DL Lab 2

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```
import pandas as pd
        import numpy as np
        df = pd.read csv("liver patient.csv")
        df.head()
Out[9]:
            Age Gender Total_Bilirubin Direct_Bilirubin Alkaline_Phosphotase Alamine_Aminotransferase Aspartate_Aminotransferase Total_Protic
             65
                 Female
                                    0.7
                                                   0.1
                                                                        187
                                                                                                   16
                                                                                                                              18
                   Male
                                   10.9
             62
                                                    5.5
                                                                        699
                                                                                                   64
                                                                                                                             100
                                    7.3
                                                   4.1
                                                                        490
                                                                                                   60
                                                                                                                              68
             62
                   Male
             58
                   Male
                                    1.0
                                                   0.4
                                                                        182
                                                                                                   14
                                                                                                                              20
             72
                   Male
                                    3.9
                                                   2.0
                                                                        195
                                                                                                   27
                                                                                                                              59
```

Question 1

Preprocessing

```
In [10]: df.drop('Gender', axis=1, inplace=True)
df
```

ut[10]:		Age	Total_Bilirubin	Direct_Bilirubin	Alkaline_Phosphotase	Alamine_Aminotransferase	Aspartate_Aminotransferase	Total_Protiens	F
	0	65	0.7	0.1	187	16	18	6.8	
	1	62	10.9	5.5	699	64	100	7.5	
	2	62	7.3	4.1	490	60	68	7.0	
	3	58	1.0	0.4	182	14	20	6.8	
	4	72	3.9	2.0	195	27	59	7.3	
	•••								
	578	60	0.5	0.1	500	20	34	5.9	
	579	40	0.6	0.1	98	35	31	6.0	
	580	52	0.8	0.2	245	48	49	6.4	
	581	31	1.3	0.5	184	29	32	6.8	
	582	38	1.0	0.3	216	21	24	7.3	
	E02 ×		10 columns						

583 rows × 10 columns

In [11]: from sklearn.preprocessing import MinMaxScaler
MM = MinMaxScaler()
x = MM.fit_transform(df)

```
Out[11]: array([[0.70930233, 0.00402145, 0. , ..., 0.52173913, 0.24
                 1.
                [0.6744186 , 0.14075067, 0.2755102 , ..., 0.5
                                                                   , 0.176
                 1.
                [0.6744186, 0.0924933, 0.20408163, ..., 0.52173913, 0.236
                 1.
                           1,
                [0.55813953, 0.00536193, 0.00510204, ..., 0.5
                                                                   , 0.28
                 1.
                [0.31395349, 0.01206434, 0.02040816, ..., 0.54347826, 0.28
                           1,
                [0.39534884, 0.0080429 , 0.01020408, ..., 0.76086957, 0.48
In [12]: from sklearn.model selection import train test split
         X = x[:, 0:9]
         Y = x[:, 9]
         X train, X test, y train, y test = train test split(X, Y, test size = 0.2, random state=1)
```

Train using LogisticRegression

0.717948717948718

Train using Keras

```
In [15]: import keras
         from keras.models import Sequential
         from keras.layers import Dense
        model = Sequential()
In [16]:
         model.add(Dense(1, activation='sigmoid', input shape=(9,)))
         model.summary()
        e:\VIT Study Materials\SEM 3\Deep Learning\LAB\.venv\Lib\site-packages\keras\src\layers\core\dense.py:93: UserWarning: Do not p
        ass an `input shape`/`input dim` argument to a layer. When using Sequential models, prefer using an `Input(shape)` object as th
        e first layer in the model instead.
          super(). init (activity regularizer=activity regularizer, **kwargs)
       Model: "sequential"
         Layer (type)
                                             Output Shape
                                                                              Param #
         dense (Dense)
                                             (None, 1)
                                                                                    10
        Total params: 10 (40.00 B)
```

```
Total params: 10 (40.00 B)

Trainable params: 10 (40.00 B)

Non-trainable params: 0 (0.00 B)
```

```
In [17]: from keras.optimizers import SGD
    model.compile(loss='BinaryCrossentropy', optimizer='SGD', metrics= ['accuracy'])
    model.fit(X_train, y_train, batch_size=50, epochs = 100, verbose = 1, validation_data= (X_test, y_test))
```

•	1/100	4. 20 / /
•	2/100	1s 20ms/step - accuracy: 0.6891 - loss: 0.6291 - val_accuracy: 0.6838 - val_loss: 0.6397
Epoch	3/100	0s 9ms/step - accuracy: 0.6835 - loss: 0.6367 - val_accuracy: 0.6923 - val_loss: 0.6378
=	4/100	0s 9ms/step - accuracy: 0.6715 - loss: 0.6420 - val_accuracy: 0.6923 - val_loss: 0.6362
	5/100	0s 9ms/step - accuracy: 0.6577 - loss: 0.6447 - val_accuracy: 0.7009 - val_loss: 0.6343
=	6/100	0s 9ms/step - accuracy: 0.6706 - loss: 0.6287 - val_accuracy: 0.7009 - val_loss: 0.6328
10/10		0s 9ms/step - accuracy: 0.7018 - loss: 0.6253 - val_accuracy: 0.7009 - val_loss: 0.6316
10/10		0s 8ms/step - accuracy: 0.6786 - loss: 0.6270 - val_accuracy: 0.7009 - val_loss: 0.6302
10/10		0s 8ms/step - accuracy: 0.6756 - loss: 0.6337 - val_accuracy: 0.7009 - val_loss: 0.6288
10/10		0s 8ms/step - accuracy: 0.6760 - loss: 0.6369 - val_accuracy: 0.7009 - val_loss: 0.6277
10/10		0s 9ms/step - accuracy: 0.6747 - loss: 0.6401 - val_accuracy: 0.7094 - val_loss: 0.6267
10/10		0s 9ms/step - accuracy: 0.7012 - loss: 0.6214 - val_accuracy: 0.7094 - val_loss: 0.6259
	12/100	0s 9ms/step - accuracy: 0.7084 - loss: 0.6063 - val_accuracy: 0.7094 - val_loss: 0.6249
•	13/100	0s 8ms/step - accuracy: 0.7129 - loss: 0.6064 - val_accuracy: 0.7094 - val_loss: 0.6241
Epoch 10/10	14/100	0s 9ms/step - accuracy: 0.6926 - loss: 0.6236 - val_accuracy: 0.7094 - val_loss: 0.6234
•	15/100	0s 9ms/step - accuracy: 0.7170 - loss: 0.6003 - val_accuracy: 0.7094 - val_loss: 0.6226
Epoch	16/100	Os 9ms/step - accuracy: 0.6944 - loss: 0.6188 - val_accuracy: 0.7094 - val_loss: 0.6221
Epoch	17/100	0s 8ms/step - accuracy: 0.6939 - loss: 0.6235 - val_accuracy: 0.7094 - val_loss: 0.6216
=	18/100	Os 9ms/step - accuracy: 0.6890 - loss: 0.6225 - val_accuracy: 0.7094 - val_loss: 0.6210
Epoch	19/100	
•	20/100	0s 9ms/step - accuracy: 0.7441 - loss: 0.5944 - val_accuracy: 0.7094 - val_loss: 0.6205 0s 9ms/step - accuracy: 0.7441 - loss: 0.6106
10/10 Epoch	21/100	0s 9ms/step - accuracy: 0.7045 - loss: 0.6116 - val_accuracy: 0.7094 - val_loss: 0.6199

10/10		0s	8ms/step -	accuracy:	0.6832 -	loss:	0.6285 -	val_accuracy:	0.7094	- val loss:	0.6195
	22/100							_ ,		_	
10/10		0s	8ms/step -	accuracy:	0.7174 -	loss:	0.6007 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.6191
	23/100					_		_			
		0s	8ms/step -	accuracy:	0.7144 -	loss:	0.6070 -	val_accuracy:	0.7094	- val_loss:	0.6187
•	24/100	Q.c	Ome/ston	accupacy:	0 7267	10551	0 5062	val_accuracy:	0 7004	val locci	A 6102
	25/100	03	ollis/step -	accuracy.	0.7207 -	1055.	0.3302 -	vai_accuracy.	0.7034	- vai_1055.	0.0102
•		0s	8ms/step -	accuracy:	0.7155 -	loss:	0.6046 -	val_accuracy:	0.7094	- val loss:	0.6179
Epoch	26/100		·							_	
		0s	8ms/step -	accuracy:	0.7054 -	loss:	0.6093 -	val_accuracy:	0.7094	- val_loss:	0.6174
	27/100					_		_			
		0s	8ms/step -	accuracy:	0.7088 -	loss:	0.6090 -	val_accuracy:	0.7094	- val_loss:	0.6171
	28/100	۵c	7ms/stan -	accinacy.	0 7176 -	1000	0 6025 -	val_accuracy:	0 7001	- val loss:	0 6167
	29/100	03	/1113/3cep -	accuracy.	0.7170 -	1033.	0.0025 -	vai_accuracy.	0.7094	- vai_1033.	0.0107
•		0s	8ms/step -	accuracy:	0.6848 -	loss:	0.6231 -	val_accuracy:	0.7094	- val loss:	0.6164
Epoch	30/100		·	-						_	
=		0s	7ms/step -	accuracy:	0.7018 -	loss:	0.6183 -	val_accuracy:	0.7094	- val_loss:	0.6161
	31/100	_				-		_			
		0s	7ms/step -	accuracy:	0.7198 -	loss:	0.6014 -	val_accuracy:	0.7094	- val_loss:	0.6158
•	32/100	95	7ms/sten -	accuracy:	0 7115 -	loss	0 6050 -	val_accuracy:	0 7094	- val loss:	0 6156
	33/100	03	7 III 3 / 3 CCP	accar acy.	0.7115	1033.	0.0050	var_accaracy.	0.7054	va1_1033.	0.0130
10/10		0s	7ms/step -	accuracy:	0.7026 -	loss:	0.6120 -	val_accuracy:	0.7094	- val_loss:	0.6153
	34/100										
		0s	7ms/step -	accuracy:	0.7082 -	loss:	0.6052 -	val_accuracy:	0.7094	- val_loss:	0.6151
•	35/100	00	Cms/ston	2661122614	0 7260	10001	0 5045	val accumacy.	0 7004	val lass.	0 (140
	36/100	05	oms/step -	accuracy:	0.7208 -	1055:	0.5945 -	val_accuracy:	0.7094	- vai_1055:	0.6149
		0s	8ms/step -	accuracy:	0.7305 -	loss:	0.5980 -	val accuracy:	0.7094	- val loss:	0.6148
	37/100		, ,	,				_ ,		_	
10/10		0s	8ms/step -	accuracy:	0.6910 -	loss:	0.6183 -	val_accuracy:	0.7094	- val_loss:	0.6146
•	38/100										
		0s	8ms/step -	accuracy:	0.6954 -	loss:	0.6184 -	val_accuracy:	0.7094	- val_loss:	0.6144
10/10	39/100	Qc.	7ms/stan	acciinacy:	0 7107	1000	0 6028	val_accuracy:	0 7001	- val loss.	0 61/1
	40/100	03	/ms/scep -	accui acy.	0./10/ -	1033.	0.0020 -	var_accuracy.	0.7094	- var_1035.	0.0141
10/10		0s	7ms/step -	accuracy:	0.7167 -	loss:	0.6019 -	val_accuracy:	0.7094	- val_loss:	0.6139
	41/100		·	•				_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.7130 -	loss:	0.6073 -	val_accuracy:	0.7094	- val_loss:	0.6137

	42/100	0-	7		0.6000	1	0 6271		0.7004		0 6136
	43/100			-				- val_accuracy:		_	
Epoch	44/100			-				- val_accuracy:		_	
Epoch	45/100	0s :	7ms/step -	accuracy:	0.7203 -	loss:	0.6032	- val_accuracy:	0.7094 -	val_loss:	0.6132
	46/100	0s 9	9ms/step -	accuracy:	0.7214 -	loss:	0.5961	- val_accuracy:	0.7094 -	val_loss:	0.6131
	47/100	0s :	7ms/step -	accuracy:	0.6636 -	loss:	0.6459	- val_accuracy:	0.7094 -	val_loss:	0.6129
10/10		0s :	11ms/step -	- accuracy	: 0.7254 -	loss:	0.5874	- val_accuracy	: 0.7094 -	val_loss:	0.6127
10/10		0s 8	8ms/step -	accuracy:	0.7024 -	loss:	0.6100	- val_accuracy:	0.7094 -	val_loss:	0.6126
10/10		0s :	7ms/step -	accuracy:	0.6742 -	loss:	0.6381	- val_accuracy:	0.7094 -	val_loss:	0.6124
10/10	•	0s 8	8ms/step -	accuracy:	0.7325 -	loss:	0.5887	- val_accuracy:	0.7094 -	val_loss:	0.6123
10/10		0s 8	8ms/step -	accuracy:	0.7042 -	loss:	0.6069	- val_accuracy:	0.7094 -	val_loss:	0.6122
10/10	52/100	0s 8	8ms/step -	accuracy:	0.7038 -	loss:	0.6059	- val_accuracy:	0.7094 -	val_loss:	0.6121
10/10		0s 8	8ms/step -	accuracy:	0.7225 -	loss:	0.5914	- val_accuracy:	0.7094 -	val_loss:	0.6120
	54/100	0s :	7ms/step -	accuracy:	0.7123 -	loss:	0.6018	- val_accuracy:	0.7094 -	val_loss:	0.6119
Epoch 10/10	55/100	0s 8	8ms/step -	accuracy:	0.7239 -	loss:	0.5888	- val_accuracy:	0.7094 -	val_loss:	0.6118
	56/100	0s :	7ms/step -	accuracy:	0.7036 -	loss:	0.6104	- val_accuracy:	0.7094 -	val_loss:	0.6116
	57/100 	0s 8	8ms/step -	accuracy:	0.6939 -	loss:	0.6146	- val_accuracy:	0.7094 -	val_loss:	0.6115
	58/100	0s :	7ms/step -	accuracy:	0.6982 -	loss:	0.6149	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6114
Epoch 10/10	59/100 	0s :	7ms/step -	accuracy:	0.7070 -	loss:	0.6046	<pre>- val_accuracy:</pre>	0.7094 -	val loss:	0.6113
	60/100			-				- val_accuracy:		_	
	61/100			-				<pre>- val_accuracy:</pre>		_	
	62/100	-5	, с сер		11.200					- 3000.	

Epoch 63/100 10/10	10/10		0s	7ms/step -	accuracv:	0.7002 -	loss:	0.6122 -	val accuracy:	0.7094	- val loss:	0.6109
Epoch 64/100 10/10				,, o ccp		01700=		0.02				0.0202
10/10	10/10		0s	8ms/step -	accuracy:	0.7118 -	loss:	0.6021 -	val_accuracy:	0.7094	- val_loss:	0.6108
Epoch 65/100	Epoch	64/100			_							
10/10	10/10		0s	8ms/step -	accuracy:	0.7211 -	loss:	0.6016 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.6107
Epoch 66/100 10/10 0s 7ms/step - accuracy: 0.7372 - loss: 0.5837 - val_accuracy: 0.7094 - val_loss: 0.6105 Epoch 67/100 10/10 0s 7ms/step - accuracy: 0.7215 - loss: 0.5939 - val_accuracy: 0.7094 - val_loss: 0.6104 Epoch 68/100 10/10 0s 7ms/step - accuracy: 0.7087 - loss: 0.6103 - val_accuracy: 0.7094 - val_loss: 0.6103 Epoch 69/100 10/10 0s 8ms/step - accuracy: 0.6848 - loss: 0.6230 - val_accuracy: 0.7094 - val_loss: 0.6102 Epoch 70/100 10/10 0s 6ms/step - accuracy: 0.7294 - loss: 0.5922 - val_accuracy: 0.7094 - val_loss: 0.6101 Epoch 71/100 10/10 0s 7ms/step - accuracy: 0.6821 - loss: 0.6306 - val_accuracy: 0.7094 - val_loss: 0.6100 Epoch 73/100 10/10 0s 6ms/step - accuracy: 0.7088 - loss: 0.6088 - val_accuracy: 0.7094 - val_loss: 0.6090 Epoch 73/100 10/10 0s 6ms/step - accuracy: 0.7190 - loss: 0.5946 - val_accuracy: 0.7094 - val_loss: 0.6097 Epoch 74/100 10/10 0s 6ms/step - accuracy: 0.7990 - loss: 0.5946 - val_accuracy: 0.7094 - val_loss: 0.6097 Epoch 75/100 10/10 0s 6ms/step - accuracy: 0.7097 - loss: 0.6109 - val_accuracy: 0.7094 - val_loss: 0.6096 Epoch 75/100 10/10 0s 6ms/step - accuracy: 0.7066 - loss: 0.6068 - val_accuracy: 0.7094 - val_loss: 0.6096 Epoch 76/100 10/10 0s 6ms/step - accuracy: 0.7066 - loss: 0.6109 - val_accuracy: 0.7094 - val_loss: 0.6095 Epoch 77/100 10/10 0s 9ms/step - accuracy: 0.7052 - loss: 0.6145 - val_accuracy: 0.7094 - val_loss: 0.6094 Epoch 77/100 10/10 0s 9ms/step - accuracy: 0.7050 - loss: 0.6155 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 78/100 10/10 0s 7ms/step - accuracy: 0.7050 - loss: 0.6155 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100	Epoch											
10/10			0s	7ms/step -	accuracy:	0.7235 -	loss:	0.5927 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.6106
Epoch 67/100 10/10							_		_			
10/10			0s	7ms/step -	accuracy:	0.7372 -	loss:	0.5837 -	val_accuracy:	0.7094	- val_loss:	0.6105
Epoch 68/100 10/10 0s 7ms/step - accuracy: 0.7087 - loss: 0.6103 - val_accuracy: 0.7094 - val_loss: 0.6103 Epoch 69/100 10/10 0s 8ms/step - accuracy: 0.6848 - loss: 0.6230 - val_accuracy: 0.7094 - val_loss: 0.6102 Epoch 70/100 10/10 0s 6ms/step - accuracy: 0.7294 - loss: 0.5922 - val_accuracy: 0.7094 - val_loss: 0.6101 Epoch 71/100 10/10 0s 7ms/step - accuracy: 0.6821 - loss: 0.6306 - val_accuracy: 0.7094 - val_loss: 0.6100 Epoch 72/100 10/10 0s 6ms/step - accuracy: 0.7088 - loss: 0.6088 - val_accuracy: 0.7094 - val_loss: 0.6099 Epoch 73/100 10/10 0s 6ms/step - accuracy: 0.7190 - loss: 0.5946 - val_accuracy: 0.7094 - val_loss: 0.6097 Epoch 74/100 10/10 0s 6ms/step - accuracy: 0.7190 - loss: 0.5946 - val_accuracy: 0.7094 - val_loss: 0.6097 Epoch 75/100 10/10 0s 6ms/step - accuracy: 0.7997 - loss: 0.6109 - val_accuracy: 0.7094 - val_loss: 0.6096 Epoch 75/100 10/10 0s 7ms/step - accuracy: 0.7066 - loss: 0.6068 - val_accuracy: 0.7094 - val_loss: 0.6095 Epoch 76/100 10/10 0s 6ms/step - accuracy: 0.7066 - loss: 0.6109 - val_accuracy: 0.7094 - val_loss: 0.6095 Epoch 77/100 10/10 0s 9ms/step - accuracy: 0.7050 - loss: 0.6145 - val_accuracy: 0.7094 - val_loss: 0.6094 Epoch 78/100 10/10 0s 9ms/step - accuracy: 0.7050 - loss: 0.6155 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 78/100 10/10 0s 7ms/step - accuracy: 0.7050 - loss: 0.6102 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100	•		0-	7 / - t		0 7215	1	0 5030		0.7004		0 6104
10/10			05	/ms/step -	accuracy:	0./215 -	1055:	0.5939 -	vai_accuracy:	0.7094	- vai_ioss:	0.6104
Epoch 69/100 10/10 10	•		Q.c	7ms/s+on	2661102671	0 7007	10551	0 6102	val accuracy:	0 7004	val loss:	0 6102
10/10			03	/1113/3Cep -	accuracy.	0.7007 -	1055.	0.0103 -	vai_accuracy.	0.7034	- vai_1055.	0.0103
Epoch 70/100 10/10	•		۵c	2ms/sten -	accuracy:	0 6848 -	1055.	0 6230 -	val accuracy:	0 7094	- val loss.	0 6102
10/10			05	ошэ, эсср	accar acy.	0.0040	1033.	0.0230	var_accar acy.	017034	va1_1033.	0.0102
Epoch 71/100 10/10			0s	6ms/step -	accuracv:	0.7294 -	loss:	0.5922 -	val accuracy:	0.7094	- val loss:	0.6101
10/10	-			,								
10/10	•		0s	7ms/step -	accuracy:	0.6821 -	loss:	0.6306 -	val_accuracy:	0.7094	- val_loss:	0.6100
Epoch 73/100 10/10	Epoch			·	•						_	
10/10	10/10		0s	6ms/step -	accuracy:	0.7088 -	loss:	0.6088 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.6099
Epoch 74/100 10/10	Epoch	73/100										
10/10 0s 6ms/step - accuracy: 0.6997 - loss: 0.6109 - val_accuracy: 0.7094 - val_loss: 0.6096 Epoch 75/100 0s 7ms/step - accuracy: 0.7066 - loss: 0.6068 - val_accuracy: 0.7094 - val_loss: 0.6095 Epoch 76/100 0s 6ms/step - accuracy: 0.7052 - loss: 0.6145 - val_accuracy: 0.7094 - val_loss: 0.6094 Epoch 77/100 0s 9ms/step - accuracy: 0.7050 - loss: 0.6155 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 78/100 0s 7ms/step - accuracy: 0.7119 - loss: 0.6102 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100	10/10		0s	6ms/step -	accuracy:	0.7190 -	loss:	0.5946 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.6097
Epoch 75/100 10/10												
10/10			0s	6ms/step -	accuracy:	0.6997 -	loss:	0.6109 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.6096
Epoch 76/100 10/10 — Os 6ms/step - accuracy: 0.7052 - loss: 0.6145 - val_accuracy: 0.7094 - val_loss: 0.6094 Epoch 77/100 10/10 — Os 9ms/step - accuracy: 0.7050 - loss: 0.6155 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 78/100 10/10 — Os 7ms/step - accuracy: 0.7119 - loss: 0.6102 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100	•						_		_			
10/10 — Os 6ms/step - accuracy: 0.7052 - loss: 0.6145 - val_accuracy: 0.7094 - val_loss: 0.6094 Epoch 77/100 10/10 — Os 9ms/step - accuracy: 0.7050 - loss: 0.6155 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 78/100 10/10 — Os 7ms/step - accuracy: 0.7119 - loss: 0.6102 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100			0s	7ms/step -	accuracy:	0.7066 -	loss:	0.6068 -	val_accuracy:	0.7094	- val_loss:	0.6095
Epoch 77/100 10/10 — Os 9ms/step - accuracy: 0.7050 - loss: 0.6155 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 78/100 10/10 — Os 7ms/step - accuracy: 0.7119 - loss: 0.6102 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100	•		0-	C / - +		0.7053	1	0 6145		0.7004		0.6004
10/10 — Os 9ms/step - accuracy: 0.7050 - loss: 0.6155 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 78/100 10/10 — Os 7ms/step - accuracy: 0.7119 - loss: 0.6102 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100			05	oms/step -	accuracy:	0.7052 -	1055:	0.6145 -	vai_accuracy:	0.7094	- vai_ioss:	0.6094
Epoch 78/100 10/10 — Os 7ms/step - accuracy: 0.7119 - loss: 0.6102 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100	•		۵c	Oms/stan -	accuracy:	0 7050 -	1000	0 6155 -	val accuracy:	0 7001	- val loss:	0 6003
10/10 — Os 7ms/step - accuracy: 0.7119 - loss: 0.6102 - val_accuracy: 0.7094 - val_loss: 0.6093 Epoch 79/100			03	эшэ/зсер -	accui acy.	0.7030 -	1055.	0.0133 -	vai_accuracy.	0.7034	- vai_1033.	0.0093
Epoch 79/100			95	7ms/sten -	accuracy:	0.7119 -	loss:	0.6102 -	val accuracy:	0.7094	- val loss:	0.6093
	=			,о, о сер		01722		0.0202				0.0023
10/10 Os 7ms/step - accuracy: 0.7393 - loss: 0.5805 - val_accuracy: 0.7094 - val_loss: 0.6092	•	-	0s	7ms/step -	accuracy:	0.7393 -	loss:	0.5805 -	val accuracy:	0.7094	- val loss:	0.6092
Epoch 80/100									_ ,		_	
10/10 — Os 9ms/step - accuracy: 0.7054 - loss: 0.6109 - val_accuracy: 0.7094 - val_loss: 0.6091	10/10		0s	9ms/step -	accuracy:	0.7054 -	loss:	0.6109 -	val_accuracy:	0.7094	- val_loss:	0.6091
Epoch 81/100	Epoch	81/100										
10/10 — Os 7ms/step - accuracy: 0.6922 - loss: 0.6202 - val_accuracy: 0.7094 - val_loss: 0.6090	10/10		0s	7ms/step -	accuracy:	0.6922 -	loss:	0.6202 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.6090
Epoch 82/100	•											
10/10 — 0s 7ms/step - accuracy: 0.7300 - loss: 0.5835 - val_accuracy: 0.7094 - val_loss: 0.6089	10/10		0s	7ms/step -	accuracy:	0.7300 -	loss:	0.5835 -	val_accuracy:	0.7094	- val_loss:	0.6089

•	83/100	0-	0		0.7070	1	0 6015		0.7004		0 (000
10/10 Epoch	84/100	ØS	⊗ms/step -	accuracy:	0.7070 -	1055:	0.6015	- val_accuracy:	0.7094 -	vai_ioss:	0.6088
10/10		0s	6ms/step -	accuracy:	0.7048 -	loss:	0.6084	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6087
Epoch	85/100										
10/10		0s	7ms/step -	accuracy:	0.7243 -	loss:	0.5916	<pre>- val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.6086
Epoch	86/100										
10/10		0s	7ms/step -	accuracy:	0.7001 -	loss:	0.6123	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6085
•	87/100										
		0s	9ms/step -	accuracy:	0.7222 -	loss:	0.6038	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6084
Epoch	88/100										
-		0s	8ms/step -	accuracy:	0.7008 -	loss:	0.6133	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6083
	89/100										
		0s	8ms/step -	accuracy:	0.6827 -	loss:	0.6331	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6082
	90/100										
		0s	8ms/step -	accuracy:	0.7074 -	loss:	0.6043	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6081
	91/100										
		0s	8ms/step -	accuracy:	0.7161 -	loss:	0.5957	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6080
•	92/100										
		0s	8ms/step -	accuracy:	0.7054 -	loss:	0.6077	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6080
•	93/100										
		0s	7ms/step -	accuracy:	0.7295 -	loss:	0.5849	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6079
•	94/100										
-		0s	7ms/step -	accuracy:	0.7279 -	loss:	0.5918	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6078
•	95/100										
-		0s	8ms/step -	accuracy:	0.7172 -	loss:	0.6007	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6077
•	96/100										
		0s	7ms/step -	accuracy:	0.7093 -	loss:	0.6070	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6076
•	97/100										
		0s	7ms/step -	accuracy:	0.7155 -	loss:	0.6068	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6075
•	98/100										
		0s	7ms/step -	accuracy:	0.7312 -	loss:	0.5890	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6074
•	99/100					_		_			
		0s	7ms/step -	accuracy:	0.7380 -	loss:	0.5728	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.6074
	100/100	_	_ , .			-		-			
10/10		0s	7ms/step -	accuracy:	0.7443 -	loss:	0.5715	- val_accuracy:	0.7094 -	val_loss:	0.6073
			_		_						

LAB2

Out[17]: <keras.src.callbacks.history.History at 0x1ed825acbc0>

Using 2 Layers

```
In [18]: y_train2 = keras.utils.to_categorical(y_train, 2)
    y_test2 = keras.utils.to_categorical(y_test, 2)

model2 = Sequential()
    model2.add(Dense(2, activation='softmax', input_shape=(9,)))
# model2.add(Dense(1, activation='sigmoid'))
    model2.summary()
```

Model: "sequential_1"

Layer (type)	Output Shape	Param #
dense_1 (Dense)	(None, 2)	20

```
Total params: 20 (80.00 B)

Trainable params: 20 (80.00 B)

Non-trainable params: 0 (0.00 B)
```

```
In [19]: model2.compile(loss='CategoricalCrossentropy', optimizer='SGD', metrics=['accuracy'])
model2.fit(X_train, y_train2, batch_size=50, epochs=500, verbose=1, validation_data=(X_test, y_test2))
```

Epoch		0- 21/
•	2/500	0s 21ms/step - accuracy: 0.6911 - loss: 0.6244 - val_accuracy: 0.7094 - val_loss: 0.6193
	3/500	0s 8ms/step - accuracy: 0.7041 - loss: 0.6175 - val_accuracy: 0.7094 - val_loss: 0.6168
	4/500	0s 8ms/step - accuracy: 0.6941 - loss: 0.6240 - val_accuracy: 0.7094 - val_loss: 0.6145
	5/500	0s 9ms/step - accuracy: 0.7067 - loss: 0.6168 - val_accuracy: 0.7094 - val_loss: 0.6124
10/10		0s 10ms/step - accuracy: 0.6976 - loss: 0.6184 - val_accuracy: 0.7094 - val_loss: 0.6107
10/10 Epoch		0s 8ms/step - accuracy: 0.7156 - loss: 0.6093 - val_accuracy: 0.7094 - val_loss: 0.6092
10/10		0s 10ms/step - accuracy: 0.7394 - loss: 0.5849 - val_accuracy: 0.7094 - val_loss: 0.6080
10/10		0s 11ms/step - accuracy: 0.6992 - loss: 0.6123 - val_accuracy: 0.7094 - val_loss: 0.6071
10/10		0s 7ms/step - accuracy: 0.7314 - loss: 0.5948 - val_accuracy: 0.7094 - val_loss: 0.6063
10/10		0s 8ms/step - accuracy: 0.6749 - loss: 0.6334 - val_accuracy: 0.7094 - val_loss: 0.6053
10/10		0s 7ms/step - accuracy: 0.7068 - loss: 0.6093 - val_accuracy: 0.7094 - val_loss: 0.6045
	12/500	0s 8ms/step - accuracy: 0.7342 - loss: 0.5857 - val_accuracy: 0.7094 - val_loss: 0.6039
	13/500	0s 8ms/step - accuracy: 0.7067 - loss: 0.6024 - val_accuracy: 0.7094 - val_loss: 0.6033
Epoch 10/10	14/500	0s 7ms/step - accuracy: 0.7174 - loss: 0.5943 - val_accuracy: 0.7094 - val_loss: 0.6027
•	15/500	0s 7ms/step - accuracy: 0.7260 - loss: 0.5931 - val_accuracy: 0.7094 - val_loss: 0.6024
•	16/500	Os 6ms/step - accuracy: 0.7241 - loss: 0.5947 - val_accuracy: 0.7094 - val_loss: 0.6020
Epoch	17/500	Os 7ms/step - accuracy: 0.7070 - loss: 0.6033 - val_accuracy: 0.7094 - val_loss: 0.6015
=	18/500	0s 7ms/step - accuracy: 0.7077 - loss: 0.6007 - val_accuracy: 0.7094 - val_loss: 0.6012
	19/500	Os 6ms/step - accuracy: 0.7244 - loss: 0.5873 - val_accuracy: 0.7094 - val_loss: 0.6009
Epoch	20/500	
10/10 Epoch	21/500	0s 7ms/step - accuracy: 0.7162 - loss: 0.5929 - val_accuracy: 0.7094 - val_loss: 0.6007

10/10		0s	9ms/step -	accuracy:	0.7040 -	loss:	0.6089 -	· val_accuracy:	0.7094 -	val loss:	0.6005
	22/500							_ ,		_	
10/10		0s	8ms/step -	accuracy:	0.7146 -	loss:	0.5943 -	val_accuracy:	0.7094 -	<pre>val_loss:</pre>	0.6002
Epoch	23/500										
		0s	7ms/step -	accuracy:	0.7379 -	loss:	0.5728 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.6000
	24/500		_			_		_			
		0s	7ms/step -	accuracy:	0.7099 -	loss:	0.6046 -	val_accuracy:	0.7094 -	val_loss:	0.5997
	25/500	0-	7		0 7177	1	0 5016		0.7004		0 5005
	26/500	05	/ms/step -	accuracy:	0./1// -	1088:	0.5916 -	val_accuracy:	0.7094 -	vai_ioss:	0.5995
		۵c	6ms/stan -	accuracy.	0 7101 -	1000	a 595a _	· val_accuracy:	0 7091 -	val locc.	0 5993
	27/500	03	oliis/scep -	accuracy.	0.7104	1033.	0.5550	vai_accuracy.	0.7054	vai_1033.	0.5555
•		0s	8ms/step -	accuracv:	0.7200 -	loss:	0.5931 -	· val_accuracy:	0.7094 -	val loss:	0.5991
	28/500		оо, о сор								
		0s	8ms/step -	accuracy:	0.7041 -	loss:	0.6007 -	val_accuracy:	0.7094 -	val_loss:	0.5990
Epoch	29/500			-						_	
10/10		0s	11ms/step	- accuracy:	: 0.6911 -	- loss:	0.6164	- val_accuracy	: 0.7094	- val_loss	: 0.5988
	30/500										
		0s	10ms/step	- accuracy:	: 0.7078 -	- loss:	0.6022	val_accuracy	: 0.7094	<pre>- val_loss</pre>	: 0.5986
	31/500					_		_			
		0s	10ms/step	- accuracy	: 0.7159 -	- loss:	0.5964	- val_accuracy	: 0.7094	- val_loss	: 0.5984
•	32/500	0-	0 / - +		0 7167	1	0 5000		0.7004		0 5003
		ØS	9ms/step -	accuracy:	0./16/ -	loss:	0.5889 -	val_accuracy:	0.7094 -	var_ross:	0.5982
•	33/500	۵c	Qms/stan -	accupacy.	0 7065 -	1000	0 6036 -	· val_accuracy:	0 7001 -	val locc.	0 5001
	34/500	03	oms/step -	accuracy.	0.7003 -	1055.	0.0030 -	vai_accuracy.	0.7034 -	va1_1055.	0.3301
		0 s	8ms/sten -	accuracy:	0.6730 -	loss:	0.6303 -	· val_accuracy:	0.7094 -	val loss:	0.5979
	35/500		оо, о сор	,							
		0s	8ms/step -	accuracy:	0.7021 -	loss:	0.6020 -	val_accuracy:	0.7094 -	val_loss:	0.5977
Epoch	36/500			-							
10/10		0s	9ms/step -	accuracy:	0.7220 -	loss:	0.5872 -	val_accuracy:	0.7094 -	<pre>val_loss:</pre>	0.5976
	37/500										
=		0s	8ms/step -	accuracy:	0.6995 -	loss:	0.6039 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5974
	38/500					_		_			
-		0s	9ms/step -	accuracy:	0.6887 -	loss:	0.6171 -	val_accuracy:	0.7094 -	val_loss:	0.5973
	39/500	0-	11		0 7100	1	0 5000		. 0 7004		. 0 5071
10/10	40/500	05	TIMS/Steb	- accuracy	. Ø./190 -	- 1088:	Ø.5898	- val_accuracy	. 0./094	- vaT_1022	. U.JY/I
10/10		۵c	11ms/sten	- accuracy	• 0 7160 -	. loss:	0 5915	- val_accuracy	· a 7091 .	- val loss	· a 597a
	41/500	03	±±1113/3 CEβ	accui acy	. 0.7100 -	1033.	0.7713	var_accar acy	. 0.7054	AUT ^T 1032	. 0.55/0
10/10		0s	10ms/sten	- accuracy:	. 0.7171 -	· loss:	0.5941	- val accuracy	: 0.7094	- val loss	: 0.5968
= = 7, = 9			, 								

•	42/500	0. 0/
Epoch	43/500	0s 8ms/step - accuracy: 0.7360 - loss: 0.5714 - val_accuracy: 0.7094 - val_loss: 0.5967
Epoch	44/500	0s 9ms/step - accuracy: 0.7080 - loss: 0.5966 - val_accuracy: 0.7094 - val_loss: 0.5965
Epoch	45/500	0s 10ms/step - accuracy: 0.6905 - loss: 0.6110 - val_accuracy: 0.7094 - val_loss: 0.5964
	46/500	0s 8ms/step - accuracy: 0.7086 - loss: 0.5979 - val_accuracy: 0.7094 - val_loss: 0.5962
10/10 Epoch	47/500	0s 9ms/step - accuracy: 0.7097 - loss: 0.5916 - val_accuracy: 0.7094 - val_loss: 0.5961
10/10 Epoch	48/500	0s 10ms/step - accuracy: 0.6996 - loss: 0.5992 - val_accuracy: 0.7094 - val_loss: 0.5959
	49/500	0s 8ms/step - accuracy: 0.7124 - loss: 0.5931 - val_accuracy: 0.7094 - val_loss: 0.5958
10/10		0s 10ms/step - accuracy: 0.7008 - loss: 0.6064 - val_accuracy: 0.7094 - val_loss: 0.5956
10/10		0s 8ms/step - accuracy: 0.7353 - loss: 0.5722 - val_accuracy: 0.7094 - val_loss: 0.5955
10/10		0s 8ms/step - accuracy: 0.7170 - loss: 0.5889 - val_accuracy: 0.7094 - val_loss: 0.5953
10/10		0s 7ms/step - accuracy: 0.7273 - loss: 0.5832 - val_accuracy: 0.7094 - val_loss: 0.5952
10/10		0s 7ms/step - accuracy: 0.7447 - loss: 0.5640 - val_accuracy: 0.7094 - val_loss: 0.5951
10/10		0s 8ms/step - accuracy: 0.6916 - loss: 0.6170 - val_accuracy: 0.7094 - val_loss: 0.5950
10/10		0s 8ms/step - accuracy: 0.7236 - loss: 0.5832 - val_accuracy: 0.7094 - val_loss: 0.5948
10/10		0s 8ms/step - accuracy: 0.6677 - loss: 0.6278 - val_accuracy: 0.7094 - val_loss: 0.5947
	57/500 	0s 6ms/step - accuracy: 0.7124 - loss: 0.5884 - val_accuracy: 0.7094 - val_loss: 0.5945
	58/500 	0s 8ms/step - accuracy: 0.7053 - loss: 0.5978 - val_accuracy: 0.7094 - val_loss: 0.5944
Epoch 10/10	59/500	0s 8ms/step - accuracy: 0.7254 - loss: 0.5757 - val_accuracy: 0.7094 - val_loss: 0.5942
Epoch 10/10	60/500	0s 9ms/step - accuracy: 0.7012 - loss: 0.5977 - val_accuracy: 0.7094 - val_loss: 0.5941
	61/500	0s 11ms/step - accuracy: 0.7058 - loss: 0.5989 - val_accuracy: 0.7094 - val_loss: 0.5940
	62/500	35 115, 5 ccp

10/10		95	8ms/sten -	accuracy:	0.7116 -	loss:	0.5909 -	val_accuracy:	0.7094 -	val loss:	0.5938
	63/500		J., J. C.		017-20		0.000				
•		0s	9ms/step -	accuracy:	0.7508 -	loss:	0.5675 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5937
Epoch	64/500		•	•						_	
10/10		0s	9ms/step -	accuracy:	0.6942 -	loss:	0.6095 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5935
Epoch	65/500										
10/10		0s	8ms/step -	accuracy:	0.7031 -	loss:	0.5953 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5934
	66/500										
=		0s	8ms/step -	accuracy:	0.7265 -	loss:	0.5769 -	val_accuracy:	0.7094 -	val_loss:	0.5933
•	67/500		_			_		_			
10/10		0s	8ms/step -	accuracy:	0.7182 -	loss:	0.5842 -	val_accuracy:	0.7094 -	val_loss:	0.5932
•	68/500	_	0 / 1		0 =444	-	0 5004		. =		
10/10		0s	8ms/step -	accuracy:	0./144 -	loss:	0.5901 -	val_accuracy:	0.7094 -	val_loss:	0.5930
•	69/500	0.0	Oms/ston	2661182614	0 7250	10001	0 5700	v21 2664826V4	0.7004	val lass.	0 5020
	70/500	05	oms/step -	accuracy:	0.7259 -	1055:	0.5/99 -	val_accuracy:	0.7094 -	va1_1055:	0.5929
•		۵c	Oms/stan -	accupacy:	0 7133 -	1000	0 5848 -	val_accuracy:	0 7004	val loss:	a 5027
	71/500	03	31113/3CEP -	accuracy.	0.7133 -	1033.	0.3040 -	vai_accuracy.	0.7034	vai_1033.	0.3327
•		95	10ms/sten -	- accuracy	0.6874	- loss:	0.6130	- val_accuracy	0.7094	- val loss:	0.5926
	72/500	05	103, 5 ccp	accai acy	. 0.007	1055.	0.0130	var_acca. acy	. 01,05	va1_1033.	0.3320
•		0s	9ms/step -	accuracy:	0.7235 -	loss:	0.5840 -	val_accuracy:	0.7094 -	val loss:	0.5925
	73/500		, ,	,				_ ,		_	
•		0s	9ms/step -	accuracy:	0.7352 -	loss:	0.5714 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5924
Epoch	74/500										
10/10		0s	9ms/step -	accuracy:	0.7255 -	loss:	0.5798 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5923
Epoch	75/500										
10/10		0s	9ms/step -	accuracy:	0.7232 -	loss:	0.5800 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5921
•	76/500										
		0s	9ms/step -	accuracy:	0.7184 -	loss:	0.5872 -	val_accuracy:	0.7094 -	val_loss:	0.5919
•	77/500	_			. =	-	0 6010		. =		0 5010
		0s	/ms/step -	accuracy:	0.7008 -	loss:	0.6010 -	val_accuracy:	0.7094 -	val_loss:	0.5918
•	78/500	0.0	Oms/ston	2661182614	0 7255	10001	0 5607	v21 2664826V4	0.7004	val lass.	0 5017
	79/500	05	oms/step -	accuracy:	0./355 -	1055:	0.5087 -	val_accuracy:	0.7094 -	va1_1055:	0.5917
•		۵c	Qms/stan -	accupacy:	0 7026 -	1000	0 5035 -	val_accuracy:	0 7004	val loss:	a 5016
	80/500	03	oliis/scep =	accuracy.	0.7020	1033.	0.5555	vai_accuracy.	0.7054	vai_1033.	0.5510
10/10		0 s	9ms/sten -	accuracy:	0.7386 -	loss:	0.5628 -	val_accuracy:	0.7094 -	val loss:	0.5915
	81/500		z <i>o</i> , <i>z</i> ccp	acca. acy t	01/200		0.000				0.000
10/10		0s	8ms/step -	accuracy:	0.7468 -	loss:	0.5621 -	val_accuracy:	0.7094 -	val_loss:	0.5913
	82/500		•	,				_ ,		_	
10/10		0s	8ms/step -	accuracy:	0.7184 -	loss:	0.5809 -	val_accuracy:	0.7094 -	val_loss:	0.5912

	83/500	0 -	0 / 1		0 7375	,	0.5640	,	0 7004		0 5040
	84/500			-				- val_accuracy:		_	
Epoch	85/500			-				- val_accuracy:		_	
	86/500	0s	9ms/step -	- accuracy:	0.7410 -	loss:	0.5601 -	- val_accuracy:	0.7094	- val_loss:	0.5908
	87/500	0s	9ms/step -	- accuracy:	0.7162 -	loss:	0.5896 -	- val_accuracy:	0.7094	- val_loss:	0.5907
	88/500	0s	9ms/step -	- accuracy:	0.7082 -	loss:	0.5934 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5905
	89/500	0s	8ms/step -	- accuracy:	0.7167 -	loss:	0.5852 -	- val_accuracy:	0.7094	- val_loss:	0.5904
10/10		0s	8ms/step -	- accuracy:	0.7229 -	loss:	0.5795 -	- val_accuracy:	0.7094	- val_loss:	0.5903
10/10		0s	7ms/step -	- accuracy:	0.7029 -	loss:	0.5994 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5902
10/10		0s	7ms/step -	- accuracy:	0.7037 -	loss:	0.5956 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5901
10/10		0s	8ms/step -	- accuracy:	0.7449 -	loss:	0.5568 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5899
10/10		0s	8ms/step -	- accuracy:	0.7241 -	loss:	0.5763 -	- val_accuracy:	0.7094	- val_loss:	0.5898
10/10		0s	8ms/step -	- accuracy:	0.7239 -	loss:	0.5742 -	- val_accuracy:	0.7094	- val_loss:	0.5897
10/10		0s	7ms/step -	- accuracy:	0.7359 -	loss:	0.5692 -	- val_accuracy:	0.7094	- val_loss:	0.5896
10/10		0s	8ms/step -	- accuracy:	0.6990 -	loss:	0.5983 -	- val_accuracy:	0.7094	- val_loss:	0.5894
10/10		0s	7ms/step -	- accuracy:	0.7096 -	loss:	0.5906 -	- val_accuracy:	0.7094	- val_loss:	0.5893
	98/500	0s	8ms/step -	- accuracy:	0.7052 -	loss:	0.5948 -	- val_accuracy:	0.7094	- val_loss:	0.5892
	99/500	0s	8ms/step -	- accuracy:	0.7199 -	loss:	0.5812 -	- val_accuracy:	0.7094	- val_loss:	0.5891
Epoch 10/10	100/500	0s	8ms/step -	- accuracy:	0.7138 -	loss:	0.5817 -	- val_accuracy:	0.7094	- val_loss:	0.5890
Epoch 10/10	101/500	0s	7ms/step -	- accuracy:	0.7124 -	loss:	0.5802 -	- val_accuracy:	0.7094	- val_loss:	0.5889
	102/500			-				- val_accuracy:		_	
	103/500			,						_ `	

10/10		0s	8ms/step - ac	curacv:	0.7286 -]	loss: (0.5776 -	val_accuracy:	0.7094 -	val loss: 0	2.5886
	104/500		т., с сор — с								
10/10		0s	8ms/step - ac	curacy:	0.7263 - 1	loss: (0.5717 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5885
•	105/500										
		0s	8ms/step - ac	curacy:	0.7012 - 1	loss: (0.5993 -	val_accuracy:	0.7094 -	val_loss: 0	0.5883
	106/500	0-	10		0 7122	1	0 5036		0 7004		0 5000
	107/500	ØS	10ms/step - a	ccuracy:	0./132 -	loss:	0.5836	- val_accuracy:	: 0.7094	- val_loss:	0.5882
		۵c	8ms/sten - ac	curacy:	a 687a - 1	lnss. (a 6094 -	val_accuracy:	a 7a94 -	val loss. (3 5881
-	108/500	03	oms, seep de	cui ucy.	0.0070	1033.	0.0054	var_accar acy:	017054	va1_1033.	3.3001
		0s	8ms/step - ac	curacy:	0.6984 -]	loss: (0.5965 -	<pre>val_accuracy:</pre>	0.7094 -	val loss: 0	0.5880
Epoch	109/500		·					_ ,		_	
10/10		0s	8ms/step - ac	curacy:	0.7246 - 1	loss: (0.5751 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5879
	110/500										
		0s	9ms/step - ac	curacy:	0.6907 - 1	loss: (0.6061 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5878
•	111/500	0-	0		0.7000	1	0 5033	1	0.7004		
	112/500	05	8ms/step - ac	curacy:	0.7028 - 1	LOSS: (0.5932 -	val_accuracy:	0.7094 -	vai_ioss: (0.58//
		95	8ms/sten - ac	curacy:	0 7367 - ¹	lnss. (0 5641 -	val_accuracy:	0 7094 -	val loss. (3 5875
	113/500	03	oms, seep de	cui ucy.	0.7507	1033.	0.5041	var_accar acy:	017054	va1_1033.	3.3073
•		0s	8ms/step - ac	curacy:	0.7021 -]	loss: (0.5894 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5874
	114/500		·					_ ,		_	
10/10		0s	9ms/step - ac	curacy:	0.7059 - 1	loss: (0.5885 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5873
	115/500										
		0s	10ms/step - a	ccuracy:	0.7013 -	loss:	0.5971	val_accuracy:	0.7094	- val_loss:	0.5872
•	116/500	0-	0		0.7000	1	0 5010		0.7004	1 (0 5071
	117/500	05	8ms/step - ac	curacy:	0.7000 - 1	1055: (0.5918 -	val_accuracy:	0.7094 -	vai_ioss: (0.58/1
		95	8ms/sten - ac	curacy:	0.7107 - 1	loss: (0.5890 -	val_accuracy:	0.7094 -	val loss: (a. 5870
	118/500	0.5	ош <i>э,</i> эсер че	cui ucy .	.,,	1033.	0.3030	var_acca, acy.	0.,05.	vu=_1033. \	3.3070
		0s	8ms/step - ac	curacy:	0.7372 - 1	loss: (0.5646 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5869
Epoch	119/500										
10/10		0s	8ms/step - ac	curacy:	0.7217 - 1	loss: (0.5764 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5868
	120/500										
		0s	8ms/step - ac	curacy:	0.7515 - 1	loss: (0.5463 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5867
	121/500	00	7ms/ston 25		0 7121	1000 1	0 5000	v21 2660026V4	0.7004	val lass. (2 5065
10/10 Enoch	122/500	05	/ms/step - ac	curacy:	0./131 - 1	1055.	0.5808 -	val_accuracy:	0.7094 -	Va1_1055: (0.5805
		0s	9ms/step - ac	curacv:	0.7038 - 1	loss: (0.5899 -	val_accuracy:	0.7094 -	val loss: 0	2.5864
	123/500		, 2 tep	- 2. 20, .							
10/10		0s	9ms/step - ac	curacy:	0.6983 - 1	loss: (0.5960 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0	0.5863
								-			

•	124/500	Oc. 9	ems/ston	2661112614	a 6000	lossi	0 5020	· val_accuracy:	0 7004	val loss:	a E963
Epoch	125/500		•	-							
Epoch	126/500		•	-				· val_accuracy:			
Epoch	127/500		•	-				· val_accuracy:			
Epoch	128/500	0s 8	8ms/step -	accuracy:	0.7044 -	loss:	0.5910 -	· val_accuracy:	0.7094 -	val_loss:	0.5858
=	129/500	0s 8	8ms/step -	accuracy:	0.7050 -	loss:	0.5903 -	· val_accuracy:	0.7094 -	val_loss:	0.5857
	130/500	0s 8	8ms/step -	accuracy:	0.6998 -	loss:	0.5907 -	· val_accuracy:	0.7094 -	val_loss:	0.5856
	131/500	0s 9	9ms/step -	accuracy:	0.6980 -	loss:	0.5964 -	· val_accuracy:	0.7094 -	val_loss:	0.5855
	132/500	0s :	10ms/step -	accuracy	0.7420	- loss:	0.5570	- val_accuracy	: 0.7094	- val_loss:	0.5853
10/10		0s 8	8ms/step -	accuracy:	0.7189 -	loss:	0.5777 -	· val_accuracy:	0.7094 -	val_loss:	0.5852
10/10		0s 8	8ms/step -	accuracy:	0.7160 -	loss:	0.5821 -	· val_accuracy:	0.7094 -	val_loss:	0.5851
10/10		0s 8	8ms/step -	accuracy:	0.7358 -	loss:	0.5610 -	· val_accuracy:	0.7094 -	val_loss:	0.5850
10/10		0s 8	8ms/step -	accuracy:	0.7264 -	loss:	0.5692 -	· val_accuracy:	0.7094 -	val_loss:	0.5850
10/10		0s 8	8ms/step -	accuracy:	0.6822 -	loss:	0.6115 -	· val_accuracy:	0.7094 -	val_loss:	0.5849
10/10		0s 8	8ms/step -	accuracy:	0.7352 -	loss:	0.5614 -	· val_accuracy:	0.7094 -	val_loss:	0.5848
10/10		0s 8	8ms/step -	accuracy:	0.7195 -	loss:	0.5773 -	· val_accuracy:	0.7094 -	val_loss:	0.5847
10/10		0s 8	8ms/step -	accuracy:	0.7043 -	loss:	0.5845 -	· val_accuracy:	0.7094 -	val_loss:	0.5846
	140/500	0s :	7ms/step -	accuracy:	0.7087 -	loss:	0.5857 -	· val_accuracy:	0.7094 -	val_loss:	0.5845
Epoch 10/10	141/500	0s 8	8ms/step -	accuracy:	0.7078 -	loss:	0.5864 -	· val_accuracy:	0.7094 -	val_loss:	0.5844
Epoch 10/10	142/500		•	-				- val_accuracy:			
	143/500		•	-				· val_accuracy:			
	144/500		-, - 					<u>-</u>		<u>-</u>	· -

10/10		0 s	8ms/sten	_	accuracy:	0.7287	· loss:	0.5619	_	val accuracy:	0.7094	- val lo)55:	0.5841
	145/500		S5, 5 CCP					015025						
10/10		0s	9ms/step	-	accuracy:	0.7035	loss:	0.5858	-	val_accuracy:	0.7094	- val_lc	ss:	0.5839
	146/500													
		0s	8ms/step	-	accuracy:	0.7154	· loss:	0.5792	-	val_accuracy:	0.7094	- val_lo	ss:	0.5839
	147/500	_	0 / 1			0 7040	-			,	. =			
	148/500	ØS.	8ms/step	-	accuracy:	0.7043	- 10SS:	0.5858	-	val_accuracy:	0.7094	- va1_10	iss: (0.5838
		95	8ms/sten	_	accuracy:	0.7002	· loss:	0.5917	_	val_accuracy:	0.7094	- val lo)SS: 1	0.5837
-	149/500	0.5	ошэ, эсер		accai acy.	0.,002	1033.	0.3327		var_acca, acy:	01,03	VUI_10		0.3037
•		0s	8ms/step	_	accuracy:	0.7094	loss:	0.5884	-	val_accuracy:	0.7094	- val_lc	ss:	0.5835
Epoch	150/500													
		0s	8ms/step	-	accuracy:	0.7017	· loss:	0.5952	-	<pre>val_accuracy:</pre>	0.7094	- val_lo	ss:	0.5834
	151/500	_	0 / 1				-			,	. =			
		0S	8ms/step	-	accuracy:	0.7037	· loss:	0.5886	-	val_accuracy:	0.7094	- val_lo	iss: (0.5833
•	152/500	95	8ms/sten	_	accuracy:	0 7068	. 1055.	0 5861	_	val_accuracy:	0 7094	- val lc	155.	0 5832
	153/500	03	ошэ, эсср		accar acy.	0.7000	1033.	0.3001		var_accar acy:	0.7054	V41_10	,55.	0.3032
	,	0s	8ms/step	_	accuracy:	0.6907	loss:	0.5956	-	val_accuracy:	0.7094	- val_lc	oss:	0.5831
	154/500													
		0s	8ms/step	-	accuracy:	0.7075	- loss:	0.5836	-	<pre>val_accuracy:</pre>	0.7094	- val_lo	ss:	0.5830
	155/500	_					-			-				
		0s	8ms/step	-	accuracy:	0.6956	- loss:	0.5974	-	val_accuracy:	0.7094	- val_lo	iss: (0.5829
•	156/500	۵s	2ms/sten	_	accuracy:	0 7163	. 1055.	0 5812	_	val_accuracy:	a 7a94	- val lo	155.	0 5829
	157/500	03	ошэ/ эсср		accuracy.	0.7103	1033.	0.3012		var_accar acy.	0.7054	Va1_10	,33.	0.3023
•		0s	7ms/step	_	accuracy:	0.7013	- loss:	0.5867	_	val_accuracy:	0.7094	- val_lc	oss:	0.5828
Epoch	158/500				-									
		0s	8ms/step	-	accuracy:	0.7203	- loss:	0.5750	-	<pre>val_accuracy:</pre>	0.7094	- val_lo	ss:	0.5827
•	159/500	_	- , ,				-			,				
		0S	/ms/step	-	accuracy:	0.7095	· loss:	0.5/84	-	val_accuracy:	0.7094	- val_lo	iss: (0.5826
	160/500	95	8ms/sten	_	accuracy:	0 7024	. 1055.	0 5864	_	val_accuracy:	0 7094	- val lc	155.	0 5824
	161/500	03	ошэ, эсср		accar acy.	0.7024	1033.	0.3004		var_accar acy:	0.7054	V41_10	,33.	0.3024
•		0s	8ms/step	_	accuracy:	0.7258	loss:	0.5703	-	val_accuracy:	0.7094	- val_lc	oss:	0.5823
Epoch	162/500													
		0s	7ms/step	-	accuracy:	0.7236	· loss:	0.5733	-	val_accuracy:	0.7094	- val_lo	ss:	0.5822
	163/500	0-	0			0.7244	1	0 5504			0.7004			0 5024
	164/500	ØS	ŏms/step	-	accuracy:	U./344	- 10SS:	0.5594	-	val_accuracy:	0.7094	- va1_10	155: (υ.582I
10/10		95	10ms/sten	. –	accuracy	0.6975	- loss	: 0.5938	} _	val_accuracy	: 0.7094	val 1	055	0.5820
_0, _0		0.5	_зэ, эсер		accar acy	. 3.0273	1000	. 0.3230	•	acca. acy	. 0.,054			3.3020

•	165/500	Q c 9,	ms/ston	2661112674	0 7227	10551	A E7A2	val accumacy:	0 7004	val loss.	A E910
Epoch	166/500		•					val_accuracy:		_	
Epoch	167/500		•					val_accuracy:		_	
Epoch	168/500		•					val_accuracy:		_	
	169/500	0s 8r	ms/step -	accuracy:	0.7001	- loss:	0.5910 -	val_accuracy:	0.7094 -	val_loss:	0.5817
	170/500	0s 8r	ms/step -	accuracy:	0.7344	- loss:	0.5686 -	val_accuracy:	0.7094 -	val_loss:	0.5815
	 171/500	0s 8r	ms/step -	accuracy:	0.7235	- loss:	0.5687 -	val_accuracy:	0.7094 -	val_loss:	0.5814
	 172/500	0s 8r	ms/step -	accuracy:	0.6974	- loss:	0.5916 -	val_accuracy:	0.7094 -	val_loss:	0.5814
	 173/500	0s 8r	ms/step -	accuracy:	0.7057	- loss:	0.5844 -	val_accuracy:	0.7094 -	val_loss:	0.5813
10/10		0s 8r	ms/step -	accuracy:	0.6941	- loss:	0.5908 -	val_accuracy:	0.7094 -	val_loss:	0.5812
10/10	•	0s 8r	ms/step -	accuracy:	0.7079	- loss:	0.5852 -	val_accuracy:	0.7094 -	val_loss:	0.5811
10/10		0s 8r	ms/step -	accuracy:	0.7113	- loss:	0.5809 -	val_accuracy:	0.7094 -	val_loss:	0.5811
10/10		0s 10	∂ms/step -	- accuracy:	: 0.7294	- loss:	0.5578	- val_accuracy	: 0.7094 -	- val_loss:	0.5809
10/10		0s 10	∂ms/step -	- accuracy:	: 0.7141	- loss:	0.5740	- val_accuracy	: 0.7094 -	- val_loss:	0.5808
10/10		0s 9r	ms/step -	accuracy:	0.7233	- loss:	0.5676 -	val_accuracy:	0.7094 -	val_loss:	0.5807
•	179/500	0s 10	∂ms/step -	- accuracy:	: 0.7146	- loss:	0.5780	- val_accuracy	: 0.7094 -	- val_loss:	0.5807
•	180/500	0s 11	1ms/step -	- accuracy:	: 0.7096	- loss:	0.5761	- val_accuracy	: 0.7094 -	- val_loss:	0.5806
	181/500 	0s 9r	ms/step -	accuracy:	0.7194	- loss:	0.5733 -	val_accuracy:	0.7094 -	val_loss:	0.5804
Epoch 10/10	182/500 ————————	0s 9r	ms/step -	accuracy:	0.7083	- loss:	0.5762 -	val_accuracy:	0.7094 -	val_loss:	0.5804
Epoch 10/10	183/500	0s 8r	ms/step -	accuracy:	0.7268	- loss:	0.5601 -	val_accuracy:	0.7094 -	val_loss:	0.5803
	184/500		•					val_accuracy:		_	
	185/500		- / 					<u>-</u>	,		

10/10		0 s	9ms/sten -	accuracy:	0.7192 -	loss:	0.5652 -	val_accuracy:	0.7094 -	val loss:	0.5801
	186/500		ээ, э сер	accai acy i	00722		0.000_				0,,,,,,
•		0s	9ms/step -	accuracy:	0.6979 -	loss:	0.5891 -	val_accuracy:	0.7094 -	val_loss:	0.5800
Epoch	187/500		•	-						_	
10/10		0s	9ms/step -	accuracy:	0.7093 -	loss:	0.5875 -	val_accuracy:	0.7094 -	<pre>val_loss:</pre>	0.5799
Epoch	188/500										
		0s	10ms/step	- accuracy	: 0.7079	- loss:	0.5800	- val_accuracy	: 0.7094	<pre>- val_loss:</pre>	0.5799
	189/500										
		0s	8ms/step -	accuracy:	0.7207 -	loss:	0.5686 -	val_accuracy:	0.7094 -	val_loss:	0.5798
	190/500	_	0 / 1		0 7454	-			. =		
		0S	9ms/step -	accuracy:	0./156 -	loss:	0.5/5/ -	val_accuracy:	0.7094 -	val_loss:	0.5/9/
•	191/500	0-	0		0 7305	1	0 5670		0.7004		0 5706
		05	8ms/step -	accuracy:	0.7285 -	1055:	0.56/0 -	val_accuracy:	0.7094 -	vai_ioss:	0.5/96
	192/500 	۵c	Oms/ston	266111126111	0 6020	10551	0 5050	val_accuracy:	0 7004	val loss:	0 5705
	193/500	03	ош3/3сер -	accui acy.	0.0323 -	1055.	0.3333 -	vai_accuracy.	0.7034 -	vai_1033.	0.3/33
•		95	8ms/sten -	accuracy:	0 7200 -	loss	0 5684 -	val_accuracy:	0 7094 -	val loss:	0 5795
	194/500	05	ошэ, эсср	accar acy.	0.7200	1033.	0.3004	var_accar acy.	0.7054	va1_1055.	0.5755
•		0s	9ms/step -	accuracv:	0.7215 -	loss:	0.5734 -	val_accuracy:	0.7094 -	val loss:	0.5794
	195/500		, с с с р								
		0s	8ms/step -	accuracy:	0.7218 -	loss:	0.5683 -	val accuracy:	0.7094 -	val loss:	0.5793
	196/500			,				_ ,		_	
		0s	8ms/step -	accuracy:	0.7173 -	loss:	0.5680 -	val_accuracy:	0.7094 -	val_loss:	0.5792
Epoch	197/500										
10/10		0s	8ms/step -	accuracy:	0.7231 -	loss:	0.5707 -	val_accuracy:	0.7094 -	<pre>val_loss:</pre>	0.5791
Epoch	198/500										
10/10		0s	9ms/step -	accuracy:	0.7154 -	loss:	0.5733 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5790
•	199/500										
		0s	8ms/step -	accuracy:	0.7154 -	loss:	0.5752 -	val_accuracy:	0.7094 -	val_loss:	0.5789
	200/500					_		_			
		0s	7ms/step -	accuracy:	0.7230 -	loss:	0.5619 -	val_accuracy:	0.7094 -	val_loss:	0.5788
•	201/500	0 -	0 / 1		0 7070	,	0 5046		0.7004		0 5707
		0S	8ms/step -	accuracy:	0./0/8 -	loss:	0.5846 -	val_accuracy:	0.7094 -	val_loss:	0.5/8/
	202/500	00	Ome/ston	26611026111	0 7100	10551	0 5724	val_accuracy:	0 7004	val locci	0 E706
	203/500	05	oms/step -	accuracy:	0.7180 -	1022:	0.5/34 -	vai_accuracy:	0.7094 -	va1_1055;	0.5/86
10/10		۵c	8ms/stan -	accuracy:	0 70/13 -	1000	a 5829 _	val_accuracy:	0 7091 -	val loss:	a 5785
	204/500	03	ош3/3сер -	accuracy.	0.7045	1033.	0.3023	vai_accuracy.	0.7054	vai_1033.	0.5765
•		0 s	8ms/sten -	accuracy:	0.7145 -	loss:	0.5747 -	val accuracy:	0.7094 -	val loss:	0.5784
	205/500		, 								
10/10		0s	8ms/step -	accuracv:	0.7051 -	loss:	0.5776 -	val_accuracy:	0.7094 -	val loss:	0.5783
•				,				_ ,		_ `	

•	206/500	0.0	Ome /stan	2661122614	0.7000	10551	0 5000	val accumacy.	0.7004	val lass.	A F792
Epoch	207/500		·	-				- val_accuracy:		_	
Epoch	208/500		·	-				- val_accuracy:		_	
Epoch	209/500		·	-				- val_accuracy:		_	
	210/500	0s	8ms/step -	accuracy:	0.6956 -	loss:	0.5876 -	- val_accuracy:	0.7094 -	· val_loss:	0.5781
	211/500	0s	8ms/step -	accuracy:	0.7086 -	loss:	0.5784 -	- val_accuracy:	0.7094 -	val_loss:	0.5780
	212/500	0s	8ms/step -	accuracy:	0.7312 -	loss:	0.5592 -	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5779
	213/500	0s	7ms/step -	accuracy:	0.7067 -	loss:	0.5812 -	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5778
	214/500	0s	8ms/step -	accuracy:	0.6989 -	loss:	0.5855 -	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5777
10/10		0s	8ms/step -	accuracy:	0.6997 -	loss:	0.5810 -	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5776
10/10		0s	9ms/step -	accuracy:	0.7204 -	loss:	0.5727 -	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5776
10/10		0s	9ms/step -	accuracy:	0.7155 -	loss:	0.5717 -	- val_accuracy:	0.7094 -	val_loss:	0.5775
10/10		0s	8ms/step -	accuracy:	0.7269 -	loss:	0.5587 -	- val_accuracy:	0.7094 -	val_loss:	0.5775
10/10		0s	8ms/step -	accuracy:	0.7170 -	loss:	0.5697 -	- val_accuracy:	0.7094 -	val_loss:	0.5774
•	219/500	0s	8ms/step -	accuracy:	0.7119 -	loss:	0.5786 -	- val_accuracy:	0.7094 -	val_loss:	0.5773
	220/500	0s	9ms/step -	accuracy:	0.7305 -	loss:	0.5625 -	<pre>- val_accuracy:</pre>	0.7094 -	· val_loss:	0.5772
•	221/500	0s	11ms/step -	- accuracy	: 0.7246	- loss:	0.5652	val_accuracy	: 0.7094	- val loss:	0.5771
	222/500	0s	10ms/step	- accuracv	: 0.7199	- loss:	0.5674	- val_accuracy	: 0.7094	- val loss:	0.5770
	223/500		·					- val accuracy:		_	
	224/500							val_accuracy:		_	
Epoch	225/500		·							_	
10/10 Epoch	226/500	62	oms/step -	accuracy:	₩./215 -	1088;	U.3048 -	- val_accuracy:	v./094 -	· va1_1022:	₩. ɔ/b &

10/10		0s	9ms/step -	accuracv:	0.7119 -	loss:	0.5776 -	val accuracy:	0.7094	- val loss:	0.5767
	227/500							,			
10/10		0s	9ms/step -	accuracy:	0.7207 -	loss:	0.5643 -	val_accuracy:	0.7094	- val_loss:	0.5766
•	228/500										
=		0s	9ms/step -	accuracy:	0.7118 -	loss:	0.5780 -	val_accuracy:	0.7094	- val_loss:	0.5765
•	229/500	0-	0 / - +		0 7207	1	0 5603		0.7004		0 5765
	230/500	05	9ms/step -	accuracy:	0./28/ -	1055:	0.5602 -	val_accuracy:	0.7094	- vai_ioss:	0.5/65
		95	8ms/sten -	accuracy:	0 7179 -	loss	0 5611 -	val_accuracy:	0 7094	- val loss:	0 5764
	231/500	03	ошэ, эсср	accar acy.	0.7173	1033.	0.3011	var_accar acy.	0.7034	va1_1033.	0.5704
		0s	8ms/step -	accuracy:	0.7078 -	loss:	0.5741 -	val_accuracy:	0.7094	- val_loss:	0.5764
Epoch	232/500			-							
		0s	8ms/step -	accuracy:	0.7187 -	loss:	0.5700 -	val_accuracy:	0.7094	- val_loss:	0.5763
	233/500					_		_			
		0s	8ms/step -	accuracy:	0.7247 -	loss:	0.5593 -	val_accuracy:	0.7094	- val_loss:	0.5763
•	234/500	00	Ome/ston	26611026144	0 7205	10551	0 5506	val_accuracy:	0 7004	val locci	0 5762
	235/500	62	oms/step -	accuracy.	0.7205 -	1055.	0.5566 -	vai_accuracy.	0.7094	- vai_1055.	0.3762
•		0s	7ms/step -	accuracv:	0.7061 -	loss:	0.5740 -	val_accuracy:	0.7094	- val loss:	0.5761
=	236/500		-,								
10/10		0s	9ms/step -	accuracy:	0.7048 -	loss:	0.5758 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5761
•	237/500										
		0s	9ms/step -	accuracy:	0.6662 -	loss:	0.6078 -	val_accuracy:	0.7094	- val_loss:	0.5760
•	238/500	0 -	0 / 1		0 7004	,	0 5503	,	0.7004		0 5750
	239/500	ØS	8ms/step -	accuracy:	0./231 -	Toss:	0.5583 -	val_accuracy:	0.7094	- val_loss:	0.5/59
•		95	8ms/sten -	accuracy:	0.6994 -	loss:	0.5855 -	val_accuracy:	0.7094	- val loss:	0.5758
	240/500	0.5	33, 3 ccp	accar acy.	0.0331	1033.	0.3033	var_acca. acy.	0.703.	va1_1000.	0.5750
•		0s	8ms/step -	accuracy:	0.7104 -	loss:	0.5744 -	val_accuracy:	0.7094	- val_loss:	0.5757
Epoch	241/500										
=		0s	8ms/step -	accuracy:	0.7116 -	loss:	0.5742 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5757
	242/500					_		_			
		0s	8ms/step -	accuracy:	0.7199 -	loss:	0.5641 -	val_accuracy:	0.7094	- val_loss:	0.5756
•	243/500	۵c	8ms/stan -	accuracy.	0 7218 -	1000	0 5607 -	val_accuracy:	0 7091	- val loss:	a 5755
	244/500	03	olii3/3cep -	accuracy.	0.7210	1033.	0.3007	vai_accuracy.	0.7054	- vai_1033.	0.5/55
10/10		0s	8ms/step -	accuracy:	0.7112 -	loss:	0.5724 -	val_accuracy:	0.7094	- val loss:	0.5754
	245/500			,				_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.7204 -	loss:	0.5627 -	val_accuracy:	0.7094	- val_loss:	0.5753
•	246/500										
10/10		0s	9ms/step -	accuracy:	0.7278 -	loss:	0.5614 -	val_accuracy:	0.7094	- val_loss:	0.5752

•	247/500	0.5	Ome/ston	2661122614	0 (010	10001	ο Γ071	val accumacy.	0.7004	val loss.	0 5751
Epoch	248/500		•	-				val_accuracy:		_	
Epoch	249/500		•	-				val_accuracy:		_	
Epoch	250/500		·	-				val_accuracy:		_	
Epoch	251/500		•	-				val_accuracy:		_	
	252/500	0s	8ms/step -	accuracy:	0.7173 -	loss:	0.5687 -	val_accuracy:	0.7094 -	val_loss:	0.5748
	 253/500	0s	8ms/step -	accuracy:	0.7294 -	loss:	0.5623 -	val_accuracy:	0.7094 -	val_loss:	0.5748
	254/500	0s	8ms/step -	accuracy:	0.7091 -	loss:	0.5671 -	val_accuracy:	0.7094 -	val_loss:	0.5747
	255/500	0s	8ms/step -	accuracy:	0.7147 -	loss:	0.5700 -	val_accuracy:	0.7094 -	val_loss:	0.5746
	256/500	0s	8ms/step -	accuracy:	0.7081 -	loss:	0.5749 -	val_accuracy:	0.7094 -	val_loss:	0.5745
10/10		0s	8ms/step -	accuracy:	0.7332 -	loss:	0.5538 -	val_accuracy:	0.7094 -	val_loss:	0.5745
10/10	258/500	0s	8ms/step -	accuracy:	0.7040 -	loss:	0.5856 -	val_accuracy:	0.7094 -	val_loss:	0.5744
10/10		0s	8ms/step -	accuracy:	0.7215 -	loss:	0.5564 -	val_accuracy:	0.7094 -	val_loss:	0.5743
10/10		0s	8ms/step -	accuracy:	0.6808 -	loss:	0.5945 -	val_accuracy:	0.7094 -	val_loss:	0.5743
10/10		0s	8ms/step -	accuracy:	0.7283 -	loss:	0.5563 -	val_accuracy:	0.7094 -	val_loss:	0.5742
10/10		0s	8ms/step -	accuracy:	0.7016 -	loss:	0.5841 -	val_accuracy:	0.7094 -	val_loss:	0.5742
10/10		0s	8ms/step -	accuracy:	0.7021 -	loss:	0.5801 -	val_accuracy:	0.7094 -	val_loss:	0.5742
10/10		0s	8ms/step -	accuracy:	0.7050 -	loss:	0.5719 -	val_accuracy:	0.7094 -	val_loss:	0.5741
10/10		0s	8ms/step -	accuracy:	0.7396 -	loss:	0.5505 -	val_accuracy:	0.7094 -	val_loss:	0.5739
10/10		0s	8ms/step -	accuracy:	0.6995 -	loss:	0.5749 -	val_accuracy:	0.7094 -	val_loss:	0.5739
Epoch 10/10	266/500	0s	8ms/step -	accuracy:	0.7174 -	loss:	0.5681 -	val_accuracy:	0.7094 -	val_loss:	0.5737
Epoch	267/500										

10/10		0s	12ms/step - accuracy	: 0.7126 -	· loss:	0.5694	- val accuracy:	0.7094	- val loss: 0.	. 5737
	268/500		, с сер песи пе							
10/10		0s	7ms/step - accuracy:	0.7097 -	loss:	0.5625 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0.5	5736
	269/500									
		0s	9ms/step - accuracy:	0.7067 -	loss:	0.5715 -	val_accuracy:	0.7094 -	val_loss: 0.5	5735
•	270/500	Q.c	9ms/step - accuracy:	0 6015	10551	A E022	val accuracy:	0 7004	val loce: 0 5	.72 <i>/</i> l
	271/500	62	Siis/step - accuracy.	0.0313 -	1055.	0.3622 -	vai_accuracy.	0.7034 -	vai_1055. 0.2	3734
•		0s	8ms/step - accuracy:	0.7166 -	loss:	0.5663 -	val accuracy:	0.7094 -	val loss: 0.5	5734
Epoch	272/500		·				_ ,		_	
		0s	8ms/step - accuracy:	0.7193 -	loss:	0.5679 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0.5	5733
•	273/500	_			_		_			
		0s	8ms/step - accuracy:	0.6873 -	loss:	0.5850 -	val_accuracy:	0.7094 -	val_loss: 0.5	5733
•	274/500 ————————	۵s	8ms/step - accuracy:	0 6882 -	loss	0 5919 -	val accuracy:	0 7094 -	val loss. 0 5	5732
	275/500	03	oms/seep accuracy.	0.0002	1033.	0.3313	vai_accar acy:	0.7054	vai_1033. 0.3	J7 J2
•		0s	8ms/step - accuracy:	0.7045 -	loss:	0.5704 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0.5	5732
Epoch	276/500									
		0s	8ms/step - accuracy:	0.6888 -	loss:	0.5916 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0.5	5731
	277/500	0 -	0 / 1	0.7040		0 5640	,	0.7004		-720
	278/500	ØS.	8ms/step - accuracy:	0.7243 -	Toss:	0.5610 -	val_accuracy:	0.7094 -	val_loss: 0.5	5/30
•		0s	8ms/step - accuracy:	0.7109 -	loss:	0.5685 -	val accuracy:	0.7094 -	val loss: 0.5	5730
	279/500		т., т., т.,							
10/10		0s	8ms/step - accuracy:	0.7195 -	loss:	0.5675 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0.5	5729
	280/500				_		_			
		0s	8ms/step - accuracy:	0.7291 -	loss:	0.5591 -	val_accuracy:	0.7094 -	val_loss: 0.5	5728
•	281/500 	۵c	8ms/step - accuracy:	0 7126 -	1000	0 5656 -	val accuracy:	0 7094 -	val loss: 0 5	5728
	282/500	03	oms/seep - accuracy.	0.7120	1033.	0.5050 =	vai_accuracy.	0.7054	vai_1033. 0.3	7720
•		0s	8ms/step - accuracy:	0.7026 -	loss:	0.5772 -	val_accuracy:	0.7094 -	val_loss: 0.5	5727
•	283/500									
		0s	8ms/step - accuracy:	0.7023 -	loss:	0.5757 -	val_accuracy:	0.7094 -	val_loss: 0.5	5727
•	284/500	0-	Ome /stan	0 7142	1	0 5610		0.7004]]	-726
	285/500	05	8ms/step - accuracy:	0.7143 -	1055:	0.5619 -	vai_accuracy:	0.7094 -	vai_1055: 0.5	0/20
•		0s	8ms/step - accuracy:	0.7255 -	loss:	0.5563 -	val accuracv:	0.7094 -	val loss: 0.5	5725
	286/500		. ,						_	
10/10		0s	8ms/step - accuracy:	0.7322 -	loss:	0.5514 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss: 0.5	5724
•	287/500		0 / 1	0.6044	-	0 5004	,	0 7006		
10/10		US	8ms/step - accuracy:	U.6941 -	1055:	0.5886 -	vai_accuracy:	0./094 -	var_ross: 0.5	0/23

•	288/500	
	289/500	0s 8ms/step - accuracy: 0.7046 - loss: 0.5742 - val_accuracy: 0.7094 - val_loss: 0.5723
10/10		0s 8ms/step - accuracy: 0.7092 - loss: 0.5662 - val_accuracy: 0.7094 - val_loss: 0.5722
	290/500	0. 0/
	291/500	0s 8ms/step - accuracy: 0.7314 - loss: 0.5482 - val_accuracy: 0.7094 - val_loss: 0.5722
•		0s 8ms/step - accuracy: 0.7118 - loss: 0.5686 - val_accuracy: 0.7094 - val_loss: 0.5721
	292/500	
10/10		0s 9ms/step - accuracy: 0.7303 - loss: 0.5492 - val_accuracy: 0.7094 - val_loss: 0.5720
	293/500	
		0s 8ms/step - accuracy: 0.7215 - loss: 0.5615 - val_accuracy: 0.7094 - val_loss: 0.5720
	294/500	0- 0/
	295/500	0s 8ms/step - accuracy: 0.7069 - loss: 0.5718 - val_accuracy: 0.7094 - val_loss: 0.5719
		0s 8ms/step - accuracy: 0.7021 - loss: 0.5812 - val accuracy: 0.7094 - val loss: 0.5719
	296/500	
		0s 8ms/step - accuracy: 0.6910 - loss: 0.5818 - val_accuracy: 0.7094 - val_loss: 0.5718
Epoch	297/500	
10/10		0s 8ms/step - accuracy: 0.7449 - loss: 0.5376 - val_accuracy: 0.7094 - val_loss: 0.5718
	298/500	
		0s 8ms/step - accuracy: 0.7038 - loss: 0.5725 - val_accuracy: 0.7094 - val_loss: 0.5717
	299/500 	0s 8ms/step - accuracy: 0.7173 - loss: 0.5666 - val_accuracy: 0.7094 - val_loss: 0.5716
	300/500	03 0m3/3cep - accuracy. 0.71/3 - 1033. 0.3000 - var_accuracy. 0.7034 - var_1033. 0.3710
		0s 8ms/step - accuracy: 0.7070 - loss: 0.5670 - val_accuracy: 0.7094 - val_loss: 0.5716
	301/500	
10/10		0s 8ms/step - accuracy: 0.7073 - loss: 0.5721 - val_accuracy: 0.7094 - val_loss: 0.5716
	302/500	
		0s 8ms/step - accuracy: 0.7219 - loss: 0.5579 - val_accuracy: 0.7094 - val_loss: 0.5715
	303/500	0s 9ms/step - accuracy: 0.7216 - loss: 0.5618 - val_accuracy: 0.7094 - val_loss: 0.5715
	304/500	95 9115/Step - accuracy. 0.7210 - 1055. 0.3018 - Val_accuracy. 0.7094 - Val_1055. 0.3713
		0s 9ms/step - accuracy: 0.7169 - loss: 0.5586 - val_accuracy: 0.7094 - val_loss: 0.5713
	305/500	
10/10		0s 10ms/step - accuracy: 0.6926 - loss: 0.5829 - val_accuracy: 0.7094 - val_loss: 0.5713
•	306/500	
10/10		0s 10ms/step - accuracy: 0.7042 - loss: 0.5758 - val_accuracy: 0.7094 - val_loss: 0.5712
•	307/500	Oc. Ome/ston Decumpose 0 7/07 local 0 E/04 vol Decumpose 0 7/04 vol local 0 E/14
10/10 Enoch	308/500	0s 9ms/step - accuracy: 0.7407 - loss: 0.5404 - val_accuracy: 0.7094 - val_loss: 0.5711
Еросп	300, 300	

10/10		0s	9ms/step -	accuracv:	0.7241 -	loss:	0.5475 -	val_accuracy:	0.7094 -	val loss:	0.5710
	309/500		т., с с с р								
		0s	8ms/step -	accuracy:	0.7251 -	loss:	0.5569 -	val_accuracy:	0.7094 -	val_loss:	0.5709
Epoch	310/500			-				_ ,			
10/10		0s	8ms/step -	accuracy:	0.6881 -	loss:	0.5886 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5708
•	311/500										
10/10		0s	8ms/step -	accuracy:	0.7097 -	loss:	0.5717 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5708
	312/500										
		0s	8ms/step -	accuracy:	0.7292 -	loss:	0.5522 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5708
	313/500					_		_			
		0s	10ms/step	- accuracy	: 0.7023	- loss:	0.5829	- val_accuracy	: 0.7094	- val_loss:	0.5707
•	314/500	_	0 / 1			-	0 5400		. =		
		0s	8ms/step -	accuracy:	0./3// -	loss:	0.5428 -	val_accuracy:	0./094 -	val_loss:	0.5/06
	315/500	0-	0		0 7027	1	0 5730		0.7004		0 5705
	316/500	05	oms/step -	accuracy:	0.7037 -	1055:	0.5/39 -	val_accuracy:	0.7094 -	Va1_1055:	0.5705
		۵c	Qms/stan -	accupacy:	0 7/68 -	1000	0 5330 -	· val_accuracy:	0 7004 -	val loss:	0 5701
	317/500	03	oliis/scep -	accuracy.	0.7400	1033.	0.5550	vai_accuracy.	0.7054	Va1_1033.	0.5704
•		0 s	8ms/sten -	accuracy:	0.6955 -	loss:	0.5777 -	val_accuracy:	0.7094 -	val loss:	0.5704
	318/500	0.5	оэ, эсер	accar acy.	0.0333	1033.	0.37.77	var_acca, acy.	0.,05	va1033.	0.3701
•		0s	8ms/step -	accuracy:	0.7274 -	loss:	0.5547 -	val_accuracy:	0.7094 -	val loss:	0.5703
	319/500			,				_ ,		_	
		0s	9ms/step -	accuracy:	0.7016 -	loss:	0.5755 -	val_accuracy:	0.7094 -	val_loss:	0.5703
Epoch	320/500										
10/10		0s	8ms/step -	accuracy:	0.7333 -	loss:	0.5452 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5702
•	321/500										
		0s	9ms/step -	accuracy:	0.6979 -	loss:	0.5828 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5702
•	322/500										
		0s	9ms/step -	accuracy:	0.7063 -	loss:	0.5672 -	val_accuracy:	0.7094 -	val_loss:	0.5702
•	323/500	_	0 / 1			-	0 5404		. =		0 ==04
		ØS	9ms/step -	accuracy:	0./2/8 -	1055:	0.5491 -	val_accuracy:	0.7094 -	val_loss:	0.5/01
	324/500	00	Oms/ston	26611026111	0 7267	10551	Q EE16	· val_accuracy:	0 7004	val loss.	0 5700
=	325/500	62	31113/3Cep -	accuracy.	0.7207 -	1055.	0.3310 -	· vai_accuracy.	0.7034 -	Va1_1055.	0.5700
		۵c	10ms/sten	- accuracy	· a 7289	- 1055	0 5621	- val_accuracy	· a 7094 .	- val loss:	0 5700
	326/500	03	1011137 3 сер	accar acy	. 0.7203	1033	0.3021	vai_accar acy	. 0.7054	Va1_1033.	0.5700
10/10		0s	9ms/step -	accuracv:	0.7033 -	loss:	0.5759 -	val_accuracy:	0.7094 -	val loss:	0.5699
	327/500		,								
•		0s	8ms/step -	accuracy:	0.7211 -	loss:	0.5523 -	val_accuracy:	0.7094 -	val_loss:	0.5698
Epoch	328/500		•	•				_ ,		_	
10/10		0s	8ms/step -	accuracy:	0.6897 -	loss:	0.5815 -	val_accuracy:	0.7094 -	val_loss:	0.5698

•	329/500	Oc 12ms/step
Epoch	330/500	0s 12ms/step - accuracy: 0.7132 - loss: 0.5630 - val_accuracy: 0.7094 - val_loss: 0.5697
Epoch	331/500	0s 10ms/step - accuracy: 0.7097 - loss: 0.5671 - val_accuracy: 0.7094 - val_loss: 0.5697
Epoch	332/500	0s 10ms/step - accuracy: 0.7358 - loss: 0.5473 - val_accuracy: 0.7094 - val_loss: 0.5696
	333/500	0s 8ms/step - accuracy: 0.7475 - loss: 0.5379 - val_accuracy: 0.7094 - val_loss: 0.5696
	334/500	0s 8ms/step - accuracy: 0.7235 - loss: 0.5568 - val_accuracy: 0.7094 - val_loss: 0.5695
	335/500	0s 8ms/step - accuracy: 0.7114 - loss: 0.5660 - val_accuracy: 0.7094 - val_loss: 0.5695
	336/500	0s 8ms/step - accuracy: 0.7039 - loss: 0.5688 - val_accuracy: 0.7094 - val_loss: 0.5694
10/10		0s 8ms/step - accuracy: 0.7073 - loss: 0.5681 - val_accuracy: 0.7094 - val_loss: 0.5693
10/10		0s 8ms/step - accuracy: 0.7003 - loss: 0.5717 - val_accuracy: 0.7094 - val_loss: 0.5693
10/10		0s 8ms/step - accuracy: 0.7410 - loss: 0.5430 - val_accuracy: 0.7094 - val_loss: 0.5692
10/10		0s 8ms/step - accuracy: 0.7103 - loss: 0.5628 - val_accuracy: 0.7094 - val_loss: 0.5692
10/10		0s 8ms/step - accuracy: 0.6893 - loss: 0.5878 - val_accuracy: 0.7094 - val_loss: 0.5691
	341/500	0s 8ms/step - accuracy: 0.7002 - loss: 0.5783 - val_accuracy: 0.7094 - val_loss: 0.5690
•	342/500 	0s 7ms/step - accuracy: 0.7019 - loss: 0.5733 - val_accuracy: 0.7094 - val_loss: 0.5690
•	343/500	0s 8ms/step - accuracy: 0.7100 - loss: 0.5603 - val_accuracy: 0.7094 - val_loss: 0.5689
•	344/500	0s 9ms/step - accuracy: 0.7089 - loss: 0.5644 - val_accuracy: 0.7094 - val_loss: 0.5688
Epoch	345/500	0s 11ms/step - accuracy: 0.6866 - loss: 0.5908 - val accuracy: 0.7094 - val loss: 0.5688
Epoch	346/500	0s 11ms/step - accuracy: 0.7028 - loss: 0.5701 - val_accuracy: 0.7094 - val_loss: 0.5688
•	347/500	
•	348/500	<pre>0s 11ms/step - accuracy: 0.7178 - loss: 0.5598 - val_accuracy: 0.7094 - val_loss: 0.5687</pre>
10/10 Epoch	349/500	0s 10ms/step - accuracy: 0.7192 - loss: 0.5508 - val_accuracy: 0.7094 - val_loss: 0.5686

10/10		0s	8ms/step -	accuracy:	0.7208 -	loss:	0.5574 -	val_accuracy:	0.7094 -	val_loss:	0.5686
•	350/500			_							
		0s	8ms/step -	accuracy:	0.7191 -	loss:	0.5530 -	val_accuracy:	0.7094 -	val_loss:	0.5685
•	351/500	0 -	0 / 1		0.7300		0 5505	1	0.7004		0 5605
=	352/500	US	9ms/step -	accuracy:	0./200 -	loss:	0.5585 -	val_accuracy:	0.7094 -	var_ross:	0.5685
	=	0s	9ms/sten -	accuracy:	0 7093 -	1055.	0 5671 -	val_accuracy:	0 7094 -	val loss.	0 5684
	353/500	03	эшэ, эсср	accar acy.	0.7033	1033.	0.5071	var_accar acy:	0.7054	vui_1055.	0.5004
		0s	9ms/step -	accuracy:	0.7219 -	loss:	0.5517 -	val_accuracy:	0.7094 -	val_loss:	0.5683
	354/500										
		0s	11ms/step	- accuracy	: 0.7158	- loss:	0.5620	- val_accuracy	: 0.7094 -	val_loss:	0.5683
•	355/500	_				_		_			
		0s	10ms/step	- accuracy	: 0.7252	- loss:	0.5532	- val_accuracy	: 0.7094 -	val_loss:	0.5682
	356/500	۵c	2ms/stan -	accuracy:	0 7258 -	1000	0 5525 -	val_accuracy:	0 7091 -	val loss.	0 5682
	357/500	03	6113/3CEP -	accuracy.	0.7230 -	1033.	0.3323 -	vai_accuracy.	0.7034 -	vai_1033.	0.3082
		0s	8ms/step -	accuracy:	0.7068 -	loss:	0.5726 -	val_accuracy:	0.7094 -	val loss:	0.5681
	358/500			,				_ ,		_	
10/10		0s	8ms/step -	accuracy:	0.7169 -	loss:	0.5592 -	val_accuracy:	0.7094 -	val_loss:	0.5681
•	359/500										
		0s	8ms/step -	accuracy:	0.6870 -	loss:	0.5840 -	val_accuracy:	0.7094 -	val_loss:	0.5680
	360/500	00	7ms/ston	26611026144	0 7104	10551	A EE70	v21 2660026V4	0.7004	val locci	0 5600
	361/500	05	/iiis/step -	accuracy.	0.7194 -	1055.	0.5576 -	vai_accuracy.	0.7094 -	vai_1055.	0.3000
•		0s	8ms/step -	accuracy:	0.7090 -	loss:	0.5675 -	val_accuracy:	0.7094 -	val loss:	0.5680
	362/500		,							_	
10/10		0s	8ms/step -	accuracy:	0.6970 -	loss:	0.5713 -	val_accuracy:	0.7094 -	val_loss:	0.5679
•	363/500										
		0s	9ms/step -	accuracy:	0.7010 -	loss:	0.5809 -	val_accuracy:	0.7094 -	val_loss:	0.5679
	364/500	0.0	11mc/c+on	266419264	. 0 7275	1000	0 5516	- val_accuracy	. 0 7004	val lassi	0 5679
	365/500	05	11ms/step	- accuracy	. 0./2/5	- 1055;	0.5510	- var_accuracy	. 0.7094 -	va1_1055;	0.50/8
		0s	8ms/step -	accuracv:	0.7319 -	loss:	0.5498 -	val_accuracy:	0.7094 -	val loss:	0.5678
	366/500		,							_	
10/10		0s	7ms/step -	accuracy:	0.6874 -	loss:	0.5830 -	val_accuracy:	0.7094 -	val_loss:	0.5677
•	367/500										
10/10		0s	10ms/step	- accuracy	: 0.7380	- loss:	0.5442	- val_accuracy	: 0.7094 -	val_loss:	0.5677
•	368/500	00	10mc/c+on	266118261	. 0 6000	1055	0 5772	val accuracy	. 0 7004	val loss:	0 5676
	369/500	62	Tollis/ 2 ceb	- accuracy	. ७.७५०४	- 1022;	0.3//2	- val_accuracy	. 0./094 -	. vaT_1022:	0,50/0
10/10		0 s	8ms/step -	accuracv:	0.6970 -	loss:	0.5700 -	val_accuracy:	0.7094 -	val loss:	0.5676
-,			-, F								· · -

•	370/500	0. 14 () 0. 7004 1 0. 7004
Epoch	371/500	0s 14ms/step - accuracy: 0.7321 - loss: 0.5518 - val_accuracy: 0.7094 - val_loss: 0.5675
	372/500	0s 9ms/step - accuracy: 0.7229 - loss: 0.5514 - val_accuracy: 0.7094 - val_loss: 0.5675
	373/500	0s 9ms/step - accuracy: 0.7020 - loss: 0.5661 - val_accuracy: 0.7094 - val_loss: 0.5674
10/10		0s 10ms/step - accuracy: 0.7113 - loss: 0.5638 - val_accuracy: 0.7094 - val_loss: 0.5674
10/10		0s 7ms/step - accuracy: 0.7055 - loss: 0.5632 - val_accuracy: 0.7094 - val_loss: 0.5673
•	375/500	0s 8ms/step - accuracy: 0.7088 - loss: 0.5700 - val_accuracy: 0.7094 - val_loss: 0.5673
•	376/500	<pre>0s 10ms/step - accuracy: 0.7364 - loss: 0.5344 - val_accuracy: 0.7094 - val_loss: 0.5672</pre>
Epoch	377/500	
	378/500	0s 11ms/step - accuracy: 0.7059 - loss: 0.5667 - val_accuracy: 0.7094 - val_loss: 0.5672
	379/500	0s 10ms/step - accuracy: 0.6784 - loss: 0.5906 - val_accuracy: 0.7094 - val_loss: 0.5672
10/10		0s 8ms/step - accuracy: 0.6763 - loss: 0.5952 - val_accuracy: 0.7094 - val_loss: 0.5671
10/10		0s 11ms/step - accuracy: 0.7276 - loss: 0.5455 - val_accuracy: 0.7094 - val_loss: 0.5670
	381/500	0s 9ms/step - accuracy: 0.7049 - loss: 0.5684 - val_accuracy: 0.7094 - val_loss: 0.5670
Epoch	382/500	0s 8ms/step - accuracy: 0.7112 - loss: 0.5613 - val_accuracy: 0.7094 - val_loss: 0.5669
Epoch	383/500	
	384/500	0s 7ms/step - accuracy: 0.7324 - loss: 0.5476 - val_accuracy: 0.7094 - val_loss: 0.5669
	385/500	0s 8ms/step - accuracy: 0.7233 - loss: 0.5555 - val_accuracy: 0.7094 - val_loss: 0.5669
10/10		0s 8ms/step - accuracy: 0.6934 - loss: 0.5799 - val_accuracy: 0.7094 - val_loss: 0.5668
10/10		0s 8ms/step - accuracy: 0.7301 - loss: 0.5493 - val_accuracy: 0.7094 - val_loss: 0.5668
Epoch 10/10	387/500	0s 8ms/step - accuracy: 0.7032 - loss: 0.5683 - val_accuracy: 0.7094 - val_loss: 0.5667
Epoch 10/10	388/500	0s 11ms/step - accuracy: 0.7200 - loss: 0.5545 - val_accuracy: 0.7094 - val_loss: 0.5667
Epoch	389/500	
10/10 Epoch	390/500	0s 8ms/step - accuracy: 0.7376 - loss: 0.5354 - val_accuracy: 0.7094 - val_loss: 0.5666

10/10		0s	8ms/step	- accuracv:	0.7208 -	loss:	0.5578	- val accuracy:	0.7094	- val loss:	0.5665
	391/500		, p	,							
10/10		0s	8ms/step	- accuracy:	0.7302 -	loss:	0.5400	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5665
•	392/500										
		0s	8ms/step	- accuracy:	0.6960 -	loss:	0.5734	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5664
	393/500	0-	0		0 7571	1	0 5127		0.7004		0 5664
	394/500	05	8ms/step	- accuracy:	0./5/1 -	1055:	0.512/	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5664
•		95	8ms/sten	- accuracy:	0.7082 -	loss:	0.5607	- val_accuracy:	0.7094	- val loss:	0.5663
	395/500	03	011137 3 CCP	accar acy.	0.7002	1033.	0.3007	var_accar acy.	0.7054	va1_1033.	0.3003
		0s	8ms/step	- accuracy:	0.7141 -	loss:	0.5635	- val_accuracy:	0.7094	- val_loss:	0.5663
Epoch	396/500			-							
10/10		0s	8ms/step	- accuracy:	0.7045 -	loss:	0.5720	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5662
	397/500					_		_			
		0s	8ms/step	- accuracy:	0.6858 -	loss:	0.5790	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5662
	398/500	Q.c	Ome/ston	2661182671	a 7220	10551	0 5450	<pre>- val_accuracy:</pre>	0 7004	val loss:	0 5661
	399/500	62	ollis/step	- accuracy.	0.7236 -	1055.	0.3430	- vai_accuracy.	0.7054	- vai_1055.	0.3001
		0s	8ms/step	- accuracy:	0.7134 -	loss:	0.5501	- val_accuracy:	0.7094	- val loss:	0.5661
	400/500		,	, , , , , , , , , , , , , , , , , , , ,				,			
10/10		0s	8ms/step	- accuracy:	0.7214 -	loss:	0.5493	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5661
	401/500										
		0s	8ms/step	- accuracy:	0.7418 -	loss:	0.5368	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5660
	402/500	0-	0		0 6055	1	0 5730		0.7004		0 5660
	403/500	05	8ms/step	- accuracy:	0.6955 -	1055:	0.5/30	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5660
		95	9ms/sten	- accuracy:	0.7341 -	loss:	0.5417	- val_accuracy:	0.7094	- val loss:	0.5659
	404/500	05	эшэ, эсср	acca. acy.	0.75.12	1033.	0.5.127	var_accar acy:	01,031		0.3033
		0s	9ms/step	- accuracy:	0.7166 -	loss:	0.5615	- val_accuracy:	0.7094	- val_loss:	0.5658
Epoch	405/500										
		0s	8ms/step	- accuracy:	0.7144 -	loss:	0.5535	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5657
•	406/500	_	0 / 1		0 7056	-			. =		0 5653
-		ØS.	8ms/step	- accuracy:	0./056 -	loss:	0.5588	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.565/
•	407/500	۵s	2ms/sten	- accuracy:	0 6946 -	loss	0 5736	- val accuracy:	0 7094	- val loss:	0 5656
-	408/500	03	ошэ, эсср	accuracy.	0.0540	1033.	0.5750	vai_accaracy.	0.7054	vai_1033.	0.3030
10/10		0s	8ms/step	- accuracy:	0.7350 -	loss:	0.5420	- val_accuracy:	0.7094	- val_loss:	0.5656
Epoch	409/500							_ •		_	
		0s	7ms/step	- accuracy:	0.7007 -	loss:	0.5676	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5655
	410/500	_						-			
10/10		Øs	8ms/step	- accuracy:	0.7099 -	loss:	0.5741	- val_accuracy:	0.7094	- val_loss:	0.5655

•	411/500	
	412/500	0s 8ms/step - accuracy: 0.7202 - loss: 0.5499 - val_accuracy: 0.7094 - val_loss: 0.5655
10/10		0s 6ms/step - accuracy: 0.7284 - loss: 0.5525 - val_accuracy: 0.7094 - val_loss: 0.5654
	413/500	0. 7 - / - 1
	414/500	0s 7ms/step - accuracy: 0.7026 - loss: 0.5743 - val_accuracy: 0.7094 - val_loss: 0.5654
•		0s 8ms/step - accuracy: 0.7193 - loss: 0.5531 - val_accuracy: 0.7094 - val_loss: 0.5654
Epoch	415/500	
		0s 8ms/step - accuracy: 0.6983 - loss: 0.5816 - val_accuracy: 0.7094 - val_loss: 0.5653
	416/500	0. 7/
	417/500	0s 7ms/step - accuracy: 0.7001 - loss: 0.5705 - val_accuracy: 0.7094 - val_loss: 0.5653
		0s 7ms/step - accuracy: 0.6975 - loss: 0.5693 - val_accuracy: 0.7094 - val_loss: 0.5652
	418/500	
		0s 7ms/step - accuracy: 0.7062 - loss: 0.5557 - val_accuracy: 0.7094 - val_loss: 0.5652
•	419/500	0.7.//
	420/500	0s 7ms/step - accuracy: 0.7081 - loss: 0.5573 - val_accuracy: 0.7094 - val_loss: 0.5651
•		0s 10ms/step - accuracy: 0.7191 - loss: 0.5505 - val_accuracy: 0.7094 - val_loss: 0.5650
	421/500	
10/10		0s 7ms/step - accuracy: 0.7183 - loss: 0.5579 - val_accuracy: 0.7094 - val_loss: 0.5650
•	422/500	
	423/500	0s 8ms/step - accuracy: 0.7386 - loss: 0.5385 - val_accuracy: 0.7094 - val_loss: 0.5649
		0s 8ms/step - accuracy: 0.7229 - loss: 0.5429 - val_accuracy: 0.7094 - val_loss: 0.5649
	424/500	
10/10		0s 8ms/step - accuracy: 0.7292 - loss: 0.5474 - val_accuracy: 0.7094 - val_loss: 0.5648
	425/500	
	426/500	0s 8ms/step - accuracy: 0.7330 - loss: 0.5395 - val_accuracy: 0.7094 - val_loss: 0.5647
		0s 8ms/step - accuracy: 0.7139 - loss: 0.5544 - val accuracy: 0.7094 - val loss: 0.5647
	427/500	
10/10		0s 8ms/step - accuracy: 0.7258 - loss: 0.5537 - val_accuracy: 0.7094 - val_loss: 0.5647
•	428/500	
10/10	429/500	0s 7ms/step - accuracy: 0.7107 - loss: 0.5600 - val_accuracy: 0.7094 - val_loss: 0.5646
10/10		0s 7ms/step - accuracy: 0.7102 - loss: 0.5578 - val_accuracy: 0.7094 - val_loss: 0.5646
	430/500	, , ,
10/10		0s 7ms/step - accuracy: 0.7106 - loss: 0.5522 - val_accuracy: 0.7094 - val_loss: 0.5645
Epoch	431/500	

10/10		0s	7ms/step	- accuracv:	0.7254 -	loss:	0.5483 -	<pre>- val_accuracy:</pre>	0.7094	- val loss:	0.5645
	432/500		-,	,				,			
10/10		0s	7ms/step	- accuracy:	0.6932 -	loss:	0.5767 -	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5645
•	433/500										
		0s	7ms/step	- accuracy:	0.7300 -	loss:	0.5438 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5644
	434/500	0-	C / - +		0 7070	1	0 5365		0 7004		0 5644
	435/500	05	oms/step	- accuracy:	0./3/8 -	1055:	0.5365 -	<pre>- val_accuracy:</pre>	0.7094	- vai_10ss:	0.5644
•		05	9ms/sten	- accuracy:	0.7210 -	loss:	0.5576	- val_accuracy:	0.7094	- val loss:	0.5643
	436/500		J5, 5 ccp	acca. ac, v	017 = 20		0.007.0			101	
•		0s	7ms/step	- accuracy:	0.7231 -	loss:	0.5420 -	- val_accuracy:	0.7094	- val_loss:	0.5643
Epoch	437/500										
		0s	7ms/step	- accuracy:	0.7413 -	loss:	0.5407	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5642
	438/500	_				-		-			
		0s	7ms/step	- accuracy:	0.7243 -	loss:	0.5471 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5642
	439/500	۵c	7ms/stan	- accuracy:	0 6848 -	1000	0 5769 .	<pre>- val_accuracy:</pre>	0 7091	- val loss:	0 56/12
	440/500	03	71113/3 CEP	- accuracy.	0.0040 -	1033.	0.5705	- vai_accuracy.	0.7034	- vai_1033.	0.3042
•		0s	7ms/step	- accuracy:	0.7245 -	loss:	0.5478 -	- val_accuracy:	0.7094	- val loss:	0.5641
Epoch	441/500							_ ,		_	
10/10		0s	8ms/step	- accuracy:	0.7199 -	loss:	0.5517 -	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5640
	442/500										
		0s	7ms/step	- accuracy:	0.7084 -	loss:	0.5532 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5640
•	443/500	0-	7		0 7176	1	0 5535		0.7004		0 5630
	444/500	05	/ms/step	- accuracy:	0./1/6 -	1055:	0.5525	- val_accuracy:	0.7094	- vai_10ss:	0.5639
		0s	7ms/step	- accuracv:	0.7225 -	loss:	0.5512 -	- val_accuracy:	0.7094	- val loss:	0.5640
	445/500		то, о сор								
10/10		0s	7ms/step	- accuracy:	0.7339 -	loss:	0.5462 -	- val_accuracy:	0.7094	- val_loss:	0.5639
	446/500										
		0s	7ms/step	- accuracy:	0.7075 -	loss:	0.5638 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5638
•	447/500	0-	0 / - +		0 7110	1	0 5505		0 7004		0 5627
-	448/500	05	9ms/step	- accuracy:	0./119 -	1055:	0.5585	<pre>- val_accuracy:</pre>	0.7094	- vai_ioss:	0.5637
•		0 s	7ms/sten	- accuracy:	0.7044 -	loss:	0.5596	- val accuracy:	0.7094	- val loss:	0.5637
	449/500	0.5	, , seep	acca. acy.	0.7011	1033.	0.3330	var_acea. acy.	01,031		0.3037
10/10		0s	7ms/step	- accuracy:	0.7344 -	loss:	0.5437	- val_accuracy:	0.7094	- val_loss:	0.5637
Epoch	450/500										
		0s	7ms/step	- accuracy:	0.7157 -	loss:	0.5581 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5637
	451/500	•	- , ,		0 7000	,	0 5404	7	0.7007		0 5636
10/10		ØS	/ms/step	- accuracy:	0./298 -	loss:	U.5486 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5636

	452/500	0-	7		0 7252	1	0 5303		0.7004		0 5635
Epoch	453/500		·	-				val_accuracy:		_	
Epoch	454/500		·	-				val_accuracy:		_	
Epoch	455/500		·	-				val_accuracy:		_	
Epoch	456/500		·	-				val_accuracy:		_	
Epoch	457/500		·	-				val_accuracy:		_	
	458/500		·	-				val_accuracy:		_	
	459/500		·	-				val_accuracy:		_	
	460/500	0s	8ms/step -	accuracy:	0.7321 -	loss:	0.5392 -	val_accuracy:	0.7094 -	val_loss:	0.5633
	461/500	0s	8ms/step -	accuracy:	0.7203 -	loss:	0.5526 -	val_accuracy:	0.7094 -	val_loss:	0.5633
	462/500	0s	8ms/step -	accuracy:	0.7163 -	loss:	0.5548 -	val_accuracy:	0.7094 -	val_loss:	0.5632
	463/500	0s	7ms/step -	accuracy:	0.7166 -	loss:	0.5584 -	val_accuracy:	0.7094 -	val_loss:	0.5632
	464/500	0s	7ms/step -	accuracy:	0.6920 -	loss:	0.5823 -	val_accuracy:	0.7094 -	val_loss:	0.5632
	465/500	0s	8ms/step -	accuracy:	0.7130 -	loss:	0.5553 -	val_accuracy:	0.7094 -	val_loss:	0.5631
	466/500	0s	7ms/step -	accuracy:	0.7304 -	loss:	0.5410 -	val_accuracy:	0.7094 -	val_loss:	0.5631
10/10		0s	7ms/step -	accuracy:	0.7095 -	loss:	0.5513 -	val_accuracy:	0.7094 -	val_loss:	0.5631
10/10		0s	8ms/step -	accuracy:	0.7197 -	loss:	0.5513 -	val_accuracy:	0.7094 -	val_loss:	0.5630
10/10		0s	8ms/step -	accuracy:	0.6978 -	loss:	0.5764 -	val_accuracy:	0.7094 -	val_loss:	0.5630
10/10		0s	7ms/step -	accuracy:	0.7267 -	loss:	0.5425 -	val_accuracy:	0.7094 -	val_loss:	0.5630
10/10		0s	8ms/step -	accuracy:	0.7178 -	loss:	0.5575 -	val_accuracy:	0.7094 -	val_loss:	0.5629
10/10		0s	9ms/step -	accuracy:	0.7290 -	loss:	0.5389 -	val_accuracy:	0.7094 -	val_loss:	0.5628
Еросп	7,2,300										

10/10		95	9ms/sten - a	occuracy:	0.7384 -	loss:	0.5488 -	val_accuracy:	0.7094 -	val loss: (2.5628
	473/500		J2, 2 CCp								
•		0s	8ms/step - a	ccuracy:	0.7226 -	loss:	0.5503 -	val_accuracy:	0.7094 -	val_loss: 0	0.5628
Epoch	474/500		·					_ ,		_	
10/10		0s	11ms/step -	accuracy:	0.7161	- loss:	0.5572	- val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5627
Epoch	475/500										
10/10		0s	7ms/step - a	ccuracy:	0.7077 -	loss:	0.5599 -	val_accuracy:	0.7094 -	val_loss: 0	0.5627
	476/500										
		0s	8ms/step - a	iccuracy:	0.7397 -	loss:	0.5353 -	val_accuracy:	0.7094 -	val_loss: 0	0.5626
	477/500										
		0s	8ms/step - a	iccuracy:	0.7194 -	loss:	0.5435 -	val_accuracy:	0.7094 -	val_loss: 0	0.5626
•	478/500	_				-		-			
		0s	8ms/step - a	iccuracy:	0./244 -	loss:	0.5450 -	val_accuracy:	0.7094 -	· val_loss: (0.5626
•	479/500	00	7ms/ston		0 7265	10001	0 5415	val accumacus	0.7004	val lassi (3 5635
	480/500	05	/ms/step - a	iccuracy:	0.7205 -	1055:	0.5415 -	val_accuracy:	0.7094 -	. vai_1055; (0.3023
		۵c	7ms/stan - a	occuracy.	a 7277 ₋	1000	0 5/172 -	val_accuracy:	0 7091 -	. val loss. (2 5625
	481/500	03	71113/3CEP - a	iccui acy.	0.7277 -	1033.	0.54/2 -	vai_accuracy.	0.7054	vai_1033. k	0.3023
•		95	7ms/sten - a	occuracy:	0.6959 -	loss:	0.5713 -	val_accuracy:	0.7094 -	val loss: (2.5625
	482/500	0.5	73, эсер	iccui acy i	0.0333	1033.	0.3713	var_acca. acy.	0.,05		0.3023
		0s	7ms/step - a	ccuracy:	0.7203 -	loss:	0.5505 -	val accuracy:	0.7094 -	val loss: (0.5625
	483/500		, ,					_ ,		_	
		0s	8ms/step - a	ccuracy:	0.7092 -	loss:	0.5629 -	val_accuracy:	0.7094 -	val_loss: 0	0.5624
Epoch	484/500							_			
10/10		0s	7ms/step - a	ccuracy:	0.7194 -	loss:	0.5484 -	val_accuracy:	0.7094 -	val_loss: 0	0.5624
Epoch	485/500										
		0s	7ms/step - a	ccuracy:	0.7162 -	loss:	0.5538 -	val_accuracy:	0.7094 -	val_loss: 0	0.5623
•	486/500										
		0s	8ms/step - a	iccuracy:	0.7194 -	loss:	0.5473 -	val_accuracy:	0.7094 -	val_loss: 0	0.5622
•	487/500	_	_ , ,		0 7404	-		,	. =		. =
		0S	/ms/step - a	iccuracy:	0./121 -	loss:	0.559/ -	val_accuracy:	0.7094 -	· val_loss: (0.5622
	488/500 	00	0ms/ston		0 7201	10001	0 5530	val_accuracy:	0.7004	val lassi (3 5633
	489/500	62	Sills/Step - a	iccuracy.	0.7201 -	1055.	0.5520 -	vai_accuracy.	0.7094 -	va1_1055. (0.3022
•	-	۵c	7ms/sten - a	occuracy.	0 6955 -	1055.	0 5710 -	val_accuracy:	0 7094 -	val loss. (2 5621
	490/500	03	71113/3ccp a	iccui acy.	0.0000	1033.	0.5710	var_accaracy.	0.7054	vai_1033. V	J. JUZI
10/10		0s	7ms/step - a	ccuracy:	0.7035 -	loss:	0.5614 -	val_accuracy:	0.7094 -	val loss: 0	0.5620
	491/500		т, с тор								
•		0s	7ms/step - a	ccuracy:	0.6984 -	loss:	0.5707 -	val_accuracy:	0.7094 -	val_loss: 0	0.5620
	492/500		•	•				_ ,		_	
10/10		0s	8ms/step - a	ccuracy:	0.7185 -	loss:	0.5546 -	val_accuracy:	0.7094 -	val_loss: 0	0.5619

```
Epoch 493/500
      10/10 -
                           0s 7ms/step - accuracy: 0.7065 - loss: 0.5620 - val accuracy: 0.7094 - val loss: 0.5619
      Epoch 494/500
                           0s 7ms/step - accuracy: 0.7118 - loss: 0.5532 - val accuracy: 0.7094 - val loss: 0.5618
      10/10 -
      Epoch 495/500
      10/10 -
                           0s 7ms/step - accuracy: 0.7200 - loss: 0.5575 - val accuracy: 0.7094 - val loss: 0.5617
      Epoch 496/500
      10/10 -
                           0s 7ms/step - accuracy: 0.7092 - loss: 0.5543 - val accuracy: 0.7094 - val loss: 0.5617
      Epoch 497/500
                           0s 8ms/step - accuracy: 0.7057 - loss: 0.5681 - val accuracy: 0.7094 - val loss: 0.5617
      10/10 -
      Epoch 498/500
      10/10 -
                           0s 7ms/step - accuracy: 0.6986 - loss: 0.5582 - val accuracy: 0.7094 - val loss: 0.5616
      Epoch 499/500
                           0s 8ms/step - accuracy: 0.7205 - loss: 0.5460 - val accuracy: 0.7094 - val loss: 0.5616
      10/10 -
      Epoch 500/500
      10/10 -
                           0s 7ms/step - accuracy: 0.6984 - loss: 0.5575 - val accuracy: 0.7094 - val loss: 0.5616
Out[19]: <keras.src.callbacks.history.History at 0x1ed82831eb0>
In [20]: v pred = np.argmax(model2.predict(X test), axis=1)
       y_pred
      4/4 -
                         - 0s 10ms/step
1, 1, 1, 1, 1, 1, 1])
In [21]: model3 = Sequential()
       model3.add(Dense(10, activation='sigmoid', input shape=(9,)))
       model3.add(Dense(1, activation = 'sigmoid'))
       model3.summary()
```

Model: "sequential 2"

Layer (type)	Output Shape	Param #		
dense_2 (Dense)	(None, 10)	100		
dense_3 (Dense)	(None, 1)	11		

```
Total params: 111 (444.00 B)

Trainable params: 111 (444.00 B)

Non-trainable params: 0 (0.00 B)
```

```
In [22]: model3.compile(loss='BinaryCrossentropy', optimizer='SGD', metrics=['accuracy'])
    model3.fit(X_train, y_train, batch_size=10, epochs=100,verbose=1, validation_data=(X_test, y_test))
```

•	1/100	4.	- <i>(</i> ,		0 7527	,	0.6043	,	0 7004	1 1	0 (122
•	2/100		·	-				- val_accuracy:		_	
Epoch	3/100		·	-				- val_accuracy:		_	
-	4/100		•	-				- val_accuracy:		_	
	5/100	0s	2ms/step -	accuracy:	0.7250 -	loss:	0.5910 -	- val_accuracy:	0.7094	- val_loss:	0.6025
	6/100	0s	2ms/step -	accuracy:	0.7079 -	loss:	0.6030 -	- val_accuracy:	0.7094	- val_loss:	0.6018
47/47 Epoch	7/100	0s	2ms/step -	accuracy:	0.7035 -	loss:	0.6067 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.6015
47/47 Epoch	8/100	0s	2ms/step -	- accuracy:	0.7282 -	loss:	0.5851 -	- val_accuracy:	0.7094	- val_loss:	0.6014
	9/100	0s	2ms/step -	accuracy:	0.7103 -	loss:	0.5994 -	- val_accuracy:	0.7094	- val_loss:	0.6013
	10/100	0s	2ms/step -	accuracy:	0.6864 -	loss:	0.6205 -	- val_accuracy:	0.7094	- val_loss:	0.6013
	11/100	0s	2ms/step -	accuracy:	0.6716 -	loss:	0.6342 -	- val_accuracy:	0.7094	- val_loss:	0.6013
-	12/100	0s	2ms/step -	accuracy:	0.7163 -	loss:	0.5940 -	- val_accuracy:	0.7094	- val_loss:	0.6013
47/47		0s	3ms/step -	accuracy:	0.6921 -	loss:	0.6159 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.6012
47/47		0s	3ms/step -	accuracy:	0.7412 -	loss:	0.5707 -	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.6012
47/47		0s	2ms/step -	accuracy:	0.7277 -	loss:	0.5840 -	- val_accuracy:	0.7094	- val_loss:	0.6011
47/47		0s	2ms/step -	- accuracy:	0.7460 -	loss:	0.5658 -	- val_accuracy:	0.7094	- val_loss:	0.6010
47/47		0s	2ms/step -	accuracy:	0.7200 -	loss:	0.5910 -	- val_accuracy:	0.7094	- val_loss:	0.6010
47/47		0s	2ms/step -	accuracy:	0.7328 -	loss:	0.5793 -	- val_accuracy:	0.7094	- val_loss:	0.6009
47/47		0s	2ms/step -	accuracy:	0.6842 -	loss:	0.6222 -	- val_accuracy:	0.7094	- val_loss:	0.6009
47/47		0s	3ms/step -	- accuracy:	0.6849 -	loss:	0.6223 -	- val_accuracy:	0.7094	- val_loss:	0.6009
47/47		0s	3ms/step -	accuracy:	0.6656 -	loss:	0.6398 -	- val_accuracy:	0.7094	- val_loss:	0.6009
Epoch	21/100										

47/47		0s	2ms/step	- accuracv:	0.7211 -	loss:	0.5891	<pre>- val_accuracy:</pre>	0.7094	- val loss:	0.6008
-	22/100										
47/47		0s	3ms/step	- accuracy:	0.6919 -	loss:	0.6156	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.6008
•	23/100										
		0s	2ms/step	- accuracy:	0.7254 -	loss:	0.5853	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.6007
	24/100	0-	2		0 7245	1	0 5003		0.7004		0.6007
	25/100	05	3ms/step	- accuracy:	0./215 -	1055:	0.5883	<pre>- val_accuracy:</pre>	0.7094	- vai_ioss:	0.6007
		95	3ms/sten	- accuracy:	0 7281 -	1055.	0 5829	<pre>- val_accuracy:</pre>	0 7094	- val loss.	0 6006
=	26/100	03	311137 3 CCP	accar acy.	0.7201	1033.	0.3023	var_accar acy:	0.7054	vai_1033.	0.0000
		0s	3ms/step	- accuracy:	0.7246 -	loss:	0.5853	- val_accuracy:	0.7094	- val_loss:	0.6005
Epoch	27/100			-							
		0s	2ms/step	- accuracy:	0.7033 -	loss:	0.6049	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.6005
	28/100					_		_			
		0s	2ms/step	- accuracy:	0.7210 -	loss:	0.5888	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.6004
•	29/100	00	2mc/c+on	2661102611	0 7224	1000	0 5700	- val_accuracy:	0 7004	val loss.	0 6004
	30/100	62	oms/scep	- accuracy.	0.7324 -	1055.	0.3799	- vai_accuracy.	0.7034	- vai_1055.	0.0004
	-	0s	2ms/step	- accuracv:	0.6926 -	loss:	0.6153	- val accuracy:	0.7094	- val loss:	0.6004
	31/100		-,	, , , , , , , , , , , , , , , , , , , ,				,			
47/47		0s	3ms/step	- accuracy:	0.7106 -	loss:	0.5991	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.6004
•	32/100										
		0s	2ms/step	- accuracy:	0.6967 -	loss:	0.6117	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.6003
	33/100	•	2 / 1		0 6000	,	0 6005	1	0 7004		0 (000
	34/100	0S	2ms/step	- accuracy:	0.6990 -	loss:	0.6085	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.6003
•		95	3ms/sten	- accuracy:	0 7569 -	1055.	0 5565	<pre>- val_accuracy:</pre>	0 7094	- val loss.	0 6002
	35/100	0.5	эшэ, эсср	acca. acy.	0.7505	1033.	0.3303	var_accar acy.	01,03	.41_1033.	0.0002
•		0s	2ms/step	- accuracy:	0.7492 -	loss:	0.5637	- val_accuracy:	0.7094	- val_loss:	0.6001
•	36/100										
		0s	3ms/step	- accuracy:	0.7425 -	loss:	0.5691	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.6001
	37/100	_				-		-			
		0s	3ms/step	- accuracy:	0.7040 -	loss:	0.6037	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.6001
	38/100	۵c	3mc/stan	- accuracy:	0 7377 -	1000	0 5726	- val accuracy:	a 7ag1	- val loss.	0 6000
	39/100	03	Jiii3/3 CCP	- accuracy.	0.7377	1033.	0.3720	- vai_accuracy.	0.7054	- Vai_1033.	0.0000
47/47		0s	3ms/step	- accuracy:	0.7122 -	loss:	0.5961	- val_accuracy:	0.7094	- val loss:	0.6000
	40/100			,				_ ,		_	
47/47		0s	3ms/step	- accuracy:	0.7117 -	loss:	0.5966	<pre>- val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.6000
•	41/100							_		_	
47/47		0s	2ms/step	- accuracy:	0.7137 -	loss:	0.5948	<pre>- val_accuracy:</pre>	0.7094	- val_loss:	0.5999

•	42/100	0.5	2ms/ston	2664192644	0.7461	10001	0 5647	val accumacy.	0.7004	val lass.	0 5000
•	43/100			-				val_accuracy:		_	
Epoch	44/100			-				val_accuracy:		_	
Epoch	45/100			-				val_accuracy:		_	
Epoch	46/100			-				val_accuracy:		_	
Epoch	47/100			-				· val_accuracy:		_	
Epoch	48/100			-				· val_accuracy:		_	
Epoch	49/100			-				val_accuracy:		_	
	50/100	0s	2ms/step -	accuracy:	0.7120 -	loss:	0.5953 -	val_accuracy:	0.7094	- val_loss:	0.5995
-	51/100	0s	2ms/step -	accuracy:	0.7022 -	loss:	0.6058 -	val_accuracy:	0.7094	- val_loss:	0.5995
	52/100	0s	2ms/step -	accuracy:	0.7151 -	loss:	0.5933 -	val_accuracy:	0.7094	- val_loss:	0.5995
Epoch	53/100			-				val_accuracy:		_	
	54/100	0s	2ms/step -	accuracy:	0.7381 -	loss:	0.5722 -	val_accuracy:	0.7094	- val_loss:	0.5993
	55/100	0s	3ms/step -	accuracy:	0.6882 -	loss:	0.6182 -	val_accuracy:	0.7094	- val_loss:	0.5993
47/47 Epoch	56/100	0s	2ms/step -	- accuracy:	0.7205 -	loss:	0.5881 -	val_accuracy:	0.7094	- val_loss:	0.5992
	57/100	0s	3ms/step -	accuracy:	0.7007 -	loss:	0.6077 -	val_accuracy:	0.7094	- val_loss:	0.5992
	58/100	0s	3ms/step -	accuracy:	0.6941 -	loss:	0.6107 -	val_accuracy:	0.7094	- val_loss:	0.5991
47/47		0s	2ms/step -	accuracy:	0.7392 -	loss:	0.5706 -	val_accuracy:	0.7094	- val_loss:	0.5991
47/47		0s	2ms/step -	accuracy:	0.6853 -	loss:	0.6194 -	· val_accuracy:	0.7094	- val_loss:	0.5991
47/47		0s	2ms/step -	accuracy:	0.7070 -	loss:	0.6002 -	· val_accuracy:	0.7094	- val_loss:	0.5991
47/47		0s	2ms/step -	accuracy:	0.7076 -	loss:	0.5997 -	val_accuracy:	0.7094	- val_loss:	0.5990
-6-3											

47/47		95	2ms/sten	_	accuracy:	0.6864	_	loss:	0.6202	_	val accuracy:	0.7094	- val	loss:	0.5989
	63/100		о, о сер						0.0202						01000
47/47		0s	2ms/step	-	accuracy:	0.7151	-	loss:	0.5926	-	<pre>val_accuracy:</pre>	0.7094	- val	_loss:	0.5989
•	64/100														
		0s	2ms/step	-	accuracy:	0.7434	-	loss:	0.5660	-	val_accuracy:	0.7094	- val	_loss:	0.5988
	65/100 	00	2ms/s+on		2661182614	0 7202		10001	0 5077		val_accuracy:	0 7004	ya1	10551	A E000
	66/100	05	ziiis/step	-	accuracy.	0.7203	-	1055.	0.56//	-	vai_accuracy.	0.7094	- Val	_1055.	0.5500
		0s	2ms/step	_	accuracy:	0.6974	_	loss:	0.6084	_	val_accuracy:	0.7094	- val	loss:	0.5987
Epoch	67/100		·		-									_	
		0s	3ms/step	-	accuracy:	0.7143	-	loss:	0.5930	-	<pre>val_accuracy:</pre>	0.7094	- val	_loss:	0.5987
	68/100	_						_			_		_	_	
	69/100	0s	3ms/step	-	accuracy:	0.7001	-	loss:	0.6070	-	val_accuracy:	0.7094	- val	_loss:	0.5986
		95	2ms/sten	_	accuracy:	0 6778	_	loss.	0 6249	_	val_accuracy:	0 7094	- val	1055.	0 5986
	70/100	03	211137 3 сер		accar acy.	0.0770		1033.	0.0243		var_accar acy.	0.7054	V 4 1	_1033.	0.5500
•		0s	2ms/step	-	accuracy:	0.6842	-	loss:	0.6202	-	<pre>val_accuracy:</pre>	0.7094	- val	_loss:	0.5986
•	71/100														
		0s	2ms/step	-	accuracy:	0.6858	-	loss:	0.6183	-	val_accuracy:	0.7094	- val	_loss:	0.5985
	72/100	0-	2			0 7255		1	0 5730			0.7004	1	1	0 5005
	73/100	05	2ms/step	-	accuracy:	0./355	-	1055:	0.5/38	-	vai_accuracy:	0.7094	- vai	_1055:	0.5985
•		0s	2ms/step	_	accuracv:	0.6798	_	loss:	0.6249	_	val_accuracy:	0.7094	- val	loss:	0.5984
	74/100		.,											_	
47/47		0s	2ms/step	-	accuracy:	0.7119	-	loss:	0.5945	-	<pre>val_accuracy:</pre>	0.7094	- val	_loss:	0.5984
•	75/100														
		0s	2ms/step	-	accuracy:	0.7088	-	loss:	0.5970	-	val_accuracy:	0.7094	- val	_loss:	0.5983
•	76/100 	۵c	2mc/stan	_	accuracy.	0 7220	_	1000	0 5854	_	val_accuracy:	0 709/	- val	1055.	0 5083
	77/100	03	21113/3CEP		accuracy.	0.7220		1033.	0.3034		vai_accuracy.	0.7054	- vai	_1033.	0.5565
		0s	2ms/step	_	accuracy:	0.7770	-	loss:	0.5339	-	val_accuracy:	0.7094	- val	_loss:	0.5982
	78/100														
-		0s	2ms/step	-	accuracy:	0.6973	-	loss:	0.6093	-	<pre>val_accuracy:</pre>	0.7094	- val	_loss:	0.5981
•	79/100	0-	2			0.7257		1	0 5725			0.7004		1	0 5001
	80/100	05	2ms/step	-	accuracy:	0./35/	-	1055:	0.5/35	-	val_accuracy:	0.7094	- vai	_1055:	0.5981
47/47		0s	3ms/step	_	accuracv:	0.7113	_	loss:	0.5933	_	val_accuracy:	0.7094	- val	loss:	0.5980
	81/100		-, P								_: : :::::				
47/47		0s	2ms/step	-	accuracy:	0.7231	-	loss:	0.5853	-	<pre>val_accuracy:</pre>	0.7094	- val	_loss:	0.5980
•	82/100		_					_			_			_	
47/47		0s	2ms/step	-	accuracy:	0.6965	-	loss:	0.6105	-	val_accuracy:	0.7094	- val	_loss:	0.5979

•	83/100	0 -	2 / 1		0 7000	1	0 5050		0.7004		0 5070
47/47 Epoch	84/100	US	2ms/step -	accuracy:	0.7228 -	loss:	0.5850	- val_accuracy:	0.7094 -	val_loss:	0.59/9
47/47		0s	2ms/step -	accuracy:	0.7375 -	loss:	0.5718	<pre>- val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5978
Epoch	85/100										
47/47		0s	3ms/step -	accuracy:	0.6813 -	loss:	0.6226	<pre>- val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5978
Epoch	86/100										
47/47		0s	2ms/step -	accuracy:	0.7048 -	loss:	0.5994	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5978
Epoch	87/100										
47/47		0s	3ms/step -	accuracy:	0.7500 -	loss:	0.5588	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5977
Epoch	88/100		•	-						_	
47/47		0s	2ms/step -	accuracy:	0.7122 -	loss:	0.5919	- val accuracy:	0.7094 -	val loss:	0.5976
Epoch	89/100		•	-				_ ,		_	
		0s	2ms/step -	accuracy:	0.7386 -	loss:	0.5698	- val accuracy:	0.7094 -	val loss:	0.5976
Epoch	90/100		•	-				_ ,		_	
47/47		0s	2ms/step -	accuracy:	0.7150 -	loss:	0.5911	<pre>- val_accuracy:</pre>	0.7094 -	val loss:	0.5975
Epoch	91/100			,				_ ,		_	
•		0s	2ms/step -	accuracy:	0.7260 -	loss:	0.5815	<pre>- val_accuracy:</pre>	0.7094 -	val loss:	0.5975
	92/100		, ,	,				_ ,		_	
		0s	2ms/step -	accuracv:	0.6909 -	loss:	0.6109	- val_accuracy:	0.7094 -	val loss:	0.5974
	93/100		.,	,							
•		0s	2ms/step -	accuracv:	0.7150 -	loss:	0.5897	- val_accuracy:	0.7094 -	val loss:	0.5974
	94/100							,			
•		0s	2ms/step -	accuracv:	0.7116 -	loss:	0.5949	- val accuracy:	0.7094 -	val loss:	0.5974
-	95/100							,			
•		0s	2ms/step -	accuracv:	0.6862 -	loss:	0.6177	- val accuracy:	0.7094 -	val loss:	0.5974
-	96/100							,			
•		0s	2ms/step -	accuracv:	0.7008 -	loss:	0.6049	- val accuracy:	0.7094 -	val loss:	0.5973
-	97/100							,			
•		0s	2ms/step -	accuracv:	0.7098 -	loss:	0.5964	- val_accuracy:	0.7094 -	val loss:	0.5972
=	98/100							,			
•		0s	3ms/step -	accuracv:	0.7320 -	loss:	0.5749	- val_accuracy:	0.7094 -	val loss:	0.5972
-	99/100		,			•		: = <u>_</u> ::::::: 30)			-
		0s	2ms/step -	accuracv:	0.7184 -	loss:	0.5879	- val accuracy:	0.7094 -	val loss:	0.5971
	100/100		, 5				-,,	ini_accar acy.			
		0 s	3ms/sten -	accuracy:	0.7398 -	loss	0.5678	- val accuracy:	0.7094 -	val loss:	0.5970
, .,							2.20.0				

LAB2

Out[22]: <keras.src.callbacks.history.History at 0x1ed8299dca0>

Question2: using reLu Activation

```
In [23]: model4 = Sequential()
  model4.add(Dense(10, activation='relu', input_shape=(9,)))
  model4.add(Dense(1, activation = 'sigmoid'))
  model4.summary()
```

Model: "sequential 3"

Layer (type)	Output Shape	Param #
dense_4 (Dense)	(None, 10)	100
dense_5 (Dense)	(None, 1)	11

```
Total params: 111 (444.00 B)

Trainable params: 111 (444.00 B)

Non-trainable params: 0 (0.00 B)
```

```
In [24]: model4.compile(loss='BinaryCrossentropy', optimizer='SGD', metrics=['accuracy'])
    model4.fit(X_train, y_train, batch_size=50, epochs=1000,verbose=1, validation_data=(X_test, y_test))
```

	1/1000	
10/10 Epoch	2/1000	1s 21ms/step - accuracy: 0.4941 - loss: 0.6944 - val_accuracy: 0.6068 - val_loss: 0.6844
10/10		0s 8ms/step - accuracy: 0.5855 - loss: 0.6794 - val_accuracy: 0.6667 - val_loss: 0.6728
•	3/1000	0s 8ms/step - accuracy: 0.7002 - loss: 0.6670 - val_accuracy: 0.6667 - val_loss: 0.6629
Epoch	4/1000	
	5/1000	0s 8ms/step - accuracy: 0.6914 - loss: 0.6580 - val_accuracy: 0.7094 - val_loss: 0.6537
		0s 8ms/step - accuracy: 0.7302 - loss: 0.6462 - val_accuracy: 0.7094 - val_loss: 0.6455
	6/1000	On Smalleton
	7/1000	0s 8ms/step - accuracy: 0.7076 - loss: 0.6421 - val_accuracy: 0.7094 - val_loss: 0.6389
10/10		0s 9ms/step - accuracy: 0.7075 - loss: 0.6383 - val_accuracy: 0.7094 - val_loss: 0.6329
•	8/1000	0s 10ms/step - accuracy: 0.6920 - loss: 0.6380 - val_accuracy: 0.7094 - val_loss: 0.6276
Epoch	9/1000	
=	10/1000	0s 9ms/step - accuracy: 0.6910 - loss: 0.6338 - val_accuracy: 0.7094 - val_loss: 0.6238
10/10		0s 8ms/step - accuracy: 0.7219 - loss: 0.6174 - val_accuracy: 0.7094 - val_loss: 0.6206
•	11/1000	0s 8ms/step - accuracy: 0.7194 - loss: 0.6169 - val_accuracy: 0.7094 - val_loss: 0.6174
Epoch	12/1000	03 0m3/3ccp
	13/1000	0s 9ms/step - accuracy: 0.7377 - loss: 0.6030 - val_accuracy: 0.7094 - val_loss: 0.6147
		0s 9ms/step - accuracy: 0.7211 - loss: 0.6044 - val_accuracy: 0.7094 - val_loss: 0.6126
•	14/1000	On Ome/ston
	15/1000	0s 9ms/step - accuracy: 0.7325 - loss: 0.5981 - val_accuracy: 0.7094 - val_loss: 0.6108
		0s 8ms/step - accuracy: 0.7083 - loss: 0.6095 - val_accuracy: 0.7094 - val_loss: 0.6093
•	16/1000	0s 11ms/step - accuracy: 0.7593 - loss: 0.5772 - val accuracy: 0.7094 - val loss: 0.6077
	17/1000	
	18/1000	0s 7ms/step - accuracy: 0.7076 - loss: 0.6077 - val_accuracy: 0.7094 - val_loss: 0.6064
10/10		0s 8ms/step - accuracy: 0.7252 - loss: 0.5994 - val_accuracy: 0.7094 - val_loss: 0.6054
Epoch 10/10	19/1000	0s 10ms/step - accuracy: 0.7243 - loss: 0.5903 - val accuracy: 0.7094 - val loss: 0.6043
	20/1000	
10/10 Enoch	21/1000	0s 11ms/step - accuracy: 0.7256 - loss: 0.5930 - val_accuracy: 0.7094 - val_loss: 0.6035
Lpocii	,	

10/10		0s	ms/step - accuracy: 0.6905 - loss: 0.6135 -	val_accuracy: 0.7094 - val_loss: 0.6029
	22/1000			
		0s	ms/step - accuracy: 0.7220 - loss: 0.5941 -	val_accuracy: 0.7094 - val_loss: 0.6022
•	23/1000	۵s	ms/step - accuracy: 0.7138 - loss: 0.5989 -	val accuracy: 0 7094 - val loss: 0 6018
=	24/1000	03	iiis/step - accui acy. 0.7150 - 1033. 0.5565 -	vai_accuracy: 0.7054 - vai_1033. 0.0010
•		0s	Oms/step - accuracy: 0.7039 - loss: 0.6055	- val_accuracy: 0.7094 - val_loss: 0.6014
•	25/1000			
		0s	ms/step - accuracy: 0.7344 - loss: 0.5812 -	val_accuracy: 0.7094 - val_loss: 0.6009
	26/1000	0 -	0.7422 1 0.6027	1 0 7004 1 1 0 6005
	27/1000	US	0ms/step - accuracy: 0.7123 - loss: 0.6007	- val_accuracy: 0.7094 - val_10ss: 0.6005
•		95	ms/step - accuracy: 0.7126 - loss: 0.5975 -	val accuracy: 0.7094 - val loss: 0.6002
	28/1000		,	
		0s	ms/step - accuracy: 0.7122 - loss: 0.5968 -	val_accuracy: 0.7094 - val_loss: 0.5999
	29/1000			
		0s	Oms/step - accuracy: 0.7248 - loss: 0.5848	- val_accuracy: 0.7094 - val_loss: 0.5995
•	30/1000	0-	1,5 / 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 - 5 -	val accuracy 0.7004 val lace 0.5002
	31/1000	05	1ms/step - accuracy: 0.7193 - loss: 0.5881	- Val_accuracy: 0.7094 - Val_1055: 0.5993
•		0s	ms/step - accuracy: 0.7117 - loss: 0.5953 -	val accuracy: 0.7094 - val loss: 0.5990
	32/1000		,	
10/10		0s	ms/step - accuracy: 0.7322 - loss: 0.5785 -	val_accuracy: 0.7094 - val_loss: 0.5988
•	33/1000			
		0s	Oms/step - accuracy: 0.7351 - loss: 0.5748	- val_accuracy: 0.7094 - val_loss: 0.5986
•	34/1000	0.0	Oms/step - accuracy: 0.7004 - loss: 0.6052	val accuracy: 0.7004 val loce: 0.5004
	35/1000	03	ons/step - accuracy. 0.7004 - 1055. 0.0032	- vai_accuracy. 0.7094 - vai_10ss. 0.3984
•		0s	ms/step - accuracy: 0.7279 - loss: 0.5823 -	val accuracy: 0.7094 - val loss: 0.5982
Epoch	36/1000		•	
		0s	ms/step - accuracy: 0.7358 - loss: 0.5773 -	val_accuracy: 0.7094 - val_loss: 0.5980
	37/1000	_		
=	38/1000	0s	1ms/step - accuracy: 0.7200 - loss: 0.5901	- val_accuracy: 0./094 - val_loss: 0.59/8
•		05	ms/step - accuracy: 0.6922 - loss: 0.6117 -	val accuracy: 0.7094 - val loss: 0.5977
	39/1000	05		var_acca, acy: 0.705; var_ross; 0.5577
10/10		0s	ms/step - accuracy: 0.6905 - loss: 0.6122 -	val_accuracy: 0.7094 - val_loss: 0.5976
Epoch	40/1000			
		0s	1ms/step - accuracy: 0.7114 - loss: 0.5944	- val_accuracy: 0.7094 - val_loss: 0.5974
•	41/1000	0-	0 5075	wal accuracy 0 7004 wall large 0 5070
10/10		ØS	ms/step - accuracy: 0.7060 - loss: 0.5975 -	vai_accuracy: 0.7094 - Vai_10ss: 0.59/3

•	42/1000	
	43/1000	0s 8ms/step - accuracy: 0.7055 - loss: 0.5943 - val_accuracy: 0.7094 - val_loss: 0.5971
		0s 7ms/step - accuracy: 0.6962 - loss: 0.6076 - val_accuracy: 0.7094 - val_loss: 0.5970
•	44/1000	0s 9ms/step - accuracy: 0.7176 - loss: 0.5889 - val accuracy: 0.7094 - val loss: 0.5969
	45/1000	
	46/1000	0s 10ms/step - accuracy: 0.7178 - loss: 0.5841 - val_accuracy: 0.7094 - val_loss: 0.5968
		0s 8ms/step - accuracy: 0.7066 - loss: 0.5969 - val_accuracy: 0.7094 - val_loss: 0.5966
	47/1000 ————————	• 0s 8ms/step - accuracy: 0.7285 - loss: 0.5775 - val_accuracy: 0.7094 - val_loss: 0.5965
Epoch	48/1000	
	49/1000	0s 11ms/step - accuracy: 0.7368 - loss: 0.5699 - val_accuracy: 0.7094 - val_loss: 0.5964
		0s 7ms/step - accuracy: 0.6933 - loss: 0.6123 - val_accuracy: 0.7094 - val_loss: 0.5963
	50/1000	• 0s 8ms/step - accuracy: 0.6934 - loss: 0.6095 - val_accuracy: 0.7094 - val_loss: 0.5962
•	51/1000	• 0s 9ms/step - accuracy: 0.7116 - loss: 0.5944 - val_accuracy: 0.7094 - val_loss: 0.5960
	52/1000	93 91115/Step - accuracy. 0.7110 - 1055. 0.3944 - Val_accuracy. 0.7094 - Val_1055. 0.3900
	53/1000	0s 11ms/step - accuracy: 0.7513 - loss: 0.5574 - val_accuracy: 0.7094 - val_loss: 0.5959
		0s 7ms/step - accuracy: 0.7373 - loss: 0.5705 - val_accuracy: 0.7094 - val_loss: 0.5958
•	54/1000	• 0s 9ms/step - accuracy: 0.7211 - loss: 0.5857 - val_accuracy: 0.7094 - val_loss: 0.5956
Epoch	55/1000	
	56/1000	• 0s 12ms/step - accuracy: 0.6999 - loss: 0.6018 - val_accuracy: 0.7094 - val_loss: 0.5955
10/10		0s 7ms/step - accuracy: 0.6909 - loss: 0.6105 - val_accuracy: 0.7094 - val_loss: 0.5954
•	57/1000 ————————	• Os 7ms/step - accuracy: 0.7225 - loss: 0.5787 - val_accuracy: 0.7094 - val_loss: 0.5953
Epoch	58/1000	
	59/1000	0s 10ms/step - accuracy: 0.6991 - loss: 0.6031 - val_accuracy: 0.7094 - val_loss: 0.5952
10/10		0s 8ms/step - accuracy: 0.7085 - loss: 0.5925 - val_accuracy: 0.7094 - val_loss: 0.5950
Epoch 10/10	60/1000	• 0s 10ms/step - accuracy: 0.7255 - loss: 0.5793 - val_accuracy: 0.7094 - val_loss: 0.5949
Epoch	61/1000	
10/10 Epoch	62/1000	0s 9ms/step - accuracy: 0.7171 - loss: 0.5824 - val_accuracy: 0.7094 - val_loss: 0.5948

10/10		0s 11ms/	step - accuracy	/: 0.6932 -	loss: 0.608	4 - val_accuracy	y: 0.7094 - val	loss: 0.5947
Epoch	63/1000							_
10/10		0s 8ms/s	tep - accuracy:	: 0.7148 - 1	oss: 0.5830	- val_accuracy:	: 0.7094 - val_	loss: 0.5946
•	64/1000			_		_		_
		0s 8ms/s	tep - accuracy:	: 0.7273 - 1	oss: 0.5778	- val_accuracy:	: 0.7094 - val_1	loss: 0.5945
•	65/1000 	0c 10mc/	ston assumas	a 7200	locc. 0 E7E	3 - val_accuracy	0 7004 val	loss: 0 F0//
	66/1000	05 101115/	step - accuracy	/. 0./200 -	1055. 0.5/5	5 - Val_accuracy	y. 0.7094 - Vai	_1055. 0.5944
•		0s 9ms/s	tep - accuracy:	: 0.7046 - 1	oss: 0.5909	- val accuracy:	: 0.7094 - val	loss: 0.5943
	67/1000	,-						
10/10		0s 7ms/s	tep - accuracy:	: 0.7292 - 1	oss: 0.5732	- val_accuracy:	: 0.7094 - val_	loss: 0.5941
Epoch	68/1000							
		0s 11ms/	step - accuracy	/: 0.7374 -	loss: 0.568	9 - val_accuracy	y: 0.7094 - val_	_loss: 0.5940
	69/1000				_	_	_	_
		0s 10ms/	step - accuracy	/: 0.7193 -	loss: 0.582	1 - val_accuracy	y: 0.7094 - val ₋	_loss: 0.5939
	70/1000	0.c 0mc/c	ton 255412544	. a 7202 1	oss. 0 F727	' val accumacy	. 0 7004 val	loss, A 5039
	71/1000	05 81115/5	tep - accuracy:	. 0.7293 - 1	055: 0.5/3/	- val_accuracy:	. 0.7094 - Val	1055: 0.5938
•		0s 9ms/s	ten - accuracy:	: 0.7191 - 1	nss: 0.5817	- val_accuracy:	: 0.7094 - val	loss: 0.5937
	72/1000		cop accar acy					
•		0s 10ms/	step - accuracy	/: 0.7270 -	loss: 0.577	6 - val_accuracy	y: 0.7094 - val	_loss: 0.5935
•	73/1000							
		0s 6ms/s	tep - accuracy:	: 0.7145 - 1	oss: 0.5870	- val_accuracy:	: 0.7094 - val_1	loss: 0.5934
•	74/1000			_		_		_
		0s 8ms/s	tep - accuracy:	: 0.7198 - 1	oss: 0.5814	- val_accuracy:	: 0.7094 - val_1	loss: 0.5933
•	75/1000 	0c 0mc/c	ton accumacy	. a 7000 1	occ. 0 6022	- val_accuracy:	· 0 7004 val '	locci A EO22
	76/1000	03 31115/5	tep - accuracy.	. 0.7000 - 1	055. 0.0022	vai_accuracy.	. 0.7094 - Vai_	1055. 0.3932
•		0s 9ms/s	tep - accuracy:	: 0.7070 - 1	oss: 0.5912	- val_accuracy:	: 0.7094 - val	loss: 0.5931
	77/1000	, -					_	
10/10		0s 7ms/s	tep - accuracy:	: 0.7507 - 1	oss: 0.5565	- val_accuracy:	: 0.7094 - val_	loss: 0.5930
	78/1000							
		0s 9ms/s	tep - accuracy:	: 0.7160 - 1	oss: 0.5849	- val_accuracy:	: 0.7094 - val_1	loss: 0.5928
•	79/1000							
		0s 15ms/	step - accuracy	/: 0.7073 -	loss: 0.590	9 - val_accuracy	y: 0.7094 - val_	_loss: 0.5927
10/10	80/1000	0c 6mc/c	ten - accuracy:	. 0 7064 - 1	ncc: 0 5001	val accuracy:	· 0 7004 - val '	loss : 0 5026
	81/1000	03 01113/3	cep - accuracy.	. 0.7004 - 1	033. 0.3031	var_accuracy.	. 0./034 - Vai	1033. 0.3320
•		0s 9ms/s	tep - accuracy:	: 0.7162 - l	oss: 0.5818	- val_accuracy:	: 0.7094 - val	loss: 0.5925
	82/1000	, -			_		_	
10/10		0s 12ms/	step - accuracy	/: 0.7297 -	loss: 0.573	5 - val_accuracy	y: 0.7094 - val_	_loss: 0.5924

•	83/1000	
	84/1000	0s 7ms/step - accuracy: 0.7350 - loss: 0.5661 - val_accuracy: 0.7094 - val_loss: 0.5923
	85/1000	0s 7ms/step - accuracy: 0.7229 - loss: 0.5782 - val_accuracy: 0.7094 - val_loss: 0.5921
•		0s 10ms/step - accuracy: 0.7054 - loss: 0.5890 - val_accuracy: 0.7094 - val_loss: 0.5920
•	86/1000	
		0s 10ms/step - accuracy: 0.7197 - loss: 0.5804 - val_accuracy: 0.7094 - val_loss: 0.5919
	87/1000 	0s 7ms/step - accuracy: 0.7183 - loss: 0.5853 - val_accuracy: 0.7094 - val_loss: 0.5918
-	88/1000	
		0s 9ms/step - accuracy: 0.6935 - loss: 0.6033 - val_accuracy: 0.7094 - val_loss: 0.5917
•	89/1000 	0s 10ms/step - accuracy: 0.7009 - loss: 0.5965 - val_accuracy: 0.7094 - val_loss: 0.5916
	90/1000	vs 10ms/step - accuracy. 0.7009 - 10ss. 0.5905 - var_accuracy. 0.7094 - var_10ss. 0.5910
10/10		0s 8ms/step - accuracy: 0.7295 - loss: 0.5725 - val_accuracy: 0.7094 - val_loss: 0.5915
	91/1000	0. 0/
	92/1000	0s 8ms/step - accuracy: 0.7042 - loss: 0.5902 - val_accuracy: 0.7094 - val_loss: 0.5914
•	•	0s 12ms/step - accuracy: 0.7058 - loss: 0.5947 - val_accuracy: 0.7094 - val_loss: 0.5913
•	93/1000	
	94/1000	0s 9ms/step - accuracy: 0.7397 - loss: 0.5613 - val_accuracy: 0.7094 - val_loss: 0.5911
		0s 7ms/step - accuracy: 0.7038 - loss: 0.5972 - val_accuracy: 0.7094 - val_loss: 0.5910
Epoch	95/1000	
		0s 10ms/step - accuracy: 0.7172 - loss: 0.5835 - val_accuracy: 0.7094 - val_loss: 0.5909
•	96/1000 	0s 9ms/step - accuracy: 0.7027 - loss: 0.5942 - val_accuracy: 0.7094 - val_loss: 0.5908
	97/1000	var_accar acy: 0.7027 1033. 0.3342 var_accar acy: 0.7034 var_1033. 0.3300
		0s 7ms/step - accuracy: 0.7225 - loss: 0.5753 - val_accuracy: 0.7094 - val_loss: 0.5907
	98/1000	0s 8ms/step - accuracy: 0.7273 - loss: 0.5704 - val_accuracy: 0.7094 - val_loss: 0.5906
	99/1000	65 oms/step - accuracy. 6.7275 - 1055. 6.5764 - Val_accuracy. 6.7694 - Val_1055. 6.5966
•		0s 10ms/step - accuracy: 0.6997 - loss: 0.5967 - val_accuracy: 0.7094 - val_loss: 0.5905
•	100/1000	0.0.4.
10/10 Enoch	101/1000	0s 8ms/step - accuracy: 0.7120 - loss: 0.5870 - val_accuracy: 0.7094 - val_loss: 0.5903
10/10		0s 7ms/step - accuracy: 0.7146 - loss: 0.5831 - val_accuracy: 0.7094 - val_loss: 0.5903
•	102/1000	
10/10		0s 9ms/step - accuracy: 0.6780 - loss: 0.6128 - val_accuracy: 0.7094 - val_loss: 0.5902
Ehocu	103/1000	

10/10		0s 10ms/step - accuracy: 0.7046 - loss: 0.5919 - val_accuracy: 0.7094 - val_loss: 0.5901
	104/1000	
10/10		0s 8ms/step - accuracy: 0.7419 - loss: 0.5558 - val_accuracy: 0.7094 - val_loss: 0.5899
Epoch	105/1000	
10/10		0s 7ms/step - accuracy: 0.7127 - loss: 0.5838 - val_accuracy: 0.7094 - val_loss: 0.5898
Epoch	106/1000	
10/10		0s 10ms/step - accuracy: 0.6970 - loss: 0.5972 - val_accuracy: 0.7094 - val_loss: 0.5897
	107/1000	
		0s 13ms/step - accuracy: 0.7235 - loss: 0.5776 - val_accuracy: 0.7094 - val_loss: 0.5896
	108/1000	
		0s 8ms/step - accuracy: 0.7250 - loss: 0.5743 - val_accuracy: 0.7094 - val_loss: 0.5895
•	109/1000	
-		0s 7ms/step - accuracy: 0.7023 - loss: 0.5912 - val_accuracy: 0.7094 - val_loss: 0.5894
	110/1000	
		0s 9ms/step - accuracy: 0.7287 - loss: 0.5703 - val_accuracy: 0.7094 - val_loss: 0.5892
	111/1000	0. 10/
		0s 10ms/step - accuracy: 0.7207 - loss: 0.5797 - val_accuracy: 0.7094 - val_loss: 0.5891
	112/1000	0s 7ms/step - accuracy: 0.7124 - loss: 0.5826 - val_accuracy: 0.7094 - val_loss: 0.5890
	113/1000	85 / ms/step - accuracy. 8./124 - 1055. 8.5826 - Val_accuracy. 8./894 - Val_1055. 8.5858
•		0s 8ms/step - accuracy: 0.7335 - loss: 0.5623 - val accuracy: 0.7094 - val loss: 0.5889
	114/1000	03 0113/31ep - accuracy. 0.7333 - 1033. 0.3023 - Val_accuracy. 0.7034 - Val_1033. 0.3003
		0s 7ms/step - accuracy: 0.7091 - loss: 0.5862 - val_accuracy: 0.7094 - val_loss: 0.5888
	115/1000	05 / ms/seep decardey: 0.7051 1055. 0.5002 var_decardey: 0.7054 var_1055. 0.5000
		0s 9ms/step - accuracy: 0.7028 - loss: 0.5878 - val_accuracy: 0.7094 - val_loss: 0.5887
	116/1000	
		Os 10ms/step - accuracy: 0.7041 - loss: 0.5864 - val_accuracy: 0.7094 - val_loss: 0.5886
	117/1000	
10/10		Os 6ms/step - accuracy: 0.7217 - loss: 0.5762 - val_accuracy: 0.7094 - val_loss: 0.5885
Epoch	118/1000	
10/10		0s 7ms/step - accuracy: 0.7151 - loss: 0.5820 - val_accuracy: 0.7094 - val_loss: 0.5883
Epoch	119/1000	
10/10		0s 9ms/step - accuracy: 0.7024 - loss: 0.5919 - val_accuracy: 0.7094 - val_loss: 0.5882
	120/1000	
10/10		0s 11ms/step - accuracy: 0.7107 - loss: 0.5900 - val_accuracy: 0.7094 - val_loss: 0.5881
•	121/1000	
10/10		0s 6ms/step - accuracy: 0.7152 - loss: 0.5770 - val_accuracy: 0.7094 - val_loss: 0.5880
	122/1000	
10/10		0s 7ms/step - accuracy: 0.6945 - loss: 0.5990 - val_accuracy: 0.7094 - val_loss: 0.5879
•	123/1000	0.0 / /
10/10		0s 9ms/step - accuracy: 0.7165 - loss: 0.5740 - val_accuracy: 0.7094 - val_loss: 0.5878

•	124/1000	
	125/1000	0s 11ms/step - accuracy: 0.7129 - loss: 0.5828 - val_accuracy: 0.7094 - val_loss: 0.5877
		0s 8ms/step - accuracy: 0.7120 - loss: 0.5792 - val_accuracy: 0.7094 - val_loss: 0.5876
•	126/1000	0s 7ms/step - accuracy: 0.7016 - loss: 0.5903 - val accuracy: 0.7094 - val loss: 0.5875
•	127/1000	
	128/1000	0s 8ms/step - accuracy: 0.7207 - loss: 0.5722 - val_accuracy: 0.7094 - val_loss: 0.5873
10/10		0s 11ms/step - accuracy: 0.7131 - loss: 0.5831 - val_accuracy: 0.7094 - val_loss: 0.5873
	129/1000	<pre>0s 8ms/step - accuracy: 0.7220 - loss: 0.5735 - val_accuracy: 0.7094 - val_loss: 0.5871</pre>
	130/1000	03 0113/35CF
	131/1000	0s 9ms/step - accuracy: 0.7342 - loss: 0.5599 - val_accuracy: 0.7094 - val_loss: 0.5870
•		0s 9ms/step - accuracy: 0.7050 - loss: 0.5833 - val_accuracy: 0.7094 - val_loss: 0.5869
	132/1000	0- 10mg/ston
	133/1000	0s 10ms/step - accuracy: 0.6965 - loss: 0.5900 - val_accuracy: 0.7094 - val_loss: 0.5868
		0s 8ms/step - accuracy: 0.7156 - loss: 0.5804 - val_accuracy: 0.7094 - val_loss: 0.5867
•	134/1000	0s 7ms/step - accuracy: 0.6942 - loss: 0.5981 - val_accuracy: 0.7094 - val_loss: 0.5866
Epoch	135/1000	
	136/1000	0s 7ms/step - accuracy: 0.7260 - loss: 0.5721 - val_accuracy: 0.7094 - val_loss: 0.5865
10/10		0s 10ms/step - accuracy: 0.7121 - loss: 0.5814 - val_accuracy: 0.7094 - val_loss: 0.5864
	137/1000	0s 11ms/step - accuracy: 0.7268 - loss: 0.5665 - val_accuracy: 0.7094 - val_loss: 0.5863
	138/1000	var_uccur ucy. 0.7200 1033. 0.5005 var_uccur ucy. 0.7054 var_1033. 0.5005
	139/1000	0s 8ms/step - accuracy: 0.7237 - loss: 0.5716 - val_accuracy: 0.7094 - val_loss: 0.5861
•		0s 8ms/step - accuracy: 0.6894 - loss: 0.6014 - val_accuracy: 0.7094 - val_loss: 0.5861
	140/1000	0. 7/ston
	141/1000	0s 7ms/step - accuracy: 0.7089 - loss: 0.5811 - val_accuracy: 0.7094 - val_loss: 0.5860
10/10		0s 10ms/step - accuracy: 0.7068 - loss: 0.5870 - val_accuracy: 0.7094 - val_loss: 0.5859
Epoch 10/10	142/1000	0s 10ms/step - accuracy: 0.7032 - loss: 0.5913 - val_accuracy: 0.7094 - val_loss: 0.5859
Epoch	143/1000	
10/10 Epoch	144/1000	0s 8ms/step - accuracy: 0.7001 - loss: 0.5924 - val_accuracy: 0.7094 - val_loss: 0.5857

10/10		0s	8ms/step - accuracv:	0.7385 - loss:	0.5547 - val accuracy	: 0.7094 - val_loss: 0.5856
	145/1000		, · · · · · · · · · · · · · · · · ·			
10/10		0s	8ms/step - accuracy:	0.7201 - loss:	0.5694 - val_accuracy	: 0.7094 - val_loss: 0.5855
Epoch	146/1000					
10/10		0s	8ms/step - accuracy:	0.7041 - loss:	0.5852 - val_accuracy	: 0.7094 - val_loss: 0.5854
	147/1000					
		0s	11ms/step - accuracy:	0.6722 - loss:	: 0.6182 - val_accurac	y: 0.7094 - val_loss: 0.5853
	148/1000	_		-		
		0s	8ms/step - accuracy:	0.7213 - loss:	0.5684 - val_accuracy	: 0.7094 - val_loss: 0.5852
	149/1000	00	Ome /ston assumative	0.7010]	0 F072 val accuracy	. 0 7004 val lass. 0 5051
	150/1000	05	oms/step - accuracy:	0.7019 - 1055:	0.58/3 - Val_accuracy	: 0.7094 - val_loss: 0.5851
•		۵c	10ms/sten - accuracy:	0 7136 - loss	· 0 5753 - val accurac	y: 0.7094 - val_loss: 0.5850
	151/1000	03	101113/3ccp accuracy.	0.7150 1033.	. 0.3733	y. 0.7054 Vai_1033. 0.5050
		0s	9ms/step - accuracy:	0.6701 - loss:	0.6171 - val accuracy	: 0.7094 - val_loss: 0.5850
	152/1000		-, _,			
		0s	8ms/step - accuracy:	0.7078 - loss:	0.5802 - val_accuracy	: 0.7094 - val_loss: 0.5849
Epoch	153/1000					
10/10		0s	8ms/step - accuracy:	0.6974 - loss:	0.5913 - val_accuracy	: 0.7094 - val_loss: 0.5848
•	154/1000					
		0s	11ms/step - accuracy:	0.7081 - loss:	: 0.5828 - val_accurac	y: 0.7094 - val_loss: 0.5847
	155/1000	_				
		0s	9ms/step - accuracy:	0.7268 - loss:	0.5619 - val_accuracy	: 0.7094 - val_loss: 0.5846
	156/1000	0-	0	0.7222 1	0 5754 1	
		05	8ms/step - accuracy:	0./232 - 10SS:	0.5/51 - Val_accuracy	: 0.7094 - val_loss: 0.5844
	157/1000 	Qc.	Qms/sten - accuracy:	0 7387 - loss:	0 5558 - val accuracy	: 0.7094 - val_loss: 0.5843
	158/1000	03	oms/scep - accuracy.	0.7507 - 1033.	0.5550 - Vai_accuracy	. 0.7054 - Val_1033. 0.5045
•		0s	11ms/step - accuracy:	0.7192 - loss:	: 0.5732 - val accurac	y: 0.7094 - val_loss: 0.5843
	159/1000		-,,			, <u>_</u>
		0s	8ms/step - accuracy:	0.7449 - loss:	0.5496 - val_accuracy	: 0.7094 - val_loss: 0.5842
Epoch	160/1000					
10/10		0s	8ms/step - accuracy:	0.7003 - loss:	0.5824 - val_accuracy	: 0.7094 - val_loss: 0.5840
	161/1000					
		0s	8ms/step - accuracy:	0.7050 - loss:	0.5867 - val_accuracy	: 0.7094 - val_loss: 0.5839
	162/1000	_				
10/10		0s	10ms/step - accuracy:	0.7111 - loss:	: 0.5801 - val_accurac	y: 0.7094 - val_loss: 0.5838
	163/1000	00	Ome/ston	0 7004 1000	0 E027 vol 200025	. 0 7004 val lace: 0 5020
	164/1000	62	oms/sceh - accoracy:	v./034 - 1055:	6.3021 - AaT accouacy	: 0.7094 - val_loss: 0.5838
10/10		95	9ms/sten - accuracy:	0.6778 - loss	0.6040 - val accuracy	: 0.7094 - val_loss: 0.5837
10/10		03	omo, seep accuracy.	0.0//U - 1033.	var_acculacy	. 0.,054 - 1033. 0.5057

•	165/1000	
	166/1000	0s 9ms/step - accuracy: 0.7057 - loss: 0.5827 - val_accuracy: 0.7094 - val_loss: 0.5836
		0s 10ms/step - accuracy: 0.7094 - loss: 0.5777 - val_accuracy: 0.7094 - val_loss: 0.5835
•	167/1000 	0s 6ms/step - accuracy: 0.7038 - loss: 0.5836 - val_accuracy: 0.7094 - val_loss: 0.5834
Epoch	168/1000	
	169/1000	0s 7ms/step - accuracy: 0.6873 - loss: 0.5936 - val_accuracy: 0.7094 - val_loss: 0.5833
		0s 9ms/step - accuracy: 0.7085 - loss: 0.5808 - val_accuracy: 0.7094 - val_loss: 0.5831
	170/1000	0. 40 (1
	 171/1000	0s 10ms/step - accuracy: 0.7325 - loss: 0.5589 - val_accuracy: 0.7094 - val_loss: 0.5831
10/10		0s 7ms/step - accuracy: 0.6963 - loss: 0.5857 - val_accuracy: 0.7094 - val_loss: 0.5830
•	172/1000 	<pre>0s 7ms/step - accuracy: 0.7195 - loss: 0.5708 - val_accuracy: 0.7094 - val_loss: 0.5829</pre>
Epoch	173/1000	05 /1115/ Seep accaracy. 01/255 1055. 015/05 var_accaracy. 01/05. var_1055. 015025
	174/1000	0s 10ms/step - accuracy: 0.7104 - loss: 0.5735 - val_accuracy: 0.7094 - val_loss: 0.5829
		0s 9ms/step - accuracy: 0.7261 - loss: 0.5680 - val_accuracy: 0.7094 - val_loss: 0.5828
•	175/1000	
-	 176/1000	0s 7ms/step - accuracy: 0.7282 - loss: 0.5632 - val_accuracy: 0.7094 - val_loss: 0.5826
10/10		0s 8ms/step - accuracy: 0.7175 - loss: 0.5678 - val_accuracy: 0.7094 - val_loss: 0.5825
	177/1000 	0s 10ms/step - accuracy: 0.6910 - loss: 0.5919 - val_accuracy: 0.7094 - val_loss: 0.5824
	178/1000	03 Toms/Step - accuracy. 0.0510 - 1033. 0.5515 - Val_accuracy. 0.7654 - Val_1033. 0.5624
		0s 10ms/step - accuracy: 0.7325 - loss: 0.5570 - val_accuracy: 0.7094 - val_loss: 0.5823
•	179/1000 	0s 7ms/step - accuracy: 0.7253 - loss: 0.5667 - val_accuracy: 0.7094 - val_loss: 0.5822
•	180/1000	
	181/1000	0s 8ms/step - accuracy: 0.7185 - loss: 0.5694 - val_accuracy: 0.7094 - val_loss: 0.5820
		0s 8ms/step - accuracy: 0.7178 - loss: 0.5696 - val_accuracy: 0.7094 - val_loss: 0.5819
Epoch 10/10	182/1000	0s 11ms/step - accuracy: 0.7047 - loss: 0.5826 - val_accuracy: 0.7094 - val_loss: 0.5818
	183/1000	03 11m3/3cep - accuracy. 0.7047 - 1033. 0.3020 - var_accuracy. 0.7034 - var_1033. 0.3010
10/10		0s 9ms/step - accuracy: 0.7057 - loss: 0.5778 - val_accuracy: 0.7094 - val_loss: 0.5817
10/10	184/1000 	0s 8ms/step - accuracy: 0.7341 - loss: 0.5564 - val_accuracy: 0.7094 - val_loss: 0.5816
	185/1000	

10/10		0s	8ms/step - accuracy: 0.6928 - loss: 0.5864 - val_accuracy: 0.7094 - val_loss: 0.5815
	186/1000		
10/10		0s	10ms/step - accuracy: 0.7396 - loss: 0.5562 - val_accuracy: 0.7094 - val_loss: 0.5814
•	187/1000		
		0s	8ms/step - accuracy: 0.7082 - loss: 0.5804 - val_accuracy: 0.7094 - val_loss: 0.5813
	188/1000	0-	0/
	189/1000	US	8ms/step - accuracy: 0.7145 - loss: 0.5707 - val_accuracy: 0.7094 - val_loss: 0.5812
		۵s	10ms/step - accuracy: 0.7448 - loss: 0.5435 - val accuracy: 0.7094 - val loss: 0.5811
	190/1000	03	10m3/3ccp accuracy. 0.7440 1033. 0.5455 vai_accuracy. 0.7054 vai_1033. 0.5011
•		0s	8ms/step - accuracy: 0.7226 - loss: 0.5655 - val_accuracy: 0.7094 - val_loss: 0.5811
	191/1000		
•		0s	8ms/step - accuracy: 0.7130 - loss: 0.5711 - val_accuracy: 0.7094 - val_loss: 0.5810
Epoch	192/1000		
10/10		0s	9ms/step - accuracy: 0.7095 - loss: 0.5750 - val_accuracy: 0.7094 - val_loss: 0.5809
•	193/1000		
		0s	12ms/step - accuracy: 0.6957 - loss: 0.5882 - val_accuracy: 0.7094 - val_loss: 0.5808
•	194/1000		
		0s	8ms/step - accuracy: 0.7046 - loss: 0.5767 - val_accuracy: 0.7094 - val_loss: 0.5807
	195/1000		- /
		0s	7ms/step - accuracy: 0.6913 - loss: 0.5948 - val_accuracy: 0.7094 - val_loss: 0.5806
	196/1000 	00	10ms/step - accuracy: 0.7101 - loss: 0.5691 - val_accuracy: 0.7094 - val_loss: 0.5805
	197/1000	05	10ms/step - accuracy. 0.7101 - 10ss. 0.5091 - Val_accuracy. 0.7094 - Val_10ss. 0.5005
		05	11ms/step - accuracy: 0.7077 - loss: 0.5796 - val_accuracy: 0.7094 - val_loss: 0.5804
	198/1000	0.5	12ms, seep deed dey. 017077 1055. 015750 var_deed dey. 01705. var_1055. 01500.
•		0s	7ms/step - accuracy: 0.7467 - loss: 0.5426 - val_accuracy: 0.7094 - val_loss: 0.5802
Epoch	199/1000		
10/10		0s	8ms/step - accuracy: 0.7371 - loss: 0.5518 - val_accuracy: 0.7094 - val_loss: 0.5802
	200/1000		
=		0s	8ms/step - accuracy: 0.7061 - loss: 0.5776 - val_accuracy: 0.7094 - val_loss: 0.5801
•	201/1000		
		0s	11ms/step - accuracy: 0.6965 - loss: 0.5872 - val_accuracy: 0.7094 - val_loss: 0.5800
•	202/1000	0-	11 - /
	203/1000	05	11ms/step - accuracy: 0.7195 - loss: 0.5643 - val_accuracy: 0.7094 - val_loss: 0.5799
10/10		0s	10ms/step - accuracy: 0.7260 - loss: 0.5553 - val_accuracy: 0.7094 - val_loss: 0.5798
	204/1000	03	105, 5 ccp
•		0s	7ms/step - accuracy: 0.7055 - loss: 0.5764 - val_accuracy: 0.7094 - val_loss: 0.5797
	205/1000		
10/10		0s	8ms/step - accuracy: 0.7007 - loss: 0.5799 - val_accuracy: 0.7094 - val_loss: 0.5796

•	206/1000	
	207/1000	0s 7ms/step - accuracy: 0.7151 - loss: 0.5639 - val_accuracy: 0.7094 - val_loss: 0.5795
	208/1000	0s 7ms/step - accuracy: 0.7444 - loss: 0.5459 - val_accuracy: 0.7094 - val_loss: 0.5794
•		0s 8ms/step - accuracy: 0.6971 - loss: 0.5829 - val_accuracy: 0.7094 - val_loss: 0.5793
•	209/1000	
	210/1000	0s 11ms/step - accuracy: 0.7370 - loss: 0.5519 - val_accuracy: 0.7094 - val_loss: 0.5793
		0s 10ms/step - accuracy: 0.7252 - loss: 0.5607 - val_accuracy: 0.7094 - val_loss: 0.5792
	211/1000	
	212/1000	0s 11ms/step - accuracy: 0.7045 - loss: 0.5756 - val_accuracy: 0.7094 - val_loss: 0.5791
•		0s 10ms/step - accuracy: 0.7291 - loss: 0.5546 - val_accuracy: 0.7094 - val_loss: 0.5789
•	213/1000	On One /step
=	214/1000	0s 9ms/step - accuracy: 0.7157 - loss: 0.5657 - val_accuracy: 0.7094 - val_loss: 0.5789
10/10		0s 7ms/step - accuracy: 0.7150 - loss: 0.5671 - val_accuracy: 0.7094 - val_loss: 0.5788
	215/1000	Os 7ms/step - accuracy: 0.7307 - loss: 0.5565 - val_accuracy: 0.7094 - val_loss: 0.5787
	216/1000	03 / 1113/3 tep - accuracy. 0.7307 - 1033. 0.3303 - Val_accuracy. 0.7034 - Val_1033. 0.3767
=		0s 7ms/step - accuracy: 0.7117 - loss: 0.5685 - val_accuracy: 0.7094 - val_loss: 0.5786
	217/1000	0s 7ms/step - accuracy: 0.7024 - loss: 0.5738 - val_accuracy: 0.7094 - val_loss: 0.5785
Epoch	218/1000	
		0s 8ms/step - accuracy: 0.7055 - loss: 0.5747 - val_accuracy: 0.7094 - val_loss: 0.5784
	219/1000	0s 10ms/step - accuracy: 0.7148 - loss: 0.5676 - val_accuracy: 0.7094 - val_loss: 0.5784
•	220/1000	
	221/1000	0s 10ms/step - accuracy: 0.7053 - loss: 0.5761 - val_accuracy: 0.7094 - val_loss: 0.5782
		0s 15ms/step - accuracy: 0.6895 - loss: 0.5886 - val_accuracy: 0.7094 - val_loss: 0.5781
	222/1000	0s 9ms/step - accuracy: 0.7509 - loss: 0.5344 - val_accuracy: 0.7094 - val_loss: 0.5780
=	223/1000	95 9ms/step - accuracy: 0.7509 - 10ss: 0.5344 - Val_accuracy: 0.7094 - Val_10ss: 0.5780
10/10		0s 10ms/step - accuracy: 0.6973 - loss: 0.5777 - val_accuracy: 0.7094 - val_loss: 0.5779
Epoch 10/10	224/1000	0s 10ms/step - accuracy: 0.7069 - loss: 0.5752 - val accuracy: 0.7094 - val loss: 0.5778
	225/1000	03 10.113, 3 ccp
10/10		0s 11ms/step - accuracy: 0.7330 - loss: 0.5488 - val_accuracy: 0.7094 - val_loss: 0.5777
⊧pocn	226/1000	

10/10		0s	10ms/step - accuracy: 0.7008 - loss: 0.5807 - val_accuracy: 0.7094 - val_loss: 0.5776
	227/1000		
10/10		0s	8ms/step - accuracy: 0.7176 - loss: 0.5673 - val_accuracy: 0.7094 - val_loss: 0.5775
Epoch	228/1000		
		0s	7ms/step - accuracy: 0.7123 - loss: 0.5708 - val_accuracy: 0.7094 - val_loss: 0.5774
•	229/1000		
		0s	7ms/step - accuracy: 0.7109 - loss: 0.5653 - val_accuracy: 0.7094 - val_loss: 0.5773
	230/1000	0 -	0 / / 0 7004 1 0 5544 1 0 7004 1 1 0 5770
-		05	8ms/step - accuracy: 0.7281 - loss: 0.5544 - val_accuracy: 0.7094 - val_loss: 0.5773
	231/1000	. ac	10ms/step - accuracy: 0.7052 - loss: 0.5717 - val_accuracy: 0.7094 - val_loss: 0.5772
	232/1000	03	10m3/step - accuracy. 0.7032 - 1033. 0.3717 - var_accuracy. 0.7034 - var_1033. 0.3772
•		95	10ms/step - accuracy: 0.7130 - loss: 0.5666 - val_accuracy: 0.7094 - val_loss: 0.5770
	233/1000		
		0s	10ms/step - accuracy: 0.7190 - loss: 0.5596 - val_accuracy: 0.7094 - val_loss: 0.5769
	234/1000		
10/10		0s	7ms/step - accuracy: 0.7165 - loss: 0.5709 - val_accuracy: 0.7094 - val_loss: 0.5768
Epoch	235/1000		
		0s	7ms/step - accuracy: 0.7190 - loss: 0.5646 - val_accuracy: 0.7094 - val_loss: 0.5767
•	236/1000		
		0s	8ms/step - accuracy: 0.7450 - loss: 0.5414 - val_accuracy: 0.7094 - val_loss: 0.5766
•	237/1000	0-	10/
		US	10ms/step - accuracy: 0.7158 - loss: 0.5624 - val_accuracy: 0.7094 - val_loss: 0.5765
	238/1000	۵c	10ms/step - accuracy: 0.7220 - loss: 0.5609 - val_accuracy: 0.7094 - val_loss: 0.5765
	239/1000	03	10m3/step - accuracy. 0.7220 - 1033. 0.3009 - Var_accuracy. 0.7094 - Var_1033. 0.3703
		05	8ms/step - accuracy: 0.6951 - loss: 0.5779 - val_accuracy: 0.7094 - val_loss: 0.5764
	240/1000		
•		0s	7ms/step - accuracy: 0.6990 - loss: 0.5793 - val_accuracy: 0.7094 - val_loss: 0.5763
Epoch	241/1000		
10/10		0s	10ms/step - accuracy: 0.7122 - loss: 0.5653 - val_accuracy: 0.7094 - val_loss: 0.5762
	242/1000		
		0s	10ms/step - accuracy: 0.7050 - loss: 0.5740 - val_accuracy: 0.7094 - val_loss: 0.5761
	243/1000	_	
		0s	8ms/step - accuracy: 0.7412 - loss: 0.5436 - val_accuracy: 0.7094 - val_loss: 0.5760
	244/1000	0-	2mg/ston
10/10 Enoch	245/1000	05	8ms/step - accuracy: 0.6803 - loss: 0.5961 - val_accuracy: 0.7094 - val_loss: 0.5760
10/10		۵c	13ms/step - accuracy: 0.7376 - loss: 0.5446 - val_accuracy: 0.7094 - val_loss: 0.5759
	246/1000	03	155, 5 ccp accuracy. 0.7570 1055. 0.5440 - var_accuracy. 0.7054 - var_1055. 0.5755
10/10		0s	10ms/step - accuracy: 0.7031 - loss: 0.5724 - val_accuracy: 0.7094 - val_loss: 0.5758
-,			

	247/1000	
	248/1000	0s 9ms/step - accuracy: 0.6983 - loss: 0.5827 - val_accuracy: 0.7094 - val_loss: 0.5756
		0s 8ms/step - accuracy: 0.7151 - loss: 0.5587 - val_accuracy: 0.7094 - val_loss: 0.5755
	249/1000	0s 7ms/step - accuracy: 0.7047 - loss: 0.5752 - val_accuracy: 0.7094 - val_loss: 0.5755
	250/1000	
	251/1000	0s 8ms/step - accuracy: 0.7189 - loss: 0.5584 - val_accuracy: 0.7094 - val_loss: 0.5753
10/10		0s 10ms/step - accuracy: 0.7229 - loss: 0.5522 - val_accuracy: 0.7094 - val_loss: 0.5753
•	252/1000 	0s 10ms/step - accuracy: 0.7072 - loss: 0.5718 - val_accuracy: 0.7094 - val_loss: 0.5751
Epoch	253/1000	
	254/1000	0s 12ms/step - accuracy: 0.7314 - loss: 0.5535 - val_accuracy: 0.7094 - val_loss: 0.5751
•		0s 8ms/step - accuracy: 0.7178 - loss: 0.5615 - val_accuracy: 0.7094 - val_loss: 0.5750
•	255/1000	0s 8ms/step - accuracy: 0.6843 - loss: 0.5880 - val_accuracy: 0.7094 - val_loss: 0.5749
	256/1000	05 oms/step - accuracy. 0.0043 - 1055. 0.3000 - val_accuracy. 0.7034 - val_1055. 0.3749
		0s 13ms/step - accuracy: 0.7215 - loss: 0.5582 - val_accuracy: 0.7094 - val_loss: 0.5748
•	257/1000 	0s 11ms/step - accuracy: 0.6823 - loss: 0.5869 - val_accuracy: 0.7094 - val_loss: 0.5748
•	258/1000	0. 0. / /
	259/1000	0s 9ms/step - accuracy: 0.7243 - loss: 0.5511 - val_accuracy: 0.7094 - val_loss: 0.5747
10/10		0s 9ms/step - accuracy: 0.7239 - loss: 0.5572 - val_accuracy: 0.7094 - val_loss: 0.5747
•	260/1000	0s 9ms/step - accuracy: 0.7188 - loss: 0.5591 - val_accuracy: 0.7094 - val_loss: 0.5746
Epoch	261/1000	
	262/1000	0s 8ms/step - accuracy: 0.7182 - loss: 0.5594 - val_accuracy: 0.7094 - val_loss: 0.5744
10/10		0s 9ms/step - accuracy: 0.7043 - loss: 0.5753 - val_accuracy: 0.7094 - val_loss: 0.5744
•	263/1000	0s 10ms/step - accuracy: 0.7033 - loss: 0.5724 - val_accuracy: 0.7094 - val_loss: 0.5743
	264/1000	05 Ioms, seep deed dey. 017055 1055. 01572. 101_deed.dey. 01705. 101_1055. 0157.5
10/10 Enoch	265/1000	0s 9ms/step - accuracy: 0.7273 - loss: 0.5526 - val_accuracy: 0.7094 - val_loss: 0.5742
10/10		0s 8ms/step - accuracy: 0.7060 - loss: 0.5659 - val_accuracy: 0.7094 - val_loss: 0.5742
Epoch 10/10	266/1000	0s 8ms/step - accuracy: 0.7104 - loss: 0.5696 - val_accuracy: 0.7094 - val_loss: 0.5741
	267/1000	03 03, 3 ccp

10/10		0s	10ms/step - accurac	v: 0.7267	- loss	: 0.5474	- val accuracy	: 0.7094	- val loss:	0.5740
	268/1000			,					141	
10/10		0s	8ms/step - accuracy	: 0.7137	- loss:	0.5604 -	val_accuracy:	0.7094	- val_loss:	0.5739
Epoch	269/1000									
10/10		0s	8ms/step - accuracy	: 0.7231	- loss:	0.5555 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>- val_loss:</pre>	0.5738
•	270/1000									
		0s	8ms/step - accuracy	: 0.7237	- loss:	0.5576 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5737
	271/1000				_		_			
		0s	8ms/step - accuracy	: 0.7110	- loss:	0.5648 -	· val_accuracy:	0.7094	- val_loss:	0.5736
	272/1000	0-	Ome /stan	. 0 7156	1	0 5611		0.7004		0 5724
=	273/1000	05	8ms/step - accuracy	: 0./156	- 1055:	0.5611 -	· vai_accuracy:	0.7094	- val_loss:	0.5/34
•		۵c	8ms/step - accuracy	• 0 7247	- 10551	0 5621 -	val accuracy:	0 7001	- val loss:	0 5734
	274/1000	03	oms/step - accuracy	. 0.7247	- 1033.	0.3021 -	vai_accuracy.	0.7034	- Vai_1033.	0.3734
		0 s	8ms/step - accuracy	: 0.7174	- loss:	0.5604 -	· val accuracy:	0.7094	- val loss:	0.5733
	275/1000		55, 5 tep a cea. dey							
		0s	8ms/step - accuracy	: 0.7287	- loss:	0.5475 -	val accuracy:	0.7094	- val loss:	0.5733
	276/1000						_ ,		_	
10/10		0s	8ms/step - accuracy	: 0.7168	- loss:	0.5628 -	val_accuracy:	0.7094	- val_loss:	0.5731
Epoch	277/1000									
10/10		0s	8ms/step - accuracy	: 0.7180	- loss:	0.5642 -	<pre>val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5730
	278/1000									
		0s	7ms/step - accuracy	: 0.7170	- loss:	0.5536 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5730
	279/1000				_		_			
		0s	7ms/step - accuracy	: 0.7015	- loss:	0.5702 -	val_accuracy:	0.7094	- val_loss:	0.5730
•	280/1000	0-	7	. 0 7016	1	0 5700		0.7004		0 5730
	281/1000	05	7ms/step - accuracy	: 0.7016	- 1055:	0.5/09 -	val_accuracy:	0.7094	- val_10ss:	0.5/29
•		۵s	8ms/step - accuracy	· 0 7158	- 1055.	0 5646 -	· val accuracy:	0 7094 .	- val loss:	a 5728
	282/1000	03	oms/seep accuracy	. 0.7130	1033.	0.3040	vai_accaracy.	0.7054	vai_1033.	0.3720
		0s	8ms/step - accuracy	: 0.7316	- loss:	0.5419 -	· val accuracy:	0.7094	- val loss:	0.5727
	283/1000		т., т.,							
		0s	8ms/step - accuracy	: 0.7208	- loss:	0.5551 -	val_accuracy:	0.7094	- val_loss:	0.5726
Epoch	284/1000								_	
10/10		0s	7ms/step - accuracy	: 0.7204	- loss:	0.5654 -	val_accuracy:	0.7094	- val_loss:	0.5725
Epoch	285/1000									
10/10		0s	7ms/step - accuracy	: 0.7256	- loss:	0.5472 -	<pre>val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5724
	286/1000						_			
		0s	9ms/step - accuracy	: 0.7209	- loss:	0.5593 -	val_accuracy:	0.7094	- val_loss:	0.5724
	287/1000	_		0 =400						
10/10		ØS	7ms/step - accuracy	: 0./199	- loss:	0.5577 -	· val_accuracy:	0./094	- val_loss:	0.5/23

	288/1000	0.0	7ms/ston	2661192611	0 7220	10001	0 5550	val accumacy.	0.7004	val loss.	0 5733
Epoch	289/1000							val_accuracy:			
Epoch	290/1000		•	-				val_accuracy:		_	
Epoch	291/1000		•	-				val_accuracy:		_	
Epoch	292/1000							val_accuracy:			
Epoch	293/1000		•	-				val_accuracy:		_	
Epoch	294/1000		•	-				val_accuracy:		_	
	295/1000		•	-				val_accuracy:		_	
	296/1000	0s	8ms/step -	accuracy:	0.6926 -	loss:	0.5770 -	val_accuracy:	0.7094 -	val_loss:	0.5716
	297/1000	0s	8ms/step -	accuracy:	0.7233 -	loss:	0.5574 -	val_accuracy:	0.7094 -	val_loss:	0.5715
	298/1000	0s	8ms/step -	accuracy:	0.7169 -	loss:	0.5608 -	val_accuracy:	0.7094 -	val_loss:	0.5714
	299/1000	0s	9ms/step -	accuracy:	0.7130 -	loss:	0.5586 -	val_accuracy:	0.7094 -	val_loss:	0.5713
	300/1000	0s	8ms/step -	accuracy:	0.7150 -	loss:	0.5642 -	val_accuracy:	0.7094 -	val_loss:	0.5712
10/10		0s	8ms/step -	accuracy:	0.7265 -	loss:	0.5511 -	val_accuracy:	0.7094 -	val_loss:	0.5712
10/10		0s	8ms/step -	accuracy:	0.7049 -	loss:	0.5647 -	val_accuracy:	0.7094 -	val_loss:	0.5710
10/10		0s	8ms/step -	accuracy:	0.7168 -	loss:	0.5564 -	val_accuracy:	0.7094 -	val_loss:	0.5710
10/10		0s	8ms/step -	accuracy:	0.7387 -	loss:	0.5389 -	val_accuracy:	0.7094 -	val_loss:	0.5710
10/10		0s	7ms/step -	accuracy:	0.7159 -	loss:	0.5599 -	val_accuracy:	0.7094 -	val_loss:	0.5708
10/10		0s	7ms/step -	accuracy:	0.6964 -	loss:	0.5815 -	val_accuracy:	0.7094 -	val_loss:	0.5707
10/10		0s	8ms/step -	accuracy:	0.7132 -	loss:	0.5601 -	val_accuracy:	0.7094 -	val_loss:	0.5707
10/10		0s	7ms/step -	accuracy:	0.7189 -	loss:	0.5613 -	val_accuracy:	0.7094 -	val_loss:	0.5706
Epoch	308/1000										

10/10		0s	8ms/step -	accuracv:	0.7428 -	loss:	0.5320 -	val accuracy:	0.7094	- val loss:	0.5704
	309/1000		,								
10/10		0s	7ms/step -	accuracy:	0.7058 -	loss:	0.5665 -	val_accuracy:	0.7094	- val_loss:	0.5704
	310/1000										
		0s	7ms/step -	accuracy:	0.7059 -	loss:	0.5651 -	val_accuracy:	0.7094	- val_loss:	0.5704
•	311/1000	0-	0 / - +		0 7070	1	0 5603		0.7004		0 5703
	312/1000	05	8ms/step -	accuracy:	0./0/8 -	1055:	0.5603 -	val_accuracy:	0.7094	- vai_ioss:	0.5/03
		95	7ms/sten -	accuracy:	0 7109 -	loss	0 5626 -	val accuracy:	0 7094	- val loss.	0 5702
	313/1000	03	7 III 37 3 CCP	accar acy.	0.7103	1033.	0.3020	var_accar acy.	0.7034	va1_1033.	0.5702
•		0s	7ms/step -	accuracy:	0.7176 -	loss:	0.5561 -	val_accuracy:	0.7094	- val_loss:	0.5701
Epoch	314/1000			-							
		0s	7ms/step -	accuracy:	0.7218 -	loss:	0.5536 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5700
	315/1000					_		_			
		0s	8ms/step -	accuracy:	0.7109 -	loss:	0.5579 -	val_accuracy:	0.7094	- val_loss:	0.5699
	316/1000	00	Ome/ston	26611026144	0 7154	10551	0 5550	val_accuracy:	0 7004	val loss.	0 5600
	317/1000	05	Jiis/step -	accuracy.	0.7154 -	1055.	0.5556 -	vai_accuracy.	0.7094	- vai_1055.	0.5099
•		0s	8ms/step -	accuracv:	0.7567 -	loss:	0.5205 -	val accuracy:	0.7094	- val loss:	0.5698
=	318/1000										
10/10		0s	8ms/step -	accuracy:	0.7147 -	loss:	0.5604 -	val_accuracy:	0.7094	- val_loss:	0.5696
	319/1000										
		0s	8ms/step -	accuracy:	0.7124 -	loss:	0.5531 -	val_accuracy:	0.7094	- val_loss:	0.5696
	320/1000	•	0 / 1		0 7440	,	0 5574	,	0.7004		0 5605
	321/1000	0S	8ms/step -	accuracy:	0./142 -	Toss:	0.55/1 -	val_accuracy:	0.7094	- val_loss:	0.5695
•		95	8ms/sten -	accuracy:	0.7160 -	loss:	0.5572 -	val_accuracy:	0.7094	- val loss:	0.5694
	322/1000	0.5	33, 3 ccp	accai acy.	0.7200	1033.	0.33,2	var_acca, acy.	0.703.	va1_1033.	0.303.
		0s	9ms/step -	accuracy:	0.6865 -	loss:	0.5793 -	val_accuracy:	0.7094	- val_loss:	0.5694
Epoch	323/1000										
		0s	7ms/step -	accuracy:	0.7004 -	loss:	0.5664 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5694
	324/1000	_				-		-			
		0s	7ms/step -	accuracy:	0.7350 -	loss:	0.5387 -	val_accuracy:	0.7094	- val_loss:	0.5693
•	325/1000	۵c	8ms/stan -	accuracy.	0 7138 -	1000	0 5523 -	val_accuracy:	0 7091	- val loss:	0 5692
	326/1000	03	olii3/3cep -	accuracy.	0.7130 -	1033.	0.5525	vai_accuracy.	0.7054	- vai_1033.	0.3032
10/10		0s	7ms/step -	accuracy:	0.7276 -	loss:	0.5541 -	val accuracy:	0.7094	- val loss:	0.5691
	327/1000			•				_ ,		_	
10/10		0s	8ms/step -	accuracy:	0.7334 -	loss:	0.5398 -	val_accuracy:	0.7094	- val_loss:	0.5691
•	328/1000										
10/10		0s	7ms/step -	accuracy:	0.7334 -	loss:	0.5418 -	val_accuracy:	0.7094	- val_loss:	0.5690

•	329/1000	0-	10		0.7254	1	0 5451		. 0 7004		0 5600
Epoch	330/1000			-				- val_accuracy		_	
Epoch	331/1000		·	-				val_accuracy:		_	
Epoch	332/1000		·					val_accuracy:		_	
	333/1000	0s	7ms/step -	accuracy:	0.7277 -	loss:	0.5444 -	val_accuracy:	0.7094	- val_loss:	0.5686
	334/1000	0s	8ms/step -	accuracy:	0.7047 -	loss:	0.5704 -	val_accuracy:	0.7094	- val_loss:	0.5685
	335/1000	0s	8ms/step -	accuracy:	0.7192 -	loss:	0.5528 -	val_accuracy:	0.7094	- val_loss:	0.5685
	336/1000	0s	7ms/step -	accuracy:	0.7049 -	loss:	0.5674 -	val_accuracy:	0.7094	- val_loss:	0.5684
	337/1000	0s	7ms/step -	accuracy:	0.6848 -	loss:	0.5801 -	val_accuracy:	0.7094	- val_loss:	0.5683
10/10		0s	7ms/step -	accuracy:	0.7264 -	loss:	0.5442 -	val_accuracy:	0.7094	- val_loss:	0.5683
10/10	=	0s	8ms/step -	accuracy:	0.7011 -	loss:	0.5682 -	val_accuracy:	0.7094	- val_loss:	0.5682
10/10	=	0s	7ms/step -	accuracy:	0.6856 -	loss:	0.5812 -	val_accuracy:	0.7094	- val_loss:	0.5681
10/10		0s	7ms/step -	accuracy:	0.7046 -	loss:	0.5573 -	val_accuracy:	0.7094	- val_loss:	0.5680
10/10		0s	8ms/step -	accuracy:	0.7095 -	loss:	0.5657 -	val_accuracy:	0.7094	- val_loss:	0.5680
10/10		0s	8ms/step -	accuracy:	0.7055 -	loss:	0.5693 -	val_accuracy:	0.7094	- val_loss:	0.5679
10/10		0s	8ms/step -	accuracy:	0.7128 -	loss:	0.5528 -	val_accuracy:	0.7094	- val_loss:	0.5679
	344/1000	0s	6ms/step -	accuracy:	0.7348 -	loss:	0.5367 -	val_accuracy:	0.7094	- val_loss:	0.5678
	345/1000	0s	7ms/step -	accuracy:	0.7326 -	loss:	0.5437 -	val_accuracy:	0.7094	- val_loss:	0.5676
Epoch 10/10	346/1000	0s	6ms/step -	accuracy:	0.7131 -	loss:	0.5511 -	val_accuracy:	0.7094	- val_loss:	0.5675
Epoch 10/10	347/1000		·					val_accuracy:		_	
	348/1000		·					val_accuracy:		_	
	349/1000	- -	,					== <u>_</u> ====		<u>-</u>	

10/10		0s	8ms/step -	accuracy:	0.6909 -	loss:	0.5753 -	val_accuracy:	0.7094	- val loss:	0.5673
	350/1000			,				_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.6952 -	loss:	0.5759 -	val_accuracy:	0.7094	- val_loss:	0.5673
	351/1000										
		0s	8ms/step -	accuracy:	0.7149 -	loss:	0.5506 -	val_accuracy:	0.7094	- val_loss:	0.5672
	352/1000	0-	0		0.7010	1	0 5605		0.7004		0 5671
	353/1000	05	8ms/step -	accuracy:	0.7018 -	· IOSS:	0.5685 -	val_accuracy:	0.7094	- vai_ioss:	0.56/1
		0s	7ms/sten -	accuracy:	0 7077 -	loss	0 5531 -	val_accuracy:	0 7094	- val loss:	0 5671
	354/1000	03	7 m3/ 3 ccp	accar acy.	0.7077	1033.	0.3331	var_accar acy.	0.7054	vai_1055.	0.3071
		0s	7ms/step -	accuracy:	0.7121 -	loss:	0.5550 -	val_accuracy:	0.7094	- val loss:	0.5671
	355/1000			-						_	
10/10		0s	8ms/step -	accuracy:	0.7233 -	loss:	0.5521 -	val_accuracy:	0.7094	- val_loss:	0.5669
•	356/1000										
		0s	7ms/step -	accuracy:	0.6969 -	loss:	0.5629 -	val_accuracy:	0.7094	- val_loss:	0.5668
•	357/1000	0 -	0 / 1		0 7065		0 5637	1	0.7004		0 5660
		ØS	8ms/step -	accuracy:	0.7065 -	· loss:	0.563/ -	val_accuracy:	0.7094	- val_loss:	0.5668
	358/1000 	۵c	2ms/stan -	accuracy:	0 7281 -	. 1000	0 5/20 -	val accuracy:	0 7001 .	- val loss:	0 5667
-	359/1000	03	oms/scep	accuracy.	0.7201	1033.	0.5420	vai_accuracy.	0.7054	vai_1033.	0.5007
•		0s	8ms/step -	accuracy:	0.7077 -	loss:	0.5610 -	val_accuracy:	0.7094	- val loss:	0.5666
	360/1000							_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.6990 -	loss:	0.5787 -	val_accuracy:	0.7094	- val_loss:	0.5665
	361/1000										
		0s	8ms/step -	accuracy:	0.7252 -	loss:	0.5515 -	val_accuracy:	0.7094	- val_loss:	0.5664
•	362/1000	0-	0		0.7024	1	0 5661		0.7004		0 5664
	363/1000	05	8ms/step -	accuracy:	0.7034 -	· IOSS:	0.5661 -	val_accuracy:	0.7094	- vai_ioss:	0.5664
		0s	8ms/sten -	accuracy:	0 7226 -	loss	0 5456 -	val_accuracy:	0 7094	- val loss:	0 5663
	364/1000	03	oms/ seep	accar acy.	0.7220	1033.	0.5450	var_accar acy.	0.7054	vai_1055.	0.3003
		0s	8ms/step -	accuracy:	0.7115 -	loss:	0.5546 -	val_accuracy:	0.7094	- val_loss:	0.5662
Epoch	365/1000		•	-						_	
10/10		0s	7ms/step -	accuracy:	0.7180 -	loss:	0.5503 -	val_accuracy:	0.7094	- val_loss:	0.5662
•	366/1000										
		0s	8ms/step -	accuracy:	0.6974 -	loss:	0.5643 -	val_accuracy:	0.7094	- val_loss:	0.5661
	367/1000	0-	0		0.7057	1	0 5630		0.7004		0 5661
10/10	368/1000	05	8ms/step -	accuracy:	0.7057 -	. 1088:	0.5638 -	val_accuracy:	0.7094	- vai_10ss:	0.5661
10/10		95	10ms/sten	- accuracy	. 0.7061	- loss	0.5514	- val_accuracy	. 0.7094	- val loss:	0.5659
	369/1000	03	201113/3 сер	accar acy	. 3.,001	1000	. 0.001	tar_acca. acy	. 5.,054	va1_1033.	0.5055
10/10		0s	8ms/step -	accuracy:	0.7192 -	loss:	0.5534 -	val_accuracy:	0.7094	- val_loss:	0.5659
			•	-						_	

•	370/1000	0.0	Ome/ston	2661192611	0 7000	10001	0 5602	val accumacy.	0.7004	val lass.	0 5650
Epoch	371/1000			-				val_accuracy:		_	
Epoch	372/1000			-				val_accuracy:		_	
Epoch	373/1000		·					val_accuracy:		_	
Epoch	374/1000							val_accuracy:			
Epoch	375/1000			-				val_accuracy:		_	
	376/1000			-				val_accuracy:		_	
	377/1000			-				val_accuracy:		_	
	378/1000	0s	8ms/step -	accuracy:	0.7249 -	loss:	0.5480 -	val_accuracy:	0.7094 -	val_loss:	0.5653
	379/1000	0s	8ms/step -	accuracy:	0.7056 -	loss:	0.5573 -	val_accuracy:	0.7094 -	val_loss:	0.5652
	380/1000	0s	9ms/step -	accuracy:	0.6893 -	loss:	0.5841 -	val_accuracy:	0.7094 -	val_loss:	0.5651
	381/1000	0s	8ms/step -	accuracy:	0.7241 -	loss:	0.5416 -	val_accuracy:	0.7094 -	val_loss:	0.5650
	382/1000	0s	7ms/step -	accuracy:	0.7156 -	loss:	0.5508 -	val_accuracy:	0.7094 -	val_loss:	0.5649
10/10		0s	8ms/step -	accuracy:	0.7243 -	loss:	0.5386 -	val_accuracy:	0.7094 -	val_loss:	0.5648
10/10		0s	8ms/step -	accuracy:	0.7482 -	loss:	0.5314 -	val_accuracy:	0.7094 -	val_loss:	0.5647
10/10		0s	9ms/step -	accuracy:	0.7202 -	loss:	0.5478 -	val_accuracy:	0.7094 -	val_loss:	0.5646
10/10		0s	8ms/step -	accuracy:	0.7013 -	loss:	0.5564 -	val_accuracy:	0.7094 -	val_loss:	0.5646
10/10		0s	8ms/step -	accuracy:	0.7251 -	loss:	0.5487 -	val_accuracy:	0.7094 -	val_loss:	0.5645
10/10		0s	7ms/step -	accuracy:	0.7177 -	loss:	0.5458 -	val_accuracy:	0.7094 -	val_loss:	0.5644
10/10		0s	8ms/step -	accuracy:	0.7108 -	loss:	0.5518 -	val_accuracy:	0.7094 -	val_loss:	0.5643
10/10		0s	8ms/step -	accuracy:	0.7168 -	loss:	0.5485 -	val_accuracy:	0.7094 -	val_loss:	0.5643
гросп	330/ 1000										

10/10		0s	8ms/step -	accuracv:	0.7135 -	loss:	0.5509 -	val_accuracy:	0.7094 -	val loss:	0.5643
	391/1000		,	,				_ ,		_	
10/10		0s	8ms/step -	accuracy:	0.7008 -	loss:	0.5700 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5642
Epoch	392/1000										
10/10		0s	8ms/step -	accuracy:	0.7394 -	loss:	0.5272 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5641
	393/1000										
		0s	7ms/step -	accuracy:	0.7154 -	loss:	0.5481 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5640
	394/1000					_		_			
		0s	7ms/step -	accuracy:	0.7060 -	loss:	0.5520 -	val_accuracy:	0.7094 -	val_loss:	0.5639
•	395/1000	0-	7		0.7226	1	0 5522		0.7004		0 5630
		05	/ms/step -	accuracy:	0.7226 -	1055:	0.5522 -	val_accuracy:	0.7094 -	vai_ioss:	0.5639
•	396/1000	Q.c	7ms/ston	accupacy:	0 7022	1055	0 5620	val_accuracy:	0 7004	val loss:	Q E630
	397/1000	03	/1113/3CEP -	accuracy.	0.7033 -	1033.	0.3030 -	vai_accuracy.	0.7034 -	vai_1033.	0.3038
•		95	8ms/sten -	accuracy:	0.7141 -	loss:	0.5486 -	val_accuracy:	0.7094 -	val loss:	0.5637
	398/1000	0.5	33, 3 ccp	accai acy i	01,11	1033.	0.5.00	rai_acca. acy.	01,031	va=_1033.	0.3037
		0s	7ms/step -	accuracy:	0.7542 -	loss:	0.5183 -	val_accuracy:	0.7094 -	val loss:	0.5636
	399/1000		, ,	,				_ ,		_	
10/10		0s	10ms/step -	- accuracy:	0.7292	- loss:	0.5396	- val_accuracy	0.7094	- val_loss:	0.5635
Epoch	400/1000										
10/10		0s	8ms/step -	accuracy:	0.7275 -	loss:	0.5364 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5634
	401/1000										
		0s	6ms/step -	accuracy:	0.7141 -	loss:	0.5487 -	val_accuracy:	0.7094 -	val_loss:	0.5633
	402/1000										
		0s	8ms/step -	accuracy:	0.7143 -	loss:	0.5439 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5633
•	403/1000	0 -	0 / 1		0 7064	,	0 5300	7	0.7004		0 5633
		05	8ms/step -	accuracy:	0.7261 -	1055:	0.5389 -	val_accuracy:	0.7094 -	vai_ioss:	0.5632
•	404/1000	Q.c	9ms/ston	accupacy:	A 6001	1055	0 5600	val_accuracy:	0 7004	val loss:	0 5622
	405/1000	03	oms/scep -	accuracy.	0.0001 -	1033.	0.3000 -	vai_accuracy.	0.7034 -	vai_1033.	0.3032
•		95	7ms/sten -	accuracy:	0.7138 -	loss:	0.5533 -	val_accuracy:	0.7094 -	val loss:	0.5631
	406/1000	•••	,, 5 ccp	acca. acy t	01720		01000				0.000_
		0s	8ms/step -	accuracy:	0.7184 -	loss:	0.5436 -	val_accuracy:	0.7094 -	val loss:	0.5630
	407/1000			,				_ ,		_	
10/10		0s	9ms/step -	accuracy:	0.7306 -	loss:	0.5376 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5629
Epoch	408/1000										
10/10		0s	8ms/step -	accuracy:	0.7111 -	loss:	0.5557 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5629
•	409/1000										
10/10		0s	8ms/step -	accuracy:	0.7220 -	loss:	0.5380 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5628
•	410/1000	_					0 = 400		. =		0 5405
10/10		Øs	/ms/step -	accuracy:	0.7039 -	loss:	0.5639 -	val_accuracy:	0.7094 -	val_loss:	0.5628

•	411/1000	0- (10		0.7330	1	0 5444		. 0 7004		0 5630
Epoch	412/1000			-				- val_accuracy		_	
Epoch	413/1000		•					val_accuracy:		_	
Epoch	414/1000		•	,				val_accuracy:		_	
	415/1000	0s 8	8ms/step -	accuracy:	0.7101 -	loss:	0.5490 -	val_accuracy:	0.7094	- val_loss:	0.5625
	416/1000	0s 7	7ms/step -	accuracy:	0.7155 -	loss:	0.5491 -	val_accuracy:	0.7009	- val_loss:	0.5624
	417/1000	0s 7	7ms/step -	accuracy:	0.7074 -	loss:	0.5555 -	val_accuracy:	0.7009	- val_loss:	0.5623
10/10		0s 9	9ms/step -	accuracy:	0.7206 -	loss:	0.5387 -	val_accuracy:	0.7094	- val_loss:	0.5623
10/10		0s 8	8ms/step -	accuracy:	0.6894 -	loss:	0.5738 -	val_accuracy:	0.7094	- val_loss:	0.5622
10/10		0s (6ms/step -	accuracy:	0.7143 -	loss:	0.5415 -	val_accuracy:	0.7094	- val_loss:	0.5622
10/10		0s 7	7ms/step -	accuracy:	0.7237 -	loss:	0.5318 -	val_accuracy:	0.7094	- val_loss:	0.5622
10/10		0s (6ms/step -	accuracy:	0.7079 -	loss:	0.5555 -	val_accuracy:	0.7094	- val_loss:	0.5621
10/10		0s 8	8ms/step -	accuracy:	0.7003 -	loss:	0.5653 -	val_accuracy:	0.7094	- val_loss:	0.5621
	423/1000	0s 9	9ms/step -	accuracy:	0.6951 -	loss:	0.5578 -	val_accuracy:	0.7094	- val_loss:	0.5621
•	424/1000	0s 8	8ms/step -	accuracy:	0.7038 -	loss:	0.5692 -	val_accuracy:	0.7094	- val_loss:	0.5620
•	425/1000 	0s 8	8ms/step -	accuracy:	0.7064 -	loss:	0.5546 -	val_accuracy:	0.7094	- val_loss:	0.5620
	426/1000 	0s 7	7ms/step -	accuracy:	0.7242 -	loss:	0.5442 -	val_accuracy:	0.7094	- val_loss:	0.5619
•	427/1000	0s 7	7ms/step -	accuracy:	0.7181 -	loss:	0.5477 -	val accuracy:	0.7094	- val loss:	0.5619
	428/1000		•	-				val accuracy:		_	
	429/1000		•	-				val accuracy:		_	
	430/1000		•	-				val_accuracy:		_	
	431/1000	03 (ошэ/эсер -	accui acy.	0.7100 -	1033.	0.5455 -	vai_accui acy.	0.7034	vai_1033.	0.501/

10/10		05	7ms/sten -	accuracy:	0.7207 -	loss:	0.5411 -	val_accuracy:	0.7094 -	val loss:	0.5616
	432/1000		,о, о сер		007207		0.00.				0.0000
		0s	8ms/step -	accuracy:	0.7022 -	loss:	0.5621 -	val_accuracy:	0.7094 -	val_loss:	0.5615
Epoch	433/1000		·							_	
10/10		0s	10ms/step	- accuracy	: 0.6990	- loss:	0.5676	- val_accuracy	: 0.7094	- val_loss:	0.5614
	434/1000										
		0s	7ms/step -	accuracy:	0.7078 -	loss:	0.5503 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5614
•	435/1000										
		0s	8ms/step -	accuracy:	0.7190 -	loss:	0.5372 -	val_accuracy:	0.7094 -	· val_loss:	0.5613
	436/1000	_	- , ,				0 ==0.6		. =		0 5440
		0s	7ms/step -	accuracy:	0.7080 -	loss:	0.5526 -	val_accuracy:	0.7094 -	· val_loss:	0.5613
•	437/1000	0-	7		0 7270	1	0 5346		0.7004		0 5613
		05	/ms/step -	accuracy:	0./3/8 -	1055:	0.5346 -	val_accuracy:	0.7094 -	· val_loss:	0.5613
•	438/1000	Q.c	ems/ston	2661102671	0 6090	1000	0 5610	val_accuracy:	0 7004	val loss:	0 5610
	439/1000	62	oms/step -	accuracy.	0.0300 -	1055.	0.3010 -	vai_accuracy.	0.7034 -	· vai_1055.	0.3010
	=	۵s	7ms/sten -	accuracy:	0 7183 -	1055.	0 5413 -	val accuracy:	0 7094 -	. val loss:	0 5610
	440/1000	03	711137 3 CCP	accuracy.	0.7103	1033.	0.5415	vai_accar acy.	0.7054	vai_1033.	0.5010
•		0 s	7ms/sten -	accuracy:	0.7311 -	loss:	0.5361 -	val_accuracy:	0.7094 -	val loss:	0.5610
=	441/1000	05	, , 5 ccp	accar acy.	0.,311	1033.	0.3301	var_acca, acy.	01,031	va1_1033.	0.3020
		0s	8ms/step -	accuracy:	0.7191 -	loss:	0.5322 -	val_accuracy:	0.7094 -	val loss:	0.5608
	442/1000			,				_ ,		_	
		0s	9ms/step -	accuracy:	0.7221 -	loss:	0.5429 -	val_accuracy:	0.7094 -	val_loss:	0.5607
	443/1000										
10/10		0s	7ms/step -	accuracy:	0.7260 -	loss:	0.5359 -	val_accuracy:	0.7094 -	val_loss:	0.5606
Epoch	444/1000										
10/10		0s	8ms/step -	accuracy:	0.7278 -	loss:	0.5251 -	<pre>val_accuracy:</pre>	0.7094 -	<pre>val_loss:</pre>	0.5606
•	445/1000										
		0s	7ms/step -	accuracy:	0.6931 -	loss:	0.5537 -	val_accuracy:	0.7094 -	val_loss:	0.5606
•	446/1000										
		0s	7ms/step -	accuracy:	0.7001 -	loss:	0.5529 -	val_accuracy:	0.7094 -	val_loss:	0.5606
•	447/1000	_	- , ,				0 5635		. =		
		0s	/ms/step -	accuracy:	0.7064 -	loss:	0.5635 -	val_accuracy:	0.7094 -	· val_loss:	0.5605
•	448/1000	0-	0		0.7012	1	0 5613		0.7004		0 5605
		05	oms/step -	accuracy:	0.7012 -	1055:	0.5013 -	val_accuracy:	0.7094 -	. var_1022:	0.5005
10/10	449/1000	۵c	7ms/stan -	accuracy:	0 6052 -	1000	0 5585 -	val accuracy:	0 7001	val loss:	0 5605
	450/1000	03	/1113/3CEP -	accui acy.	0.0932 -	1033.	0.5555 -	vai_accuracy.	0.7034	vai_1033.	0.5005
•		05	7ms/sten -	accuracy.	0.7209 -	loss	0.5480 -	val accuracy:	0.7094 -	· val loss·	0.5604
	451/1000	-	т, эсер	accar acy.	31.203		- 1 - 100	- a _ a c c a . a c y .	2		
10/10		0s	7ms/step -	accuracy:	0.7218 -	loss:	0.5388 -	val_accuracy:	0.7094 -	val loss:	0.5603
•				,						_	

•	452/1000	
	453/1000	0s 10ms/step - accuracy: 0.6987 - loss: 0.5670 - val_accuracy: 0.7094 - val_loss: 0.5603
		0s 7ms/step - accuracy: 0.7256 - loss: 0.5348 - val_accuracy: 0.7094 - val_loss: 0.5601
	454/1000	
	455/1000	0s 7ms/step - accuracy: 0.7264 - loss: 0.5398 - val_accuracy: 0.7094 - val_loss: 0.5600
		0s 8ms/step - accuracy: 0.7295 - loss: 0.5403 - val_accuracy: 0.7094 - val_loss: 0.5599
	456/1000	05 01115/ 500p
10/10		0s 7ms/step - accuracy: 0.7147 - loss: 0.5433 - val_accuracy: 0.7094 - val_loss: 0.5599
•	457/1000	
		0s 7ms/step - accuracy: 0.7091 - loss: 0.5554 - val_accuracy: 0.7094 - val_loss: 0.5599
	458/1000 ——————————————————————————————————	0s 8ms/step - accuracy: 0.7167 - loss: 0.5444 - val_accuracy: 0.7094 - val_loss: 0.5597
	459/1000	8 8 8 8 8 8 8 8 8 9 9 9 9 9 9 9 9 9 9 9
•		0s 7ms/step - accuracy: 0.6805 - loss: 0.5599 - val_accuracy: 0.7094 - val_loss: 0.5597
Epoch	460/1000	
=		0s 8ms/step - accuracy: 0.6901 - loss: 0.5658 - val_accuracy: 0.7094 - val_loss: 0.5596
•	461/1000	
	462/1000	0s 8ms/step - accuracy: 0.7003 - loss: 0.5488 - val_accuracy: 0.7094 - val_loss: 0.5596
•		0s 7ms/step - accuracy: 0.6874 - loss: 0.5698 - val_accuracy: 0.7094 - val_loss: 0.5596
	463/1000	05 / ms/ seep accaracy: 0100/ 10055 015050 141_4ccaracy: 01/05 1 141_1055 015550
		0s 13ms/step - accuracy: 0.7080 - loss: 0.5460 - val_accuracy: 0.7094 - val_loss: 0.5596
	464/1000	
		0s 7ms/step - accuracy: 0.7141 - loss: 0.5401 - val_accuracy: 0.7094 - val_loss: 0.5595
•	465/1000	0s 8ms/step - accuracy: 0.7344 - loss: 0.5332 - val_accuracy: 0.7094 - val_loss: 0.5595
	466/1000	65 ons/step - accuracy. 6.7344 - 1055. 6.3332 - Val_accuracy. 6.7034 - Val_1055. 6.3333
		0s 7ms/step - accuracy: 0.7065 - loss: 0.5570 - val_accuracy: 0.7094 - val_loss: 0.5595
Epoch	467/1000	
		0s 7ms/step - accuracy: 0.7003 - loss: 0.5508 - val_accuracy: 0.7094 - val_loss: 0.5594
•	468/1000	0. 7/
	469/1000	0s 7ms/step - accuracy: 0.7065 - loss: 0.5543 - val_accuracy: 0.7094 - val_loss: 0.5594
10/10		0s 7ms/step - accuracy: 0.7362 - loss: 0.5335 - val_accuracy: 0.7094 - val_loss: 0.5593
	470/1000	
10/10		0s 7ms/step - accuracy: 0.6993 - loss: 0.5463 - val_accuracy: 0.7094 - val_loss: 0.5594
-	471/1000	
10/10		0s 8ms/step - accuracy: 0.7264 - loss: 0.5455 - val_accuracy: 0.7094 - val_loss: 0.5593
Epoch	472/1000	

10/10		0s	9ms/step	_	accuracy:	0.7086 -	loss:	0.5474	_ ,	val_accuracy:	0.7094	- val_loss:	0.5592
•	473/1000												
	474 /4 000	0s	8ms/step	-	accuracy:	0.6966 -	loss:	0.5588	- '	val_accuracy:	0.7094	- val_loss:	0.5592
	474/1000 	Q.c	Ome/ston		2661102614	0 71/10	1055	0 5270	,	val_accuracy:	0 7004	val locci	0 EE01
	475/1000	03	ollis/step	_	accuracy.	0.7140 -	1055.	0.3373	_	vai_accuracy.	0.7034	- vai_1055.	0.5591
		0s	7ms/step	_	accuracy:	0.6984 -	loss:	0.5582	_ ,	val_accuracy:	0.7094	- val loss:	0.5590
Epoch	476/1000		·		-					_ ,		_	
		0s	7ms/step	-	accuracy:	0.7159 -	loss:	0.5478	- '	val_accuracy:	0.7094	- val_loss:	0.5589
•	477/1000	0 -	0 / 1			0.7355		0 5054			0.7004		0 5507
	478/1000	ØS	8ms/step	-	accuracy:	0./355 -	loss:	0.5251	- '	val_accuracy:	0.7094	- val_loss:	0.5587
		0 s	8ms/sten	_	accuracy:	0.7074 -	loss:	0.5520	_ ,	val_accuracy:	0.7094	- val loss:	0.5588
	479/1000		оо, о сер					013320					0.000
10/10		0s	7ms/step	-	accuracy:	0.7065 -	loss:	0.5377	- '	val_accuracy:	0.7094	- val_loss:	0.5587
•	480/1000												
		0s	6ms/step	-	accuracy:	0.6900 -	loss:	0.5586	- '	val_accuracy:	0.7094	- val_loss:	0.5587
	481/1000 	۵c	7ms/stan	_	accuracy:	0 7128 -	1000	0 5/13	_ ,	val accuracy:	0 7001	- val loss:	0 5585
	482/1000	03	/1113/3 CEP	_	accui acy.	0.7128	1033.	0.5415		vai_accuracy.	0.7034	- vai_1033.	0.5565
	,	0s	7ms/step	_	accuracy:	0.7306 -	loss:	0.5292	_ ,	val_accuracy:	0.7094	- val_loss:	0.5584
	483/1000												
		0s	9ms/step	-	accuracy:	0.7154 -	loss:	0.5447	- '	val_accuracy:	0.7094	- val_loss:	0.5583
•	484/1000	0-	0			0.7310	1	0 5260			0.7004		0 5503
	485/1000	05	9ms/step	-	accuracy:	0./310 -	1088:	0.5260	- '	val_accuracy:	0.7094	- vai_1055:	0.5583
•		0s	7ms/step	_	accuracv:	0.7338 -	loss:	0.5231	_ ,	val_accuracy:	0.7094	- val loss:	0.5584
	486/1000		, ,		,					_ ,		_	
		0s	7ms/step	-	accuracy:	0.7027 -	loss:	0.5437	- '	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5583
•	487/1000	_					-			-			
	488/1000	0s	8ms/step	-	accuracy:	0./2/4 -	loss:	0.5330	- '	val_accuracy:	0.7094	- val_loss:	0.5583
		95	7ms/sten	_	accuracy:	0.7243 -	loss:	0.5327	_ ,	val_accuracy:	0.7094	- val loss:	0.5582
	489/1000		,, o cop			017-15		0,000		-u- <u>-</u> uu			0.000
10/10		0s	7ms/step	-	accuracy:	0.7119 -	loss:	0.5330	- '	val_accuracy:	0.7094	- val_loss:	0.5581
•	490/1000												
		0s	7ms/step	-	accuracy:	0.7133 -	loss:	0.5412	- '	val_accuracy:	0.7094	- val_loss:	0.5581
10/10	491/1000	۵c	2mc/ctan	_	accuracy:	0 7/133 -	1000	0 5151	_ ,	val_accuracy:	0 7001	- val loss.	0 5581
	492/1000	03	oms/scep	_	accui acy.	0./400 -	1033.	0.9191	_	var_accuracy.	0.7094	var_1033.	0.7301
10/10		0s	6ms/step	_	accuracy:	0.7099 -	loss:	0.5520	_ ,	val_accuracy:	0.7094	- val_loss:	0.5579
			·		-					_		_ _	

•	493/1000							_			
	494/1000	0s	7ms/step -	accuracy:	0.7135 -	loss:	0.5536 -	val_accuracy:	0.7094	- val_loss:	0.5579
	•	0s	8ms/step -	accuracy:	0.6993 -	loss:	0.5555 -	val_accuracy:	0.7094	- val_loss:	0.5579
	495/1000	_			0 7004	,	0.5004		0 7004		
	496/1000	0s	/ms/step -	accuracy:	0./231 -	loss:	0.5324 -	val_accuracy:	0.7094	- val_loss:	0.5580
		0s	8ms/step -	accuracv:	0.7083 -	loss:	0.5487 -	val_accuracy:	0.7094	- val loss:	0.5578
	497/1000		,	,							
10/10		0s	8ms/step -	accuracy:	0.6944 -	loss:	0.5626 -	val_accuracy:	0.7094	- val_loss:	0.5577
•	498/1000					_		_			
		0s	8ms/step -	accuracy:	0.7209 -	loss:	0.5397 -	val_accuracy:	0.7094	- val_loss:	0.5576
	499/1000 	05	7ms/sten -	accuracy:	0.7322 -	loss:	0.5240 -	val_accuracy:	0.7094	- val loss:	0.5574
	500/1000	05	7 III 3 7 3 CCP	acca, acy.	0.,322	1033.	0.32.0	var_acca. acy.	0.,05.	.41_1033.	0.337
10/10		0s	7ms/step -	accuracy:	0.7179 -	loss:	0.5434 -	val_accuracy:	0.7094	- val_loss:	0.5573
•	501/1000										
		0s	6ms/step -	accuracy:	0.7343 -	loss:	0.5259 -	val_accuracy:	0.7094	- val_loss:	0.5572
•	502/1000	۵s	7ms/stan -	accuracy.	0 6956 -	1055.	0 5/83 -	val_accuracy:	0 7091	- val loss:	0 5572
	503/1000	03	71113/3CEP -	accuracy.	0.0550 -	1033.	0.5405	vai_accuracy.	0.7054	- Vai_1033.	0.5572
•	·	0s	8ms/step -	accuracy:	0.7141 -	loss:	0.5455 -	val_accuracy:	0.7094	- val_loss:	0.5571
	504/1000										
		0s	6ms/step -	accuracy:	0.7193 -	loss:	0.5383 -	val_accuracy:	0.7094	- val_loss:	0.5572
	505/1000	۵s	6ms/stan -	accuracy.	0 7158 -	1055.	0 5371 _	val_accuracy:	0 7091	- val loss:	0 5570
	506/1000	03	oliis/scep =	accuracy.	0.7130 -	1033.	0.55/1	vai_accuracy.	0.7054	- Vai_1033.	0.5570
•		0s	8ms/step -	accuracy:	0.7158 -	loss:	0.5387 -	val_accuracy:	0.7094	- val_loss:	0.5571
	507/1000										
		0s	8ms/step -	accuracy:	0.7158 -	loss:	0.5491 -	val_accuracy:	0.7094	- val_loss:	0.5569
•	508/1000	۵s	10ms/stan .	- accuracy:	. 0 6761	- 1000	0 5682	- val_accuracy	· a 7091	- val loss:	0 5569
	509/1000	03	101113/3cep	accuracy.	. 0.0701	- 1033.	0.3002	- vai_accuracy	. 0.7054	- vai_1033.	0.5505
		0s	6ms/step -	accuracy:	0.7105 -	loss:	0.5574 -	val_accuracy:	0.7094	- val_loss:	0.5569
•	510/1000										
10/10		0s	7ms/step -	accuracy:	0.7534 -	loss:	0.5086 -	val_accuracy:	0.7094	- val_loss:	0.5567
10/10	511/1000	۵s	7ms/sten -	accuracy.	0 7021 -	1055.	0 5548 -	val_accuracy:	0 7094	- val loss.	0 5567
	512/1000	03	/1113/3CEP -	accui acy.	0.7021 -	1033.	0.5540 -	vai_accuracy.	0.7054	va1_1033.	0.5507
10/10		0s	7ms/step -	accuracy:	0.7021 -	loss:	0.5529 -	val_accuracy:	0.7094	- val_loss:	0.5568
Epoch	513/1000										

10/10		0s	7ms/step - accuracy:	0.7044 -	loss:	0.5500 -	val accuracy:	0.7094 -	val loss:	0.5566
	514/1000		, с сор — ассан а ор							
		0s	6ms/step - accuracy:	0.7080 -	loss:	0.5496 -	val_accuracy:	0.7094 -	val_loss:	0.5565
Epoch	515/1000						_ ,			
10/10		0s	8ms/step - accuracy:	0.6973 -	loss:	0.5646 -	val_accuracy:	0.7094 -	val_loss:	0.5567
Epoch	516/1000									
10/10		0s	6ms/step - accuracy:	0.7209 -	loss:	0.5406 -	val_accuracy:	0.7094 -	val_loss:	0.5564
	517/1000									
		0s	8ms/step - accuracy:	0.7139 -	loss:	0.5317 -	val_accuracy:	0.7094 -	val_loss:	0.5564
•	518/1000									
=		0s	11ms/step - accuracy	: 0.6946	- loss:	0.5557	- val_accuracy	: 0.7094	- val_loss:	0.5564
•	519/1000									
		0s	8ms/step - accuracy:	0.6913 -	loss:	0.5496 -	val_accuracy:	0.7094 -	val_loss:	0.5563
	520/1000	_			_		_			
		0s	9ms/step - accuracy:	0.7108 -	loss:	0.5489 -	val_accuracy:	0.7094 -	val_loss: (0.5561
	521/1000	0 -	0 / 1	0.6000	,	0 5537	-	0.7004	7 7	0 5564
		0S	9ms/step - accuracy:	0.6990 -	loss:	0.553/ -	val_accuracy:	0.7094 -	val_loss:	0.5561
	522/1000	0.0	Ome / ston	0 6024	10001	0 5005	val accumacy.	0.7004	val lassi	0 5561
	523/1000	05	8ms/step - accuracy:	0.0834 -	1022:	0.5095 -	vai_accuracy:	0.7094 -	Va1_1055: (0.5561
		Q.c	9ms/step - accuracy:	0 7242	10551	0 5264	val accuracy:	0 7004	val loss.	0 5560
	524/1000	03	Jiis/step - accuracy.	0.7242 -	1055.	0.3304 -	vai_accuracy.	0.7034 -	va1_1055.	0.3300
		۵s	10ms/sten - accuracy	· a 6904	- 1055	0 5514	- val accuracy	· a 7a94	- val loss.	0 5560
	525/1000	03	10m3/3ccp accuracy	. 0.0504	1033	. 0.5514	vai_accar acy	. 0.7054	va1_1033.	0.5500
		0 s	8ms/step - accuracy:	0.7259 -	loss:	0.5186 -	val accuracy:	0.7094 -	val loss:	0.5560
	526/1000	•••		007.200		0.0200				
•		0s	7ms/step - accuracy:	0.7029 -	loss:	0.5473 -	val accuracy:	0.7094 -	val loss:	0.5558
	527/1000						_ ,		_	
•		0s	7ms/step - accuracy:	0.7010 -	loss:	0.5533 -	val accuracy:	0.7094 -	val loss:	0.5559
Epoch	528/1000						_ ,		_	
10/10		0s	8ms/step - accuracy:	0.6972 -	loss:	0.5585 -	val_accuracy:	0.7094 -	val_loss:	0.5559
Epoch	529/1000									
10/10		0s	10ms/step - accuracy	: 0.7006	- loss	0.5438	- val_accuracy	: 0.7094	<pre>- val_loss:</pre>	0.5558
	530/1000									
10/10		0s	6ms/step - accuracy:	0.7261 -	loss:	0.5359 -	val_accuracy:	0.7094 -	val_loss:	0.5557
•	531/1000									
10/10		0s	8ms/step - accuracy:	0.6949 -	loss:	0.5487 -	val_accuracy:	0.7094 -	val_loss:	0.5557
	532/1000				_		_			
10/10		0s	9ms/step - accuracy:	0.7195 -	loss:	0.5371 -	val_accuracy:	0.7094 -	val_loss:	0.5557
•	533/1000	•		0.6054		0 5400		0.7004		
10/10		ØS	6ms/step - accuracy:	0.6951 -	loss:	0.5490 -	val_accuracy:	0./094 -	val_loss: (0.5557

•	534/1000	
	535/1000	0s 9ms/step - accuracy: 0.7201 - loss: 0.5254 - val_accuracy: 0.7094 - val_loss: 0.5557
		0s 10ms/step - accuracy: 0.6931 - loss: 0.5544 - val_accuracy: 0.7094 - val_loss: 0.5556
•	536/1000	0s 10ms/step - accuracy: 0.7235 - loss: 0.5360 - val_accuracy: 0.7094 - val_loss: 0.5555
•	537/1000	
	538/1000	0s 9ms/step - accuracy: 0.7367 - loss: 0.5156 - val_accuracy: 0.7094 - val_loss: 0.5554
10/10		0s 8ms/step - accuracy: 0.6988 - loss: 0.5488 - val_accuracy: 0.7094 - val_loss: 0.5555
	539/1000	0s 9ms/step - accuracy: 0.6976 - loss: 0.5462 - val_accuracy: 0.7094 - val_loss: 0.5554
Epoch	540/1000	
	541/1000	0s 10ms/step - accuracy: 0.7133 - loss: 0.5431 - val_accuracy: 0.7094 - val_loss: 0.5553
10/10		0s 13ms/step - accuracy: 0.7525 - loss: 0.5023 - val_accuracy: 0.7094 - val_loss: 0.5552
	542/1000	0s 8ms/step - accuracy: 0.6986 - loss: 0.5505 - val_accuracy: 0.7094 - val_loss: 0.5551
Epoch	543/1000	
	544/1000	0s 7ms/step - accuracy: 0.7141 - loss: 0.5317 - val_accuracy: 0.7094 - val_loss: 0.5550
•		0s 7ms/step - accuracy: 0.7090 - loss: 0.5354 - val_accuracy: 0.7094 - val_loss: 0.5550
	545/1000 ———————	0s 8ms/step - accuracy: 0.7110 - loss: 0.5373 - val_accuracy: 0.7094 - val_loss: 0.5549
Epoch	546/1000	
	547/1000	0s 8ms/step - accuracy: 0.7191 - loss: 0.5404 - val_accuracy: 0.7094 - val_loss: 0.5548
10/10		0s 8ms/step - accuracy: 0.7018 - loss: 0.5322 - val_accuracy: 0.7094 - val_loss: 0.5548
•	548/1000	0s 8ms/step - accuracy: 0.7120 - loss: 0.5407 - val_accuracy: 0.7094 - val_loss: 0.5548
Epoch	549/1000	
	550/1000	0s 10ms/step - accuracy: 0.7055 - loss: 0.5455 - val_accuracy: 0.7094 - val_loss: 0.5548
10/10		0s 9ms/step - accuracy: 0.6958 - loss: 0.5452 - val_accuracy: 0.7094 - val_loss: 0.5547
Epoch 10/10	551/1000	0s 9ms/step - accuracy: 0.7057 - loss: 0.5473 - val_accuracy: 0.7094 - val_loss: 0.5547
	552/1000	
10/10 Enoch	553/1000	0s 10ms/step - accuracy: 0.7178 - loss: 0.5414 - val_accuracy: 0.7094 - val_loss: 0.5546
10/10		0s 11ms/step - accuracy: 0.6949 - loss: 0.5455 - val_accuracy: 0.7094 - val_loss: 0.5546
Epoch	554/1000	

10/10		0s	12ms/step - accuracy: (0.7079 - loss:	0.5487 - val accur	acy: 0.7094 - val_loss: 0.5544
	555/1000		, ,		_	_
10/10		0s	11ms/step - accuracy: (0.7294 - loss:	0.5200 - val_accur	acy: 0.7094 - val_loss: 0.5543
Epoch	556/1000					
10/10		0s	<pre>11ms/step - accuracy: (</pre>	0.7174 - loss:	0.5308 - val_accur	acy: 0.7094 - val_loss: 0.5542
Epoch	557/1000					
10/10		0s	9ms/step - accuracy: 0	.7332 - loss:	0.5212 - val_accura	cy: 0.7094 - val_loss: 0.5542
	558/1000					
		0s	10ms/step - accuracy: (0.6952 - loss:	0.5553 - val_accur	acy: 0.7094 - val_loss: 0.5542
	559/1000					
		0s	9ms/step - accuracy: 0	.7025 - loss:	0.5554 - val_accura	cy: 0.7094 - val_loss: 0.5542
•	560/1000					
		0s	9ms/step - accuracy: 0	.6883 - loss:	0.5466 - val_accura	cy: 0.7094 - val_loss: 0.5541
•	561/1000	_	0 / /	7460 7	0.5040	0.7004 1.1 0.5540
		0s	9ms/step - accuracy: 0	./160 - loss:	0.5310 - val_accura	cy: 0.7094 - val_loss: 0.5540
	562/1000	0-	0/		0 5552	0 7004 1 1 0 5530
		65	9ms/step - accuracy: 0	.6936 - 1088:	0.5552 - Val_accura	cy: 0.7094 - val_loss: 0.5539
	563/1000	Q.c	Ome/ston accuracy: 0	7029 1055	0 5247 val accura	cy: 0.7094 - val loss: 0.5538
=	564/1000	05	siis/step - accuracy. V	.7020 - 1055.	0.5547 - Val_accura	cy. 0.7094 - Val_1055. 0.5538
•		Qc.	Oms/sten - accuracy: 0	7102 - 1055	0 5408 - val accura	cy: 0.7094 - val_loss: 0.5538
	565/1000	03	Jiiis/step - accuracy. V	.7102 - 1033.	0.5400 - Vai_accura	cy. 0.7094 - Val_1033. 0.9598
		95	9ms/sten - accuracy: 0	7087 - loss:	0 5451 - val accura	cy: 0.7094 - val_loss: 0.5537
	566/1000	03	Jiii J, Jeep accaracy.	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	0.5451 var_accara	var_1033. 0.333,
		0s	11ms/step - accuracy: (0.7065 - loss:	0.5382 - val accur	acy: 0.7094 - val_loss: 0.5538
	567/1000					
•		0s	9ms/step - accuracy: 0	.7118 - loss:	0.5402 - val accura	cy: 0.7094 - val_loss: 0.5538
	568/1000		,		_	_
10/10		0s	9ms/step - accuracy: 0	.7193 - loss:	0.5300 - val_accura	cy: 0.7094 - val_loss: 0.5538
Epoch	569/1000					
10/10		0s	8ms/step - accuracy: 0	.7291 - loss:	0.5224 - val_accura	cy: 0.7094 - val_loss: 0.5536
	570/1000					
10/10		0s	8ms/step - accuracy: 0	.7142 - loss:	0.5356 - val_accura	cy: 0.7094 - val_loss: 0.5536
	571/1000					
		0s	8ms/step - accuracy: 0	.6953 - loss:	0.5449 - val_accura	cy: 0.7094 - val_loss: 0.5536
	572/1000					
10/10		0s	7ms/step - accuracy: 0	.7151 - loss:	0.5478 - val_accura	cy: 0.7094 - val_loss: 0.5536
	573/1000	•	7 / 1		0.5545	0.7004
		ØS	/ms/step - accuracy: 0	.68/3 - loss:	0.5545 - val_accura	cy: 0.7094 - val_loss: 0.5535
•	574/1000	0-	7ms/stan	7004 1	0 5515	ov. 0.7004 vol. location 5536
10/10		65	/ms/scep - accuracy: 0	./004 - 10SS:	סיסיסים - var_accura	cy: 0.7094 - val_loss: 0.5536

	575/1000	0.5	Ome/ston	266002604	0 (800	10001	0 5504	vol accumacy.	0.7004	val loss.	0 5536
Epoch	576/1000		•	-				val_accuracy:		_	
Epoch	577/1000		•	-				val_accuracy:		_	
Epoch	578/1000		•	-				val_accuracy:		_	
Epoch	579/1000			_				val_accuracy:			
Epoch	580/1000		•	-				val_accuracy:		_	
	581/1000		•	-				val_accuracy:		_	
	582/1000		•	-				val_accuracy:		_	
Epoch	583/1000	0s	7ms/step -	accuracy:	0.7090 -	loss:	0.5432 -	val_accuracy:	0.7179 -	val_loss:	0.5529
	584/1000	0s	7ms/step -	accuracy:	0.6874 -	loss:	0.5680 -	val_accuracy:	0.7094 -	val_loss:	0.5530
	585/1000	0s	7ms/step -	accuracy:	0.7204 -	loss:	0.5411 -	val_accuracy:	0.7094 -	val_loss:	0.5529
	586/1000	0s	7ms/step -	accuracy:	0.7309 -	loss:	0.5256 -	val_accuracy:	0.7094 -	val_loss:	0.5528
	587/1000	0s	7ms/step -	accuracy:	0.6967 -	loss:	0.5500 -	val_accuracy:	0.7094 -	val_loss:	0.5528
	588/1000	0s	7ms/step -	accuracy:	0.6858 -	loss:	0.5695 -	val_accuracy:	0.7094 -	val_loss:	0.5528
	589/1000	0s	7ms/step -	accuracy:	0.7161 -	loss:	0.5329 -	val_accuracy:	0.7094 -	val_loss:	0.5527
	590/1000	0s	7ms/step -	accuracy:	0.7104 -	loss:	0.5407 -	val_accuracy:	0.7179 -	val_loss:	0.5525
	591/1000	0s	7ms/step -	accuracy:	0.7057 -	loss:	0.5428 -	val_accuracy:	0.7179 -	val_loss:	0.5524
10/10		0s	7ms/step -	accuracy:	0.7336 -	loss:	0.5218 -	val_accuracy:	0.7179 -	val_loss:	0.5524
10/10		0s	7ms/step -	accuracy:	0.7287 -	loss:	0.5319 -	val_accuracy:	0.7179 -	val_loss:	0.5523
10/10		0s	8ms/step -	accuracy:	0.7158 -	loss:	0.5457 -	val_accuracy:	0.7179 -	val_loss:	0.5522
10/10		0s	7ms/step -	accuracy:	0.7306 -	loss:	0.5381 -	val_accuracy:	0.7179 -	val_loss:	0.5522

10/10		0s	7ms/step	_ ;	accuracy:	0.7133 -	loss:	0.5411	- v	al_accuracy:	0.7179	- val_loss:	0.5521
•	596/1000												
		0s	7ms/step	-	accuracy:	0.7140 -	loss:	0.5344	- V	al_accuracy:	0.7179	- val_loss:	0.5520
	597/1000	0-	7			0.7260	1	0 5407		-1	0 7170		0 5524
	598/1000	05	/ms/step	-	accuracy:	0.7260 -	loss:	0.5407	- V	al_accuracy:	0.7179	- val_loss:	0.5521
•		0s	7ms/step	- ;	accuracv:	0.7286 -	loss:	0.5302	- v	al_accuracy:	0.7179	- val loss:	0.5521
	599/1000		-,										
10/10		0s	7ms/step	-	accuracy:	0.7270 -	loss:	0.5315	- v	al_accuracy:	0.7179	- val_loss:	0.5520
•	600/1000												
		0s	7ms/step	-	accuracy:	0.6962 -	loss:	0.5589	- V	al_accuracy:	0.7179	- val_loss:	0.5519
	601/1000	Q.c	7ms /s+on		accupacy:	0 7092	1055	0 5400	.,	al_accuracy:	0 7170	val locci	0 5520
	602/1000	62	/iiis/step	-	accuracy.	0.7002 -	1055.	0.3430	- v	ar_accuracy.	0.7179	- vai_1055.	0.3320
•		0s	6ms/step	- ;	accuracy:	0.7247 -	loss:	0.5283	- v	al_accuracy:	0.7179	- val loss:	0.5519
	603/1000		·		-					_ ,		_	
		0s	7ms/step	-	accuracy:	0.7207 -	loss:	0.5345	- V	al_accuracy:	0.7179	- val_loss:	0.5517
	604/1000	_	0 / 1			0 =040	-				0 7470		0 ==4=
	605 /1000	0s	9ms/step	-	accuracy:	0.7213 -	loss:	0.5385	- V	al_accuracy:	0.7179	- val_loss:	0.5517
	605/1000	95	7ms/sten	_	accuracy:	0 6916 -	loss	0 5626	- V	al accuracy:	0 7179	- val loss:	0 5517
	606/1000	0.5	7 3 , 3 ccp		accai acy.	0.0310	1033.	0.3020	٠	ar_accar acy:	01,1,5	vu1_1033.	0.331,
•		0s	7ms/step	- :	accuracy:	0.7527 -	loss:	0.5038	- v	al_accuracy:	0.7094	- val_loss:	0.5515
•	607/1000												
		0s	8ms/step	-	accuracy:	0.7303 -	loss:	0.5202	- V	al_accuracy:	0.7179	- val_loss:	0.5516
•	608/1000	0.0	7ms/ston		2661102614	0 7157	10001	0 5446	.,	al_accuracy:	0 7170	val lass.	0 5516
	609/1000	05	/IIIS/Step	-	accuracy.	0./15/ -	1055.	0.3440	- v	ar_accuracy.	0.7179	- vai_1055.	0.5510
		0s	7ms/step	- ;	accuracy:	0.7287 -	loss:	0.5287	- v	al_accuracy:	0.7179	- val loss:	0.5516
	610/1000		•							_ ,		_	
		0s	7ms/step	- ;	accuracy:	0.7035 -	loss:	0.5476	- v	al_accuracy:	0.7179	- val_loss:	0.5515
•	611/1000	_					-			-			
		0s	7ms/step	-	accuracy:	0.7508 -	loss:	0.5097	- V	al_accuracy:	0.7179	- val_loss:	0.5514
•	612/1000	95	7ms/sten	_	accuracy:	0 7009 -	loss	0 5435	- V	al_accuracy:	0 7179	- val loss:	0 5514
-	613/1000	03	7 m3/ 3 ccp		accar acy.	0.7003	1033.	0.5455	•	ar_accaracy.	0.7173	va1_1033.	0.5514
•		0s	7ms/step	- :	accuracy:	0.6655 -	loss:	0.5827	- v	al_accuracy:	0.7179	- val_loss:	0.5515
•	614/1000												
10/10		0s	7ms/step	-	accuracy:	0.7277 -	loss:	0.5264	- V	al_accuracy:	0.7179	- val_loss:	0.5513
•	615/1000	00	Omc / c+ a=		2661182611	0 7250	1055:	0 5255		al accumació	0 7170	val lass:	Q EF12
10/10		ØS	oms/step	-	accuracy:	Ø./259 -	TOSS:	v.5355	- V	al_accuracy:	0./1/9	- var_10ss:	0.5513

	616/1000	0.5	Oms/ston	26611026141	0 7105	10001	0 5426	val accumacy.	0 7170	val lass.	A FF13
Epoch	617/1000		·	-				val_accuracy:		_	
Epoch	618/1000		·	-				val_accuracy:		_	
Epoch	619/1000		·	-				val_accuracy:		_	
Epoch	620/1000			_				val_accuracy:			
Epoch	621/1000		·	-				val_accuracy:		_	
Epoch	622/1000		·	-				val_accuracy:		_	
	623/1000		·	-				val_accuracy:		_	
	624/1000	0s	7ms/step -	accuracy:	0.7262 -	loss:	0.5296 -	val_accuracy:	0.7179 -	val_loss:	0.5509
	625/1000	0s	6ms/step -	accuracy:	0.6991 -	loss:	0.5528 -	val_accuracy:	0.7179 -	· val_loss:	0.5509
	626/1000	0s	7ms/step -	accuracy:	0.7012 -	loss:	0.5412 -	val_accuracy:	0.7179 -	· val_loss:	0.5509
	627/1000	0s	7ms/step -	accuracy:	0.7118 -	loss:	0.5400 -	val_accuracy:	0.7179 -	val_loss:	0.5507
	628/1000	0s	7ms/step -	accuracy:	0.7279 -	loss:	0.5234 -	val_accuracy:	0.7179 -	val_loss:	0.5507
10/10		0s	7ms/step -	accuracy:	0.7168 -	loss:	0.5257 -	val_accuracy:	0.7179 -	val_loss:	0.5507
10/10		0s	8ms/step -	accuracy:	0.7238 -	loss:	0.5322 -	val_accuracy:	0.7179 -	val_loss:	0.5507
10/10		0s	7ms/step -	accuracy:	0.7124 -	loss:	0.5407 -	val_accuracy:	0.7179 -	val_loss:	0.5508
10/10		0s	7ms/step -	accuracy:	0.6941 -	loss:	0.5585 -	val_accuracy:	0.7179 -	val_loss:	0.5508
10/10		0s	6ms/step -	accuracy:	0.7216 -	loss:	0.5296 -	val_accuracy:	0.7179 -	val_loss:	0.5505
10/10		0s	7ms/step -	accuracy:	0.7080 -	loss:	0.5488 -	val_accuracy:	0.7179 -	val_loss:	0.5504
10/10		0s	7ms/step -	accuracy:	0.7209 -	loss:	0.5330 -	val_accuracy:	0.7179 -	val_loss:	0.5505
10/10		0s	7ms/step -	accuracy:	0.7208 -	loss:	0.5352 -	val_accuracy:	0.7179 -	val_loss:	0.5504
гросп	030/1000										

10/10		0s	7ms/step -	accuracv:	0.6855 -	loss:	0.5657 -	· val accuracy:	0.7179	- val loss:	0.5503
	637/1000		т, с сор								
10/10		0s	6ms/step -	accuracy:	0.7154 -	loss:	0.5452 -	val_accuracy:	0.7179	- val_loss:	0.5503
Epoch	638/1000			_							
10/10		0s	7ms/step -	accuracy:	0.7206 -	loss:	0.5327 -	<pre>val_accuracy:</pre>	0.7179	<pre>- val_loss:</pre>	0.5503
•	639/1000										
		0s	7ms/step -	accuracy:	0.7181 -	loss:	0.5286 -	<pre>val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5501
	640/1000					_		_			
		0s	7ms/step -	accuracy:	0.7244 -	loss:	0.5314 -	val_accuracy:	0.7094	- val_loss:	0.5499
•	641/1000	0-	0 / - +		0 7370	1	0 5162		0.7004		0 5500
	642/1000	05	9ms/step -	accuracy:	0./3/0 -	1055:	0.5162 -	val_accuracy:	0.7094	- val_loss:	0.5500
		۵c	7ms/stan -	acciinaci.	0 7307 -	10551	0 5166 -	· val_accuracy:	0 7001	- val loss:	0 5/00
	643/1000	03	/1113/3Cep -	accuracy.	0.7337 -	1055.	0.3100 -	vai_accuracy.	0.7034	- vai_1055.	0.3433
•		0 s	7ms/sten -	accuracy:	0.7245 -	loss:	0.5294 -	val_accuracy:	0.7179	- val loss:	0.5498
	644/1000	0.5	, 3, 3 ccp	accai acy i	01,213	1033.	0.323	rar_acea. acy.	01,1,5	va1_1033.	0.5.50
		0s	7ms/step -	accuracy:	0.7088 -	loss:	0.5527 -	val_accuracy:	0.7094	- val loss:	0.5498
	645/1000							_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.7268 -	loss:	0.5347 -	<pre>val_accuracy:</pre>	0.7179	<pre>- val_loss:</pre>	0.5497
	646/1000										
10/10		0s	7ms/step -	accuracy:	0.7267 -	loss:	0.5204 -	<pre>val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5497
	647/1000										
		0s	7ms/step -	accuracy:	0.7353 -	loss:	0.5157 -	<pre>val_accuracy:</pre>	0.7179	<pre>- val_loss:</pre>	0.5496
•	648/1000					_		_			
		0s	7ms/step -	accuracy:	0.7053 -	loss:	0.5497 -	val_accuracy:	0.7179	- val_loss:	0.5495
•	649/1000	0-	7		0 7220	1	0 5330		0 7170		0 5405
	650/1000	05	/ms/step -	accuracy:	0./330 -	1055:	0.5228 -	val_accuracy:	0.7179	- vai_ioss:	0.5495
		۵c	9ms/sten -	accuracy:	0 7080 -	1055.	0 5481 -	· val_accuracy:	0 7179	- val loss:	0 5495
	651/1000	03	эшэ, эсср	accuracy.	0.7000	1033.	0.5401	var_accar acy.	0.7175	vai_1033.	0.5455
		0s	7ms/step -	accuracv:	0.7152 -	loss:	0.5354 -	val_accuracy:	0.7179	- val loss:	0.5494
	652/1000		-,								
10/10		0s	7ms/step -	accuracy:	0.7080 -	loss:	0.5385 -	val_accuracy:	0.7179	- val_loss:	0.5494
Epoch	653/1000										
10/10		0s	7ms/step -	accuracy:	0.7059 -	loss:	0.5494 -	<pre>val_accuracy:</pre>	0.7094	<pre>- val_loss:</pre>	0.5494
Epoch	654/1000										
10/10		0s	7ms/step -	accuracy:	0.6998 -	loss:	0.5424 -	<pre>val_accuracy:</pre>	0.7179	<pre>- val_loss:</pre>	0.5495
•	655/1000		_ ,			_		_			
		0s	8ms/step -	accuracy:	0.7236 -	loss:	0.5364 -	val_accuracy:	0.7179	- val_loss:	0.5494
•	656/1000	0 -	7 / - 1		0.7224	1.	0 5247		0 7470	1 3	0 5404
10/10		US	/ms/step -	accuracy:	0./334 -	TOSS:	0.521/ -	val_accuracy:	0./1/9	- var_loss:	o.5494

Epoch 65		0 -	7 ()		0 6760	1	0 5630	1	0 7470	1 1	0.5404
10/10 — Epoch 65	58/1000		•	-				- val_accuracy:		_	
10/10 — Epoch 65	59/1000		•	-				- val_accuracy:		_	
10/10 — Epoch 66		0s	7ms/step -	accuracy:	0.7195	- loss:	0.5267	- val_accuracy:	0.7094 -	val_loss:	0.5492
10/10 — Epoch 66		0s	10ms/step	- accuracy	: 0.7311	- loss	: 0.5347	7 - val_accuracy	: 0.7179	- val_loss	: 0.5493
10/10 —		0s	8ms/step -	accuracy:	0.7068	- loss:	0.5379	- val_accuracy:	0.7179 -	val_loss:	0.5492
Epoch 66 10/10 —		0s	8ms/step -	accuracy:	0.7290	- loss:	0.5278	- val_accuracy:	0.7179 -	val_loss:	0.5492
Epoch 66 10/10 —		0s	7ms/step -	accuracy:	0.7487	- loss:	0.5084	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5491
Epoch 66 10/10 —		0s	7ms/step -	accuracy:	0.7097	- loss:	0.5303	<pre>- val_accuracy:</pre>	0.7179 -	val loss:	0.5492
Epoch 66	65/1000			_				- val accuracy:			
Epoch 66	66/1000		•	-						_	
Epoch 66	67/1000		•	-				- val_accuracy:		_	
Epoch 66				-				_ ,		_	
10/10 — Epoch 66	 69/1000	0s	8ms/step -	accuracy:	0.7016	- loss:	0.5457	- val_accuracy:	0.7179 -	val_loss:	0.5492
10/10 — Epoch 67		0s	8ms/step -	accuracy:	0.6986	- loss:	0.5360	<pre>- val_accuracy:</pre>	0.7179 -	val_loss:	0.5490
10/10 -		0s	9ms/step -	accuracy:	0.7282	- loss:	0.5299	- val_accuracy:	0.7179 -	val_loss:	0.5490
Epoch 67 10/10 —		0s	8ms/step -	accuracy:	0.7406	- loss:	0.5154	- val_accuracy:	0.7094 -	val_loss:	0.5487
Epoch 67 10/10 —		0s	8ms/step -	accuracy:	0.7208	- loss:	0.5425	<pre>- val_accuracy:</pre>	0.7094 -	val_loss:	0.5487
Epoch 67		0s	8ms/step -	accuracv:	0.6973	- loss:	0.5436	<pre>- val_accuracy:</pre>	0.7094 -	val loss:	0.5488
Epoch 67	74/1000		•	-				val accuracy:		_	
Epoch 67	75/1000		•	·						_	
10/10 — Epoch 67	76/1000		•	-				- val_accuracy:		_	
10/10 -	77/1000	0s	8ms/step -	accuracy:	0.7294	- loss:	0.5170	- val_accuracy:	0.7179 -	val_loss:	0.5482

10/10	• 0s 8ms/step - accuracy: 0.7221 - loss: 0.5407 - val_accuracy: 0.7179 - val_loss: 0.5480
Epoch 678/1000	
10/10	• 0s 8ms/step - accuracy: 0.7055 - loss: 0.5500 - val_accuracy: 0.7179 - val_loss: 0.5480
Epoch 679/1000	
	• 0s 8ms/step - accuracy: 0.7112 - loss: 0.5365 - val_accuracy: 0.7179 - val_loss: 0.5482
Epoch 680/1000	0. 0. / 0. 7361
10/10 ————————————————————————————————————	• 0s 8ms/step - accuracy: 0.7261 - loss: 0.5270 - val_accuracy: 0.7179 - val_loss: 0.5482
•	• 0s 8ms/step - accuracy: 0.6930 - loss: 0.5525 - val_accuracy: 0.7094 - val_loss: 0.5482
Epoch 682/1000	05 0m3/5ccp
•	• Os 9ms/step - accuracy: 0.7272 - loss: 0.5285 - val_accuracy: 0.7094 - val_loss: 0.5482
Epoch 683/1000	
10/10	• 0s 7ms/step - accuracy: 0.7173 - loss: 0.5430 - val_accuracy: 0.7094 - val_loss: 0.5482
Epoch 684/1000	
	• 0s 7ms/step - accuracy: 0.7042 - loss: 0.5554 - val_accuracy: 0.7094 - val_loss: 0.5482
Epoch 685/1000 10/10	• 0s 7ms/step - accuracy: 0.7169 - loss: 0.5289 - val accuracy: 0.7094 - val loss: 0.5481
Epoch 686/1000	95 /ms/step - accuracy. 0.7169 - 1055. 0.5269 - Val_accuracy. 0.7094 - Val_1055. 0.5481
•	• 0s 7ms/step - accuracy: 0.7166 - loss: 0.5323 - val_accuracy: 0.7179 - val_loss: 0.5479
Epoch 687/1000	
10/10	• 0s 7ms/step - accuracy: 0.7107 - loss: 0.5402 - val_accuracy: 0.7179 - val_loss: 0.5478
Epoch 688/1000	
	• 0s 8ms/step - accuracy: 0.7462 - loss: 0.5112 - val_accuracy: 0.7179 - val_loss: 0.5477
Epoch 689/1000	
	• 0s 7ms/step - accuracy: 0.7350 - loss: 0.5155 - val_accuracy: 0.7179 - val_loss: 0.5476
Epoch 690/1000 10/10 ————————————————————————————————————	• 0s 7ms/step - accuracy: 0.6980 - loss: 0.5475 - val_accuracy: 0.7179 - val_loss: 0.5477
Epoch 691/1000	υς γιιογότερ αυτά αυχ. 0.0500 1033. 0.5475 ναι_αυτά αυχ. 0.7175 ναι_1033. 0.5477
•	• Os 8ms/step - accuracy: 0.7103 - loss: 0.5281 - val_accuracy: 0.7094 - val_loss: 0.5479
Epoch 692/1000	
	• 0s 9ms/step - accuracy: 0.7094 - loss: 0.5393 - val_accuracy: 0.7094 - val_loss: 0.5479
Epoch 693/1000	
	• 0s 8ms/step - accuracy: 0.7032 - loss: 0.5389 - val_accuracy: 0.7094 - val_loss: 0.5478
Epoch 694/1000 10/10 ————————————————————————————————————	• 0s 8ms/step - accuracy: 0.7093 - loss: 0.5355 - val accuracy: 0.7094 - val loss: 0.5477
Epoch 695/1000	03 oms/step - accuracy. 0.7095 - 1033. 0.5555 - var_accuracy. 0.7094 - var_1033. 0.5477
•	• 0s 7ms/step - accuracy: 0.7233 - loss: 0.5289 - val_accuracy: 0.7094 - val_loss: 0.5478
Epoch 696/1000	
10/10	• 0s 7ms/step - accuracy: 0.7168 - loss: 0.5312 - val_accuracy: 0.7094 - val_loss: 0.5476
Epoch 697/1000	
10/10	• 0s 8ms/step - accuracy: 0.7119 - loss: 0.5435 - val_accuracy: 0.7179 - val_loss: 0.5475

•	698/1000	
	699/1000	0s 8ms/step - accuracy: 0.7033 - loss: 0.5408 - val_accuracy: 0.7179 - val_loss: 0.5474
10/10		0s 7ms/step - accuracy: 0.7257 - loss: 0.5207 - val_accuracy: 0.7094 - val_loss: 0.5474
•	700/1000	0. (/
	701/1000	0s 6ms/step - accuracy: 0.7391 - loss: 0.5051 - val_accuracy: 0.7179 - val_loss: 0.5473
•		0s 7ms/step - accuracy: 0.7319 - loss: 0.5137 - val_accuracy: 0.7094 - val_loss: 0.5475
	702/1000	03 / ms/ seep accuracy: 0.7515 1055. 0.5157 var_accuracy: 0.7054 var_1055. 0.5475
•		0s 7ms/step - accuracy: 0.6976 - loss: 0.5629 - val_accuracy: 0.7094 - val_loss: 0.5475
	703/1000	
10/10		0s 10ms/step - accuracy: 0.7044 - loss: 0.5501 - val_accuracy: 0.7094 - val_loss: 0.5473
Epoch	704/1000	
10/10		0s 8ms/step - accuracy: 0.7402 - loss: 0.5193 - val_accuracy: 0.7094 - val_loss: 0.5472
•	705/1000	
		0s 8ms/step - accuracy: 0.7286 - loss: 0.5326 - val_accuracy: 0.7179 - val_loss: 0.5474
•	706/1000	
		0s 7ms/step - accuracy: 0.7241 - loss: 0.5180 - val_accuracy: 0.7094 - val_loss: 0.5472
	707/1000	0.7 / / 0.7000 1 0.5405 1 0.7004 11 0.5470
		0s 7ms/step - accuracy: 0.7039 - loss: 0.5485 - val_accuracy: 0.7094 - val_loss: 0.5472
•	708/1000 	0s 7ms/step - accuracy: 0.7242 - loss: 0.5326 - val accuracy: 0.7179 - val loss: 0.5469
	709/1000	vs /ms/step - accuracy. 0.7242 - 1055. 0.5320 - var_accuracy. 0.7179 - var_1055. 0.5409
•		0s 9ms/step - accuracy: 0.7071 - loss: 0.5356 - val_accuracy: 0.7179 - val_loss: 0.5469
	710/1000	35 5 ms, seep accaracy: 31,071 1055: 31,5550 var_accaracy: 31,175 var_1055: 31,5105
		0s 8ms/step - accuracy: 0.7273 - loss: 0.5319 - val_accuracy: 0.7179 - val_loss: 0.5468
	711/1000	
10/10		0s 8ms/step - accuracy: 0.7122 - loss: 0.5351 - val_accuracy: 0.7179 - val_loss: 0.5467
Epoch	712/1000	
10/10		0s 7ms/step - accuracy: 0.7209 - loss: 0.5339 - val_accuracy: 0.7179 - val_loss: 0.5466
•	713/1000	
		0s 7ms/step - accuracy: 0.7028 - loss: 0.5376 - val_accuracy: 0.7179 - val_loss: 0.5466
	714/1000	
		0s 10ms/step - accuracy: 0.6896 - loss: 0.5449 - val_accuracy: 0.7094 - val_loss: 0.5468
•	715/1000	0s 7ms/ston assumaçue 0 7000 losse 0 5217 val assumaçue 0 7004 val losse 0 5467
10/10	716/1000	0s 7ms/step - accuracy: 0.7089 - loss: 0.5317 - val_accuracy: 0.7094 - val_loss: 0.5467
10/10		0s 7ms/step - accuracy: 0.7376 - loss: 0.5087 - val_accuracy: 0.7094 - val_loss: 0.5469
	717/1000	55 /5, 5 ccp
10/10		0s 8ms/step - accuracy: 0.6955 - loss: 0.5571 - val accuracy: 0.7094 - val loss: 0.5466
	718/1000	
•		

10/10		0s	6ms/step -	accuracy:	0.7295 -	loss:	0.5345 -	val_accuracy:	0.7179 -	val loss:	0.5465
	719/1000			,				_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.7120 -	loss:	0.5284 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5467
Epoch	720/1000										
10/10		0s	7ms/step -	accuracy:	0.7311 -	loss:	0.5160 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5465
Epoch	721/1000										
10/10		0s	8ms/step -	accuracy:	0.7281 -	loss:	0.5254 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5466
	722/1000										
		0s	9ms/step -	accuracy:	0.7050 -	loss:	0.5363 -	<pre>val_accuracy:</pre>	0.7094 -	val_loss:	0.5466
	723/1000										
		0s	6ms/step -	accuracy:	0.7523 -	loss:	0.5147 -	val_accuracy:	0.7094 -	val_loss:	0.5466
•	724/1000		_			_		_			
=		0s	7ms/step -	accuracy:	0.7307 -	loss:	0.5310 -	val_accuracy:	0.7094 -	val_loss:	0.5465
•	725/1000					,		,	. =		0 5464
		0s	/ms/step -	accuracy:	0.6925 -	loss:	0.5503 -	val_accuracy:	0.7094 -	val_loss:	0.5464
•	726/1000	0-	0		0.7003	1	0 5530		0 7170		0 5463
		05	8ms/step -	accuracy:	0.7003 -	1055:	0.5528 -	val_accuracy:	0./1/9 -	val_loss:	0.5463
	727/1000 	۵c	7ms/ston	2661102671	0 6902	1000	0 5501	val_accuracy:	0 7004	val locci	0 5462
	728/1000	62	/1113/3tep -	accuracy.	0.0033 -	1055.	0.3364 -	vai_accuracy.	0.7034 -	vai_1055.	0.3402
		۵c	7ms/stan -	accuracy:	0 7033 -	1000	0 5302 -	val_accuracy:	a 7179 ₋	. val loss:	0 5/61
	729/1000	03	71113/3CEP -	accuracy.	0.7033	1033.	0.5502	vai_accuracy.	0.7175	vai_1033.	0.5401
		95	6ms/sten -	accuracy:	0.6988 -	loss:	0.5398 -	val_accuracy:	0.7094 -	val loss:	0.5462
	730/1000	03	ошэ, эсср	accar acy.	0.0300	1033.	0.5550	var_accar acy.	0.7034	va1_1033.	0.5402
		0s	9ms/step -	accuracy:	0.7270 -	loss:	0.5220 -	val_accuracy:	0.7179 -	val loss:	0.5461
	731/1000		о, о сор	,			***************************************				
•		0s	11ms/step	- accuracy:	0.7349	- loss:	0.5162	- val_accuracy	: 0.7179	- val loss:	0.5458
Epoch	732/1000			-						_	
10/10		0s	9ms/step -	accuracy:	0.7319 -	loss:	0.5240 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5457
Epoch	733/1000										
10/10		0s	9ms/step -	accuracy:	0.7473 -	loss:	0.5079 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5458
Epoch	734/1000										
		0s	10ms/step	- accuracy:	0.7318	- loss:	0.5338	val_accuracy	: 0.7179	- val_loss:	0.5456
	735/1000										
		0s	9ms/step -	accuracy:	0.7256 -	loss:	0.5299 -	val_accuracy:	0.7179 -	val_loss:	0.5456
•	736/1000										
10/10		0s	8ms/step -	accuracy:	0.7270 -	loss:	0.5299 -	val_accuracy:	0.7179 -	val_loss:	0.5455
•	737/1000		0 / :		0 7005	-	0 5440	1	0 7470		0 5455
10/10		ØS	⊗ms/step -	accuracy:	0./095 -	Toss:	0.5410 -	val_accuracy:	U./179 -	val_loss:	υ . 5455
•	738/1000	0-	7ms/s+s=	20011122	0 7120	1000	0 5216	vol posicione	0 7170	val lass:	0 [455
10/10		Ø\$	/ms/step -	accuracy:	0./120 -	1088:	0.5310 -	val_accuracy:	v./1/9 -	. var_1088:	v.5455

•	739/1000	0.0 0	- /-+-»		0.7420	1	0 5300		0 7170		0 5456
Epoch	740/1000		·					val_accuracy:		_	
Epoch	741/1000		·					val_accuracy:		_	
Epoch	742/1000		·					val_accuracy:		_	
Epoch	743/1000	0s 8m	s/step -	accuracy:	0.7193 -	loss:	0.5240 -	val_accuracy:	0.7179	- val_loss:	0.5452
Epoch	744/1000		•	-				val_accuracy:		_	
	745/1000	0s 10	ms/step -	accuracy	: 0. 7115 ·	- loss:	0.5319	- val_accuracy	: 0.7179	- val_loss:	0.5454
	746/1000	0s 7m	s/step -	accuracy:	0.7112 -	loss:	0.5437 -	val_accuracy:	0.7179	- val_loss:	0.5453
	747/1000	0s 8m	s/step -	accuracy:	0.7214 -	loss:	0.5396 -	val_accuracy:	0.7179	- val_loss:	0.5453
	748/1000	0s 9m	s/step -	accuracy:	0.7139 -	loss:	0.5424 -	val_accuracy:	0.7179	- val_loss:	0.5451
	749/1000	0s 8m	s/step -	accuracy:	0.7129 -	loss:	0.5384 -	val_accuracy:	0.7179	- val_loss:	0.5451
-	750/1000	0s 8m	s/step -	accuracy:	0.7346 -	loss:	0.5039 -	val_accuracy:	0.7179	- val_loss:	0.5451
10/10		0s 8m	s/step -	accuracy:	0.7060 -	loss:	0.5401 -	val_accuracy:	0.7179	- val_loss:	0.5450
10/10		0s 8m	s/step -	accuracy:	0.7534 -	loss:	0.5015 -	val_accuracy:	0.7179	- val_loss:	0.5449
10/10		0s 8m	s/step -	accuracy:	0.7191 -	loss:	0.5363 -	val_accuracy:	0.7179	- val_loss:	0.5449
10/10		0s 6m	s/step -	accuracy:	0.7521 -	loss:	0.4980 -	val_accuracy:	0.7179	- val_loss:	0.5448
10/10		0s 8m	s/step -	accuracy:	0.7289 -	loss:	0.5290 -	val_accuracy:	0.7179	- val_loss:	0.5449
10/10		0s 7m	s/step -	accuracy:	0.7063 -	loss:	0.5423 -	val_accuracy:	0.7179	- val_loss:	0.5450
10/10		0s 7m	s/step -	accuracy:	0.7100 -	loss:	0.5412 -	val_accuracy:	0.7179	- val_loss:	0.5450
10/10		0s 9m	s/step -	accuracy:	0.6961 -	loss:	0.5491 -	val_accuracy:	0.7179	- val_loss:	0.5448
10/10		0s 8m	s/step -	accuracy:	0.7444 -	loss:	0.5050 -	val_accuracy:	0.7179	- val_loss:	0.5447
Epoch	759/1000										

10/10		05	7ms/sten - ac	curacy:	0.7073 -	loss:	0.5566 -	val accuracy:	0.7179 -	val loss:	0.5446
	760/1000		, o, o cop						007.275		
•		0s	6ms/step - ac	curacy:	0.7231 -	loss:	0.5179 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5447
Epoch	761/1000		•	-				_ ,		_	
10/10		0s	7ms/step - ac	curacy:	0.7376 -	loss:	0.5209 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5446
•	762/1000										
		0s	9ms/step - ac	curacy:	0.7049 -	loss:	0.5382 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5446
	763/1000										
		0s	8ms/step - ac	curacy:	0.7100 -	loss:	0.5432 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5445
•	764/1000	_			0 =040		0 = 440		0 7470		0 = 44=
		0s	/ms/step - ac	curacy:	0.7019 -	loss:	0.5412 -	val_accuracy:	0./1/9 -	val_loss:	0.5445
•	765/1000	0-	7		0 7201	1	0 5140		0 7170		0 5445
		05	/ms/step - ac	curacy:	0./301 -	1055:	0.5148 -	val_accuracy:	0./1/9 -	val_loss:	0.5445
	766/1000 	۵c	7ms/ston as	cupacy	Q 711E	1000	0 5250	val_accuracy:	0 7170	val loss:	0 5445
	767/1000	62	/1115/Step - ac	.curacy.	0./113 -	1055.	0.3333 -	vai_accuracy.	0.7179 -	vai_1055.	0.3443
		۵s	10ms/sten - a	occuracy.	0 7340 -	- loss:	0 5130	- val_accuracy:	· a 7a94	- val loss:	0 5441
	768/1000	03	101113/3ccp a	iccui acy.	0.7540	1033.	0.5150	vai_accaracy	. 0.7054	vai_1033.	0.5441
•		0 s	7ms/sten - ac	curacy:	0.7439 -	loss:	0.5154 -	val_accuracy:	0.7179 -	val loss:	0.5441
	769/1000		, 5, 5 ccp	.cu. ucy .					007.275		
		0s	7ms/step - ac	curacy:	0.7226 -	loss:	0.5413 -	val_accuracy:	0.7179 -	val loss:	0.5440
=	770/1000		, ,	,				_ ,		_	
		0s	6ms/step - ac	curacy:	0.7173 -	loss:	0.5384 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5439
	771/1000			-							
10/10		0s	7ms/step - ac	curacy:	0.7515 -	loss:	0.5126 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5438
Epoch	772/1000										
10/10		0s	6ms/step - ac	curacy:	0.7401 -	loss:	0.5179 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5439
	773/1000										
		0s	7ms/step - ac	curacy:	0.7190 -	loss:	0.5324 -	val_accuracy:	0.7094 -	val_loss:	0.5439
	774/1000										
		0s	7ms/step - ac	curacy:	0.7427 -	loss:	0.5302 -	<pre>val_accuracy:</pre>	0.7179 -	val_loss:	0.5439
	775/1000	_					0 = 0.40		0 7470		0 5444
=		0S	5ms/step - ac	curacy:	0.69// -	loss:	0.5348 -	val_accuracy:	0./1/9 -	val_loss:	0.5441
•	776/1000	0-	Cma/atan		0 7076	1	0 5360		0 7170		0 5430
		05	oms/step - ac	curacy:	0.7076 -	1088:	0.5368 -	val_accuracy:	0./1/9 -	va1_1055:	0.5438
10/10	777/1000	۵c	Oms/ston	cupacy:	0 7015	1000	0 5577	val_accuracy:	0 7170	val loss:	0 5420
	778/1000	03	Jiis/step - ac	.curacy.	0.7043 -	1055.	0.33// -	vai_accuracy.	0.7179 -	vai_1055.	0.3433
•		95	6ms/sten - ac	curacy:	0.7393 -	1055.	0.5167 -	val_accuracy:	0.7179 -	val loss.	0.5438
	779/1000	55	55, 5 ccp ac	.ca. acy.			0.5107	.uz_uccur ucy.	3., 1, 5		2.5.50
10/10		0s	7ms/step - ac	curacv:	0.7150 -	loss:	0.5365 -	val_accuracy:	0.7179 -	val loss:	0.5439
==, ==			-/ we	· · · · · · · · · · · ·		•			- /		

•	780/1000	
	781/1000	0s 6ms/step - accuracy: 0.7109 - loss: 0.5492 - val_accuracy: 0.7179 - val_loss: 0.5439
		0s 8ms/step - accuracy: 0.7087 - loss: 0.5360 - val_accuracy: 0.7179 - val_loss: 0.5439
•	782/1000	0s 7ms/step - accuracy: 0.6960 - loss: 0.5514 - val accuracy: 0.7179 - val loss: 0.5440
	783/1000	% /ms/step - accuracy: 0.6960 - 1055: 0.5514 - Vai_accuracy: 0.7179 - Vai_1055: 0.5440
•		0s 8ms/step - accuracy: 0.7284 - loss: 0.5266 - val_accuracy: 0.7179 - val_loss: 0.5440
Epoch	784/1000	
		0s 8ms/step - accuracy: 0.7208 - loss: 0.5272 - val_accuracy: 0.7179 - val_loss: 0.5439
•	785/1000	
	786/1000	0s 7ms/step - accuracy: 0.7134 - loss: 0.5316 - val_accuracy: 0.7179 - val_loss: 0.5438
•		0s 7ms/step - accuracy: 0.7111 - loss: 0.5391 - val_accuracy: 0.7179 - val_loss: 0.5439
	787/1000	
10/10		0s 10ms/step - accuracy: 0.7225 - loss: 0.5299 - val_accuracy: 0.7179 - val_loss: 0.5439
•	788/1000	
		0s 6ms/step - accuracy: 0.7270 - loss: 0.5248 - val_accuracy: 0.7179 - val_loss: 0.5440
	789/1000 	0s 6ms/step - accuracy: 0.7302 - loss: 0.5156 - val_accuracy: 0.7179 - val_loss: 0.5438
	790/1000	03 01113/312p - accuracy. 0.7302 - 1033. 0.3130 - Val_accuracy. 0.7179 - Val_1033. 0.3430
•		0s 7ms/step - accuracy: 0.7039 - loss: 0.5391 - val_accuracy: 0.7179 - val_loss: 0.5439
•	791/1000	
		0s 7ms/step - accuracy: 0.7036 - loss: 0.5481 - val_accuracy: 0.7179 - val_loss: 0.5436
	792/1000	On Start Transport 0 7073 long 0 5400 trail province 0 7470 trail long 0 5430
	793/1000	0s 8ms/step - accuracy: 0.7073 - loss: 0.5400 - val_accuracy: 0.7179 - val_loss: 0.5436
•		0s 7ms/step - accuracy: 0.7081 - loss: 0.5254 - val_accuracy: 0.7179 - val_loss: 0.5437
	794/1000	
		0s 8ms/step - accuracy: 0.6975 - loss: 0.5493 - val_accuracy: 0.7179 - val_loss: 0.5436
•	795/1000	0- 7
	796/1000	0s 7ms/step - accuracy: 0.7119 - loss: 0.5286 - val_accuracy: 0.7179 - val_loss: 0.5435
•		0s 10ms/step - accuracy: 0.6846 - loss: 0.5429 - val accuracy: 0.7179 - val loss: 0.5434
	797/1000	
10/10		0s 7ms/step - accuracy: 0.7097 - loss: 0.5375 - val_accuracy: 0.7179 - val_loss: 0.5434
•	798/1000	
10/10		0s 9ms/step - accuracy: 0.7056 - loss: 0.5323 - val_accuracy: 0.7179 - val_loss: 0.5431
10/10	799/1000	0s 6ms/step - accuracy: 0.7047 - loss: 0.5267 - val_accuracy: 0.7179 - val_loss: 0.5432
	800/1000	
-		

10/10		0s	7ms/step -	accuracv:	0.7059 -	loss:	0.5436 -	val accuracy:	0.7179	- val loss:	0.5431
	801/1000		,								
10/10		0s	9ms/step -	accuracy:	0.7457 -	loss:	0.5138 -	val_accuracy:	0.7179	- val_loss:	0.5430
	802/1000										
		0s	6ms/step -	accuracy:	0.7308 -	loss:	0.5249 -	val_accuracy:	0.7094	<pre>- val_loss:</pre>	0.5429
	803/1000	_				_		_			
		0s	7ms/step -	accuracy:	0.7310 -	loss:	0.5216 -	val_accuracy:	0.7179	- val_loss:	0.5431
	804/1000	Q.c	7ms/ston	2661102614	0 7162	10551	0 5260	val_accuracy:	0 7170	val loss:	0 5420
	805/1000	03	/III3/3CEP -	accuracy.	0.7102 -	1033.	0.3208 -	vai_accuracy.	0.7179	- vai_1033.	0.5423
•		0s	6ms/step -	accuracv:	0.7171 -	loss:	0.5362 -	val_accuracy:	0.7179	- val loss:	0.5428
	806/1000										
10/10		0s	7ms/step -	accuracy:	0.7409 -	loss:	0.5150 -	val_accuracy:	0.7094	- val_loss:	0.5427
	807/1000										
		0s	8ms/step -	accuracy:	0.7131 -	loss:	0.5437 -	val_accuracy:	0.7094	- val_loss:	0.5427
	808/1000	_				-		_			
		0s	6ms/step -	accuracy:	0.7199 -	loss:	0.5440 -	val_accuracy:	0.7179	- val_loss:	0.5427
•	809/1000 	Q.c	6ms/ston	2661102674	0 7222	10551	0 5206	val accuracy:	0 7004	val loss:	0 5426
	810/1000	03	oms/step -	accuracy.	0.7223 -	1055.	0.3290 -	vai_accuracy.	0.7034	- vai_1055.	0.3420
		0s	7ms/step -	accuracv:	0.7173 -	loss:	0.5386 -	val_accuracy:	0.7179	- val loss:	0.5426
=	811/1000		, с с с р								
10/10		0s	7ms/step -	accuracy:	0.7237 -	loss:	0.5230 -	val_accuracy:	0.7179	- val_loss:	0.5425
•	812/1000										
		0s	7ms/step -	accuracy:	0.6991 -	loss:	0.5563 -	val_accuracy:	0.7179	- val_loss:	0.5426
•	813/1000	_				-		_			
		0s	8ms/step -	accuracy:	0.7150 -	loss:	0.5316 -	val_accuracy:	0.7179	- val_loss:	0.5425
	814/1000 	۵c	7ms/stan -	accupacy:	0 7186 -	1000	0 5275 -	val_accuracy:	0 7170	- val loss:	0 5/25
	815/1000	03	/1113/3CEP -	accuracy.	0.7100 -	1055.	0.32/3 -	vai_accuracy.	0.7179	- vai_1055.	0.3423
		0s	6ms/step -	accuracy:	0.7311 -	loss:	0.5067 -	val_accuracy:	0.7179	- val loss:	0.5424
	816/1000										
10/10		0s	8ms/step -	accuracy:	0.7349 -	loss:	0.5160 -	val_accuracy:	0.7094	- val_loss:	0.5423
•	817/1000										
		0s	6ms/step -	accuracy:	0.7627 -	loss:	0.4911 -	val_accuracy:	0.7179	- val_loss:	0.5422
•	818/1000	_	_ , ,				0 5440		0 =1=0		0 = 400
10/10		0S	/ms/step -	accuracy:	0./238 -	loss:	0.5140 -	val_accuracy:	0./1/9	- val_loss:	0.5420
•	819/1000 	۵c	8mc/stan -	accuracy.	0 70/12 -	1000	0 5502 -	val accuracy:	0 7170	- val loss:	0 5/20
	820/1000	03	oms/step -	accuracy.	0.7042 -	1033.	0.3362 -	vai_accuracy.	0./1/3	- var_1022.	U.J420
10/10		0s	8ms/step -	accuracv:	0.7348 -	loss:	0.5286 -	val_accuracy:	0.7179	- val loss:	0.5420
=2, =0			, P								

	821/1000	0-	7m = / = t = n		0.7310	1	0 5301		0 7170		0 5410
Epoch	822/1000		•	-				val_accuracy:		_	
Epoch	823/1000		•	-				val_accuracy:		_	
Epoch	824/1000		·	-				val_accuracy:		_	
Epoch	825/1000			_				val_accuracy:			
Epoch	826/1000		•	-				val_accuracy:		_	
Epoch	827/1000		•	-				val_accuracy:		_	
	828/1000		•	-				val_accuracy:		_	
Epoch	829/1000	0s	8ms/step -	accuracy:	0.7386 -	loss:	0.5186 -	val_accuracy:	0.7179 -	val_loss:	0.5417
	830/1000	0s	6ms/step -	accuracy:	0.7385 -	loss:	0.5189 -	val_accuracy:	0.7179 -	val_loss:	0.5416
-	831/1000	0s	7ms/step -	accuracy:	0.7189 -	loss:	0.5494 -	val_accuracy:	0.7179 -	val_loss:	0.5417
Epoch	832/1000		·	-				val_accuracy:		_	
	833/1000	0s	7ms/step -	accuracy:	0.7165 -	loss:	0.5397 -	val_accuracy:	0.7179 -	val_loss:	0.5414
	834/1000	0s	6ms/step -	accuracy:	0.7294 -	loss:	0.5297 -	val_accuracy:	0.7179 -	val_loss:	0.5414
	835/1000	0s	7ms/step -	accuracy:	0.7192 -	loss:	0.5329 -	val_accuracy:	0.7179 -	val_loss:	0.5413
	836/1000	0s	8ms/step -	accuracy:	0.7285 -	loss:	0.5274 -	val_accuracy:	0.7179 -	val_loss:	0.5413
	837/1000	0s	9ms/step -	accuracy:	0.7153 -	loss:	0.5338 -	val_accuracy:	0.7179 -	val_loss:	0.5414
10/10		0s	7ms/step -	accuracy:	0.7194 -	loss:	0.5348 -	val_accuracy:	0.7179 -	val_loss:	0.5413
10/10		0s	8ms/step -	accuracy:	0.7282 -	loss:	0.5260 -	val_accuracy:	0.7179 -	val_loss:	0.5412
10/10		0s	8ms/step -	accuracy:	0.7355 -	loss:	0.5291 -	val_accuracy:	0.7179 -	val_loss:	0.5412
10/10		0s	6ms/step -	accuracy:	0.7394 -	loss:	0.5263 -	val_accuracy:	0.7179 -	val_loss:	0.5410
-											

10/10		0s	6ms/step -	accuracv:	0.7187 -	loss:	0.5370 -	val_accuracy:	0.7179	· val loss:	0.5410
	842/1000		т., с сер								
•		0s	7ms/step -	accuracy:	0.7200 -	loss:	0.5390 -	val_accuracy:	0.7179	val_loss:	0.5410
Epoch	843/1000										
10/10		0s	7ms/step -	accuracy:	0.7032 -	loss:	0.5377 -	val_accuracy:	0.7179	<pre>val_loss:</pre>	0.5409
•	844/1000										
		0s	7ms/step -	accuracy:	0.7240 -	loss:	0.5241 -	val_accuracy:	0.7179	· val_loss:	0.5411
	845/1000					_		_			
		0s	7ms/step -	accuracy:	0.7458 -	loss:	0.5204 -	val_accuracy:	0.7179	· val_loss:	0.5411
	846/1000	0-	10		. 0 7244	1	0 5107		. 0 7170		0 5400
	847/1000	05	10ms/step	- accuracy	: 0.7244	- 1055:	0.5197	- val_accuracy	: 0./1/9	- val_loss:	0.5409
•		۵c	7ms/stan -	accupacy:	0 7224 -	1000	0 5244 -	val_accuracy:	0 7170	val loss:	0 5/00
=	848/1000	03	/1113/3CEP -	accui acy.	0.7224 -	1033.	0.3244 -	vai_accuracy.	0.7179	vai_1033.	0.5405
•		95	7ms/sten -	accuracy:	0.7166 -	loss:	0.5297 -	val_accuracy:	0.7179	· val loss:	0.5410
	849/1000	0.5	, , seep	accai acy.	0.7200	1033.	0.3237	var_acca. acy.	01,1,5	vu1_1033.	0.5.20
•		0s	8ms/step -	accuracy:	0.7332 -	loss:	0.5302 -	val accuracy:	0.7179	· val loss:	0.5409
	850/1000			,				_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.7187 -	loss:	0.5139 -	val_accuracy:	0.7179	val_loss:	0.5407
Epoch	851/1000										
10/10		0s	8ms/step -	accuracy:	0.7364 -	loss:	0.5207 -	val_accuracy:	0.7179	<pre>val_loss:</pre>	0.5406
	852/1000										
		0s	7ms/step -	accuracy:	0.7314 -	loss:	0.5226 -	val_accuracy:	0.7179	· val_loss:	0.5406
	853/1000					_		_			
		0s	7ms/step -	accuracy:	0.7221 -	loss:	0.5363 -	val_accuracy:	0.7179	· val_loss:	0.5405
•	854/1000 	00	7ms/ston	2664122644	0 7212	10001	0 [1[val_accuracy:	0 7170	val less.	0 5406
	855/1000	05	/ms/step -	accuracy:	0./312 -	1055:	0.5155 -	vai_accuracy:	0.7179	· Val_1055:	0.5406
•		95	9ms/sten -	accuracy:	0 7421 -	loss	0 4992 -	val_accuracy:	0 7179 -	· val loss:	0 5405
	856/1000	05	эшэ, эсср	accar acy.	0.7421	1033.	0.4332	var_accar acy.	0.7173	va1_1033.	0.5405
•		0s	7ms/step -	accuracy:	0.7377 -	loss:	0.5070 -	val accuracy:	0.7179	val loss:	0.5406
	857/1000							_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.7319 -	loss:	0.5389 -	val_accuracy:	0.7179	val_loss:	0.5406
	858/1000										
10/10		0s	8ms/step -	accuracy:	0.6965 -	loss:	0.5503 -	val_accuracy:	0.7179	<pre>val_loss:</pre>	0.5406
•	859/1000										
10/10		0s	7ms/step -	accuracy:	0.6993 -	loss:	0.5413 -	val_accuracy:	0.7179	· val_loss:	0.5407
•	860/1000	_	- , .		0 =45:	-			0 7001		0 = 400
10/10		0s	7ms/step -	accuracy:	0.7134 -	loss:	0.5394 -	val_accuracy:	0.7094	· val_loss:	0.5408
-	861/1000	0-	7ms/s+22	D.C.C.UCC.C.	0 7252	10000	0 [122	vol posinsaire	0 7170	vol lass:	0 5400
10/10		US	/ms/step -	accuracy:	0./353 -	TOSS:	Ø.5123 -	val_accuracy:	U./1/9 ·	· var_ross:	U.5406

	862/1000	
	863/1000	0s 7ms/step - accuracy: 0.7311 - loss: 0.5251 - val_accuracy: 0.7179 - val_loss: 0.5404
10/10		0s 7ms/step - accuracy: 0.7582 - loss: 0.5007 - val_accuracy: 0.7179 - val_loss: 0.5403
•	864/1000	0s 0ms/step
=	865/1000	0s 9ms/step - accuracy: 0.7098 - loss: 0.5303 - val_accuracy: 0.7179 - val_loss: 0.5404
		0s 8ms/step - accuracy: 0.7053 - loss: 0.5476 - val_accuracy: 0.7179 - val_loss: 0.5402
	866/1000	65 ons/step - accuracy. 6.7655 - 1055. 6.5470 - Var_accuracy. 6.7179 - Var_1055. 6.5462
•		0s 7ms/step - accuracy: 0.7205 - loss: 0.5344 - val accuracy: 0.7179 - val loss: 0.5402
	867/1000	03 / m3/3ccp decardey: 0.7203 1033. 0.3344 var_decardey: 0.7173 var_1033. 0.3402
•		0s 8ms/step - accuracy: 0.7101 - loss: 0.5304 - val_accuracy: 0.7179 - val_loss: 0.5402
	868/1000	
		0s 8ms/step - accuracy: 0.6928 - loss: 0.5534 - val_accuracy: 0.7179 - val_loss: 0.5404
	869/1000	
10/10		0s 7ms/step - accuracy: 0.7100 - loss: 0.5270 - val_accuracy: 0.7179 - val_loss: 0.5407
Epoch	870/1000	
10/10		0s 7ms/step - accuracy: 0.7458 - loss: 0.5039 - val_accuracy: 0.7179 - val_loss: 0.5405
Epoch	871/1000	
10/10		0s 7ms/step - accuracy: 0.7128 - loss: 0.5368 - val_accuracy: 0.7179 - val_loss: 0.5401
•	872/1000	
		0s 9ms/step - accuracy: 0.7230 - loss: 0.5224 - val_accuracy: 0.7179 - val_loss: 0.5399
•	873/1000	
		0s 11ms/step - accuracy: 0.7353 - loss: 0.5294 - val_accuracy: 0.7179 - val_loss: 0.5397
	874/1000	
		0s 8ms/step - accuracy: 0.7293 - loss: 0.5220 - val_accuracy: 0.7179 - val_loss: 0.5397
•	875/1000	05 7ms/ston 255unasyu 0 7170 lassi 0 5416 yal 255unasyu 0 7170 yal lassi 0 5209
	876/1000	0s 7ms/step - accuracy: 0.7179 - loss: 0.5416 - val_accuracy: 0.7179 - val_loss: 0.5398
		0s 8ms/step - accuracy: 0.7163 - loss: 0.5268 - val_accuracy: 0.7179 - val_loss: 0.5397
	877/1000	03 0113/3cep - accuracy. 0.7103 - 1033. 0.3200 - var_accuracy. 0.7173 - var_1033. 0.3337
•		0s 8ms/step - accuracy: 0.7267 - loss: 0.5173 - val_accuracy: 0.7179 - val_loss: 0.5396
	878/1000	
•		Os 8ms/step - accuracy: 0.7258 - loss: 0.5298 - val_accuracy: 0.7179 - val_loss: 0.5395
	879/1000	
10/10		Os 10ms/step - accuracy: 0.7149 - loss: 0.5436 - val_accuracy: 0.7179 - val_loss: 0.5397
Epoch	880/1000	
10/10		0s 8ms/step - accuracy: 0.7444 - loss: 0.5003 - val_accuracy: 0.7179 - val_loss: 0.5396
Epoch	881/1000	
10/10		0s 7ms/step - accuracy: 0.7070 - loss: 0.5303 - val_accuracy: 0.7179 - val_loss: 0.5397
Epoch	882/1000	

10/10		0s	8ms/step -	accuracv:	0.7323 -	loss:	0.5217 -	· val_accuracy:	0.7179	- val loss:	0.5396
	883/1000		оо, о сор								
10/10		0s	7ms/step -	accuracy:	0.7227 -	loss:	0.5252 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5394
	884/1000										
10/10		0s	7ms/step -	accuracy:	0.7403 -	loss:	0.5137 -	<pre>val_accuracy:</pre>	0.7179	<pre>- val_loss:</pre>	0.5393
	885/1000										
		0s	8ms/step -	accuracy:	0.7228 -	loss:	0.5189 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5392
	886/1000					_		_			
		0s	8ms/step -	accuracy:	0.7023 -	loss:	0.5459 -	val_accuracy:	0.7179	- val_loss:	0.5392
•	887/1000	0-	Om = / = t = n		0 7007	1	0 5257		0 7170		0 5202
	888/1000	05	oms/step -	accuracy:	0.7087 -	1022:	0.5357 -	val_accuracy:	0.7179	- vai_1055:	0.5392
•		۵c	2ms/stan -	accuracy:	0 7229 -	1000	0 5289 _	· val_accuracy:	a 7179	- val loss:	a 5392
	889/1000	03	ош3/ 3 сер	accuracy.	0.7223	1033.	0.5205	var_accar acy.	0.7175	vai_1033.	0.3332
		0s	8ms/step -	accuracv:	0.7031 -	loss:	0.5449 -	val_accuracy:	0.7179	- val loss:	0.5391
	890/1000		,								
		0s	8ms/step -	accuracy:	0.7236 -	loss:	0.5344 -	val_accuracy:	0.7179	- val_loss:	0.5390
Epoch	891/1000										
10/10		0s	7ms/step -	accuracy:	0.7203 -	loss:	0.5273 -	<pre>val_accuracy:</pre>	0.7179	- val_loss:	0.5390
•	892/1000										
		0s	7ms/step -	accuracy:	0.7261 -	loss:	0.5345 -	<pre>val_accuracy:</pre>	0.7179	- val_loss:	0.5391
	893/1000					_		_			
		0s	7ms/step -	accuracy:	0.7243 -	loss:	0.5269 -	val_accuracy:	0.7179	- val_loss:	0.5391
•	894/1000	0-	0 / - +		0 7455	1	0 5300	1	0 7170		0 5301
	895/1000	05	8ms/step -	accuracy:	0./155 -	1055:	0.5290 -	val_accuracy:	0.7179	- val_loss:	0.5391
•		۵c	7ms/stan -	accuracy.	0 7001 -	1000	0 5506 -	· val_accuracy:	a 7179	- val loss:	0 539 <i>1</i>
	896/1000	03	/1113/3 сер -	accuracy.	0.7004	1033.	0.5500	vai_accuracy.	0.7175	- vai_1033.	0.5554
•		0s	7ms/step -	accuracv:	0.7082 -	loss:	0.5352 -	val_accuracy:	0.7179	- val loss:	0.5394
	897/1000		-,								
		0s	7ms/step -	accuracy:	0.7361 -	loss:	0.5210 -	val_accuracy:	0.7179	- val_loss:	0.5392
Epoch	898/1000			_							
10/10		0s	8ms/step -	accuracy:	0.7138 -	loss:	0.5270 -	<pre>val_accuracy:</pre>	0.7179	- val_loss:	0.5392
•	899/1000										
=		0s	7ms/step -	accuracy:	0.7179 -	loss:	0.5239 -	<pre>val_accuracy:</pre>	0.7179	- val_loss:	0.5391
•	900/1000					_		_			
10/10		0s	8ms/step -	accuracy:	0.7353 -	loss:	0.5289 -	val_accuracy:	0.7179	- val_loss:	0.5386
•	901/1000	0-	7ms/s+22	D.C.C.U.C.C.C.	0 7270	10	0 5121	val accomme	0 7170	wal lass:	0 5306
		ØS	/ms/step -	accuracy:	0./3/9 -	1022:	0.5121 -	val_accuracy:	0./1/9	- vai_ioss:	U.5386
10/10	902/1000	۵c	7mc/ctan	acciinacy:	0 7210	10551	0 5215	· val_accuracy:	0 7170	- val loss:	0 5397
TA\ TA		62	/ms/steh -	accuracy:	0.7210 -	1022;	0.3213 -	var_accuracy:	0./1/9	- var_1022;	0.330/

•	903/1000	0 -	0 / 1		0 7457	,	0 4005		0 7470		0 5307
Epoch	904/1000			-				val_accuracy:		_	
Epoch	905/1000			-				val_accuracy:		_	
Epoch	906/1000			-				val_accuracy:		_	
	907/1000	0s	7ms/step -	accuracy:	0.7323 -	loss:	0.5256 -	val_accuracy:	0.7179	- val_loss:	0.5387
	908/1000	0s	8ms/step -	accuracy:	0.7059 -	loss:	0.5337 -	val_accuracy:	0.7179	- val_loss:	0.5388
	909/1000	0s	8ms/step -	accuracy:	0.7076 -	loss:	0.5330 -	val_accuracy:	0.7179	- val_loss:	0.5387
10/10		0s	7ms/step -	accuracy:	0.6953 -	loss:	0.5510 -	val_accuracy:	0.7179	- val_loss:	0.5388
10/10		0s	7ms/step -	- accuracy:	0.6958 -	loss:	0.5388 -	val_accuracy:	0.7179	- val_loss:	0.5388
10/10		0s	7ms/step -	accuracy:	0.7247 -	loss:	0.5169 -	val_accuracy:	0.7179	- val_loss:	0.5387
10/10		0s	7ms/step -	accuracy:	0.7011 -	loss:	0.5517 -	val_accuracy:	0.7179	- val_loss:	0.5387
10/10	913/1000	0s	7ms/step -	- accuracy:	0.7231 -	loss:	0.5331 -	val_accuracy:	0.7179	- val_loss:	0.5385
10/10		0s	7ms/step -	- accuracy:	0.7313 -	loss:	0.5153 -	val_accuracy:	0.7179	- val_loss:	0.5383
10/10		0s	8ms/step -	- accuracy:	0.7169 -	loss:	0.5185 -	val_accuracy:	0.7179	- val_loss:	0.5381
•	916/1000	0s	8ms/step -	· accuracy:	0.7044 -	loss:	0.5404 -	val_accuracy:	0.7179	- val_loss:	0.5381
•	917/1000	0s	7ms/step -	- accuracy:	0.7279 -	loss:	0.5287 -	val_accuracy:	0.7179	- val_loss: (0.5382
•	918/1000	0s	7ms/step -	- accuracy:	0.7307 -	loss:	0.5123 -	val_accuracy:	0.7179	- val_loss:	0.5383
	919/1000	0s	7ms/step -	· accuracy:	0.7196 -	loss:	0.5273 -	val accuracy:	0.7179	- val loss: (0.5381
	920/1000	0s	7ms/step -	· accuracv:	0.7295 -	loss:	0.5114 -	val_accuracy:	0.7179	- val loss: (0.5380
	921/1000			-				val_accuracy:		_	
	922/1000			-				<pre>val_accuracy:</pre>		_	
	923/1000	03	, m3, 3 cep -	accui acy.	J., 1, 0 -	1033.	0.5255 -	vai_accuracy.	J.,1,7	Va1_1033.	0.5570

10/10		0s	7ms/step -	accuracv:	0.6859 -	loss:	0.5531 -	val_accuracy:	0.7179	- val loss:	0.5378
	924/1000		7					,			
10/10		0s	9ms/step -	accuracy:	0.7379 -	loss:	0.5033 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5378
	925/1000										
		0s	8ms/step -	accuracy:	0.7152 -	loss:	0.5262 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5379
	926/1000					_		_			
		0s	8ms/step -	accuracy:	0.7086 -	loss:	0.5326 -	val_accuracy:	0.7179	- val_loss:	0.5380
	927/1000	0-	7		0.7300	1	0 5106	val accuracy:	0 7170		0 5300
	928/1000	05	/ms/step -	accuracy:	0.7290 -	1022:	0.5196 -	vai_accuracy:	0.7179	- vai_1055:	0.5380
•		95	2ms/sten -	accuracy:	0 7011 -	1055.	0 5500 -	val_accuracy:	0 7179	- val loss.	0 5381
	929/1000	05	ошэ, эсср	accar acy.	0.7011	1033.	0.3300	var_accar acy.	0.7173	va1_1033.	0.5501
•		0s	7ms/step -	accuracy:	0.7260 -	loss:	0.5085 -	val_accuracy:	0.7179	- val loss:	0.5380
	930/1000			,				_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.7017 -	loss:	0.5426 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5380
	931/1000										
		0s	9ms/step -	accuracy:	0.7269 -	loss:	0.5192 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5379
•	932/1000					_		_			
		0s	7ms/step -	accuracy:	0.6862 -	loss:	0.5542 -	val_accuracy:	0.7179	- val_loss:	0.5380
•	933/1000	00	Oms/ston	2664122644	0 7420	10551	0 [174	val accumacy.	0 7170	val lass.	0 5270
	934/1000	05	8ms/step -	accuracy:	0.7438 -	1055:	0.51/4 -	val_accuracy:	0.7179	- val_10ss:	0.5378
		95	2ms/sten -	accuracy:	0 7023 -	1055.	0 5429 -	val_accuracy:	0 7179	- val loss.	0 5379
	935/1000	05	ошэ, эсср	accar acy.	0.7023	1033.	0.5425	var_accar acy.	0.7173	va1_1033.	0.3373
•		0s	7ms/step -	accuracy:	0.7244 -	loss:	0.5319 -	val_accuracy:	0.7179	- val loss:	0.5376
	936/1000		·	•						_	
10/10		0s	8ms/step -	accuracy:	0.7430 -	loss:	0.5194 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5376
	937/1000										
		0s	9ms/step -	accuracy:	0.7307 -	loss:	0.5143 -	val_accuracy:	0.7179	- val_loss:	0.5375
	938/1000	_				-		-			
=		0s	8ms/step -	accuracy:	0.7025 -	loss:	0.5450 -	val_accuracy:	0.7179	- val_loss:	0.5376
	939/1000	Q.c	7ms/ston	accupacy:	0 7227	10551	0 5252	val_accuracy:	0 7170	val locc:	0 5276
	940/1000	62	/1115/5tep -	accuracy.	0.7237 -	1055.	0.5555 -	vai_accuracy.	0.7179	- vai_1055.	0.5576
•		0 s	8ms/sten -	accuracy:	0.7131 -	loss:	0.5375 -	val_accuracy:	0.7179	- val loss:	0.5376
	941/1000		сс, с сор								
10/10		0s	7ms/step -	accuracy:	0.7142 -	loss:	0.5272 -	val_accuracy:	0.7179	- val_loss:	0.5377
Epoch	942/1000										
10/10		0s	8ms/step -	accuracy:	0.7115 -	loss:	0.5339 -	val_accuracy:	0.7179	- val_loss:	0.5375
•	943/1000										
10/10		0s	7ms/step -	accuracy:	0.7125 -	loss:	0.5290 -	val_accuracy:	0.7179	- val_loss:	0.5372

	944/1000	0- 7/
Epoch	945/1000	0s 7ms/step - accuracy: 0.7141 - loss: 0.5281 - val_accuracy: 0.7179 - val_loss: 0.5373
Epoch	946/1000	0s 10ms/step - accuracy: 0.7465 - loss: 0.5049 - val_accuracy: 0.7179 - val_loss: 0.5371
	947/1000	0s 8ms/step - accuracy: 0.7067 - loss: 0.5317 - val_accuracy: 0.7179 - val_loss: 0.5372
	948/1000	0s 8ms/step - accuracy: 0.7296 - loss: 0.5177 - val_accuracy: 0.7179 - val_loss: 0.5371
10/10		0s 7ms/step - accuracy: 0.7237 - loss: 0.5225 - val_accuracy: 0.7179 - val_loss: 0.5369
10/10		0s 7ms/step - accuracy: 0.6981 - loss: 0.5524 - val_accuracy: 0.7179 - val_loss: 0.5370
10/10		0s 8ms/step - accuracy: 0.7384 - loss: 0.5077 - val_accuracy: 0.7179 - val_loss: 0.5369
10/10		0s 7ms/step - accuracy: 0.7257 - loss: 0.5190 - val_accuracy: 0.7179 - val_loss: 0.5369
10/10		0s 8ms/step - accuracy: 0.7227 - loss: 0.5140 - val_accuracy: 0.7179 - val_loss: 0.5370
10/10		0s 8ms/step - accuracy: 0.7333 - loss: 0.5270 - val_accuracy: 0.7179 - val_loss: 0.5368
10/10		0s 7ms/step - accuracy: 0.7181 - loss: 0.5395 - val_accuracy: 0.7179 - val_loss: 0.5366
	955/1000	0s 7ms/step - accuracy: 0.7319 - loss: 0.5217 - val_accuracy: 0.7179 - val_loss: 0.5366
•	956/1000	0s 7ms/step - accuracy: 0.7143 - loss: 0.5348 - val_accuracy: 0.7179 - val_loss: 0.5367
Epoch	957/1000	0s 8ms/step - accuracy: 0.7273 - loss: 0.5029 - val_accuracy: 0.7265 - val_loss: 0.5365
Epoch	958/1000	0s 7ms/step - accuracy: 0.7075 - loss: 0.5462 - val_accuracy: 0.7179 - val_loss: 0.5368
Epoch	959/1000	Os 7ms/step - accuracy: 0.7107 - loss: 0.5314 - val_accuracy: 0.7179 - val_loss: 0.5369
Epoch	960/1000	
Epoch	961/1000	0s 9ms/step - accuracy: 0.7216 - loss: 0.5200 - val_accuracy: 0.7179 - val_loss: 0.5368
•	962/1000	0s 7ms/step - accuracy: 0.7064 - loss: 0.5325 - val_accuracy: 0.7179 - val_loss: 0.5367
10/10 Epoch	963/1000	0s 8ms/step - accuracy: 0.7186 - loss: 0.5230 - val_accuracy: 0.7179 - val_loss: 0.5366
10/10 Epoch	964/1000	0s 7ms/step - accuracy: 0.7092 - loss: 0.5252 - val_accuracy: 0.7179 - val_loss: 0.5369

10/10		0s	7ms/step -	accuracv:	0.7030 -	loss:	0.5362 -	val accuracy:	0.7179	- val loss:	0.5371
	965/1000		,					,			
10/10		0s	7ms/step -	accuracy:	0.7370 -	loss:	0.5126 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5368
•	966/1000										
		0s	8ms/step -	accuracy:	0.7193 -	loss:	0.5255 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5365
•	967/1000		_			_		_			
		0s	8ms/step -	accuracy:	0.7035 -	loss:	0.5283 -	val_accuracy:	0.7179	- val_loss:	0.5364
	968/1000	0-	7		0 7220	1	0 5100		0 7170	1	0 5265
	969/1000	62	/ms/step -	accuracy:	0./339 -	1022:	0.5100 -	val_accuracy:	0.7179	- vai_1055:	0.5565
•		95	9ms/sten -	accuracy:	0 7217 -	1055.	0 5200 -	val_accuracy:	0 7179	- val loss:	0 5364
	970/1000	03	эшэ, эсср	accar acy.	0.7217	1033.	0.3200	var_accar acy.	0.7173	va1_1033.	0.3304
•		0s	7ms/step -	accuracy:	0.7173 -	loss:	0.5170 -	val_accuracy:	0.7179	- val loss:	0.5363
	971/1000			,				_ ,		_	
10/10		0s	7ms/step -	accuracy:	0.7341 -	loss:	0.5153 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5362
	972/1000										
		0s	7ms/step -	accuracy:	0.7330 -	loss:	0.5193 -	val_accuracy:	0.7179	- val_loss:	0.5366
•	973/1000	_				_		_			
		0s	8ms/step -	accuracy:	0.7149 -	loss:	0.5251 -	val_accuracy:	0.7179	- val_loss:	0.5365
•	974/1000	0-	0		0 7305	1	0 5350		0 7170		0 5265
	975/1000	05	8ms/step -	accuracy:	0.7205 -	1055:	0.5259 -	val_accuracy:	0.7179	- vai_10ss:	0.5365
		95	9ms/sten -	accuracy:	0 7156 -	1055.	0 5241 -	val_accuracy:	0 7179	- val loss:	0 5362
	976/1000	03	эшэ, эсср	accar acy.	0.7130	1033.	0.32-1	var_accar acy.	0.7173	va1_1033.	0.3302
•		0s	7ms/step -	accuracy:	0.7308 -	loss:	0.5107 -	val_accuracy:	0.7179	- val loss:	0.5361
	977/1000		·	•						_	
10/10		0s	7ms/step -	accuracy:	0.7257 -	loss:	0.5053 -	val_accuracy:	0.7179	<pre>- val_loss:</pre>	0.5362
	978/1000										
		0s	8ms/step -	accuracy:	0.7091 -	loss:	0.5367 -	val_accuracy:	0.7179	- val_loss:	0.5360
	979/1000	_				-		-			
		0s	7ms/step -	accuracy:	0.7317 -	loss:	0.5143 -	val_accuracy:	0.7179	- val_loss:	0.5361
	980/1000	Q.c	ems/ston	accupacy:	0 7007	10551	0 5222	val_accuracy:	0 7170	val loss:	0 5260
	981/1000	05	oms/step -	accuracy.	0.7097 -	1055.	0.5555 -	vai_accuracy.	0.7179	- vai_1055.	0.5500
•		05	7ms/sten -	accuracy:	0.7095 -	loss:	0.5239 -	val_accuracy:	0.7179	- val loss:	0.5362
	982/1000		, с с с р								
10/10		0s	8ms/step -	accuracy:	0.7178 -	loss:	0.5240 -	val_accuracy:	0.7179	- val_loss:	0.5361
Epoch	983/1000										
10/10		0s	9ms/step -	accuracy:	0.7251 -	loss:	0.5256 -	val_accuracy:	0.7179	- val_loss:	0.5360
•	984/1000										
10/10		0s	7ms/step -	accuracy:	0.7525 -	loss:	0.4906 -	val_accuracy:	0.7265	- val_loss:	0.5356

Epoch	985/1000										
=		0s	7ms/step -	accuracy:	0.7442 -	loss:	0.5187	<pre>- val_accuracy:</pre>	0.7265 -	val_loss:	0.5357
•	986/1000					_		_			
=		0s	8ms/step -	accuracy:	0.7366 -	loss:	0.5183	<pre>- val_accuracy:</pre>	0.7436 -	val_loss:	0.5355
•	987/1000	_	_ , ,		0 7040	-	0 5400	,	0 7404		0 5054
	000/1000	0s	/ms/step -	accuracy:	0./343 -	loss:	0.5192	- val_accuracy:	0.7436 -	val_loss:	0.5354
•	988/1000	00	7ms/ston	26611026111	0 7002	10001	0 5500	- val accuracy:	0 7426	val locci	0 5354
	989/1000	05	/ms/step -	accuracy.	0.7002 -	1055.	0.5500	- vai_accuracy.	0.7430 -	va1_1055.	0.5554
•		۵s	7ms/sten -	accuracy.	0 7269 -	1055.	0 5153 .	- val accuracy:	0 7265 -	val loss.	0 5355
=	990/1000	03	/ III 3 / 3 CCP	accuracy.	0.7203	1033.	0.5155	vai_accaracy.	0.7203	va1_1033.	0.5555
•		0s	8ms/step -	accuracv:	0.7213 -	loss:	0.5375	- val_accuracy:	0.7265 -	val loss:	0.5354
=	991/1000		-,	, , ,				,			
10/10		0s	11ms/step -	accuracy	0.7023	- loss:	0.5444	- val_accuracy	: 0.7179 -	val_loss:	0.5355
Epoch	992/1000										
10/10		0s	7ms/step -	accuracy:	0.7204 -	loss:	0.5193	<pre>- val_accuracy:</pre>	0.7179 -	<pre>val_loss:</pre>	0.5356
•	993/1000										
-		0s	8ms/step -	accuracy:	0.7236 -	loss:	0.5081	<pre>- val_accuracy:</pre>	0.7179 -	val_loss:	0.5358
	994/1000										
		0s	8ms/step -	accuracy:	0.7226 -	loss:	0.5248	- val_accuracy:	0.7179 -	val_loss:	0.5357
•	995/1000	•	7 / .		0 7007	,	0 5464	1	0 7470		0 5356
=		0S	/ms/step -	accuracy:	0./23/ -	1055:	0.5164	- val_accuracy:	0./1/9 -	val_loss:	0.5356
•	996/1000	Q.c	7ms/ston	accupacy:	0 7155	10551	0 5206	<pre>- val_accuracy:</pre>	0 7170	val locc:	0 5256
-	997/1000	03	/iiis/step -	accuracy.	0.7133 -	1055.	0.3230	- vai_accuracy.	0.7179 -	va1_1055.	0.3330
		95	7ms/sten -	accuracy:	0.7105 -	loss:	0.5214	- val accuracy:	0.7179 -	val loss:	0.5356
	998/1000	0.5	, 3, 3 ccp	accar acy.	0., 203	1033.	0.321	var_accar acy.	01,1,5		0.3330
•		0s	9ms/step -	accuracy:	0.7099 -	loss:	0.5349	- val_accuracy:	0.7179 -	val loss:	0.5355
	999/1000									_	
•		0s	7ms/step -	accuracy:	0.7216 -	loss:	0.5165	- val_accuracy:	0.7179 -	val_loss:	0.5357
Epoch	1000/1000			-				_			
10/10		0s	7ms/step -	accuracy:	0.7037 -	loss:	0.5272	<pre>- val_accuracy:</pre>	0.7179 -	<pre>val_loss:</pre>	0.5355

Out[24]: <keras.src.callbacks.history.History at 0x1ed828760f0>

Question 3: MNIST

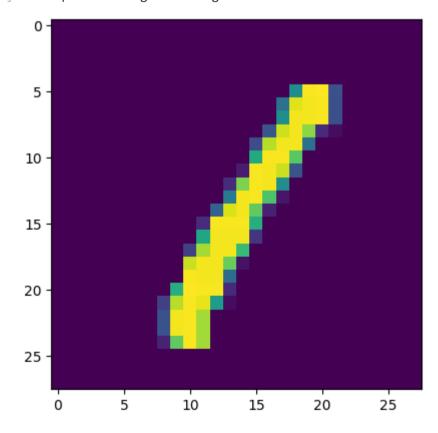
```
In [25]: from keras.datasets import mnist import matplotlib.pyplot as plt
```

```
In [26]: batch_size = 128
    num_classes = 10
    epochs = 10
    (X_train, y_train), (X_test, y_test) = mnist.load_data()
```

Downloading data from https://storage.googleapis.com/tensorflow/tf-keras-datasets/mnist.npz 11490434/11490434 — 10s lus/step

In [27]: plt.imshow(X_train[3])

Out[27]: <matplotlib.image.AxesImage at 0x1ed826869f0>



In [28]: print(X_train[3])

]]	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
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	0	0	0	0	0	0	0	0	0	0]								
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	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-	0	0	0	0	0	0	0	0	0	0]								
Γ	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
_		253	255	63	0	0	0	0	0	0]								
Γ		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	96
2	244	251	253	62	0	0	0	0	0	0]								
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2		251	253	62	0	0	0	0	0	0]								
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2	251	94	0	0	0	0	0	0	0	0]								
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1	L89	0	0	0	0	0	0	0	0	0]								
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	66	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	0	0	0	32	205	253	251	126
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	0	0	0	104	251	253	184	15
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	0	0	80	240	251	193	23	0
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	0	32	253	253	253	159	0	0
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	0	151	251	251	251	39	0	0
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	48	221	251	251	172	0	0	0
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	0	234	251	251	196	12	0	0	0
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0			251	251	89	0	0	0	0
	0	0	0	0	0	0	0	0	0	0]								
[0	0	0	0	0	0	0	0	0	159	255	253	253	31	0	0	0	0

```
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                                            64 251 253 220
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                                           24 193 253 220
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In [40]: X train = X train.reshape(60000, 784)
         X \text{ test} = X \text{ test.reshape}(10000, 784)
         X train = X train.astype('float32')
         X test = X test.astype('float32')
         X train /= 255
         X test /= 255
         y train cat = keras.utils.to categorical(y train, num classes=10)
         y test cat = keras.utils.to categorical(y test, num classes=10)
         model5 = Sequential()
In [41]:
         model5.add(Dense(784, activation='relu', input shape=(784,)))
         model5.add(Dense(784, activation='relu', input shape=(784,)))
         model5.add(Dense(784, activation='relu', input shape=(784,)))
         model5.add(Dense(10, activation = 'softmax'))
         model5.summary()
        e:\VIT Study Materials\SEM 3\Deep Learning\LAB\.venv\Lib\site-packages\keras\src\layers\core\dense.py:93: UserWarning: Do not p
        ass an `input shape`/`input dim` argument to a layer. When using Sequential models, prefer using an `Input(shape)` object as th
        e first layer in the model instead.
          super(). init (activity regularizer=activity regularizer, **kwargs)
       Model: "sequential 6"
```

file:///C:/Users/sambh/OneDrive/Desktop/LAB2.html

Layer (type)	Output Shape	Param #
dense_14 (Dense)	(None, 784)	615,440
dense_15 (Dense)	(None, 784)	615,440
dense_16 (Dense)	(None, 784)	615,440
dense_17 (Dense)	(None, 10)	7,850

Total params: 1,854,170 (7.07 MB)

Trainable params: 1,854,170 (7.07 MB)

Non-trainable params: 0 (0.00 B)

```
In [43]: model5.compile(loss='CategoricalCrossentropy', optimizer='SGD', metrics=['accuracy'])
         model5.fit(X train, y train cat, batch size=50, epochs=10, verbose=1, validation data=(X test, y test cat))
        Epoch 1/10
                                       6s 5ms/step - accuracy: 0.1136 - loss: 2.2976 - val accuracy: 0.1135 - val loss: 2.2969
        1200/1200
        Epoch 2/10
        1200/1200
                                       5s 4ms/step - accuracy: 0.1137 - loss: 2.2971 - val accuracy: 0.1135 - val loss: 2.2963
        Epoch 3/10
        1200/1200
                                       6s 5ms/step - accuracy: 0.1137 - loss: 2.2965 - val accuracy: 0.1135 - val loss: 2.2957
        Epoch 4/10
        1200/1200
                                       6s 5ms/step - accuracy: 0.1129 - loss: 2.2957 - val accuracy: 0.1135 - val loss: 2.2949
        Epoch 5/10
                                       5s 4ms/step - accuracy: 0.1126 - loss: 2.2952 - val accuracy: 0.1135 - val loss: 2.2940
        1200/1200
        Epoch 6/10
                                       5s 4ms/step - accuracy: 0.1150 - loss: 2.2939 - val accuracy: 0.1135 - val loss: 2.2932
        1200/1200
        Epoch 7/10
        1200/1200
                                       6s 5ms/step - accuracy: 0.1139 - loss: 2.2932 - val accuracy: 0.1189 - val loss: 2.2923
        Epoch 8/10
        1200/1200
                                       7s 6ms/step - accuracy: 0.1247 - loss: 2.2921 - val accuracy: 0.1135 - val loss: 2.2906
        Epoch 9/10
        1200/1200
                                       5s 4ms/step - accuracy: 0.1184 - loss: 2.2906 - val accuracy: 0.1135 - val loss: 2.2890
        Epoch 10/10
```

5s 4ms/step - accuracy: 0.1161 - loss: 2.2891 - val accuracy: 0.1157 - val loss: 2.2867

1200/1200

```
Out[43]: <keras.src.callbacks.history.History at 0x1ed8f0f82c0>
In [45]: loss, accuracy = model5.evaluate(X test, y test cat, verbose=0)
         print(f"Test Loss: {loss:.4f}")
         print(f"Test Accuracy: {accuracy:.4f}")
        Test Loss: 2,2867
        Test Accuracy: 0.1157
In [48]: predictions = model5.predict(X test)
         for i in range(5):
             predicted class = np.argmax(predictions[i])
             true class = np.argmax(y test cat[i])
             print(f"Image {i+1}: Predicted = {predicted class}, True = {true class}")
        313/313 ---
                                   - 1s 2ms/step
        Image 1: Predicted = 1, True = 7
        Image 2: Predicted = 1, True = 2
        Image 3: Predicted = 1, True = 1
        Image 4: Predicted = 1, True = 0
        Image 5: Predicted = 1, True = 4
```

Question 4

```
[1],
                       [1],
                       [0]])
In [59]: synapse0 = 2 * np.random.random((3, 4)) - 1
         synapse1 = 2 * np.random.random((4, 1)) - 1
         print("Initial random weights for synapse0:")
         print(synapse0)
         print("\nInitial random weights for synapse1:")
         print(synapse1)
        Initial random weights for synapse0:
        [[-0.42444932 -0.73994286 -0.96126608 0.35767107]
         [-0.57674377 -0.46890668 -0.01685368 -0.89327491]
         [ 0.14823521 -0.70654285  0.17861107  0.39951672]]
        Initial random weights for synapse1:
        [[-0.79533114]
         [-0.17188802]
         [ 0.38880032]
         [-0.17164146]]
In [63]: epochs = 1000
         for j in range(epochs):
             layer 0 = X
             layer 1 = sigmoid(np.dot(layer 0, synapse0))
             layer 2 = sigmoid(np.dot(layer 1, synapse1))
             layer 2 error = y - layer 2
             if (j % 10000) == 0:
                 print(f"\nError after {j} iterations: {np.mean(np.abs(layer 2 error)):.5f}")
             layer 2 delta = layer 2 error * sigmoid derivative(layer 2)
             layer 1 error = layer 2 delta.dot(synapse1.T)
             layer_1_delta = layer_1_error * sigmoid_derivative(layer_1)
             synapse1 += layer 1.T.dot(layer 2 delta)
             synapse0 += layer 0.T.dot(layer 1 delta)
```

Error after 0 iterations: 0.03159

```
In [65]: print("\nOutput after training:")
         print(layer 2)
         classified output = (layer 2 > 0.5).astype(int)
         print("\nClassified Output after training (0 or 1):")
         print(classified output)
         print("\nFinal weights for synapse0:")
         print(synapse0)
         print("\nFinal weights for synapse1:")
         print(synapse1)
         # Test
         print("\nTesting with a new situation [1, 0, 0]:")
         new input = np.array([1, 0, 0])
         11 = sigmoid(np.dot(new_input, synapse0))
         12 = sigmoid(np.dot(l1, synapse1))
         print("Prediction for [1, 0, 0]:")
         print(12)
```

```
Output after training:
[[0.01312246]
[0.97687284]
 [0.97750513]
 [0.03344716]]
Classified Output after training (0 or 1):
[[0]]
[1]
 [1]
 [0]]
Final weights for synapse0:
[-6.0460626 1.04288708 3.09102454 -6.55490124]
[ 1.91657777  0.09436428  -0.66498881  -0.77146376]]
Final weights for synapse1:
[[-8.15987505]
[-4.08772551]
[ 7.57847555]
 [ 7.46256194]]
Testing with a new situation [1, 0, 0]:
Prediction for [1, 0, 0]:
[0.98644327]
```

In []: