## April 6, 2020

### 1 11 - Neural Networks

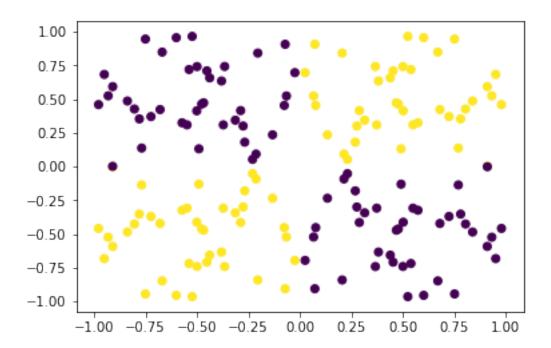
#### 1.1 Part 1 - XOR

- 1. Using the XOR dataset below, train (400 epochs) a neural network (NN) using 1, 2, 3, 4, and 5 hidden layers (where each layer has only 2 neurons). For each n layers, store the resulting loss score along with n. Plot the results to find what the optimal number of layers is.
- 2. Repeat the above with 3-neuron and 4-neuron Hidden layers. How do these results compare to the 2 neuron layers?
- 3. Using the most optimal configuraion (n-layers, k-neurons per layer), compare how tanh, sigmoid,softplus and relu effect the loss after 400 epochs. Try other Activation functions as well (https://keras.io/activations/)
- 4. Instead of SGD try other optimizers and report on the loss score. (https://keras.io/optimizers/)

y = np.array([np.ones([2\*n]),np.zeros([2\*n])]).reshape(4\*n)

```
In [5]: plt.scatter(*zip(*X), c=y)
```

Out[5]: <matplotlib.collections.PathCollection at Oxb2b007f60>



#### 1.1.1 Part 1.1

```
In [6]: model = Sequential()

model.add(Dense(2, input_dim=2, activation='tanh')) #sigmoid, relu
# model.add(Dense(2, activation='tanh'))
model.add(Dense(1, activation='sigmoid'))
# model.add(Dense(1, input_dim=2, activation='sigmoid'))

sgd = SGD(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')

model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))

# evaluate the model
scores_one = model.evaluate(X, y)
```

WARNING:tensorflow:From /Users/Broth/anaconda3/lib/python3.7/site-packages/tensorflow/python/ogInstructions for updating:

Colocations handled automatically by placer.

WARNING:tensorflow:From /Users/Broth/anaconda3/lib/python3.7/site-packages/tensorflow/python/oglinstructions for updating:

Use tf.cast instead.

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Epoch 1/400
160/160 [====================================
Epoch 2/400
160/160 [====================================
Epoch 3/400
160/160 [====================================
Epoch 4/400
160/160 [====================================
Epoch 5/400
160/160 [====================================
Epoch 6/400
160/160 [====================================
Epoch 7/400
160/160 [====================================
Epoch 8/400
160/160 [====================================
Epoch 9/400 160/160 [====================================
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Epoch 10/400 160/160 [====================================
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Epoch 17/400
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Epoch 19/400
160/160 [====================================
Epoch 20/400
160/160 [====================================
Epoch 21/400
160/160 [====================================
Epoch 22/400
160/160 [====================================
Epoch 23/400

160/160 [======]	_	0s	447us/step - loss: 0.6334
Epoch 24/400			
160/160 [====================================	_	0s	441us/step - loss: 0.6311
Epoch 25/400			-
160/160 [=======]	-	0s	429us/step - loss: 0.6290
Epoch 26/400			
160/160 [======]	-	0s	435us/step - loss: 0.6267
Epoch 27/400			
160/160 [======]	-	0s	432us/step - loss: 0.6240
Epoch 28/400			
160/160 [=======]	-	0s	431us/step - loss: 0.6215
Epoch 29/400		_	
160/160 [====================================	_	0s	444us/step - loss: 0.6188
Epoch 30/400		^	450 / 1 2 0 0404
160/160 [=======] Fnoch 31/400	_	US	453us/step - loss: 0.6161
Epoch 31/400 160/160 [====================================		٥٥	402mg/gton - logg: 0 6124
Epoch 32/400		US	423us/step - 10ss. 0.0134
160/160 [====================================	_	۸e	451ug/stan - loss: 0 6105
Epoch 33/400		OB	101d5/50ep 1055. 0.0100
160/160 [====================================	_	0s	437us/step - loss: 0.6074
Epoch 34/400		0.2	10. uz, 200p
160/160 [====================================	_	0s	443us/step - loss: 0.6042
Epoch 35/400			
160/160 [====================================	-	0s	434us/step - loss: 0.6010
Epoch 36/400			-
160/160 [====================================	-	0s	439us/step - loss: 0.5977
Epoch 37/400			
160/160 [=======]	-	0s	462us/step - loss: 0.5940
Epoch 38/400			
160/160 [======]	-	0s	425us/step - loss: 0.5906
Epoch 39/400			
160/160 [============================	-	0s	444us/step - loss: 0.5869
Epoch 40/400			
160/160 [====================================	-	0s	398us/step - loss: 0.5828
Epoch 41/400		^	000 /
160/160 [====================================	_	0s	396us/step - loss: 0.5/90
Epoch 42/400 160/160 [====================================		0-	407/
Epoch 43/400	_	US	40/us/step - 10ss: 0.5/50
160/160 [====================================	_	Λe	/11us/stan = loss: 0 570/
Epoch 44/400		US	411us/step = 10ss. 0.3704
160/160 [====================================	_	09	416us/sten - loss: 0 5661
Epoch 45/400		OB	110ab, 50cp 10bb. 0.0001
160/160 [====================================	_	0s	409us/step - loss: 0.5615
Epoch 46/400		- <b>-</b>	
160/160 [====================================	_	0s	407us/step - loss: 0.5569
Epoch 47/400			•

160/160 [=======]	_	0s	411us/step	_	loss:	0.5526
Epoch 48/400			_			
160/160 [======]	-	0s	416us/step	_	loss:	0.5473
Epoch 49/400						
160/160 [=======]	-	0s	426us/step	-	loss:	0.5424
Epoch 50/400						
160/160 [======]	-	0s	441us/step	-	loss:	0.5375
Epoch 51/400						
160/160 [=======]	-	0s	406us/step	-	loss:	0.5327
Epoch 52/400						
160/160 [=======]	-	0s	397us/step	-	loss:	0.5275
Epoch 53/400						
160/160 [=======]	-	0s	416us/step	-	loss:	0.5222
Epoch 54/400						
160/160 [=======]	-	0s	431us/step	-	loss:	0.5173
Epoch 55/400						
160/160 [=======]	-	0s	430us/step	-	loss:	0.5122
Epoch 56/400						
160/160 [=======]	-	0s	425us/step	-	loss:	0.5069
Epoch 57/400						
160/160 [=======]	-	0s	431us/step	-	loss:	0.5019
Epoch 58/400						
160/160 [=======]	-	0s	438us/step	-	loss:	0.4969
Epoch 59/400			_			
160/160 [====================================	-	0s	403us/step	-	loss:	0.4920
Epoch 60/400			_			
160/160 [========]	-	0s	425us/step	-	loss:	0.4870
Epoch 61/400			_			
160/160 [=======]	-	0s	422us/step	-	loss:	0.4822
Epoch 62/400			_			
160/160 [===========]	-	0s	437us/step	-	loss:	0.4771
Epoch 63/400						
160/160 [====================================	-	0s	435us/step	-	loss:	0.4721
Epoch 64/400						
160/160 [====================================	-	0s	424us/step	-	loss:	0.4681
Epoch 65/400		_			_	
160/160 [====================================	-	0s	433us/step	-	loss:	0.4634
Epoch 66/400		_			_	
160/160 [====================================	-	0s	433us/step	-	loss:	0.4587
Epoch 67/400		_			_	
160/160 [====================================	-	0s	431us/step	-	loss:	0.4544
Epoch 68/400		_			_	
160/160 [====================================	-	0s	432us/step	-	loss:	0.4503
Epoch 69/400		•	400 /		-	0 4456
160/160 [====================================	-	Us	420us/step	-	loss:	0.4459
Epoch 70/400		•	404 /		-	0 4404
160/160 [====================================	-	Us	404us/step	-	loss:	0.4421
Epoch 71/400						

Epoch 72/400	160/160 [======] -	- 0s	407us/step	- loss:	0.4382
Epoch 73/400 160/160 [====================================			_		
160/160	160/160 [======] -	- 0s	431us/step	- loss:	0.4342
Epoch 74/400 160/160 [====================================					
160/160	160/160 [======] -	- 0s	443us/step	- loss:	0.4305
Epoch 75/400 160/160 [====================================					
160/160		- 0s	453us/step	- loss:	0.4270
Epoch 76/400 160/160 [====================================	<b>1</b>				
160/160 [====================================		- 0s	436us/step	- loss:	0.4235
Epoch 77/400 160/160 [====================================	-				
160/160		- 0s	443us/step	- loss:	0.4204
Epoch 78/400 160/160 [====================================					
160/160 [====================================		- 0s	431us/step	- loss:	0.4169
Epoch 79/400 160/160 [====================================	-				
160/160		- 0s	419us/step	- loss:	0.4140
Epoch 80/400 160/160 [====================================					
160/160		- 0s	430us/step	- loss:	0.4108
Epoch 81/400 160/160 [====================================	-				
160/160 [====================================		- 0s	435us/step	- loss:	0.4079
Epoch 82/400 160/160 [====================================	•				
160/160   160/		- 0s	425us/step	- loss:	0.4051
Epoch 83/400 160/160 [====================================	•				
160/160		- 0s	434us/step	- loss:	0.4022
Epoch 84/400  160/160 [====================================	-				
160/160		- 0s	432us/step	- loss:	0.3998
Epoch 85/400  160/160 [====================================	-				
160/160 [====================================		- 0s	420us/step	- loss:	0.3970
Epoch 86/400  160/160 [====================================					
160/160 [====================================		- 0s	434us/step	- loss:	0.3946
Epoch 87/400  160/160 [====================================	•				
160/160 [====================================		- 0s	433us/step	- loss:	0.3921
Epoch 88/400  160/160 [====================================					
160/160 [====================================		- 0s	432us/step	- loss:	0.3900
Epoch 89/400  160/160 [====================================	-				
160/160 [====================================		- 0s	414us/step	- loss:	0.3877
Epoch 90/400 160/160 [====================================					
160/160 [====================================		- 0s	440us/step	- loss:	0.3856
Epoch 91/400 160/160 [====================================	-				
160/160 [====================================		- 0s	472us/step	- loss:	0.3831
Epoch 92/400  160/160 [====================================	•				
160/160 [====================================		- 0s	422us/step	- loss:	0.3816
Epoch 93/400 160/160 [====================================	-				
160/160 [====================================		- 0s	425us/step	- loss:	0.3793
Epoch 94/400 160/160 [====================================					
160/160 [====================================		- 0s	419us/step	- loss:	0.3774
<del>-</del>	•				
Epoch 95/400		- 0s	423us/step	- loss:	0.3756
	Epoch 95/400				

160/160 [=======]	_	0s	420us/step	_	loss:	0.3739
Epoch 96/400			_			
160/160 [======]	-	0s	415us/step	-	loss:	0.3722
Epoch 97/400						
160/160 [=======]	-	0s	416us/step	-	loss:	0.3709
Epoch 98/400						
160/160 [======]	-	0s	413us/step	-	loss:	0.3691
Epoch 99/400		_			_	
160/160 [====================================	-	0s	390us/step	-	loss:	0.3675
Epoch 100/400		^	440 / .		-	0 0000
160/160 [====================================	_	Us	410us/step	_	loss:	0.3662
Epoch 101/400 160/160 [====================================		0-	111/		7	0 2647
Epoch 102/400	_	US	411us/step	_	loss:	0.3647
160/160 [====================================	_	Λα	106ug/gton	_	loggi	0 3630
Epoch 103/400		US	400us/scep		TOSS.	0.0002
160/160 [====================================	_	0s	425us/sten	_	loss	0 3622
Epoch 104/400		V.D	12000, 500p		TODD.	0.0022
160/160 [====================================	_	0s	418us/step	_	loss:	0.3606
Epoch 105/400			, <sub>P</sub>			
160/160 [====================================	_	0s	395us/step	_	loss:	0.3598
Epoch 106/400			•			
160/160 [====================================	_	0s	422us/step	_	loss:	0.3583
Epoch 107/400			_			
160/160 [======]	-	0s	422us/step	-	loss:	0.3572
Epoch 108/400						
160/160 [======]	-	0s	415us/step	-	loss:	0.3561
Epoch 109/400						
160/160 [=======]	-	0s	419us/step	-	loss:	0.3552
Epoch 110/400						
160/160 [====================================	-	0s	421us/step	-	loss:	0.3540
Epoch 111/400		•	404		_	
160/160 [=======]	_	0s	424us/step	_	loss:	0.3528
Epoch 112/400		0 -	404/		7	0 2500
160/160 [====================================	_	US	421us/step	_	loss:	0.3522
Epoch 113/400 160/160 [====================================	_	٥٥	109ug /g+op		1000.	0 2510
Epoch 114/400		US	40ous/step	_	1088.	0.3312
160/160 [====================================	_	٥q	422115/sten	_	1099.	0 3503
Epoch 115/400		OB	122ub/ b0cp		TOBB.	0.0000
160/160 [====================================	_	0s	418us/step	_	loss:	0.3494
Epoch 116/400		Ü	rroup, boop		TODD.	0.0101
160/160 [====================================	_	0s	428us/step	_	loss:	0.3484
Epoch 117/400			, · · · · · · · · · · · · · · · · ·			_
160/160 [====================================	_	0s	425us/step	_	loss:	0.3479
Epoch 118/400			•			
160/160 [====================================	-	0s	422us/step	-	loss:	0.3467
Epoch 119/400						

160/160 [======]	_	0s	423us/step	_	loss:	0.3461
Epoch 120/400						
160/160 [====================================	-	0s	425us/step	-	loss:	0.3452
Epoch 121/400		_			_	
160/160 [====================================	-	0s	429us/step	-	loss:	0.3446
Epoch 122/400		•	100 /		_	
160/160 [====================================	-	0s	406us/step	_	loss:	0.3441
Epoch 123/400		^	440 / .		,	0.0400
160/160 [====================================	-	US	412us/step	_	loss:	0.3433
Epoch 124/400		^	405 / .		,	0.0406
160/160 [====================================	_	US	405us/step	_	loss:	0.3426
Epoch 125/400		0 -	445/		7	0.2400
160/160 [====================================	_	US	415us/step	_	loss:	0.3420
Epoch 126/400 160/160 [====================================		0-	116/		7	0 2/11
	_	US	41ous/step	_	loss:	0.3411
Epoch 127/400 160/160 [====================================	_	٥٥	109ug /g+op		1000.	0 2407
Epoch 128/400		US	40ous/step		1088.	0.3407
160/160 [====================================	_	٥٥	/17ug/gton		1000.	0 2402
Epoch 129/400		US	417us/scep		1088.	0.3402
160/160 [====================================	_	Λα	121ug/gton	_	loggi	0 3307
Epoch 130/400		05	421us/scep		TOSS.	0.3391
160/160 [====================================	_	۸e	42811g/gtan	_	loggi	0 3388
Epoch 131/400		0B	420us/ 5 cep		TOSS.	0.0000
160/160 [====================================	_	٥q	424115/sten	_	1099.	0 3386
Epoch 132/400		OB	121ub/ b0cp		TOBB.	0.0000
160/160 [====================================	_	0s	419us/sten	_	loss	0 3379
Epoch 133/400		V.D	11000, 500		TODD.	0.0010
160/160 [====================================	_	0s	414us/sten	_	loss:	0.3375
Epoch 134/400		Ü	11145, 500p		TODE.	0.00.0
160/160 [====================================	_	0s	420us/step	_	loss:	0.3371
Epoch 135/400			, <sub>F</sub>			
160/160 [====================================	_	0s	415us/step	_	loss:	0.3366
Epoch 136/400			, <sub>F</sub>			
160/160 [====================================	_	0s	426us/step	_	loss:	0.3363
Epoch 137/400			. 1			
160/160 [====================================	_	0s	402us/step	_	loss:	0.3359
Epoch 138/400			. 1			
160/160 [====================================	_	0s	404us/step	_	loss:	0.3354
Epoch 139/400			•			
160/160 [====================================	-	0s	417us/step	_	loss:	0.3348
Epoch 140/400			-			
160/160 [====================================	-	0s	426us/step	_	loss:	0.3345
Epoch 141/400			•			
160/160 [==========]	-	0s	404us/step	_	loss:	0.3342
Epoch 142/400			-			
160/160 [=======]	-	0s	394us/step	_	loss:	0.3340
Epoch 143/400						

160/160 []	-	0s	424us/step	_	loss:	0.3334
Epoch 144/400						
160/160 [========]	-	0s	419us/step	-	loss:	0.3333
Epoch 145/400						
160/160 [=======]	-	0s	424us/step	-	loss:	0.3330
Epoch 146/400						
160/160 [=======]	-	0s	433us/step	-	loss:	0.3327
Epoch 147/400		_			_	
160/160 [====================================	-	0s	412us/step	-	loss:	0.3324
Epoch 148/400		_			_	
160/160 [====================================	-	0s	402us/step	-	loss:	0.3322
Epoch 149/400		_			_	
160/160 [====================================	-	0s	397us/step	-	loss:	0.3315
Epoch 150/400		^	005 / .		-	0.0045
160/160 [====================================	-	0s	385us/step	-	loss:	0.3315
Epoch 151/400		0 -	204/		7	0 2210
160/160 [====================================	_	US	394us/step	_	loss:	0.3312
Epoch 152/400		0 -	100/		7	0 2207
160/160 [====================================	_	US	422us/step	_	loss:	0.3307
160/160 [====================================		٥٩	127::2 / 2+ 22		1	0 2200
Epoch 154/400	_	US	45/us/step	_	TOSS:	0.3306
160/160 [====================================	_	Λα	122ug /g+op	_	loggi	0 3301
Epoch 155/400		US	422us/step		TOSS.	0.3301
160/160 [====================================	_	Λe	/3111g/gton	_	loggi	n 3200
Epoch 156/400		05	431us/scep		TOSS.	0.3299
160/160 [====================================	_	Λe	121112/sten	_	loggi	0 3206
Epoch 157/400		US	421us/scep		TOSS.	0.0290
160/160 [====================================	_	٥q	424115/sten	_	1099.	0 3298
Epoch 158/400		OB	121ub/ b0cp		TOBB.	0.0250
160/160 [====================================	_	0s	415us/step	_	loss:	0.3292
Epoch 159/400		Ü	11000, 500p		1000.	0.0202
160/160 [====================================	_	0s	423us/step	_	loss:	0.3292
Epoch 160/400			, <sub>F</sub>			
160/160 [====================================	_	0s	422us/step	_	loss:	0.3289
Epoch 161/400			,			
160/160 [====================================	_	0s	418us/step	_	loss:	0.3286
Epoch 162/400			. 1			
160/160 [====================================	_	0s	404us/step	_	loss:	0.3283
Epoch 163/400			•			
160/160 [====================================	_	0s	419us/step	-	loss:	0.3280
Epoch 164/400			_			
160/160 [====================================	_	0s	422us/step	-	loss:	0.3278
Epoch 165/400			-			
160/160 [======]	-	0s	412us/step	-	loss:	0.3279
Epoch 166/400			_			
160/160 [=======]	-	0s	414us/step	-	loss:	0.3279
Epoch 167/400						

160/160 [=======]	_	0s	414us/step	_	loss:	0.3274
Epoch 168/400			_			
160/160 [=======]	-	0s	412us/step	-	loss:	0.3272
Epoch 169/400						
160/160 [=======]	-	0s	416us/step	-	loss:	0.3271
Epoch 170/400		_			_	
160/160 [====================================	-	0s	421us/step	-	loss:	0.3269
Epoch 171/400		0 -	101/		7	0 2070
160/160 [====================================	_	US	424us/step	_	loss:	0.3270
Epoch 172/400 160/160 [====================================	_	٥	/12ug/gton		1000.	0 2262
Epoch 173/400		US	413us/scep	_	1088.	0.3203
160/160 [====================================	_	۸s	423115/sten	_	1099.	0 3264
Epoch 174/400		OB	120ub/ bucp		TOBB.	0.0201
160/160 [====================================	_	0s	422us/step	_	loss:	0.3264
Epoch 175/400						
160/160 [====================================	_	0s	420us/step	_	loss:	0.3265
Epoch 176/400			-			
160/160 [====================================	_	0s	419us/step	_	loss:	0.3259
Epoch 177/400						
160/160 [======]	-	0s	424us/step	-	loss:	0.3263
Epoch 178/400						
160/160 [======]	-	0s	419us/step	-	loss:	0.3260
Epoch 179/400						
160/160 [=======]	-	0s	433us/step	-	loss:	0.3256
Epoch 180/400		_			_	
160/160 [====================================	-	0s	422us/step	_	loss:	0.3257
Epoch 181/400 160/160 [====================================		0-	111/		1	0.2050
Epoch 182/400	_	US	414us/step	_	loss:	0.3252
160/160 [====================================	_	Λe	/18ug/gton	_	loggi	0 3257
Epoch 183/400		US	410us/scep		TOSS.	0.0201
160/160 [====================================	_	0s	429us/sten	_	loss:	0.3248
Epoch 184/400		Ü	120 027, 2009		TODE.	0.0210
160/160 [====================================	_	0s	415us/step	_	loss:	0.3251
Epoch 185/400			1			
160/160 [====================================	_	0s	418us/step	_	loss:	0.3248
Epoch 186/400			•			
160/160 [======]	-	0s	421us/step	-	loss:	0.3252
Epoch 187/400						
160/160 [======]	-	0s	414us/step	-	loss:	0.3249
Epoch 188/400						
160/160 [======]	-	0s	424us/step	-	loss:	0.3245
Epoch 189/400					_	
160/160 [====================================	-	0s	424us/step	-	loss:	0.3244
Epoch 190/400		^	100 / :		,	0.0045
160/160 [====================================	_	US	40bus/step	_	Toss:	0.3245
Epoch 191/400						

160/160 [=======]	_	0s	420us/step	_	loss:	0.3245
Epoch 192/400			_			
160/160 [=======]	-	0s	422us/step	-	loss:	0.3244
Epoch 193/400						
160/160 [======]	-	0s	411us/step	-	loss:	0.3243
Epoch 194/400						
160/160 [====================================	-	0s	416us/step	-	loss:	0.3243
Epoch 195/400		0 -	440/		7	0 2020
160/160 [====================================	-	US	419us/step	_	loss:	0.3238
Epoch 196/400 160/160 [====================================		٥٩	107:12/2+02		1	0 2027
Epoch 197/400		US	407us/scep	_	TOSS.	0.3231
160/160 [====================================	_	۸e	41511g/gten	_	loggi	0 3238
Epoch 198/400		0B	410us/scep		1055.	0.0200
160/160 [====================================	_	0s	413us/step	_	loss:	0.3239
Epoch 199/400			110 ш2, 200р			0.0200
160/160 [====================================	_	0s	411us/step	_	loss:	0.3237
Epoch 200/400			. 1			
160/160 [====================================	_	0s	416us/step	_	loss:	0.3235
Epoch 201/400			-			
160/160 [====================================	-	0s	418us/step	-	loss:	0.3233
Epoch 202/400						
160/160 [===========]	-	0s	429us/step	-	loss:	0.3233
Epoch 203/400						
160/160 [=======]	-	0s	414us/step	-	loss:	0.3230
Epoch 204/400						
160/160 [=======]	-	0s	411us/step	-	loss:	0.3233
Epoch 205/400		_			_	
160/160 [====================================	-	0s	420us/step	-	loss:	0.3235
Epoch 206/400		0 -	440/		7	0 2020
160/160 [=========] Epoch 207/400	_	US	412us/step	_	loss:	0.3232
160/160 [========]	_	Λα	120ug /gton	_	loggi	0 3335
Epoch 208/400		05	429us/scep		TOSS.	0.3233
160/160 [====================================	_	٥q	419113/sten	_	1099.	0 3235
Epoch 209/400		V.D	110 ab, 500p		TODD.	0.0200
160/160 [====================================	_	0s	414us/step	_	loss:	0.3230
Epoch 210/400			, <sub>F</sub>			
160/160 [====================================	_	0s	419us/step	_	loss:	0.3226
Epoch 211/400			•			
160/160 [====================================	-	0s	416us/step	-	loss:	0.3230
Epoch 212/400						
160/160 [======]	-	0s	416us/step	-	loss:	0.3229
Epoch 213/400						
160/160 [=======]	-	0s	413us/step	-	loss:	0.3230
Epoch 214/400						
160/160 [=======]	-	0s	423us/step	-	loss:	0.3226
Epoch 215/400						

160/160 [=======]	_	0s	413us/step	_	loss:	0.3228
Epoch 216/400						
160/160 [=======]	-	0s	416us/step	-	loss:	0.3230
Epoch 217/400						
160/160 [=========]	-	0s	413us/step	-	loss:	0.3224
Epoch 218/400						
160/160 [=========]	-	0s	417us/step	-	loss:	0.3227
Epoch 219/400						
160/160 [====================================	-	0s	409us/step	-	loss:	0.3226
Epoch 220/400						
160/160 [===========]	_	0s	417us/step	-	loss:	0.3222
Epoch 221/400			_			
160/160 [====================================	_	0s	417us/step	-	loss:	0.3220
Epoch 222/400			_			
160/160 [====================================	_	0s	424us/step	-	loss:	0.3223
Epoch 223/400			-			
160/160 [====================================	_	0s	418us/step	-	loss:	0.3227
Epoch 224/400			-			
160/160 [====================================	_	0s	421us/step	_	loss:	0.3220
Epoch 225/400						
160/160 [====================================	_	0s	426us/step	_	loss:	0.3224
Epoch 226/400						
160/160 [====================================	_	0s	415us/step	_	loss:	0.3224
Epoch 227/400						
160/160 [====================================	_	0s	420us/step	_	loss:	0.3221
Epoch 228/400			. 1			
160/160 [====================================	_	0s	415us/step	_	loss:	0.3220
Epoch 229/400			. 1			
160/160 [====================================	_	0s	416us/step	_	loss:	0.3223
Epoch 230/400			. 1			
160/160 [====================================	_	0s	413us/step	_	loss:	0.3222
Epoch 231/400						
160/160 [====================================	_	0s	412us/step	_	loss:	0.3219
Epoch 232/400						
160/160 [====================================	_	0s	416us/step	_	loss:	0.3221
Epoch 233/400						
160/160 [====================================	_	0s	419us/step	_	loss:	0.3220
Epoch 234/400			. 1			
160/160 [====================================	_	0s	416us/step	_	loss:	0.3223
Epoch 235/400			. 1			
160/160 [====================================	_	0s	417us/step	_	loss:	0.3217
Epoch 236/400						
160/160 [====================================	_	0s	411us/step	_	loss:	0.3218
Epoch 237/400						
160/160 [====================================	_	0s	419us/step	_	loss:	0.3219
Epoch 238/400			. 1			
160/160 [====================================	_	0s	417us/step	_	loss:	0.3215
Epoch 239/400			1			
-						

160/160 []	_	0s	424us/step	_	loss:	0.3219
Epoch 240/400			. 1			
160/160 [=======]	-	0s	419us/step	-	loss:	0.3217
Epoch 241/400						
160/160 [======]	_	0s	416us/step	-	loss:	0.3217
Epoch 242/400						
160/160 [======]	-	0s	419us/step	-	loss:	0.3215
Epoch 243/400						
160/160 [=======]	-	0s	421us/step	-	loss:	0.3218
Epoch 244/400			_			
160/160 [=======]	-	0s	420us/step	-	loss:	0.3213
Epoch 245/400		_			_	
160/160 [====================================	-	0s	427us/step	-	loss:	0.3217
Epoch 246/400		_			_	
160/160 [====================================	_	0s	412us/step	-	loss:	0.3217
Epoch 247/400		•	440 / .		-	0.0004
160/160 [====================================	_	Us	418us/step	_	loss:	0.3221
Epoch 248/400		ο-	102/		7	0.2000
160/160 [====================================	_	US	423us/step	_	loss:	0.3220
Epoch 249/400 160/160 [====================================		Λ-	100/		7	0.2010
	_	US	409us/step	_	loss:	0.3219
Epoch 250/400 160/160 [====================================	_	٥٥	107ug/gton		1000.	0 2010
Epoch 251/400		US	407us/scep		1088.	0.3219
160/160 [====================================	_	۸a	122112/sten	_	loggi	0 321/
Epoch 252/400		OS	422us/scep		TOSS.	0.0214
160/160 [====================================	_	۸e	42511g/gten	_	loggi	0 3213
Epoch 253/400		OS	420us/scep		TOSS.	0.0210
160/160 [====================================	_	0s	41411s/sten	_	loss	0 3214
Epoch 254/400		OB	ттив/воср		TOBB.	0.0211
160/160 [====================================	_	0s	422us/step	_	loss:	0.3215
Epoch 255/400			ши, стер			0.0220
160/160 [====================================	_	0s	419us/step	_	loss:	0.3217
Epoch 256/400			1			
160/160 [====================================	_	0s	426us/step	_	loss:	0.3213
Epoch 257/400			. 1			
160/160 [====================================	_	0s	415us/step	_	loss:	0.3215
Epoch 258/400			•			
160/160 [====================================	_	0s	415us/step	_	loss:	0.3216
Epoch 259/400			_			
160/160 [=======]	-	0s	402us/step	-	loss:	0.3213
Epoch 260/400						
160/160 [======]	_	0s	413us/step	-	loss:	0.3211
Epoch 261/400						
160/160 [======]	_	0s	396us/step	-	loss:	0.3215
Epoch 262/400						
160/160 [======]	-	0s	406us/step	-	loss:	0.3213
Epoch 263/400						

```
160/160 [============== ] - Os 411us/step - loss: 0.3213
Epoch 264/400
160/160 [============= ] - 0s 418us/step - loss: 0.3212
Epoch 265/400
160/160 [============= ] - 0s 416us/step - loss: 0.3214
Epoch 266/400
160/160 [============= ] - Os 410us/step - loss: 0.3209
Epoch 267/400
160/160 [============= ] - 0s 437us/step - loss: 0.3214
Epoch 268/400
Epoch 269/400
Epoch 270/400
160/160 [============= ] - 0s 417us/step - loss: 0.3213
Epoch 271/400
160/160 [============= ] - 0s 428us/step - loss: 0.3212
Epoch 272/400
160/160 [============ ] - Os 439us/step - loss: 0.3214
Epoch 273/400
160/160 [============ ] - Os 439us/step - loss: 0.3212
Epoch 274/400
Epoch 275/400
160/160 [============= ] - 0s 420us/step - loss: 0.3213
Epoch 276/400
160/160 [============= ] - Os 434us/step - loss: 0.3212
Epoch 277/400
Epoch 278/400
160/160 [============== ] - Os 428us/step - loss: 0.3209
Epoch 279/400
160/160 [============= ] - Os 424us/step - loss: 0.3215
Epoch 280/400
160/160 [============= ] - 0s 431us/step - loss: 0.3212
Epoch 281/400
Epoch 282/400
160/160 [============== ] - Os 419us/step - loss: 0.3214
Epoch 283/400
160/160 [============== ] - Os 440us/step - loss: 0.3210
Epoch 284/400
Epoch 285/400
Epoch 286/400
160/160 [============== ] - Os 429us/step - loss: 0.3211
Epoch 287/400
```

160/160 []	_	0s	424us/step	_	loss:	0.3213
Epoch 288/400			_			
160/160 [======]	-	0s	427us/step	-	loss:	0.3206
Epoch 289/400						
160/160 [======]	-	0s	419us/step	-	loss:	0.3212
Epoch 290/400		_			_	
160/160 [====================================	-	0s	419us/step	-	loss:	0.3209
Epoch 291/400		ο-	111/		7	0.2010
160/160 [====================================	_	US	414us/step	_	loss:	0.3212
Epoch 292/400 160/160 [====================================	_	Λα	442ug/gton	_	loggi	0 3308
Epoch 293/400		US	442us/scep		TOSS.	0.3200
160/160 [====================================	_	0s	415us/step	_	loss:	0.3211
Epoch 294/400		Ü	rroub, brop		TODD.	0.0211
160/160 [====================================	_	0s	409us/step	_	loss:	0.3214
Epoch 295/400			1			
160/160 [====================================	_	0s	409us/step	_	loss:	0.3207
Epoch 296/400			_			
160/160 [======]	-	0s	431us/step	-	loss:	0.3210
Epoch 297/400						
160/160 [======]	-	0s	415us/step	-	loss:	0.3207
Epoch 298/400						
160/160 [======]	-	0s	434us/step	-	loss:	0.3212
Epoch 299/400			_			
160/160 [====================================	-	0s	422us/step	-	loss:	0.3209
Epoch 300/400		_	4.45		_	
160/160 [====================================	-	0s	417us/step	-	loss:	0.3206
Epoch 301/400		ο-	440/		7	0.2000
160/160 [====================================	_	US	419us/step	_	loss:	0.3208
Epoch 302/400 160/160 [====================================	_	۸a	/1511g/gton	_	loggi	0 3203
Epoch 303/400		OS	410us/scep		TOSS.	0.0200
160/160 [====================================	_	0s	396us/step	_	loss:	0.3211
Epoch 304/400			occus, scop			0.0222
160/160 [====================================	_	0s	412us/step	_	loss:	0.3210
Epoch 305/400			•			
160/160 [====================================	_	0s	425us/step	_	loss:	0.3208
Epoch 306/400						
160/160 [======]	-	0s	420us/step	-	loss:	0.3208
Epoch 307/400						
160/160 [======]	-	0s	421us/step	-	loss:	0.3208
Epoch 308/400						
160/160 [====================================	-	0s	417us/step	-	loss:	0.3207
Epoch 309/400		^	400 / .		,	0 0010
160/160 [====================================	-	Us	400us/step	_	loss:	0.3210
Epoch 310/400		0-	102112/5+5		1695	0.3006
160/160 [=======] Fnoch 311/400	_	US	42ous/step	_	TOSS:	0.3206
Epoch 311/400						

160/160 [=======]	_	0s	412us/step	_	loss:	0.3207
Epoch 312/400						
160/160 [=======]	-	0s	426us/step	-	loss:	0.3204
Epoch 313/400						
160/160 [=======]	-	0s	420us/step	-	loss:	0.3203
Epoch 314/400		_			_	
160/160 [====================================	-	0s	429us/step	-	loss:	0.3209
Epoch 315/400		^	400 / 1		-	0 0004
160/160 [====================================	_	US	409us/step	_	loss:	0.3204
Epoch 316/400 160/160 [====================================		٥٩	/10mg/gton		1.000.	0 2004
Epoch 317/400	_	US	41ous/step	_	TOSS:	0.3204
160/160 [====================================	_	Λe	122115/stan	_	loggi	0 3208
Epoch 318/400		OB	422us/50ep		1055.	0.0200
160/160 [====================================	_	0s	417us/sten	_	loss:	0.3209
Epoch 319/400		0.2	11: d2, 200p			0.0200
160/160 [====================================	_	0s	418us/step	_	loss:	0.3207
Epoch 320/400			. 1			
160/160 [====================================	_	0s	416us/step	_	loss:	0.3208
Epoch 321/400			-			
160/160 [=======]	-	0s	420us/step	-	loss:	0.3207
Epoch 322/400						
160/160 [===========]	-	0s	405us/step	-	loss:	0.3207
Epoch 323/400						
160/160 [=======]	-	0s	412us/step	-	loss:	0.3208
Epoch 324/400						
160/160 [=======]	-	0s	421us/step	-	loss:	0.3208
Epoch 325/400		_			_	
160/160 [====================================	-	0s	415us/step	-	loss:	0.3205
Epoch 326/400		^	440 / .		-	0 0005
160/160 [====================================	_	0s	418us/step	_	loss:	0.3205
Epoch 327/400		٥٩	100mg /gt on		1.000.	0 2011
160/160 [====================================	_	US	409us/step	_	TOSS:	0.3211
160/160 [====================================	_	Λe	121115/stan	_	loggi	0 3204
Epoch 329/400		OS	421us/scep		TOSS.	0.0204
160/160 [====================================	_	0s	415us/sten	_	loss	0 3206
Epoch 330/400		ŮĎ.	11000, 500p		TODD.	0.0200
160/160 [====================================	_	0s	397us/step	_	loss:	0.3203
Epoch 331/400			1			
160/160 [====================================	_	0s	409us/step	_	loss:	0.3207
Epoch 332/400			-			
160/160 [====================================	_	0s	412us/step	_	loss:	0.3207
Epoch 333/400			_			
160/160 [=======]	-	0s	417us/step	-	loss:	0.3208
Epoch 334/400						
160/160 [========]	-	0s	405us/step	-	loss:	0.3207
Epoch 335/400						

160/160 []	_	0s	423us/step	_	loss:	0.3202
Epoch 336/400			_			
160/160 [======]	-	0s	415us/step	-	loss:	0.3209
Epoch 337/400						
160/160 [======]	-	0s	409us/step	-	loss:	0.3208
Epoch 338/400		_			_	
160/160 [====================================	-	0s	406us/step	-	loss:	0.3202
Epoch 339/400		ο-	405/		7	0.2004
160/160 [====================================	_	US	405us/step	_	loss:	0.3204
Epoch 340/400 160/160 [====================================	_	Λα	300ug/gton	_	loggi	0 3308
Epoch 341/400		US	Saars/scep		TOSS.	0.3200
160/160 [====================================	_	0s	388us/sten	_	loss:	0.3209
Epoch 342/400		Ü	cocue, brop		TODD.	0.0200
160/160 [====================================	_	0s	387us/step	_	loss:	0.3210
Epoch 343/400			1			
160/160 [====================================	_	0s	398us/step	_	loss:	0.3206
Epoch 344/400			_			
160/160 [======]	-	0s	399us/step	_	loss:	0.3206
Epoch 345/400						
160/160 [======]	-	0s	400us/step	-	loss:	0.3204
Epoch 346/400						
160/160 [======]	-	0s	398us/step	-	loss:	0.3204
Epoch 347/400			_			
160/160 [====================================	-	0s	385us/step	-	loss:	0.3205
Epoch 348/400		_			_	
160/160 [====================================	-	0s	404us/step	_	loss:	0.3208
Epoch 349/400		ο-	444/		7	0.2000
160/160 [====================================	_	US	411us/step	_	loss:	0.3209
Epoch 350/400 160/160 [====================================	_	۸a	/1711g/gton	_	loggi	0 3205
Epoch 351/400		OS	417 us/scep		TOSS.	0.0200
160/160 [====================================	_	0s	427us/step	_	loss:	0.3204
Epoch 352/400			12. dz, z c p			0.0201
160/160 [====================================	_	0s	416us/step	_	loss:	0.3202
Epoch 353/400			•			
160/160 [====================================	_	0s	410us/step	_	loss:	0.3205
Epoch 354/400						
160/160 [======]	-	0s	401us/step	-	loss:	0.3205
Epoch 355/400						
160/160 [======]	-	0s	425us/step	-	loss:	0.3206
Epoch 356/400						
160/160 [====================================	-	0s	414us/step	-	loss:	0.3208
Epoch 357/400		^	400 / :		,	0.0004
160/160 [====================================	-	Us	423us/step	_	loss:	0.3204
Epoch 358/400		0-	/1Eng/s+s		1695	0.3005
160/160 [====================================	_	US	410us/step	_	TOSS:	0.3205
Epoch 359/400						

160/160 [====================================	.3209
Epoch 360/400	
160/160 [====================================	.3206
Epoch 361/400	
160/160 [====================================	.3206
Epoch 362/400	
160/160 [============ ] - Os 419us/step - loss: 0.	.3200
Epoch 363/400	
160/160 [====================================	.3200
Epoch 364/400	0004
160/160 [====================================	.3204
Epoch 365/400	2007
160/160 [====================================	.3207
Epoch 366/400	2005
160/160 [====================================	.3205
Epoch 367/400	2004
160/160 [====================================	.3201
Epoch 368/400	2000
160/160 [====================================	.3202
Epoch 369/400	2000
160/160 [====================================	.3203
Epoch 370/400	2000
160/160 [====================================	.3203
Epoch 371/400	2004
160/160 [====================================	.3204
Epoch 372/400	2000
160/160 [====================================	.3208
Epoch 373/400	2007
160/160 [====================================	.3207
Epoch 374/400	2002
160/160 [====================================	.3203
Epoch 375/400	2000
160/160 [====================================	.3202
Epoch 376/400	2006
160/160 [====================================	.3206
Epoch 377/400 160/160 [====================================	2004
<del>-</del>	.3204
Epoch 378/400	2000
160/160 [====================================	.3200
Epoch 379/400	2004
160/160 [====================================	.3204
Epoch 380/400	2007
160/160 [====================================	.3207
Epoch 381/400 160/160 [====================================	2001
<del>-</del>	.3201
Epoch 382/400	2000
160/160 [====================================	.3∠00
Epoch 383/400	

```
160/160 [============== ] - Os 418us/step - loss: 0.3198
Epoch 384/400
Epoch 385/400
Epoch 386/400
Epoch 387/400
Epoch 388/400
Epoch 389/400
Epoch 390/400
Epoch 391/400
160/160 [============= ] - 0s 428us/step - loss: 0.3200
Epoch 392/400
160/160 [============= ] - Os 415us/step - loss: 0.3200
Epoch 393/400
Epoch 394/400
Epoch 395/400
Epoch 396/400
Epoch 397/400
160/160 [============== ] - Os 413us/step - loss: 0.3208
Epoch 398/400
Epoch 399/400
160/160 [============= ] - Os 404us/step - loss: 0.3200
Epoch 400/400
160/160 [============= ] - Os 433us/step - loss: 0.3199
160/160 [========== ] - Os 189us/step
In [7]: model = Sequential()
   model.add(Dense(2, input_dim=2, activation='tanh')) #sigmoid, relu
   model.add(Dense(2, input_dim = 2, activation='relu'))
   model.add(Dense(1, activation='sigmoid'))
    # model.add(Dense(1,input_dim=2, activation='sigmoid'))
   sgd = SGD(1r=0.1)
   model.compile(loss='binary_crossentropy', optimizer='sgd')
```

# model.fit(X, y, batch\_size=2, epochs=400) #160/4 = 40 per epoch #print(model.predict\_proba(X).reshape(4\*n))

# evaluate the model
scores\_two = model.evaluate(X, y)

```
Epoch 1/400
Epoch 2/400
160/160 [============== ] - 0s 507us/step - loss: 0.6832
Epoch 3/400
160/160 [============== ] - Os 487us/step - loss: 0.6803
Epoch 4/400
160/160 [============== ] - Os 441us/step - loss: 0.6778
Epoch 5/400
160/160 [============== ] - Os 435us/step - loss: 0.6753
Epoch 6/400
Epoch 7/400
160/160 [============= ] - Os 447us/step - loss: 0.6695
Epoch 8/400
160/160 [============= ] - Os 444us/step - loss: 0.6663
Epoch 9/400
Epoch 10/400
Epoch 11/400
160/160 [============= ] - 0s 482us/step - loss: 0.6552
Epoch 12/400
160/160 [============] - Os 474us/step - loss: 0.6516
Epoch 13/400
Epoch 14/400
160/160 [============= ] - Os 474us/step - loss: 0.6433
Epoch 15/400
160/160 [============== ] - Os 478us/step - loss: 0.6388
Epoch 16/400
160/160 [============== ] - Os 458us/step - loss: 0.6338
Epoch 17/400
Epoch 18/400
160/160 [=============== ] - Os 440us/step - loss: 0.6234
Epoch 19/400
160/160 [============== ] - Os 492us/step - loss: 0.6177
Epoch 20/400
Epoch 21/400
```

```
Epoch 22/400
160/160 [============] - Os 481us/step - loss: 0.6000
Epoch 23/400
Epoch 24/400
160/160 [============= ] - Os 478us/step - loss: 0.5870
Epoch 25/400
160/160 [============= ] - 0s 471us/step - loss: 0.5804
Epoch 26/400
Epoch 27/400
Epoch 28/400
160/160 [============= ] - Os 484us/step - loss: 0.5586
Epoch 29/400
160/160 [============= ] - Os 480us/step - loss: 0.5516
Epoch 30/400
160/160 [============= ] - Os 476us/step - loss: 0.5447
Epoch 31/400
Epoch 32/400
160/160 [============= ] - Os 457us/step - loss: 0.5320
Epoch 33/400
Epoch 34/400
160/160 [=============== ] - Os 442us/step - loss: 0.5202
Epoch 35/400
Epoch 36/400
160/160 [============== ] - Os 491us/step - loss: 0.5094
Epoch 37/400
160/160 [============= ] - Os 472us/step - loss: 0.5039
Epoch 38/400
160/160 [============= ] - Os 466us/step - loss: 0.4990
Epoch 39/400
Epoch 40/400
160/160 [============== ] - Os 494us/step - loss: 0.4903
Epoch 41/400
160/160 [============== ] - 0s 492us/step - loss: 0.4863
Epoch 42/400
160/160 [============= ] - Os 475us/step - loss: 0.4822
Epoch 43/400
Epoch 44/400
160/160 [============== ] - Os 485us/step - loss: 0.4757
Epoch 45/400
```

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Epoch 46/400
160/160 [============] - Os 481us/step - loss: 0.4693
Epoch 47/400
160/160 [============= ] - Os 500us/step - loss: 0.4664
Epoch 48/400
160/160 [============= ] - 0s 476us/step - loss: 0.4639
Epoch 49/400
160/160 [============= ] - Os 486us/step - loss: 0.4616
Epoch 50/400
160/160 [============= ] - Os 481us/step - loss: 0.4590
Epoch 51/400
Epoch 52/400
160/160 [============= ] - Os 487us/step - loss: 0.4549
Epoch 53/400
160/160 [============= ] - Os 490us/step - loss: 0.4528
Epoch 54/400
160/160 [============== ] - Os 477us/step - loss: 0.4506
Epoch 55/400
Epoch 56/400
160/160 [============= ] - Os 472us/step - loss: 0.4468
Epoch 57/400
160/160 [============= ] - Os 462us/step - loss: 0.4449
Epoch 58/400
160/160 [============= ] - Os 454us/step - loss: 0.4433
Epoch 59/400
160/160 [============== ] - Os 464us/step - loss: 0.4418
Epoch 60/400
Epoch 61/400
160/160 [============= ] - 0s 471us/step - loss: 0.4384
Epoch 62/400
160/160 [============= ] - Os 467us/step - loss: 0.4372
Epoch 63/400
160/160 [============= ] - Os 464us/step - loss: 0.4362
Epoch 64/400
Epoch 65/400
160/160 [============== ] - Os 448us/step - loss: 0.4339
Epoch 66/400
160/160 [============= ] - Os 468us/step - loss: 0.4326
Epoch 67/400
160/160 [============= ] - Os 463us/step - loss: 0.4314
Epoch 68/400
160/160 [============== ] - Os 471us/step - loss: 0.4299
Epoch 69/400
```

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Epoch 70/400
160/160 [============= ] - Os 468us/step - loss: 0.4285
Epoch 71/400
Epoch 72/400
160/160 [============= ] - Os 475us/step - loss: 0.4264
Epoch 73/400
160/160 [============= ] - 0s 470us/step - loss: 0.4253
Epoch 74/400
Epoch 75/400
Epoch 76/400
Epoch 77/400
160/160 [============= ] - Os 472us/step - loss: 0.4223
Epoch 78/400
160/160 [============== ] - Os 473us/step - loss: 0.4216
Epoch 79/400
160/160 [============= ] - Os 466us/step - loss: 0.4206
Epoch 80/400
160/160 [============= ] - Os 448us/step - loss: 0.4199
Epoch 81/400
160/160 [============= ] - Os 444us/step - loss: 0.4192
Epoch 82/400
160/160 [============== ] - Os 458us/step - loss: 0.4186
Epoch 83/400
160/160 [============== ] - Os 476us/step - loss: 0.4180
Epoch 84/400
Epoch 85/400
Epoch 86/400
Epoch 87/400
160/160 [============= ] - 0s 471us/step - loss: 0.4152
Epoch 88/400
160/160 [============== ] - Os 469us/step - loss: 0.4148
Epoch 89/400
160/160 [============== ] - Os 460us/step - loss: 0.4145
Epoch 90/400
160/160 [============= ] - Os 473us/step - loss: 0.4145
Epoch 91/400
Epoch 92/400
160/160 [============== ] - Os 468us/step - loss: 0.4121
Epoch 93/400
```

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160/160 [============== ] - Os 467us/step - loss: 0.4123
Epoch 94/400
160/160 [============] - Os 479us/step - loss: 0.4119
Epoch 95/400
160/160 [============= ] - Os 469us/step - loss: 0.4111
Epoch 96/400
160/160 [============= ] - Os 471us/step - loss: 0.4108
Epoch 97/400
160/160 [============= ] - 0s 476us/step - loss: 0.4098
Epoch 98/400
Epoch 99/400
Epoch 100/400
Epoch 101/400
Epoch 102/400
160/160 [============] - Os 460us/step - loss: 0.4080
Epoch 103/400
160/160 [============= ] - Os 499us/step - loss: 0.4076
Epoch 104/400
160/160 [============= ] - Os 453us/step - loss: 0.4073
Epoch 105/400
Epoch 106/400
160/160 [============= ] - Os 450us/step - loss: 0.4063
Epoch 107/400
160/160 [============== ] - Os 466us/step - loss: 0.4059
Epoch 108/400
Epoch 109/400
160/160 [============= ] - Os 459us/step - loss: 0.4049
Epoch 110/400
160/160 [============= ] - Os 460us/step - loss: 0.4047
Epoch 111/400
160/160 [============= ] - 0s 467us/step - loss: 0.4043
Epoch 112/400
160/160 [============== ] - Os 450us/step - loss: 0.4039
Epoch 113/400
160/160 [============== ] - Os 453us/step - loss: 0.4040
Epoch 114/400
160/160 [============= ] - Os 464us/step - loss: 0.4032
Epoch 115/400
Epoch 116/400
160/160 [============== ] - Os 453us/step - loss: 0.4027
Epoch 117/400
```

160/160 [====================================	.4029
Epoch 118/400	
160/160 [====================================	.4022
Epoch 119/400	
160/160 [============ ] - Os 460us/step - loss: 0	.4017
Epoch 120/400	
160/160 [============ ] - Os 462us/step - loss: 0	.4012
Epoch 121/400	
160/160 [=========== ] - Os 448us/step - loss: 0	.4011
Epoch 122/400	
160/160 [====================================	.4007
Epoch 123/400	4005
160/160 [====================================	.4005
Epoch 124/400 160/160 [====================================	4000
Epoch 125/400	.4002
160/160 [====================================	4000
Epoch 126/400	. 1000
160/160 [====================================	3993
Epoch 127/400	.0000
160/160 [====================================	.3993
Epoch 128/400	
160/160 [====================================	.3989
Epoch 129/400	
160/160 [============= ] - Os 447us/step - loss: 0	.3985
Epoch 130/400	
160/160 [============ ] - Os 461us/step - loss: 0	.3985
Epoch 131/400	
160/160 [============] - Os 462us/step - loss: 0	.3982
Epoch 132/400	
160/160 [============ ] - Os 462us/step - loss: 0	.3980
Epoch 133/400	
160/160 [====================================	.3976
Epoch 134/400	0074
160/160 [====================================	.3976
Epoch 135/400 160/160 [====================================	2060
Epoch 136/400	. 3909
160/160 [====================================	3070
Epoch 137/400	.0910
160/160 [====================================	3970
Epoch 138/400	.0010
160/160 [====================================	.3960
100/100 [=	
Epoch 139/400	.3964
	.3964
Epoch 139/400 160/160 [====================================	

160/160 [=======]	_	0s	477us/step	_	loss:	0.3956
Epoch 142/400			_			
160/160 [=======]	-	0s	474us/step	-	loss:	0.3953
Epoch 143/400						
160/160 [=======]	-	0s	502us/step	-	loss:	0.3952
Epoch 144/400		_			_	
160/160 [====================================	-	0s	517us/step	-	loss:	0.3951
Epoch 145/400		0 -	E10/		7	0 2047
160/160 [====================================	_	US	518us/step	_	loss:	0.3947
Epoch 146/400 160/160 [====================================		٥٩	E0/11/2 /aton		1	0 2045
Epoch 147/400		US	504us/step		TOSS.	0.3945
160/160 [====================================	_	۸e	490115/sten	_	loggi	0 3943
Epoch 148/400		0B	400us/scep		1055.	0.0040
160/160 [====================================	_	0s	472us/step	_	loss:	0.3942
Epoch 149/400			1. 200, 200p			0.00
160/160 [====================================	_	0s	598us/step	_	loss:	0.3938
Epoch 150/400			. 1			
160/160 [====================================	_	0s	545us/step	_	loss:	0.3935
Epoch 151/400			-			
160/160 [=======]	-	0s	521us/step	-	loss:	0.3938
Epoch 152/400						
160/160 [===========]	-	0s	463us/step	-	loss:	0.3934
Epoch 153/400						
160/160 [====================================	-	0s	455us/step	-	loss:	0.3930
Epoch 154/400						
160/160 [====================================	-	0s	475us/step	-	loss:	0.3924
Epoch 155/400		•	100 /		_	
160/160 [====================================	_	0s	480us/step	_	loss:	0.3928
Epoch 156/400 160/160 [====================================		0 -	100/		7	0 2005
Epoch 157/400	_	US	463us/step	_	loss:	0.3925
160/160 [========]	_	۸e	473118/sten	_	loggi	0 3925
Epoch 158/400		US	47 Sus/scep		TOSS.	0.0920
160/160 [====================================	_	0s	507us/sten	_	loss	0 3921
Epoch 159/400		Ü	001 dz, 200p		1000.	0.0021
160/160 [====================================	_	0s	476us/step	_	loss:	0.3922
Epoch 160/400			. 1			
160/160 [====================================	_	0s	483us/step	-	loss:	0.3920
Epoch 161/400			_			
160/160 [======]	-	0s	484us/step	-	loss:	0.3917
Epoch 162/400						
160/160 [=======]	-	0s	465us/step	-	loss:	0.3915
Epoch 163/400						
160/160 [====================================	-	0s	499us/step	-	loss:	0.3914
Epoch 164/400		_			_	
160/160 [====================================	-	0s	485us/step	-	loss:	0.3911
Epoch 165/400						

```
Epoch 166/400
160/160 [============= ] - Os 478us/step - loss: 0.3909
Epoch 167/400
160/160 [============= ] - 0s 484us/step - loss: 0.3908
Epoch 168/400
160/160 [============= ] - 0s 489us/step - loss: 0.3899
Epoch 169/400
160/160 [============= ] - Os 463us/step - loss: 0.3905
Epoch 170/400
Epoch 171/400
Epoch 172/400
Epoch 173/400
160/160 [============= ] - Os 535us/step - loss: 0.3900
Epoch 174/400
160/160 [============ ] - Os 493us/step - loss: 0.3897
Epoch 175/400
Epoch 176/400
160/160 [============== ] - 0s 462us/step - loss: 0.3892
Epoch 177/400
Epoch 178/400
160/160 [============= ] - Os 474us/step - loss: 0.3892
Epoch 179/400
160/160 [============== ] - 0s 504us/step - loss: 0.3892
Epoch 180/400
Epoch 181/400
Epoch 182/400
160/160 [============= ] - Os 467us/step - loss: 0.3885
Epoch 183/400
160/160 [============= ] - Os 464us/step - loss: 0.3884
Epoch 184/400
Epoch 185/400
160/160 [============== ] - Os 450us/step - loss: 0.3882
Epoch 186/400
160/160 [============= ] - Os 450us/step - loss: 0.3883
Epoch 187/400
Epoch 188/400
160/160 [============== ] - Os 476us/step - loss: 0.3878
Epoch 189/400
```

160/160 [=======]	_	0s	492us/step	_	loss:	0.3878
Epoch 190/400			_			
160/160 [======]	-	0s	491us/step	-	loss:	0.3877
Epoch 191/400						
160/160 [=======]	-	0s	476us/step	-	loss:	0.3873
Epoch 192/400						
160/160 [======]	-	0s	517us/step	-	loss:	0.3876
Epoch 193/400		_			_	
160/160 [====================================	-	0s	505us/step	-	loss:	0.3872
Epoch 194/400		^	500 / .		-	0 0070
160/160 [====================================	_	Us	529us/step	_	loss:	0.3873
Epoch 195/400		0-	100/		7	0 2072
160/160 [==========] Epoch 196/400	_	US	499us/step	_	loss:	0.3873
160/160 [====================================	_	Λα	179ug /gton	_	loggi	0 3870
Epoch 197/400		US	4/Zus/scep		TOSS.	0.5070
160/160 [====================================	_	0s	445us/sten	_	loss	0 3869
Epoch 198/400		V.D	rious, scop		TODD.	0.0000
160/160 [====================================	_	0s	439us/step	_	loss:	0.3867
Epoch 199/400			, <sub>F</sub>			
160/160 [====================================	_	0s	460us/step	_	loss:	0.3865
Epoch 200/400			•			
160/160 [====================================	_	0s	501us/step	_	loss:	0.3869
Epoch 201/400			_			
160/160 [======]	-	0s	492us/step	-	loss:	0.3863
Epoch 202/400						
160/160 [======]	-	0s	467us/step	-	loss:	0.3866
Epoch 203/400						
160/160 [======]	-	0s	474us/step	-	loss:	0.3861
Epoch 204/400			_			
160/160 [====================================	-	0s	452us/step	-	loss:	0.3864
Epoch 205/400		•	100 /		_	
160/160 [====================================	_	0s	469us/step	_	loss:	0.3862
Epoch 206/400		0 -	E16/		7	0 2061
160/160 [====================================	_	US	516us/step	_	loss:	0.3861
Epoch 207/400 160/160 [====================================	_	٥٥	520ug /g+op		1000.	0 2060
Epoch 208/400		US	529us/step	_	TOSS.	0.3000
160/160 [====================================	_	٥q	484119/sten	_	1099.	0 3858
Epoch 209/400		0B	404us/scep		TOSS.	0.0000
160/160 [====================================	_	0s	498us/step	_	loss:	0.3855
Epoch 210/400			100as, 200p			
160/160 [====================================	_	0s	465us/step	_	loss:	0.3857
Epoch 211/400			, · · · · · · · · · · · · · · · · ·			
160/160 [====================================	_	0s	463us/step	_	loss:	0.3855
Epoch 212/400			•			
160/160 [====================================	-	0s	450us/step	-	loss:	0.3858
Epoch 213/400						

160/160 [======]	_	0s	492us/step	_	loss:	0.3853
Epoch 214/400						
160/160 [=======]	-	0s	503us/step	-	loss:	0.3854
Epoch 215/400						
160/160 [====================================	-	0s	480us/step	-	loss:	0.3851
Epoch 216/400		_			_	
160/160 [====================================	-	0s	468us/step	-	loss:	0.3850
Epoch 217/400		•	100 /		_	
160/160 [====================================	-	0s	492us/step	_	loss:	0.3850
Epoch 218/400		^	500 / .		-	0 0040
160/160 [====================================	_	Us	520us/step	_	loss:	0.3849
Epoch 219/400		^	407 / .		-	0 0040
160/160 [====================================	_	Us	48/us/step	_	loss:	0.3848
Epoch 220/400		^	F07 / .		,	0 0040
160/160 [====================================	_	US	52/us/step	_	loss:	0.3848
Epoch 221/400 160/160 [====================================		0-	171/		7	0 2044
Epoch 222/400	_	US	4/4us/step	_	loss:	0.3844
160/160 [========]		0-	167 /		7	0 2042
	_	US	46/us/step	_	loss:	0.3843
Epoch 223/400 160/160 [====================================		٥٩	106.19/9+00		1	0 2016
Epoch 224/400	_	US	49ous/step	_	TOSS:	0.3040
160/160 [====================================	_	Λα	103ug/g+op	_	loggi	n 29/1
Epoch 225/400		US	493us/step		TOSS.	0.3041
160/160 [====================================	_	Λα	108ug/g+op	_	loggi	0 3843
Epoch 226/400		US	49ous/scep		TOSS.	0.3042
160/160 [====================================	_	٥٥	19649 / 9+00		1000.	n 20/1
Epoch 227/400		US	400us/step	_	TOSS.	0.3041
160/160 [====================================	_	Λe	188115/stan	_	loggi	0 3840
Epoch 228/400		05	400us/scep		TOSS.	0.3040
160/160 [====================================	_	۸e	468119/sten	_	loggi	0 3841
Epoch 229/400		OB	тоошь, в сер		TOBB.	0.0011
160/160 [====================================	_	0s	48411s/sten	_	loss	0 3839
Epoch 230/400		V.D	10 145, 500p		TODD.	0.0000
160/160 [====================================	_	0s	499us/sten	_	loss:	0.3837
Epoch 231/400		Ü	100 ab, 500p		1000.	0.0001
160/160 [====================================	_	0s	472us/step	_	loss:	0.3837
Epoch 232/400			1. 200, 200p			
160/160 [====================================	_	0s	468us/step	_	loss:	0.3832
Epoch 233/400			, <u>-</u>			
160/160 [====================================	_	0s	488us/step	_	loss:	0.3835
Epoch 234/400			1			
160/160 [====================================	_	0s	514us/step	_	loss:	0.3837
Epoch 235/400			<b>r</b>			
160/160 [====================================	_	0s	495us/step	_	loss:	0.3834
Epoch 236/400			. 1			
160/160 [====================================	_	0s	476us/step	_	loss:	0.3833
Epoch 237/400			-			

160/160 [=======]	_	0s	483us/step	_	loss:	0.3832
Epoch 238/400			_			
160/160 [=======]	-	0s	482us/step	-	loss:	0.3832
Epoch 239/400						
160/160 [=======]	-	0s	454us/step	-	loss:	0.3830
Epoch 240/400						
160/160 [====================================	-	0s	458us/step	-	loss:	0.3830
Epoch 241/400		0 -	400/		7	0.2000
160/160 [====================================	_	US	492us/step	_	loss:	0.3828
Epoch 242/400 160/160 [====================================		٥٩	EOEug/aton		1	0 2007
Epoch 243/400		US	505us/step	_	TOSS.	0.3021
160/160 [====================================	_	۸e	199112/sten	_	loggi	0 3826
Epoch 244/400		0B	400us/scep		1055.	0.0020
160/160 [====================================	_	0s	485us/step	_	loss:	0.3828
Epoch 245/400			recas, seep			0.0020
160/160 [====================================	_	0s	511us/step	_	loss:	0.3826
Epoch 246/400			. 1			
160/160 [====================================	_	0s	505us/step	_	loss:	0.3825
Epoch 247/400			-			
160/160 [===========]	-	0s	475us/step	-	loss:	0.3822
Epoch 248/400						
160/160 [===========]	-	0s	485us/step	-	loss:	0.3824
Epoch 249/400						
160/160 [====================================	-	0s	503us/step	-	loss:	0.3823
Epoch 250/400						
160/160 [=======]	-	0s	514us/step	-	loss:	0.3823
Epoch 251/400		_			_	
160/160 [====================================	-	0s	482us/step	-	loss:	0.3821
Epoch 252/400		^	400 / 1		-	0 0047
160/160 [====================================	_	US	490us/step	_	loss:	0.3817
Epoch 253/400 160/160 [====================================	_	Λα	170ug/gton	_	loggi	A 3910
Epoch 254/400		05	47 Jus/ Scep		TOSS.	0.3019
160/160 [====================================	_	٥q	49311s/sten	_	1099.	0 3818
Epoch 255/400		V.D	100ab, btop		TODD.	0.0010
160/160 [====================================	_	0s	478us/step	_	loss:	0.3818
Epoch 256/400			, <sub>F</sub>			
160/160 [====================================	_	0s	482us/step	_	loss:	0.3817
Epoch 257/400			•			
160/160 [===========]	-	0s	501us/step	-	loss:	0.3816
Epoch 258/400						
160/160 [======]	-	0s	481us/step	-	loss:	0.3815
Epoch 259/400						
160/160 [=======]	-	0s	502us/step	-	loss:	0.3813
Epoch 260/400						
160/160 [=======]	-	0s	519us/step	-	loss:	0.3813
Epoch 261/400						

160/160 [=======]	_	0s	498us/step	_	loss:	0.3810
Epoch 262/400			_			
160/160 [=======]	-	0s	487us/step	-	loss:	0.3811
Epoch 263/400						
160/160 [======]	-	0s	499us/step	-	loss:	0.3812
Epoch 264/400						
160/160 [====================================	-	0s	475us/step	-	loss:	0.3811
Epoch 265/400		0 -	100/		7	0 2000
160/160 [====================================	_	US	492us/step	_	loss:	0.3809
Epoch 266/400 160/160 [====================================	_	Λα	501ug/gton	_	loggi	U 38U8
Epoch 267/400		US	501us/scep		TOSS.	0.3000
160/160 [====================================	_	٥q	47311s/sten	_	1099.	0 3809
Epoch 268/400		0B	47 ous/ scep		TOSS.	0.0003
160/160 [====================================	_	0s	474us/step	_	loss:	0.3807
Epoch 269/400			1. 145, 500p			
160/160 [====================================	_	0s	505us/step	_	loss:	0.3802
Epoch 270/400			. 1			
160/160 [====================================	_	0s	503us/step	_	loss:	0.3808
Epoch 271/400			-			
160/160 [==========]	-	0s	488us/step	-	loss:	0.3805
Epoch 272/400						
160/160 [==========]	-	0s	502us/step	-	loss:	0.3803
Epoch 273/400						
160/160 [====================================	-	0s	484us/step	-	loss:	0.3805
Epoch 274/400						
160/160 [====================================	-	0s	464us/step	-	loss:	0.3803
Epoch 275/400		_			_	
160/160 [====================================	-	0s	462us/step	-	loss:	0.3803
Epoch 276/400		^	450 / .		-	0 0000
160/160 [====================================	_	Us	459us/step	_	loss:	0.3802
Epoch 277/400 160/160 [====================================		٥٩	161		1	0 2001
Epoch 278/400	_	US	461us/step	_	TOSS:	0.3001
160/160 [====================================	_	۸e	478112/sten	_	loggi	0 3794
Epoch 279/400		US	47 Ous/ Scep		TOSS.	0.5734
160/160 [====================================	_	0s	493us/step	_	loss:	0.3801
Epoch 280/400			100as, 200p			
160/160 [====================================	_	0s	514us/step	_	loss:	0.3799
Epoch 281/400			. 1			
160/160 [====================================	_	0s	478us/step	_	loss:	0.3798
Epoch 282/400			_			
160/160 [=======]	-	0s	511us/step	_	loss:	0.3799
Epoch 283/400						
160/160 [=======]	-	0s	501us/step	-	loss:	0.3796
Epoch 284/400						
160/160 [=======]	-	0s	480us/step	-	loss:	0.3797
Epoch 285/400						

160/160
Epoch 287/400 160/160 [====================================
160/160   160/
Epoch 288/400 160/160 [====================================
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Epoch 289/400 160/160 [====================================
160/160     1
Epoch 290/400 160/160 [====================================
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Epoch 291/400 160/160 [====================================
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Epoch 292/400 160/160 [====================================
160/160   160/
Epoch 293/400  160/160 [====================================
160/160 [====================================
Epoch 294/400  160/160 [====================================
160/160 [====================================
Epoch 295/400 160/160 [====================================
160/160 [====================================
Epoch 296/400 160/160 [====================================
160/160 [====================================
Epoch 297/400  160/160 [====================================
Epoch 298/400 160/160 [====================================
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Epoch 299/400  160/160 [====================================
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Epoch 300/400  160/160 [====================================
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Epoch 301/400  160/160 [====================================
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Epoch 302/400  160/160 [====================================
160/160 [====================================
Epoch 303/400  160/160 [====================================
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Epoch 304/400 160/160 [====================================
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Epoch 305/400
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Epoch 306/400
160/160 [====================================
Epoch 307/400
Epoch 307/400 160/160 [====================================
Epoch 307/400  160/160 [====================================
160/160 [====================================

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Epoch 310/400
160/160 [============] - Os 477us/step - loss: 0.3779
Epoch 311/400
160/160 [============= ] - Os 484us/step - loss: 0.3778
Epoch 312/400
160/160 [============= ] - Os 491us/step - loss: 0.3778
Epoch 313/400
160/160 [============= ] - Os 489us/step - loss: 0.3778
Epoch 314/400
160/160 [============= ] - Os 470us/step - loss: 0.3778
Epoch 315/400
Epoch 316/400
160/160 [============= ] - Os 489us/step - loss: 0.3774
Epoch 317/400
160/160 [============= ] - Os 467us/step - loss: 0.3776
Epoch 318/400
160/160 [============ ] - Os 492us/step - loss: 0.3775
Epoch 319/400
160/160 [============= ] - Os 650us/step - loss: 0.3774
Epoch 320/400
160/160 [============= ] - 0s 505us/step - loss: 0.3774
Epoch 321/400
160/160 [============= ] - Os 476us/step - loss: 0.3770
Epoch 322/400
160/160 [============== ] - Os 514us/step - loss: 0.3772
Epoch 323/400
160/160 [============== ] - Os 490us/step - loss: 0.3773
Epoch 324/400
160/160 [============== ] - Os 476us/step - loss: 0.3773
Epoch 325/400
160/160 [============ ] - Os 491us/step - loss: 0.3771
Epoch 326/400
160/160 [============= ] - 0s 491us/step - loss: 0.3769
Epoch 327/400
160/160 [============= ] - Os 469us/step - loss: 0.3768
Epoch 328/400
160/160 [============== ] - Os 468us/step - loss: 0.3768
Epoch 329/400
Epoch 330/400
160/160 [============= ] - 0s 498us/step - loss: 0.3768
Epoch 331/400
160/160 [============= ] - Os 494us/step - loss: 0.3767
Epoch 332/400
160/160 [============== ] - Os 482us/step - loss: 0.3768
Epoch 333/400
```

```
Epoch 334/400
160/160 [=========== ] - Os 506us/step - loss: 0.3766
Epoch 335/400
160/160 [============= ] - 0s 522us/step - loss: 0.3765
Epoch 336/400
160/160 [============= ] - 0s 529us/step - loss: 0.3765
Epoch 337/400
160/160 [============= ] - 0s 532us/step - loss: 0.3765
Epoch 338/400
Epoch 339/400
Epoch 340/400
Epoch 341/400
160/160 [============= ] - Os 557us/step - loss: 0.3758
Epoch 342/400
160/160 [============ ] - Os 533us/step - loss: 0.3760
Epoch 343/400
Epoch 344/400
Epoch 345/400
160/160 [============= ] - Os 487us/step - loss: 0.3760
Epoch 346/400
160/160 [============== ] - Os 482us/step - loss: 0.3756
Epoch 347/400
Epoch 348/400
Epoch 349/400
160/160 [=========== ] - Os 491us/step - loss: 0.3758
Epoch 350/400
160/160 [============= ] - 0s 522us/step - loss: 0.3756
Epoch 351/400
160/160 [============= ] - 0s 552us/step - loss: 0.3758
Epoch 352/400
Epoch 353/400
160/160 [============== ] - Os 540us/step - loss: 0.3755
Epoch 354/400
Epoch 355/400
160/160 [============= ] - Os 460us/step - loss: 0.3756
Epoch 356/400
160/160 [============== ] - Os 481us/step - loss: 0.3755
Epoch 357/400
```

160/160 [=======]	_	0s	494us/step	_	loss:	0.3753
Epoch 358/400			, <sub>P</sub>			
160/160 [====================================	_	0s	480us/step	_	loss:	0.3754
Epoch 359/400						
160/160 [=======]	-	0s	458us/step	-	loss:	0.3751
Epoch 360/400						
160/160 [=======]	-	0s	476us/step	-	loss:	0.3751
Epoch 361/400						
160/160 [======]	-	0s	504us/step	-	loss:	0.3752
Epoch 362/400						
160/160 [======]	-	0s	490us/step	-	loss:	0.3751
Epoch 363/400			_			
160/160 [=======]	-	0s	483us/step	-	loss:	0.3753
Epoch 364/400			_			
160/160 [===========]	-	0s	470us/step	-	loss:	0.3747
Epoch 365/400		_			_	
160/160 [====================================	-	0s	466us/step	-	loss:	0.3750
Epoch 366/400		_			_	
160/160 [====================================	-	0s	473us/step	-	loss:	0.3749
Epoch 367/400		•	101 /		_	
160/160 [====================================	-	0s	484us/step	_	loss:	0.3747
Epoch 368/400		^	405 / .		-	0.0750
160/160 [====================================	-	US	485us/step	_	loss:	0.3750
Epoch 369/400		0-	170 /		7	0 2740
160/160 [====================================	_	US	4/8us/step	_	loss:	0.3748
Epoch 370/400 160/160 [====================================		0-	100/		7	0 2747
	_	US	469us/step	_	loss:	0.3747
Epoch 371/400 160/160 [====================================	_	٥٥	179ug /g+on		1000.	0 27/6
Epoch 372/400		US	47ous/scep		TOSS.	0.3740
160/160 [====================================	_	Λe	18511g/gton	_	loggi	0 37/18
Epoch 373/400		0B	400us/scep		TOSS.	0.0740
160/160 [========]	_	0s	48111s/sten	_	loss	0 3745
Epoch 374/400		V.D	iorab, boop		TODD.	0.0110
160/160 [====================================	_	0s	469us/step	_	loss:	0.3745
Epoch 375/400		Ü	roous, scop		1000.	0.0110
160/160 [====================================	_	0s	489us/step	_	loss:	0.3743
Epoch 376/400			, <sub>F</sub>			
160/160 [====================================	_	0s	448us/step	_	loss:	0.3745
Epoch 377/400			, 1			
160/160 [====================================	_	0s	443us/step	_	loss:	0.3743
Epoch 378/400			•			
160/160 [====================================	-	0s	437us/step	_	loss:	0.3743
Epoch 379/400			-			
160/160 [==========]	-	0s	476us/step	-	loss:	0.3743
Epoch 380/400			_			
160/160 [=======]	-	0s	465us/step	-	loss:	0.3742
Epoch 381/400						

```
Epoch 382/400
Epoch 383/400
160/160 [============= ] - Os 469us/step - loss: 0.3742
Epoch 384/400
Epoch 385/400
Epoch 386/400
Epoch 387/400
Epoch 388/400
Epoch 389/400
Epoch 390/400
160/160 [============= ] - Os 471us/step - loss: 0.3739
Epoch 391/400
Epoch 392/400
Epoch 393/400
Epoch 394/400
Epoch 395/400
Epoch 396/400
Epoch 397/400
Epoch 398/400
160/160 [============= ] - Os 465us/step - loss: 0.3733
Epoch 399/400
160/160 [============= ] - Os 464us/step - loss: 0.3733
Epoch 400/400
160/160 [============== ] - Os 474us/step - loss: 0.3730
160/160 [=========== ] - 0s 289us/step
In [8]: model = Sequential()
   model.add(Dense(2, input_dim=2, activation='tanh')) #sigmoid, relu
   model.add(Dense(2, input_dim = 2, activation='relu'))
   model.add(Dense(2, input_dim = 2, activation='sigmoid'))
   model.add(Dense(1, activation='sigmoid'))
```

```
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
   sgd = SGD(1r=0.1)
   model.compile(loss='binary_crossentropy', optimizer='sgd')
   model.fit(X, y, batch size=2, epochs=400) #160/4 = 40 per epoch
   #print(model.predict_proba(X).reshape(4*n))
   # evaluate the model
   scores_three = model.evaluate(X, y)
Epoch 1/400
160/160 [============ ] - Os 1ms/step - loss: 0.7310
Epoch 2/400
Epoch 3/400
160/160 [============= ] - 0s 517us/step - loss: 0.7074
Epoch 4/400
160/160 [============= ] - 0s 514us/step - loss: 0.7028
Epoch 5/400
Epoch 6/400
Epoch 7/400
Epoch 8/400
Epoch 9/400
160/160 [============== ] - Os 528us/step - loss: 0.6968
Epoch 10/400
Epoch 11/400
Epoch 12/400
Epoch 13/400
Epoch 14/400
160/160 [============= ] - Os 541us/step - loss: 0.6949
Epoch 15/400
Epoch 16/400
Epoch 17/400
160/160 [============= ] - 0s 543us/step - loss: 0.6938
Epoch 18/400
```

Epoch 19/400						
160/160 [====================================	_	0s	546us/step	_	loss:	0.6931
Epoch 20/400			_			
160/160 [=======]	-	0s	575us/step	-	loss:	0.6926
Epoch 21/400						
160/160 [=======]	-	0s	520us/step	-	loss:	0.6921
Epoch 22/400						
160/160 [=======]	-	0s	563us/step	-	loss:	0.6915
Epoch 23/400						
160/160 [============]	-	0s	555us/step	-	loss:	0.6911
Epoch 24/400						
160/160 [============]	-	0s	497us/step	-	loss:	0.6906
Epoch 25/400						
160/160 [====================================	-	0s	494us/step	-	loss:	0.6905
Epoch 26/400						
160/160 [=======]	-	0s	461us/step	-	loss:	0.6900
Epoch 27/400						
160/160 [=======]	-	0s	546us/step	-	loss:	0.6894
Epoch 28/400						
160/160 [=======]	-	0s	526us/step	-	loss:	0.6892
Epoch 29/400						
160/160 [=======]	-	0s	532us/step	-	loss:	0.6888
Epoch 30/400						
160/160 [=======]	-	0s	548us/step	-	loss:	0.6886
Epoch 31/400						
160/160 [=======]	-	0s	570us/step	-	loss:	0.6880
Epoch 32/400						
160/160 [=======]	-	0s	550us/step	-	loss:	0.6876
Epoch 33/400						
160/160 [====================================	-	0s	506us/step	-	loss:	0.6872
Epoch 34/400		_			_	
160/160 [====================================	-	0s	561us/step	-	loss:	0.6869
Epoch 35/400		_			_	
160/160 [====================================	-	0s	572us/step	-	loss:	0.6864
Epoch 36/400		•	/ .		_	
160/160 [====================================	-	0s	bbbus/step	_	loss:	0.6858
Epoch 37/400		^	505 / .		-	0 0050
160/160 [====================================	-	0s	535us/step	_	loss:	0.6856
Epoch 38/400		^	<b>544</b> / .		-	0 0050
160/160 [====================================	_	0s	541us/step	_	loss:	0.6853
Epoch 39/400		^	540 / .		-	0 0051
160/160 [====================================	_	0s	543us/step	_	loss:	0.6851
Epoch 40/400		^	F00 / .		,	0 6040
160/160 [====================================	_	US	529us/step	_	loss:	0.6848
Epoch 41/400		0-	E0633 / - +		1.55	0 6040
160/160 [====================================	_	US	o∠ous/step	_	TOSS:	0.0842
Epoch 42/400		0-	EE/110 / - +		1	0 6020
160/160 [====================================	_	US	oo4us/step	_	TOSS:	U.0839

T 1 40/400						
Epoch 43/400		^	FF4 / .		,	0 6004
160/160 [=======]	_	US	554us/step	_	loss:	0.6834
Epoch 44/400		^	E4E / .		-	0 0000
160/160 [====================================	_	US	515us/step	_	loss:	0.6830
Epoch 45/400		^	400 / .		-	0 0001
160/160 [====================================	-	0s	463us/step	_	loss:	0.6824
Epoch 46/400		_	101		_	
160/160 [====================================	-	0s	494us/step	_	loss:	0.6821
Epoch 47/400		^	100 / .		-	0 0010
160/160 [====================================	-	0s	492us/step	_	loss:	0.6816
Epoch 48/400		_			_	
160/160 [========]	-	0s	47bus/step	-	loss:	0.6810
Epoch 49/400		_			_	
160/160 [====================================	-	0s	486us/step	-	loss:	0.6803
Epoch 50/400		_			_	
160/160 [=========]	-	0s	480us/step	-	loss:	0.6798
Epoch 51/400		_			_	
160/160 [=======]	-	0s	505us/step	-	loss:	0.6791
Epoch 52/400						
160/160 [======]	-	0s	548us/step	-	loss:	0.6784
Epoch 53/400			_			
160/160 [======]	-	0s	488us/step	-	loss:	0.6777
Epoch 54/400			_			
160/160 [======]	-	0s	520us/step	-	loss:	0.6770
Epoch 55/400						
160/160 [=======]	-	0s	485us/step	-	loss:	0.6757
Epoch 56/400						
160/160 [======]	-	0s	496us/step	-	loss:	0.6751
Epoch 57/400						
160/160 [=======]	-	0s	485us/step	-	loss:	0.6740
Epoch 58/400						
160/160 [=======]	-	0s	518us/step	-	loss:	0.6730
Epoch 59/400						
160/160 [=======]	-	0s	532us/step	-	loss:	0.6720
Epoch 60/400						
160/160 [======]	-	0s	541us/step	-	loss:	0.6707
Epoch 61/400						
160/160 [======]	-	0s	530us/step	-	loss:	0.6695
Epoch 62/400						
160/160 [======]	-	0s	535us/step	-	loss:	0.6680
Epoch 63/400						
160/160 [=======]	-	0s	516us/step	-	loss:	0.6668
Epoch 64/400						
160/160 [=======]	-	0s	520us/step	-	loss:	0.6657
Epoch 65/400						
160/160 [=======]	-	0s	517us/step	-	loss:	0.6641
Epoch 66/400						
160/160 [====================================	-	0s	537us/step	-	loss:	0.6625

Epoch 67/400	
160/160 [====================================	3610
Epoch 68/400	
160/160 [============ ] - Os 539us/step - loss: 0.6	3595
Epoch 69/400	
160/160 [============ ] - 0s 534us/step - loss: 0.6	3578
Epoch 70/400	
160/160 [============= ] - 0s 538us/step - loss: 0.6	3558
Epoch 71/400	
160/160 [============= ] - Os 504us/step - loss: 0.6	3539
Epoch 72/400	
160/160 [============ ] - Os 532us/step - loss: 0.6	3521
Epoch 73/400	
160/160 [====================================	3503
Epoch 74/400	
160/160 [============ ] - Os 538us/step - loss: 0.6	3480
Epoch 75/400	
160/160 [============ ] - Os 535us/step - loss: 0.6	3458
Epoch 76/400	
160/160 [====================================	3437
Epoch 77/400	
160/160 [============ ] - Os 517us/step - loss: 0.6	3415
Epoch 78/400	
160/160 [============ ] - 0s 509us/step - loss: 0.6	3396
Epoch 79/400	
160/160 [====================================	3370
Epoch 80/400	
160/160 [====================================	3345
Epoch 81/400	
160/160 [====================================	319
Epoch 82/400	
160/160 [====================================	5297
Epoch 83/400	
160/160 [====================================	5268
Epoch 84/400	
160/160 [====================================	5240
Epoch 85/400	2011
160/160 [====================================	5211
Epoch 86/400	1400
160/160 [====================================	5183
Epoch 87/400	
160/160 [====================================	i155
Epoch 88/400	
160/160 [====================================	5124
Epoch 89/400	2000
160/160 [====================================	5092
Epoch 90/400	2050
160/160 [====================================	059

Epoch 91/400						
160/160 [====================================	_	0s	504us/step	_	loss:	0.6030
Epoch 92/400			•			
160/160 [====================================	_	0s	513us/step	_	loss:	0.5994
Epoch 93/400			-			
160/160 [====================================	-	0s	535us/step	-	loss:	0.5961
Epoch 94/400			-			
160/160 [====================================	-	0s	542us/step	_	loss:	0.5931
Epoch 95/400			_			
160/160 [=======]	-	0s	539us/step	-	loss:	0.5895
Epoch 96/400						
160/160 [=======]	-	0s	535us/step	-	loss:	0.5861
Epoch 97/400						
160/160 [=======]	-	0s	554us/step	-	loss:	0.5830
Epoch 98/400						
160/160 [=======]	-	0s	516us/step	-	loss:	0.5794
Epoch 99/400						
160/160 [=======]	-	0s	507us/step	-	loss:	0.5760
Epoch 100/400						
160/160 [=======]	-	0s	494us/step	-	loss:	0.5725
Epoch 101/400						
160/160 [=======]	-	0s	505us/step	-	loss:	0.5694
Epoch 102/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.5660
Epoch 103/400						
160/160 [=======]	-	0s	543us/step	-	loss:	0.5625
Epoch 104/400						
160/160 [======]	-	0s	515us/step	-	loss:	0.5594
Epoch 105/400						
160/160 [====================================	-	0s	516us/step	-	loss:	0.5560
Epoch 106/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.5527
Epoch 107/400						
160/160 [=======]	-	0s	521us/step	-	loss:	0.5495
Epoch 108/400						
160/160 [=======]	-	0s	512us/step	-	loss:	0.5464
Epoch 109/400						
160/160 [=======]	-	0s	523us/step	-	loss:	0.5431
Epoch 110/400						
160/160 [=======]	-	0s	514us/step	-	loss:	0.5397
Epoch 111/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.5374
Epoch 112/400						
160/160 [=======]	-	0ຮ	520us/step	-	loss:	0.5344
Epoch 113/400			-			
160/160 [====================================	-	0s	512us/step	-	loss:	0.5321
Epoch 114/400		_			_	
160/160 [====================================	-	0s	500us/step	_	loss:	0.5292

Epoch 115/400						
160/160 [====================================	_	0s	510us/step	_	loss:	0.5265
Epoch 116/400			•			
160/160 [====================================	_	0s	502us/step	_	loss:	0.5238
Epoch 117/400			-			
160/160 [====================================	_	0s	527us/step	-	loss:	0.5216
Epoch 118/400			-			
160/160 [====================================	_	0s	517us/step	_	loss:	0.5192
Epoch 119/400						
160/160 [======]	-	0s	496us/step	-	loss:	0.5170
Epoch 120/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.5148
Epoch 121/400						
160/160 [=======]	-	0s	502us/step	-	loss:	0.5124
Epoch 122/400						
160/160 [=======]	-	0s	491us/step	-	loss:	0.5106
Epoch 123/400						
160/160 [=======]	-	0s	520us/step	-	loss:	0.5084
Epoch 124/400						
160/160 [======]	-	0s	514us/step	-	loss:	0.5061
Epoch 125/400						
160/160 [===========]	-	0s	523us/step	-	loss:	0.5043
Epoch 126/400						
160/160 [===========]	-	0s	549us/step	-	loss:	0.5024
Epoch 127/400						
160/160 [===========]	-	0s	480us/step	-	loss:	0.5001
Epoch 128/400						
160/160 [========]	-	0s	517us/step	-	loss:	0.4982
Epoch 129/400						
160/160 [=======]	-	0s	534us/step	-	loss:	0.4967
Epoch 130/400						
160/160 [=======]	-	0s	506us/step	-	loss:	0.4950
Epoch 131/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.4918
Epoch 132/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.4918
Epoch 133/400						
160/160 [====================================	-	0s	508us/step	-	loss:	0.4901
Epoch 134/400		_	,		_	
160/160 [====================================	-	0s	505us/step	-	loss:	0.4883
Epoch 135/400		_	,		_	
160/160 [====================================	-	0s	504us/step	-	loss:	0.4866
Epoch 136/400		_	,		_	
160/160 [====================================	-	0s	520us/step	-	loss:	0.4851
Epoch 137/400		_	546		_	0.4555
160/160 [====================================	-	0s	518us/step	-	loss:	0.4834
Epoch 138/400		•	E48 / :		-	0 4000
160/160 [====================================	-	Us	51/us/step	-	loss:	0.4823

Epoch 139/400	
160/160 [====================================	·07
Epoch 140/400	01
160/160 [====================================	`a2
Epoch 141/400	32
160/160 [====================================	'80
Epoch 142/400	00
160/160 [====================================	64
Epoch 143/400	0 -
160/160 [====================================	51
Epoch 144/400	
160/160 [====================================	36
Epoch 145/400	
160/160 [====================================	20
Epoch 146/400	
160/160 [====================================	13
Epoch 147/400	
160/160 [====================================	99
Epoch 148/400	
160/160 [====================================	88
Epoch 149/400	
160/160 [====================================	76
Epoch 150/400	
160/160 [====================================	66
Epoch 151/400	
160/160 [====================================	52
Epoch 152/400	
160/160 [====================================	43
Epoch 153/400	
160/160 [====================================	31
Epoch 154/400	
160/160 [====================================	19
Epoch 155/400	110
160/160 [====================================	10
160/160 [====================================	:00
Epoch 157/400	00
160/160 [====================================	91
Epoch 158/400	<i>J</i> 1
160/160 [====================================	76
Epoch 159/400	
160/160 [====================================	75
Epoch 160/400	
160/160 [====================================	65
Epoch 161/400	
160/160 [====================================	54
Epoch 162/400	
160/160 [====================================	48

Epoch 163/400						
160/160 [====================================	_	0s	524us/step	_	loss:	0.4535
Epoch 164/400			_			
160/160 [=======]	-	0s	540us/step	-	loss:	0.4528
Epoch 165/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.4519
Epoch 166/400						
160/160 [=======]	-	0s	518us/step	-	loss:	0.4509
Epoch 167/400						
160/160 [============]	-	0s	524us/step	-	loss:	0.4501
Epoch 168/400						
160/160 [============]	-	0s	517us/step	-	loss:	0.4496
Epoch 169/400						
160/160 [============]	-	0s	516us/step	-	loss:	0.4485
Epoch 170/400						
160/160 [=======]	-	0s	508us/step	-	loss:	0.4480
Epoch 171/400						
160/160 [=======]	-	0s	500us/step	-	loss:	0.4473
Epoch 172/400						
160/160 [=======]	-	0s	514us/step	-	loss:	0.4462
Epoch 173/400						
160/160 [=======]	-	0s	537us/step	-	loss:	0.4458
Epoch 174/400						
160/160 [=======]	-	0ຮ	568us/step	-	loss:	0.4450
Epoch 175/400						
160/160 [=======]	-	0ຮ	587us/step	-	loss:	0.4444
Epoch 176/400						
160/160 [=======]	-	0s	623us/step	-	loss:	0.4433
Epoch 177/400						
160/160 [====================================	-	0s	557us/step	-	loss:	0.4426
Epoch 178/400		_			_	
160/160 [====================================	-	0s	562us/step	-	loss:	0.4418
Epoch 179/400		•	101		_	
160/160 [====================================	-	0s	491us/step	-	loss:	0.4406
Epoch 180/400		^	500 / .		-	0 4400
160/160 [====================================	_	0s	523us/step	_	loss:	0.4400
Epoch 181/400		^	E40 / :		-	0 4000
160/160 [====================================	_	US	512us/step	_	loss:	0.4398
Epoch 182/400		^	F00 / .		-	0 4000
160/160 [====================================	_	US	509us/step	_	loss:	0.4390
Epoch 183/400		^	F07 / .		-	0 4070
160/160 [====================================	_	US	52/us/step	_	loss:	0.4378
Epoch 184/400		Ο-	E10/		7	0 4070
160/160 [====================================	_	US	512us/step	_	loss:	0.4372
Epoch 185/400		0-	E02::a /-+		1.55	0 4262
160/160 [====================================	_	US	o∠sus/step	_	TOSS:	U.4363
Epoch 186/400	_	0~	E00110 / 0 + 6 =	_	1000:	0 4250
160/160 [====================================	_	US	Josus/step	_	TOSS:	0.4359

Epoch 187/400
160/160 [====================================
Epoch 188/400
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Epoch 194/400
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Epoch 195/400
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Epoch 196/400
160/160 [=======] - Os 510us/step - loss: 0.4300
Epoch 197/400
160/160 [=======] - Os 496us/step - loss: 0.4283
Epoch 198/400
160/160 [=======] - Os 505us/step - loss: 0.4285
Epoch 199/400
160/160 [============] - Os 514us/step - loss: 0.4282
Epoch 200/400
160/160 [============] - Os 513us/step - loss: 0.4277
Epoch 201/400
160/160 [=======] - Os 519us/step - loss: 0.4271
Epoch 202/400
160/160 [=======] - Os 513us/step - loss: 0.4266
Epoch 203/400
160/160 [=======] - Os 508us/step - loss: 0.4261
Epoch 204/400
160/160 [=======] - Os 507us/step - loss: 0.4254
Epoch 205/400
160/160 [====================================
Epoch 206/400
160/160 [=============] - Os 510us/step - loss: 0.4244
Epoch 207/400
160/160 [====================================
Epoch 208/400
160/160 [====================================
Epoch 209/400
160/160 [=============] - Os 501us/step - loss: 0.4228
Epoch 210/400
160/160 [====================================

Epoch 211/400
160/160 [====================================
Epoch 212/400
160/160 [====================================
Epoch 213/400
160/160 [====================================
Epoch 214/400
160/160 [============] - Os 481us/step - loss: 0.4207 Epoch 215/400
160/160 [====================================
Epoch 216/400
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Epoch 217/400
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Epoch 218/400
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Epoch 219/400
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Epoch 220/400
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Epoch 223/400 160/160 [====================================
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Epoch 231/400 160/160 [====================================
Epoch 232/400
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Epoch 233/400
160/160 [====================================
Epoch 234/400
160/160 [====================================
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Epoch 235/400					
160/160 [====================================	_	0s	511us/step	- loss	: 0.4122
Epoch 236/400					
160/160 [=======]	-	0s	511us/step	- loss	: 0.4116
Epoch 237/400					
160/160 [=======]	-	0s	510us/step	- loss	: 0.4114
Epoch 238/400					
160/160 [=======]	-	0s	506us/step	- loss	: 0.4108
Epoch 239/400					
160/160 [============]	-	0s	505us/step	- loss	: 0.4107
Epoch 240/400					
160/160 [============]	-	0s	498us/step	- loss	: 0.4104
Epoch 241/400					
160/160 [============]	-	0s	471us/step	- loss	: 0.4107
Epoch 242/400					
160/160 [====================================	-	0s	483us/step	- loss	: 0.4096
Epoch 243/400					
160/160 [=======]	-	0s	492us/step	- loss	: 0.4087
Epoch 244/400					
160/160 [=======]	-	0s	526us/step	- loss	: 0.4090
Epoch 245/400					
160/160 [=======]	-	0s	525us/step	- loss	: 0.4086
Epoch 246/400					
160/160 [=======]	-	0s	515us/step	- loss	: 0.4083
Epoch 247/400					
160/160 [=======]	-	0s	522us/step	- loss	: 0.4078
Epoch 248/400					
160/160 [=======]	-	0ຮ	496us/step	- loss	: 0.4079
Epoch 249/400					
160/160 [====================================	-	0s	477us/step	- loss	: 0.4073
Epoch 250/400		_		_	
160/160 [====================================	-	0s	478us/step	- loss	: 0.4072
Epoch 251/400		_		_	
160/160 [====================================	-	0s	473us/step	- loss	: 0.4068
Epoch 252/400		•	100 / .	_	
160/160 [====================================	-	0s	490us/step	- loss	: 0.4068
Epoch 253/400		^	E40 / .	-	0 4005
160/160 [====================================	-	0s	510us/step	- loss	: 0.4065
Epoch 254/400		^	500 / .	-	0 4050
160/160 [====================================	-	0s	508us/step	- loss	: 0.4059
Epoch 255/400		•	540 / .	_	0 4050
160/160 [====================================	-	0s	510us/step	- loss	: 0.4052
Epoch 256/400		^	E40 / .	-	0 4055
160/160 [====================================	-	0s	510us/step	- loss	: 0.4055
Epoch 257/400		^	E44/	7	. 0 4054
160/160 [====================================	-	US	514us/step	- Toss	: 0.4054
Epoch 258/400		^	401m = /- 1	٦.	. 0 4050
160/160 [====================================	-	US	491us/step	- Toss	: 0.4050

Epoch 259/400						
160/160 [=========]	_	0s	508us/step	_	loss:	0.4048
Epoch 260/400			•			
160/160 [====================================	_	0s	488us/step	_	loss:	0.4042
Epoch 261/400			-			
160/160 [====================================	_	0s	485us/step	-	loss:	0.4042
Epoch 262/400			-			
160/160 [====================================	_	0s	527us/step	_	loss:	0.4039
Epoch 263/400			_			
160/160 [=======]	-	0s	552us/step	-	loss:	0.4038
Epoch 264/400						
160/160 [=======]	-	0s	529us/step	-	loss:	0.4037
Epoch 265/400						
160/160 [=======]	-	0s	522us/step	-	loss:	0.4035
Epoch 266/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.4031
Epoch 267/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.4032
Epoch 268/400						
160/160 [===========]	-	0s	516us/step	-	loss:	0.4028
Epoch 269/400						
160/160 [===========]	-	0s	516us/step	-	loss:	0.4021
Epoch 270/400						
160/160 [===========]	-	0s	513us/step	-	loss:	0.4025
Epoch 271/400						
160/160 [====================================	-	0s	512us/step	-	loss:	0.4018
Epoch 272/400			_			
160/160 [=========]	-	0s	528us/step	-	loss:	0.4020
Epoch 273/400						
160/160 [=======]	-	0s	594us/step	-	loss:	0.4017
Epoch 274/400						
160/160 [=======]	-	0s	546us/step	-	loss:	0.4015
Epoch 275/400						
160/160 [=======]	-	0s	571us/step	-	loss:	0.4018
Epoch 276/400						
160/160 [=======]	-	0s	543us/step	-	loss:	0.4016
Epoch 277/400						
160/160 [=======]	-	0s	505us/step	-	loss:	0.4010
Epoch 278/400						
160/160 [=======]	-	0s	520us/step	-	loss:	0.4008
Epoch 279/400						
160/160 [=======]	-	0s	519us/step	-	loss:	0.4005
Epoch 280/400						
160/160 [=======]	-	0s	521us/step	-	loss:	0.4005
Epoch 281/400						
160/160 [======]	-	0s	522us/step	-	loss:	0.4005
Epoch 282/400						
160/160 [=======]	-	0s	521us/step	-	loss:	0.3999

Epoch 283/400	
160/160 [============ ] - Os 517us/step - loss: 0.4	001
Epoch 284/400	
160/160 [====================================	995
Epoch 285/400	
160/160 [============ ] - Os 529us/step - loss: 0.3	999
Epoch 286/400	
160/160 [====================================	995
Epoch 287/400	
160/160 [====================================	993
Epoch 288/400	
160/160 [====================================	994
Epoch 289/400	001
160/160 [====================================	080
Epoch 290/400	303
	005
160/160 [====================================	905
Epoch 291/400	
160/160 [====================================	977
Epoch 292/400	
160/160 [====================================	987
Epoch 293/400	
160/160 [====================================	979
Epoch 294/400	
160/160 [============ ] - Os 522us/step - loss: 0.3	984
Epoch 295/400	
160/160 [====================================	980
Epoch 296/400	
160/160 [====================================	975
Epoch 297/400	
160/160 [====================================	974
Epoch 298/400	
160/160 [====================================	975
Epoch 299/400	010
160/160 [====================================	073
Epoch 300/400	913
160/160 [====================================	070
<del>-</del>	912
Epoch 301/400	070
160/160 [====================================	973
Epoch 302/400	
160/160 [====================================	967
Epoch 303/400	
160/160 [====================================	967
Epoch 304/400	
160/160 [====================================	966
Epoch 305/400	
160/160 [============ ] - Os 508us/step - loss: 0.3	967
Epoch 306/400	
160/160 [====================================	962
•	

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Epoch 307/400
160/160 [====================================
Epoch 308/400
160/160 [====================================
Epoch 309/400
160/160 [====================================
Epoch 310/400
160/160 [============ ] - Os 514us/step - loss: 0.3951
Epoch 311/400
160/160 [============] - Os 512us/step - loss: 0.3958
Epoch 312/400
160/160 [====================================
Epoch 313/400
160/160 [====================================
Epoch 314/400
160/160 [====================================
Epoch 315/400
160/160 [====================================
Epoch 316/400
160/160 [============= ] - Os 479us/step - loss: 0.3950
Epoch 317/400
160/160 [============= ] - Os 476us/step - loss: 0.3949
Epoch 318/400
160/160 [============= ] - Os 518us/step - loss: 0.3949
Epoch 319/400
160/160 [====================================
Epoch 320/400
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Epoch 321/400
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Epoch 322/400
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Epoch 331/400						
160/160 [====================================	_	0s	506us/step	_	loss:	0.3932
Epoch 332/400						
160/160 [==========]	-	0s	511us/step	-	loss:	0.3929
Epoch 333/400						
160/160 [====================================	-	0s	516us/step	-	loss:	0.3929
Epoch 334/400			_			
160/160 [=======]	-	0s	512us/step	-	loss:	0.3929
Epoch 335/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.3922
Epoch 336/400						
160/160 [=======]	-	0s	510us/step	-	loss:	0.3927
Epoch 337/400						
160/160 [=======]	-	0s	509us/step	-	loss:	0.3922
Epoch 338/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.3920
Epoch 339/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.3923
Epoch 340/400						
160/160 [=======]	-	0s	503us/step	-	loss:	0.3922
Epoch 341/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.3923
Epoch 342/400						
160/160 [=======]	-	0s	505us/step	-	loss:	0.3920
Epoch 343/400						
160/160 [==========]	-	0s	502us/step	-	loss:	0.3913
Epoch 344/400			_			
160/160 [=======]	-	0s	480us/step	-	loss:	0.3913
Epoch 345/400						
160/160 [=======]	-	0s	475us/step	-	loss:	0.3915
Epoch 346/400						
160/160 [=======]	-	0s	471us/step	_	loss:	0.3908
Epoch 347/400						
160/160 [=======]	-	0s	510us/step	-	loss:	0.3912
Epoch 348/400						
160/160 [=======]	-	0s	532us/step	-	loss:	0.3908
Epoch 349/400						
160/160 [=======]	-	0s	506us/step	-	loss:	0.3908
Epoch 350/400						
160/160 [=======]	-	0s	505us/step	-	loss:	0.3913
Epoch 351/400						
160/160 [=======]	-	0s	518us/step	-	loss:	0.3907
Epoch 352/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.3907
Epoch 353/400						
160/160 [=======]	-	0s	501us/step	_	loss:	0.3907
Epoch 354/400						
160/160 [=======]	-	0s	507us/step	-	loss:	0.3905

Epoch 355/400						
160/160 [====================================	_	0s	516us/step	_	loss:	0.3905
Epoch 356/400			_			
160/160 [=======]	-	0s	503us/step	-	loss:	0.3904
Epoch 357/400						
160/160 [=======]	-	0s	492us/step	-	loss:	0.3903
Epoch 358/400						
160/160 [=======]	-	0s	472us/step	-	loss:	0.3904
Epoch 359/400						
160/160 [=======]	-	0s	473us/step	-	loss:	0.3900
Epoch 360/400						
160/160 [=======]	-	0s	473us/step	-	loss:	0.3895
Epoch 361/400						
160/160 [=======]	-	0s	496us/step	-	loss:	0.3899
Epoch 362/400						
160/160 [=======]	-	0s	469us/step	-	loss:	0.3897
Epoch 363/400						
160/160 [=======]	-	0s	500us/step	-	loss:	0.3897
Epoch 364/400						
160/160 [=======]	-	0s	485us/step	-	loss:	0.3895
Epoch 365/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.3891
Epoch 366/400						
160/160 [=======]	-	0s	516us/step	-	loss:	0.3894
Epoch 367/400						
160/160 [=======]	-	0s	505us/step	-	loss:	0.3887
Epoch 368/400						
160/160 [======]	-	0s	509us/step	-	loss:	0.3892
Epoch 369/400						
160/160 [==========]	-	0s	522us/step	-	loss:	0.3886
Epoch 370/400						
160/160 [=======]	-	0s	506us/step	-	loss:	0.3888
Epoch 371/400						
160/160 [=======]	-	0s	505us/step	-	loss:	0.3885
Epoch 372/400						
160/160 [======]	-	0s	520us/step	-	loss:	0.3889
Epoch 373/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.3886
Epoch 374/400						
160/160 [=======]	-	0s	519us/step	-	loss:	0.3884
Epoch 375/400						
160/160 [=======]	-	0s	505us/step	-	loss:	0.3886
Epoch 376/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.3880
Epoch 377/400						
160/160 [====================================	-	0s	520us/step	-	loss:	0.3882
Epoch 378/400						
160/160 [====================================	-	0s	514us/step	-	loss:	0.3877

```
Epoch 379/400
Epoch 380/400
160/160 [============ ] - Os 520us/step - loss: 0.3882
Epoch 381/400
Epoch 382/400
Epoch 383/400
160/160 [============ ] - Os 512us/step - loss: 0.3869
Epoch 384/400
160/160 [============== ] - Os 514us/step - loss: 0.3875
Epoch 385/400
160/160 [============== ] - 0s 509us/step - loss: 0.3878
Epoch 386/400
160/160 [============== ] - Os 511us/step - loss: 0.3873
Epoch 387/400
Epoch 388/400
160/160 [============= ] - 0s 497us/step - loss: 0.3868
Epoch 389/400
Epoch 390/400
Epoch 391/400
160/160 [============= ] - 0s 487us/step - loss: 0.3862
Epoch 392/400
Epoch 393/400
160/160 [============= ] - Os 504us/step - loss: 0.3870
Epoch 394/400
Epoch 395/400
160/160 [============= ] - Os 494us/step - loss: 0.3865
Epoch 396/400
Epoch 397/400
160/160 [=============== ] - Os 512us/step - loss: 0.3862
Epoch 398/400
Epoch 399/400
160/160 [============ ] - Os 509us/step - loss: 0.3865
Epoch 400/400
160/160 [============= ] - Os 505us/step - loss: 0.3859
160/160 [=========== ] - Os 332us/step
```

In [9]: model = Sequential()

```
model.add(Dense(2, input_dim=2, activation='tanh')) #sigmoid, relu
     model.add(Dense(2, input_dim = 2, activation='relu'))
     model.add(Dense(2, input_dim = 2, activation='sigmoid'))
     model.add(Dense(2, input dim = 2, activation='tanh'))
     model.add(Dense(1, activation='sigmoid'))
     # model.add(Dense(1,input dim=2, activation='sigmoid'))
     sgd = SGD(1r=0.1)
     model.compile(loss='binary_crossentropy', optimizer='sgd')
     model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
     #print(model.predict_proba(X).reshape(4*n))
     # evaluate the model
     scores_four = model.evaluate(X, y)
Epoch 1/400
160/160 [================ ] - 0s 2ms/step - loss: 0.7273
Epoch 2/400
Epoch 3/400
160/160 [============== ] - 0s 572us/step - loss: 0.6992
Epoch 4/400
Epoch 5/400
160/160 [============== ] - Os 573us/step - loss: 0.6963
Epoch 6/400
Epoch 7/400
160/160 [============== ] - Os 576us/step - loss: 0.6958
Epoch 8/400
160/160 [=============== ] - Os 571us/step - loss: 0.6950
Epoch 9/400
160/160 [============= ] - 0s 591us/step - loss: 0.6948
Epoch 10/400
Epoch 11/400
Epoch 12/400
Epoch 13/400
160/160 [============= ] - 0s 573us/step - loss: 0.6942
Epoch 14/400
160/160 [============] - Os 591us/step - loss: 0.6943
Epoch 15/400
```

Enoch 16/100						
Epoch 16/400 160/160 [====================================	_	Λα	575ug /gtop	_	loggi	0 6036
Epoch 17/400		US	575us/step		TOSS.	0.0930
160/160 [====================================		٥٥	F7/112/2+02		1	0 6025
	_	US	5/4us/step	_	TOSS:	0.0935
Epoch 18/400		Λ-	F76/		7	0 6007
160/160 [====================================	_	US	5/6us/step	_	loss:	0.6937
Epoch 19/400		^	C44 / 1		,	0 0000
160/160 [====================================	_	US	641us/step	_	loss:	0.6932
Epoch 20/400		Λ-	CO7 /+		7	0 6001
160/160 [====================================	_	US	68/us/step	_	loss:	0.6931
Epoch 21/400		Λ-	F74/		7	0 6007
160/160 [====================================	_	US	5/4us/step	_	loss:	0.6927
Epoch 22/400		Λ-	E05/		7	0 6006
160/160 [====================================	_	US	585us/step	_	loss:	0.6926
Epoch 23/400		^	F00 / 1		-	0 0000
160/160 [====================================	_	US	586us/step	_	loss:	0.6926
Epoch 24/400		Λ-	E70/		7	0 6004
160/160 [====================================	_	US	5/Ous/step	_	loss:	0.6924
Epoch 25/400		^	570 / ·		-	0 0001
160/160 [====================================	-	Us	5/3us/step	_	loss:	0.6924
Epoch 26/400		^	500 / .		-	0 0000
160/160 [====================================	-	Us	568us/step	_	loss:	0.6923
Epoch 27/400		_	5.05 / .		_	
160/160 [====================================	-	0s	567us/step	-	loss:	0.6920
Epoch 28/400		_	,		_	
160/160 [====================================	-	0s	573us/step	-	loss:	0.6917
Epoch 29/400		_	,		_	
160/160 [====================================	-	0s	576us/step	-	loss:	0.6916
Epoch 30/400		_	/		_	
160/160 [====================================	-	0s	563us/step	-	loss:	0.6915
Epoch 31/400		_			_	
160/160 [====================================	-	0s	574us/step	_	loss:	0.6916
Epoch 32/400		_	/		_	
160/160 [====================================	-	0s	588us/step	-	loss:	0.6914
Epoch 33/400		_	/		_	
160/160 [====================================	-	0s	570us/step	_	loss:	0.6912
Epoch 34/400		^	570 / ·		-	0 0000
160/160 [====================================	-	Us	5/9us/step	_	loss:	0.6908
Epoch 35/400		•	500 / .		-	0 0001
160/160 [====================================	-	Us	568us/step	_	loss:	0.6904
Epoch 36/400		_	555 / .		_	
160/160 [====================================	-	0s	57bus/step	-	loss:	0.6904
Epoch 37/400		^	575 / ·		-	0 0000
160/160 [====================================	-	US	b/bus/step	_	Toss:	0.6900
Epoch 38/400		^	EC4- / :		٦.	0 2005
160/160 [====================================	_	US	561us/step	_	Toss:	0.6895
Epoch 39/400		^	ECO/		7	0 0000
160/160 [====================================	-	US	568US/Step	_	Toss:	0.6888

Epoch 40/400						
160/160 [====================================	_	0s	576us/step	_	loss:	0.6892
Epoch 41/400			•			
160/160 [====================================	_	0s	563us/step	_	loss:	0.6891
Epoch 42/400			-			
160/160 [====================================	_	0s	576us/step	-	loss:	0.6889
Epoch 43/400			-			
160/160 [====================================	_	0s	567us/step	_	loss:	0.6886
Epoch 44/400			_			
160/160 [=======]	-	0s	578us/step	-	loss:	0.6880
Epoch 45/400						
160/160 [=======]	-	0s	587us/step	-	loss:	0.6874
Epoch 46/400						
160/160 [=======]	-	0s	567us/step	-	loss:	0.6873
Epoch 47/400						
160/160 [=======]	-	0s	573us/step	-	loss:	0.6875
Epoch 48/400						
160/160 [=======]	-	0s	581us/step	-	loss:	0.6863
Epoch 49/400						
160/160 [=======]	-	0s	582us/step	-	loss:	0.6858
Epoch 50/400						
160/160 [=======]	-	0s	567us/step	-	loss:	0.6859
Epoch 51/400						
160/160 [=======]	-	0s	573us/step	-	loss:	0.6851
Epoch 52/400						
160/160 [=======]	-	0s	581us/step	-	loss:	0.6852
Epoch 53/400						
160/160 [=======]	-	0s	542us/step	-	loss:	0.6846
Epoch 54/400						
160/160 [====================================	-	0s	555us/step	-	loss:	0.6840
Epoch 55/400						
160/160 [=======]	-	0s	530us/step	-	loss:	0.6840
Epoch 56/400						
160/160 [=======]	-	0s	568us/step	-	loss:	0.6826
Epoch 57/400						
160/160 [=======]	-	0s	556us/step	-	loss:	0.6822
Epoch 58/400						
160/160 [=======]	-	0s	568us/step	-	loss:	0.6821
Epoch 59/400						
160/160 [=======]	-	0s	561us/step	-	loss:	0.6816
Epoch 60/400						
160/160 [=======]	-	0s	565us/step	-	loss:	0.6809
Epoch 61/400						
160/160 [=======]	-	0s	567us/step	-	loss:	0.6797
Epoch 62/400						
160/160 [====================================	-	0s	570us/step	-	loss:	0.6793
Epoch 63/400		_			_	
160/160 [====================================	-	0s	5/3us/step	_	loss:	0.6791

Epoch 64/400						
160/160 [====================================	_	0s	578us/step	_	loss:	0.6780
Epoch 65/400			_			
160/160 [====================================	_	0s	569us/step	_	loss:	0.6773
Epoch 66/400			-			
160/160 [====================================	_	0s	552us/step	_	loss:	0.6765
Epoch 67/400			-			
160/160 [====================================	_	0s	567us/step	_	loss:	0.6756
Epoch 68/400			_			
160/160 [====================================	-	0s	548us/step	-	loss:	0.6747
Epoch 69/400						
160/160 [====================================	-	0s	567us/step	-	loss:	0.6740
Epoch 70/400			_			
160/160 [====================================	-	0s	567us/step	-	loss:	0.6730
Epoch 71/400			_			
160/160 [====================================	-	0s	570us/step	-	loss:	0.6721
Epoch 72/400			_			
160/160 [====================================	-	0s	575us/step	-	loss:	0.6707
Epoch 73/400			_			
160/160 [====================================	_	0s	560us/step	_	loss:	0.6689
Epoch 74/400			_			
160/160 [====================================	-	0s	577us/step	-	loss:	0.6690
Epoch 75/400			_			
160/160 [====================================	-	0s	568us/step	-	loss:	0.6681
Epoch 76/400			_			
160/160 [====================================	_	0s	577us/step	-	loss:	0.6648
Epoch 77/400			-			
160/160 [====================================	_	0s	552us/step	-	loss:	0.6654
Epoch 78/400			-			
160/160 [====================================	_	0s	575us/step	_	loss:	0.6642
Epoch 79/400						
160/160 [========]	-	0s	549us/step	-	loss:	0.6624
Epoch 80/400						
160/160 [========]	-	0s	570us/step	-	loss:	0.6618
Epoch 81/400						
160/160 [======]	-	0s	562us/step	-	loss:	0.6600
Epoch 82/400						
160/160 [=======]	-	0s	575us/step	-	loss:	0.6582
Epoch 83/400						
160/160 [=======]	-	0s	565us/step	-	loss:	0.6570
Epoch 84/400						
160/160 [======]	-	0s	572us/step	-	loss:	0.6544
Epoch 85/400						
160/160 [=======]	-	0s	548us/step	-	loss:	0.6531
Epoch 86/400						
160/160 [=======]	-	0s	576us/step	-	loss:	0.6503
Epoch 87/400						
160/160 [=======]	-	0s	576us/step	-	loss:	0.6506

Epoch 88/400						
160/160 [====================================	_	0s	578us/step	_	loss:	0.6476
Epoch 89/400			_			
160/160 [====================================	_	0s	560us/step	-	loss:	0.6480
Epoch 90/400			-			
160/160 [====================================	_	0s	569us/step	-	loss:	0.6454
Epoch 91/400			-			
160/160 [====================================	_	0s	606us/step	-	loss:	0.6432
Epoch 92/400			_			
160/160 [====================================	-	0s	590us/step	-	loss:	0.6408
Epoch 93/400						
160/160 [====================================	_	0s	570us/step	_	loss:	0.6392
Epoch 94/400			_			
160/160 [====================================	-	0s	548us/step	-	loss:	0.6368
Epoch 95/400			_			
160/160 [====================================	-	0s	570us/step	-	loss:	0.6340
Epoch 96/400			_			
160/160 [====================================	-	0s	583us/step	-	loss:	0.6341
Epoch 97/400			_			
160/160 [====================================	_	0s	544us/step	_	loss:	0.6302
Epoch 98/400			_			
160/160 [====================================	-	0s	520us/step	-	loss:	0.6295
Epoch 99/400			_			
160/160 [====================================	-	0s	521us/step	-	loss:	0.6280
Epoch 100/400			_			
160/160 [====================================	_	0s	526us/step	_	loss:	0.6263
Epoch 101/400			_			
160/160 [=======]	-	0s	546us/step	-	loss:	0.6238
Epoch 102/400						
160/160 [=======]	-	0s	555us/step	-	loss:	0.6212
Epoch 103/400						
160/160 [=======]	-	0s	548us/step	-	loss:	0.6208
Epoch 104/400						
160/160 [=======]	-	0s	554us/step	-	loss:	0.6185
Epoch 105/400						
160/160 [======]	-	0s	557us/step	-	loss:	0.6180
Epoch 106/400						
160/160 [=======]	-	0s	565us/step	-	loss:	0.6150
Epoch 107/400						
160/160 [=======]	-	0s	550us/step	-	loss:	0.6136
Epoch 108/400						
160/160 [=======]	-	0s	539us/step	-	loss:	0.6114
Epoch 109/400						
160/160 [=======]	-	0s	556us/step	-	loss:	0.6096
Epoch 110/400						
160/160 [======]	-	0s	532us/step	-	loss:	0.6086
Epoch 111/400						
160/160 [====================================	-	0s	553us/step	-	loss:	0.6071

T 1 440/400
Epoch 112/400
160/160 [====================================
Epoch 113/400
160/160 [====================================
Epoch 114/400
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Epoch 115/400
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Epoch 116/400
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Epoch 117/400
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Epoch 118/400
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Epoch 119/400
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Epoch 120/400
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Epoch 121/400
160/160 [====================================
Epoch 122/400
160/160 [====================================
Epoch 123/400
160/160 [====================================
Epoch 124/400
160/160 [============= ] - Os 553us/step - loss: 0.5936
Epoch 125/400
160/160 [====================================
Epoch 126/400
160/160 [====================================
Epoch 127/400
160/160 [====================================
Epoch 128/400
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Epoch 129/400
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Epoch 130/400
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Epoch 131/400
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Epoch 132/400
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Epoch 133/400
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Epoch 134/400
160/160 [====================================
Epoch 135/400
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Epoch 136/400
160/160 [====================================
Epoch 137/400
160/160 [====================================
Epoch 138/400
160/160 [====================================
Epoch 139/400
160/160 [====================================
Epoch 140/400
160/160 [============] - Os 561us/step - loss: 0.5872
Epoch 141/400
160/160 [====================================
Epoch 142/400
160/160 [====================================
Epoch 143/400
160/160 [====================================
Epoch 144/400
160/160 [============= ] - Os 540us/step - loss: 0.5868
Epoch 145/400
160/160 [====================================
Epoch 146/400
160/160 [====================================
Epoch 147/400
160/160 [====================================
Epoch 148/400
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Epoch 149/400
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Epoch 150/400
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Epoch 151/400
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Epoch 152/400
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Epoch 153/400
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Epoch 155/400
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Epoch 156/400
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Epoch 157/400
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Epoch 158/400
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Epoch 159/400
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Epoch 160/400						
160/160 [====================================	_	0s	535us/step	_	loss:	0.5846
Epoch 161/400			•			
160/160 [====================================	_	0s	558us/step	_	loss:	0.5839
Epoch 162/400			-			
160/160 [====================================	_	0s	564us/step	_	loss:	0.5821
Epoch 163/400			-			
160/160 [====================================	_	0s	555us/step	_	loss:	0.5835
Epoch 164/400			_			
160/160 [=======]	-	0s	566us/step	-	loss:	0.5832
Epoch 165/400						
160/160 [=======]	-	0s	562us/step	-	loss:	0.5827
Epoch 166/400						
160/160 [=======]	-	0s	558us/step	-	loss:	0.5843
Epoch 167/400						
160/160 [=======]	-	0s	563us/step	-	loss:	0.5820
Epoch 168/400						
160/160 [=======]	-	0s	557us/step	-	loss:	0.5815
Epoch 169/400						
160/160 [=======]	-	0s	575us/step	-	loss:	0.5835
Epoch 170/400						
160/160 [========]	-	0s	573us/step	-	loss:	0.5826
Epoch 171/400						
160/160 [========]	-	0s	540us/step	-	loss:	0.5832
Epoch 172/400						
160/160 [===========]	-	0s	535us/step	-	loss:	0.5831
Epoch 173/400			_			
160/160 [=======]	-	0s	512us/step	-	loss:	0.5833
Epoch 174/400						
160/160 [=======]	-	0s	556us/step	-	loss:	0.5846
Epoch 175/400						
160/160 [=======]	-	0s	559us/step	-	loss:	0.5840
Epoch 176/400						
160/160 [=======]	-	0s	522us/step	-	loss:	0.5839
Epoch 177/400						
160/160 [======]	-	0s	558us/step	-	loss:	0.5833
Epoch 178/400						
160/160 [==========]	-	0s	570us/step	-	loss:	0.5824
Epoch 179/400						
160/160 [==========]	-	0s	534us/step	-	loss:	0.5828
Epoch 180/400						
160/160 [=======]	-	0s	554us/step	-	loss:	0.5830
Epoch 181/400						
160/160 [===========]	-	0s	559us/step	-	loss:	0.5831
Epoch 182/400						
160/160 [=======]	-	0s	565us/step	-	loss:	0.5834
Epoch 183/400						
160/160 [====================================	-	0s	556us/step	-	loss:	0.5832

Epoch 184/400			
160/160 [======]	-	0s	561us/step - loss: 0.5820
Epoch 185/400			
160/160 [======]	-	0s	540us/step - loss: 0.5746
Epoch 186/400			
160/160 [======]	-	0s	579us/step - loss: 0.5857
Epoch 187/400			
160/160 [======]	-	0s	543us/step - loss: 0.5815
Epoch 188/400			
160/160 []	-	0s	563us/step - loss: 0.5786
Epoch 189/400			
160/160 [======]	-	0s	562us/step - loss: 0.5839
Epoch 190/400			
160/160 [=======]	-	0s	597us/step - loss: 0.5796
Epoch 191/400			
160/160 [====================================	-	0s	582us/step - loss: 0.5824
Epoch 192/400			
160/160 [=======]	-	0s	627us/step - loss: 0.5830
Epoch 193/400			
160/160 [======]	-	0s	627us/step - loss: 0.5819
Epoch 194/400			
160/160 [======]	-	0s	570us/step - loss: 0.5820
Epoch 195/400			
160/160 [======]	-	0s	554us/step - loss: 0.5823
Epoch 196/400			
160/160 [======]	-	0s	573us/step - loss: 0.5830
Epoch 197/400			
160/160 []	-	0s	555us/step - loss: 0.5806
Epoch 198/400			
160/160 [====================================	-	0s	566us/step - loss: 0.5809
Epoch 199/400		_	
160/160 [====================================	_	0s	565us/step - loss: 0.5819
Epoch 200/400		_	
160/160 [====================================	-	0s	557us/step - loss: 0.5790
Epoch 201/400		_	
160/160 [====================================	-	0s	561us/step - loss: 0.5837
Epoch 202/400		_	
160/160 [====================================	-	0s	558us/step - loss: 0.5813
Epoch 203/400		_	/
160/160 [====================================	_	0s	563us/step - loss: 0.5802
Epoch 204/400		_	
160/160 [====================================	-	0s	537us/step - loss: 0.5818
Epoch 205/400		_	
160/160 [====================================	-	0s	b6bus/step - loss: 0.5820
Epoch 206/400		_	
160/160 [====================================	-	0s	b46us/step - loss: 0.5813
Epoch 207/400		_	
160/160 [==========]	-	0s	562us/step - loss: 0.5809

F. 1.000/400						
Epoch 208/400		^	F.CO. / .		-	0 5005
160/160 [====================================	_	Us	569us/step	_	loss:	0.5825
Epoch 209/400		_			_	
160/160 [====================================	-	0s	535us/step	_	loss:	0.5817
Epoch 210/400						
160/160 [=======]	-	0s	548us/step	-	loss:	0.5825
Epoch 211/400			_			
160/160 [======]	-	0s	559us/step	-	loss:	0.5814
Epoch 212/400						
160/160 [=======]	-	0s	549us/step	-	loss:	0.5806
Epoch 213/400						
160/160 [==========]	-	0s	582us/step	-	loss:	0.5802
Epoch 214/400						
160/160 [=======]	-	0s	586us/step	-	loss:	0.5796
Epoch 215/400						
160/160 [========]	-	0s	571us/step	-	loss:	0.5826
Epoch 216/400						
160/160 [====================================	_	0s	562us/step	_	loss:	0.5802
Epoch 217/400			•			
160/160 [====================================	_	0s	554us/step	_	loss:	0.5812
Epoch 218/400			. 1			
160/160 [====================================	_	0s	542us/step	_	loss:	0.5805
Epoch 219/400						
160/160 [====================================	_	0s	554us/step	_	loss:	0.5819
Epoch 220/400		0.0	00 142, 200p			0.0020
160/160 [====================================	_	0s	544us/sten	_	loss	0 5785
Epoch 221/400		Ü	01145/500p		TODD.	0.0100
160/160 [====================================	_	٥q	565119/9ten	_	1099.	0 5798
Epoch 222/400		Ü	cocab, btop		TODD.	0.0100
160/160 [====================================	_	٥q	554119/sten	_	1099.	0 5772
Epoch 223/400		OB	оотав/втер		TOBB.	0.0112
160/160 [====================================	_	۸e	555119/9ten	_	loggi	0 5829
Epoch 224/400		OB	coods, step		TOBB.	0.0023
160/160 [====================================	_	۸e	53311g /gton	_	loggi	n 5788
Epoch 225/400		OS	JJJus/step		TOSS.	0.5700
160/160 [====================================	_	Λα	561ug/gton	_	loggi	0 5901
Epoch 226/400		US	501us/step		TOSS.	0.5601
160/160 [====================================	_	٥٥	E6/113/3+00	_	1000.	0 5000
		US	504us/step		TOSS.	0.5600
Epoch 227/400 160/160 [====================================		٥-	FF0/		7	0 5000
	_	US	558us/step	_	loss:	0.5606
Epoch 228/400		^	550 / .		-	0 5040
160/160 [====================================	_	US	559us/step	_	loss:	0.5816
Epoch 229/400		_	550 / .		_	
160/160 [====================================	-	Us	550us/step	_	loss:	0.5806
Epoch 230/400		•	500 /		-	0 5001
160/160 [====================================	-	0s	569us/step	-	loss:	0.5824
Epoch 231/400		_	5.10 <i>'</i>		_	:-
160/160 [============]	-	0s	548us/step	-	loss:	0.5816

Epoch 232/400	
160/160 [====================================	799
Epoch 233/400	
160/160 [====================================	824
Epoch 234/400	
160/160 [====================================	818
Epoch 235/400	
160/160 [====================================	808
Epoch 236/400	
160/160 [============ ] - Os 548us/step - loss: 0.5	782
Epoch 237/400	
160/160 [============ ] - Os 538us/step - loss: 0.5	798
Epoch 238/400	
160/160 [============ ] - Os 561us/step - loss: 0.56	804
Epoch 239/400	
160/160 [============ ] - Os 542us/step - loss: 0.5	793
Epoch 240/400	
160/160 [============ ] - Os 562us/step - loss: 0.56	808
Epoch 241/400	
160/160 [============= ] - Os 583us/step - loss: 0.5	798
Epoch 242/400	
160/160 [============ ] - Os 583us/step - loss: 0.56	814
Epoch 243/400	
160/160 [============= ] - Os 555us/step - loss: 0.5	784
Epoch 244/400	
160/160 [============ ] - Os 561us/step - loss: 0.56	827
Epoch 245/400	
160/160 [============ ] - Os 564us/step - loss: 0.5	799
Epoch 246/400	
160/160 [============ ] - Os 549us/step - loss: 0.56	802
Epoch 247/400	
160/160 [====================================	802
Epoch 248/400	
160/160 [============ ] - Os 549us/step - loss: 0.56	809
Epoch 249/400	
160/160 [============= ] - Os 564us/step - loss: 0.56	805
Epoch 250/400	
160/160 [============ ] - Os 567us/step - loss: 0.56	815
Epoch 251/400	
160/160 [============ ] - Os 558us/step - loss: 0.58	803
Epoch 252/400	
160/160 [============= ] - Os 554us/step - loss: 0.56	815
Epoch 253/400	
160/160 [============ ] - Os 540us/step - loss: 0.5	784
Epoch 254/400	
160/160 [====================================	781
Epoch 255/400 160/160 [====================================	

F 1 050/400						
Epoch 256/400		^	FF0 / .		-	0 5700
160/160 [====================================	-	US	552us/step	_	loss:	0.5798
Epoch 257/400		^	500 / .		-	0 5700
160/160 [=========]	_	Us	560us/step	_	loss:	0.5799
Epoch 258/400		_	555 / .		_	
160/160 [=========]	-	0s	555us/step	-	loss:	0.5795
Epoch 259/400		_			_	
160/160 [======]	-	0s	560us/step	-	loss:	0.5805
Epoch 260/400						
160/160 [======]	-	0s	564us/step	-	loss:	0.5812
Epoch 261/400						
160/160 [=======]	-	0s	554us/step	-	loss:	0.5761
Epoch 262/400						
160/160 [=======]	-	0s	563us/step	-	loss:	0.5807
Epoch 263/400						
160/160 [========]	-	0s	540us/step	-	loss:	0.5808
Epoch 264/400						
160/160 [==========]	-	0s	568us/step	-	loss:	0.5786
Epoch 265/400			_			
160/160 [==========]	_	0s	557us/step	_	loss:	0.5799
Epoch 266/400						
160/160 [=======]	_	0s	537us/step	_	loss:	0.5807
Epoch 267/400			1			
160/160 [=======]	_	0s	532us/step	_	loss:	0.5773
Epoch 268/400						
160/160 [=======]	_	0s	548us/sten	_	loss	0 5825
Epoch 269/400		Ü	o rous, stop		TODD.	0.0020
160/160 [=======]	_	۸q	57011s/sten	_	1088.	0 5807
Epoch 270/400		Ü	or out, boop		TODD.	0.0001
160/160 [=======]	_	۸q	548119/sten	_	1088.	0 5771
Epoch 271/400		OB	040us/scep		1055.	0.0111
160/160 [========]	_	۸e	56011g/gton	_	loggi	n 5780
Epoch 272/400		OB	ooous, step		TOSS.	0.0703
160/160 [========]	_	Λα	557ug/gton	_	loggi	Λ <b>5</b> 91/
Epoch 273/400		OS	337 ds/step		1055.	0.5014
160/160 [========]		٥٩	FF7ug/gton		1.000.	0 5700
Epoch 274/400		US	557 us/step	_	TOSS.	0.5769
160/160 [=======]		٥٥	E60ug/gton		1.000.	0 5000
	_	US	562us/step	_	loss:	0.5800
Epoch 275/400		^	/ ·		,	0 5704
160/160 [====================================	-	US	55/us/step	_	loss:	0.5794
Epoch 276/400		_	550 / .		_	
160/160 [====================================	-	0s	570us/step	-	loss:	0.5810
Epoch 277/400		_	,		_	
160/160 [====================================	-	0s	552us/step	-	loss:	0.5804
Epoch 278/400						
160/160 [=========]	-	0s	570us/step	-	loss:	0.5794
Epoch 279/400						
160/160 [====================================	-	0s	552us/step	_	loss:	0.5787

Epoch 280/400
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Epoch 303/400
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Epoch 304/400
160/160 [=======] - Os 557us/step - loss: 0.5770
Epoch 305/400
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Epoch 306/400
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Epoch 307/400 160/160 [====================================
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Epoch 310/400
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Epoch 311/400
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Epoch 312/400
160/160 [=======] - Os 559us/step - loss: 0.5778
Epoch 313/400
160/160 [====================================
Epoch 314/400
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Epoch 315/400 160/160 [====================================
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Epoch 327/400
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Epoch 328/400		^	F.CO. / .		-	0 5700
160/160 [====================================	_	Us	568us/step	_	loss:	0.5790
Epoch 329/400		_			_	
160/160 [=======]	-	0s	bbbus/step	-	loss:	0.5783
Epoch 330/400						
160/160 [======]	-	0s	559us/step	-	loss:	0.5791
Epoch 331/400			_			
160/160 [======]	-	0s	549us/step	-	loss:	0.5788
Epoch 332/400						
160/160 [=======]	-	0s	535us/step	-	loss:	0.5784
Epoch 333/400						
160/160 [=======]	-	0s	546us/step	-	loss:	0.5803
Epoch 334/400						
160/160 [=======]	-	0s	529us/step	-	loss:	0.5782
Epoch 335/400						
160/160 [=======]	-	0s	554us/step	-	loss:	0.5778
Epoch 336/400						
160/160 [====================================	-	0s	552us/step	-	loss:	0.5782
Epoch 337/400			•			
160/160 [========]	_	0s	554us/step	_	loss:	0.5778
Epoch 338/400			. 1			
160/160 [=======]	_	0s	560us/step	_	loss:	0.5776
Epoch 339/400		0.0	cocas, scop			
160/160 [=======]	_	0s	564us/step	_	loss:	0.5779
Epoch 340/400		Ů.	001ab, 500p		1000.	0.0110
160/160 [=======]	_	٥٩	544119/sten	_	1099.	0 5772
Epoch 341/400		Ü	o i iub, b top		TODD.	0.0112
160/160 [=======]	_	۸e	562119/sten	_	loggi	0 5784
Epoch 342/400		OB	cozus/ btcp		TOBB.	0.0701
160/160 [========]	_	۸e	57911g/gton	_	loggi	0 5780
Epoch 343/400		OS	572us/scep		TOSS.	0.5760
160/160 [========]	_	Λα	550ug/g+on	_	loggi	0 5796
		OS	332us/step		TOSS.	0.5760
Epoch 344/400 160/160 [====================================		٥٩	E21::a/a+an		1	0 5760
	_	US	551us/step	_	TOSS:	0.5769
Epoch 345/400 160/160 [=======]		٥-	F20/		7	0 5770
	_	US	550us/step	_	TOSS:	0.5119
Epoch 346/400		Λ-	F00/		7	0 5707
160/160 [====================================	_	US	529us/step	_	loss:	0.5787
Epoch 347/400		^	505 / .		-	0 5777
160/160 [====================================	-	US	535us/step	_	loss:	0.5///
Epoch 348/400		_			_	
160/160 [====================================	-	0s	565us/step	-	loss:	0.5781
Epoch 349/400		_			_	
160/160 [====================================	-	0s	561us/step	-	loss:	0.5769
Epoch 350/400			_			
160/160 [=======]	-	0s	559us/step	-	loss:	0.5753
Epoch 351/400						
160/160 [====================================	-	0s	553us/step	-	loss:	0.5792

F. 1.050/400						
Epoch 352/400		^	F.C.4 / .		-	0 5700
160/160 [====================================	_	US	564us/step	_	loss:	0.5780
Epoch 353/400		^	E45 / .		-	0 5704
160/160 [====================================	_	Us	54/us/step	_	loss:	0.5794
Epoch 354/400		_	504 / .		_	
160/160 [====================================	-	0s	564us/step	-	loss:	0.5779
Epoch 355/400		_			_	
160/160 [====================================	-	0s	562us/step	-	loss:	0.5778
Epoch 356/400						
160/160 [=======]	-	0s	553us/step	-	loss:	0.5786
Epoch 357/400						
160/160 [=======]	-	0s	557us/step	-	loss:	0.5775
Epoch 358/400						
160/160 [=======]	-	0s	568us/step	-	loss:	0.5769
Epoch 359/400						
160/160 [==========]	-	0s	566us/step	-	loss:	0.5757
Epoch 360/400						
160/160 [=======]	-	0s	562us/step	-	loss:	0.5771
Epoch 361/400						
160/160 [=========]	-	0s	561us/step	-	loss:	0.5780
Epoch 362/400						
160/160 [====================================	-	0s	547us/step	-	loss:	0.5788
Epoch 363/400			_			
160/160 [====================================	_	0s	558us/step	_	loss:	0.5784
Epoch 364/400			-			
160/160 [====================================	_	0s	565us/step	_	loss:	0.5780
Epoch 365/400						
160/160 [====================================	_	0s	542us/step	_	loss:	0.5747
Epoch 366/400						
160/160 [====================================	_	0s	559us/step	_	loss:	0.5789
Epoch 367/400			. 1			
160/160 [====================================	_	0s	564us/step	_	loss:	0.5765
Epoch 368/400			. 1			
160/160 [====================================	_	0s	534us/step	_	loss:	0.5784
Epoch 369/400			, <sub>F</sub>			
160/160 [====================================	_	0s	558us/step	_	loss:	0.5781
Epoch 370/400		0.0	occus, scop			0.0.01
160/160 [====================================	_	0s	565us/step	_	loss:	0.5790
Epoch 371/400		Ů.	occus, scop		TODE.	0.0100
160/160 [====================================	_	0s	563us/sten	_	loss	0 5784
Epoch 372/400		OB	осоць, в сер		TOBB.	0.0701
160/160 [====================================	_	۸e	562ug/gten	_	loggi	0 5762
Epoch 373/400		OS	302us/scep		TOSS.	0.0702
160/160 [====================================	_	Λα	5/511g/gton	_	loggi	0 5764
Epoch 374/400	_	OS	o-tous/step	-	TOSS:	0.5704
160/160 [====================================	_	0~	560ug /g+c=	_	loggi	0 5700
	_	υS	oo∠us/step	_	TOSS:	0.0102
Epoch 375/400 160/160 [====================================	_	0~	563ng /g+ a-	_	1000:	0 5777
100/100 []	_	US	Josus/step	_	TOSS:	0.5111

Epoch 376/400
160/160 [====================================
Epoch 377/400
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Epoch 399/400
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1 05 01 0ab, 500p 10bb. 0.0100

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Epoch 400/400
160/160 [========== ] - Os 438us/step
In [10]: model = Sequential()
      model.add(Dense(2, input_dim=2, activation='tanh')) #sigmoid, relu
      model.add(Dense(2, input_dim = 2, activation='relu'))
      model.add(Dense(2, input_dim = 2, activation='sigmoid'))
      model.add(Dense(2, input_dim = 2, activation='tanh'))
      model.add(Dense(2, input_dim = 2, activation='relu'))
      model.add(Dense(1, activation='sigmoid'))
      # model.add(Dense(1,input_dim=2, activation='sigmoid'))
      sgd = SGD(1r=0.1)
      model.compile(loss='binary_crossentropy', optimizer='sgd')
      model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
      #print(model.predict_proba(X).reshape(4*n))
      # evaluate the model
      scores_five = model.evaluate(X, y)
Epoch 1/400
Epoch 2/400
160/160 [============] - Os 655us/step - loss: 0.6913
Epoch 3/400
160/160 [============== ] - Os 636us/step - loss: 0.6902
Epoch 4/400
Epoch 5/400
Epoch 6/400
160/160 [=============== ] - Os 606us/step - loss: 0.6886
Epoch 7/400
Epoch 8/400
160/160 [============= ] - Os 629us/step - loss: 0.6875
Epoch 9/400
160/160 [============= ] - 0s 621us/step - loss: 0.6869
Epoch 10/400
160/160 [============= ] - Os 631us/step - loss: 0.6860
Epoch 11/400
Epoch 12/400
```

```
160/160 [============== ] - Os 610us/step - loss: 0.6843
Epoch 13/400
160/160 [============] - Os 612us/step - loss: 0.6839
Epoch 14/400
Epoch 15/400
160/160 [============= ] - Os 634us/step - loss: 0.6819
Epoch 16/400
160/160 [============== ] - 0s 633us/step - loss: 0.6812
Epoch 17/400
160/160 [============= ] - Os 633us/step - loss: 0.6798
Epoch 18/400
160/160 [============= ] - Os 610us/step - loss: 0.6786
Epoch 19/400
160/160 [============= ] - Os 621us/step - loss: 0.6774
Epoch 20/400
Epoch 21/400
160/160 [============= ] - Os 650us/step - loss: 0.6749
Epoch 22/400
160/160 [============= ] - Os 618us/step - loss: 0.6717
Epoch 23/400
160/160 [============= ] - Os 584us/step - loss: 0.6706
Epoch 24/400
Epoch 25/400
Epoch 26/400
160/160 [============== ] - Os 559us/step - loss: 0.6632
Epoch 27/400
160/160 [============== ] - Os 608us/step - loss: 0.6608
Epoch 28/400
Epoch 29/400
160/160 [============= ] - Os 637us/step - loss: 0.6533
Epoch 30/400
160/160 [============= ] - Os 636us/step - loss: 0.6495
Epoch 31/400
160/160 [============== ] - Os 619us/step - loss: 0.6452
Epoch 32/400
160/160 [============== ] - Os 637us/step - loss: 0.6389
Epoch 33/400
160/160 [============= ] - Os 650us/step - loss: 0.6316
Epoch 34/400
160/160 [============= ] - Os 621us/step - loss: 0.6290
Epoch 35/400
160/160 [============== ] - Os 611us/step - loss: 0.6191
Epoch 36/400
```

```
Epoch 37/400
160/160 [============= ] - Os 629us/step - loss: 0.5986
Epoch 38/400
160/160 [============= ] - Os 615us/step - loss: 0.5903
Epoch 39/400
Epoch 40/400
160/160 [============= ] - Os 540us/step - loss: 0.5592
Epoch 41/400
Epoch 42/400
Epoch 43/400
160/160 [============= ] - 0s 540us/step - loss: 0.5003
Epoch 44/400
160/160 [============= ] - 0s 578us/step - loss: 0.4789
Epoch 45/400
160/160 [============= ] - Os 559us/step - loss: 0.4588
Epoch 46/400
160/160 [============= ] - 0s 575us/step - loss: 0.4394
Epoch 47/400
160/160 [============= ] - Os 606us/step - loss: 0.4199
Epoch 48/400
Epoch 49/400
Epoch 50/400
Epoch 51/400
Epoch 52/400
Epoch 53/400
160/160 [============= ] - Os 636us/step - loss: 0.3578
Epoch 54/400
160/160 [============= ] - 0s 617us/step - loss: 0.3504
Epoch 55/400
160/160 [============== ] - Os 603us/step - loss: 0.3518
Epoch 56/400
Epoch 57/400
160/160 [============== ] - Os 584us/step - loss: 0.3400
Epoch 58/400
160/160 [============= ] - Os 605us/step - loss: 0.3406
Epoch 59/400
160/160 [=============== ] - Os 605us/step - loss: 0.3396
Epoch 60/400
```

```
Epoch 61/400
160/160 [============] - Os 589us/step - loss: 0.3372
Epoch 62/400
Epoch 63/400
160/160 [============= ] - 0s 623us/step - loss: 0.3354
Epoch 64/400
160/160 [============= ] - Os 609us/step - loss: 0.3605
Epoch 65/400
Epoch 66/400
Epoch 67/400
Epoch 68/400
Epoch 69/400
160/160 [============= ] - Os 600us/step - loss: 0.3391
Epoch 70/400
160/160 [============= ] - Os 610us/step - loss: 0.3372
Epoch 71/400
160/160 [============= ] - Os 610us/step - loss: 0.3225
Epoch 72/400
160/160 [============= ] - 0s 621us/step - loss: 0.3453
Epoch 73/400
160/160 [============== ] - Os 613us/step - loss: 0.3463
Epoch 74/400
160/160 [=============== ] - Os 613us/step - loss: 0.3452
Epoch 75/400
160/160 [============== ] - Os 610us/step - loss: 0.3470
Epoch 76/400
Epoch 77/400
160/160 [============= ] - 0s 631us/step - loss: 0.3381
Epoch 78/400
160/160 [============= ] - 0s 607us/step - loss: 0.3512
Epoch 79/400
Epoch 80/400
Epoch 81/400
160/160 [============= ] - Os 608us/step - loss: 0.3439
Epoch 82/400
Epoch 83/400
160/160 [============== ] - Os 620us/step - loss: 0.3299
Epoch 84/400
```

160/160 [=======]	_	0s	615us/step	_	loss:	0.3440
Epoch 85/400			_			
160/160 [======]	-	0s	604us/step	-	loss:	0.3432
Epoch 86/400						
160/160 [=======]	-	0s	635us/step	-	loss:	0.3516
Epoch 87/400						
160/160 [======]	-	0s	613us/step	-	loss:	0.3368
Epoch 88/400						
160/160 [======]	-	0s	615us/step	-	loss:	0.3399
Epoch 89/400						
160/160 [=======]	-	0s	634us/step	-	loss:	0.3470
Epoch 90/400						
160/160 [======]	-	0s	602us/step	-	loss:	0.3424
Epoch 91/400						
160/160 [=======]	-	0s	642us/step	-	loss:	0.3392
Epoch 92/400			_			
160/160 [=======]	-	0s	629us/step	-	loss:	0.3379
Epoch 93/400						
160/160 [======]	-	0s	618us/step	-	loss:	0.3447
Epoch 94/400						
160/160 [======]	-	0s	603us/step	-	loss:	0.3378
Epoch 95/400						
160/160 [======]	-	0s	606us/step	-	loss:	0.3529
Epoch 96/400						
160/160 [======]	-	0s	620us/step	-	loss:	0.3469
Epoch 97/400						
160/160 [=======]	-	0s	611us/step	-	loss:	0.3429
Epoch 98/400						
160/160 [=======]	-	0s	616us/step	-	loss:	0.3402
Epoch 99/400						
160/160 [=======]	-	0s	605us/step	-	loss:	0.3245
Epoch 100/400						
160/160 [===========]	-	0s	609us/step	-	loss:	0.3477
Epoch 101/400						
160/160 [=======]	-	0s	601us/step	-	loss:	0.3402
Epoch 102/400						
160/160 [======]	-	0s	600us/step	-	loss:	0.3493
Epoch 103/400						
160/160 [======]	-	0s	613us/step	-	loss:	0.3410
Epoch 104/400						
160/160 [======]	-	0s	603us/step	-	loss:	0.3377
Epoch 105/400						
160/160 [===========]	-	0s	604us/step	-	loss:	0.3516
Epoch 106/400						
160/160 [====================================	-	0s	622us/step	-	loss:	0.3423
Epoch 107/400					_	
160/160 [====================================	-	0s	619us/step	-	loss:	0.3446
Epoch 108/400						

Epoch 109/400 160/160 [====================================	160/160 [======] -	_	0s	598us/step - loss: 0.3345
Epoch 110/400 160/160 [				•
160/160 [====================================	160/160 [=======] -	-	0s	636us/step - loss: 0.3365
Epoch 111/400 160/160 [====================================				
160/160 [====================================		-	0s	579us/step - loss: 0.3461
Epoch 112/400 160/160 [====================================				
160/160 [====================================		-	0s	599us/step - loss: 0.3448
Epoch 113/400 160/160 [====================================				
160/160   1		-	0s	587us/step - loss: 0.3367
Epoch 114/400 160/160 [====================================			_	
160/160   15/400   160/160   160/1		-	0s	613us/step - loss: 0.3284
Epoch 115/400 160/160 [====================================			^	0.4.4.4
160/160   16		-	0s	614us/step - loss: 0.3466
Epoch 116/400 160/160 [====================================			0-	F00/ 1 0 2472
160/160 [====================================		_	US	599us/step - 10ss: 0.3473
Epoch 117/400 160/160 [====================================		_	Λe	501us/stan - loss: 0 3326
160/160 [====================================			OS	331us/step 10ss. 0.3320
Epoch 118/400 160/160 [====================================	•	_	0s	606us/step - loss: 0 3462
160/160 [====================================			OB	1088. 0.0102
Epoch 119/400 160/160 [====================================	<u> -</u>	_	0s	592us/step - loss: 0.3464
160/160 [====================================				
Epoch 120/400 160/160 [====================================		_	0s	610us/step - loss: 0.3354
Epoch 121/400  160/160 [====================================				•
160/160	160/160 [====================================	-	0s	603us/step - loss: 0.3461
Epoch 122/400 160/160 [====================================	Epoch 121/400			
160/160 [====================================	160/160 [======] -	-	0s	582us/step - loss: 0.3352
Epoch 123/400  160/160 [====================================	<u> -</u>			
160/160 [====================================	160/160 [======] -	-	0s	590us/step - loss: 0.3516
Epoch 124/400 160/160 [====================================				
160/160		-	0s	599us/step - loss: 0.3413
Epoch 125/400  160/160 [====================================	-			
160/160 [====================================		-	0s	608us/step - loss: 0.3399
Epoch 126/400  160/160 [====================================			_	
160/160 [====================================		-	0s	598us/step - loss: 0.3361
Epoch 127/400  160/160 [====================================	•		0 -	000/
160/160 [====================================		_	US	606us/step - 10ss: 0.3406
Epoch 128/400  160/160 [====================================	•	_	٥٥	E99ug/gtop - logg: 0 2440
160/160 [====================================			US	300us/step - 10ss. 0.3440
Epoch 129/400  160/160 [====================================		_	٥q	598us/sten - loss: 0 3345
160/160 [====================================			OB	1088. 0.0010
Epoch 130/400  160/160 [====================================		_	0s	594us/step - loss: 0.3282
160/160 [====================================			Ü	1000. 0.0202
Epoch 131/400 160/160 [====================================	•	_	0s	598us/step - loss: 0.3365
160/160 [====================================			-	
<del>-</del>	•	_	0s	593us/step - loss: 0.3351
				-

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Epoch 133/400
160/160 [============= ] - Os 592us/step - loss: 0.3407
Epoch 134/400
160/160 [============= ] - 0s 589us/step - loss: 0.3505
Epoch 135/400
160/160 [============= ] - Os 600us/step - loss: 0.3408
Epoch 136/400
160/160 [============= ] - 0s 612us/step - loss: 0.3384
Epoch 137/400
Epoch 138/400
Epoch 139/400
160/160 [============= ] - Os 591us/step - loss: 0.3370
Epoch 140/400
160/160 [============= ] - 0s 602us/step - loss: 0.3203
Epoch 141/400
160/160 [============ ] - Os 606us/step - loss: 0.3358
Epoch 142/400
Epoch 143/400
160/160 [============= ] - Os 611us/step - loss: 0.3357
Epoch 144/400
Epoch 145/400
160/160 [============= ] - 0s 594us/step - loss: 0.3468
Epoch 146/400
160/160 [============== ] - Os 608us/step - loss: 0.3412
Epoch 147/400
Epoch 148/400
160/160 [============= ] - 0s 602us/step - loss: 0.3408
Epoch 149/400
160/160 [============= ] - 0s 619us/step - loss: 0.3372
Epoch 150/400
Epoch 151/400
Epoch 152/400
160/160 [============== ] - Os 618us/step - loss: 0.3269
Epoch 153/400
160/160 [============= ] - 0s 595us/step - loss: 0.3373
Epoch 154/400
160/160 [============= ] - 0s 582us/step - loss: 0.3375
Epoch 155/400
160/160 [============== ] - Os 612us/step - loss: 0.3424
Epoch 156/400
```

160/160 [=======]	_	0s	595us/step	_	loss:	0.3351
Epoch 157/400			_			
160/160 [======]	-	0s	595us/step	-	loss:	0.3422
Epoch 158/400						
160/160 [=======]	-	0s	608us/step	-	loss:	0.3385
Epoch 159/400						
160/160 [=======]	-	0s	578us/step	-	loss:	0.3380
Epoch 160/400		_			_	
160/160 [====================================	-	0s	595us/step	-	loss:	0.3353
Epoch 161/400		^	570 / .		-	0 0400
160/160 [====================================	_	Us	5/6us/step	_	loss:	0.3422
Epoch 162/400 160/160 [====================================		0-	F70/		7	0 2407
Epoch 163/400	_	US	5/9us/step	_	loss:	0.3407
160/160 [====================================	_	۸a	619ug/gton	_	loggi	0 3/10
Epoch 164/400		US	Olous/scep		TOSS.	0.5410
160/160 [====================================	_	0s	59711s/sten	_	loss	0 3352
Epoch 165/400		V.D	oo rab, boop		TODD.	0.0002
160/160 [====================================	_	0s	595us/step	_	loss:	0.3405
Epoch 166/400			,			
160/160 [====================================	_	0s	597us/step	_	loss:	0.3439
Epoch 167/400			•			
160/160 [====================================	-	0s	597us/step	_	loss:	0.3458
Epoch 168/400			_			
160/160 [======]	-	0s	613us/step	-	loss:	0.3406
Epoch 169/400						
160/160 [======]	-	0s	588us/step	-	loss:	0.3350
Epoch 170/400						
160/160 [======]	-	0s	582us/step	-	loss:	0.3256
Epoch 171/400			_			
160/160 [====================================	-	0s	606us/step	-	loss:	0.3453
Epoch 172/400		_	0.10		_	
160/160 [====================================	-	0s	619us/step	_	loss:	0.3276
Epoch 173/400		0 -	C12/		7	0 0445
160/160 [====================================	-	US	613us/step	_	loss:	0.3415
Epoch 174/400 160/160 [====================================	_	٥	610ug/gton		1000.	0 2/10
Epoch 175/400		US	olous/scep		TOSS.	0.3410
160/160 [====================================	_	۸s	607118/sten	_	1099.	0 3354
Epoch 176/400		OB	oor us, step		TOBB.	0.0001
160/160 [====================================	_	0s	620us/step	_	loss:	0.3359
Epoch 177/400		Ü	020d2, 200p		1000.	0.0000
160/160 [====================================	_	0s	594us/step	_	loss:	0.3360
Epoch 178/400			1			
160/160 [====================================	_	0s	592us/step	_	loss:	0.3419
Epoch 179/400			. 1			
160/160 [====================================	_	0s	596us/step	_	loss:	0.3401
Epoch 180/400			_			

160/160 [=======]	_	0s	614us/step	_	loss:	0.3278
Epoch 181/400			_			
160/160 [======]	-	0s	606us/step	-	loss:	0.3413
Epoch 182/400						
160/160 [======]	-	0s	607us/step	-	loss:	0.3419
Epoch 183/400		_			_	
160/160 [====================================	-	0s	614us/step	-	loss:	0.3469
Epoch 184/400		0 -	COO /		7	0.2400
160/160 [==========] Epoch 185/400	_	US	628us/step	_	loss:	0.3409
160/160 [====================================	_	۸a	508ug/gton	_	loggi	0 3356
Epoch 186/400		US	Jours, step		TOSS.	0.5550
160/160 [====================================	_	0s	619us/step	_	loss:	0.3412
Epoch 187/400		O.D	orous, scop		TODD.	0.0112
160/160 [====================================	_	0s	605us/step	_	loss:	0.3355
Epoch 188/400			1			
160/160 [====================================	_	0s	595us/step	_	loss:	0.3321
Epoch 189/400			_			
160/160 [======]	-	0s	606us/step	_	loss:	0.3294
Epoch 190/400						
160/160 [======]	-	0s	610us/step	-	loss:	0.3391
Epoch 191/400						
160/160 [======]	-	0s	599us/step	-	loss:	0.3436
Epoch 192/400			_			
160/160 [====================================	-	0s	614us/step	-	loss:	0.3316
Epoch 193/400		_	500 / .		_	0.0004
160/160 [====================================	-	0s	598us/step	_	loss:	0.3391
Epoch 194/400		0 -	COF /		7	0 2440
160/160 [====================================	_	US	605us/step	_	loss:	0.3419
Epoch 195/400 160/160 [====================================	_	Λe	60111g/gten	_	loggi	0 3336
Epoch 196/400		US	oorus/scep		TOSS.	0.0000
160/160 [====================================	_	0s	701us/step	_	loss:	0.3401
Epoch 197/400			. став, всер			0.0101
160/160 [====================================	_	0s	654us/step	_	loss:	0.3359
Epoch 198/400			•			
160/160 [====================================	_	0s	628us/step	_	loss:	0.3416
Epoch 199/400						
160/160 [======]	-	0s	607us/step	-	loss:	0.3367
Epoch 200/400						
160/160 [======]	-	0s	638us/step	-	loss:	0.3186
Epoch 201/400						
160/160 [====================================	-	0s	667us/step	-	loss:	0.3412
Epoch 202/400		^	coo / :		,	0.0000
160/160 [====================================	-	Us	622us/step	_	loss:	0.3302
Epoch 203/400		0~	61 Eng / 5+ 5		1000	0 2420
160/160 [====================================	_	US	orous/step	_	TOSS:	0.3438
Epoch 204/400						

160/160 []	_	0s	668us/step	_	loss:	0.3320
Epoch 205/400			_			
160/160 [======]	-	0s	662us/step	-	loss:	0.3399
Epoch 206/400						
160/160 [======]	-	0s	642us/step	-	loss:	0.3382
Epoch 207/400						
160/160 [====================================	-	0s	619us/step	-	loss:	0.3377
Epoch 208/400		ο-	C25 /		7	0.0001
160/160 [====================================	_	US	635us/step	_	loss:	0.3301
Epoch 209/400 160/160 [====================================		٥٩	606.12/2+02		1.000.	0 2204
Epoch 210/400	_	US	ooous/step		1088.	0.3304
160/160 [====================================	_	۸e	616119/sten	_	loggi	0 3361
Epoch 211/400		OB	orous, scep		1055.	0.0001
160/160 [====================================	_	0s	670us/step	_	loss:	0.3308
Epoch 212/400			o. cas, scop			
160/160 [====================================	_	0s	600us/step	_	loss:	0.3383
Epoch 213/400			. 1			
160/160 [====================================	_	0s	568us/step	_	loss:	0.3311
Epoch 214/400			-			
160/160 [======]	-	0s	578us/step	-	loss:	0.3344
Epoch 215/400						
160/160 [======]	-	0s	636us/step	-	loss:	0.3341
Epoch 216/400						
160/160 [======]	-	0s	643us/step	-	loss:	0.3358
Epoch 217/400						
160/160 [======]	-	0s	592us/step	-	loss:	0.3390
Epoch 218/400		_			_	
160/160 [====================================	-	0s	598us/step	-	loss:	0.3304
Epoch 219/400		^	677 / 1		-	0 0440
160/160 [====================================	_	Us	6//us/step	_	loss:	0.3418
Epoch 220/400 160/160 [====================================		٥٩	66000 / at on		1.000.	0 2/10
Epoch 221/400	_	US	002us/step	_	TOSS:	0.3419
160/160 [====================================	_	۸a	657118/sten	_	loggi	0 3264
Epoch 222/400		US	037 us/scep		1055.	0.3204
160/160 [====================================	_	0s	682us/sten	_	loss	0 3421
Epoch 223/400		Ü	oozab, boop		TODD.	0.0121
160/160 [====================================	_	0s	618us/step	_	loss:	0.3230
Epoch 224/400			1			
160/160 [====================================	_	0s	613us/step	_	loss:	0.3372
Epoch 225/400			•			
160/160 [====================================	_	0s	628us/step	_	loss:	0.3386
Epoch 226/400			_			
160/160 [=======]	-	0s	665us/step	-	loss:	0.3427
Epoch 227/400						
160/160 [======]	-	0s	653us/step	-	loss:	0.3445
Epoch 228/400						

160/160 [=======]	_	0s	642us/step	_	loss:	0.3409
Epoch 229/400			. 1			
160/160 [=======]	-	0s	673us/step	-	loss:	0.3366
Epoch 230/400						
160/160 [======]	_	0s	628us/step	-	loss:	0.3376
Epoch 231/400						
160/160 [======]	-	0s	653us/step	-	loss:	0.3299
Epoch 232/400						
160/160 [=======]	-	0s	646us/step	-	loss:	0.3354
Epoch 233/400			_			
160/160 [=======]	-	0s	671us/step	-	loss:	0.3370
Epoch 234/400		_			_	
160/160 [====================================	-	0s	695us/step	-	loss:	0.3291
Epoch 235/400		_			_	
160/160 [====================================	-	0s	625us/step	-	loss:	0.3390
Epoch 236/400		_	202 / .		_	
160/160 [====================================	-	0s	606us/step	_	loss:	0.3308
Epoch 237/400		•	040 / .		-	0 0004
160/160 [====================================	_	Us	612us/step	_	loss:	0.3284
Epoch 238/400		ο-	C15/		7	0 0450
160/160 [====================================	_	US	615us/step	_	loss:	0.3453
Epoch 239/400 160/160 [====================================		Λ-	604/		7	0 2260
	_	US	664us/step	_	loss:	0.3360
Epoch 240/400 160/160 [====================================	_	٥٥	661ug/gton		1000.	0 20/1
Epoch 241/400		US	oorus/step		TOSS.	0.3241
160/160 [====================================	_	Λα	617ug/gton	_	loggi	0 3307
Epoch 242/400		OS	orrus/scep		TOSS.	0.0021
160/160 [====================================	_	۸q	599113/sten	_	1099.	0 3386
Epoch 243/400		OB	оззав, в сер		TOBB.	0.0000
160/160 [====================================	_	0s	590us/step	_	loss:	0.3327
Epoch 244/400			occus, scop			
160/160 [====================================	_	0s	581us/step	_	loss:	0.3319
Epoch 245/400			1			
160/160 [====================================	_	0s	697us/step	_	loss:	0.3449
Epoch 246/400			. 1			
160/160 [====================================	_	0s	622us/step	_	loss:	0.3398
Epoch 247/400			•			
160/160 [====================================	_	0s	620us/step	_	loss:	0.3369
Epoch 248/400						
160/160 [======]	_	0s	651us/step	-	loss:	0.3370
Epoch 249/400						
160/160 [======]	-	0s	661us/step	-	loss:	0.3416
Epoch 250/400						
160/160 [======]	-	0s	675us/step	-	loss:	0.3331
Epoch 251/400						
160/160 [======]	_	0s	672us/step	-	loss:	0.3391
Epoch 252/400						

160/160 [======] - Os 601us/s	step - loss: 0.3333
Epoch 253/400	•
160/160 [=========== ] - Os 607us/s	step - loss: 0.3476
Epoch 254/400	
160/160 [======] - Os 612us/s	step - loss: 0.3334
Epoch 255/400	
160/160 [=======] - Os 612us/s	step - loss: 0.3330
Epoch 256/400	
160/160 [=======] - Os 605us/s	step - loss: 0.3309
Epoch 257/400	
160/160 [=======] - Os 606us/s	step - loss: 0.3401
Epoch 258/400	
160/160 [======] - Os 588us/s	step - loss: 0.3338
Epoch 259/400	
160/160 [======] - Os 662us/s	step - loss: 0.3354
Epoch 260/400	
160/160 [======] - Os 667us/s	step - loss: 0.3387
Epoch 261/400	
160/160 [======] - Os 653us/s	step - loss: 0.3429
Epoch 262/400	
160/160 [======] - Os 667us/s	step - loss: 0.3425
Epoch 263/400	
160/160 [======] - Os 590us/s	step - loss: 0.3325
Epoch 264/400	
160/160 [======] - Os 576us/s	step - loss: 0.3239
Epoch 265/400	
160/160 [======] - Os 587us/s	step - loss: 0.3501
Epoch 266/400	
160/160 [======] - Os 614us/s	step - loss: 0.3391
Epoch 267/400	
160/160 [======] - Os 612us/s	step - loss: 0.3398
Epoch 268/400	
160/160 [=========== ] - Os 606us/s	step - loss: 0.3433
Epoch 269/400	
160/160 [======] - Os 612us/s	step - loss: 0.3327
Epoch 270/400	
160/160 [=======] - Os 604us/s	step - loss: 0.3366
Epoch 271/400	
160/160 [========== ] - 0s 633us/s	step - loss: 0.3379
Epoch 272/400	
160/160 [=======] - Os 684us/s	step - loss: 0.3397
Epoch 273/400	
160/160 [========== ] - 0s 726us/s	step - loss: 0.3299
Epoch 274/400	
160/160 [=========== ] - 0s 658us/s	step - loss: 0.3402
Epoch 275/400	
160/160 [========== ] - Os 607us/s	step - loss: 0.3358
Epoch 276/400	

160/160 [=======]	_	0s	552us/step	_	loss:	0.3321
Epoch 277/400			_			
160/160 [=======]	-	0s	570us/step	-	loss:	0.3352
Epoch 278/400						
160/160 [=======]	-	0s	584us/step	-	loss:	0.3364
Epoch 279/400						
160/160 [====================================	-	0s	620us/step	-	loss:	0.3346
Epoch 280/400		0 -	C44/		7	0 0070
160/160 [====================================	-	US	641us/step	_	loss:	0.3373
Epoch 281/400 160/160 [====================================		٥٩	62Eug /g+on		1.000.	A 2221
Epoch 282/400		US	osous/step	_	1088.	0.3331
160/160 [====================================	_	۸e	637112/sten	_	loggi	0 3388
Epoch 283/400		V.S	oor us, step		1055.	0.0000
160/160 [====================================	_	0s	643us/step	_	loss:	0.3412
Epoch 284/400			о 10 ад, д с ср			***************************************
160/160 [====================================	_	0s	642us/step	_	loss:	0.3413
Epoch 285/400			. 1			
160/160 [====================================	_	0s	702us/step	_	loss:	0.3402
Epoch 286/400			-			
160/160 [=======]	-	0s	665us/step	_	loss:	0.3401
Epoch 287/400						
160/160 [======]	-	0s	625us/step	-	loss:	0.3426
Epoch 288/400						
160/160 [===========]	-	0s	580us/step	-	loss:	0.3365
Epoch 289/400						
160/160 [=======]	-	0s	614us/step	-	loss:	0.3376
Epoch 290/400		_			_	
160/160 [====================================	-	0s	602us/step	-	loss:	0.3372
Epoch 291/400		0 -	C1 C /		7	0 2270
160/160 [==========] Epoch 292/400	_	US	616US/Step	_	loss:	0.3379
160/160 [====================================	_	۸a	670ug/gton	_	loggi	0 3317
Epoch 293/400		OS	oraus/scep		TOSS.	0.3317
160/160 [====================================	_	۸s	659119/sten	_	1099.	0 3400
Epoch 294/400		V.D	occus, scop		TODD.	0.0100
160/160 [====================================	_	0s	616us/step	_	loss:	0.3343
Epoch 295/400			, <sub>P</sub>			
160/160 [====================================	_	0s	592us/step	_	loss:	0.3412
Epoch 296/400			•			
160/160 [============]	-	0s	630us/step	-	loss:	0.3339
Epoch 297/400						
160/160 [======]	-	0s	589us/step	-	loss:	0.3301
Epoch 298/400						
160/160 [======]	-	0s	614us/step	-	loss:	0.3352
Epoch 299/400						
160/160 [===========]	-	0s	679us/step	-	loss:	0.3383
Epoch 300/400						

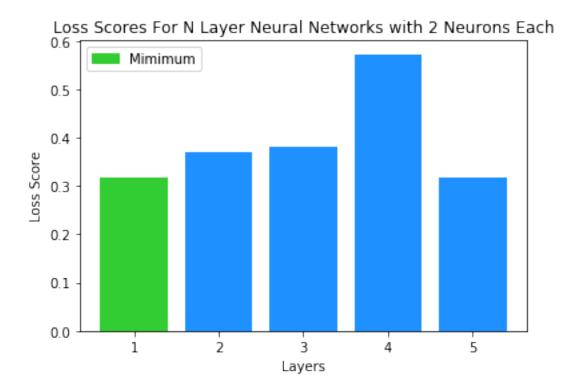
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Epoch 301/400	
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Epoch 315/400	
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Epoch 316/400	
160/160 [====================================	22
Epoch 317/400	
160/160 [============ ] - Os 607us/step - loss: 0.340	)2
Epoch 318/400	
160/160 [============ ] - Os 625us/step - loss: 0.336	<i>i</i> 7
Epoch 319/400	
160/160 [====================================	8
Epoch 320/400	
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Epoch 321/400	
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Epoch 323/400	. /
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Epoch 324/400	

160/160 [======] -	0s	590us/step	- loss:	0.3218
Epoch 325/400		_		
160/160 [=======] -	0s	579us/step	- loss:	0.3344
Epoch 326/400				
160/160 [======] -	0s	564us/step	- loss:	0.3335
Epoch 327/400				
160/160 [======] -	0s	588us/step	- loss:	0.3367
Epoch 328/400	_	,		
160/160 [====================================	0s	595us/step	- loss:	0.3255
Epoch 329/400	•	204 / .	-	0 0444
160/160 [====================================	Us	631us/step	- loss:	0.3416
Epoch 330/400 160/160 [====================================	0-	604/	1	0.2452
Epoch 331/400	US	624us/step	- loss:	0.3453
160/160 [======] -	. 0.5	573ug/g+on	- logg:	A 3379
Epoch 332/400	OS	orous/scep	TOSS.	0.5576
160/160 [=======] -	. Os	59711s/sten	- loss:	0 3350
Epoch 333/400	O.D	corab, buch	1000.	0.0000
160/160 [=======] -	0s	597us/step	- loss:	0.3360
Epoch 334/400		,		
160/160 [====================================	0s	642us/step	- loss:	0.3401
Epoch 335/400				
160/160 [====================================	0s	614us/step	- loss:	0.3375
Epoch 336/400		_		
160/160 [======] -	0s	648us/step	- loss:	0.3382
Epoch 337/400				
160/160 [=======] -	0s	639us/step	- loss:	0.3313
Epoch 338/400				
160/160 [======] -	0s	614us/step	- loss:	0.3360
Epoch 339/400				
160/160 [====================================	0s	634us/step	- loss:	0.3331
Epoch 340/400	•	225 / .	_	
160/160 [====================================	· Us	66bus/step	- loss:	0.3332
Epoch 341/400	0 -	CO4/-+	7	0.0100
160/160 [====================================	US	624us/step	- loss:	0.3188
Epoch 342/400 160/160 [====================================	Λα	610ug/gton	_ logg.	0 2/50
Epoch 343/400	05	019us/step	- 1088.	0.3439
160/160 [=======] -		634115/sten	- 1099.	0 3332
Epoch 344/400	OB	oo lub/ b tep	TODD.	0.0002
160/160 [=======] -	. 0s	634us/step	- loss:	0.3388
Epoch 345/400	0.0	остав, втор		
160/160 [====================================	0s	628us/step	- loss:	0.3303
Epoch 346/400		1		
160/160 [====================================	0s	627us/step	- loss:	0.3378
Epoch 347/400		•		
160/160 [========== ] -	0s	604us/step	- loss:	0.3400
Epoch 348/400				

160/160 [====================================
Epoch 349/400
160/160 [============= ] - Os 610us/step - loss: 0.3356
Epoch 350/400
160/160 [============] - Os 638us/step - loss: 0.3374
Epoch 351/400
160/160 [====================================
Epoch 352/400
160/160 [====================================
Epoch 353/400
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Epoch 355/400
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Epoch 356/400
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Epoch 358/400
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Epoch 359/400
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Epoch 360/400
160/160 [============] - Os 638us/step - loss: 0.3418
Epoch 361/400
160/160 [===========] - Os 628us/step - loss: 0.3293
Epoch 362/400
160/160 [====================================
Epoch 363/400
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Epoch 365/400 160/160 [====================================
Epoch 366/400
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Epoch 368/400
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Epoch 369/400
160/160 [====================================
Epoch 370/400
160/160 [====================================
Epoch 371/400
160/160 [============ ] - Os 611us/step - loss: 0.3311
Epoch 372/400

160/160 [====================================
Epoch 373/400
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Epoch 374/400
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Epoch 376/400 160/160 [====================================
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Epoch 381/400
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Epoch 382/400
160/160 [============= ] - Os 643us/step - loss: 0.3330
Epoch 383/400
160/160 [============= ] - Os 630us/step - loss: 0.3411
Epoch 384/400
160/160 [====================================
Epoch 385/400
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Epoch 386/400
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Epoch 387/400 160/160 [====================================
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Epoch 394/400
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Epoch 395/400
160/160 [====================================
Epoch 396/400

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Epoch 397/400
160/160 [============= ] - 0s 616us/step - loss: 0.3309
Epoch 398/400
160/160 [============ ] - Os 629us/step - loss: 0.3305
Epoch 399/400
160/160 [============= ] - Os 642us/step - loss: 0.3337
Epoch 400/400
160/160 [============= ] - Os 664us/step - loss: 0.3399
160/160 [=========== ] - Os 568us/step
In [20]: color = []
       scores = [scores_one, scores_two, scores_three, scores_four, scores_five]
       for score in scores:
           if score == min(scores):
              color.append('limegreen')
          else:
              color.append('dodgerblue')
       patch1 = mpatches.Patch(color='limegreen', label='Mimimum')
       plt.bar(layers, scores, width = .8, color = color)
       plt.legend(handles=[patch1], loc = 'best')
       plt.xlabel('Layers')
       plt.ylabel('Loss Score')
       plt.title('Loss Scores For N Layer Neural Networks with 2 Neurons Each')
       plt.show()
```



Looking at the above graph, the 2-neuron Neural Network with 1 layer performs best

## 1.1.2 Part 1.2

```
In [21]: ### Three Layer Neural Networks ###

model = Sequential()

model.add(Dense(3, input_dim=2, activation='tanh')) #sigmoid, relu
    # model.add(Dense(2, activation='tanh'))
    model.add(Dense(1, activation='sigmoid'))

# model.add(Dense(1, input_dim=2, activation='sigmoid'))

sgd = SGD(lr=0.1)
    model.compile(loss='binary_crossentropy', optimizer='sgd')

model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
    #print(model.predict_proba(X).reshape(4*n))

# evaluate the model
    scores_3one = model.evaluate(X, y)

model = Sequential()
```

```
model.add(Dense(3, input_dim=2, activation='tanh')) #sigmoid, relu
model.add(Dense(3, input_dim = 3, activation='relu'))
model.add(Dense(1, activation='sigmoid'))
# model.add(Dense(1,input dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores_3two = model.evaluate(X, y)
model = Sequential()
model.add(Dense(3, input_dim=2, activation='tanh')) #sigmoid, relu
model.add(Dense(3, input_dim = 3, activation='relu'))
model.add(Dense(3, input_dim = 3, activation='sigmoid'))
model.add(Dense(1, activation='sigmoid'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores_3three = model.evaluate(X, y)
model = Sequential()
model.add(Dense(3, input_dim=2, activation='tanh')) #sigmoid, relu
model.add(Dense(3, input_dim = 3, activation='relu'))
model.add(Dense(3, input_dim = 3, activation='sigmoid'))
model.add(Dense(3, input_dim = 3, activation='tanh'))
model.add(Dense(1, activation='sigmoid'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
```

```
#print(model.predict_proba(X).reshape(4*n))
     # evaluate the model
     scores_3four = model.evaluate(X, y)
     model = Sequential()
     model.add(Dense(3, input_dim=2, activation='tanh')) #sigmoid, relu
     model.add(Dense(3, input_dim = 3, activation='relu'))
     model.add(Dense(3, input_dim = 3, activation='sigmoid'))
     model.add(Dense(3, input_dim = 3, activation='tanh'))
     model.add(Dense(3, input_dim = 3, activation='relu'))
     model.add(Dense(1, activation='sigmoid'))
     # model.add(Dense(1,input_dim=2, activation='sigmoid'))
     sgd = SGD(lr=0.1)
     model.compile(loss='binary_crossentropy', optimizer='sgd')
     model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
     #print(model.predict_proba(X).reshape(4*n))
     # evaluate the model
     scores_3five = model.evaluate(X, y)
     scores3 = [scores_3one, scores_3two, scores_3three, scores_3four, scores_3five]
Epoch 1/400
160/160 [=========== ] - Os 2ms/step - loss: 0.6955
Epoch 2/400
Epoch 3/400
Epoch 4/400
Epoch 5/400
160/160 [============== ] - Os 461us/step - loss: 0.6946
Epoch 6/400
Epoch 7/400
Epoch 8/400
Epoch 9/400
Epoch 10/400
Epoch 11/400
```

```
160/160 [============== ] - Os 481us/step - loss: 0.6938
Epoch 12/400
160/160 [============= ] - Os 468us/step - loss: 0.6937
Epoch 13/400
Epoch 14/400
Epoch 15/400
Epoch 16/400
Epoch 17/400
Epoch 18/400
Epoch 19/400
160/160 [============= ] - Os 447us/step - loss: 0.6930
Epoch 20/400
160/160 [============= ] - Os 464us/step - loss: 0.6929
Epoch 21/400
160/160 [============= ] - Os 478us/step - loss: 0.6929
Epoch 22/400
Epoch 23/400
Epoch 24/400
160/160 [============== ] - Os 441us/step - loss: 0.6924
Epoch 25/400
160/160 [============== ] - Os 474us/step - loss: 0.6923
Epoch 26/400
Epoch 27/400
Epoch 28/400
160/160 [============= ] - Os 496us/step - loss: 0.6920
Epoch 29/400
160/160 [============= ] - Os 476us/step - loss: 0.6920
Epoch 30/400
Epoch 31/400
160/160 [============== ] - Os 501us/step - loss: 0.6916
Epoch 32/400
160/160 [============= ] - 0s 501us/step - loss: 0.6914
Epoch 33/400
160/160 [============= ] - 0s 486us/step - loss: 0.6913
Epoch 34/400
160/160 [============== ] - Os 500us/step - loss: 0.6911
Epoch 35/400
```

160/160 [=======]	_	0s	481us/step	_	loss:	0.6908
Epoch 36/400			_			
160/160 [======]	-	0s	494us/step	-	loss:	0.6907
Epoch 37/400						
160/160 [=======]	-	0s	469us/step	-	loss:	0.6902
Epoch 38/400						
160/160 [=======]	-	0s	455us/step	-	loss:	0.6900
Epoch 39/400						
160/160 [====================================	-	0s	452us/step	-	loss:	0.6901
Epoch 40/400		_			_	
160/160 [====================================	-	0s	459us/step	_	loss:	0.6895
Epoch 41/400		^	100 /		-	0 0001
160/160 [====================================	-	0s	466us/step	_	loss:	0.6894
Epoch 42/400		^	450 / .		-	0 0000
160/160 [====================================	_	US	452us/step	_	loss:	0.6892
Epoch 43/400		0 -	470/		7	0 6000
160/160 [===========] Epoch 44/400	_	US	470us/step	_	loss:	0.6890
160/160 [====================================		٥٩	162:: a / a + a n		1	0 6006
Epoch 45/400	_	US	463us/step	_	loss:	0.0000
160/160 [====================================	_	٥٥	155ug /g+op		1000.	n 6000
Epoch 46/400		US	455us/step		TOSS.	0.0002
160/160 [====================================	_	Λe	180us/sten	_	loggi	0 6870
Epoch 47/400		US	400us/scep		TOSS.	0.0013
160/160 [====================================	_	٥q	468119/sten	_	1099.	0 6875
Epoch 48/400		0B	400us/scep		1055.	0.0070
160/160 [====================================	_	٥q	467119/sten	_	1099.	0 6872
Epoch 49/400		V.D	101 ab, 500p		TODD.	0.0012
160/160 [====================================	_	0s	453us/step	_	loss:	0.6866
Epoch 50/400			recus, seep			
160/160 [====================================	_	0s	457us/step	_	loss:	0.6861
Epoch 51/400			, 1			
160/160 [====================================	_	0s	455us/step	_	loss:	0.6857
Epoch 52/400			•			
160/160 [====================================	_	0s	456us/step	_	loss:	0.6853
Epoch 53/400			-			
160/160 [====================================	_	0s	460us/step	-	loss:	0.6847
Epoch 54/400			_			
160/160 [=======]	-	0s	506us/step	-	loss:	0.6842
Epoch 55/400						
160/160 [=======]	-	0s	474us/step	-	loss:	0.6833
Epoch 56/400						
160/160 [============]	-	0s	438us/step	-	loss:	0.6826
Epoch 57/400						
160/160 [=======]	-	0s	452us/step	-	loss:	0.6820
Epoch 58/400						
160/160 [====================================	-	0s	457us/step	-	loss:	0.6813
Epoch 59/400						

```
160/160 [============== ] - Os 456us/step - loss: 0.6804
Epoch 60/400
160/160 [============] - Os 487us/step - loss: 0.6796
Epoch 61/400
160/160 [============= ] - 0s 483us/step - loss: 0.6788
Epoch 62/400
160/160 [============= ] - Os 479us/step - loss: 0.6780
Epoch 63/400
160/160 [============= ] - Os 496us/step - loss: 0.6771
Epoch 64/400
160/160 [============= ] - Os 483us/step - loss: 0.6758
Epoch 65/400
Epoch 66/400
160/160 [============= ] - Os 463us/step - loss: 0.6735
Epoch 67/400
Epoch 68/400
160/160 [============ ] - Os 463us/step - loss: 0.6713
Epoch 69/400
Epoch 70/400
160/160 [============= ] - Os 460us/step - loss: 0.6685
Epoch 71/400
160/160 [============= ] - Os 445us/step - loss: 0.6670
Epoch 72/400
160/160 [============== ] - Os 472us/step - loss: 0.6653
Epoch 73/400
Epoch 74/400
Epoch 75/400
Epoch 76/400
160/160 [============= ] - Os 449us/step - loss: 0.6586
Epoch 77/400
Epoch 78/400
160/160 [=============== ] - Os 447us/step - loss: 0.6542
Epoch 79/400
160/160 [============== ] - Os 472us/step - loss: 0.6526
Epoch 80/400
160/160 [============== ] - Os 457us/step - loss: 0.6505
Epoch 81/400
160/160 [============= ] - Os 457us/step - loss: 0.6482
Epoch 82/400
160/160 [============== ] - Os 471us/step - loss: 0.6460
Epoch 83/400
```

```
Epoch 84/400
160/160 [============] - Os 440us/step - loss: 0.6409
Epoch 85/400
160/160 [============= ] - 0s 439us/step - loss: 0.6383
Epoch 86/400
160/160 [============= ] - Os 446us/step - loss: 0.6357
Epoch 87/400
160/160 [============= ] - Os 437us/step - loss: 0.6329
Epoch 88/400
160/160 [============] - Os 471us/step - loss: 0.6302
Epoch 89/400
Epoch 90/400
160/160 [============= ] - Os 466us/step - loss: 0.6246
Epoch 91/400
160/160 [============= ] - Os 468us/step - loss: 0.6210
Epoch 92/400
160/160 [============= ] - Os 466us/step - loss: 0.6181
Epoch 93/400
160/160 [=============== ] - Os 455us/step - loss: 0.6149
Epoch 94/400
160/160 [============= ] - Os 448us/step - loss: 0.6115
Epoch 95/400
Epoch 96/400
160/160 [============== ] - Os 429us/step - loss: 0.6043
Epoch 97/400
160/160 [============== ] - Os 436us/step - loss: 0.6008
Epoch 98/400
160/160 [============== ] - Os 456us/step - loss: 0.5974
Epoch 99/400
Epoch 100/400
Epoch 101/400
160/160 [============= ] - Os 447us/step - loss: 0.5854
Epoch 102/400
160/160 [============== ] - Os 448us/step - loss: 0.5813
Epoch 103/400
160/160 [============== ] - Os 450us/step - loss: 0.5775
Epoch 104/400
160/160 [============= ] - Os 449us/step - loss: 0.5732
Epoch 105/400
160/160 [============= ] - Os 444us/step - loss: 0.5688
Epoch 106/400
160/160 [============== ] - Os 445us/step - loss: 0.5643
Epoch 107/400
```

160/160 [=======]	-	0s	439us/step	_	loss:	0.5598
Epoch 108/400						
160/160 [=======]	-	0s	446us/step	-	loss:	0.5553
Epoch 109/400						
160/160 [======]	-	0s	450us/step	-	loss:	0.5503
Epoch 110/400		_			_	
160/160 [====================================	-	0s	452us/step	-	loss:	0.5458
Epoch 111/400		^	400 / .		-	0 5406
160/160 [====================================	-	US	439us/step	_	loss:	0.5406
Epoch 112/400 160/160 [=======]		٥٥	101a /a+an		1.000.	0 5260
Epoch 113/400		US	424us/step		1088.	0.5502
160/160 [========]	_	۸e	42111g/gten	_	loggi	0 5307
Epoch 114/400		OB	421us/5cep		1055.	0.0007
160/160 [=======]	_	0s	429us/sten	_	loss:	0.5253
Epoch 115/400		0.2	120 dz, 200p			0.0200
160/160 [========]	_	0s	447us/step	_	loss:	0.5204
Epoch 116/400			. 1			
160/160 [====================================	-	0s	446us/step	_	loss:	0.5153
Epoch 117/400			-			
160/160 [=======]	-	0s	436us/step	-	loss:	0.5098
Epoch 118/400						
160/160 [=======]	-	0s	443us/step	-	loss:	0.5045
Epoch 119/400						
160/160 [======]	-	0s	451us/step	-	loss:	0.4992
Epoch 120/400						
160/160 [======]	-	0s	439us/step	-	loss:	0.4936
Epoch 121/400		_			_	
160/160 [====================================	-	0s	444us/step	-	loss:	0.4880
Epoch 122/400		^	445 / .		-	0 4005
160/160 [=======]	-	US	445us/step	_	loss:	0.4825
Epoch 123/400		٥٥	100mg /gt on		1.000.	0 4770
160/160 [=======] Epoch 124/400	_	US	422us/step	_	TOSS:	0.4//2
160/160 [=======]	_	۸a	/3111g/gton	_	loggi	0 /713
Epoch 125/400		OS	401us/scep		TOSS.	0.4/13
160/160 [=======]	_	0s	42111s/sten	_	loss	0 4659
Epoch 126/400		ŮĎ.	12145, 500p		TODD.	0.1000
160/160 [=======]	_	0s	435us/step	_	loss:	0.4600
Epoch 127/400			1			
160/160 [==========]	-	0s	444us/step	_	loss:	0.4544
Epoch 128/400			-			
160/160 [====================================	-	0s	453us/step	_	loss:	0.4488
Epoch 129/400			_			
160/160 [=======]	-	0s	447us/step	-	loss:	0.4435
Epoch 130/400						
160/160 [=======]	-	0s	450us/step	-	loss:	0.4377
Epoch 131/400						

160/160 [====================================
Epoch 132/400
160/160 [====================================
Epoch 133/400
160/160 [====================================
Epoch 134/400
160/160 [====================================
Epoch 135/400
160/160 [============] - Os 446us/step - loss: 0.4103 Epoch 136/400
160/160 [====================================
Epoch 137/400
160/160 [====================================
Epoch 138/400
160/160 [====================================
Epoch 139/400
160/160 [====================================
Epoch 140/400
160/160 [====================================
Epoch 141/400
160/160 [====================================
Epoch 142/400
160/160 [====================================
Epoch 143/400
160/160 [=======] - Os 445us/step - loss: 0.3699
Epoch 144/400
160/160 [====================================
Epoch 145/400 160/160 [====================================
Epoch 146/400
160/160 [====================================
Epoch 147/400
160/160 [====================================
Epoch 148/400
160/160 [====================================
Epoch 149/400
160/160 [====================================
Epoch 150/400
160/160 [====================================
Epoch 151/400
160/160 [====================================
Epoch 152/400
160/160 [====================================
Epoch 153/400
160/160 [====================================
Epoch 154/400 160/160 [====================================
Epoch 155/400
1pool 100/100

160/160 [=======]	_	0s	436us/step	_	loss:	0.3202
Epoch 156/400			_			
160/160 [=======]	-	0s	452us/step	-	loss:	0.3167
Epoch 157/400						
160/160 [=======]	-	0s	449us/step	-	loss:	0.3133
Epoch 158/400		_			_	
160/160 [====================================	-	0s	461us/step	-	loss:	0.3099
Epoch 159/400		0 -	456/		7	0 2000
160/160 [===========] Epoch 160/400	_	US	456us/step	_	loss:	0.3066
160/160 [====================================	_	Λα	151ug/gton	_	loggi	0 3030
Epoch 161/400		OS	451us/scep		TOSS.	0.3039
160/160 [====================================	_	0s	443us/step	_	loss:	0.3007
Epoch 162/400		V.D	rious, scop		TODD.	0.0001
160/160 [====================================	_	0s	452us/step	_	loss:	0.2981
Epoch 163/400			1			
160/160 [====================================	_	0s	437us/step	_	loss:	0.2953
Epoch 164/400			_			
160/160 [=======]	-	0s	450us/step	_	loss:	0.2922
Epoch 165/400						
160/160 [===========]	-	0s	448us/step	-	loss:	0.2899
Epoch 166/400						
160/160 [=======]	-	0s	453us/step	-	loss:	0.2875
Epoch 167/400			_			
160/160 [====================================	-	0s	450us/step	-	loss:	0.2848
Epoch 168/400		•	4.45		_	
160/160 [====================================	-	0s	44bus/step	_	loss:	0.2825
Epoch 169/400		0 -	1111		7	0 0707
160/160 [====================================	_	US	444us/step	_	loss:	0.2797
Epoch 170/400 160/160 [====================================	_	Λe	113112/sten	_	loggi	0 2770
Epoch 171/400		US	440us/scep		TOSS.	0.2113
160/160 [====================================	_	0s	445us/step	_	loss:	0.2755
Epoch 172/400			110 dz, 200p			0.2.00
160/160 [====================================	_	0s	438us/step	_	loss:	0.2734
Epoch 173/400			•			
160/160 [====================================	-	0s	442us/step	_	loss:	0.2711
Epoch 174/400						
160/160 [======]	-	0s	457us/step	-	loss:	0.2690
Epoch 175/400						
160/160 [=======]	-	0s	440us/step	-	loss:	0.2671
Epoch 176/400						
160/160 [====================================	-	0s	451us/step	-	loss:	0.2652
Epoch 177/400		^	450 / .		,	0.0000
160/160 [====================================	-	υs	453us/step	_	loss:	0.2633
Epoch 178/400 160/160 [====================================		0~	151ng/s+s		1695	0 0614
	_	US	404us/step	_	TOSS:	0.2014
Epoch 179/400						

160/160 [====================================	2597
Epoch 180/400	
160/160 [====================================	2579
Epoch 181/400	
160/160 [====================================	2561
Epoch 182/400	
160/160 [====================================	2543
Epoch 183/400	2500
160/160 [====================================	2529
Epoch 184/400 160/160 [====================================	)E1/
Epoch 185/400	1014
160/160 [====================================	2501
Epoch 186/400	1001
160/160 [====================================	2487
Epoch 187/400	
160/160 [====================================	2472
Epoch 188/400	
160/160 [====================================	2455
Epoch 189/400	
160/160 [====================================	2441
Epoch 190/400	
160/160 [====================================	2426
Epoch 191/400	
160/160 [====================================	2416
Epoch 192/400	2402
160/160 [====================================	2403
160/160 [====================================	2301
Epoch 194/400	1001
160/160 [====================================	2376
Epoch 195/400	
160/160 [====================================	2365
Epoch 196/400	
160/160 [====================================	2356
Epoch 197/400	
160/160 [====================================	2345
Epoch 198/400	
160/160 [====================================	2332
Epoch 199/400	
160/160 [====================================	2323
Epoch 200/400	2044
160/160 [====================================	2311
Epoch 201/400 160/160 [====================================	റാവ
Epoch 202/400	1 <b>2</b> 33
160/160 [====================================	2287
Epoch 203/400	-201
1poon 200, 100	

```
Epoch 204/400
Epoch 205/400
160/160 [============= ] - 0s 421us/step - loss: 0.2263
Epoch 206/400
160/160 [============= ] - Os 435us/step - loss: 0.2254
Epoch 207/400
160/160 [============== ] - Os 442us/step - loss: 0.2242
Epoch 208/400
Epoch 209/400
Epoch 210/400
160/160 [============= ] - Os 495us/step - loss: 0.2213
Epoch 211/400
160/160 [============= ] - Os 437us/step - loss: 0.2209
Epoch 212/400
160/160 [============= ] - Os 432us/step - loss: 0.2201
Epoch 213/400
160/160 [============== ] - Os 417us/step - loss: 0.2191
Epoch 214/400
160/160 [============== ] - Os 413us/step - loss: 0.2187
Epoch 215/400
160/160 [============ ] - Os 416us/step - loss: 0.2175
Epoch 216/400
160/160 [============== ] - Os 439us/step - loss: 0.2169
Epoch 217/400
160/160 [============== ] - Os 445us/step - loss: 0.2162
Epoch 218/400
Epoch 219/400
160/160 [============= ] - Os 444us/step - loss: 0.2145
Epoch 220/400
160/160 [============= ] - Os 443us/step - loss: 0.2140
Epoch 221/400
160/160 [============= ] - Os 448us/step - loss: 0.2132
Epoch 222/400
Epoch 223/400
160/160 [============== ] - Os 452us/step - loss: 0.2119
Epoch 224/400
Epoch 225/400
Epoch 226/400
160/160 [============== ] - Os 442us/step - loss: 0.2100
Epoch 227/400
```

```
Epoch 228/400
160/160 [============= ] - Os 445us/step - loss: 0.2089
Epoch 229/400
160/160 [============= ] - 0s 443us/step - loss: 0.2083
Epoch 230/400
160/160 [============= ] - Os 441us/step - loss: 0.2075
Epoch 231/400
160/160 [============= ] - Os 443us/step - loss: 0.2070
Epoch 232/400
Epoch 233/400
Epoch 234/400
Epoch 235/400
Epoch 236/400
160/160 [============ ] - Os 434us/step - loss: 0.2048
Epoch 237/400
Epoch 238/400
160/160 [============= ] - 0s 430us/step - loss: 0.2032
Epoch 239/400
Epoch 240/400
Epoch 241/400
Epoch 242/400
Epoch 243/400
Epoch 244/400
160/160 [============= ] - 0s 427us/step - loss: 0.2005
Epoch 245/400
Epoch 246/400
160/160 [============== ] - Os 446us/step - loss: 0.1995
Epoch 247/400
Epoch 248/400
160/160 [============= ] - Os 452us/step - loss: 0.1990
Epoch 249/400
160/160 [============= ] - Os 447us/step - loss: 0.1984
Epoch 250/400
160/160 [============== ] - Os 437us/step - loss: 0.1980
Epoch 251/400
```

160/160 [======] -	- (	0s	450us/step	_	loss:	0.1974
Epoch 252/400						
160/160 [=======] -	- (	0s	442us/step	_	loss:	0.1974
Epoch 253/400						
160/160 [======] -	- (	0s	445us/step	-	loss:	0.1970
Epoch 254/400						
160/160 [======] -	- (	0s	444us/step	-	loss:	0.1963
Epoch 255/400						
160/160 [======] -	- (	0s	447us/step	-	loss:	0.1959
Epoch 256/400						
160/160 [======] -	- (	0ຣ	453us/step	-	loss:	0.1955
Epoch 257/400			_			
160/160 [======] -	- (	0s	449us/step	-	loss:	0.1951
Epoch 258/400			_			
160/160 [=======] -	- (	0s	461us/step	-	loss:	0.1946
Epoch 259/400		_			_	
160/160 [=======] -	- (	0s	437us/step	-	loss:	0.1949
Epoch 260/400		_			_	
160/160 [========] -	- (	0s	443us/step	-	loss:	0.1944
Epoch 261/400		_	110 /		_	
160/160 [====================================	- (	0s	449us/step	_	loss:	0.1935
Epoch 262/400	,	^	454 / .		-	0 4004
160/160 [====================================	- (	US	454us/step	_	loss:	0.1931
Epoch 263/400 160/160 [=======] -	,	O	420		1	0 1000
	- (	US	432us/step	_	loss:	0.1928
Epoch 264/400 160/160 [======] -	,	O	102 /		1	0 1007
	- (	US	423us/step	_	loss:	0.1927
Epoch 265/400 160/160 [====================================	_ (	<b>Λ</b> α	120ug /g+op	_	1000.	0 1024
Epoch 266/400	- (	US	43ous/step		1088.	0.1924
160/160 [=======] -	_ (	۸۵	128115/stan	_	loggi	0 1010
Epoch 267/400	`	OS	420us/scep		TUBB.	0.1313
160/160 [====================================	- (	Λs	42211s/sten	_	loss	0 1916
Epoch 268/400	`	Ü	122db/ 500p		TODD.	0.1010
160/160 [====================================	- (	0s	42411s/step	_	loss:	0.1914
Epoch 269/400		0.0	12 145, 5 cop		1000.	0.1011
160/160 [====================================	- (	0s	419us/step	_	loss:	0.1913
Epoch 270/400			, <sub>F</sub>			
160/160 [====================================	- (	0s	448us/step	_	loss:	0.1909
Epoch 271/400			. 1			
160/160 [=======] -	- (	0s	448us/step	_	loss:	0.1906
Epoch 272/400			-			
160/160 [=======] -	- (	0s	434us/step	_	loss:	0.1902
Epoch 273/400			-			
160/160 [=======] -	- (	0s	445us/step	-	loss:	0.1901
Epoch 274/400			_			
160/160 [======] -	- (	0s	443us/step	-	loss:	0.1896
Epoch 275/400						

160/160 [======] - (	Os 4	434us/step	- lo	ss:	0.1895
Epoch 276/400					
160/160 [======] - (	Os (	444us/step	- lo	ss:	0.1891
Epoch 277/400					
160/160 [=======] - (	0s	454us/step	- lo	ss:	0.1889
Epoch 278/400	•	440 / .	_		
160/160 [=========] - (	Os 4	442us/step	- 10	ss:	0.1883
Epoch 279/400 160/160 [====================================	Λ-	120/	٦.		0 1000
Epoch 280/400	US '	43ous/step	- 10	oss:	0.1882
160/160 [=======] - (	۸a .	AAAug/gton	- 10		0 1877
Epoch 281/400	05	444us/scep	10		0.1077
160/160 [=======] - (	0s 4	452us/step	- 10	ss:	0.1876
Epoch 282/400	Ů.	102d2, 200p			0.10.0
160/160 [=======] - (	Os 4	444us/step	- lo	ss:	0.1874
Epoch 283/400					
160/160 [=======] - (	Os 4	445us/step	- lo	ss:	0.1868
Epoch 284/400		_			
160/160 [=======] - (	Os 4	434us/step	- lo	ss:	0.1868
Epoch 285/400					
160/160 [======] - (	Os 4	448us/step	- lo	ss:	0.1867
Epoch 286/400					
160/160 [======] - (	0s	448us/step	- lo	ss:	0.1864
Epoch 287/400					
160/160 [======] - (	0s	432us/step	- lo	ss:	0.1863
Epoch 288/400	_		_		
160/160 [=======] - (	Os 4	441us/step	- 10	ss:	0.1860
Epoch 289/400	Λ-	445/	٦.		0 1050
160/160 [=======] - (	US	445us/step	- 10	ss:	0.1856
Epoch 290/400 160/160 [======] - (	Og.	151ug/gton	_ 10		0 1957
Epoch 291/400	05.	401us/scep	10	, 66,	0.1007
160/160 [=======] - (	0s 4	440us/sten	- 10	323	0.1850
Epoch 292/400	Ů.	11042, 2007		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.1000
160/160 [======] - (	Os 4	452us/step	- lo	ss:	0.1849
Epoch 293/400		, <u>-</u> -			
160/160 [======] - (	Os 4	445us/step	- lo	ss:	0.1848
Epoch 294/400		•			
160/160 [=======] - (	Os 4	442us/step	- lo	ss:	0.1842
Epoch 295/400					
160/160 [======] - (	Os 4	433us/step	- lo	ss:	0.1843
Epoch 296/400					
160/160 [======] - (	Os (	446us/step	- lo	ss:	0.1841
Epoch 297/400					
160/160 [=======] - (	0s	439us/step	- lo	ss:	0.1837
Epoch 298/400	•	400 '	_		
160/160 [=======] - (	Us	438us/step	- lo	ss:	0.1840
Epoch 299/400					

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Epoch 300/400
Epoch 301/400
Epoch 302/400
160/160 [============= ] - Os 439us/step - loss: 0.1828
Epoch 303/400
160/160 [============= ] - Os 448us/step - loss: 0.1824
Epoch 304/400
160/160 [============= ] - Os 442us/step - loss: 0.1823
Epoch 305/400
Epoch 306/400
160/160 [============= ] - Os 444us/step - loss: 0.1820
Epoch 307/400
160/160 [============== ] - Os 446us/step - loss: 0.1816
Epoch 308/400
160/160 [============ ] - Os 439us/step - loss: 0.1814
Epoch 309/400
160/160 [=============== ] - Os 433us/step - loss: 0.1813
Epoch 310/400
Epoch 311/400
Epoch 312/400
160/160 [============== ] - Os 439us/step - loss: 0.1809
Epoch 313/400
160/160 [============== ] - Os 440us/step - loss: 0.1806
Epoch 314/400
160/160 [============== ] - Os 454us/step - loss: 0.1804
Epoch 315/400
160/160 [============= ] - Os 449us/step - loss: 0.1803
Epoch 316/400
160/160 [============= ] - Os 443us/step - loss: 0.1801
Epoch 317/400
Epoch 318/400
160/160 [============== ] - Os 451us/step - loss: 0.1798
Epoch 319/400
160/160 [============== ] - Os 441us/step - loss: 0.1797
Epoch 320/400
Epoch 321/400
160/160 [============= ] - Os 420us/step - loss: 0.1790
Epoch 322/400
160/160 [============== ] - Os 436us/step - loss: 0.1789
Epoch 323/400
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Epoch 324/400
160/160 [============ ] - Os 443us/step - loss: 0.1786
Epoch 325/400
160/160 [============= ] - 0s 436us/step - loss: 0.1788
Epoch 326/400
160/160 [============= ] - 0s 442us/step - loss: 0.1784
Epoch 327/400
160/160 [============= ] - Os 457us/step - loss: 0.1779
Epoch 328/400
160/160 [============ ] - Os 441us/step - loss: 0.1781
Epoch 329/400
Epoch 330/400
160/160 [============= ] - Os 449us/step - loss: 0.1779
Epoch 331/400
160/160 [============= ] - Os 442us/step - loss: 0.1776
Epoch 332/400
160/160 [============ ] - Os 445us/step - loss: 0.1775
Epoch 333/400
160/160 [============== ] - Os 448us/step - loss: 0.1774
Epoch 334/400
160/160 [============= ] - Os 434us/step - loss: 0.1772
Epoch 335/400
160/160 [============= ] - Os 439us/step - loss: 0.1768
Epoch 336/400
160/160 [============== ] - Os 441us/step - loss: 0.1770
Epoch 337/400
Epoch 338/400
Epoch 339/400
160/160 [============= ] - Os 434us/step - loss: 0.1762
Epoch 340/400
160/160 [============= ] - Os 432us/step - loss: 0.1765
Epoch 341/400
160/160 [============= ] - Os 450us/step - loss: 0.1763
Epoch 342/400
160/160 [============== ] - Os 432us/step - loss: 0.1760
Epoch 343/400
160/160 [============== ] - Os 425us/step - loss: 0.1761
Epoch 344/400
160/160 [============== ] - Os 436us/step - loss: 0.1760
Epoch 345/400
160/160 [============= ] - Os 443us/step - loss: 0.1757
Epoch 346/400
160/160 [============== ] - Os 443us/step - loss: 0.1755
Epoch 347/400
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Epoch 348/400
160/160 [============= ] - Os 439us/step - loss: 0.1759
Epoch 349/400
160/160 [============= ] - Os 440us/step - loss: 0.1753
Epoch 350/400
160/160 [============= ] - 0s 437us/step - loss: 0.1754
Epoch 351/400
160/160 [============== ] - Os 449us/step - loss: 0.1751
Epoch 352/400
Epoch 353/400
Epoch 354/400
160/160 [============= ] - Os 434us/step - loss: 0.1744
Epoch 355/400
160/160 [============= ] - Os 439us/step - loss: 0.1743
Epoch 356/400
160/160 [============ ] - Os 436us/step - loss: 0.1744
Epoch 357/400
160/160 [=============== ] - Os 439us/step - loss: 0.1742
Epoch 358/400
Epoch 359/400
160/160 [============= ] - Os 451us/step - loss: 0.1738
Epoch 360/400
160/160 [============== ] - Os 454us/step - loss: 0.1739
Epoch 361/400
160/160 [============== ] - Os 434us/step - loss: 0.1738
Epoch 362/400
160/160 [============== ] - Os 436us/step - loss: 0.1733
Epoch 363/400
Epoch 364/400
160/160 [============= ] - Os 442us/step - loss: 0.1735
Epoch 365/400
160/160 [============= ] - Os 442us/step - loss: 0.1733
Epoch 366/400
160/160 [============== ] - Os 467us/step - loss: 0.1732
Epoch 367/400
160/160 [============== ] - Os 450us/step - loss: 0.1733
Epoch 368/400
Epoch 369/400
160/160 [============= ] - Os 448us/step - loss: 0.1728
Epoch 370/400
160/160 [============== ] - Os 442us/step - loss: 0.1728
Epoch 371/400
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Epoch 372/400
Epoch 373/400
160/160 [============= ] - Os 447us/step - loss: 0.1718
Epoch 374/400
160/160 [============= ] - 0s 446us/step - loss: 0.1723
Epoch 375/400
160/160 [============= ] - 0s 433us/step - loss: 0.1723
Epoch 376/400
160/160 [============= ] - Os 430us/step - loss: 0.1718
Epoch 377/400
Epoch 378/400
160/160 [============= ] - Os 440us/step - loss: 0.1719
Epoch 379/400
160/160 [============= ] - Os 447us/step - loss: 0.1719
Epoch 380/400
160/160 [============= ] - Os 433us/step - loss: 0.1717
Epoch 381/400
160/160 [=============== ] - Os 450us/step - loss: 0.1717
Epoch 382/400
160/160 [============ ] - Os 437us/step - loss: 0.1715
Epoch 383/400
160/160 [============ ] - Os 431us/step - loss: 0.1716
Epoch 384/400
160/160 [============== ] - Os 441us/step - loss: 0.1713
Epoch 385/400
160/160 [============== ] - Os 428us/step - loss: 0.1712
Epoch 386/400
160/160 [=============== ] - Os 432us/step - loss: 0.1710
Epoch 387/400
160/160 [============= ] - Os 439us/step - loss: 0.1709
Epoch 388/400
160/160 [============= ] - Os 447us/step - loss: 0.1711
Epoch 389/400
Epoch 390/400
160/160 [============== ] - Os 432us/step - loss: 0.1708
Epoch 391/400
160/160 [============== ] - Os 438us/step - loss: 0.1707
Epoch 392/400
160/160 [============= ] - Os 440us/step - loss: 0.1708
Epoch 393/400
160/160 [============= ] - Os 444us/step - loss: 0.1707
Epoch 394/400
160/160 [============== ] - Os 435us/step - loss: 0.1705
Epoch 395/400
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Epoch 396/400
160/160 [============= ] - Os 452us/step - loss: 0.1705
Epoch 397/400
160/160 [============== ] - Os 445us/step - loss: 0.1698
Epoch 398/400
160/160 [============= ] - Os 438us/step - loss: 0.1699
Epoch 399/400
160/160 [============= ] - Os 445us/step - loss: 0.1700
Epoch 400/400
160/160 [========= ] - Os 571us/step
Epoch 1/400
Epoch 2/400
160/160 [=============== ] - Os 496us/step - loss: 0.7052
Epoch 3/400
160/160 [=========== ] - Os 475us/step - loss: 0.7002
Epoch 4/400
160/160 [============= ] - Os 497us/step - loss: 0.6963
Epoch 5/400
Epoch 6/400
160/160 [============== ] - Os 478us/step - loss: 0.6880
Epoch 7/400
160/160 [============= ] - 0s 496us/step - loss: 0.6849
Epoch 8/400
160/160 [============= ] - Os 487us/step - loss: 0.6819
Epoch 9/400
160/160 [============= ] - Os 487us/step - loss: 0.6788
Epoch 10/400
160/160 [============== ] - Os 479us/step - loss: 0.6753
Epoch 11/400
160/160 [============] - Os 497us/step - loss: 0.6720
Epoch 12/400
Epoch 13/400
160/160 [=============== ] - Os 483us/step - loss: 0.6658
Epoch 14/400
Epoch 15/400
160/160 [=========== ] - Os 488us/step - loss: 0.6596
Epoch 16/400
160/160 [============== ] - Os 493us/step - loss: 0.6562
Epoch 17/400
160/160 [=========== ] - Os 487us/step - loss: 0.6534
Epoch 18/400
160/160 [============= ] - Os 493us/step - loss: 0.6499
```

Fnoch 10/400
Epoch 19/400 160/160 [====================================
Epoch 20/400
160/160 [====================================
Epoch 21/400
160/160 [====================================
<del>-</del>
Epoch 22/400
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Epoch 23/400
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Epoch 24/400
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Epoch 25/400
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Epoch 26/400
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Epoch 27/400
160/160 [====================================
Epoch 28/400
160/160 [====================================
Epoch 29/400
160/160 [============= ] - Os 485us/step - loss: 0.6146
Epoch 30/400
160/160 [====================================
Epoch 31/400
160/160 [============] - Os 491us/step - loss: 0.6083
Epoch 32/400
160/160 [============] - Os 476us/step - loss: 0.6054
Epoch 33/400
160/160 [============] - Os 490us/step - loss: 0.6026
Epoch 34/400
160/160 [===========] - Os 479us/step - loss: 0.5995
Epoch 35/400
160/160 [====================================
Epoch 36/400
160/160 [=============] - Os 484us/step - loss: 0.5940
Epoch 37/400
160/160 [====================================
Epoch 38/400
160/160 [====================================
Epoch 39/400
160/160 [====================================
Epoch 40/400
160/160 [====================================
Epoch 41/400
160/160 [====================================
Epoch 42/400
160/160 [====================================

Epoch 43/400	
160/160 [====================================	5732
Epoch 44/400	
160/160 [====================================	5700
Epoch 45/400	
160/160 [====================================	5667
Epoch 46/400	
160/160 [====================================	5634
Epoch 47/400	
160/160 [====================================	5590
Epoch 48/400	
160/160 [====================================	5553
Epoch 49/400	
160/160 [====================================	5503
Epoch 50/400	
160/160 [====================================	5460
Epoch 51/400	
160/160 [====================================	5407
Epoch 52/400	
160/160 [====================================	360
Epoch 53/400	
160/160 [====================================	5298
Epoch 54/400	
160/160 [====================================	5233
Epoch 55/400	
160/160 [====================================	5162
Epoch 56/400	
160/160 [====================================	5104
Epoch 57/400	
160/160 [============ ] - Os 497us/step - loss: 0.5	5028
Epoch 58/400	
160/160 [============= ] - Os 479us/step - loss: 0.4	1958
Epoch 59/400	
160/160 [====================================	1869
Epoch 60/400	
160/160 [============= ] - Os 483us/step - loss: 0.4	1784
Epoch 61/400	
160/160 [====================================	1687
Epoch 62/400	
160/160 [====================================	1616
Epoch 63/400	
160/160 [====================================	1527
Epoch 64/400	
160/160 [====================================	1443
Epoch 65/400	
160/160 [====================================	1346
Epoch 66/400	
160/160 [====================================	1257

Enoch 67/400						
Epoch 67/400 160/160 [====================================	_	٥٥	10Eug /g+on	_	1000.	0 /165
Epoch 68/400		US	405us/step		1088.	0.4105
160/160 [====================================		٥-	101/		1	0 4005
	_	US	491us/step	_	TOSS:	0.4005
Epoch 69/400 160/160 [====================================		٥-	F00/		1	0 4006
	_	US	508us/step	_	loss:	0.4006
Epoch 70/400		Λ-	407/		<b>7</b>	0.2001
160/160 [====================================	_	US	49/us/step	_	loss:	0.3921
Epoch 71/400 160/160 [====================================		٥-	100/		1	0 2027
	_	US	488us/step	_	loss:	0.3837
Epoch 72/400		^	404 / 1		7	0 0776
160/160 [====================================	_	US	491us/step	_	loss:	0.3776
Epoch 73/400		^	404 / .		-	0 0005
160/160 [====================================	-	0s	494us/step	-	loss:	0.3695
Epoch 74/400		_	500 / .		_	
160/160 [====================================	-	0s	508us/step	-	loss:	0.3619
Epoch 75/400		_	100 / .		_	0 0554
160/160 [====================================	-	0s	493us/step	-	loss:	0.3554
Epoch 76/400						
160/160 [=======]	-	0s	491us/step	-	loss:	0.3492
Epoch 77/400						
160/160 [=======]	-	0s	490us/step	-	loss:	0.3424
Epoch 78/400						
160/160 [======]	-	0s	487us/step	-	loss:	0.3367
Epoch 79/400						
160/160 [========]	-	0s	483us/step	-	loss:	0.3288
Epoch 80/400						
160/160 [========]	-	0s	486us/step	-	loss:	0.3268
Epoch 81/400						
160/160 [========]	-	0s	497us/step	-	loss:	0.3195
Epoch 82/400						
160/160 [=========]	-	0s	481us/step	-	loss:	0.3126
Epoch 83/400						
160/160 [===========]	-	0s	491us/step	-	loss:	0.3107
Epoch 84/400						
160/160 [===========]	-	0s	459us/step	-	loss:	0.3045
Epoch 85/400						
160/160 [========]	-	0s	499us/step	-	loss:	0.2996
Epoch 86/400						
160/160 [=======]	-	0s	476us/step	-	loss:	0.2930
Epoch 87/400						
160/160 [========]	-	0s	484us/step	-	loss:	0.2897
Epoch 88/400						
160/160 [====================================	-	0s	496us/step	-	loss:	0.2848
Epoch 89/400			_			
160/160 [====================================	_	0s	488us/step	_	loss:	0.2795
Epoch 90/400			-			
160/160 [=======]	-	0s	485us/step	-	loss:	0.2752

Epoch 91/400						
160/160 [====================================	_	0s	480us/step	_	loss:	0.2708
Epoch 92/400			•			
160/160 [====================================	_	0s	494us/step	_	loss:	0.2664
Epoch 93/400			-			
160/160 [====================================	_	0s	488us/step	-	loss:	0.2624
Epoch 94/400			-			
160/160 [====================================	_	0s	509us/step	_	loss:	0.2578
Epoch 95/400			_			
160/160 [=======]	-	0s	472us/step	-	loss:	0.2536
Epoch 96/400						
160/160 [=======]	-	0s	485us/step	-	loss:	0.2495
Epoch 97/400						
160/160 [=======]	-	0s	470us/step	-	loss:	0.2446
Epoch 98/400						
160/160 [=======]	-	0s	486us/step	-	loss:	0.2418
Epoch 99/400						
160/160 [=======]	-	0s	488us/step	-	loss:	0.2365
Epoch 100/400						
160/160 [=======]	-	0s	495us/step	-	loss:	0.2326
Epoch 101/400						
160/160 [=======]	-	0s	507us/step	-	loss:	0.2284
Epoch 102/400						
160/160 [=======]	-	0s	493us/step	-	loss:	0.2238
Epoch 103/400						
160/160 [=======]	-	0s	502us/step	-	loss:	0.2211
Epoch 104/400						
160/160 [======]	-	0s	499us/step	-	loss:	0.2165
Epoch 105/400						
160/160 [====================================	-	0s	507us/step	-	loss:	0.2123
Epoch 106/400						
160/160 [=======]	-	0s	507us/step	-	loss:	0.2095
Epoch 107/400						
160/160 [=======]	-	0s	512us/step	-	loss:	0.2066
Epoch 108/400						
160/160 [=======]	-	0s	496us/step	-	loss:	0.2028
Epoch 109/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.1988
Epoch 110/400						
160/160 [=======]	-	0s	509us/step	-	loss:	0.1955
Epoch 111/400						
160/160 [=======]	-	0s	503us/step	-	loss:	0.1918
Epoch 112/400						
160/160 [=======]	-	0s	489us/step	-	loss:	0.1889
Epoch 113/400						
160/160 [====================================	-	0s	502us/step	-	loss:	0.1857
Epoch 114/400		_			_	
160/160 [====================================	-	0s	488us/step	-	loss:	0.1826

Epoch 115/400
160/160 [====================================
Epoch 116/400
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Epoch 117/400
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Epoch 137/400
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Epoch 138/400
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Epoch 139/400	
160/160 [====================================	0
Epoch 140/400	
160/160 [====================================	3
Epoch 141/400	
160/160 [====================================	9
Epoch 142/400	
160/160 [====================================	2
Epoch 143/400	
160/160 [============= ] - Os 487us/step - loss: 0.123	5
Epoch 144/400	
160/160 [====================================	4
Epoch 145/400	
160/160 [============= ] - Os 481us/step - loss: 0.120	4
Epoch 146/400	
160/160 [============= ] - Os 473us/step - loss: 0.119	3
Epoch 147/400	
160/160 [============= ] - Os 488us/step - loss: 0.118	6
Epoch 148/400	
160/160 [============= ] - Os 492us/step - loss: 0.116	5
Epoch 149/400	
160/160 [============= ] - Os 495us/step - loss: 0.114	8
Epoch 150/400	
160/160 [============= ] - Os 483us/step - loss: 0.114	8
Epoch 151/400	
160/160 [============= ] - Os 494us/step - loss: 0.113	2
Epoch 152/400	
160/160 [====================================	3
Epoch 153/400	
160/160 [====================================	3
Epoch 154/400	
160/160 [============ ] - Os 491us/step - loss: 0.109	7
Epoch 155/400	
160/160 [============= ] - Os 481us/step - loss: 0.108	8
Epoch 156/400	
160/160 [============ ] - Os 490us/step - loss: 0.107	4
Epoch 157/400	
160/160 [====================================	8
Epoch 158/400	
160/160 [====================================	6
Epoch 159/400	
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Epoch 161/400	
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Epoch 162/400	_
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Epoch 163/400
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Epoch 164/400
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Epoch 165/400
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Epoch 166/400
160/160 [============] - Os 499us/step - loss: 0.0975
Epoch 167/400
160/160 [====================================
Epoch 168/400
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Epoch 186/400
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Epoch 187/400			
160/160 [======] -	0s	488us/step - loss: 0	0.0821
Epoch 188/400			
160/160 [======] -	0s	490us/step - loss: 0	0.0810
Epoch 189/400			
160/160 [======] -	0s	492us/step - loss: 0	0.0805
Epoch 190/400			
160/160 [======] -	0s	489us/step - loss: (	0.0807
Epoch 191/400			
160/160 [======] -	0s	485us/step - loss: (	0.0791
Epoch 192/400			
160/160 [======] -	0s	487us/step - loss: (	0.0785
Epoch 193/400			
160/160 [======] -	0s	484us/step - loss: (	0.0786
Epoch 194/400			
160/160 [======] -	0s	492us/step - loss: (	0.0781
Epoch 195/400			
160/160 [======] -	0s	492us/step - loss: (	0.0776
Epoch 196/400			
160/160 [======] -	0s	483us/step - loss: (	0.0769
Epoch 197/400			
160/160 [======] -	0s	478us/step - loss: (	0.0758
Epoch 198/400			
160/160 [======] -	0s	474us/step - loss: (	0.0763
Epoch 199/400			
160/160 [======] -	0s	483us/step - loss: 0	0.0762
Epoch 200/400			
160/160 [======] -	0s	489us/step - loss: (	0.0746
Epoch 201/400			
160/160 [======] -	0s	478us/step - loss: (	0.0746
Epoch 202/400			
160/160 [======] -	· 0s	483us/step - loss: (	0.0742
Epoch 203/400			
160/160 [======] -	0s	492us/step - loss: (	0.0735
Epoch 204/400			
160/160 [======] -	0s	487us/step - loss: (	0.0729
Epoch 205/400			
160/160 [======] -	0s	471us/step - loss: (	0.0728
Epoch 206/400			
160/160 [======] -	0s	454us/step - loss: (	0.0720
Epoch 207/400			
160/160 [======] -	0s	461us/step - loss: 0	0.0718
Epoch 208/400			
160/160 [====================================	0s	500us/step - loss: (	0.0712
Epoch 209/400			
160/160 [======] -	· 0s	499us/step - loss: 0	0.0705
Epoch 210/400			
160/160 [======] -	· 0s	477us/step - loss: (	0.0701

Frank 044 /400						
Epoch 211/400		Λ-	100/		7	0.0004
160/160 [====================================	_	US	489us/step	_	loss:	0.0694
Epoch 212/400		^	100 / .		-	0 0004
160/160 [====================================	-	Us	488us/step	_	loss:	0.0694
Epoch 213/400		_			_	
160/160 [====================================	-	0s	487us/step	-	loss:	0.0689
Epoch 214/400		_			_	
160/160 [======]	-	0s	480us/step	-	loss:	0.0688
Epoch 215/400			_			
160/160 [======]	-	0s	500us/step	-	loss:	0.0682
Epoch 216/400						
160/160 [======]	-	0s	486us/step	-	loss:	0.0673
Epoch 217/400						
160/160 [======]	-	0s	478us/step	-	loss:	0.0674
Epoch 218/400						
160/160 [=======]	-	0s	494us/step	-	loss:	0.0669
Epoch 219/400						
160/160 [=======]	-	0s	491us/step	-	loss:	0.0666
Epoch 220/400						
160/160 [=========]	-	0s	488us/step	-	loss:	0.0663
Epoch 221/400						
160/160 [====================================	-	0s	495us/step	_	loss:	0.0654
Epoch 222/400			_			
160/160 [====================================	_	0s	488us/step	_	loss:	0.0655
Epoch 223/400			-			
160/160 [====================================	_	0s	481us/step	_	loss:	0.0650
Epoch 224/400						
160/160 [====================================	_	0s	482us/step	_	loss:	0.0648
Epoch 225/400						
160/160 [====================================	_	0s	484us/step	_	loss:	0.0644
Epoch 226/400			. 1			
160/160 [====================================	_	0s	481us/step	_	loss:	0.0638
Epoch 227/400			<u>.</u>			
160/160 [=========]	_	0s	476us/step	_	loss:	0.0637
Epoch 228/400						
160/160 [====================================	_	0s	499us/step	_	loss:	0.0634
Epoch 229/400						
160/160 [=======]	_	0s	483us/step	_	loss:	0.0628
Epoch 230/400		0.0	100 a.z., 200 p			
160/160 [=======]	_	0s	490us/step	_	loss:	0.0623
Epoch 231/400		Ů.	100 db, 200p		TODE.	0.0020
160/160 [=======]	_	٥q	485115/sten	_	1099.	0 0621
Epoch 232/400		OB	100db/ btcp		TOBB.	0.0021
160/160 [=========]	_	۸a	497119/9+22	_	1088.	0 0621
Epoch 233/400		OB	10200/ 50ep		TODD.	0.0021
160/160 [========]	_	Λe	490118/8+02	_	loggi	0 0615
Epoch 234/400	_	υS	Toolo, steb	_	TODD.	0.0010
160/160 [========]	_	٥a	187118 / 8+ 65	_	loggi	0 0612
100/100 []	_	US	±01 us/steb	-	TOSS:	0.0013

Epoch 235/400	
160/160 [====================================	0.0613
Epoch 236/400	
160/160 [====================================	0.0607
Epoch 237/400	
160/160 [====================================	0.0605
Epoch 238/400	
160/160 [====================================	0.0598
Epoch 239/400	
160/160 [============ ] - Os 485us/step - loss:	0.0599
Epoch 240/400	
160/160 [============ ] - Os 482us/step - loss:	0.0598
Epoch 241/400	
160/160 [============ ] - Os 483us/step - loss:	0.0592
Epoch 242/400	
160/160 [============ ] - Os 498us/step - loss:	0.0589
Epoch 243/400	
160/160 [============ ] - Os 516us/step - loss:	0.0587
Epoch 244/400	
160/160 [============ ] - Os 500us/step - loss:	0.0583
Epoch 245/400	
160/160 [=========== ] - Os 484us/step - loss:	0.0584
Epoch 246/400	
160/160 [=========== ] - Os 497us/step - loss:	0.0580
Epoch 247/400	
160/160 [============ ] - Os 499us/step - loss:	0.0577
Epoch 248/400	
160/160 [============ ] - 0s 483us/step - loss:	0.0574
Epoch 249/400	
160/160 [=========== ] - Os 496us/step - loss:	0.0572
Epoch 250/400	
160/160 [======] - Os 485us/step - loss:	0.0568
Epoch 251/400	
160/160 [======] - 0s 482us/step - loss:	0.0565
Epoch 252/400	
160/160 [=======] - Os 486us/step - loss:	0.0563
Epoch 253/400	
160/160 [======] - Os 479us/step - loss:	0.0561
Epoch 254/400	
160/160 [============ ] - Os 493us/step - loss:	0.0557
Epoch 255/400	
160/160 [============ ] - Os 484us/step - loss:	0.0557
Epoch 256/400	
160/160 [============ ] - Os 478us/step - loss:	0.0552
Epoch 257/400	
160/160 [====================================	0.0548
Epoch 258/400	
160/160 [============ ] - Os 491us/step - loss:	U.0551

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Epoch 259/400
160/160 [====================================
Epoch 260/400
160/160 [====================================
Epoch 261/400
160/160 [====================================
Epoch 262/400
160/160 [====================================
Epoch 263/400
160/160 [============] - Os 498us/step - loss: 0.0535
Epoch 264/400
160/160 [====================================
Epoch 265/400
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Epoch 266/400
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Epoch 281/400
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Epoch 282/400
160/160 [============= ] - Os 490us/step - loss: 0.0499

Epoch 283/400	
160/160 [====================================	<del>)</del> 7
Epoch 284/400	
160/160 [====================================	<del>)</del> 2
Epoch 285/400	
160/160 [====================================	<b>)</b> 4
Epoch 286/400	
160/160 [====================================	92
Epoch 287/400	
160/160 [====================================	90
Epoch 288/400	
160/160 [====================================	39
Epoch 289/400	
160/160 [====================================	39
Epoch 290/400	
160/160 [====================================	31
Epoch 291/400	
160/160 [====================================	34
Epoch 292/400	
160/160 [====================================	33
Epoch 293/400	
160/160 [====================================	30
Epoch 294/400	
160/160 [====================================	31
Epoch 295/400	
160/160 [====================================	78
Epoch 296/400	
160/160 [====================================	′5
Epoch 297/400	
160/160 [====================================	′5
Epoch 298/400	
160/160 [====================================	′5
Epoch 299/400	
160/160 [====================================	′3
Epoch 300/400	
160/160 [====================================	′2
Epoch 301/400	
160/160 [====================================	74
Epoch 302/400	
160/160 [====================================	70
Epoch 303/400	
160/160 [====================================	36
Epoch 304/400	
160/160 [====================================	35
Epoch 305/400	
160/160 [====================================	3
Epoch 306/400	
160/160 [====================================	53

Epoch 307/400		
160/160 [====================================	oss: 0.044	48
Epoch 308/400		
160/160 [====================================	oss: 0.045	58
Epoch 309/400		
160/160 [====================================	oss: 0.045	57
Epoch 310/400		
160/160 [====================================	oss: 0.045	57
Epoch 311/400		
160/160 [============ ] - 0s 480us/step - lo	oss: 0.045	53
Epoch 312/400		
160/160 [============ ] - 0s 463us/step - lo	oss: 0.045	55
Epoch 313/400		
160/160 [============ ] - 0s 483us/step - lo	oss: 0.044	48
Epoch 314/400		
160/160 [============ ] - 0s 481us/step - lo	oss: 0.044	47
Epoch 315/400		
160/160 [============ ] - 0s 488us/step - lo	oss: 0.044	47
Epoch 316/400		
160/160 [============ ] - 0s 501us/step - lo	oss: 0.044	49
Epoch 317/400		
160/160 [============ ] - Os 497us/step - lo	ss: 0.044	49
Epoch 318/400		
160/160 [============ ] - 0s 487us/step - lo	oss: 0.044	47
Epoch 319/400		
160/160 [============ ] - Os 484us/step - lo	oss: 0.044	46
Epoch 320/400		
160/160 [============ ] - Os 466us/step - lo	oss: 0.044	43
Epoch 321/400		
160/160 [============= ] - Os 456us/step - lo	oss: 0.044	43
Epoch 322/400		
160/160 [============ ] - Os 472us/step - lo	ss: 0.044	42
Epoch 323/400		
160/160 [====================================	oss: 0.044	40
Epoch 324/400		
160/160 [============ ] - Os 488us/step - lo	ss: 0.043	38
Epoch 325/400		
160/160 [============ ] - Os 507us/step - lo	ss: 0.043	37
Epoch 326/400		
160/160 [====================================	ss: 0.043	37
Epoch 327/400		
160/160 [====================================	ss: 0.043	35
Epoch 328/400		
160/160 [====================================	ss: 0.043	34
Epoch 329/400		
160/160 [====================================	ss: 0.043	36
Epoch 330/400		
160/160 [====================================	ss: 0.043	33

Epoch 331/400	
160/160 [====================================	0
Epoch 332/400	
160/160 [====================================	0
Epoch 333/400	
160/160 [====================================	2
Epoch 334/400	
160/160 [====================================	7
Epoch 335/400	
160/160 [============= ] - Os 493us/step - loss: 0.0424	4
Epoch 336/400	
160/160 [============= ] - Os 502us/step - loss: 0.042	6
Epoch 337/400	
160/160 [============= ] - Os 479us/step - loss: 0.042	6
Epoch 338/400	
160/160 [====================================	4
Epoch 339/400	
160/160 [============= ] - Os 488us/step - loss: 0.042	1
Epoch 340/400	
160/160 [============= ] - Os 495us/step - loss: 0.042	2
Epoch 341/400	
160/160 [============= ] - Os 498us/step - loss: 0.041	9
Epoch 342/400	
160/160 [============= ] - Os 492us/step - loss: 0.042	1
Epoch 343/400	
160/160 [============= ] - Os 506us/step - loss: 0.041	9
Epoch 344/400	
160/160 [====================================	9
Epoch 345/400	
160/160 [====================================	7
Epoch 346/400	
160/160 [====================================	8
Epoch 347/400	
160/160 [====================================	4
Epoch 348/400	
160/160 [====================================	4
Epoch 349/400	
160/160 [====================================	3
Epoch 350/400	
160/160 [====================================	2
Epoch 351/400	
160/160 [====================================	0
Epoch 352/400	
160/160 [====================================	2
Epoch 353/400	_
160/160 [====================================	9
Epoch 354/400	_
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Epoch 355/400
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Epoch 367/400
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Epoch 368/400
160/160 [====================================
Epoch 369/400
160/160 [============ ] - Os 503us/step - loss: 0.0397
Epoch 370/400
160/160 [=========== ] - Os 472us/step - loss: 0.0396
Epoch 371/400
160/160 [============ ] - Os 478us/step - loss: 0.0396
Epoch 372/400
160/160 [============] - Os 487us/step - loss: 0.0395
Epoch 373/400
160/160 [============] - Os 507us/step - loss: 0.0387
Epoch 374/400
160/160 [=======] - Os 474us/step - loss: 0.0394
Epoch 375/400
160/160 [=======] - Os 478us/step - loss: 0.0393
Epoch 376/400
160/160 [====================================
Epoch 377/400
160/160 [====================================
Epoch 378/400
160/160 [=========== - 0s 565us/step - loss: 0.0391

Enab 270/400						
Epoch 379/400 160/160 [====================================		٥٥	EE1wa/aton	٦.		0 0300
	_	US	551us/step	- т	.088:	0.0300
Epoch 380/400		^	407 / .	,		0.000
160/160 [====================================	_	US	49/us/step	- 1	.oss:	0.0386
Epoch 381/400		_		_		
160/160 [====================================	-	0s	490us/step	- I	.oss:	0.0389
Epoch 382/400						
160/160 [=======]	-	0s	514us/step	- 1	.oss:	0.0389
Epoch 383/400						
160/160 [======]	-	0s	483us/step	- 1	.oss:	0.0388
Epoch 384/400						
160/160 [=======]	-	0s	491us/step	- 1	oss:	0.0385
Epoch 385/400						
160/160 [=======]	-	0s	511us/step	- 1	.oss:	0.0382
Epoch 386/400						
160/160 [=======]	-	0s	490us/step	- 1	oss:	0.0384
Epoch 387/400						
160/160 [=======]	-	0s	489us/step	- 1	oss:	0.0384
Epoch 388/400						
160/160 [====================================	_	0s	477us/step	- 1	oss:	0.0382
Epoch 389/400			-			
160/160 [====================================	_	0s	492us/step	- 1	oss:	0.0381
Epoch 390/400						
160/160 [====================================	_	0s	481us/step	- 1	oss:	0.0370
Epoch 391/400						
160/160 [====================================	_	0s	481us/step	- 1	oss:	0.0384
Epoch 392/400			, <u>-</u> -			
160/160 [====================================	_	0s	501us/step	- 1	088:	0.0380
Epoch 393/400		0.0	oulus, such	_		
160/160 [========]	_	0s	485us/sten	- 1	088.	0 0381
Epoch 394/400		Ů.	10000, 200p	_	.000.	0.0001
160/160 [========]	_	0s	498us/sten	- 1	088.	0 0382
Epoch 395/400		ŮĎ.	roods, boop	_		0.0002
160/160 [====================================	_	۸e	48311g/gtan	_ 1	vaa.	0 0375
Epoch 396/400		OB	400db/ b cep		.000.	0.0070
160/160 [====================================	_	۸e	51/11g/gton	_ 1	000.	0 0375
Epoch 397/400		OS	orans/scep		.060.	0.0373
160/160 [====================================	_	Λα	167ug/gton	_ 1	000.	0 0378
Epoch 398/400		OS	407 ds/scep		.660.	0.0376
160/160 [====================================	_	٥٥	E02112 /2+02	_ 1	0001	0 0272
	_	US	503us/step	- т	.088:	0.0372
Epoch 399/400		^	400 / .	,		0 0074
160/160 [====================================	_	US	482us/step	- 1	.oss:	0.0374
Epoch 400/400		^	<b>504</b> / .	-		0 0075
160/160 [====================================				- T	.oss:	0.0375
160/160 [====================================	-	0s	/01us/step			
Epoch 1/400		_	- ,	_		
160/160 [====================================	-	0s	2ms/step -	los	s: 0.	6916
Epoch 2/400						

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Epoch 3/400
Epoch 4/400
Epoch 5/400
160/160 [============= ] - 0s 546us/step - loss: 0.6879
Epoch 6/400
160/160 [============= ] - 0s 522us/step - loss: 0.6868
Epoch 7/400
Epoch 8/400
Epoch 9/400
160/160 [============= ] - 0s 521us/step - loss: 0.6846
Epoch 10/400
Epoch 11/400
160/160 [============] - Os 554us/step - loss: 0.6833
Epoch 12/400
160/160 [============= ] - 0s 545us/step - loss: 0.6823
Epoch 13/400
Epoch 14/400
Epoch 15/400
160/160 [============== ] - Os 533us/step - loss: 0.6800
Epoch 16/400
160/160 [============== ] - Os 534us/step - loss: 0.6790
Epoch 17/400
Epoch 18/400
160/160 [============= ] - Os 542us/step - loss: 0.6772
Epoch 19/400
160/160 [============== ] - 0s 532us/step - loss: 0.6762
Epoch 20/400
160/160 [============= ] - Os 558us/step - loss: 0.6750
Epoch 21/400
160/160 [============== ] - Os 536us/step - loss: 0.6742
Epoch 22/400
Epoch 23/400
160/160 [=============== ] - Os 555us/step - loss: 0.6723
Epoch 24/400
Epoch 25/400
160/160 [============== ] - Os 537us/step - loss: 0.6700
Epoch 26/400
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Epoch 27/400
160/160 [============= ] - Os 513us/step - loss: 0.6675
Epoch 28/400
160/160 [============= ] - Os 538us/step - loss: 0.6663
Epoch 29/400
Epoch 30/400
160/160 [============= ] - Os 537us/step - loss: 0.6639
Epoch 31/400
Epoch 32/400
Epoch 33/400
160/160 [============= ] - 0s 521us/step - loss: 0.6598
Epoch 34/400
160/160 [============= ] - Os 544us/step - loss: 0.6583
Epoch 35/400
160/160 [=========== ] - Os 530us/step - loss: 0.6568
Epoch 36/400
Epoch 37/400
Epoch 38/400
Epoch 39/400
160/160 [============== ] - Os 567us/step - loss: 0.6504
Epoch 40/400
Epoch 41/400
160/160 [============== ] - Os 533us/step - loss: 0.6468
Epoch 42/400
160/160 [=========== ] - Os 512us/step - loss: 0.6450
Epoch 43/400
160/160 [============= ] - Os 516us/step - loss: 0.6426
Epoch 44/400
160/160 [============= ] - Os 520us/step - loss: 0.6409
Epoch 45/400
Epoch 46/400
Epoch 47/400
160/160 [============= ] - 0s 507us/step - loss: 0.6353
Epoch 48/400
160/160 [============= ] - 0s 542us/step - loss: 0.6333
Epoch 49/400
160/160 [============== ] - Os 538us/step - loss: 0.6309
Epoch 50/400
```

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Epoch 51/400
160/160 [=========== ] - Os 540us/step - loss: 0.6268
Epoch 52/400
160/160 [============= ] - 0s 529us/step - loss: 0.6249
Epoch 53/400
160/160 [============= ] - Os 515us/step - loss: 0.6227
Epoch 54/400
Epoch 55/400
160/160 [============ ] - Os 537us/step - loss: 0.6182
Epoch 56/400
Epoch 57/400
160/160 [============= ] - 0s 563us/step - loss: 0.6138
Epoch 58/400
160/160 [============= ] - Os 512us/step - loss: 0.6110
Epoch 59/400
160/160 [============= ] - Os 525us/step - loss: 0.6087
Epoch 60/400
Epoch 61/400
160/160 [============= ] - 0s 532us/step - loss: 0.6038
Epoch 62/400
160/160 [============= ] - 0s 538us/step - loss: 0.6012
Epoch 63/400
160/160 [============== ] - 0s 528us/step - loss: 0.5983
Epoch 64/400
160/160 [============== ] - Os 515us/step - loss: 0.5958
Epoch 65/400
160/160 [============== ] - Os 510us/step - loss: 0.5928
Epoch 66/400
Epoch 67/400
160/160 [============== ] - 0s 517us/step - loss: 0.5872
Epoch 68/400
160/160 [============= ] - 0s 526us/step - loss: 0.5845
Epoch 69/400
160/160 [============== ] - Os 541us/step - loss: 0.5810
Epoch 70/400
160/160 [============== ] - 0s 519us/step - loss: 0.5788
Epoch 71/400
160/160 [============== ] - 0s 529us/step - loss: 0.5752
Epoch 72/400
Epoch 73/400
160/160 [=============== ] - Os 529us/step - loss: 0.5695
Epoch 74/400
```

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160/160 [============== ] - Os 513us/step - loss: 0.5663
Epoch 75/400
160/160 [============= ] - Os 510us/step - loss: 0.5635
Epoch 76/400
160/160 [============= ] - 0s 519us/step - loss: 0.5603
Epoch 77/400
160/160 [============= ] - 0s 511us/step - loss: 0.5573
Epoch 78/400
160/160 [============= ] - 0s 519us/step - loss: 0.5544
Epoch 79/400
160/160 [============= ] - 0s 503us/step - loss: 0.5508
Epoch 80/400
Epoch 81/400
160/160 [============= ] - Os 524us/step - loss: 0.5446
Epoch 82/400
160/160 [============= ] - Os 510us/step - loss: 0.5419
Epoch 83/400
160/160 [============ ] - Os 501us/step - loss: 0.5388
Epoch 84/400
160/160 [=============== ] - Os 517us/step - loss: 0.5358
Epoch 85/400
160/160 [============= ] - 0s 578us/step - loss: 0.5328
Epoch 86/400
Epoch 87/400
Epoch 88/400
160/160 [============== ] - Os 536us/step - loss: 0.5244
Epoch 89/400
Epoch 90/400
160/160 [============= ] - Os 538us/step - loss: 0.5188
Epoch 91/400
160/160 [============= ] - Os 551us/step - loss: 0.5159
Epoch 92/400
160/160 [============= ] - 0s 536us/step - loss: 0.5134
Epoch 93/400
160/160 [============== ] - Os 545us/step - loss: 0.5104
Epoch 94/400
160/160 [============== ] - 0s 532us/step - loss: 0.5080
Epoch 95/400
160/160 [============= ] - 0s 527us/step - loss: 0.5062
Epoch 96/400
160/160 [============= ] - 0s 518us/step - loss: 0.5033
Epoch 97/400
160/160 [============== ] - Os 535us/step - loss: 0.5014
Epoch 98/400
```

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160/160 [============== ] - Os 541us/step - loss: 0.4993
Epoch 99/400
160/160 [============= ] - Os 560us/step - loss: 0.4969
Epoch 100/400
Epoch 101/400
160/160 [============= ] - Os 544us/step - loss: 0.4930
Epoch 102/400
160/160 [============= ] - Os 538us/step - loss: 0.4911
Epoch 103/400
Epoch 104/400
Epoch 105/400
160/160 [============= ] - Os 542us/step - loss: 0.4850
Epoch 106/400
160/160 [============= ] - 0s 538us/step - loss: 0.4833
Epoch 107/400
160/160 [============= ] - Os 541us/step - loss: 0.4811
Epoch 108/400
Epoch 109/400
Epoch 110/400
Epoch 111/400
Epoch 112/400
160/160 [============== ] - Os 529us/step - loss: 0.4734
Epoch 113/400
160/160 [============== ] - Os 542us/step - loss: 0.4719
Epoch 114/400
160/160 [============= ] - 0s 529us/step - loss: 0.4704
Epoch 115/400
160/160 [============= ] - Os 549us/step - loss: 0.4686
Epoch 116/400
160/160 [============= ] - 0s 547us/step - loss: 0.4672
Epoch 117/400
160/160 [============== ] - Os 533us/step - loss: 0.4663
Epoch 118/400
160/160 [============== ] - Os 543us/step - loss: 0.4647
Epoch 119/400
160/160 [============= ] - Os 538us/step - loss: 0.4638
Epoch 120/400
160/160 [============= ] - 0s 542us/step - loss: 0.4624
Epoch 121/400
160/160 [============== ] - Os 540us/step - loss: 0.4614
Epoch 122/400
```

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160/160 [============== ] - Os 532us/step - loss: 0.4598
Epoch 123/400
160/160 [============= ] - 0s 543us/step - loss: 0.4589
Epoch 124/400
160/160 [============= ] - 0s 549us/step - loss: 0.4574
Epoch 125/400
Epoch 126/400
160/160 [============= ] - Os 552us/step - loss: 0.4556
Epoch 127/400
160/160 [============= ] - Os 538us/step - loss: 0.4542
Epoch 128/400
Epoch 129/400
Epoch 130/400
160/160 [============= ] - 0s 505us/step - loss: 0.4513
Epoch 131/400
160/160 [============ ] - Os 525us/step - loss: 0.4504
Epoch 132/400
Epoch 133/400
Epoch 134/400
160/160 [============= ] - Os 573us/step - loss: 0.4475
Epoch 135/400
160/160 [============== ] - Os 531us/step - loss: 0.4463
Epoch 136/400
Epoch 137/400
Epoch 138/400
Epoch 139/400
160/160 [============= ] - Os 545us/step - loss: 0.4428
Epoch 140/400
160/160 [============= ] - 0s 568us/step - loss: 0.4423
Epoch 141/400
Epoch 142/400
160/160 [============== ] - Os 543us/step - loss: 0.4406
Epoch 143/400
160/160 [============= ] - Os 539us/step - loss: 0.4396
Epoch 144/400
Epoch 145/400
160/160 [============== ] - Os 539us/step - loss: 0.4384
Epoch 146/400
```

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Epoch 147/400
160/160 [=========== ] - Os 539us/step - loss: 0.4366
Epoch 148/400
160/160 [============= ] - 0s 537us/step - loss: 0.4366
Epoch 149/400
160/160 [============= ] - 0s 552us/step - loss: 0.4352
Epoch 150/400
160/160 [============= ] - Os 558us/step - loss: 0.4346
Epoch 151/400
160/160 [============= ] - Os 544us/step - loss: 0.4333
Epoch 152/400
Epoch 153/400
Epoch 154/400
160/160 [============= ] - 0s 537us/step - loss: 0.4323
Epoch 155/400
160/160 [============] - Os 535us/step - loss: 0.4312
Epoch 156/400
Epoch 157/400
Epoch 158/400
160/160 [============= ] - 0s 561us/step - loss: 0.4292
Epoch 159/400
Epoch 160/400
Epoch 161/400
Epoch 162/400
Epoch 163/400
Epoch 164/400
160/160 [============= ] - 0s 549us/step - loss: 0.4253
Epoch 165/400
160/160 [============== ] - Os 534us/step - loss: 0.4248
Epoch 166/400
160/160 [============== ] - Os 533us/step - loss: 0.4236
Epoch 167/400
Epoch 168/400
Epoch 169/400
160/160 [============== ] - Os 542us/step - loss: 0.4229
Epoch 170/400
```

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160/160 [============== ] - Os 546us/step - loss: 0.4216
Epoch 171/400
160/160 [============= ] - Os 524us/step - loss: 0.4215
Epoch 172/400
160/160 [============= ] - 0s 532us/step - loss: 0.4206
Epoch 173/400
160/160 [============= ] - 0s 531us/step - loss: 0.4202
Epoch 174/400
160/160 [============= ] - 0s 506us/step - loss: 0.4194
Epoch 175/400
160/160 [============= ] - 0s 526us/step - loss: 0.4182
Epoch 176/400
Epoch 177/400
Epoch 178/400
160/160 [============= ] - Os 535us/step - loss: 0.4170
Epoch 179/400
160/160 [============ ] - Os 543us/step - loss: 0.4163
Epoch 180/400
160/160 [=============== ] - Os 521us/step - loss: 0.4168
Epoch 181/400
160/160 [============= ] - 0s 532us/step - loss: 0.4154
Epoch 182/400
160/160 [============= ] - Os 500us/step - loss: 0.4152
Epoch 183/400
160/160 [============== ] - Os 529us/step - loss: 0.4144
Epoch 184/400
Epoch 185/400
160/160 [============== ] - Os 546us/step - loss: 0.4136
Epoch 186/400
160/160 [============= ] - 0s 528us/step - loss: 0.4134
Epoch 187/400
160/160 [============= ] - Os 543us/step - loss: 0.4117
Epoch 188/400
160/160 [============= ] - 0s 536us/step - loss: 0.4124
Epoch 189/400
160/160 [============== ] - Os 548us/step - loss: 0.4118
Epoch 190/400
160/160 [============== ] - Os 507us/step - loss: 0.4111
Epoch 191/400
Epoch 192/400
160/160 [============= ] - Os 536us/step - loss: 0.4106
Epoch 193/400
160/160 [============== ] - Os 533us/step - loss: 0.4100
Epoch 194/400
```

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Epoch 195/400
Epoch 196/400
160/160 [============= ] - 0s 523us/step - loss: 0.4090
Epoch 197/400
160/160 [============= ] - 0s 524us/step - loss: 0.4080
Epoch 198/400
160/160 [============= ] - 0s 523us/step - loss: 0.4083
Epoch 199/400
Epoch 200/400
Epoch 201/400
Epoch 202/400
Epoch 203/400
160/160 [=========== ] - Os 520us/step - loss: 0.4064
Epoch 204/400
Epoch 205/400
Epoch 206/400
Epoch 207/400
160/160 [============== ] - Os 510us/step - loss: 0.4052
Epoch 208/400
Epoch 209/400
Epoch 210/400
160/160 [============= ] - Os 542us/step - loss: 0.4040
Epoch 211/400
160/160 [============= ] - 0s 546us/step - loss: 0.4039
Epoch 212/400
160/160 [============= ] - 0s 536us/step - loss: 0.4036
Epoch 213/400
Epoch 214/400
Epoch 215/400
Epoch 216/400
Epoch 217/400
160/160 [============== ] - Os 539us/step - loss: 0.4022
Epoch 218/400
```

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160/160 [============== ] - Os 544us/step - loss: 0.4016
Epoch 219/400
Epoch 220/400
Epoch 221/400
160/160 [============= ] - Os 535us/step - loss: 0.4012
Epoch 222/400
160/160 [============= ] - 0s 556us/step - loss: 0.4008
Epoch 223/400
Epoch 224/400
Epoch 225/400
160/160 [============= ] - 0s 549us/step - loss: 0.4004
Epoch 226/400
160/160 [============= ] - Os 533us/step - loss: 0.4000
Epoch 227/400
160/160 [============= ] - Os 537us/step - loss: 0.3990
Epoch 228/400
Epoch 229/400
Epoch 230/400
Epoch 231/400
Epoch 232/400
Epoch 233/400
Epoch 234/400
160/160 [============ ] - Os 707us/step - loss: 0.3980
Epoch 235/400
160/160 [============= ] - Os 674us/step - loss: 0.3976
Epoch 236/400
Epoch 237/400
Epoch 238/400
160/160 [============== ] - Os 529us/step - loss: 0.3975
Epoch 239/400
160/160 [============= ] - 0s 633us/step - loss: 0.3973
Epoch 240/400
Epoch 241/400
160/160 [=============== ] - Os 695us/step - loss: 0.3967
Epoch 242/400
```

160/160 [======]	_	0s	640us/step	_	loss:	0.3962
Epoch 243/400						
160/160 [=======]	-	0s	630us/step	-	loss:	0.3965
Epoch 244/400						
160/160 [====================================	-	0s	641us/step	-	loss:	0.3961
Epoch 245/400		_			_	
160/160 [====================================	-	0s	618us/step	-	loss:	0.3958
Epoch 246/400		•	5.45		_	
160/160 [====================================	-	0s	547us/step	-	loss:	0.3957
Epoch 247/400		^	505 / .		-	0 0054
160/160 [====================================	_	Us	525us/step	_	loss:	0.3951
Epoch 248/400		^	E40 / .		-	0 0057
160/160 [====================================	_	Us	542us/step	_	loss:	0.3957
Epoch 249/400		^	F04 / .		-	0 0050
160/160 [====================================	-	US	534us/step	_	loss:	0.3950
Epoch 250/400 160/160 [====================================		0-	FF0 /		7	0 2040
	_	US	559us/step	_	loss:	0.3948
Epoch 251/400 160/160 [====================================		0-	F27 /		7	0 2040
	_	US	53/us/step	_	loss:	0.3949
Epoch 252/400 160/160 [====================================	_	٥٥	E2211g /g+op	_	1000.	0 2040
Epoch 253/400		US	555us/step		TOSS.	0.3949
160/160 [====================================	_	Λα	5/711g/gtop	_	loggi	0 3011
Epoch 254/400		05	547 us/scep		TOSS.	0.3344
160/160 [====================================	_	۸e	64011s/sten	_	loggi	0 3942
Epoch 255/400		US	040us/scep		TOSS.	0.0342
160/160 [====================================	_	Λe	615ug/gten	_	loggi	0 30/0
Epoch 256/400		V.S	olous/scep		TOSS.	0.0040
160/160 [====================================	_	٥q	634115/sten	_	1099.	0 3938
Epoch 257/400		OB	оочив, втер		TOBB.	0.0000
160/160 [====================================	_	0s	545us/step	_	loss:	0.3937
Epoch 258/400		Ü	o rous, stop		1000.	0.0001
160/160 [====================================	_	0s	550us/step	_	loss:	0.3933
Epoch 259/400			occus, scop			
160/160 [====================================	_	0s	548us/step	_	loss:	0.3937
Epoch 260/400						
160/160 [====================================	_	0s	555us/step	_	loss:	0.3934
Epoch 261/400			,			
160/160 [====================================	_	0s	536us/step	_	loss:	0.3926
Epoch 262/400			. 1			
160/160 [====================================	_	0s	538us/step	_	loss:	0.3927
Epoch 263/400						
160/160 [====================================	_	0s	542us/step	_	loss:	0.3929
Epoch 264/400			•			
160/160 [====================================	_	0s	513us/step	_	loss:	0.3927
Epoch 265/400			•			
160/160 [====================================	-	0s	566us/step	_	loss:	0.3922
Epoch 266/400						

160/160 [======]	_	0s	529us/step	_	loss:	0.3924
Epoch 267/400						
160/160 [======]	-	0s	540us/step	-	loss:	0.3923
Epoch 268/400						
160/160 [=======]	-	0s	525us/step	-	loss:	0.3918
Epoch 269/400						
160/160 [=========]	-	0s	539us/step	-	loss:	0.3910
Epoch 270/400						
160/160 [====================================	-	0s	538us/step	-	loss:	0.3924
Epoch 271/400						
160/160 [====================================	-	0s	537us/step	_	loss:	0.3915
Epoch 272/400			-			
160/160 [====================================	-	0s	527us/step	_	loss:	0.3914
Epoch 273/400			•			
160/160 [====================================	_	0s	531us/step	_	loss:	0.3910
Epoch 274/400						
160/160 [====================================	_	0s	539us/step	_	loss:	0.3905
Epoch 275/400			<u>.</u>			
160/160 [====================================	_	0s	528us/step	_	loss:	0.3909
Epoch 276/400						
160/160 [========]	_	0s	545us/step	_	loss:	0.3907
Epoch 277/400		Ü	o rous, stop		TODE.	0.0001
160/160 [====================================	_	0s	524us/sten	_	loss:	0.3903
Epoch 278/400		V.D	02 1db/ b00p		TODD.	0.0000
160/160 [====================================	_	0s	553us/sten	_	loss	0 3900
Epoch 279/400		OB	осоць, в сер		TOBB.	0.0000
160/160 [====================================	_	Λe	5/711g/gton	_	loggi	U 30U3
Epoch 280/400		V.S	O±1 us/ scep		1055.	0.0000
160/160 [====================================	_	۸e	535119/sten	_	loggi	0 3902
Epoch 281/400		V.S	ooous, step		TOSS.	0.0002
160/160 [====================================	_	Λe	530ug/gtan	_	loggi	0 3001
Epoch 282/400		US	Joous, step		TOSS.	0.5501
160/160 [====================================	_	Λe	52/11g/gten	_	loggi	0 3001
Epoch 283/400		US	024us/step		TOSS.	0.5501
160/160 [====================================	_	٥٥	E2211g /g+op		1000.	U 300E
Epoch 284/400		05	ooous/step		1055.	0.3035
160/160 [====================================	_	٥٥	E/1911g /g+op		1000.	0 2006
	_	US	54ous/step	_	TOSS:	0.3090
Epoch 285/400 160/160 [====================================		٥٩	E16ug/gton		1.000.	0 2004
	_	US	510us/step	_	TOSS:	0.3094
Epoch 286/400		٥-	E41/a+		7	0 2007
160/160 [====================================	_	US	541us/step	_	loss:	0.3007
Epoch 287/400		^	500 / 1		,	0 0000
160/160 [====================================	_	US	o∠ous/step	_	Toss:	U.3888
Epoch 288/400		^	E40/		7	0 2000
160/160 [====================================	-	US	542us/step	_	Toss:	0.3889
Epoch 289/400		^	500 / :		-	0 0000
160/160 [====================================	-	Us	523us/step	_	loss:	0.3886
Epoch 290/400						

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Epoch 291/400
Epoch 292/400
Epoch 293/400
Epoch 294/400
160/160 [============= ] - 0s 540us/step - loss: 0.3882
Epoch 295/400
Epoch 296/400
Epoch 297/400
Epoch 298/400
Epoch 299/400
160/160 [============= ] - Os 546us/step - loss: 0.3868
Epoch 300/400
Epoch 301/400
160/160 [============= ] - 0s 529us/step - loss: 0.3870
Epoch 302/400
Epoch 303/400
Epoch 304/400
Epoch 305/400
Epoch 306/400
Epoch 307/400
160/160 [============= ] - 0s 541us/step - loss: 0.3863
Epoch 308/400
160/160 [============= ] - Os 555us/step - loss: 0.3860
Epoch 309/400
Epoch 310/400
160/160 [============== ] - 0s 524us/step - loss: 0.3856
Epoch 311/400
Epoch 312/400
160/160 [============= ] - 0s 535us/step - loss: 0.3854
Epoch 313/400
Epoch 314/400
```

160/160 [======]	_	0s	545us/step	-	loss:	0.3853
Epoch 315/400						
160/160 [=======]	-	0s	524us/step	-	loss:	0.3850
Epoch 316/400						
160/160 [===========]	-	0s	543us/step	-	loss:	0.3852
Epoch 317/400		_	,		_	
160/160 [====================================	-	0s	bbbus/step	-	loss:	0.3847
Epoch 318/400		^	F04 / .		-	0 0046
160/160 [====================================	_	US	531us/step	_	loss:	0.3846
Epoch 319/400 160/160 [====================================		0-	E40		7	0 2040
Epoch 320/400	_	US	540us/step	_	loss:	0.3646
160/160 [====================================	_	٥٥	EEOug/aton	_	1000.	0 2016
Epoch 321/400		US	550us/step		TOSS.	0.3040
160/160 [====================================	_	Λe	550ug/gten	_	loggi	U 38/13
Epoch 322/400		US	JJZus/step		TOSS.	0.0040
160/160 [====================================	_	٥q	53711s/sten	_	1099.	0 3843
Epoch 323/400		V.D	001 427 2002		TODD.	0.0010
160/160 [====================================	_	0s	518us/sten	_	loss:	0.3840
Epoch 324/400		Ü	orous, scop		1000.	0.0010
160/160 [====================================	_	0s	525us/step	_	loss:	0.3837
Epoch 325/400			1			
160/160 [====================================	_	0s	517us/step	_	loss:	0.3837
Epoch 326/400						
160/160 [====================================	_	0s	554us/step	-	loss:	0.3837
Epoch 327/400			_			
160/160 [====================================	-	0s	553us/step	-	loss:	0.3834
Epoch 328/400						
160/160 [=======]	-	0s	558us/step	-	loss:	0.3831
Epoch 329/400						
160/160 [===========]	-	0s	540us/step	-	loss:	0.3830
Epoch 330/400						
160/160 [====================================	-	0s	519us/step	-	loss:	0.3834
Epoch 331/400						
160/160 [======]	-	0s	536us/step	-	loss:	0.3832
Epoch 332/400						
160/160 [===========]	-	0s	553us/step	-	loss:	0.3829
Epoch 333/400		_			_	
160/160 [====================================	-	0s	551us/step	-	loss:	0.3829
Epoch 334/400		^	500 / .		-	0 0000
160/160 [====================================	_	Us	532us/step	_	loss:	0.3826
Epoch 335/400		^	F.60. / .		-	0 0000
160/160 [====================================	_	US	563us/step	_	loss:	0.3822
Epoch 336/400		0~	E40112 /2+2-		1695	V 2003
160/160 [=======] Fpoch 337/400	_	US	040us/step	_	TOSS:	0.3823
Epoch 337/400 160/160 [====================================	_	Og	51111g /g+on	_	loggi	በ 3910
Epoch 338/400	_	υS	orrus/sceb	_	TOSS:	0.3019
просп 900/ <del>1</del> 00						

160/160 [=======]	_	0s	528us/step	_	loss:	0.3819
Epoch 339/400			_			
160/160 [======]	-	0s	533us/step	-	loss:	0.3814
Epoch 340/400						
160/160 [======]	-	0s	567us/step	-	loss:	0.3819
Epoch 341/400						
160/160 [====================================	-	0s	548us/step	-	loss:	0.3821
Epoch 342/400		ο-	E44/-+		7	0 2017
160/160 [====================================	_	US	541us/step	_	loss:	0.3817
Epoch 343/400 160/160 [====================================		٥٥	E/11:2/2+02		1000.	0 2012
Epoch 344/400		US	541us/step		TUSS.	0.3013
160/160 [====================================	_	۸e	539112/stan	_	loggi	0 3814
Epoch 345/400		OB	ooous, step		1055.	0.0014
160/160 [====================================	_	0s	534us/step	_	loss:	0.3804
Epoch 346/400			00 1u2, 200p			0.0001
160/160 [====================================	_	0s	545us/step	_	loss:	0.3806
Epoch 347/400			. 1			
160/160 [====================================	_	0s	529us/step	_	loss:	0.3811
Epoch 348/400			-			
160/160 [======]	-	0s	535us/step	-	loss:	0.3807
Epoch 349/400						
160/160 [======]	-	0s	525us/step	_	loss:	0.3807
Epoch 350/400						
160/160 [======]	-	0s	529us/step	-	loss:	0.3802
Epoch 351/400						
160/160 [=======]	-	0s	538us/step	-	loss:	0.3804
Epoch 352/400		_			_	
160/160 [====================================	-	0s	529us/step	-	loss:	0.3796
Epoch 353/400		^	F07 / .		,	0.0000
160/160 [====================================	_	Us	53/us/step	_	loss:	0.3800
Epoch 354/400 160/160 [====================================		٥٥	E2011a /aton		1000.	0 3000
Epoch 355/400	_	US	550us/step	_	TOSS:	0.3000
160/160 [====================================	_	۸۵	55711g/gton	_	loggi	0 3788
Epoch 356/400		OS	557 us/scep		TOSS.	0.3700
160/160 [====================================	_	0s	531us/sten	_	loss	0 3802
Epoch 357/400		Ü	colub, btop		TODD.	0.0002
160/160 [====================================	_	0s	552us/step	_	loss:	0.3793
Epoch 358/400						
160/160 [====================================	_	0s	519us/step	_	loss:	0.3787
Epoch 359/400			•			
160/160 [====================================	_	0s	540us/step	_	loss:	0.3791
Epoch 360/400			-			
160/160 [=======]	-	0s	542us/step	-	loss:	0.3800
Epoch 361/400						
160/160 [======]	-	0s	546us/step	-	loss:	0.3780
Epoch 362/400						

```
Epoch 363/400
160/160 [============] - Os 545us/step - loss: 0.3793
Epoch 364/400
160/160 [============= ] - 0s 529us/step - loss: 0.3788
Epoch 365/400
160/160 [============= ] - 0s 527us/step - loss: 0.3788
Epoch 366/400
160/160 [============= ] - 0s 536us/step - loss: 0.3784
Epoch 367/400
160/160 [============ ] - Os 527us/step - loss: 0.3782
Epoch 368/400
Epoch 369/400
160/160 [============= ] - 0s 538us/step - loss: 0.3788
Epoch 370/400
Epoch 371/400
160/160 [============= ] - Os 531us/step - loss: 0.3771
Epoch 372/400
Epoch 373/400
Epoch 374/400
Epoch 375/400
160/160 [============== ] - Os 537us/step - loss: 0.3780
Epoch 376/400
Epoch 377/400
Epoch 378/400
160/160 [============ ] - Os 554us/step - loss: 0.3781
Epoch 379/400
160/160 [============= ] - Os 537us/step - loss: 0.3775
Epoch 380/400
160/160 [============= ] - 0s 538us/step - loss: 0.3764
Epoch 381/400
Epoch 382/400
Epoch 383/400
160/160 [=============== ] - Os 536us/step - loss: 0.3759
Epoch 384/400
160/160 [============= ] - 0s 531us/step - loss: 0.3769
Epoch 385/400
160/160 [============== ] - Os 531us/step - loss: 0.3760
Epoch 386/400
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Epoch 387/400
Epoch 388/400
Epoch 389/400
160/160 [============= ] - 0s 533us/step - loss: 0.3763
Epoch 390/400
160/160 [============= ] - Os 539us/step - loss: 0.3755
Epoch 391/400
Epoch 392/400
Epoch 393/400
160/160 [============= ] - 0s 533us/step - loss: 0.3763
Epoch 394/400
160/160 [============= ] - Os 516us/step - loss: 0.3750
Epoch 395/400
160/160 [============= ] - Os 496us/step - loss: 0.3759
Epoch 396/400
160/160 [=============== ] - Os 500us/step - loss: 0.3756
Epoch 397/400
Epoch 398/400
Epoch 399/400
Epoch 400/400
160/160 [=========== ] - 0s 736us/step
Epoch 1/400
160/160 [============== ] - 0s 2ms/step - loss: 0.6957
Epoch 2/400
160/160 [============= ] - Os 575us/step - loss: 0.6927
Epoch 3/400
Epoch 4/400
160/160 [=============== ] - Os 563us/step - loss: 0.6908
Epoch 5/400
160/160 [============== ] - 0s 582us/step - loss: 0.6903
Epoch 6/400
Epoch 7/400
160/160 [============== ] - Os 589us/step - loss: 0.6888
Epoch 8/400
160/160 [=========== ] - Os 572us/step - loss: 0.6886
Epoch 9/400
160/160 [============= ] - 0s 572us/step - loss: 0.6887
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Epoch 58/400						
160/160 [====================================	_	0s	557us/step	_	loss:	0.4170
Epoch 59/400			•			
160/160 [====================================	_	0s	590us/step	_	loss:	0.3959
Epoch 60/400			-			
160/160 [====================================	_	0s	582us/step	-	loss:	0.3746
Epoch 61/400			-			
160/160 [====================================	_	0s	585us/step	-	loss:	0.3506
Epoch 62/400						
160/160 [=======]	-	0s	575us/step	-	loss:	0.3297
Epoch 63/400						
160/160 [=======]	-	0s	582us/step	-	loss:	0.3095
Epoch 64/400						
160/160 [=======]	-	0s	571us/step	-	loss:	0.2893
Epoch 65/400						
160/160 [=======]	-	0s	590us/step	-	loss:	0.2675
Epoch 66/400						
160/160 [=======]	-	0s	577us/step	-	loss:	0.2523
Epoch 67/400						
160/160 [=======]	-	0s	578us/step	-	loss:	0.2356
Epoch 68/400						
160/160 [=======]	-	0s	599us/step	-	loss:	0.2207
Epoch 69/400						
160/160 [=======]	-	0s	586us/step	-	loss:	0.2088
Epoch 70/400						
160/160 [=======]	-	0s	585us/step	-	loss:	0.1971
Epoch 71/400						
160/160 [======]	-	0s	588us/step	-	loss:	0.1880
Epoch 72/400						
160/160 [============]	-	0s	582us/step	-	loss:	0.1791
Epoch 73/400						
160/160 [=======]	-	0s	579us/step	-	loss:	0.1717
Epoch 74/400						
160/160 [=======]	-	0s	588us/step	-	loss:	0.1620
Epoch 75/400						
160/160 [=======]	-	0s	599us/step	-	loss:	0.1565
Epoch 76/400						
160/160 [=======]	-	0s	588us/step	-	loss:	0.1525
Epoch 77/400						
160/160 [=======]	-	0s	587us/step	-	loss:	0.1479
Epoch 78/400						
160/160 [=======]	-	0s	589us/step	-	loss:	0.1422
Epoch 79/400						
160/160 [=======]	-	0s	584us/step	-	loss:	0.1365
Epoch 80/400						
160/160 [====================================	-	0s	591us/step	-	loss:	0.1318
Epoch 81/400		_			_	
160/160 [====================================	-	0s	588us/step	-	loss:	0.1294

Epoch 82/400						
160/160 [====================================	_	0s	594us/step	-	loss:	0.1224
Epoch 83/400						
160/160 [=======]	-	0s	584us/step	-	loss:	0.1243
Epoch 84/400						
160/160 [======]	-	0s	585us/step	-	loss:	0.1170
Epoch 85/400						
160/160 [======]	-	0s	589us/step	-	loss:	0.1183
Epoch 86/400						
160/160 [=======]	-	0s	588us/step	-	loss:	0.1137
Epoch 87/400						
160/160 [=======]	-	0s	576us/step	-	loss:	0.1073
Epoch 88/400						
160/160 [=======]	-	0s	568us/step	-	loss:	0.1091
Epoch 89/400						
160/160 [=======]	-	0s	566us/step	-	loss:	0.1037
Epoch 90/400						
160/160 [=======]	-	0s	592us/step	-	loss:	0.1036
Epoch 91/400						
160/160 [========]	-	0s	588us/step	-	loss:	0.0970
Epoch 92/400						
160/160 [======]	-	0s	578us/step	-	loss:	0.0981
Epoch 93/400						
160/160 [=======]	-	0s	579us/step	-	loss:	0.0948
Epoch 94/400						
160/160 [=======]	-	0s	575us/step	-	loss:	0.0941
Epoch 95/400						
160/160 [======]	-	0s	584us/step	-	loss:	0.0905
Epoch 96/400						
160/160 [=======]	-	0s	577us/step	-	loss:	0.0911
Epoch 97/400						
160/160 [=======]	-	0s	591us/step	-	loss:	0.0857
Epoch 98/400						
160/160 [=======]	-	0s	577us/step	-	loss:	0.0869
Epoch 99/400						
160/160 [======]	-	0s	575us/step	-	loss:	0.0877
Epoch 100/400						
160/160 [======]	-	0s	587us/step	-	loss:	0.0838
Epoch 101/400						
160/160 [======]	-	0s	573us/step	-	loss:	0.0854
Epoch 102/400						
160/160 [======]	-	0s	583us/step	-	loss:	0.0808
Epoch 103/400						
160/160 [=======]	-	0s	589us/step	-	loss:	0.0813
Epoch 104/400						
160/160 [=======]	-	0s	584us/step	-	loss:	0.0771
Epoch 105/400						
160/160 [====================================	-	0s	584us/step	-	loss:	0.0777

Epoch 106/400						
160/160 [====================================	_	0s	595us/step	_	loss:	0.0776
Epoch 107/400						
160/160 [====================================	_	0s	590us/step	_	loss:	0.0773
Epoch 108/400			. 1			
160/160 [====================================	_	0s	587us/step	_	loss:	0.0705
Epoch 109/400			. 1			
160/160 [====================================	_	0s	583us/step	_	loss:	0.0723
Epoch 110/400			. 1			
160/160 [====================================	_	0s	591us/step	_	loss:	0.0706
Epoch 111/400			•			
160/160 [====================================	_	0s	551us/step	_	loss:	0.0710
Epoch 112/400			•			
160/160 [====================================	_	0s	585us/step	_	loss:	0.0681
Epoch 113/400			-			
160/160 [====================================	_	0s	591us/step	_	loss:	0.0726
Epoch 114/400			-			
160/160 [====================================	-	0s	575us/step	_	loss:	0.0651
Epoch 115/400			-			
160/160 [====================================	_	0s	608us/step	_	loss:	0.0697
Epoch 116/400			•			
160/160 [====================================	_	0s	578us/step	_	loss:	0.0637
Epoch 117/400			-			
160/160 [====================================	_	0s	588us/step	_	loss:	0.0730
Epoch 118/400			_			
160/160 [====================================	-	0s	596us/step	_	loss:	0.0555
Epoch 119/400			_			
160/160 [========]	-	0s	575us/step	_	loss:	0.0723
Epoch 120/400						
160/160 [=======]	-	0s	590us/step	_	loss:	0.0634
Epoch 121/400						
160/160 [=======]	-	0s	580us/step	-	loss:	0.0638
Epoch 122/400						
160/160 [=======]	-	0s	575us/step	-	loss:	0.0654
Epoch 123/400						
160/160 [=======]	-	0s	592us/step	-	loss:	0.0658
Epoch 124/400						
160/160 [=========]	-	0s	600us/step	-	loss:	0.0710
Epoch 125/400						
160/160 [=========]	-	0s	594us/step	-	loss:	0.0581
Epoch 126/400						
160/160 [=========]	-	0s	576us/step	-	loss:	0.0526
Epoch 127/400						
160/160 [=======]	-	0s	593us/step	-	loss:	0.0617
Epoch 128/400						
160/160 [=========]	-	0s	581us/step	-	loss:	0.0650
Epoch 129/400 160/160 [====================================					_	

Epoch 130/400						
160/160 [====================================	_	0s	592us/step	_	loss:	0.0674
Epoch 131/400			•			
160/160 [====================================	_	0s	576us/step	_	loss:	0.0612
Epoch 132/400			-			
160/160 [====================================	_	0s	570us/step	_	loss:	0.0581
Epoch 133/400			-			
160/160 [====================================	_	0s	595us/step	_	loss:	0.0648
Epoch 134/400			_			
160/160 [====================================	-	0s	577us/step	-	loss:	0.0533
Epoch 135/400						
160/160 [====================================	-	0s	586us/step	-	loss:	0.0572
Epoch 136/400			_			
160/160 [====================================	-	0s	577us/step	-	loss:	0.0570
Epoch 137/400			_			
160/160 [====================================	-	0s	571us/step	-	loss:	0.0570
Epoch 138/400			_			
160/160 [====================================	-	0s	584us/step	-	loss:	0.0484
Epoch 139/400			_			
160/160 [====================================	_	0s	581us/step	_	loss:	0.0577
Epoch 140/400			_			
160/160 [====================================	-	0s	583us/step	-	loss:	0.0635
Epoch 141/400			_			
160/160 [====================================	-	0s	582us/step	-	loss:	0.0648
Epoch 142/400			_			
160/160 [====================================	_	0s	564us/step	_	loss:	0.0580
Epoch 143/400			_			
160/160 [=======]	-	0s	569us/step	-	loss:	0.0568
Epoch 144/400						
160/160 [=======]	-	0s	566us/step	-	loss:	0.0624
Epoch 145/400						
160/160 [=======]	-	0s	572us/step	-	loss:	0.0545
Epoch 146/400						
160/160 [=======]	-	0s	560us/step	-	loss:	0.0581
Epoch 147/400						
160/160 [======]	-	0s	595us/step	-	loss:	0.0569
Epoch 148/400						
160/160 [=======]	-	0s	578us/step	-	loss:	0.0612
Epoch 149/400						
160/160 [=======]	-	0s	554us/step	-	loss:	0.0544
Epoch 150/400						
160/160 [=======]	-	0s	592us/step	-	loss:	0.0576
Epoch 151/400						
160/160 [=======]	-	0s	554us/step	-	loss:	0.0553
Epoch 152/400						
160/160 [======]	-	0s	586us/step	-	loss:	0.0505
Epoch 153/400						
160/160 [====================================	-	0s	577us/step	-	loss:	0.0590

Epoch 154/400	
160/160 [====================================	32
Epoch 155/400	
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Epoch 156/400	
160/160 [====================================	90
Epoch 157/400	
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160/160 [====================================	44
Epoch 159/400	
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Epoch 173/400	
160/160 [====================================	51
Epoch 174/400	
160/160 [====================================	30
Epoch 175/400	
160/160 [====================================	53
Epoch 176/400	
160/160 [====================================	52
Epoch 177/400	
160/160 [====================================	55

Epoch 178/400
160/160 [============] - Os 587us/step - loss: 0.0516
Epoch 179/400
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Epoch 185/400
160/160 [=======] - Os 592us/step - loss: 0.0362
Epoch 186/400
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Epoch 194/400
160/160 [=======] - Os 531us/step - loss: 0.0439
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Epoch 208/400
160/160 [============= ] - Os 558us/step - loss: 0.0493
Epoch 209/400
160/160 [============= ] - Os 593us/step - loss: 0.0474
Epoch 210/400
160/160 [====================================
Epoch 211/400
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Epoch 212/400
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Epoch 213/400
160/160 [============= ] - Os 580us/step - loss: 0.0459
Epoch 214/400
160/160 [============ ] - Os 584us/step - loss: 0.0409
Epoch 215/400
160/160 [============= ] - Os 590us/step - loss: 0.0552
Epoch 216/400
160/160 [============= ] - Os 585us/step - loss: 0.0411
Epoch 217/400
160/160 [============= ] - Os 588us/step - loss: 0.0512
Epoch 218/400
160/160 [============= ] - Os 580us/step - loss: 0.0504
Epoch 219/400
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Epoch 226/400	
160/160 [====================================	69
Epoch 227/400	
160/160 [====================================	64
Epoch 228/400	
160/160 [====================================	70
Epoch 229/400	
160/160 [====================================	73
Epoch 230/400	
160/160 [====================================	73
Epoch 231/400	
160/160 [====================================	51
Epoch 232/400	
160/160 [====================================	61
Epoch 233/400	
160/160 [====================================	23
Epoch 234/400	
160/160 [====================================	10
Epoch 235/400	
160/160 [====================================	41
Epoch 236/400	
160/160 [====================================	22
Epoch 237/400	
160/160 [====================================	26
Epoch 238/400	
160/160 [====================================	20
Epoch 239/400	
160/160 [====================================	45
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160/160 [====================================	73
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160/160 [====================================	78
Epoch 242/400	
160/160 [====================================	36
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Epoch 248/400	
160/160 [====================================	91
Epoch 249/400	
160/160 [====================================	57

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Epoch 255/400
160/160 [============] - Os 591us/step - loss: 0.0412
Epoch 256/400
160/160 [============= ] - Os 591us/step - loss: 0.0404
Epoch 257/400
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Epoch 258/400
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Epoch 259/400
160/160 [============= ] - Os 575us/step - loss: 0.0441
Epoch 260/400
160/160 [============= ] - Os 580us/step - loss: 0.0452
Epoch 261/400
160/160 [============= ] - Os 579us/step - loss: 0.0487
Epoch 262/400
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Epoch 279/400
160/160 [============= ] - Os 591us/step - loss: 0.0379
Epoch 280/400
160/160 [============= ] - Os 577us/step - loss: 0.0383
Epoch 281/400
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Epoch 293/400
160/160 [============] - Os 599us/step - loss: 0.0400
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Epoch 311/400 160/160 [====================================	007
Epoch 312/400	91
160/160 [====================================	150
Epoch 313/400	.00
160/160 [====================================	103
Epoch 314/400	
160/160 [====================================	126
Epoch 315/400	
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Epoch 316/400	
160/160 [====================================	368
Epoch 317/400	
160/160 [====================================	373
Epoch 318/400	
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Epoch 319/400	140
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Epoch 320/400	72
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Epoch 330/400
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Epoch 331/400
160/160 [============= ] - Os 591us/step - loss: 0.0446
Epoch 332/400
160/160 [============= ] - Os 555us/step - loss: 0.0406
Epoch 333/400
160/160 [============= ] - Os 595us/step - loss: 0.0409
Epoch 334/400
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Epoch 336/400
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Epoch 352/400
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Epoch 353/400
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Epoch 354/400
160/160 [===========] - Os 591us/step - loss: 0.0354
Epoch 355/400
160/160 [=======] - Os 585us/step - loss: 0.0419
Epoch 356/400
160/160 [=======] - Os 596us/step - loss: 0.0369
Epoch 357/400
160/160 [=======] - Os 581us/step - loss: 0.0364
Epoch 358/400
160/160 [============] - Os 579us/step - loss: 0.0372
Epoch 359/400
160/160 [===========] - Os 581us/step - loss: 0.0414
Epoch 360/400
160/160 [============] - Os 589us/step - loss: 0.0343
Epoch 361/400
160/160 [=======] - Os 592us/step - loss: 0.0358
Epoch 362/400
160/160 [=======] - Os 568us/step - loss: 0.0348
Epoch 363/400
160/160 [=======] - Os 588us/step - loss: 0.0398
Epoch 364/400
160/160 [============ ] - Os 593us/step - loss: 0.0354
Epoch 365/400
160/160 [============ ] - Os 588us/step - loss: 0.0329
Epoch 366/400
160/160 [====================================
Epoch 367/400
160/160 [====================================
Epoch 368/400
160/160 [====================================
Epoch 369/400
160/160 [============= ] - Os 584us/step - loss: 0.0329

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Epoch 370/400		_			_	
160/160 [====================================	-	0s	578us/step	-	loss:	0.0368
Epoch 371/400						
160/160 [======]	-	0s	574us/step	-	loss:	0.0326
Epoch 372/400						
160/160 [======]	-	0s	603us/step	-	loss:	0.0401
Epoch 373/400						
160/160 [======]	-	0s	595us/step	-	loss:	0.0361
Epoch 374/400						
160/160 [=======]	-	0s	584us/step	-	loss:	0.0338
Epoch 375/400						
160/160 [=======]	-	0s	578us/step	-	loss:	0.0371
Epoch 376/400						
160/160 [========]	-	0s	592us/step	-	loss:	0.0358
Epoch 377/400						
160/160 [====================================	-	0s	585us/step	_	loss:	0.0301
Epoch 378/400			_			
160/160 [====================================	_	0s	593us/step	_	loss:	0.0366
Epoch 379/400			•			
160/160 [====================================	_	0s	559us/step	_	loss:	0.0367
Epoch 380/400			<u>.</u>			
160/160 [====================================	_	0s	580us/step	_	loss:	0.0380
Epoch 381/400						
160/160 [====================================	_	0s	611us/step	_	loss:	0.0346
Epoch 382/400						
160/160 [====================================	_	0s	603us/step	_	loss:	0.0369
Epoch 383/400		Ů.	occus, scop		TODE.	0.0000
160/160 [=======]	_	0s	613us/sten	_	loss	0 0339
Epoch 384/400		Ů.	orous, stop		TODE.	0.0000
160/160 [=======]	_	0s	609118/sten	_	loss	0 0368
Epoch 385/400		Ü	cooub, boop		TODD.	0.0000
160/160 [========]	_	٥٩	595119/sten	_	1088.	0 0400
Epoch 386/400		OB	озоць, в сер		TOBB.	0.0100
160/160 [=======]	_	۸e	50711g/gton	_	loggi	0 0/01
Epoch 387/400		OS	09/us/scep		TOSS.	0.0401
160/160 [========]	_	۸e	607ug/gten	_	loggi	0 0365
Epoch 388/400		OS	oorus/scep		TOSS.	0.0000
160/160 [========]	_	Λα	602ug/gtop	_	loggi	U U380
Epoch 389/400		US	002us/step		TOSS.	0.0309
160/160 [========]		٥٩	607,19/9+00		1.000.	0 0270
Epoch 390/400	_	US	027us/step		TOSS.	0.0370
•		Λ-	COO /+		7	0 0000
160/160 [====================================	_	US	620us/step	_	loss:	0.0362
Epoch 391/400		^	575 / ·		,	0 0046
160/160 [====================================	-	US	b/bus/step	_	Toss:	0.0346
Epoch 392/400		^	FOF / :		-	0 0005
160/160 [====================================	-	US	595us/step	-	Toss:	0.0395
Epoch 393/400		•	F07 / :		-	0 0075
160/160 [====================================	-	US	58/us/step	_	Toss:	0.0373

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Epoch 394/400 160/160 [====================================
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Epoch 396/400
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Epoch 4/400
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Epoch 5/400
160/160 [====================================
Epoch 6/400
160/160 [====================================
Epoch 7/400
160/160 [====================================
Epoch 8/400
160/160 [=======] - Os 618us/step - loss: 0.6799
Epoch 9/400
160/160 [====================================
Epoch 10/400
160/160 [====================================
Epoch 11/400
160/160 [====================================
Epoch 12/400
160/160 [====================================
Epoch 13/400
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Epoch 14/400 160/160 [====================================
Epoch 15/400 160/160 [====================================
Epoch 16/400
160/160 [====================================
Epoch 17/400
Thoon 11/400

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Epoch 18/400
160/160 [============= ] - Os 605us/step - loss: 0.6605
Epoch 19/400
Epoch 20/400
160/160 [============= ] - Os 663us/step - loss: 0.6556
Epoch 21/400
160/160 [============= ] - Os 619us/step - loss: 0.6518
Epoch 22/400
160/160 [============ ] - Os 614us/step - loss: 0.6481
Epoch 23/400
Epoch 24/400
160/160 [============= ] - Os 607us/step - loss: 0.6420
Epoch 25/400
Epoch 26/400
160/160 [============ ] - Os 633us/step - loss: 0.6276
Epoch 27/400
160/160 [=============== ] - Os 628us/step - loss: 0.6252
Epoch 28/400
160/160 [============= ] - 0s 623us/step - loss: 0.6188
Epoch 29/400
Epoch 30/400
160/160 [============== ] - 0s 618us/step - loss: 0.6024
Epoch 31/400
Epoch 32/400
Epoch 33/400
Epoch 34/400
160/160 [============= ] - Os 634us/step - loss: 0.5522
Epoch 35/400
Epoch 36/400
160/160 [============== ] - Os 638us/step - loss: 0.5116
Epoch 37/400
Epoch 38/400
160/160 [============= ] - 0s 628us/step - loss: 0.4554
Epoch 39/400
Epoch 40/400
160/160 [============== ] - Os 623us/step - loss: 0.4044
Epoch 41/400
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Epoch 42/400
160/160 [============= ] - Os 616us/step - loss: 0.3570
Epoch 43/400
Epoch 44/400
160/160 [============= ] - Os 632us/step - loss: 0.3180
Epoch 45/400
160/160 [============= ] - Os 615us/step - loss: 0.3016
Epoch 46/400
Epoch 47/400
Epoch 48/400
160/160 [============= ] - Os 634us/step - loss: 0.2610
Epoch 49/400
Epoch 50/400
160/160 [============ ] - Os 629us/step - loss: 0.2397
Epoch 51/400
160/160 [=============== ] - Os 616us/step - loss: 0.2379
Epoch 52/400
160/160 [============== ] - 0s 626us/step - loss: 0.2259
Epoch 53/400
160/160 [============= ] - Os 636us/step - loss: 0.2158
Epoch 54/400
160/160 [============== ] - Os 631us/step - loss: 0.2060
Epoch 55/400
160/160 [============== ] - Os 625us/step - loss: 0.2008
Epoch 56/400
Epoch 57/400
160/160 [============= ] - Os 641us/step - loss: 0.1903
Epoch 58/400
160/160 [============= ] - Os 638us/step - loss: 0.1860
Epoch 59/400
160/160 [============= ] - Os 622us/step - loss: 0.1830
Epoch 60/400
Epoch 61/400
Epoch 62/400
160/160 [============= ] - 0s 628us/step - loss: 0.1732
Epoch 63/400
160/160 [============= ] - Os 641us/step - loss: 0.1586
Epoch 64/400
160/160 [============== ] - Os 637us/step - loss: 0.1548
Epoch 65/400
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Epoch 66/400
160/160 [============] - Os 620us/step - loss: 0.1472
Epoch 67/400
Epoch 68/400
160/160 [============= ] - Os 606us/step - loss: 0.1469
Epoch 69/400
160/160 [============= ] - Os 614us/step - loss: 0.1493
Epoch 70/400
Epoch 71/400
Epoch 72/400
160/160 [============= ] - Os 608us/step - loss: 0.1329
Epoch 73/400
160/160 [============= ] - Os 665us/step - loss: 0.1420
Epoch 74/400
160/160 [============ ] - Os 620us/step - loss: 0.1248
Epoch 75/400
160/160 [=============== ] - Os 599us/step - loss: 0.1413
Epoch 76/400
Epoch 77/400
160/160 [============= ] - 0s 596us/step - loss: 0.1245
Epoch 78/400
160/160 [============== ] - Os 664us/step - loss: 0.1268
Epoch 79/400
160/160 [============== ] - Os 629us/step - loss: 0.1448
Epoch 80/400
160/160 [============== ] - Os 623us/step - loss: 0.1260
Epoch 81/400
Epoch 82/400
160/160 [============= ] - 0s 603us/step - loss: 0.1343
Epoch 83/400
Epoch 84/400
160/160 [============== ] - Os 641us/step - loss: 0.1263
Epoch 85/400
Epoch 86/400
160/160 [============== ] - Os 612us/step - loss: 0.1020
Epoch 87/400
160/160 [============= ] - 0s 678us/step - loss: 0.1065
Epoch 88/400
160/160 [============== ] - Os 594us/step - loss: 0.1149
Epoch 89/400
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Epoch 90/400
160/160 [============= ] - Os 623us/step - loss: 0.1167
Epoch 91/400
160/160 [============= ] - Os 618us/step - loss: 0.1050
Epoch 92/400
160/160 [============= ] - Os 612us/step - loss: 0.1107
Epoch 93/400
160/160 [============= ] - 0s 613us/step - loss: 0.1022
Epoch 94/400
Epoch 95/400
Epoch 96/400
160/160 [============= ] - 0s 624us/step - loss: 0.1032
Epoch 97/400
160/160 [============= ] - Os 616us/step - loss: 0.1162
Epoch 98/400
160/160 [============ ] - Os 620us/step - loss: 0.0943
Epoch 99/400
160/160 [============= ] - Os 638us/step - loss: 0.0829
Epoch 100/400
160/160 [============= ] - 0s 622us/step - loss: 0.0954
Epoch 101/400
160/160 [============= ] - 0s 602us/step - loss: 0.0893
Epoch 102/400
160/160 [=============== ] - Os 627us/step - loss: 0.1135
Epoch 103/400
Epoch 104/400
Epoch 105/400
160/160 [============= ] - Os 634us/step - loss: 0.1182
Epoch 106/400
160/160 [============= ] - Os 634us/step - loss: 0.0939
Epoch 107/400
160/160 [============= ] - Os 624us/step - loss: 0.0990
Epoch 108/400
160/160 [============== ] - Os 642us/step - loss: 0.0936
Epoch 109/400
160/160 [============== ] - Os 638us/step - loss: 0.0938
Epoch 110/400
160/160 [============= ] - 0s 637us/step - loss: 0.0982
Epoch 111/400
160/160 [============= ] - 0s 620us/step - loss: 0.1054
Epoch 112/400
160/160 [============== ] - Os 635us/step - loss: 0.1039
Epoch 113/400
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Epoch 114/400
160/160 [============= ] - Os 647us/step - loss: 0.0810
Epoch 115/400
160/160 [============= ] - Os 639us/step - loss: 0.0940
Epoch 116/400
160/160 [============= ] - Os 620us/step - loss: 0.1046
Epoch 117/400
160/160 [============= ] - 0s 617us/step - loss: 0.0855
Epoch 118/400
Epoch 119/400
Epoch 120/400
160/160 [============= ] - Os 638us/step - loss: 0.0840
Epoch 121/400
160/160 [============= ] - Os 634us/step - loss: 0.1115
Epoch 122/400
160/160 [============ ] - Os 641us/step - loss: 0.0887
Epoch 123/400
Epoch 124/400
Epoch 125/400
Epoch 126/400
160/160 [============== ] - Os 628us/step - loss: 0.1008
Epoch 127/400
160/160 [============== ] - Os 629us/step - loss: 0.1024
Epoch 128/400
Epoch 129/400
160/160 [============= ] - Os 635us/step - loss: 0.0908
Epoch 130/400
160/160 [============= ] - 0s 592us/step - loss: 0.0773
Epoch 131/400
160/160 [============= ] - 0s 597us/step - loss: 0.1034
Epoch 132/400
160/160 [============== ] - Os 590us/step - loss: 0.0728
Epoch 133/400
160/160 [============== ] - Os 612us/step - loss: 0.0856
Epoch 134/400
160/160 [============= ] - 0s 578us/step - loss: 0.0965
Epoch 135/400
Epoch 136/400
160/160 [============== ] - Os 623us/step - loss: 0.0793
Epoch 137/400
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160/160 [============== ] - Os 658us/step - loss: 0.0893
Epoch 138/400
160/160 [=========== ] - Os 626us/step - loss: 0.0794
Epoch 139/400
160/160 [============= ] - Os 605us/step - loss: 0.0960
Epoch 140/400
160/160 [============= ] - 0s 653us/step - loss: 0.0894
Epoch 141/400
160/160 [============= ] - 0s 658us/step - loss: 0.0833
Epoch 142/400
160/160 [============= ] - Os 661us/step - loss: 0.0740
Epoch 143/400
Epoch 144/400
160/160 [============= ] - 0s 597us/step - loss: 0.0794
Epoch 145/400
Epoch 146/400
160/160 [============ ] - Os 600us/step - loss: 0.1010
Epoch 147/400
160/160 [=============== ] - Os 627us/step - loss: 0.1043
Epoch 148/400
160/160 [============= ] - 0s 617us/step - loss: 0.0768
Epoch 149/400
160/160 [============= ] - Os 590us/step - loss: 0.0800
Epoch 150/400
Epoch 151/400
Epoch 152/400
Epoch 153/400
160/160 [============= ] - Os 639us/step - loss: 0.0933
Epoch 154/400
160/160 [============= ] - Os 632us/step - loss: 0.0690
Epoch 155/400
Epoch 156/400
160/160 [============== ] - Os 611us/step - loss: 0.1016
Epoch 157/400
160/160 [============== ] - 0s 621us/step - loss: 0.0723
Epoch 158/400
160/160 [============= ] - Os 630us/step - loss: 0.0879
Epoch 159/400
160/160 [============= ] - 0s 629us/step - loss: 0.0914
Epoch 160/400
160/160 [============== ] - Os 604us/step - loss: 0.0969
Epoch 161/400
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160/160 [============== ] - Os 613us/step - loss: 0.0973
Epoch 162/400
160/160 [=========== ] - Os 628us/step - loss: 0.0583
Epoch 163/400
Epoch 164/400
160/160 [============== ] - Os 635us/step - loss: 0.0965
Epoch 165/400
160/160 [============= ] - Os 614us/step - loss: 0.0885
Epoch 166/400
Epoch 167/400
Epoch 168/400
160/160 [============= ] - Os 636us/step - loss: 0.0900
Epoch 169/400
160/160 [============= ] - 0s 615us/step - loss: 0.1008
Epoch 170/400
160/160 [============ ] - Os 626us/step - loss: 0.0775
Epoch 171/400
Epoch 172/400
160/160 [============= ] - Os 633us/step - loss: 0.0946
Epoch 173/400
Epoch 174/400
160/160 [============== ] - Os 640us/step - loss: 0.0663
Epoch 175/400
160/160 [============== ] - Os 627us/step - loss: 0.0808
Epoch 176/400
Epoch 177/400
Epoch 178/400
160/160 [============= ] - Os 648us/step - loss: 0.0659
Epoch 179/400
160/160 [============= ] - Os 628us/step - loss: 0.0626
Epoch 180/400
160/160 [============== ] - Os 630us/step - loss: 0.0620
Epoch 181/400
Epoch 182/400
160/160 [============= ] - Os 648us/step - loss: 0.0628
Epoch 183/400
160/160 [============= ] - Os 636us/step - loss: 0.0910
Epoch 184/400
160/160 [============== ] - Os 641us/step - loss: 0.0591
Epoch 185/400
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Epoch 186/400
160/160 [============] - Os 620us/step - loss: 0.0670
Epoch 187/400
160/160 [============= ] - Os 634us/step - loss: 0.0720
Epoch 188/400
Epoch 189/400
160/160 [============= ] - 0s 632us/step - loss: 0.0524
Epoch 190/400
160/160 [============= ] - Os 629us/step - loss: 0.0590
Epoch 191/400
Epoch 192/400
Epoch 193/400
Epoch 194/400
160/160 [============= ] - Os 654us/step - loss: 0.0587
Epoch 195/400
160/160 [============= ] - Os 634us/step - loss: 0.0898
Epoch 196/400
Epoch 197/400
160/160 [============= ] - Os 617us/step - loss: 0.0719
Epoch 198/400
160/160 [============== ] - Os 597us/step - loss: 0.0640
Epoch 199/400
Epoch 200/400
160/160 [============== ] - Os 627us/step - loss: 0.0600
Epoch 201/400
160/160 [=========== ] - Os 614us/step - loss: 0.0710
Epoch 202/400
160/160 [============= ] - Os 644us/step - loss: 0.0550
Epoch 203/400
Epoch 204/400
160/160 [============== ] - Os 645us/step - loss: 0.0708
Epoch 205/400
160/160 [============== ] - 0s 621us/step - loss: 0.0924
Epoch 206/400
160/160 [============== ] - Os 611us/step - loss: 0.0648
Epoch 207/400
Epoch 208/400
160/160 [=============== ] - Os 622us/step - loss: 0.0690
Epoch 209/400
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Epoch 210/400
160/160 [============= ] - Os 632us/step - loss: 0.0659
Epoch 211/400
Epoch 212/400
160/160 [============= ] - Os 619us/step - loss: 0.0603
Epoch 213/400
Epoch 214/400
160/160 [============= ] - Os 623us/step - loss: 0.0642
Epoch 215/400
Epoch 216/400
Epoch 217/400
Epoch 218/400
160/160 [============ ] - Os 607us/step - loss: 0.0558
Epoch 219/400
160/160 [============= ] - 0s 603us/step - loss: 0.0563
Epoch 220/400
160/160 [============= ] - 0s 628us/step - loss: 0.0538
Epoch 221/400
Epoch 222/400
Epoch 223/400
Epoch 224/400
Epoch 225/400
Epoch 226/400
160/160 [============= ] - 0s 617us/step - loss: 0.0494
Epoch 227/400
160/160 [============== ] - Os 628us/step - loss: 0.0576
Epoch 228/400
160/160 [============== ] - Os 629us/step - loss: 0.0543
Epoch 229/400
160/160 [============== ] - 0s 621us/step - loss: 0.0522
Epoch 230/400
160/160 [============== ] - Os 611us/step - loss: 0.0508
Epoch 231/400
160/160 [============= ] - Os 630us/step - loss: 0.0544
Epoch 232/400
160/160 [============== ] - Os 639us/step - loss: 0.0608
Epoch 233/400
```

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Epoch 234/400
160/160 [============= ] - Os 606us/step - loss: 0.0527
Epoch 235/400
Epoch 236/400
160/160 [============= ] - Os 635us/step - loss: 0.0638
Epoch 237/400
Epoch 238/400
Epoch 239/400
Epoch 240/400
Epoch 241/400
Epoch 242/400
160/160 [============= ] - Os 653us/step - loss: 0.0451
Epoch 243/400
160/160 [=============== ] - Os 637us/step - loss: 0.0518
Epoch 244/400
Epoch 245/400
160/160 [============= ] - 0s 617us/step - loss: 0.0583
Epoch 246/400
Epoch 247/400
Epoch 248/400
Epoch 249/400
160/160 [========== ] - Os 611us/step - loss: 0.0614
Epoch 250/400
160/160 [============= ] - 0s 605us/step - loss: 0.0514
Epoch 251/400
160/160 [============= ] - Os 609us/step - loss: 0.0496
Epoch 252/400
Epoch 253/400
Epoch 254/400
Epoch 255/400
Epoch 256/400
Epoch 257/400
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Epoch 258/400
160/160 [============= ] - Os 609us/step - loss: 0.0535
Epoch 259/400
160/160 [============== ] - 0s 616us/step - loss: 0.0452
Epoch 260/400
160/160 [============= ] - Os 620us/step - loss: 0.0586
Epoch 261/400
160/160 [============= ] - 0s 624us/step - loss: 0.0583
Epoch 262/400
Epoch 263/400
Epoch 264/400
160/160 [============= ] - 0s 631us/step - loss: 0.0563
Epoch 265/400
160/160 [============= ] - Os 625us/step - loss: 0.0512
Epoch 266/400
160/160 [============= ] - Os 599us/step - loss: 0.0424
Epoch 267/400
160/160 [============= ] - Os 604us/step - loss: 0.0498
Epoch 268/400
Epoch 269/400
160/160 [============= ] - 0s 631us/step - loss: 0.0598
Epoch 270/400
160/160 [============== ] - Os 617us/step - loss: 0.0519
Epoch 271/400
Epoch 272/400
Epoch 273/400
160/160 [============= ] - Os 629us/step - loss: 0.0448
Epoch 274/400
160/160 [============= ] - 0s 622us/step - loss: 0.0394
Epoch 275/400
160/160 [============= ] - 0s 607us/step - loss: 0.0583
Epoch 276/400
160/160 [============== ] - Os 605us/step - loss: 0.0490
Epoch 277/400
Epoch 278/400
160/160 [============= ] - 0s 623us/step - loss: 0.0353
Epoch 279/400
160/160 [============= ] - Os 632us/step - loss: 0.0430
Epoch 280/400
160/160 [============== ] - Os 626us/step - loss: 0.0484
Epoch 281/400
```

```
Epoch 282/400
160/160 [============= ] - Os 615us/step - loss: 0.0510
Epoch 283/400
160/160 [============= ] - 0s 622us/step - loss: 0.0482
Epoch 284/400
160/160 [============= ] - Os 625us/step - loss: 0.0517
Epoch 285/400
160/160 [============= ] - 0s 623us/step - loss: 0.0432
Epoch 286/400
Epoch 287/400
Epoch 288/400
Epoch 289/400
Epoch 290/400
160/160 [============= ] - Os 623us/step - loss: 0.0523
Epoch 291/400
Epoch 292/400
Epoch 293/400
Epoch 294/400
Epoch 295/400
Epoch 296/400
Epoch 297/400
160/160 [============ ] - Os 621us/step - loss: 0.0439
Epoch 298/400
160/160 [============= ] - 0s 632us/step - loss: 0.0364
Epoch 299/400
Epoch 300/400
Epoch 301/400
Epoch 302/400
Epoch 303/400
Epoch 304/400
160/160 [============= ] - Os 707us/step - loss: 0.0637
Epoch 305/400
```

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160/160 [============== ] - Os 629us/step - loss: 0.0519
Epoch 306/400
160/160 [============] - Os 629us/step - loss: 0.0543
Epoch 307/400
Epoch 308/400
160/160 [============= ] - Os 619us/step - loss: 0.0419
Epoch 309/400
160/160 [============= ] - 0s 592us/step - loss: 0.0473
Epoch 310/400
Epoch 311/400
Epoch 312/400
160/160 [============= ] - Os 634us/step - loss: 0.0386
Epoch 313/400
160/160 [============= ] - Os 623us/step - loss: 0.0459
Epoch 314/400
160/160 [============ ] - Os 636us/step - loss: 0.0513
Epoch 315/400
Epoch 316/400
160/160 [============= ] - Os 673us/step - loss: 0.0450
Epoch 317/400
Epoch 318/400
160/160 [============== ] - Os 638us/step - loss: 0.0409
Epoch 319/400
160/160 [============== ] - Os 646us/step - loss: 0.0472
Epoch 320/400
160/160 [============== ] - Os 634us/step - loss: 0.0403
Epoch 321/400
160/160 [============= ] - 0s 628us/step - loss: 0.0472
Epoch 322/400
160/160 [============= ] - 0s 629us/step - loss: 0.0548
Epoch 323/400
160/160 [============= ] - Os 628us/step - loss: 0.0455
Epoch 324/400
Epoch 325/400
160/160 [============== ] - Os 601us/step - loss: 0.0363
Epoch 326/400
160/160 [============= ] - Os 636us/step - loss: 0.0463
Epoch 327/400
160/160 [============= ] - Os 613us/step - loss: 0.0496
Epoch 328/400
160/160 [============== ] - Os 599us/step - loss: 0.0430
Epoch 329/400
```

```
Epoch 330/400
Epoch 331/400
Epoch 332/400
160/160 [============= ] - Os 637us/step - loss: 0.0418
Epoch 333/400
160/160 [============= ] - Os 620us/step - loss: 0.0402
Epoch 334/400
160/160 [============= ] - 0s 617us/step - loss: 0.0433
Epoch 335/400
Epoch 336/400
160/160 [============= ] - 0s 623us/step - loss: 0.0458
Epoch 337/400
160/160 [============= ] - Os 628us/step - loss: 0.0396
Epoch 338/400
160/160 [============= ] - Os 613us/step - loss: 0.0394
Epoch 339/400
160/160 [============= ] - Os 623us/step - loss: 0.0380
Epoch 340/400
160/160 [============== ] - Os 625us/step - loss: 0.0602
Epoch 341/400
Epoch 342/400
160/160 [============== ] - Os 640us/step - loss: 0.0439
Epoch 343/400
160/160 [============== ] - Os 618us/step - loss: 0.0383
Epoch 344/400
Epoch 345/400
160/160 [============= ] - Os 612us/step - loss: 0.0476
Epoch 346/400
160/160 [============= ] - Os 613us/step - loss: 0.0439
Epoch 347/400
160/160 [============= ] - 0s 612us/step - loss: 0.0392
Epoch 348/400
Epoch 349/400
160/160 [============== ] - Os 613us/step - loss: 0.0422
Epoch 350/400
Epoch 351/400
160/160 [============= ] - Os 638us/step - loss: 0.0448
Epoch 352/400
160/160 [=============== ] - Os 605us/step - loss: 0.0371
Epoch 353/400
```

```
Epoch 354/400
160/160 [============= ] - 0s 616us/step - loss: 0.0458
Epoch 355/400
160/160 [============= ] - Os 606us/step - loss: 0.0410
Epoch 356/400
160/160 [============= ] - Os 603us/step - loss: 0.0419
Epoch 357/400
160/160 [============= ] - 0s 599us/step - loss: 0.0383
Epoch 358/400
Epoch 359/400
Epoch 360/400
160/160 [============= ] - Os 615us/step - loss: 0.0404
Epoch 361/400
Epoch 362/400
160/160 [============ ] - Os 634us/step - loss: 0.0373
Epoch 363/400
160/160 [============= ] - 0s 632us/step - loss: 0.0373
Epoch 364/400
160/160 [============= ] - 0s 622us/step - loss: 0.0398
Epoch 365/400
160/160 [============= ] - Os 590us/step - loss: 0.0389
Epoch 366/400
160/160 [============== ] - Os 613us/step - loss: 0.0372
Epoch 367/400
160/160 [============== ] - Os 621us/step - loss: 0.0439
Epoch 368/400
Epoch 369/400
160/160 [============ ] - Os 617us/step - loss: 0.0405
Epoch 370/400
160/160 [============= ] - Os 610us/step - loss: 0.0474
Epoch 371/400
160/160 [============= ] - Os 609us/step - loss: 0.0446
Epoch 372/400
Epoch 373/400
Epoch 374/400
Epoch 375/400
Epoch 376/400
160/160 [============== ] - Os 628us/step - loss: 0.0363
Epoch 377/400
```

```
Epoch 378/400
160/160 [============= ] - Os 656us/step - loss: 0.0456
Epoch 379/400
160/160 [============= ] - Os 667us/step - loss: 0.0378
Epoch 380/400
160/160 [============= ] - 0s 686us/step - loss: 0.0423
Epoch 381/400
160/160 [============== ] - Os 665us/step - loss: 0.0382
Epoch 382/400
Epoch 383/400
Epoch 384/400
160/160 [============= ] - Os 645us/step - loss: 0.0433
Epoch 385/400
Epoch 386/400
160/160 [============ ] - Os 590us/step - loss: 0.0406
Epoch 387/400
Epoch 388/400
Epoch 389/400
Epoch 390/400
Epoch 391/400
Epoch 392/400
Epoch 393/400
160/160 [============ ] - Os 637us/step - loss: 0.0401
Epoch 394/400
160/160 [============= ] - Os 640us/step - loss: 0.0389
Epoch 395/400
Epoch 396/400
Epoch 397/400
160/160 [============== ] - Os 632us/step - loss: 0.0334
Epoch 398/400
160/160 [============== ] - Os 631us/step - loss: 0.0376
Epoch 399/400
160/160 [============= ] - Os 651us/step - loss: 0.0386
Epoch 400/400
160/160 [============== ] - Os 663us/step - loss: 0.0418
160/160 [============ ] - Os 943us/step
```

```
In [22]: ### Four Layer Neural Networks ###
         model = Sequential()
         model.add(Dense(4, input_dim=2, activation='tanh')) #sigmoid, relu
         # model.add(Dense(2, activation='tanh'))
         model.add(Dense(1, activation='sigmoid'))
         # model.add(Dense(1,input_dim=2, activation='sigmoid'))
         sgd = SGD(1r=0.1)
         model.compile(loss='binary_crossentropy', optimizer='sgd')
         model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
         #print(model.predict_proba(X).reshape(4*n))
         # evaluate the model
         scores_4one = model.evaluate(X, y)
         model = Sequential()
         model.add(Dense(4, input_dim=2, activation='tanh')) #sigmoid, relu
         model.add(Dense(4, input dim = 4, activation='relu'))
         model.add(Dense(1, activation='sigmoid'))
         # model.add(Dense(1,input_dim=2, activation='sigmoid'))
         sgd = SGD(lr=0.1)
         model.compile(loss='binary_crossentropy', optimizer='sgd')
         model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
         #print(model.predict_proba(X).reshape(4*n))
         # evaluate the model
         scores_4two = model.evaluate(X, y)
         model = Sequential()
         model.add(Dense(4, input_dim=2, activation='tanh')) #sigmoid, relu
         model.add(Dense(4, input_dim = 4, activation='relu'))
         model.add(Dense(4, input_dim = 4, activation='sigmoid'))
         model.add(Dense(1, activation='sigmoid'))
         # model.add(Dense(1,input_dim=2, activation='sigmoid'))
         sgd = SGD(1r=0.1)
```

```
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores 4three = model.evaluate(X, y)
model = Sequential()
model.add(Dense(4, input_dim=2, activation='tanh')) #sigmoid, relu
model.add(Dense(4, input_dim = 4, activation='relu'))
model.add(Dense(4, input_dim = 4, activation='sigmoid'))
model.add(Dense(4, input_dim = 4, activation='tanh'))
model.add(Dense(1, activation='sigmoid'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores_4four = model.evaluate(X, y)
model = Sequential()
model.add(Dense(4, input_dim=2, activation='tanh')) #sigmoid, relu
model.add(Dense(4, input_dim = 4, activation='relu'))
model.add(Dense(4, input_dim = 4, activation='sigmoid'))
model.add(Dense(4, input_dim = 4, activation='tanh'))
model.add(Dense(4, input_dim = 4, activation='relu'))
model.add(Dense(1, activation='sigmoid'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores_4five = model.evaluate(X, y)
scores4 = [scores 4one, scores 4two, scores 4three, scores 4four, scores 4five]
```

Epoch 1/400				
160/160 [====================================	_	0s	2ms/step - loss: 0.70	09
Epoch 2/400				
160/160 [=======]	-	0s	492us/step - loss: 0.	6985
Epoch 3/400				
160/160 [=======]	-	0s	487us/step - loss: 0.	6974
Epoch 4/400				
160/160 [==========]	-	0s	501us/step - loss: 0.	6961
Epoch 5/400				
160/160 [=======]	-	0s	469us/step - loss: 0.	6954
Epoch 6/400				
160/160 [=======]	-	0s	499us/step - loss: 0.	6948
Epoch 7/400				
160/160 [====================================	-	0ຮ	494us/step - loss: 0.	6944
Epoch 8/400				
160/160 [====================================	-	0s	479us/step - loss: 0.	6936
Epoch 9/400		_		
160/160 [====================================	-	0s	479us/step - loss: 0.	6935
Epoch 10/400		•	544 /	
160/160 [====================================	-	0s	511us/step - loss: 0.	6929
Epoch 11/400		^	400 / 1 3 0	6007
160/160 [====================================	_	US	498us/step - loss: 0.	6927
Epoch 12/400 160/160 [====================================		0-	101/	cooc
	_	US	481us/step - 10ss: 0.	0920
Epoch 13/400 160/160 [====================================	_	٥٥	10Eug/gton - logg, 0	6020
Epoch 14/400		US	400us/step = 10ss. 0.	0920
160/160 [====================================	_	۸e	189119/stan - loss. 0	6013
Epoch 15/400		OB	400us/step 10ss. 0.	0310
160/160 [====================================	_	0s	489us/step - loss: 0.	6913
Epoch 16/400			100 db, 200p	0010
160/160 [====================================	_	0s	479us/step - loss: 0.	6908
Epoch 17/400				
160/160 [====================================	_	0s	492us/step - loss: 0.	6904
Epoch 18/400			•	
160/160 [=======]	-	0s	527us/step - loss: 0.	6901
Epoch 19/400				
160/160 [=======]	-	0s	555us/step - loss: 0.	6895
Epoch 20/400				
160/160 [=======]	-	0s	496us/step - loss: 0.	6891
Epoch 21/400				
160/160 [=======]	-	0s	497us/step - loss: 0.	6887
Epoch 22/400				
160/160 [======]	-	0s	497us/step - loss: 0.	6880
Epoch 23/400			/	
160/160 [====================================	-	0s	515us/step - loss: 0.	6876
Epoch 24/400		_	<b>5</b> 04 /	000=
160/160 [====================================	-	0s	b01us/step - loss: 0.	6868

160/160	Epoch 25/400						
Epoch 26/400 160/160 [====================================	-	_	0s	495us/step	_	loss:	0.6859
Epoch 27/400 160/160 [====================================				•			
Epoch 27/400 160/160 [====================================	160/160 [========]	_	0s	499us/step	_	loss:	0.6852
160/160 [====================================				-			
160/160   160		_	0s	490us/step	_	loss:	0.6844
Epoch 29/400 160/160 [====================================				-			
Epoch 29/400 160/160 [====================================	160/160 [====================================	_	0s	481us/step	_	loss:	0.6834
Epoch 30/400  160/160 [====================================	Epoch 29/400			_			
160/160 [====================================	160/160 [=======]	-	0s	487us/step	-	loss:	0.6824
Epoch 31/400 160/160 [====================================	Epoch 30/400						
160/160 [====================================	160/160 [=======]	-	0s	476us/step	-	loss:	0.6814
Epoch 32/400 160/160 [====================================	Epoch 31/400						
160/160 [====================================	160/160 [=======]	-	0s	508us/step	-	loss:	0.6802
Epoch 33/400  160/160 [====================================	Epoch 32/400						
160/160 [====================================	160/160 [=======]	-	0s	484us/step	-	loss:	0.6791
Epoch 34/400  160/160 [====================================	Epoch 33/400						
160/160 [====================================	160/160 [=======]	-	0s	500us/step	-	loss:	0.6778
Epoch 35/400  160/160 [====================================	Epoch 34/400						
160/160 [====================================	160/160 [=======]	-	0s	514us/step	-	loss:	0.6761
Epoch 36/400 160/160 [====================================	Epoch 35/400						
160/160 [====================================	160/160 [=======]	-	0s	481us/step	-	loss:	0.6746
Epoch 37/400  160/160 [====================================	Epoch 36/400						
160/160 [====================================	160/160 [=======]	-	0s	507us/step	-	loss:	0.6729
Epoch 38/400 160/160 [====================================	Epoch 37/400						
160/160 [====================================	160/160 [===========]	-	0s	476us/step	-	loss:	0.6713
Epoch 39/400  160/160 [====================================	Epoch 38/400			_			
160/160 [====================================	160/160 [====================================	-	0s	486us/step	-	loss:	0.6693
Epoch 40/400  160/160 [====================================	Epoch 39/400						
160/160 [====================================	160/160 [=======]	-	0s	456us/step	-	loss:	0.6672
Epoch 41/400 160/160 [====================================	Epoch 40/400						
160/160 [====================================	160/160 [=======]	-	0s	484us/step	-	loss:	0.6648
Epoch 42/400 160/160 [====================================	-						
160/160 [====================================	160/160 [=======]	-	0s	472us/step	-	loss:	0.6624
Epoch 43/400  160/160 [====================================	•						
160/160 [====================================	160/160 [=======]	-	0s	487us/step	-	loss:	0.6600
Epoch 44/400 160/160 [====================================							
160/160 [====================================	160/160 [====================================	-	0s	478us/step	-	loss:	0.6577
Epoch 45/400 160/160 [====================================	•						
160/160 [====================================	160/160 [====================================	-	0s	491us/step	-	loss:	0.6551
	-						
	160/160 [=======]	-	0s	493us/step	-	loss:	0.6516
	Epoch 46/400						
160/160 [============] - Os 493us/step - loss: 0.6487	160/160 [====================================	-	0s	493us/step	-	loss:	0.6487
Epoch 47/400	-						
160/160 [====================================		-	0s	508us/step	-	loss:	0.6456
	Epoch 48/400						
Epoch 48/400	160/160 [====================================	-	0s	506us/step	-	loss:	0.6419
	•		_	500 1		_	
Epoch 48/400	TON\ TON [=======]	-	US	ouous/step	-	Toss:	0.6419

Epoch 49/400	
160/160 [====================================	85
Epoch 50/400	
160/160 [====================================	45
Epoch 51/400	
160/160 [====================================	10
Epoch 52/400	
160/160 [====================================	68
Epoch 53/400	
160/160 [====================================	25
Epoch 54/400	
160/160 [====================================	81
Epoch 55/400	
160/160 [====================================	36
Epoch 56/400	
160/160 [====================================	88
Epoch 57/400	
160/160 [====================================	42
Epoch 58/400	
160/160 [====================================	94
Epoch 59/400	
160/160 [====================================	46
Epoch 60/400	
160/160 [====================================	93
Epoch 61/400	
160/160 [====================================	42
Epoch 62/400	
160/160 [====================================	92
Epoch 63/400	
160/160 [====================================	34
Epoch 64/400	
160/160 [====================================	85
Epoch 65/400	
160/160 [====================================	29
Epoch 66/400	
160/160 [====================================	72
Epoch 67/400	
160/160 [====================================	21
Epoch 68/400	
160/160 [====================================	64
Epoch 69/400	
160/160 [====================================	12
Epoch 70/400	
160/160 [====================================	58
Epoch 71/400	- 0
160/160 [====================================	00
Epoch 72/400	-
160/160 [====================================	47
100, 100 L 100ab, 50ep 1055. 0.02	- '

Epoch 73/400			
160/160 [========]	_	۸e	489us/stan - loss: 0 5190
Epoch 74/400		OB	103d5/5tep 1035. 0.0130
160/160 [========]	_	09	467us/sten - loss: 0 5136
Epoch 75/400		OB	10745, 5000
160/160 [=======]	_	0s	478us/step = loss: 0.5086
Epoch 76/400		ŮĎ.	17045, 5305
160/160 [=======]	_	0s	461us/step - loss: 0.5029
Epoch 77/400			
160/160 [====================================	_	0s	474us/step - loss: 0.4981
Epoch 78/400			•
160/160 [====================================	_	0s	472us/step - loss: 0.4928
Epoch 79/400			-
160/160 [====================================	-	0s	465us/step - loss: 0.4879
Epoch 80/400			
160/160 [======]	-	0s	472us/step - loss: 0.4829
Epoch 81/400			
160/160 [=======]	-	0s	463us/step - loss: 0.4780
Epoch 82/400			
160/160 [======]	-	0s	464us/step - loss: 0.4734
Epoch 83/400			
160/160 [=======]	-	0s	470us/step - loss: 0.4686
Epoch 84/400			
160/160 [======]	-	0s	494us/step - loss: 0.4643
Epoch 85/400			
160/160 [=======]	-	0s	467us/step - loss: 0.4599
Epoch 86/400		_	
160/160 [====================================	-	0s	461us/step - loss: 0.4553
Epoch 87/400		•	400 / 1 7 0 4540
160/160 [====================================	_	US	460us/step - loss: 0.4510
Epoch 88/400 160/160 [=======]		٥٥	470mg/g+on logg, 0 4470
Epoch 89/400		US	4/2us/step - 10ss. 0.44/0
160/160 [=========]	_	۸a	170us/stan - loss: 0 1/33
Epoch 90/400		OB	170db/bcep 1055. 0.4400
160/160 [=======]	_	0s	530us/step = loss: 0.4390
Epoch 91/400		Ü	1022. 0.1000
160/160 [====================================	_	0s	475us/step - loss: 0.4354
Epoch 92/400			
160/160 [====================================	_	0s	464us/step - loss: 0.4313
Epoch 93/400			-
160/160 [====================================	_	0s	466us/step - loss: 0.4280
Epoch 94/400			-
160/160 [======]	-	0s	476us/step - loss: 0.4244
Epoch 95/400			
160/160 [======]	-	0s	482us/step - loss: 0.4213
Epoch 96/400			
160/160 [=======]	-	0s	490us/step - loss: 0.4182

Epoch 97/400						
160/160 [====================================	_	0s	487us/step	_	loss:	0.4149
Epoch 98/400			_			
160/160 [====================================	_	0s	485us/step	_	loss:	0.4115
Epoch 99/400			-			
160/160 [====================================	_	0s	467us/step	_	loss:	0.4088
Epoch 100/400			•			
160/160 [====================================	_	0s	458us/step	_	loss:	0.4061
Epoch 101/400						
160/160 [====================================	_	0s	464us/step	_	loss:	0.4030
Epoch 102/400			•			
160/160 [====================================	_	0s	461us/step	_	loss:	0.4004
Epoch 103/400			. 1			
160/160 [====================================	_	0s	468us/step	_	loss:	0.3978
Epoch 104/400			, <sub>P</sub>			
160/160 [====================================	_	0s	459us/step	_	loss:	0.3951
Epoch 105/400		0.2	100 az, 200p			0.0001
160/160 [====================================	_	0s	465us/step	_	loss:	0.3924
Epoch 106/400		Ů.	roods, soop		TODE.	0.0021
160/160 [====================================	_	٥q	467115/sten	_	1099.	0 3902
Epoch 107/400		OB	101 db/ b0cp		TOBB.	0.0002
160/160 [====================================	_	۸e	464119/sten	_	loggi	0 3883
Epoch 108/400		OB	404us/scep		1055.	0.0000
160/160 [====================================	_	۸e	15611g /gton	_	loggi	0 3857
Epoch 109/400		OS	400us/scep		TOSS.	0.5057
160/160 [====================================	_	Λα	462ug /g+op	_	loggi	V 3838
Epoch 110/400		OS	402us/scep		TOSS.	0.3030
160/160 [====================================	_	٥٥	470ug /gton	_	1000.	A 2017
Epoch 111/400		OS	470us/scep		1055.	0.3017
160/160 [====================================	_	٥٥	161 ug /g+op	_	1000.	0 2707
Epoch 112/400		OS	401us/scep		1055.	0.3191
160/160 [====================================	_	Λα	15/11g/gton	_	loggi	A 2779
Epoch 113/400		OS	404us/scep		TOSS.	0.3110
160/160 [====================================	_	٥٥	162ug /g+op	_	1000.	0 2756
Epoch 114/400		US	403us/step		TOSS.	0.3730
160/160 [====================================	_	٥٥	157ug /g+op	_	1000.	0 27/1
Epoch 115/400		US	457us/step		TOSS.	0.3741
160/160 [====================================	_	٥٥	40Eug /g+op	_	1000.	0 2726
		US	495us/step	_	TOSS.	0.3720
Epoch 116/400 160/160 [====================================		٥٩	160ug /g+on		1.000.	0 2710
	_	US	40ous/step	_	TOSS:	0.3/10
Epoch 117/400		٥-	162		7	0.3600
160/160 [====================================	_	US	463us/step	_	loss:	0.3690
Epoch 118/400		Λ-	100/		7	0 0070
160/160 [====================================	_	US	469us/step	_	loss:	0.3676
Epoch 119/400		^	160/		7	0.0000
160/160 [====================================	_	US	40ous/step	_	Toss:	0.3662
Epoch 120/400		^	470/		7	0 0045
160/160 [====================================	-	US	4/9us/step	_	Toss:	U.3645

Epoch 121/400						
160/160 [====================================	_	0s	458us/step	_	loss:	0.3628
Epoch 122/400			•			
160/160 [====================================	_	0s	469us/step	_	loss:	0.3619
Epoch 123/400			-			
160/160 [====================================	_	0s	455us/step	_	loss:	0.3602
Epoch 124/400			-			
160/160 [====================================	_	0s	471us/step	_	loss:	0.3591
Epoch 125/400			_			
160/160 [=======]	-	0s	460us/step	-	loss:	0.3579
Epoch 126/400						
160/160 [=======]	-	0s	470us/step	-	loss:	0.3568
Epoch 127/400						
160/160 [=======]	-	0s	460us/step	-	loss:	0.3553
Epoch 128/400						
160/160 [=======]	-	0s	469us/step	-	loss:	0.3543
Epoch 129/400						
160/160 [=======]	-	0s	460us/step	-	loss:	0.3533
Epoch 130/400						
160/160 [=======]	-	0s	483us/step	-	loss:	0.3521
Epoch 131/400						
160/160 [=======]	-	0s	460us/step	-	loss:	0.3515
Epoch 132/400						
160/160 [=======]	-	0s	468us/step	-	loss:	0.3499
Epoch 133/400						
160/160 [===========]	-	0s	471us/step	-	loss:	0.3491
Epoch 134/400			_			
160/160 [=======]	-	0s	466us/step	-	loss:	0.3482
Epoch 135/400						
160/160 [=======]	-	0s	473us/step	_	loss:	0.3472
Epoch 136/400						
160/160 [=======]	-	0s	464us/step	-	loss:	0.3463
Epoch 137/400						
160/160 [=======]	-	0s	497us/step	-	loss:	0.3453
Epoch 138/400						
160/160 [======]	-	0s	476us/step	-	loss:	0.3450
Epoch 139/400						
160/160 [==========]	-	0s	462us/step	-	loss:	0.3441
Epoch 140/400						
160/160 [==========]	-	0s	465us/step	-	loss:	0.3435
Epoch 141/400						
160/160 [=======]	-	0s	465us/step	-	loss:	0.3427
Epoch 142/400						
160/160 [===========]	-	0s	466us/step	-	loss:	0.3419
Epoch 143/400						
160/160 [=======]	-	0s	468us/step	-	loss:	0.3411
Epoch 144/400						
160/160 [====================================	-	0s	472us/step	-	loss:	0.3401

Fr I. 145/400
Epoch 145/400
160/160 [====================================
Epoch 146/400
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Epoch 147/400
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Epoch 148/400
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Epoch 155/400
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Epoch 156/400
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Epoch 157/400
160/160 [============= ] - Os 469us/step - loss: 0.3337
Epoch 158/400
160/160 [============= ] - Os 464us/step - loss: 0.3330
Epoch 159/400
160/160 [============= ] - Os 480us/step - loss: 0.3325
Epoch 160/400
160/160 [====================================
Epoch 161/400
160/160 [============= ] - Os 461us/step - loss: 0.3319
Epoch 162/400
160/160 [============= ] - Os 464us/step - loss: 0.3316
Epoch 163/400
160/160 [============= ] - Os 469us/step - loss: 0.3312
Epoch 164/400
160/160 [============= ] - Os 466us/step - loss: 0.3309
Epoch 165/400
160/160 [====================================
Epoch 166/400
160/160 [====================================
Epoch 167/400
160/160 [====================================
Epoch 168/400
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Epoch 169/400	
160/160 [====================================	0.3291
Epoch 170/400	
160/160 [====================================	0.3290
Epoch 171/400	
160/160 [====================================	0.3289
Epoch 172/400	
160/160 [====================================	0.3285
Epoch 173/400	
160/160 [============ ] - Os 479us/step - loss:	0.3280
Epoch 174/400	
160/160 [============ ] - Os 457us/step - loss:	0.3280
Epoch 175/400	
160/160 [============ ] - Os 459us/step - loss:	0.3277
Epoch 176/400	
160/160 [============= ] - Os 462us/step - loss:	0.3274
Epoch 177/400	
160/160 [============ ] - Os 472us/step - loss:	0.3272
Epoch 178/400	
160/160 [============ ] - Os 461us/step - loss:	0.3270
Epoch 179/400	
160/160 [============ ] - Os 464us/step - loss:	0.3265
Epoch 180/400	
160/160 [============ ] - Os 470us/step - loss:	0.3262
Epoch 181/400	
160/160 [============ ] - Os 466us/step - loss:	0.3261
Epoch 182/400	
160/160 [============ ] - Os 477us/step - loss:	0.3258
Epoch 183/400	
160/160 [============ ] - Os 480us/step - loss:	0.3257
Epoch 184/400	
160/160 [============ ] - Os 478us/step - loss:	0.3253
Epoch 185/400	
160/160 [====================================	0.3250
Epoch 186/400	
160/160 [============] - Os 459us/step - loss:	0.3250
Epoch 187/400	
160/160 [============] - Os 471us/step - loss:	0.3247
Epoch 188/400	
160/160 [====================================	0.3245
Epoch 189/400	
160/160 [====================================	0.3247
Epoch 190/400	
160/160 [====================================	0.3245
Epoch 191/400	
160/160 [====================================	0.3245
Epoch 192/400	
160/160 [====================================	0.3238

Enoch 102/400						
Epoch 193/400 160/160 [====================================	_	Λα	470ug/gton	_	loggi	U 3334
Epoch 194/400		OS	470us/scep		TOSS.	0.3234
160/160 [====================================	_	Λe	166us /sten	_	loggi	U 3338
Epoch 195/400		OS	400us/scep		TOSS.	0.0200
160/160 [=======]	_	Λe	156ug/gten	_	loggi	0 3334
Epoch 196/400		OS	4000s/scep		TOSS.	0.0204
160/160 [=======]	_	۸q	480115/sten	_	1099.	0 3237
Epoch 197/400		OB	100db/btcp		TOBB.	0.0201
160/160 [========]	_	0s	451118/sten	_	loss	0 3232
Epoch 198/400		Ů.	10145, 500p		TODE.	0.0202
160/160 [========]	_	0s	463us/step	_	loss:	0.3233
Epoch 199/400		Ů.	roods, soop		TODE.	0.0200
160/160 [====================================	_	0s	462us/step	_	loss:	0.3231
Epoch 200/400			, <sub>F</sub>			
160/160 [====================================	_	0s	462us/step	_	loss:	0.3226
Epoch 201/400			. 1			
160/160 [====================================	_	0s	465us/step	_	loss:	0.3231
Epoch 202/400						
160/160 [====================================	_	0s	466us/step	_	loss:	0.3227
Epoch 203/400						
160/160 [====================================	_	0s	472us/step	_	loss:	0.3228
Epoch 204/400			-			
160/160 [====================================	-	0s	459us/step	_	loss:	0.3226
Epoch 205/400						
160/160 [========]	-	0s	462us/step	-	loss:	0.3222
Epoch 206/400						
160/160 [======]	-	0s	463us/step	-	loss:	0.3224
Epoch 207/400						
160/160 [=======]	-	0s	457us/step	-	loss:	0.3223
Epoch 208/400						
160/160 [======]	-	0s	458us/step	-	loss:	0.3216
Epoch 209/400						
160/160 [======]	-	0s	468us/step	-	loss:	0.3222
Epoch 210/400						
160/160 [===========]	-	0s	450us/step	-	loss:	0.3218
Epoch 211/400		_			_	
160/160 [====================================	-	0s	461us/step	-	loss:	0.3215
Epoch 212/400		_	101 / .		_	
160/160 [====================================	-	0s	461us/step	_	loss:	0.3216
Epoch 213/400		_	454		_	0 0044
160/160 [====================================	-	0s	474us/step	_	loss:	0.3214
Epoch 214/400		^	455 / .		,	0 0047
160/160 [=======] Enach 215/400	_	US	455us/step	_	TOSS:	0.3217
Epoch 215/400		0-	177ng /c+		1000	0 2014
160/160 [=======] Enach 216/400	_	US	4//us/step	_	TOSS:	0.3214
Epoch 216/400 160/160 [=======]		0~	160mg / g + c =	_	1000:	0 2010
100/100 []	_	US	400us/step	_	TOSS:	0.3210

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Epoch 217/400
160/160 [====================================
Epoch 218/400
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Epoch 219/400
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Epoch 220/400
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Epoch 221/400
160/160 [============ ] - Os 465us/step - loss: 0.3208
Epoch 222/400
160/160 [============= ] - Os 471us/step - loss: 0.3211
Epoch 223/400
160/160 [====================================
Epoch 224/400
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Epoch 225/400
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Epoch 226/400
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Epoch 240/400
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Epoch 241/400
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Epoch 242/400
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Epoch 243/400
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Epoch 244/400
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Epoch 245/400
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Epoch 246/400
160/160 [============= ] - Os 454us/step - loss: 0.3200
Epoch 247/400
160/160 [============] - Os 460us/step - loss: 0.3197
Epoch 248/400
160/160 [====================================
Epoch 249/400
160/160 [====================================
Epoch 250/400
160/160 [============ ] - Os 472us/step - loss: 0.3196
Epoch 251/400
160/160 [============= ] - Os 462us/step - loss: 0.3195
Epoch 252/400
160/160 [============= ] - Os 461us/step - loss: 0.3195
Epoch 253/400
160/160 [============ ] - Os 473us/step - loss: 0.3192
Epoch 254/400
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Epoch 255/400
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Epoch 262/400
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Epoch 263/400
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Epoch 264/400
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Epoch 265/400						
160/160 [====================================	_	0s	465us/step	_	loss:	0.3190
Epoch 266/400			•			
160/160 [====================================	_	0s	468us/step	_	loss:	0.3187
Epoch 267/400			-			
160/160 [====================================	_	0s	457us/step	-	loss:	0.3190
Epoch 268/400			-			
160/160 [====================================	_	0s	456us/step	-	loss:	0.3187
Epoch 269/400			_			
160/160 [======]	-	0s	467us/step	-	loss:	0.3190
Epoch 270/400						
160/160 [=======]	-	0s	470us/step	-	loss:	0.3190
Epoch 271/400						
160/160 [=======]	-	0s	441us/step	-	loss:	0.3188
Epoch 272/400						
160/160 [=======]	-	0s	464us/step	-	loss:	0.3186
Epoch 273/400						
160/160 [=======]	-	0s	451us/step	-	loss:	0.3187
Epoch 274/400						
160/160 [=======]	-	0s	456us/step	-	loss:	0.3191
Epoch 275/400						
160/160 [======]	-	0s	457us/step	-	loss:	0.3192
Epoch 276/400						
160/160 [==========]	-	0s	452us/step	-	loss:	0.3187
Epoch 277/400						
160/160 [===========]	-	0s	461us/step	-	loss:	0.3191
Epoch 278/400						
160/160 [=======]	-	0s	433us/step	-	loss:	0.3187
Epoch 279/400						
160/160 [=======]	-	0s	450us/step	-	loss:	0.3189
Epoch 280/400						
160/160 [=======]	-	0s	458us/step	-	loss:	0.3186
Epoch 281/400						
160/160 [=========]	-	0s	462us/step	-	loss:	0.3184
Epoch 282/400						
160/160 [======]	-	0s	463us/step	-	loss:	0.3186
Epoch 283/400						
160/160 [=======]	-	0s	472us/step	-	loss:	0.3179
Epoch 284/400						
160/160 [=======]	-	0s	458us/step	-	loss:	0.3181
Epoch 285/400						
160/160 [=======]	-	0s	460us/step	-	loss:	0.3187
Epoch 286/400						
160/160 [=======]	-	0s	439us/step	-	loss:	0.3183
Epoch 287/400						
160/160 [====================================	-	0ຣ	457us/step	-	loss:	0.3186
Epoch 288/400		_			_	
160/160 [====================================	-	0s	478us/step	-	loss:	0.3184

T. 1. 200/400						
Epoch 289/400		•	400 / .		-	0.0405
160/160 [====================================	_	Us	482us/step	_	loss:	0.3185
Epoch 290/400		_			_	
160/160 [====================================	-	0s	465us/step	-	loss:	0.3184
Epoch 291/400		_			_	
160/160 [====================================	-	0s	478us/step	-	loss:	0.3183
Epoch 292/400		_			_	
160/160 [====================================	-	0s	453us/step	-	loss:	0.3183
Epoch 293/400						
160/160 [=======]	-	0s	458us/step	-	loss:	0.3184
Epoch 294/400			_			
160/160 [======]	-	0s	460us/step	-	loss:	0.3185
Epoch 295/400						
160/160 [=======]	-	0s	457us/step	-	loss:	0.3184
Epoch 296/400						
160/160 [=======]	-	0s	453us/step	-	loss:	0.3185
Epoch 297/400						
160/160 [=======]	-	0s	466us/step	-	loss:	0.3183
Epoch 298/400						
160/160 [=======]	-	0s	455us/step	-	loss:	0.3187
Epoch 299/400						
160/160 [=======]	-	0s	469us/step	-	loss:	0.3184
Epoch 300/400						
160/160 [=======]	-	0s	460us/step	-	loss:	0.3189
Epoch 301/400						
160/160 [=======]	-	0s	462us/step	-	loss:	0.3182
Epoch 302/400						
160/160 [=======]	-	0s	457us/step	-	loss:	0.3184
Epoch 303/400						
160/160 [=======]	-	0s	481us/step	-	loss:	0.3184
Epoch 304/400						
160/160 [=======]	-	0s	455us/step	-	loss:	0.3185
Epoch 305/400						
160/160 [=======]	-	0s	459us/step	-	loss:	0.3183
Epoch 306/400						
160/160 [=======]	-	0s	464us/step	-	loss:	0.3182
Epoch 307/400						
160/160 [=======]	-	0s	480us/step	-	loss:	0.3179
Epoch 308/400						
160/160 [=======]	-	0s	485us/step	-	loss:	0.3184
Epoch 309/400						
160/160 [=========]	-	0s	483us/step	-	loss:	0.3181
Epoch 310/400						
160/160 [=======]	-	0s	446us/step	-	loss:	0.3182
Epoch 311/400			_			
160/160 [====================================	-	0s	453us/step	_	loss:	0.3185
Epoch 312/400			-			
160/160 [=======]	-	0s	475us/step	-	loss:	0.3181
			_			

Epoch 313/400						
160/160 [====================================	_	0s	469us/step	_	loss:	0.3184
Epoch 314/400			1			
160/160 [====================================	_	0s	484us/step	_	loss:	0.3181
Epoch 315/400			. 1			
160/160 [====================================	_	0s	469us/step	_	loss:	0.3182
Epoch 316/400			1			
160/160 [====================================	_	0s	464us/step	_	loss:	0.3182
Epoch 317/400			. 1			
160/160 [====================================	_	0s	464us/step	_	loss:	0.3179
Epoch 318/400			•			
160/160 [====================================	_	0s	464us/step	_	loss:	0.3183
Epoch 319/400			•			
160/160 [====================================	_	0s	464us/step	-	loss:	0.3184
Epoch 320/400			-			
160/160 [====================================	-	0s	473us/step	-	loss:	0.3179
Epoch 321/400			_			
160/160 [====================================	-	0s	486us/step	-	loss:	0.3179
Epoch 322/400			_			
160/160 [====================================	_	0s	457us/step	-	loss:	0.3186
Epoch 323/400						
160/160 [========]	-	0s	475us/step	-	loss:	0.3182
Epoch 324/400						
160/160 [======]	-	0s	473us/step	-	loss:	0.3181
Epoch 325/400						
160/160 [======]	-	0s	466us/step	-	loss:	0.3179
Epoch 326/400						
160/160 [======]	-	0s	470us/step	-	loss:	0.3180
Epoch 327/400						
160/160 [======]	-	0s	519us/step	-	loss:	0.3179
Epoch 328/400						
160/160 [=======]	-	0s	512us/step	-	loss:	0.3181
Epoch 329/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.3181
Epoch 330/400						
160/160 [======]	-	0s	518us/step	-	loss:	0.3179
Epoch 331/400						
160/160 []	-	0s	515us/step	-	loss:	0.3180
Epoch 332/400						
160/160 [=======]	-	0ຮ	458us/step	-	loss:	0.3179
Epoch 333/400						
160/160 [====================================	-	0ຮ	466us/step	-	loss:	0.3177
Epoch 334/400						
160/160 [=======]	-	0s	466us/step	-	loss:	0.3178
Epoch 335/400		_			_	
160/160 [====================================	-	0s	468us/step	-	loss:	0.3179
Epoch 336/400		_			_	
160/160 [======]	-	0s	462us/step	-	loss:	0.3183

Epoch 337/400
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Epoch 338/400
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Epoch 346/400
160/160 [============] - Os 455us/step - loss: 0.3181 Epoch 347/400
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Epoch 348/400
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Epoch 361/400						
160/160 [====================================	_	0s	425us/step	_	loss:	0.3178
Epoch 362/400			•			
160/160 [====================================	_	0s	450us/step	_	loss:	0.3173
Epoch 363/400			-			
160/160 [====================================	_	0s	437us/step	-	loss:	0.3174
Epoch 364/400			-			
160/160 [====================================	_	0s	462us/step	_	loss:	0.3179
Epoch 365/400			_			
160/160 [====================================	-	0s	445us/step	-	loss:	0.3180
Epoch 366/400						
160/160 [====================================	-	0s	439us/step	-	loss:	0.3179
Epoch 367/400			_			
160/160 [====================================	-	0s	464us/step	-	loss:	0.3179
Epoch 368/400			_			
160/160 [====================================	-	0s	446us/step	-	loss:	0.3177
Epoch 369/400			_			
160/160 [====================================	-	0s	472us/step	-	loss:	0.3173
Epoch 370/400			_			
160/160 [====================================	-	0s	475us/step	-	loss:	0.3178
Epoch 371/400			_			
160/160 [====================================	-	0s	467us/step	-	loss:	0.3172
Epoch 372/400			_			
160/160 [====================================	-	0s	467us/step	-	loss:	0.3175
Epoch 373/400			_			
160/160 [====================================	_	0s	466us/step	-	loss:	0.3178
Epoch 374/400			-			
160/160 [====================================	_	0s	461us/step	-	loss:	0.3171
Epoch 375/400			-			
160/160 [====================================	_	0s	471us/step	_	loss:	0.3172
Epoch 376/400			_			
160/160 [=======]	-	0s	460us/step	-	loss:	0.3175
Epoch 377/400						
160/160 [====================================	-	0s	479us/step	-	loss:	0.3179
Epoch 378/400			_			
160/160 [=======]	-	0s	467us/step	-	loss:	0.3182
Epoch 379/400						
160/160 [=======]	-	0s	469us/step	-	loss:	0.3174
Epoch 380/400						
160/160 [=======]	-	0s	469us/step	-	loss:	0.3176
Epoch 381/400						
160/160 [=======]	-	0s	469us/step	-	loss:	0.3178
Epoch 382/400						
160/160 [=======]	-	0s	477us/step	-	loss:	0.3175
Epoch 383/400			_			
160/160 [=======]	-	0s	470us/step	-	loss:	0.3174
Epoch 384/400			_			
160/160 [=======]	-	0s	489us/step	-	loss:	0.3176

Epoch 385/400
160/160 [====================================
Epoch 386/400
160/160 [====================================
Epoch 387/400
160/160 [====================================
Epoch 388/400
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Epoch 389/400
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Epoch 397/400
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Epoch 398/400
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Epoch 399/400
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Epoch 400/400
160/160 [====================================
160/160 [====================================
Epoch 1/400
160/160 [====================================
Epoch 2/400
160/160 [====================================
Epoch 3/400
160/160 [====================================
Epoch 4/400 160/160 [====================================
Epoch 5/400
160/160 [====================================
Epoch 6/400
160/160 [====================================
Epoch 7/400
160/160 [====================================
Epoch 8/400
-r

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Epoch 9/400
160/160 [============= ] - Os 524us/step - loss: 0.5976
Epoch 10/400
160/160 [============== ] - 0s 522us/step - loss: 0.5902
Epoch 11/400
160/160 [============= ] - 0s 508us/step - loss: 0.5835
Epoch 12/400
160/160 [============= ] - Os 520us/step - loss: 0.5765
Epoch 13/400
160/160 [============= ] - Os 514us/step - loss: 0.5699
Epoch 14/400
Epoch 15/400
Epoch 16/400
160/160 [============= ] - Os 515us/step - loss: 0.5499
Epoch 17/400
160/160 [============= ] - Os 514us/step - loss: 0.5435
Epoch 18/400
160/160 [============= ] - Os 530us/step - loss: 0.5370
Epoch 19/400
160/160 [============= ] - 0s 515us/step - loss: 0.5314
Epoch 20/400
Epoch 21/400
160/160 [============== ] - Os 523us/step - loss: 0.5199
Epoch 22/400
160/160 [============== ] - Os 534us/step - loss: 0.5146
Epoch 23/400
160/160 [============== ] - Os 509us/step - loss: 0.5093
Epoch 24/400
160/160 [============ ] - Os 510us/step - loss: 0.5045
Epoch 25/400
160/160 [============= ] - 0s 509us/step - loss: 0.4998
Epoch 26/400
160/160 [============= ] - Os 497us/step - loss: 0.4955
Epoch 27/400
Epoch 28/400
Epoch 29/400
160/160 [============== ] - Os 534us/step - loss: 0.4843
Epoch 30/400
Epoch 31/400
160/160 [============== ] - Os 524us/step - loss: 0.4781
Epoch 32/400
```

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Epoch 33/400
160/160 [============= ] - Os 508us/step - loss: 0.4726
Epoch 34/400
Epoch 35/400
Epoch 36/400
160/160 [============= ] - 0s 520us/step - loss: 0.4653
Epoch 37/400
160/160 [============= ] - Os 519us/step - loss: 0.4630
Epoch 38/400
Epoch 39/400
160/160 [============= ] - 0s 525us/step - loss: 0.4593
Epoch 40/400
160/160 [============= ] - 0s 513us/step - loss: 0.4573
Epoch 41/400
160/160 [============= ] - Os 523us/step - loss: 0.4556
Epoch 42/400
Epoch 43/400
160/160 [============= ] - Os 504us/step - loss: 0.4526
Epoch 44/400
Epoch 45/400
160/160 [============== ] - Os 508us/step - loss: 0.4496
Epoch 46/400
160/160 [============== ] - 0s 516us/step - loss: 0.4482
Epoch 47/400
Epoch 48/400
160/160 [============= ] - 0s 523us/step - loss: 0.4460
Epoch 49/400
160/160 [============= ] - Os 504us/step - loss: 0.4451
Epoch 50/400
160/160 [============= ] - Os 514us/step - loss: 0.4444
Epoch 51/400
Epoch 52/400
160/160 [============== ] - Os 510us/step - loss: 0.4419
Epoch 53/400
160/160 [============== ] - Os 516us/step - loss: 0.4410
Epoch 54/400
160/160 [============= ] - 0s 513us/step - loss: 0.4404
Epoch 55/400
160/160 [============== ] - Os 528us/step - loss: 0.4395
Epoch 56/400
```

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Epoch 57/400
Epoch 58/400
160/160 [============= ] - 0s 509us/step - loss: 0.4368
Epoch 59/400
160/160 [============= ] - 0s 515us/step - loss: 0.4363
Epoch 60/400
160/160 [============= ] - 0s 519us/step - loss: 0.4362
Epoch 61/400
160/160 [============= ] - Os 525us/step - loss: 0.4350
Epoch 62/400
Epoch 63/400
Epoch 64/400
Epoch 65/400
160/160 [============= ] - Os 525us/step - loss: 0.4324
Epoch 66/400
160/160 [=============== ] - Os 523us/step - loss: 0.4316
Epoch 67/400
Epoch 68/400
Epoch 69/400
Epoch 70/400
Epoch 71/400
Epoch 72/400
160/160 [============ ] - Os 513us/step - loss: 0.4281
Epoch 73/400
160/160 [============= ] - 0s 507us/step - loss: 0.4279
Epoch 74/400
Epoch 75/400
160/160 [============== ] - 0s 528us/step - loss: 0.4274
Epoch 76/400
160/160 [============== ] - 0s 527us/step - loss: 0.4263
Epoch 77/400
Epoch 78/400
Epoch 79/400
160/160 [============== ] - Os 504us/step - loss: 0.4253
Epoch 80/400
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160/160 [============== ] - Os 519us/step - loss: 0.4244
Epoch 81/400
Epoch 82/400
Epoch 83/400
160/160 [============= ] - 0s 509us/step - loss: 0.4234
Epoch 84/400
160/160 [============= ] - 0s 513us/step - loss: 0.4229
Epoch 85/400
160/160 [============= ] - 0s 505us/step - loss: 0.4228
Epoch 86/400
Epoch 87/400
Epoch 88/400
160/160 [============= ] - Os 519us/step - loss: 0.4216
Epoch 89/400
160/160 [============= ] - Os 507us/step - loss: 0.4211
Epoch 90/400
Epoch 91/400
160/160 [============= ] - 0s 516us/step - loss: 0.4204
Epoch 92/400
160/160 [============= ] - Os 519us/step - loss: 0.4200
Epoch 93/400
160/160 [============== ] - Os 512us/step - loss: 0.4205
Epoch 94/400
160/160 [============== ] - Os 500us/step - loss: 0.4193
Epoch 95/400
160/160 [============== ] - Os 515us/step - loss: 0.4189
Epoch 96/400
160/160 [============= ] - 0s 519us/step - loss: 0.4184
Epoch 97/400
160/160 [============= ] - Os 517us/step - loss: 0.4176
Epoch 98/400
160/160 [============= ] - Os 507us/step - loss: 0.4178
Epoch 99/400
160/160 [============== ] - Os 523us/step - loss: 0.4175
Epoch 100/400
160/160 [============== ] - Os 512us/step - loss: 0.4170
Epoch 101/400
160/160 [============== ] - Os 519us/step - loss: 0.4170
Epoch 102/400
160/160 [============= ] - Os 520us/step - loss: 0.4164
Epoch 103/400
160/160 [============== ] - Os 496us/step - loss: 0.4162
Epoch 104/400
```

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160/160 [============== ] - Os 507us/step - loss: 0.4164
Epoch 105/400
160/160 [============= ] - Os 526us/step - loss: 0.4156
Epoch 106/400
160/160 [============= ] - 0s 493us/step - loss: 0.4152
Epoch 107/400
160/160 [============= ] - Os 513us/step - loss: 0.4149
Epoch 108/400
160/160 [============= ] - Os 512us/step - loss: 0.4145
Epoch 109/400
Epoch 110/400
Epoch 111/400
160/160 [============= ] - Os 516us/step - loss: 0.4135
Epoch 112/400
160/160 [============= ] - Os 520us/step - loss: 0.4130
Epoch 113/400
160/160 [============ ] - Os 510us/step - loss: 0.4130
Epoch 114/400
160/160 [=============== ] - Os 512us/step - loss: 0.4124
Epoch 115/400
Epoch 116/400
160/160 [============ ] - Os 510us/step - loss: 0.4119
Epoch 117/400
Epoch 118/400
160/160 [============== ] - Os 508us/step - loss: 0.4112
Epoch 119/400
160/160 [============== ] - Os 504us/step - loss: 0.4112
Epoch 120/400
Epoch 121/400
160/160 [============= ] - 0s 508us/step - loss: 0.4105
Epoch 122/400
160/160 [============= ] - Os 503us/step - loss: 0.4100
Epoch 123/400
160/160 [============== ] - Os 521us/step - loss: 0.4100
Epoch 124/400
160/160 [============== ] - Os 511us/step - loss: 0.4096
Epoch 125/400
Epoch 126/400
Epoch 127/400
160/160 [============== ] - Os 519us/step - loss: 0.4087
Epoch 128/400
```

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Epoch 129/400
160/160 [============= ] - Os 509us/step - loss: 0.4079
Epoch 130/400
160/160 [============= ] - Os 518us/step - loss: 0.4076
Epoch 131/400
160/160 [============= ] - 0s 522us/step - loss: 0.4079
Epoch 132/400
160/160 [============= ] - 0s 516us/step - loss: 0.4074
Epoch 133/400
Epoch 134/400
Epoch 135/400
Epoch 136/400
Epoch 137/400
160/160 [============ ] - Os 517us/step - loss: 0.4062
Epoch 138/400
Epoch 139/400
Epoch 140/400
160/160 [============= ] - Os 514us/step - loss: 0.4056
Epoch 141/400
160/160 [============== ] - 0s 522us/step - loss: 0.4054
Epoch 142/400
160/160 [============== ] - Os 518us/step - loss: 0.4044
Epoch 143/400
160/160 [============== ] - Os 519us/step - loss: 0.4050
Epoch 144/400
Epoch 145/400
160/160 [============= ] - 0s 516us/step - loss: 0.4042
Epoch 146/400
160/160 [============= ] - 0s 524us/step - loss: 0.4035
Epoch 147/400
160/160 [============== ] - Os 524us/step - loss: 0.4038
Epoch 148/400
Epoch 149/400
160/160 [============== ] - Os 514us/step - loss: 0.4036
Epoch 150/400
160/160 [============= ] - 0s 529us/step - loss: 0.4035
Epoch 151/400
160/160 [============== ] - Os 513us/step - loss: 0.4031
Epoch 152/400
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Epoch 153/400
Epoch 154/400
Epoch 155/400
160/160 [============= ] - 0s 520us/step - loss: 0.4029
Epoch 156/400
160/160 [============= ] - 0s 518us/step - loss: 0.4025
Epoch 157/400
160/160 [============= ] - 0s 524us/step - loss: 0.4023
Epoch 158/400
Epoch 159/400
160/160 [============= ] - 0s 524us/step - loss: 0.4024
Epoch 160/400
160/160 [============= ] - 0s 506us/step - loss: 0.4019
Epoch 161/400
160/160 [============= ] - Os 523us/step - loss: 0.4017
Epoch 162/400
160/160 [=============== ] - Os 519us/step - loss: 0.4015
Epoch 163/400
Epoch 164/400
160/160 [============= ] - 0s 515us/step - loss: 0.4014
Epoch 165/400
Epoch 166/400
160/160 [============== ] - Os 506us/step - loss: 0.4010
Epoch 167/400
Epoch 168/400
160/160 [============ ] - Os 519us/step - loss: 0.4005
Epoch 169/400
160/160 [============= ] - 0s 518us/step - loss: 0.4002
Epoch 170/400
160/160 [============= ] - 0s 526us/step - loss: 0.4004
Epoch 171/400
160/160 [============== ] - 0s 521us/step - loss: 0.4003
Epoch 172/400
160/160 [============== ] - Os 520us/step - loss: 0.4005
Epoch 173/400
Epoch 174/400
160/160 [============= ] - Os 499us/step - loss: 0.3999
Epoch 175/400
160/160 [============== ] - Os 506us/step - loss: 0.3997
Epoch 176/400
```

160/160 [======]	_	0s	520us/step	_	loss:	0.3994
Epoch 177/400						
160/160 [==========]	-	0s	507us/step	-	loss:	0.3996
Epoch 178/400		_			_	
160/160 [====================================	-	0s	524us/step	-	loss:	0.3993
Epoch 179/400		•	500 / .		_	
160/160 [====================================	-	0s	520us/step	-	loss:	0.3992
Epoch 180/400		^	500 / 1		-	0.0000
160/160 [====================================	-	US	523us/step	_	loss:	0.3990
Epoch 181/400		0 -	E16/		7	0.2000
160/160 [====================================	_	US	516us/step	_	loss:	0.3990
Epoch 182/400 160/160 [====================================		٥٩	EQ4ua/atan		1	0 2005
	_	US	524us/step	_	TOSS:	0.3905
Epoch 183/400 160/160 [====================================	_	٥٥	100ug /g+op	_	1000.	0 2007
Epoch 184/400		US	499us/step		TOSS.	0.3901
160/160 [====================================	_	Λe	50/11g/gton	_	loggi	U 3088
Epoch 185/400		05	304us/step		TOSS.	0.3300
160/160 [====================================	_	Λe	513ug/gton	_	loggi	N 3085
Epoch 186/400		US	orous/scep		TOSS.	0.0300
160/160 [====================================	_	٥q	52011s/sten	_	1099.	0 3979
Epoch 187/400		OB	ozoub/bucp		TOBB.	0.0313
160/160 [====================================	_	0s	520us/step	_	loss:	0.3984
Epoch 188/400		Ü	020as, 500p		1000.	0.0001
160/160 [====================================	_	0s	506us/step	_	loss:	0.3978
Epoch 189/400			ordas, stop			
160/160 [====================================	_	0s	518us/step	_	loss:	0.3978
Epoch 190/400						
160/160 [====================================	_	0s	518us/step	_	loss:	0.3973
Epoch 191/400						
160/160 [====================================	-	0s	510us/step	-	loss:	0.3975
Epoch 192/400			-			
160/160 [====================================	-	0s	521us/step	-	loss:	0.3974
Epoch 193/400			_			
160/160 [====================================	-	0s	513us/step	-	loss:	0.3975
Epoch 194/400			_			
160/160 [=======]	-	0s	520us/step	-	loss:	0.3974
Epoch 195/400						
160/160 [=======]	-	0s	512us/step	-	loss:	0.3971
Epoch 196/400						
160/160 [=======]	-	0s	509us/step	-	loss:	0.3970
Epoch 197/400						
160/160 [===========]	-	0s	523us/step	-	loss:	0.3969
Epoch 198/400						
160/160 [==========]	-	0s	508us/step	-	loss:	0.3968
Epoch 199/400						
160/160 [===========]	-	0s	509us/step	-	loss:	0.3968
Epoch 200/400						

160/160 [======]	_	0s	507us/step	_	loss:	0.3967
Epoch 201/400						
160/160 [=======]	-	0s	523us/step	-	loss:	0.3961
Epoch 202/400		_	,		_	
160/160 [====================================	-	0s	526us/step	-	loss:	0.3966
Epoch 203/400		•	546 / .		_	
160/160 [====================================	-	0s	513us/step	_	loss:	0.3962
Epoch 204/400		^	500 / 1		,	0.0000
160/160 [====================================	-	US	520us/step	_	loss:	0.3960
Epoch 205/400		0 -	E10/		7	0.2000
160/160 [====================================	_	US	518us/step	_	loss:	0.3960
Epoch 206/400 160/160 [====================================		٥٩	EOEug /gton		1.000.	0.2054
	_	US	525us/step	_	TOSS:	0.3954
Epoch 207/400 160/160 [========]	_	٥٥	E10ug/g+op		1000.	0 2054
Epoch 208/400		US	519us/scep		1088.	0.3934
160/160 [========]	_	Λe	520ug/gtan	_	loggi	0 3056
Epoch 209/400		05	520us/step		TOSS.	0.3930
160/160 [========]	_	Λe	52211g /gt an	_	loggi	N 3052
Epoch 210/400		US	ozzus/step		TOSS.	0.0302
160/160 [========]	_	٥q	54011s/sten	_	1099.	0 3955
Epoch 211/400		OB	очоць, в сер		TOBB.	0.0000
160/160 [=======]	_	0s	526us/step	_	loss:	0.3953
Epoch 212/400		Ü	ozouz, zoop		TODE.	0.0000
160/160 [====================================	_	0s	529us/step	_	loss:	0.3951
Epoch 213/400			одо, и о ор			
160/160 [====================================	_	0s	527us/step	_	loss:	0.3948
Epoch 214/400			1			
160/160 [====================================	_	0s	521us/step	_	loss:	0.3948
Epoch 215/400			•			
160/160 [====================================	-	0s	534us/step	_	loss:	0.3950
Epoch 216/400			_			
160/160 [=======]	-	0s	516us/step	-	loss:	0.3948
Epoch 217/400						
160/160 [======]	-	0s	536us/step	-	loss:	0.3946
Epoch 218/400						
160/160 [=======]	-	0s	519us/step	-	loss:	0.3947
Epoch 219/400						
160/160 [=======]	-	0s	531us/step	-	loss:	0.3946
Epoch 220/400						
160/160 [======]	-	0s	530us/step	-	loss:	0.3938
Epoch 221/400						
160/160 [======]	-	0s	526us/step	-	loss:	0.3944
Epoch 222/400						
160/160 [======]	-	0s	527us/step	-	loss:	0.3941
Epoch 223/400						
160/160 [====================================	-	0s	509us/step	-	loss:	0.3937
Epoch 224/400						

160/160 []	_	0s	530us/step	_	loss:	0.3940
Epoch 225/400			_			
160/160 [======]	-	0s	506us/step	-	loss:	0.3935
Epoch 226/400						
160/160 [======]	-	0s	522us/step	-	loss:	0.3936
Epoch 227/400		_			_	
160/160 [=======]	-	0s	528us/step	-	loss:	0.3934
Epoch 228/400		ο-	F20/		7	0 2020
160/160 [====================================	_	US	530us/step	_	loss:	0.3930
Epoch 229/400 160/160 [====================================	_	٥٥	522ug /g+op	_	loggi	0 3030
Epoch 230/400		OS	522us/step		TOSS.	0.3930
160/160 [====================================	_	0s	529us/sten	_	loss	0 3932
Epoch 231/400		Ü	020 db, 5 cop		TODD.	0.0002
160/160 [====================================	_	0s	589us/step	_	loss:	0.3930
Epoch 232/400			1			
160/160 [====================================	_	0s	493us/step	_	loss:	0.3930
Epoch 233/400			•			
160/160 [====================================	-	0s	474us/step	_	loss:	0.3930
Epoch 234/400			_			
160/160 [======]	-	0s	500us/step	-	loss:	0.3928
Epoch 235/400						
160/160 [======]	-	0s	498us/step	-	loss:	0.3924
Epoch 236/400						
160/160 [=======]	-	0s	519us/step	-	loss:	0.3924
Epoch 237/400						
160/160 [====================================	-	0s	512us/step	-	loss:	0.3924
Epoch 238/400		^	F00 / .		-	0 2000
160/160 [====================================	_	Us	509us/step	_	loss:	0.3928
Epoch 239/400 160/160 [====================================		٥٥	E01112 / aton	_	1000.	0 2002
Epoch 240/400		US	521us/step		TOSS.	0.3923
160/160 [====================================	_	۸q	52311s/sten	_	1099.	0 3922
Epoch 241/400		OB	ozoub, bucp		TOBB.	0.0022
160/160 [====================================	_	0s	529us/step	_	loss:	0.3920
Epoch 242/400			, <sub>F</sub>			
160/160 [====================================	_	0s	526us/step	_	loss:	0.3921
Epoch 243/400			•			
160/160 [====================================	-	0s	510us/step	_	loss:	0.3916
Epoch 244/400						
160/160 [======]	-	0s	518us/step	-	loss:	0.3912
Epoch 245/400						
160/160 [======]	-	0s	531us/step	-	loss:	0.3912
Epoch 246/400						
160/160 [===========]	-	0s	522us/step	-	loss:	0.3915
Epoch 247/400		_			_	
160/160 [====================================	-	0s	524us/step	-	loss:	0.3914
Epoch 248/400						

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Epoch 249/400
160/160 [============= ] - Os 516us/step - loss: 0.3910
Epoch 250/400
Epoch 251/400
Epoch 252/400
160/160 [============= ] - Os 517us/step - loss: 0.3910
Epoch 253/400
Epoch 254/400
Epoch 255/400
Epoch 256/400
Epoch 257/400
160/160 [============= ] - Os 520us/step - loss: 0.3904
Epoch 258/400
Epoch 259/400
Epoch 260/400
Epoch 261/400
160/160 [============== ] - Os 504us/step - loss: 0.3898
Epoch 262/400
160/160 [============== ] - Os 499us/step - loss: 0.3898
Epoch 263/400
Epoch 264/400
Epoch 265/400
160/160 [============= ] - 0s 512us/step - loss: 0.3896
Epoch 266/400
Epoch 267/400
Epoch 268/400
160/160 [============== ] - 0s 521us/step - loss: 0.3892
Epoch 269/400
160/160 [============== ] - 0s 502us/step - loss: 0.3888
Epoch 270/400
Epoch 271/400
Epoch 272/400
```

160/160 [=======]	_	0s	515us/step	_	loss:	0.3889
Epoch 273/400			_			
160/160 [======]	-	0s	511us/step	-	loss:	0.3887
Epoch 274/400						
160/160 [======]	-	0s	506us/step	-	loss:	0.3887
Epoch 275/400						
160/160 [=======]	-	0s	509us/step	-	loss:	0.3884
Epoch 276/400			_			
160/160 [=======]	-	0s	526us/step	-	loss:	0.3886
Epoch 277/400			_			
160/160 [====================================	-	0s	503us/step	-	loss:	0.3886
Epoch 278/400		_			_	
160/160 [====================================	-	0s	516us/step	-	loss:	0.3883
Epoch 279/400		_	500 / .		_	
160/160 [====================================	-	0s	522us/step	_	loss:	0.3882
Epoch 280/400		^	F04 / .		-	0.0004
160/160 [====================================	_	US	504us/step	_	loss:	0.3881
Epoch 281/400		0 -	F06/		7	0 2070
160/160 [====================================	_	US	506us/step	_	loss:	0.3878
Epoch 282/400 160/160 [====================================		٥-	F06 /-+		7	0 2000
	_	US	52ous/step	_	TOSS:	0.3000
Epoch 283/400 160/160 [====================================	_	٥٥	52/11g/g+on		1000.	0 2076
Epoch 284/400		US	524us/step		TOSS.	0.3070
160/160 [====================================	_	۸a	52511g/gton	_	loggi	0 3877
Epoch 285/400		VS	ozous/scep		TOSS.	0.3011
160/160 [====================================	_	Λe	51011g/gten	_	loggi	0 3876
Epoch 286/400		V.S	orous, step		TOSS.	0.5070
160/160 [====================================	_	0s	506us/sten	_	loss	0 3877
Epoch 287/400		OB	ооошь, в сер		TOBB.	0.0011
160/160 [====================================	_	0s	508us/step	_	loss:	0.3875
Epoch 288/400			ordas, scop			
160/160 [====================================	_	0s	524us/step	_	loss:	0.3872
Epoch 289/400			1 , , , , ,			
160/160 [====================================	_	0s	518us/step	_	loss:	0.3869
Epoch 290/400			. 1			
160/160 [====================================	_	0s	516us/step	_	loss:	0.3868
Epoch 291/400			•			
160/160 [====================================	_	0s	516us/step	_	loss:	0.3871
Epoch 292/400			-			
160/160 [=======]	-	0s	516us/step	-	loss:	0.3869
Epoch 293/400						
160/160 [======]	_	0s	516us/step	-	loss:	0.3870
Epoch 294/400						
160/160 [======]	-	0s	535us/step	-	loss:	0.3865
Epoch 295/400						
160/160 [=======]	-	0s	505us/step	-	loss:	0.3865
Epoch 296/400						

160/160 [=======]	_	0s	509us/step	_	loss:	0.3867
Epoch 297/400			_			
160/160 [=======]	-	0s	508us/step	-	loss:	0.3864
Epoch 298/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.3863
Epoch 299/400						
160/160 [====================================	-	0s	513us/step	-	loss:	0.3853
Epoch 300/400		0 -	F01/		7	0 2062
160/160 [====================================	-	US	521us/step	_	loss:	0.3863
Epoch 301/400 160/160 [====================================		٥٩	EOEug /gton		1.000.	0 2064
Epoch 302/400		US	505us/step	_	1088.	0.3004
160/160 [====================================	_	Λe	51011g/gten	_	loggi	0 3861
Epoch 303/400		V.S	olous, scep		1055.	0.0001
160/160 [====================================	_	0s	505us/step	_	loss:	0.3858
Epoch 304/400			occus, scop			
160/160 [====================================	_	0s	518us/step	_	loss:	0.3860
Epoch 305/400			. 1			
160/160 [====================================	_	0s	511us/step	_	loss:	0.3860
Epoch 306/400			-			
160/160 [=======]	-	0s	523us/step	_	loss:	0.3857
Epoch 307/400						
160/160 [===========]	-	0s	519us/step	-	loss:	0.3855
Epoch 308/400						
160/160 [=======]	-	0s	519us/step	-	loss:	0.3855
Epoch 309/400						
160/160 [=======]	-	0s	513us/step	-	loss:	0.3853
Epoch 310/400		_			_	
160/160 [====================================	-	0s	507us/step	-	loss:	0.3853
Epoch 311/400		^	500 / 1		-	0 0040
160/160 [====================================	_	Us	526us/step	_	loss:	0.3849
Epoch 312/400 160/160 [========]		٥٩	E01ug/gton		1.000.	0 2040
Epoch 313/400	_	US	521us/step	_	TOSS:	0.3049
160/160 [====================================	_	۸e	520118/sten	_	loggi	0 3851
Epoch 314/400		US	ozous/scep		TOSS.	0.5051
160/160 [====================================	_	0s	517us/step	_	loss:	0.3844
Epoch 315/400		Ů.	011 db, b00p		TODE.	0.0011
160/160 [====================================	_	0s	529us/step	_	loss:	0.3850
Epoch 316/400			. 1			
160/160 [====================================	_	0s	500us/step	_	loss:	0.3847
Epoch 317/400			_			
160/160 [=======]	-	0s	504us/step	_	loss:	0.3843
Epoch 318/400						
160/160 [=======]	-	0s	532us/step	-	loss:	0.3844
Epoch 319/400						
160/160 [=======]	-	0s	515us/step	-	loss:	0.3844
Epoch 320/400						

160/160 [=======]	_	0s	507us/step	_	loss:	0.3842
Epoch 321/400			_			
160/160 [======]	-	0s	516us/step	-	loss:	0.3839
Epoch 322/400						
160/160 [======]	-	0s	510us/step	-	loss:	0.3843
Epoch 323/400		_			_	
160/160 [=======]	_	0s	508us/step	-	loss:	0.3843
Epoch 324/400		Λ-	E02 /		7	0 2026
160/160 [=======] Epoch 325/400	_	US	523us/step	_	loss:	0.3836
160/160 [====================================	_	٥٥	512ug /gton	_	loggi	0 3843
Epoch 326/400		OS	512us/scep		TOSS.	0.3042
160/160 [====================================	_	0s	518us/step	_	loss:	0.3838
Epoch 327/400		Ü	orous, stop		TODD.	0.0000
160/160 [====================================	_	0s	522us/step	_	loss:	0.3837
Epoch 328/400			1			
160/160 [====================================	_	0s	518us/step	_	loss:	0.3836
Epoch 329/400			_			
160/160 [======]	-	0s	517us/step	_	loss:	0.3835
Epoch 330/400						
160/160 [======]	-	0s	517us/step	-	loss:	0.3833
Epoch 331/400						
160/160 [======]	-	0s	505us/step	-	loss:	0.3836
Epoch 332/400			_			
160/160 [====================================	-	0s	518us/step	-	loss:	0.3829
Epoch 333/400		_			_	
160/160 [====================================	_	0s	522us/step	_	loss:	0.3833
Epoch 334/400		Λ-	F20/		7	0 2020
160/160 [====================================	_	US	532us/step	_	loss:	0.3832
Epoch 335/400 160/160 [====================================	_	٥٥	502ug/gton	_	loggi	0 3836
Epoch 336/400		OS	502us/step		TOSS.	0.3020
160/160 [====================================	_	0s	525us/step	_	loss:	0.3831
Epoch 337/400		Ü	020d2, 200p		1000.	0.0001
160/160 [====================================	_	0s	529us/step	_	loss:	0.3829
Epoch 338/400			. 1			
160/160 [====================================	_	0s	516us/step	_	loss:	0.3828
Epoch 339/400			_			
160/160 [======]	-	0s	516us/step	_	loss:	0.3825
Epoch 340/400						
160/160 [======]	-	0s	520us/step	-	loss:	0.3829
Epoch 341/400						
160/160 [======]	-	0s	499us/step	-	loss:	0.3827
Epoch 342/400		_			_	
160/160 [====================================	-	0s	526us/step	-	loss:	0.3820
Epoch 343/400		Ο.	E00/		1	0 2005
160/160 [=======] Fnoch 244/400	_	US	508us/step	_	TOSS:	0.3825
Epoch 344/400						

160/160 [======] - 0s 513	us/step - loss: 0.3823
Epoch 345/400	-
160/160 [======] - 0s 532	us/step - loss: 0.3824
Epoch 346/400	
160/160 [======] - Os 513	us/step - loss: 0.3823
Epoch 347/400	
160/160 [======] - 0s 532	us/step - loss: 0.3821
Epoch 348/400	/
160/160 [======] - 0s 506	us/step - loss: 0.3818
Epoch 349/400	/
160/160 [=======] - 0s 519	us/step - loss: 0.3820
Epoch 350/400 160/160 [========] - 0s 548	ng/gton - logg, 0 2017
Epoch 351/400	us/step - 10ss. 0.3617
160/160 [======== ] - 0s 526	115/stan - loss: 0 3819
Epoch 352/400	us/step 1055. 0.0015
160/160 [=======] - 0s 523	us/step - loss: 0.3819
Epoch 353/400	
160/160 [========= ] - 0s 519	us/step - loss: 0.3816
Epoch 354/400	
160/160 [=======] - 0s 532	us/step - loss: 0.3814
Epoch 355/400	-
160/160 [=======] - Os 515	us/step - loss: 0.3812
Epoch 356/400	
160/160 [======] - Os 563	us/step - loss: 0.3813
Epoch 357/400	
160/160 [======] - 0s 533	us/step - loss: 0.3811
Epoch 358/400	
160/160 [======] - 0s 569	us/step - loss: 0.3814
Epoch 359/400	
160/160 [=======] - 0s 594	us/step - loss: 0.3812
Epoch 360/400	/
160/160 [======] - 0s 519	us/step - loss: 0.3810
Epoch 361/400 160/160 [=========== ] - 0s 514	/ 1 0.3810
Epoch 362/400	us/step - loss: 0.3810
160/160 [============ ] - 0s 516	us/stan - loss: 0 3807
Epoch 363/400	us/step 1055. 0.3007
160/160 [========	us/sten - loss: 0 3807
Epoch 364/400	ab, b top 1055. 0.0007
160/160 [=======] - 0s 521	us/step - loss: 0.3808
Epoch 365/400	1
160/160 [=======] - 0s 530	us/step - loss: 0.3806
Epoch 366/400	•
160/160 [======== ] - 0s 517	us/step - loss: 0.3805
Epoch 367/400	-
160/160 [======] - Os 504	us/step - loss: 0.3800
Epoch 368/400	

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Epoch 369/400
160/160 [============= ] - 0s 530us/step - loss: 0.3802
Epoch 370/400
160/160 [============= ] - Os 515us/step - loss: 0.3800
Epoch 371/400
Epoch 372/400
160/160 [============= ] - 0s 519us/step - loss: 0.3805
Epoch 373/400
160/160 [============ ] - Os 521us/step - loss: 0.3802
Epoch 374/400
Epoch 375/400
Epoch 376/400
160/160 [============= ] - Os 514us/step - loss: 0.3799
Epoch 377/400
160/160 [============ ] - Os 528us/step - loss: 0.3796
Epoch 378/400
Epoch 379/400
160/160 [============= ] - Os 488us/step - loss: 0.3796
Epoch 380/400
160/160 [============= ] - 0s 486us/step - loss: 0.3793
Epoch 381/400
160/160 [============== ] - Os 541us/step - loss: 0.3793
Epoch 382/400
160/160 [============== ] - 0s 526us/step - loss: 0.3794
Epoch 383/400
160/160 [============== ] - Os 508us/step - loss: 0.3793
Epoch 384/400
160/160 [============== ] - Os 513us/step - loss: 0.3793
Epoch 385/400
160/160 [============= ] - 0s 507us/step - loss: 0.3789
Epoch 386/400
160/160 [============= ] - 0s 518us/step - loss: 0.3792
Epoch 387/400
160/160 [============== ] - 0s 514us/step - loss: 0.3792
Epoch 388/400
160/160 [============== ] - Os 514us/step - loss: 0.3790
Epoch 389/400
160/160 [=============== ] - Os 518us/step - loss: 0.3786
Epoch 390/400
160/160 [============= ] - Os 504us/step - loss: 0.3786
Epoch 391/400
160/160 [=============== ] - Os 516us/step - loss: 0.3785
Epoch 392/400
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Epoch 393/400
160/160 [============= ] - 0s 515us/step - loss: 0.3783
Epoch 394/400
Epoch 395/400
160/160 [============= ] - 0s 523us/step - loss: 0.3784
Epoch 396/400
160/160 [============= ] - 0s 498us/step - loss: 0.3783
Epoch 397/400
Epoch 398/400
Epoch 399/400
160/160 [============= ] - Os 514us/step - loss: 0.3778
Epoch 400/400
160/160 [============= ] - Os 511us/step - loss: 0.3780
160/160 [========= ] - Os 1ms/step
Epoch 1/400
160/160 [============= ] - 0s 2ms/step - loss: 0.7276
Epoch 2/400
Epoch 3/400
160/160 [============== ] - Os 566us/step - loss: 0.7049
Epoch 4/400
160/160 [============= ] - Os 524us/step - loss: 0.7016
Epoch 5/400
Epoch 6/400
160/160 [============= ] - Os 564us/step - loss: 0.6970
Epoch 7/400
Epoch 8/400
160/160 [============ ] - Os 560us/step - loss: 0.6936
Epoch 9/400
Epoch 10/400
Epoch 11/400
160/160 [=============== ] - Os 565us/step - loss: 0.6886
Epoch 12/400
160/160 [=========== ] - Os 569us/step - loss: 0.6869
Epoch 13/400
Epoch 14/400
160/160 [=========== ] - Os 507us/step - loss: 0.6834
Epoch 15/400
160/160 [============= ] - 0s 518us/step - loss: 0.6814
```

Enach 16/400				
Epoch 16/400 160/160 [=======] -	_	0	5/0vg/gton - logg:	0 6707
Epoch 17/400		US	540us/step - 10ss.	0.0191
160/160 [=======] -		Λ	E7Eug/aton logg.	0 6776
	_	US	5/5us/step - 10ss:	0.6776
Epoch 18/400 160/160 [======] -		Λ	FFOrma /atom logg.	0 6757
	-	US	550us/step - 10ss:	0.6757
Epoch 19/400		Λ-	FC0/ 1	0 6700
160/160 [=======] -	-	US	562us/step - 10ss:	0.6738
Epoch 20/400		Λ-	FC4/	0 6710
160/160 [======] -	-	US	561us/step - 10ss:	0.6718
Epoch 21/400		^	FFO / 1	0.000
160/160 [======] -	_	US	559us/step - loss:	0.6696
Epoch 22/400		^	500 /	0 0070
160/160 [======] -	-	0s	569us/step - loss:	0.6673
Epoch 23/400		_	500 /	
160/160 [======] -	-	0s	532us/step - loss:	0.6648
Epoch 24/400		_		
160/160 [======] -	-	0s	535us/step - loss:	0.6621
Epoch 25/400				
160/160 [======] -	-	0s	542us/step - loss:	0.6595
Epoch 26/400				
160/160 [======] -	-	0ຣ	524us/step - loss:	0.6564
Epoch 27/400				
160/160 [======] -	-	0s	538us/step - loss:	0.6536
Epoch 28/400				
160/160 [======] -	-	0ຣ	550us/step - loss:	0.6504
Epoch 29/400				
160/160 [======] -	-	0s	553us/step - loss:	0.6470
Epoch 30/400				
160/160 [======] -	-	0s	570us/step - loss:	0.6439
Epoch 31/400				
160/160 [=======] -	-	0s	567us/step - loss:	0.6402
Epoch 32/400				
160/160 [======] -	-	0s	560us/step - loss:	0.6362
Epoch 33/400				
160/160 [======] -	-	0s	552us/step - loss:	0.6320
Epoch 34/400				
160/160 [======] -	-	0s	575us/step - loss:	0.6279
Epoch 35/400				
160/160 [======] -	-	0s	543us/step - loss:	0.6233
Epoch 36/400				
160/160 [=======] -	-	0s	562us/step - loss:	0.6182
Epoch 37/400				
160/160 [=======] -	-	0s	564us/step - loss:	0.6129
Epoch 38/400			-	
160/160 [====================================	-	0s	553us/step - loss:	0.6072
Epoch 39/400			-	
160/160 [====================================	-	0s	541us/step - loss:	0.6014
			=	

Epoch 40/400						
160/160 [====================================	_	0s	524us/step	_	loss:	0.5949
Epoch 41/400			_			
160/160 [=======]	-	0s	544us/step	-	loss:	0.5883
Epoch 42/400						
160/160 [=======]	-	0s	568us/step	-	loss:	0.5813
Epoch 43/400						
160/160 [=======]	-	0s	550us/step	-	loss:	0.5736
Epoch 44/400						
160/160 [============]	-	0s	560us/step	-	loss:	0.5659
Epoch 45/400						
160/160 [============]	-	0s	565us/step	-	loss:	0.5576
Epoch 46/400						
160/160 [====================================	-	0s	570us/step	-	loss:	0.5490
Epoch 47/400						
160/160 [=======]	-	0s	568us/step	-	loss:	0.5399
Epoch 48/400						
160/160 [=======]	-	0s	547us/step	-	loss:	0.5300
Epoch 49/400						
160/160 [=======]	-	0s	570us/step	-	loss:	0.5205
Epoch 50/400						
160/160 [=======]	-	0s	564us/step	-	loss:	0.5104
Epoch 51/400						
160/160 [=======]	-	0s	555us/step	-	loss:	0.4999
Epoch 52/400						
160/160 [=======]	-	0s	559us/step	-	loss:	0.4888
Epoch 53/400						
160/160 [=======]	-	0ຮ	560us/step	-	loss:	0.4779
Epoch 54/400						
160/160 [====================================	-	0s	539us/step	-	loss:	0.4667
Epoch 55/400		_			_	
160/160 [====================================	-	0s	515us/step	-	loss:	0.4553
Epoch 56/400		_			_	
160/160 [====================================	-	0s	550us/step	-	loss:	0.4438
Epoch 57/400		•	5.05 / .		_	
160/160 [====================================	-	0s	567us/step	_	loss:	0.4322
Epoch 58/400		^	505 / .		-	0 4000
160/160 [====================================	-	0s	565us/step	_	loss:	0.4208
Epoch 59/400		^	/ ·		-	0 4000
160/160 [====================================	_	0s	555us/step	_	loss:	0.4090
Epoch 60/400		^	504 / .		-	0 0074
160/160 [====================================	_	0s	564us/step	_	loss:	0.3974
Epoch 61/400		^	F00 / .		,	0 0004
160/160 [====================================	_	US	ossus/step	_	TOSS:	0.3861
Epoch 62/400		0-	EGGna/-+		1.55	0 2740
160/160 [====================================	_	US	ooous/step	_	TOSS:	0.3/48
Epoch 63/400		0-	EEGna/-+		1	0 2640
160/160 [====================================	_	US	ooous/step	_	TOSS:	0.3640

Enoch 64/400				
Epoch 64/400 160/160 [====================================		٥٥	EEOug/gton - logg: 0 252	_
Epoch 65/400		US	552us/step - 10ss. 0.555	5
-		۸-	E45/	0
160/160 [====================================	_	US	545us/step - 10ss: 0.342	ŏ
Epoch 66/400		^	504 /	_
160/160 [====================================	_	0s	561us/step - Ioss: 0.333	6
Epoch 67/400		_		_
160/160 [====================================	_	0s	550us/step - loss: 0.323	8
Epoch 68/400		_		_
160/160 [=======]	_	0s	564us/step - loss: 0.313	9
Epoch 69/400				
160/160 [======]	-	0s	556us/step - loss: 0.305	4
Epoch 70/400				
160/160 [======]	-	0s	543us/step - loss: 0.296	7
Epoch 71/400				
160/160 [======]	-	0s	577us/step - loss: 0.288	7
Epoch 72/400				
160/160 [=======]	-	0s	556us/step - loss: 0.280	6
Epoch 73/400				
160/160 [=======]	-	0s	559us/step - loss: 0.272	4
Epoch 74/400				
160/160 [=======]	-	0s	559us/step - loss: 0.265	6
Epoch 75/400				
160/160 [========]	-	0s	545us/step - loss: 0.258	3
Epoch 76/400				
160/160 [=========]	-	0s	556us/step - loss: 0.252	1
Epoch 77/400				
160/160 [===========]	_	0s	551us/step - loss: 0.245	4
Epoch 78/400				
160/160 [===========]	_	0s	564us/step - loss: 0.239	4
Epoch 79/400			_	
160/160 [====================================	_	0s	546us/step - loss: 0.233	3
Epoch 80/400			-	
160/160 [====================================	_	0s	557us/step - loss: 0.227	6
Epoch 81/400			-	
160/160 [====================================	_	0s	561us/step - loss: 0.222	4
Epoch 82/400			-	
160/160 [====================================	_	0s	538us/step - loss: 0.217	2
Epoch 83/400			-	
160/160 [====================================	_	0s	562us/step - loss: 0.212	1
Epoch 84/400			-	
160/160 [====================================	_	0s	568us/step - loss: 0.207	3
Epoch 85/400			•	
160/160 [====================================	_	0s	557us/step - loss: 0.202	9
Epoch 86/400			•	
160/160 [====================================	_	0s	555us/step - loss: 0.198	3
Epoch 87/400				
160/160 [====================================	_	0s	555us/step - loss: 0.194	4
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Epoch 88/400
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Epoch 112/400
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Epoch 113/400
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Epoch 116/400
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Epoch 117/400
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Epoch 118/400
160/160 [====================================
Epoch 119/400
160/160 [============ ] - Os 561us/step - loss: 0.1116
Epoch 120/400
160/160 [====================================
Epoch 121/400
160/160 [============ ] - Os 569us/step - loss: 0.1086
Epoch 122/400
160/160 [============= ] - Os 537us/step - loss: 0.1072
Epoch 123/400
160/160 [====================================
Epoch 124/400
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Epoch 125/400
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Epoch 126/400
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Epoch 135/400
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Epoch 136/400						
160/160 [====================================	_	0s	560us/step	_	loss:	0.0910
Epoch 137/400			•			
160/160 [====================================	_	0s	567us/step	_	loss:	0.0896
Epoch 138/400			-			
160/160 [====================================	_	0s	532us/step	_	loss:	0.0891
Epoch 139/400			-			
160/160 [====================================	_	0s	532us/step	_	loss:	0.0868
Epoch 140/400			_			
160/160 [=======]	-	0s	549us/step	-	loss:	0.0872
Epoch 141/400						
160/160 [=======]	-	0s	565us/step	-	loss:	0.0867
Epoch 142/400						
160/160 [=======]	-	0s	564us/step	-	loss:	0.0855
Epoch 143/400						
160/160 [=======]	-	0s	572us/step	-	loss:	0.0844
Epoch 144/400						
160/160 [=======]	-	0s	566us/step	-	loss:	0.0835
Epoch 145/400						
160/160 [=======]	-	0s	580us/step	-	loss:	0.0825
Epoch 146/400						
160/160 [=======]	-	0s	552us/step	-	loss:	0.0825
Epoch 147/400						
160/160 [=======]	-	0s	572us/step	-	loss:	0.0811
Epoch 148/400						
160/160 [===========]	-	0s	547us/step	-	loss:	0.0810
Epoch 149/400			_			
160/160 [=======]	-	0s	571us/step	-	loss:	0.0800
Epoch 150/400						
160/160 [=======]	-	0s	562us/step	-	loss:	0.0790
Epoch 151/400						
160/160 [=======]	-	0s	563us/step	-	loss:	0.0772
Epoch 152/400						
160/160 [=======]	-	0s	556us/step	-	loss:	0.0782
Epoch 153/400						
160/160 [======]	-	0s	552us/step	-	loss:	0.0761
Epoch 154/400						
160/160 [==========]	-	0s	565us/step	-	loss:	0.0773
Epoch 155/400						
160/160 [==========]	-	0s	544us/step	-	loss:	0.0764
Epoch 156/400						
160/160 [=======]	-	0s	588us/step	-	loss:	0.0754
Epoch 157/400						
160/160 [===========]	-	0s	535us/step	-	loss:	0.0752
Epoch 158/400						
160/160 [=======]	-	0s	557us/step	-	loss:	0.0745
Epoch 159/400						
160/160 [====================================	-	0s	532us/step	-	loss:	0.0736

Epoch 160/400						
160/160 [====================================	_	0s	544us/step	_	loss:	0.0736
Epoch 161/400			•			
160/160 [====================================	_	0s	548us/step	_	loss:	0.0713
Epoch 162/400			-			
160/160 [====================================	-	0s	568us/step	_	loss:	0.0718
Epoch 163/400			-			
160/160 [====================================	-	0s	545us/step	_	loss:	0.0718
Epoch 164/400			_			
160/160 [======]	-	0s	583us/step	-	loss:	0.0691
Epoch 165/400						
160/160 [======]	-	0s	542us/step	-	loss:	0.0708
Epoch 166/400						
160/160 [======]	-	0s	563us/step	-	loss:	0.0695
Epoch 167/400						
160/160 [======]	-	0s	574us/step	-	loss:	0.0701
Epoch 168/400						
160/160 [======]	-	0s	560us/step	-	loss:	0.0691
Epoch 169/400						
160/160 [======]	-	0s	558us/step	-	loss:	0.0692
Epoch 170/400						
160/160 [=======]	-	0s	561us/step	-	loss:	0.0682
Epoch 171/400						
160/160 [=======]	-	0s	565us/step	-	loss:	0.0673
Epoch 172/400						
160/160 [=======]	-	0s	558us/step	-	loss:	0.0676
Epoch 173/400						
160/160 [======]	-	0s	559us/step	-	loss:	0.0667
Epoch 174/400						
160/160 [===========]	-	0s	563us/step	-	loss:	0.0662
Epoch 175/400						
160/160 [=========]	-	0s	531us/step	-	loss:	0.0658
Epoch 176/400						
160/160 [=========]	-	0s	557us/step	-	loss:	0.0641
Epoch 177/400						
160/160 [======]	-	0s	572us/step	-	loss:	0.0631
Epoch 178/400						
160/160 [=======]	-	0s	550us/step	-	loss:	0.0639
Epoch 179/400						
160/160 [=======]	-	0s	579us/step	-	loss:	0.0632
Epoch 180/400						
160/160 [=======]	-	0s	557us/step	-	loss:	0.0633
Epoch 181/400						
160/160 [=======]	-	0s	566us/step	-	loss:	0.0622
Epoch 182/400						
160/160 [====================================	-	0s	558us/step	-	loss:	0.0607
Epoch 183/400		_			_	
160/160 [====================================	-	0s	553us/step	-	loss:	0.0623

Epoch 184/400
160/160 [=======] - Os 557us/step - loss: 0.0607
Epoch 185/400
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Epoch 186/400 160/160 [====================================
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Epoch 191/400
160/160 [=======] - Os 563us/step - loss: 0.0594
Epoch 192/400
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Epoch 208/400		^	F.07 / .		-	0 0554
160/160 [=======]	-	US	56/us/step	_	loss:	0.0554
Epoch 209/400		•	500 / :		-	0.0500
160/160 [====================================	_	US	563us/step	_	loss:	0.0539
Epoch 210/400		^	F.C.4 / .		,	0 0500
160/160 [====================================	-	0s	561us/step	_	loss:	0.0528
Epoch 211/400		_	500 / .		_	
160/160 [====================================	-	0s	562us/step	_	loss:	0.0537
Epoch 212/400		•	574 / ·		-	0 0505
160/160 [====================================	-	0s	5/lus/step	_	loss:	0.0535
Epoch 213/400		_			_	
160/160 [========]	-	0s	548us/step	-	loss:	0.0522
Epoch 214/400		_			_	
160/160 [=========]	-	0s	576us/step	-	loss:	0.0537
Epoch 215/400		_			_	
160/160 [=========]	-	0s	566us/step	-	loss:	0.0537
Epoch 216/400		_			_	
160/160 [=========]	-	0s	566us/step	-	loss:	0.0534
Epoch 217/400						
160/160 [======]	-	0s	560us/step	-	loss:	0.0527
Epoch 218/400			_			
160/160 [======]	-	0s	568us/step	-	loss:	0.0522
Epoch 219/400			_			
160/160 [======]	-	0s	548us/step	-	loss:	0.0525
Epoch 220/400						
160/160 [=======]	-	0s	544us/step	-	loss:	0.0496
Epoch 221/400						
160/160 [======]	-	0s	554us/step	-	loss:	0.0523
Epoch 222/400						
160/160 [=======]	-	0s	575us/step	-	loss:	0.0521
Epoch 223/400						
160/160 [======]	-	0s	568us/step	-	loss:	0.0500
Epoch 224/400						
160/160 [=======]	-	0s	565us/step	-	loss:	0.0515
Epoch 225/400						
160/160 [======]	-	0s	562us/step	-	loss:	0.0502
Epoch 226/400						
160/160 [======]	-	0s	566us/step	-	loss:	0.0491
Epoch 227/400						
160/160 [======]	-	0s	556us/step	-	loss:	0.0506
Epoch 228/400						
160/160 [=======]	-	0s	563us/step	-	loss:	0.0491
Epoch 229/400						
160/160 [=======]	-	0s	563us/step	-	loss:	0.0495
Epoch 230/400						
160/160 [=======]	-	0s	571us/step	-	loss:	0.0493
Epoch 231/400						
160/160 [====================================	-	0s	558us/step	-	loss:	0.0494

Epoch 232/400						
160/160 [====================================	_	0s	567us/step	-	loss:	0.0485
Epoch 233/400			_			
160/160 [=======]	-	0s	548us/step	-	loss:	0.0498
Epoch 234/400						
160/160 [=======]	-	0s	566us/step	-	loss:	0.0461
Epoch 235/400						
160/160 [======]	-	0s	567us/step	-	loss:	0.0504
Epoch 236/400						
160/160 [=======]	-	0s	564us/step	-	loss:	0.0494
Epoch 237/400						
160/160 [=======]	-	0s	563us/step	-	loss:	0.0490
Epoch 238/400						
160/160 [======]	-	0s	547us/step	-	loss:	0.0485
Epoch 239/400						
160/160 [======]	-	0s	574us/step	-	loss:	0.0488
Epoch 240/400						
160/160 [======]	-	0s	557us/step	-	loss:	0.0491
Epoch 241/400						
160/160 [======]	-	0s	563us/step	-	loss:	0.0470
Epoch 242/400						
160/160 [======]	-	0s	554us/step	-	loss:	0.0478
Epoch 243/400						
160/160 [=======]	-	0ຮ	545us/step	-	loss:	0.0465
Epoch 244/400						
160/160 [=======]	-	0ຮ	578us/step	-	loss:	0.0486
Epoch 245/400						
160/160 [=======]	-	0s	579us/step	-	loss:	0.0472
Epoch 246/400		_			_	
160/160 [====================================	-	0s	567us/step	-	loss:	0.0469
Epoch 247/400		_			_	
160/160 [====================================	-	0s	554us/step	-	loss:	0.0467
Epoch 248/400		•	500 / .		_	
160/160 [====================================	-	0s	568us/step	-	loss:	0.0463
Epoch 249/400		^	FF0 / 1		-	0 0475
160/160 [====================================	_	US	550us/step	_	loss:	0.0475
Epoch 250/400		0-	FF0 /		7	0 0472
160/160 [====================================	_	US	558us/step	_	loss:	0.0473
Epoch 251/400		٥-	F60/		7	0 0460
160/160 [====================================	_	US	562us/step	_	loss:	0.0462
Epoch 252/400		٥-	FF0 /-+		7	0.0456
160/160 [====================================	_	US	552us/step	_	loss:	0.0456
Epoch 253/400 160/160 [====================================		٥٩	EEGua /aton		1000.	0 0460
	_	US	556us/step	_	TOSS:	0.0400
Epoch 254/400 160/160 [====================================	_	0~	551ng/g+s=	_	1000:	0 0445
	_	US	oorus/step	_	TOSS:	0.0445
Epoch 255/400 160/160 [====================================	_	0~	560ng/g+s=	_	1000:	0.0450
		US	JUUUS/STED	_	TOSS:	0.0450

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Epoch 304/400		^	F74 / .		-	0 0404
160/160 [====================================	_	Us	5/lus/step	_	loss:	0.0401
Epoch 305/400		_			_	
160/160 [====================================	-	0s	bbbus/step	-	loss:	0.0395
Epoch 306/400						
160/160 [=======]	-	0s	569us/step	-	loss:	0.0391
Epoch 307/400			_			
160/160 [======]	-	0s	553us/step	-	loss:	0.0395
Epoch 308/400						
160/160 [=======]	-	0s	561us/step	-	loss:	0.0394
Epoch 309/400						
160/160 [=======]	-	0s	554us/step	-	loss:	0.0363
Epoch 310/400						
160/160 [==========]	-	0s	557us/step	-	loss:	0.0387
Epoch 311/400						
160/160 [=======]	-	0s	559us/step	-	loss:	0.0395
Epoch 312/400						
160/160 [=======]	-	0s	551us/step	-	loss:	0.0389
Epoch 313/400						
160/160 [====================================	-	0s	560us/step	-	loss:	0.0398
Epoch 314/400			_			
160/160 [====================================	_	0s	572us/step	_	loss:	0.0362
Epoch 315/400			_			
160/160 [====================================	_	0s	557us/step	_	loss:	0.0390
Epoch 316/400			-			
160/160 [====================================	_	0s	580us/step	_	loss:	0.0392
Epoch 317/400						
160/160 [====================================	_	0s	578us/step	_	loss:	0.0384
Epoch 318/400			•			
160/160 [====================================	_	0s	560us/step	_	loss:	0.0384
Epoch 319/400						
160/160 [====================================	_	0s	558us/step	_	loss:	0.0392
Epoch 320/400			. 1			
160/160 [====================================	_	0s	569us/step	_	loss:	0.0380
Epoch 321/400			1			
160/160 [====================================	_	0s	556us/step	_	loss:	0.0381
Epoch 322/400			<u>.</u>			
160/160 [====================================	_	0s	575us/step	_	loss:	0.0382
Epoch 323/400						
160/160 [====================================	_	0s	552us/step	_	loss:	0.0379
Epoch 324/400		Ů.	002as, 500p		TODE.	0.00.0
160/160 [====================================	_	۸e	579119/stan	_	loggi	0 0376
Epoch 325/400		OB	orzab/becp		TOBB.	0.0070
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Epoch 326/400		OB	coous, scep		TODD.	0.0010
160/160 [====================================	_	Oa	567ug /g+on	_	loggi	U U3E1
Epoch 327/400		OĐ	oorus/scep		TOSS.	0.0001
160/160 [====================================	_	٥a	565ug /g+cs	_	loggi	0 0373
100/ 100 []	_	US	Joous/step	_	TOSS:	0.0313

Epoch 328/400						
160/160 [====================================	_	0s	563us/step	_	loss:	0.0382
Epoch 329/400			_			
160/160 [====================================	_	0s	574us/step	_	loss:	0.0360
Epoch 330/400			_			
160/160 [====================================	_	0s	572us/step	_	loss:	0.0376
Epoch 331/400			-			
160/160 [====================================	_	0s	560us/step	_	loss:	0.0374
Epoch 332/400			-			
160/160 [====================================	-	0s	562us/step	_	loss:	0.0371
Epoch 333/400			_			
160/160 [====================================	_	0s	565us/step	_	loss:	0.0370
Epoch 334/400			-			
160/160 [====================================	_	0s	570us/step	_	loss:	0.0379
Epoch 335/400			•			
160/160 [====================================	_	0s	564us/step	_	loss:	0.0366
Epoch 336/400			. 1			
160/160 [====================================	_	0s	546us/step	_	loss:	0.0368
Epoch 337/400						
160/160 [====================================	_	0s	570us/step	_	loss:	0.0373
Epoch 338/400			. 1			
160/160 [====================================	_	0s	564us/step	_	loss:	0.0369
Epoch 339/400						
160/160 [====================================	_	0s	569us/step	_	loss:	0.0377
Epoch 340/400						
160/160 [====================================	_	0s	547us/step	_	loss:	0.0372
Epoch 341/400			. 1			
160/160 [====================================	_	0s	563us/step	_	loss:	0.0370
Epoch 342/400						
160/160 [====================================	_	0s	574us/step	_	loss:	0.0359
Epoch 343/400						
160/160 [====================================	_	0s	551us/step	_	loss:	0.0364
Epoch 344/400						
160/160 [====================================	_	0s	572us/step	_	loss:	0.0360
Epoch 345/400						
160/160 [====================================	_	0s	557us/step	_	loss:	0.0359
Epoch 346/400			•			
160/160 [====================================	_	0s	554us/step	_	loss:	0.0373
Epoch 347/400			-			
160/160 [====================================	_	0s	554us/step	_	loss:	0.0366
Epoch 348/400			•			
160/160 [====================================	_	0s	553us/step	_	loss:	0.0359
Epoch 349/400			•			
160/160 [====================================	_	0s	563us/step	_	loss:	0.0362
Epoch 350/400			1			
160/160 [====================================	_	0s	552us/step	_	loss:	0.0365
Epoch 351/400			1			
160/160 [====================================	_	0s	564us/step	_	loss:	0.0358
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Epoch 352/400		^	FF4 / .		-	0 0007
160/160 [=======]	-	US	551us/step	_	loss:	0.0367
Epoch 353/400		•	550 / .		-	0 0050
160/160 [====================================	-	US	556us/step	_	loss:	0.0359
Epoch 354/400		^	F.C.C. / .		,	0.0000
160/160 [====================================	-	0s	566us/step	_	loss:	0.0362
Epoch 355/400		_	500 / .		_	
160/160 [====================================	-	0s	568us/step	_	loss:	0.0360
Epoch 356/400		•	550 / .		-	0 0050
160/160 [====================================	-	0s	556us/step	_	loss:	0.0353
Epoch 357/400		_			_	
160/160 [========]	-	0s	54bus/step	-	loss:	0.0352
Epoch 358/400		_			_	
160/160 [====================================	-	0s	565us/step	-	loss:	0.0351
Epoch 359/400		_			_	
160/160 [=========]	-	0s	562us/step	-	loss:	0.0356
Epoch 360/400		_	,		_	
160/160 [========]	-	0s	550us/step	-	loss:	0.0359
Epoch 361/400						
160/160 [======]	-	0s	558us/step	-	loss:	0.0349
Epoch 362/400			_			
160/160 [======]	-	0s	562us/step	-	loss:	0.0353
Epoch 363/400			_			
160/160 [======]	-	0s	551us/step	-	loss:	0.0356
Epoch 364/400						
160/160 [======]	-	0s	559us/step	-	loss:	0.0356
Epoch 365/400						
160/160 [======]	-	0s	557us/step	-	loss:	0.0358
Epoch 366/400						
160/160 [======]	-	0s	554us/step	-	loss:	0.0354
Epoch 367/400						
160/160 [======]	-	0s	565us/step	-	loss:	0.0351
Epoch 368/400						
160/160 [=======]	-	0s	565us/step	-	loss:	0.0352
Epoch 369/400						
160/160 [======]	-	0s	554us/step	-	loss:	0.0347
Epoch 370/400						
160/160 [======]	-	0s	551us/step	-	loss:	0.0342
Epoch 371/400						
160/160 [======]	-	0s	561us/step	-	loss:	0.0338
Epoch 372/400						
160/160 [=======]	-	0s	568us/step	-	loss:	0.0357
Epoch 373/400						
160/160 [=======]	-	0s	552us/step	-	loss:	0.0350
Epoch 374/400						
160/160 [=======]	-	0s	564us/step	_	loss:	0.0354
Epoch 375/400						
160/160 [====================================	-	0s	551us/step	-	loss:	0.0342

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160/160 [====================================
Epoch 22/400
160/160 [====================================
Epoch 23/400

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160/160 [=============== ] - Os 612us/step - loss: 0.6430
Epoch 24/400
160/160 [============= ] - Os 614us/step - loss: 0.6367
Epoch 25/400
160/160 [============= ] - Os 604us/step - loss: 0.6296
Epoch 26/400
160/160 [============= ] - 0s 622us/step - loss: 0.6213
Epoch 27/400
160/160 [============= ] - Os 616us/step - loss: 0.6131
Epoch 28/400
Epoch 29/400
Epoch 30/400
160/160 [============= ] - 0s 618us/step - loss: 0.5804
Epoch 31/400
160/160 [============= ] - 0s 623us/step - loss: 0.5664
Epoch 32/400
160/160 [============ ] - Os 623us/step - loss: 0.5510
Epoch 33/400
Epoch 34/400
160/160 [============= ] - 0s 596us/step - loss: 0.5185
Epoch 35/400
Epoch 36/400
Epoch 37/400
Epoch 38/400
Epoch 39/400
160/160 [============= ] - 0s 599us/step - loss: 0.4298
Epoch 40/400
160/160 [============= ] - Os 602us/step - loss: 0.4131
Epoch 41/400
160/160 [============= ] - Os 601us/step - loss: 0.3960
Epoch 42/400
Epoch 43/400
Epoch 44/400
Epoch 45/400
160/160 [============= ] - Os 600us/step - loss: 0.3486
Epoch 46/400
160/160 [============== ] - Os 580us/step - loss: 0.3348
Epoch 47/400
```

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Epoch 48/400
Epoch 49/400
160/160 [============= ] - Os 564us/step - loss: 0.3146
Epoch 50/400
160/160 [============== ] - 0s 576us/step - loss: 0.3062
Epoch 51/400
160/160 [============= ] - 0s 587us/step - loss: 0.3025
Epoch 52/400
Epoch 53/400
Epoch 54/400
Epoch 55/400
Epoch 56/400
160/160 [============ ] - Os 607us/step - loss: 0.2754
Epoch 57/400
160/160 [=============== ] - Os 602us/step - loss: 0.2716
Epoch 58/400
160/160 [============= ] - Os 617us/step - loss: 0.2670
Epoch 59/400
Epoch 60/400
160/160 [============== ] - Os 613us/step - loss: 0.2573
Epoch 61/400
Epoch 62/400
Epoch 63/400
Epoch 64/400
160/160 [============= ] - 0s 611us/step - loss: 0.2403
Epoch 65/400
160/160 [============= ] - 0s 596us/step - loss: 0.2330
Epoch 66/400
Epoch 67/400
Epoch 68/400
160/160 [============= ] - Os 605us/step - loss: 0.2159
Epoch 69/400
Epoch 70/400
160/160 [============== ] - Os 609us/step - loss: 0.2114
Epoch 71/400
```

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160/160 [============== ] - 0s 569us/step - loss: 0.2063
Epoch 72/400
160/160 [============= ] - 0s 574us/step - loss: 0.2018
Epoch 73/400
Epoch 74/400
160/160 [============= ] - 0s 616us/step - loss: 0.1918
Epoch 75/400
160/160 [============= ] - Os 602us/step - loss: 0.1866
Epoch 76/400
160/160 [============] - Os 637us/step - loss: 0.1840
Epoch 77/400
Epoch 78/400
160/160 [============= ] - 0s 597us/step - loss: 0.1733
Epoch 79/400
Epoch 80/400
160/160 [============= ] - Os 589us/step - loss: 0.1685
Epoch 81/400
160/160 [=============== ] - Os 616us/step - loss: 0.1628
Epoch 82/400
160/160 [============= ] - 0s 596us/step - loss: 0.1635
Epoch 83/400
Epoch 84/400
Epoch 85/400
160/160 [============== ] - Os 607us/step - loss: 0.1479
Epoch 86/400
160/160 [============== ] - Os 587us/step - loss: 0.1413
Epoch 87/400
160/160 [============ ] - Os 617us/step - loss: 0.1441
Epoch 88/400
160/160 [============= ] - 0s 618us/step - loss: 0.1368
Epoch 89/400
Epoch 90/400
Epoch 91/400
160/160 [============== ] - 0s 599us/step - loss: 0.1263
Epoch 92/400
Epoch 93/400
160/160 [============= ] - Os 612us/step - loss: 0.1236
Epoch 94/400
160/160 [============== ] - Os 603us/step - loss: 0.1195
Epoch 95/400
```

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160/160 [============== ] - Os 621us/step - loss: 0.1140
Epoch 96/400
160/160 [============ ] - Os 604us/step - loss: 0.1146
Epoch 97/400
160/160 [============= ] - 0s 589us/step - loss: 0.1054
Epoch 98/400
160/160 [============= ] - 0s 608us/step - loss: 0.1089
Epoch 99/400
160/160 [============= ] - 0s 618us/step - loss: 0.1042
Epoch 100/400
Epoch 101/400
Epoch 102/400
160/160 [============= ] - 0s 588us/step - loss: 0.0913
Epoch 103/400
160/160 [============= ] - Os 603us/step - loss: 0.0973
Epoch 104/400
160/160 [============= ] - Os 609us/step - loss: 0.0935
Epoch 105/400
160/160 [============= ] - 0s 596us/step - loss: 0.0896
Epoch 106/400
Epoch 107/400
160/160 [============= ] - 0s 616us/step - loss: 0.0828
Epoch 108/400
160/160 [============== ] - Os 598us/step - loss: 0.0843
Epoch 109/400
Epoch 110/400
160/160 [============== ] - Os 608us/step - loss: 0.0833
Epoch 111/400
160/160 [============= ] - Os 603us/step - loss: 0.0810
Epoch 112/400
160/160 [============= ] - Os 612us/step - loss: 0.0730
Epoch 113/400
160/160 [============= ] - 0s 613us/step - loss: 0.0763
Epoch 114/400
160/160 [============== ] - Os 619us/step - loss: 0.0713
Epoch 115/400
160/160 [============== ] - 0s 619us/step - loss: 0.0752
Epoch 116/400
160/160 [============= ] - Os 602us/step - loss: 0.0715
Epoch 117/400
160/160 [============= ] - Os 616us/step - loss: 0.0695
Epoch 118/400
160/160 [============== ] - Os 599us/step - loss: 0.0659
Epoch 119/400
```

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Epoch 120/400
160/160 [============= ] - 0s 569us/step - loss: 0.0648
Epoch 121/400
160/160 [============= ] - 0s 590us/step - loss: 0.0622
Epoch 122/400
160/160 [============= ] - 0s 615us/step - loss: 0.0682
Epoch 123/400
160/160 [============= ] - Os 615us/step - loss: 0.0649
Epoch 124/400
160/160 [============= ] - Os 627us/step - loss: 0.0620
Epoch 125/400
Epoch 126/400
160/160 [============= ] - 0s 592us/step - loss: 0.0609
Epoch 127/400
Epoch 128/400
160/160 [============= ] - Os 591us/step - loss: 0.0635
Epoch 129/400
160/160 [============= ] - Os 609us/step - loss: 0.0618
Epoch 130/400
160/160 [============= ] - 0s 638us/step - loss: 0.0592
Epoch 131/400
160/160 [============= ] - Os 600us/step - loss: 0.0565
Epoch 132/400
160/160 [============== ] - Os 611us/step - loss: 0.0624
Epoch 133/400
Epoch 134/400
160/160 [============== ] - Os 596us/step - loss: 0.0609
Epoch 135/400
Epoch 136/400
160/160 [============= ] - 0s 619us/step - loss: 0.0563
Epoch 137/400
160/160 [============= ] - 0s 611us/step - loss: 0.0568
Epoch 138/400
160/160 [============== ] - Os 617us/step - loss: 0.0562
Epoch 139/400
160/160 [============== ] - 0s 599us/step - loss: 0.0584
Epoch 140/400
160/160 [============= ] - Os 620us/step - loss: 0.0550
Epoch 141/400
Epoch 142/400
160/160 [============== ] - Os 603us/step - loss: 0.0525
Epoch 143/400
```

160/160 [=======]	_	0s	595us/step	_	loss:	0.0568
Epoch 144/400			_			
160/160 [=======]	-	0s	595us/step	-	loss:	0.0555
Epoch 145/400						
160/160 [======]	-	0s	611us/step	-	loss:	0.0532
Epoch 146/400						
160/160 [====================================	-	0s	607us/step	-	loss:	0.0525
Epoch 147/400		0 -	C10/		7	0 0400
160/160 [====================================	_	US	618us/step	_	loss:	0.0482
Epoch 148/400 160/160 [====================================		٥٩	611		1.000.	0 0552
Epoch 149/400	_	US	ollus/step	_	TOSS:	0.0555
160/160 [====================================	_	Λe	600us/stan	_	loggi	0 05/0
Epoch 150/400		US	ooous, step		TOSS.	0.0040
160/160 [====================================	_	0s	613us/sten	_	loss	0 0505
Epoch 151/400		V.D	orous, suop		TODD.	0.0000
160/160 [====================================	_	0s	592us/step	_	loss:	0.0494
Epoch 152/400			1			
160/160 [====================================	_	0s	614us/step	_	loss:	0.0508
Epoch 153/400						
160/160 [====================================	_	0s	603us/step	_	loss:	0.0516
Epoch 154/400			_			
160/160 [======]	-	0s	605us/step	-	loss:	0.0506
Epoch 155/400						
160/160 [======]	-	0s	610us/step	-	loss:	0.0532
Epoch 156/400						
160/160 [=========]	-	0s	588us/step	-	loss:	0.0488
Epoch 157/400						
160/160 [====================================	-	0s	613us/step	-	loss:	0.0472
Epoch 158/400		•	000 / .		_	
160/160 [====================================	_	0s	609us/step	_	loss:	0.0522
Epoch 159/400		0 -	F04/		7	0 0506
160/160 [====================================	_	US	594us/step	_	loss:	0.0506
Epoch 160/400 160/160 [====================================	_	٥٥	E9011g /g+op		1000.	0 0460
Epoch 161/400		US	569us/step	_	TOSS.	0.0409
160/160 [====================================	_	٥q	612115/sten	_	1099.	0 0468
Epoch 162/400		US	012us/scep		TOSS.	0.0400
160/160 [====================================	_	0s	614us/step	_	loss:	0.0520
Epoch 163/400			011a2, 200p			0.0020
160/160 [====================================	_	0s	606us/step	_	loss:	0.0453
Epoch 164/400			. 1			
160/160 [====================================	_	0s	605us/step	_	loss:	0.0443
Epoch 165/400			•			
160/160 [=========]	-	0s	610us/step	-	loss:	0.0436
Epoch 166/400			_			
160/160 [======]	-	0s	615us/step	-	loss:	0.0462
Epoch 167/400						

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Epoch 168/400
160/160 [============= ] - 0s 619us/step - loss: 0.0484
Epoch 169/400
160/160 [============== ] - 0s 617us/step - loss: 0.0512
Epoch 170/400
Epoch 171/400
Epoch 172/400
Epoch 173/400
Epoch 174/400
Epoch 175/400
160/160 [============= ] - Os 602us/step - loss: 0.0450
Epoch 176/400
160/160 [============ ] - Os 609us/step - loss: 0.0489
Epoch 177/400
Epoch 178/400
Epoch 179/400
160/160 [============= ] - 0s 625us/step - loss: 0.0432
Epoch 180/400
160/160 [============== ] - Os 594us/step - loss: 0.0470
Epoch 181/400
Epoch 182/400
160/160 [============== ] - Os 579us/step - loss: 0.0460
Epoch 183/400
160/160 [=========== ] - Os 576us/step - loss: 0.0436
Epoch 184/400
160/160 [============= ] - 0s 601us/step - loss: 0.0508
Epoch 185/400
160/160 [============= ] - 0s 705us/step - loss: 0.0495
Epoch 186/400
160/160 [============== ] - Os 679us/step - loss: 0.0408
Epoch 187/400
Epoch 188/400
160/160 [============= ] - 0s 626us/step - loss: 0.0342
Epoch 189/400
160/160 [============= ] - Os 616us/step - loss: 0.0480
Epoch 190/400
160/160 [============== ] - Os 601us/step - loss: 0.0470
Epoch 191/400
```

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Epoch 192/400
Epoch 193/400
160/160 [============= ] - 0s 613us/step - loss: 0.0478
Epoch 194/400
Epoch 195/400
Epoch 196/400
160/160 [============= ] - 0s 606us/step - loss: 0.0368
Epoch 197/400
Epoch 198/400
Epoch 199/400
Epoch 200/400
160/160 [============= ] - Os 618us/step - loss: 0.0455
Epoch 201/400
160/160 [=============== ] - Os 621us/step - loss: 0.0472
Epoch 202/400
Epoch 203/400
Epoch 204/400
160/160 [============== ] - Os 600us/step - loss: 0.0386
Epoch 205/400
Epoch 206/400
Epoch 207/400
160/160 [============ ] - Os 614us/step - loss: 0.0369
Epoch 208/400
160/160 [============= ] - Os 602us/step - loss: 0.0476
Epoch 209/400
160/160 [============= ] - 0s 592us/step - loss: 0.0468
Epoch 210/400
Epoch 211/400
160/160 [============== ] - Os 608us/step - loss: 0.0465
Epoch 212/400
160/160 [============== ] - Os 615us/step - loss: 0.0438
Epoch 213/400
Epoch 214/400
160/160 [============== ] - Os 608us/step - loss: 0.0466
Epoch 215/400
```

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Epoch 216/400
160/160 [============= ] - Os 607us/step - loss: 0.0438
Epoch 217/400
160/160 [============= ] - Os 574us/step - loss: 0.0445
Epoch 218/400
Epoch 219/400
Epoch 220/400
Epoch 221/400
Epoch 222/400
160/160 [============= ] - Os 625us/step - loss: 0.0498
Epoch 223/400
160/160 [============= ] - 0s 606us/step - loss: 0.0399
Epoch 224/400
160/160 [============ ] - Os 613us/step - loss: 0.0475
Epoch 225/400
Epoch 226/400
Epoch 227/400
Epoch 228/400
160/160 [============== ] - Os 634us/step - loss: 0.0463
Epoch 229/400
Epoch 230/400
Epoch 231/400
Epoch 232/400
160/160 [============= ] - Os 595us/step - loss: 0.0489
Epoch 233/400
Epoch 234/400
Epoch 235/400
Epoch 236/400
160/160 [============= ] - Os 605us/step - loss: 0.0455
Epoch 237/400
Epoch 238/400
160/160 [============== ] - Os 616us/step - loss: 0.0488
Epoch 239/400
```

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Epoch 240/400
Epoch 241/400
160/160 [============= ] - Os 595us/step - loss: 0.0426
Epoch 242/400
160/160 [============= ] - Os 604us/step - loss: 0.0403
Epoch 243/400
160/160 [============= ] - 0s 596us/step - loss: 0.0455
Epoch 244/400
160/160 [============= ] - 0s 592us/step - loss: 0.0413
Epoch 245/400
Epoch 246/400
Epoch 247/400
160/160 [============= ] - 0s 598us/step - loss: 0.0359
Epoch 248/400
160/160 [============ ] - Os 595us/step - loss: 0.0415
Epoch 249/400
160/160 [============= ] - Os 604us/step - loss: 0.0484
Epoch 250/400
Epoch 251/400
Epoch 252/400
160/160 [============== ] - Os 605us/step - loss: 0.0404
Epoch 253/400
160/160 [=============== ] - Os 616us/step - loss: 0.0358
Epoch 254/400
160/160 [============== ] - Os 604us/step - loss: 0.0503
Epoch 255/400
160/160 [============= ] - 0s 609us/step - loss: 0.0383
Epoch 256/400
160/160 [============= ] - 0s 614us/step - loss: 0.0394
Epoch 257/400
160/160 [============== ] - 0s 612us/step - loss: 0.0353
Epoch 258/400
Epoch 259/400
160/160 [============== ] - Os 602us/step - loss: 0.0436
Epoch 260/400
160/160 [============== ] - Os 616us/step - loss: 0.0470
Epoch 261/400
160/160 [============= ] - Os 600us/step - loss: 0.0435
Epoch 262/400
160/160 [============== ] - Os 588us/step - loss: 0.0461
Epoch 263/400
```

160/160 [=======]	_	0s	603us/step	_	loss:	0.0483
Epoch 264/400			•			
160/160 [======]	-	0s	609us/step	-	loss:	0.0426
Epoch 265/400						
160/160 [======]	-	0s	612us/step	_	loss:	0.0354
Epoch 266/400						
160/160 [=======]	-	0s	611us/step	_	loss:	0.0521
Epoch 267/400		_			_	
160/160 [====================================	-	0s	607us/step	-	loss:	0.0465
Epoch 268/400		^	202 / .		-	0 0440
160/160 [====================================	_	Us	606us/step	_	loss:	0.0463
Epoch 269/400 160/160 [====================================		0-	F05 /		1	0.0200
Epoch 270/400	_	US	595us/step	_	loss:	0.0399
160/160 [====================================	_	Λα	616ug/gton	_	loggi	0 0502
Epoch 271/400		US	Olous/scep		TOSS.	0.0002
160/160 [====================================	_	0s	623us/sten	_	loss	0 0308
Epoch 272/400		V.D	020ab, 500p		TODD.	0.0000
160/160 [====================================	_	0s	618us/step	_	loss:	0.0453
Epoch 273/400			, <sub>F</sub>			
160/160 [====================================	_	0s	612us/step	_	loss:	0.0405
Epoch 274/400			•			
160/160 [====================================	_	0s	615us/step	_	loss:	0.0346
Epoch 275/400			_			
160/160 [======]	-	0s	615us/step	-	loss:	0.0381
Epoch 276/400						
160/160 [======]	-	0s	615us/step	_	loss:	0.0384
Epoch 277/400						
160/160 [======]	-	0s	613us/step	-	loss:	0.0424
Epoch 278/400						
160/160 [====================================	-	0s	601us/step	_	loss:	0.0422
Epoch 279/400		_	500 / .		_	
160/160 [====================================	-	0s	598us/step	_	loss:	0.0438
Epoch 280/400		0 -	E00 /t		7	0.0402
160/160 [====================================	_	US	598us/step	_	loss:	0.0403
Epoch 281/400 160/160 [====================================	_	٥	E00119 / g + op		1000.	0 0470
Epoch 282/400		US	599us/step		1088.	0.0476
160/160 [====================================	_	۸s	621119/sten	_	1099.	0 0406
Epoch 283/400		OB	ozius/sucp		TOBB.	0.0100
160/160 [====================================	_	0s	612us/step	_	loss:	0.0424
Epoch 284/400			01245, 200p			****
160/160 [====================================	_	0s	586us/step	_	loss:	0.0448
Epoch 285/400			, <b>P</b>			
160/160 [====================================	_	0s	617us/step	_	loss:	0.0472
Epoch 286/400			. 1			
160/160 [====================================	_	0s	613us/step	_	loss:	0.0397
Epoch 287/400			_			

160/160 [=======]	_	0s	619us/step	_	loss:	0.0396
Epoch 288/400			_			
160/160 [======]	-	0s	603us/step	-	loss:	0.0426
Epoch 289/400						
160/160 [======]	-	0s	595us/step	-	loss:	0.0443
Epoch 290/400						
160/160 [======]	-	0s	601us/step	-	loss:	0.0402
Epoch 291/400		_			_	
160/160 [=======]	_	0s	590us/step	-	loss:	0.0437
Epoch 292/400		^	205 / .		-	0.000
160/160 [=========]	_	Us	605us/step	_	loss:	0.0383
Epoch 293/400		0-	615/-+		1	0 0444
160/160 [==========] Epoch 294/400	_	US	olous/step	_	loss:	0.0444
160/160 [====================================	_	Λα	605ug/gton	_	loggi	0 0424
Epoch 295/400		US	ooous/scep		TOSS.	0.0424
160/160 [====================================	_	0s	609us/sten	_	loss	0 0376
Epoch 296/400		Ü	осочь, втор		TODD.	0.0010
160/160 [=======]	_	0s	599us/step	_	loss:	0.0488
Epoch 297/400			, , , , , , , , , , , , , , , , , , ,			
160/160 [====================================	_	0s	622us/step	_	loss:	0.0390
Epoch 298/400						
160/160 [====================================	_	0s	626us/step	_	loss:	0.0371
Epoch 299/400			_			
160/160 [======]	-	0s	604us/step	-	loss:	0.0365
Epoch 300/400						
160/160 [======]	-	0s	616us/step	-	loss:	0.0462
Epoch 301/400						
160/160 [======]	-	0s	612us/step	-	loss:	0.0415
Epoch 302/400						
160/160 [========]	-	0s	609us/step	-	loss:	0.0405
Epoch 303/400		•	205 / .		_	
160/160 [========]	_	0s	60bus/step	_	loss:	0.0430
Epoch 304/400		0 -	CO2 /		7	0 0449
160/160 [==========]	_	US	603us/step	_	loss:	0.0443
Epoch 305/400 160/160 [====================================	_	٥٥	500ug/gton	_	1000.	0 0424
Epoch 306/400		US	599us/step		TUSS.	0.0424
160/160 [====================================	_	٥q	617119/sten	_	logg·	0 0355
Epoch 307/400		OB	оттав, всер		TOBB.	0.0000
160/160 [====================================	_	0s	598us/step	_	loss:	0.0445
Epoch 308/400			occus, scop			0.0110
160/160 [=======]	_	0s	599us/step	_	loss:	0.0396
Epoch 309/400			, , , , ,			
160/160 [====================================	-	0s	582us/step	_	loss:	0.0374
Epoch 310/400			•			
160/160 [=======]	-	0s	580us/step	-	loss:	0.0462
Epoch 311/400						

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Epoch 312/400
Epoch 313/400
Epoch 314/400
160/160 [============= ] - 0s 608us/step - loss: 0.0464
Epoch 315/400
160/160 [============= ] - 0s 616us/step - loss: 0.0433
Epoch 316/400
Epoch 317/400
Epoch 318/400
160/160 [============= ] - Os 615us/step - loss: 0.0430
Epoch 319/400
160/160 [============= ] - 0s 632us/step - loss: 0.0383
Epoch 320/400
160/160 [============= ] - Os 597us/step - loss: 0.0380
Epoch 321/400
160/160 [============= ] - 0s 588us/step - loss: 0.0465
Epoch 322/400
Epoch 323/400
Epoch 324/400
Epoch 325/400
160/160 [=============== ] - Os 608us/step - loss: 0.0450
Epoch 326/400
Epoch 327/400
160/160 [============ ] - Os 598us/step - loss: 0.0322
Epoch 328/400
160/160 [============= ] - Os 625us/step - loss: 0.0455
Epoch 329/400
160/160 [============= ] - Os 601us/step - loss: 0.0424
Epoch 330/400
Epoch 331/400
160/160 [============== ] - 0s 581us/step - loss: 0.0418
Epoch 332/400
160/160 [============= ] - Os 605us/step - loss: 0.0399
Epoch 333/400
160/160 [============= ] - 0s 576us/step - loss: 0.0403
Epoch 334/400
160/160 [============== ] - Os 616us/step - loss: 0.0370
Epoch 335/400
```

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Epoch 336/400
160/160 [============= ] - Os 613us/step - loss: 0.0410
Epoch 337/400
160/160 [============= ] - Os 601us/step - loss: 0.0330
Epoch 338/400
160/160 [============= ] - 0s 582us/step - loss: 0.0388
Epoch 339/400
160/160 [============= ] - Os 598us/step - loss: 0.0456
Epoch 340/400
Epoch 341/400
Epoch 342/400
160/160 [============= ] - Os 625us/step - loss: 0.0409
Epoch 343/400
160/160 [============= ] - Os 613us/step - loss: 0.0380
Epoch 344/400
160/160 [============= ] - Os 606us/step - loss: 0.0365
Epoch 345/400
Epoch 346/400
160/160 [============= ] - Os 604us/step - loss: 0.0339
Epoch 347/400
160/160 [============= ] - 0s 592us/step - loss: 0.0446
Epoch 348/400
160/160 [============== ] - Os 595us/step - loss: 0.0376
Epoch 349/400
Epoch 350/400
Epoch 351/400
160/160 [=========== ] - Os 597us/step - loss: 0.0358
Epoch 352/400
160/160 [============= ] - 0s 632us/step - loss: 0.0424
Epoch 353/400
160/160 [============= ] - Os 610us/step - loss: 0.0344
Epoch 354/400
Epoch 355/400
160/160 [============== ] - Os 618us/step - loss: 0.0403
Epoch 356/400
160/160 [============== ] - Os 613us/step - loss: 0.0379
Epoch 357/400
160/160 [============= ] - Os 624us/step - loss: 0.0463
Epoch 358/400
160/160 [============== ] - Os 617us/step - loss: 0.0391
Epoch 359/400
```

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Epoch 360/400
160/160 [============] - Os 608us/step - loss: 0.0358
Epoch 361/400
160/160 [============= ] - 0s 620us/step - loss: 0.0354
Epoch 362/400
160/160 [============= ] - 0s 596us/step - loss: 0.0444
Epoch 363/400
160/160 [============= ] - Os 594us/step - loss: 0.0386
Epoch 364/400
160/160 [============= ] - 0s 599us/step - loss: 0.0448
Epoch 365/400
Epoch 366/400
160/160 [============= ] - Os 634us/step - loss: 0.0406
Epoch 367/400
160/160 [============= ] - 0s 631us/step - loss: 0.0362
Epoch 368/400
160/160 [============= ] - Os 603us/step - loss: 0.0404
Epoch 369/400
Epoch 370/400
160/160 [============= ] - Os 608us/step - loss: 0.0450
Epoch 371/400
160/160 [============= ] - 0s 634us/step - loss: 0.0382
Epoch 372/400
160/160 [============== ] - Os 624us/step - loss: 0.0410
Epoch 373/400
160/160 [============== ] - Os 626us/step - loss: 0.0400
Epoch 374/400
Epoch 375/400
Epoch 376/400
160/160 [============= ] - 0s 613us/step - loss: 0.0368
Epoch 377/400
Epoch 378/400
Epoch 379/400
160/160 [============== ] - 0s 616us/step - loss: 0.0434
Epoch 380/400
160/160 [============== ] - Os 616us/step - loss: 0.0375
Epoch 381/400
160/160 [============= ] - 0s 627us/step - loss: 0.0384
Epoch 382/400
160/160 [=============== ] - Os 638us/step - loss: 0.0362
Epoch 383/400
```

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Epoch 384/400
160/160 [============= ] - Os 614us/step - loss: 0.0366
Epoch 385/400
160/160 [============= ] - 0s 620us/step - loss: 0.0392
Epoch 386/400
Epoch 387/400
Epoch 388/400
Epoch 389/400
Epoch 390/400
Epoch 391/400
160/160 [============= ] - Os 610us/step - loss: 0.0420
Epoch 392/400
160/160 [============= ] - Os 603us/step - loss: 0.0361
Epoch 393/400
Epoch 394/400
Epoch 395/400
Epoch 396/400
160/160 [============== ] - Os 610us/step - loss: 0.0454
Epoch 397/400
160/160 [============== ] - Os 602us/step - loss: 0.0344
Epoch 398/400
160/160 [============== ] - Os 616us/step - loss: 0.0348
Epoch 399/400
160/160 [============ ] - Os 619us/step - loss: 0.0414
Epoch 400/400
160/160 [============= ] - 0s 642us/step - loss: 0.0384
160/160 [========= ] - Os 1ms/step
Epoch 1/400
Epoch 2/400
Epoch 3/400
Epoch 4/400
Epoch 5/400
160/160 [=========== ] - Os 669us/step - loss: 0.6924
Epoch 6/400
160/160 [============= ] - 0s 686us/step - loss: 0.6933
```

Enoch 7/400					
Epoch 7/400 160/160 [====================================	_	Λα	675ug/gton -	loggi	0 6019
Epoch 8/400		OS	0/ous/step	1055.	0.0310
160/160 [========]		٥-	712/	1	0 6010
	_	US	/ious/step -	· TOSS:	0.0919
Epoch 9/400		Λ-	710/	7	0 6010
160/160 [====================================	_	US	/19us/step -	· loss:	0.6912
Epoch 10/400		^	005 / 1	-	0 0045
160/160 [====================================	_	US	805us/step -	loss:	0.6915
Epoch 11/400		Λ-	CO7 /-+	7	0 6000
160/160 [====================================	_	US	69/us/step -	loss:	0.6908
Epoch 12/400		Λ-	C70 /	7	0 6006
160/160 [====================================	_	US	6/8us/step -	loss:	0.6906
Epoch 13/400		Λ-	C71/-+	7	0 6000
160/160 [====================================	_	US	6/lus/step -	loss:	0.6908
Epoch 14/400		^	coo / .	-	0 6004
160/160 [====================================	_	US	680us/step -	· loss:	0.6901
Epoch 15/400		Λ-	701/	7	0 6001
160/160 [====================================	_	US	/21us/step -	· loss:	0.6901
Epoch 16/400		^	704 / .	-	0 0000
160/160 [====================================	_	Us	/01us/step -	· loss:	0.6880
Epoch 17/400		^	074 / .	-	0 0001
160/160 [====================================	-	0s	6/lus/step -	· loss:	0.6904
Epoch 18/400		_		_	
160/160 [====================================	-	0s	682us/step -	· loss:	0.6901
Epoch 19/400		_		_	
160/160 [=========]	-	0s	643us/step -	· loss:	0.6889
Epoch 20/400		_		_	
160/160 [====================================	-	0s	659us/step -	· loss:	0.6885
Epoch 21/400		_		_	
160/160 [====================================	-	0s	643us/step -	· loss:	0.6884
Epoch 22/400		_		_	
160/160 [====================================	-	0s	645us/step -	· loss:	0.6881
Epoch 23/400		_		_	
160/160 [====================================	-	0s	687us/step -	· loss:	0.6864
Epoch 24/400		_		_	
160/160 [====================================	-	0s	679us/step -	· loss:	0.6871
Epoch 25/400		_	0.00	_	
160/160 [====================================	-	0s	667us/step -	· loss:	0.6862
Epoch 26/400		^	004 / .	-	0 0051
160/160 [====================================	_	Us	661us/step -	· loss:	0.6851
Epoch 27/400		_	000 / .	_	
160/160 [====================================	-	0s	668us/step -	· loss:	0.6852
Epoch 28/400		^	000 / .	-	0 0011
160/160 [====================================	-	US	obyus/step -	- loss:	0.6844
Epoch 29/400		^	CC7 / ·	7	0 0000
160/160 [====================================	-	Us	ob/us/step -	· loss:	0.6828
Epoch 30/400		^	007 / :	-	0 0005
160/160 [=======]	-	Us	ob/us/step -	· loss:	0.6825

Epoch 31/400						
160/160 [====================================	_	0s	669us/step	_	loss:	0.6817
Epoch 32/400						
160/160 [====================================	_	0s	670us/step	_	loss:	0.6790
Epoch 33/400						
160/160 [====================================	_	0s	667us/step	_	loss:	0.6800
Epoch 34/400						
160/160 [====================================	_	0s	672us/step	_	loss:	0.6777
Epoch 35/400						
160/160 [====================================	_	0s	659us/step	_	loss:	0.6759
Epoch 36/400						
160/160 [====================================	_	0s	675us/step	_	loss:	0.6748
Epoch 37/400			. 1			
160/160 [====================================	_	0s	661us/step	_	loss:	0.6726
Epoch 38/400						
160/160 [====================================	_	0s	677us/step	_	loss:	0.6709
Epoch 39/400						
160/160 [====================================	_	0s	673us/step	_	loss:	0.6690
Epoch 40/400						
160/160 [====================================	_	0s	659us/step	_	loss:	0.6660
Epoch 41/400						
160/160 [====================================	_	0s	695us/step	_	loss:	0.6643
Epoch 42/400						
160/160 [====================================	_	0s	678us/step	_	loss:	0.6600
Epoch 43/400						
160/160 [====================================	_	0s	666us/step	_	loss:	0.6571
Epoch 44/400						
160/160 [====================================	_	0s	675us/step	_	loss:	0.6528
Epoch 45/400						
160/160 [====================================	_	0s	657us/step	_	loss:	0.6493
Epoch 46/400			•			
160/160 [====================================	_	0s	689us/step	_	loss:	0.6416
Epoch 47/400			-			
160/160 [====================================	_	0s	695us/step	_	loss:	0.6375
Epoch 48/400			-			
160/160 [===========]	_	0s	664us/step	-	loss:	0.6328
Epoch 49/400			_			
160/160 [====================================	-	0s	666us/step	-	loss:	0.6252
Epoch 50/400						
160/160 [====================================	-	0s	659us/step	-	loss:	0.6180
Epoch 51/400						
160/160 [====================================	_	0s	657us/step	-	loss:	0.6045
Epoch 52/400			_			
160/160 [====================================	_	0s	644us/step	-	loss:	0.5971
Epoch 53/400			-			
160/160 [====================================	_	0s	668us/step	-	loss:	0.5864
Epoch 54/400			-			
160/160 [====================================	-	0s	646us/step	-	loss:	0.5743
			•			

Epoch 55/400			
160/160 [======]	-	0s	627us/step - loss: 0.5551
Epoch 56/400			
160/160 [======]	-	0s	640us/step - loss: 0.5494
Epoch 57/400			
160/160 [======]	-	0s	655us/step - loss: 0.5291
Epoch 58/400			
160/160 [=======]	-	0s	675us/step - loss: 0.5131
Epoch 59/400			
160/160 [=======]	-	0s	670us/step - loss: 0.4927
Epoch 60/400			
160/160 [=======]	-	0s	654us/step - loss: 0.4746
Epoch 61/400			
160/160 [=======]	-	0s	669us/step - loss: 0.4549
Epoch 62/400			
160/160 [=======]	-	0s	613us/step - loss: 0.4325
Epoch 63/400			
160/160 [=======]	-	0s	631us/step - loss: 0.4090
Epoch 64/400			
160/160 [======]	-	0s	669us/step - loss: 0.3970
Epoch 65/400			
160/160 [======]	-	0s	683us/step - loss: 0.3738
Epoch 66/400			
160/160 [======]	-	0s	689us/step - loss: 0.3490
Epoch 67/400			
160/160 [=======]	-	0s	676us/step - loss: 0.3379
Epoch 68/400			
160/160 [=======]	-	0s	659us/step - loss: 0.3170
Epoch 69/400			
160/160 [=======]	-	0s	688us/step - loss: 0.3060
Epoch 70/400			
160/160 [======]	-	0s	677us/step - loss: 0.2905
Epoch 71/400			
160/160 [======]	-	0s	676us/step - loss: 0.2719
Epoch 72/400			
160/160 [======]	-	0s	700us/step - loss: 0.2590
Epoch 73/400			
160/160 [======]	-	0s	629us/step - loss: 0.2502
Epoch 74/400			
160/160 [======]	-	0s	658us/step - loss: 0.2395
Epoch 75/400			
160/160 [=======]	-	0s	690us/step - loss: 0.2301
Epoch 76/400			
160/160 [=======]	-	0s	672us/step - loss: 0.2239
Epoch 77/400			
160/160 [======]	-	0s	678us/step - loss: 0.2170
Epoch 78/400			
160/160 [====================================	-	0s	684us/step - loss: 0.2042

Enoch 70/400
Epoch 79/400 160/160 [====================================
Epoch 80/400
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160/160 [====================================
Epoch 81/400
160/160 [====================================
Epoch 82/400
160/160 [====================================
Epoch 83/400
160/160 [====================================
Epoch 84/400
160/160 [====================================
Epoch 85/400
160/160 [====================================
Epoch 86/400
160/160 [====================================
Epoch 87/400
160/160 [=======] - Os 665us/step - loss: 0.1597
Epoch 88/400
160/160 [=======] - Os 687us/step - loss: 0.1703
Epoch 89/400
160/160 [============] - Os 628us/step - loss: 0.1599
Epoch 90/400
160/160 [============] - Os 647us/step - loss: 0.1568
Epoch 91/400
160/160 [============ ] - Os 630us/step - loss: 0.1491
Epoch 92/400
160/160 [============ ] - Os 669us/step - loss: 0.1421
Epoch 93/400
160/160 [============ ] - Os 674us/step - loss: 0.1462
Epoch 94/400
160/160 [====================================
Epoch 95/400
160/160 [====================================
Epoch 96/400
160/160 [====================================
Epoch 97/400
160/160 [====================================
Epoch 98/400
160/160 [====================================
Epoch 99/400
160/160 [====================================
Epoch 100/400
160/160 [====================================
Epoch 101/400
160/160 [====================================
Epoch 102/400
160/160 [====================================
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Enach 102/400			
Epoch 103/400 160/160 [=======]	_	٥٥	660ug/gton - logg: 0 1422
Epoch 104/400		US	009us/step - 10ss. 0.1422
160/160 [=======]		٥٥	69000/aton logg, 0 1179
Epoch 105/400	_	US	660us/step - 10ss: 0.1176
160/160 [=======]		٥٥	66600/aton logg, 0 1070
	_	US	666us/step - 10ss: 0.1270
Epoch 106/400		Λ-	C70/
160/160 [====================================	_	US	6/9us/step - loss: 0.1355
Epoch 107/400		Λ-	CEO / - + 1 0 12CA
160/160 [===========]	_	US	659us/step - 10ss: 0.1364
Epoch 108/400		^	670 / 1 0 4050
160/160 [====================================	_	US	6/2us/step - loss: 0.1252
Epoch 109/400		^	CEO /
160/160 [====================================	_	Us	658us/step - loss: 0.1183
Epoch 110/400		•	000 / 1 0 1007
160/160 [====================================	-	0s	686us/step - loss: 0.1397
Epoch 111/400		_	205 /
160/160 [========]	-	0s	66bus/step - loss: 0.1209
Epoch 112/400		_	
160/160 [========]	-	0s	689us/step - loss: 0.1271
Epoch 113/400		_	
160/160 [======]	-	0s	681us/step - loss: 0.1139
Epoch 114/400			
160/160 [======]	-	0s	684us/step - loss: 0.1041
Epoch 115/400			
160/160 [======]	-	0s	662us/step - loss: 0.1279
Epoch 116/400			
160/160 [======]	-	0s	658us/step - loss: 0.1143
Epoch 117/400			
160/160 [======]	-	0s	647us/step - loss: 0.1230
Epoch 118/400			
160/160 [======]	-	0s	657us/step - loss: 0.0979
Epoch 119/400			
160/160 [======]	-	0s	636us/step - loss: 0.1180
Epoch 120/400			
160/160 [======]	-	0s	662us/step - loss: 0.1095
Epoch 121/400			
160/160 [=======]	-	0s	677us/step - loss: 0.1159
Epoch 122/400			
160/160 [=======]	-	0s	677us/step - loss: 0.1054
Epoch 123/400			
160/160 [=======]	-	0s	653us/step - loss: 0.0946
Epoch 124/400			
160/160 [=======]	-	0s	667us/step - loss: 0.1286
Epoch 125/400			
160/160 [======]	-	0s	648us/step - loss: 0.1135
Epoch 126/400			
160/160 [=======]	-	0s	666us/step - loss: 0.1091

Epoch 127/400			
160/160 [=======]	-	0s	660us/step - loss: 0.1254
Epoch 128/400			
160/160 [======]	-	0s	658us/step - loss: 0.1092
Epoch 129/400			
160/160 [======]	-	0s	671us/step - loss: 0.1323
Epoch 130/400			
160/160 [======]	-	0s	679us/step - loss: 0.1013
Epoch 131/400			
160/160 [=======]	-	0s	681us/step - loss: 0.1052
Epoch 132/400			
160/160 [=======]	-	0s	653us/step - loss: 0.0914
Epoch 133/400			
160/160 [=======]	-	0s	676us/step - loss: 0.0978
Epoch 134/400			
160/160 [=======]	-	0s	642us/step - loss: 0.0928
Epoch 135/400			
160/160 [=======]	-	0s	675us/step - loss: 0.0976
Epoch 136/400			
160/160 [======]	-	0s	669us/step - loss: 0.0913
Epoch 137/400			
160/160 [=======]	-	0s	642us/step - loss: 0.1048
Epoch 138/400			
160/160 [======]	-	0s	639us/step - loss: 0.0882
Epoch 139/400			
160/160 [======]	-	0s	623us/step - loss: 0.1096
Epoch 140/400			
160/160 [=======]	-	0s	684us/step - loss: 0.1172
Epoch 141/400			
160/160 [=======]	-	0s	645us/step - loss: 0.0968
Epoch 142/400			
160/160 [=======]	-	0s	676us/step - loss: 0.1247
Epoch 143/400			
160/160 [=======]	-	0s	657us/step - loss: 0.0802
Epoch 144/400			
160/160 [=======]	-	0s	671us/step - loss: 0.0813
Epoch 145/400			
160/160 [=======]	-	0s	667us/step - loss: 0.1140
Epoch 146/400			
160/160 [=======]	-	0s	657us/step - loss: 0.0921
Epoch 147/400			
160/160 [====================================	-	0s	634us/step - loss: 0.0874
Epoch 148/400			
160/160 [====================================	-	0s	607us/step - loss: 0.1026
Epoch 149/400			
160/160 [====================================	-	0s	612us/step - loss: 0.0914
Epoch 150/400			
160/160 [====================================	-	0s	633us/step - loss: 0.1130

Epoch 151/400						
160/160 [====================================	_	0s	620us/step	_	loss:	0.1072
Epoch 152/400			•			
160/160 [====================================	_	0s	613us/step	_	loss:	0.0994
Epoch 153/400			•			
160/160 [====================================	_	0s	658us/step	_	loss:	0.0812
Epoch 154/400						
160/160 [====================================	_	0s	644us/step	_	loss:	0.0701
Epoch 155/400						
160/160 [====================================	_	0s	636us/step	_	loss:	0.0850
Epoch 156/400			. 1			
160/160 [====================================	_	0s	662us/step	_	loss:	0.0941
Epoch 157/400						
160/160 [====================================	_	0s	659us/step	_	loss:	0.0915
Epoch 158/400			оссия, госр			0.0020
160/160 [====================================	_	0s	638us/sten	_	loss:	0.0916
Epoch 159/400		Ü	occus, scop		TODE.	0.0010
160/160 [====================================	_	0s	632us/sten	_	loss	0 0931
Epoch 160/400		ŮĎ.	cozac, cocp		TODD.	0.0001
160/160 [====================================	_	۸e	678112/stan	_	loggi	0 0869
Epoch 161/400		V.S	orous/scep		1055.	0.0003
160/160 [====================================	_	۸e	659112/stan	_	loggi	0 0018
Epoch 162/400		V.S	ooous, step		TOSS.	0.0010
160/160 [====================================	_	Λe	67/11s/sten	_	loggi	0 0762
Epoch 163/400		OS	074us/scep		TOSS.	0.0702
160/160 [====================================	_	Λα	658ug/gton	_	loggi	0 1025
Epoch 164/400		05	050us/step		TOSS.	0.1025
160/160 [====================================	_	٥٥	655ug/gton	_	1000.	0 0001
Epoch 165/400		05	055us/step		1055.	0.0021
160/160 [====================================	_	٥٥	696119/gton	_	1000.	U U03E
Epoch 166/400		05	ooous/step		TOSS.	0.0000
160/160 [====================================	_	Λα	67311g /g+op	_	loggi	0 0674
Epoch 167/400		05	073us/step		TOSS.	0.0074
160/160 [====================================	_	٥٥	677112 /aton	_	1000.	0 0700
Epoch 168/400		US	orrus/step		TOSS.	0.0196
160/160 [====================================	_	٥٥	66/11g/gton	_	1000.	0 0000
Epoch 169/400		US	004us/step		TOSS.	0.0000
160/160 [====================================	_	٥٥	670ug/gton	_	1000.	0 0705
Epoch 170/400		US	0/2us/step		TOSS.	0.0195
160/160 [====================================	_	٥٥	656ug/gton	_	1000.	0 0671
Epoch 171/400		05	050us/step		1055.	0.0071
160/160 [====================================		٥٩	601 ya /aton		1.000.	0 0000
	_	US	oolus/step		TOSS.	0.0922
Epoch 172/400 160/160 [====================================		٥٩	GEEng/aton		1.000.	0 0705
	_	υs	occus/step	_	TOSS:	0.0125
Epoch 173/400 160/160 [====================================	_	0.5	673119 / 9+ 65	_	loggi	0 0707
	_	US	orous/step	_	TOSS:	0.0191
Epoch 174/400 160/160 [====================================	_	0~	65912/2+2-	_	1000:	0 0011
100/100 []	_	US	ocous/step	_	TOSS:	0.0044

Epoch 175/400	
160/160 [============ ] - Os 667us/st	cep - loss: 0.0794
Epoch 176/400	•
160/160 [============ ] - Os 663us/st	cep - loss: 0.0839
Epoch 177/400	•
160/160 [============ ] - Os 633us/st	ep - loss: 0.0673
Epoch 178/400	•
160/160 [============ ] - Os 658us/st	ep - loss: 0.0862
Epoch 179/400	
160/160 [=======] - Os 671us/st	ep - loss: 0.0846
Epoch 180/400	
160/160 [=======] - Os 671us/st	ep - loss: 0.0759
Epoch 181/400	
160/160 [=======] - Os 683us/st	ep - loss: 0.0645
Epoch 182/400	
160/160 [=======] - Os 651us/st	ep - loss: 0.0601
Epoch 183/400	
160/160 [=======] - Os 667us/st	cep - loss: 0.0744
Epoch 184/400	
160/160 [=======] - Os 670us/st	ep - loss: 0.0788
Epoch 185/400	
160/160 [========== ] - Os 689us/st	ep - loss: 0.0674
Epoch 186/400	
160/160 [========= ] - Os 642us/st	ep - loss: 0.0699
Epoch 187/400	
160/160 [========== ] - Os 657us/st	ep - loss: 0.0707
Epoch 188/400	
160/160 [========== ] - Os 659us/st	ep - loss: 0.0554
Epoch 189/400	
160/160 [===========] - Os 658us/st	cep - loss: 0.0746
Epoch 190/400	
160/160 [=======] - Os 675us/st	ep - loss: 0.0673
Epoch 191/400	
160/160 [========== ] - Os 660us/st	ep - loss: 0.0732
Epoch 192/400	
160/160 [=======] - Os 657us/st	cep - loss: 0.0722
Epoch 193/400	
160/160 [=======] - Os 661us/st	cep - loss: 0.0640
Epoch 194/400	
160/160 [=======] - Os 679us/st	cep - loss: 0.0692
Epoch 195/400	
160/160 [=======] - Os 678us/st	cep - loss: 0.0802
Epoch 196/400	
160/160 [=======] - Os 661us/st	cep - loss: 0.0711
Epoch 197/400	
160/160 [============ ] - Os 682us/st	ep - loss: 0.0602
Epoch 198/400	_
160/160 [====================================	cep - loss: 0.0490

Epoch 199/400						
160/160 [====================================	_	0s	656us/step	_	loss:	0.0577
Epoch 200/400			•			
160/160 [====================================	_	0s	617us/step	_	loss:	0.0661
Epoch 201/400			-			
160/160 [====================================	_	0s	620us/step	-	loss:	0.0803
Epoch 202/400			-			
160/160 [====================================	_	0s	625us/step	_	loss:	0.0576
Epoch 203/400			_			
160/160 [=======]	-	0s	617us/step	-	loss:	0.0492
Epoch 204/400						
160/160 [=======]	-	0s	718us/step	-	loss:	0.0934
Epoch 205/400						
160/160 [=======]	-	0s	678us/step	-	loss:	0.0727
Epoch 206/400						
160/160 [=======]	-	0s	638us/step	-	loss:	0.0688
Epoch 207/400						
160/160 [=======]	-	0s	626us/step	-	loss:	0.0554
Epoch 208/400						
160/160 [=======]	-	0s	622us/step	-	loss:	0.0900
Epoch 209/400						
160/160 [=======]	-	0s	633us/step	-	loss:	0.0540
Epoch 210/400						
160/160 [=======]	-	0s	652us/step	-	loss:	0.0697
Epoch 211/400						
160/160 [=======]	-	0s	642us/step	-	loss:	0.0696
Epoch 212/400						
160/160 [=======]	-	0s	667us/step	-	loss:	0.0668
Epoch 213/400						
160/160 [====================================	-	0s	647us/step	-	loss:	0.0609
Epoch 214/400						
160/160 [=======]	-	0s	626us/step	-	loss:	0.0587
Epoch 215/400						
160/160 [=======]	-	0s	659us/step	-	loss:	0.0585
Epoch 216/400						
160/160 [=======]	-	0s	673us/step	-	loss:	0.0643
Epoch 217/400						
160/160 [=======]	-	0s	673us/step	-	loss:	0.0684
Epoch 218/400						
160/160 [=======]	-	0s	665us/step	-	loss:	0.0543
Epoch 219/400						
160/160 [=======]	-	0s	646us/step	-	loss:	0.0544
Epoch 220/400						
160/160 [====================================	-	0ຮ	674us/step	-	loss:	0.0740
Epoch 221/400		_			_	
160/160 [====================================	-	0s	675us/step	-	loss:	0.0586
Epoch 222/400		_			_	
160/160 [====================================	-	0s	64bus/step	-	loss:	0.0697

Enoch 222/400						
Epoch 223/400 160/160 [====================================	_	Λe	660us/sten	_	1000.	0 0446
Epoch 224/400		OS	oogus/scep		TOSS.	0.0440
160/160 [====================================	_	Λe	6/1911s/sten	_	loggi	0 0824
Epoch 225/400		OS	043us/scep		TOSS.	0.0024
160/160 [========]	_	Λe	676118/sten	_	loggi	0 0756
Epoch 226/400		OS	orous/scep		TOSS.	0.0750
160/160 [========]	_	۸e	677118/sten	_	loggi	0 0611
Epoch 227/400		OB	orrus/scep		TOSS.	0.0011
160/160 [=======]	_	۸q	641119/sten	_	1099.	0 0548
Epoch 228/400		Ů.	o ii ab, b cop		TODD.	0.0010
160/160 [=======]	_	۸q	658119/sten	_	1099.	0 0600
Epoch 229/400		OB	осоць, в сер		TOBB.	0.0000
160/160 [========]	_	0s	630us/sten	_	loss	0 0423
Epoch 230/400		Ů.	ocour, boop		TODD.	0.0120
160/160 [=======]	_	0s	644us/step	_	loss:	0.0659
Epoch 231/400		Ů.	o i i ab, b cop		1000.	0.0000
160/160 [====================================	_	0s	662us/step	_	loss:	0.0666
Epoch 232/400			, <sub>-</sub>			
160/160 [====================================	_	0s	668us/step	_	loss:	0.0432
Epoch 233/400			,			
160/160 [====================================	_	0s	646us/step	_	loss:	0.0828
Epoch 234/400			. 1			
160/160 [====================================	_	0s	662us/step	_	loss:	0.0470
Epoch 235/400			•			
160/160 [====================================	_	0s	687us/step	_	loss:	0.0790
Epoch 236/400			-			
160/160 [====================================	-	0s	644us/step	-	loss:	0.0652
Epoch 237/400						
160/160 [=======]	-	0s	642us/step	-	loss:	0.0742
Epoch 238/400						
160/160 [=======]	-	0s	662us/step	-	loss:	0.0574
Epoch 239/400						
160/160 [=======]	-	0s	667us/step	-	loss:	0.0504
Epoch 240/400						
160/160 [======]	-	0s	680us/step	-	loss:	0.0805
Epoch 241/400						
160/160 [======]	-	0s	640us/step	-	loss:	0.0588
Epoch 242/400						
160/160 [======]	-	0s	647us/step	-	loss:	0.0526
Epoch 243/400						
160/160 [=======]	-	0s	635us/step	-	loss:	0.0550
Epoch 244/400						
160/160 [====================================	-	0s	626us/step	-	loss:	0.0601
Epoch 245/400		•	0.05		-	0 0445
160/160 [====================================	-	Us	665us/step	-	loss:	0.0446
Epoch 246/400		^	627		1	0 0504
160/160 [============]	_	US	os/us/step	_	TOSS:	U.U534

Epoch 247/400	
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Epoch 267/400	
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Epoch 268/400	
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Epoch 269/400	
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Epoch 271/400
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Epoch 278/400
160/160 [============= ] - Os 663us/step - loss: 0.0444
Epoch 279/400
160/160 [====================================
Epoch 280/400
160/160 [============= ] - Os 671us/step - loss: 0.0519
Epoch 281/400
160/160 [====================================
Epoch 282/400
160/160 [====================================
Epoch 283/400
160/160 [============= ] - Os 677us/step - loss: 0.0495
Epoch 284/400
160/160 [====================================
Epoch 285/400
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Epoch 286/400
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Epoch 294/400
160/160 [====================================

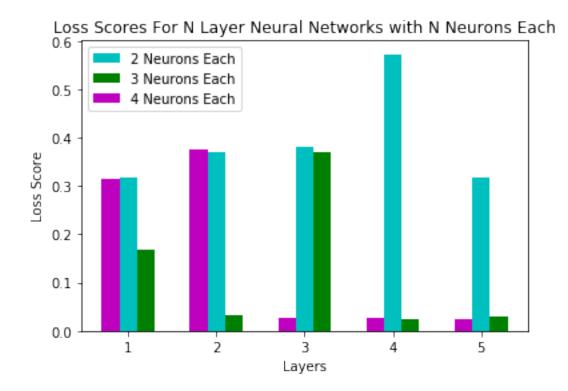
En ab 205 /400
Epoch 295/400 160/160 [====================================
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Epoch 319/400		^	007 / 1 0 0544
160/160 [====================================	-	Us	66/us/step - loss: 0.0541
Epoch 320/400		_	
160/160 [====================================	-	0s	653us/step - loss: 0.0525
Epoch 321/400		_	055 /
160/160 [=========]	-	0s	657us/step - loss: 0.0450
Epoch 322/400		_	
160/160 [====================================	-	0s	659us/step - loss: 0.0460
Epoch 323/400		_	
160/160 [====================================	-	0s	656us/step - loss: 0.0430
Epoch 324/400		_	
160/160 [=======]	-	0s	658us/step - loss: 0.0346
Epoch 325/400			
160/160 [========]	-	0s	680us/step - loss: 0.0326
Epoch 326/400			
160/160 [====================================	-	0s	657us/step - loss: 0.0654
Epoch 327/400			
160/160 [======]	-	0s	669us/step - loss: 0.0382
Epoch 328/400			
160/160 [======]	-	0s	654us/step - loss: 0.0488
Epoch 329/400			
160/160 [======]	-	0s	638us/step - loss: 0.0591
Epoch 330/400			
160/160 [======]	-	0s	652us/step - loss: 0.0534
Epoch 331/400			
160/160 [======]	-	0s	662us/step - loss: 0.0413
Epoch 332/400			
160/160 [======]	-	0s	633us/step - loss: 0.0489
Epoch 333/400			
160/160 [=======]	-	0s	644us/step - loss: 0.0411
Epoch 334/400			
160/160 [=======]	-	0s	672us/step - loss: 0.0363
Epoch 335/400			
160/160 [======]	-	0s	663us/step - loss: 0.0506
Epoch 336/400			
160/160 [=========]	-	0s	671us/step - loss: 0.0348
Epoch 337/400			
160/160 [======]	-	0s	642us/step - loss: 0.0422
Epoch 338/400			
160/160 [======]	-	0s	640us/step - loss: 0.0392
Epoch 339/400			
160/160 [=======]	-	0s	647us/step - loss: 0.0432
Epoch 340/400			
160/160 [=======]	-	0s	657us/step - loss: 0.0484
Epoch 341/400			
160/160 [=======]	-	0s	655us/step - loss: 0.0487
Epoch 342/400			
160/160 [====================================	-	0s	674us/step - loss: 0.0501

Epoch 343/400		_	004 / .		_	0 0400
160/160 [====================================	-	0s	664us/step	-	loss:	0.0482
Epoch 344/400						
160/160 [======]	-	0s	655us/step	-	loss:	0.0386
Epoch 345/400						
160/160 [=======]	-	0s	668us/step	-	loss:	0.0467
Epoch 346/400						
160/160 [===========]	-	0s	655us/step	-	loss:	0.0459
Epoch 347/400						
160/160 [=======]	-	0s	646us/step	-	loss:	0.0596
Epoch 348/400						
160/160 [=======]	-	0s	671us/step	-	loss:	0.0423
Epoch 349/400						
160/160 [====================================	-	0s	733us/step	-	loss:	0.0421
Epoch 350/400			_			
160/160 [====================================	-	0s	711us/step	_	loss:	0.0371
Epoch 351/400			•			
160/160 [====================================	_	0s	758us/step	_	loss:	0.0325
Epoch 352/400			<u>.</u>			
160/160 [========]	_	0s	675us/step	_	loss:	0.0383
Epoch 353/400		Ů.	0,042,200p		TODE.	0.0000
160/160 [====================================	_	٥٩	631119/sten	_	1088.	0 0339
Epoch 354/400		OB	colub/btcp		TOBB.	0.0003
160/160 [====================================	_	۸e	67111g/gten	_	loggi	0 0806
Epoch 355/400		OS	O/Ius/scep		TOSS.	0.0000
160/160 [====================================		٥٩	610,19/9+00		1.000.	0 0460
	_	US	642us/step	_	TOSS:	0.0462
Epoch 356/400 160/160 [====================================		٥-	670		7	0 0200
	_	US	6/9us/step	_	TOSS:	0.0320
Epoch 357/400		Λ-	CEO /		1	0 0400
160/160 [====================================	_	US	650us/step	_	loss:	0.0482
Epoch 358/400		^	706 / .		,	0.000
160/160 [====================================	_	US	/36us/step	_	loss:	0.0662
Epoch 359/400		_			_	
160/160 [====================================	-	0s	677us/step	-	loss:	0.0409
Epoch 360/400		_			_	
160/160 [====================================	-	0s	667us/step	-	loss:	0.0585
Epoch 361/400						
160/160 [======]	-	0s	668us/step	-	loss:	0.0411
Epoch 362/400						
160/160 [=======]	-	0s	673us/step	-	loss:	0.0473
Epoch 363/400						
160/160 [============]	-	0s	686us/step	-	loss:	0.0444
Epoch 364/400						
160/160 [=======]	-	0s	683us/step	-	loss:	0.0420
Epoch 365/400						
160/160 [=======]	-	0s	665us/step	_	loss:	0.0393
Epoch 366/400			_			
160/160 [==========]	-	0s	667us/step	-	loss:	0.0331
			_			

F 1 267/400
Epoch 367/400
160/160 [====================================
Epoch 368/400
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Epoch 370/400
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Epoch 371/400
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Epoch 372/400
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Epoch 373/400
160/160 [============= ] - Os 630us/step - loss: 0.0484
Epoch 374/400
160/160 [====================================
Epoch 375/400
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Epoch 376/400
160/160 [====================================
Epoch 377/400
160/160 [============= ] - Os 637us/step - loss: 0.0349
Epoch 378/400
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Epoch 379/400
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Epoch 391/400
Epoch 392/400
160/160 [============= ] - Os 603us/step - loss: 0.0405
Epoch 393/400
Epoch 394/400
Epoch 395/400
160/160 [============= ] - 0s 682us/step - loss: 0.0329
Epoch 396/400
160/160 [============== ] - Os 677us/step - loss: 0.0404
Epoch 397/400
Epoch 398/400
160/160 [============== ] - Os 676us/step - loss: 0.0422
Epoch 399/400
160/160 [============= ] - 0s 689us/step - loss: 0.0328
Epoch 400/400
160/160 [============= ] - Os 636us/step - loss: 0.0390
160/160 [========== ] - Os 1ms/step
In [23]: layers3 = np.arange(1.2,6.2,1)
      layers4 = np.arange(.8, 5.8, 1)
      plt.bar(layers, scores, width = .2, color = 'c', label = '2 Neurons Each', align = 'c'
      plt.bar(layers3, scores3, width = .2, color = 'g', label = '3 Neurons Each', align =
      plt.bar(layers4, scores4, width = .2, color = 'm', label = '4 Neurons Each', align =
      plt.xlabel('Layers')
      plt.ylabel('Loss Score')
      plt.title('Loss Scores For N Layer Neural Networks with N Neurons Each')
      plt.legend(loc="best")
      plt.show()
```



Looking at the above graph, the 5 Layer Neural Network with 4 Neurons at each layer performs the best

## 1.1.3 Part 1.3

```
In [24]: ### Tanh ###
    scores = []

model = Sequential()

model.add(Dense(4, input_dim=2, activation='tanh')) #sigmoid, relu
    model.add(Dense(4, input_dim = 4, activation='tanh'))
    model.add(Dense(1, activation='tanh'))
    # model.add(Dense(1, input_dim=2, activation='sigmoid'))

sgd = SGD(lr=0.1)
    model.compile(loss='binary_crossentropy', optimizer='sgd')

model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
    #print(model.predict_proba(X).reshape(4*n))
```

```
# evaluate the model
scores.append(model.evaluate(X, y))
### Sigmoid ###
model = Sequential()
model.add(Dense(4, input_dim=2, activation='sigmoid')) #sigmoid, relu
model.add(Dense(4, input_dim = 4, activation='sigmoid'))
model.add(Dense(1, activation='sigmoid'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### relu ###
model = Sequential()
model.add(Dense(4, input_dim=2, activation='relu')) #sigmoid, relu
model.add(Dense(4, input_dim = 4, activation='relu'))
model.add(Dense(4, input_dim = 4, activation='relu'))
model.add(Dense(4, input dim = 4, activation='relu'))
model.add(Dense(4, input_dim = 4, activation='relu'))
model.add(Dense(1, activation='relu'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
```

```
model = Sequential()
        model.add(Dense(4, input_dim=2, activation='softplus')) #sigmoid, relu
        model.add(Dense(4, input_dim = 4, activation='softplus'))
        model.add(Dense(1, activation='softplus'))
         # model.add(Dense(1,input_dim=2, activation='sigmoid'))
         sgd = SGD(lr=0.1)
        model.compile(loss='binary_crossentropy', optimizer='sgd')
        model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
         #print(model.predict_proba(X).reshape(4*n))
         # evaluate the model
         scores.append(model.evaluate(X, y))
         ### exponential ###
        model = Sequential()
        model.add(Dense(4, input_dim=2, activation='exponential')) #sigmoid, relu
        model.add(Dense(4, input_dim = 4, activation='exponential'))
        model.add(Dense(1, activation='exponential'))
         # model.add(Dense(1,input_dim=2, activation='sigmoid'))
         sgd = SGD(1r=0.1)
        model.compile(loss='binary_crossentropy', optimizer='sgd')
        model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
         #print(model.predict_proba(X).reshape(4*n))
         # evaluate the model
         scores.append(model.evaluate(X, y))
Epoch 1/400
160/160 [================ ] - Os 3ms/step - loss: 1.1993
Epoch 2/400
```

### softplus ###

```
160/160 [============== ] - Os 684us/step - loss: 0.6560
Epoch 3/400
160/160 [============ ] - Os 673us/step - loss: 0.6190
Epoch 4/400
160/160 [============= ] - 0s 693us/step - loss: 0.5894
Epoch 5/400
160/160 [============= ] - 0s 710us/step - loss: 0.5153
Epoch 6/400
160/160 [============= ] - 0s 711us/step - loss: 0.5125
Epoch 7/400
160/160 [============= ] - Os 716us/step - loss: 0.4757
Epoch 8/400
Epoch 9/400
Epoch 10/400
160/160 [============= ] - 0s 718us/step - loss: 0.5702
Epoch 11/400
160/160 [============= ] - Os 720us/step - loss: 0.5126
Epoch 12/400
Epoch 13/400
160/160 [============= ] - 0s 733us/step - loss: 0.6192
Epoch 14/400
Epoch 15/400
160/160 [============== ] - 0s 764us/step - loss: 0.5884
Epoch 16/400
Epoch 17/400
Epoch 18/400
160/160 [============= ] - 0s 783us/step - loss: 0.5293
Epoch 19/400
160/160 [============= ] - 0s 779us/step - loss: 0.4136
Epoch 20/400
160/160 [============= ] - 0s 721us/step - loss: 0.3598
Epoch 21/400
Epoch 22/400
160/160 [============== ] - Os 664us/step - loss: 0.4416
Epoch 23/400
Epoch 24/400
Epoch 25/400
160/160 [============== ] - Os 645us/step - loss: 0.5479
Epoch 26/400
```

```
Epoch 27/400
160/160 [============ ] - Os 680us/step - loss: 0.4122
Epoch 28/400
Epoch 29/400
160/160 [============= ] - Os 647us/step - loss: 0.7992
Epoch 30/400
160/160 [============= ] - 0s 734us/step - loss: 0.5125
Epoch 31/400
Epoch 32/400
Epoch 33/400
160/160 [============= ] - Os 633us/step - loss: 0.6328
Epoch 34/400
160/160 [============= ] - 0s 651us/step - loss: 0.6732
Epoch 35/400
160/160 [============ ] - Os 622us/step - loss: 0.6568
Epoch 36/400
160/160 [=============== ] - Os 624us/step - loss: 1.0008
Epoch 37/400
160/160 [============= ] - Os 643us/step - loss: 0.7300
Epoch 38/400
Epoch 39/400
160/160 [============== ] - 0s 723us/step - loss: 0.7043
Epoch 40/400
Epoch 41/400
Epoch 42/400
160/160 [============ ] - Os 726us/step - loss: 0.7086
Epoch 43/400
160/160 [============= ] - Os 750us/step - loss: 0.7128
Epoch 44/400
Epoch 45/400
Epoch 46/400
160/160 [============== ] - Os 748us/step - loss: 0.7190
Epoch 47/400
Epoch 48/400
160/160 [============= ] - 0s 671us/step - loss: 0.7084
Epoch 49/400
160/160 [============== ] - Os 707us/step - loss: 0.7100
Epoch 50/400
```

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Epoch 51/400
160/160 [============ ] - Os 724us/step - loss: 0.7138
Epoch 52/400
160/160 [============= ] - 0s 719us/step - loss: 0.7060
Epoch 53/400
160/160 [============= ] - 0s 762us/step - loss: 0.7105
Epoch 54/400
Epoch 55/400
Epoch 56/400
Epoch 57/400
Epoch 58/400
160/160 [============= ] - 0s 707us/step - loss: 0.7056
Epoch 59/400
160/160 [============= ] - Os 702us/step - loss: 0.7129
Epoch 60/400
160/160 [============ ] - Os 694us/step - loss: 0.7082
Epoch 61/400
160/160 [============= ] - Os 680us/step - loss: 0.7127
Epoch 62/400
160/160 [============= ] - 0s 696us/step - loss: 0.7082
Epoch 63/400
160/160 [=============== ] - Os 696us/step - loss: 0.7055
Epoch 64/400
160/160 [============== ] - Os 682us/step - loss: 0.7116
Epoch 65/400
Epoch 66/400
160/160 [============= ] - Os 670us/step - loss: 0.7079
Epoch 67/400
Epoch 68/400
160/160 [============= ] - Os 691us/step - loss: 0.7060
Epoch 69/400
Epoch 70/400
Epoch 71/400
Epoch 72/400
160/160 [============= ] - 0s 703us/step - loss: 0.7009
Epoch 73/400
160/160 [============== ] - 0s 704us/step - loss: 0.7056
Epoch 74/400
```

```
Epoch 75/400
160/160 [============] - Os 669us/step - loss: 0.6978
Epoch 76/400
160/160 [============= ] - 0s 618us/step - loss: 0.7053
Epoch 77/400
Epoch 78/400
160/160 [============= ] - 0s 710us/step - loss: 0.7035
Epoch 79/400
Epoch 80/400
Epoch 81/400
Epoch 82/400
160/160 [============= ] - Os 701us/step - loss: 0.6956
Epoch 83/400
160/160 [============ ] - Os 686us/step - loss: 0.6973
Epoch 84/400
160/160 [============= ] - 0s 681us/step - loss: 0.6943
Epoch 85/400
160/160 [============= ] - 0s 709us/step - loss: 0.6835
Epoch 86/400
160/160 [============= ] - 0s 715us/step - loss: 0.6808
Epoch 87/400
160/160 [============== ] - Os 755us/step - loss: 0.6822
Epoch 88/400
Epoch 89/400
Epoch 90/400
Epoch 91/400
160/160 [============= ] - Os 710us/step - loss: 0.6620
Epoch 92/400
160/160 [============= ] - 0s 708us/step - loss: 0.6392
Epoch 93/400
160/160 [============== ] - Os 708us/step - loss: 0.6430
Epoch 94/400
Epoch 95/400
160/160 [============= ] - 0s 706us/step - loss: 0.6324
Epoch 96/400
160/160 [============= ] - 0s 738us/step - loss: 0.6274
Epoch 97/400
160/160 [============== ] - 0s 726us/step - loss: 0.6186
Epoch 98/400
```

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Epoch 99/400
160/160 [============= ] - Os 678us/step - loss: 0.6129
Epoch 100/400
Epoch 101/400
Epoch 102/400
Epoch 103/400
160/160 [============] - Os 675us/step - loss: 0.6112
Epoch 104/400
Epoch 105/400
160/160 [============= ] - 0s 675us/step - loss: 0.5964
Epoch 106/400
160/160 [============= ] - Os 666us/step - loss: 0.6026
Epoch 107/400
160/160 [============= ] - Os 674us/step - loss: 0.6019
Epoch 108/400
160/160 [=============== ] - Os 677us/step - loss: 0.5970
Epoch 109/400
Epoch 110/400
Epoch 111/400
160/160 [============== ] - Os 656us/step - loss: 0.5973
Epoch 112/400
Epoch 113/400
Epoch 114/400
160/160 [============ ] - Os 676us/step - loss: 0.6027
Epoch 115/400
160/160 [============= ] - 0s 683us/step - loss: 0.5968
Epoch 116/400
160/160 [============= ] - 0s 676us/step - loss: 0.5903
Epoch 117/400
160/160 [============== ] - 0s 702us/step - loss: 0.5938
Epoch 118/400
Epoch 119/400
160/160 [============== ] - Os 684us/step - loss: 0.5783
Epoch 120/400
160/160 [============= ] - Os 682us/step - loss: 0.5819
Epoch 121/400
Epoch 122/400
```

```
Epoch 123/400
160/160 [============] - Os 654us/step - loss: 0.5346
Epoch 124/400
160/160 [============= ] - Os 656us/step - loss: 0.5100
Epoch 125/400
160/160 [============= ] - Os 604us/step - loss: 0.5553
Epoch 126/400
160/160 [============= ] - 0s 609us/step - loss: 0.5924
Epoch 127/400
Epoch 128/400
Epoch 129/400
Epoch 130/400
Epoch 131/400
160/160 [============= ] - Os 684us/step - loss: 1.1697
Epoch 132/400
160/160 [============== ] - Os 682us/step - loss: 0.6113
Epoch 133/400
Epoch 134/400
160/160 [============= ] - Os 687us/step - loss: 0.6810
Epoch 135/400
Epoch 136/400
160/160 [============== ] - Os 682us/step - loss: 0.5604
Epoch 137/400
Epoch 138/400
Epoch 139/400
160/160 [============= ] - Os 677us/step - loss: 0.4291
Epoch 140/400
Epoch 141/400
Epoch 142/400
160/160 [============== ] - Os 683us/step - loss: 1.2056
Epoch 143/400
160/160 [============= ] - 0s 689us/step - loss: 0.7564
Epoch 144/400
160/160 [============= ] - Os 679us/step - loss: 0.7190
Epoch 145/400
160/160 [============== ] - Os 676us/step - loss: 0.7077
Epoch 146/400
```

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Epoch 147/400
160/160 [============ ] - Os 674us/step - loss: 0.7143
Epoch 148/400
Epoch 149/400
160/160 [============= ] - Os 673us/step - loss: 0.7176
Epoch 150/400
160/160 [============= ] - Os 674us/step - loss: 0.7140
Epoch 151/400
160/160 [============= ] - 0s 693us/step - loss: 0.7053
Epoch 152/400
Epoch 153/400
160/160 [============= ] - 0s 683us/step - loss: 0.7074
Epoch 154/400
160/160 [============= ] - Os 683us/step - loss: 0.7108
Epoch 155/400
160/160 [============= ] - Os 668us/step - loss: 0.7091
Epoch 156/400
Epoch 157/400
160/160 [============= ] - Os 666us/step - loss: 0.7010
Epoch 158/400
160/160 [============= ] - 0s 686us/step - loss: 0.7095
Epoch 159/400
160/160 [============== ] - Os 685us/step - loss: 0.7108
Epoch 160/400
Epoch 161/400
Epoch 162/400
160/160 [=========== ] - Os 674us/step - loss: 0.7092
Epoch 163/400
160/160 [============= ] - 0s 690us/step - loss: 0.7083
Epoch 164/400
160/160 [============= ] - 0s 675us/step - loss: 0.7074
Epoch 165/400
Epoch 166/400
160/160 [============== ] - Os 669us/step - loss: 0.7083
Epoch 167/400
160/160 [============= ] - Os 673us/step - loss: 0.7056
Epoch 168/400
Epoch 169/400
160/160 [============== ] - Os 685us/step - loss: 0.7054
Epoch 170/400
```

```
160/160 [============== ] - Os 693us/step - loss: 0.7123
Epoch 171/400
160/160 [============] - Os 681us/step - loss: 0.7048
Epoch 172/400
160/160 [============= ] - Os 694us/step - loss: 0.7190
Epoch 173/400
160/160 [============= ] - 0s 691us/step - loss: 0.7015
Epoch 174/400
160/160 [============= ] - Os 671us/step - loss: 0.7101
Epoch 175/400
160/160 [============= ] - Os 677us/step - loss: 0.7129
Epoch 176/400
Epoch 177/400
160/160 [============= ] - Os 674us/step - loss: 0.7133
Epoch 178/400
Epoch 179/400
160/160 [=========== ] - Os 672us/step - loss: 0.7116
Epoch 180/400
160/160 [============= ] - 0s 683us/step - loss: 0.7008
Epoch 181/400
160/160 [============= ] - 0s 689us/step - loss: 0.7047
Epoch 182/400
Epoch 183/400
160/160 [============== ] - Os 638us/step - loss: 0.7126
Epoch 184/400
160/160 [============== ] - Os 634us/step - loss: 0.7118
Epoch 185/400
Epoch 186/400
160/160 [============= ] - Os 680us/step - loss: 0.7006
Epoch 187/400
160/160 [============= ] - Os 686us/step - loss: 0.7090
Epoch 188/400
160/160 [============= ] - Os 697us/step - loss: 0.6968
Epoch 189/400
160/160 [============== ] - Os 681us/step - loss: 0.7073
Epoch 190/400
160/160 [============== ] - Os 689us/step - loss: 0.7134
Epoch 191/400
160/160 [============= ] - 0s 695us/step - loss: 0.6844
Epoch 192/400
160/160 [============= ] - 0s 705us/step - loss: 0.7002
Epoch 193/400
160/160 [============== ] - Os 673us/step - loss: 0.7147
Epoch 194/400
```

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Epoch 195/400
160/160 [============] - Os 663us/step - loss: 0.7093
Epoch 196/400
Epoch 197/400
Epoch 198/400
160/160 [============= ] - Os 655us/step - loss: 0.7128
Epoch 199/400
Epoch 200/400
Epoch 201/400
Epoch 202/400
160/160 [============= ] - Os 684us/step - loss: 0.7109
Epoch 203/400
160/160 [=========== ] - Os 681us/step - loss: 0.7066
Epoch 204/400
Epoch 205/400
160/160 [============= ] - 0s 679us/step - loss: 0.7062
Epoch 206/400
Epoch 207/400
Epoch 208/400
160/160 [============== ] - Os 672us/step - loss: 0.7000
Epoch 209/400
Epoch 210/400
160/160 [============= ] - Os 662us/step - loss: 0.7120
Epoch 211/400
160/160 [============= ] - 0s 682us/step - loss: 0.7086
Epoch 212/400
160/160 [============= ] - Os 661us/step - loss: 0.6977
Epoch 213/400
160/160 [============== ] - Os 668us/step - loss: 0.7114
Epoch 214/400
160/160 [=============== ] - Os 681us/step - loss: 0.7065
Epoch 215/400
160/160 [============== ] - Os 671us/step - loss: 0.7114
Epoch 216/400
160/160 [============= ] - 0s 664us/step - loss: 0.7084
Epoch 217/400
160/160 [============== ] - Os 669us/step - loss: 0.7100
Epoch 218/400
```

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Epoch 219/400
160/160 [============= ] - Os 637us/step - loss: 0.7184
Epoch 220/400
160/160 [============= ] - 0s 672us/step - loss: 0.7003
Epoch 221/400
160/160 [============== ] - 0s 680us/step - loss: 0.7053
Epoch 222/400
160/160 [============= ] - 0s 679us/step - loss: 0.7092
Epoch 223/400
Epoch 224/400
Epoch 225/400
Epoch 226/400
Epoch 227/400
160/160 [============ ] - Os 646us/step - loss: 0.7148
Epoch 228/400
Epoch 229/400
160/160 [============= ] - Os 679us/step - loss: 0.6985
Epoch 230/400
Epoch 231/400
160/160 [=============== ] - Os 682us/step - loss: 0.7140
Epoch 232/400
Epoch 233/400
Epoch 234/400
160/160 [============= ] - 0s 667us/step - loss: 0.7062
Epoch 235/400
160/160 [============= ] - Os 669us/step - loss: 0.7090
Epoch 236/400
160/160 [============= ] - 0s 667us/step - loss: 0.7064
Epoch 237/400
Epoch 238/400
160/160 [============== ] - Os 679us/step - loss: 0.7143
Epoch 239/400
160/160 [============= ] - Os 687us/step - loss: 0.7123
Epoch 240/400
Epoch 241/400
160/160 [============== ] - Os 671us/step - loss: 0.7075
Epoch 242/400
```

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160/160 [============== ] - Os 656us/step - loss: 0.7093
Epoch 243/400
160/160 [============] - Os 691us/step - loss: 0.7040
Epoch 244/400
160/160 [============= ] - Os 678us/step - loss: 0.7110
Epoch 245/400
160/160 [============= ] - 0s 682us/step - loss: 0.7108
Epoch 246/400
160/160 [============= ] - Os 677us/step - loss: 0.6996
Epoch 247/400
160/160 [============= ] - 0s 689us/step - loss: 0.7062
Epoch 248/400
Epoch 249/400
160/160 [============= ] - 0s 672us/step - loss: 0.6898
Epoch 250/400
Epoch 251/400
160/160 [============= ] - Os 652us/step - loss: 0.7064
Epoch 252/400
Epoch 253/400
Epoch 254/400
Epoch 255/400
Epoch 256/400
160/160 [============== ] - Os 685us/step - loss: 0.6928
Epoch 257/400
Epoch 258/400
160/160 [=========== ] - Os 676us/step - loss: 0.7032
Epoch 259/400
160/160 [============= ] - Os 653us/step - loss: 0.7075
Epoch 260/400
160/160 [============= ] - Os 688us/step - loss: 0.7130
Epoch 261/400
160/160 [============== ] - Os 680us/step - loss: 0.7132
Epoch 262/400
160/160 [============== ] - Os 664us/step - loss: 0.7120
Epoch 263/400
Epoch 264/400
160/160 [============= ] - 0s 683us/step - loss: 0.7036
Epoch 265/400
160/160 [============== ] - Os 679us/step - loss: 0.7146
Epoch 266/400
```

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Epoch 267/400
Epoch 268/400
160/160 [============= ] - 0s 680us/step - loss: 0.7084
Epoch 269/400
160/160 [============= ] - 0s 680us/step - loss: 0.7054
Epoch 270/400
160/160 [============= ] - Os 719us/step - loss: 0.7070
Epoch 271/400
160/160 [============ ] - Os 711us/step - loss: 0.7055
Epoch 272/400
Epoch 273/400
160/160 [============= ] - Os 653us/step - loss: 0.7074
Epoch 274/400
160/160 [============= ] - Os 653us/step - loss: 0.7070
Epoch 275/400
160/160 [============ ] - Os 682us/step - loss: 0.7006
Epoch 276/400
Epoch 277/400
Epoch 278/400
160/160 [============= ] - Os 653us/step - loss: 0.7110
Epoch 279/400
160/160 [============== ] - Os 669us/step - loss: 0.7090
Epoch 280/400
160/160 [============== ] - Os 656us/step - loss: 0.7070
Epoch 281/400
Epoch 282/400
160/160 [============= ] - Os 682us/step - loss: 0.7110
Epoch 283/400
160/160 [============= ] - Os 678us/step - loss: 0.7147
Epoch 284/400
Epoch 285/400
160/160 [============== ] - Os 684us/step - loss: 0.6952
Epoch 286/400
160/160 [============== ] - Os 672us/step - loss: 0.7129
Epoch 287/400
160/160 [============== ] - Os 681us/step - loss: 0.7130
Epoch 288/400
160/160 [============= ] - Os 668us/step - loss: 0.7073
Epoch 289/400
160/160 [============== ] - Os 674us/step - loss: 0.7038
Epoch 290/400
```

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160/160 [============== ] - Os 653us/step - loss: 0.7018
Epoch 291/400
160/160 [============ ] - Os 685us/step - loss: 0.7115
Epoch 292/400
160/160 [============= ] - Os 648us/step - loss: 0.7049
Epoch 293/400
160/160 [============= ] - Os 633us/step - loss: 0.6998
Epoch 294/400
160/160 [============= ] - Os 644us/step - loss: 0.7017
Epoch 295/400
Epoch 296/400
Epoch 297/400
160/160 [============= ] - 0s 673us/step - loss: 0.7094
Epoch 298/400
160/160 [============= ] - 0s 671us/step - loss: 0.7056
Epoch 299/400
160/160 [============ ] - Os 659us/step - loss: 0.7134
Epoch 300/400
Epoch 301/400
160/160 [============= ] - 0s 657us/step - loss: 0.7088
Epoch 302/400
Epoch 303/400
160/160 [=============== ] - Os 656us/step - loss: 0.7120
Epoch 304/400
Epoch 305/400
Epoch 306/400
160/160 [============= ] - 0s 670us/step - loss: 0.7092
Epoch 307/400
160/160 [============= ] - 0s 645us/step - loss: 0.7063
Epoch 308/400
160/160 [============= ] - Os 680us/step - loss: 0.7073
Epoch 309/400
160/160 [=============== ] - Os 666us/step - loss: 0.6983
Epoch 310/400
160/160 [============== ] - Os 684us/step - loss: 0.7125
Epoch 311/400
160/160 [============= ] - Os 688us/step - loss: 0.7113
Epoch 312/400
160/160 [============= ] - 0s 661us/step - loss: 0.7024
Epoch 313/400
160/160 [=============== ] - Os 654us/step - loss: 0.7056
Epoch 314/400
```

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160/160 [============== ] - Os 658us/step - loss: 0.7100
Epoch 315/400
160/160 [============= ] - Os 678us/step - loss: 0.7105
Epoch 316/400
160/160 [============= ] - Os 650us/step - loss: 0.7123
Epoch 317/400
Epoch 318/400
160/160 [============= ] - 0s 687us/step - loss: 0.7068
Epoch 319/400
160/160 [============= ] - 0s 666us/step - loss: 0.7038
Epoch 320/400
Epoch 321/400
160/160 [============= ] - Os 635us/step - loss: 0.7123
Epoch 322/400
160/160 [============= ] - Os 665us/step - loss: 0.7108
Epoch 323/400
160/160 [============= ] - Os 666us/step - loss: 0.7067
Epoch 324/400
Epoch 325/400
160/160 [============= ] - Os 665us/step - loss: 0.7119
Epoch 326/400
160/160 [============= ] - 0s 668us/step - loss: 0.7083
Epoch 327/400
160/160 [=============== ] - Os 646us/step - loss: 0.7096
Epoch 328/400
Epoch 329/400
Epoch 330/400
160/160 [============ ] - Os 667us/step - loss: 0.7142
Epoch 331/400
Epoch 332/400
160/160 [============= ] - 0s 623us/step - loss: 0.7048
Epoch 333/400
160/160 [============== ] - Os 638us/step - loss: 0.7014
Epoch 334/400
160/160 [============== ] - 0s 641us/step - loss: 0.7086
Epoch 335/400
160/160 [============== ] - 0s 616us/step - loss: 0.7064
Epoch 336/400
160/160 [============= ] - Os 661us/step - loss: 0.7096
Epoch 337/400
160/160 [============== ] - Os 682us/step - loss: 0.7039
Epoch 338/400
```

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Epoch 339/400
160/160 [============= ] - 0s 677us/step - loss: 0.6874
Epoch 340/400
160/160 [============= ] - Os 666us/step - loss: 0.7146
Epoch 341/400
160/160 [============= ] - 0s 674us/step - loss: 0.7068
Epoch 342/400
160/160 [============= ] - 0s 662us/step - loss: 0.7048
Epoch 343/400
Epoch 344/400
Epoch 345/400
Epoch 346/400
Epoch 347/400
160/160 [============ ] - Os 681us/step - loss: 0.7090
Epoch 348/400
160/160 [============ ] - Os 669us/step - loss: 0.7113
Epoch 349/400
160/160 [============= ] - 0s 673us/step - loss: 0.7040
Epoch 350/400
Epoch 351/400
160/160 [============== ] - Os 649us/step - loss: 0.7090
Epoch 352/400
Epoch 353/400
Epoch 354/400
160/160 [============= ] - 0s 673us/step - loss: 0.7080
Epoch 355/400
160/160 [============= ] - 0s 664us/step - loss: 0.7044
Epoch 356/400
160/160 [============= ] - Os 675us/step - loss: 0.7119
Epoch 357/400
160/160 [============== ] - Os 657us/step - loss: 0.7122
Epoch 358/400
160/160 [============== ] - Os 686us/step - loss: 0.7048
Epoch 359/400
160/160 [============= ] - Os 666us/step - loss: 0.7136
Epoch 360/400
160/160 [============= ] - 0s 671us/step - loss: 0.7089
Epoch 361/400
160/160 [============== ] - Os 665us/step - loss: 0.7146
Epoch 362/400
```

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Epoch 363/400
160/160 [============= ] - Os 663us/step - loss: 0.6834
Epoch 364/400
160/160 [============= ] - 0s 667us/step - loss: 0.7043
Epoch 365/400
160/160 [============= ] - Os 669us/step - loss: 0.7115
Epoch 366/400
160/160 [============= ] - 0s 657us/step - loss: 0.7134
Epoch 367/400
Epoch 368/400
Epoch 369/400
Epoch 370/400
Epoch 371/400
160/160 [============= ] - Os 655us/step - loss: 0.7077
Epoch 372/400
Epoch 373/400
Epoch 374/400
160/160 [============= ] - Os 676us/step - loss: 0.7070
Epoch 375/400
Epoch 376/400
160/160 [============== ] - Os 680us/step - loss: 0.7023
Epoch 377/400
160/160 [============== ] - Os 656us/step - loss: 0.7068
Epoch 378/400
160/160 [============= ] - Os 692us/step - loss: 0.7115
Epoch 379/400
160/160 [============= ] - Os 648us/step - loss: 0.7010
Epoch 380/400
160/160 [============= ] - 0s 671us/step - loss: 0.7096
Epoch 381/400
160/160 [=============== ] - 0s 678us/step - loss: 0.7052
Epoch 382/400
160/160 [============== ] - 0s 683us/step - loss: 0.7062
Epoch 383/400
160/160 [============== ] - Os 654us/step - loss: 0.7073
Epoch 384/400
Epoch 385/400
160/160 [============== ] - Os 678us/step - loss: 0.7076
Epoch 386/400
```

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Epoch 387/400
Epoch 388/400
Epoch 389/400
160/160 [============= ] - Os 660us/step - loss: 0.7094
Epoch 390/400
160/160 [============= ] - Os 662us/step - loss: 0.7120
Epoch 391/400
160/160 [============== ] - Os 675us/step - loss: 0.7073
Epoch 392/400
Epoch 393/400
160/160 [============= ] - Os 628us/step - loss: 0.7120
Epoch 394/400
Epoch 395/400
160/160 [============ ] - Os 640us/step - loss: 0.7102
Epoch 396/400
160/160 [=============== ] - Os 626us/step - loss: 0.7155
Epoch 397/400
Epoch 398/400
Epoch 399/400
Epoch 400/400
160/160 [========== ] - Os 1ms/step
Epoch 1/400
160/160 [============== ] - 0s 3ms/step - loss: 0.6946
Epoch 2/400
160/160 [============= ] - Os 681us/step - loss: 0.6942
Epoch 3/400
Epoch 4/400
Epoch 5/400
160/160 [============== ] - Os 681us/step - loss: 0.6944
Epoch 6/400
Epoch 7/400
160/160 [============== ] - Os 655us/step - loss: 0.6943
Epoch 8/400
160/160 [============== ] - Os 688us/step - loss: 0.6944
Epoch 9/400
160/160 [============= ] - Os 676us/step - loss: 0.6945
```

Enoch 10/400				
Epoch 10/400 160/160 [======] - 0	٦	670ug/g+op - 1	logg.	0 6045
Epoch 11/400	75	0/9us/step - 1	.088.	0.0945
160/160 [======] - (	٦	672ug/g+on 1		0 6042
	JS	6/3us/step - 1	.088:	0.0943
Epoch 12/400 160/160 [======] - 0	٦	600vg/g+op 1		0 6042
	JS	699us/step - 1	.oss:	0.6943
Epoch 13/400	<b>^</b>	COC / 1		0 0045
160/160 [======] - (	JS	686us/step - 1	.oss:	0.6945
Epoch 14/400	۸_	666/		0 6027
160/160 [======] - (	JS	obous/step - 1	.oss:	0.6937
Epoch 15/400	`	607 / 1		0 0040
160/160 [======] - (	JS	68/us/step - 1	.oss:	0.6942
Epoch 16/400		205 /		0 0011
160/160 [======] - (	)s	685us/step - 1	.oss:	0.6944
Epoch 17/400	_	000 /		
160/160 [======] - (	)s	670us/step - 1	.oss:	0.6945
Epoch 18/400	_	T00 /		
160/160 [======] - (	)s	709us/step - 1	.oss:	0.6944
Epoch 19/400				
160/160 [======] - 0	)ຮ	670us/step - 1	.oss:	0.6945
Epoch 20/400				
160/160 [======] - 0	)ຮ	685us/step - 1	oss:	0.6943
Epoch 21/400				
160/160 [======] - 0	)ຮ	692us/step - 1	oss:	0.6943
Epoch 22/400				
160/160 [======] - 0	)s	679us/step - 1	Loss:	0.6945
Epoch 23/400				
160/160 [======] - 0	)s	695us/step - 1	Loss:	0.6946
Epoch 24/400				
160/160 [======] - 0	)ຮ	680us/step - 1	Loss:	0.6945
Epoch 25/400				
160/160 [======] - 0	)ຮ	684us/step - 1	Loss:	0.6945
Epoch 26/400				
160/160 [======] - 0	)s	685us/step - 1	loss:	0.6947
Epoch 27/400				
160/160 [======] - 0	)s	674us/step - 1	loss:	0.6943
Epoch 28/400				
160/160 [======] - 0	)s	695us/step - 1	Loss:	0.6944
Epoch 29/400				
160/160 [======] - 0	)s	673us/step - 1	Loss:	0.6945
Epoch 30/400				
160/160 [======] - 0	)s	679us/step - 1	Loss:	0.6942
Epoch 31/400				
160/160 [======] - 0	)s	687us/step - 1	Loss:	0.6944
Epoch 32/400		_		
160/160 [=======] - 0	)s	676us/step - 1	Loss:	0.6943
Epoch 33/400				
160/160 [======] - 0	)ຣ	686us/step - 1	loss:	0.6948

Epoch 34/400
160/160 [====================================
Epoch 35/400
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Epoch 36/400
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Epoch 37/400
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Epoch 38/400
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Epoch 43/400
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Epoch 55/400
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Epoch 56/400
160/160 [====================================
Epoch 57/400
160/160 [====================================
100/100 [1085: 0.0945

Epoch 58/400						
160/160 [====================================	_	0s	654us/step	-	loss:	0.6942
Epoch 59/400						
160/160 [=======]	-	0s	668us/step	-	loss:	0.6942
Epoch 60/400						
160/160 [=======]	-	0s	676us/step	-	loss:	0.6945
Epoch 61/400						
160/160 [=======]	-	0s	690us/step	-	loss:	0.6946
Epoch 62/400						
160/160 [============]	-	0s	689us/step	-	loss:	0.6947
Epoch 63/400						
160/160 [============]	-	0s	679us/step	-	loss:	0.6941
Epoch 64/400						
160/160 [============]	-	0s	687us/step	_	loss:	0.6946
Epoch 65/400						
160/160 [============]	-	0s	681us/step	_	loss:	0.6944
Epoch 66/400						
160/160 [====================================	-	0s	687us/step	-	loss:	0.6944
Epoch 67/400						
160/160 [=======]	-	0s	693us/step	-	loss:	0.6945
Epoch 68/400						
160/160 [=======]	-	0s	679us/step	-	loss:	0.6944
Epoch 69/400						
160/160 [============]	-	0s	693us/step	-	loss:	0.6943
Epoch 70/400						
160/160 [============]	-	0s	676us/step	_	loss:	0.6945
Epoch 71/400						
160/160 [======]	-	0s	684us/step	_	loss:	0.6942
Epoch 72/400						
160/160 [=======]	-	0s	695us/step	-	loss:	0.6944
Epoch 73/400						
160/160 [=======]	-	0s	675us/step	-	loss:	0.6943
Epoch 74/400						
160/160 [=======]	-	0s	696us/step	-	loss:	0.6946
Epoch 75/400						
160/160 [=======]	-	0s	686us/step	-	loss:	0.6942
Epoch 76/400						
160/160 [=======]	-	0s	657us/step	-	loss:	0.6943
Epoch 77/400						
160/160 [====================================	-	0ຮ	669us/step	-	loss:	0.6941
Epoch 78/400						
160/160 [=======]	-	0s	635us/step	-	loss:	0.6942
Epoch 79/400						
160/160 [=======]	-	0s	668us/step	-	loss:	0.6947
Epoch 80/400						
160/160 [====================================	-	0s	690us/step	-	loss:	0.6943
Epoch 81/400		_			_	
160/160 [====================================	-	0s	671us/step	-	loss:	0.6940

Epoch 82/400						
160/160 [====================================	_	0s	673us/step	_	loss:	0.6945
Epoch 83/400			_			
160/160 [=======]	-	0s	677us/step	-	loss:	0.6946
Epoch 84/400						
160/160 [=======]	-	0s	694us/step	-	loss:	0.6945
Epoch 85/400						
160/160 [=======]	-	0s	668us/step	-	loss:	0.6946
Epoch 86/400						
160/160 [============]	-	0s	690us/step	-	loss:	0.6943
Epoch 87/400						
160/160 [============]	-	0s	677us/step	-	loss:	0.6943
Epoch 88/400						
160/160 [====================================	-	0s	670us/step	-	loss:	0.6943
Epoch 89/400						
160/160 [=======]	-	0s	698us/step	-	loss:	0.6942
Epoch 90/400						
160/160 [=======]	-	0s	665us/step	-	loss:	0.6944
Epoch 91/400						
160/160 [========]	-	0s	686us/step	-	loss:	0.6942
Epoch 92/400						
160/160 [=======]	-	0s	679us/step	-	loss:	0.6946
Epoch 93/400						
160/160 [=======]	-	0s	675us/step	-	loss:	0.6940
Epoch 94/400						
160/160 [========]	-	0ຮ	694us/step	-	loss:	0.6942
Epoch 95/400						
160/160 [=======]	-	0s	681us/step	-	loss:	0.6944
Epoch 96/400						
160/160 [====================================	-	0s	679us/step	-	loss:	0.6944
Epoch 97/400		_	/		_	
160/160 [====================================	-	0s	677us/step	-	loss:	0.6946
Epoch 98/400		•	201 /		_	
160/160 [====================================	-	0s	681us/step	-	loss:	0.6942
Epoch 99/400		^	200 / .		-	0 0010
160/160 [====================================	_	0s	692us/step	_	loss:	0.6946
Epoch 100/400		^	CEO / .		7	0 6045
160/160 [====================================	_	US	658us/step	_	loss:	0.6945
Epoch 101/400		ο-	CO1/-+		<b>7</b>	0 6040
160/160 [====================================	_	US	691us/step	_	loss:	0.6943
Epoch 102/400		ο-	C70 /		<b>7</b>	0 6040
160/160 [====================================	_	US	6/9us/step	_	loss:	0.6942
Epoch 103/400 160/160 [====================================		٥٩	60Eug /gton		1.555	0 6041
	_	US	695us/step	_	TOSS:	0.0941
Epoch 104/400 160/160 [====================================	_	0~	700110/0+0-	_	1000:	0 6045
	_	US	ızzus/step	_	TORE:	0.0945
Epoch 105/400 160/160 [====================================	_	0.5	680110 / 0+05	_	logge	0 60/2
100/100 []	_	US	oosus/step	_	TOSS:	0.0943

Epoch 106/400						
160/160 [====================================	_	0s	667us/step	_	loss:	0.6945
Epoch 107/400			•			
160/160 [====================================	_	0s	680us/step	_	loss:	0.6946
Epoch 108/400			-			
160/160 [====================================	-	0s	668us/step	-	loss:	0.6944
Epoch 109/400			-			
160/160 [====================================	-	0s	737us/step	_	loss:	0.6947
Epoch 110/400			_			
160/160 [======]	-	0s	701us/step	-	loss:	0.6945
Epoch 111/400						
160/160 [======]	-	0s	668us/step	-	loss:	0.6944
Epoch 112/400						
160/160 [======]	-	0s	692us/step	-	loss:	0.6943
Epoch 113/400						
160/160 [======]	-	0s	686us/step	-	loss:	0.6945
Epoch 114/400						
160/160 [=======]	-	0s	682us/step	-	loss:	0.6941
Epoch 115/400						
160/160 [======]	-	0s	685us/step	-	loss:	0.6946
Epoch 116/400						
160/160 [=======]	-	0s	677us/step	-	loss:	0.6945
Epoch 117/400						
160/160 [=======]	-	0s	671us/step	-	loss:	0.6945
Epoch 118/400						
160/160 [=======]	-	0s	691us/step	-	loss:	0.6945
Epoch 119/400						
160/160 [======]	-	0s	675us/step	-	loss:	0.6941
Epoch 120/400						
160/160 [============]	-	0s	700us/step	-	loss:	0.6945
Epoch 121/400						
160/160 [=========]	-	0s	682us/step	-	loss:	0.6943
Epoch 122/400						
160/160 [=======]	-	0s	681us/step	-	loss:	0.6948
Epoch 123/400						
160/160 [======]	-	0s	689us/step	-	loss:	0.6945
Epoch 124/400						
160/160 [=======]	-	0s	675us/step	-	loss:	0.6943
Epoch 125/400						
160/160 [=======]	-	0s	691us/step	-	loss:	0.6944
Epoch 126/400						
160/160 [=======]	-	0s	688us/step	-	loss:	0.6945
Epoch 127/400						
160/160 [=======]	-	0s	689us/step	-	loss:	0.6944
Epoch 128/400						
160/160 [====================================	-	0s	682us/step	-	loss:	0.6946
Epoch 129/400		_			_	
160/160 [====================================	-	0s	686us/step	-	loss:	0.6945

Epoch 130/400						
160/160 [====================================	_	0s	674us/step	-	loss:	0.6944
Epoch 131/400						
160/160 [=======]	-	0s	668us/step	-	loss:	0.6944
Epoch 132/400						
160/160 [======]	-	0s	629us/step	-	loss:	0.6944
Epoch 133/400						
160/160 [=======]	-	0s	638us/step	-	loss:	0.6943
Epoch 134/400						
160/160 [===========]	-	0s	623us/step	-	loss:	0.6946
Epoch 135/400						
160/160 [===========]	-	0s	671us/step	-	loss:	0.6942
Epoch 136/400						
160/160 [===========]	-	0s	680us/step	-	loss:	0.6944
Epoch 137/400						
160/160 [===========]	-	0s	661us/step	-	loss:	0.6943
Epoch 138/400						
160/160 [===========]	-	0s	682us/step	-	loss:	0.6945
Epoch 139/400						
160/160 [===========]	-	0s	683us/step	-	loss:	0.6944
Epoch 140/400						
160/160 [===========]	-	0s	684us/step	-	loss:	0.6944
Epoch 141/400						
160/160 [===========]	-	0s	714us/step	-	loss:	0.6942
Epoch 142/400						
160/160 [===========]	-	0s	717us/step	-	loss:	0.6944
Epoch 143/400						
160/160 [=======]	-	0s	706us/step	-	loss:	0.6943
Epoch 144/400						
160/160 [=======]	-	0s	716us/step	-	loss:	0.6944
Epoch 145/400						
160/160 [=======]	-	0s	682us/step	-	loss:	0.6945
Epoch 146/400						
160/160 [=======]	-	0s	692us/step	-	loss:	0.6942
Epoch 147/400						
160/160 [======]	-	0s	684us/step	-	loss:	0.6943
Epoch 148/400						
160/160 [=======]	-	0s	692us/step	-	loss:	0.6940
Epoch 149/400						
160/160 [=======]	-	0ຮ	690us/step	-	loss:	0.6946
Epoch 150/400						
160/160 [=======]	-	0s	690us/step	-	loss:	0.6944
Epoch 151/400						
160/160 [=======]	-	0s	682us/step	-	loss:	0.6945
Epoch 152/400						
160/160 [====================================	-	0s	683us/step	-	loss:	0.6944
Epoch 153/400		_			_	
160/160 [=======]	-	0s	687us/step	-	loss:	0.6946

T 1 454/400	
Epoch 154/400	0.0044
160/160 [====================================	0.6944
Epoch 155/400	
160/160 [====================================	0.6945
Epoch 156/400	
160/160 [====================================	0.6946
Epoch 157/400	
160/160 [====================================	0.6946
Epoch 158/400	
160/160 [====================================	0.6943
Epoch 159/400	
160/160 [====================================	0.6941
Epoch 160/400	
160/160 [====================================	0.6944
Epoch 161/400	
160/160 [====================================	0.6943
Epoch 162/400	
160/160 [====================================	0.6945
Epoch 163/400	
160/160 [====================================	0.6946
Epoch 164/400	
160/160 [====================================	0.6944
Epoch 165/400	
160/160 [====================================	0.6944
Epoch 166/400	
160/160 [=============	0.6942
Epoch 167/400	
160/160 [============= ] - Os 690us/step - loss:	0.6941
Epoch 168/400	
160/160 [============= ] - Os 685us/step - loss:	0.6944
Epoch 169/400	
160/160 [====================================	0.6945
Epoch 170/400	
160/160 [============= ] - Os 695us/step - loss:	0.6942
Epoch 171/400	
160/160 [============= ] - Os 697us/step - loss:	0.6946
Epoch 172/400	
160/160 [============ ] - Os 692us/step - loss:	0.6945
Epoch 173/400	
160/160 [============ ] - Os 664us/step - loss:	0.6942
Epoch 174/400	
160/160 [============ ] - Os 636us/step - loss:	0.6943
Epoch 175/400	
160/160 [============ ] - Os 646us/step - loss:	0.6944
Epoch 176/400	
160/160 [============ ] - Os 679us/step - loss:	0.6945
Epoch 177/400	
160/160 [============ ] - Os 693us/step - loss:	0.6943

Epoch 178/400			
160/160 [======]	-	0s	689us/step - loss: 0.6944
Epoch 179/400			
160/160 [======]	-	0s	674us/step - loss: 0.6943
Epoch 180/400			
160/160 [======]	-	0s	692us/step - loss: 0.6946
Epoch 181/400			
160/160 [======]	_	0s	692us/step - loss: 0.6942
Epoch 182/400			
160/160 [======]	_	0s	684us/step - loss: 0.6944
Epoch 183/400			
160/160 [======] -	-	0s	678us/step - loss: 0.6943
Epoch 184/400			_
160/160 [===========]	_	0s	673us/step - loss: 0.6942
Epoch 185/400			-
160/160 [====================================	_	0s	664us/step - loss: 0.6944
Epoch 186/400			•
160/160 [====================================	_	0s	687us/step - loss: 0.6942
Epoch 187/400			•
160/160 [====================================	_	0s	696us/step - loss: 0.6949
Epoch 188/400			· · · · · · · · · · · · · · · · · · ·
160/160 [=======]	_	0s	674us/step - loss: 0.6946
Epoch 189/400			color, cosp
160/160 [=======]	_	0s	681us/step - loss: 0.6947
Epoch 190/400			2022 2001
160/160 [=======]	_	0s	693us/sten - loss: 0 6943
Epoch 191/400		Ü	1022. 0.00 10
160/160 [=======]	_	0s	693us/sten - loss: 0 6942
Epoch 192/400		Ü	1022. 0.00 I
160/160 [=======]	_	0s	663us/step - loss: 0.6947
Epoch 193/400		Ü	1022. 0.001.
160/160 [=======]	_	0s	666us/step - loss: 0.6944
Epoch 194/400		Ü	1022. 0.0011
160/160 [====================================	_	0s	643us/sten - loss: 0 6945
Epoch 195/400		O.D.	010ab, 5top 10bb. 0.0010
160/160 [=======]	_	0s	690us/sten - loss: 0 6943
Epoch 196/400		O.D.	1055. 0.0010
160/160 [=======]	_	0s	681us/sten - loss: 0 6944
Epoch 197/400		Ü	1022. 0.0011
160/160 [=======]	_	0s	692us/sten - loss: 0 6943
Epoch 198/400		Ü	1022. 0.00 10
160/160 [====================================	_	۸q	691us/sten - loss: 0 6942
Epoch 199/400		V.S	001us/step 10ss. 0.0042
160/160 [====================================	_	۸e	684ug/sten - loss: 0 6943
Epoch 200/400		OB	1055. 0.0340
160/160 [====================================	_	٥٩	688119/sten - loss 0 60/F
Epoch 201/400		υs	000ab/bcep 10ab. 0.0340
160/160 [====================================	_	٥٩	670us/stan - loss 0 6044
100/100 []	-	υs	010us/scep - 10ss. 0.0344

Enoch 202/400						
Epoch 202/400 160/160 [====================================	_	Λα	601ug/gtop	_	loggi	0 6044
Epoch 203/400		OS	Oblus/scep		TOSS.	0.0344
160/160 [====================================	_	Λe	67/11s/sten	_	loggi	0 60/5
Epoch 204/400		OS	0/4us/scep		TOSS.	0.0343
160/160 [=======]	_	Λe	671115/ston	_	loggi	0 6944
Epoch 205/400		OS	O/Ius/scep		TOSS.	0.0344
160/160 [========]	_	۸q	694119/sten	_	1099.	0 6947
Epoch 206/400		OB	озчав, в сер		TOBB.	0.0011
160/160 [========]	_	0s	663us/step	_	loss:	0.6945
Epoch 207/400		Ů.	cccas, scop		TODE.	0.0010
160/160 [========]	_	0s	684us/step	_	loss:	0.6943
Epoch 208/400		•	оотав, воор			0.0010
160/160 [====================================	_	0s	689us/step	_	loss:	0.6945
Epoch 209/400			1			
160/160 [====================================	_	0s	685us/step	_	loss:	0.6942
Epoch 210/400			. 1			
160/160 [====================================	_	0s	714us/step	_	loss:	0.6944
Epoch 211/400			-			
160/160 [====================================	_	0s	702us/step	_	loss:	0.6945
Epoch 212/400			_			
160/160 [=======]	-	0s	672us/step	-	loss:	0.6945
Epoch 213/400						
160/160 [======]	-	0s	685us/step	-	loss:	0.6947
Epoch 214/400						
160/160 [=======]	-	0s	683us/step	-	loss:	0.6941
Epoch 215/400						
160/160 [======]	-	0s	686us/step	-	loss:	0.6943
Epoch 216/400						
160/160 [======]	-	0s	685us/step	-	loss:	0.6943
Epoch 217/400						
160/160 [====================================	-	0s	688us/step	-	loss:	0.6944
Epoch 218/400		_			_	
160/160 [====================================	-	0s	676us/step	-	loss:	0.6945
Epoch 219/400		_	054 / .		_	
160/160 [====================================	_	0s	654us/step	_	loss:	0.6945
Epoch 220/400		ο-	CEO /		7	0 6044
160/160 [====================================	_	US	652us/step	_	loss:	0.6944
Epoch 221/400 160/160 [====================================	_	٥٥	660ug/gton	_	1000.	0 6044
Epoch 222/400	_	US	oogus/step	_	TOSS:	0.0944
160/160 [========]	_	٥٥	670ug/gton	_	1000.	0 6046
Epoch 223/400		OS	oraus/scep		TOSS.	0.0340
160/160 [========]	_	Λe	690115/sten	_	loggi	0 69/5
Epoch 224/400		OB	oodas, step		TODD.	0.0340
160/160 [========]	_	0,5	691us/sten	_	1088.	0.6943
Epoch 225/400		OB	00145/506p		1000.	3.0040
160/160 [=======]	_	0s	681us/sten	_	loss:	0.6943
, = 2		- ~				

Epoch 226/400	
160/160 [====================================	13
Epoch 227/400	
160/160 [====================================	14
Epoch 228/400	
160/160 [====================================	14
Epoch 229/400	
160/160 [====================================	11
Epoch 230/400	
160/160 [====================================	12
Epoch 231/400	
160/160 [====================================	14
Epoch 232/400	
160/160 [====================================	13
Epoch 233/400	
160/160 [====================================	13
Epoch 234/400	
160/160 [====================================	11
Epoch 235/400	
160/160 [====================================	13
Epoch 236/400	
160/160 [====================================	<del>1</del> 5
Epoch 237/400	
160/160 [====================================	13
Epoch 238/400	
160/160 [============= ] - Os 660us/step - loss: 0.694	11
Epoch 239/400	
160/160 [====================================	12
Epoch 240/400	
160/160 [====================================	13
Epoch 241/400	
160/160 [====================================	14
Epoch 242/400	
160/160 [====================================	13
Epoch 243/400	
160/160 [====================================	13
Epoch 244/400	
160/160 [====================================	14
Epoch 245/400	
160/160 [====================================	14
Epoch 246/400	
160/160 [====================================	10
Epoch 247/400	
160/160 [====================================	<del>1</del> 5
Epoch 248/400	
160/160 [====================================	<del>1</del> 6
Epoch 249/400	
160/160 [====================================	±4

Epoch 250/400	
160/160 [============ ] - Os 701us/step - loss: 0.0	3943
Epoch 251/400	
160/160 [====================================	3945
Epoch 252/400	
160/160 [====================================	3940
Epoch 253/400	
160/160 [====================================	3944
Epoch 254/400	
160/160 [====================================	5943
Epoch 255/400	20.40
160/160 [====================================	5942
Epoch 256/400	0015
160/160 [====================================	5945
Epoch 257/400	
160/160 [====================================	5944
Epoch 258/400	
160/160 [====================================	5940
Epoch 259/400	
160/160 [====================================	5941
Epoch 260/400	0015
160/160 [====================================	5945
Epoch 261/400	20.40
160/160 [====================================	5943
Epoch 262/400	20.40
160/160 [====================================	5942
Epoch 263/400	20.40
160/160 [====================================	5943
Epoch 264/400	20.40
160/160 [====================================	5942
Epoch 265/400	2011
160/160 [====================================	3944
Epoch 266/400	2040
160/160 [====================================	5942
Epoch 267/400	CO 4 C
160/160 [====================================	3946
Epoch 268/400	2040
160/160 [====================================	3942
Epoch 269/400	2041
160/160 [====================================	3941
Epoch 270/400	2015
160/160 [====================================	3945
Epoch 271/400	2011
160/160 [====================================	5944
Epoch 272/400	SO 4 E
160/160 [====================================	o945
Epoch 273/400	2042
160/160 [====================================	o943

Epoch 274/400	
160/160 [====================================	943
Epoch 275/400	
160/160 [====================================	944
Epoch 276/400	
160/160 [====================================	942
Epoch 277/400	
160/160 [====================================	943
Epoch 278/400	
160/160 [============ ] - Os 677us/step - loss: 0.69	942
Epoch 279/400	
160/160 [============ ] - Os 695us/step - loss: 0.69	945
Epoch 280/400	
160/160 [============ ] - Os 668us/step - loss: 0.69	943
Epoch 281/400	
160/160 [============ ] - Os 682us/step - loss: 0.69	946
Epoch 282/400	
160/160 [============ ] - Os 672us/step - loss: 0.69	942
Epoch 283/400	
160/160 [============ ] - Os 691us/step - loss: 0.69	944
Epoch 284/400	
160/160 [============ ] - Os 708us/step - loss: 0.69	943
Epoch 285/400	
160/160 [============ ] - Os 700us/step - loss: 0.69	945
Epoch 286/400	
160/160 [============ ] - Os 700us/step - loss: 0.69	944
Epoch 287/400	
160/160 [============= ] - Os 673us/step - loss: 0.69	943
Epoch 288/400	
160/160 [============= ] - Os 674us/step - loss: 0.69	946
Epoch 289/400	
160/160 [============ ] - Os 677us/step - loss: 0.69	943
Epoch 290/400	
160/160 [====================================	945
Epoch 291/400	
160/160 [============ ] - Os 680us/step - loss: 0.69	945
Epoch 292/400	
160/160 [============ ] - Os 680us/step - loss: 0.69	944
Epoch 293/400	
160/160 [====================================	945
Epoch 294/400	
160/160 [=========== ] - Os 690us/step - loss: 0.69	944
Epoch 295/400	
160/160 [============ ] - Os 634us/step - loss: 0.69	946
Epoch 296/400	
160/160 [====================================	946
Epoch 297/400	
160/160 [====================================	<i>9</i> 45

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Epoch 298/400
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Epoch 306/400
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Epoch 307/400
160/160 [============= ] - Os 685us/step - loss: 0.6944
Epoch 308/400
160/160 [====================================
Epoch 309/400
160/160 [============] - Os 672us/step - loss: 0.6945
Epoch 310/400
160/160 [============] - Os 654us/step - loss: 0.6942
Epoch 311/400
160/160 [============] - Os 676us/step - loss: 0.6943
Epoch 312/400
160/160 [============] - Os 682us/step - loss: 0.6945
Epoch 313/400
160/160 [============] - Os 689us/step - loss: 0.6943
Epoch 314/400
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Epoch 315/400
160/160 [============] - Os 695us/step - loss: 0.6946
Epoch 316/400
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Epoch 332/400
160/160 [============] - Os 692us/step - loss: 0.6945 Epoch 333/400
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Epoch 353/400
160/160 [============ ] - Os 710us/step - loss: 0.6941
Epoch 354/400
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Epoch 370/400
160/160 [=======] - Os 691us/step - loss: 0.6944
Epoch 371/400
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Epoch 372/400 160/160 [====================================
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Epoch 374/400
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Epoch 375/400
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Epoch 376/400
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Epoch 377/400
160/160 [=======] - Os 676us/step - loss: 0.6944
Epoch 378/400
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Epoch 392/400
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Epoch 393/400
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Epoch 394/400 160/160 [====================================	_	۸a	68/ug/gtop = logg: 0 69/5
Epoch 395/400		VS	004us/step 10ss. 0.0940
160/160 [====================================	_	۸a	680ug/gtop = logg: 0 60//
Epoch 396/400		VS	009ds/step 10ss. 0.0944
160/160 [====================================	_	۸a	678ug/gton - logg: 0 60/5
Epoch 397/400		VS	070ds/step 10ss. 0.0940
160/160 [====================================	_	۸q	680us/sten - loss: 0 6946
Epoch 398/400		O.D	100ab, 200p 10bb. 0.0010
160/160 [====================================	_	0s	693us/step - loss: 0.6944
Epoch 399/400			
160/160 [====================================	_	0s	687us/step - loss: 0.6943
Epoch 400/400			20. uz, 200p
160/160 [====================================	_	0s	689us/step - loss: 0.6944
160/160 [====================================			
Epoch 1/400			1
160/160 [====================================	_	1s	3ms/step - loss: 0.9617
Epoch 2/400			•
160/160 [====================================	_	0s	684us/step - loss: 0.7294
Epoch 3/400			•
160/160 [====================================	_	0s	672us/step - loss: 0.7106
Epoch 4/400			•
160/160 [====================================	-	0s	689us/step - loss: 0.7016
Epoch 5/400			-
160/160 [===========]	-	0s	641us/step - loss: 0.7020
Epoch 6/400			
160/160 [=======]	-	0s	667us/step - loss: 0.6952
Epoch 7/400			
160/160 [=======]	-	0s	691us/step - loss: 0.6863
Epoch 8/400			
160/160 [==========]	-	0s	714us/step - loss: 0.6646
Epoch 9/400			
160/160 [============]	-	0s	673us/step - loss: 0.6462
Epoch 10/400			
160/160 [==========]	-	0s	680us/step - loss: 0.6346
Epoch 11/400			
160/160 [===========]	-	0s	690us/step - loss: 0.6131
Epoch 12/400			
160/160 [=======]	-	0s	683us/step - loss: 0.5932
Epoch 13/400			
160/160 [=======]	-	0s	689us/step - loss: 0.5732
Epoch 14/400			
160/160 [=======]	-	0s	687us/step - loss: 0.6904
Epoch 15/400			
160/160 [====================================	-	0s	690us/step - loss: 0.6248
Epoch 16/400			
160/160 [====================================	-	0s	686us/step - loss: 0.7247
Epoch 17/400			

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Epoch 18/400
160/160 [============ ] - Os 678us/step - loss: 0.7096
Epoch 19/400
160/160 [============= ] - Os 685us/step - loss: 0.6946
Epoch 20/400
Epoch 21/400
160/160 [============= ] - Os 670us/step - loss: 0.7090
Epoch 22/400
Epoch 23/400
Epoch 24/400
Epoch 25/400
Epoch 26/400
160/160 [============ ] - Os 684us/step - loss: 0.6963
Epoch 27/400
Epoch 28/400
Epoch 29/400
Epoch 30/400
160/160 [============== ] - Os 681us/step - loss: 0.7016
Epoch 31/400
Epoch 32/400
Epoch 33/400
Epoch 34/400
160/160 [============= ] - Os 680us/step - loss: 0.6939
Epoch 35/400
Epoch 36/400
Epoch 37/400
Epoch 38/400
Epoch 39/400
Epoch 40/400
160/160 [============== ] - 0s 732us/step - loss: 0.6923
Epoch 41/400
```

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Epoch 42/400
160/160 [============] - Os 730us/step - loss: 0.6820
Epoch 43/400
160/160 [============= ] - 0s 719us/step - loss: 0.6725
Epoch 44/400
160/160 [============= ] - 0s 726us/step - loss: 0.6678
Epoch 45/400
160/160 [============= ] - Os 694us/step - loss: 0.6616
Epoch 46/400
Epoch 47/400
Epoch 48/400
Epoch 49/400
Epoch 50/400
160/160 [============ ] - Os 697us/step - loss: 0.5778
Epoch 51/400
160/160 [=============== ] - Os 694us/step - loss: 0.5474
Epoch 52/400
160/160 [============= ] - Os 680us/step - loss: 0.5612
Epoch 53/400
Epoch 54/400
160/160 [============== ] - Os 690us/step - loss: 0.5463
Epoch 55/400
Epoch 56/400
Epoch 57/400
160/160 [============ ] - Os 772us/step - loss: 0.5359
Epoch 58/400
Epoch 59/400
160/160 [============= ] - 0s 716us/step - loss: 8.0590
Epoch 60/400
160/160 [============== ] - Os 685us/step - loss: 8.0590
Epoch 61/400
160/160 [============== ] - Os 695us/step - loss: 8.0590
Epoch 62/400
160/160 [============== ] - Os 701us/step - loss: 8.0590
Epoch 63/400
160/160 [============= ] - Os 699us/step - loss: 8.0590
Epoch 64/400
160/160 [============== ] - Os 673us/step - loss: 8.0590
Epoch 65/400
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160/160 [============== ] - Os 701us/step - loss: 8.0590
Epoch 66/400
160/160 [============] - Os 673us/step - loss: 8.0590
Epoch 67/400
Epoch 68/400
160/160 [============= ] - Os 677us/step - loss: 8.0590
Epoch 69/400
160/160 [============= ] - Os 687us/step - loss: 8.0590
Epoch 70/400
Epoch 71/400
Epoch 72/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 73/400
160/160 [============= ] - Os 681us/step - loss: 8.0590
Epoch 74/400
160/160 [============= ] - Os 689us/step - loss: 8.0590
Epoch 75/400
Epoch 76/400
Epoch 77/400
Epoch 78/400
Epoch 79/400
Epoch 80/400
160/160 [============== ] - Os 683us/step - loss: 8.0590
Epoch 81/400
160/160 [============ ] - Os 687us/step - loss: 8.0590
Epoch 82/400
160/160 [============= ] - Os 672us/step - loss: 8.0590
Epoch 83/400
160/160 [============= ] - Os 690us/step - loss: 8.0590
Epoch 84/400
Epoch 85/400
160/160 [============== ] - Os 676us/step - loss: 8.0590
Epoch 86/400
Epoch 87/400
160/160 [============= ] - Os 659us/step - loss: 8.0590
Epoch 88/400
Epoch 89/400
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160/160 [============== ] - Os 637us/step - loss: 8.0590
Epoch 90/400
160/160 [============] - Os 638us/step - loss: 8.0590
Epoch 91/400
160/160 [============= ] - Os 625us/step - loss: 8.0590
Epoch 92/400
160/160 [============= ] - Os 655us/step - loss: 8.0590
Epoch 93/400
160/160 [============= ] - Os 686us/step - loss: 8.0590
Epoch 94/400
Epoch 95/400
Epoch 96/400
160/160 [============= ] - Os 683us/step - loss: 8.0590
Epoch 97/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 98/400
160/160 [============= ] - Os 683us/step - loss: 8.0590
Epoch 99/400
Epoch 100/400
Epoch 101/400
160/160 [============= ] - Os 678us/step - loss: 8.0590
Epoch 102/400
160/160 [============== ] - Os 688us/step - loss: 8.0590
Epoch 103/400
160/160 [============== ] - Os 704us/step - loss: 8.0590
Epoch 104/400
Epoch 105/400
160/160 [============= ] - Os 692us/step - loss: 8.0590
Epoch 106/400
160/160 [============= ] - Os 686us/step - loss: 8.0590
Epoch 107/400
160/160 [============= ] - Os 693us/step - loss: 8.0590
Epoch 108/400
Epoch 109/400
160/160 [============== ] - Os 691us/step - loss: 8.0590
Epoch 110/400
Epoch 111/400
160/160 [============= ] - Os 697us/step - loss: 8.0590
Epoch 112/400
Epoch 113/400
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Epoch 114/400
160/160 [============] - Os 692us/step - loss: 8.0590
Epoch 115/400
160/160 [============= ] - Os 690us/step - loss: 8.0590
Epoch 116/400
160/160 [============= ] - Os 684us/step - loss: 8.0590
Epoch 117/400
160/160 [============= ] - Os 696us/step - loss: 8.0590
Epoch 118/400
Epoch 119/400
Epoch 120/400
160/160 [============= ] - Os 689us/step - loss: 8.0590
Epoch 121/400
160/160 [============= ] - Os 705us/step - loss: 8.0590
Epoch 122/400
160/160 [============= ] - Os 683us/step - loss: 8.0590
Epoch 123/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 124/400
Epoch 125/400
160/160 [============= ] - Os 699us/step - loss: 8.0590
Epoch 126/400
160/160 [============== ] - Os 681us/step - loss: 8.0590
Epoch 127/400
160/160 [============== ] - Os 694us/step - loss: 8.0590
Epoch 128/400
Epoch 129/400
160/160 [============= ] - Os 689us/step - loss: 8.0590
Epoch 130/400
160/160 [============= ] - Os 681us/step - loss: 8.0590
Epoch 131/400
160/160 [============= ] - Os 687us/step - loss: 8.0590
Epoch 132/400
160/160 [============== ] - Os 693us/step - loss: 8.0590
Epoch 133/400
160/160 [============== ] - Os 685us/step - loss: 8.0590
Epoch 134/400
160/160 [============== ] - Os 694us/step - loss: 8.0590
Epoch 135/400
160/160 [============= ] - Os 695us/step - loss: 8.0590
Epoch 136/400
160/160 [============== ] - Os 693us/step - loss: 8.0590
Epoch 137/400
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Epoch 138/400
160/160 [============] - Os 705us/step - loss: 8.0590
Epoch 139/400
160/160 [============= ] - Os 676us/step - loss: 8.0590
Epoch 140/400
160/160 [============= ] - Os 696us/step - loss: 8.0590
Epoch 141/400
160/160 [============= ] - 0s 711us/step - loss: 8.0590
Epoch 142/400
160/160 [============= ] - Os 707us/step - loss: 8.0590
Epoch 143/400
Epoch 144/400
160/160 [============= ] - Os 693us/step - loss: 8.0590
Epoch 145/400
160/160 [============= ] - Os 690us/step - loss: 8.0590
Epoch 146/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 147/400
160/160 [============= ] - Os 667us/step - loss: 8.0590
Epoch 148/400
Epoch 149/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 150/400
160/160 [============== ] - Os 688us/step - loss: 8.0590
Epoch 151/400
160/160 [============== ] - Os 691us/step - loss: 8.0590
Epoch 152/400
160/160 [============== ] - Os 709us/step - loss: 8.0590
Epoch 153/400
Epoch 154/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 155/400
160/160 [============= ] - Os 700us/step - loss: 8.0590
Epoch 156/400
Epoch 157/400
160/160 [============== ] - Os 677us/step - loss: 8.0590
Epoch 158/400
160/160 [============= ] - Os 668us/step - loss: 8.0590
Epoch 159/400
160/160 [============= ] - Os 690us/step - loss: 8.0590
Epoch 160/400
Epoch 161/400
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Epoch 162/400
160/160 [============] - Os 668us/step - loss: 8.0590
Epoch 163/400
160/160 [============= ] - Os 678us/step - loss: 8.0590
Epoch 164/400
160/160 [============= ] - Os 693us/step - loss: 8.0590
Epoch 165/400
160/160 [============= ] - Os 672us/step - loss: 8.0590
Epoch 166/400
Epoch 167/400
Epoch 168/400
160/160 [============= ] - Os 653us/step - loss: 8.0590
Epoch 169/400
160/160 [============= ] - Os 679us/step - loss: 8.0590
Epoch 170/400
160/160 [============= ] - Os 684us/step - loss: 8.0590
Epoch 171/400
Epoch 172/400
Epoch 173/400
160/160 [============= ] - Os 638us/step - loss: 8.0590
Epoch 174/400
Epoch 175/400
160/160 [============== ] - Os 689us/step - loss: 8.0590
Epoch 176/400
Epoch 177/400
160/160 [=========== ] - Os 671us/step - loss: 8.0590
Epoch 178/400
160/160 [============= ] - Os 689us/step - loss: 8.0590
Epoch 179/400
160/160 [============= ] - Os 694us/step - loss: 8.0590
Epoch 180/400
160/160 [============== ] - Os 694us/step - loss: 8.0590
Epoch 181/400
160/160 [============== ] - Os 679us/step - loss: 8.0590
Epoch 182/400
160/160 [============= ] - 0s 709us/step - loss: 8.0590
Epoch 183/400
160/160 [============= ] - Os 679us/step - loss: 8.0590
Epoch 184/400
Epoch 185/400
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160/160 [=======]	_	0s	684us/step	_	loss:	8.0590
Epoch 186/400			_			
160/160 [=======]	-	0s	680us/step	-	loss:	8.0590
Epoch 187/400						
160/160 [=======]	-	0s	692us/step	-	loss:	8.0590
Epoch 188/400		_			_	
160/160 [====================================	-	0s	673us/step	-	loss:	8.0590
Epoch 189/400		0 -	COO /+		7	0 0500
160/160 [===========] Epoch 190/400	_	US	689us/step	_	loss:	8.0590
160/160 [====================================	_	۸a	603ug/gtop	_	loggi	8 0500
Epoch 191/400		OS	093us/step		TOSS.	0.0590
160/160 [====================================	_	0s	686us/step	_	loss:	8.0590
Epoch 192/400		O.D	occus, scop		TODD.	0.0000
160/160 [====================================	_	0s	686us/step	_	loss:	8.0590
Epoch 193/400			1			
160/160 [====================================	_	0s	690us/step	_	loss:	8.0590
Epoch 194/400			_			
160/160 [=======]	-	0s	685us/step	_	loss:	8.0590
Epoch 195/400						
160/160 [===========]	-	0s	680us/step	-	loss:	8.0590
Epoch 196/400						
160/160 [=======]	-	0s	676us/step	-	loss:	8.0590
Epoch 197/400						
160/160 [====================================	-	0s	691us/step	-	loss:	8.0590
Epoch 198/400		_	<b>5</b> .4.4.4		_	0 0500
160/160 [====================================	-	0s	714us/step	_	loss:	8.0590
Epoch 199/400		0 -	CO1 /		7	0 0500
160/160 [====================================	_	US	691us/step	_	loss:	8.0590
Epoch 200/400 160/160 [====================================	_	Λe	668115/stan	_	loggi	8 0500
Epoch 201/400		US	ooous/scep		TOSS.	0.0090
160/160 [====================================	_	0s	709us/step	_	loss:	8.0590
Epoch 202/400						
160/160 [====================================	_	0s	706us/step	_	loss:	8.0590
Epoch 203/400			•			
160/160 [====================================	-	0s	686us/step	_	loss:	8.0590
Epoch 204/400						
160/160 [======]	-	0s	694us/step	-	loss:	8.0590
Epoch 205/400						
160/160 [=======]	-	0s	689us/step	-	loss:	8.0590
Epoch 206/400						
160/160 [====================================	-	0s	688us/step	-	loss:	8.0590
Epoch 207/400		^			,	0.0500
160/160 [====================================	-	Us	689us/step	_	loss:	8.0590
Epoch 208/400 160/160 [====================================		0~	60000/2+2		1000	0 0500
	_	US	osous/step	_	TOSS:	0.0590
Epoch 209/400						

160/160 [====================================
Epoch 210/400
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Epoch 218/400
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Epoch 219/400
160/160 [====================================
Epoch 220/400
160/160 [============= ] - Os 692us/step - loss: 8.0590
Epoch 221/400
160/160 [====================================
Epoch 222/400
160/160 [====================================
Epoch 223/400
160/160 [====================================
Epoch 224/400 160/160 [====================================
Epoch 225/400
160/160 [====================================
Epoch 226/400
160/160 [====================================
Epoch 227/400
160/160 [====================================
Epoch 228/400
160/160 [====================================
Epoch 229/400
160/160 [============= ] - Os 687us/step - loss: 8.0590
Epoch 230/400
160/160 [============] - Os 695us/step - loss: 8.0590
Epoch 231/400
160/160 [====================================
Epoch 232/400
160/160 [====================================
Epoch 233/400

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Epoch 234/400
160/160 [============= ] - Os 697us/step - loss: 8.0590
Epoch 235/400
Epoch 236/400
160/160 [============= ] - 0s 753us/step - loss: 8.0590
Epoch 237/400
160/160 [============= ] - Os 750us/step - loss: 8.0590
Epoch 238/400
160/160 [============ ] - Os 837us/step - loss: 8.0590
Epoch 239/400
Epoch 240/400
160/160 [============= ] - Os 692us/step - loss: 8.0590
Epoch 241/400
160/160 [============= ] - Os 698us/step - loss: 8.0590
Epoch 242/400
160/160 [============= ] - Os 727us/step - loss: 8.0590
Epoch 243/400
Epoch 244/400
Epoch 245/400
Epoch 246/400
Epoch 247/400
160/160 [============== ] - Os 670us/step - loss: 8.0590
Epoch 248/400
160/160 [============== ] - Os 712us/step - loss: 8.0590
Epoch 249/400
160/160 [============= ] - Os 705us/step - loss: 8.0590
Epoch 250/400
160/160 [============= ] - 0s 711us/step - loss: 8.0590
Epoch 251/400
160/160 [============= ] - Os 698us/step - loss: 8.0590
Epoch 252/400
Epoch 253/400
160/160 [============== ] - Os 697us/step - loss: 8.0590
Epoch 254/400
Epoch 255/400
160/160 [============= ] - Os 754us/step - loss: 8.0590
Epoch 256/400
160/160 [============== ] - Os 709us/step - loss: 8.0590
Epoch 257/400
```

160/160 [======]	_	0s	707us/step	-	loss:	8.0590
Epoch 258/400						
160/160 [======]	-	0s	702us/step	-	loss:	8.0590
Epoch 259/400						
160/160 [======]	-	0s	712us/step	-	loss:	8.0590
Epoch 260/400						
160/160 [=======]	-	0s	690us/step	-	loss:	8.0590
Epoch 261/400						
160/160 [====================================	-	0s	697us/step	-	loss:	8.0590
Epoch 262/400						
160/160 [====================================	-	0s	687us/step	-	loss:	8.0590
Epoch 263/400		_			_	
160/160 [====================================	-	0s	676us/step	-	loss:	8.0590
Epoch 264/400		•	000 / .		_	0 0500
160/160 [====================================	-	0s	693us/step	-	loss:	8.0590
Epoch 265/400		^	224 / .		-	0.0500
160/160 [====================================	-	US	664us/step	_	loss:	8.0590
Epoch 266/400		^	204 / .		-	0.0500
160/160 [====================================	_	Us	691us/step	_	loss:	8.0590
Epoch 267/400		^	607 / 1		-	0 0500
160/160 [====================================	_	US	68/us/step	_	loss:	8.0590
Epoch 268/400 160/160 [====================================		٥٩	601 ug /gt op		1	0 0500
Epoch 269/400	_	US	691us/step	_	loss:	8.0590
160/160 [====================================	_	٥٥	602ug/g+op	_	1000.	0 0500
Epoch 270/400	_	US	ossus/step	_	TOSS:	0.0590
160/160 [====================================	_	٥٥	655ug /g+op	_	1000.	0 0500
Epoch 271/400		US	ossus/step		TOSS.	0.0590
160/160 [====================================	_	Λe	703us/sten	_	loggi	8 0500
Epoch 272/400		05	703us/scep		TOSS.	0.0590
160/160 [====================================	_	۸e	687118/sten	_	loggi	8 0590
Epoch 273/400		0B	oor us, step		TOSS.	0.0000
160/160 [====================================	_	0s	671us/sten	_	loss	8 0590
Epoch 274/400		V.D	011db/b00p		TODD.	0.0000
160/160 [====================================	_	0s	694us/sten	_	loss:	8.0590
Epoch 275/400		Ü	00 142, 200p		1000.	0.0000
160/160 [====================================	_	0s	659us/step	_	loss:	8.0590
Epoch 276/400			000 az, z 00p			
160/160 [====================================	_	0s	696us/step	_	loss:	8.0590
Epoch 277/400			, <sub>F</sub>			
160/160 [====================================	_	0s	689us/step	_	loss:	8.0590
Epoch 278/400			1			
160/160 [====================================	_	0s	720us/step	_	loss:	8.0590
Epoch 279/400			<b>F</b>			
160/160 [====================================	_	0s	670us/step	_	loss:	8.0590
Epoch 280/400						
160/160 [====================================	_	0s	700us/step	_	loss:	8.0590
Epoch 281/400			_			

160/160 [=======]	_	0s	686us/step	_	loss:	8.0590
Epoch 282/400						
160/160 [======]	_	0s	694us/step	-	loss:	8.0590
Epoch 283/400						
160/160 [===========]	-	0s	694us/step	-	loss:	8.0590
Epoch 284/400		_			_	
160/160 [====================================	-	0s	669us/step	-	loss:	8.0590
Epoch 285/400		^	607 / 1		-	0.0500
160/160 [====================================	_	US	69/us/step	_	loss:	8.0590
Epoch 286/400 160/160 [====================================		٥٩	607:10 / 0+ 00		1.000.	9 0500
Epoch 287/400		US	oorus/step		1088.	0.0590
160/160 [====================================	_	۸e	679112/sten	_	loggi	8 0590
Epoch 288/400		V.S	отоць, в сер		1055.	0.0000
160/160 [====================================	_	0s	687us/step	_	loss:	8.0590
Epoch 289/400			00. a2, 200p			
160/160 [====================================	_	0s	668us/step	_	loss:	8.0590
Epoch 290/400			. 1			
160/160 [====================================	_	0s	708us/step	_	loss:	8.0590
Epoch 291/400			-			
160/160 [===========]	-	0s	698us/step	_	loss:	8.0590
Epoch 292/400						
160/160 [======]	_	0s	672us/step	_	loss:	8.0590
Epoch 293/400						
160/160 [====================================	-	0s	679us/step	-	loss:	8.0590
Epoch 294/400						
160/160 [=======]	-	0s	661us/step	-	loss:	8.0590
Epoch 295/400		_			_	
160/160 [====================================	-	0s	697us/step	-	loss:	8.0590
Epoch 296/400		^	COD / 1		-	0.0500
160/160 [====================================	_	Us	693us/step	_	loss:	8.0590
Epoch 297/400 160/160 [====================================		٥٩	69/119/9+02		1.000.	9 0500
Epoch 298/400	_	US	664us/step	_	TOSS:	0.0590
160/160 [====================================	_	Λe	68411g/gtan	_	loggi	8 0590
Epoch 299/400		US	004us/scep		TOSS.	0.0090
160/160 [====================================	_	0s	690us/step	_	loss:	8.0590
Epoch 300/400			occus, scop			
160/160 [====================================	_	0s	687us/step	_	loss:	8.0590
Epoch 301/400			. 1			
160/160 [====================================	_	0s	682us/step	_	loss:	8.0590
Epoch 302/400			_			
160/160 [======]	_	0s	678us/step	-	loss:	8.0590
Epoch 303/400			_			
160/160 [======]	-	0s	684us/step	-	loss:	8.0590
Epoch 304/400						
160/160 [======]	-	0s	702us/step	-	loss:	8.0590
Epoch 305/400						

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Epoch 306/400
160/160 [============] - Os 693us/step - loss: 8.0590
Epoch 307/400
Epoch 308/400
160/160 [============= ] - Os 671us/step - loss: 8.0590
Epoch 309/400
160/160 [============= ] - 0s 703us/step - loss: 8.0590
Epoch 310/400
Epoch 311/400
Epoch 312/400
160/160 [============= ] - Os 682us/step - loss: 8.0590
Epoch 313/400
160/160 [============= ] - Os 669us/step - loss: 8.0590
Epoch 314/400
160/160 [============= ] - Os 697us/step - loss: 8.0590
Epoch 315/400
Epoch 316/400
Epoch 317/400
160/160 [============= ] - Os 669us/step - loss: 8.0590
Epoch 318/400
160/160 [============== ] - Os 699us/step - loss: 8.0590
Epoch 319/400
160/160 [============== ] - Os 697us/step - loss: 8.0590
Epoch 320/400
Epoch 321/400
160/160 [============= ] - Os 699us/step - loss: 8.0590
Epoch 322/400
160/160 [============= ] - Os 695us/step - loss: 8.0590
Epoch 323/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 324/400
Epoch 325/400
160/160 [============== ] - Os 691us/step - loss: 8.0590
Epoch 326/400
160/160 [============= ] - Os 690us/step - loss: 8.0590
Epoch 327/400
160/160 [============= ] - Os 681us/step - loss: 8.0590
Epoch 328/400
160/160 [============== ] - Os 697us/step - loss: 8.0590
Epoch 329/400
```

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Epoch 330/400
160/160 [============ ] - Os 690us/step - loss: 8.0590
Epoch 331/400
160/160 [============= ] - Os 705us/step - loss: 8.0590
Epoch 332/400
160/160 [============= ] - Os 692us/step - loss: 8.0590
Epoch 333/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 334/400
Epoch 335/400
Epoch 336/400
160/160 [============= ] - Os 715us/step - loss: 8.0590
Epoch 337/400
160/160 [============= ] - Os 677us/step - loss: 8.0590
Epoch 338/400
160/160 [============= ] - Os 660us/step - loss: 8.0590
Epoch 339/400
Epoch 340/400
Epoch 341/400
160/160 [============= ] - Os 697us/step - loss: 8.0590
Epoch 342/400
Epoch 343/400
Epoch 344/400
Epoch 345/400
160/160 [============= ] - Os 683us/step - loss: 8.0590
Epoch 346/400
160/160 [============= ] - Os 683us/step - loss: 8.0590
Epoch 347/400
160/160 [============= ] - Os 689us/step - loss: 8.0590
Epoch 348/400
Epoch 349/400
160/160 [============== ] - Os 679us/step - loss: 8.0590
Epoch 350/400
160/160 [============= ] - Os 675us/step - loss: 8.0590
Epoch 351/400
160/160 [============= ] - Os 686us/step - loss: 8.0590
Epoch 352/400
160/160 [=============== ] - Os 697us/step - loss: 8.0590
Epoch 353/400
```

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160/160 [============== ] - Os 678us/step - loss: 8.0590
Epoch 354/400
160/160 [============= ] - Os 691us/step - loss: 8.0590
Epoch 355/400
160/160 [============= ] - Os 690us/step - loss: 8.0590
Epoch 356/400
160/160 [============= ] - Os 689us/step - loss: 8.0590
Epoch 357/400
160/160 [============= ] - Os 680us/step - loss: 8.0590
Epoch 358/400
Epoch 359/400
Epoch 360/400
160/160 [============= ] - Os 698us/step - loss: 8.0590
Epoch 361/400
160/160 [============= ] - Os 676us/step - loss: 8.0590
Epoch 362/400
160/160 [============= ] - Os 693us/step - loss: 8.0590
Epoch 363/400
160/160 [============= ] - Os 688us/step - loss: 8.0590
Epoch 364/400
Epoch 365/400
160/160 [============= ] - Os 695us/step - loss: 8.0590
Epoch 366/400
160/160 [=============== ] - Os 697us/step - loss: 8.0590
Epoch 367/400
160/160 [=============== ] - Os 679us/step - loss: 8.0590
Epoch 368/400
160/160 [============== ] - Os 685us/step - loss: 8.0590
Epoch 369/400
160/160 [============= ] - Os 686us/step - loss: 8.0590
Epoch 370/400
160/160 [============= ] - Os 693us/step - loss: 8.0590
Epoch 371/400
160/160 [============= ] - Os 694us/step - loss: 8.0590
Epoch 372/400
Epoch 373/400
160/160 [============== ] - Os 679us/step - loss: 8.0590
Epoch 374/400
160/160 [============= ] - Os 669us/step - loss: 8.0590
Epoch 375/400
160/160 [============= ] - Os 640us/step - loss: 8.0590
Epoch 376/400
160/160 [============== ] - Os 694us/step - loss: 8.0590
Epoch 377/400
```

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160/160 [============== ] - Os 698us/step - loss: 8.0590
Epoch 378/400
160/160 [============= ] - Os 684us/step - loss: 8.0590
Epoch 379/400
Epoch 380/400
160/160 [============= ] - Os 684us/step - loss: 8.0590
Epoch 381/400
160/160 [============= ] - Os 691us/step - loss: 8.0590
Epoch 382/400
Epoch 383/400
Epoch 384/400
160/160 [============= ] - Os 698us/step - loss: 8.0590
Epoch 385/400
160/160 [============= ] - Os 684us/step - loss: 8.0590
Epoch 386/400
160/160 [============= ] - Os 687us/step - loss: 8.0590
Epoch 387/400
Epoch 388/400
Epoch 389/400
Epoch 390/400
Epoch 391/400
Epoch 392/400
160/160 [============== ] - Os 679us/step - loss: 8.0590
Epoch 393/400
Epoch 394/400
160/160 [============= ] - Os 699us/step - loss: 8.0590
Epoch 395/400
160/160 [============= ] - Os 685us/step - loss: 8.0590
Epoch 396/400
Epoch 397/400
160/160 [============== ] - Os 690us/step - loss: 8.0590
Epoch 398/400
Epoch 399/400
160/160 [============= ] - 0s 703us/step - loss: 8.0590
Epoch 400/400
160/160 [============== ] - Os 693us/step - loss: 8.0590
160/160 [=========== ] - Os 2ms/step
```

Epoch 1/400			
160/160 [====================================	_	1s	3ms/step - loss: 0.7035
Epoch 2/400			
160/160 [======]	-	0s	710us/step - loss: 0.6945
Epoch 3/400			
160/160 [======]	-	0s	702us/step - loss: 0.6986
Epoch 4/400			
160/160 [======]	-	0s	693us/step - loss: 0.6970
Epoch 5/400			
160/160 [======]	-	0s	705us/step - loss: 0.6958
Epoch 6/400			
160/160 [======]	-	0s	700us/step - loss: 0.6963
Epoch 7/400			
160/160 [======]	-	0s	689us/step - loss: 0.6959
Epoch 8/400			
160/160 [=========]	-	0s	683us/step - loss: 0.6972
Epoch 9/400			
160/160 [=======]	-	0s	703us/step - loss: 0.6930
Epoch 10/400			
160/160 []	-	0s	712us/step - loss: 0.6966
Epoch 11/400		_	
160/160 [====================================	-	0s	697us/step - loss: 0.6972
Epoch 12/400		_	007 /
160/160 [====================================	_	0s	697us/step - loss: 0.6971
Epoch 13/400		^	700 / 1 2 0 0054
160/160 [====================================	_	US	706us/step - 10ss: 0.6954
Epoch 14/400 160/160 [====================================		0-	705/
Epoch 15/400	_	US	/25us/step - 10ss: 0.6964
160/160 [====================================	_	٥٥	602ug/gtop - logg: 0 60E9
Epoch 16/400		OS	033us/step = 10ss. 0.0330
160/160 [====================================	_	۸e	691us/stan - loss: 0 6947
Epoch 17/400		OB	001ab/b0cp 10bb. 0.001/
160/160 [====================================	_	0s	708us/sten - loss: 0 6958
Epoch 18/400		V.D	100ab, 500p 10bb. 0.0000
160/160 [====================================	_	0s	699us/step - loss: 0.6952
Epoch 19/400			200 au, 200 p
160/160 [====================================	_	0s	696us/step - loss: 0.6958
Epoch 20/400			. 1
160/160 [====================================	_	0s	695us/step - loss: 0.6968
Epoch 21/400			•
160/160 [====================================	_	0s	697us/step - loss: 0.6959
Epoch 22/400			-
160/160 [====================================	_	0s	678us/step - loss: 0.6963
Epoch 23/400			-
160/160 [=======]	_	0s	624us/step - loss: 0.6952
Epoch 24/400			
160/160 [======]	-	0s	658us/step - loss: 0.6953

Enoch 25 /400		
Epoch 25/400 160/160 [====================================	1000.	0 6054
Epoch 26/400	TUSS.	0.0954
-	7	0 6066
160/160 [=========== ] - Os 705us/step -	loss:	0.6966
Epoch 27/400	,	0 0050
160/160 [============ ] - Os 706us/step -	loss:	0.6952
Epoch 28/400	-	0 0054
160/160 [====================================	loss:	0.6954
Epoch 29/400	,	0.0000
160/160 [============ ] - Os 702us/step -	loss:	0.6960
Epoch 30/400	-	0 0010
160/160 [====================================	loss:	0.6949
Epoch 31/400	_	
160/160 [====================================	loss:	0.6951
Epoch 32/400	_	
160/160 [====================================	loss:	0.6960
Epoch 33/400	_	
160/160 [============ ] - Os 690us/step -	loss:	0.6956
Epoch 34/400		
160/160 [============ ] - Os 706us/step -	loss:	0.6944
Epoch 35/400		
160/160 [=========== ] - Os 695us/step -	loss:	0.6951
Epoch 36/400		
160/160 [=========== ] - Os 694us/step -	loss:	0.6956
Epoch 37/400		
160/160 [============ ] - Os 698us/step -	loss:	0.6946
Epoch 38/400		
160/160 [============ ] - Os 711us/step -	loss:	0.6955
Epoch 39/400		
160/160 [=========== ] - Os 704us/step -	loss:	0.6954
Epoch 40/400		
160/160 [============ ] - Os 690us/step -	loss:	0.6958
Epoch 41/400		
160/160 [=========== ] - Os 689us/step -	loss:	0.6958
Epoch 42/400		
160/160 [=========== ] - Os 702us/step -	loss:	0.6950
Epoch 43/400		
160/160 [=========== ] - Os 727us/step -	loss:	0.6952
Epoch 44/400		
160/160 [=========== ] - Os 702us/step -	loss:	0.6959
Epoch 45/400		
160/160 [=========== ] - Os 684us/step -	loss:	0.6941
Epoch 46/400		
160/160 [=========== ] - Os 697us/step -	loss:	0.6947
Epoch 47/400		
160/160 [====================================	loss:	0.6957
Epoch 48/400		
160/160 [====================================	loss:	0.6955

Fnoch 49/400	
Epoch 49/400 160/160 [====================================	52
Epoch 50/400	<i>J</i> <u></u>
160/160 [====================================	40
Epoch 51/400	±Э
160/160 [====================================	27
	51
Epoch 52/400 160/160 [====================================	E 2
-	55
Epoch 53/400 160/160 [====================================	40
	±Θ
Epoch 54/400 160/160 [====================================	E0
-	50
Epoch 55/400	- <i>1</i>
160/160 [====================================	54
Epoch 56/400	20
160/160 [====================================	39
Epoch 57/400	40
160/160 [====================================	10
Epoch 58/400	
160/160 [====================================	<del>1</del> 5
Epoch 59/400	
160/160 [====================================	41
Epoch 60/400	
160/160 [====================================	53
Epoch 61/400	
160/160 [====================================	50
Epoch 62/400	
160/160 [====================================	42
Epoch 63/400	
160/160 [====================================	42
Epoch 64/400	
160/160 [====================================	17
Epoch 65/400	
160/160 [====================================	36
Epoch 66/400	
160/160 [====================================	14
Epoch 67/400	
160/160 [====================================	54
Epoch 68/400	
160/160 [====================================	19
Epoch 69/400	
160/160 [====================================	43
Epoch 70/400	
160/160 [====================================	<del>1</del> 7
Epoch 71/400	
160/160 [====================================	39
Epoch 72/400	
160/160 [====================================	40

Enach 72/400				
Epoch 73/400 160/160 [====================================	_	٥٥	607ug/gton - logg	. 0 6022
Epoch 74/400		US	09/us/step - 10ss	. 0.0933
-		۸-	601/atan ]	. 0 6040
160/160 [====================================	_	US	ogius/step - loss	: 0.6940
Epoch 75/400		^	704 /	0 0000
160/160 [====================================	-	0s	704us/step - loss	: 0.6939
Epoch 76/400		_		
160/160 [====================================	-	0s	70bus/step - loss	: 0.6938
Epoch 77/400		_		
160/160 [====================================	-	0s	696us/step - loss	: 0.6937
Epoch 78/400		_		
160/160 [====================================	_	0s	689us/step - loss	: 0.6940
Epoch 79/400		_		
160/160 [====================================	-	0s	705us/step - loss	: 0.6927
Epoch 80/400				
160/160 [=======]	-	0s	706us/step - loss	: 0.6936
Epoch 81/400				
160/160 [======]	-	0s	700us/step - loss	: 0.6940
Epoch 82/400				
160/160 [======]	-	0s	706us/step - loss	: 0.6929
Epoch 83/400				
160/160 [======]	-	0s	696us/step - loss	: 0.6937
Epoch 84/400				
160/160 [=======]	-	0s	695us/step - loss	: 0.6933
Epoch 85/400				
160/160 [======]	-	0s	693us/step - loss	: 0.6935
Epoch 86/400				
160/160 [=======]	-	0s	688us/step - loss	: 0.6936
Epoch 87/400				
160/160 [=======]	-	0s	709us/step - loss	: 0.6937
Epoch 88/400				
160/160 [=======]	-	0s	696us/step - loss	: 0.6932
Epoch 89/400				
160/160 [=======]	-	0s	711us/step - loss	: 0.6933
Epoch 90/400				
160/160 [=======]	-	0s	686us/step - loss	: 0.6940
Epoch 91/400				
160/160 [====================================	_	0s	707us/step - loss	: 0.6934
Epoch 92/400				
160/160 [====================================	_	0s	716us/step - loss	: 0.6940
Epoch 93/400			_	
160/160 [====================================	_	0s	686us/step - loss	: 0.6929
Epoch 94/400			_	
160/160 [====================================	_	0s	688us/step - loss	: 0.6934
Epoch 95/400			•	
160/160 [====================================	_	0s	704us/step - loss	: 0.6935
Epoch 96/400				
160/160 [====================================	_	0s	703us/step - loss	: 0.6934
_			-	

Epoch 97/400						
160/160 [=======]	-	0s	701us/step	-	loss:	0.6931
Epoch 98/400						
160/160 [=======]	-	0s	682us/step	-	loss:	0.6931
Epoch 99/400						
160/160 [=======]	-	0s	717us/step	-	loss:	0.6928
Epoch 100/400						
160/160 [=======]	-	0s	691us/step	-	loss:	0.6919
Epoch 101/400						
160/160 [=======]	-	0s	697us/step	-	loss:	0.6925
Epoch 102/400						
160/160 [=======]	-	0s	685us/step	-	loss:	0.6938
Epoch 103/400						
160/160 [=======]	-	0s	706us/step	-	loss:	0.6937
Epoch 104/400						
160/160 [=======]	-	0s	695us/step	-	loss:	0.6924
Epoch 105/400						
160/160 [=======]	-	0s	701us/step	-	loss:	0.6930
Epoch 106/400						
160/160 [=======]	-	0s	706us/step	-	loss:	0.6930
Epoch 107/400						
160/160 [=======]	-	0s	702us/step	-	loss:	0.6928
Epoch 108/400						
160/160 [=======]	-	0s	699us/step	-	loss:	0.6930
Epoch 109/400						
160/160 [=======]	-	0s	697us/step	-	loss:	0.6924
Epoch 110/400						
160/160 [=======]	-	0s	678us/step	-	loss:	0.6925
Epoch 111/400						
160/160 [=======]	-	0s	710us/step	-	loss:	0.6915
Epoch 112/400						
160/160 [======]	-	0s	700us/step	-	loss:	0.6932
Epoch 113/400						
160/160 [======]	-	0s	705us/step	-	loss:	0.6920
Epoch 114/400						
160/160 [======]	-	0s	685us/step	-	loss:	0.6920
Epoch 115/400						
160/160 [======]	-	0s	702us/step	-	loss:	0.6915
Epoch 116/400						
160/160 [======]	-	0s	707us/step	-	loss:	0.6913
Epoch 117/400						
160/160 [=======]	-	0s	717us/step	-	loss:	0.6924
Epoch 118/400						
160/160 [=======]	-	0s	712us/step	-	loss:	0.6922
Epoch 119/400						
160/160 [====================================	-	0s	685us/step	-	loss:	0.6918
Epoch 120/400						
160/160 [====================================	-	0s	701us/step	-	loss:	0.6915

Epoch 121/400			
160/160 [======] -	- 0s	s 706us/step - loss:	0.6922
Epoch 122/400			
160/160 [======] -	- 0s	703us/step - loss:	0.6924
Epoch 123/400			
160/160 [=======] -	- 0s	s 689us/step - loss:	0.6912
Epoch 124/400			
160/160 [====================================	- 0s	705us/step - loss:	0.6924
Epoch 125/400		•	
160/160 [====================================	- 0:	s 698us/step - loss:	0.6903
Epoch 126/400			
160/160 [=======] -	- 0:	s 720us/step - loss:	0.6924
Epoch 127/400		, 1000, 200p 1000.	0.0021
160/160 [=======] -	- Ne	s 699119/sten - loss.	0 6898
Epoch 128/400	O.	o ooodby buch lobb.	0.0000
160/160 [=======] -	- ∩c	68/11g/gton - logg:	0 6008
Epoch 129/400	O.	5 004us/step 10ss.	0.0300
160/160 [=======] -	- Ne	60/11g/gton - logg:	0 6007
Epoch 130/400	O.	5 034us/step 10ss.	0.0301
160/160 [=======] -	٥	711,12/2+22 1022.	0 6010
	- 08	s /llus/step - loss:	0.6910
Epoch 131/400 160/160 [=======] -	0-	. 606/-+ 1	0 6000
	- 08	s 696us/step - 10ss:	0.6909
Epoch 132/400	0 -	744/	0 6000
160/160 [=======] -	- 08	s /llus/step - loss:	0.6899
Epoch 133/400	^	704 /	0 0001
160/160 [=======] -	- 08	s /04us/step - loss:	0.6904
Epoch 134/400	^	200 /	0 0000
160/160 [=======] -	- 08	s 689us/step - loss:	0.6906
Epoch 135/400	_		
160/160 [=======] -	- 05	3 /10us/step - loss:	0.6905
Epoch 136/400			
160/160 [======] -	- 0s	s 697us/step - loss:	0.6899
Epoch 137/400			
160/160 [======] -	- 0s	693us/step - loss:	0.6896
Epoch 138/400			
160/160 [======] -	- 0s	696us/step - loss:	0.6896
Epoch 139/400			
160/160 [======] -	- 0s	706us/step - loss:	0.6894
Epoch 140/400			
160/160 [======] -	- 0s	s 690us/step - loss:	0.6897
Epoch 141/400			
160/160 [======] -	- 0s	s 688us/step - loss:	0.6894
Epoch 142/400			
160/160 [======] -	- 0s	s 689us/step - loss:	0.6890
Epoch 143/400			
160/160 [====================================	- 0s	3 710us/step - loss:	0.6891
Epoch 144/400			
160/160 [======] -	- 0s	697us/step - loss:	0.6895

Epoch 145/400						
160/160 [====================================	_	0s	694us/step	_	loss:	0.6890
Epoch 146/400			•			
160/160 [====================================	_	0s	695us/step	_	loss:	0.6894
Epoch 147/400			-			
160/160 [====================================	_	0s	696us/step	_	loss:	0.6882
Epoch 148/400			-			
160/160 [====================================	_	0s	694us/step	_	loss:	0.6887
Epoch 149/400			_			
160/160 [======]	-	0s	705us/step	-	loss:	0.6880
Epoch 150/400						
160/160 [======]	-	0s	707us/step	-	loss:	0.6885
Epoch 151/400						
160/160 [======]	-	0s	663us/step	-	loss:	0.6874
Epoch 152/400						
160/160 [======]	-	0s	664us/step	-	loss:	0.6878
Epoch 153/400						
160/160 [======]	-	0s	684us/step	-	loss:	0.6876
Epoch 154/400						
160/160 [======]	-	0s	691us/step	-	loss:	0.6870
Epoch 155/400						
160/160 [=======]	-	0s	704us/step	-	loss:	0.6869
Epoch 156/400						
160/160 [=======]	-	0s	693us/step	-	loss:	0.6857
Epoch 157/400						
160/160 [=======]	-	0s	689us/step	-	loss:	0.6875
Epoch 158/400						
160/160 [======]	-	0s	691us/step	-	loss:	0.6851
Epoch 159/400						
160/160 [============]	-	0s	706us/step	-	loss:	0.6850
Epoch 160/400						
160/160 [=========]	-	0s	678us/step	-	loss:	0.6844
Epoch 161/400						
160/160 [=========]	-	0s	690us/step	-	loss:	0.6855
Epoch 162/400						
160/160 [======]	-	0s	709us/step	-	loss:	0.6846
Epoch 163/400						
160/160 [=======]	-	0s	695us/step	-	loss:	0.6806
Epoch 164/400						
160/160 [=======]	-	0s	701us/step	-	loss:	0.6835
Epoch 165/400						
160/160 [=======]	-	0s	686us/step	-	loss:	0.6826
Epoch 166/400						
160/160 [=======]	-	0s	698us/step	-	loss:	0.6830
Epoch 167/400						
160/160 [====================================	-	0s	681us/step	-	loss:	0.6822
Epoch 168/400		_			_	
160/160 [====================================	-	0s	707us/step	-	loss:	0.6816

Epoch 169/400	
160/160 [=======] - 0s 69	9us/step - loss: 0.6806
Epoch 170/400	•
160/160 [=======] - 0s 69	6us/step - loss: 0.6790
Epoch 171/400	-
160/160 [====================================	5us/step - loss: 0.6788
Epoch 172/400	-
160/160 [====================================	9us/step - loss: 0.6766
Epoch 173/400	_
160/160 [======] - Os 699	9us/step - loss: 0.6776
Epoch 174/400	
160/160 [======] - Os 690	6us/step - loss: 0.6755
Epoch 175/400	
160/160 [======] - Os 699	9us/step - loss: 0.6735
Epoch 176/400	
160/160 [======] - 0s 69	1us/step - loss: 0.6735
Epoch 177/400	
160/160 [======] - Os 70	6us/step - loss: 0.6709
Epoch 178/400	
160/160 [======] - Os 67	5us/step - loss: 0.6700
Epoch 179/400	
160/160 [======] - Os 69	6us/step - loss: 0.6655
Epoch 180/400	
160/160 [======] - 0s 71	6us/step - loss: 0.6641
Epoch 181/400	
160/160 [======] - 0s 70	5us/step - loss: 0.6611
Epoch 182/400	
160/160 [=======] - Os 69	3us/step - loss: 0.6561
Epoch 183/400	
160/160 [=======] - Os 67	9us/step - loss: 0.6510
Epoch 184/400	
160/160 [======] - 0s 71	6us/step - loss: 0.6407
Epoch 185/400	
160/160 [======] - 0s 69	2us/step - loss: 0.6368
Epoch 186/400	
160/160 [======] - 0s 70	Ous/step - loss: 0.6193
Epoch 187/400	
160/160 [======] - 0s 68	7us/step - loss: 0.6222
Epoch 188/400	
160/160 [======] - 0s 70-	4us/step - loss: 0.6141
Epoch 189/400	
160/160 [======] - 0s 70	Ous/step - loss: 0.5997
Epoch 190/400	
160/160 [======] - 0s 70	7us/step - loss: 0.5876
Epoch 191/400	
160/160 [=======] - 0s 69	Ous/step - loss: 0.5733
Epoch 192/400	
160/160 [======] - 0s 70	2us/step - loss: 0.5609

Epoch 193/400						
160/160 [====================================	_	0s	698us/step	-	loss:	0.5253
Epoch 194/400			_			
160/160 [=======]	-	0s	688us/step	-	loss:	0.4744
Epoch 195/400						
160/160 [=======]	-	0s	690us/step	-	loss:	0.5370
Epoch 196/400						
160/160 [=======]	-	0s	707us/step	-	loss:	0.5013
Epoch 197/400						
160/160 [============]	-	0s	698us/step	-	loss:	0.4323
Epoch 198/400						
160/160 [============]	-	0s	692us/step	-	loss:	0.4600
Epoch 199/400						
160/160 [============]	-	0s	698us/step	-	loss:	0.4345
Epoch 200/400						
160/160 [============]	-	0s	709us/step	-	loss:	0.5179
Epoch 201/400						
160/160 [====================================	-	0s	689us/step	-	loss:	0.4227
Epoch 202/400						
160/160 [======]	-	0s	689us/step	-	loss:	3.5217
Epoch 203/400						
160/160 [============]	-	0s	688us/step	-	loss:	8.0590
Epoch 204/400						
160/160 [============]	-	0s	694us/step	-	loss:	8.0590
Epoch 205/400						
160/160 [============]	-	0s	696us/step	-	loss:	8.0590
Epoch 206/400						
160/160 [======]	-	0s	680us/step	-	loss:	8.0590
Epoch 207/400						
160/160 [=======]	-	0s	681us/step	-	loss:	8.0590
Epoch 208/400						
160/160 [=======]	-	0s	643us/step	-	loss:	8.0590
Epoch 209/400						
160/160 [=======]	-	0s	670us/step	-	loss:	8.0590
Epoch 210/400						
160/160 [=======]	-	0s	664us/step	-	loss:	8.0590
Epoch 211/400						
160/160 [=======]	-	0ຮ	662us/step	-	loss:	8.0590
Epoch 212/400						
160/160 [=======]	-	0ຮ	631us/step	-	loss:	8.0590
Epoch 213/400						
160/160 [=======]	-	0s	698us/step	-	loss:	8.0590
Epoch 214/400						
160/160 [=======]	-	0ຮ	686us/step	-	loss:	8.0590
Epoch 215/400						
160/160 [====================================	-	0s	691us/step	-	loss:	8.0590
Epoch 216/400		_			_	
160/160 [====================================	-	0s	700us/step	-	loss:	8.0590

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Epoch 217/400		•	050 /
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Epoch 218/400		ο-	C25/-t 1 0 0500
160/160 [====================================	-	US	635us/step - loss: 8.0590
Epoch 219/400		_	070 /
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Epoch 220/400		_	504 /
160/160 [====================================	-	0s	704us/step - loss: 8.0590
Epoch 221/400		_	
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Epoch 222/400		_	
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Epoch 223/400		_	
160/160 [====================================	-	0s	706us/step - loss: 8.0590
Epoch 224/400		_	
160/160 [====================================	-	0s	705us/step - loss: 8.0590
Epoch 225/400		_	
160/160 [====================================	-	0s	702us/step - loss: 8.0590
Epoch 226/400			
160/160 [======]	-	0s	694us/step - loss: 8.0590
Epoch 227/400			
160/160 [======]	-	0s	704us/step - loss: 8.0590
Epoch 228/400			
160/160 [======]	-	0s	702us/step - loss: 8.0590
Epoch 229/400			
160/160 [======]	-	0s	703us/step - loss: 8.0590
Epoch 230/400			
160/160 [======]	-	0s	690us/step - loss: 8.0590
Epoch 231/400			
160/160 [======]	-	0s	690us/step - loss: 8.0590
Epoch 232/400			
160/160 [======]	-	0s	705us/step - loss: 8.0590
Epoch 233/400			
160/160 [=======]	-	0s	701us/step - loss: 8.0590
Epoch 234/400			
160/160 [=======]	-	0s	699us/step - loss: 8.0590
Epoch 235/400			
160/160 [======]	-	0s	683us/step - loss: 8.0590
Epoch 236/400			
160/160 [=======]	-	0s	661us/step - loss: 8.0590
Epoch 237/400			
160/160 [======]	-	0s	683us/step - loss: 8.0590
Epoch 238/400			
160/160 [=======]	-	0s	719us/step - loss: 8.0590
Epoch 239/400			
160/160 [=======]	-	0s	701us/step - loss: 8.0590
Epoch 240/400			
160/160 [====================================	-	0s	707us/step - loss: 8.0590

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Epoch 326/400
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160/160 [============= ] - Os 696us/step - loss: 8.0590
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Epoch 385/400 160/160 [====================================	_	٥٥	607ug/g+op	_	1000.	9 0E00
Epoch 386/400		05	09/us/scep		TOSS.	0.0590
160/160 [====================================		٥٩	60Eug /gton		1.000.	9 0500
	_	US	ogous/step	_	TOSS:	0.0590
Epoch 387/400		0-	601		7	0 0500
160/160 [====================================	_	US	691us/step	_	loss:	8.0590
Epoch 388/400		0 -	700 /		7	0 0500
160/160 [====================================	_	US	70ous/step	_	loss:	8.0590
Epoch 389/400		0 -	COO /+		7	0 0500
160/160 [====================================	_	US	680us/step	_	loss:	8.0590
Epoch 390/400		^	007 / 1		,	0 0500
160/160 [====================================	_	US	66/us/step	_	loss:	8.0590
Epoch 391/400		^	CO4 / 1		,	0 0500
160/160 [====================================	_	US	694us/step	_	loss:	8.0590
Epoch 392/400		^	200 / .		-	0.0500
160/160 [====================================	_	US	693us/step	_	loss:	8.0590
Epoch 393/400		•	200 / .		_	0.0500
160/160 [====================================	-	0s	692us/step	_	loss:	8.0590
Epoch 394/400		_			_	
160/160 [====================================	-	0s	716us/step	-	loss:	8.0590
Epoch 395/400		_			_	
160/160 [=======]	-	0s	717us/step	-	loss:	8.0590
Epoch 396/400						
160/160 [=======]	-	0s	692us/step	-	loss:	8.0590
Epoch 397/400						
160/160 [======]	-	0s	693us/step	-	loss:	8.0590
Epoch 398/400						
160/160 [=======]	-	0s	699us/step	-	loss:	8.0590
Epoch 399/400						
160/160 [=======]	-	0s	703us/step	-	loss:	8.0590
Epoch 400/400						
160/160 [========]			_	-	loss:	8.0590
160/160 [====================================	-	0s	2ms/step			
Epoch 1/400						
160/160 [=======]	-	1s	3ms/step -	10	oss: na	an
Epoch 2/400						
160/160 [=======]	-	0s	722us/step	-	loss:	nan
Epoch 3/400						
160/160 [=======]	-	0s	694us/step	-	loss:	nan
Epoch 4/400						
160/160 [=======]	-	0s	710us/step	-	loss:	nan
Epoch 5/400						
160/160 [===========]	-	0s	707us/step	-	loss:	nan
Epoch 6/400						
160/160 [=======]	-	0s	705us/step	-	loss:	nan
Epoch 7/400						
160/160 [=======]	-	0s	704us/step	-	loss:	nan
Epoch 8/400						

```
Epoch 9/400
160/160 [============ ] - Os 703us/step - loss: nan
Epoch 10/400
Epoch 11/400
Epoch 12/400
Epoch 13/400
160/160 [=========== ] - Os 713us/step - loss: nan
Epoch 14/400
160/160 [============ ] - Os 692us/step - loss: nan
Epoch 15/400
160/160 [============ ] - Os 706us/step - loss: nan
Epoch 16/400
160/160 [============ ] - Os 707us/step - loss: nan
Epoch 17/400
160/160 [=========== ] - Os 696us/step - loss: nan
Epoch 18/400
160/160 [============== ] - 0s 706us/step - loss: nan
Epoch 19/400
Epoch 20/400
Epoch 21/400
Epoch 22/400
Epoch 23/400
Epoch 24/400
160/160 [============ ] - Os 699us/step - loss: nan
Epoch 25/400
Epoch 26/400
Epoch 27/400
160/160 [============= ] - Os 694us/step - loss: nan
Epoch 28/400
160/160 [============ ] - Os 708us/step - loss: nan
Epoch 29/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 30/400
160/160 [============ ] - Os 710us/step - loss: nan
Epoch 31/400
Epoch 32/400
```

```
Epoch 33/400
160/160 [============ ] - Os 707us/step - loss: nan
Epoch 34/400
Epoch 35/400
Epoch 36/400
Epoch 37/400
160/160 [=========== ] - Os 713us/step - loss: nan
Epoch 38/400
Epoch 39/400
160/160 [============ ] - Os 701us/step - loss: nan
Epoch 40/400
160/160 [============ ] - Os 665us/step - loss: nan
Epoch 41/400
160/160 [=========== ] - Os 643us/step - loss: nan
Epoch 42/400
160/160 [============== ] - 0s 695us/step - loss: nan
Epoch 43/400
160/160 [============== ] - 0s 704us/step - loss: nan
Epoch 44/400
160/160 [=========== ] - Os 712us/step - loss: nan
Epoch 45/400
Epoch 46/400
Epoch 47/400
Epoch 48/400
160/160 [============ ] - Os 682us/step - loss: nan
Epoch 49/400
Epoch 50/400
Epoch 51/400
160/160 [============ ] - Os 718us/step - loss: nan
Epoch 52/400
160/160 [============= ] - Os 694us/step - loss: nan
Epoch 53/400
160/160 [============ ] - Os 709us/step - loss: nan
Epoch 54/400
160/160 [============ ] - Os 703us/step - loss: nan
Epoch 55/400
Epoch 56/400
```

```
Epoch 57/400
160/160 [============ ] - Os 687us/step - loss: nan
Epoch 58/400
Epoch 59/400
Epoch 60/400
Epoch 61/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 62/400
Epoch 63/400
160/160 [============ ] - Os 701us/step - loss: nan
Epoch 64/400
160/160 [============ ] - Os 708us/step - loss: nan
Epoch 65/400
160/160 [=========== ] - Os 708us/step - loss: nan
Epoch 66/400
Epoch 67/400
Epoch 68/400
Epoch 69/400
Epoch 70/400
Epoch 71/400
Epoch 72/400
160/160 [============ ] - Os 700us/step - loss: nan
Epoch 73/400
Epoch 74/400
Epoch 75/400
160/160 [============ ] - Os 716us/step - loss: nan
Epoch 76/400
160/160 [============= ] - Os 701us/step - loss: nan
Epoch 77/400
160/160 [============ ] - Os 698us/step - loss: nan
Epoch 78/400
160/160 [============ ] - Os 691us/step - loss: nan
Epoch 79/400
Epoch 80/400
```

```
Epoch 81/400
160/160 [============ ] - Os 712us/step - loss: nan
Epoch 82/400
Epoch 83/400
Epoch 84/400
Epoch 85/400
160/160 [============ ] - Os 708us/step - loss: nan
Epoch 86/400
160/160 [============ ] - Os 704us/step - loss: nan
Epoch 87/400
160/160 [============ ] - Os 712us/step - loss: nan
Epoch 88/400
160/160 [============ ] - Os 692us/step - loss: nan
Epoch 89/400
160/160 [=========== ] - Os 701us/step - loss: nan
Epoch 90/400
160/160 [============== ] - 0s 704us/step - loss: nan
Epoch 91/400
Epoch 92/400
Epoch 93/400
Epoch 94/400
Epoch 95/400
Epoch 96/400
160/160 [============ ] - Os 711us/step - loss: nan
Epoch 97/400
Epoch 98/400
Epoch 99/400
160/160 [============ ] - Os 717us/step - loss: nan
Epoch 100/400
160/160 [============= ] - Os 697us/step - loss: nan
Epoch 101/400
160/160 [============ ] - Os 695us/step - loss: nan
Epoch 102/400
160/160 [============ ] - Os 699us/step - loss: nan
Epoch 103/400
Epoch 104/400
```

```
Epoch 105/400
160/160 [============ ] - Os 651us/step - loss: nan
Epoch 106/400
Epoch 107/400
Epoch 108/400
Epoch 109/400
160/160 [============ ] - Os 694us/step - loss: nan
Epoch 110/400
160/160 [=========== ] - Os 712us/step - loss: nan
Epoch 111/400
160/160 [============ ] - Os 693us/step - loss: nan
Epoch 112/400
160/160 [============ ] - Os 702us/step - loss: nan
Epoch 113/400
160/160 [============ ] - Os 706us/step - loss: nan
Epoch 114/400
160/160 [============== ] - 0s 685us/step - loss: nan
Epoch 115/400
Epoch 116/400
Epoch 117/400
Epoch 118/400
Epoch 119/400
Epoch 120/400
160/160 [============ ] - Os 663us/step - loss: nan
Epoch 121/400
Epoch 122/400
Epoch 123/400
160/160 [============= ] - Os 694us/step - loss: nan
Epoch 124/400
160/160 [============ ] - Os 706us/step - loss: nan
Epoch 125/400
160/160 [============ ] - Os 695us/step - loss: nan
Epoch 126/400
160/160 [============ ] - Os 703us/step - loss: nan
Epoch 127/400
Epoch 128/400
```

```
Epoch 129/400
160/160 [============ ] - Os 696us/step - loss: nan
Epoch 130/400
Epoch 131/400
Epoch 132/400
Epoch 133/400
160/160 [============ ] - Os 700us/step - loss: nan
Epoch 134/400
160/160 [=================== ] - Os 700us/step - loss: nan
Epoch 135/400
160/160 [============ ] - Os 709us/step - loss: nan
Epoch 136/400
160/160 [============ ] - Os 714us/step - loss: nan
Epoch 137/400
160/160 [============ ] - Os 687us/step - loss: nan
Epoch 138/400
160/160 [============== ] - 0s 704us/step - loss: nan
Epoch 139/400
160/160 [============== ] - 0s 706us/step - loss: nan
Epoch 140/400
160/160 [=========== ] - Os 715us/step - loss: nan
Epoch 141/400
Epoch 142/400
Epoch 143/400
Epoch 144/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 145/400
Epoch 146/400
Epoch 147/400
160/160 [============ ] - Os 839us/step - loss: nan
Epoch 148/400
160/160 [============ ] - Os 812us/step - loss: nan
Epoch 149/400
Epoch 150/400
160/160 [============ ] - Os 726us/step - loss: nan
Epoch 151/400
Epoch 152/400
```

```
Epoch 153/400
160/160 [============ ] - Os 696us/step - loss: nan
Epoch 154/400
Epoch 155/400
Epoch 156/400
Epoch 157/400
160/160 [=========== ] - Os 727us/step - loss: nan
Epoch 158/400
160/160 [=========== ] - Os 713us/step - loss: nan
Epoch 159/400
160/160 [=========== ] - Os 712us/step - loss: nan
Epoch 160/400
160/160 [============ ] - Os 710us/step - loss: nan
Epoch 161/400
160/160 [=========== ] - Os 701us/step - loss: nan
Epoch 162/400
160/160 [============== ] - 0s 703us/step - loss: nan
Epoch 163/400
Epoch 164/400
160/160 [=========== ] - Os 716us/step - loss: nan
Epoch 165/400
Epoch 166/400
Epoch 167/400
Epoch 168/400
160/160 [============ ] - Os 715us/step - loss: nan
Epoch 169/400
Epoch 170/400
Epoch 171/400
160/160 [============ ] - Os 711us/step - loss: nan
Epoch 172/400
160/160 [============ ] - Os 717us/step - loss: nan
Epoch 173/400
Epoch 174/400
160/160 [============ ] - Os 714us/step - loss: nan
Epoch 175/400
Epoch 176/400
```

```
Epoch 177/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 178/400
Epoch 179/400
Epoch 180/400
Epoch 181/400
160/160 [============ ] - Os 692us/step - loss: nan
Epoch 182/400
160/160 [=============== ] - Os 704us/step - loss: nan
Epoch 183/400
160/160 [============ ] - Os 759us/step - loss: nan
Epoch 184/400
160/160 [============ ] - Os 697us/step - loss: nan
Epoch 185/400
160/160 [=========== ] - Os 701us/step - loss: nan
Epoch 186/400
160/160 [============== ] - 0s 714us/step - loss: nan
Epoch 187/400
160/160 [============== ] - 0s 713us/step - loss: nan
Epoch 188/400
Epoch 189/400
Epoch 190/400
Epoch 191/400
Epoch 192/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 193/400
Epoch 194/400
Epoch 195/400
160/160 [============ ] - Os 711us/step - loss: nan
Epoch 196/400
160/160 [============ ] - Os 717us/step - loss: nan
Epoch 197/400
Epoch 198/400
160/160 [============ ] - Os 716us/step - loss: nan
Epoch 199/400
Epoch 200/400
```

```
Epoch 201/400
160/160 [============ ] - Os 693us/step - loss: nan
Epoch 202/400
Epoch 203/400
Epoch 204/400
Epoch 205/400
160/160 [=========== ] - Os 718us/step - loss: nan
Epoch 206/400
160/160 [================== ] - Os 719us/step - loss: nan
Epoch 207/400
160/160 [============ ] - Os 710us/step - loss: nan
Epoch 208/400
160/160 [============ ] - Os 698us/step - loss: nan
Epoch 209/400
160/160 [=========== ] - Os 693us/step - loss: nan
Epoch 210/400
160/160 [============== ] - 0s 709us/step - loss: nan
Epoch 211/400
160/160 [============== ] - 0s 692us/step - loss: nan
Epoch 212/400
Epoch 213/400
Epoch 214/400
Epoch 215/400
Epoch 216/400
160/160 [=========== ] - Os 704us/step - loss: nan
Epoch 217/400
Epoch 218/400
Epoch 219/400
160/160 [============ ] - Os 707us/step - loss: nan
Epoch 220/400
160/160 [============ ] - Os 729us/step - loss: nan
Epoch 221/400
Epoch 222/400
160/160 [============ ] - Os 726us/step - loss: nan
Epoch 223/400
Epoch 224/400
```

```
Epoch 225/400
160/160 [============ ] - Os 733us/step - loss: nan
Epoch 226/400
Epoch 227/400
Epoch 228/400
Epoch 229/400
160/160 [=========== ] - Os 678us/step - loss: nan
Epoch 230/400
160/160 [=================== ] - Os 699us/step - loss: nan
Epoch 231/400
160/160 [============ ] - Os 690us/step - loss: nan
Epoch 232/400
160/160 [============ ] - Os 713us/step - loss: nan
Epoch 233/400
160/160 [=========== ] - Os 696us/step - loss: nan
Epoch 234/400
160/160 [============== ] - 0s 723us/step - loss: nan
Epoch 235/400
160/160 [============== ] - 0s 683us/step - loss: nan
Epoch 236/400
Epoch 237/400
Epoch 238/400
Epoch 239/400
Epoch 240/400
160/160 [============ ] - Os 692us/step - loss: nan
Epoch 241/400
Epoch 242/400
Epoch 243/400
160/160 [============ ] - Os 709us/step - loss: nan
Epoch 244/400
160/160 [============ ] - Os 726us/step - loss: nan
Epoch 245/400
Epoch 246/400
160/160 [============ ] - Os 706us/step - loss: nan
Epoch 247/400
Epoch 248/400
```

```
Epoch 249/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 250/400
Epoch 251/400
Epoch 252/400
Epoch 253/400
160/160 [=========== ] - Os 681us/step - loss: nan
Epoch 254/400
160/160 [============ ] - Os 667us/step - loss: nan
Epoch 255/400
160/160 [============ ] - Os 713us/step - loss: nan
Epoch 256/400
160/160 [============ ] - Os 715us/step - loss: nan
Epoch 257/400
160/160 [============ ] - Os 691us/step - loss: nan
Epoch 258/400
160/160 [============== ] - 0s 697us/step - loss: nan
Epoch 259/400
160/160 [============== ] - 0s 697us/step - loss: nan
Epoch 260/400
160/160 [=========== ] - Os 711us/step - loss: nan
Epoch 261/400
Epoch 262/400
Epoch 263/400
Epoch 264/400
160/160 [============ ] - Os 696us/step - loss: nan
Epoch 265/400
Epoch 266/400
Epoch 267/400
160/160 [============ ] - Os 728us/step - loss: nan
Epoch 268/400
160/160 [============ ] - Os 709us/step - loss: nan
Epoch 269/400
Epoch 270/400
160/160 [============ ] - Os 689us/step - loss: nan
Epoch 271/400
Epoch 272/400
```

```
Epoch 273/400
160/160 [============ ] - Os 721us/step - loss: nan
Epoch 274/400
Epoch 275/400
Epoch 276/400
Epoch 277/400
160/160 [=========== ] - Os 704us/step - loss: nan
Epoch 278/400
160/160 [============ ] - Os 729us/step - loss: nan
Epoch 279/400
160/160 [============ ] - Os 697us/step - loss: nan
Epoch 280/400
160/160 [============ ] - Os 701us/step - loss: nan
Epoch 281/400
160/160 [============ ] - Os 697us/step - loss: nan
Epoch 282/400
160/160 [============== ] - 0s 724us/step - loss: nan
Epoch 283/400
Epoch 284/400
Epoch 285/400
Epoch 286/400
Epoch 287/400
Epoch 288/400
160/160 [============ ] - Os 680us/step - loss: nan
Epoch 289/400
Epoch 290/400
Epoch 291/400
160/160 [============ ] - Os 708us/step - loss: nan
Epoch 292/400
160/160 [============ ] - Os 719us/step - loss: nan
Epoch 293/400
Epoch 294/400
160/160 [============ ] - Os 693us/step - loss: nan
Epoch 295/400
Epoch 296/400
```

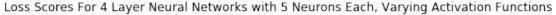
```
Epoch 297/400
160/160 [============ ] - Os 698us/step - loss: nan
Epoch 298/400
Epoch 299/400
Epoch 300/400
Epoch 301/400
160/160 [============ ] - Os 708us/step - loss: nan
Epoch 302/400
160/160 [=================== ] - Os 713us/step - loss: nan
Epoch 303/400
160/160 [============ ] - Os 709us/step - loss: nan
Epoch 304/400
160/160 [============ ] - Os 707us/step - loss: nan
Epoch 305/400
160/160 [=========== ] - Os 703us/step - loss: nan
Epoch 306/400
160/160 [============== ] - 0s 723us/step - loss: nan
Epoch 307/400
Epoch 308/400
Epoch 309/400
Epoch 310/400
Epoch 311/400
Epoch 312/400
160/160 [============ ] - Os 709us/step - loss: nan
Epoch 313/400
Epoch 314/400
Epoch 315/400
160/160 [============= ] - Os 696us/step - loss: nan
Epoch 316/400
160/160 [============ ] - Os 707us/step - loss: nan
Epoch 317/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 318/400
160/160 [============ ] - Os 725us/step - loss: nan
Epoch 319/400
Epoch 320/400
```

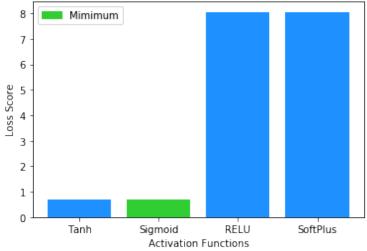
```
Epoch 321/400
160/160 [============ ] - Os 687us/step - loss: nan
Epoch 322/400
Epoch 323/400
Epoch 324/400
Epoch 325/400
160/160 [============ ] - Os 687us/step - loss: nan
Epoch 326/400
160/160 [=================== ] - Os 708us/step - loss: nan
Epoch 327/400
160/160 [============ ] - Os 710us/step - loss: nan
Epoch 328/400
160/160 [============ ] - Os 691us/step - loss: nan
Epoch 329/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 330/400
Epoch 331/400
160/160 [============== ] - 0s 732us/step - loss: nan
Epoch 332/400
Epoch 333/400
Epoch 334/400
Epoch 335/400
Epoch 336/400
160/160 [=========== ] - Os 707us/step - loss: nan
Epoch 337/400
Epoch 338/400
Epoch 339/400
160/160 [============= ] - Os 698us/step - loss: nan
Epoch 340/400
160/160 [============ ] - Os 712us/step - loss: nan
Epoch 341/400
Epoch 342/400
160/160 [============ ] - Os 699us/step - loss: nan
Epoch 343/400
Epoch 344/400
```

```
Epoch 345/400
160/160 [============ ] - Os 701us/step - loss: nan
Epoch 346/400
Epoch 347/400
Epoch 348/400
Epoch 349/400
160/160 [=========== ] - Os 704us/step - loss: nan
Epoch 350/400
160/160 [=================== ] - Os 683us/step - loss: nan
Epoch 351/400
160/160 [============ ] - Os 706us/step - loss: nan
Epoch 352/400
160/160 [============ ] - Os 700us/step - loss: nan
Epoch 353/400
160/160 [============ ] - Os 697us/step - loss: nan
Epoch 354/400
Epoch 355/400
160/160 [============== ] - 0s 712us/step - loss: nan
Epoch 356/400
Epoch 357/400
Epoch 358/400
Epoch 359/400
Epoch 360/400
160/160 [============ ] - Os 705us/step - loss: nan
Epoch 361/400
Epoch 362/400
Epoch 363/400
160/160 [============ ] - Os 704us/step - loss: nan
Epoch 364/400
160/160 [============= ] - Os 675us/step - loss: nan
Epoch 365/400
160/160 [============ ] - Os 683us/step - loss: nan
Epoch 366/400
160/160 [============ ] - Os 676us/step - loss: nan
Epoch 367/400
Epoch 368/400
```

```
Epoch 369/400
160/160 [============ ] - Os 691us/step - loss: nan
Epoch 370/400
Epoch 371/400
Epoch 372/400
Epoch 373/400
160/160 [=========== ] - Os 711us/step - loss: nan
Epoch 374/400
160/160 [================== ] - Os 717us/step - loss: nan
Epoch 375/400
160/160 [============ ] - Os 701us/step - loss: nan
Epoch 376/400
160/160 [============ ] - Os 701us/step - loss: nan
Epoch 377/400
160/160 [=========== ] - Os 710us/step - loss: nan
Epoch 378/400
160/160 [============== ] - 0s 704us/step - loss: nan
Epoch 379/400
160/160 [============= ] - 0s 714us/step - loss: nan
Epoch 380/400
Epoch 381/400
Epoch 382/400
Epoch 383/400
Epoch 384/400
160/160 [=========== ] - Os 737us/step - loss: nan
Epoch 385/400
Epoch 386/400
Epoch 387/400
160/160 [============ ] - Os 704us/step - loss: nan
Epoch 388/400
160/160 [============= ] - Os 678us/step - loss: nan
Epoch 389/400
160/160 [============ ] - Os 675us/step - loss: nan
Epoch 390/400
160/160 [============ ] - Os 623us/step - loss: nan
Epoch 391/400
Epoch 392/400
```

```
Epoch 393/400
160/160 [============ ] - Os 675us/step - loss: nan
Epoch 394/400
Epoch 395/400
Epoch 396/400
Epoch 397/400
160/160 [============ ] - Os 692us/step - loss: nan
Epoch 398/400
160/160 [============ ] - Os 714us/step - loss: nan
Epoch 399/400
160/160 [============ ] - Os 702us/step - loss: nan
Epoch 400/400
160/160 [============ ] - Os 705us/step - loss: nan
160/160 [========== ] - Os 2ms/step
In [26]: color = []
      for score in scores:
         if score == min(scores):
            color.append('limegreen')
         else:
            color.append('dodgerblue')
      patch1 = mpatches.Patch(color='limegreen', label='Mimimum')
      plt.legend(handles=[patch1], loc = 'best')
      actives = ['Tanh', 'Sigmoid', 'RELU', 'SoftPlus', 'Exponential']
      plt.bar(actives, scores, width = .8, color = color)
      plt.xlabel('Activation Functions')
      plt.ylabel('Loss Score')
      plt.title('Loss Scores For 4 Layer Neural Networks with 5 Neurons Each, Varying Active
      plt.show()
```





Looking at the above graph, the Sigmoid activation function slightly outperforms tanh. (exponential score returns nan values)

## 1.1.4 Part 1.4

```
In [27]: scores = []
         ### Stochastic Gradient Descent ###
         model = Sequential()
         model.add(Dense(4, input_dim=2, activation='sigmoid')) #sigmoid, relu
         model.add(Dense(4, input_dim = 4, activation='sigmoid'))
         model.add(Dense(1, activation='sigmoid'))
         sgd = SGD(lr=0.1)
         model.compile(loss='binary_crossentropy', optimizer=sgd)
         model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
         #print(model.predict_proba(X).reshape(4*n))
         # evaluate the model
         scores.append(model.evaluate(X, y))
         ### RMSprop ###
         from keras.optimizers import RMSprop
```

```
model = Sequential()
model.add(Dense(4, input_dim=2, activation='sigmoid')) #sigmoid, relu
model.add(Dense(4, input dim = 4, activation='sigmoid'))
model.add(Dense(4, input_dim = 4, activation='sigmoid'))
model.add(Dense(4, input_dim = 4, activation='sigmoid'))
model.add(Dense(4, input_dim = 4, activation='sigmoid'))
model.add(Dense(1, activation='sigmoid'))
RMSProp = RMSprop(learning_rate=0.001, rho=0.9)
model.compile(loss='binary_crossentropy', optimizer=RMSProp)
model.fit(X, y, batch_size=2, epochs=400) \#160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Adadelta ###
model = Sequential()
model.add(Dense(4, input_dim=2, activation='sigmoid')) #sigmoid, relu
model.add(Dense(4, input_dim = 4, activation='sigmoid'))
model.add(Dense(1, activation='sigmoid'))
from keras.optimizers import Adadelta
adad = Adadelta(learning rate=1.0, rho=0.95)
model.compile(loss='binary_crossentropy', optimizer=adad)
model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Adamax ###
model = Sequential()
```

```
model.add(Dense(4, input_dim=2, activation='sigmoid')) #sigmoid, relu
     model.add(Dense(4, input_dim = 4, activation='sigmoid'))
     model.add(Dense(1, activation='sigmoid'))
     from keras.optimizers import Adamax
     amax = Adamax(learning_rate=0.002, beta_1=0.9, beta_2=0.999)
     model.compile(loss='binary_crossentropy', optimizer=amax)
     model.fit(X, y, batch_size=2, epochs=400) #160/4 = 40 per epoch
     #print(model.predict_proba(X).reshape(4*n))
     # evaluate the model
     scores.append(model.evaluate(X, y))
Epoch 1/400
Epoch 2/400
160/160 [============= ] - Os 732us/step - loss: 0.7017
Epoch 3/400
Epoch 4/400
160/160 [============== ] - Os 773us/step - loss: 0.7017
Epoch 5/400
Epoch 6/400
Epoch 7/400
Epoch 8/400
Epoch 9/400
160/160 [============= ] - 0s 720us/step - loss: 0.7016
Epoch 10/400
160/160 [============= ] - Os 769us/step - loss: 0.6978
Epoch 11/400
Epoch 12/400
Epoch 13/400
160/160 [============= ] - 0s 778us/step - loss: 0.7029
Epoch 14/400
```

Enach 15/400
Epoch 15/400 160/160 [====================================
Epoch 16/400
160/160 [====================================
Epoch 17/400
160/160 [====================================
Epoch 18/400
160/160 [====================================
Epoch 19/400
160/160 [====================================
Epoch 20/400
160/160 [====================================
Epoch 21/400
160/160 [====================================
Epoch 22/400
160/160 [===========] - Os 728us/step - loss: 0.6996
Epoch 23/400
160/160 [===========] - Os 751us/step - loss: 0.7004
Epoch 24/400
160/160 [============ ] - Os 769us/step - loss: 0.7030
Epoch 25/400
160/160 [============ ] - Os 758us/step - loss: 0.6952
Epoch 26/400
160/160 [============ ] - Os 738us/step - loss: 0.6995
Epoch 27/400
160/160 [====================================
Epoch 28/400
160/160 [====================================
Epoch 29/400
160/160 [============ - 0s 726us/step - loss: 0.6998
Epoch 30/400
160/160 [====================================
Epoch 31/400
160/160 [====================================
Epoch 32/400
160/160 [====================================
Epoch 33/400
160/160 [====================================
Epoch 34/400
160/160 [====================================
Epoch 35/400
160/160 [====================================
Epoch 36/400
160/160 [====================================
Epoch 37/400
160/160 [====================================
Epoch 38/400
160/160 [====================================
-

Epoch 39/400						
160/160 [====================================	_	0s	769us/step	-	loss:	0.6955
Epoch 40/400			_			
160/160 [====================================	_	0s	748us/step	-	loss:	0.6998
Epoch 41/400			-			
160/160 [====================================	_	0s	809us/step	-	loss:	0.6933
Epoch 42/400			-			
160/160 [====================================	_	0s	714us/step	_	loss:	0.6988
Epoch 43/400			_			
160/160 [====================================	-	0s	743us/step	-	loss:	0.7015
Epoch 44/400						
160/160 [====================================	-	0s	781us/step	-	loss:	0.6992
Epoch 45/400			_			
160/160 [====================================	-	0s	791us/step	-	loss:	0.7009
Epoch 46/400			_			
160/160 [====================================	-	0s	745us/step	-	loss:	0.6970
Epoch 47/400			_			
160/160 [====================================	-	0s	754us/step	-	loss:	0.6978
Epoch 48/400			_			
160/160 [====================================	_	0s	739us/step	_	loss:	0.7018
Epoch 49/400			_			
160/160 [====================================	-	0s	778us/step	-	loss:	0.6963
Epoch 50/400			_			
160/160 [====================================	-	0s	776us/step	-	loss:	0.7034
Epoch 51/400			_			
160/160 [====================================	_	0s	771us/step	-	loss:	0.7015
Epoch 52/400			-			
160/160 [====================================	_	0s	775us/step	-	loss:	0.6991
Epoch 53/400			_			
160/160 [====================================	-	0s	775us/step	-	loss:	0.7000
Epoch 54/400						
160/160 [========]	-	0s	705us/step	-	loss:	0.7005
Epoch 55/400						
160/160 [========]	-	0s	698us/step	-	loss:	0.6994
Epoch 56/400						
160/160 [======]	-	0s	709us/step	-	loss:	0.6987
Epoch 57/400						
160/160 [=======]	-	0s	729us/step	-	loss:	0.6994
Epoch 58/400						
160/160 [=======]	-	0s	738us/step	-	loss:	0.6959
Epoch 59/400						
160/160 [======]	-	0s	698us/step	-	loss:	0.6999
Epoch 60/400						
160/160 [=======]	-	0s	727us/step	-	loss:	0.6988
Epoch 61/400						
160/160 [=======]	-	0s	709us/step	-	loss:	0.6989
Epoch 62/400						
160/160 [======]	-	0s	756us/step	-	loss:	0.6999

Epoch 63/400	
160/160 [====================================	7000
Epoch 64/400	
160/160 [====================================	6971
Epoch 65/400	
160/160 [====================================	7023
Epoch 66/400	
160/160 [====================================	6993
Epoch 67/400	
160/160 [====================================	6989
Epoch 68/400	
160/160 [====================================	7016
Epoch 69/400	
160/160 [====================================	6977
Epoch 70/400	
160/160 [====================================	6981
Epoch 71/400	
160/160 [====================================	7014
Epoch 72/400	
160/160 [====================================	7011
Epoch 73/400	
160/160 [====================================	6997
Epoch 74/400	
160/160 [====================================	6996
Epoch 75/400	
160/160 [====================================	6991
Epoch 76/400	
160/160 [====================================	6999
Epoch 77/400	
160/160 [====================================	6979
Epoch 78/400	
160/160 [====================================	7009
Epoch 79/400	
160/160 [====================================	6983
Epoch 80/400	0007
160/160 [====================================	6967
Epoch 81/400	6004
160/160 [====================================	6994
Epoch 82/400	6060
160/160 [====================================	6963
Epoch 83/400	7007
160/160 [====================================	7027
Epoch 84/400	6000
160/160 [====================================	6980
Epoch 85/400	7000
160/160 [====================================	7009
Epoch 86/400	COCE
160/160 [====================================	0995

Epoch 87/400						
160/160 [====================================	_	0s	731us/step	_	loss:	0.6992
Epoch 88/400			•			
160/160 [====================================	_	0s	728us/step	_	loss:	0.6993
Epoch 89/400			-			
160/160 [====================================	_	0s	750us/step	-	loss:	0.6993
Epoch 90/400			-			
160/160 [====================================	_	0s	744us/step	_	loss:	0.6988
Epoch 91/400			_			
160/160 [=======]	-	0s	761us/step	-	loss:	0.7009
Epoch 92/400						
160/160 [=======]	-	0s	765us/step	-	loss:	0.7025
Epoch 93/400						
160/160 [=======]	-	0s	719us/step	-	loss:	0.7018
Epoch 94/400						
160/160 [=======]	-	0s	704us/step	-	loss:	0.6993
Epoch 95/400						
160/160 [=======]	-	0s	704us/step	-	loss:	0.6997
Epoch 96/400						
160/160 [=======]	-	0s	724us/step	-	loss:	0.6986
Epoch 97/400						
160/160 [=======]	-	0s	688us/step	-	loss:	0.7007
Epoch 98/400						
160/160 [=======]	-	0s	735us/step	-	loss:	0.6979
Epoch 99/400						
160/160 [==========]	-	0s	705us/step	-	loss:	0.6982
Epoch 100/400			_			
160/160 [=======]	-	0s	685us/step	-	loss:	0.7006
Epoch 101/400						
160/160 [=======]	-	0s	681us/step	-	loss:	0.6989
Epoch 102/400						
160/160 [=======]	-	0s	680us/step	-	loss:	0.6977
Epoch 103/400						
160/160 [=======]	-	0s	697us/step	-	loss:	0.7001
Epoch 104/400						
160/160 [=======]	-	0s	749us/step	-	loss:	0.6978
Epoch 105/400						
160/160 [=======]	-	0s	727us/step	-	loss:	0.7005
Epoch 106/400						
160/160 [=======]	-	0s	695us/step	-	loss:	0.7000
Epoch 107/400						
160/160 [=======]	-	0s	704us/step	-	loss:	0.7004
Epoch 108/400						
160/160 [=======]	-	0s	694us/step	-	loss:	0.6969
Epoch 109/400						
160/160 [======]	-	0s	696us/step	-	loss:	0.7004
Epoch 110/400						
160/160 [=======]	-	0s	747us/step	-	loss:	0.6994

Enoch 111/400					
Epoch 111/400 160/160 [====================================	_	۸a	605ug/gton = log		0 6006
Epoch 112/400		05	090us/step = 10s	δ.	0.0990
160/160 [====================================	_	۸a	710ug/gton - log		0 6088
Epoch 113/400		VS	/10ds/step 10s	ο.	0.0300
160/160 [====================================	_	۸a	723ug/gton - log		0 7000
Epoch 114/400		VS	725us/step 10s	ο.	0.1003
160/160 [====================================	_	۸q	717119/sten - los	١٩٠	0 6997
Epoch 115/400		OB	717 db/ b c c p 10 b	ъ.	0.0001
160/160 [====================================	_	0s	716us/sten - los	١ς.	0 7008
Epoch 116/400		Ů.	110ab, 500p 10b		0.1.000
160/160 [====================================	_	0s	755us/step - los	s:	0.6961
Epoch 117/400		Ů.	100ab, 500p 10b		0.0001
160/160 [====================================	_	0s	725us/step - los	s:	0.6996
Epoch 118/400			,		
160/160 [====================================	_	0s	746us/step - los	s:	0.6918
Epoch 119/400			. 1		
160/160 [====================================	_	0s	726us/step - los	s:	0.7024
Epoch 120/400			•		
160/160 [====================================	_	0s	740us/step - los	s:	0.6996
Epoch 121/400			•		
160/160 [=======]	-	0s	744us/step - los	s:	0.6955
Epoch 122/400					
160/160 [======]	_	0s	765us/step - los	s:	0.6967
Epoch 123/400					
160/160 [======]	-	0s	719us/step - los	s:	0.7011
Epoch 124/400					
160/160 [======]	-	0s	760us/step - los	s:	0.6993
Epoch 125/400					
160/160 [======]	-	0s	689us/step - los	s:	0.6981
Epoch 126/400					
160/160 [======]	-	0s	701us/step - los	s:	0.6999
Epoch 127/400					
160/160 [============]	-	0s	725us/step - los	s:	0.6964
Epoch 128/400		_			
160/160 [====================================	_	0s	726us/step - los	s:	0.7006
Epoch 129/400		^	740 /		0 0057
160/160 [====================================	_	Us	/16us/step - los	s:	0.6957
Epoch 130/400 160/160 [====================================		٥-	672/		0.7000
	_	US	6/3us/step - los	s:	0.7002
Epoch 131/400		٥-	706/ 1		0 6077
160/160 [====================================	_	US	/2ous/step - los	s:	0.6977
Epoch 132/400 160/160 [====================================	_	٥٥	72/ug/g+on = log		0 6094
Epoch 133/400	_	υS	104m9/greh - 108	٥.	0.0504
160/160 [====================================	_	٥e	735ug/gten = 100		0 7007
Epoch 134/400		US	100mg/greh - 108	ο.	0.1001
160/160 [====================================	_	۸a	73411s/sten - los	١.	0 7002
100/ 100 []		OB	totablaceh Top	٥.	0.1002

Epoch 135/400		_	<b>5.15</b> / .		_	
160/160 [====================================	-	0s	717us/step	_	loss:	0.6997
Epoch 136/400						
160/160 [=======]	-	0s	687us/step	-	loss:	0.6984
Epoch 137/400						
160/160 [=======]	-	0s	737us/step	-	loss:	0.6978
Epoch 138/400						
160/160 [=======]	-	0s	727us/step	-	loss:	0.6993
Epoch 139/400						
160/160 [===========]	-	0s	734us/step	-	loss:	0.6993
Epoch 140/400						
160/160 [=======]	-	0s	711us/step	-	loss:	0.6982
Epoch 141/400						
160/160 [=======]	-	0s	738us/step	-	loss:	0.6980
Epoch 142/400						
160/160 [=======]	-	0s	756us/step	-	loss:	0.7010
Epoch 143/400						
160/160 [====================================	_	0s	764us/step	_	loss:	0.6984
Epoch 144/400			_			
160/160 [====================================	_	0s	704us/step	_	loss:	0.6988
Epoch 145/400						
160/160 [====================================	_	0s	707us/step	_	loss:	0.6987
Epoch 146/400			. 1			
160/160 [====================================	_	0s	687us/step	_	loss:	0.6976
Epoch 147/400			<u>.</u>			
160/160 [====================================	_	0s	762us/step	_	loss:	0.6996
Epoch 148/400			·			
160/160 [====================================	_	0s	720us/step	_	loss:	0.6965
Epoch 149/400						
160/160 [====================================	_	0s	711us/step	_	loss:	0.6980
Epoch 150/400			·,			
160/160 [====================================	_	0s	733us/step	_	loss:	0.6983
Epoch 151/400			· • • • • • • • • • • • • • • • • • • •			
160/160 [====================================	_	0s	759us/sten	_	loss:	0.6983
Epoch 152/400		0.0	. 00 dz, 200p			
160/160 [====================================	_	0s	745us/step	_	loss:	0.6964
Epoch 153/400		Ů.	, 10 db, 5 dop		TODE.	0.0001
160/160 [====================================	_	0s	706us/step	_	loss:	0.6987
Epoch 154/400		Ů.	, 00d2, 200p		TODE.	0.0001
160/160 [====================================	_	0s	727us/sten	_	loss	0 6992
Epoch 155/400		OB	727 db/ b0cp		TOBB.	0.0002
160/160 [====================================	_	۸e	736ug/gten	_	loggi	n 6088
Epoch 156/400		OS	750us/scep		TOSS.	0.0300
160/160 [====================================	_	Oa	740ug/g+on	_	loggi	0 6047
Epoch 157/400		OĐ	1 Tous/ steb		TOSS.	0.0341
160/160 [====================================	_	٥a	710112/2+22	_	loggi	0 7007
	_	υS	riaus/scep	_	TOSS:	0.7007
Epoch 158/400 160/160 [====================================	_	0~	683112/2+2-	_	1000:	0 6004
100/100 []	_	US	oosus/step	_	TOSS:	0.0984

Epoch 159/400			
160/160 [======]	-	0s	701us/step - loss: 0.7001
Epoch 160/400			
160/160 [=========]	-	0s	690us/step - loss: 0.6993
Epoch 161/400			
160/160 [========]	-	0s	711us/step - loss: 0.6995
Epoch 162/400			
160/160 [====================================	_	0s	750us/step - loss: 0.6982
Epoch 163/400			-
160/160 [====================================	_	0s	735us/step - loss: 0.7009
Epoch 164/400			
160/160 [=======]	_	0s	694us/step - loss: 0.7005
Epoch 165/400		Ů.	columbia de la companya de la compan
160/160 [=======]	_	۸e	740us/stan - loss: 0 6989
Epoch 166/400		OB	7 +0 db/ b cep 10bb. 0.0000
160/160 [=======]	_	٥٥	607ug/gton - logg: 0 6094
Epoch 167/400		OS	097us/step = 10ss. 0.0904
160/160 [========]		٥٩	70000/ston loss 0.6000
	_	US	72ous/step - 10ss: 0.0900
Epoch 168/400		_	745 /
160/160 [====================================	-	US	/45us/step - loss: 0.69//
Epoch 169/400		_	
160/160 [====================================	-	0s	727us/step - loss: 0.6992
Epoch 170/400			
160/160 [======]	-	0s	738us/step - loss: 0.6999
Epoch 171/400			
160/160 [=========]	-	0s	688us/step - loss: 0.7014
Epoch 172/400			
160/160 [=======]	-	0s	703us/step - loss: 0.6999
Epoch 173/400			
160/160 [=========]	-	0s	759us/step - loss: 0.6972
Epoch 174/400			
160/160 [====================================	_	0s	742us/step - loss: 0.7000
Epoch 175/400			-
160/160 [====================================	_	0s	699us/step - loss: 0.6985
Epoch 176/400			•
160/160 [========]	_	0s	705us/step - loss: 0.6973
Epoch 177/400			1
160/160 [========]	_	0s	747us/step - loss: 0.7000
Epoch 178/400		0.0	. 1. az, zesp = 2022. 01.000
160/160 [=======]	_	٥q	733us/sten - loss: 0 6970
Epoch 179/400		OB	100as/scep 105s. 0.0570
160/160 [=======]		٥٩	717::2/2+02 ]022: 0.7001
	_	US	/1/us/step = 10ss: 0.7001
Epoch 180/400		^	740 / 1 7 0 6004
160/160 [=======]	_	US	142us/step - 10ss: 0.6994
Epoch 181/400		^	700 / 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
160/160 [====================================	-	Us	/3bus/step - loss: 0.6998
Epoch 182/400		_	
160/160 [====================================	-	0s	/33us/step - loss: 0.6969

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Epoch 183/400
160/160 [====================================
Epoch 184/400
160/160 [====================================
Epoch 185/400
160/160 [====================================
Epoch 186/400
160/160 [=======] - Os 707us/step - loss: 0.6974
Epoch 187/400
160/160 [=======] - Os 698us/step - loss: 0.6995
Epoch 188/400
160/160 [============] - Os 718us/step - loss: 0.6985
Epoch 189/400
160/160 [======] - Os 706us/step - loss: 0.6983
Epoch 190/400
160/160 [============] - Os 704us/step - loss: 0.6985
Epoch 191/400
160/160 [====================================
Epoch 192/400
160/160 [======] - Os 705us/step - loss: 0.7001
Epoch 193/400
160/160 [=======] - Os 752us/step - loss: 0.6978
Epoch 194/400
160/160 [========] - Os 685us/step - loss: 0.6960
Epoch 195/400
160/160 [=======] - Os 737us/step - loss: 0.7002
Epoch 196/400
160/160 [=======] - Os 657us/step - loss: 0.6992
Epoch 197/400
160/160 [====================================
Epoch 198/400
160/160 [====================================
Epoch 199/400
160/160 [====================================
Epoch 200/400
160/160 [====================================
Epoch 201/400
160/160 [====================================
Epoch 202/400
160/160 [====================================
Epoch 203/400
160/160 [====================================
Epoch 204/400
160/160 [====================================
Epoch 205/400
160/160 [====================================
Epoch 206/400
160/160 [====================================

F 1 007/400						
Epoch 207/400		^	600 / 1		,	0 6004
160/160 [====================================	_	US	683us/step	_	loss:	0.6994
Epoch 208/400		^	705 / .		-	0 0000
160/160 [====================================	_	US	/25us/step	_	loss:	0.6998
Epoch 209/400		_	200 / .		_	
160/160 [====================================	-	0s	692us/step	-	loss:	0.6990
Epoch 210/400		_			_	
160/160 [====================================	-	0s	690us/step	-	loss:	0.6998
Epoch 211/400						
160/160 [=======]	-	0s	702us/step	-	loss:	0.6976
Epoch 212/400						
160/160 [=======]	-	0s	679us/step	-	loss:	0.6983
Epoch 213/400						
160/160 [=======]	-	0s	711us/step	-	loss:	0.6983
Epoch 214/400						
160/160 [=======]	-	0s	681us/step	-	loss:	0.7002
Epoch 215/400						
160/160 [===========]	-	0s	698us/step	-	loss:	0.6957
Epoch 216/400						
160/160 [======]	-	0s	662us/step	-	loss:	0.7016
Epoch 217/400						
160/160 [=======]	-	0s	688us/step	-	loss:	0.6994
Epoch 218/400						
160/160 [=======]	-	0s	701us/step	-	loss:	0.6996
Epoch 219/400						
160/160 [=======]	-	0s	686us/step	_	loss:	0.6988
Epoch 220/400						
160/160 [========]	-	0s	682us/step	-	loss:	0.6982
Epoch 221/400						
160/160 [========]	-	0s	700us/step	-	loss:	0.6989
Epoch 222/400						
160/160 [=========]	-	0s	706us/step	-	loss:	0.6982
Epoch 223/400						
160/160 [====================================	_	0s	700us/step	_	loss:	0.7001
Epoch 224/400			_			
160/160 [====================================	_	0s	744us/step	_	loss:	0.6987
Epoch 225/400			_			
160/160 [====================================	_	0s	733us/step	_	loss:	0.7002
Epoch 226/400			-			
160/160 [====================================	-	0s	731us/step	_	loss:	0.6996
Epoch 227/400			-			
160/160 [====================================	_	0s	710us/step	_	loss:	0.6977
Epoch 228/400						
160/160 [====================================	_	0s	714us/step	_	loss:	0.6991
Epoch 229/400						
160/160 [====================================	_	0s	738us/step	_	loss:	0.6966
Epoch 230/400			, · · · · · · · · · · · · · · · · ·			
160/160 [====================================	_	0s	692us/step	_	loss:	0.6983
·			P			

Fnoch 221/400						
Epoch 231/400 160/160 [====================================	_	٥٥	690ug/gton		1000.	0 6001
		US	009us/step		TOSS.	0.0904
Epoch 232/400		٥-	721/		7	0 6027
160/160 [====================================	_	US	/31us/step	_	loss:	0.6937
Epoch 233/400		^	205 / .		-	0 7000
160/160 [====================================	-	0s	695us/step	_	loss:	0.7000
Epoch 234/400		_			_	
160/160 [====================================	-	0s	710us/step	-	loss:	0.6981
Epoch 235/400		_			_	
160/160 [=======]	-	0s	705us/step	-	loss:	0.6967
Epoch 236/400			_			
160/160 [=======]	-	0s	743us/step	-	loss:	0.6995
Epoch 237/400						
160/160 [=======]	-	0s	721us/step	-	loss:	0.6991
Epoch 238/400						
160/160 [===========]	-	0s	709us/step	-	loss:	0.6997
Epoch 239/400						
160/160 [=======]	-	0s	724us/step	-	loss:	0.6993
Epoch 240/400						
160/160 [====================================	-	0s	723us/step	_	loss:	0.6990
Epoch 241/400			_			
160/160 [====================================	_	0s	713us/step	_	loss:	0.7002
Epoch 242/400			•			
160/160 [====================================	_	0s	704us/step	_	loss:	0.6997
Epoch 243/400						
160/160 [====================================	_	0s	817us/step	_	loss:	0.6966
Epoch 244/400						
160/160 [====================================	_	0s	790us/step	_	loss:	0.6984
Epoch 245/400		0.0	, 00 dz, 200p			
160/160 [====================================	_	0s	841us/sten	_	loss:	0.6979
Epoch 246/400		0.0	0 11 db, b 0 op			
160/160 [====================================	_	0s	733us/sten	_	loss:	0.6969
Epoch 247/400		Ů.	, cods, boop		TODE.	0.0000
160/160 [====================================	_	٥q	752118/sten	_	1099.	0 6979
Epoch 248/400		Ü	, 02db, 50cp		TODD.	0.0010
160/160 [====================================	_	۸e	749112/stan	_	loggi	0 6988
Epoch 249/400		OB	7 43 db/ b cep		TOSS.	0.0000
160/160 [====================================	_	۸e	606115/ston	_	loggi	0 6005
Epoch 250/400		OS	030us/step		TOSS.	0.0333
160/160 [====================================	_	Λα	703ug/gton	_	loggi	0 7004
Epoch 251/400		US	703us/step		TOSS.	0.7004
160/160 [====================================		٥-	702/		7	0.7002
	_	US	703us/step	_	loss:	0.7003
Epoch 252/400		Λ-	COO /-+		7	0 6004
160/160 [====================================	_	US	o9ous/step	_	TOSS:	U.6984
Epoch 253/400		^	C79/		7	0 0075
160/160 [====================================	-	US	o/Jus/step	-	Toss:	0.6975
Epoch 254/400		•	704 /		-	0 0001
160/160 [====================================	-	Us	704us/step	-	loss:	0.6984

Epoch 255/400
160/160 [====================================
Epoch 256/400
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Epoch 257/400
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Epoch 258/400
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Epoch 277/400
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Epoch 278/400
160/160 [====================================

Enoch 270/400				
Epoch 279/400 160/160 [====================================	_	٥٥	710ug/gton - logg:	0 6007
Epoch 280/400		US	/19us/step - 10ss.	0.0991
<del>-</del>		٥-	707/	0 6070
160/160 [====================================	_	US	/2/us/step - loss:	0.6970
Epoch 281/400		^	745 /	0 7000
160/160 [====================================	-	0s	74bus/step - loss:	0.7008
Epoch 282/400		_		
160/160 [====================================	-	0s	739us/step - loss:	0.6993
Epoch 283/400		_		
160/160 [============]	-	0s	736us/step - loss:	0.6971
Epoch 284/400				
160/160 [=======]	-	0s	720us/step - loss:	0.6978
Epoch 285/400				
160/160 [======]	-	0s	728us/step - loss:	0.6989
Epoch 286/400				
160/160 [======]	-	0s	729us/step - loss:	0.6977
Epoch 287/400				
160/160 [=======]	-	0s	738us/step - loss:	0.7000
Epoch 288/400				
160/160 [======]	-	0s	675us/step - loss:	0.6973
Epoch 289/400				
160/160 [=======]	-	0s	704us/step - loss:	0.6978
Epoch 290/400				
160/160 [=======]	-	0s	733us/step - loss:	0.6968
Epoch 291/400				
160/160 [====================================	_	0s	692us/step - loss:	0.6997
Epoch 292/400			_	
160/160 [====================================	_	0s	730us/step - loss:	0.6972
Epoch 293/400			•	
160/160 [====================================	_	0s	720us/step - loss:	0.6975
Epoch 294/400			•	
160/160 [====================================	_	0s	731us/step - loss:	0.6956
Epoch 295/400			•	
160/160 [====================================	_	0s	707us/step - loss:	0.6996
Epoch 296/400			•	
160/160 [====================================	_	0s	759us/step - loss:	0.6997
Epoch 297/400			•	
160/160 [====================================	_	0s	754us/step - loss:	0.6993
Epoch 298/400			•	
160/160 [====================================	_	0s	747us/step - loss:	0.6979
Epoch 299/400				
160/160 [====================================	_	0s	751us/step - loss:	0.6991
Epoch 300/400				
160/160 [====================================	_	0s	682us/step - loss:	0.6972
Epoch 301/400				
160/160 [====================================	_	0s	709us/step - loss.	0.7007
Epoch 302/400		2.5	. 10 az, 200p 1000.	3.1001
160/160 [====================================	_	0s	734us/sten - loss	0.6984
100,100 [		OD.	. 0 1 d D D D D D D D D D D D D D D D D D D	J.0001

Enoch 202/400						
Epoch 303/400 160/160 [====================================	_	۸e	683119/sten	_	loggi	0 6974
Epoch 304/400		OS	ooous/scep		TOSS.	0.0314
160/160 [====================================	_	٥q	72011s/sten	_	1099.	0 6988
Epoch 305/400		ŮĎ.	, 2005, 500p		TODD.	0.0000
160/160 [====================================	_	0s	711us/step	_	loss:	0.6968
Epoch 306/400		Ů.	, 11ab, 500p		TODE.	0.0000
160/160 [====================================	_	0s	677us/step	_	loss:	0.6982
Epoch 307/400						
160/160 [====================================	_	0s	704us/step	_	loss:	0.6995
Epoch 308/400			. 1			
160/160 [====================================	_	0s	761us/step	_	loss:	0.6966
Epoch 309/400			. 1			
160/160 [====================================	_	0s	681us/step	_	loss:	0.7001
Epoch 310/400			•			
160/160 [====================================	_	0s	696us/step	_	loss:	0.6983
Epoch 311/400			_			
160/160 [=======]	-	0s	710us/step	-	loss:	0.6981
Epoch 312/400						
160/160 [=======]	-	0s	729us/step	-	loss:	0.6980
Epoch 313/400						
160/160 [===========]	-	0s	717us/step	-	loss:	0.6997
Epoch 314/400						
160/160 [=======]	-	0s	748us/step	-	loss:	0.6995
Epoch 315/400						
160/160 [=======]	-	0s	740us/step	-	loss:	0.6987
Epoch 316/400						
160/160 [======]	-	0s	717us/step	-	loss:	0.6986
Epoch 317/400						
160/160 [====================================	-	0s	740us/step	-	loss:	0.6972
Epoch 318/400		_			_	
160/160 [====================================	-	0s	730us/step	_	loss:	0.6979
Epoch 319/400		•	740 / .		-	0 0000
160/160 [====================================	_	0s	/43us/step	_	loss:	0.6982
Epoch 320/400 160/160 [====================================		0-	705/****		1	0.7004
Epoch 321/400	_	US	705us/step	_	loss:	0.7004
160/160 [====================================	_	Λα	678ug /gtop	_	loggi	0 6008
Epoch 322/400		OS	orous/scep		TOSS.	0.0330
160/160 [====================================	_	۸e	689119/sten	_	loggi	0 6977
Epoch 323/400		OS	009us/scep		TOSS.	0.0311
160/160 [====================================	_	۸e	719112/sten	_	loggi	0 6986
Epoch 324/400		OB	713us/scep		TOSS.	0.0300
160/160 [====================================	_	0s	675us/step	_	loss:	0.6986
Epoch 325/400		20	2. 242, 200p			1.0000
160/160 [========]	_	0s	707us/step	_	loss:	0.6999
Epoch 326/400			, 200Р			
160/160 [====================================	_	0s	732us/step	_	loss:	0.6992
-						

Epoch 327/400						
160/160 [====================================	_	0s	679us/step	_	loss:	0.6987
Epoch 328/400			•			
160/160 [====================================	_	0s	732us/step	_	loss:	0.6986
Epoch 329/400			•			
160/160 [====================================	_	0s	691us/step	_	loss:	0.6977
Epoch 330/400						
160/160 [====================================	_	0s	701us/step	_	loss:	0.6992
Epoch 331/400			•			
160/160 [====================================	_	0s	760us/step	_	loss:	0.6996
Epoch 332/400			•			
160/160 [====================================	_	0s	762us/step	_	loss:	0.6985
Epoch 333/400			. 1			
160/160 [====================================	_	0s	770us/step	_	loss:	0.6989
Epoch 334/400			. 1			
160/160 [====================================	_	0s	713us/step	_	loss:	0.6989
Epoch 335/400			1			
160/160 [====================================	_	0s	718us/step	_	loss:	0.7006
Epoch 336/400			1			
160/160 [====================================	_	0s	712us/step	_	loss:	0.6986
Epoch 337/400						
160/160 [====================================	_	0s	694us/step	_	loss:	0.6982
Epoch 338/400			, <sub>-</sub>			
160/160 [====================================	_	0s	716us/step	_	loss:	0.6994
Epoch 339/400			1			
160/160 [====================================	_	0s	736us/step	_	loss:	0.6983
Epoch 340/400			· · · · · · · · · · · · · · · · · · ·			
160/160 [====================================	_	0s	748us/step	_	loss:	0.6989
Epoch 341/400			·,			
160/160 [====================================	_	0s	725us/step	_	loss:	0.6991
Epoch 342/400			,			
160/160 [====================================	_	0s	703us/step	_	loss:	0.6970
Epoch 343/400			, , , , , , , , , , , , , , , , , , ,			
160/160 [====================================	_	0s	714us/step	_	loss:	0.6991
Epoch 344/400			·			
160/160 [====================================	_	0s	746us/step	_	loss:	0.6984
Epoch 345/400			·,			
160/160 [====================================	_	0s	774us/step	_	loss:	0.6969
Epoch 346/400			· · · · · · · · · · · · · · · · · · ·			
160/160 [====================================	_	0s	724us/step	_	loss:	0.6998
Epoch 347/400		0.0	1 а с , с с с р			
160/160 [====================================	_	0s	700us/step	_	loss:	0.6990
Epoch 348/400		Ů.	rough, boop		TODE.	0.0000
160/160 [====================================	_	0s	733us/step	_	loss:	0.6999
Epoch 349/400		0.0	, 00 dz, 20 cp			
160/160 [====================================	_	0s	728us/step	_	loss:	0.6986
Epoch 350/400		- ~	, гор			
160/160 [====================================	_	0s	742us/step	_	loss:	0.6979
, = L		٠.	22, 200р			

Enach 251/400
Epoch 351/400 160/160 [====================================
Epoch 352/400
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Epoch 353/400
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Epoch 354/400
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Epoch 355/400
160/160 [====================================
Epoch 356/400
160/160 [====================================
Epoch 357/400
160/160 [====================================
Epoch 358/400
160/160 [============ ] - Os 696us/step - loss: 0.6978
Epoch 359/400
160/160 [========== ] - Os 721us/step - loss: 0.6908
Epoch 360/400
160/160 [=========== ] - Os 703us/step - loss: 0.6995
Epoch 361/400
160/160 [============ ] - Os 714us/step - loss: 0.6993
Epoch 362/400
160/160 [============ ] - Os 776us/step - loss: 0.6979
Epoch 363/400
160/160 [=========== ] - Os 747us/step - loss: 0.6998
Epoch 364/400
160/160 [=========== ] - Os 767us/step - loss: 0.6994
Epoch 365/400
160/160 [=========== ] - Os 695us/step - loss: 0.6997
Epoch 366/400
160/160 [=========== ] - Os 698us/step - loss: 0.6999
Epoch 367/400
160/160 [============ ] - Os 756us/step - loss: 0.6988
Epoch 368/400
160/160 [=========== ] - Os 762us/step - loss: 0.6987
Epoch 369/400
160/160 [============= ] - Os 718us/step - loss: 0.6997
Epoch 370/400
160/160 [====================================
Epoch 371/400
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Epoch 372/400
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Epoch 373/400
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Epoch 374/400
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Epoch 375/400
160/160 [====================================
Epoch 376/400
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Epoch 377/400
160/160 [====================================
Epoch 378/400
160/160 [============= ] - Os 714us/step - loss: 0.6989
Epoch 379/400
160/160 [====================================
Epoch 380/400
160/160 [====================================
Epoch 381/400
160/160 [============= ] - Os 725us/step - loss: 0.6983
Epoch 382/400
160/160 [====================================
Epoch 383/400
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Epoch 384/400
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Epoch 385/400
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Epoch 386/400
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Epoch 390/400
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Epoch 391/400
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Epoch 392/400
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Epoch 393/400
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Epoch 394/400
160/160 [============ ] - Os 718us/step - loss: 0.6984
Epoch 395/400
160/160 [====================================
Epoch 396/400
160/160 [====================================
Epoch 397/400
160/160 [====================================
Epoch 398/400
160/160 [============= ] - Os 692us/step - loss: 0.6994

Epoch 399/400	
160/160 [====================================	1 6080
Epoch 400/400	7.0300
160/160 [====================================	0 6061
160/160 [====================================	7.0901
Epoch 1/400	
160/160 [====================================	2002
Epoch 2/400	1990
160/160 [====================================	0 6075
Epoch 3/400	7.0913
160/160 [====================================	1 6062
Epoch 4/400	7.0902
160/160 [====================================	0 6056
Epoch 5/400	7.0950
160/160 [====================================	0 6050
Epoch 6/400	7.0950
160/160 [====================================	0 6044
<del>-</del>	7.0944
Epoch 7/400	0 6041
160/160 [====================================	7.6941
Epoch 8/400 160/160 [====================================	0 6040
	J.6942
Epoch 9/400 160/160 [====================================	0 6040
<del>-</del>	7.6940
Epoch 10/400 160/160 [====================================	2 6020
	7.6939
Epoch 11/400 160/160 [====================================	2 6020
_	7.6939
Epoch 12/400 160/160 [====================================	2 6020
_	7.0939
Epoch 13/400 160/160 [====================================	0 6020
<del>-</del>	7.6939
Epoch 14/400	0 6027
160/160 [====================================	).6931
Epoch 15/400 160/160 [====================================	2 6020
	7.6939
Epoch 16/400 160/160 [====================================	1 6020
Epoch 17/400	7.0930
160/160 [====================================	0 6020
Epoch 18/400	7.0930
160/160 [====================================	0 6020
_	7.0939
Epoch 19/400 160/160 [====================================	0 6020
	7.6939
Epoch 20/400 160/160 [====================================	1 6020
<del>-</del>	7.0938
Epoch 21/400 160/160 [====================================	1 6020
<del>-</del>	7.0333
Epoch 22/400	

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Epoch 23/400
160/160 [============] - Os 798us/step - loss: 0.6938
Epoch 24/400
Epoch 25/400
160/160 [============= ] - Os 843us/step - loss: 0.6939
Epoch 26/400
160/160 [============= ] - Os 860us/step - loss: 0.6940
Epoch 27/400
160/160 [============ ] - Os 812us/step - loss: 0.6938
Epoch 28/400
Epoch 29/400
Epoch 30/400
Epoch 31/400
160/160 [============= ] - Os 868us/step - loss: 0.6939
Epoch 32/400
Epoch 33/400
Epoch 34/400
Epoch 35/400
160/160 [============== ] - Os 863us/step - loss: 0.6938
Epoch 36/400
Epoch 37/400
Epoch 38/400
160/160 [============ ] - Os 837us/step - loss: 0.6940
Epoch 39/400
160/160 [============= ] - Os 868us/step - loss: 0.6939
Epoch 40/400
160/160 [============= ] - 0s 866us/step - loss: 0.6938
Epoch 41/400
Epoch 42/400
Epoch 43/400
Epoch 44/400
Epoch 45/400
160/160 [============== ] - Os 844us/step - loss: 0.6939
Epoch 46/400
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Epoch 47/400
160/160 [============= ] - Os 806us/step - loss: 0.6939
Epoch 48/400
Epoch 49/400
160/160 [============= ] - 0s 844us/step - loss: 0.6938
Epoch 50/400
Epoch 51/400
Epoch 52/400
Epoch 53/400
160/160 [============= ] - 0s 857us/step - loss: 0.6938
Epoch 54/400
160/160 [============= ] - Os 810us/step - loss: 0.6939
Epoch 55/400
160/160 [============= ] - Os 817us/step - loss: 0.6939
Epoch 56/400
Epoch 57/400
160/160 [============= ] - 0s 806us/step - loss: 0.6939
Epoch 58/400
Epoch 59/400
Epoch 60/400
Epoch 61/400
Epoch 62/400
160/160 [============ ] - Os 851us/step - loss: 0.6939
Epoch 63/400
160/160 [============= ] - 0s 813us/step - loss: 0.6939
Epoch 64/400
160/160 [============= ] - 0s 927us/step - loss: 0.6938
Epoch 65/400
Epoch 66/400
160/160 [============== ] - 0s 812us/step - loss: 0.6938
Epoch 67/400
Epoch 68/400
160/160 [============= ] - 0s 814us/step - loss: 0.6939
Epoch 69/400
160/160 [============== ] - Os 866us/step - loss: 0.6937
Epoch 70/400
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Epoch 71/400
160/160 [============= ] - Os 850us/step - loss: 0.6939
Epoch 72/400
Epoch 73/400
160/160 [============= ] - 0s 862us/step - loss: 0.6938
Epoch 74/400
160/160 [============= ] - 0s 776us/step - loss: 0.6938
Epoch 75/400
160/160 [============= ] - Os 776us/step - loss: 0.6937
Epoch 76/400
Epoch 77/400
160/160 [============= ] - Os 860us/step - loss: 0.6938
Epoch 78/400
160/160 [============= ] - 0s 795us/step - loss: 0.6938
Epoch 79/400
160/160 [============= ] - Os 815us/step - loss: 0.6937
Epoch 80/400
Epoch 81/400
Epoch 82/400
Epoch 83/400
Epoch 84/400
Epoch 85/400
Epoch 86/400
Epoch 87/400
160/160 [============= ] - 0s 899us/step - loss: 0.6938
Epoch 88/400
Epoch 89/400
Epoch 90/400
160/160 [============== ] - 0s 892us/step - loss: 0.6938
Epoch 91/400
160/160 [============== ] - Os 810us/step - loss: 0.6938
Epoch 92/400
Epoch 93/400
160/160 [============== ] - Os 825us/step - loss: 0.6939
Epoch 94/400
```

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160/160 [============== ] - Os 821us/step - loss: 0.6938
Epoch 95/400
160/160 [============= ] - 0s 867us/step - loss: 0.6934
Epoch 96/400
Epoch 97/400
Epoch 98/400
160/160 [============= ] - 0s 842us/step - loss: 0.6938
Epoch 99/400
Epoch 100/400
Epoch 101/400
160/160 [============= ] - Os 834us/step - loss: 0.6939
Epoch 102/400
160/160 [============= ] - 0s 846us/step - loss: 0.6938
Epoch 103/400
160/160 [============= ] - Os 849us/step - loss: 0.6936
Epoch 104/400
Epoch 105/400
160/160 [============= ] - 0s 861us/step - loss: 0.6938
Epoch 106/400
160/160 [============= ] - 0s 871us/step - loss: 0.6938
Epoch 107/400
160/160 [============== ] - Os 831us/step - loss: 0.6936
Epoch 108/400
160/160 [============== ] - Os 841us/step - loss: 0.6939
Epoch 109/400
160/160 [============== ] - Os 839us/step - loss: 0.6938
Epoch 110/400
160/160 [============= ] - 0s 834us/step - loss: 0.6938
Epoch 111/400
160/160 [============= ] - 0s 809us/step - loss: 0.6938
Epoch 112/400
160/160 [============= ] - Os 838us/step - loss: 0.6938
Epoch 113/400
160/160 [============== ] - 0s 823us/step - loss: 0.6938
Epoch 114/400
160/160 [============== ] - Os 868us/step - loss: 0.6938
Epoch 115/400
160/160 [============= ] - Os 840us/step - loss: 0.6938
Epoch 116/400
160/160 [============= ] - 0s 855us/step - loss: 0.6938
Epoch 117/400
160/160 [=============== ] - Os 881us/step - loss: 0.6935
Epoch 118/400
```

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160/160 [============== ] - Os 828us/step - loss: 0.6938
Epoch 119/400
160/160 [============= ] - 0s 801us/step - loss: 0.6938
Epoch 120/400
160/160 [============= ] - 0s 767us/step - loss: 0.6938
Epoch 121/400
160/160 [============= ] - 0s 822us/step - loss: 0.6935
Epoch 122/400
160/160 [============= ] - 0s 827us/step - loss: 0.6938
Epoch 123/400
Epoch 124/400
Epoch 125/400
160/160 [============= ] - 0s 828us/step - loss: 0.6939
Epoch 126/400
160/160 [============= ] - 0s 843us/step - loss: 0.6939
Epoch 127/400
160/160 [============= ] - Os 845us/step - loss: 0.6936
Epoch 128/400
Epoch 129/400
160/160 [============= ] - 0s 817us/step - loss: 0.6938
Epoch 130/400
Epoch 131/400
Epoch 132/400
Epoch 133/400
Epoch 134/400
Epoch 135/400
Epoch 136/400
160/160 [============== ] - Os 855us/step - loss: 0.6938
Epoch 137/400
Epoch 138/400
Epoch 139/400
160/160 [============= ] - 0s 783us/step - loss: 0.6938
Epoch 140/400
160/160 [============= ] - 0s 792us/step - loss: 0.6938
Epoch 141/400
160/160 [============== ] - Os 846us/step - loss: 0.6938
Epoch 142/400
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Epoch 143/400
160/160 [============= ] - Os 812us/step - loss: 0.6937
Epoch 144/400
160/160 [============= ] - 0s 852us/step - loss: 0.6938
Epoch 145/400
Epoch 146/400
Epoch 147/400
Epoch 148/400
Epoch 149/400
160/160 [============= ] - Os 801us/step - loss: 0.6936
Epoch 150/400
Epoch 151/400
160/160 [============ ] - Os 836us/step - loss: 0.6936
Epoch 152/400
Epoch 153/400
160/160 [============= ] - 0s 885us/step - loss: 0.6938
Epoch 154/400
160/160 [============= ] - Os 880us/step - loss: 0.6938
Epoch 155/400
160/160 [============== ] - Os 856us/step - loss: 0.6938
Epoch 156/400
Epoch 157/400
Epoch 158/400
160/160 [============= ] - Os 830us/step - loss: 0.6938
Epoch 159/400
160/160 [============= ] - 0s 871us/step - loss: 0.6936
Epoch 160/400
160/160 [============= ] - 0s 883us/step - loss: 0.6938
Epoch 161/400
Epoch 162/400
Epoch 163/400
Epoch 164/400
Epoch 165/400
160/160 [============== ] - Os 873us/step - loss: 0.6937
Epoch 166/400
```

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Epoch 167/400
160/160 [============= ] - Os 841us/step - loss: 0.6936
Epoch 168/400
160/160 [============= ] - Os 810us/step - loss: 0.6935
Epoch 169/400
160/160 [============= ] - 0s 806us/step - loss: 0.6934
Epoch 170/400
160/160 [============= ] - 0s 853us/step - loss: 0.6934
Epoch 171/400
Epoch 172/400
Epoch 173/400
160/160 [============= ] - Os 804us/step - loss: 0.6936
Epoch 174/400
Epoch 175/400
160/160 [============= ] - Os 901us/step - loss: 0.6935
Epoch 176/400
160/160 [============= ] - 0s 836us/step - loss: 0.6935
Epoch 177/400
160/160 [============= ] - 0s 823us/step - loss: 0.6934
Epoch 178/400
160/160 [============= ] - 0s 824us/step - loss: 0.6933
Epoch 179/400
160/160 [============== ] - 0s 788us/step - loss: 0.6932
Epoch 180/400
Epoch 181/400
Epoch 182/400
160/160 [============= ] - 0s 829us/step - loss: 0.6933
Epoch 183/400
160/160 [============= ] - Os 833us/step - loss: 0.6935
Epoch 184/400
160/160 [============= ] - 0s 811us/step - loss: 0.6934
Epoch 185/400
160/160 [============== ] - Os 860us/step - loss: 0.6932
Epoch 186/400
160/160 [============== ] - 0s 838us/step - loss: 0.6934
Epoch 187/400
160/160 [============= ] - 0s 862us/step - loss: 0.6933
Epoch 188/400
160/160 [============= ] - 0s 846us/step - loss: 0.6928
Epoch 189/400
160/160 [============== ] - Os 825us/step - loss: 0.6932
Epoch 190/400
```

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Epoch 191/400
160/160 [============= ] - 0s 844us/step - loss: 0.6932
Epoch 192/400
160/160 [============= ] - 0s 822us/step - loss: 0.6928
Epoch 193/400
160/160 [============= ] - Os 831us/step - loss: 0.6930
Epoch 194/400
Epoch 195/400
160/160 [============= ] - Os 846us/step - loss: 0.6930
Epoch 196/400
Epoch 197/400
160/160 [============= ] - 0s 798us/step - loss: 0.6930
Epoch 198/400
160/160 [============= ] - Os 830us/step - loss: 0.6928
Epoch 199/400
160/160 [============ ] - Os 802us/step - loss: 0.6928
Epoch 200/400
160/160 [=============== ] - Os 827us/step - loss: 0.6928
Epoch 201/400
Epoch 202/400
Epoch 203/400
160/160 [============== ] - Os 840us/step - loss: 0.6923
Epoch 204/400
Epoch 205/400
Epoch 206/400
Epoch 207/400
160/160 [============= ] - 0s 829us/step - loss: 0.6923
Epoch 208/400
160/160 [============= ] - 0s 815us/step - loss: 0.6924
Epoch 209/400
160/160 [============== ] - 0s 841us/step - loss: 0.6922
Epoch 210/400
Epoch 211/400
160/160 [============== ] - Os 812us/step - loss: 0.6920
Epoch 212/400
160/160 [============= ] - Os 832us/step - loss: 0.6919
Epoch 213/400
160/160 [============== ] - Os 832us/step - loss: 0.6918
Epoch 214/400
```

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Epoch 215/400
160/160 [============= ] - Os 837us/step - loss: 0.6916
Epoch 216/400
160/160 [============= ] - 0s 831us/step - loss: 0.6915
Epoch 217/400
160/160 [============= ] - 0s 857us/step - loss: 0.6913
Epoch 218/400
160/160 [============= ] - 0s 828us/step - loss: 0.6912
Epoch 219/400
160/160 [============= ] - Os 833us/step - loss: 0.6910
Epoch 220/400
Epoch 221/400
160/160 [============= ] - 0s 832us/step - loss: 0.6908
Epoch 222/400
Epoch 223/400
160/160 [============ ] - Os 839us/step - loss: 0.6903
Epoch 224/400
160/160 [============= ] - 0s 837us/step - loss: 0.6902
Epoch 225/400
Epoch 226/400
160/160 [============= ] - 0s 857us/step - loss: 0.6898
Epoch 227/400
160/160 [============== ] - Os 830us/step - loss: 0.6894
Epoch 228/400
Epoch 229/400
Epoch 230/400
160/160 [============ ] - Os 849us/step - loss: 0.6887
Epoch 231/400
160/160 [============= ] - 0s 923us/step - loss: 0.6883
Epoch 232/400
160/160 [============= ] - 0s 878us/step - loss: 0.6878
Epoch 233/400
Epoch 234/400
160/160 [============== ] - 0s 884us/step - loss: 0.6873
Epoch 235/400
160/160 [============= ] - 0s 870us/step - loss: 0.6869
Epoch 236/400
160/160 [============= ] - 0s 847us/step - loss: 0.6864
Epoch 237/400
160/160 [============== ] - Os 825us/step - loss: 0.6860
Epoch 238/400
```

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Epoch 239/400
160/160 [============= ] - 0s 856us/step - loss: 0.6849
Epoch 240/400
160/160 [============= ] - 0s 873us/step - loss: 0.6844
Epoch 241/400
Epoch 242/400
Epoch 243/400
Epoch 244/400
Epoch 245/400
160/160 [============= ] - 0s 808us/step - loss: 0.6809
Epoch 246/400
Epoch 247/400
160/160 [============= ] - Os 846us/step - loss: 0.6786
Epoch 248/400
160/160 [============= ] - 0s 822us/step - loss: 0.6783
Epoch 249/400
160/160 [============= ] - 0s 851us/step - loss: 0.6768
Epoch 250/400
Epoch 251/400
160/160 [============== ] - Os 862us/step - loss: 0.6753
Epoch 252/400
160/160 [============== ] - 0s 798us/step - loss: 0.6742
Epoch 253/400
Epoch 254/400
160/160 [=========== ] - Os 841us/step - loss: 0.6718
Epoch 255/400
160/160 [============= ] - 0s 809us/step - loss: 0.6705
Epoch 256/400
160/160 [============= ] - 0s 826us/step - loss: 0.6690
Epoch 257/400
Epoch 258/400
160/160 [============== ] - Os 841us/step - loss: 0.6660
Epoch 259/400
160/160 [============= ] - 0s 876us/step - loss: 0.6646
Epoch 260/400
160/160 [============= ] - Os 852us/step - loss: 0.6630
Epoch 261/400
160/160 [============== ] - 0s 821us/step - loss: 0.6613
Epoch 262/400
```

160/160 [=======]	_	0s	829us/step	_	loss:	0.6595
Epoch 263/400			_			
160/160 [======]	-	0s	820us/step	-	loss:	0.6574
Epoch 264/400						
160/160 [=======]	-	0s	863us/step	-	loss:	0.6555
Epoch 265/400						
160/160 [=======]	-	0s	832us/step	-	loss:	0.6532
Epoch 266/400		_			_	
160/160 [====================================	-	0s	839us/step	-	loss:	0.6508
Epoch 267/400		^	0.05 / .		-	0.0400
160/160 [====================================	_	Us	865us/step	_	loss:	0.6486
Epoch 268/400		٥-	051/		1	0.6455
160/160 [===========] Epoch 269/400	_	US	oblus/step	_	loss:	0.0455
160/160 [====================================	_	۸a	920ug/gton	_	loggi	0 6/3/
Epoch 270/400		US	320us/scep		TOSS.	0.0404
160/160 [====================================	_	0s	796us/sten	_	loss	0 6406
Epoch 271/400		V.D	rous, susp		TODD.	0.0100
160/160 [====================================	_	0s	819us/step	_	loss:	0.6375
Epoch 272/400			, <sub>F</sub>			
160/160 [====================================	_	0s	839us/step	_	loss:	0.6344
Epoch 273/400						
160/160 [====================================	-	0s	843us/step	_	loss:	0.6314
Epoch 274/400			_			
160/160 [======]	-	0s	795us/step	-	loss:	0.6280
Epoch 275/400						
160/160 [======]	-	0s	842us/step	-	loss:	0.6242
Epoch 276/400						
160/160 [======]	-	0s	827us/step	-	loss:	0.6205
Epoch 277/400			_			
160/160 [====================================	-	0s	858us/step	-	loss:	0.6168
Epoch 278/400		_	077 /		_	
160/160 [====================================	-	0s	877us/step	_	loss:	0.6126
Epoch 279/400		0 -	007/		7	0 6000
160/160 [====================================	-	US	82/us/step	_	loss:	0.6083
Epoch 280/400 160/160 [====================================	_	٥	947ug /g+on		1000.	0 6020
Epoch 281/400		US	04/us/step	_	1088.	0.0036
160/160 [====================================	_	۸s	836119/sten	_	1099.	0 5989
Epoch 282/400		OB	осоць, в сер		TOBB.	0.0000
160/160 [====================================	_	0s	795us/step	_	loss:	0.5932
Epoch 283/400			. ссад, деср			0.000
160/160 [====================================	_	0s	828us/step	_	loss:	0.5876
Epoch 284/400			1			
160/160 [====================================	_	0s	833us/step	_	loss:	0.5816
Epoch 285/400			•			
160/160 [====================================	-	0s	844us/step	-	loss:	0.5749
Epoch 286/400						

160/160 [=======]	_	0s	827us/step	_	loss:	0.5677
Epoch 287/400			. 1			
160/160 [=======]	-	0s	824us/step	-	loss:	0.5597
Epoch 288/400						
160/160 [======]	_	0s	800us/step	-	loss:	0.5520
Epoch 289/400						
160/160 [======]	-	0s	865us/step	-	loss:	0.5440
Epoch 290/400						
160/160 [=======]	-	0s	844us/step	-	loss:	0.5353
Epoch 291/400						
160/160 [=======]	-	0s	887us/step	-	loss:	0.5262
Epoch 292/400						
160/160 [====================================	-	0s	801us/step	-	loss:	0.5165
Epoch 293/400		_			_	
160/160 [====================================	-	0s	841us/step	-	loss:	0.5071
Epoch 294/400		_	000 /		_	
160/160 [====================================	-	0s	829us/step	-	loss:	0.4977
Epoch 295/400		^	000 / .		-	0 4074
160/160 [====================================	_	Us	803us/step	_	loss:	0.4874
Epoch 296/400		0 -	040/		7	0 4707
160/160 [====================================	_	US	840us/step	_	loss:	0.4/8/
Epoch 297/400 160/160 [====================================		٥-	070		7	0 4700
	_	US	9/2us/step	_	loss:	0.4702
Epoch 298/400 160/160 [====================================	_	٥٥	975ug /g+op	_	1000.	0 4600
Epoch 299/400		US	orous/step		TOSS.	0.4000
160/160 [====================================	_	۸a	959ug/g+op	_	loggi	0 4522
Epoch 300/400		05	osous/scep		TOSS.	0.4022
160/160 [====================================	_	Λe	87411g/gten	_	loggi	0 4440
Epoch 301/400		V.S	O/ tub/ b cep		TOSS.	0.1110
160/160 [====================================	_	٥s	862us/sten	_	loss	0 4360
Epoch 302/400		OB	00245/500p		TOBB.	0.1000
160/160 [====================================	_	0s	789us/sten	_	loss:	0.4282
Epoch 303/400		Ü	, cods, scop		1000.	0.1202
160/160 [====================================	_	0s	838us/step	_	loss:	0.4217
Epoch 304/400			cccas, scop			
160/160 [====================================	_	0s	863us/step	_	loss:	0.4147
Epoch 305/400			1			
160/160 [====================================	_	0s	816us/step	_	loss:	0.4084
Epoch 306/400						
160/160 [====================================	_	0s	853us/step	-	loss:	0.4030
Epoch 307/400			-			
160/160 [====================================	_	0s	741us/step	-	loss:	0.3965
Epoch 308/400			-			
160/160 [====================================	-	0s	833us/step	-	loss:	0.3928
Epoch 309/400			_			
160/160 [=======]	-	0s	843us/step	-	loss:	0.3879
Epoch 310/400						

160/160 [=======]	_	0s	806us/step	_	loss:	0.3837
Epoch 311/400			_			
160/160 [======]	-	0s	801us/step	-	loss:	0.3795
Epoch 312/400						
160/160 [======]	-	0s	809us/step	-	loss:	0.3750
Epoch 313/400			_			
160/160 [=======]	-	0s	843us/step	-	loss:	0.3715
Epoch 314/400		_			_	
160/160 [====================================	-	0s	841us/step	-	loss:	0.3683
Epoch 315/400		•	0.10 / .		-	0.0050
160/160 [====================================	_	Us	846us/step	_	loss:	0.3658
Epoch 316/400 160/160 [====================================		Λ-	051/		7	0 2622
Epoch 317/400	_	US	oblus/step	_	loss:	0.3633
160/160 [====================================	_	Λα	93/11g/gton	_	loggi	0.3600
Epoch 318/400		OS	OO-lus/ step		TOSS.	0.3000
160/160 [====================================	_	0s	826us/sten	_	loss	0 3581
Epoch 319/400		Ü	ozoub, btop		TODD.	0.0001
160/160 [====================================	_	0s	837us/step	_	loss:	0.3561
Epoch 320/400						
160/160 [====================================	_	0s	803us/step	_	loss:	0.3539
Epoch 321/400						
160/160 [====================================	_	0s	816us/step	_	loss:	0.3531
Epoch 322/400			_			
160/160 [======]	-	0s	954us/step	-	loss:	0.3511
Epoch 323/400						
160/160 [=======]	-	0s	913us/step	-	loss:	0.3505
Epoch 324/400						
160/160 [======]	-	0s	858us/step	-	loss:	0.3488
Epoch 325/400			_			
160/160 [====================================	-	0s	890us/step	-	loss:	0.3476
Epoch 326/400		_	0.05 / .		_	
160/160 [====================================	_	0s	865us/step	_	loss:	0.3466
Epoch 327/400		ο-	020/		7	0 0457
160/160 [====================================	_	US	830us/step	_	loss:	0.3457
Epoch 328/400 160/160 [====================================	_	٥٥	940ug /gtop		1000.	0 2//2
Epoch 329/400		US	049us/step	_	TOSS.	0.3443
160/160 [====================================	_	۸q	839119/sten	_	1099.	0 3447
Epoch 330/400		OB	оозив, в сер		TOBB.	0.0117
160/160 [====================================	_	0s	877us/step	_	loss:	0.3435
Epoch 331/400			oaz, zeep			0.0100
160/160 [====================================	_	0s	886us/step	_	loss:	0.3432
Epoch 332/400			, · · · · · · · · · · · · · · · · ·			
160/160 [====================================	_	0s	801us/step	_	loss:	0.3427
Epoch 333/400			•			
160/160 [====================================	-	0s	827us/step	-	loss:	0.3428
Epoch 334/400						

160/160 [=======]	_	0s	828us/step	_	loss:	0.3423
Epoch 335/400			_			
160/160 [=======]	-	0s	866us/step	-	loss:	0.3420
Epoch 336/400						
160/160 [=======]	-	0s	821us/step	-	loss:	0.3408
Epoch 337/400						
160/160 [============]	-	0s	884us/step	-	loss:	0.3410
Epoch 338/400		0 -	000/		7	0 0444
160/160 [====================================	_	US	803us/step	_	loss:	0.3411
Epoch 339/400 160/160 [====================================	_	۸a	77/11g/gton	_	loggi	0 3/07
Epoch 340/400		US	// tus/scep		TOSS.	0.0407
160/160 [====================================	_	0s	805us/step	_	loss:	0.3407
Epoch 341/400		O.D	cocab, brop		TODD.	0.0101
160/160 [====================================	_	0s	849us/step	_	loss:	0.3397
Epoch 342/400			1			
160/160 [====================================	_	0s	829us/step	_	loss:	0.3409
Epoch 343/400			_			
160/160 [=======]	-	0s	876us/step	_	loss:	0.3399
Epoch 344/400						
160/160 [=======]	-	0s	866us/step	-	loss:	0.3404
Epoch 345/400						
160/160 [=======]	-	0s	835us/step	-	loss:	0.3401
Epoch 346/400			_			
160/160 [============]	-	0s	836us/step	-	loss:	0.3405
Epoch 347/400		_			_	
160/160 [====================================	-	0s	816us/step	-	loss:	0.3400
Epoch 348/400		^	004 / 1		-	0 0400
160/160 [====================================	_	Us	921us/step	_	loss:	0.3403
Epoch 349/400 160/160 [====================================	_	٥٥	920ug /g+op		1000.	0 2406
Epoch 350/400		US	osaus/step		TOSS.	0.3400
160/160 [====================================	_	۸s	817119/sten	_	1099.	0 3388
Epoch 351/400		V.D	orrus, stop		TODD.	0.0000
160/160 [====================================	_	0s	806us/step	_	loss:	0.3402
Epoch 352/400			,			
160/160 [====================================	_	0s	786us/step	_	loss:	0.3398
Epoch 353/400			•			
160/160 [============]	-	0s	833us/step	-	loss:	0.3406
Epoch 354/400						
160/160 [======]	-	0s	870us/step	-	loss:	0.3391
Epoch 355/400						
160/160 [=======]	-	0s	873us/step	-	loss:	0.3404
Epoch 356/400						
160/160 [====================================	-	0s	858us/step	-	loss:	0.3403
Epoch 357/400		_	'		_	
160/160 [====================================	-	0s	850us/step	-	loss:	0.3408
Epoch 358/400						

160/160 [=======]	_	0s	862us/step	_	loss:	0.3401
Epoch 359/400			_			
160/160 [======]	-	0s	921us/step	-	loss:	0.3398
Epoch 360/400						
160/160 [=======]	-	0s	821us/step	-	loss:	0.3413
Epoch 361/400		_			_	
160/160 [====================================	-	0s	861us/step	-	loss:	0.3410
Epoch 362/400		0 -	070/		7	0.2406
160/160 [====================================	-	US	8/9us/step	_	loss:	0.3406
Epoch 363/400 160/160 [====================================		٥٩	96Eug /g+on		1	0 2406
Epoch 364/400		US	oosus/step		TOSS.	0.3400
160/160 [====================================	_	۸e	83911g/gtan	_	loggi	0 3408
Epoch 365/400		0B	oodus, step		1055.	0.0400
160/160 [====================================	_	0s	831us/step	_	loss:	0.3404
Epoch 366/400			001u2, 200p			0.0101
160/160 [====================================	_	0s	818us/step	_	loss:	0.3415
Epoch 367/400			. 1			
160/160 [====================================	_	0s	836us/step	_	loss:	0.3409
Epoch 368/400			-			
160/160 [=======]	-	0s	831us/step	-	loss:	0.3418
Epoch 369/400						
160/160 [============]	-	0s	845us/step	-	loss:	0.3412
Epoch 370/400						
160/160 [=======]	-	0s	886us/step	-	loss:	0.3406
Epoch 371/400						
160/160 [=======]	-	0s	891us/step	-	loss:	0.3416
Epoch 372/400		_			_	
160/160 [====================================	-	0s	814us/step	-	loss:	0.3405
Epoch 373/400		^	000 / 1		-	0 0445
160/160 [====================================	_	Us	886us/step	_	loss:	0.3415
Epoch 374/400 160/160 [====================================		٥٩	002119/9+00		1	0 2/10
Epoch 375/400	_	US	oosus/step	_	TOSS:	0.3419
160/160 [====================================	_	۸e	87911g/gtan	_	loggi	0 3419
Epoch 376/400		US	0/2us/scep		TOSS.	0.0413
160/160 [====================================	_	0s	867us/sten	_	loss:	0.3429
Epoch 377/400			00. a2, 200p			0.0120
160/160 [====================================	_	0s	838us/step	_	loss:	0.3420
Epoch 378/400			. 1			
160/160 [====================================	_	0s	874us/step	-	loss:	0.3422
Epoch 379/400			_			
160/160 [=======]	-	0s	833us/step	-	loss:	0.3424
Epoch 380/400						
160/160 [========]	-	0s	833us/step	-	loss:	0.3428
Epoch 381/400						
160/160 [=======]	-	0s	809us/step	-	loss:	0.3421
Epoch 382/400						

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Epoch 383/400
Epoch 384/400
Epoch 385/400
160/160 [============= ] - Os 840us/step - loss: 0.3420
Epoch 386/400
Epoch 387/400
Epoch 388/400
Epoch 389/400
160/160 [============= ] - Os 859us/step - loss: 0.3430
Epoch 390/400
160/160 [============= ] - Os 835us/step - loss: 0.3418
Epoch 391/400
160/160 [============= ] - Os 857us/step - loss: 0.3425
Epoch 392/400
160/160 [============== ] - Os 877us/step - loss: 0.3429
Epoch 393/400
Epoch 394/400
Epoch 395/400
Epoch 396/400
Epoch 397/400
Epoch 398/400
Epoch 399/400
160/160 [============= ] - 0s 809us/step - loss: 0.3428
Epoch 400/400
160/160 [========= ] - Os 2ms/step
Epoch 1/400
160/160 [=========== ] - 1s 5ms/step - loss: 0.7318
Epoch 2/400
160/160 [=============== ] - Os 1ms/step - loss: 0.7121
Epoch 3/400
160/160 [============== ] - Os 1ms/step - loss: 0.7030
Epoch 4/400
160/160 [============ ] - Os 975us/step - loss: 0.6979
Epoch 5/400
160/160 [============ ] - Os 993us/step - loss: 0.6960
```

Epoch 6/400			
160/160 [====================================	_	0s	954us/step - loss: 0.6950
Epoch 7/400			•
160/160 [====================================	_	0s	950us/step - loss: 0.6946
Epoch 8/400			-
160/160 [====================================	_	0s	944us/step - loss: 0.6943
Epoch 9/400			-
160/160 [====================================	_	0s	989us/step - loss: 0.6942
Epoch 10/400			-
160/160 [======]	-	0s	985us/step - loss: 0.6944
Epoch 11/400			
160/160 [======]	-	0s	958us/step - loss: 0.6941
Epoch 12/400			
160/160 [======]	-	0s	933us/step - loss: 0.6942
Epoch 13/400			
160/160 [======]	-	0s	974us/step - loss: 0.6943
Epoch 14/400			
160/160 [======]	-	0s	951us/step - loss: 0.6940
Epoch 15/400			
160/160 [=======]	-	0s	950us/step - loss: 0.6942
Epoch 16/400			
160/160 [=======]	-	0s	986us/step - loss: 0.6946
Epoch 17/400			
160/160 [=======]	-	0s	929us/step - loss: 0.6944
Epoch 18/400			
160/160 [=========]	_	0s	950us/step - loss: 0.6942
Epoch 19/400			-
160/160 [============]	_	0s	989us/step - loss: 0.6943
Epoch 20/400			
160/160 [=======]	_	0s	1ms/step - loss: 0.6943
Epoch 21/400			
160/160 [======]	-	0s	1ms/step - loss: 0.6943
Epoch 22/400			
160/160 [======]	-	0s	962us/step - loss: 0.6944
Epoch 23/400			
160/160 [======]	-	0s	937us/step - loss: 0.6941
Epoch 24/400			
160/160 [======]	-	0s	966us/step - loss: 0.6942
Epoch 25/400			
160/160 [=======]	-	0s	997us/step - loss: 0.6941
Epoch 26/400			
160/160 [======]	-	0s	1ms/step - loss: 0.6943
Epoch 27/400			
160/160 [======]	-	0s	990us/step - loss: 0.6939
Epoch 28/400			
160/160 [======]	-	0s	939us/step - loss: 0.6942
Epoch 29/400			
160/160 [===========]	-	0s	971us/step - loss: 0.6942

Epoch 30/400						
160/160 [==========]	-	0s	961us/step	-	loss:	0.6945
Epoch 31/400						
160/160 [=======]	-	0s	995us/step	_	loss:	0.6941
Epoch 32/400						
160/160 [=======]	-	0s	1ms/step -	10	ss: 0	. 6943
Epoch 33/400						
160/160 [=======]	-	0s	918us/step	-	loss:	0.6943
Epoch 34/400						
160/160 [===========]	-	0s	931us/step	-	loss:	0.6939
Epoch 35/400						
160/160 [=======]	-	0s	917us/step	-	loss:	0.6942
Epoch 36/400						
160/160 [=======]	-	0s	951us/step	-	loss:	0.6943
Epoch 37/400						
160/160 [=======]	-	0s	931us/step	-	loss:	0.6941
Epoch 38/400						
160/160 [=======]	-	0s	965us/step	-	loss:	0.6940
Epoch 39/400						
160/160 [=======]	-	0s	940us/step	-	loss:	0.6943
Epoch 40/400						
160/160 [=======]	-	0s	921us/step	-	loss:	0.6942
Epoch 41/400						
160/160 [=======]	-	0s	936us/step	-	loss:	0.6944
Epoch 42/400						
160/160 [=======]	-	0s	937us/step	-	loss:	0.6944
Epoch 43/400						
160/160 [=======]	-	0s	923us/step	-	loss:	0.6941
Epoch 44/400						
160/160 [=======]	-	0s	959us/step	-	loss:	0.6945
Epoch 45/400						
160/160 [======]	-	0s	934us/step	-	loss:	0.6938
Epoch 46/400						
160/160 [======]	-	0s	919us/step	-	loss:	0.6942
Epoch 47/400						
160/160 [======]	-	0s	930us/step	-	loss:	0.6941
Epoch 48/400			_			
160/160 [=======]	-	0s	952us/step	-	loss:	0.6942
Epoch 49/400						
160/160 [====================================	-	0s	924us/step	-	loss:	0.6941
Epoch 50/400			_			
160/160 [=======]	-	0s	935us/step	_	loss:	0.6940
Epoch 51/400			_			
160/160 [=======]	-	0s	931us/step	_	loss:	0.6943
Epoch 52/400		_			_	
160/160 [====================================	-	0s	933us/step	-	loss:	0.6942
Epoch 53/400		_			_	
160/160 [====================================	-	0s	947us/step	-	loss:	0.6940

Epoch 54/400			
160/160 [============]	-	0s	942us/step - loss: 0.6939
Epoch 55/400			
160/160 [=======]	-	0s	930us/step - loss: 0.6943
Epoch 56/400			
160/160 [=======]	-	0s	973us/step - loss: 0.6941
Epoch 57/400			
160/160 [======]	-	0s	986us/step - loss: 0.6943
Epoch 58/400			
160/160 [======]	-	0s	966us/step - loss: 0.6941
Epoch 59/400			
160/160 [=======]	-	0s	944us/step - loss: 0.6942
Epoch 60/400			
160/160 [=======]	-	0s	957us/step - loss: 0.6941
Epoch 61/400			
160/160 [=======]	-	0s	1ms/step - loss: 0.6941
Epoch 62/400			
160/160 [=======]	-	0s	997us/step - loss: 0.6942
Epoch 63/400			
160/160 [=======]	-	0s	972us/step - loss: 0.6941
Epoch 64/400			
160/160 [======]	-	0s	1ms/step - loss: 0.6942
Epoch 65/400			
160/160 [======]	-	0s	942us/step - loss: 0.6943
Epoch 66/400			
160/160 [=======]	-	0s	932us/step - loss: 0.6941
Epoch 67/400			
160/160 [======]	-	0s	921us/step - loss: 0.6943
Epoch 68/400			
160/160 [=======]	-	0s	930us/step - loss: 0.6944
Epoch 69/400			
160/160 [=======]	-	0s	917us/step - loss: 0.6943
Epoch 70/400			
160/160 [=======]	-	0s	914us/step - loss: 0.6940
Epoch 71/400			
160/160 [=======]	-	0s	1ms/step - loss: 0.6942
Epoch 72/400			
160/160 [=======]	-	0s	990us/step - loss: 0.6941
Epoch 73/400			
160/160 [=======]	-	0s	945us/step - loss: 0.6943
Epoch 74/400			
160/160 [===========]	-	0s	956us/step - loss: 0.6941
Epoch 75/400			
160/160 [=======]	-	0s	937us/step - loss: 0.6941
Epoch 76/400			
160/160 [===========]	-	0s	987us/step - loss: 0.6945
Epoch 77/400			
160/160 [==========]	-	0s	966us/step - loss: 0.6940

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Epoch 102/400			
160/160 [====================================	_	0s	998us/step - loss: 0.6941
Epoch 103/400			•
160/160 [====================================	_	0s	887us/step - loss: 0.6942
Epoch 104/400			-
160/160 [====================================	_	0s	903us/step - loss: 0.6942
Epoch 105/400			-
160/160 [====================================	_	0s	926us/step - loss: 0.6941
Epoch 106/400			-
160/160 [====================================	-	0s	949us/step - loss: 0.6943
Epoch 107/400			
160/160 [====================================	-	0s	998us/step - loss: 0.6941
Epoch 108/400			-
160/160 [====================================	-	0s	948us/step - loss: 0.6941
Epoch 109/400			-
160/160 [====================================	-	0s	961us/step - loss: 0.6941
Epoch 110/400			-
160/160 [====================================	-	0s	916us/step - loss: 0.6941
Epoch 111/400			-
160/160 [====================================	_	0s	922us/step - loss: 0.6941
Epoch 112/400			-
160/160 [====================================	-	0s	1ms/step - loss: 0.6941
Epoch 113/400			-
160/160 [====================================	-	0s	919us/step - loss: 0.6943
Epoch 114/400			-
160/160 [====================================	_	0s	947us/step - loss: 0.6941
Epoch 115/400			-
160/160 [====================================	_	0s	982us/step - loss: 0.6943
Epoch 116/400			-
160/160 [====================================	_	0s	971us/step - loss: 0.6943
Epoch 117/400			
160/160 [=======]	-	0s	926us/step - loss: 0.6941
Epoch 118/400			
160/160 [=======]	-	0s	969us/step - loss: 0.6940
Epoch 119/400			
160/160 [======]	-	0s	1ms/step - loss: 0.6942
Epoch 120/400			
160/160 [=======]	-	0s	917us/step - loss: 0.6943
Epoch 121/400			
160/160 [=======]	-	0s	917us/step - loss: 0.6943
Epoch 122/400			
160/160 [=======]	-	0s	953us/step - loss: 0.6942
Epoch 123/400			
160/160 [=======]	-	0s	933us/step - loss: 0.6942
Epoch 124/400			
160/160 [======]	-	0s	958us/step - loss: 0.6943
Epoch 125/400			
160/160 [=======]	-	0s	922us/step - loss: 0.6940

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Epoch 150/400
160/160 [=======] - Os 953us/step - loss: 0.6939
Epoch 151/400
160/160 [======] - Os 954us/step - loss: 0.6941
Epoch 152/400
160/160 [============] - Os 984us/step - loss: 0.6940
Epoch 153/400
160/160 [=============] - Os 983us/step - loss: 0.6943
Epoch 154/400
160/160 [============ ] - Os 990us/step - loss: 0.6944
Epoch 155/400
160/160 [============ ] - Os 965us/step - loss: 0.6943
Epoch 156/400
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Epoch 215/400
160/160 [=============] - Os 1ms/step - loss: 0.6941
Epoch 216/400
160/160 [=============] - Os 924us/step - loss: 0.6941
Epoch 217/400
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Epoch 233/400
160/160 [============= ] - Os 916us/step - loss: 0.6942
Epoch 234/400
160/160 [============= ] - Os 1ms/step - loss: 0.6941
Epoch 235/400
160/160 [============ ] - Os 930us/step - loss: 0.6943
Epoch 236/400
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Epoch 237/400
160/160 [============ ] - Os 938us/step - loss: 0.6942
Epoch 238/400
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Epoch 242/400
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Epoch 243/400
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Epoch 244/400
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Epoch 245/400
160/160 [============= ] - Os 931us/step - loss: 0.6944

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Epoch 246/400
Epoch 247/400
160/160 [============ ] - Os 952us/step - loss: 0.6940
Epoch 248/400
Epoch 249/400
Epoch 250/400
160/160 [============] - Os 938us/step - loss: 0.6940
Epoch 251/400
160/160 [============== ] - Os 940us/step - loss: 0.6940
Epoch 252/400
Epoch 253/400
160/160 [============== ] - 0s 1ms/step - loss: 0.6941
Epoch 254/400
160/160 [=========== ] - Os 988us/step - loss: 0.6940
Epoch 255/400
160/160 [============= ] - 0s 1ms/step - loss: 0.6941
Epoch 256/400
160/160 [============= ] - 0s 957us/step - loss: 0.6942
Epoch 257/400
Epoch 258/400
Epoch 259/400
Epoch 260/400
Epoch 261/400
160/160 [============== ] - Os 939us/step - loss: 0.6942
Epoch 262/400
160/160 [============= ] - Os 1ms/step - loss: 0.6940
Epoch 263/400
Epoch 264/400
Epoch 265/400
160/160 [============== ] - Os 928us/step - loss: 0.6942
Epoch 266/400
160/160 [=========== ] - Os 1ms/step - loss: 0.6942
Epoch 267/400
160/160 [============== ] - Os 946us/step - loss: 0.6942
Epoch 268/400
160/160 [=========== ] - Os 953us/step - loss: 0.6940
Epoch 269/400
160/160 [============ ] - Os 1ms/step - loss: 0.6941
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Epoch 270/400
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Enoch 204/400			
Epoch 294/400 160/160 [====================================	_	Λα	032ug/gtop = logg: 0 60/3
Epoch 295/400		OS	332us/step = 10ss. 0.0343
160/160 [====================================	_	۸a	038ug/gtop = logg: 0 60/1
Epoch 296/400		OS	300us/step 10ss. 0.0341
160/160 [====================================	_	۸e	1mg/gton - logg: 0 69/0
Epoch 297/400		OS	1ms/step = 10ss. 0.0940
160/160 [====================================	_	Λα	0/1ug/gtop = logg: 0.60/1
Epoch 298/400		OS	941us/step = 10ss. 0.0941
160/160 [====================================	_	۸e	956us/stan - loss: 0 6940
Epoch 299/400		OS	300us/scep 10ss. 0.0340
160/160 [====================================	_	۸e	031ug/gton - logg: 0 60/2
Epoch 300/400		OS	301us/scep 10ss. 0.0342
160/160 [====================================	_	۸e	1mg/stan - loss: 0 6939
Epoch 301/400		OS	Ims/step 10ss. 0.0303
160/160 [====================================	_	۸e	958ug/stan - loss: 0 6940
Epoch 302/400		OB	300us/scep 10ss. 0.0340
160/160 [====================================	_	٥q	924us/sten - loss: 0 6939
Epoch 303/400		OB	321ab/btcp 10bb. 0.0303
160/160 [====================================	_	09	952us/sten - loss: 0 6941
Epoch 304/400		OB	302ab/ 50cp 10bb. 0.0311
160/160 [====================================	_	0s	921us/sten - loss: 0 6939
Epoch 305/400		Ü	1000. 0.0000
160/160 [====================================	_	0s	946us/step - loss: 0.6940
Epoch 306/400		Ü	210a2, 200p 1022. 0.0010
160/160 [====================================	_	0s	927us/step - loss: 0.6942
Epoch 307/400		0.2	52. az, 200p 2002. 000012
160/160 [====================================	_	0s	950us/step - loss: 0.6940
Epoch 308/400			
160/160 [====================================	_	0s	933us/step - loss: 0.6941
Epoch 309/400			•
160/160 [====================================	_	0s	925us/step - loss: 0.6940
Epoch 310/400			<u>-</u>
160/160 [====================================	_	0s	937us/step - loss: 0.6939
Epoch 311/400			_
160/160 [======]	-	0s	925us/step - loss: 0.6940
Epoch 312/400			
160/160 [======]	-	0s	925us/step - loss: 0.6940
Epoch 313/400			
160/160 [======]	-	0s	957us/step - loss: 0.6940
Epoch 314/400			
160/160 [======]	-	0s	936us/step - loss: 0.6942
Epoch 315/400			
160/160 [=======]	-	0s	922us/step - loss: 0.6940
Epoch 316/400			
160/160 [=======]	-	0s	917us/step - loss: 0.6940
Epoch 317/400			
160/160 [===========]	-	0ຣ	962us/step - loss: 0.6941

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Epoch 318/400
Epoch 319/400
160/160 [============] - Os 996us/step - loss: 0.6940
Epoch 320/400
Epoch 321/400
Epoch 322/400
160/160 [============= ] - Os 946us/step - loss: 0.6940
Epoch 323/400
160/160 [============== ] - 0s 1ms/step - loss: 0.6941
Epoch 324/400
Epoch 325/400
160/160 [============== ] - Os 937us/step - loss: 0.6942
Epoch 326/400
160/160 [============ ] - Os 939us/step - loss: 0.6941
Epoch 327/400
160/160 [============= ] - Os 934us/step - loss: 0.6940
Epoch 328/400
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Epoch 331/400
Epoch 332/400
Epoch 333/400
160/160 [============== ] - Os 991us/step - loss: 0.6940
Epoch 334/400
160/160 [============ ] - Os 978us/step - loss: 0.6942
Epoch 335/400
Epoch 336/400
160/160 [=============== ] - Os 950us/step - loss: 0.6942
Epoch 337/400
160/160 [============== ] - Os 940us/step - loss: 0.6942
Epoch 338/400
160/160 [=========== ] - Os 968us/step - loss: 0.6940
Epoch 339/400
160/160 [============== ] - Os 954us/step - loss: 0.6940
Epoch 340/400
160/160 [=========== ] - Os 1ms/step - loss: 0.6941
Epoch 341/400
160/160 [============ ] - Os 1ms/step - loss: 0.6939
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Epoch 342/400 160/160 [====================================
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T 1 000/400						
Epoch 366/400		_	004 / .		_	
160/160 [====================================	-	0s	961us/step	-	loss:	0.6941
Epoch 367/400						
160/160 [======]	-	0s	919us/step	-	loss:	0.6942
Epoch 368/400						
160/160 [=======]	-	0s	929us/step	-	loss:	0.6940
Epoch 369/400						
160/160 [=======]	-	0s	932us/step	-	loss:	0.6941
Epoch 370/400						
160/160 [=======]	-	0s	931us/step	-	loss:	0.6939
Epoch 371/400						
160/160 [=======]	-	0s	939us/step	-	loss:	0.6940
Epoch 372/400						
160/160 [=========]	-	0s	918us/step	-	loss:	0.6941
Epoch 373/400						
160/160 [====================================	-	0s	936us/step	-	loss:	0.6941
Epoch 374/400			-			
160/160 [====================================	_	0s	941us/step	_	loss:	0.6940
Epoch 375/400						
160/160 [=======]	_	0s	915us/step	_	loss:	0.6941
Epoch 376/400						
160/160 [=======]	_	0s	951us/step	_	loss:	0.6942
Epoch 377/400		Ů.	ooras, stop		TODE.	0.0012
160/160 [=======]	_	0s	950us/sten	_	loss	0 6942
Epoch 378/400		OB	Joous, Bucp		TOBB.	0.0012
160/160 [=======]	_	۸e	927118/sten	_	loggi	0 6940
Epoch 379/400		OB	321 us/ scep		TOSS.	0.0040
160/160 [========]	_	۸e	92811g/gtan	_	loggi	0 60/1
Epoch 380/400		OS	920us/scep		TOSS.	0.0341
160/160 [=========]	_	Λα	9//wg/stop	_	loggi	0 6030
Epoch 381/400		OS	944us/step		TOSS.	0.0333
160/160 [=======]		٥٩	010,12/2+22		1	0 60/1
		US	91ous/step		TOSS.	0.0941
Epoch 382/400 160/160 [=======]		٥-	049/		7	0 6040
	_	US	94ous/step	_	loss:	0.6940
Epoch 383/400		Λ-	001/		7	0 6000
160/160 [====================================	_	US	921us/step	_	loss:	0.6939
Epoch 384/400		^	000 / 1		-	0 6044
160/160 [=========]	-	US	932us/step	_	loss:	0.6941
Epoch 385/400		^	000 / .		-	0 0011
160/160 [========]	-	0s	909us/step	-	loss:	0.6941
Epoch 386/400						
160/160 [======]	-	0s	951us/step	-	loss:	0.6939
Epoch 387/400						
160/160 [=======]	-	0s	946us/step	_	loss:	0.6942
Epoch 388/400						
160/160 [======]	-	0s	972us/step	-	loss:	0.6941
Epoch 389/400						
160/160 [====================================	-	0s	993us/step	-	loss:	0.6940

Epoch 390/400	
160/160 [====================================	0 6941
Epoch 391/400	0.0541
160/160 [====================================	0 6940
Epoch 392/400	0.0010
160/160 [====================================	0.6941
Epoch 393/400	0.0011
160/160 [====================================	6940
Epoch 394/400	
160/160 [====================================	0.6940
Epoch 395/400	
160/160 [====================================	0.6939
Epoch 396/400	
160/160 [====================================	0.6941
Epoch 397/400	
160/160 [====================================	0.6941
Epoch 398/400	
160/160 [====================================	0.6941
Epoch 399/400	
160/160 [====================================	0.6942
Epoch 400/400	
160/160 [====================================	0.6940
160/160 [============ ] - Os 2ms/step	
Epoch 1/400	
160/160 [====================================	7026
Epoch 2/400	
_	
Epoch 2/400 160/160 [====================================	0.6974
Epoch 2/400 160/160 [====================================	0.6974
Epoch 2/400 160/160 [====================================	0.6974 0.6951
Epoch 2/400 160/160 [====================================	0.6974 0.6951
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942
Epoch 2/400  160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942 0.6939
Epoch 2/400  160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942 0.6939
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942 0.6939 0.6940
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942 0.6939 0.6940
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942 0.6939 0.6940
Epoch 2/400  160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942 0.6939 0.6940
Epoch 2/400 160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942 0.6939 0.6940 0.6940
Epoch 2/400  160/160 [====================================	0.6974 0.6951 0.6944 0.6939 0.6941 0.6942 0.6939 0.6940 0.6940

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Epoch 14/400
160/160 [============] - Os 904us/step - loss: 0.6936
Epoch 15/400
160/160 [============= ] - 0s 906us/step - loss: 0.6948
Epoch 16/400
Epoch 17/400
160/160 [============= ] - Os 864us/step - loss: 0.6940
Epoch 18/400
Epoch 19/400
Epoch 20/400
160/160 [============= ] - Os 955us/step - loss: 0.6948
Epoch 21/400
160/160 [============= ] - 0s 917us/step - loss: 0.6943
Epoch 22/400
Epoch 23/400
Epoch 24/400
Epoch 25/400
Epoch 26/400
Epoch 27/400
Epoch 28/400
160/160 [============== ] - Os 1ms/step - loss: 0.6937
Epoch 29/400
160/160 [============= ] - Os 934us/step - loss: 0.6936
Epoch 30/400
160/160 [============= ] - 0s 891us/step - loss: 0.6942
Epoch 31/400
160/160 [============= ] - 0s 905us/step - loss: 0.6942
Epoch 32/400
Epoch 33/400
160/160 [============== ] - 0s 966us/step - loss: 0.6944
Epoch 34/400
160/160 [============= ] - 0s 894us/step - loss: 0.6938
Epoch 35/400
Epoch 36/400
160/160 [============== ] - Os 967us/step - loss: 0.6949
Epoch 37/400
```

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160/160 [============== ] - Os 946us/step - loss: 0.6940
Epoch 38/400
160/160 [============= ] - 0s 961us/step - loss: 0.6938
Epoch 39/400
160/160 [============= ] - 0s 988us/step - loss: 0.6948
Epoch 40/400
Epoch 41/400
160/160 [============= ] - 0s 891us/step - loss: 0.6942
Epoch 42/400
Epoch 43/400
Epoch 44/400
160/160 [============= ] - Os 956us/step - loss: 0.6936
Epoch 45/400
160/160 [============= ] - 0s 899us/step - loss: 0.6943
Epoch 46/400
160/160 [============ ] - Os 919us/step - loss: 0.6938
Epoch 47/400
Epoch 48/400
Epoch 49/400
Epoch 50/400
160/160 [============== ] - Os 889us/step - loss: 0.6938
Epoch 51/400
Epoch 52/400
160/160 [============== ] - Os 860us/step - loss: 0.6943
Epoch 53/400
160/160 [============ ] - Os 873us/step - loss: 0.6941
Epoch 54/400
160/160 [============= ] - 0s 934us/step - loss: 0.6942
Epoch 55/400
Epoch 56/400
160/160 [============== ] - Os 937us/step - loss: 0.6943
Epoch 57/400
160/160 [============== ] - Os 909us/step - loss: 0.6939
Epoch 58/400
Epoch 59/400
160/160 [============= ] - Os 904us/step - loss: 0.6940
Epoch 60/400
160/160 [============== ] - Os 891us/step - loss: 0.6945
Epoch 61/400
```

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Epoch 62/400
160/160 [============] - Os 895us/step - loss: 0.6943
Epoch 63/400
160/160 [============= ] - 0s 879us/step - loss: 0.6936
Epoch 64/400
Epoch 65/400
160/160 [============= ] - 0s 867us/step - loss: 0.6939
Epoch 66/400
Epoch 67/400
Epoch 68/400
160/160 [============= ] - 0s 843us/step - loss: 0.6938
Epoch 69/400
Epoch 70/400
160/160 [============= ] - Os 866us/step - loss: 0.6941
Epoch 71/400
Epoch 72/400
160/160 [============= ] - 0s 889us/step - loss: 0.6938
Epoch 73/400
160/160 [============= ] - Os 880us/step - loss: 0.6940
Epoch 74/400
160/160 [=============== ] - Os 856us/step - loss: 0.6932
Epoch 75/400
Epoch 76/400
Epoch 77/400
Epoch 78/400
160/160 [============= ] - Os 865us/step - loss: 0.6940
Epoch 79/400
Epoch 80/400
Epoch 81/400
Epoch 82/400
Epoch 83/400
160/160 [============= ] - 0s 951us/step - loss: 0.6934
Epoch 84/400
160/160 [============== ] - Os 967us/step - loss: 0.6936
Epoch 85/400
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Epoch 86/400
160/160 [============] - Os 888us/step - loss: 0.6933
Epoch 87/400
160/160 [============= ] - 0s 931us/step - loss: 0.6936
Epoch 88/400
160/160 [============= ] - 0s 866us/step - loss: 0.6937
Epoch 89/400
160/160 [============= ] - Os 922us/step - loss: 0.6940
Epoch 90/400
160/160 [============= ] - 0s 987us/step - loss: 0.6943
Epoch 91/400
Epoch 92/400
160/160 [============= ] - 0s 866us/step - loss: 0.6933
Epoch 93/400
160/160 [============= ] - 0s 886us/step - loss: 0.6939
Epoch 94/400
160/160 [============ ] - Os 913us/step - loss: 0.6930
Epoch 95/400
Epoch 96/400
160/160 [============= ] - 0s 962us/step - loss: 0.6928
Epoch 97/400
160/160 [============= ] - 0s 956us/step - loss: 0.6923
Epoch 98/400
Epoch 99/400
160/160 [============== ] - Os 869us/step - loss: 0.6930
Epoch 100/400
Epoch 101/400
Epoch 102/400
160/160 [============= ] - Os 921us/step - loss: 0.6926
Epoch 103/400
160/160 [============= ] - Os 914us/step - loss: 0.6918
Epoch 104/400
160/160 [============== ] - Os 871us/step - loss: 0.6920
Epoch 105/400
160/160 [============== ] - Os 868us/step - loss: 0.6923
Epoch 106/400
Epoch 107/400
Epoch 108/400
160/160 [============== ] - Os 892us/step - loss: 0.6912
Epoch 109/400
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Epoch 110/400
160/160 [============ ] - Os 874us/step - loss: 0.6912
Epoch 111/400
160/160 [============= ] - 0s 882us/step - loss: 0.6909
Epoch 112/400
160/160 [============= ] - 0s 898us/step - loss: 0.6903
Epoch 113/400
160/160 [============== ] - Os 866us/step - loss: 0.6902
Epoch 114/400
Epoch 115/400
Epoch 116/400
160/160 [============= ] - 0s 878us/step - loss: 0.6893
Epoch 117/400
160/160 [============= ] - 0s 859us/step - loss: 0.6892
Epoch 118/400
160/160 [============= ] - Os 894us/step - loss: 0.6889
Epoch 119/400
160/160 [============= ] - 0s 927us/step - loss: 0.6879
Epoch 120/400
Epoch 121/400
Epoch 122/400
160/160 [============== ] - Os 892us/step - loss: 0.6875
Epoch 123/400
Epoch 124/400
160/160 [============== ] - Os 997us/step - loss: 0.6883
Epoch 125/400
160/160 [============== ] - 0s 892us/step - loss: 0.6863
Epoch 126/400
160/160 [============= ] - 0s 863us/step - loss: 0.6864
Epoch 127/400
160/160 [============= ] - 0s 934us/step - loss: 0.6846
Epoch 128/400
Epoch 129/400
160/160 [============== ] - Os 944us/step - loss: 0.6830
Epoch 130/400
160/160 [============== ] - Os 944us/step - loss: 0.6829
Epoch 131/400
160/160 [============= ] - 0s 918us/step - loss: 0.6818
Epoch 132/400
160/160 [============== ] - Os 901us/step - loss: 0.6805
Epoch 133/400
```

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Epoch 134/400
160/160 [============] - Os 903us/step - loss: 0.6792
Epoch 135/400
160/160 [============= ] - Os 927us/step - loss: 0.6790
Epoch 136/400
160/160 [============= ] - 0s 917us/step - loss: 0.6780
Epoch 137/400
160/160 [============= ] - Os 845us/step - loss: 0.6766
Epoch 138/400
Epoch 139/400
Epoch 140/400
160/160 [============= ] - Os 885us/step - loss: 0.6746
Epoch 141/400
Epoch 142/400
160/160 [============ ] - Os 890us/step - loss: 0.6703
Epoch 143/400
Epoch 144/400
160/160 [============= ] - 0s 908us/step - loss: 0.6678
Epoch 145/400
Epoch 146/400
Epoch 147/400
160/160 [============== ] - Os 925us/step - loss: 0.6634
Epoch 148/400
160/160 [============== ] - Os 915us/step - loss: 0.6618
Epoch 149/400
160/160 [============ ] - Os 894us/step - loss: 0.6605
Epoch 150/400
160/160 [============= ] - 0s 861us/step - loss: 0.6584
Epoch 151/400
160/160 [============= ] - 0s 896us/step - loss: 0.6573
Epoch 152/400
160/160 [============== ] - Os 847us/step - loss: 0.6550
Epoch 153/400
160/160 [============== ] - Os 904us/step - loss: 0.6543
Epoch 154/400
Epoch 155/400
Epoch 156/400
160/160 [============== ] - Os 874us/step - loss: 0.6469
Epoch 157/400
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Epoch 158/400
160/160 [============ ] - Os 900us/step - loss: 0.6432
Epoch 159/400
Epoch 160/400
160/160 [============= ] - Os 859us/step - loss: 0.6399
Epoch 161/400
160/160 [============= ] - Os 890us/step - loss: 0.6370
Epoch 162/400
Epoch 163/400
Epoch 164/400
160/160 [============= ] - 0s 858us/step - loss: 0.6318
Epoch 165/400
Epoch 166/400
160/160 [============= ] - Os 880us/step - loss: 0.6284
Epoch 167/400
Epoch 168/400
160/160 [============= ] - Os 955us/step - loss: 0.6247
Epoch 169/400
Epoch 170/400
160/160 [============== ] - Os 858us/step - loss: 0.6214
Epoch 171/400
160/160 [============== ] - Os 921us/step - loss: 0.6194
Epoch 172/400
Epoch 173/400
160/160 [============= ] - 0s 893us/step - loss: 0.6166
Epoch 174/400
160/160 [============= ] - 0s 906us/step - loss: 0.6148
Epoch 175/400
160/160 [============= ] - Os 954us/step - loss: 0.6138
Epoch 176/400
Epoch 177/400
160/160 [============== ] - Os 933us/step - loss: 0.6106
Epoch 178/400
Epoch 179/400
160/160 [============= ] - Os 898us/step - loss: 0.6076
Epoch 180/400
160/160 [============== ] - Os 903us/step - loss: 0.6072
Epoch 181/400
```

160/160 [=======]	_	0s	927us/step	_	loss:	0.6050
Epoch 182/400			_			
160/160 [=======]	-	0s	923us/step	-	loss:	0.6039
Epoch 183/400						
160/160 [=======]	-	0s	896us/step	-	loss:	0.6025
Epoch 184/400						
160/160 [====================================	-	0s	904us/step	-	loss:	0.6029
Epoch 185/400		0 -	000/		7	0 6000
160/160 [========] Epoch 186/400	_	US	899us/step	_	loss:	0.6003
160/160 [====================================	_	۸a	266ug /g+op	_	loggi	U E003
Epoch 187/400		OS	ooous/step		TOSS.	0.5555
160/160 [====================================	_	0s	891115/sten	_	loss	0 5986
Epoch 188/400		V.D	colub, buop		TODD.	0.0000
160/160 [====================================	_	0s	870us/step	_	loss:	0.5978
Epoch 189/400			1			
160/160 [====================================	-	0s	903us/step	-	loss:	0.5967
Epoch 190/400			_			
160/160 [=======]	-	0s	867us/step	-	loss:	0.5966
Epoch 191/400						
160/160 [===========]	-	0s	898us/step	-	loss:	0.5953
Epoch 192/400						
160/160 [=======]	-	0s	897us/step	-	loss:	0.5941
Epoch 193/400						
160/160 [====================================	-	0s	876us/step	-	loss:	0.5936
Epoch 194/400		_			_	
160/160 [====================================	-	0s	853us/step	-	loss:	0.5927
Epoch 195/400		0 -	012/		7	0 5010
160/160 [====================================	_	US	913us/step	_	loss:	0.5918
Epoch 196/400 160/160 [====================================	_	Λe	896us /stan	_	loggi	Λ <b>5013</b>
Epoch 197/400		US	030us/scep		TOSS.	0.0310
160/160 [====================================	_	0s	913us/step	_	loss:	0.5906
Epoch 198/400			010a2, 200p			
160/160 [====================================	_	0s	902us/step	_	loss:	0.5904
Epoch 199/400			•			
160/160 [====================================	-	0s	877us/step	-	loss:	0.5892
Epoch 200/400						
160/160 [======]	-	0s	912us/step	-	loss:	0.5883
Epoch 201/400						
160/160 [=======]	-	0s	884us/step	-	loss:	0.5877
Epoch 202/400						
160/160 [====================================	-	0s	893us/step	-	loss:	0.5879
Epoch 203/400		^	047 / :		,	0 5005
160/160 [====================================	-	Us	91/us/step	-	loss:	0.5865
Epoch 204/400 160/160 [====================================		0~	007112/2+2		1695	0 5000
	_	US	aorus/step	_	TOSS:	0.5862
Epoch 205/400						

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Epoch 206/400
Epoch 207/400
Epoch 208/400
Epoch 209/400
160/160 [============= ] - 0s 880us/step - loss: 0.5833
Epoch 210/400
Epoch 211/400
Epoch 212/400
160/160 [============= ] - 0s 896us/step - loss: 0.5814
Epoch 213/400
160/160 [============= ] - Os 870us/step - loss: 0.5810
Epoch 214/400
160/160 [============ ] - Os 865us/step - loss: 0.5807
Epoch 215/400
Epoch 216/400
Epoch 217/400
Epoch 218/400
160/160 [=============== ] - Os 894us/step - loss: 0.5786
Epoch 219/400
Epoch 220/400
Epoch 221/400
160/160 [=============== ] - Os 855us/step - loss: 0.5768
Epoch 222/400
160/160 [============= ] - 0s 895us/step - loss: 0.5765
Epoch 223/400
160/160 [============= ] - Os 854us/step - loss: 0.5760
Epoch 224/400
160/160 [============== ] - 0s 873us/step - loss: 0.5752
Epoch 225/400
Epoch 226/400
160/160 [============== ] - Os 878us/step - loss: 0.5744
Epoch 227/400
Epoch 228/400
160/160 [============== ] - Os 879us/step - loss: 0.5722
Epoch 229/400
```

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Epoch 230/400
160/160 [============ ] - Os 899us/step - loss: 0.5714
Epoch 231/400
Epoch 232/400
160/160 [============= ] - 0s 851us/step - loss: 0.5694
Epoch 233/400
160/160 [============= ] - Os 855us/step - loss: 0.5679
Epoch 234/400
160/160 [============ ] - Os 861us/step - loss: 0.5683
Epoch 235/400
Epoch 236/400
Epoch 237/400
Epoch 238/400
160/160 [============ ] - Os 877us/step - loss: 0.5633
Epoch 239/400
Epoch 240/400
Epoch 241/400
160/160 [============= ] - 0s 904us/step - loss: 0.5592
Epoch 242/400
Epoch 243/400
Epoch 244/400
Epoch 245/400
160/160 [============== ] - Os 881us/step - loss: 0.5518
Epoch 246/400
160/160 [============= ] - 0s 861us/step - loss: 0.5495
Epoch 247/400
Epoch 248/400
Epoch 249/400
160/160 [============== ] - Os 861us/step - loss: 0.5420
Epoch 250/400
160/160 [============== ] - 0s 876us/step - loss: 0.5394
Epoch 251/400
Epoch 252/400
160/160 [============== ] - Os 863us/step - loss: 0.5337
Epoch 253/400
```

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Epoch 254/400
Epoch 255/400
160/160 [============= ] - 0s 918us/step - loss: 0.5242
Epoch 256/400
160/160 [============= ] - 0s 895us/step - loss: 0.5206
Epoch 257/400
160/160 [============= ] - 0s 849us/step - loss: 0.5173
Epoch 258/400
Epoch 259/400
Epoch 260/400
Epoch 261/400
Epoch 262/400
160/160 [============= ] - Os 884us/step - loss: 0.4945
Epoch 263/400
Epoch 264/400
160/160 [============= ] - 0s 870us/step - loss: 0.4868
Epoch 265/400
Epoch 266/400
160/160 [============== ] - 0s 876us/step - loss: 0.4765
Epoch 267/400
160/160 [============== ] - Os 842us/step - loss: 0.4700
Epoch 268/400
Epoch 269/400
Epoch 270/400
160/160 [============= ] - 0s 878us/step - loss: 0.4554
Epoch 271/400
Epoch 272/400
160/160 [============== ] - Os 851us/step - loss: 0.4453
Epoch 273/400
160/160 [============== ] - 0s 913us/step - loss: 0.4402
Epoch 274/400
Epoch 275/400
160/160 [============= ] - 0s 893us/step - loss: 0.4320
Epoch 276/400
160/160 [============== ] - Os 920us/step - loss: 0.4278
Epoch 277/400
```

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Epoch 278/400
160/160 [============= ] - Os 839us/step - loss: 0.4194
Epoch 279/400
160/160 [============= ] - Os 860us/step - loss: 0.4154
Epoch 280/400
160/160 [============= ] - 0s 886us/step - loss: 0.4099
Epoch 281/400
160/160 [============= ] - Os 858us/step - loss: 0.4076
Epoch 282/400
Epoch 283/400
Epoch 284/400
Epoch 285/400
Epoch 286/400
160/160 [============ ] - Os 887us/step - loss: 0.3907
Epoch 287/400
Epoch 288/400
Epoch 289/400
Epoch 290/400
160/160 [============== ] - Os 917us/step - loss: 0.3793
Epoch 291/400
Epoch 292/400
160/160 [=============== ] - Os 853us/step - loss: 0.3750
Epoch 293/400
160/160 [============ ] - Os 891us/step - loss: 0.3722
Epoch 294/400
160/160 [============= ] - 0s 873us/step - loss: 0.3708
Epoch 295/400
160/160 [============= ] - 0s 877us/step - loss: 0.3682
Epoch 296/400
160/160 [============== ] - 0s 861us/step - loss: 0.3662
Epoch 297/400
Epoch 298/400
Epoch 299/400
Epoch 300/400
160/160 [=============== ] - Os 851us/step - loss: 0.3575
Epoch 301/400
```

```
Epoch 302/400
Epoch 303/400
Epoch 304/400
160/160 [============= ] - 0s 891us/step - loss: 0.3529
Epoch 305/400
160/160 [============== ] - Os 895us/step - loss: 0.3520
Epoch 306/400
Epoch 307/400
Epoch 308/400
160/160 [============= ] - 0s 874us/step - loss: 0.3488
Epoch 309/400
Epoch 310/400
160/160 [============ ] - Os 877us/step - loss: 0.3447
Epoch 311/400
160/160 [============== ] - Os 864us/step - loss: 0.3443
Epoch 312/400
Epoch 313/400
Epoch 314/400
160/160 [============== ] - Os 878us/step - loss: 0.3430
Epoch 315/400
Epoch 316/400
Epoch 317/400
160/160 [========== ] - Os 928us/step - loss: 0.3393
Epoch 318/400
160/160 [============= ] - 0s 866us/step - loss: 0.3383
Epoch 319/400
160/160 [============= ] - 0s 888us/step - loss: 0.3382
Epoch 320/400
160/160 [============== ] - Os 900us/step - loss: 0.3373
Epoch 321/400
Epoch 322/400
Epoch 323/400
160/160 [============= ] - 0s 856us/step - loss: 0.3339
Epoch 324/400
160/160 [============== ] - Os 876us/step - loss: 0.3346
Epoch 325/400
```

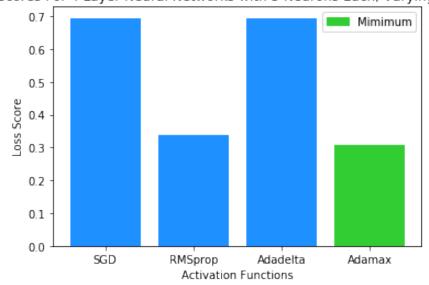
```
Epoch 326/400
160/160 [============= ] - Os 900us/step - loss: 0.3324
Epoch 327/400
Epoch 328/400
160/160 [============= ] - 0s 861us/step - loss: 0.3310
Epoch 329/400
160/160 [============= ] - Os 850us/step - loss: 0.3305
Epoch 330/400
Epoch 331/400
Epoch 332/400
Epoch 333/400
Epoch 334/400
160/160 [============ ] - Os 857us/step - loss: 0.3278
Epoch 335/400
160/160 [=============== ] - Os 891us/step - loss: 0.3282
Epoch 336/400
Epoch 337/400
Epoch 338/400
Epoch 339/400
Epoch 340/400
Epoch 341/400
Epoch 342/400
160/160 [============= ] - 0s 867us/step - loss: 0.3253
Epoch 343/400
160/160 [============= ] - 0s 859us/step - loss: 0.3234
Epoch 344/400
160/160 [============== ] - 0s 884us/step - loss: 0.3240
Epoch 345/400
Epoch 346/400
160/160 [============= ] - 0s 889us/step - loss: 0.3232
Epoch 347/400
Epoch 348/400
160/160 [============== ] - Os 879us/step - loss: 0.3220
Epoch 349/400
```

```
Epoch 350/400
160/160 [============= ] - Os 894us/step - loss: 0.3220
Epoch 351/400
160/160 [============= ] - 0s 867us/step - loss: 0.3208
Epoch 352/400
160/160 [============= ] - 0s 847us/step - loss: 0.3204
Epoch 353/400
160/160 [============= ] - 0s 881us/step - loss: 0.3203
Epoch 354/400
160/160 [============= ] - Os 887us/step - loss: 0.3195
Epoch 355/400
Epoch 356/400
Epoch 357/400
Epoch 358/400
160/160 [============ ] - Os 898us/step - loss: 0.3192
Epoch 359/400
160/160 [=============== ] - Os 857us/step - loss: 0.3190
Epoch 360/400
160/160 [============= ] - 0s 855us/step - loss: 0.3182
Epoch 361/400
Epoch 362/400
160/160 [============== ] - Os 863us/step - loss: 0.3198
Epoch 363/400
160/160 [============== ] - Os 891us/step - loss: 0.3168
Epoch 364/400
160/160 [============== ] - Os 856us/step - loss: 0.3178
Epoch 365/400
160/160 [============ ] - Os 917us/step - loss: 0.3169
Epoch 366/400
Epoch 367/400
160/160 [============= ] - 0s 879us/step - loss: 0.3164
Epoch 368/400
Epoch 369/400
160/160 [============== ] - Os 885us/step - loss: 0.3172
Epoch 370/400
Epoch 371/400
160/160 [============= ] - 0s 866us/step - loss: 0.3168
Epoch 372/400
160/160 [=============== ] - Os 886us/step - loss: 0.3155
Epoch 373/400
```

```
Epoch 374/400
160/160 [============ ] - Os 878us/step - loss: 0.3152
Epoch 375/400
160/160 [============= ] - Os 869us/step - loss: 0.3149
Epoch 376/400
160/160 [============= ] - 0s 904us/step - loss: 0.3142
Epoch 377/400
Epoch 378/400
160/160 [============= ] - Os 879us/step - loss: 0.3156
Epoch 379/400
Epoch 380/400
160/160 [============= ] - Os 895us/step - loss: 0.3146
Epoch 381/400
Epoch 382/400
160/160 [============ ] - Os 926us/step - loss: 0.3132
Epoch 383/400
160/160 [=============== ] - Os 890us/step - loss: 0.3133
Epoch 384/400
160/160 [============= ] - 0s 894us/step - loss: 0.3144
Epoch 385/400
160/160 [============= ] - 0s 851us/step - loss: 0.3125
Epoch 386/400
160/160 [============== ] - Os 877us/step - loss: 0.3138
Epoch 387/400
Epoch 388/400
Epoch 389/400
Epoch 390/400
160/160 [============= ] - Os 912us/step - loss: 0.3126
Epoch 391/400
160/160 [============= ] - 0s 867us/step - loss: 0.3116
Epoch 392/400
160/160 [============== ] - 0s 878us/step - loss: 0.3126
Epoch 393/400
160/160 [============== ] - Os 877us/step - loss: 0.3115
Epoch 394/400
160/160 [============= ] - 0s 879us/step - loss: 0.3114
Epoch 395/400
160/160 [============= ] - Os 910us/step - loss: 0.3109
Epoch 396/400
160/160 [============== ] - Os 866us/step - loss: 0.3111
Epoch 397/400
```

```
Epoch 398/400
Epoch 399/400
Epoch 400/400
160/160 [========= ] - Os 3ms/step
In [28]: color = []
     for score in scores:
        if score == min(scores):
           color.append('limegreen')
        else:
           color.append('dodgerblue')
     patch1 = mpatches.Patch(color='limegreen', label='Mimimum')
     plt.legend(handles=[patch1], loc = 'best')
     actives = ['SGD', 'RMSprop', 'Adadelta', 'Adamax']
     plt.bar(actives, scores, width = .8, color = color)
     plt.xlabel('Activation Functions')
     plt.ylabel('Loss Score')
     plt.title('Loss Scores For 4 Layer Neural Networks with 5 Neurons Each, Varying Optim
     plt.show()
```

Loss Scores For 4 Layer Neural Networks with 5 Neurons Each, Varying Optimizers



Looking at the above graph, Adamax Prop appears to perform the best

## 1.2 Part 2 - BYOD (Bring your own Dataset)

In [31]: import pandas as pd

Using your own dataset, experiment and find the best Neural Network configuration. You may use any resource to improve results, just reference it.

While you may use any dataset, I'd prefer you didn't use the diabetes dataset used in the lesson.

https://stackoverflow.com/questions/34673164/how-to-train-and-tune-an-artificial-multilayer-perceptron-neural-network-using-k https://keras.io/

2 For this analysis, I will be using the game\_team\_stats.csv from the NHL game data found on Kaggle here. I will be predicting the whether a team won a game, with 1 is a win and 0 is a loss.

See the caveats in the documentation: http://pandas.pydata.org/pandas-docs/stable/indexing.htm

2.0.1 Step 1. Determine optimal number of layers, starting with 11 nodes each to match num-

Try using .loc[row\_indexer,col\_indexer] = value instead

```
In [32]: scores = []
### One Layer ###
```

ber of input layers

```
model = Sequential()
model.add(Dense(11, input dim=11, activation='tanh')) #siqmoid, relu
# model.add(Dense(2, activation='tanh'))
model.add(Dense(1, activation='sigmoid'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Two Layers ###
model = Sequential()
model.add(Dense(11, input_dim=11, activation='tanh')) #sigmoid, relu
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(1, activation='tanh'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Three Layers ###
model = Sequential()
model.add(Dense(11, input_dim=11, activation='tanh')) #sigmoid, relu
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(1, activation='tanh'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
```

```
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Four Layers
model = Sequential()
model.add(Dense(11, input_dim=11, activation='tanh')) #sigmoid, relu
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(1, activation='tanh'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Five Layers
model = Sequential()
model.add(Dense(11, input_dim=11, activation='tanh')) #sigmoid, relu
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(1, activation='tanh'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
```

```
### Six Layers
model = Sequential()
model.add(Dense(11, input_dim=11, activation='tanh')) #sigmoid, relu
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(1, activation='tanh'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Seven Layers
model = Sequential()
model.add(Dense(11, input_dim=11, activation='tanh')) #sigmoid, relu
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(1, activation='tanh'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
```

```
# evaluate the model
scores.append(model.evaluate(X, y))
### Eight Layers
model = Sequential()
model.add(Dense(11, input_dim=11, activation='tanh')) #sigmoid, relu
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(1, activation='tanh'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(1r=0.1)
model.compile(loss='binary crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Nine Layers
model = Sequential()
model.add(Dense(11, input dim=11, activation='tanh')) #siqmoid, relu
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(11, input dim = 11, activation='tanh'))
model.add(Dense(11, input_dim = 11, activation='tanh'))
model.add(Dense(1, activation='tanh'))
# model.add(Dense(1,input_dim=2, activation='sigmoid'))
sgd = SGD(lr=0.1)
```

```
model.compile(loss='binary_crossentropy', optimizer='sgd')
        model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
        #print(model.predict_proba(X).reshape(4*n))
        # evaluate the model
        scores.append(model.evaluate(X, y))
        ### Ten Layers
        model = Sequential()
        model.add(Dense(11, input_dim=11, activation='tanh')) #siqmoid, relu
        model.add(Dense(11, input_dim = 11, activation='tanh'))
        model.add(Dense(11, input dim = 11, activation='tanh'))
        model.add(Dense(11, input_dim = 11, activation='tanh'))
        model.add(Dense(11, input_dim = 11, activation='tanh'))
        model.add(Dense(11, input_dim = 11, activation='tanh'))
        model.add(Dense(1, activation='tanh'))
        # model.add(Dense(1,input_dim=2, activation='sigmoid'))
        sgd = SGD(lr=0.1)
        model.compile(loss='binary_crossentropy', optimizer='sgd')
        model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
        #print(model.predict_proba(X).reshape(4*n))
        # evaluate the model
        scores.append(model.evaluate(X, y))
Epoch 1/200
22868/22868 [============= ] - 1s 35us/step - loss: 0.7136
Epoch 2/200
22868/22868 [============= ] - Os 12us/step - loss: 0.6977
Epoch 3/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6958
Epoch 4/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6948
Epoch 5/200
Epoch 6/200
22868/22868 [============= ] - Os 12us/step - loss: 0.6935
```

Epoch 7/200				
-	[======]	_	0s	12us/step - loss: 0.6933
Epoch 8/200	-			
-	[=====]	_	0s	12us/step - loss: 0.6930
Epoch 9/200	-			
	[======]	_	0s	12us/step - loss: 0.6928
Epoch 10/200				
	[======]	-	0s	12us/step - loss: 0.6927
Epoch 11/200				-
	[======]	-	0s	12us/step - loss: 0.6925
Epoch 12/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6924
Epoch 13/200				
22868/22868	[======]	-	0s	12us/step - loss: 0.6924
Epoch 14/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6921
Epoch 15/200				
22868/22868	[======]	-	0s	12us/step - loss: 0.6921
Epoch 16/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6919
Epoch 17/200				
22868/22868	[======]	-	0s	12us/step - loss: 0.6919
Epoch 18/200				
22868/22868	[======]	-	0s	12us/step - loss: 0.6917
Epoch 19/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6917
Epoch 20/200				
22868/22868	[======]	-	0s	12us/step - loss: 0.6916
Epoch 21/200				
22868/22868	[=====]	-	0s	12us/step - loss: 0.6915
Epoch 22/200				
	[=====]	-	0s	12us/step - loss: 0.6915
Epoch 23/200				
	[=====]	-	0s	12us/step - loss: 0.6914
Epoch 24/200				
	[]	-	0s	11us/step - loss: 0.6914
Epoch 25/200				
	[======]	-	0s	12us/step - loss: 0.6913
Epoch 26/200				
	[======]	-	0s	12us/step - loss: 0.6912
Epoch 27/200				
	[======]	-	0s	12us/step - loss: 0.6911
Epoch 28/200			_	
	[======]	-	0s	12us/step - loss: 0.6911
Epoch 29/200			^	10 /
	[]	-	Us	12us/step - loss: 0.6909
Epoch 30/200			^	44 / 1 3 0 0000
22868/22868	[======]	-	Us	lius/step - loss: 0.6908

Epoch 31/200				
	[======]	_	0s	12us/step - loss: 0.6907
Epoch 32/200				•
-	[======]	_	0s	12us/step - loss: 0.6906
Epoch 33/200				•
	[======]	_	0s	12us/step - loss: 0.6906
Epoch 34/200				•
22868/22868	[======]	-	0s	12us/step - loss: 0.6904
Epoch 35/200				
22868/22868	[======]	-	0s	12us/step - loss: 0.6901
Epoch 36/200				
22868/22868	[======]	-	0s	12us/step - loss: 0.6899
Epoch 37/200				
	[======]	-	0s	12us/step - loss: 0.6897
Epoch 38/200				
	[======]	-	0s	12us/step - loss: 0.6894
Epoch 39/200				
	[=====]	-	0s	12us/step - loss: 0.6893
Epoch 40/200				
	[=====]	-	0s	12us/step - loss: 0.6890
Epoch 41/200				
	[]	-	0s	12us/step - loss: 0.6887
Epoch 42/200				
	[]	-	0s	12us/step - loss: 0.6883
Epoch 43/200				
	[======]	-	0s	12us/step - loss: 0.6882
Epoch 44/200			_	
	[=====]	-	0s	12us/step - loss: 0.6876
Epoch 45/200			•	10 / 1 0 0000
	[======]	_	Us	12us/step - loss: 0.6868
Epoch 46/200			ο-	10/
	[======]	_	US	12us/step - 10ss: 0.6655
Epoch 47/200			٥-	10/ 1 0 6930
	[=======]	_	US	12us/step - 10ss: 0.6830
Epoch 48/200	[======]	_	Λα	12ug/gton = logg: 0 6782
Epoch 49/200			US	12us/step - 10ss. 0.0782
-	[=======]	_	۸e	12ug/stap = loss: 0 6701
Epoch 50/200			OS	12us/scep 10ss. 0.0701
•	[======]	_	۸q	12us/sten - loss: 0 6469
Epoch 51/200			OB	1245, 5000 1055. 0.0105
_	[======]	_	0s	12us/sten - loss: 0 6239
Epoch 52/200			Ü	1245, 5000 1055. 0.0200
-	[======]	_	0s	12us/step - loss: 0.6108
Epoch 53/200				
	[=====]	_	0s	12us/step - loss: 0.6028
Epoch 54/200				
	[======]	_	0s	12us/step - loss: 0.5969
				<del>-</del>

Epoch 55/200			
22868/22868 [===================================	_	0s	12us/step - loss: 0.5886
Epoch 56/200			•
22868/22868 [===================================	_	0s	12us/step - loss: 0.5765
Epoch 57/200			•
22868/22868 [===================================	_	0s	12us/step - loss: 0.5693
Epoch 58/200			•
22868/22868 [===================================	_	0s	12us/step - loss: 0.5653
Epoch 59/200			-
22868/22868 [===================================	-	0s	12us/step - loss: 0.5497
Epoch 60/200			
22868/22868 [===================================	_	0s	12us/step - loss: 0.5588
Epoch 61/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5537
Epoch 62/200			
22868/22868 [===================================	-	0s	11us/step - loss: 0.5515
Epoch 63/200			
22868/22868 [===================================	-	0s	11us/step - loss: 0.5479
Epoch 64/200			
22868/22868 [===================================	_	0s	12us/step - loss: 0.5402
Epoch 65/200			
22868/22868 [===================================	_	0s	13us/step - loss: 0.5401
Epoch 66/200			
22868/22868 [===================================	_	0s	11us/step - loss: 0.5366
Epoch 67/200			
22868/22868 [===================================	-	0s	11us/step - loss: 0.5399
Epoch 68/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5405
Epoch 69/200			
22868/22868 [===================================	-	0s	11us/step - loss: 0.5385
Epoch 70/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5363
Epoch 71/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5338
Epoch 72/200			
22868/22868 [===================================	-	0s	11us/step - loss: 0.5362
Epoch 73/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5327
Epoch 74/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5327
Epoch 75/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5307
Epoch 76/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5297
Epoch 77/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5338
Epoch 78/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5304

E 1 70/000				
Epoch 79/200			0 -	10/
	[======]	-	US	12us/step - 10ss: 0.52/1
Epoch 80/200			^	44 / 1 3 0 5047
	[=======]	-	Us	llus/step - loss: 0.531/
Epoch 81/200			•	10 / 1 7 0 5001
	[======]	-	0s	12us/step - loss: 0.5284
Epoch 82/200			_	
	[======]	-	0s	12us/step - loss: 0.5320
Epoch 83/200			•	10 / 1 7 0 5050
	[======]	-	0s	12us/step - loss: 0.52/9
Epoch 84/200			•	10 / 1 2 2 2 5 5 5 5 5
	[======]	-	0s	12us/step - loss: 0.5250
Epoch 85/200			•	40 4
	[======]	-	0s	12us/step - loss: 0.5303
Epoch 86/200			_	
	[======]	-	0s	12us/step - loss: 0.5292
Epoch 87/200			_	
	[=======]	-	0s	12us/step - loss: 0.5253
Epoch 88/200	_		_	
	[======]	-	0s	12us/step - loss: 0.5247
Epoch 89/200			_	
	[=====]	-	0s	12us/step - loss: 0.5302
Epoch 90/200	_		_	
	[=====]	-	0s	12us/step - loss: 0.5298
Epoch 91/200			_	
	[=====]	-	0s	12us/step - loss: 0.5239
Epoch 92/200	_		_	
	[=====]	-	0s	12us/step - loss: 0.5276
Epoch 93/200			_	
	[======]	-	0s	12us/step - loss: 0.5294
Epoch 94/200			_	
	[======]	-	0s	12us/step - loss: 0.5260
Epoch 95/200			_	
	[======]	-	0s	12us/step - loss: 0.5293
Epoch 96/200			•	10 / 1 7 0 5000
	[======]	-	0s	12us/step - loss: 0.5289
Epoch 97/200			^	44 / 1 3 0 5000
	[======]	-	Us	llus/step - loss: 0.5229
Epoch 98/200			^	10 / 1 0 5075
	[======]	_	US	12us/step - loss: 0.52/5
Epoch 99/200			•	
	[========]	-	0s	11us/step - loss: 0.5242
Epoch 100/20			•	
	[=========]	-	0s	11us/step - 1oss: 0.5272
Epoch 101/20			^	10 / 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2
	[=========]	-	Us	12us/step - loss: 0.5248
Epoch 102/20			^	40 / 1 3 0 5555
22868/22868	[======]	-	US	12us/step - loss: 0.5233

Epoch 103/200
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Epoch 126/200
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Epoch 127/200 22868/22868 [=======]		٥٥	11ug/gtop - logg: 0 5120
Epoch 128/200	_	US	Trus/step - Toss: 0.5120
22868/22868 [=======]	_	Λα	11ug/gtop = logg: 0 5131
Epoch 129/200		US	11us/step - 10ss. 0.5151
22868/22868 [===================================	_	Λα	12ug/gtop = logg: 0 5162
Epoch 130/200		US	12us/step - 10ss. 0.5102
22868/22868 [===================================	_	۸e	12ug/stan - loss: 0 5002
Epoch 131/200		VS	12us/step 10ss. 0.5032
22868/22868 [=======]	_	0s	12us/step - loss: 0 5104
Epoch 132/200		O.D	1245, 5000 1055. 0.0101
22868/22868 [=======]	_	0s	12us/step - loss: 0.5104
Epoch 133/200		Ů.	izaz, zeep iezz. e.eiei
22868/22868 [========]	_	0s	11us/step - loss: 0.5097
Epoch 134/200		-	Line, itsp
22868/22868 [=======]	_	0s	11us/step - loss: 0.5094
Epoch 135/200			
22868/22868 [===================================	_	0s	12us/step - loss: 0.5097
Epoch 136/200			•
22868/22868 [===================================	_	0s	12us/step - loss: 0.5113
Epoch 137/200			-
22868/22868 [===================================	-	0s	12us/step - loss: 0.5104
Epoch 138/200			
22868/22868 [======]	-	0s	11us/step - loss: 0.5091
Epoch 139/200			
22868/22868 [=======]	-	0s	12us/step - loss: 0.5137
Epoch 140/200			
22868/22868 [=======]	-	0s	12us/step - loss: 0.5060
Epoch 141/200			
22868/22868 [=======]	-	0s	12us/step - loss: 0.5081
Epoch 142/200			
22868/22868 [=========]	-	0s	12us/step - loss: 0.5049
Epoch 143/200			
22868/22868 [===================================	-	0s	12us/step - loss: 0.5082
Epoch 144/200		_	
22868/22868 [===================================	-	0s	12us/step - loss: 0.5090
Epoch 145/200		^	44 / 1 3 0 5000
22868/22868 [===================================	_	Us	llus/step - loss: 0.5063
Epoch 146/200 22868/22868 [========]		0-	10/ 1 0 5065
	_	US	12us/step - 10ss: 0.5065
Epoch 147/200 22868/22868 [========]		٥٩	10mg/gton logg. 0 F029
Epoch 148/200	_	US	12us/step - 10ss: 0.5056
22868/22868 [===================================	_	Λα	12ug/gtop = logg: 0 5037
Epoch 149/200		OD	12us/scep 10ss. 0.3031
22868/22868 [===================================	_	0 <	11us/sten - loss: 0 4003
Epoch 150/200		VB	11ab/ 50cp 10bb. 0.4330
22868/22868 [=======]	_	0s	12us/step - loss: 0.5011
		2.5	,

Epoch 151/200			
22868/22868 [===================================	1 –	0s	12us/step - loss: 0.5002
Epoch 152/200	•		
22868/22868 [===================================	] –	0s	11us/step - loss: 0.4982
Epoch 153/200			•
22868/22868 [===================================	] –	0s	12us/step - loss: 0.5007
Epoch 154/200			•
22868/22868 [===================================	] –	0s	11us/step - loss: 0.4999
Epoch 155/200			
22868/22868 [===================================	] –	0s	12us/step - loss: 0.5026
Epoch 156/200			
22868/22868 [===================================	] –	0s	12us/step - loss: 0.4965
Epoch 157/200			
22868/22868 [===================================	] –	0s	11us/step - loss: 0.5021
Epoch 158/200			
22868/22868 [===================================	] –	0s	11us/step - loss: 0.5006
Epoch 159/200			
22868/22868 [===================================	] –	0s	12us/step - loss: 0.4975
Epoch 160/200			
22868/22868 [===================================	] –	0s	11us/step - loss: 0.4987
Epoch 161/200	_		
22868/22868 [===================================	] –	0s	12us/step - loss: 0.4940
Epoch 162/200		_	
22868/22868 [===================================	] –	0s	12us/step - loss: 0.4972
Epoch 163/200	,	_	10 / 1000
22868/22868 [===================================	J –	0s	12us/step - loss: 0.4962
Epoch 164/200	1	^	44 / 1 3 0 4000
22868/22868 [===================================	J –	US	llus/step - loss: 0.4962
Epoch 165/200 22868/22868 [===================================	1	٥٩	1000/0+00 1000 0 4072
	J –	US	12us/step - 10ss: 0.4973
Epoch 166/200 22868/22868 [===================================	1 _	٥٥	11ug/gton - logg: 0 4040
Epoch 167/200	J	US	11us/step = 10ss. 0.4340
22868/22868 [===================================	1 _	۸e	11ug/stap = loss: 0 /010
Epoch 168/200	J	V.S	11us/scep 10ss. 0.4010
22868/22868 [==============	1 –	0s	12us/step - loss: 0.5009
Epoch 169/200	,	OD	1245, 5000
22868/22868 [=============	1 –	0s	12us/step - loss: 0.4944
Epoch 170/200	•		
22868/22868 [===================================	] –	0s	12us/step - loss: 0.4932
Epoch 171/200			
22868/22868 [===================================	] –	0s	11us/step - loss: 0.4937
Epoch 172/200			•
22868/22868 [===================================	] –	0s	11us/step - loss: 0.4938
Epoch 173/200			<del>-</del>
22868/22868 [===================================	] –	0s	12us/step - loss: 0.4926
Epoch 174/200			
22868/22868 [===================================	] –	0s	12us/step - loss: 0.4920

Epoch 175/200						
22868/22868 [===================================	_	0s	12us/step	_	loss:	0.4921
Epoch 176/200						
22868/22868 [===================================	_	0s	11us/step	_	loss:	0.4939
Epoch 177/200			. 1			
22868/22868 [===================================	_	0s	12us/step	_	loss:	0.4940
Epoch 178/200			. 1			
22868/22868 [===================================	_	0s	12us/step	_	loss:	0.4909
Epoch 179/200			-			
22868/22868 [===================================	-	0s	12us/step	_	loss:	0.4913
Epoch 180/200						
22868/22868 [=======]	-	0s	11us/step	_	loss:	0.4898
Epoch 181/200						
22868/22868 [======]	-	0s	11us/step	-	loss:	0.4939
Epoch 182/200						
22868/22868 [===========]	-	0s	11us/step	-	loss:	0.4927
Epoch 183/200						
22868/22868 [===========]	-	0s	11us/step	-	loss:	0.4882
Epoch 184/200						
22868/22868 [========]	-	0s	12us/step	-	loss:	0.4935
Epoch 185/200						
22868/22868 [=======]	-	0s	12us/step	-	loss:	0.4955
Epoch 186/200						
22868/22868 [=======]	-	0s	12us/step	-	loss:	0.4943
Epoch 187/200						
22868/22868 [=======]	-	0s	11us/step	-	loss:	0.4939
Epoch 188/200			_			
22868/22868 [==========]	-	0s	11us/step	-	loss:	0.4914
Epoch 189/200		_			_	
22868/22868 [===================================	-	0s	11us/step	_	loss:	0.4965
Epoch 190/200		•			_	
22868/22868 [===================================	-	0s	11us/step	_	loss:	0.4905
Epoch 191/200		•			_	
22868/22868 [===================================	-	0s	11us/step	_	loss:	0.4938
Epoch 192/200		^	44 / 1		-	0 4000
22868/22868 [===================================	_	US	llus/step	_	loss:	0.4929
Epoch 193/200 22868/22868 [===================================		0-	11/		7	0 4016
Epoch 194/200	_	US	llus/step	_	loss:	0.4916
22868/22868 [===================================		٥٥	11ug/gton	_	loggi	0 4005
Epoch 195/200		US	Trus/scep	_	TOSS.	0.4925
22868/22868 [===================================	_	Λα	11ug/gton	_	logge	0 4030
Epoch 196/200		OS	ilus/scep		1055.	0.4330
22868/22868 [===================================	_	۸e	1911g/gtan	_	1000.	0 4894
Epoch 197/200		OB	-240/00ch		TOBB.	J. 4034
22868/22868 [===================================	_	0s	19us/sten	_	loss	0.4905
Epoch 198/200		JB	-245/ 506p		1000.	0.4000
22868/22868 [===================================	_	0s	11us/sten	_	loss	0.4914
		Ü	-145, 500p		1000.	J. 1011

Epoch 199/200
22868/22868 [===================================
Epoch 200/200
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Epoch 1/200
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Epoch 2/200
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Epoch 3/200
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Epoch 4/200
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Epoch 5/200
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Epoch 6/200
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Epoch 7/200
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Epoch 8/200
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Epoch 10/200
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Epoch 19/200
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Epoch 20/200
22868/22868 [===================================
Epoch 21/200
22868/22868 [===================================
Epoch 22/200

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22868/22868 [============== ] - Os 12us/step - loss: 0.6056
Epoch 23/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5866
Epoch 24/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5825
Epoch 25/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5795
Epoch 26/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5698
Epoch 27/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5613
Epoch 28/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5534
Epoch 29/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5553
Epoch 30/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5489
Epoch 31/200
Epoch 32/200
Epoch 33/200
Epoch 34/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5395
Epoch 35/200
22868/22868 [============== ] - 0s 12us/step - loss: 0.5312
Epoch 36/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5333
Epoch 37/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5275
Epoch 38/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5289
Epoch 39/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5279
Epoch 40/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5263
Epoch 41/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5260
Epoch 42/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5240
Epoch 43/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5275
Epoch 44/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5322
Epoch 45/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5281
Epoch 46/200
```

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22868/22868 [============== ] - Os 12us/step - loss: 0.5252
Epoch 47/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5182
Epoch 48/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5392
Epoch 49/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5355
Epoch 50/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5338
Epoch 51/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5372
Epoch 52/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5314
Epoch 53/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5340
Epoch 54/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5276
Epoch 55/200
Epoch 56/200
Epoch 57/200
22868/22868 [============ ] - 0s 12us/step - loss: 0.5304
Epoch 58/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5294
Epoch 59/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5318
Epoch 60/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5272
Epoch 61/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5306
Epoch 62/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5336
Epoch 63/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5263
Epoch 64/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5276
Epoch 65/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5253
Epoch 66/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5255
Epoch 67/200
22868/22868 [============== ] - 0s 12us/step - loss: 0.5294
Epoch 68/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5280
Epoch 69/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5309
Epoch 70/200
```

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22868/22868 [============== ] - Os 13us/step - loss: 0.5315
Epoch 71/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5318
Epoch 72/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5264
Epoch 73/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5259
Epoch 74/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5280
Epoch 75/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5258
Epoch 76/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5251
Epoch 77/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5283
Epoch 78/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5266
Epoch 79/200
Epoch 80/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5277
Epoch 81/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5224
Epoch 82/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5272
Epoch 83/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5231
Epoch 84/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5246
Epoch 85/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5276
Epoch 86/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5288
Epoch 87/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5254
Epoch 88/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5252
Epoch 89/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5273
Epoch 90/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5243
Epoch 91/200
22868/22868 [============== ] - 0s 12us/step - loss: 0.5258
Epoch 92/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5257
Epoch 93/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5267
Epoch 94/200
```

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22868/22868 [============== ] - Os 13us/step - loss: 0.5265
Epoch 95/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5222
Epoch 96/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5259
Epoch 97/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5268
Epoch 98/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5276
Epoch 99/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5261
Epoch 100/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5266
Epoch 101/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5252
Epoch 102/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5218
Epoch 103/200
Epoch 104/200
Epoch 105/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5257
Epoch 106/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5256
Epoch 107/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5262
Epoch 108/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5248
Epoch 109/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5224
Epoch 110/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5224
Epoch 111/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5239
Epoch 112/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5245
Epoch 113/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5260
Epoch 114/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5212
Epoch 115/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5223
Epoch 116/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5229
Epoch 117/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5203
Epoch 118/200
```

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22868/22868 [============== ] - Os 13us/step - loss: 0.5235
Epoch 119/200
Epoch 120/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5215
Epoch 121/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5204
Epoch 122/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5222
Epoch 123/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5177
Epoch 124/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5225
Epoch 125/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5225
Epoch 126/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5219
Epoch 127/200
Epoch 128/200
Epoch 129/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5248
Epoch 130/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5195
Epoch 131/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5209
Epoch 132/200
Epoch 133/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5208
Epoch 134/200
22868/22868 [============ ] - Os 12us/step - loss: 0.5227
Epoch 135/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5259
Epoch 136/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5218
Epoch 137/200
22868/22868 [============== ] - 0s 12us/step - loss: 0.5198
Epoch 138/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5253
Epoch 139/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5248
Epoch 140/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5161
Epoch 141/200
22868/22868 [============== ] - 0s 12us/step - loss: 0.5218
Epoch 142/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5201
Epoch 143/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5206
Epoch 144/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5207
Epoch 145/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5202
Epoch 146/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5193
Epoch 147/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5217
Epoch 148/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5232
Epoch 149/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5221
Epoch 150/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5219
Epoch 151/200
Epoch 152/200
Epoch 153/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5190
Epoch 154/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5222
Epoch 155/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5208
Epoch 156/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5237
Epoch 157/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5212
Epoch 158/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5197
Epoch 159/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5245
Epoch 160/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5204
Epoch 161/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5186
Epoch 162/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5190
Epoch 163/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5191
Epoch 164/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5177
Epoch 165/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5189
Epoch 166/200
```

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22868/22868 [============= ] - Os 12us/step - loss: 0.5201
Epoch 167/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5198
Epoch 168/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5203
Epoch 169/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5199
Epoch 170/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5212
Epoch 171/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5220
Epoch 172/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5199
Epoch 173/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5239
Epoch 174/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5202
Epoch 175/200
Epoch 176/200
Epoch 177/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5185
Epoch 178/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5181
Epoch 179/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5186
Epoch 180/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5203
Epoch 181/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5196
Epoch 182/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5207
Epoch 183/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5178
Epoch 184/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5188
Epoch 185/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5211
Epoch 186/200
22868/22868 [============== ] - 0s 12us/step - loss: 0.5212
Epoch 187/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5201
Epoch 188/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5211
Epoch 189/200
22868/22868 [============== ] - 0s 12us/step - loss: 0.5194
Epoch 190/200
```

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22868/22868 [============= ] - Os 12us/step - loss: 0.5156
Epoch 191/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5214
Epoch 192/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5172
Epoch 193/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5213
Epoch 194/200
22868/22868 [============= ] - Os 12us/step - loss: 0.5186
Epoch 195/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5193
Epoch 196/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5199
Epoch 197/200
22868/22868 [============= ] - 0s 12us/step - loss: 0.5188
Epoch 198/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5171
Epoch 199/200
Epoch 200/200
Epoch 1/200
22868/22868 [============= ] - 1s 36us/step - loss: 0.7093
Epoch 2/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6933
Epoch 3/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6931
Epoch 4/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6929
Epoch 5/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6923
Epoch 6/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6923
Epoch 7/200
Epoch 8/200
22868/22868 [=============== ] - Os 14us/step - loss: 0.6896
Epoch 9/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6898
Epoch 10/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6884
Epoch 11/200
Epoch 12/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6831
Epoch 13/200
```

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Epoch 14/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6633
Epoch 15/200
Epoch 16/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6575
Epoch 17/200
22868/22868 [=============== ] - Os 14us/step - loss: 0.6583
Epoch 18/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6936
Epoch 19/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6255
Epoch 20/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6073
Epoch 21/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6023
Epoch 22/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5974
Epoch 23/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5819
Epoch 24/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5756
Epoch 25/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5718
Epoch 26/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5628
Epoch 27/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5602
Epoch 28/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5540
Epoch 29/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5510
Epoch 30/200
Epoch 31/200
Epoch 32/200
22868/22868 [=============== ] - Os 13us/step - loss: 0.5381
Epoch 33/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5399
Epoch 34/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5362
Epoch 35/200
Epoch 36/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5386
Epoch 37/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5376
```

Epoch 38/200				
	[======]	_	0s	14us/step - loss: 0.5354
Epoch 39/200				
-	[======]	_	0s	14us/step - loss: 0.5327
Epoch 40/200				•
	[=======]	_	0s	14us/step - loss: 0.5345
Epoch 41/200				•
22868/22868	[======]	-	0s	14us/step - loss: 0.5344
Epoch 42/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5294
Epoch 43/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5342
Epoch 44/200				
22868/22868	[]	-	0s	14us/step - loss: 0.5299
Epoch 45/200				
	[======]	-	0s	14us/step - loss: 0.5301
Epoch 46/200				
	[=====]	-	0s	14us/step - loss: 0.5298
Epoch 47/200				
	[=====]	-	0s	14us/step - loss: 0.5324
Epoch 48/200				
	[=====]	-	0s	14us/step - loss: 0.5364
Epoch 49/200				
	[=====]	-	0s	14us/step - loss: 0.5364
Epoch 50/200				
	[=====]	-	0s	14us/step - loss: 0.5335
Epoch 51/200				
	[=====]	-	0s	14us/step - loss: 0.5315
Epoch 52/200			_	
	[======]	-	0s	14us/step - loss: 0.5290
Epoch 53/200			^	14 / 1 2 0 5074
	[=======]	_	Us	14us/step - loss: 0.52/6
Epoch 54/200			^	14 / 1 3 0 5000
	[======]	-	US	14us/step - loss: 0.5288
Epoch 55/200			٥	1499/9400 1099 0 5205
Epoch 56/200		_	US	14us/step - 10ss: 0.5505
-	[=======]	_	۸a	1/ug/gtop = logg: 0 5288
Epoch 57/200			US	14us/scep 10ss. 0.0200
-	[=======]	_	۸e	14us/stan - loss: 0 5251
Epoch 58/200			V.S	14us/scep 10ss. 0.0201
_	[======]	_	۸q	14us/sten - loss: 0 5296
Epoch 59/200			V.S	14us/scep 10ss. 0.0250
-	[======]	_	٥s	14us/sten - loss: 0 5273
Epoch 60/200			0.0	112,200
	[=====]	_	0s	14us/step - loss: 0.5267
Epoch 61/200				
	[=====]	_	0s	14us/step - loss: 0.5246
	-			•

Epoch 62/200	
22868/22868 [===================================	ss: 0.5264
Epoch 63/200	
22868/22868 [===================================	ss: 0.5248
Epoch 64/200	
22868/22868 [===================================	ss: 0.5264
Epoch 65/200	
22868/22868 [===================================	ss: 0.5231
Epoch 66/200	
22868/22868 [===================================	ss: 0.5238
Epoch 67/200	
22868/22868 [============ ] - Os 14us/step - lo	ss: 0.5246
Epoch 68/200	
22868/22868 [=========== ] - Os 14us/step - lo	ss: 0.5267
Epoch 69/200	
22868/22868 [============ ] - Os 14us/step - lo	ss: 0.5260
Epoch 70/200	
22868/22868 [============ ] - Os 14us/step - lo	ss: 0.5244
Epoch 71/200	
22868/22868 [============ ] - Os 14us/step - lo	ss: 0.5200
Epoch 72/200	
22868/22868 [============ ] - Os 14us/step - lo	ss: 0.5265
Epoch 73/200	
22868/22868 [============ ] - Os 14us/step - lo	ss: 0.5248
Epoch 74/200	
22868/22868 [============ ] - Os 14us/step - lo	ss: 0.5249
Epoch 75/200	
22868/22868 [============ ] - Os 13us/step - lo	ss: 0.5253
Epoch 76/200	
22868/22868 [============= ] - Os 14us/step - lo	ss: 0.5271
Epoch 77/200	
22868/22868 [===========] - Os 14us/step - lo	ss: 0.5221
Epoch 78/200	
22868/22868 [===========] - Os 14us/step - lo	ss: 0.5234
Epoch 79/200	
22868/22868 [===========] - Os 14us/step - lo	ss: 0.5244
Epoch 80/200	
22868/22868 [===================================	ss: 0.5218
Epoch 81/200	
22868/22868 [===================================	ss: 0.5234
Epoch 82/200	
22868/22868 [===================================	ss: 0.5232
Epoch 83/200	
22868/22868 [===================================	ss: 0.5245
Epoch 84/200	o ==··
22868/22868 [===================================	ss: 0.5211
Epoch 85/200	0 5040
22868/22868 [============ ] - Os 14us/step - lo	ss: 0.5248

Epoch 86/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5229
Epoch 87/200		•
22868/22868 [===================================	0s	14us/step - loss: 0.5251
Epoch 88/200		•
22868/22868 [===================================	0s	13us/step - loss: 0.5223
Epoch 89/200		•
22868/22868 [===================================	0s	14us/step - loss: 0.5212
Epoch 90/200		-
22868/22868 [===================================	0s	14us/step - loss: 0.5208
Epoch 91/200		
22868/22868 [============ ] -	0s	14us/step - loss: 0.5215
Epoch 92/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5203
Epoch 93/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5239
Epoch 94/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5201
Epoch 95/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5227
Epoch 96/200		
22868/22868 [============ ] -	0s	14us/step - loss: 0.5186
Epoch 97/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5213
Epoch 98/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5214
Epoch 99/200		
22868/22868 [===================================	0s	13us/step - loss: 0.5218
Epoch 100/200		
22868/22868 [===========	0s	14us/step - loss: 0.5220
Epoch 101/200		
22868/22868 [=========== ] -	0s	14us/step - loss: 0.5203
Epoch 102/200		
22868/22868 [=========== ] -	0s	13us/step - loss: 0.5177
Epoch 103/200		
22868/22868 [=========== ] -	0s	13us/step - loss: 0.5187
Epoch 104/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5178
Epoch 105/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5244
Epoch 106/200		
22868/22868 [=========== ] -	0s	14us/step - loss: 0.5171
Epoch 107/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5182
Epoch 108/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5218
Epoch 109/200		
22868/22868 [===================================	0s	14us/step - loss: 0.5195

Epoch 110/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5196
Epoch 111/200			
22868/22868 [=========================	_	0s	14us/step - loss: 0.5164
Epoch 112/200			•
22868/22868 [===================================	_	0s	13us/step - loss: 0.5182
Epoch 113/200			-
22868/22868 [==============================	_	0s	14us/step - loss: 0.5170
Epoch 114/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5180
Epoch 115/200			
22868/22868 [===================================	_	0s	13us/step - loss: 0.5172
Epoch 116/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5199
Epoch 117/200			
22868/22868 [===================================	_	0s	13us/step - loss: 0.5163
Epoch 118/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5195
Epoch 119/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5157
Epoch 120/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5187
Epoch 121/200		_	
22868/22868 [===================================	_	0s	14us/step - loss: 0.5192
Epoch 122/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5160
Epoch 123/200		•	14 / 1 2 2 5 1 2 7
22868/22868 [===================================	_	Us	14us/step - loss: 0.516/
Epoch 124/200		Λ-	14/
22868/22868 [===================================	_	US	14us/step - 10ss: 0.5163
Epoch 125/200 22868/22868 [===================================		٥٥	1/ug/gton - logg: 0 5155
Epoch 126/200	_	US	14us/step - 10ss: 0.5155
22868/22868 [===================================		٥٥	1/ug/gton - logg: 0 515/
Epoch 127/200		05	14us/step = 10ss. 0.3134
22868/22868 [=========================	_	۸q	14us/sten - loss: 0 5178
Epoch 128/200		OB	Tiub, beep Tobb. 0.0170
22868/22868 [=========================	_	0s	13us/step - loss: 0.5155
Epoch 129/200		Ů.	icab, beep lebb. c.cles
22868/22868 [===================================	_	0s	14us/step - loss: 0.5149
Epoch 130/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5188
Epoch 131/200			
22868/22868 [==============================	_	0s	14us/step - loss: 0.5151
Epoch 132/200			•
22868/22868 [===================================	_	0s	14us/step - loss: 0.5177
Epoch 133/200			-
22868/22868 [===================================	_	0s	14us/step - loss: 0.5186

Epoch 134/200			
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5171
Epoch 135/200	-		1
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5157
Epoch 136/200			•
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5146
Epoch 137/200			•
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5152
Epoch 138/200			
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5131
Epoch 139/200			
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5120
Epoch 140/200			
22868/22868 [===================================	=] ·	- 0s	14us/step - loss: 0.5127
Epoch 141/200			
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5126
Epoch 142/200			
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5126
Epoch 143/200			
22868/22868 [===================================	=] ·	- 0s	14us/step - loss: 0.5113
Epoch 144/200	_		
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5111
Epoch 145/200	,	_	
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5095
Epoch 146/200	,	•	
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5099
Epoch 147/200	,	0	44 / 4 3 0 5007
22868/22868 [===================================	=] -	- Us	14us/step - loss: 0.509/
Epoch 148/200 22868/22868 [===================================	_1	0-	14/
	-] .	- 08	14us/step - 10ss: 0.50/1
Epoch 149/200 22868/22868 [===================================	_1 .	- Oa	1/ug/gton - logg: 0 5055
Epoch 150/200	_] .	- 05	14us/step - 10ss. 0.5055
22868/22868 [===================================	_1 .	- Oa	1/us/stan = loss: 0 5081
Epoch 151/200	_1	V.S	14d5/5tep 1055. 0.0001
22868/22868 [===================================	=1 -	- Os	14us/step - loss: 0.5069
Epoch 152/200	_	O.D	1145,5000 1055. 0.0005
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5052
Epoch 153/200	-		
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5105
Epoch 154/200	_		
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5049
Epoch 155/200			•
22868/22868 [===================================	=] -	- 0s	13us/step - loss: 0.5065
Epoch 156/200			-
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5065
Epoch 157/200			
22868/22868 [===================================	=] -	- 0s	14us/step - loss: 0.5049

Epoch 158/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5035
Epoch 159/200			,,			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5021
Epoch 160/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5018
Epoch 161/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5002
Epoch 162/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5018
Epoch 163/200			•			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5047
Epoch 164/200			-			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5014
Epoch 165/200			_			
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.4986
Epoch 166/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5014
Epoch 167/200						
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.4991
Epoch 168/200						
22868/22868 [=======]	-	0s	14us/step	_	loss:	0.5003
Epoch 169/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.4972
Epoch 170/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5061
Epoch 171/200						
22868/22868 [======]	-	0s	14us/step	-	loss:	0.5005
Epoch 172/200						
22868/22868 [========]	-	0s	13us/step	-	loss:	0.4984
Epoch 173/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.4934
Epoch 174/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.4965
Epoch 175/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.4962
Epoch 176/200						
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.5051
Epoch 177/200		_			_	
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.4986
Epoch 178/200		_			_	
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.4996
Epoch 179/200		•			_	
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.4935
Epoch 180/200		^	4.4 / :		7.	0 4054
22868/22868 [===================================	-	Us	14us/step	_	loss:	0.4974
Epoch 181/200		^	1 / /		7	0 4005
22868/22868 [===================================	_	US	14us/step	_	Toss:	0.4985

Fr1. 100/000			
Epoch 182/200 22868/22868 [===================================	ר	٥٩	12::2/2+22 ]222. 0 4002
Epoch 183/200	J -	US	13us/step - 10ss: 0.4992
22868/22868 [===================================	ı _	٥٥	1/11g/gton - logg: 0 /052
Epoch 184/200	.J _	US	14us/step - 10ss. 0.4955
22868/22868 [===================================	1 _	. 0.	1/us/stan = loss: 0 5000
Epoch 185/200	J	OS	14us/step 10ss. 0.0000
22868/22868 [===================================	1 -	. 09	14us/sten - loss: 0 4942
Epoch 186/200	_	O.D	1145,500p 1055. 0.1512
22868/22868 [===================================	1 -	0s	14us/step - loss: 0.4954
Epoch 187/200	-		1145, 200p
22868/22868 [===================================	1 -	0s	14us/step - loss: 0.5011
Epoch 188/200	-		
22868/22868 [===================================	] -	0s	14us/step - loss: 0.4938
Epoch 189/200	_		
22868/22868 [===================================	] -	0s	14us/step - loss: 0.4891
Epoch 190/200			•
22868/22868 [===================================	] -	0s	14us/step - loss: 0.4935
Epoch 191/200			-
22868/22868 [===================================	] -	0s	14us/step - loss: 0.4884
Epoch 192/200			
22868/22868 [===================================	] -	0s	14us/step - loss: 0.6756
Epoch 193/200			
22868/22868 [===================================	] -	0s	14us/step - loss: 0.6975
Epoch 194/200			
22868/22868 [===================================	] -	0s	14us/step - loss: 0.6977
Epoch 195/200			
22868/22868 [===================================	] -	0s	14us/step - loss: 0.6971
Epoch 196/200	_		
22868/22868 [===================================	] -	0s	14us/step - loss: 0.6964
Epoch 197/200	_	_	
22868/22868 [===================================	] -	0s	14us/step - loss: 0.6957
Epoch 198/200	,	_	
22868/22868 [===================================	] -	0s	14us/step - loss: 0.6959
Epoch 199/200	7	^	44 / 1 3 0 0057
22868/22868 [===================================	] -	US	14us/step - loss: 0.695/
Epoch 200/200 22868/22868 [===================================	ר	0-	14/
22868/22868 [===================================			-
Epoch 1/200	J -	18	3/us/scep
22868/22868 [===================================		. 1.	10ug/gtop = logg: 0 7134
Epoch 2/200	.J _	15	40ds/step - 10ss. 0.7134
22868/22868 [===================================	1 _	. 0.	15us/stan - loss: 0 68/3
Epoch 3/200	٦	OB	1045, 50ep 1055. 0.0045
22868/22868 [===================================	1 -	. 0 a	15us/step - loss: 0 6783
Epoch 4/200	_	OB	1000, 000p 1000. 0.0100
22868/22868 [===================================	1 -	. ()s	15us/step - loss: 0.6685
Epoch 5/200	_	3.5	,
-r			

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22868/22868 [============== ] - Os 15us/step - loss: 0.6481
Epoch 6/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6239
Epoch 7/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6264
Epoch 8/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6200
Epoch 9/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.6044
Epoch 10/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.6132
Epoch 11/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5991
Epoch 12/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5891
Epoch 13/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5853
Epoch 14/200
Epoch 15/200
Epoch 16/200
Epoch 17/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5509
Epoch 18/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5502
Epoch 19/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5429
Epoch 20/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5414
Epoch 21/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5360
Epoch 22/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5334
Epoch 23/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5350
Epoch 24/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5307
Epoch 25/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5334
Epoch 26/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5241
Epoch 27/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5249
Epoch 28/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5348
Epoch 29/200
```

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22868/22868 [============= ] - Os 15us/step - loss: 0.5270
Epoch 30/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5199
Epoch 31/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5185
Epoch 32/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5205
Epoch 33/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5199
Epoch 34/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5162
Epoch 35/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5238
Epoch 36/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5155
Epoch 37/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5167
Epoch 38/200
Epoch 39/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5137
Epoch 40/200
Epoch 41/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5109
Epoch 42/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5087
Epoch 43/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5155
Epoch 44/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5045
Epoch 45/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5054
Epoch 46/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5062
Epoch 47/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5075
Epoch 48/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5060
Epoch 49/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5049
Epoch 50/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5038
Epoch 51/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5043
Epoch 52/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5011
Epoch 53/200
```

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22868/22868 [============== ] - Os 15us/step - loss: 0.4982
Epoch 54/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5072
Epoch 55/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5105
Epoch 56/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5000
Epoch 57/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5041
Epoch 58/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5086
Epoch 59/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5003
Epoch 60/200
22868/22868 [============== ] - Os 15us/step - loss: 0.4976
Epoch 61/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.4998
Epoch 62/200
Epoch 63/200
Epoch 64/200
Epoch 65/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5316
Epoch 66/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5349
Epoch 67/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5299
Epoch 68/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5305
Epoch 69/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5300
Epoch 70/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5306
Epoch 71/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5293
Epoch 72/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5300
Epoch 73/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5295
Epoch 74/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5286
Epoch 75/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5271
Epoch 76/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5264
Epoch 77/200
```

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22868/22868 [============== ] - Os 15us/step - loss: 0.5291
Epoch 78/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5276
Epoch 79/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5241
Epoch 80/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5300
Epoch 81/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5284
Epoch 82/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5248
Epoch 83/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5283
Epoch 84/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5192
Epoch 85/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5242
Epoch 86/200
Epoch 87/200
Epoch 88/200
Epoch 89/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5235
Epoch 90/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5214
Epoch 91/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5215
Epoch 92/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5209
Epoch 93/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5182
Epoch 94/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5220
Epoch 95/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5206
Epoch 96/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5223
Epoch 97/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5227
Epoch 98/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5203
Epoch 99/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5200
Epoch 100/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5204
Epoch 101/200
```

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22868/22868 [============== ] - Os 15us/step - loss: 0.5235
Epoch 102/200
Epoch 103/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5165
Epoch 104/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5190
Epoch 105/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5179
Epoch 106/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5184
Epoch 107/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5203
Epoch 108/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5179
Epoch 109/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5173
Epoch 110/200
Epoch 111/200
Epoch 112/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5169
Epoch 113/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5184
Epoch 114/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5223
Epoch 115/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5171
Epoch 116/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5170
Epoch 117/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5173
Epoch 118/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5164
Epoch 119/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5238
Epoch 120/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5161
Epoch 121/200
Epoch 122/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5168
Epoch 123/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5158
Epoch 124/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5202
Epoch 125/200
```

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22868/22868 [============== ] - Os 15us/step - loss: 0.5159
Epoch 126/200
Epoch 127/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5172
Epoch 128/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5171
Epoch 129/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5111
Epoch 130/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5181
Epoch 131/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5138
Epoch 132/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5157
Epoch 133/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5153
Epoch 134/200
Epoch 135/200
Epoch 136/200
Epoch 137/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5188
Epoch 138/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5136
Epoch 139/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5199
Epoch 140/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5163
Epoch 141/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5172
Epoch 142/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5162
Epoch 143/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5243
Epoch 144/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5144
Epoch 145/200
Epoch 146/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5169
Epoch 147/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5113
Epoch 148/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5167
Epoch 149/200
```

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22868/22868 [============= ] - Os 15us/step - loss: 0.5204
Epoch 150/200
Epoch 151/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5191
Epoch 152/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5215
Epoch 153/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5145
Epoch 154/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5127
Epoch 155/200
22868/22868 [============= ] - Os 16us/step - loss: 0.5150
Epoch 156/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5150
Epoch 157/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5179
Epoch 158/200
Epoch 159/200
Epoch 160/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5174
Epoch 161/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5154
Epoch 162/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5187
Epoch 163/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5167
Epoch 164/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5185
Epoch 165/200
22868/22868 [============ ] - Os 15us/step - loss: 0.5144
Epoch 166/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5141
Epoch 167/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5154
Epoch 168/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5175
Epoch 169/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5182
Epoch 170/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5164
Epoch 171/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5143
Epoch 172/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5123
Epoch 173/200
```

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22868/22868 [============== ] - Os 15us/step - loss: 0.5150
Epoch 174/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5162
Epoch 175/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5152
Epoch 176/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5188
Epoch 177/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5135
Epoch 178/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5134
Epoch 179/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5167
Epoch 180/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5131
Epoch 181/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5174
Epoch 182/200
Epoch 183/200
Epoch 184/200
Epoch 185/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5149
Epoch 186/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5166
Epoch 187/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5136
Epoch 188/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5160
Epoch 189/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5154
Epoch 190/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5151
Epoch 191/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5143
Epoch 192/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5136
Epoch 193/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5183
Epoch 194/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5179
Epoch 195/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5152
Epoch 196/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5167
Epoch 197/200
```

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22868/22868 [============== ] - 0s 15us/step - loss: 0.5142
Epoch 198/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5145
Epoch 199/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5141
Epoch 200/200
Epoch 1/200
Epoch 2/200
22868/22868 [============= ] - 0s 16us/step - loss: 0.6938
Epoch 3/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6928
Epoch 4/200
22868/22868 [============== ] - 0s 16us/step - loss: 0.6923
Epoch 5/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6919
Epoch 6/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6915
Epoch 7/200
Epoch 8/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6899
Epoch 9/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6890
Epoch 10/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6885
Epoch 11/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6874
Epoch 12/200
22868/22868 [============== ] - Os 16us/step - loss: 0.6871
Epoch 13/200
Epoch 14/200
Epoch 15/200
22868/22868 [=============== ] - Os 17us/step - loss: 0.6849
Epoch 16/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6842
Epoch 17/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6827
Epoch 18/200
Epoch 19/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6798
Epoch 20/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6781
```

Epoch 21/200	
22868/22868 [===================================	cep - loss: 0.6749
Epoch 22/200	•
22868/22868 [===================================	ep - loss: 0.6710
Epoch 23/200	•
22868/22868 [===================================	ep - loss: 0.6638
Epoch 24/200	•
22868/22868 [===================================	cep - loss: 0.6471
Epoch 25/200	-
22868/22868 [======== ] - Os 17us/st	ep - loss: 0.6333
Epoch 26/200	
22868/22868 [======== ] - Os 16us/st	ep - loss: 0.6199
Epoch 27/200	
22868/22868 [=======] - Os 18us/st	ep - loss: 0.6097
Epoch 28/200	
22868/22868 [===========] - Os 16us/st	ep - loss: 0.6001
Epoch 29/200	
22868/22868 [===========] - Os 16us/st	ep - loss: 0.5875
Epoch 30/200	
22868/22868 [========= ] - Os 16us/st	ep - loss: 0.5868
Epoch 31/200	
22868/22868 [======== ] - Os 16us/st	ep - loss: 0.5744
Epoch 32/200	
22868/22868 [======== ] - Os 16us/st	ep - loss: 0.5640
Epoch 33/200	
22868/22868 [===========] - Os 16us/st	ep - loss: 0.5652
Epoch 34/200	
22868/22868 [=========== ] - Os 16us/st	ep - loss: 0.5559
Epoch 35/200	
22868/22868 [======] - 0s 16us/st	cep - loss: 0.5524
Epoch 36/200	
22868/22868 [======== ] - 0s 16us/st	ep - loss: 0.5528
Epoch 37/200	
22868/22868 [========== ] - 0s 16us/st	ep - loss: 0.5450
Epoch 38/200	
22868/22868 [======== ] - 0s 16us/st	cep - loss: 0.5444
Epoch 39/200	
22868/22868 [===================================	cep - loss: 0.5402
Epoch 40/200	
22868/22868 [===================================	cep - loss: 0.5418
Epoch 41/200	
22868/22868 [===================================	cep - loss: 0.5366
Epoch 42/200	
22868/22868 [============ ] - 0s 16us/st	cep - loss: 0.5367
Epoch 43/200	1. 0.5000
22868/22868 [===================================	tep - loss: 0.5333
Epoch 44/200	1 <sub>4</sub> 0 5000
22868/22868 [=========== ] - 0s 16us/st	ep - 10ss: 0.5363

Epoch 45/200				
-	[======]	_	0s	16us/step - loss: 0.5307
Epoch 46/200				
-	[======]	_	0s	16us/step - loss: 0.5294
Epoch 47/200				•
	[======]	_	0s	16us/step - loss: 0.5337
Epoch 48/200				-
22868/22868	[=======]	-	0s	16us/step - loss: 0.5259
Epoch 49/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5256
Epoch 50/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5233
Epoch 51/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5379
Epoch 52/200				
	[=====]	-	0s	16us/step - loss: 0.5207
Epoch 53/200				
	[]	-	0s	16us/step - loss: 0.5231
Epoch 54/200				
	[]	-	0s	16us/step - loss: 0.5186
Epoch 55/200				
	[]	-	0s	16us/step - loss: 0.5198
Epoch 56/200				
	[]	-	0s	16us/step - loss: 0.5219
Epoch 57/200				
	[=====]	-	0s	16us/step - loss: 0.5166
Epoch 58/200			_	
	[=====]	-	0s	16us/step - loss: 0.5154
Epoch 59/200			^	10 / 1 0 5150
	[======]	-	Us	16us/step - 10ss: 0.5158
Epoch 60/200			0 -	16/
	[=====]	_	US	Tous/step - Toss: 0.5148
Epoch 61/200	[======]		٥-	16/
		_	US	Tous/step - Toss: 0.5127
Epoch 62/200	[]	_	۸a	16ug/gtop = logg: 0 5105
Epoch 63/200			US	Tous/step - Toss. 0.5105
-	[======]	_	۸a	16ug/stap = loss: 0 5063
Epoch 64/200			US	10us/scep 10ss. 0.0005
-	[======]	_	۸q	16us/sten - loss: 0 5034
Epoch 65/200			OB	Tous, step Tobs. 0.0001
	[======]	_	۸q	16us/sten - loss: 0 5086
Epoch 66/200			OB	Tous, step Tobs: 0.0000
-	[======]	_	0s	16us/step - loss: 0.5605
Epoch 67/200				,,
_	[======]	_	0s	16us/step - loss: 0.5252
Epoch 68/200				
	[======]	_	0s	16us/step - loss: 0.5217
	-			•

Epoch 69/200				
-	[======]	_	0s	16us/step - loss: 0.5161
Epoch 70/200				
-	[======]	_	0s	16us/step - loss: 0.5166
Epoch 71/200				•
	[======]	_	0s	16us/step - loss: 0.5166
Epoch 72/200				•
22868/22868	[=======]	-	0s	16us/step - loss: 0.5134
Epoch 73/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5135
Epoch 74/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5122
Epoch 75/200				
	[=====]	-	0s	16us/step - loss: 0.5166
Epoch 76/200				
	[=====]	-	0s	16us/step - loss: 0.5106
Epoch 77/200				
	[=====]	-	0s	16us/step - loss: 0.5133
Epoch 78/200				
	[=====]	-	0s	16us/step - loss: 0.5091
Epoch 79/200				
	[]	-	0s	16us/step - loss: 0.5081
Epoch 80/200				
	[]	-	0s	16us/step - loss: 0.5066
Epoch 81/200				
	[=====]	-	0s	16us/step - loss: 0.5107
Epoch 82/200			_	
	[=====]	-	0s	16us/step - loss: 0.5044
Epoch 83/200			^	10 / 1 2 0 5014
	[======]	-	Us	16us/step - loss: 0.5041
Epoch 84/200	[======]		٥-	16/
Epoch 85/200		_	US	Tous/step - Toss: 0.5000
•	[======]	_	٥٥	16ug/gton - logg: 0 5020
Epoch 86/200		_	US	Tous/step - Toss: 0.5039
	[======]	_	۸e	16us/stan - loss: 0 5070
Epoch 87/200			OB	1003/3cep 1033. 0.0070
-	[======]	_	0s	16us/step - loss: 0 5024
Epoch 88/200			Ü	1045, 5000 1055. 0.0021
•	[======]	_	0s	16us/step - loss: 0.4999
Epoch 89/200				
	[=====]	_	0s	16us/step - loss: 0.5011
Epoch 90/200				
-	[=====]	_	0s	16us/step - loss: 0.5000
Epoch 91/200				
	[=====]	_	0s	16us/step - loss: 0.4994
Epoch 92/200				•
_	[======]	-	0s	16us/step - loss: 0.4943

Enach 02/000			
Epoch 93/200 22868/22868 [===================================		٥٥	16ug/gton logg. 0 4004
	_	US	Tous/step - Toss: 0.4994
Epoch 94/200		Λ-	16
22868/22868 [===================================	_	US	16us/step - 16ss: 0.4973
Epoch 95/200		^	16 / 1 2 0 1061
22868/22868 [===================================	_	US	16us/step - 10ss: 0.4961
Epoch 96/200		^	10 / 1 2 2 1010
22868/22868 [===================================	_	Us	16us/step - 10ss: 0.4940
Epoch 97/200		^	16 / 1 2 0 1010
22868/22868 [===================================	_	US	16us/step - 10ss: 0.4942
Epoch 98/200		^	10 / 1 0 1000
22868/22868 [===================================	_	Us	16us/step - 10ss: 0.4928
Epoch 99/200		•	10 / 1000
22868/22868 [===================================	-	0s	16us/step - loss: 0.4903
Epoch 100/200		•	10 / 1000
22868/22868 [===================================	_	0s	16us/step - loss: 0.4896
Epoch 101/200		_	
22868/22868 [===================================	_	0s	16us/step - loss: 0.4944
Epoch 102/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.5001
Epoch 103/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.5011
Epoch 104/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.4941
Epoch 105/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.4889
Epoch 106/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.4913
Epoch 107/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.4895
Epoch 108/200		_	
22868/22868 [===================================	-	0s	16us/step - loss: 0.5034
Epoch 109/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.5036
Epoch 110/200		_	
22868/22868 [===================================	-	0s	16us/step - loss: 0.5069
Epoch 111/200		_	
22868/22868 [===================================	-	0s	16us/step - loss: 0.5051
Epoch 112/200		_	
22868/22868 [===================================	_	0s	16us/step - loss: 0.5071
Epoch 113/200		_	
22868/22868 [===================================	-	0s	16us/step - loss: 0.4989
Epoch 114/200		_	
22868/22868 [===================================	-	0s	17us/step - loss: 0.4982
Epoch 115/200		_	
22868/22868 [===================================	-	0s	1/us/step - loss: 0.5046
Epoch 116/200		_	<b></b>
22868/22868 [===================================	-	0s	1/us/step - loss: 0.5030

Epoch 117/200
22868/22868 [===================================
Epoch 118/200
22868/22868 [===================================
Epoch 119/200
22868/22868 [===================================
Epoch 120/200
22868/22868 [===================================
Epoch 121/200
22868/22868 [===================================
Epoch 122/200
22868/22868 [============= ] - Os 17us/step - loss: 0.7006
Epoch 123/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6996
Epoch 124/200
22868/22868 [===================================
Epoch 125/200
22868/22868 [===================================
Epoch 126/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6978
Epoch 127/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6978
Epoch 128/200
22868/22868 [===================================
Epoch 129/200
22868/22868 [===================================
Epoch 130/200
22868/22868 [===================================
Epoch 131/200
22868/22868 [============ ] - Os 16us/step - loss: 0.6977
Epoch 132/200
22868/22868 [===================================
Epoch 133/200
22868/22868 [===================================
Epoch 134/200
22868/22868 [===================================
Epoch 135/200
22868/22868 [===================================
Epoch 136/200
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Epoch 137/200
22868/22868 [===================================
Epoch 138/200
22868/22868 [===================================
Epoch 139/200
22868/22868 [===================================
Epoch 140/200
22868/22868 [===================================

Epoch 141/200						
22868/22868 [===================================	_	0s	17us/step	_	loss:	0.6966
Epoch 142/200			1. uz, z c p			
22868/22868 [===================================	_	0s	17us/step	_	loss:	0.6963
Epoch 143/200			, <sub>P</sub>			
22868/22868 [===================================	_	0s	18us/step	_	loss:	0.6960
Epoch 144/200						
22868/22868 [===================================	_	0s	17us/step	_	loss:	0.6966
Epoch 145/200			. 1			
22868/22868 [===================================	_	0s	17us/step	_	loss:	0.6956
Epoch 146/200			•			
22868/22868 [===================================	_	0s	17us/step	_	loss:	0.6966
Epoch 147/200			-			
22868/22868 [===================================	_	0s	17us/step	_	loss:	0.6960
Epoch 148/200			_			
22868/22868 [===================================	-	0s	17us/step	_	loss:	0.6955
Epoch 149/200			_			
22868/22868 [===================================	-	0s	16us/step	-	loss:	0.6959
Epoch 150/200						
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.6964
Epoch 151/200						
22868/22868 [=======]	-	0s	17us/step	_	loss:	0.6960
Epoch 152/200						
22868/22868 [==========]	-	0s	17us/step	-	loss:	0.6958
Epoch 153/200						
22868/22868 [=======]	-	0s	17us/step	-	loss:	0.6958
Epoch 154/200						
22868/22868 [======]	-	0s	16us/step	-	loss:	0.6956
Epoch 155/200						
22868/22868 [========]	-	0s	17us/step	-	loss:	0.6958
Epoch 156/200						
22868/22868 [=======]	-	0s	17us/step	-	loss:	0.6964
Epoch 157/200						
22868/22868 [=======]	-	0s	16us/step	-	loss:	0.6956
Epoch 158/200						
22868/22868 [=======]	-	0s	17us/step	-	loss:	0.6958
Epoch 159/200						
22868/22868 [===================================	-	0s	16us/step	-	loss:	0.6958
Epoch 160/200		_			_	
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.6954
Epoch 161/200		_			_	
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.6960
Epoch 162/200		_			_	
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.6958
Epoch 163/200		_	40 4		-	0 00==
22868/22868 [===================================	-	0s	16us/step	-	loss:	0.6958
Epoch 164/200		^	47 / .		7	0 0050
22868/22868 [===================================	-	Us	1/us/step	_	loss:	0.6956

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Epoch 165/200 22868/22868 [===================================		٥٥	17ug/gton - logg: 0 6054
Epoch 166/200	_	US	1/us/step - 10ss: 0.0954
22868/22868 [===================================	_	Λα	17ug/gtop = logg: 0 6057
Epoch 167/200		US	17us/step - 10ss. 0.0957
22868/22868 [===================================	_	Λα	17ug/gtop = logg: 0 6053
Epoch 168/200		US	17us/step - 10ss. 0.0955
22868/22868 [===================================	_	Λa	17us/stan = loss: 0 6052
Epoch 169/200		OB	1745/50ep 1055. 0.0502
22868/22868 [===================================	_	0s	17us/step - loss: 0 6960
Epoch 170/200		OB	1745,5000 1055. 0.0000
22868/22868 [=========================	_	0s	17us/step - loss: 0.6958
Epoch 171/200		Ů.	1142,200
22868/22868 [=========================	_	0s	16us/step - loss: 0.6956
Epoch 172/200			
22868/22868 [=========================	_	0s	17us/step - loss: 0.6954
Epoch 173/200			
22868/22868 [===================================	_	0s	17us/step - loss: 0.6954
Epoch 174/200			•
22868/22868 [===================================	_	0s	17us/step - loss: 0.6954
Epoch 175/200			-
22868/22868 [===================================	_	0s	17us/step - loss: 0.6953
Epoch 176/200			
22868/22868 [===================================	_	0s	17us/step - loss: 0.6952
Epoch 177/200			
22868/22868 [===================================	_	0s	17us/step - loss: 0.6952
Epoch 178/200			
22868/22868 [===================================	_	0s	17us/step - loss: 0.6952
Epoch 179/200			
22868/22868 [===================================	_	0s	16us/step - loss: 0.6955
Epoch 180/200			
22868/22868 [===================================	-	0s	17us/step - loss: 0.6953
Epoch 181/200			
22868/22868 [===================================	_	0s	17us/step - loss: 0.6954
Epoch 182/200			
22868/22868 [===================================	_	0s	16us/step - loss: 0.6951
Epoch 183/200		•	10 / 1 0 0050
22868/22868 [===================================	_	Us	16us/step - 10ss: 0.6956
Epoch 184/200 22868/22868 [===================================		0-	17/
	_	US	1/us/step - 10ss: 0.6951
Epoch 185/200 22868/22868 [===================================		٥٥	17::g/gton logg: 0.60EE
Epoch 186/200	_	US	1/us/step - 10ss: 0.0955
22868/22868 [===================================	_	Λα	17ug/gtop = logg: 0 6055
Epoch 187/200		G	1,42,20eh 1022. 0.0300
22868/22868 [===================================	_	09	17us/sten - loss: 0 6951
Epoch 188/200		GO	1,45,50ep 1055. 0.0301
22868/22868 [===================================	_	0,5	17us/step - loss: 0 6950
		JD	1. 25, 500p 1055. 0.0000

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Epoch 189/200 22868/22868 [===================================
Epoch 190/200
22868/22868 [===================================
Epoch 191/200
22868/22868 [===================================
Epoch 192/200
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Epoch 193/200
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Epoch 194/200
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Epoch 195/200
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Epoch 196/200
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Epoch 197/200
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Epoch 198/200
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Epoch 199/200
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Epoch 200/200
22868/22868 [===================================
22868/22868 [===================================
Epoch 1/200
22868/22868 [===================================
Epoch 2/200
22868/22868 [===================================
Epoch 3/200
22868/22868 [===================================
Epoch 4/200
22868/22868 [===================================
Epoch 5/200
22868/22868 [===================================
Epoch 6/200
22868/22868 [===================================
Epoch 7/200
22868/22868 [===================================
Epoch 8/200
22868/22868 [===================================
Epoch 9/200
22868/22868 [===================================
Epoch 10/200
22868/22868 [===================================
Epoch 11/200
22868/22868 [===================================
Epoch 12/200

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22868/22868 [============== ] - Os 18us/step - loss: 0.6923
Epoch 13/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.6917
Epoch 14/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6911
Epoch 15/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6904
Epoch 16/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6901
Epoch 17/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6897
Epoch 18/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6894
Epoch 19/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.6890
Epoch 20/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6883
Epoch 21/200
Epoch 22/200
Epoch 23/200
Epoch 24/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6833
Epoch 25/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6825
Epoch 26/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6810
Epoch 27/200
22868/22868 [============== ] - Os 19us/step - loss: 0.6798
Epoch 28/200
22868/22868 [============== ] - Os 18us/step - loss: 0.6782
Epoch 29/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6749
Epoch 30/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6710
Epoch 31/200
22868/22868 [============== ] - 0s 18us/step - loss: 0.6642
Epoch 32/200
22868/22868 [============== ] - Os 18us/step - loss: 0.6515
Epoch 33/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6229
Epoch 34/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.6050
Epoch 35/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6031
Epoch 36/200
```

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22868/22868 [============== ] - Os 18us/step - loss: 0.5958
Epoch 37/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.5914
Epoch 38/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5718
Epoch 39/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5760
Epoch 40/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5679
Epoch 41/200
22868/22868 [============== ] - Os 18us/step - loss: 0.5595
Epoch 42/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5587
Epoch 43/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.5518
Epoch 44/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5431
Epoch 45/200
22868/22868 [============== ] - Os 18us/step - loss: 0.5356
Epoch 46/200
Epoch 47/200
Epoch 48/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5320
Epoch 49/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5287
Epoch 50/200
22868/22868 [============== ] - Os 19us/step - loss: 0.5328
Epoch 51/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5233
Epoch 52/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5238
Epoch 53/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5225
Epoch 54/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5251
Epoch 55/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5236
Epoch 56/200
22868/22868 [============== ] - 0s 18us/step - loss: 0.5164
Epoch 57/200
22868/22868 [============== ] - Os 19us/step - loss: 0.5189
Epoch 58/200
22868/22868 [============= ] - 0s 19us/step - loss: 0.5152
Epoch 59/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.5237
Epoch 60/200
```

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22868/22868 [============= ] - Os 18us/step - loss: 0.5154
Epoch 61/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5135
Epoch 62/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5137
Epoch 63/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5152
Epoch 64/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5129
Epoch 65/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5140
Epoch 66/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5131
Epoch 67/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.5063
Epoch 68/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5066
Epoch 69/200
Epoch 70/200
Epoch 71/200
Epoch 72/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5069
Epoch 73/200
22868/22868 [============== ] - 0s 18us/step - loss: 0.5142
Epoch 74/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5095
Epoch 75/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5074
Epoch 76/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5064
Epoch 77/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5107
Epoch 78/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5045
Epoch 79/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5027
Epoch 80/200
22868/22868 [============== ] - 0s 18us/step - loss: 0.5004
Epoch 81/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.5038
Epoch 82/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5021
Epoch 83/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.4960
Epoch 84/200
```

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22868/22868 [============= ] - Os 18us/step - loss: 0.5036
Epoch 85/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4990
Epoch 86/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4980
Epoch 87/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4973
Epoch 88/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4974
Epoch 89/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.5013
Epoch 90/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4997
Epoch 91/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5025
Epoch 92/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4970
Epoch 93/200
Epoch 94/200
Epoch 95/200
Epoch 96/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4935
Epoch 97/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4968
Epoch 98/200
22868/22868 [============== ] - 0s 18us/step - loss: 0.4918
Epoch 99/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4957
Epoch 100/200
22868/22868 [============== ] - Os 18us/step - loss: 0.4933
Epoch 101/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4974
Epoch 102/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4971
Epoch 103/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4949
Epoch 104/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4939
Epoch 105/200
22868/22868 [============= ] - Os 18us/step - loss: 0.4945
Epoch 106/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4963
Epoch 107/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4931
Epoch 108/200
```

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22868/22868 [============= ] - Os 17us/step - loss: 0.4977
Epoch 109/200
Epoch 110/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4929
Epoch 111/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4941
Epoch 112/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4932
Epoch 113/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4958
Epoch 114/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4929
Epoch 115/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4959
Epoch 116/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4931
Epoch 117/200
Epoch 118/200
Epoch 119/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6968
Epoch 120/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6963
Epoch 121/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6956
Epoch 122/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6957
Epoch 123/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6956
Epoch 124/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6955
Epoch 125/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6950
Epoch 126/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6946
Epoch 127/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6950
Epoch 128/200
22868/22868 [============== ] - 0s 18us/step - loss: 0.6954
Epoch 129/200
22868/22868 [============== ] - Os 18us/step - loss: 0.6951
Epoch 130/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6946
Epoch 131/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6951
Epoch 132/200
```

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22868/22868 [============== ] - Os 17us/step - loss: 0.6948
Epoch 133/200
Epoch 134/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6946
Epoch 135/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6945
Epoch 136/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6945
Epoch 137/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6943
Epoch 138/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6942
Epoch 139/200
22868/22868 [============ ] - Os 17us/step - loss: 0.6944
Epoch 140/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6946
Epoch 141/200
Epoch 142/200
Epoch 143/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6941
Epoch 144/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6938
Epoch 145/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6938
Epoch 146/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6939
Epoch 147/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6944
Epoch 148/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6935
Epoch 149/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6939
Epoch 150/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6933
Epoch 151/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6937
Epoch 152/200
Epoch 153/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6937
Epoch 154/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6940
Epoch 155/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6938
Epoch 156/200
```

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22868/22868 [============= ] - Os 18us/step - loss: 0.6935
Epoch 157/200
Epoch 158/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6921
Epoch 159/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6920
Epoch 160/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6917
Epoch 161/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6911
Epoch 162/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6908
Epoch 163/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6905
Epoch 164/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6896
Epoch 165/200
Epoch 166/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6883
Epoch 167/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6876
Epoch 168/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6870
Epoch 169/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6854
Epoch 170/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6844
Epoch 171/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6819
Epoch 172/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6793
Epoch 173/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6751
Epoch 174/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6690
Epoch 175/200
22868/22868 [============== ] - 0s 18us/step - loss: 0.6574
Epoch 176/200
Epoch 177/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6310
Epoch 178/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6242
Epoch 179/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6268
Epoch 180/200
```

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22868/22868 [============== ] - Os 17us/step - loss: 0.6331
Epoch 181/200
Epoch 182/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5929
Epoch 183/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5809
Epoch 184/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5899
Epoch 185/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5850
Epoch 186/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5706
Epoch 187/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5632
Epoch 188/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5562
Epoch 189/200
Epoch 190/200
Epoch 191/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5554
Epoch 192/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5542
Epoch 193/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5457
Epoch 194/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.5473
Epoch 195/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5494
Epoch 196/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5414
Epoch 197/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.5428
Epoch 198/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5426
Epoch 199/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.5363
Epoch 200/200
22868/22868 [============= ] - 1s 43us/step
Epoch 1/200
22868/22868 [============ ] - 1s 48us/step - loss: 0.7018
Epoch 2/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.6913
Epoch 3/200
```

```
Epoch 4/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.6883
Epoch 5/200
Epoch 6/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6857
Epoch 7/200
22868/22868 [=============== ] - Os 18us/step - loss: 0.6848
Epoch 8/200
Epoch 9/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.6783
Epoch 10/200
22868/22868 [============== ] - 0s 19us/step - loss: 0.6712
Epoch 11/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.6608
Epoch 12/200
22868/22868 [============== ] - 0s 18us/step - loss: 0.6393
Epoch 13/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6286
Epoch 14/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6718
Epoch 15/200
22868/22868 [============== ] - Os 19us/step - loss: 0.6679
Epoch 16/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.6448
Epoch 17/200
22868/22868 [============= ] - Os 18us/step - loss: 0.6021
Epoch 18/200
22868/22868 [============= ] - 0s 19us/step - loss: 0.5902
Epoch 19/200
22868/22868 [============= ] - 0s 19us/step - loss: 0.5767
Epoch 20/200
Epoch 21/200
Epoch 22/200
22868/22868 [=============== ] - Os 18us/step - loss: 0.5548
Epoch 23/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5513
Epoch 24/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5406
Epoch 25/200
Epoch 26/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.5338
Epoch 27/200
```

Epoch 28/200				
	[]	-	0s	18us/step - loss: 0.5289
Epoch 29/200				
22868/22868	[======]	-	0s	18us/step - loss: 0.5267
Epoch 30/200				
22868/22868	[======]	-	0s	18us/step - loss: 0.5246
Epoch 31/200				
22868/22868	[======]	-	0s	18us/step - loss: 0.5261
Epoch 32/200				
22868/22868	[======]	-	0s	18us/step - loss: 0.5242
Epoch 33/200				
22868/22868	[========]	-	0s	18us/step - loss: 0.5353
Epoch 34/200				_
22868/22868	[========]	-	0s	19us/step - loss: 0.5170
Epoch 35/200				-
22868/22868	[=======]	-	0s	18us/step - loss: 0.5216
Epoch 36/200				-
	[=======]	-	0s	19us/step - loss: 0.5177
Epoch 37/200				•
-	[======]	_	0s	18us/step - loss: 0.5123
Epoch 38/200				
	[======]	_	0s	19us/step - loss: 0.5200
Epoch 39/200				
	[======]	_	0s	19us/step - loss: 0.5080
Epoch 40/200				
-	[======]	_	0s	19us/step - loss: 0.5101
Epoch 41/200				
	[======]	_	0s	18us/step - loss: 0.5100
Epoch 42/200				•
-	[======]	_	0s	18us/step - loss: 0.5093
Epoch 43/200				•
	[======]	_	0s	19us/step - loss: 0.5010
Epoch 44/200				
•	[======]	_	0s	18us/step - loss: 0.5031
Epoch 45/200	_			
	[======]	_	0s	19us/step - loss: 0.5003
Epoch 46/200	_			
	[======]	_	0s	18us/step - loss: 0.5034
Epoch 47/200				
	[======]	_	0s	19us/step - loss: 0.5061
Epoch 48/200				
-	[======]	_	0s	19us/step - loss: 0.5036
Epoch 49/200	-			
_	[======]	_	0s	19us/step - loss: 0.5040
Epoch 50/200	_			
•	[=======]	_	0s	18us/step - loss: 0.5101
Epoch 51/200			7.5	
	[=======]	_	0s	18us/step - loss: 0.5033
,	-		<i>-</i>	2022. 0.0000

Epoch 52/200		
22868/22868 [===================================	loss:	0.5422
Epoch 53/200		
22868/22868 [===================================	loss:	0.5444
Epoch 54/200		
22868/22868 [===================================	loss:	0.5415
Epoch 55/200		
22868/22868 [===================================	loss:	0.5328
Epoch 56/200		
22868/22868 [============ ] - 0s 19us/step -	loss:	0.5333
Epoch 57/200		
22868/22868 [=========== ] - 0s 19us/step -	loss:	0.5348
Epoch 58/200		
22868/22868 [=========== ] - 0s 19us/step -	loss:	0.5319
Epoch 59/200		
22868/22868 [============ ] - 0s 19us/step -	loss:	0.5293
Epoch 60/200		
22868/22868 [============ ] - 0s 19us/step -	loss:	0.5277
Epoch 61/200		
22868/22868 [============ ] - 0s 18us/step -	loss:	0.5269
Epoch 62/200		
22868/22868 [============ ] - 0s 18us/step -	loss:	0.5278
Epoch 63/200		
22868/22868 [============= ] - 0s 18us/step -	loss:	0.5273
Epoch 64/200		
22868/22868 [============ ] - 0s 18us/step -	loss:	0.5232
Epoch 65/200		
22868/22868 [============= ] - 0s 18us/step -	loss:	0.5227
Epoch 66/200		
22868/22868 [============ ] - Os 19us/step -	loss:	0.5167
Epoch 67/200		
22868/22868 [============ ] - Os 19us/step -	loss:	0.5188
Epoch 68/200		
22868/22868 [============ ] - Os 19us/step -	loss:	0.5161
Epoch 69/200		
22868/22868 [============= ] - 0s 19us/step -	loss:	0.5110
Epoch 70/200	_	
22868/22868 [===================================	loss:	0.5149
Epoch 71/200	_	
22868/22868 [===================================	loss:	0.5184
Epoch 72/200	_	
22868/22868 [===================================	loss:	0.5172
Epoch 73/200	_	
22868/22868 [============= ] - Os 19us/step -	loss:	0.5145
Epoch 74/200	7.	0 5400
22868/22868 [============ ] - Os 19us/step -	Toss:	0.5122
Epoch 75/200	1	0 5400
22868/22868 [============ ] - Os 19us/step -	TOSS:	0.5120

E 1 70/000				
Epoch 76/200			ο-	10/
	[======]	-	US	18us/step - 10ss: 0.5136
Epoch 77/200			^	10 / 1 3 0 5100
	[======]	_	US	19us/step - loss: 0.5128
Epoch 78/200			_	40 / 4 7 7 9 5004
	[======]	-	0s	19us/step - loss: 0.5091
Epoch 79/200			_	
	[======]	-	0s	19us/step - loss: 0.5137
Epoch 80/200			•	40 / 4 7 7 0 5004
	[======]	-	Us	19us/step - loss: 0.5094
Epoch 81/200			•	40 / 4 7 7 9 5400
	[=====]	-	0s	19us/step - loss: 0.5108
Epoch 82/200			•	40 4
	[======]	-	0s	18us/step - loss: 0.5068
Epoch 83/200			_	
	[======]	-	0s	19us/step - loss: 0.5123
Epoch 84/200			_	
	[======]	-	0s	18us/step - loss: 0.5134
Epoch 85/200			_	
	[======]	-	0s	19us/step - loss: 0.5084
Epoch 86/200			_	
	[=====]	-	0s	18us/step - loss: 0.5092
Epoch 87/200			_	
	[=====]	-	0s	19us/step - loss: 0.5236
Epoch 88/200			_	
	[=====]	-	0s	19us/step - loss: 0.5035
Epoch 89/200			_	
	[=====]	-	0s	19us/step - loss: 0.5075
Epoch 90/200			_	
	[======]	-	0s	19us/step - loss: 0.5102
Epoch 91/200			_	
	[======]	-	0s	18us/step - loss: 0.5114
Epoch 92/200			_	
	[======]	-	0s	18us/step - loss: 0.5162
Epoch 93/200			•	40 4
	[======]	-	0s	19us/step - loss: 0.5049
Epoch 94/200			^	10 / 1 2 2 5010
	[======]	-	Us	18us/step - loss: 0.5013
Epoch 95/200			•	10 / 1 7 0 5011
	[======]	-	Us	18us/step - loss: 0.5041
Epoch 96/200			•	40 4
	[======]	-	0s	18us/step - loss: 0.5055
Epoch 97/200			•	10 / 1 2 2 2 5 10 4
	[======]	-	0s	18us/step - Ioss: 0.5194
Epoch 98/200			•	10 /
	[======]	-	Us	18us/step - Ioss: 0.5180
Epoch 99/200			^	10 / 1 3 2 5:5:
22868/22868	[=====]	-	Us	18us/step - 10ss: 0.5191

Epoch 100/200
22868/22868 [===================================
Epoch 101/200
22868/22868 [===================================
Epoch 102/200
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Epoch 103/200
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Epoch 104/200
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Epoch 105/200
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Epoch 106/200
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Epoch 107/200
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Epoch 108/200
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Epoch 109/200
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Epoch 110/200
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Epoch 111/200
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Epoch 112/200
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Epoch 113/200
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Epoch 114/200
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Epoch 115/200
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Epoch 116/200
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Epoch 117/200
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Epoch 118/200
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Epoch 119/200
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Epoch 120/200
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Epoch 121/200
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Epoch 122/200
22868/22868 [===================================
Epoch 123/200
22868/22868 [===================================
22000, 22000 [

Epoch 124/200			
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5186
Epoch 125/200			
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5242
Epoch 126/200			
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5203
Epoch 127/200			
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5177
Epoch 128/200			
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5189
Epoch 129/200			
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5207
Epoch 130/200			
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5210
Epoch 131/200			
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5175
Epoch 132/200			
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5163
Epoch 133/200			
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5227
Epoch 134/200			-
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5227
Epoch 135/200			-
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5177
Epoch 136/200			-
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5170
Epoch 137/200			-
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5174
Epoch 138/200			-
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5145
Epoch 139/200			•
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5180
Epoch 140/200			-
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5163
Epoch 141/200			-
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5118
Epoch 142/200			•
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5173
Epoch 143/200			•
22868/22868 [===================================	] -	0s	18us/step - loss: 0.5163
Epoch 144/200			-
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5111
Epoch 145/200			•
22868/22868 [===================================	] –	0s	19us/step - loss: 0.5170
Epoch 146/200			
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5193
Epoch 147/200	_		
22868/22868 [===================================	] -	0s	19us/step - loss: 0.5180
			•

Epoch 148/200			
22868/22868 [===================================	۱ –	0s	18us/step - loss: 0.5154
Epoch 149/200			1
22868/22868 [===================================	] –	0s	18us/step - loss: 0.5179
Epoch 150/200			•
22868/22868 [===================================	] –	0s	18us/step - loss: 0.5162
Epoch 151/200			-
22868/22868 [===================================	] –	0s	18us/step - loss: 0.5155
Epoch 152/200			
22868/22868 [===================================	] –	0s	18us/step - loss: 0.5131
Epoch 153/200			
22868/22868 [===================================	] –	0s	19us/step - loss: 0.5165
Epoch 154/200			
22868/22868 [===================================	-	0s	19us/step - loss: 0.5133
Epoch 155/200			
22868/22868 [===================================	] –	0s	19us/step - loss: 0.5151
Epoch 156/200			
22868/22868 [===================================	-	0s	19us/step - loss: 0.5160
Epoch 157/200			
22868/22868 [===================================	-	0s	19us/step - loss: 0.5173
Epoch 158/200	_		
22868/22868 [===================================	] –	0s	19us/step - loss: 0.5164
Epoch 159/200		_	
22868/22868 [===================================	-	0s	19us/step - loss: 0.5147
Epoch 160/200		_	10 / 10 0 5100
22868/22868 [===================================	J –	0s	19us/step - loss: 0.5182
Epoch 161/200		^	40 / 1 2 0 5445
22868/22868 [===================================	J –	US	19us/step - loss: 0.5145
Epoch 162/200 22868/22868 [===================================	1	0-	10/
	, –	US	19us/step - 10ss: 0.5156
Epoch 163/200 22868/22868 [===================================	ı _	٥٥	10ug/gton - logg: 0 5171
Epoch 164/200	] _	US	19us/step - 10ss. 0.51/1
22868/22868 [===================================	ı _	۸a	10ug/stap = loss: 0 51/2
Epoch 165/200	ı	OB	1005, 50ep 1055. 0.0142
22868/22868 [===================================	۱ –	0s	19us/step - loss: 0.5143
Epoch 166/200	•	OB	1040, 5000 1050. 0.0110
22868/22868 [===================================	۱ –	0s	19us/step - loss: 0.5145
Epoch 167/200			
22868/22868 [===================================	۱ –	0s	19us/step - loss: 0.5189
Epoch 168/200			
22868/22868 [===================================	] –	0s	19us/step - loss: 0.5174
Epoch 169/200			•
22868/22868 [===================================	] –	0s	19us/step - loss: 0.5166
Epoch 170/200			<del>-</del>
22868/22868 [===================================	-	0s	19us/step - loss: 0.5167
Epoch 171/200			
22868/22868 [===================================	] –	0s	19us/step - loss: 0.5157

Epoch 172/200
22868/22868 [===================================
Epoch 173/200
22868/22868 [===================================
Epoch 174/200
22868/22868 [===================================
Epoch 175/200
22868/22868 [===================================
Epoch 176/200
22868/22868 [===================================
Epoch 177/200
22868/22868 [===================================
Epoch 178/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5119
Epoch 179/200
22868/22868 [===================================
Epoch 180/200
22868/22868 [===================================
Epoch 181/200
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Epoch 182/200
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Epoch 183/200
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Epoch 184/200
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Epoch 185/200
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Epoch 186/200
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Epoch 187/200
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Epoch 191/200
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Epoch 192/200
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Epoch 193/200
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Epoch 194/200
22868/22868 [===================================
Epoch 195/200
22868/22868 [===================================

Epoch 196/200			
22868/22868 [=======]	_	Λe	10ug/gton - logg: 0 5130
Epoch 197/200		VS	13us/scep 10ss. 0.3130
22868/22868 [=======]	_	۸e	18us/stan - loss: 0 5161
Epoch 198/200		V.S	1005/50ep 1055. 0.0101
22868/22868 [========]	_	0s	18us/step - loss: 0 5134
Epoch 199/200		V.S	1005/50ep 1055. 0.0104
22868/22868 [=======]	_	0s	18us/step - loss: 0.5108
Epoch 200/200		Ů.	1022, 2004
22868/22868 [=======]	_	0s	19us/step - loss: 0.5131
22868/22868 [=========================]			
Epoch 1/200			
22868/22868 [===================================	_	1s	51us/step - loss: 1.2155
Epoch 2/200			
22868/22868 [===================================	_	0s	20us/step - loss: 0.6897
Epoch 3/200			•
22868/22868 [===================================	_	0s	20us/step - loss: 0.6871
Epoch 4/200			•
22868/22868 [===================================	_	0s	20us/step - loss: 0.6851
Epoch 5/200			•
22868/22868 [===================================	_	0s	20us/step - loss: 0.6808
Epoch 6/200			•
22868/22868 [===================================	_	0s	20us/step - loss: 0.6719
Epoch 7/200			•
22868/22868 [===================================	-	0s	20us/step - loss: 0.6562
Epoch 8/200			-
22868/22868 [===================================	-	0s	20us/step - loss: 0.6397
Epoch 9/200			-
22868/22868 [===================================	_	0s	20us/step - loss: 0.6390
Epoch 10/200			-
22868/22868 [===================================	-	0s	20us/step - loss: 0.6303
Epoch 11/200			-
22868/22868 [===================================	-	0s	20us/step - loss: 0.6084
Epoch 12/200			
22868/22868 [===================================	-	0s	20us/step - loss: 0.5904
Epoch 13/200			_
22868/22868 [===================================	-	0s	20us/step - loss: 0.5773
Epoch 14/200			
22868/22868 [===================================	-	0s	20us/step - loss: 0.5734
Epoch 15/200			
22868/22868 [===================================	-	0s	20us/step - loss: 0.5650
Epoch 16/200			
22868/22868 [=======]	-	0s	20us/step - loss: 0.5513
Epoch 17/200			
22868/22868 [=======]	-	0s	20us/step - loss: 0.5497
Epoch 18/200			
22868/22868 [=======]	-	0s	20us/step - loss: 0.5488
Epoch 19/200			

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22868/22868 [============= ] - Os 20us/step - loss: 0.5377
Epoch 20/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5403
Epoch 21/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5397
Epoch 22/200
22868/22868 [============ ] - Os 20us/step - loss: 0.5494
Epoch 23/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5335
Epoch 24/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5295
Epoch 25/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5217
Epoch 26/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5235
Epoch 27/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5199
Epoch 28/200
Epoch 29/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5483
Epoch 30/200
Epoch 31/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5394
Epoch 32/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.5368
Epoch 33/200
22868/22868 [============== ] - Os 20us/step - loss: 0.5382
Epoch 34/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.5313
Epoch 35/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5342
Epoch 36/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5243
Epoch 37/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5285
Epoch 38/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5181
Epoch 39/200
22868/22868 [============== ] - 0s 20us/step - loss: 0.5254
Epoch 40/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5225
Epoch 41/200
22868/22868 [============= ] - Os 20us/step - loss: 0.5231
Epoch 42/200
22868/22868 [============== ] - 0s 20us/step - loss: 0.5162
Epoch 43/200
```

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22868/22868 [============= ] - Os 20us/step - loss: 0.7784
Epoch 44/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6940
Epoch 45/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 46/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 47/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6937
Epoch 48/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 49/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 50/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 51/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6936
Epoch 52/200
Epoch 53/200
Epoch 54/200
Epoch 55/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6935
Epoch 56/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 57/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 58/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 59/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 60/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 61/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 62/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 63/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 64/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 65/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 66/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 67/200
```

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22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 68/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 69/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6932
Epoch 70/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6934
Epoch 71/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 72/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 73/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 74/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 75/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6936
Epoch 76/200
Epoch 77/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 78/200
Epoch 79/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 80/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6936
Epoch 81/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 82/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 83/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 84/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 85/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6936
Epoch 86/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 87/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 88/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 89/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 90/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 91/200
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22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 92/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 93/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 94/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 95/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6936
Epoch 96/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 97/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 98/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 99/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 100/200
Epoch 101/200
Epoch 102/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 103/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 104/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6936
Epoch 105/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 106/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6936
Epoch 107/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 108/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 109/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 110/200
22868/22868 [============== ] - 0s 20us/step - loss: 0.6932
Epoch 111/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 112/200
22868/22868 [============== ] - Os 20us/step - loss: 0.6932
Epoch 113/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 114/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 115/200
```

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22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 116/200
Epoch 117/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 118/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 119/200
22868/22868 [============= ] - Os 21us/step - loss: 0.6935
Epoch 120/200
22868/22868 [============ ] - Os 21us/step - loss: 0.6934
Epoch 121/200
22868/22868 [============ ] - Os 21us/step - loss: 0.6934
Epoch 122/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 123/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 124/200
Epoch 125/200
Epoch 126/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6932
Epoch 127/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 128/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 129/200
Epoch 130/200
22868/22868 [============== ] - Os 20us/step - loss: 0.6935
Epoch 131/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 132/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 133/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 134/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 135/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 136/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 137/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 138/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6935
Epoch 139/200
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22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 140/200
Epoch 141/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 142/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 143/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 144/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 145/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 146/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 147/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6935
Epoch 148/200
Epoch 149/200
Epoch 150/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 151/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 152/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 153/200
Epoch 154/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 155/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 156/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 157/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 158/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 159/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 160/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 161/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 162/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6934
Epoch 163/200
```

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22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 164/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 165/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 166/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 167/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6934
Epoch 168/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6934
Epoch 169/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 170/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 171/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6934
Epoch 172/200
Epoch 173/200
Epoch 174/200
Epoch 175/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6932
Epoch 176/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 177/200
22868/22868 [============== ] - Os 20us/step - loss: 0.6932
Epoch 178/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6933
Epoch 179/200
22868/22868 [============ ] - Os 20us/step - loss: 0.6934
Epoch 180/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6932
Epoch 181/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6932
Epoch 182/200
22868/22868 [============== ] - 0s 20us/step - loss: 0.6932
Epoch 183/200
22868/22868 [============== ] - 0s 20us/step - loss: 0.6932
Epoch 184/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6933
Epoch 185/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6932
Epoch 186/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6931
Epoch 187/200
```

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22868/22868 [============= ] - Os 20us/step - loss: 0.6931
Epoch 188/200
22868/22868 [============= ] - 0s 20us/step - loss: 0.6932
Epoch 189/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6931
Epoch 190/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6931
Epoch 191/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6928
Epoch 192/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6930
Epoch 193/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6930
Epoch 194/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6930
Epoch 195/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6929
Epoch 196/200
22868/22868 [============== ] - Os 20us/step - loss: 0.6929
Epoch 197/200
Epoch 198/200
Epoch 199/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6928
Epoch 200/200
22868/22868 [============= ] - Os 20us/step - loss: 0.6927
22868/22868 [============ ] - 1s 48us/step
Epoch 1/200
22868/22868 [============= ] - 1s 53us/step - loss: 8.0590
Epoch 2/200
22868/22868 [============== ] - 0s 21us/step - loss: 8.0590
Epoch 3/200
Epoch 4/200
Epoch 5/200
22868/22868 [=============== ] - Os 21us/step - loss: 8.0590
Epoch 6/200
Epoch 7/200
22868/22868 [============= ] - Os 21us/step - loss: 8.0590
Epoch 8/200
22868/22868 [============ ] - Os 21us/step - loss: 8.0590
Epoch 9/200
22868/22868 [============== ] - 0s 21us/step - loss: 8.0590
Epoch 10/200
22868/22868 [============== ] - 0s 21us/step - loss: 8.0590
```

Epoch 11/200					
-	[======]	_	0s	21us/step - loss: 8.09	590
Epoch 12/200				•	
-	[======]	_	0s	21us/step - loss: 8.09	590
Epoch 13/200				· ·	
	[======]	_	0s	21us/step - loss: 8.0	590
Epoch 14/200				•	
22868/22868	[=======]	-	0s	21us/step - loss: 8.09	590
Epoch 15/200				-	
22868/22868	[======]	-	0s	21us/step - loss: 8.09	590
Epoch 16/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 17/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.09	590
Epoch 18/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.09	590
Epoch 19/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 20/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 21/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 22/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 23/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.09	590
Epoch 24/200					
22868/22868	[======]	-	0s	21us/step - loss: 8.09	590
Epoch 25/200					
	[=====]	-	0s	21us/step - loss: 8.09	590
Epoch 26/200					
	[=====]	-	0s	21us/step - loss: 8.0	590
Epoch 27/200					
	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 28/200					
	[]	-	0s	21us/step - loss: 8.0	590
Epoch 29/200					
	[=====]	-	0s	21us/step - loss: 8.0	590
Epoch 30/200					
	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 31/200					
	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 32/200			_		
	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 33/200			_	<b>0.</b>	
	[======]	-	0s	21us/step - loss: 8.0	590
Epoch 34/200			_		
22868/22868	[======]	-	Us	21us/step - loss: 8.0	590

Epoch 35/200						
	[======]	_	0s	21us/step -	loss:	8.0590
Epoch 36/200						
22868/22868	[======]	_	0s	21us/step -	loss:	8.0590
Epoch 37/200				•		
	[=======]	_	0s	21us/step -	loss:	8.0590
Epoch 38/200				•		
22868/22868	[=======]	-	0s	21us/step -	loss:	8.0590
Epoch 39/200						
22868/22868	[======]	-	0s	21us/step -	loss:	8.0590
Epoch 40/200						
22868/22868	[======]	-	0s	21us/step -	loss:	8.0590
Epoch 41/200						
22868/22868	[======]	-	0s	21us/step -	loss:	8.0590
Epoch 42/200						
	[=====]	-	0s	21us/step -	loss:	8.0590
Epoch 43/200						
	[=====]	-	0s	21us/step -	loss:	8.0590
Epoch 44/200						
	[=====]	-	0s	21us/step -	loss:	8.0590
Epoch 45/200						
	[]	-	0s	21us/step -	loss:	8.0590
Epoch 46/200						
	[]	-	0s	21us/step -	loss:	8.0590
Epoch 47/200						
	[=====]	-	0s	21us/step -	loss:	8.0590
Epoch 48/200			_		_	
	[=====]	-	0s	21us/step -	loss:	8.0590
Epoch 49/200			^	04 / .	-	0 0500
	[======]	-	Us	21us/step -	loss:	8.0590
Epoch 50/200			0 -	04/	7	0 0500
	[======]	_	US	Zius/step -	loss:	8.0590
Epoch 51/200			٥-	01/	7	0 0500
Epoch 52/200	[=======]	_	US	Zius/step -	Toss:	8.0590
	[======]	_	٥٥	21ug/gton =	loggi	8 0500
Epoch 53/200			US	Zius/step -	TOSS.	0.0090
-	[======]	_	۸e	2111g/gton -	loggi	8 0500
Epoch 54/200			VS	Zius/scep	TOSS.	0.0090
-	[======]	_	۸q	21119/sten -	1088.	8 0590
Epoch 55/200			OB	Ziub/bucp	TOBB.	0.0000
_	[=====]	_	٥s	21us/sten -	loss	8 0590
Epoch 56/200			O.D	Ziub, buop	1000.	0.0000
-	[======]	_	0s	21us/step -	loss:	8.0590
Epoch 57/200				,oop		
•	[=====]	_	0s	21us/step -	loss:	8.0590
Epoch 58/200						
	[=====]	_	0s	21us/step -	loss:	8.0590
	-					

Epoch 59/200						
-	[======]	_	0s	21us/step -	loss:	8.0590
Epoch 60/200				1		
-	[======]	_	0s	21us/step - 1	loss:	8.0590
Epoch 61/200				1		
	[=======]	_	0s	21us/step - 1	loss:	8.0590
Epoch 62/200				•		
22868/22868	[=======]	-	0s	21us/step - 3	loss:	8.0590
Epoch 63/200						
22868/22868	[======]	-	0s	21us/step - 3	loss:	8.0590
Epoch 64/200						
22868/22868	[======]	-	0s	21us/step - 3	loss:	8.0590
Epoch 65/200						
22868/22868	[======]	-	0s	21us/step - 3	loss:	8.0590
Epoch 66/200						
	[]	-	0s	21us/step - 1	loss:	8.0590
Epoch 67/200						
	[=====]	-	0s	21us/step - 1	loss:	8.0590
Epoch 68/200						
	[=====]	-	0s	21us/step - 1	loss:	8.0590
Epoch 69/200						
	[]	-	0s	21us/step - 1	loss:	8.0590
Epoch 70/200						
	[]	-	0s	21us/step - 1	loss:	8.0590
Epoch 71/200						
	[=====]	-	0s	21us/step -	loss:	8.0590
Epoch 72/200			_		_	
	[=====]	-	0s	21us/step -	loss:	8.0590
Epoch 73/200			^	04 / .	-	0 0500
	[======]	-	Us	21us/step -	loss:	8.0590
Epoch 74/200			0 -	01/	<b>.</b>	0 0500
	[======]	_	US	Zius/step	ross:	8.0590
Epoch 75/200			٥-	01/	J	0 0500
Epoch 76/200	[=======]	_	US	Zius/step	ross:	8.0590
	[======]	_	٥٥	21ug/gton = 1	loggi	8 0500
Epoch 77/200			US	Zius/step -	TOSS.	0.0090
	[======]	_	۸e	2111g/gtan - 1	loggi	8 0500
Epoch 78/200			VS	Zius/scep	TOSS.	0.0090
-	[======]	_	۸q	21119/sten -	1088.	8 0590
Epoch 79/200			OB	zius/bucp	TOBB.	0.0000
_	[=====]	_	٥s	21us/sten -	loss	8 0590
Epoch 80/200			O.D	Zias, stop	TODD.	0.0000
-	[=====]	_	0s	21us/step -	loss:	8.0590
Epoch 81/200				, ~ · · · · · ·		
	[=====]	_	0s	21us/step -	loss:	8.0590
Epoch 82/200				· · · · · ·		
	[======]	_	0s	21us/step - 1	loss:	8.0590
	_			•		

Epoch 83/200					
-	[======]	_	0s	21us/step - loss: 8	.0590
Epoch 84/200				,	
-	[======]	_	0s	21us/step - loss: 8	.0590
Epoch 85/200					
	[=======]	_	0s	21us/step - loss: 8	.0590
Epoch 86/200				•	
22868/22868	[=======]	-	0s	21us/step - loss: 8	.0590
Epoch 87/200					
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Epoch 88/200					
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Epoch 89/200					
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Epoch 90/200					
	[=====]	-	0s	21us/step - loss: 8	.0590
Epoch 91/200					
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Epoch 92/200					
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Epoch 94/200					
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Epoch 95/200					
	[=====]	-	0s	21us/step - loss: 8	.0590
Epoch 96/200			_		
	[=====]	-	0s	21us/step - loss: 8	.0590
Epoch 97/200			^	04 / 1 3 0	0500
	[======]	-	Us	21us/step - loss: 8	.0590
Epoch 98/200	[=====]		٥-	01/	0500
Epoch 99/200		_	US	Zius/step - ioss: 8	.0590
•	[======]		٥٩	01 yg /g+on logg 0	0500
Epoch 100/20		_	US	Zius/step - ioss: o	.0590
		_	۸e	21ug/gton - logg: 8	0590
Epoch 101/20			VS	21us/step 10ss. 0	.0090
	[========]	_	۸q	2111s/sten - loss: 8	0590
Epoch 102/20			OB	21db/b0cp 10bb. 0	.0000
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Epoch 103/20			Ů.	2145,500p 1055. 0	
_	_ [======]	_	0s	21us/step - loss: 8	.0590
Epoch 104/20			Ů.	2145,500p 1055. 0	
-	[=======]	_	0s	21us/step - loss: 8	.0590
Epoch 105/20				г	
	[======]	_	0s	21us/step - loss: 8	.0590
Epoch 106/20					
_	[=======]	_	0s	21us/step - loss: 8	.0590
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Epoch 107/200					
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Epoch 114/200					
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Epoch 119/200			_		
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Epoch 120/200			-		
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Epoch 121/200			-		
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Epoch 128/200			•		
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Epoch 129/200			•		
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Epoch 130/200					
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Epoch 160/200					
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Epoch 161/200					
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Epoch 167/200					
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Epoch 168/200					
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Epoch 169/200					
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Epoch 170/200					
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Epoch 171/200					
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Epoch 172/200					
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Epoch 173/200	_		. 1		
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Epoch 174/200					
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Epoch 175/200	_		. 1		
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Epoch 176/200	_		,		
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Epoch 177/200	-		, _ c o p		
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Epoch 178/200	_		, этор		
22868/22868 [===================================	1 -	0s	21us/sten	- loss:	8.0590
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Epoch 179/200
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Epoch 199/200
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Epoch 200/200
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Epoch 1/200
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Epoch 2/200

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22868/22868 [============== ] - 1s 22us/step - loss: 0.6912
Epoch 3/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.6892
Epoch 4/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.6877
Epoch 5/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.6835
Epoch 6/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.6796
Epoch 7/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.6709
Epoch 8/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.6500
Epoch 9/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.6265
Epoch 10/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.6242
Epoch 11/200
Epoch 12/200
Epoch 13/200
Epoch 14/200
Epoch 15/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5815
Epoch 16/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5733
Epoch 17/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5710
Epoch 18/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5605
Epoch 19/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5603
Epoch 20/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5557
Epoch 21/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5556
Epoch 22/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5492
Epoch 23/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5517
Epoch 24/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5461
Epoch 25/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5416
Epoch 26/200
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22868/22868 [============== ] - 1s 23us/step - loss: 0.5395
Epoch 27/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5450
Epoch 28/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5384
Epoch 29/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5427
Epoch 30/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5375
Epoch 31/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5360
Epoch 32/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5387
Epoch 33/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5374
Epoch 34/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5348
Epoch 35/200
Epoch 36/200
Epoch 37/200
Epoch 38/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5335
Epoch 39/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5346
Epoch 40/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5293
Epoch 41/200
22868/22868 [============== ] - 1s 24us/step - loss: 0.5326
Epoch 42/200
Epoch 43/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5281
Epoch 44/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5297
Epoch 45/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5256
Epoch 46/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5290
Epoch 47/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5249
Epoch 48/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5261
Epoch 49/200
Epoch 50/200
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22868/22868 [============= ] - 1s 22us/step - loss: 0.5191
Epoch 51/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5181
Epoch 52/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5137
Epoch 53/200
22868/22868 [============= ] - Os 22us/step - loss: 0.5165
Epoch 54/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5174
Epoch 55/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5188
Epoch 56/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5141
Epoch 57/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5157
Epoch 58/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5136
Epoch 59/200
Epoch 60/200
Epoch 61/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5147
Epoch 62/200
22868/22868 [============= ] - Os 22us/step - loss: 0.5137
Epoch 63/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5112
Epoch 64/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5085
Epoch 65/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5149
Epoch 66/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5175
Epoch 67/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5081
Epoch 68/200
22868/22868 [============ ] - 1s 22us/step - loss: 0.5104
Epoch 69/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5098
Epoch 70/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5098
Epoch 71/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5463
Epoch 72/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5163
Epoch 73/200
Epoch 74/200
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22868/22868 [============== ] - 1s 22us/step - loss: 0.5150
Epoch 75/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5116
Epoch 76/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5060
Epoch 77/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5044
Epoch 78/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5201
Epoch 79/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5301
Epoch 80/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5312
Epoch 81/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5286
Epoch 82/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5322
Epoch 83/200
Epoch 84/200
Epoch 85/200
Epoch 86/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5080
Epoch 87/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5097
Epoch 88/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5062
Epoch 89/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5673
Epoch 90/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5289
Epoch 91/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5265
Epoch 92/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5275
Epoch 93/200
Epoch 94/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5267
Epoch 95/200
22868/22868 [============== ] - 1s 23us/step - loss: 0.5286
Epoch 96/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5263
Epoch 97/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5248
Epoch 98/200
```

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22868/22868 [============= ] - 1s 24us/step - loss: 0.5226
Epoch 99/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5262
Epoch 100/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5245
Epoch 101/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5218
Epoch 102/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5235
Epoch 103/200
Epoch 104/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5199
Epoch 105/200
22868/22868 [============= ] - 1s 24us/step - loss: 0.5200
Epoch 106/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5237
Epoch 107/200
Epoch 108/200
Epoch 109/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5222
Epoch 110/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5203
Epoch 111/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5203
Epoch 112/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5173
Epoch 113/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5181
Epoch 114/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5193
Epoch 115/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5157
Epoch 116/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5157
Epoch 117/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5184
Epoch 118/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5165
Epoch 119/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5165
Epoch 120/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5191
Epoch 121/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5155
Epoch 122/200
```

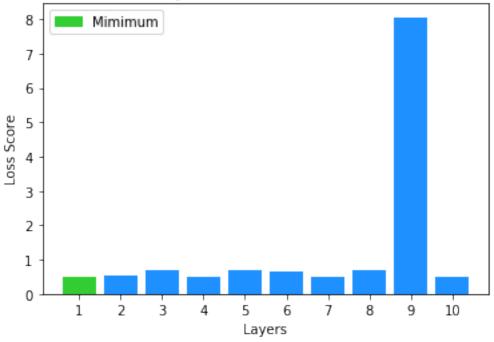
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22868/22868 [============= ] - 1s 22us/step - loss: 0.5204
Epoch 123/200
Epoch 124/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5225
Epoch 125/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5176
Epoch 126/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5126
Epoch 127/200
Epoch 128/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5150
Epoch 129/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5142
Epoch 130/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5197
Epoch 131/200
Epoch 132/200
Epoch 133/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5224
Epoch 134/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5173
Epoch 135/200
22868/22868 [============== ] - Os 22us/step - loss: 0.5166
Epoch 136/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5171
Epoch 137/200
22868/22868 [============== ] - 0s 22us/step - loss: 0.5162
Epoch 138/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5175
Epoch 139/200
22868/22868 [============= ] - 0s 22us/step - loss: 0.5155
Epoch 140/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5167
Epoch 141/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5163
Epoch 142/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5150
Epoch 143/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5149
Epoch 144/200
22868/22868 [============= ] - Os 22us/step - loss: 0.5129
Epoch 145/200
22868/22868 [============== ] - 0s 22us/step - loss: 0.5142
Epoch 146/200
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22868/22868 [============= ] - 1s 22us/step - loss: 0.5147
Epoch 147/200
Epoch 148/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5179
Epoch 149/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5128
Epoch 150/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5133
Epoch 151/200
Epoch 152/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5122
Epoch 153/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5146
Epoch 154/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5141
Epoch 155/200
Epoch 156/200
Epoch 157/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5142
Epoch 158/200
Epoch 159/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5166
Epoch 160/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5135
Epoch 161/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5150
Epoch 162/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5150
Epoch 163/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5119
Epoch 164/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5150
Epoch 165/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5112
Epoch 166/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5131
Epoch 167/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5119
Epoch 168/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5143
Epoch 169/200
Epoch 170/200
```

```
22868/22868 [============= ] - 1s 22us/step - loss: 0.5155
Epoch 171/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5097
Epoch 172/200
22868/22868 [============ ] - 1s 22us/step - loss: 0.5134
Epoch 173/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5109
Epoch 174/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5087
Epoch 175/200
Epoch 176/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5162
Epoch 177/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5145
Epoch 178/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5141
Epoch 179/200
Epoch 180/200
Epoch 181/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5119
Epoch 182/200
Epoch 183/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5110
Epoch 184/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5157
Epoch 185/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5146
Epoch 186/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5131
Epoch 187/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5121
Epoch 188/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5133
Epoch 189/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5105
Epoch 190/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5116
Epoch 191/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5119
Epoch 192/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5122
Epoch 193/200
22868/22868 [============== ] - 1s 22us/step - loss: 0.5095
Epoch 194/200
```

```
22868/22868 [============= ] - 1s 22us/step - loss: 0.5111
Epoch 195/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5114
Epoch 196/200
22868/22868 [============ ] - 1s 22us/step - loss: 0.5099
Epoch 197/200
22868/22868 [============ ] - 1s 22us/step - loss: 0.5117
Epoch 198/200
22868/22868 [============ ] - 1s 22us/step - loss: 0.5116
Epoch 199/200
22868/22868 [============= ] - 1s 22us/step - loss: 0.5158
Epoch 200/200
22868/22868 [============ ] - 1s 53us/step
In [34]: layers = np.arange(1,11,1)
       color = []
       for score in scores:
          if score == min(scores):
              color.append('limegreen')
          else:
              color.append('dodgerblue')
       patch1 = mpatches.Patch(color='limegreen', label='Mimimum')
       plt.legend(handles=[patch1], loc = 'best')
       plt.bar(layers, scores, width = .8, color = color)
       plt.xlabel('Layers')
       plt.xticks(layers)
       plt.ylabel('Loss Score')
       plt.title('Loss Scores For N Layer Neural Networks with 11 Neurons Each')
       plt.show()
```





Judging by the graph above, only 1 layer appears necessary for this dataset.

## 2.0.2 Step 2. Determine Optimal Number of Neurons Per Layer

Epoch 2/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.6933
Epoch 3/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6933
Epoch 4/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.6933
Epoch 5/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.6933
Epoch 6/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.6933
Epoch 7/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6933
Epoch 8/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.6933
Epoch 9/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6933
Epoch 10/200				_
22868/22868	[=======]	-	0s	13us/step - loss: 0.6933
Epoch 11/200				
	[======]	-	0s	13us/step - loss: 0.6933
Epoch 12/200				-
22868/22868	[=======]	-	0s	13us/step - loss: 0.6932
Epoch 13/200				-
22868/22868	[======]	-	0s	13us/step - loss: 0.6933
Epoch 14/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6932
Epoch 15/200				_
22868/22868	[======]	-	0s	13us/step - loss: 0.6933
Epoch 16/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6933
Epoch 17/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6933
Epoch 18/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6932
Epoch 19/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6933
Epoch 20/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6932
Epoch 21/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6934
Epoch 22/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6931
Epoch 23/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6932
Epoch 24/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.6932
Epoch 25/200				
22868/22868	[=====]	-	0s	13us/step - loss: 0.6933

Epoch 26/200			
22868/22868 [=======]	_	0s	13us/step - loss: 0.6933
Epoch 27/200			
22868/22868 [=======]	_	0s	13us/step - loss: 0.6933
Epoch 28/200			
22868/22868 [===================================	_	0s	13us/step - loss: 0.6933
Epoch 29/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 30/200			•
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 31/200			
22868/22868 [=============================	-	0s	13us/step - loss: 0.6933
Epoch 32/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6933
Epoch 33/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6933
Epoch 34/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6933
Epoch 35/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6934
Epoch 36/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 37/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6934
Epoch 38/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6933
Epoch 39/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.6933
Epoch 40/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6932
Epoch 41/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6933
Epoch 42/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.6933
Epoch 43/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.6933
Epoch 44/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.6933
Epoch 45/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932
Epoch 46/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6933
Epoch 47/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932
Epoch 48/200		_	
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 49/200		_	
22868/22868 [===================================	-	0s	13us/step - loss: 0.6934

Epoch 50/200		
22868/22868 [=============	====] - Os 13us/ste	p - loss: 0.6933
Epoch 51/200		1
22868/22868 [============	====] - Os 14us/ste	p - loss: 0.6933
Epoch 52/200	-	1
22868/22868 [============	====] - Os 13us/ste	p - loss: 0.6932
Epoch 53/200	-	•
22868/22868 [=============	====] - Os 14us/ste	p - loss: 0.6933
Epoch 54/200		•
22868/22868 [===============	====] - Os 13us/ste	p - loss: 0.6933
Epoch 55/200		-
22868/22868 [==============	====] - Os 13us/ste	p - loss: 0.6933
Epoch 56/200		-
22868/22868 [=============	====] - Os 13us/ste	p - loss: 0.6933
Epoch 57/200		
22868/22868 [===============	====] - Os 13us/ste	p - loss: 0.6932
Epoch 58/200		
22868/22868 [===============	====] - Os 14us/ste	p - loss: 0.6932
Epoch 59/200		
22868/22868 [===============	====] - Os 13us/ste	p - loss: 0.6933
Epoch 60/200		
22868/22868 [===============	====] - Os 13us/ste	p - loss: 0.6931
Epoch 61/200		
22868/22868 [==============	====] - Os 13us/ste	p - loss: 0.6933
Epoch 62/200		
22868/22868 [==============	====] - Os 13us/ste	p - loss: 0.6932
Epoch 63/200		
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6933
Epoch 64/200		
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6931
Epoch 65/200		
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6933
Epoch 66/200		
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6933
Epoch 67/200		
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6933
Epoch 68/200		
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6933
Epoch 69/200		
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6933
Epoch 70/200		
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6932
Epoch 71/200		
22868/22868 [===================================	====] - Os 14us/ste	p - loss: 0.6933
Epoch 72/200	_	
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6933
Epoch 73/200		_
22868/22868 [===================================	====] - Os 13us/ste	p - loss: 0.6933

Epoch 74/200			
22868/22868 [===================================	_	0s	13us/step - loss: 0.6932
Epoch 75/200			•
22868/22868 [===================================	_	0s	13us/step - loss: 0.6933
Epoch 76/200			•
22868/22868 [===================================	_	0s	13us/step - loss: 0.6932
Epoch 77/200			•
22868/22868 [===================================	_	0s	13us/step - loss: 0.6934
Epoch 78/200			-
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932
Epoch 79/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932
Epoch 80/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 81/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932
Epoch 82/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 83/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 84/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 85/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 86/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932
Epoch 87/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6933
Epoch 88/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.6932
Epoch 89/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932
Epoch 90/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6934
Epoch 91/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 92/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932
Epoch 93/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 94/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 95/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 96/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6933
Epoch 97/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.6932

Epoch 98/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 99/200		•	20 a2, 200p			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 100/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 101/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 102/200			. 1			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 103/200			•			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 104/200			-			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 105/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 106/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 107/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6932
Epoch 108/200						
22868/22868 [=======]	-	0s	13us/step	_	loss:	0.6933
Epoch 109/200						
22868/22868 [======]	-	0s	13us/step	-	loss:	0.6933
Epoch 110/200						
22868/22868 [======]	-	0s	13us/step	-	loss:	0.6932
Epoch 111/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6933
Epoch 112/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6932
Epoch 113/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6933
Epoch 114/200						
22868/22868 [===================================	-	0s	13us/step	-	loss:	0.6934
Epoch 115/200						
22868/22868 [===================================	-	0s	13us/step	-	loss:	0.6933
Epoch 116/200		_			_	
22868/22868 [===================================	-	0s	13us/step	-	loss:	0.6932
Epoch 117/200		_			_	
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6932
Epoch 118/200		_	10 / .		_	
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 119/200		^	40 / .		-	0 0000
22868/22868 [===================================	_	Us	13us/step	_	loss:	0.6932
Epoch 120/200		0 -	10/		1	0 6000
22868/22868 [===================================	_	US	isus/step	_	Toss:	0.6933
Epoch 121/200		0-	12,, 7, -+		1	0 6022
22868/22868 [===================================	_	US	13us/step	_	TOSS:	0.0933

Epoch 122/200
22868/22868 [===================================
Epoch 123/200
22868/22868 [===================================
Epoch 124/200
22868/22868 [===================================
Epoch 125/200
22868/22868 [===================================
Epoch 126/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6933
Epoch 127/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6933
Epoch 128/200
22868/22868 [===================================
Epoch 129/200
22868/22868 [============ ] - Os 13us/step - loss: 0.6933
Epoch 130/200
22868/22868 [============ ] - Os 13us/step - loss: 0.6933
Epoch 131/200
22868/22868 [============ ] - Os 13us/step - loss: 0.6932
Epoch 132/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6933
Epoch 133/200
22868/22868 [============] - Os 13us/step - loss: 0.6933
Epoch 134/200
22868/22868 [===================================
Epoch 135/200
22868/22868 [===================================
Epoch 136/200
22868/22868 [===================================
Epoch 137/200
22868/22868 [===================================
Epoch 138/200 22868/22868 [===================================
Epoch 139/200
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Epoch 140/200
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Epoch 141/200
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Epoch 142/200
22868/22868 [===================================
Epoch 143/200
22868/22868 [===================================
Epoch 144/200
22868/22868 [===================================
Epoch 145/200
22868/22868 [===================================

Epoch 146/200						
22868/22868 [=========]	-	0s	13us/step	-	loss:	0.6933
Epoch 147/200						
22868/22868 [==========]	-	0s	13us/step	-	loss:	0.6933
Epoch 148/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6933
Epoch 149/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6932
Epoch 150/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6933
Epoch 151/200						
22868/22868 [======]	-	0s	13us/step	-	loss:	0.6933
Epoch 152/200						
22868/22868 [=======]	-	0s	13us/step	_	loss:	0.6932
Epoch 153/200						
22868/22868 [======]	-	0s	13us/step	-	loss:	0.6933
Epoch 154/200						
22868/22868 [=========]	-	0s	13us/step	_	loss:	0.6933
Epoch 155/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 156/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6932
Epoch 157/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6932
Epoch 158/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 159/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6932
Epoch 160/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 161/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6932
Epoch 162/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 163/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6932
Epoch 164/200			_			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 165/200			-			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 166/200			-			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 167/200			•			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 168/200			. 1			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 169/200			. 1			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
- -			. 1			

Epoch 170/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6933
Epoch 171/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6933
Epoch 172/200						
22868/22868 [===========]	-	0s	13us/step	-	loss:	0.6933
Epoch 173/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.6933
Epoch 174/200						
22868/22868 [===========]	-	0s	13us/step	-	loss:	0.6933
Epoch 175/200						
22868/22868 [======]	-	0s	13us/step	-	loss:	0.6933
Epoch 176/200						
22868/22868 [==========]	-	0s	13us/step	-	loss:	0.6933
Epoch 177/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 178/200						
22868/22868 [===================================	-	0s	13us/step	-	loss:	0.6933
Epoch 179/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 180/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 181/200			_			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6932
Epoch 182/200			_			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 183/200			_			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 184/200			-			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6933
Epoch 185/200			-			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6932
Epoch 186/200			_			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 187/200			-			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.6932
Epoch 188/200			-			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 189/200			-			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 190/200			-			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 191/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 192/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.6933
Epoch 193/200			r			
22868/22868 [========]	_	0s	13us/step	_	loss:	0.6933
- -			. 1			

Epoch 194/200
22868/22868 [===================================
Epoch 195/200
22868/22868 [===================================
Epoch 196/200
22868/22868 [===================================
Epoch 197/200
22868/22868 [===================================
Epoch 198/200
22868/22868 [===================================
Epoch 199/200
22868/22868 [===================================
Epoch 200/200
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Epoch 1/200
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Epoch 2/200
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Epoch 3/200
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Epoch 6/200
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Epoch 7/200
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Epoch 8/200
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Epoch 9/200
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Epoch 10/200
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Epoch 11/200
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Epoch 12/200
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Epoch 13/200
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Epoch 14/200
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Epoch 15/200
22868/22868 [===================================
Epoch 16/200
22868/22868 [===================================
Epoch 17/200
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22868/22868 [============= ] - Os 13us/step - loss: 0.6929
Epoch 18/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6928
Epoch 19/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6929
Epoch 20/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6928
Epoch 21/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6928
Epoch 22/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6928
Epoch 23/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6928
Epoch 24/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6927
Epoch 25/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6928
Epoch 26/200
Epoch 27/200
Epoch 28/200
Epoch 29/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6927
Epoch 30/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6927
Epoch 31/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6925
Epoch 32/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6926
Epoch 33/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6926
Epoch 34/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6926
Epoch 35/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6925
Epoch 36/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6923
Epoch 37/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6923
Epoch 38/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6923
Epoch 39/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6923
Epoch 40/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6923
Epoch 41/200
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22868/22868 [============== ] - Os 14us/step - loss: 0.6923
Epoch 42/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6921
Epoch 43/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6921
Epoch 44/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6920
Epoch 45/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6920
Epoch 46/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6920
Epoch 47/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6920
Epoch 48/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6920
Epoch 49/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6920
Epoch 50/200
Epoch 51/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6918
Epoch 52/200
Epoch 53/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6917
Epoch 54/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6916
Epoch 55/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6915
Epoch 56/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6914
Epoch 57/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6914
Epoch 58/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6913
Epoch 59/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6913
Epoch 60/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6912
Epoch 61/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6911
Epoch 62/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6910
Epoch 63/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6907
Epoch 64/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6907
Epoch 65/200
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22868/22868 [============= ] - Os 13us/step - loss: 0.6907
Epoch 66/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6906
Epoch 67/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6904
Epoch 68/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6904
Epoch 69/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6902
Epoch 70/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6902
Epoch 71/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6902
Epoch 72/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6899
Epoch 73/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6897
Epoch 74/200
Epoch 75/200
Epoch 76/200
Epoch 77/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6894
Epoch 78/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6893
Epoch 79/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6892
Epoch 80/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6890
Epoch 81/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6891
Epoch 82/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6888
Epoch 83/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6887
Epoch 84/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6885
Epoch 85/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6883
Epoch 86/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6883
Epoch 87/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6879
Epoch 88/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6878
Epoch 89/200
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22868/22868 [============= ] - Os 13us/step - loss: 0.6875
Epoch 90/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6870
Epoch 91/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6870
Epoch 92/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6864
Epoch 93/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6859
Epoch 94/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6849
Epoch 95/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6842
Epoch 96/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6835
Epoch 97/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6827
Epoch 98/200
Epoch 99/200
Epoch 100/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6792
Epoch 101/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6776
Epoch 102/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6748
Epoch 103/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6711
Epoch 104/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6630
Epoch 105/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6425
Epoch 106/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6129
Epoch 107/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6027
Epoch 108/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5954
Epoch 109/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5936
Epoch 110/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5766
Epoch 111/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5673
Epoch 112/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5689
Epoch 113/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5577
Epoch 114/200
Epoch 115/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5580
Epoch 116/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5539
Epoch 117/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5516
Epoch 118/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5462
Epoch 119/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5403
Epoch 120/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5342
Epoch 121/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5418
Epoch 122/200
Epoch 123/200
Epoch 124/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5377
Epoch 125/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5343
Epoch 126/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5343
Epoch 127/200
Epoch 128/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5342
Epoch 129/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5394
Epoch 130/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5322
Epoch 131/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5367
Epoch 132/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5318
Epoch 133/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5288
Epoch 134/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5330
Epoch 135/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5266
Epoch 136/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5309
Epoch 137/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5309
Epoch 138/200
Epoch 139/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5266
Epoch 140/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5275
Epoch 141/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5305
Epoch 142/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5324
Epoch 143/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5249
Epoch 144/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5301
Epoch 145/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5289
Epoch 146/200
Epoch 147/200
Epoch 148/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5339
Epoch 149/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5286
Epoch 150/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5275
Epoch 151/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5252
Epoch 152/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5295
Epoch 153/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5270
Epoch 154/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5268
Epoch 155/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5267
Epoch 156/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5255
Epoch 157/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5254
Epoch 158/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5289
Epoch 159/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5267
Epoch 160/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5244
Epoch 161/200
```

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22868/22868 [============== ] - Os 13us/step - loss: 0.5268
Epoch 162/200
Epoch 163/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5249
Epoch 164/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5270
Epoch 165/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5280
Epoch 166/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5274
Epoch 167/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5251
Epoch 168/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5252
Epoch 169/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5239
Epoch 170/200
Epoch 171/200
Epoch 172/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5286
Epoch 173/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5241
Epoch 174/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5241
Epoch 175/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5252
Epoch 176/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5261
Epoch 177/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5269
Epoch 178/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5249
Epoch 179/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5235
Epoch 180/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5269
Epoch 181/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5226
Epoch 182/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5239
Epoch 183/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5251
Epoch 184/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5198
Epoch 185/200
```

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22868/22868 [============== ] - Os 13us/step - loss: 0.5252
Epoch 186/200
22868/22868 [============ ] - Os 13us/step - loss: 0.5244
Epoch 187/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5269
Epoch 188/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5262
Epoch 189/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5262
Epoch 190/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5235
Epoch 191/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5218
Epoch 192/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5247
Epoch 193/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5256
Epoch 194/200
Epoch 195/200
Epoch 196/200
Epoch 197/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5222
Epoch 198/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5222
Epoch 199/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5264
Epoch 200/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5219
22868/22868 [============ ] - 1s 49us/step
Epoch 1/200
Epoch 2/200
Epoch 3/200
22868/22868 [============== ] - Os 13us/step - loss: 0.6946
Epoch 4/200
Epoch 5/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6943
Epoch 6/200
22868/22868 [============ ] - Os 13us/step - loss: 0.6940
Epoch 7/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6939
Epoch 8/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6939
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29868/22868 [===================================	Epoch 9/200	
Epoch 10/200 22868/22868 [===================================		0.6939
28868/22868 [===================================	<del>-</del>	
Epoch 11/200 22868/22868 [===================================		0.6937
2868/22868 [===================================	<del>-</del>	
Epoch 12/200 22868/22868 [===================================		0.6938
2868/22868 [===================================	<del>-</del>	
Epoch 13/200 22868/22868 [===================================		0.6935
22868/22868 [===================================		
Epoch 14/200 22868/22868 [===================================		0.6935
Epoch 15/200 22868/22868 [===================================	Epoch 14/200	
Epoch 15/200 22868/22868 [===================================	22868/22868 [===================================	0.6935
Epoch 16/200  22868/22868 [===================================		
22868/22868 [===================================	22868/22868 [===================================	0.6935
Epoch 17/200  22868/22868 [===================================	Epoch 16/200	
22868/22868 [===================================	22868/22868 [===================================	0.6936
Epoch 18/200  22868/22868 [===================================	Epoch 17/200	
22868/22868 [===================================		0.6936
Epoch 19/200  22868/22868 [===================================	Epoch 18/200	
22868/22868 [===================================	22868/22868 [===================================	0.6934
Epoch 20/200  22868/22868 [===================================	Epoch 19/200	
22868/22868 [===================================	22868/22868 [===================================	0.6935
Epoch 21/200  22868/22868 [===================================		
22868/22868 [===================================	22868/22868 [===================================	0.6933
Epoch 22/200  22868/22868 [===================================	Epoch 21/200	
22868/22868 [===================================	22868/22868 [===================================	0.6934
Epoch 23/200 22868/22868 [===================================	Epoch 22/200	
22868/22868 [===================================	22868/22868 [===================================	0.6933
Epoch 24/200  22868/22868 [===================================		
22868/22868 [===================================	22868/22868 [============ ] - Os 13us/step - loss:	0.6935
Epoch 25/200  22868/22868 [===================================		
22868/22868 [===================================	22868/22868 [============= ] - Os 13us/step - loss:	0.6935
Epoch 26/200  22868/22868 [===================================	•	
22868/22868 [===================================	22868/22868 [===================================	0.6933
Epoch 27/200  22868/22868 [===================================		
22868/22868 [===================================	22868/22868 [===================================	0.6934
Epoch 28/200  22868/22868 [===================================	<b>-</b>	
22868/22868 [===================================	22868/22868 [============ ] - Os 14us/step - loss:	0.6936
Epoch 29/200  22868/22868 [===================================	•	
22868/22868 [===================================		0.6931
Epoch 30/200 22868/22868 [===================================		
22868/22868 [===================================	22868/22868 [===================================	0.6929
Epoch 31/200	22868/22868 [============ ] - 0s 13us/step - loss:	0.6925
	Epoch 31/200	
22868/22868 [===================================	<del>-</del>	0.6918
Epoch 32/200	<del>-</del>	
	22868/22868 [===================================	0.6888
00060/00060 [	22000/22000 [=================================	U.6888

Epoch 33/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.6788
Epoch 34/200	_		•
22868/22868 [===================================	] -	0s	13us/step - loss: 0.6646
Epoch 35/200			•
22868/22868 [===================================	] -	0s	14us/step - loss: 0.6399
Epoch 36/200			•
22868/22868 [===================================	] -	0s	13us/step - loss: 0.6190
Epoch 37/200			-
22868/22868 [===================================	] -	0s	13us/step - loss: 0.6109
Epoch 38/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.6097
Epoch 39/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5942
Epoch 40/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5824
Epoch 41/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5824
Epoch 42/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5727
Epoch 43/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5696
Epoch 44/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5591
Epoch 45/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5636
Epoch 46/200			
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5478
Epoch 47/200			
22868/22868 [===================================	] -	0s	14us/step - loss: 0.5533
Epoch 48/200	_		
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5481
Epoch 49/200	_		
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5464
Epoch 50/200	_		
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5421
Epoch 51/200	_		
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5464
Epoch 52/200	_	_	
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5410
Epoch 53/200	_	_	
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5420
Epoch 54/200	_	_	
22868/22868 [===================================	] -	0s	13us/step - loss: 0.5421
Epoch 55/200	,	^	44 /
22868/22868 [===================================	J –	0s	14us/step - 1oss: 0.5360
Epoch 56/200	7	^	14/
22868/22868 [===================================	– ر	US	14us/step - loss: 0.5383

Epoch 57/200				
-	[======]	_	0s	13us/step - loss: 0.5365
Epoch 58/200				1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
-	[======]	_	0s	13us/step - loss: 0.5356
Epoch 59/200				•
	[======]	_	0s	13us/step - loss: 0.5350
Epoch 60/200				•
22868/22868	[======]	-	0s	14us/step - loss: 0.5361
Epoch 61/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.5319
Epoch 62/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.5360
Epoch 63/200				
	[======]	-	0s	13us/step - loss: 0.5322
Epoch 64/200				
	[=====]	-	0s	13us/step - loss: 0.5345
Epoch 65/200				
	[=====]	-	0s	13us/step - loss: 0.5306
Epoch 66/200				
	[=====]	-	0s	13us/step - loss: 0.5260
Epoch 67/200				
	[]	-	0s	13us/step - loss: 0.5295
Epoch 68/200				
	[]	-	0s	13us/step - loss: 0.5336
Epoch 69/200				
	[=====]	-	0s	13us/step - loss: 0.5312
Epoch 70/200			_	
	[=====]	-	0s	13us/step - loss: 0.5349
Epoch 71/200			•	10 / 1 0 5005
	[======]	_	Us	13us/step - loss: 0.5285
Epoch 72/200			ο-	12/
Epoch 73/200	[======]	_	US	13us/step - 10ss: 0.5320
•	[======]		٥٥	12::g/gton logg: 0 E210
Epoch 74/200		_	US	15us/step - 10ss: 0.5510
	[======]	_	۸e	13ug/gton - logg: 0 5205
Epoch 75/200			05	13us/step = 10ss. 0.3293
-	[=======]	_	Λe	13us/stan - loss: 0 5296
Epoch 76/200			OB	1005, 5 cep 1055. 0.0250
-	[======]	_	0s	13us/sten - loss: 0 5269
Epoch 77/200			Ü	1045, 5000 1055. 0.0205
	[=====]	_	0s	13us/step - loss: 0 5302
Epoch 78/200			Ü	Toda, book Toda. C.CCCI
-	[=====]	_	0s	13us/step - loss: 0.5273
Epoch 79/200				
	[=====]	_	0s	13us/step - loss: 0.5269
Epoch 80/200				
_	[======]	_	0s	13us/step - loss: 0.5287
				<del>-</del>

Enach 01/000					
Epoch 81/200 22868/22868 [=======]		٥٩	12ng/g+on 1	1	0 5206
	_	US	ious/step - i	.088:	0.5506
Epoch 82/200		٥-	12/		0 5051
22868/22868 [===================================	-	US	13us/step - 1	Loss:	0.5251
Epoch 83/200		^	40 / 1		0 5076
22868/22868 [===================================	_	US	13us/step - 1	Loss:	0.5276
Epoch 84/200		^	10 /		0 5070
22868/22868 [===================================	-	Us	13us/step - 1	LOSS:	0.5279
Epoch 85/200		^	10 /		0 5005
22868/22868 [===================================	_	US	13us/step - 1	Loss:	0.5265
Epoch 86/200		^	10 /		0 5050
22868/22868 [===================================	-	Us	13us/step - 1	LOSS:	0.5250
Epoch 87/200		•	10 /	-	
22868/22868 [===================================	-	0s	13us/step - 1	LOSS:	0.5274
Epoch 88/200		•	10 /	-	
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5282
Epoch 89/200		_			
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5257
Epoch 90/200					
22868/22868 [=======]	-	0s	13us/step - 1	Loss:	0.5265
Epoch 91/200					
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5257
Epoch 92/200		_			
22868/22868 [=======]	-	0s	13us/step - 1	Loss:	0.5265
Epoch 93/200					
22868/22868 [=======]	-	0s	13us/step - 1	Loss:	0.5261
Epoch 94/200					
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5242
Epoch 95/200					
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5271
Epoch 96/200		_			
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5268
Epoch 97/200					
22868/22868 [=======]	-	0s	13us/step - 1	Loss:	0.5248
Epoch 98/200		_			
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5247
Epoch 99/200		_			
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5269
Epoch 100/200		_			
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5245
Epoch 101/200		_			
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5226
Epoch 102/200		_			
22868/22868 [===================================	-	0s	13us/step - 1	LOSS:	0.5242
Epoch 103/200		_		_	
22868/22868 [===================================	-	0s	13us/step - 1	Loss:	0.5280
Epoch 104/200		_	10 1		
22868/22868 [===================================	-	0s	13us/step - 1	LOSS:	U.5266

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Epoch 105/200 22868/22868 [===================================
Epoch 106/200
22868/22868 [===================================
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Epoch 107/200
22868/22868 [===================================
Epoch 108/200
22868/22868 [===================================
Epoch 109/200
22868/22868 [===================================
Epoch 110/200
22868/22868 [============ ] - Os 13us/step - loss: 0.5203
Epoch 111/200
22868/22868 [=========== ] - Os 13us/step - loss: 0.5263
Epoch 112/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5253
Epoch 113/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5244
Epoch 114/200
22868/22868 [============ ] - Os 13us/step - loss: 0.5283
Epoch 115/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5257
Epoch 116/200
22868/22868 [===================================
Epoch 117/200
22868/22868 [===================================
Epoch 118/200
22868/22868 [===================================
Epoch 119/200
22868/22868 [===================================
Epoch 120/200
22868/22868 [===================================
Epoch 121/200
22868/22868 [===================================
Epoch 122/200
22868/22868 [===================================
Epoch 123/200
22868/22868 [===================================
Epoch 124/200
22868/22868 [===================================
Epoch 125/200
22868/22868 [===================================
Epoch 126/200
22868/22868 [===================================
Epoch 127/200
22868/22868 [===================================
Epoch 128/200
22868/22868 [===================================
22000/22000 [] - US 15uS/Step - 10SS: U.5241

Epoch 129/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5274
Epoch 130/200			1			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5215
Epoch 131/200			. 1			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5252
Epoch 132/200			. 1			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5225
Epoch 133/200			-			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5233
Epoch 134/200						
22868/22868 [=======]	-	0s	13us/step	_	loss:	0.5236
Epoch 135/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5253
Epoch 136/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5243
Epoch 137/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5233
Epoch 138/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5260
Epoch 139/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5225
Epoch 140/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5207
Epoch 141/200						
22868/22868 [===========]	-	0s	13us/step	-	loss:	0.5214
Epoch 142/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5223
Epoch 143/200						
22868/22868 [===========]	-	0s	13us/step	-	loss:	0.5234
Epoch 144/200			_			
22868/22868 [=========]	-	0s	13us/step	-	loss:	0.5214
Epoch 145/200						
22868/22868 [===================================	-	0s	13us/step	-	loss:	0.5211
Epoch 146/200		_			_	
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5274
Epoch 147/200		_			_	
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5237
Epoch 148/200		•	10 /		_	0 5044
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5211
Epoch 149/200		•			_	
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.5228
Epoch 150/200		^	40 / 1		-	0 5075
22868/22868 [===================================	-	US	13us/step	_	loss:	0.5275
Epoch 151/200		0-	1929/		1	0 5020
22868/22868 [===================================	_	US	13us/step	_	TOSS:	0.5230
Epoch 152/200 22868/22868 [===================================	_	0~	12110/0+0-	_	1000:	0 5067
22000/22000 [	-	US	rous/step	_	TOSS:	0.5267

Epoch 153/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5210
Epoch 154/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5256
Epoch 155/200						
22868/22868 [===========]	-	0s	13us/step	-	loss:	0.5215
Epoch 156/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5213
Epoch 157/200						
22868/22868 [===========]	-	0s	13us/step	-	loss:	0.5238
Epoch 158/200						
22868/22868 [======]	-	0s	13us/step	_	loss:	0.5232
Epoch 159/200						
22868/22868 [==========]	-	0s	13us/step	-	loss:	0.5224
Epoch 160/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5239
Epoch 161/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5247
Epoch 162/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5243
Epoch 163/200			_			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5224
Epoch 164/200			_			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5248
Epoch 165/200			_			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5223
Epoch 166/200			-			
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5248
Epoch 167/200			•			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5210
Epoch 168/200			•			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5228
Epoch 169/200			•			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5219
Epoch 170/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5246
Epoch 171/200			1			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5221
Epoch 172/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5209
Epoch 173/200						
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5243
Epoch 174/200			1			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5215
Epoch 175/200			,		. =	
22868/22868 [===================================	_	0s	13us/sten	_	loss:	0.5236
Epoch 176/200			,			
22868/22868 [===================================	_	0s	13us/sten	_	loss:	0.5250
· -			r			

7			
Epoch 177/200		_	10 /
22868/22868 [===================================	-	Us	13us/step - loss: 0.5225
Epoch 178/200		_	
22868/22868 [===================================	-	0s	13us/step - loss: 0.5238
Epoch 179/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.5238
Epoch 180/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5225
Epoch 181/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5219
Epoch 182/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5225
Epoch 183/200			
22868/22868 [===========]	-	0s	13us/step - loss: 0.5249
Epoch 184/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5266
Epoch 185/200			
22868/22868 [==========]	-	0s	13us/step - loss: 0.5238
Epoch 186/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.5209
Epoch 187/200			-
22868/22868 [===================================	-	0s	13us/step - loss: 0.5235
Epoch 188/200			-
22868/22868 [===================================	_	0s	13us/step - loss: 0.5213
Epoch 189/200			•
22868/22868 [===================================	_	0s	13us/step - loss: 0.5234
Epoch 190/200			•
22868/22868 [===================================	_	0s	14us/step - loss: 0.5211
Epoch 191/200			•
22868/22868 [=======]	_	0s	13us/step - loss: 0.5242
Epoch 192/200			
22868/22868 [===============================	_	0s	13us/step - loss: 0.5227
Epoch 193/200			1
22868/22868 [=======]	_	0s	13us/step - loss: 0.5229
Epoch 194/200			
22868/22868 [===================================	_	0s	13us/step - loss: 0.5222
Epoch 195/200			
22868/22868 [===================================	_	0s	13us/step - loss: 0.5240
Epoch 196/200			
22868/22868 [===================================	_	0s	13us/step - loss: 0.5221
Epoch 197/200		• •	
22868/22868 [=======]	_	0s	13us/sten - loss: 0 5222
Epoch 198/200		Ü	1045, 2000 1055. 0.0222
22868/22868 [===================================	_	0 <	13us/step - loss: 0 5216
Epoch 199/200		JD	1000. 0.0210
22868/22868 [===================================	_	09	13us/sten - loss: 0 5240
Epoch 200/200		OB	1005, 500p 1055. 0.0240
22868/22868 [===================================	_	۸e	13us/sten - loss: 0 5036
22000, 22000 []		OB	10ab/ 50ep 10bb. 0.0200

```
22868/22868 [============ ] - 1s 49us/step
Epoch 1/200
22868/22868 [============= ] - 1s 44us/step - loss: 0.7733
Epoch 2/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6956
Epoch 3/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6953
Epoch 4/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6961
Epoch 5/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6959
Epoch 6/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6949
Epoch 7/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6925
Epoch 8/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6903
Epoch 9/200
Epoch 10/200
Epoch 11/200
Epoch 12/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6828
Epoch 13/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6800
Epoch 14/200
Epoch 15/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6830
Epoch 16/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6525
Epoch 17/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6564
Epoch 18/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6354
Epoch 19/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6147
Epoch 20/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5981
Epoch 21/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5924
Epoch 22/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5796
Epoch 23/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5784
Epoch 24/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5649
Epoch 25/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5635
Epoch 26/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5506
Epoch 27/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5543
Epoch 28/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5489
Epoch 29/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5538
Epoch 30/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5480
Epoch 31/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5392
Epoch 32/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5393
Epoch 33/200
Epoch 34/200
Epoch 35/200
Epoch 36/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5366
Epoch 37/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5333
Epoch 38/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5366
Epoch 39/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5353
Epoch 40/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5356
Epoch 41/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5363
Epoch 42/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5305
Epoch 43/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5317
Epoch 44/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5344
Epoch 45/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5335
Epoch 46/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5329
Epoch 47/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5289
Epoch 48/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5291
Epoch 49/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5318
Epoch 50/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5283
Epoch 51/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5301
Epoch 52/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5278
Epoch 53/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5358
Epoch 54/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5313
Epoch 55/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5295
Epoch 56/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5314
Epoch 57/200
Epoch 58/200
Epoch 59/200
Epoch 60/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5261
Epoch 61/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5287
Epoch 62/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5254
Epoch 63/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5254
Epoch 64/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5226
Epoch 65/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5242
Epoch 66/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5285
Epoch 67/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5234
Epoch 68/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5265
Epoch 69/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5271
Epoch 70/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5260
Epoch 71/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5278
Epoch 72/200
```

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22868/22868 [============= ] - 0s 13us/step - loss: 0.5263
Epoch 73/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5266
Epoch 74/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5248
Epoch 75/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5286
Epoch 76/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5290
Epoch 77/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5272
Epoch 78/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5223
Epoch 79/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5253
Epoch 80/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5272
Epoch 81/200
Epoch 82/200
Epoch 83/200
Epoch 84/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5264
Epoch 85/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5273
Epoch 86/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5229
Epoch 87/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5260
Epoch 88/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5257
Epoch 89/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5259
Epoch 90/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5223
Epoch 91/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5241
Epoch 92/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5267
Epoch 93/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5260
Epoch 94/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5263
Epoch 95/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5223
Epoch 96/200
```

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22868/22868 [============== ] - Os 13us/step - loss: 0.5238
Epoch 97/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5238
Epoch 98/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5252
Epoch 99/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5248
Epoch 100/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5235
Epoch 101/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5263
Epoch 102/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5267
Epoch 103/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5237
Epoch 104/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5238
Epoch 105/200
Epoch 106/200
Epoch 107/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5259
Epoch 108/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5238
Epoch 109/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5221
Epoch 110/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5267
Epoch 111/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5255
Epoch 112/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5255
Epoch 113/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5218
Epoch 114/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5222
Epoch 115/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5230
Epoch 116/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5251
Epoch 117/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5260
Epoch 118/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5234
Epoch 119/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5235
Epoch 120/200
```

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22868/22868 [============== ] - Os 14us/step - loss: 0.5252
Epoch 121/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5222
Epoch 122/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5248
Epoch 123/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5231
Epoch 124/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5219
Epoch 125/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5248
Epoch 126/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5226
Epoch 127/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5214
Epoch 128/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5244
Epoch 129/200
Epoch 130/200
Epoch 131/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5254
Epoch 132/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5263
Epoch 133/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5264
Epoch 134/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5239
Epoch 135/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5264
Epoch 136/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5218
Epoch 137/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5222
Epoch 138/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5230
Epoch 139/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5246
Epoch 140/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5257
Epoch 141/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5220
Epoch 142/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5268
Epoch 143/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5244
Epoch 144/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5226
Epoch 145/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5261
Epoch 146/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5235
Epoch 147/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5241
Epoch 148/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5271
Epoch 149/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5196
Epoch 150/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5238
Epoch 151/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5217
Epoch 152/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5248
Epoch 153/200
Epoch 154/200
Epoch 155/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5239
Epoch 156/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5262
Epoch 157/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5198
Epoch 158/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5219
Epoch 159/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5226
Epoch 160/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5222
Epoch 161/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5262
Epoch 162/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5226
Epoch 163/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5243
Epoch 164/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5220
Epoch 165/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5236
Epoch 166/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5251
Epoch 167/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5230
Epoch 168/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5226
Epoch 169/200
Epoch 170/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5210
Epoch 171/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5227
Epoch 172/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5222
Epoch 173/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5190
Epoch 174/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5240
Epoch 175/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5221
Epoch 176/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5233
Epoch 177/200
Epoch 178/200
Epoch 179/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5216
Epoch 180/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5231
Epoch 181/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5251
Epoch 182/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5229
Epoch 183/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5199
Epoch 184/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5243
Epoch 185/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5266
Epoch 186/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5228
Epoch 187/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5239
Epoch 188/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5203
Epoch 189/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5219
Epoch 190/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5225
Epoch 191/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5241
Epoch 192/200
```

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22868/22868 [============= ] - Os 14us/step - loss: 0.5234
Epoch 193/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5238
Epoch 194/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5259
Epoch 195/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5246
Epoch 196/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5232
Epoch 197/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5232
Epoch 198/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5238
Epoch 199/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5227
Epoch 200/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5224
22868/22868 [============ ] - 1s 49us/step
Epoch 1/200
22868/22868 [============= ] - 1s 45us/step - loss: 0.7760
Epoch 2/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6901
Epoch 3/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6888
Epoch 4/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6851
Epoch 5/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6819
Epoch 6/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6786
Epoch 7/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6723
Epoch 8/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6597
Epoch 9/200
Epoch 10/200
22868/22868 [=============== ] - Os 14us/step - loss: 0.6150
Epoch 11/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6096
Epoch 12/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5926
Epoch 13/200
Epoch 14/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5872
Epoch 15/200
```

Epoch 16/200			
22868/22868 [=======]	_	0s	13us/step - loss: 0.5639
Epoch 17/200			•
22868/22868 [===================================	_	0s	14us/step - loss: 0.5593
Epoch 18/200			•
22868/22868 [===================================	_	0s	14us/step - loss: 0.5667
Epoch 19/200			•
22868/22868 [===================================	-	0s	13us/step - loss: 0.5510
Epoch 20/200			-
22868/22868 [===================================	-	0s	14us/step - loss: 0.5495
Epoch 21/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.5527
Epoch 22/200			
22868/22868 [===================================	-	0s	14us/step - loss: 0.5476
Epoch 23/200			
22868/22868 [===================================	-	0s	14us/step - loss: 0.5456
Epoch 24/200			
22868/22868 [===================================	-	0s	14us/step - loss: 0.5405
Epoch 25/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5419
Epoch 26/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.5400
Epoch 27/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5378
Epoch 28/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.5397
Epoch 29/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5327
Epoch 30/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5381
Epoch 31/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5348
Epoch 32/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.5353
Epoch 33/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.5352
Epoch 34/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.5267
Epoch 35/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5308
Epoch 36/200			
22868/22868 [======]	-	0s	13us/step - loss: 0.5321
Epoch 37/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5339
Epoch 38/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.5342
Epoch 39/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.5326

Epoch 40/200				
-	[======]	_	0s	13us/step - loss: 0.5318
Epoch 41/200				
-	[======]	_	0s	13us/step - loss: 0.5292
Epoch 42/200				•
	[=======]	_	0s	13us/step - loss: 0.5295
Epoch 43/200				-
22868/22868	[=======]	-	0s	13us/step - loss: 0.5276
Epoch 44/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.5292
Epoch 45/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.5272
Epoch 46/200				
	[======]	-	0s	13us/step - loss: 0.5292
Epoch 47/200				
	[=====]	-	0s	13us/step - loss: 0.5271
Epoch 48/200				
22868/22868	[=====]	-	0s	13us/step - loss: 0.5273
Epoch 49/200				
	[=====]	-	0s	13us/step - loss: 0.5291
Epoch 50/200				
	[=====]	-	0s	13us/step - loss: 0.5240
Epoch 51/200				
	[]	-	0s	13us/step - loss: 0.5305
Epoch 52/200				
	[]	-	0s	13us/step - loss: 0.5271
Epoch 53/200				
	[=====]	-	0s	13us/step - loss: 0.5302
Epoch 54/200			_	
	[======]	-	0s	14us/step - loss: 0.5232
Epoch 55/200			^	10 / 1 2 0 5070
	[======]	_	Us	13us/step - loss: 0.52/0
Epoch 56/200			^	40 / 1
	[======]	-	US	13us/step - 10ss: 0.5248
Epoch 57/200	[=====]		٥٥	12ug/gton logg. 0 F2/2
Epoch 58/200		_	US	15us/step - 10ss: 0.5245
-	[======]	_	Λα	13ug/gtop = logg: 0 5035
Epoch 59/200			05	13us/step = 10ss. 0.3233
-	[======]	_	۸۵	13ug/gton - logg: 0 5200
Epoch 60/200			OB	1005, 5 tep 1055. 0.0250
	[======]	_	۸۵	1/11g/gton - logg: 0 5282
Epoch 61/200			OB	14us/step 10ss. 0.0202
-	[======]	_	Λe	13ug/stan - loss: 0 5286
Epoch 62/200			O.D.	10a2, 500p 10bb. 0.0200
	[=====]	_	0s	13us/step - loss: 0.5255
Epoch 63/200				,,
	[=====]	_	0s	13us/step - loss: 0.5225
,	-		- ~	2022. 0.0220

Epoch 64/200				
-	[======]	_	0s	13us/step - loss: 0.5229
Epoch 65/200				1
-	[======]	_	0s	14us/step - loss: 0.5286
Epoch 66/200				•
	[======]	_	0s	13us/step - loss: 0.5248
Epoch 67/200				•
22868/22868	[======]	-	0s	13us/step - loss: 0.5265
Epoch 68/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.5288
Epoch 69/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5265
Epoch 70/200				
22868/22868	[======]	-	0s	13us/step - loss: 0.5261
Epoch 71/200				
	[======]	-	0s	13us/step - loss: 0.5274
Epoch 72/200				
22868/22868	[=====]	-	0s	14us/step - loss: 0.5237
Epoch 73/200				
	[=====]	-	0s	14us/step - loss: 0.5229
Epoch 74/200				
	[=====]	-	0s	14us/step - loss: 0.5262
Epoch 75/200				
	[=====]	-	0s	14us/step - loss: 0.5262
Epoch 76/200				
	[]	-	0s	15us/step - loss: 0.5249
Epoch 77/200				
	[]	-	0s	13us/step - loss: 0.5258
Epoch 78/200			_	
	[======]	-	0s	13us/step - loss: 0.5262
Epoch 79/200			_	
	[======]	-	0s	13us/step - loss: 0.5235
Epoch 80/200			_	40 / 4 2 2 2 5007
	[======]	-	0s	13us/step - loss: 0.5227
Epoch 81/200			^	40 / 1 0 5045
	[======]	-	US	13us/step - 10ss: 0.5215
Epoch 82/200	[======]		٥-	14/
		_	US	14us/step - 10ss: 0.5246
Epoch 83/200	[======]	_	٥٥	12ug/gton - logg: 0 5022
Epoch 84/200		_	US	15us/step - 10ss: 0.5255
	[=====]		٥٥	1/11/2/2+02 1022 0 5005
Epoch 85/200		_	US	14us/step - 10ss: 0.5225
-	[======]	_	Λα	13ug/gtop = logg: 0 52/0
Epoch 86/200		_	υS	10us/step = 10ss. 0.3249
	[======]	_	Λe	13us/sten - loss 0 50/9
Epoch 87/200			GO	1005/506p 1055. 0.0240
_	[======]	_	09	14us/sten - loss: 0 5105
			JB	1145, 500p 1055. 0.0190

Epoch 88/200			
22868/22868 [=======]	_	0s	14us/step - loss: 0.5206
Epoch 89/200			•
22868/22868 [===================================	_	0s	14us/step - loss: 0.5220
Epoch 90/200			•
22868/22868 [===================================	_	0s	13us/step - loss: 0.5237
Epoch 91/200			•
22868/22868 [===================================	_	0s	13us/step - loss: 0.5232
Epoch 92/200			-
22868/22868 [===================================	-	0s	13us/step - loss: 0.5227
Epoch 93/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.5185
Epoch 94/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5186
Epoch 95/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.5208
Epoch 96/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5186
Epoch 97/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.5186
Epoch 98/200			
22868/22868 [===================================	-	0s	14us/step - loss: 0.5210
Epoch 99/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5199
Epoch 100/200			
22868/22868 [===================================	-	0s	13us/step - loss: 0.5168
Epoch 101/200			-
22868/22868 [===================================	-	0s	13us/step - loss: 0.5222
Epoch 102/200			
22868/22868 [===================================	-	0s	14us/step - loss: 0.5194
Epoch 103/200			
22868/22868 [======]	-	0s	14us/step - loss: 0.5167
Epoch 104/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5199
Epoch 105/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5189
Epoch 106/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5189
Epoch 107/200			
22868/22868 [=======]	-	0s	14us/step - loss: 0.5156
Epoch 108/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5170
Epoch 109/200			
22868/22868 [=======]	-	0s	13us/step - loss: 0.5157
Epoch 110/200			
22868/22868 [=========]	-	0s	13us/step - loss: 0.5112
Epoch 111/200			
22868/22868 [===================================	-	0s	14us/step - loss: 0.5132

Epoch 112/200
22868/22868 [===================================
Epoch 113/200
22868/22868 [===================================
Epoch 114/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5081
Epoch 115/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5103
Epoch 116/200
22868/22868 [===================================
Epoch 117/200
22868/22868 [===================================
Epoch 118/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5237
Epoch 119/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5229
Epoch 120/200
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Epoch 121/200
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Epoch 136/200 22868/22868 [===================================	_	٥٥	12ug/gton	_	1000.	U E030
Epoch 137/200		US	13us/step		TOSS.	0.5236
22868/22868 [===================================		٥	12,19/9+05		1.000.	0 E000
	_	US	13us/step	_	TOSS:	0.5220
Epoch 138/200		ο-	10/		7	0 5000
22868/22868 [===================================	_	US	13us/step	_	loss:	0.5223
Epoch 139/200		^	4.4 / 1		-	0 5046
22868/22868 [===================================	_	US	14us/step	_	loss:	0.5246
Epoch 140/200		^	40 / 1		-	0 5050
22868/22868 [===================================	_	US	13us/step	_	loss:	0.5250
Epoch 141/200		^	40 / .		-	0 5057
22868/22868 [===================================	-	Us	13us/step	_	loss:	0.5257
Epoch 142/200		•			_	
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5241
Epoch 143/200		_			_	
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5200
Epoch 144/200						
22868/22868 [=========]	-	0s	13us/step	-	loss:	0.5251
Epoch 145/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5253
Epoch 146/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5277
Epoch 147/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5256
Epoch 148/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5228
Epoch 149/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5247
Epoch 150/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	0.5219
Epoch 151/200						
22868/22868 [============]	-	0s	13us/step	-	loss:	0.5248
Epoch 152/200						
22868/22868 [======]	-	0s	13us/step	-	loss:	0.5264
Epoch 153/200						
22868/22868 [===========]	-	0s	13us/step	-	loss:	0.5244
Epoch 154/200						
22868/22868 [===================================	-	0s	13us/step	-	loss:	0.5252
Epoch 155/200						
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.5245
Epoch 156/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	0.5275
Epoch 157/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5236
Epoch 158/200			•			
22868/22868 [===================================	_	0s	13us/step	_	loss:	0.5225
Epoch 159/200			•			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5234
			-			

Enach 160/200
Epoch 160/200 22868/22868 [===================================
Epoch 161/200
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Epoch 162/200
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Epoch 163/200
22868/22868 [===================================
Epoch 164/200
22868/22868 [===================================
Epoch 165/200
22868/22868 [===================================
Epoch 166/200
22868/22868 [============ ] - Os 14us/step - loss: 0.5148
Epoch 167/200
22868/22868 [===================================
Epoch 168/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5087
Epoch 169/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5108
Epoch 170/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5104
Epoch 171/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5190
Epoch 172/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5255
Epoch 173/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5224
Epoch 174/200
22868/22868 [===================================
Epoch 175/200
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Epoch 176/200
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Epoch 177/200
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Epoch 184/200
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22868/22868 [===================================
Epoch 188/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5222
Epoch 189/200
22868/22868 [===================================
Epoch 190/200
22868/22868 [===================================
Epoch 191/200
22868/22868 [===================================
Epoch 192/200
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Epoch 193/200
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Epoch 194/200
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Epoch 195/200
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Epoch 196/200
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Epoch 197/200
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Epoch 198/200
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Epoch 199/200
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Epoch 200/200
22868/22868 [===================================
22868/22868 [===================================
Epoch 1/200
22868/22868 [===================================
Epoch 2/200
22868/22868 [===================================
Epoch 3/200
22868/22868 [===================================
Epoch 4/200
22868/22868 [===================================
Epoch 5/200
22868/22868 [===================================
Epoch 6/200
22868/22868 [===================================
Epoch 7/200

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22868/22868 [============== ] - Os 14us/step - loss: 0.6821
Epoch 8/200
22868/22868 [============= ] - Os 13us/step - loss: 1.0419
Epoch 9/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6962
Epoch 10/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6951
Epoch 11/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 12/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6951
Epoch 13/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6949
Epoch 14/200
22868/22868 [============ ] - 0s 14us/step - loss: 0.6944
Epoch 15/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6933
Epoch 16/200
Epoch 17/200
Epoch 18/200
Epoch 19/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6918
Epoch 20/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6912
Epoch 21/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6881
Epoch 22/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6820
Epoch 23/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.6716
Epoch 24/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6409
Epoch 25/200
22868/22868 [============= ] - Os 13us/step - loss: 0.6344
Epoch 26/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6182
Epoch 27/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6032
Epoch 28/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.6016
Epoch 29/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5926
Epoch 30/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5822
Epoch 31/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5724
Epoch 32/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5758
Epoch 33/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5608
Epoch 34/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5552
Epoch 35/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5595
Epoch 36/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5465
Epoch 37/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5536
Epoch 38/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5410
Epoch 39/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5472
Epoch 40/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5415
Epoch 41/200
Epoch 42/200
Epoch 43/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5416
Epoch 44/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5398
Epoch 45/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5400
Epoch 46/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5374
Epoch 47/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5362
Epoch 48/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5288
Epoch 49/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5442
Epoch 50/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5364
Epoch 51/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5337
Epoch 52/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5408
Epoch 53/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5334
Epoch 54/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5322
Epoch 55/200
```

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22868/22868 [============= ] - Os 14us/step - loss: 0.5305
Epoch 56/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5351
Epoch 57/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5335
Epoch 58/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5332
Epoch 59/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5321
Epoch 60/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5333
Epoch 61/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5280
Epoch 62/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5252
Epoch 63/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5328
Epoch 64/200
Epoch 65/200
Epoch 66/200
Epoch 67/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5263
Epoch 68/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5280
Epoch 69/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5275
Epoch 70/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5289
Epoch 71/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5252
Epoch 72/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5254
Epoch 73/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5269
Epoch 74/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5255
Epoch 75/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5272
Epoch 76/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5278
Epoch 77/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5250
Epoch 78/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5332
Epoch 79/200
```

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22868/22868 [============= ] - Os 14us/step - loss: 0.5287
Epoch 80/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5268
Epoch 81/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5274
Epoch 82/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5253
Epoch 83/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5254
Epoch 84/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5252
Epoch 85/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5265
Epoch 86/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5300
Epoch 87/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5236
Epoch 88/200
Epoch 89/200
Epoch 90/200
Epoch 91/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5255
Epoch 92/200
22868/22868 [============== ] - Os 13us/step - loss: 0.5291
Epoch 93/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5256
Epoch 94/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5286
Epoch 95/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5250
Epoch 96/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5235
Epoch 97/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5239
Epoch 98/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5284
Epoch 99/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5241
Epoch 100/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5291
Epoch 101/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5264
Epoch 102/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5302
Epoch 103/200
```

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22868/22868 [============== ] - Os 14us/step - loss: 0.5258
Epoch 104/200
Epoch 105/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5271
Epoch 106/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5252
Epoch 107/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5231
Epoch 108/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5309
Epoch 109/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5288
Epoch 110/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5248
Epoch 111/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5262
Epoch 112/200
Epoch 113/200
Epoch 114/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5263
Epoch 115/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5229
Epoch 116/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5286
Epoch 117/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5258
Epoch 118/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5260
Epoch 119/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5248
Epoch 120/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5256
Epoch 121/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5243
Epoch 122/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5270
Epoch 123/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5244
Epoch 124/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5266
Epoch 125/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5235
Epoch 126/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5219
Epoch 127/200
```

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22868/22868 [============= ] - Os 14us/step - loss: 0.5249
Epoch 128/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5232
Epoch 129/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5226
Epoch 130/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5235
Epoch 131/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5244
Epoch 132/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5251
Epoch 133/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5227
Epoch 134/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5234
Epoch 135/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5294
Epoch 136/200
Epoch 137/200
Epoch 138/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5260
Epoch 139/200
22868/22868 [============= ] - 0s 13us/step - loss: 0.5252
Epoch 140/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5275
Epoch 141/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5243
Epoch 142/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5239
Epoch 143/200
22868/22868 [============= ] - Os 13us/step - loss: 0.5252
Epoch 144/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5255
Epoch 145/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5230
Epoch 146/200
22868/22868 [============== ] - 0s 13us/step - loss: 0.5232
Epoch 147/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5272
Epoch 148/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5215
Epoch 149/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5241
Epoch 150/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5242
Epoch 151/200
```

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22868/22868 [============= ] - 0s 14us/step - loss: 0.5233
Epoch 152/200
Epoch 153/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5254
Epoch 154/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5241
Epoch 155/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5250
Epoch 156/200
22868/22868 [============ ] - Os 14us/step - loss: 0.5204
Epoch 157/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5229
Epoch 158/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5231
Epoch 159/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5237
Epoch 160/200
Epoch 161/200
Epoch 162/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5210
Epoch 163/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5271
Epoch 164/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5243
Epoch 165/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5217
Epoch 166/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5250
Epoch 167/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5262
Epoch 168/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5229
Epoch 169/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5237
Epoch 170/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5220
Epoch 171/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5269
Epoch 172/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5216
Epoch 173/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5222
Epoch 174/200
Epoch 175/200
```

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22868/22868 [============== ] - Os 14us/step - loss: 0.5228
Epoch 176/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5252
Epoch 177/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5226
Epoch 178/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5236
Epoch 179/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5250
Epoch 180/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5221
Epoch 181/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5222
Epoch 182/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5211
Epoch 183/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5223
Epoch 184/200
Epoch 185/200
Epoch 186/200
Epoch 187/200
Epoch 188/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5226
Epoch 189/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5230
Epoch 190/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5222
Epoch 191/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5290
Epoch 192/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5236
Epoch 193/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5210
Epoch 194/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5247
Epoch 195/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5231
Epoch 196/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5236
Epoch 197/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5203
Epoch 198/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5247
Epoch 199/200
```

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22868/22868 [============= ] - Os 13us/step - loss: 0.5242
Epoch 200/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5232
22868/22868 [============ ] - 1s 53us/step
Epoch 1/200
22868/22868 [============= ] - 1s 46us/step - loss: 7.9630
Epoch 2/200
22868/22868 [============== ] - Os 14us/step - loss: 7.9712
Epoch 3/200
22868/22868 [============== ] - 0s 14us/step - loss: 7.9712
Epoch 4/200
Epoch 5/200
22868/22868 [============== ] - 0s 13us/step - loss: 7.9712
Epoch 6/200
22868/22868 [============== ] - 0s 14us/step - loss: 7.9712
Epoch 7/200
22868/22868 [============== ] - 0s 14us/step - loss: 7.9712
Epoch 8/200
22868/22868 [============= ] - Os 13us/step - loss: 7.9712
Epoch 9/200
22868/22868 [============= ] - Os 14us/step - loss: 7.9712
Epoch 10/200
22868/22868 [============== ] - 0s 14us/step - loss: 7.9712
Epoch 11/200
22868/22868 [============== ] - 0s 14us/step - loss: 7.9712
Epoch 12/200
22868/22868 [============= ] - 0s 13us/step - loss: 7.9712
Epoch 13/200
22868/22868 [============= ] - 0s 13us/step - loss: 7.9712
Epoch 14/200
22868/22868 [============== ] - 0s 14us/step - loss: 7.9712
Epoch 15/200
Epoch 16/200
Epoch 17/200
22868/22868 [=============== ] - Os 14us/step - loss: 7.9712
Epoch 18/200
22868/22868 [============= ] - 0s 14us/step - loss: 7.9712
Epoch 19/200
22868/22868 [============== ] - 0s 14us/step - loss: 7.9712
Epoch 20/200
Epoch 21/200
Epoch 22/200
22868/22868 [============== ] - 0s 14us/step - loss: 7.9712
```

Epoch 23/200				
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 24/200				
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 25/200				
	[======]	_	0s	14us/step - loss: 7.9712
Epoch 26/200				•
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 27/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 28/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 29/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 30/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 31/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 32/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 33/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 34/200			_	
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 35/200			_	
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 36/200			^	14 / 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
	[======]	_	Us	14us/step - loss: 7.9/12
Epoch 37/200			0 -	14/
	[=======]	_	US	14us/step - 10ss: 7.9712
Epoch 38/200	[======]	_	٥٥	1/11g/gton - logg: 7 0710
Epoch 39/200			US	14us/step - 10ss. 7.9712
•	[======]	_	۸a	1/ug/gtop = logg: 7 9712
Epoch 40/200			05	14us/step = 10ss. 7.3712
	[======]	_	۸q	14us/sten - loss: 7 9712
Epoch 41/200			O.D	1145,5000 1055. 1.0112
	[=====]	_	0s	14us/step - loss: 7.9712
Epoch 42/200				
	[=====]	_	0s	14us/step - loss: 7.9712
Epoch 43/200				
	[======]	_	0s	13us/step - loss: 7.9712
Epoch 44/200				1
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 45/200				•
	[=======]	-	0s	14us/step - loss: 7.9712
Epoch 46/200				-
22868/22868	[======]	-	0s	14us/step - loss: 7.9712

Epoch 47/200				
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 48/200				
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 49/200				
	[======]	_	0s	14us/step - loss: 7.9712
Epoch 50/200				•
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 51/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 52/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 53/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 54/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 55/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 56/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 57/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 58/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 59/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 60/200			_	
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 61/200			^	14 / 1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
	[======]	_	Us	14us/step - loss: 7.9/12
Epoch 62/200			0 -	14/
	[=======]	_	US	14us/step - 10ss: 7.9712
Epoch 63/200			٥-	14/
Epoch 64/200	[=======]	_	US	14us/step - 10ss: 7.9712
	[======]	_	۸a	1/ug/gtop = logg: 7 9712
Epoch 65/200			US	14us/step - 10ss. 7.9712
-	[======]	_	۸a	1/ug/gton - logg: 7 9712
Epoch 66/200			US	14us/scep 10ss. 7.3712
-	[======]	_	۸q	14us/sten - loss: 7 9712
Epoch 67/200			OB	11ub/ bccp 10bb. 7.3712
	[======]	_	٥s	14us/sten - loss: 7 9712
Epoch 68/200			O.D	1145,5000 1055. 1.0112
-	[=====]	_	0s	14us/step - loss: 7.9712
Epoch 69/200				
_	[=====]	_	0s	14us/step - loss: 7.9712
Epoch 70/200				
	[=====]	_	0s	14us/step - loss: 7.9712
	_			•

Epoch 71/200	
22868/22868 [===================================	712
Epoch 72/200	
22868/22868 [===================================	712
Epoch 73/200	
22868/22868 [===================================	712
Epoch 74/200	
22868/22868 [===================================	712
Epoch 75/200	
22868/22868 [===================================	712
Epoch 76/200	
22868/22868 [===================================	712
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Epoch 95/200						
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Epoch 96/200		_				
-		] -	0s	14us/step	- loss:	7.9712
Epoch 97/200				•		
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Epoch 98/200				•		
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Epoch 106/200		_	_		_	
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Epoch 107/200		_	_		_	
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Epoch 108/200		7	•	44 / .	-	7 0710
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Epoch 112/200		J _	US	14us/step	- 1088.	1.9112
		1 _	۸a	1/11g/gton	- 1000:	7 0712
Epoch 113/200		7	OB	14d5/5cep	1055.	1.5112
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Epoch 114/200		_	Ü	1100,000	1000.	1.0112
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Epoch 116/200		-				
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Epoch 117/200		_		· · · · · · · · · · · · · · · · · · ·		
		] -	0s	14us/step	- loss:	7.9712
Epoch 118/200				•		
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Epoch 143/200
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Epoch 144/200
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Epoch 145/200
22868/22868 [============= ] - Os 14us/step - loss: 7.9712
Epoch 146/200
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Epoch 147/200
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Epoch 167/200			
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Epoch 168/200			
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Epoch 169/200			
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Epoch 170/200			
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Epoch 171/200			
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Epoch 172/200			
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Epoch 173/200			
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Epoch 174/200			
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Epoch 175/200			
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Epoch 176/200			
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Epoch 177/200			
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Epoch 178/200			-
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Epoch 179/200			-
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Epoch 180/200			-
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Epoch 181/200			-
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Epoch 182/200			-
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Epoch 184/200			-
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Epoch 185/200			-
22868/22868 [===================================	] –	0s	14us/step - loss: 7.9712
Epoch 186/200			-
22868/22868 [===================================	] –	0s	13us/step - loss: 7.9712
Epoch 187/200			-
22868/22868 [===================================	] –	0s	14us/step - loss: 7.9712
Epoch 188/200			•
22868/22868 [===================================	] –	0s	14us/step - loss: 7.9712
Epoch 189/200			•
22868/22868 [===================================	] –	0s	13us/step - loss: 7.9712
Epoch 190/200			•
22868/22868 [===================================	] –	0s	14us/step - loss: 7.9712
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Epoch 191/200		_			_	
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Epoch 192/200		_			_	
22868/22868 [===================================	-	0s	14us/step	-	loss:	7.9712
Epoch 193/200						
22868/22868 [===================================	-	0s	14us/step	_	loss:	7.9712
Epoch 194/200						
22868/22868 [===================================	-	0s	14us/step	_	loss:	7.9712
Epoch 195/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	7.9712
Epoch 196/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	7.9712
Epoch 197/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	7.9712
Epoch 198/200						
22868/22868 [===========] -	-	0s	14us/step	-	loss:	7.9712
Epoch 199/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	7.9712
Epoch 200/200						
22868/22868 [===========] -			-	-	loss:	7.9712
22868/22868 [==========] -	-	1s	53us/step			
Epoch 1/200						
22868/22868 [===================================	-	1s	47us/step	-	loss:	0.9084
Epoch 2/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.7000
Epoch 3/200						
22868/22868 [=======] -	-	0s	14us/step	-	loss:	0.6983
Epoch 4/200						
22868/22868 [=======] -	-	0s	14us/step	_	loss:	0.7001
Epoch 5/200						
22868/22868 [===========] -	-	0s	14us/step	-	loss:	0.6958
Epoch 6/200						
22868/22868 [======] -	-	0s	14us/step	_	loss:	0.6948
Epoch 7/200						
22868/22868 [======] -	-	0s	14us/step	_	loss:	0.6945
Epoch 8/200						
22868/22868 [======] -	-	0s	14us/step	_	loss:	0.6934
Epoch 9/200						
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.6920
Epoch 10/200						
22868/22868 [======] -	-	0s	14us/step	_	loss:	0.6894
Epoch 11/200						
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.6854
Epoch 12/200			-			
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.6793
Epoch 13/200			•			
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.6675
Epoch 14/200			-			

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22868/22868 [============== ] - Os 14us/step - loss: 0.6385
Epoch 15/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6447
Epoch 16/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6203
Epoch 17/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6143
Epoch 18/200
/Users/Broth/anaconda3/lib/python3.7/site-packages/keras/callbacks/callbacks.py:95: RuntimeWar:
 % (hook_name, delta_t_median), RuntimeWarning)
/Users/Broth/anaconda3/lib/python3.7/site-packages/keras/callbacks/callbacks.py:95: RuntimeWar:
 % (hook_name, delta_t_median), RuntimeWarning)
22868/22868 [============= ] - 1s 26us/step - loss: 0.5933
Epoch 19/200
Epoch 20/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5745
Epoch 21/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6744
Epoch 22/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6422
Epoch 23/200
Epoch 24/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6339
Epoch 25/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6150
Epoch 26/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6427
Epoch 27/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5862
Epoch 28/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5948
Epoch 29/200
Epoch 30/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5771
Epoch 31/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5753
Epoch 32/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5659
Epoch 33/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5604
Epoch 34/200
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22868/22868 [============= ] - Os 14us/step - loss: 0.5594
Epoch 35/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5559
Epoch 36/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5533
Epoch 37/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5507
Epoch 38/200
22868/22868 [============ ] - 0s 14us/step - loss: 0.5494
Epoch 39/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5476
Epoch 40/200
22868/22868 [============ ] - 0s 14us/step - loss: 0.5494
Epoch 41/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5439
Epoch 42/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5461
Epoch 43/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5402
Epoch 44/200
Epoch 45/200
Epoch 46/200
Epoch 47/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5370
Epoch 48/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5350
Epoch 49/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5350
Epoch 50/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5377
Epoch 51/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5336
Epoch 52/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5361
Epoch 53/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5313
Epoch 54/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5316
Epoch 55/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5314
Epoch 56/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5453
Epoch 57/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5360
Epoch 58/200
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22868/22868 [============= ] - 0s 14us/step - loss: 0.5303
Epoch 59/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5339
Epoch 60/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5326
Epoch 61/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5312
Epoch 62/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5317
Epoch 63/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5276
Epoch 64/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5301
Epoch 65/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5322
Epoch 66/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5325
Epoch 67/200
Epoch 68/200
Epoch 69/200
Epoch 70/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5377
Epoch 71/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5323
Epoch 72/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5320
Epoch 73/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5260
Epoch 74/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5268
Epoch 75/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5282
Epoch 76/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5315
Epoch 77/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5276
Epoch 78/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5269
Epoch 79/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5282
Epoch 80/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5268
Epoch 81/200
Epoch 82/200
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22868/22868 [============== ] - 0s 14us/step - loss: 0.5293
Epoch 83/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5254
Epoch 84/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5259
Epoch 85/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5264
Epoch 86/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5276
Epoch 87/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5270
Epoch 88/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5273
Epoch 89/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5275
Epoch 90/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5252
Epoch 91/200
Epoch 92/200
Epoch 93/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5279
Epoch 94/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5318
Epoch 95/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5246
Epoch 96/200
Epoch 97/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5290
Epoch 98/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5318
Epoch 99/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5305
Epoch 100/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5300
Epoch 101/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5287
Epoch 102/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5279
Epoch 103/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5263
Epoch 104/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5257
Epoch 105/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5283
Epoch 106/200
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22868/22868 [============= ] - 0s 14us/step - loss: 0.5274
Epoch 107/200
Epoch 108/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5247
Epoch 109/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5269
Epoch 110/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5310
Epoch 111/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5264
Epoch 112/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5259
Epoch 113/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5297
Epoch 114/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5278
Epoch 115/200
Epoch 116/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5252
Epoch 117/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5264
Epoch 118/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5219
Epoch 119/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5296
Epoch 120/200
Epoch 121/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5234
Epoch 122/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5259
Epoch 123/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5250
Epoch 124/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5264
Epoch 125/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5279
Epoch 126/200
Epoch 127/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5252
Epoch 128/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5232
Epoch 129/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5251
Epoch 130/200
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22868/22868 [============= ] - 0s 14us/step - loss: 0.5264
Epoch 131/200
Epoch 132/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5294
Epoch 133/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5259
Epoch 134/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5257
Epoch 135/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5305
Epoch 136/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5217
Epoch 137/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5252
Epoch 138/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5241
Epoch 139/200
Epoch 140/200
Epoch 141/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5269
Epoch 142/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5249
Epoch 143/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5235
Epoch 144/200
Epoch 145/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5252
Epoch 146/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5200
Epoch 147/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5253
Epoch 148/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5246
Epoch 149/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5247
Epoch 150/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5217
Epoch 151/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5219
Epoch 152/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5249
Epoch 153/200
Epoch 154/200
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22868/22868 [============= ] - Os 14us/step - loss: 0.5249
Epoch 155/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5254
Epoch 156/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5238
Epoch 157/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5254
Epoch 158/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5263
Epoch 159/200
22868/22868 [============ ] - 0s 14us/step - loss: 0.5224
Epoch 160/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5236
Epoch 161/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5259
Epoch 162/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5248
Epoch 163/200
Epoch 164/200
Epoch 165/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5202
Epoch 166/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5216
Epoch 167/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5263
Epoch 168/200
Epoch 169/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5226
Epoch 170/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5222
Epoch 171/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5234
Epoch 172/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5256
Epoch 173/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5251
Epoch 174/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5236
Epoch 175/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5219
Epoch 176/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5262
Epoch 177/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5228
Epoch 178/200
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22868/22868 [============= ] - Os 14us/step - loss: 0.5239
Epoch 179/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5267
Epoch 180/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5259
Epoch 181/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5246
Epoch 182/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5236
Epoch 183/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5213
Epoch 184/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5255
Epoch 185/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5223
Epoch 186/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5248
Epoch 187/200
Epoch 188/200
Epoch 189/200
Epoch 190/200
22868/22868 [============ ] - Os 14us/step - loss: 0.5237
Epoch 191/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5231
Epoch 192/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5234
Epoch 193/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5217
Epoch 194/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5226
Epoch 195/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5210
Epoch 196/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5249
Epoch 197/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5273
Epoch 198/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5226
Epoch 199/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5226
Epoch 200/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5219
22868/22868 [============ ] - 1s 56us/step
Epoch 1/200
```

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Epoch 2/200
22868/22868 [============= ] - Os 16us/step - loss: 0.7015
Epoch 3/200
Epoch 4/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6931
Epoch 5/200
22868/22868 [=============== ] - Os 14us/step - loss: 0.6897
Epoch 6/200
Epoch 7/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6819
Epoch 8/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6761
Epoch 9/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6724
Epoch 10/200
22868/22868 [============== ] - Os 16us/step - loss: 0.6835
Epoch 11/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6633
Epoch 12/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6618
Epoch 13/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6506
Epoch 14/200
22868/22868 [============ ] - 0s 14us/step - loss: 0.6534
Epoch 15/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6272
Epoch 16/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6250
Epoch 17/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6037
Epoch 18/200
Epoch 19/200
Epoch 20/200
22868/22868 [=============== ] - 0s 14us/step - loss: 0.5817
Epoch 21/200
Epoch 22/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6872
Epoch 23/200
Epoch 24/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6559
Epoch 25/200
```

Epoch 26/200					
-	]	_	0s	14us/step - loss: 0.6281	
Epoch 27/200	-				
	]	_	0s	14us/step - loss: 0.5721	
Epoch 28/200	_				
	]	_	0s	14us/step - loss: 0.5718	;
Epoch 29/200	_				
	]	_	0s	14us/step - loss: 0.5699	,
Epoch 30/200				•	
	]	_	0s	14us/step - loss: 0.5645	,
Epoch 31/200				-	
22868/22868 [=	]	-	0s	14us/step - loss: 0.5619	1
Epoch 32/200				-	
	]	-	0s	14us/step - loss: 0.5564	:
Epoch 33/200				_	
22868/22868 [=	]	-	0s	14us/step - loss: 0.5639	1
Epoch 34/200				-	
	]	-	0s	14us/step - loss: 0.5576	,
Epoch 35/200				-	
22868/22868 [=	]	_	0s	14us/step - loss: 0.5507	
Epoch 36/200				-	
22868/22868 [=	]	-	0s	14us/step - loss: 0.5519	1
Epoch 37/200				-	
22868/22868 [=	]	-	0s	14us/step - loss: 0.5422	
Epoch 38/200				_	
22868/22868 [=	]	-	0s	14us/step - loss: 0.5452	
Epoch 39/200				_	
22868/22868 [=	]	-	0s	14us/step - loss: 0.5379	1
Epoch 40/200					
22868/22868 [=	]	-	0s	14us/step - loss: 0.5414	:
Epoch 41/200					
22868/22868 [=	]	-	0s	14us/step - loss: 0.5450	,
Epoch 42/200					
22868/22868 [=	]	-	0s	14us/step - loss: 0.5372	
Epoch 43/200					
	]	-	0s	14us/step - loss: 0.5405	,
Epoch 44/200					
22868/22868 [=	]	-	0s	14us/step - loss: 0.5395	,
Epoch 45/200					
	]	-	0s	14us/step - loss: 0.5481	
Epoch 46/200					
22868/22868 [=	]	-	0s	14us/step - loss: 0.5354	ī
Epoch 47/200					
	]	-	0s	14us/step - loss: 0.5365	
Epoch 48/200					
	]	-	0s	14us/step - loss: 0.5369	
Epoch 49/200					
22868/22868 [=	]	-	0s	14us/step - loss: 0.5343	

Epoch 50/200				
	[]	-	0s	14us/step - loss: 0.5360
Epoch 51/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5336
Epoch 52/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5341
Epoch 53/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5353
Epoch 54/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5337
Epoch 55/200				
22868/22868	[========]	-	0s	14us/step - loss: 0.5360
Epoch 56/200				_
22868/22868	[========]	-	0s	14us/step - loss: 0.5286
Epoch 57/200				-
22868/22868	[========]	-	0s	14us/step - loss: 0.5338
Epoch 58/200				•
	[=======]	_	0s	14us/step - loss: 0.5318
Epoch 59/200				•
	[======]	_	0s	14us/step - loss: 0.5343
Epoch 60/200				
	[======]	_	0s	14us/step - loss: 0.5326
Epoch 61/200				
	[======]	_	0s	14us/step - loss: 0.5371
Epoch 62/200				
	[======]	_	0s	14us/step - loss: 0.5278
Epoch 63/200				
	[======]	_	0s	14us/step - loss: 0.5226
Epoch 64/200				
-	[======]	_	0s	14us/step - loss: 0.5317
Epoch 65/200				
	[======]	_	0s	14us/step - loss: 0.5255
Epoch 66/200				
•	[======]	_	0s	14us/step - loss: 0.5293
Epoch 67/200				
	[======]	_	0s	14us/step - loss: 0.5306
Epoch 68/200	-			
	[======]	_	0s	14us/step - loss: 0.5310
Epoch 69/200				
	[======]	_	0s	14us/step - loss: 0.5339
Epoch 70/200				
-	[=====]	_	0s	14us/step - loss: 0.5297
Epoch 71/200			Ü	True, ecop Tobe: 0.020.
	[=======]	_	() s	14us/step - loss: 0 5238
Epoch 72/200			25	
•	[======]	_	()e	14us/step - loss: 0 5326
Epoch 73/200			OB	1100, 500p 1000. 0.0020
	[=======]	_	()e	14us/step - loss: 0 5302
22000, 22000	j		Ü	1145, 500p 1055. 0.0002

Epoch 74/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5291
Epoch 75/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5340
Epoch 76/200				
22868/22868	[=======]	_	0s	14us/step - loss: 0.5270
Epoch 77/200				-
	[======]	_	0s	14us/step - loss: 0.5261
Epoch 78/200				•
	[======]	_	0s	14us/step - loss: 0.5256
Epoch 79/200				
	[======]	_	0s	14us/step = loss: 0.5254
Epoch 80/200			Ů.	1145, 500p 1055. 0.0201
-	[======]	_	۸q	14us/sten - loss: 0 5272
Epoch 81/200			O.D	1145,5000 1055. 0.0272
	[======]	_	۸q	14us/sten - loss: 0 5281
Epoch 82/200			OB	1145,5000 1055. 0.0201
	[======]	_	۸q	14us/sten - loss: 0 5238
Epoch 83/200			OB	1145,5000 1055. 0.0200
	[]	_	۸a	1/11g/gtop = logg: 0 5260
Epoch 84/200			V.S	14us/step 10ss. 0.0209
-	[======]	_	٥٥	1/ug/stop = logg: 0 52/7
Epoch 85/200			05	14us/step = 10ss. 0.3247
	[======]	_	٥٥	1/11g/gtop = logg: 0 5235
Epoch 86/200			OS	14us/step 10ss. 0.0200
	[======]	_	٥٥	1/ug/gtop = logg: 0 5266
Epoch 87/200			OS	14us/step 10ss. 0.0200
	[======]	_	٥٥	1/11g/gtop = logg: 0 5224
Epoch 88/200			05	14us/step = 10ss. 0.3224
	[]	_	٥٥	1/2g/gton - logg: 0 5262
Epoch 89/200			05	14us/step = 10ss. 0.3202
	[]	_	٥٥	1/11g/gtop = logg: 0 5047
			US	14us/step - 10ss. 0.3247
Epoch 90/200	[======]		۸-	14/
		_	US	14us/step - 10ss: 0.5251
Epoch 91/200	[======]		٥	1/112/2+02 3022 0 5050
		_	US	14us/step - 10ss: 0.5252
Epoch 92/200	[]		۸-	14/
		_	US	14us/step - 10ss: 0.5246
Epoch 93/200	[======]		۸-	14/
		_	US	14us/step - 10ss: 0.5222
Epoch 94/200			^	44 / 1 3 0 5007
	[=====]	_	US	14us/step - 10ss: 0.526/
Epoch 95/200			0	14/
	[======]	-	US	14us/step - loss: 0.5303
Epoch 96/200			^	44 / 1 3 2 2 5 5 5 5
	[======]	-	Us	14us/step - loss: 0.5251
Epoch 97/200			^	44 / 1 3 2 2 5 2 2 2
22868/22868	[======]	-	US	14us/step - 1oss: 0.5244

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Epoch 98/200 22868/22868 [===================================	
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Epoch 99/200	
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Epoch 100/200	
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Epoch 101/200	
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Epoch 102/200	
22868/22868 [============= ] - Os 14us/step - loss: 0.5247	
Epoch 103/200	
22868/22868 [============ ] - Os 14us/step - loss: 0.5242	
Epoch 104/200	
22868/22868 [============ ] - Os 14us/step - loss: 0.5249	
Epoch 105/200	
22868/22868 [============ ] - Os 14us/step - loss: 0.5251	
Epoch 106/200	
22868/22868 [===================================	
Epoch 107/200	
22868/22868 [============ ] - Os 15us/step - loss: 0.5227	
Epoch 108/200	
22868/22868 [============ ] - Os 14us/step - loss: 0.5234	
Epoch 109/200	
22868/22868 [============= ] - Os 14us/step - loss: 0.5188	
Epoch 110/200	
22868/22868 [============= ] - Os 14us/step - loss: 0.5242	
Epoch 111/200	
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Epoch 112/200	
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Epoch 113/200	
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Epoch 114/200	
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Epoch 120/200	
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Epoch 121/200	
22868/22868 [===================================	
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Epoch 122/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5215
Epoch 123/200		•				0.0220
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5277
Epoch 124/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5219
Epoch 125/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5247
Epoch 126/200			. 1			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5232
Epoch 127/200			•			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5206
Epoch 128/200			-			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5263
Epoch 129/200			_			
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.5284
Epoch 130/200			_			
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5243
Epoch 131/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5261
Epoch 132/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5243
Epoch 133/200						
22868/22868 [==========]	-	0s	14us/step	-	loss:	0.5206
Epoch 134/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5272
Epoch 135/200						
22868/22868 [======]	-	0s	14us/step	-	loss:	0.5231
Epoch 136/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5215
Epoch 137/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5211
Epoch 138/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5259
Epoch 139/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5341
Epoch 140/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5223
Epoch 141/200		_			_	
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5250
Epoch 142/200		_			_	
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5221
Epoch 143/200		_			_	
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.5242
Epoch 144/200		^	4.4 / .		7.	0 5400
22868/22868 [===================================	-	Us	14us/step	_	loss:	0.5190
Epoch 145/200		^	1 / / - :		7	0 5054
22868/22868 [===================================	-	US	14us/step	_	Toss:	0.5251

Epoch 146/200
22868/22868 [===================================
Epoch 147/200
22868/22868 [===================================
Epoch 148/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5219
Epoch 149/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5221
Epoch 150/200
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Epoch 151/200
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Epoch 152/200
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Epoch 153/200
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Epoch 154/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5209
Epoch 155/200
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Epoch 157/200
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Epoch 158/200
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Epoch 170/200
22868/22868 [===================================
Epoch 171/200
22868/22868 [===========] - 0s 14us/step - loss: 0.5250
Epoch 172/200
22868/22868 [============ ] - Os 14us/step - loss: 0.5273
Epoch 173/200
22868/22868 [============] - 0s 14us/step - loss: 0.5290
Epoch 174/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5243
Epoch 175/200
22868/22868 [===================================
Epoch 176/200
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Epoch 177/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5233
Epoch 178/200
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Epoch 17/200

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22868/22868 [============= ] - 0s 14us/step - loss: 0.6944
Epoch 18/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6941
Epoch 19/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6947
Epoch 20/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6941
Epoch 21/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6942
Epoch 22/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6942
Epoch 23/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6939
Epoch 24/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6940
Epoch 25/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6935
Epoch 26/200
Epoch 27/200
Epoch 28/200
Epoch 29/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6928
Epoch 30/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6930
Epoch 31/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6932
Epoch 32/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6926
Epoch 33/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6928
Epoch 34/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6927
Epoch 35/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6932
Epoch 36/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6924
Epoch 37/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6931
Epoch 38/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6929
Epoch 39/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6929
Epoch 40/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6925
Epoch 41/200
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22868/22868 [============= ] - 0s 14us/step - loss: 0.6930
Epoch 42/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6922
Epoch 43/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6925
Epoch 44/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6926
Epoch 45/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6916
Epoch 46/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6922
Epoch 47/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6898
Epoch 48/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6874
Epoch 49/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6825
Epoch 50/200
Epoch 51/200
Epoch 52/200
Epoch 53/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6398
Epoch 54/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6240
Epoch 55/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6508
Epoch 56/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6917
Epoch 57/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6143
Epoch 58/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6190
Epoch 59/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5878
Epoch 60/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6498
Epoch 61/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.7002
Epoch 62/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6930
Epoch 63/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6922
Epoch 64/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6918
Epoch 65/200
```

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22868/22868 [============= ] - Os 14us/step - loss: 0.6920
Epoch 66/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6918
Epoch 67/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6916
Epoch 68/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6906
Epoch 69/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6885
Epoch 70/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6871
Epoch 71/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6841
Epoch 72/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.6738
Epoch 73/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6545
Epoch 74/200
Epoch 75/200
Epoch 76/200
Epoch 77/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6296
Epoch 78/200
22868/22868 [============= ] - Os 14us/step - loss: 0.7047
Epoch 79/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6932
Epoch 80/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6927
Epoch 81/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6919
Epoch 82/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6914
Epoch 83/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6910
Epoch 84/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6901
Epoch 85/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6890
Epoch 86/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6888
Epoch 87/200
22868/22868 [============= ] - 0s 16us/step - loss: 0.6872
Epoch 88/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6861
Epoch 89/200
```

```
22868/22868 [============== ] - Os 14us/step - loss: 0.6856
Epoch 90/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6834
Epoch 91/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6801
Epoch 92/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6763
Epoch 93/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6651
Epoch 94/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6348
Epoch 95/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6404
Epoch 96/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6592
Epoch 97/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6124
Epoch 98/200
Epoch 99/200
Epoch 100/200
Epoch 101/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5809
Epoch 102/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.7088
Epoch 103/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6950
Epoch 104/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6952
Epoch 105/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6951
Epoch 106/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6952
Epoch 107/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6948
Epoch 108/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6951
Epoch 109/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6950
Epoch 110/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6952
Epoch 111/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 112/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6947
Epoch 113/200
```

```
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 114/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6948
Epoch 115/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6950
Epoch 116/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6950
Epoch 117/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 118/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 119/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6953
Epoch 120/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6950
Epoch 121/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6951
Epoch 122/200
Epoch 123/200
Epoch 124/200
Epoch 125/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 126/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6948
Epoch 127/200
22868/22868 [============ ] - Os 14us/step - loss: 0.6947
Epoch 128/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6954
Epoch 129/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6948
Epoch 130/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6948
Epoch 131/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6950
Epoch 132/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6952
Epoch 133/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6948
Epoch 134/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6948
Epoch 135/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6946
Epoch 136/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6950
Epoch 137/200
```

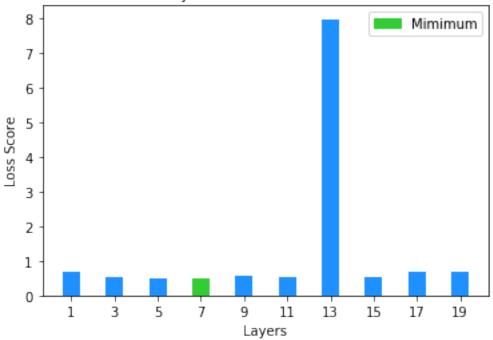
```
22868/22868 [============= ] - Os 14us/step - loss: 0.6947
Epoch 138/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 139/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6950
Epoch 140/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6954
Epoch 141/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6955
Epoch 142/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 143/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 144/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6953
Epoch 145/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6952
Epoch 146/200
Epoch 147/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6948
Epoch 148/200
Epoch 149/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 150/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6950
Epoch 151/200
Epoch 152/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6950
Epoch 153/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6956
Epoch 154/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 155/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6948
Epoch 156/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6948
Epoch 157/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6947
Epoch 158/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6947
Epoch 159/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 160/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.6950
Epoch 161/200
```

```
22868/22868 [============== ] - Os 15us/step - loss: 0.6951
Epoch 162/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.6947
Epoch 163/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6955
Epoch 164/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6951
Epoch 165/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6951
Epoch 166/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6957
Epoch 167/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6948
Epoch 168/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6945
Epoch 169/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6946
Epoch 170/200
Epoch 171/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6950
Epoch 172/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6946
Epoch 173/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 174/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6951
Epoch 175/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6953
Epoch 176/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6950
Epoch 177/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6952
Epoch 178/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6948
Epoch 179/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6947
Epoch 180/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6950
Epoch 181/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.6946
Epoch 182/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6950
Epoch 183/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 184/200
Epoch 185/200
```

```
Epoch 186/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6948
Epoch 187/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6951
Epoch 188/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.6943
Epoch 189/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6946
Epoch 190/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 191/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6950
Epoch 192/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 193/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 194/200
Epoch 195/200
Epoch 196/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6949
Epoch 197/200
22868/22868 [============= ] - Os 14us/step - loss: 0.6948
Epoch 198/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6951
Epoch 199/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6946
Epoch 200/200
22868/22868 [============ ] - 1s 55us/step
In [36]: color = []
      for score in scores:
         if score == min(scores):
            color.append('limegreen')
         else:
            color.append('dodgerblue')
      patch1 = mpatches.Patch(color='limegreen', label='Mimimum')
      plt.legend(handles=[patch1], loc = 'best')
      plt.bar(neurons, scores, width = .8, color = color)
      plt.xlabel('Neurons')
      plt.ylabel('Loss Score')
```

```
plt.title('Loss Scores For 1 Layer Neural Networks with N Neurons Each')
plt.xticks(neurons)
plt.show()
```

## Loss Scores For N Layer Neural Networks with N Neurons Each



Judging by the above graph, all numbers of neurons produce similarly low Loss Scores (with the exception of 13), with 7 neurons being the lowest.

## 2.0.3 Step 3. Determine optimal activation function

```
In [38]: act_funcs = ['tanh', 'sigmoid', 'relu', 'softplus', 'exponential']
    scores = []

n = 7
    for act in act_funcs:
        model = Sequential()

    model.add(Dense(n, input_dim=11, activation=act)) #sigmoid, relu
    model.add(Dense(1, activation=act))

sgd = SGD(lr=0.1)
    model.compile(loss='binary_crossentropy', optimizer='sgd')

model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
    #print(model.predict_proba(X).reshape(4*n))
```

## # evaluate the model

## scores.append(model.evaluate(X, y))

Epoch 1/200							
	[======]	_	1 a	50ug/gtan	_	1000.	1 2574
Epoch 2/200	[]		15	Jous/scep		TOSS.	1.2014
	[======]	_	۸e	15119/9tan	_	1000.	0 7045
Epoch 3/200	[]		OS	10ds/scep		TOSS.	0.7040
-	[======]	_	Λe	15ug/gton	_	loggi	0 6065
Epoch 4/200	[]		OS	10ds/scep		TOSS.	0.0303
	[======]	_	۸e	15119/9tan	_	1000.	0 6959
Epoch 5/200	ı		OB	rous, sucp		TOBB.	0.0000
-	[=====]	_	٥q	15119/sten	_	1088.	0 6940
Epoch 6/200	ı		OB	rous, sucp		TOBB.	0.0010
	[=====]	_	٥q	14119/sten	_	1088.	0 6933
Epoch 7/200			OB	тчав/воср		TOBB.	0.0000
-	[======]	_	٥q	14119/sten	_	1088.	0 6931
Epoch 8/200			OB	тчав/воср		TOBB.	0.0001
	[======]	_	٥q	14119/sten	_	1088.	0 6934
Epoch 9/200	[]		V.S	14d5/5cep		1055.	0.0004
	[======]	_	Λe	15ug/gton	_	loggi	0 6031
Epoch 10/200			05	15us/scep		1055.	0.0331
	[======]	_	Λe	16ug/gten	_	loggi	0 6027
Epoch 11/200			OS	rous/scep		TOSS.	0.0321
	[=======]	_	۸e	15ug/gton	_	loggi	0 6015
Epoch 12/200			OS	10ds/scep		TOSS.	0.0313
	[======]	_	۸e	15112/2tan	_	1000.	0 6906
Epoch 13/200			US	10ds/scep		TOSS.	0.0300
	[======]	_	۸e	1411g/gtan	_	1000.	0 6898
Epoch 14/200			V.S	14d5/5cep		1055.	0.0000
	[======]	_	٥q	14119/sten	_	1088.	0 6881
Epoch 15/200			OB	тчав/воср		TOBB.	0.0001
	[=======]	_	0s	14us/sten	_	loss	0 6781
Epoch 16/200			O.D	ттав, в сер		TODD.	0.0101
•	[======]	_	0s	14us/sten	_	loss	0 6376
Epoch 17/200			O.D	ттав, в сер		TODD.	0.0010
-	[======]	_	0s	14us/step	_	loss:	0.6312
Epoch 18/200			Ü	11d5, 500p		1000.	0.0012
-	[======]	_	0s	14us/step	_	loss:	0.6147
Epoch 19/200				-145, 500p			
-	[======]	_	0s	14us/step	_	loss:	0.6051
Epoch 20/200				,			
	[======]	_	0s	14us/sten	_	loss:	0.5933
Epoch 21/200							
	[======]	_	0s	14us/step	_	loss:	0.5842
Epoch 22/200							<del></del>
-	[======]	_	0s	15us/sten	_	loss:	0.5749
	-						

Epoch 23/200				
-	[========]	_	0s	14us/step - loss: 0.5752
Epoch 24/200				•
	[=========]	_	0s	15us/step - loss: 0.5656
Epoch 25/200				•
	[=========]	_	0s	15us/step - loss: 0.5673
Epoch 26/200				-
22868/22868 [	[==========]	-	0s	14us/step - loss: 0.5556
Epoch 27/200				
22868/22868 [	[=========]	-	0s	14us/step - loss: 0.5564
Epoch 28/200				
22868/22868 [	[=========]	-	0s	14us/step - loss: 0.5510
Epoch 29/200				
	[========]	-	0s	15us/step - loss: 0.5473
Epoch 30/200				
22868/22868 [	[==========]	-	0s	15us/step - loss: 0.5453
Epoch 31/200				
22868/22868 [	[==========]	-	0s	14us/step - loss: 0.5436
Epoch 32/200				
22868/22868 [	[==========]	-	0s	15us/step - loss: 0.5420
Epoch 33/200				
22868/22868 [	[=========]	-	0s	14us/step - loss: 0.5426
Epoch 34/200				
22868/22868 [	[========]	-	0s	15us/step - loss: 0.5933
Epoch 35/200				
22868/22868 [	[========]	-	0s	14us/step - loss: 0.5400
Epoch 36/200				
22868/22868 [	[========]	-	0s	14us/step - loss: 0.5400
Epoch 37/200				
22868/22868 [	[========]	-	0s	15us/step - loss: 0.5403
Epoch 38/200				
	[=======]	-	0s	15us/step - loss: 0.5385
Epoch 39/200				
	[======]	-	0s	14us/step - loss: 0.5377
Epoch 40/200				
	[======]	-	0s	15us/step - loss: 0.5380
Epoch 41/200				
	[======]	-	0s	14us/step - loss: 0.5388
Epoch 42/200				
	[======]	-	0s	14us/step - loss: 0.5343
Epoch 43/200				
	[======]	-	0s	15us/step - loss: 0.5325
Epoch 44/200				
	[======]	-	0s	14us/step - loss: 0.5341
Epoch 45/200	_			
	[=======]	-	0s	14us/step - loss: 0.5376
Epoch 46/200	_		_	
22868/22868 [	[=======]	-	0s	15us/step - loss: 0.5307

Epoch 47/200				
-	[======]	_	0s	15us/step - loss: 0.5324
Epoch 48/200				1
-	[======]	_	0s	15us/step - loss: 0.5332
Epoch 49/200				•
22868/22868	[=======]	-	0s	15us/step - loss: 0.5326
Epoch 50/200				•
22868/22868	[=======]	-	0s	15us/step - loss: 0.5289
Epoch 51/200				
22868/22868	[======]	-	0s	15us/step - loss: 0.5334
Epoch 52/200				
22868/22868	[======]	-	0s	15us/step - loss: 0.5327
Epoch 53/200				
	[======]	-	0s	15us/step - loss: 0.5327
Epoch 54/200				
	[=====]	-	0s	14us/step - loss: 0.5313
Epoch 55/200				
	[=====]	-	0s	14us/step - loss: 0.5324
Epoch 56/200				
	[=====]	-	0s	14us/step - loss: 0.5310
Epoch 57/200				
	[]	-	0s	14us/step - loss: 0.5277
Epoch 58/200				
	[]	-	0s	14us/step - loss: 0.5321
Epoch 59/200				
	[=====]	-	0s	14us/step - loss: 0.5326
Epoch 60/200			_	
	[]	-	0s	14us/step - loss: 0.5311
Epoch 61/200			^	44 /
	[======]	-	Us	14us/step - loss: 0.52/3
Epoch 62/200			ο-	14/
	[======]	_	US	14us/step - 10ss: 0.5277
Epoch 63/200	[========]		٥-	1//
		_	US	14us/step - 10ss: 0.5321
Epoch 64/200	[======]	_	Λα	1/ug/gtop = logg: 0 5277
Epoch 65/200			US	14us/step - 10ss. 0.5277
-	[=======]	_	۸e	1/us/stan = loss: 0 5200
Epoch 66/200			OS	14us/scep 10ss. 0.0299
-	[======]	_	۸q	14us/sten - loss: 0 5261
Epoch 67/200			OB	14ub/ b c c p 10bb. 0.0201
	[=====]	_	۸q	14us/sten - loss: 0 5291
Epoch 68/200			OB	14ub/ b c c p 10bb. 0.0201
-	[======]	_	0s	14us/step - loss: 0.5300
Epoch 69/200				,,
	[]	_	0s	14us/step - loss: 0.5292
Epoch 70/200				
	[=====]	_	0s	14us/step - loss: 0.5282
	-			•

Epoch 71/200				
	[======]	-	0s	14us/step - loss: 0.5258
Epoch 72/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5257
Epoch 73/200				
22868/22868	[======]	-	0s	14us/step - loss: 0.5281
Epoch 74/200				
22868/22868	[=======]	-	0s	14us/step - loss: 0.5272
Epoch 75/200				
22868/22868	[=======]	-	0s	14us/step - loss: 0.5289
Epoch 76/200				
22868/22868	[=======]	-	0s	14us/step - loss: 0.5265
Epoch 77/200				_
22868/22868	[========]	-	0s	14us/step - loss: 0.5280
Epoch 78/200				-
22868/22868	[=======]	-	0s	14us/step - loss: 0.5288
Epoch 79/200				-
	[======]	_	0s	14us/step - loss: 0.5256
Epoch 80/200				•
	[======]	_	0s	14us/step - loss: 0.5252
Epoch 81/200				
	[======]	_	0s	14us/step - loss: 0.5261
Epoch 82/200				
	[======]	_	0s	14us/step - loss: 0.5285
Epoch 83/200				
-	[======]	_	0s	14us/step - loss: 0.5265
Epoch 84/200				
	[======]	_	0s	14us/step - loss: 0.5251
Epoch 85/200				
-	[======]	_	0s	14us/step - loss: 0.5292
Epoch 86/200				
	[======]	_	0s	14us/step - loss: 0.5247
Epoch 87/200				
•	[======]	_	0s	14us/step - loss: 0.5258
Epoch 88/200				
	[======]	_	0s	14us/step - loss: 0.5249
Epoch 89/200				
	[======]	_	0s	14us/step - loss: 0.5270
Epoch 90/200				
-	[======]	_	0s	14us/step - loss: 0.5241
Epoch 91/200				
-	[======]	_	0s	14us/step - loss: 0.5251
Epoch 92/200				1000 0.000
	[======]	_	0s	14us/step - loss: 0.5251
Epoch 93/200				,,
	[======]	_	0s	14us/step - loss: 0.5262
Epoch 94/200			7.5	
-	[======]	_	0s	14us/step - loss: 0.5262
,	-		<i>-</i>	

Epoch 95/200						
-	]	_	0s	14us/step	- loss:	0.5279
Epoch 96/200	-					
-	]	_	0s	14us/step	- loss:	0.5231
Epoch 97/200						
	]	-	0s	14us/step	- loss:	0.5259
Epoch 98/200				-		
22868/22868 [==	]	-	0s	14us/step	- loss:	0.5228
Epoch 99/200						
22868/22868 [==	]	-	0s	14us/step	- loss:	0.5273
Epoch 100/200						
22868/22868 [==	]	-	0s	14us/step	- loss:	0.5257
Epoch 101/200						
22868/22868 [==	]	-	0s	15us/step	- loss:	0.5283
Epoch 102/200						
22868/22868 [==	]	-	0s	14us/step	- loss:	0.5248
Epoch 103/200						
	]	-	0s	14us/step	- loss:	0.5242
Epoch 104/200						
	]	-	0s	14us/step	- loss:	0.5202
Epoch 105/200	_			_		
	]	-	0s	14us/step	- loss:	0.5245
Epoch 106/200	_					
	]	-	0s	14us/step	- loss:	0.5236
Epoch 107/200	_					
	]	-	0s	14us/step	- loss:	0.5226
Epoch 108/200	-		_		_	
	]	-	0s	14us/step	- loss:	0.5206
Epoch 109/200	7		•	4.0 / .	-	0 5054
	]	_	Us	14us/step	- loss:	0.5254
Epoch 110/200			ο-	1.4/	1	0 5045
	]	_	US	14us/step	- loss:	0.5245
Epoch 111/200	1		٥-	14/	1	0 5021
	]	_	US	14us/step	- loss:	0.5231
Epoch 112/200	]	_	Λα	1/11g/gtop	- logg:	0 5260
Epoch 113/200			US	14us/step	- 1088.	0.5209
	]	_	۸e	1/11g/gten	- 1000	0 52/13
Epoch 114/200			OS	14us/scep	TOSS.	0.0240
•	]	_	۸q	14119/sten	- 1099	0 5269
Epoch 115/200	,		OB	11db/bccp	TODD.	0.0203
•	]	_	0s	14us/sten	- loss:	0 5240
Epoch 116/200	_		Ü	riab, boop	TODD.	0.0210
-	]	_	0s	14us/step	- loss:	0.5261
Epoch 117/200	-					<b></b>
	]	_	0s	14us/step	- loss:	0.5240
Epoch 118/200	-			r		
_	]	_	0s	14us/step	- loss:	0.5229
_	_			•		

Epoch 119/200
22868/22868 [===================================
Epoch 120/200
22868/22868 [===================================
Epoch 121/200
22868/22868 [===================================
Epoch 122/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5227
Epoch 123/200
22868/22868 [===================================
Epoch 124/200
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Epoch 125/200
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Epoch 126/200
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Epoch 127/200
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Epoch 140/200
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Epoch 141/200 22868/22868 [===================================
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Epoch 142/200 22868/22868 [===================================
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Epoch 143/200
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Epoch 144/200
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Epoch 145/200
22868/22868 [===================================
Epoch 146/200
22868/22868 [===================================
Epoch 147/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5228
Epoch 148/200
22868/22868 [===================================
Epoch 149/200
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Epoch 150/200
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Epoch 151/200
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Epoch 152/200
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Epoch 165/200
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Epoch 166/200
22868/22868 [===================================
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Epoch 167/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5208
Epoch 168/200			,,			0.0200
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5225
Epoch 169/200			,			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5254
Epoch 170/200			,			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5232
Epoch 171/200						
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5221
Epoch 172/200			-			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5227
Epoch 173/200			-			
22868/22868 [===================================	_	0s	14us/step	_	loss:	0.5231
Epoch 174/200			_			
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.5236
Epoch 175/200			_			
22868/22868 [===================================	-	0s	15us/step	_	loss:	0.5220
Epoch 176/200			_			
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.5212
Epoch 177/200						
22868/22868 [===================================	-	0s	14us/step	_	loss:	0.5231
Epoch 178/200						
22868/22868 [=======]	-	0s	16us/step	_	loss:	0.5216
Epoch 179/200						
22868/22868 [=======]	-	0s	14us/step	_	loss:	0.5219
Epoch 180/200						
22868/22868 [=======]	-	0s	14us/step	_	loss:	0.5218
Epoch 181/200						
22868/22868 [===========]	-	0s	14us/step	_	loss:	0.5249
Epoch 182/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5230
Epoch 183/200						
22868/22868 [=======]	-	0s	14us/step	_	loss:	0.5233
Epoch 184/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	0.5223
Epoch 185/200						
22868/22868 [========]	-	0s	15us/step	-	loss:	0.5236
Epoch 186/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5213
Epoch 187/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5211
Epoch 188/200						
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5233
Epoch 189/200		_			_	
22868/22868 [===================================	-	0s	14us/step	-	loss:	0.5224
Epoch 190/200		•	4.0		-	
22868/22868 [===================================	-	Us	14us/step	_	loss:	0.5249

T 1 404 /000			
Epoch 191/200 22868/22868 [=======]	_	0s	14us/step - loss: 0.5239
Epoch 192/200		• •	
22868/22868 [=======]	_	0s	14us/step - loss: 0.5234
Epoch 193/200		O.D	1145, 5000 1055. 0.0201
22868/22868 [========]	_	0s	14us/step - loss: 0 5225
Epoch 194/200		OB	1145,5000 1055. 0.0220
22868/22868 [=======]	_	٥q	14us/sten - loss: 0 5275
Epoch 195/200		OB	1145,5000 1055. 0.0270
22868/22868 [=======]	_	0s	14us/step - loss: 0 5213
Epoch 196/200		O.D	1145, 5000 1055. 0.0210
22868/22868 [=======]	_	٥q	14us/sten - loss: 0 5207
Epoch 197/200		OB	1145,5000 1055. 0.0207
22868/22868 [=======]	_	٥q	14us/sten - loss: 0 5240
Epoch 198/200		OB	1145,5000 1055. 0.0210
22868/22868 [=======]	_	٥q	14us/sten - loss: 0 5189
Epoch 199/200		V.S	14us/scep 10ss. 0.0103
22868/22868 [=======]	_	٥q	14us/sten - loss: 0 5225
Epoch 200/200		OB	1145,5000 1055. 0.0220
22868/22868 [===================================	_	٥q	14us/sten - loss: 0 5246
22868/22868 [===================================			-
Epoch 1/200		10	oous, seep
22868/22868 [=======]	_	1 a	50us/sten - loss: 0 6873
Epoch 2/200		-5	coup, beep lebb. c.core
22868/22868 [========]	_	0s	14us/step - loss: 0.6451
Epoch 3/200			
22868/22868 [=======]	_	0s	14us/step - loss: 0.6329
Epoch 4/200			
22868/22868 [=======]	_	0s	14us/step - loss: 0.6200
Epoch 5/200		Ů.	1145, 500p 1055. 0.0200
22868/22868 [========]	_	0s	14us/step - loss: 0.6084
Epoch 6/200		-	
22868/22868 [=======]	_	0s	15us/step - loss: 0.5976
Epoch 7/200			
22868/22868 [=======]	_	0s	14us/step - loss: 0.5882
Epoch 8/200			
22868/22868 [=======]	_	0s	14us/step - loss: 0.5790
Epoch 9/200			
22868/22868 [===================================	_	0s	15us/step - loss: 0.5718
Epoch 10/200			
22868/22868 [===================================	_	0s	14us/step - loss: 0.5640
Epoch 11/200			•
22868/22868 [=======]	_	0s	15us/step - loss: 0.5566
Epoch 12/200			
22868/22868 [=======]	_	0s	15us/step - loss: 0.5549
Epoch 13/200			•
22868/22868 [=========]	-	0s	14us/step - loss: 0.5475
Epoch 14/200			<del>-</del>

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22868/22868 [============= ] - 0s 14us/step - loss: 0.5423
Epoch 15/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5411
Epoch 16/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5308
Epoch 17/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5298
Epoch 18/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5316
Epoch 19/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5268
Epoch 20/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5252
Epoch 21/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5241
Epoch 22/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5197
Epoch 23/200
Epoch 24/200
Epoch 25/200
Epoch 26/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5197
Epoch 27/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5164
Epoch 28/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5148
Epoch 29/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5148
Epoch 30/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5145
Epoch 31/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5183
Epoch 32/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5133
Epoch 33/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5092
Epoch 34/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5090
Epoch 35/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5095
Epoch 36/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5100
Epoch 37/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5066
Epoch 38/200
```

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22868/22868 [============= ] - 0s 14us/step - loss: 0.5080
Epoch 39/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5084
Epoch 40/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5076
Epoch 41/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5091
Epoch 42/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5076
Epoch 43/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5096
Epoch 44/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5056
Epoch 45/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5092
Epoch 46/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5095
Epoch 47/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5076
Epoch 48/200
Epoch 49/200
Epoch 50/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5076
Epoch 51/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5101
Epoch 52/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5082
Epoch 53/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5069
Epoch 54/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5093
Epoch 55/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5086
Epoch 56/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5060
Epoch 57/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5090
Epoch 58/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5054
Epoch 59/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5075
Epoch 60/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5082
Epoch 61/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5055
Epoch 62/200
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22868/22868 [============== ] - Os 14us/step - loss: 0.5072
Epoch 63/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5049
Epoch 64/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5044
Epoch 65/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5062
Epoch 66/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5055
Epoch 67/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5063
Epoch 68/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5057
Epoch 69/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5047
Epoch 70/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5029
Epoch 71/200
Epoch 72/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5052
Epoch 73/200
Epoch 74/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5057
Epoch 75/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5068
Epoch 76/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5067
Epoch 77/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5077
Epoch 78/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5040
Epoch 79/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5036
Epoch 80/200
22868/22868 [============ ] - 0s 14us/step - loss: 0.5077
Epoch 81/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5043
Epoch 82/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5036
Epoch 83/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5079
Epoch 84/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5043
Epoch 85/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5024
Epoch 86/200
```

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22868/22868 [============== ] - Os 14us/step - loss: 0.5028
Epoch 87/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5034
Epoch 88/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5029
Epoch 89/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5045
Epoch 90/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5025
Epoch 91/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5025
Epoch 92/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5074
Epoch 93/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5037
Epoch 94/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5015
Epoch 95/200
Epoch 96/200
Epoch 97/200
Epoch 98/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5064
Epoch 99/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5012
Epoch 100/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5017
Epoch 101/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5010
Epoch 102/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5041
Epoch 103/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5059
Epoch 104/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5047
Epoch 105/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5038
Epoch 106/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5026
Epoch 107/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.5036
Epoch 108/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5011
Epoch 109/200
Epoch 110/200
```

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22868/22868 [============== ] - Os 14us/step - loss: 0.5022
Epoch 111/200
Epoch 112/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5051
Epoch 113/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5008
Epoch 114/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5051
Epoch 115/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4991
Epoch 116/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5007
Epoch 117/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5002
Epoch 118/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.4998
Epoch 119/200
Epoch 120/200
Epoch 121/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5023
Epoch 122/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5023
Epoch 123/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5015
Epoch 124/200
Epoch 125/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5025
Epoch 126/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5015
Epoch 127/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5008
Epoch 128/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4987
Epoch 129/200
22868/22868 [============== ] - Os 14us/step - loss: 0.4991
Epoch 130/200
Epoch 131/200
Epoch 132/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5001
Epoch 133/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.4991
Epoch 134/200
```

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22868/22868 [============== ] - Os 15us/step - loss: 0.5008
Epoch 135/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4995
Epoch 136/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4988
Epoch 137/200
22868/22868 [============ ] - 0s 14us/step - loss: 0.5007
Epoch 138/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4993
Epoch 139/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.4984
Epoch 140/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.5003
Epoch 141/200
22868/22868 [============= ] - Os 15us/step - loss: 0.4991
Epoch 142/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4956
Epoch 143/200
Epoch 144/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4996
Epoch 145/200
Epoch 146/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4992
Epoch 147/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4971
Epoch 148/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4972
Epoch 149/200
22868/22868 [============== ] - Os 14us/step - loss: 0.5011
Epoch 150/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4979
Epoch 151/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.4958
Epoch 152/200
22868/22868 [============= ] - Os 15us/step - loss: 0.4984
Epoch 153/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4998
Epoch 154/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4946
Epoch 155/200
22868/22868 [============= ] - Os 15us/step - loss: 0.4985
Epoch 156/200
22868/22868 [============= ] - Os 15us/step - loss: 0.4960
Epoch 157/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4941
Epoch 158/200
```

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22868/22868 [============= ] - Os 15us/step - loss: 0.4941
Epoch 159/200
22868/22868 [============ ] - Os 14us/step - loss: 0.4947
Epoch 160/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4992
Epoch 161/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4946
Epoch 162/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4940
Epoch 163/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4935
Epoch 164/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.4923
Epoch 165/200
22868/22868 [============= ] - Os 15us/step - loss: 0.4956
Epoch 166/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4981
Epoch 167/200
Epoch 168/200
22868/22868 [============= ] - Os 15us/step - loss: 0.4976
Epoch 169/200
Epoch 170/200
Epoch 171/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4943
Epoch 172/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4940
Epoch 173/200
22868/22868 [============== ] - Os 14us/step - loss: 0.4932
Epoch 174/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4936
Epoch 175/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.4952
Epoch 176/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4941
Epoch 177/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4938
Epoch 178/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4922
Epoch 179/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.4963
Epoch 180/200
22868/22868 [============= ] - 0s 14us/step - loss: 0.4918
Epoch 181/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4952
Epoch 182/200
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22868/22868 [============= ] - Os 14us/step - loss: 0.4955
Epoch 183/200
22868/22868 [============ ] - Os 14us/step - loss: 0.4897
Epoch 184/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4938
Epoch 185/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4955
Epoch 186/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4912
Epoch 187/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4921
Epoch 188/200
22868/22868 [============= ] - Os 15us/step - loss: 0.4925
Epoch 189/200
22868/22868 [============== ] - Os 15us/step - loss: 0.4922
Epoch 190/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4922
Epoch 191/200
Epoch 192/200
Epoch 193/200
Epoch 194/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4912
Epoch 195/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4927
Epoch 196/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4915
Epoch 197/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4920
Epoch 198/200
22868/22868 [============= ] - Os 14us/step - loss: 0.4888
Epoch 199/200
22868/22868 [============= ] - Os 15us/step - loss: 0.4941
Epoch 200/200
22868/22868 [============== ] - 0s 14us/step - loss: 0.4963
22868/22868 [============= ] - 1s 57us/step
Epoch 1/200
Epoch 2/200
22868/22868 [============= ] - Os 14us/step - loss: 8.0647
Epoch 3/200
22868/22868 [============ ] - Os 14us/step - loss: 8.0621
Epoch 4/200
22868/22868 [============= ] - Os 14us/step - loss: 8.0591
Epoch 5/200
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Epoch 6/200				
-	[======]	_	0s	14us/step - loss: 8.0584
Epoch 7/200	-			
-	[======]	_	0s	14us/step - loss: 8.0582
Epoch 8/200	-			
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 9/200	-			
	[=======]	_	0s	15us/step - loss: 7.9712
Epoch 10/200				-
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 11/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 12/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 13/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 14/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 15/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 16/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 17/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 18/200				
22868/22868	[======]	-	0s	15us/step - loss: 7.9712
Epoch 19/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 20/200				
	[======]	-	0s	14us/step - loss: 7.9712
Epoch 21/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 22/200				
	[======]	-	0s	14us/step - loss: 7.9712
Epoch 23/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 24/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 25/200			_	
	[======]	-	0s	14us/step - loss: 7.9712
Epoch 26/200			_	
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Epoch 27/200			_	
	[======]	-	0s	14us/step - loss: 7.9712
Epoch 28/200			_	
	[======]	-	0s	14us/step - loss: 7.9712
Epoch 29/200			_	44 /
22868/22868	[=====]	-	Us	14us/step - loss: 7.9712

Epoch 30/200	
22868/22868 [===================================	7.9712
Epoch 31/200	
22868/22868 [===================================	7.9712
Epoch 32/200	
22868/22868 [===================================	7.9712
Epoch 33/200	
22868/22868 [===================================	7.9712
Epoch 34/200	
22868/22868 [===================================	7.9712
Epoch 35/200	
22868/22868 [============= ] - 0s 15us/step - loss:	7.9712
Epoch 36/200	
22868/22868 [============= ] - 0s 14us/step - loss:	7.9712
Epoch 37/200	
22868/22868 [===================================	7.9712
Epoch 38/200	
22868/22868 [===================================	7.9712
Epoch 39/200	
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Epoch 40/200	
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Epoch 41/200	
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Epoch 42/200	
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Epoch 43/200	
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Epoch 44/200	
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Epoch 45/200	
22868/22868 [===================================	7.9712
Epoch 46/200	
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Epoch 47/200	
22868/22868 [===================================	7.9712
Epoch 48/200	
22868/22868 [===================================	7.9712
Epoch 49/200	
22868/22868 [===================================	7.9712
Epoch 50/200	
22868/22868 [===================================	7.9712
Epoch 51/200	<b>5</b> 0 <b>5</b> 10
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Epoch 52/200	7 0710
22868/22868 [===================================	7.9712
Epoch 53/200	7 0740
22868/22868 [===================================	1.9/12

Epoch 54/200				
-	[======]	_	0s	15us/step - loss: 7.9712
Epoch 55/200				1
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 56/200				
	[======]	_	0s	14us/step - loss: 7.9712
Epoch 57/200				•
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 58/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 59/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 60/200				
	[]	-	0s	14us/step - loss: 7.9712
Epoch 61/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 62/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 63/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 64/200				
	[]	-	0s	14us/step - loss: 7.9712
Epoch 65/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 66/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 67/200			_	
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 68/200			^	14 / 1 7 7 0710
	[======]	-	Us	14us/step - loss: 7.9712
Epoch 69/200			0 -	14/
	[======]	_	US	14us/step - 10ss: 7.9712
Epoch 70/200			٥-	15/
	[=======]	_	US	Tous/step - Toss: 7.9712
Epoch 71/200	[======]	_	٥٥	1/ug/gtop = logg: 7 0712
Epoch 72/200			US	14us/step - 10ss. 7.9712
	[======]	_	۸a	1/us/stan = loss: 7 9712
Epoch 73/200			US	14us/scep 10ss. 7.3/12
-	[=======]	_	۸q	14us/sten - loss: 7 9712
Epoch 74/200			OB	14ub/ b c c p 10bb. 7.3712
	[======]	_	٥s	14us/sten - loss: 7 9712
Epoch 75/200			O.D	1145,5000 1055. 1.5112
-	[=====]	_	0s	14us/step - loss: 7.9712
Epoch 76/200				
_	[=====]	_	0s	14us/step - loss: 7.9712
Epoch 77/200				
_	[=====]	_	0s	14us/step - loss: 7.9712
	_			•

Epoch 78/200				
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 79/200				
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 80/200				
	[======]	_	0s	14us/step - loss: 7.9712
Epoch 81/200				•
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 82/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 83/200				
22868/22868	[======]	-	0s	14us/step - loss: 7.9712
Epoch 84/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 85/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 86/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 87/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 88/200				
	[]	-	0s	14us/step - loss: 7.9712
Epoch 89/200				
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 90/200			_	
	[=====]	-	0s	14us/step - loss: 7.9712
Epoch 91/200			•	45 / 4 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
	[======]	-	0s	15us/step - Ioss: 7.9/12
Epoch 92/200			^	44 / 1 7 7 0740
	[=======]	_	US	14us/step - 10ss: 7.9712
Epoch 93/200			٥	1499/9+09 1099 7 0710
Epoch 94/200		_	US	14us/step - 10ss: 7.9712
•	[======]	_	۸a	1/ug/gtop = logg: 7 9712
Epoch 95/200			05	14us/step = 10ss. 7.3712
	[======]	_	۸q	14us/sten - loss: 7 9712
Epoch 96/200			OB	14ub/ btcp 10bb. 7.3712
	[======]	_	0s	14us/step - loss: 7.9712
Epoch 97/200			Ů.	1145, 500p 1055
-	[=====]	_	0s	14us/step - loss: 7.9712
Epoch 98/200				
_	[=====]	_	0s	14us/step - loss: 7.9712
Epoch 99/200				
-	[======]	_	0s	14us/step - loss: 7.9712
Epoch 100/20				
	[=======]	_	0s	14us/step - loss: 7.9712
Epoch 101/20				-
_	[======]	-	0s	14us/step - loss: 7.9712

Epoch 102/200			
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Epoch 103/200			
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Epoch 104/200			
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Epoch 105/200			
22868/22868 [===================================	_	0s	15us/step - loss: 7.9712
Epoch 106/200			
22868/22868 [===================================	_	0s	14us/step - loss: 7.9712
Epoch 107/200			
22868/22868 [===================================	_	0s	15us/step - loss: 7.9712
Epoch 108/200			
22868/22868 [===================================	_	0s	14us/step - loss: 7.9712
Epoch 109/200			
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Epoch 110/200			-
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Epoch 111/200			-
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Epoch 112/200			•
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Epoch 113/200			•
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Epoch 114/200			•
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Epoch 115/200			•
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Epoch 116/200			•
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Epoch 117/200			•
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Epoch 118/200			•
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Epoch 119/200			•
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Epoch 120/200			•
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Epoch 121/200			•
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Epoch 122/200			•
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Epoch 123/200			
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Epoch 124/200			
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Epoch 125/200			
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Epoch 126/200			
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Epoch 127/200			
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Epoch 128/200			
22868/22868 [===================================	-	0s	14us/step - loss: 7.9712
Epoch 129/200			-
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Epoch 130/200			-
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Epoch 131/200			
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Epoch 132/200			
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Epoch 133/200	•	• •	11a2, 200p
22868/22868 [==============	۱ –	0s	15us/step - loss: 7.9712
Epoch 134/200	•	Ü	1042, 2007 1022
22868/22868 [===================================	۱ –	0s	14us/step - loss: 7.9712
Epoch 135/200	•	Ů.	1145, 2000 1022. 1.0112
22868/22868 [==============	۱ –	۸q	14us/sten - loss: 7 9712
Epoch 136/200	'	O.D	1145,5000 1055. 1.0112
22868/22868 [===================================	۱ –	۸q	15us/sten - loss: 7 9712
Epoch 137/200	,	OB	Toub, beep Tobb. 7.3712
22868/22868 [==============	۱ –	۸q	14us/sten - loss: 7 9712
Epoch 138/200	•	Ü	1145, 500p 1055
22868/22868 [=============	۱ –	0s	14us/sten - loss: 7 9712
Epoch 139/200	'	O.D	1145,5000 1055. 1.0112
22868/22868 [===================================	۱ –	0s	14us/sten - loss: 7 9712
Epoch 140/200	•	Ů.	1145, 2000 1022. 1.0112
22868/22868 [===================================	l –	0s	15us/sten - loss: 7 9712
Epoch 141/200	•	Ů.	1005, 200p 1025. 1.0112
22868/22868 [=========================	l –	0s	15us/sten - loss: 7 9712
Epoch 142/200	'	O.D	1000, 5000 1000: 1.0112
22868/22868 [===================================	۱ –	۸q	14us/sten - loss: 7 9712
Epoch 143/200	'	O.D	1145,5000 1055. 1.0112
22868/22868 [==============	۱ –	0s	14us/step - loss: 7.9712
Epoch 144/200	'	O.D	1145,5000 1055. 1.0112
22868/22868 [==============	l –	0s	14us/sten - loss: 7 9712
Epoch 145/200	•	Ů.	1145, 2000 1022. 1.0112
22868/22868 [===================================	l –	0s	14us/sten - loss: 7 9712
Epoch 146/200	'	O.D	1145,5000 1055. 1.0112
22868/22868 [===================================	۱ –	۸q	15us/sten - loss: 7 9712
Epoch 147/200	,	OB	10db/50cp 10bb. 7.3712
22868/22868 [===================================	۱ –	۸q	14us/sten - loss: 7 9712
Epoch 148/200	•	20	
22868/22868 [===================================	l –	۸q	15us/sten - loss: 7 9712
Epoch 149/200	•	OB	1000, 500p 1000. 1.0112
22868/22868 [===================================	l –	۸q	14us/sten - loss: 7 9712
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Epoch 150/200
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Epoch 174/200
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Epoch 175/200
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Epoch 196/200
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Epoch 197/200
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Epoch 198/200
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Epoch 199/200
22868/22868 [============= ] - Os 15us/step - loss: 7.9712
Epoch 200/200
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Epoch 1/200
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Epoch 2/200
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Epoch 3/200
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Epoch 4/200
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Epoch 5/200
22868/22868 [============= ] - 0s 15us/step - loss: 8.0590
Epoch 6/200
22868/22868 [============= ] - Os 15us/step - loss: 8.0590
Epoch 7/200
22868/22868 [============= ] - Os 15us/step - loss: 8.0590
Epoch 8/200
22868/22868 [============= ] - Os 15us/step - loss: 8.0590
Epoch 9/200
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Epoch 21/200
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22868/22868 [============= ] - Os 15us/step - loss: 8.0590
Epoch 22/200
22868/22868 [============= ] - Os 15us/step - loss: 8.0590
Epoch 23/200
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Epoch 30/200
Epoch 31/200
Epoch 32/200
Epoch 33/200
22868/22868 [============= ] - Os 15us/step - loss: 8.0590
Epoch 34/200
22868/22868 [============== ] - Os 15us/step - loss: 8.0590
Epoch 35/200
22868/22868 [============== ] - Os 15us/step - loss: 8.0590
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22868/22868 [============== ] - Os 15us/step - loss: 8.0590
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22868/22868 [============== ] - Os 15us/step - loss: 8.0590
Epoch 42/200
22868/22868 [============== ] - Os 15us/step - loss: 8.0590
Epoch 43/200
22868/22868 [============== ] - Os 15us/step - loss: 8.0590
Epoch 44/200
22868/22868 [============== ] - Os 15us/step - loss: 8.0590
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22868/22868 [============= ] - Os 15us/step - loss: 8.0590
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22868/22868 [============= ] - Os 15us/step - loss: 8.0590
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Epoch 199/200
Epoch 200/200
22868/22868 [=========== ] - 1s 61us/step
Epoch 1/200
22868/22868 [============= ] - 1s 53us/step - loss: nan
Epoch 2/200
22868/22868 [============= ] - 0s 14us/step - loss: nan
Epoch 3/200
22868/22868 [============= ] - 0s 14us/step - loss: nan
Epoch 4/200
22868/22868 [============== ] - 0s 14us/step - loss: nan
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22868/22868 [============= ] - 0s 15us/step - loss: nan
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22868/22868 [============= ] - Os 17us/step - loss: nan
Epoch 7/200
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22868/22868 [============= ] - 0s 19us/step - loss: nan
Epoch 10/200
22868/22868 [============= ] - Os 18us/step - loss: nan
Epoch 11/200
22868/22868 [============== ] - 0s 16us/step - loss: nan
Epoch 12/200
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Epoch 13/200
22868/22868 [============= ] - 0s 15us/step - loss: nan
Epoch 14/200
22868/22868 [============== ] - Os 16us/step - loss: nan
Epoch 15/200
22868/22868 [============= ] - 0s 17us/step - loss: nan
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Epoch 37/200
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Epoch 60/200
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Epoch 85/200
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Epoch 108/200
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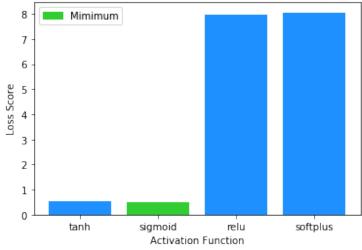
Epoch 109/200
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Epoch 132/200
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22868/22868 [=======]	-	0s	13us/step	-	loss:	nan
Epoch 134/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	nan
Epoch 135/200						
22868/22868 [=======]	-	0s	13us/step	-	loss:	nan
Epoch 136/200						
22868/22868 [=======]	-	0s	14us/step	-	loss:	nan
Epoch 137/200						
22868/22868 [===================================	-	0s	13us/step	-	loss:	nan
Epoch 138/200						
22868/22868 [===================================	-	0s	13us/step	-	loss:	nan
Epoch 139/200						
22868/22868 [===================================	-	0s	13us/step	_	loss:	nan
Epoch 140/200			-			
22868/22868 [===================================	_	0s	13us/step	_	loss:	nan
Epoch 141/200			•			
22868/22868 [=======]	_	0s	13us/step	_	loss:	nan
Epoch 142/200			. 1			
22868/22868 [=======]	_	0s	13us/step	_	loss:	nan
Epoch 143/200						
22868/22868 [=======]	_	0s	13us/step	_	loss:	nan
Epoch 144/200			10 ab, 5 cop			
22868/22868 [=======]	_	0s	13us/step	_	loss:	nan
Epoch 145/200			10 ab, 5 cop			
22868/22868 [========]	_	0s	14us/sten	_	loss	nan
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22868/22868 [========]	_	۸q	13119/sten	_	1088.	nan
Epoch 147/200		O.D	тоць, в сер		TODD.	nan
22868/22868 [===================================	_	۸q	14119/sten	_	1088.	nan
Epoch 148/200		OB	тчав/веср		TOBB.	nan
22868/22868 [=======]	_	۸e	13112/sten	_	1000.	nan
Epoch 149/200		V.S	10db/bcep		1055.	nan
22868/22868 [=======]	_	۸a	15ug/gton	_	loggi	nan
Epoch 150/200		OS	10us/scep		1055.	nan
22868/22868 [========]	_	٥٥	13ug/gton	_	loggi	non
Epoch 151/200		05	13us/scep		1055.	IIaII
22868/22868 [=======]	_	٥٥	13ug/gton	_	loggi	non
Epoch 152/200		05	13us/scep		1055.	IIaII
22868/22868 [===================================		٥٥	1/11g/gton	_	1000.	non
	_	US	14us/step	_	TOSS:	nan
Epoch 153/200		^	40 / 1		-	
22868/22868 [===================================	_	US	13us/step	_	loss:	nan
Epoch 154/200		^	40 / 1		-	
22868/22868 [===================================	-	US	13us/step	-	Toss:	nan
Epoch 155/200		^	40 / .		-	
22868/22868 [===================================	-	0s	13us/step	-	loss:	nan
Epoch 156/200		_			_	
22868/22868 [===================================	-	Us	14us/step	-	loss:	nan

Epoch 157/200						
22868/22868 [===================================	_	0s	13us/step	- ]	loss:	nan
Epoch 158/200						
22868/22868 [===================================	_	0s	14us/step	- ]	Loss:	nan
Epoch 159/200			1			
22868/22868 [===================================	_	0s	13us/step	- ]	Loss:	nan
Epoch 160/200			-			
22868/22868 [===================================	_	0s	13us/step	- ]	loss:	nan
Epoch 161/200			_			
22868/22868 [===================================	-	0s	13us/step	- ]	loss:	nan
Epoch 162/200						
22868/22868 [===========]	-	0s	13us/step	- ]	Loss:	nan
Epoch 163/200						
22868/22868 [===========]	-	0s	13us/step	- ]	Loss:	nan
Epoch 164/200						
22868/22868 [===================================	-	0s	13us/step	- ]	loss:	nan
Epoch 165/200						
22868/22868 [===================================	-	0s	13us/step	- ]	loss:	nan
Epoch 166/200						
22868/22868 [===================================	-	0s	13us/step	- ]	Loss:	nan
Epoch 167/200						
22868/22868 [=======]	-	0s	13us/step	- ]	loss:	nan
Epoch 168/200						
22868/22868 [=======]	-	0s	13us/step	- ]	Loss:	nan
Epoch 169/200						
22868/22868 [===========]	-	0s	13us/step	- ]	Loss:	nan
Epoch 170/200		_		_		
22868/22868 [===================================	-	0s	13us/step	- ]	Loss:	nan
Epoch 171/200		_		_		
22868/22868 [===================================	-	0s	13us/step	- ]	Loss:	nan
Epoch 172/200		^	10 / .	_		
22868/22868 [===================================	_	Us	13us/step	- 1	Loss:	nan
Epoch 173/200		ο-	12/	,		
22868/22868 [===================================	_	US	13us/step	- ,	Loss:	nan
Epoch 174/200 22868/22868 [===================================		٥٥	1/119/9+05	,		<b>n</b> on
Epoch 175/200	_	US	14us/step		LOSS:	nan
22868/22868 [===================================	_	Λa	13ug/gton	_ 1	l ogg•	non
Epoch 176/200		05	13us/scep		LUSS.	IIaII
22868/22868 [===================================	_	۸۵	1311g/gton	_ 1	امععنا	nan
Epoch 177/200		OB	Tous/ Step	_	LOBB.	nan
22868/22868 [===================================	_	۸e	13119/9ten	_ 1	١٨٩٩٠	nan
Epoch 178/200		OB	Tous/ Step	_	LOBB.	nan
22868/22868 [===================================	_	0s	14us/sten	- 1	loss.	nan
Epoch 179/200			- 142, 500р	_		
22868/22868 [===================================	_	0s	13us/sten	- 1	Loss:	nan
Epoch 180/200			, 200Р			
22868/22868 [===================================	_	0s	14us/step	- ]	Loss:	nan
· -		-	P	_		

```
Epoch 181/200
22868/22868 [============ ] - 0s 14us/step - loss: nan
Epoch 182/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 183/200
22868/22868 [============= ] - 0s 14us/step - loss: nan
Epoch 184/200
22868/22868 [============== ] - 0s 14us/step - loss: nan
Epoch 185/200
22868/22868 [============= ] - 0s 14us/step - loss: nan
Epoch 186/200
22868/22868 [============== ] - 0s 13us/step - loss: nan
Epoch 187/200
22868/22868 [============= ] - 0s 14us/step - loss: nan
Epoch 188/200
22868/22868 [============== ] - 0s 13us/step - loss: nan
Epoch 189/200
Epoch 190/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 191/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 192/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 193/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 194/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 195/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 196/200
22868/22868 [============== ] - 0s 14us/step - loss: nan
Epoch 197/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 198/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
Epoch 199/200
22868/22868 [============= ] - Os 13us/step - loss: nan
Epoch 200/200
22868/22868 [============= ] - 0s 13us/step - loss: nan
22868/22868 [============ ] - 1s 57us/step
In [39]: color = []
       for score in scores:
          if score == min(scores):
             color.append('limegreen')
```

Loss Scores For 4 Layer Neural Networks with 15 Neurons Each, Varying Activation Functions



Juding from the above graph and printout, the sigmoid activation function performs best

## 2.0.4 Step 4. Determine optimal optimizer

```
model.compile(loss='binary_crossentropy', optimizer='sgd')
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### RMSprop ###
model = Sequential()
model.add(Dense(n, input_dim=11, activation=act)) #sigmoid, relu
model.add(Dense(1, activation=act))
rmsp = RMSprop(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer= rmsp)
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict_proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Adadelta ###
model = Sequential()
model.add(Dense(n, input_dim=11, activation=act)) #sigmoid, relu
model.add(Dense(1, activation=act))
adad = Adadelta(lr=0.1)
model.compile(loss='binary_crossentropy', optimizer= adad)
model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
#print(model.predict proba(X).reshape(4*n))
# evaluate the model
scores.append(model.evaluate(X, y))
### Adamax ###
model = Sequential()
model.add(Dense(n, input_dim=11, activation=act)) #sigmoid, relu
model.add(Dense(1, activation=act))
```

```
amax = Adamax(lr=0.1)
       model.compile(loss='binary_crossentropy', optimizer= amax)
       model.fit(X, y, batch_size=100, epochs=200) #160/4 = 40 per epoch
       #print(model.predict proba(X).reshape(4*n))
       # evaluate the model
       scores.append(model.evaluate(X, y))
Epoch 1/200
22868/22868 [============= ] - 1s 53us/step - loss: 0.7190
Epoch 2/200
22868/22868 [============= ] - Os 15us/step - loss: 0.7009
Epoch 3/200
22868/22868 [============== ] - Os 15us/step - loss: 0.6946
Epoch 4/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.6902
Epoch 5/200
22868/22868 [============== ] - Os 14us/step - loss: 0.6868
Epoch 6/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6832
Epoch 7/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6795
Epoch 8/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6750
Epoch 9/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6691
Epoch 10/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6609
Epoch 11/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6500
Epoch 12/200
22868/22868 [============== ] - Os 15us/step - loss: 0.6362
Epoch 13/200
22868/22868 [============= ] - Os 15us/step - loss: 0.6205
Epoch 14/200
22868/22868 [============== ] - Os 15us/step - loss: 0.6059
Epoch 15/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5943
Epoch 16/200
Epoch 17/200
Epoch 18/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5654
Epoch 19/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5593
Epoch 20/200
```

```
22868/22868 [============== ] - Os 15us/step - loss: 0.5565
Epoch 21/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5473
Epoch 22/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5386
Epoch 23/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5397
Epoch 24/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5324
Epoch 25/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5315
Epoch 26/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5261
Epoch 27/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5289
Epoch 28/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5257
Epoch 29/200
Epoch 30/200
Epoch 31/200
Epoch 32/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5184
Epoch 33/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5166
Epoch 34/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5135
Epoch 35/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5147
Epoch 36/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5150
Epoch 37/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5141
Epoch 38/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5104
Epoch 39/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5107
Epoch 40/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5099
Epoch 41/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5160
Epoch 42/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5130
Epoch 43/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5173
Epoch 44/200
```

```
22868/22868 [============= ] - Os 15us/step - loss: 0.5124
Epoch 45/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5117
Epoch 46/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5097
Epoch 47/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5097
Epoch 48/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5072
Epoch 49/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5107
Epoch 50/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5093
Epoch 51/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5076
Epoch 52/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5078
Epoch 53/200
Epoch 54/200
Epoch 55/200
Epoch 56/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5092
Epoch 57/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5077
Epoch 58/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5077
Epoch 59/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5050
Epoch 60/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5072
Epoch 61/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5080
Epoch 62/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5084
Epoch 63/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5114
Epoch 64/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5049
Epoch 65/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5036
Epoch 66/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5066
Epoch 67/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5051
Epoch 68/200
```

```
22868/22868 [============== ] - Os 15us/step - loss: 0.5082
Epoch 69/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5081
Epoch 70/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5085
Epoch 71/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5097
Epoch 72/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5086
Epoch 73/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5025
Epoch 74/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5044
Epoch 75/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5109
Epoch 76/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5074
Epoch 77/200
Epoch 78/200
Epoch 79/200
Epoch 80/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5069
Epoch 81/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5076
Epoch 82/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5091
Epoch 83/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5065
Epoch 84/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5052
Epoch 85/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5085
Epoch 86/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5077
Epoch 87/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5044
Epoch 88/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5115
Epoch 89/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5065
Epoch 90/200
22868/22868 [============= ] - Os 14us/step - loss: 0.5029
Epoch 91/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5037
Epoch 92/200
```

```
22868/22868 [============== ] - Os 15us/step - loss: 0.5081
Epoch 93/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5094
Epoch 94/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5029
Epoch 95/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5046
Epoch 96/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5059
Epoch 97/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5057
Epoch 98/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5062
Epoch 99/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5055
Epoch 100/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5067
Epoch 101/200
Epoch 102/200
Epoch 103/200
Epoch 104/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5038
Epoch 105/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5057
Epoch 106/200
Epoch 107/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5062
Epoch 108/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5056
Epoch 109/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5095
Epoch 110/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5041
Epoch 111/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5043
Epoch 112/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5049
Epoch 113/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5066
Epoch 114/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5031
Epoch 115/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5060
Epoch 116/200
```

```
22868/22868 [============== ] - 0s 15us/step - loss: 0.5073
Epoch 117/200
Epoch 118/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5052
Epoch 119/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5061
Epoch 120/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5085
Epoch 121/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5052
Epoch 122/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5067
Epoch 123/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5045
Epoch 124/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5046
Epoch 125/200
Epoch 126/200
Epoch 127/200
Epoch 128/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5040
Epoch 129/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5012
Epoch 130/200
Epoch 131/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5069
Epoch 132/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5014
Epoch 133/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5058
Epoch 134/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5036
Epoch 135/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5067
Epoch 136/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5037
Epoch 137/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5036
Epoch 138/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5062
Epoch 139/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5044
Epoch 140/200
```

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22868/22868 [============= ] - Os 15us/step - loss: 0.5024
Epoch 141/200
Epoch 142/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5069
Epoch 143/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5031
Epoch 144/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5031
Epoch 145/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5035
Epoch 146/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5068
Epoch 147/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5056
Epoch 148/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5032
Epoch 149/200
Epoch 150/200
Epoch 151/200
Epoch 152/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5105
Epoch 153/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5068
Epoch 154/200
Epoch 155/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5070
Epoch 156/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5044
Epoch 157/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5058
Epoch 158/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5033
Epoch 159/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5036
Epoch 160/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5050
Epoch 161/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5059
Epoch 162/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5056
Epoch 163/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5042
Epoch 164/200
```

```
22868/22868 [============== ] - Os 15us/step - loss: 0.4998
Epoch 165/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5050
Epoch 166/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5014
Epoch 167/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5060
Epoch 168/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5064
Epoch 169/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5023
Epoch 170/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5045
Epoch 171/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5050
Epoch 172/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5027
Epoch 173/200
Epoch 174/200
Epoch 175/200
Epoch 176/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5030
Epoch 177/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5022
Epoch 178/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5025
Epoch 179/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5045
Epoch 180/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5023
Epoch 181/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5012
Epoch 182/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5025
Epoch 183/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5034
Epoch 184/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5064
Epoch 185/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5033
Epoch 186/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5018
Epoch 187/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5045
Epoch 188/200
```

```
22868/22868 [============== ] - Os 15us/step - loss: 0.5055
Epoch 189/200
22868/22868 [============= ] - 0s 15us/step - loss: 0.5062
Epoch 190/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5081
Epoch 191/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5050
Epoch 192/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5039
Epoch 193/200
22868/22868 [============== ] - Os 15us/step - loss: 0.5019
Epoch 194/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5009
Epoch 195/200
22868/22868 [============== ] - 0s 15us/step - loss: 0.5043
Epoch 196/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5080
Epoch 197/200
Epoch 198/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5074
Epoch 199/200
Epoch 200/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5046
22868/22868 [=========== ] - 1s 61us/step
Epoch 1/200
22868/22868 [============= ] - 1s 55us/step - loss: 0.6472
Epoch 2/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5903
Epoch 3/200
22868/22868 [============= ] - 0s 16us/step - loss: 0.5750
Epoch 4/200
Epoch 5/200
Epoch 6/200
Epoch 7/200
Epoch 8/200
22868/22868 [============= ] - Os 15us/step - loss: 0.5601
Epoch 9/200
Epoch 10/200
22868/22868 [============== ] - Os 16us/step - loss: 0.5550
Epoch 11/200
```

Epoch 12/200				
-	[======]	_	0s	16us/step - loss: 0.5555
Epoch 13/200				
-	[======]	_	0s	15us/step - loss: 0.5559
Epoch 14/200				•
	[======]	_	0s	16us/step - loss: 0.5547
Epoch 15/200				-
22868/22868	[=======]	-	0s	16us/step - loss: 0.5513
Epoch 16/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5531
Epoch 17/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5518
Epoch 18/200				
22868/22868	[======]	-	0s	15us/step - loss: 0.5513
Epoch 19/200				
	[]	-	0s	16us/step - loss: 0.5473
Epoch 20/200				
	[]	-	0s	16us/step - loss: 0.5486
Epoch 21/200				
	[]	-	0s	16us/step - loss: 0.5539
Epoch 22/200				
	[]	-	0s	16us/step - loss: 0.5512
Epoch 23/200				
	[]	-	0s	15us/step - loss: 0.5509
Epoch 24/200				
	[=====]	-	0s	16us/step - loss: 0.5516
Epoch 25/200			_	
	[=====]	-	0s	17us/step - loss: 0.5496
Epoch 26/200			^	10 / 1 0 5005
	[======]	_	Us	16us/step - 10ss: 0.5625
Epoch 27/200			0 -	16/
	[=====]	_	US	Tous/step - Toss: 0.5526
Epoch 28/200			٥-	16/
Epoch 29/200	[=====]	_	US	Tous/step - Toss: 0.5468
	[]	_	۸a	16ug/gtop = logg: 0 5556
Epoch 30/200			US	Tous/step - Toss. 0.5550
-	[======]	_	۸a	16ug/gtop = logg: 0 5510
Epoch 31/200			US	Tous, step Toss. 0.0019
-	[======]	_	۸q	16us/sten - loss: 0 5506
Epoch 32/200			OB	Toub, buch Tobb. 0.0000
_	[]	_	٥s	16us/sten - loss: 0 5521
Epoch 33/200			O.D	1045, 5000 1055. 0.0021
	[======]	_	0s	16us/step - loss: 0.5490
Epoch 34/200				
	[======]	_	0s	16us/step - loss: 0.5479
Epoch 35/200				
_	[======]	_	0s	15us/step - loss: 0.5501
	_			•

Epoch 36/200				
	[======]	_	0s	16us/step - loss: 0.5498
Epoch 37/200				
-	[======]	_	0s	15us/step - loss: 0.5498
Epoch 38/200				•
	[======]	_	0s	16us/step - loss: 0.5511
Epoch 39/200				•
22868/22868	[=======]	-	0s	16us/step - loss: 0.5518
Epoch 40/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5498
Epoch 41/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5465
Epoch 42/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5511
Epoch 43/200				
	[]	-	0s	16us/step - loss: 0.5584
Epoch 44/200				
	[]	-	0s	16us/step - loss: 0.5490
Epoch 45/200				
	[]	-	0s	16us/step - loss: 0.5482
Epoch 46/200				
	[]	-	0s	16us/step - loss: 0.5437
Epoch 47/200				
	[]	-	0s	16us/step - loss: 0.5517
Epoch 48/200				
	[=====]	-	0s	16us/step - loss: 0.5468
Epoch 49/200			_	
	[=====]	-	0s	16us/step - loss: 0.5465
Epoch 50/200			^	10 / 1 2 0 5407
	[======]	_	Us	16us/step - loss: 0.546/
Epoch 51/200			0 -	16/
	[=====]	_	US	Tous/step - Toss: 0.5508
Epoch 52/200	[======]		٥	16::g/g+on logg: 0 E472
Epoch 53/200		_	US	Tous/step - Toss: 0.5475
	[]	_	۸a	16ug/gtop = logg: 0 5486
Epoch 54/200			05	10us/step = 10ss. 0.0400
-	[======]	_	Λe	16us/stan - loss: 0 5447
Epoch 55/200			V.S	1003/50ep 1055. 0.044/
-	[======]	_	٥s	16us/step - loss: 0 5536
Epoch 56/200			O.D	Toub, brop Tobb: 0.0000
	[]	_	0s	16us/step - loss: 0.5416
Epoch 57/200			Ů.	read, beep read. c.erre
-	[======]	_	0s	16us/step - loss: 0.5436
Epoch 58/200				
	[======]	_	0s	16us/step - loss: 0.5472
Epoch 59/200				
	[======]	_	0s	16us/step - loss: 0.5465
				<del>-</del>

Epoch 60/200				
-	[======]	_	0s	16us/step - loss: 0.5437
Epoch 61/200				
-	[======]	_	0s	15us/step - loss: 0.5551
Epoch 62/200				•
	[======]	_	0s	16us/step - loss: 0.5538
Epoch 63/200				•
22868/22868	[=======]	-	0s	16us/step - loss: 0.5454
Epoch 64/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5496
Epoch 65/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5455
Epoch 66/200				
22868/22868	[=====]	-	0s	16us/step - loss: 0.5449
Epoch 67/200				
	[=====]	-	0s	16us/step - loss: 0.5450
Epoch 68/200				
22868/22868	[=====]	-	0s	16us/step - loss: 0.5495
Epoch 69/200				
	[=====]	-	0s	15us/step - loss: 0.5594
Epoch 70/200				
	[=====]	-	0s	16us/step - loss: 0.5534
Epoch 71/200				
	[]	-	0s	16us/step - loss: 0.5538
Epoch 72/200				
	[]	-	0s	16us/step - loss: 0.5429
Epoch 73/200				
	[]	-	0s	15us/step - loss: 0.5469
Epoch 74/200			_	
	[======]	-	0s	16us/step - loss: 0.5493
Epoch 75/200			_	
	[======]	-	0s	16us/step - loss: 0.54/3
Epoch 76/200			_	10 / 1 7 0 5400
	[======]	-	0s	16us/step - loss: 0.5463
Epoch 77/200			^	46 / 1 3 0 5540
	[======]	-	US	16us/step - 10ss: 0.5512
Epoch 78/200	[======]		٥-	15/stan lass 0.5470
		_	US	15us/step - 10ss: 0.5470
Epoch 79/200	[======]	_	٥٥	16ug/gton - logg: 0 5522
Epoch 80/200		_	US	Tous/step - Toss: 0.5522
	[======]	_	٥٥	15ug/gton - logg: 0 5406
Epoch 81/200			US	13us/step - 10ss. 0.3490
-	[======]	_	٥c	16us/stan - loss. 0 5/65
Epoch 82/200		_	OB	10us/step - 10ss. 0.0400
	[======]	_	۸e	15us/sten - loss 0 5/63
Epoch 83/200			GO	1045/50ep 1055. 0.0405
	[======]	_	09	16us/sten - loss: 0 5456
			JB	1045, 505p 1055. 0.0400

T 1 04/000			
Epoch 84/200	1	0 -	16
22868/22868 [===================================	J –	US	lous/step - loss: 0.5431
Epoch 85/200	,	_	45 /
22868/22868 [===================================	] -	US	15us/step - 10ss: 0.5420
Epoch 86/200	,	_	10 / 1 7 0 5450
22868/22868 [===================================	] -	0s	16us/step - loss: 0.5473
Epoch 87/200		_	
22868/22868 [===================================	] -	0s	16us/step - loss: 0.5468
Epoch 88/200		_	
22868/22868 [===================================	] -	0s	16us/step - loss: 0.5469
Epoch 89/200		_	
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5553
Epoch 90/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5486
Epoch 91/200			
22868/22868 [===================================	] –	0ຣ	15us/step - loss: 0.5539
Epoch 92/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5459
Epoch 93/200			
22868/22868 [===================================	] –	0s	15us/step - loss: 0.5494
Epoch 94/200			
22868/22868 [===================================	] –	0s	15us/step - loss: 0.5531
Epoch 95/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5553
Epoch 96/200			
22868/22868 [===================================	] –	0s	15us/step - loss: 0.5538
Epoch 97/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5462
Epoch 98/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5497
Epoch 99/200			
22868/22868 [===================================	] –	0s	15us/step - loss: 0.5446
Epoch 100/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5466
Epoch 101/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5453
Epoch 102/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5445
Epoch 103/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5568
Epoch 104/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5436
Epoch 105/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5491
Epoch 106/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5441
Epoch 107/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5477

Epoch 108/200	
22868/22868 [============= ] - 0s 16us/step - loss: 0.5508	,
Epoch 109/200	
22868/22868 [============= ] - Os 16us/step - loss: 0.5565	,
Epoch 110/200	
22868/22868 [============ ] - Os 15us/step - loss: 0.5460	)
Epoch 111/200	
22868/22868 [============= ] - Os 16us/step - loss: 0.5546	;
Epoch 112/200	
22868/22868 [============== ] - Os 15us/step - loss: 0.5408	;
Epoch 113/200	
22868/22868 [===================================	j
Epoch 114/200	
22868/22868 [===================================	,
Epoch 115/200	
22868/22868 [===================================	
Epoch 116/200	
22868/22868 [===================================	
Epoch 117/200	
22868/22868 [===================================	)
Epoch 118/200	
22868/22868 [===================================	,
Epoch 119/200	
22868/22868 [===================================	,
Epoch 120/200	
22868/22868 [===================================	
Epoch 121/200	
22868/22868 [===================================	,
Epoch 122/200	
22868/22868 [===================================	
Epoch 123/200	
22868/22868 [===================================	,
Epoch 124/200	
22868/22868 [===================================	,
Epoch 125/200	
22868/22868 [===================================	,
Epoch 126/200	
22868/22868 [===================================	,
Epoch 127/200	
22868/22868 [===================================	,
Epoch 128/200	
22868/22868 [===================================	
Epoch 129/200	
22868/22868 [===================================	
Epoch 130/200	
22868/22868 [===================================	
Epoch 131/200	
22868/22868 [===================================	j

Epoch 132/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5497
Epoch 133/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.5440
Epoch 134/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.5451
Epoch 135/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.5477
Epoch 136/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5474
Epoch 137/200			
22868/22868 [===================================	-	0s	16us/step - loss: 0.5492
Epoch 138/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5458
Epoch 139/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5415
Epoch 140/200			-
22868/22868 [===================================	-	0s	16us/step - loss: 0.5439
Epoch 141/200			-
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5438
Epoch 142/200			•
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5478
Epoch 143/200			•
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5462
Epoch 144/200			-
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5455
Epoch 145/200			•
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5432
Epoch 146/200			•
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5481
Epoch 147/200			•
22868/22868 [===================================	-	0s	16us/step - loss: 0.5460
Epoch 148/200			•
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5398
Epoch 149/200			•
22868/22868 [===================================	-	0s	16us/step - loss: 0.5418
Epoch 150/200			•
22868/22868 [===================================	-	0s	16us/step - loss: 0.5459
Epoch 151/200			•
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5414
Epoch 152/200			•
22868/22868 [===================================	۱ –	0s	16us/step - loss: 0.5386
Epoch 153/200			•
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5452
Epoch 154/200			
22868/22868 [===================================	] –	0s	16us/step - loss: 0.5408
Epoch 155/200			
22868/22868 [============	l –	0s	16us/step - loss: 0.5392
			•

Epoch 156/200
22868/22868 [===================================
Epoch 157/200
22868/22868 [===================================
Epoch 158/200
22868/22868 [===================================
Epoch 159/200
22868/22868 [===================================
Epoch 160/200
22868/22868 [===================================
Epoch 161/200
22868/22868 [===================================
Epoch 162/200
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Epoch 163/200
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Epoch 164/200
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Epoch 165/200
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Epoch 166/200
22868/22868 [===================================
Epoch 167/200
22868/22868 [===================================
Epoch 168/200
22868/22868 [============= ] - Os 16us/step - loss: 0.5527
Epoch 169/200
22868/22868 [===================================
Epoch 170/200
22868/22868 [===================================
Epoch 171/200
22868/22868 [===================================
Epoch 172/200
22868/22868 [===================================
Epoch 173/200
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Epoch 174/200
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Epoch 175/200
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Epoch 176/200
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Epoch 177/200
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Epoch 178/200
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Epoch 179/200
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*

Enoch 190/200						
Epoch 180/200 22868/22868 [===================================		٥٥	15ug /g+on		loggi	V EEE0
Epoch 181/200		US	15us/scep		1088.	0.5556
22868/22868 [===================================		٥	16.12 /aton		1.000.	O E42E
	_	US	Tous/step	_	TOSS:	0.5455
Epoch 182/200		ο-	15/		7	0 5506
22868/22868 [===================================	_	US	15us/step	_	loss:	0.5526
Epoch 183/200		Λ-	16/		7	0 5000
22868/22868 [===================================	_	US	lous/step	_	loss:	0.5392
Epoch 184/200		^	40 / 1		,	0 5400
22868/22868 [===================================	_	US	16us/step	_	loss:	0.5420
Epoch 185/200		^	40 ( )		-	0 5050
22868/22868 [===================================	_	Us	16us/step	_	loss:	0.5653
Epoch 186/200		•	10 1 .		_	0 5440
22868/22868 [===================================	-	0s	16us/step	-	loss:	0.5443
Epoch 187/200		_			_	
22868/22868 [===================================	-	0s	16us/step	-	loss:	0.5446
Epoch 188/200						
22868/22868 [========]	-	0s	15us/step	-	loss:	0.5430
Epoch 189/200						
22868/22868 [=======]	-	0s	16us/step	-	loss:	0.5467
Epoch 190/200						
22868/22868 [=======]	-	0s	15us/step	-	loss:	0.5399
Epoch 191/200						
22868/22868 [=======]	-	0s	16us/step	-	loss:	0.5486
Epoch 192/200						
22868/22868 [=======]	-	0s	16us/step	-	loss:	0.5576
Epoch 193/200						
22868/22868 [=======]	-	0s	16us/step	-	loss:	0.5445
Epoch 194/200						
22868/22868 [=======]	-	0s	15us/step	-	loss:	0.5456
Epoch 195/200						
22868/22868 [===========]	-	0s	16us/step	-	loss:	0.5420
Epoch 196/200						
22868/22868 [======]	-	0s	15us/step	-	loss:	0.5539
Epoch 197/200						
22868/22868 [==========]	-	0s	16us/step	-	loss:	0.5418
Epoch 198/200						
22868/22868 [===================================	-	0s	16us/step	-	loss:	0.5397
Epoch 199/200						
22868/22868 [==========]	-	0s	16us/step	-	loss:	0.5445
Epoch 200/200						
22868/22868 [===================================	-	0s	15us/step	_	loss:	0.5503
22868/22868 [===================================	-	1s	60us/step			
Epoch 1/200			•			
22868/22868 [===================================	_	1s	58us/step	_	loss:	0.6965
Epoch 2/200			•			
22868/22868 [===================================	_	0s	17us/step	_	loss:	0.6941
Epoch 3/200			•			

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22868/22868 [============= ] - Os 16us/step - loss: 0.6925
Epoch 4/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6911
Epoch 5/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6897
Epoch 6/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6883
Epoch 7/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6870
Epoch 8/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6857
Epoch 9/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6845
Epoch 10/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6833
Epoch 11/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6820
Epoch 12/200
Epoch 13/200
Epoch 14/200
Epoch 15/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6768
Epoch 16/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6753
Epoch 17/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6738
Epoch 18/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6722
Epoch 19/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6706
Epoch 20/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6688
Epoch 21/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6670
Epoch 22/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6650
Epoch 23/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6630
Epoch 24/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6608
Epoch 25/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6585
Epoch 26/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6560
Epoch 27/200
```

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22868/22868 [============= ] - Os 17us/step - loss: 0.6535
Epoch 28/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6509
Epoch 29/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6482
Epoch 30/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6454
Epoch 31/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6424
Epoch 32/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6393
Epoch 33/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6360
Epoch 34/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6327
Epoch 35/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6293
Epoch 36/200
Epoch 37/200
Epoch 38/200
Epoch 39/200
Epoch 40/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6111
Epoch 41/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6074
Epoch 42/200
22868/22868 [============= ] - Os 19us/step - loss: 0.6035
Epoch 43/200
22868/22868 [============== ] - Os 17us/step - loss: 0.5996
Epoch 44/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5957
Epoch 45/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5918
Epoch 46/200
22868/22868 [============== ] - Os 19us/step - loss: 0.5879
Epoch 47/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.5840
Epoch 48/200
22868/22868 [============== ] - Os 19us/step - loss: 0.5801
Epoch 49/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5761
Epoch 50/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.5722
Epoch 51/200
```

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22868/22868 [============== ] - Os 18us/step - loss: 0.5681
Epoch 52/200
22868/22868 [============= ] - Os 18us/step - loss: 0.5641
Epoch 53/200
22868/22868 [============= ] - 1s 23us/step - loss: 0.5600
Epoch 54/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5560
Epoch 55/200
22868/22868 [============= ] - Os 19us/step - loss: 0.5520
Epoch 56/200
22868/22868 [============== ] - Os 17us/step - loss: 0.5481
Epoch 57/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.5443
Epoch 58/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5406
Epoch 59/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5370
Epoch 60/200
Epoch 61/200
Epoch 62/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5275
Epoch 63/200
22868/22868 [============= ] - Os 16us/step - loss: 0.5247
Epoch 64/200
22868/22868 [============= ] - Os 16us/step - loss: 0.5220
Epoch 65/200
22868/22868 [============== ] - Os 17us/step - loss: 0.5195
Epoch 66/200
22868/22868 [============== ] - Os 16us/step - loss: 0.5171
Epoch 67/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5149
Epoch 68/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.5128
Epoch 69/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.5108
Epoch 70/200
22868/22868 [============= ] - Os 17us/step - loss: 0.5090
Epoch 71/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.5073
Epoch 72/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.5056
Epoch 73/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.5040
Epoch 74/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.5026
Epoch 75/200
```

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22868/22868 [============== ] - Os 17us/step - loss: 0.5012
Epoch 76/200
22868/22868 [============= ] - Os 16us/step - loss: 0.5000
Epoch 77/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4988
Epoch 78/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4977
Epoch 79/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4966
Epoch 80/200
22868/22868 [============== ] - Os 17us/step - loss: 0.4956
Epoch 81/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4947
Epoch 82/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4939
Epoch 83/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4930
Epoch 84/200
Epoch 85/200
Epoch 86/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4908
Epoch 87/200
Epoch 88/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4897
Epoch 89/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4890
Epoch 90/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4885
Epoch 91/200
22868/22868 [============== ] - Os 17us/step - loss: 0.4881
Epoch 92/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4876
Epoch 93/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4872
Epoch 94/200
22868/22868 [============== ] - Os 17us/step - loss: 0.4868
Epoch 95/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4863
Epoch 96/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.4860
Epoch 97/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4856
Epoch 98/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4852
Epoch 99/200
```

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22868/22868 [============= ] - Os 17us/step - loss: 0.4850
Epoch 100/200
Epoch 101/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4843
Epoch 102/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4840
Epoch 103/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4837
Epoch 104/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4834
Epoch 105/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4832
Epoch 106/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4829
Epoch 107/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4827
Epoch 108/200
Epoch 109/200
Epoch 110/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4821
Epoch 111/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4818
Epoch 112/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4817
Epoch 113/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4814
Epoch 114/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4814
Epoch 115/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4812
Epoch 116/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4810
Epoch 117/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4808
Epoch 118/200
22868/22868 [============== ] - Os 17us/step - loss: 0.4806
Epoch 119/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4806
Epoch 120/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4804
Epoch 121/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4802
Epoch 122/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4802
Epoch 123/200
```

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22868/22868 [============= ] - Os 16us/step - loss: 0.4800
Epoch 124/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4798
Epoch 125/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4798
Epoch 126/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4797
Epoch 127/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4795
Epoch 128/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4794
Epoch 129/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4792
Epoch 130/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4791
Epoch 131/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4790
Epoch 132/200
Epoch 133/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4788
Epoch 134/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4787
Epoch 135/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4786
Epoch 136/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4785
Epoch 137/200
22868/22868 [============= ] - 0s 18us/step - loss: 0.4784
Epoch 138/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4784
Epoch 139/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4783
Epoch 140/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4781
Epoch 141/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4780
Epoch 142/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4779
Epoch 143/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4779
Epoch 144/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4778
Epoch 145/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4777
Epoch 146/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4776
Epoch 147/200
```

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22868/22868 [============= ] - Os 17us/step - loss: 0.4775
Epoch 148/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4775
Epoch 149/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4774
Epoch 150/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4773
Epoch 151/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4772
Epoch 152/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4771
Epoch 153/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4771
Epoch 154/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4770
Epoch 155/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4769
Epoch 156/200
Epoch 157/200
Epoch 158/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4767
Epoch 159/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4766
Epoch 160/200
22868/22868 [============== ] - Os 17us/step - loss: 0.4766
Epoch 161/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4765
Epoch 162/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4764
Epoch 163/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4763
Epoch 164/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4763
Epoch 165/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4762
Epoch 166/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4762
Epoch 167/200
22868/22868 [============== ] - Os 17us/step - loss: 0.4761
Epoch 168/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4760
Epoch 169/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4759
Epoch 170/200
22868/22868 [============== ] - 0s 16us/step - loss: 0.4758
Epoch 171/200
```

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22868/22868 [============= ] - Os 17us/step - loss: 0.4758
Epoch 172/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4758
Epoch 173/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4757
Epoch 174/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4756
Epoch 175/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4755
Epoch 176/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4756
Epoch 177/200
22868/22868 [============= ] - 0s 16us/step - loss: 0.4754
Epoch 178/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4754
Epoch 179/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4753
Epoch 180/200
Epoch 181/200
Epoch 182/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4751
Epoch 183/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4749
Epoch 184/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4749
Epoch 185/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4749
Epoch 186/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4749
Epoch 187/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4748
Epoch 188/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4747
Epoch 189/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4746
Epoch 190/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4745
Epoch 191/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4745
Epoch 192/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4744
Epoch 193/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4742
Epoch 194/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.4743
Epoch 195/200
```

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22868/22868 [============== ] - 0s 17us/step - loss: 0.4742
Epoch 196/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4741
Epoch 197/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4740
Epoch 198/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4739
Epoch 199/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4739
Epoch 200/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4738
22868/22868 [============ ] - 1s 60us/step
Epoch 1/200
22868/22868 [============= ] - 1s 57us/step - loss: 0.6970
Epoch 2/200
22868/22868 [============== ] - Os 16us/step - loss: 0.6957
Epoch 3/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6961
Epoch 4/200
22868/22868 [============= ] - Os 16us/step - loss: 0.6952
Epoch 5/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6954
Epoch 6/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6955
Epoch 7/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6945
Epoch 8/200
22868/22868 [============= ] - Os 17us/step - loss: 0.6957
Epoch 9/200
22868/22868 [============ ] - Os 17us/step - loss: 0.6954
Epoch 10/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6947
Epoch 11/200
Epoch 12/200
Epoch 13/200
Epoch 14/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6964
Epoch 15/200
22868/22868 [============== ] - 0s 17us/step - loss: 0.6962
Epoch 16/200
Epoch 17/200
22868/22868 [============== ] - Os 17us/step - loss: 0.6955
Epoch 18/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.6947
```

Epoch 19/200				
-	[======]	_	0s	16us/step - loss: 0.6955
Epoch 20/200				
-	[======]	_	0s	17us/step - loss: 0.6964
Epoch 21/200				•
	[=======]	_	0s	16us/step - loss: 0.6942
Epoch 22/200				•
22868/22868	[======]	-	0s	17us/step - loss: 0.6966
Epoch 23/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.6953
Epoch 24/200				
22868/22868	[======]	-	0s	17us/step - loss: 0.6949
Epoch 25/200				
22868/22868	[======]	-	0s	16us/step - loss: 0.5656
Epoch 26/200				
22868/22868	[======]	-	0s	17us/step - loss: 0.5175
Epoch 27/200				
22868/22868	[======]	-	0s	17us/step - loss: 0.5209
Epoch 28/200				
	[=====]	-	0s	17us/step - loss: 0.5336
Epoch 29/200				
	[=====]	-	0s	17us/step - loss: 0.5297
Epoch 30/200				
	[=====]	-	0s	17us/step - loss: 0.5321
Epoch 31/200				
	[=====]	-	0s	17us/step - loss: 0.5217
Epoch 32/200				
	[=====]	-	0s	17us/step - loss: 0.5222
Epoch 33/200			_	
	[======]	-	0s	16us/step - loss: 0.5233
Epoch 34/200			_	45 /
	[======]	-	0s	17us/step - loss: 0.5251
Epoch 35/200			_	45 4
	[======]	-	0s	17us/step - loss: 0.5303
Epoch 36/200			^	47 /
	[=======]	-	US	1/us/step - loss: 0.5203
Epoch 37/200	[=======]		۸-	17/
		_	US	1/us/step - 10ss: 0.5225
Epoch 38/200	[======]	_	٥٥	17ug/gton - logg: 0 5242
Epoch 39/200			US	1/us/step - 10ss. 0.5242
_	[======]	_	۸a	17ug/gtop = logg: 0 5263
Epoch 40/200			US	1/us/step - 10ss. 0.5265
-	[======]	_	۸a	16ug/gtop = logg: 0 5226
Epoch 41/200		_	US	10us/step = 10ss. 0.0220
	[======]	_	۸e	17us/sten - loss 0 5332
Epoch 42/200			OD	1,45,50eh 1055. 0.0002
_	[======]	_	0 <	17us/sten - loss: 0 5014
			JB	1. 45, 500p 1055. 0.0214

Epoch 43/200				
-	[======]	_	0s	17us/step - loss: 0.5252
Epoch 44/200				
-	[======]	_	0s	17us/step - loss: 0.5207
Epoch 45/200				•
	[=======]	_	0s	17us/step - loss: 0.5170
Epoch 46/200				-
22868/22868	[=======]	-	0s	17us/step - loss: 0.5120
Epoch 47/200				
22868/22868	[======]	-	0s	17us/step - loss: 0.4922
Epoch 48/200				
22868/22868	[======]	-	0s	17us/step - loss: 0.4931
Epoch 49/200				
	[=====]	-	0s	16us/step - loss: 0.4955
Epoch 50/200				
	[=====]	-	0s	17us/step - loss: 0.4974
Epoch 51/200				
	[=====]	-	0s	17us/step - loss: 0.4923
Epoch 52/200				
	[=====]	-	0s	17us/step - loss: 0.4937
Epoch 53/200				
	[]	-	0s	16us/step - loss: 0.4900
Epoch 54/200				
	[]	-	0s	17us/step - loss: 0.4916
Epoch 55/200				
	[=====]	-	0s	17us/step - loss: 0.4932
Epoch 56/200			_	
	[======]	-	0s	17us/step - loss: 0.4946
Epoch 57/200			^	47 /
	[======]	-	Us	1/us/step - loss: 0.4945
Epoch 58/200			0 -	16/
	[======]	_	US	Tous/step - Toss: 0.4946
Epoch 59/200	[======]		٥	16::g/gton logg: 0.4064
Epoch 60/200		_	US	Tous/step - Toss: 0.4964
	[======]	_	۸a	16ug/gtop = logg: 0 4000
Epoch 61/200			05	Tous/step = 10ss. 0.4990
-	[======]	_	Λe	16us/stan - loss: 0 4993
Epoch 62/200			V.S	1005/50ep 1055. 0.4000
-	[======]	_	٥s	17us/sten - loss: 0 4934
Epoch 63/200			O.D	1746, 5000 1055. 0.1001
_	[=====]	_	٥s	16us/sten - loss: 0 4979
Epoch 64/200			Ů.	Toda, book Toda. C. 1818
-	[=====]	_	0s	17us/step - loss: 0.4952
Epoch 65/200				
	[=====]	_	0s	17us/step - loss: 0.4966
Epoch 66/200				
_	[======]	_	0s	16us/step - loss: 0.4918
				<del>-</del>

Epoch 67/200				
-	[======]	_	0s	17us/step - loss: 0.4950
Epoch 68/200				
-	[======]	_	0s	16us/step - loss: 0.4988
Epoch 69/200				•
	[=======]	_	0s	16us/step - loss: 0.4913
Epoch 70/200				•
22868/22868	[=======]	-	0s	17us/step - loss: 0.4949
Epoch 71/200				
22868/22868	[======]	-	0s	17us/step - loss: 0.4970
Epoch 72/200				
22868/22868	[======]	-	0s	17us/step - loss: 0.5085
Epoch 73/200				
	[=====]	-	0s	17us/step - loss: 0.5057
Epoch 74/200				
	[=====]	-	0s	16us/step - loss: 0.5067
Epoch 75/200				
	[=====]	-	0s	17us/step - loss: 0.5028
Epoch 76/200				
	[=====]	-	0s	16us/step - loss: 0.4973
Epoch 77/200				
	[]	-	0s	16us/step - loss: 0.5014
Epoch 78/200				
	[]	-	0s	17us/step - loss: 0.4953
Epoch 79/200				
	[=====]	-	0s	16us/step - loss: 0.4964
Epoch 80/200			_	
	[=====]	-	0s	16us/step - loss: 0.4972
Epoch 81/200			^	47 /
	[======]	-	Us	1/us/step - loss: 0.4982
Epoch 82/200	[======]		۸-	17/
		_	US	1/us/step - 10ss: 0.4915
Epoch 83/200	[======]		٥	16::g/gton logg: 0.4070
Epoch 84/200		_	US	Tous/step - Toss: 0.4970
	[======]	_	۸a	17us/stan = loss: 0 /960
Epoch 85/200			US	17us/scep 10ss. 0.4300
-	[======]	_	۸q	16us/sten - loss: 0 4928
Epoch 86/200			OB	1045, 5000 1055. 0.4520
-	[=====]	_	0s	17us/step - loss: 0.4989
Epoch 87/200			Ů.	1. ab, beep 1855. C. 1866
	[]	_	0s	16us/step - loss: 0.4974
Epoch 88/200			Ů.	10ab, 200p 10bb. 0.10.1
-	[=====]	_	0s	17us/step - loss: 0.4985
Epoch 89/200				
	[=====]	_	0s	17us/step - loss: 0.4962
Epoch 90/200				
	[======]	_	0s	17us/step - loss: 0.4954
				<del>-</del>

Epoch 91/200
22868/22868 [===================================
Epoch 92/200
22868/22868 [==========] - Os 17us/step - loss: 0.4984
Epoch 93/200
22868/22868 [============] - Os 17us/step - loss: 0.5003
Epoch 94/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4975
Epoch 95/200
22868/22868 [============] - Os 16us/step - loss: 0.4927
Epoch 96/200
22868/22868 [===================================
Epoch 97/200
22868/22868 [===================================
Epoch 98/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4956
Epoch 99/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4964
Epoch 100/200
22868/22868 [===================================
Epoch 101/200
22868/22868 [===================================
Epoch 102/200
22868/22868 [===================================
Epoch 103/200
22868/22868 [===================================
Epoch 104/200
22868/22868 [===================================
Epoch 105/200
22868/22868 [===================================
Epoch 106/200
22868/22868 [===================================
Epoch 107/200
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Epoch 108/200
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Epoch 109/200
22868/22868 [===================================
Epoch 110/200
22868/22868 [===================================
Epoch 111/200
22868/22868 [===================================
Epoch 112/200
22868/22868 [===================================
Epoch 113/200
22868/22868 [===================================
Epoch 114/200
22868/22868 [===================================
22000, 22000 [

Epoch 115/200		_			_	
22868/22868 [========]	-	0s	17us/step	-	loss:	0.4946
Epoch 116/200						
22868/22868 [=======]	-	0s	17us/step	-	loss:	0.4971
Epoch 117/200						
22868/22868 [=======]	-	0s	17us/step	-	loss:	0.5005
Epoch 118/200						
22868/22868 [=======]	-	0s	16us/step	-	loss:	0.5003
Epoch 119/200						
22868/22868 [======]	-	0s	17us/step	-	loss:	0.5010
Epoch 120/200						
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.4944
Epoch 121/200						
22868/22868 [===================================	-	0s	17us/step	_	loss:	0.4953
Epoch 122/200						
22868/22868 [===================================	-	0s	17us/step	_	loss:	0.4967
Epoch 123/200			_			
22868/22868 [===================================	_	0s	16us/step	_	loss:	0.4954
Epoch 124/200			-			
22868/22868 [===================================	_	0s	17us/step	_	loss:	0.4944
Epoch 125/200						
22868/22868 [===========]	_	0s	17us/step	_	loss:	0.4953
Epoch 126/200						
22868/22868 [=========]	_	0s	17us/step	_	loss:	0.4912
Epoch 127/200						
22868/22868 [===============================	_	0s	17us/step	_	loss:	0.4941
Epoch 128/200						
22868/22868 [=======]	_	0s	17us/step	_	loss:	0.4951
Epoch 129/200			1. dz, z c c p			
22868/22868 [========]	_	0s	17us/step	_	loss:	0.4935
Epoch 130/200		Ü	1, db, boop		1000.	0.1000
22868/22868 [========]	_	0s	17us/step	_	loss:	0.4957
Epoch 131/200		Ů.	1, db, boop		1000.	0.1001
22868/22868 [=======]	_	09	17119/sten	_	1088.	0 4914
Epoch 132/200		O.D	IT db/ boop		TODD.	0.1011
22868/22868 [=======]	_	09	16ug/gten	_	1088.	0 4997
Epoch 133/200		OB	rous, step		TOBB.	0.1001
22868/22868 [========]	_	۸e	16119/9ten	_	1000.	0 4941
Epoch 134/200		V.S	rous/scep		1055.	0.4341
22868/22868 [===================================	_	۸a	1711g/gton	_	loggi	0 /055
Epoch 135/200		OS	17us/scep		TOSS.	0.4300
22868/22868 [=======]		٥٥	17ug/gton	_	1000.	0 4006
Epoch 136/200		US	17us/scep		1055.	0.4330
22868/22868 [========]		٥٥	17ug/gton	_	1000.	0 4057
	_	US	ııus/step	_	TOSS:	0.4957
Epoch 137/200 22868/22868 [========]		0~	17ng /g+		1.00-1	0 4060
	_	US	r/us/step	_	TOSS:	0.4900
Epoch 138/200		0-	17.00/5+5		1	0 4046
22868/22868 [===================================	_	US	1/us/step	_	TOSS:	0.4946

Epoch 139/200		_			_	
22868/22868 [===================================	-	0s	17us/step	_	loss:	0.4937
Epoch 140/200		_			_	
22868/22868 [=======]	-	0s	17us/step	_	loss:	0.5020
Epoch 141/200						
22868/22868 [======]	-	0s	17us/step	-	loss:	0.4931
Epoch 142/200						
22868/22868 [======]	-	0s	16us/step	-	loss:	0.4954
Epoch 143/200						
22868/22868 [======]	-	0s	16us/step	-	loss:	0.5026
Epoch 144/200						
22868/22868 [=======]	-	0s	17us/step	-	loss:	0.4984
Epoch 145/200						
22868/22868 [=======]	-	0s	17us/step	-	loss:	0.4950
Epoch 146/200						
22868/22868 [=======]	-	0s	16us/step	-	loss:	0.4890
Epoch 147/200						
22868/22868 [===========]	-	0s	17us/step	-	loss:	0.4888
Epoch 148/200						
22868/22868 [=======]	-	0s	16us/step	-	loss:	0.4924
Epoch 149/200						
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.4899
Epoch 150/200						
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.4939
Epoch 151/200						
22868/22868 [===========]	-	0s	16us/step	-	loss:	0.4911
Epoch 152/200						
22868/22868 [===========]	-	0s	16us/step	-	loss:	0.4946
Epoch 153/200						
22868/22868 [===================================	-	0s	16us/step	-	loss:	0.4930
Epoch 154/200						
22868/22868 [===========]	-	0s	16us/step	-	loss:	0.4976
Epoch 155/200						
22868/22868 [===================================	-	0s	17us/step	_	loss:	0.4945
Epoch 156/200						
22868/22868 [===================================	-	0s	16us/step	_	loss:	0.4937
Epoch 157/200						
22868/22868 [===================================	-	0s	17us/step	_	loss:	0.4926
Epoch 158/200						
22868/22868 [===================================	-	0s	17us/step	_	loss:	0.4953
Epoch 159/200						
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.4963
Epoch 160/200						
22868/22868 [===================================	-	0s	16us/step	-	loss:	0.4960
Epoch 161/200			_			
22868/22868 [===================================	-	0s	17us/step	-	loss:	0.4936
Epoch 162/200			•			
22868/22868 [===================================	-	0s	17us/step	_	loss:	0.4943
			-			

Epoch 163/200				
22868/22868 [===================================	] –	0s	17us/step - loss: 0.	4949
Epoch 164/200				
22868/22868 [===================================	] –	0s	16us/step - loss: 0.	5012
Epoch 165/200				
22868/22868 [===================================	] –	0s	17us/step - loss: 0.	4940
Epoch 166/200				
22868/22868 [===================================	] –	0s	17us/step - loss: 0.	4979
Epoch 167/200			-	
22868/22868 [===================================	] –	0s	17us/step - loss: 0.	4975
Epoch 168/200			•	
22868/22868 [=============	1 –	0s	16us/step - loss: 0.	4919
Epoch 169/200			True, True	
22868/22868 [=============	1 –	0s	16us/step = loss: 0.	4911
Epoch 170/200	,	Ů.	10as, 20op 10ss. 0.	1011
22868/22868 [===================================	1 –	Ô٩	1711s/sten - loss: 0	4905
Epoch 171/200	ı	OB	17db/b0cp 10bb. 0.	1000
22868/22868 [===================================	1 –	٥q	1711s/sten - loss: 0	4936
Epoch 172/200	ı	OB	17db/b0cp 10bb. 0.	1000
22868/22868 [===================================	1 _	۸e	16ug/gton - logg: 0	5037
Epoch 173/200	J	OS	10us/step 10ss. 0.	3031
22868/22868 [===================================	1 _	Λa	17ug/gton = logg: 0	1060
Epoch 174/200	J	US	17us/scep = 10ss. 0.	4300
22868/22868 [===================================	1 _	Λα	17ug/gton = logg: 0	1010
Epoch 175/200	J	OS	17ds/step 10ss. 0.	4343
22868/22868 [===================================	1 _	Λα	16ug/ston = logg: 0	1003
Epoch 176/200	J	US	Tous/step = Toss. O.	4303
22868/22868 [===================================	1 _	٥٥	17ug/gton - logg: 0	1006
Epoch 177/200	J	US	17ds/step = 10ss. 0.	4320
22868/22868 [===================================	1	٥٥	17va/aton logg. 0	EVSO
Epoch 178/200	J –	US	17us/step - 10ss. 0.	3032
22868/22868 [===================================	1	٥٥	17va/aton logg. 0	4002
	, –	US	17us/step - 10ss: 0.	4903
Epoch 179/200	1	Ο-	17/	1011
22868/22868 [===================================	J –	US	Trus/step - loss: 0.	4914
Epoch 180/200 22868/22868 [===================================	1	Λ-	16	4017
	J –	US	Tous/step - Toss: 0.	4917
Epoch 181/200	1	0 -	17/	1010
22868/22868 [===================================	J –	US	1/us/step - loss: 0.	4940
Epoch 182/200	,	^	10 / 1	4000
22868/22868 [===================================	J –	US	lous/step - loss: 0.	4933
Epoch 183/200	,	^	10 / 1	4000
22868/22868 [===================================	J –	US	lous/step - loss: 0.	4883
Epoch 184/200	,	^	47 / 1	400=
22868/22868 [===================================	J –	Us	1/us/step - loss: 0.	4995
Epoch 185/200	,	^	47 / 1 3 0	4054
22868/22868 [===================================	J –	Us	1/us/step - loss: 0.	4954
Epoch 186/200	,	^	47 / 1	4040
22868/22868 [===================================	J –	Us	irus/step - loss: 0.	4949

```
Epoch 187/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4912
Epoch 188/200
Epoch 189/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4957
Epoch 190/200
22868/22868 [=============== ] - Os 17us/step - loss: 0.4983
Epoch 191/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4910
Epoch 192/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4952
Epoch 193/200
22868/22868 [============ ] - Os 17us/step - loss: 0.4954
Epoch 194/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4911
Epoch 195/200
22868/22868 [============= ] - 0s 17us/step - loss: 0.4923
Epoch 196/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4931
Epoch 197/200
22868/22868 [============= ] - Os 16us/step - loss: 0.5028
Epoch 198/200
22868/22868 [============= ] - Os 16us/step - loss: 0.4946
Epoch 199/200
22868/22868 [============= ] - Os 17us/step - loss: 0.4989
Epoch 200/200
22868/22868 [============ ] - 1s 63us/step
In [41]: color = []
       for score in scores:
          if score == min(scores):
             color.append('limegreen')
          else:
             color.append('dodgerblue')
       patch1 = mpatches.Patch(color='limegreen', label='Mimimum')
       plt.legend(handles=[patch1], loc = 'best')
       plt.bar(optimizers, scores, width = .8, color = color)
       plt.xlabel('Optimizer')
       plt.ylabel('Loss Score')
       plt.title('Loss Scores For 4 Layer Neural Networks with 15 Neurons Each, Varying Option
       plt.show()
```

0.5 - 0.4 - 0.5 - 0.1 - 0.0 - SGD RMSprop Adadelta Adamax

Loss Scores For 4 Layer Neural Networks with 15 Neurons Each, Varying Optimizers

Looking at the graph above, the Adadelta optimizer produces the best loss score.

## 2.0.5 Final Thoughts

Overall, I am a little disappointed that the model didn't perform better. I wanted to use large batch sizes and small epochs to speed up the process, and am wondering if that contributed to the loss score not being lower. Additionally, I wonder if using larger ranges for optimizing the number of layers and neurons would have improved model performance as well.

Optimizer