

In [1]:

```
import pandas as pd
import numpy as np
```

In [2]:

```
from keras.models import Sequential
from keras.layers import Dense, Activation, Layer, Lambda
```

In [3]:

```
from sklearn.model_selection import train_test_split
```

In [6]:

```
# Reading data
concrete = pd.read_csv("/Users/acer/Sandesh Pal/Data Science Assgn/Neural Network/concrete.csv")
concrete.head()
```

Out[6]:

	cement	slag	ash	water	superplastic	coarseagg	fineagg	age	strength
0	141.3	212.0	0.0	203.5	0.0	971.8	748.5	28	29.89
1	168.9	42.2	124.3	158.3	10.8	1080.8	796.2	14	23.51
2	250.0	0.0	95.7	187.4	5.5	956.9	861.2	28	29.22
3	266.0	114.0	0.0	228.0	0.0	932.0	670.0	28	45.85
4	154.8	183.4	0.0	193.3	9.1	1047.4	696.7	28	18.29

In [17]:

```
def prep_model(hidden_dim):
    model = Sequential()
    for i in range(1, len(hidden_dim)-1):
        if (i==1):
            model.add(Dense(hidden_dim[i], input_dim=hidden_dim[0], kernel_initializer="normal", activation="relu"))
        else:
            model.add(Dense(hidden_dim[i], activation="relu"))
            model.add(Dense(hidden_dim[-1]))
    model.compile(loss="mean_squared_error", optimizer="adam", metrics = ["accuracy"])
    return (model)
```

In [18]:

```
column_names = list(concrete.columns)
predictors = column_names[0:8]
target = column_names[8]
```

In [19]:

```
first_model = prep_model([8,50,1])
first_model.fit(np.array(concrete[predictors]), np.array(concrete[target]), epochs=900)
pred_train = first_model.predict(np.array(concrete[predictors]))
pred_train = pd.Series([i[0] for i in pred_train])
rmse_value = np.sqrt(np.mean((pred_train-concrete[target])**2))
```

```
Epoch 1/900
33/33 [=====] - 14s 1ms/step - loss: 1719.8933 - accuracy: 0.0000e+00
Epoch 2/900
33/33 [=====] - 0s 1ms/step - loss: 215.3746 - accuracy: 0.0000e+00
Epoch 3/900
33/33 [=====] - 0s 1ms/step - loss: 167.8002 - accuracy: 0.0000e+00
Epoch 4/900
33/33 [=====] - 0s 1ms/step - loss: 148.9384 - accuracy: 0.0000e+00
Epoch 5/900
33/33 [=====] - 0s 1ms/step - loss: 138.5907 - accuracy: 0.0000e+00
Epoch 6/900
33/33 [=====] - 0s 1ms/step - loss: 120.7962 - accuracy: 0.0000e+00
Epoch 7/900
33/33 [=====] - 0s 1ms/step - loss: 102.7596 - accuracy: 0.0000e+00
Epoch 8/900
33/33 [=====] - 0s 1ms/step - loss: 99.2349 - accuracy: 0.0000e+00
Epoch 9/900
33/33 [=====] - 0s 1ms/step - loss: 91.7399 - accuracy: 0.0000e+00
Epoch 10/900
33/33 [=====] - 0s 1ms/step - loss: 86.4707 - accuracy: 0.0000e+00
Epoch 11/900
33/33 [=====] - 0s 1ms/step - loss: 88.7492 - accuracy: 0.0000e+00
Epoch 12/900
33/33 [=====] - 0s 2ms/step - loss: 72.3520 - accuracy: 0.0000e+00
Epoch 13/900
33/33 [=====] - 0s 1ms/step - loss: 70.1542 - accuracy: 0.0000e+00
Epoch 14/900
```

33/33 [=====] - 0s 1ms/step - loss: 63.2328 - accuracy: 0.0000e+00
Epoch 15/900
33/33 [=====] - 0s 1ms/step - loss: 64.9242 - accuracy: 0.0000e+00
Epoch 16/900
33/33 [=====] - 0s 1ms/step - loss: 66.7478 - accuracy: 0.0000e+00
Epoch 17/900
33/33 [=====] - 0s 2ms/step - loss: 74.7775 - accuracy: 0.0000e+00
Epoch 18/900
33/33 [=====] - 0s 1ms/step - loss: 60.0816 - accuracy: 0.0000e+00
Epoch 19/900
33/33 [=====] - 0s 1ms/step - loss: 62.3442 - accuracy: 0.0000e+00
Epoch 20/900
33/33 [=====] - 0s 2ms/step - loss: 54.2161 - accuracy: 0.0000e+00
Epoch 21/900
33/33 [=====] - 0s 2ms/step - loss: 53.1542 - accuracy: 0.0000e+00
Epoch 22/900
33/33 [=====] - 0s 2ms/step - loss: 61.4917 - accuracy: 0.0000e+00
Epoch 23/900
33/33 [=====] - 0s 1ms/step - loss: 54.9608 - accuracy: 0.0000e+00
Epoch 24/900
33/33 [=====] - 0s 2ms/step - loss: 69.0681 - accuracy: 0.0000e+00
Epoch 25/900
33/33 [=====] - 0s 2ms/step - loss: 51.3388 - accuracy: 0.0000e+00
Epoch 26/900
33/33 [=====] - 0s 1ms/step - loss: 51.8049 - accuracy: 0.0000e+00
Epoch 27/900
33/33 [=====] - 0s 1ms/step - loss: 56.0112 - accuracy: 0.0000e+00
Epoch 28/900
33/33 [=====] - 0s 2ms/step - loss: 48.9230 - accuracy: 0.0000e+00
Epoch 29/900
33/33 [=====] - 0s 1ms/step - loss: 57.2192 - accuracy: 0.0000e+00
Epoch 30/900
33/33 [=====] - 0s 1ms/step - loss: 46.2666 - accuracy: 0.0000e+00
Epoch 31/900
33/33 [=====] - 0s 1ms/step - loss: 52.6241 - accuracy: 0.0000e+00
Epoch 32/900
33/33 [=====] - 0s 2ms/step - loss: 54.5871 - accuracy: 0.0000e+00
Epoch 33/900
33/33 [=====] - 0s 1ms/step - loss: 51.8575 - accuracy: 0.0000e+00
Epoch 34/900
33/33 [=====] - 0s 1ms/step - loss: 46.4438 - accuracy: 0.0000e+00
Epoch 35/900
33/33 [=====] - 0s 2ms/step - loss: 45.5578 - accuracy: 0.0000e+00
Epoch 36/900
33/33 [=====] - 0s 2ms/step - loss: 48.7952 - accuracy: 0.0000e+00
Epoch 37/900
33/33 [=====] - 0s 1ms/step - loss: 44.0966 - accuracy: 0.0000e+00
Epoch 38/900
33/33 [=====] - 0s 2ms/step - loss: 49.4484 - accuracy: 0.0000e+00
Epoch 39/900
33/33 [=====] - 0s 2ms/step - loss: 48.2160 - accuracy: 0.0000e+00
Epoch 40/900
33/33 [=====] - 0s 1ms/step - loss: 44.2668 - accuracy: 0.0000e+00
Epoch 41/900
33/33 [=====] - 0s 1ms/step - loss: 55.6415 - accuracy: 0.0000e+00
Epoch 42/900
33/33 [=====] - 0s 1ms/step - loss: 56.6786 - accuracy: 0.0000e+00
Epoch 43/900
33/33 [=====] - 0s 1ms/step - loss: 41.7054 - accuracy: 0.0000e+00
Epoch 44/900
33/33 [=====] - 0s 1ms/step - loss: 43.9988 - accuracy: 0.0000e+00
Epoch 45/900
33/33 [=====] - 0s 1ms/step - loss: 46.9008 - accuracy: 0.0000e+00
Epoch 46/900
33/33 [=====] - 0s 2ms/step - loss: 54.7053 - accuracy: 0.0000e+00
Epoch 47/900
33/33 [=====] - 0s 1ms/step - loss: 46.7053 - accuracy: 0.0000e+00
Epoch 48/900
33/33 [=====] - 0s 1ms/step - loss: 44.3737 - accuracy: 0.0000e+00
Epoch 49/900
33/33 [=====] - 0s 1ms/step - loss: 50.7424 - accuracy: 0.0000e+00
Epoch 50/900
33/33 [=====] - 0s 1ms/step - loss: 53.6455 - accuracy: 0.0000e+00
Epoch 51/900
33/33 [=====] - 0s 1ms/step - loss: 49.5603 - accuracy: 0.0000e+00
Epoch 52/900
33/33 [=====] - 0s 1ms/step - loss: 44.8773 - accuracy: 0.0000e+00

Epoch 53/900
33/33 [=====] - 0s 1ms/step - loss: 44.8229 - accuracy: 0.0000e+00
Epoch 54/900
33/33 [=====] - 0s 1ms/step - loss: 45.0834 - accuracy: 0.0000e+00
Epoch 55/900
33/33 [=====] - 0s 1ms/step - loss: 43.9387 - accuracy: 0.0000e+00
Epoch 56/900
33/33 [=====] - 0s 1ms/step - loss: 49.7097 - accuracy: 0.0000e+00
Epoch 57/900
33/33 [=====] - 0s 1ms/step - loss: 44.5701 - accuracy: 0.0000e+00
Epoch 58/900
33/33 [=====] - 0s 1ms/step - loss: 42.2319 - accuracy: 0.0000e+00
Epoch 59/900
33/33 [=====] - 0s 2ms/step - loss: 43.5291 - accuracy: 0.0000e+00
Epoch 60/900
33/33 [=====] - 0s 2ms/step - loss: 44.8937 - accuracy: 0.0000e+00
Epoch 61/900
33/33 [=====] - 0s 2ms/step - loss: 50.0477 - accuracy: 0.0000e+00
Epoch 62/900
33/33 [=====] - 0s 2ms/step - loss: 60.6050 - accuracy: 0.0000e+00
Epoch 63/900
33/33 [=====] - 0s 1ms/step - loss: 44.3306 - accuracy: 0.0000e+00
Epoch 64/900
33/33 [=====] - 0s 2ms/step - loss: 42.9314 - accuracy: 0.0000e+00
Epoch 65/900
33/33 [=====] - 0s 2ms/step - loss: 41.3652 - accuracy: 0.0000e+00
Epoch 66/900
33/33 [=====] - 0s 2ms/step - loss: 40.4463 - accuracy: 0.0000e+00
Epoch 67/900
33/33 [=====] - 0s 2ms/step - loss: 54.3107 - accuracy: 0.0000e+00
Epoch 68/900
33/33 [=====] - 0s 2ms/step - loss: 46.9318 - accuracy: 0.0000e+00
Epoch 69/900
33/33 [=====] - 0s 1ms/step - loss: 49.5241 - accuracy: 0.0000e+00
Epoch 70/900
33/33 [=====] - 0s 1ms/step - loss: 43.8361 - accuracy: 0.0000e+00
Epoch 71/900
33/33 [=====] - 0s 1ms/step - loss: 42.4386 - accuracy: 0.0000e+00
Epoch 72/900
33/33 [=====] - 0s 2ms/step - loss: 43.0862 - accuracy: 0.0000e+00
Epoch 73/900
33/33 [=====] - 0s 1ms/step - loss: 40.9361 - accuracy: 0.0000e+00
Epoch 74/900
33/33 [=====] - 0s 1ms/step - loss: 46.7691 - accuracy: 0.0000e+00
Epoch 75/900
33/33 [=====] - 0s 2ms/step - loss: 39.0294 - accuracy: 0.0000e+00
Epoch 76/900
33/33 [=====] - 0s 1ms/step - loss: 49.9364 - accuracy: 0.0000e+00
Epoch 77/900
33/33 [=====] - 0s 2ms/step - loss: 44.0373 - accuracy: 0.0000e+00
Epoch 78/900
33/33 [=====] - 0s 2ms/step - loss: 43.2463 - accuracy: 0.0000e+00
Epoch 79/900
33/33 [=====] - 0s 2ms/step - loss: 44.7197 - accuracy: 0.0000e+00
Epoch 80/900
33/33 [=====] - 0s 1ms/step - loss: 46.1770 - accuracy: 0.0000e+00
Epoch 81/900
33/33 [=====] - 0s 1ms/step - loss: 45.7994 - accuracy: 0.0000e+00
Epoch 82/900
33/33 [=====] - 0s 1ms/step - loss: 47.7771 - accuracy: 0.0000e+00
Epoch 83/900
33/33 [=====] - 0s 2ms/step - loss: 47.8431 - accuracy: 0.0000e+00
Epoch 84/900
33/33 [=====] - 0s 2ms/step - loss: 43.2592 - accuracy: 0.0000e+00
Epoch 85/900
33/33 [=====] - 0s 2ms/step - loss: 40.2824 - accuracy: 0.0000e+00
Epoch 86/900
33/33 [=====] - 0s 2ms/step - loss: 38.3651 - accuracy: 0.0000e+00
Epoch 87/900
33/33 [=====] - 0s 1ms/step - loss: 44.9525 - accuracy: 0.0000e+00
Epoch 88/900
33/33 [=====] - 0s 2ms/step - loss: 39.4053 - accuracy: 0.0000e+00
Epoch 89/900
33/33 [=====] - 0s 1ms/step - loss: 50.6734 - accuracy: 0.0000e+00
Epoch 90/900
33/33 [=====] - 0s 2ms/step - loss: 39.9293 - accuracy: 0.0000e+00
Epoch 91/900

33/33 [=====] - 0s 1ms/step - loss: 59.9320 - accuracy: 0.0000e+00
Epoch 92/900
33/33 [=====] - 0s 2ms/step - loss: 40.9345 - accuracy: 0.0000e+00
Epoch 93/900
33/33 [=====] - 0s 2ms/step - loss: 45.5592 - accuracy: 0.0000e+00
Epoch 94/900
33/33 [=====] - 0s 4ms/step - loss: 40.8924 - accuracy: 0.0000e+00
Epoch 95/900
33/33 [=====] - 0s 2ms/step - loss: 39.2840 - accuracy: 0.0000e+00
Epoch 96/900
33/33 [=====] - 0s 2ms/step - loss: 43.6826 - accuracy: 0.0000e+00
Epoch 97/900
33/33 [=====] - 0s 2ms/step - loss: 46.7049 - accuracy: 0.0000e+00
Epoch 98/900
33/33 [=====] - 0s 1ms/step - loss: 50.4275 - accuracy: 0.0000e+00
Epoch 99/900
33/33 [=====] - 0s 1ms/step - loss: 38.9714 - accuracy: 0.0000e+00
Epoch 100/900
33/33 [=====] - 0s 2ms/step - loss: 36.6141 - accuracy: 0.0000e+00
Epoch 101/900
33/33 [=====] - 0s 1ms/step - loss: 39.3725 - accuracy: 0.0000e+00
Epoch 102/900
33/33 [=====] - 0s 2ms/step - loss: 43.1214 - accuracy: 0.0000e+00
Epoch 103/900
33/33 [=====] - 0s 2ms/step - loss: 42.3946 - accuracy: 0.0000e+00
Epoch 104/900
33/33 [=====] - 0s 2ms/step - loss: 42.8497 - accuracy: 0.0000e+00
Epoch 105/900
33/33 [=====] - 0s 2ms/step - loss: 38.8363 - accuracy: 0.0000e+00
Epoch 106/900
33/33 [=====] - 0s 2ms/step - loss: 42.3005 - accuracy: 0.0000e+00
Epoch 107/900
33/33 [=====] - 0s 1ms/step - loss: 34.4106 - accuracy: 0.0000e+00
Epoch 108/900
33/33 [=====] - 0s 1ms/step - loss: 42.2917 - accuracy: 0.0000e+00
Epoch 109/900
33/33 [=====] - 0s 1ms/step - loss: 42.1741 - accuracy: 0.0000e+00
Epoch 110/900
33/33 [=====] - 0s 2ms/step - loss: 43.0582 - accuracy: 0.0000e+00
Epoch 111/900
33/33 [=====] - 0s 2ms/step - loss: 44.7540 - accuracy: 0.0000e+00
Epoch 112/900
33/33 [=====] - 0s 2ms/step - loss: 37.1396 - accuracy: 0.0000e+00
Epoch 113/900
33/33 [=====] - 0s 1ms/step - loss: 39.7453 - accuracy: 0.0000e+00
Epoch 114/900
33/33 [=====] - 0s 1ms/step - loss: 37.3786 - accuracy: 0.0000e+00
Epoch 115/900
33/33 [=====] - 0s 1ms/step - loss: 39.0940 - accuracy: 0.0000e+00
Epoch 116/900
33/33 [=====] - 0s 2ms/step - loss: 34.5091 - accuracy: 0.0000e+00
Epoch 117/900
33/33 [=====] - 0s 2ms/step - loss: 37.3662 - accuracy: 0.0000e+00
Epoch 118/900
33/33 [=====] - 0s 1ms/step - loss: 38.9666 - accuracy: 0.0000e+00
Epoch 119/900
33/33 [=====] - 0s 1ms/step - loss: 34.1083 - accuracy: 0.0000e+00
Epoch 120/900
33/33 [=====] - 0s 2ms/step - loss: 45.9512 - accuracy: 0.0000e+00
Epoch 121/900
33/33 [=====] - 0s 3ms/step - loss: 43.4331 - accuracy: 0.0000e+00
Epoch 122/900
33/33 [=====] - 0s 2ms/step - loss: 44.3478 - accuracy: 0.0000e+00
Epoch 123/900
33/33 [=====] - 0s 2ms/step - loss: 40.6367 - accuracy: 0.0000e+00
Epoch 124/900
33/33 [=====] - 0s 3ms/step - loss: 38.2978 - accuracy: 0.0000e+00
Epoch 125/900
33/33 [=====] - 0s 2ms/step - loss: 38.0501 - accuracy: 0.0000e+00
Epoch 126/900
33/33 [=====] - 0s 2ms/step - loss: 43.0633 - accuracy: 0.0000e+00
Epoch 127/900
33/33 [=====] - 0s 1ms/step - loss: 39.3292 - accuracy: 0.0000e+00
Epoch 128/900
33/33 [=====] - 0s 1ms/step - loss: 40.5169 - accuracy: 0.0000e+00
Epoch 129/900
33/33 [=====] - 0s 1ms/step - loss: 37.6829 - accuracy: 0.0000e+00

Epoch 130/900
33/33 [=====] - 0s 2ms/step - loss: 34.2568 - accuracy: 0.0000e+00
Epoch 131/900
33/33 [=====] - 0s 2ms/step - loss: 32.7886 - accuracy: 0.0000e+00
Epoch 132/900
33/33 [=====] - 0s 2ms/step - loss: 42.3066 - accuracy: 0.0000e+00
Epoch 133/900
33/33 [=====] - 0s 2ms/step - loss: 48.5910 - accuracy: 0.0000e+00
Epoch 134/900
33/33 [=====] - 0s 2ms/step - loss: 42.4082 - accuracy: 0.0000e+00
Epoch 135/900
33/33 [=====] - 0s 2ms/step - loss: 35.6579 - accuracy: 0.0000e+00
Epoch 136/900
33/33 [=====] - 0s 2ms/step - loss: 34.3191 - accuracy: 0.0000e+00
Epoch 137/900
33/33 [=====] - 0s 2ms/step - loss: 43.1409 - accuracy: 0.0000e+00
Epoch 138/900
33/33 [=====] - 0s 2ms/step - loss: 35.6023 - accuracy: 0.0000e+00
Epoch 139/900
33/33 [=====] - 0s 2ms/step - loss: 35.0606 - accuracy: 0.0000e+00
Epoch 140/900
33/33 [=====] - 0s 2ms/step - loss: 32.1738 - accuracy: 0.0000e+00
Epoch 141/900
33/33 [=====] - 0s 2ms/step - loss: 34.7486 - accuracy: 0.0000e+00
Epoch 142/900
33/33 [=====] - 0s 2ms/step - loss: 31.2667 - accuracy: 0.0000e+00
Epoch 143/900
33/33 [=====] - 0s 2ms/step - loss: 36.1803 - accuracy: 0.0000e+00
Epoch 144/900
33/33 [=====] - 0s 2ms/step - loss: 36.5076 - accuracy: 0.0000e+00
Epoch 145/900
33/33 [=====] - 0s 2ms/step - loss: 34.4657 - accuracy: 0.0000e+00
Epoch 146/900
33/33 [=====] - 0s 2ms/step - loss: 42.8496 - accuracy: 0.0000e+00
Epoch 147/900
33/33 [=====] - 0s 2ms/step - loss: 31.2014 - accuracy: 0.0000e+00
Epoch 148/900
33/33 [=====] - 0s 2ms/step - loss: 36.7111 - accuracy: 0.0000e+00
Epoch 149/900
33/33 [=====] - 0s 3ms/step - loss: 41.1311 - accuracy: 0.0000e+00
Epoch 150/900
33/33 [=====] - 0s 2ms/step - loss: 39.5512 - accuracy: 0.0000e+00
Epoch 151/900
33/33 [=====] - 0s 2ms/step - loss: 42.6099 - accuracy: 0.0000e+00
Epoch 152/900
33/33 [=====] - 0s 2ms/step - loss: 39.6575 - accuracy: 0.0000e+00
Epoch 153/900
33/33 [=====] - 0s 2ms/step - loss: 37.7830 - accuracy: 0.0000e+00
Epoch 154/900
33/33 [=====] - 0s 2ms/step - loss: 43.7236 - accuracy: 0.0000e+00
Epoch 155/900
33/33 [=====] - 0s 2ms/step - loss: 31.5538 - accuracy: 0.0000e+00
Epoch 156/900
33/33 [=====] - 0s 2ms/step - loss: 39.4592 - accuracy: 0.0000e+00
Epoch 157/900
33/33 [=====] - 0s 3ms/step - loss: 34.6584 - accuracy: 0.0000e+00
Epoch 158/900
33/33 [=====] - 0s 3ms/step - loss: 39.6110 - accuracy: 0.0000e+00
Epoch 159/900
33/33 [=====] - 0s 3ms/step - loss: 36.8787 - accuracy: 0.0000e+00
Epoch 160/900
33/33 [=====] - 0s 2ms/step - loss: 34.2889 - accuracy: 0.0000e+00
Epoch 161/900
33/33 [=====] - 0s 2ms/step - loss: 36.4271 - accuracy: 0.0000e+00
Epoch 162/900
33/33 [=====] - 0s 1ms/step - loss: 41.6386 - accuracy: 0.0000e+00
Epoch 163/900
33/33 [=====] - 0s 2ms/step - loss: 30.8033 - accuracy: 0.0000e+00
Epoch 164/900
33/33 [=====] - 0s 2ms/step - loss: 34.7337 - accuracy: 0.0000e+00
Epoch 165/900
33/33 [=====] - 0s 1ms/step - loss: 38.8617 - accuracy: 0.0000e+00
Epoch 166/900
33/33 [=====] - 0s 1ms/step - loss: 32.5137 - accuracy: 0.0000e+00
Epoch 167/900
33/33 [=====] - 0s 1ms/step - loss: 34.2310 - accuracy: 0.0000e+00
Epoch 168/900

33/33 [=====] - 0s 2ms/step - loss: 31.4192 - accuracy: 0.0000e+00
Epoch 169/900
33/33 [=====] - 0s 2ms/step - loss: 32.2907 - accuracy: 0.0000e+00
Epoch 170/900
33/33 [=====] - 0s 1ms/step - loss: 34.8418 - accuracy: 0.0000e+00
Epoch 171/900
33/33 [=====] - 0s 1ms/step - loss: 32.2533 - accuracy: 0.0000e+00
Epoch 172/900
33/33 [=====] - 0s 2ms/step - loss: 34.2869 - accuracy: 0.0000e+00
Epoch 173/900
33/33 [=====] - 0s 2ms/step - loss: 33.7149 - accuracy: 0.0000e+00
Epoch 174/900
33/33 [=====] - 0s 1ms/step - loss: 33.2680 - accuracy: 0.0000e+00
Epoch 175/900
33/33 [=====] - 0s 1ms/step - loss: 33.1041 - accuracy: 0.0000e+00
Epoch 176/900
33/33 [=====] - 0s 2ms/step - loss: 33.0771 - accuracy: 0.0000e+00
Epoch 177/900
33/33 [=====] - 0s 2ms/step - loss: 34.5562 - accuracy: 0.0000e+00
Epoch 178/900
33/33 [=====] - 0s 2ms/step - loss: 29.1692 - accuracy: 0.0000e+00
Epoch 179/900
33/33 [=====] - 0s 2ms/step - loss: 32.2964 - accuracy: 0.0000e+00
Epoch 180/900
33/33 [=====] - 0s 2ms/step - loss: 33.9748 - accuracy: 0.0000e+00
Epoch 181/900
33/33 [=====] - 0s 3ms/step - loss: 39.7727 - accuracy: 0.0000e+00
Epoch 182/900
33/33 [=====] - 0s 1ms/step - loss: 32.6032 - accuracy: 0.0000e+00
Epoch 183/900
33/33 [=====] - 0s 1ms/step - loss: 31.3800 - accuracy: 0.0000e+00
Epoch 184/900
33/33 [=====] - 0s 2ms/step - loss: 33.1997 - accuracy: 0.0000e+00
Epoch 185/900
33/33 [=====] - 0s 3ms/step - loss: 31.8064 - accuracy: 0.0000e+00
Epoch 186/900
33/33 [=====] - 0s 2ms/step - loss: 33.0925 - accuracy: 0.0000e+00
Epoch 187/900
33/33 [=====] - 0s 2ms/step - loss: 30.4508 - accuracy: 0.0000e+00
Epoch 188/900
33/33 [=====] - 0s 3ms/step - loss: 35.1926 - accuracy: 0.0000e+00
Epoch 189/900
33/33 [=====] - 0s 1ms/step - loss: 31.0681 - accuracy: 0.0000e+00
Epoch 190/900
33/33 [=====] - 0s 2ms/step - loss: 35.4703 - accuracy: 0.0000e+00
Epoch 191/900
33/33 [=====] - 0s 2ms/step - loss: 35.7589 - accuracy: 0.0000e+00
Epoch 192/900
33/33 [=====] - 0s 3ms/step - loss: 37.4413 - accuracy: 0.0000e+00
Epoch 193/900
33/33 [=====] - 0s 1ms/step - loss: 33.7556 - accuracy: 0.0000e+00
Epoch 194/900
33/33 [=====] - 0s 1ms/step - loss: 31.7178 - accuracy: 0.0000e+00
Epoch 195/900
33/33 [=====] - 0s 1ms/step - loss: 32.4368 - accuracy: 0.0000e+00
Epoch 196/900
33/33 [=====] - 0s 3ms/step - loss: 42.4093 - accuracy: 0.0000e+00
Epoch 197/900
33/33 [=====] - 0s 2ms/step - loss: 30.6122 - accuracy: 0.0000e+00
Epoch 198/900
33/33 [=====] - 0s 2ms/step - loss: 31.1206 - accuracy: 0.0000e+00
Epoch 199/900
33/33 [=====] - 0s 2ms/step - loss: 33.7858 - accuracy: 0.0000e+00
Epoch 200/900
33/33 [=====] - 0s 4ms/step - loss: 31.0435 - accuracy: 0.0000e+00
Epoch 201/900
33/33 [=====] - 0s 2ms/step - loss: 33.8637 - accuracy: 0.0000e+00
Epoch 202/900
33/33 [=====] - 0s 2ms/step - loss: 29.5250 - accuracy: 0.0000e+00
Epoch 203/900
33/33 [=====] - 0s 1ms/step - loss: 32.6976 - accuracy: 0.0000e+00
Epoch 204/900
33/33 [=====] - 0s 2ms/step - loss: 29.4361 - accuracy: 0.0000e+00
Epoch 205/900
33/33 [=====] - 0s 1ms/step - loss: 29.2549 - accuracy: 0.0000e+00
Epoch 206/900
33/33 [=====] - 0s 2ms/step - loss: 32.0435 - accuracy: 0.0000e+00

Epoch 207/900
33/33 [=====] - 0s 2ms/step - loss: 28.9730 - accuracy: 0.0000e+00
Epoch 208/900
33/33 [=====] - 0s 2ms/step - loss: 30.7627 - accuracy: 0.0000e+00
Epoch 209/900
33/33 [=====] - 0s 2ms/step - loss: 33.5716 - accuracy: 0.0000e+00
Epoch 210/900
33/33 [=====] - 0s 2ms/step - loss: 31.5564 - accuracy: 0.0000e+00
Epoch 211/900
33/33 [=====] - 0s 3ms/step - loss: 27.4738 - accuracy: 0.0000e+00
Epoch 212/900
33/33 [=====] - 0s 2ms/step - loss: 29.2722 - accuracy: 0.0000e+00
Epoch 213/900
33/33 [=====] - 0s 2ms/step - loss: 30.1436 - accuracy: 0.0000e+00
Epoch 214/900
33/33 [=====] - 0s 1ms/step - loss: 33.0570 - accuracy: 0.0000e+00
Epoch 215/900
33/33 [=====] - 0s 2ms/step - loss: 30.9244 - accuracy: 0.0000e+00
Epoch 216/900
33/33 [=====] - 0s 1ms/step - loss: 33.6726 - accuracy: 0.0000e+00
Epoch 217/900
33/33 [=====] - 0s 2ms/step - loss: 33.6880 - accuracy: 0.0000e+00
Epoch 218/900
33/33 [=====] - 0s 2ms/step - loss: 34.2464 - accuracy: 0.0000e+00
Epoch 219/900
33/33 [=====] - 0s 3ms/step - loss: 30.6374 - accuracy: 0.0000e+00
Epoch 220/900
33/33 [=====] - 0s 2ms/step - loss: 31.1884 - accuracy: 0.0000e+00
Epoch 221/900
33/33 [=====] - 0s 2ms/step - loss: 30.1102 - accuracy: 0.0000e+00
Epoch 222/900
33/33 [=====] - 0s 4ms/step - loss: 31.9866 - accuracy: 0.0000e+00
Epoch 223/900
33/33 [=====] - 0s 1ms/step - loss: 28.6030 - accuracy: 0.0000e+00
Epoch 224/900
33/33 [=====] - 0s 1ms/step - loss: 35.3819 - accuracy: 0.0000e+00
Epoch 225/900
33/33 [=====] - ETA: 0s - loss: 34.3765 - accuracy: 0.0000e+0 - 0s 2ms/step - 1
oss: 33.8862 - accuracy: 0.0000e+00
Epoch 226/900
33/33 [=====] - 0s 2ms/step - loss: 31.0970 - accuracy: 0.0000e+00
Epoch 227/900
33/33 [=====] - 0s 2ms/step - loss: 31.1720 - accuracy: 0.0000e+00
Epoch 228/900
33/33 [=====] - 0s 2ms/step - loss: 28.6040 - accuracy: 0.0000e+00
Epoch 229/900
33/33 [=====] - 0s 3ms/step - loss: 34.6783 - accuracy: 0.0000e+00
Epoch 230/900
33/33 [=====] - 0s 1ms/step - loss: 34.8595 - accuracy: 0.0000e+00
Epoch 231/900
33/33 [=====] - 0s 2ms/step - loss: 31.4875 - accuracy: 0.0000e+00
Epoch 232/900
33/33 [=====] - 0s 4ms/step - loss: 31.7286 - accuracy: 0.0000e+00
Epoch 233/900
33/33 [=====] - 0s 2ms/step - loss: 31.0464 - accuracy: 0.0000e+00
Epoch 234/900
33/33 [=====] - 0s 2ms/step - loss: 31.5121 - accuracy: 0.0000e+00
Epoch 235/900
33/33 [=====] - 0s 3ms/step - loss: 38.3036 - accuracy: 0.0000e+00
Epoch 236/900
33/33 [=====] - 0s 2ms/step - loss: 29.7810 - accuracy: 0.0000e+00
Epoch 237/900
33/33 [=====] - 0s 2ms/step - loss: 30.8309 - accuracy: 0.0000e+00
Epoch 238/900
33/33 [=====] - 0s 3ms/step - loss: 31.0610 - accuracy: 0.0000e+00
Epoch 239/900
33/33 [=====] - 0s 2ms/step - loss: 30.2026 - accuracy: 0.0000e+00
Epoch 240/900
33/33 [=====] - 0s 1ms/step - loss: 28.5873 - accuracy: 0.0000e+00
Epoch 241/900
33/33 [=====] - 0s 2ms/step - loss: 31.9437 - accuracy: 0.0000e+00
Epoch 242/900
33/33 [=====] - 0s 3ms/step - loss: 30.8080 - accuracy: 0.0000e+00
Epoch 243/900
33/33 [=====] - 0s 1ms/step - loss: 30.5804 - accuracy: 0.0000e+00
Epoch 244/900
33/33 [=====] - 0s 2ms/step - loss: 28.9485 - accuracy: 0.0000e+00

```
Epoch 245/900
33/33 [=====] - 0s 4ms/step - loss: 26.8571 - accuracy: 0.0000e+00
Epoch 246/900
33/33 [=====] - 0s 4ms/step - loss: 31.7421 - accuracy: 0.0000e+00
Epoch 247/900
33/33 [=====] - 0s 6ms/step - loss: 31.2431 - accuracy: 0.0000e+00
Epoch 248/900
33/33 [=====] - 0s 3ms/step - loss: 36.4057 - accuracy: 0.0000e+00
Epoch 249/900
33/33 [=====] - 0s 2ms/step - loss: 32.6947 - accuracy: 0.0000e+00
Epoch 250/900
33/33 [=====] - 0s 1ms/step - loss: 27.3406 - accuracy: 0.0000e+00
Epoch 251/900
33/33 [=====] - 0s 1ms/step - loss: 28.1954 - accuracy: 0.0000e+00
Epoch 252/900
33/33 [=====] - 0s 1ms/step - loss: 26.3933 - accuracy: 0.0000e+00
Epoch 253/900
33/33 [=====] - 0s 3ms/step - loss: 29.3895 - accuracy: 0.0000e+00
Epoch 254/900
33/33 [=====] - 0s 1ms/step - loss: 27.7116 - accuracy: 0.0000e+00
Epoch 255/900
33/33 [=====] - 0s 1ms/step - loss: 25.3973 - accuracy: 0.0000e+00
Epoch 256/900
33/33 [=====] - 0s 1ms/step - loss: 26.3266 - accuracy: 0.0000e+00
Epoch 257/900
33/33 [=====] - 0s 2ms/step - loss: 30.6655 - accuracy: 0.0000e+00
Epoch 258/900
33/33 [=====] - 0s 2ms/step - loss: 29.6349 - accuracy: 0.0000e+00
Epoch 259/900
33/33 [=====] - 0s 2ms/step - loss: 31.0852 - accuracy: 0.0000e+00
Epoch 260/900
33/33 [=====] - 0s 2ms/step - loss: 28.5639 - accuracy: 0.0000e+00
Epoch 261/900
33/33 [=====] - 0s 3ms/step - loss: 25.4538 - accuracy: 0.0000e+00
Epoch 262/900
33/33 [=====] - 0s 2ms/step - loss: 30.5610 - accuracy: 0.0000e+00
Epoch 263/900
33/33 [=====] - 0s 1ms/step - loss: 27.1622 - accuracy: 0.0000e+00
Epoch 264/900
33/33 [=====] - 0s 2ms/step - loss: 28.3240 - accuracy: 0.0000e+00
Epoch 265/900
33/33 [=====] - 0s 1ms/step - loss: 31.9541 - accuracy: 0.0000e+00
Epoch 266/900
33/33 [=====] - 0s 2ms/step - loss: 27.3730 - accuracy: 0.0000e+00
Epoch 267/900
33/33 [=====] - 0s 1ms/step - loss: 27.7263 - accuracy: 0.0000e+00
Epoch 268/900
33/33 [=====] - 0s 3ms/step - loss: 28.9133 - accuracy: 0.0000e+00
Epoch 269/900
33/33 [=====] - 0s 1ms/step - loss: 35.9612 - accuracy: 0.0000e+00
Epoch 270/900
33/33 [=====] - 0s 2ms/step - loss: 29.8163 - accuracy: 0.0000e+00
Epoch 271/900
33/33 [=====] - 0s 1ms/step - loss: 26.9027 - accuracy: 0.0000e+00
Epoch 272/900
33/33 [=====] - 0s 2ms/step - loss: 31.4976 - accuracy: 0.0000e+00
Epoch 273/900
33/33 [=====] - 0s 1ms/step - loss: 30.0612 - accuracy: 0.0000e+00
Epoch 274/900
33/33 [=====] - 0s 2ms/step - loss: 26.3135 - accuracy: 0.0000e+00
Epoch 275/900
33/33 [=====] - 0s 1ms/step - loss: 29.0775 - accuracy: 0.0000e+00
Epoch 276/900
33/33 [=====] - 0s 3ms/step - loss: 28.5186 - accuracy: 0.0000e+00
Epoch 277/900
33/33 [=====] - 0s 1ms/step - loss: 30.0327 - accuracy: 0.0000e+00
Epoch 278/900
33/33 [=====] - 0s 2ms/step - loss: 24.2022 - accuracy: 0.0000e+00
Epoch 279/900
33/33 [=====] - 0s 2ms/step - loss: 35.8978 - accuracy: 0.0000e+00
Epoch 280/900
33/33 [=====] - 0s 2ms/step - loss: 28.9819 - accuracy: 0.0000e+00
Epoch 281/900
33/33 [=====] - 0s 2ms/step - loss: 28.1908 - accuracy: 0.0000e+00
Epoch 282/900
33/33 [=====] - 0s 2ms/step - loss: 25.3948 - accuracy: 0.0000e+00
Epoch 283/900
```


33/33 [=====] - 0s 1ms/step - loss: 28.0171 - accuracy: 0.0000e+00
Epoch 284/900
33/33 [=====] - 0s 1ms/step - loss: 29.6817 - accuracy: 0.0000e+00
Epoch 285/900
33/33 [=====] - 0s 3ms/step - loss: 29.1731 - accuracy: 0.0000e+00
Epoch 286/900
33/33 [=====] - 0s 2ms/step - loss: 29.1326 - accuracy: 0.0000e+00
Epoch 287/900
33/33 [=====] - 0s 1ms/step - loss: 30.9708 - accuracy: 0.0000e+00
Epoch 288/900
33/33 [=====] - 0s 1ms/step - loss: 27.2174 - accuracy: 0.0000e+00
Epoch 289/900
33/33 [=====] - 0s 2ms/step - loss: 28.1363 - accuracy: 0.0000e+00
Epoch 290/900
33/33 [=====] - 0s 2ms/step - loss: 26.3034 - accuracy: 0.0000e+00
Epoch 291/900
33/33 [=====] - 0s 2ms/step - loss: 29.9823 - accuracy: 0.0000e+00
Epoch 292/900
33/33 [=====] - 0s 2ms/step - loss: 30.4453 - accuracy: 0.0000e+00
Epoch 293/900
33/33 [=====] - 0s 1ms/step - loss: 25.6936 - accuracy: 0.0000e+00
Epoch 294/900
33/33 [=====] - 0s 1ms/step - loss: 27.5217 - accuracy: 0.0000e+00
Epoch 295/900
33/33 [=====] - 0s 2ms/step - loss: 24.2765 - accuracy: 0.0000e+00
Epoch 296/900
33/33 [=====] - 0s 1ms/step - loss: 26.3398 - accuracy: 0.0000e+00
Epoch 297/900
33/33 [=====] - 0s 2ms/step - loss: 28.5408 - accuracy: 0.0000e+00
Epoch 298/900
33/33 [=====] - 0s 2ms/step - loss: 27.8629 - accuracy: 0.0000e+00
Epoch 299/900
33/33 [=====] - 0s 1ms/step - loss: 29.3577 - accuracy: 0.0000e+00
Epoch 300/900
33/33 [=====] - 0s 2ms/step - loss: 27.5770 - accuracy: 0.0000e+00
Epoch 301/900
33/33 [=====] - 0s 2ms/step - loss: 27.1371 - accuracy: 0.0000e+00
Epoch 302/900
33/33 [=====] - 0s 2ms/step - loss: 24.9811 - accuracy: 0.0000e+00
Epoch 303/900
33/33 [=====] - 0s 2ms/step - loss: 29.1252 - accuracy: 0.0000e+00
Epoch 304/900
33/33 [=====] - 0s 1ms/step - loss: 27.6817 - accuracy: 0.0000e+00
Epoch 305/900
33/33 [=====] - 0s 1ms/step - loss: 26.0064 - accuracy: 0.0000e+00
Epoch 306/900
33/33 [=====] - 0s 1ms/step - loss: 25.5707 - accuracy: 0.0000e+00
Epoch 307/900
33/33 [=====] - 0s 2ms/step - loss: 23.4834 - accuracy: 0.0000e+00
Epoch 308/900
33/33 [=====] - 0s 1ms/step - loss: 26.3870 - accuracy: 0.0000e+00
Epoch 309/900
33/33 [=====] - 0s 1ms/step - loss: 23.4857 - accuracy: 0.0000e+00
Epoch 310/900
33/33 [=====] - 0s 1ms/step - loss: 28.1344 - accuracy: 0.0000e+00
Epoch 311/900
33/33 [=====] - 0s 1ms/step - loss: 23.9588 - accuracy: 0.0000e+00
Epoch 312/900
33/33 [=====] - 0s 2ms/step - loss: 24.6425 - accuracy: 0.0000e+00
Epoch 313/900
33/33 [=====] - 0s 2ms/step - loss: 28.4543 - accuracy: 0.0000e+00
Epoch 314/900
33/33 [=====] - 0s 1ms/step - loss: 28.5979 - accuracy: 0.0000e+00
Epoch 315/900
33/33 [=====] - 0s 2ms/step - loss: 29.3521 - accuracy: 0.0000e+00
Epoch 316/900
33/33 [=====] - 0s 2ms/step - loss: 30.5781 - accuracy: 0.0000e+00
Epoch 317/900
33/33 [=====] - 0s 2ms/step - loss: 30.7312 - accuracy: 0.0000e+00
Epoch 318/900
33/33 [=====] - 0s 2ms/step - loss: 28.5465 - accuracy: 0.0000e+00
Epoch 319/900
33/33 [=====] - 0s 2ms/step - loss: 23.6572 - accuracy: 0.0000e+00
Epoch 320/900
33/33 [=====] - 0s 1ms/step - loss: 27.5180 - accuracy: 0.0000e+00
Epoch 321/900
33/33 [=====] - 0s 2ms/step - loss: 25.3358 - accuracy: 0.0000e+00

```
Epoch 322/900
33/33 [=====] - 0s 2ms/step - loss: 25.4281 - accuracy: 0.0000e+00
Epoch 323/900
33/33 [=====] - 0s 1ms/step - loss: 23.2781 - accuracy: 0.0000e+00
Epoch 324/900
33/33 [=====] - 0s 1ms/step - loss: 25.6589 - accuracy: 0.0000e+00
Epoch 325/900
33/33 [=====] - 0s 1ms/step - loss: 23.2359 - accuracy: 0.0000e+00
Epoch 326/900
33/33 [=====] - 0s 1ms/step - loss: 24.3752 - accuracy: 0.0000e+00
Epoch 327/900
33/33 [=====] - 0s 1ms/step - loss: 23.1162 - accuracy: 0.0000e+00
Epoch 328/900
33/33 [=====] - 0s 2ms/step - loss: 23.3791 - accuracy: 0.0000e+00
Epoch 329/900
33/33 [=====] - 0s 1ms/step - loss: 27.5164 - accuracy: 0.0000e+00
Epoch 330/900
33/33 [=====] - 0s 1ms/step - loss: 24.6127 - accuracy: 0.0000e+00
Epoch 331/900
33/33 [=====] - 0s 1ms/step - loss: 25.4488 - accuracy: 0.0000e+00
Epoch 332/900
33/33 [=====] - 0s 1ms/step - loss: 23.3950 - accuracy: 0.0000e+00
Epoch 333/900
33/33 [=====] - 0s 1ms/step - loss: 23.6203 - accuracy: 0.0000e+00
Epoch 334/900
33/33 [=====] - 0s 1ms/step - loss: 25.6571 - accuracy: 0.0000e+00
Epoch 335/900
33/33 [=====] - 0s 1ms/step - loss: 25.6211 - accuracy: 0.0000e+00
Epoch 336/900
33/33 [=====] - 0s 1ms/step - loss: 23.1446 - accuracy: 0.0000e+00
Epoch 337/900
33/33 [=====] - 0s 1ms/step - loss: 20.6617 - accuracy: 0.0000e+00
Epoch 338/900
33/33 [=====] - 0s 2ms/step - loss: 26.5573 - accuracy: 0.0000e+00
Epoch 339/900
33/33 [=====] - 0s 2ms/step - loss: 24.4184 - accuracy: 0.0000e+00
Epoch 340/900
33/33 [=====] - 0s 1ms/step - loss: 28.3413 - accuracy: 0.0000e+00
Epoch 341/900
33/33 [=====] - 0s 1ms/step - loss: 19.8429 - accuracy: 0.0000e+00
Epoch 342/900
33/33 [=====] - 0s 1ms/step - loss: 26.7056 - accuracy: 0.0000e+00
Epoch 343/900
33/33 [=====] - 0s 2ms/step - loss: 25.7310 - accuracy: 0.0000e+00
Epoch 344/900
33/33 [=====] - 0s 1ms/step - loss: 26.8209 - accuracy: 0.0000e+00
Epoch 345/900
33/33 [=====] - 0s 1ms/step - loss: 27.2895 - accuracy: 0.0000e+00
Epoch 346/900
33/33 [=====] - 0s 1ms/step - loss: 23.3117 - accuracy: 0.0000e+00
Epoch 347/900
33/33 [=====] - 0s 2ms/step - loss: 24.2624 - accuracy: 0.0000e+00
Epoch 348/900
33/33 [=====] - 0s 1ms/step - loss: 20.8296 - accuracy: 0.0000e+00
Epoch 349/900
33/33 [=====] - 0s 1ms/step - loss: 20.5666 - accuracy: 0.0000e+00
Epoch 350/900
33/33 [=====] - 0s 2ms/step - loss: 31.1137 - accuracy: 0.0000e+00
Epoch 351/900
33/33 [=====] - 0s 1ms/step - loss: 23.1481 - accuracy: 0.0000e+00
Epoch 352/900
33/33 [=====] - 0s 1ms/step - loss: 22.5032 - accuracy: 0.0000e+00
Epoch 353/900
33/33 [=====] - 0s 1ms/step - loss: 26.5531 - accuracy: 0.0000e+00
Epoch 354/900
33/33 [=====] - 0s 1ms/step - loss: 22.4583 - accuracy: 0.0000e+00
Epoch 355/900
33/33 [=====] - 0s 2ms/step - loss: 23.8241 - accuracy: 0.0000e+00
Epoch 356/900
33/33 [=====] - ETA: 0s - loss: 13.9142 - accuracy: 0.0000e+0 - 0s 2ms/step - 1
oss: 24.7935 - accuracy: 0.0000e+00
Epoch 357/900
33/33 [=====] - 0s 2ms/step - loss: 24.5636 - accuracy: 0.0000e+00
Epoch 358/900
33/33 [=====] - 0s 2ms/step - loss: 22.8221 - accuracy: 0.0000e+00
Epoch 359/900
33/33 [=====] - 0s 2ms/step - loss: 25.7020 - accuracy: 0.0000e+00
```

```
Epoch 360/900
33/33 [=====] - 0s 2ms/step - loss: 24.4097 - accuracy: 0.0000e+00
Epoch 361/900
33/33 [=====] - 0s 2ms/step - loss: 25.3225 - accuracy: 0.0000e+00
Epoch 362/900
33/33 [=====] - 0s 2ms/step - loss: 22.4565 - accuracy: 0.0000e+00
Epoch 363/900
33/33 [=====] - 0s 2ms/step - loss: 22.5483 - accuracy: 0.0000e+00
Epoch 364/900
33/33 [=====] - 0s 2ms/step - loss: 27.1588 - accuracy: 0.0000e+00
Epoch 365/900
33/33 [=====] - 0s 2ms/step - loss: 23.3228 - accuracy: 0.0000e+00
Epoch 366/900
33/33 [=====] - 0s 2ms/step - loss: 21.9719 - accuracy: 0.0000e+00
Epoch 367/900
33/33 [=====] - 0s 2ms/step - loss: 22.9326 - accuracy: 0.0000e+00
Epoch 368/900
33/33 [=====] - 0s 2ms/step - loss: 21.8029 - accuracy: 0.0000e+00
Epoch 369/900
33/33 [=====] - 0s 1ms/step - loss: 22.8977 - accuracy: 0.0000e+00
Epoch 370/900
33/33 [=====] - 0s 2ms/step - loss: 23.5968 - accuracy: 0.0000e+00
Epoch 371/900
33/33 [=====] - 0s 1ms/step - loss: 23.0013 - accuracy: 0.0000e+00
Epoch 372/900
33/33 [=====] - 0s 2ms/step - loss: 23.5202 - accuracy: 0.0000e+00
Epoch 373/900
33/33 [=====] - 0s 1ms/step - loss: 23.5314 - accuracy: 0.0000e+00
Epoch 374/900
33/33 [=====] - 0s 1ms/step - loss: 24.7162 - accuracy: 0.0000e+00
Epoch 375/900
33/33 [=====] - 0s 1ms/step - loss: 27.3804 - accuracy: 0.0000e+00
Epoch 376/900
33/33 [=====] - 0s 1ms/step - loss: 23.4404 - accuracy: 0.0000e+00
Epoch 377/900
33/33 [=====] - 0s 1ms/step - loss: 21.4031 - accuracy: 0.0000e+00
Epoch 378/900
33/33 [=====] - 0s 2ms/step - loss: 20.6341 - accuracy: 0.0000e+00
Epoch 379/900
33/33 [=====] - 0s 2ms/step - loss: 24.1193 - accuracy: 0.0000e+00
Epoch 380/900
33/33 [=====] - 0s 1ms/step - loss: 21.3651 - accuracy: 0.0000e+00
Epoch 381/900
33/33 [=====] - 0s 1ms/step - loss: 21.6026 - accuracy: 0.0000e+00
Epoch 382/900
33/33 [=====] - 0s 2ms/step - loss: 24.7274 - accuracy: 0.0000e+00
Epoch 383/900
33/33 [=====] - 0s 2ms/step - loss: 20.0442 - accuracy: 0.0000e+00
Epoch 384/900
33/33 [=====] - 0s 2ms/step - loss: 22.5341 - accuracy: 0.0000e+00
Epoch 385/900
33/33 [=====] - 0s 2ms/step - loss: 20.1514 - accuracy: 0.0000e+00
Epoch 386/900
33/33 [=====] - 0s 2ms/step - loss: 22.3308 - accuracy: 0.0000e+00
Epoch 387/900
33/33 [=====] - 0s 2ms/step - loss: 25.1171 - accuracy: 0.0000e+00
Epoch 388/900
33/33 [=====] - 0s 2ms/step - loss: 23.1340 - accuracy: 0.0000e+00
Epoch 389/900
33/33 [=====] - 0s 2ms/step - loss: 20.3813 - accuracy: 0.0000e+00
Epoch 390/900
33/33 [=====] - 0s 1ms/step - loss: 21.4984 - accuracy: 0.0000e+00
Epoch 391/900
33/33 [=====] - 0s 1ms/step - loss: 22.5436 - accuracy: 0.0000e+00
Epoch 392/900
33/33 [=====] - 0s 2ms/step - loss: 33.5927 - accuracy: 0.0000e+00
Epoch 393/900
33/33 [=====] - 0s 1ms/step - loss: 23.9696 - accuracy: 0.0000e+00
Epoch 394/900
33/33 [=====] - 0s 2ms/step - loss: 20.5120 - accuracy: 0.0000e+00
Epoch 395/900
33/33 [=====] - 0s 1ms/step - loss: 20.7465 - accuracy: 0.0000e+00
Epoch 396/900
33/33 [=====] - 0s 2ms/step - loss: 21.9929 - accuracy: 0.0000e+00
Epoch 397/900
33/33 [=====] - 0s 1ms/step - loss: 23.9382 - accuracy: 0.0000e+00
Epoch 398/900
```

Epoch 398/900
33/33 [=====] - 0s 2ms/step - loss: 22.4897 - accuracy: 0.0000e+00
Epoch 399/900
33/33 [=====] - 0s 2ms/step - loss: 20.3383 - accuracy: 0.0000e+00
Epoch 400/900
33/33 [=====] - 0s 2ms/step - loss: 19.8979 - accuracy: 0.0000e+00
Epoch 401/900
33/33 [=====] - 0s 1ms/step - loss: 23.3870 - accuracy: 0.0000e+00
Epoch 402/900
33/33 [=====] - 0s 2ms/step - loss: 23.3511 - accuracy: 0.0000e+00
Epoch 403/900
33/33 [=====] - 0s 1ms/step - loss: 22.8822 - accuracy: 0.0000e+00
Epoch 404/900
33/33 [=====] - 0s 1ms/step - loss: 20.9951 - accuracy: 0.0000e+00
Epoch 405/900
33/33 [=====] - 0s 1ms/step - loss: 21.4315 - accuracy: 0.0000e+00
Epoch 406/900
33/33 [=====] - 0s 1ms/step - loss: 22.9116 - accuracy: 0.0000e+00
Epoch 407/900
33/33 [=====] - 0s 1ms/step - loss: 21.2177 - accuracy: 0.0000e+00
Epoch 408/900
33/33 [=====] - 0s 1ms/step - loss: 22.2472 - accuracy: 0.0000e+00
Epoch 409/900
33/33 [=====] - 0s 2ms/step - loss: 23.3802 - accuracy: 0.0000e+00
Epoch 410/900
33/33 [=====] - 0s 2ms/step - loss: 35.0663 - accuracy: 0.0000e+00
Epoch 411/900
33/33 [=====] - 0s 1ms/step - loss: 21.2510 - accuracy: 0.0000e+00
Epoch 412/900
33/33 [=====] - 0s 1ms/step - loss: 18.2613 - accuracy: 0.0000e+00
Epoch 413/900
33/33 [=====] - 0s 1ms/step - loss: 20.1765 - accuracy: 0.0000e+00
Epoch 414/900
33/33 [=====] - 0s 1ms/step - loss: 23.5381 - accuracy: 0.0000e+00
Epoch 415/900
33/33 [=====] - 0s 1ms/step - loss: 23.6433 - accuracy: 0.0000e+00
Epoch 416/900
33/33 [=====] - 0s 1ms/step - loss: 19.6833 - accuracy: 0.0000e+00
Epoch 417/900
33/33 [=====] - 0s 2ms/step - loss: 19.7758 - accuracy: 0.0000e+00
Epoch 418/900
33/33 [=====] - 0s 1ms/step - loss: 19.6099 - accuracy: 0.0000e+00
Epoch 419/900
33/33 [=====] - 0s 2ms/step - loss: 20.8296 - accuracy: 0.0000e+00
Epoch 420/900
33/33 [=====] - 0s 2ms/step - loss: 23.5868 - accuracy: 0.0000e+00
Epoch 421/900
33/33 [=====] - 0s 2ms/step - loss: 20.7187 - accuracy: 0.0000e+00
Epoch 422/900
33/33 [=====] - 0s 2ms/step - loss: 19.1829 - accuracy: 0.0000e+00
Epoch 423/900
33/33 [=====] - 0s 2ms/step - loss: 19.6379 - accuracy: 0.0000e+00
Epoch 424/900
33/33 [=====] - 0s 2ms/step - loss: 21.7225 - accuracy: 0.0000e+00
Epoch 425/900
33/33 [=====] - 0s 2ms/step - loss: 23.5849 - accuracy: 0.0000e+00
Epoch 426/900
33/33 [=====] - 0s 1ms/step - loss: 20.5859 - accuracy: 0.0000e+00
Epoch 427/900
33/33 [=====] - 0s 2ms/step - loss: 21.7056 - accuracy: 0.0000e+00
Epoch 428/900
33/33 [=====] - 0s 1ms/step - loss: 19.6634 - accuracy: 0.0000e+00
Epoch 429/900
33/33 [=====] - 0s 1ms/step - loss: 18.9987 - accuracy: 0.0000e+00
Epoch 430/900
33/33 [=====] - 0s 1ms/step - loss: 19.6889 - accuracy: 0.0000e+00
Epoch 431/900
33/33 [=====] - 0s 1ms/step - loss: 18.4011 - accuracy: 0.0000e+00
Epoch 432/900
33/33 [=====] - 0s 1ms/step - loss: 21.1865 - accuracy: 0.0000e+00
Epoch 433/900
33/33 [=====] - 0s 2ms/step - loss: 20.6252 - accuracy: 0.0000e+00
Epoch 434/900
33/33 [=====] - 0s 2ms/step - loss: 18.7861 - accuracy: 0.0000e+00
Epoch 435/900
33/33 [=====] - 0s 1ms/step - loss: 27.6007 - accuracy: 0.0000e+00
Epoch 436/900
33/33 [=====] - 0s 2ms/step - loss: 25.0644 - accuracy: 0.0000e+00

```
33/33 [=====] - 0s 2ms/step - loss: 20.0044 - accuracy: 0.0000e+00
Epoch 437/900
33/33 [=====] - 0s 1ms/step - loss: 19.0102 - accuracy: 0.0000e+00
Epoch 438/900
33/33 [=====] - 0s 1ms/step - loss: 20.2437 - accuracy: 0.0000e+00
Epoch 439/900
33/33 [=====] - 0s 1ms/step - loss: 18.6083 - accuracy: 0.0000e+00
Epoch 440/900
33/33 [=====] - 0s 1ms/step - loss: 20.6578 - accuracy: 0.0000e+00
Epoch 441/900
33/33 [=====] - 0s 1ms/step - loss: 18.5772 - accuracy: 0.0000e+00
Epoch 442/900
33/33 [=====] - 0s 1ms/step - loss: 24.1685 - accuracy: 0.0000e+00
Epoch 443/900
33/33 [=====] - 0s 2ms/step - loss: 20.0326 - accuracy: 0.0000e+00
Epoch 444/900
33/33 [=====] - 0s 2ms/step - loss: 21.0148 - accuracy: 0.0000e+00
Epoch 445/900
33/33 [=====] - 0s 2ms/step - loss: 21.0684 - accuracy: 0.0000e+00
Epoch 446/900
33/33 [=====] - 0s 2ms/step - loss: 25.3678 - accuracy: 0.0000e+00
Epoch 447/900
33/33 [=====] - 0s 2ms/step - loss: 23.8273 - accuracy: 0.0000e+00
Epoch 448/900
33/33 [=====] - 0s 2ms/step - loss: 20.1022 - accuracy: 0.0000e+00
Epoch 449/900
33/33 [=====] - 0s 1ms/step - loss: 19.3924 - accuracy: 0.0000e+00
Epoch 450/900
33/33 [=====] - 0s 1ms/step - loss: 20.4898 - accuracy: 0.0000e+00
Epoch 451/900
33/33 [=====] - 0s 2ms/step - loss: 19.0908 - accuracy: 0.0000e+00
Epoch 452/900
33/33 [=====] - 0s 1ms/step - loss: 21.9046 - accuracy: 0.0000e+00
Epoch 453/900
33/33 [=====] - 0s 1ms/step - loss: 24.9723 - accuracy: 0.0000e+00
Epoch 454/900
33/33 [=====] - 0s 1ms/step - loss: 23.2081 - accuracy: 0.0000e+00
Epoch 455/900
33/33 [=====] - 0s 1ms/step - loss: 18.1463 - accuracy: 0.0000e+00
Epoch 456/900
33/33 [=====] - 0s 1ms/step - loss: 18.5624 - accuracy: 0.0000e+00
Epoch 457/900
33/33 [=====] - 0s 2ms/step - loss: 19.1803 - accuracy: 0.0000e+00
Epoch 458/900
33/33 [=====] - 0s 1ms/step - loss: 19.5041 - accuracy: 0.0000e+00
Epoch 459/900
33/33 [=====] - 0s 2ms/step - loss: 17.3232 - accuracy: 0.0000e+00
Epoch 460/900
33/33 [=====] - 0s 2ms/step - loss: 20.1225 - accuracy: 0.0000e+00
Epoch 461/900
33/33 [=====] - 0s 1ms/step - loss: 20.4992 - accuracy: 0.0000e+00
Epoch 462/900
33/33 [=====] - 0s 2ms/step - loss: 18.1316 - accuracy: 0.0000e+00
Epoch 463/900
33/33 [=====] - 0s 2ms/step - loss: 17.7161 - accuracy: 0.0000e+00
Epoch 464/900
33/33 [=====] - 0s 2ms/step - loss: 24.8072 - accuracy: 0.0000e+00
Epoch 465/900
33/33 [=====] - 0s 1ms/step - loss: 19.9940 - accuracy: 0.0000e+00
Epoch 466/900
33/33 [=====] - 0s 2ms/step - loss: 18.2818 - accuracy: 0.0000e+00
Epoch 467/900
33/33 [=====] - 0s 1ms/step - loss: 18.2075 - accuracy: 0.0000e+00
Epoch 468/900
33/33 [=====] - 0s 2ms/step - loss: 16.2332 - accuracy: 0.0000e+00
Epoch 469/900
33/33 [=====] - 0s 1ms/step - loss: 19.7666 - accuracy: 0.0000e+00
Epoch 470/900
33/33 [=====] - 0s 2ms/step - loss: 18.7571 - accuracy: 0.0000e+00
Epoch 471/900
33/33 [=====] - 0s 1ms/step - loss: 16.6728 - accuracy: 0.0000e+00
Epoch 472/900
33/33 [=====] - 0s 1ms/step - loss: 17.6059 - accuracy: 0.0000e+00
Epoch 473/900
33/33 [=====] - 0s 1ms/step - loss: 18.5738 - accuracy: 0.0000e+00
Epoch 474/900
33/33 [=====] - 0s 1ms/step - loss: 18.7200 - accuracy: 0.0000e+00
Epoch 475/900
```

Epoch 475/900
33/33 [=====] - 0s 1ms/step - loss: 17.3592 - accuracy: 0.0000e+00
Epoch 476/900
33/33 [=====] - 0s 1ms/step - loss: 18.3352 - accuracy: 0.0000e+00
Epoch 477/900
33/33 [=====] - 0s 1ms/step - loss: 19.0447 - accuracy: 0.0000e+00
Epoch 478/900
33/33 [=====] - 0s 1ms/step - loss: 17.4551 - accuracy: 0.0000e+00
Epoch 479/900
33/33 [=====] - 0s 1ms/step - loss: 19.1948 - accuracy: 0.0000e+00
Epoch 480/900
33/33 [=====] - 0s 2ms/step - loss: 19.3650 - accuracy: 0.0000e+00
Epoch 481/900
33/33 [=====] - 0s 2ms/step - loss: 17.7609 - accuracy: 0.0000e+00
Epoch 482/900
33/33 [=====] - 0s 1ms/step - loss: 19.9142 - accuracy: 0.0000e+00
Epoch 483/900
33/33 [=====] - 0s 2ms/step - loss: 18.1112 - accuracy: 0.0000e+00
Epoch 484/900
33/33 [=====] - 0s 1ms/step - loss: 19.4865 - accuracy: 0.0000e+00
Epoch 485/900
33/33 [=====] - 0s 1ms/step - loss: 18.7907 - accuracy: 0.0000e+00
Epoch 486/900
33/33 [=====] - 0s 1ms/step - loss: 18.9535 - accuracy: 0.0000e+00
Epoch 487/900
33/33 [=====] - 0s 1ms/step - loss: 22.2436 - accuracy: 0.0000e+00
Epoch 488/900
33/33 [=====] - 0s 1ms/step - loss: 18.1031 - accuracy: 0.0000e+00
Epoch 489/900
33/33 [=====] - 0s 2ms/step - loss: 22.9279 - accuracy: 0.0000e+00
Epoch 490/900
33/33 [=====] - 0s 2ms/step - loss: 19.2931 - accuracy: 0.0000e+00
Epoch 491/900
33/33 [=====] - 0s 2ms/step - loss: 18.7330 - accuracy: 0.0000e+00
Epoch 492/900
33/33 [=====] - 0s 1ms/step - loss: 22.9165 - accuracy: 0.0000e+00
Epoch 493/900
33/33 [=====] - 0s 1ms/step - loss: 19.1112 - accuracy: 0.0000e+00
Epoch 494/900
33/33 [=====] - 0s 1ms/step - loss: 18.0909 - accuracy: 0.0000e+00
Epoch 495/900
33/33 [=====] - 0s 2ms/step - loss: 20.9070 - accuracy: 0.0000e+00
Epoch 496/900
33/33 [=====] - 0s 1ms/step - loss: 23.7534 - accuracy: 0.0000e+00
Epoch 497/900
33/33 [=====] - 0s 2ms/step - loss: 20.2672 - accuracy: 0.0000e+00
Epoch 498/900
33/33 [=====] - 0s 1ms/step - loss: 19.3075 - accuracy: 0.0000e+00
Epoch 499/900
33/33 [=====] - 0s 1ms/step - loss: 17.6451 - accuracy: 0.0000e+00
Epoch 500/900
33/33 [=====] - 0s 1ms/step - loss: 16.8314 - accuracy: 0.0000e+00
Epoch 501/900
33/33 [=====] - 0s 1ms/step - loss: 25.1882 - accuracy: 0.0000e+00
Epoch 502/900
33/33 [=====] - 0s 2ms/step - loss: 18.6580 - accuracy: 0.0000e+00
Epoch 503/900
33/33 [=====] - 0s 1ms/step - loss: 19.9986 - accuracy: 0.0000e+00
Epoch 504/900
33/33 [=====] - 0s 1ms/step - loss: 16.1076 - accuracy: 0.0000e+00
Epoch 505/900
33/33 [=====] - 0s 1ms/step - loss: 19.0347 - accuracy: 0.0000e+00
Epoch 506/900
33/33 [=====] - 0s 2ms/step - loss: 18.6189 - accuracy: 0.0000e+00
Epoch 507/900
33/33 [=====] - 0s 2ms/step - loss: 20.4761 - accuracy: 0.0000e+00
Epoch 508/900
33/33 [=====] - 0s 2ms/step - loss: 19.2056 - accuracy: 0.0000e+00
Epoch 509/900
33/33 [=====] - 0s 2ms/step - loss: 16.6388 - accuracy: 0.0000e+00
Epoch 510/900
33/33 [=====] - 0s 2ms/step - loss: 18.8366 - accuracy: 0.0000e+00
Epoch 511/900
33/33 [=====] - 0s 3ms/step - loss: 18.5811 - accuracy: 0.0000e+00
Epoch 512/900
33/33 [=====] - 0s 3ms/step - loss: 18.9655 - accuracy: 0.0000e+00
Epoch 513/900
33/33 [=====] - 0s 2ms/step - loss: 18.4844 - accuracy: 0.0000e+00

33/33 [=====] - 0s 2ms/step - loss: 19.4644 - accuracy: 0.0000e+00
Epoch 514/900
33/33 [=====] - 0s 2ms/step - loss: 17.2665 - accuracy: 0.0000e+00
Epoch 515/900
33/33 [=====] - 0s 2ms/step - loss: 16.0458 - accuracy: 0.0000e+00
Epoch 516/900
33/33 [=====] - 0s 1ms/step - loss: 18.0065 - accuracy: 0.0000e+00
Epoch 517/900
33/33 [=====] - 0s 1ms/step - loss: 17.5191 - accuracy: 0.0000e+00
Epoch 518/900
33/33 [=====] - 0s 1ms/step - loss: 21.8578 - accuracy: 0.0000e+00
Epoch 519/900
33/33 [=====] - 0s 1ms/step - loss: 20.8947 - accuracy: 0.0000e+00
Epoch 520/900
33/33 [=====] - 0s 2ms/step - loss: 24.5928 - accuracy: 0.0000e+00
Epoch 521/900
33/33 [=====] - 0s 2ms/step - loss: 18.0132 - accuracy: 0.0000e+00
Epoch 522/900
33/33 [=====] - 0s 1ms/step - loss: 22.3442 - accuracy: 0.0000e+00
Epoch 523/900
33/33 [=====] - 0s 1ms/step - loss: 16.9910 - accuracy: 0.0000e+00
Epoch 524/900
33/33 [=====] - 0s 1ms/step - loss: 16.0985 - accuracy: 0.0000e+00
Epoch 525/900
33/33 [=====] - 0s 1ms/step - loss: 19.5851 - accuracy: 0.0000e+00
Epoch 526/900
33/33 [=====] - 0s 1ms/step - loss: 18.0717 - accuracy: 0.0000e+00
Epoch 527/900
33/33 [=====] - 0s 1ms/step - loss: 19.0687 - accuracy: 0.0000e+00
Epoch 528/900
33/33 [=====] - 0s 1ms/step - loss: 18.0089 - accuracy: 0.0000e+00
Epoch 529/900
33/33 [=====] - 0s 1ms/step - loss: 16.8227 - accuracy: 0.0000e+00
Epoch 530/900
33/33 [=====] - 0s 2ms/step - loss: 18.6460 - accuracy: 0.0000e+00
Epoch 531/900
33/33 [=====] - 0s 1ms/step - loss: 15.9818 - accuracy: 0.0000e+00
Epoch 532/900
33/33 [=====] - 0s 1ms/step - loss: 20.0411 - accuracy: 0.0000e+00
Epoch 533/900
33/33 [=====] - 0s 2ms/step - loss: 17.2673 - accuracy: 0.0000e+00
Epoch 534/900
33/33 [=====] - 0s 1ms/step - loss: 18.2656 - accuracy: 0.0000e+00
Epoch 535/900
33/33 [=====] - 0s 1ms/step - loss: 18.6121 - accuracy: 0.0000e+00
Epoch 536/900
33/33 [=====] - 0s 1ms/step - loss: 19.7721 - accuracy: 0.0000e+00
Epoch 537/900
33/33 [=====] - 0s 2ms/step - loss: 18.3256 - accuracy: 0.0000e+00
Epoch 538/900
33/33 [=====] - 0s 1ms/step - loss: 20.7287 - accuracy: 0.0000e+00
Epoch 539/900
33/33 [=====] - 0s 2ms/step - loss: 16.0838 - accuracy: 0.0000e+00
Epoch 540/900
33/33 [=====] - 0s 1ms/step - loss: 18.2123 - accuracy: 0.0000e+00
Epoch 541/900
33/33 [=====] - 0s 1ms/step - loss: 19.5221 - accuracy: 0.0000e+00
Epoch 542/900
33/33 [=====] - 0s 1ms/step - loss: 17.1242 - accuracy: 0.0000e+00
Epoch 543/900
33/33 [=====] - 0s 1ms/step - loss: 19.1738 - accuracy: 0.0000e+00
Epoch 544/900
33/33 [=====] - 0s 1ms/step - loss: 17.5520 - accuracy: 0.0000e+00
Epoch 545/900
33/33 [=====] - 0s 1ms/step - loss: 18.7705 - accuracy: 0.0000e+00
Epoch 546/900
33/33 [=====] - 0s 2ms/step - loss: 19.5124 - accuracy: 0.0000e+00
Epoch 547/900
33/33 [=====] - 0s 2ms/step - loss: 21.5129 - accuracy: 0.0000e+00
Epoch 548/900
33/33 [=====] - 0s 2ms/step - loss: 16.8577 - accuracy: 0.0000e+00
Epoch 549/900
33/33 [=====] - 0s 1ms/step - loss: 18.6841 - accuracy: 0.0000e+00
Epoch 550/900
33/33 [=====] - 0s 1ms/step - loss: 15.5802 - accuracy: 0.0000e+00
Epoch 551/900
33/33 [=====] - 0s 2ms/step - loss: 16.3126 - accuracy: 0.0000e+00
Epoch 552/900

Epoch 552/900
33/33 [=====] - 0s 2ms/step - loss: 19.6448 - accuracy: 0.0000e+00
Epoch 553/900
33/33 [=====] - 0s 1ms/step - loss: 14.7249 - accuracy: 0.0000e+00
Epoch 554/900
33/33 [=====] - 0s 2ms/step - loss: 16.4442 - accuracy: 0.0000e+00
Epoch 555/900
33/33 [=====] - 0s 2ms/step - loss: 37.6407 - accuracy: 0.0000e+00
Epoch 556/900
33/33 [=====] - 0s 2ms/step - loss: 19.3721 - accuracy: 0.0000e+00
Epoch 557/900
33/33 [=====] - 0s 2ms/step - loss: 17.0837 - accuracy: 0.0000e+00
Epoch 558/900
33/33 [=====] - 0s 2ms/step - loss: 18.8728 - accuracy: 0.0000e+00
Epoch 559/900
33/33 [=====] - 0s 1ms/step - loss: 17.5686 - accuracy: 0.0000e+00
Epoch 560/900
33/33 [=====] - 0s 1ms/step - loss: 23.0865 - accuracy: 0.0000e+00
Epoch 561/900
33/33 [=====] - 0s 2ms/step - loss: 16.9808 - accuracy: 0.0000e+00
Epoch 562/900
33/33 [=====] - 0s 1ms/step - loss: 25.0460 - accuracy: 0.0000e+00
Epoch 563/900
33/33 [=====] - 0s 1ms/step - loss: 19.9903 - accuracy: 0.0000e+00
Epoch 564/900
33/33 [=====] - 0s 1ms/step - loss: 16.8386 - accuracy: 0.0000e+00
Epoch 565/900
33/33 [=====] - 0s 2ms/step - loss: 14.9281 - accuracy: 0.0000e+00
Epoch 566/900
33/33 [=====] - 0s 1ms/step - loss: 16.0786 - accuracy: 0.0000e+00
Epoch 567/900
33/33 [=====] - 0s 1ms/step - loss: 18.5628 - accuracy: 0.0000e+00
Epoch 568/900
33/33 [=====] - 0s 2ms/step - loss: 16.4905 - accuracy: 0.0000e+00
Epoch 569/900
33/33 [=====] - 0s 2ms/step - loss: 16.7741 - accuracy: 0.0000e+00
Epoch 570/900
33/33 [=====] - 0s 1ms/step - loss: 17.9822 - accuracy: 0.0000e+00
Epoch 571/900
33/33 [=====] - 0s 1ms/step - loss: 16.7402 - accuracy: 0.0000e+00
Epoch 572/900
33/33 [=====] - 0s 1ms/step - loss: 18.7471 - accuracy: 0.0000e+00
Epoch 573/900
33/33 [=====] - 0s 1ms/step - loss: 21.0418 - accuracy: 0.0000e+00
Epoch 574/900
33/33 [=====] - 0s 2ms/step - loss: 19.9280 - accuracy: 0.0000e+00
Epoch 575/900
33/33 [=====] - 0s 1ms/step - loss: 19.3609 - accuracy: 0.0000e+00
Epoch 576/900
33/33 [=====] - 0s 1ms/step - loss: 22.3806 - accuracy: 0.0000e+00
Epoch 577/900
33/33 [=====] - 0s 2ms/step - loss: 17.0508 - accuracy: 0.0000e+00
Epoch 578/900
33/33 [=====] - 0s 2ms/step - loss: 16.9426 - accuracy: 0.0000e+00
Epoch 579/900
33/33 [=====] - 0s 2ms/step - loss: 13.9468 - accuracy: 0.0000e+00
Epoch 580/900
33/33 [=====] - 0s 1ms/step - loss: 16.8218 - accuracy: 0.0000e+00
Epoch 581/900
33/33 [=====] - 0s 2ms/step - loss: 17.2048 - accuracy: 0.0000e+00
Epoch 582/900
33/33 [=====] - 0s 1ms/step - loss: 15.8678 - accuracy: 0.0000e+00
Epoch 583/900
33/33 [=====] - 0s 1ms/step - loss: 17.6106 - accuracy: 0.0000e+00
Epoch 584/900
33/33 [=====] - 0s 1ms/step - loss: 15.7210 - accuracy: 0.0000e+00
Epoch 585/900
33/33 [=====] - 0s 2ms/step - loss: 18.2386 - accuracy: 0.0000e+00
Epoch 586/900
33/33 [=====] - 0s 1ms/step - loss: 15.9213 - accuracy: 0.0000e+00
Epoch 587/900
33/33 [=====] - 0s 1ms/step - loss: 15.5251 - accuracy: 0.0000e+00
Epoch 588/900
33/33 [=====] - 0s 2ms/step - loss: 16.9050 - accuracy: 0.0000e+00
Epoch 589/900
33/33 [=====] - 0s 2ms/step - loss: 19.2688 - accuracy: 0.0000e+00
Epoch 590/900
33/33 [=====] - 0s 1ms/step - loss: 16.8405 - accuracy: 0.0000e+00

33/33 [=====] - 0s 1ms/step - loss: 16.8405 - accuracy: 0.0000e+00
Epoch 591/900
33/33 [=====] - 0s 1ms/step - loss: 18.0331 - accuracy: 0.0000e+00
Epoch 592/900
33/33 [=====] - 0s 1ms/step - loss: 14.1215 - accuracy: 0.0000e+00
Epoch 593/900
33/33 [=====] - 0s 2ms/step - loss: 16.3068 - accuracy: 0.0000e+00
Epoch 594/900
33/33 [=====] - 0s 2ms/step - loss: 18.1417 - accuracy: 0.0000e+00
Epoch 595/900
33/33 [=====] - 0s 2ms/step - loss: 16.2749 - accuracy: 0.0000e+00
Epoch 596/900
33/33 [=====] - 0s 1ms/step - loss: 14.8215 - accuracy: 0.0000e+00
Epoch 597/900
33/33 [=====] - 0s 1ms/step - loss: 13.8227 - accuracy: 0.0000e+00
Epoch 598/900
33/33 [=====] - 0s 1ms/step - loss: 29.8485 - accuracy: 0.0000e+00
Epoch 599/900
33/33 [=====] - 0s 1ms/step - loss: 17.9834 - accuracy: 0.0000e+00
Epoch 600/900
33/33 [=====] - 0s 1ms/step - loss: 16.8562 - accuracy: 0.0000e+00
Epoch 601/900
33/33 [=====] - 0s 1ms/step - loss: 16.6082 - accuracy: 0.0000e+00
Epoch 602/900
33/33 [=====] - 0s 1ms/step - loss: 14.5891 - accuracy: 0.0000e+00
Epoch 603/900
33/33 [=====] - 0s 1ms/step - loss: 16.6368 - accuracy: 0.0000e+00
Epoch 604/900
33/33 [=====] - 0s 1ms/step - loss: 14.2296 - accuracy: 0.0000e+00
Epoch 605/900
33/33 [=====] - 0s 2ms/step - loss: 16.0003 - accuracy: 0.0000e+00
Epoch 606/900
33/33 [=====] - 0s 1ms/step - loss: 14.3857 - accuracy: 0.0000e+00
Epoch 607/900
33/33 [=====] - 0s 1ms/step - loss: 13.5635 - accuracy: 0.0000e+00
Epoch 608/900
33/33 [=====] - 0s 2ms/step - loss: 21.0398 - accuracy: 0.0000e+00
Epoch 609/900
33/33 [=====] - 0s 2ms/step - loss: 15.0521 - accuracy: 0.0000e+00
Epoch 610/900
33/33 [=====] - 0s 2ms/step - loss: 12.8500 - accuracy: 0.0000e+00
Epoch 611/900
33/33 [=====] - 0s 2ms/step - loss: 14.6782 - accuracy: 0.0000e+00
Epoch 612/900
33/33 [=====] - 0s 2ms/step - loss: 16.3121 - accuracy: 0.0000e+00
Epoch 613/900
33/33 [=====] - 0s 2ms/step - loss: 17.5037 - accuracy: 0.0000e+00
Epoch 614/900
33/33 [=====] - 0s 2ms/step - loss: 16.2049 - accuracy: 0.0000e+00
Epoch 615/900
33/33 [=====] - 0s 2ms/step - loss: 13.6154 - accuracy: 0.0000e+00
Epoch 616/900
33/33 [=====] - 0s 2ms/step - loss: 16.4742 - accuracy: 0.0000e+00
Epoch 617/900
33/33 [=====] - 0s 2ms/step - loss: 18.6008 - accuracy: 0.0000e+00
Epoch 618/900
33/33 [=====] - 0s 2ms/step - loss: 15.7216 - accuracy: 0.0000e+00
Epoch 619/900
33/33 [=====] - 0s 2ms/step - loss: 15.6759 - accuracy: 0.0000e+00
Epoch 620/900
33/33 [=====] - 0s 1ms/step - loss: 16.6246 - accuracy: 0.0000e+00
Epoch 621/900
33/33 [=====] - 0s 2ms/step - loss: 16.4361 - accuracy: 0.0000e+00
Epoch 622/900
33/33 [=====] - 0s 2ms/step - loss: 17.5807 - accuracy: 0.0000e+00
Epoch 623/900
33/33 [=====] - 0s 2ms/step - loss: 17.4660 - accuracy: 0.0000e+00
Epoch 624/900
33/33 [=====] - 0s 2ms/step - loss: 16.8244 - accuracy: 0.0000e+00
Epoch 625/900
33/33 [=====] - 0s 2ms/step - loss: 18.2723 - accuracy: 0.0000e+00
Epoch 626/900
33/33 [=====] - 0s 2ms/step - loss: 14.0826 - accuracy: 0.0000e+00
Epoch 627/900
33/33 [=====] - 0s 2ms/step - loss: 19.3048 - accuracy: 0.0000e+00
Epoch 628/900
33/33 [=====] - 0s 2ms/step - loss: 14.6157 - accuracy: 0.0000e+00
Epoch 629/900

Epoch 629/900
33/33 [=====] - 0s 2ms/step - loss: 14.0758 - accuracy: 0.0000e+00
Epoch 630/900
33/33 [=====] - 0s 2ms/step - loss: 16.7867 - accuracy: 0.0000e+00
Epoch 631/900
33/33 [=====] - 0s 1ms/step - loss: 16.4052 - accuracy: 0.0000e+00
Epoch 632/900
33/33 [=====] - 0s 1ms/step - loss: 20.8954 - accuracy: 0.0000e+00
Epoch 633/900
33/33 [=====] - 0s 2ms/step - loss: 15.3031 - accuracy: 0.0000e+00
Epoch 634/900
33/33 [=====] - 0s 2ms/step - loss: 14.3905 - accuracy: 0.0000e+00
Epoch 635/900
33/33 [=====] - 0s 1ms/step - loss: 14.8204 - accuracy: 0.0000e+00
Epoch 636/900
33/33 [=====] - 0s 1ms/step - loss: 15.5078 - accuracy: 0.0000e+00
Epoch 637/900
33/33 [=====] - 0s 1ms/step - loss: 13.2454 - accuracy: 0.0000e+00
Epoch 638/900
33/33 [=====] - 0s 1ms/step - loss: 18.0542 - accuracy: 0.0000e+00
Epoch 639/900
33/33 [=====] - ETA: 0s - loss: 13.1692 - accuracy: 0.0000e+0 - 0s 1ms/step - 1
oss: 15.8064 - accuracy: 0.0000e+00
Epoch 640/900
33/33 [=====] - 0s 1ms/step - loss: 16.3829 - accuracy: 0.0000e+00
Epoch 641/900
33/33 [=====] - 0s 1ms/step - loss: 16.5148 - accuracy: 0.0000e+00
Epoch 642/900
33/33 [=====] - 0s 1ms/step - loss: 14.0354 - accuracy: 0.0000e+00
Epoch 643/900
33/33 [=====] - 0s 1ms/step - loss: 16.9944 - accuracy: 0.0000e+00
Epoch 644/900
33/33 [=====] - 0s 1ms/step - loss: 19.8268 - accuracy: 0.0000e+00
Epoch 645/900
33/33 [=====] - 0s 1ms/step - loss: 15.0073 - accuracy: 0.0000e+00
Epoch 646/900
33/33 [=====] - 0s 2ms/step - loss: 15.5476 - accuracy: 0.0000e+00
Epoch 647/900
33/33 [=====] - 0s 1ms/step - loss: 14.2132 - accuracy: 0.0000e+00
Epoch 648/900
33/33 [=====] - 0s 2ms/step - loss: 15.9082 - accuracy: 0.0000e+00
Epoch 649/900
33/33 [=====] - 0s 2ms/step - loss: 17.4077 - accuracy: 0.0000e+00
Epoch 650/900
33/33 [=====] - 0s 1ms/step - loss: 13.9356 - accuracy: 0.0000e+00
Epoch 651/900
33/33 [=====] - 0s 1ms/step - loss: 15.1820 - accuracy: 0.0000e+00
Epoch 652/900
33/33 [=====] - 0s 2ms/step - loss: 13.7519 - accuracy: 0.0000e+00
Epoch 653/900
33/33 [=====] - 0s 1ms/step - loss: 15.6994 - accuracy: 0.0000e+00
Epoch 654/900
33/33 [=====] - 0s 2ms/step - loss: 15.9168 - accuracy: 0.0000e+00
Epoch 655/900
33/33 [=====] - 0s 1ms/step - loss: 16.1270 - accuracy: 0.0000e+00
Epoch 656/900
33/33 [=====] - 0s 1ms/step - loss: 20.0974 - accuracy: 0.0000e+00
Epoch 657/900
33/33 [=====] - 0s 1ms/step - loss: 25.5550 - accuracy: 0.0000e+00
Epoch 658/900
33/33 [=====] - 0s 1ms/step - loss: 16.4596 - accuracy: 0.0000e+00
Epoch 659/900
33/33 [=====] - 0s 2ms/step - loss: 16.8141 - accuracy: 0.0000e+00
Epoch 660/900
33/33 [=====] - 0s 2ms/step - loss: 13.6771 - accuracy: 0.0000e+00
Epoch 661/900
33/33 [=====] - 0s 4ms/step - loss: 14.5556 - accuracy: 0.0000e+00
Epoch 662/900
33/33 [=====] - 0s 2ms/step - loss: 13.9914 - accuracy: 0.0000e+00
Epoch 663/900
33/33 [=====] - 0s 1ms/step - loss: 18.9687 - accuracy: 0.0000e+00
Epoch 664/900
33/33 [=====] - 0s 1ms/step - loss: 16.8021 - accuracy: 0.0000e+00
Epoch 665/900
33/33 [=====] - 0s 1ms/step - loss: 13.3382 - accuracy: 0.0000e+00
Epoch 666/900
33/33 [=====] - 0s 2ms/step - loss: 16.9137 - accuracy: 0.0000e+00

Epoch 667/900
33/33 [=====] - 0s 1ms/step - loss: 14.9832 - accuracy: 0.0000e+00
Epoch 668/900
33/33 [=====] - 0s 2ms/step - loss: 14.5054 - accuracy: 0.0000e+00
Epoch 669/900
33/33 [=====] - 0s 1ms/step - loss: 19.1962 - accuracy: 0.0000e+00
Epoch 670/900
33/33 [=====] - 0s 2ms/step - loss: 15.0463 - accuracy: 0.0000e+00
Epoch 671/900
33/33 [=====] - 0s 2ms/step - loss: 16.9671 - accuracy: 0.0000e+00
Epoch 672/900
33/33 [=====] - 0s 2ms/step - loss: 16.5052 - accuracy: 0.0000e+00
Epoch 673/900
33/33 [=====] - 0s 2ms/step - loss: 15.8544 - accuracy: 0.0000e+00
Epoch 674/900
33/33 [=====] - 0s 2ms/step - loss: 16.9425 - accuracy: 0.0000e+00
Epoch 675/900
33/33 [=====] - 0s 1ms/step - loss: 14.5363 - accuracy: 0.0000e+00
Epoch 676/900
33/33 [=====] - 0s 2ms/step - loss: 17.8131 - accuracy: 0.0000e+00
Epoch 677/900
33/33 [=====] - 0s 1ms/step - loss: 16.6691 - accuracy: 0.0000e+00
Epoch 678/900
33/33 [=====] - 0s 1ms/step - loss: 15.4163 - accuracy: 0.0000e+00
Epoch 679/900
33/33 [=====] - 0s 2ms/step - loss: 15.3573 - accuracy: 0.0000e+00
Epoch 680/900
33/33 [=====] - 0s 3ms/step - loss: 13.5862 - accuracy: 0.0000e+00
Epoch 681/900
33/33 [=====] - 0s 2ms/step - loss: 16.2035 - accuracy: 0.0000e+00
Epoch 682/900
33/33 [=====] - 0s 2ms/step - loss: 16.0028 - accuracy: 0.0000e+00
Epoch 683/900
33/33 [=====] - 0s 2ms/step - loss: 14.0678 - accuracy: 0.0000e+00
Epoch 684/900
33/33 [=====] - 0s 2ms/step - loss: 13.6487 - accuracy: 0.0000e+00
Epoch 685/900
33/33 [=====] - 0s 2ms/step - loss: 16.7623 - accuracy: 0.0000e+00
Epoch 686/900
33/33 [=====] - 0s 2ms/step - loss: 14.4110 - accuracy: 0.0000e+00
Epoch 687/900
33/33 [=====] - 0s 2ms/step - loss: 15.8791 - accuracy: 0.0000e+00
Epoch 688/900
33/33 [=====] - 0s 2ms/step - loss: 12.8931 - accuracy: 0.0000e+00
Epoch 689/900
33/33 [=====] - 0s 2ms/step - loss: 13.9998 - accuracy: 0.0000e+00
Epoch 690/900
33/33 [=====] - 0s 2ms/step - loss: 15.2874 - accuracy: 0.0000e+00
Epoch 691/900
33/33 [=====] - 0s 2ms/step - loss: 13.8416 - accuracy: 0.0000e+00
Epoch 692/900
33/33 [=====] - 0s 2ms/step - loss: 16.3060 - accuracy: 0.0000e+00
Epoch 693/900
33/33 [=====] - 0s 2ms/step - loss: 15.6105 - accuracy: 0.0000e+00
Epoch 694/900
33/33 [=====] - 0s 2ms/step - loss: 13.6043 - accuracy: 0.0000e+00
Epoch 695/900
33/33 [=====] - 0s 2ms/step - loss: 16.1376 - accuracy: 0.0000e+00
Epoch 696/900
33/33 [=====] - 0s 2ms/step - loss: 15.6866 - accuracy: 0.0000e+00
Epoch 697/900
33/33 [=====] - 0s 1ms/step - loss: 13.7560 - accuracy: 0.0000e+00
Epoch 698/900
33/33 [=====] - 0s 2ms/step - loss: 14.1088 - accuracy: 0.0000e+00
Epoch 699/900
33/33 [=====] - 0s 2ms/step - loss: 17.9239 - accuracy: 0.0000e+00
Epoch 700/900
33/33 [=====] - 0s 2ms/step - loss: 13.8970 - accuracy: 0.0000e+00
Epoch 701/900
33/33 [=====] - 0s 1ms/step - loss: 20.3618 - accuracy: 0.0000e+00
Epoch 702/900
33/33 [=====] - 0s 1ms/step - loss: 15.1793 - accuracy: 0.0000e+00
Epoch 703/900
33/33 [=====] - 0s 2ms/step - loss: 23.6853 - accuracy: 0.0000e+00
Epoch 704/900
33/33 [=====] - 0s 2ms/step - loss: 21.3044 - accuracy: 0.0000e+00
Epoch 705/900

33/33 [=====] - 0s 1ms/step - loss: 17.6753 - accuracy: 0.0000e+00
Epoch 706/900
33/33 [=====] - 0s 1ms/step - loss: 16.1664 - accuracy: 0.0000e+00
Epoch 707/900
33/33 [=====] - 0s 1ms/step - loss: 13.4163 - accuracy: 0.0000e+00
Epoch 708/900
33/33 [=====] - 0s 1ms/step - loss: 12.3918 - accuracy: 0.0000e+00
Epoch 709/900
33/33 [=====] - 0s 1ms/step - loss: 17.6130 - accuracy: 0.0000e+00
Epoch 710/900
33/33 [=====] - 0s 1ms/step - loss: 13.9002 - accuracy: 0.0000e+00
Epoch 711/900
33/33 [=====] - 0s 2ms/step - loss: 15.9880 - accuracy: 0.0000e+00
Epoch 712/900
33/33 [=====] - 0s 2ms/step - loss: 13.8626 - accuracy: 0.0000e+00
Epoch 713/900
33/33 [=====] - 0s 2ms/step - loss: 14.4072 - accuracy: 0.0000e+00
Epoch 714/900
33/33 [=====] - 0s 2ms/step - loss: 14.7493 - accuracy: 0.0000e+00
Epoch 715/900
33/33 [=====] - 0s 2ms/step - loss: 16.4877 - accuracy: 0.0000e+00
Epoch 716/900
33/33 [=====] - 0s 2ms/step - loss: 13.4094 - accuracy: 0.0000e+00
Epoch 717/900
33/33 [=====] - 0s 2ms/step - loss: 16.3512 - accuracy: 0.0000e+00
Epoch 718/900
33/33 [=====] - 0s 2ms/step - loss: 12.6238 - accuracy: 0.0000e+00
Epoch 719/900
33/33 [=====] - 0s 2ms/step - loss: 13.2088 - accuracy: 0.0000e+00
Epoch 720/900
33/33 [=====] - 0s 1ms/step - loss: 14.1859 - accuracy: 0.0000e+00
Epoch 721/900
33/33 [=====] - 0s 2ms/step - loss: 14.0308 - accuracy: 0.0000e+00
Epoch 722/900
33/33 [=====] - 0s 1ms/step - loss: 15.0487 - accuracy: 0.0000e+00
Epoch 723/900
33/33 [=====] - 0s 2ms/step - loss: 13.3041 - accuracy: 0.0000e+00
Epoch 724/900
33/33 [=====] - 0s 2ms/step - loss: 17.6042 - accuracy: 0.0000e+00
Epoch 725/900
33/33 [=====] - 0s 2ms/step - loss: 15.9242 - accuracy: 0.0000e+00
Epoch 726/900
33/33 [=====] - 0s 2ms/step - loss: 14.2691 - accuracy: 0.0000e+00
Epoch 727/900
33/33 [=====] - 0s 2ms/step - loss: 16.8092 - accuracy: 0.0000e+00
Epoch 728/900
33/33 [=====] - 0s 2ms/step - loss: 12.9697 - accuracy: 0.0000e+00
Epoch 729/900
33/33 [=====] - 0s 2ms/step - loss: 15.0500 - accuracy: 0.0000e+00
Epoch 730/900
33/33 [=====] - 0s 2ms/step - loss: 16.9817 - accuracy: 0.0000e+00
Epoch 731/900
33/33 [=====] - 0s 2ms/step - loss: 15.2801 - accuracy: 0.0000e+00
Epoch 732/900
33/33 [=====] - 0s 2ms/step - loss: 14.5103 - accuracy: 0.0000e+00
Epoch 733/900
33/33 [=====] - 0s 2ms/step - loss: 16.3390 - accuracy: 0.0000e+00
Epoch 734/900
33/33 [=====] - 0s 2ms/step - loss: 14.0855 - accuracy: 0.0000e+00
Epoch 735/900
33/33 [=====] - 0s 2ms/step - loss: 15.7164 - accuracy: 0.0000e+00
Epoch 736/900
33/33 [=====] - 0s 2ms/step - loss: 15.7162 - accuracy: 0.0000e+00
Epoch 737/900
33/33 [=====] - 0s 2ms/step - loss: 14.8959 - accuracy: 0.0000e+00
Epoch 738/900
33/33 [=====] - 0s 2ms/step - loss: 12.2883 - accuracy: 0.0000e+00
Epoch 739/900
33/33 [=====] - 0s 2ms/step - loss: 15.5043 - accuracy: 0.0000e+00
Epoch 740/900
33/33 [=====] - 0s 2ms/step - loss: 12.4907 - accuracy: 0.0000e+00
Epoch 741/900
33/33 [=====] - 0s 2ms/step - loss: 15.7519 - accuracy: 0.0000e+00
Epoch 742/900
33/33 [=====] - 0s 2ms/step - loss: 13.6850 - accuracy: 0.0000e+00
Epoch 743/900
33/33 [=====] - 0s 2ms/step - loss: 12.8333 - accuracy: 0.0000e+00

Epoch 744/900
33/33 [=====] - 0s 2ms/step - loss: 16.7718 - accuracy: 0.0000e+00
Epoch 745/900
33/33 [=====] - 0s 2ms/step - loss: 13.9078 - accuracy: 0.0000e+00
Epoch 746/900
33/33 [=====] - 0s 2ms/step - loss: 13.9712 - accuracy: 0.0000e+00
Epoch 747/900
33/33 [=====] - 0s 2ms/step - loss: 15.1590 - accuracy: 0.0000e+00
Epoch 748/900
33/33 [=====] - 0s 1ms/step - loss: 22.8627 - accuracy: 0.0000e+00
Epoch 749/900
33/33 [=====] - 0s 1ms/step - loss: 13.7327 - accuracy: 0.0000e+00
Epoch 750/900
33/33 [=====] - 0s 1ms/step - loss: 13.0165 - accuracy: 0.0000e+00
Epoch 751/900
33/33 [=====] - 0s 2ms/step - loss: 14.4955 - accuracy: 0.0000e+00
Epoch 752/900
33/33 [=====] - 0s 1ms/step - loss: 13.4070 - accuracy: 0.0000e+00
Epoch 753/900
33/33 [=====] - 0s 1ms/step - loss: 12.9560 - accuracy: 0.0000e+00
Epoch 754/900
33/33 [=====] - 0s 1ms/step - loss: 12.8424 - accuracy: 0.0000e+00
Epoch 755/900
33/33 [=====] - 0s 1ms/step - loss: 13.5636 - accuracy: 0.0000e+00
Epoch 756/900
33/33 [=====] - 0s 2ms/step - loss: 14.9405 - accuracy: 0.0000e+00
Epoch 757/900
33/33 [=====] - 0s 2ms/step - loss: 11.7013 - accuracy: 0.0000e+00
Epoch 758/900
33/33 [=====] - 0s 1ms/step - loss: 15.9162 - accuracy: 0.0000e+00
Epoch 759/900
33/33 [=====] - 0s 1ms/step - loss: 13.4513 - accuracy: 0.0000e+00
Epoch 760/900
33/33 [=====] - 0s 1ms/step - loss: 15.1512 - accuracy: 0.0000e+00
Epoch 761/900
33/33 [=====] - 0s 1ms/step - loss: 13.1183 - accuracy: 0.0000e+00
Epoch 762/900
33/33 [=====] - 0s 1ms/step - loss: 18.1130 - accuracy: 0.0000e+00
Epoch 763/900
33/33 [=====] - 0s 2ms/step - loss: 16.2256 - accuracy: 0.0000e+00
Epoch 764/900
33/33 [=====] - 0s 2ms/step - loss: 13.4553 - accuracy: 0.0000e+00
Epoch 765/900
33/33 [=====] - 0s 1ms/step - loss: 14.1204 - accuracy: 0.0000e+00
Epoch 766/900
33/33 [=====] - 0s 2ms/step - loss: 16.3744 - accuracy: 0.0000e+00
Epoch 767/900
33/33 [=====] - 0s 2ms/step - loss: 13.4898 - accuracy: 0.0000e+00
Epoch 768/900
33/33 [=====] - 0s 1ms/step - loss: 15.6106 - accuracy: 0.0000e+00
Epoch 769/900
33/33 [=====] - 0s 1ms/step - loss: 16.0341 - accuracy: 0.0000e+00
Epoch 770/900
33/33 [=====] - 0s 2ms/step - loss: 14.5407 - accuracy: 0.0000e+00
Epoch 771/900
33/33 [=====] - 0s 2ms/step - loss: 18.3443 - accuracy: 0.0000e+00
Epoch 772/900
33/33 [=====] - 0s 2ms/step - loss: 14.0500 - accuracy: 0.0000e+00
Epoch 773/900
33/33 [=====] - 0s 1ms/step - loss: 16.7076 - accuracy: 0.0000e+00
Epoch 774/900
33/33 [=====] - 0s 2ms/step - loss: 13.6447 - accuracy: 0.0000e+00
Epoch 775/900
33/33 [=====] - 0s 1ms/step - loss: 16.8780 - accuracy: 0.0000e+00
Epoch 776/900
33/33 [=====] - 0s 2ms/step - loss: 18.7268 - accuracy: 0.0000e+00
Epoch 777/900
33/33 [=====] - 0s 2ms/step - loss: 15.2795 - accuracy: 0.0000e+00
Epoch 778/900
33/33 [=====] - 0s 1ms/step - loss: 15.3096 - accuracy: 0.0000e+00
Epoch 779/900
33/33 [=====] - 0s 2ms/step - loss: 15.5251 - accuracy: 0.0000e+00
Epoch 780/900
33/33 [=====] - 0s 2ms/step - loss: 17.6852 - accuracy: 0.0000e+00
Epoch 781/900
33/33 [=====] - 0s 2ms/step - loss: 15.3838 - accuracy: 0.0000e+00
Epoch 782/900

33/33 [=====] - 0s 1ms/step - loss: 12.3836 - accuracy: 0.0000e+00
Epoch 783/900
33/33 [=====] - 0s 1ms/step - loss: 13.7954 - accuracy: 0.0000e+00
Epoch 784/900
33/33 [=====] - 0s 1ms/step - loss: 12.4385 - accuracy: 0.0000e+00
Epoch 785/900
33/33 [=====] - 0s 1ms/step - loss: 14.5373 - accuracy: 0.0000e+00
Epoch 786/900
33/33 [=====] - 0s 2ms/step - loss: 11.6114 - accuracy: 0.0000e+00
Epoch 787/900
33/33 [=====] - 0s 2ms/step - loss: 16.6564 - accuracy: 0.0000e+00
Epoch 788/900
33/33 [=====] - 0s 1ms/step - loss: 12.5241 - accuracy: 0.0000e+00
Epoch 789/900
33/33 [=====] - 0s 2ms/step - loss: 13.3582 - accuracy: 0.0000e+00
Epoch 790/900
33/33 [=====] - 0s 2ms/step - loss: 14.1329 - accuracy: 0.0000e+00
Epoch 791/900
33/33 [=====] - 0s 1ms/step - loss: 12.0284 - accuracy: 0.0000e+00
Epoch 792/900
33/33 [=====] - 0s 1ms/step - loss: 12.5780 - accuracy: 0.0000e+00
Epoch 793/900
33/33 [=====] - 0s 1ms/step - loss: 21.7511 - accuracy: 0.0000e+00
Epoch 794/900
33/33 [=====] - 0s 2ms/step - loss: 25.5646 - accuracy: 0.0000e+00
Epoch 795/900
33/33 [=====] - 0s 2ms/step - loss: 18.2738 - accuracy: 0.0000e+00
Epoch 796/900
33/33 [=====] - 0s 2ms/step - loss: 17.7479 - accuracy: 0.0000e+00
Epoch 797/900
33/33 [=====] - 0s 1ms/step - loss: 15.0819 - accuracy: 0.0000e+00
Epoch 798/900
33/33 [=====] - 0s 2ms/step - loss: 13.9245 - accuracy: 0.0000e+00
Epoch 799/900
33/33 [=====] - 0s 1ms/step - loss: 12.6583 - accuracy: 0.0000e+00
Epoch 800/900
33/33 [=====] - 0s 2ms/step - loss: 12.6011 - accuracy: 0.0000e+00
Epoch 801/900
33/33 [=====] - 0s 1ms/step - loss: 15.6953 - accuracy: 0.0000e+00
Epoch 802/900
33/33 [=====] - 0s 2ms/step - loss: 16.4136 - accuracy: 0.0000e+00
Epoch 803/900
33/33 [=====] - 0s 1ms/step - loss: 14.1091 - accuracy: 0.0000e+00
Epoch 804/900
33/33 [=====] - 0s 2ms/step - loss: 13.1530 - accuracy: 0.0000e+00
Epoch 805/900
33/33 [=====] - 0s 1ms/step - loss: 13.6845 - accuracy: 0.0000e+00
Epoch 806/900
33/33 [=====] - 0s 2ms/step - loss: 10.9950 - accuracy: 0.0000e+00
Epoch 807/900
33/33 [=====] - 0s 2ms/step - loss: 14.3690 - accuracy: 0.0000e+00
Epoch 808/900
33/33 [=====] - 0s 1ms/step - loss: 11.3587 - accuracy: 0.0000e+00
Epoch 809/900
33/33 [=====] - 0s 1ms/step - loss: 12.1557 - accuracy: 0.0000e+00
Epoch 810/900
33/33 [=====] - 0s 1ms/step - loss: 10.9457 - accuracy: 0.0000e+00
Epoch 811/900
33/33 [=====] - 0s 2ms/step - loss: 13.8361 - accuracy: 0.0000e+00
Epoch 812/900
33/33 [=====] - 0s 1ms/step - loss: 13.8100 - accuracy: 0.0000e+00
Epoch 813/900
33/33 [=====] - 0s 1ms/step - loss: 14.9056 - accuracy: 0.0000e+00
Epoch 814/900
33/33 [=====] - 0s 2ms/step - loss: 16.2002 - accuracy: 0.0000e+00
Epoch 815/900
33/33 [=====] - 0s 2ms/step - loss: 14.7762 - accuracy: 0.0000e+00
Epoch 816/900
33/33 [=====] - 0s 2ms/step - loss: 17.5989 - accuracy: 0.0000e+00
Epoch 817/900
33/33 [=====] - 0s 2ms/step - loss: 15.3475 - accuracy: 0.0000e+00
Epoch 818/900
33/33 [=====] - 0s 2ms/step - loss: 13.1517 - accuracy: 0.0000e+00
Epoch 819/900
33/33 [=====] - 0s 2ms/step - loss: 17.5158 - accuracy: 0.0000e+00
Epoch 820/900
33/33 [=====] - 0s 2ms/step - loss: 14.3964 - accuracy: 0.0000e+00

Epoch 821/900
33/33 [=====] - 0s 2ms/step - loss: 13.8187 - accuracy: 0.0000e+00
Epoch 822/900
33/33 [=====] - 0s 2ms/step - loss: 13.9876 - accuracy: 0.0000e+00
Epoch 823/900
33/33 [=====] - 0s 1ms/step - loss: 12.1206 - accuracy: 0.0000e+00
Epoch 824/900
33/33 [=====] - 0s 2ms/step - loss: 13.4269 - accuracy: 0.0000e+00
Epoch 825/900
33/33 [=====] - 0s 2ms/step - loss: 17.2803 - accuracy: 0.0000e+00
Epoch 826/900
33/33 [=====] - 0s 1ms/step - loss: 11.8082 - accuracy: 0.0000e+00
Epoch 827/900
33/33 [=====] - 0s 1ms/step - loss: 13.5664 - accuracy: 0.0000e+00
Epoch 828/900
33/33 [=====] - 0s 1ms/step - loss: 14.2497 - accuracy: 0.0000e+00
Epoch 829/900
33/33 [=====] - 0s 2ms/step - loss: 12.7261 - accuracy: 0.0000e+00
Epoch 830/900
33/33 [=====] - 0s 1ms/step - loss: 14.6410 - accuracy: 0.0000e+00
Epoch 831/900
33/33 [=====] - 0s 1ms/step - loss: 16.8749 - accuracy: 0.0000e+00
Epoch 832/900
33/33 [=====] - 0s 2ms/step - loss: 13.2663 - accuracy: 0.0000e+00
Epoch 833/900
33/33 [=====] - 0s 1ms/step - loss: 13.5419 - accuracy: 0.0000e+00
Epoch 834/900
33/33 [=====] - 0s 1ms/step - loss: 10.3879 - accuracy: 0.0000e+00
Epoch 835/900
33/33 [=====] - 0s 1ms/step - loss: 12.5981 - accuracy: 0.0000e+00
Epoch 836/900
33/33 [=====] - 0s 2ms/step - loss: 14.1915 - accuracy: 0.0000e+00
Epoch 837/900
33/33 [=====] - 0s 2ms/step - loss: 11.9790 - accuracy: 0.0000e+00
Epoch 838/900
33/33 [=====] - 0s 1ms/step - loss: 13.0094 - accuracy: 0.0000e+00
Epoch 839/900
33/33 [=====] - 0s 1ms/step - loss: 13.5511 - accuracy: 0.0000e+00
Epoch 840/900
33/33 [=====] - 0s 2ms/step - loss: 13.6467 - accuracy: 0.0000e+00
Epoch 841/900
33/33 [=====] - 0s 1ms/step - loss: 14.7965 - accuracy: 0.0000e+00
Epoch 842/900
33/33 [=====] - 0s 1ms/step - loss: 11.4124 - accuracy: 0.0000e+00
Epoch 843/900
33/33 [=====] - 0s 2ms/step - loss: 14.6082 - accuracy: 0.0000e+00
Epoch 844/900
33/33 [=====] - 0s 2ms/step - loss: 14.4553 - accuracy: 0.0000e+00
Epoch 845/900
33/33 [=====] - 0s 2ms/step - loss: 10.9101 - accuracy: 0.0000e+00
Epoch 846/900
33/33 [=====] - 0s 2ms/step - loss: 13.0116 - accuracy: 0.0000e+00
Epoch 847/900
33/33 [=====] - 0s 1ms/step - loss: 15.1226 - accuracy: 0.0000e+00
Epoch 848/900
33/33 [=====] - 0s 1ms/step - loss: 10.9506 - accuracy: 0.0000e+00
Epoch 849/900
33/33 [=====] - 0s 1ms/step - loss: 13.1901 - accuracy: 0.0000e+00
Epoch 850/900
33/33 [=====] - 0s 2ms/step - loss: 13.7914 - accuracy: 0.0000e+00
Epoch 851/900
33/33 [=====] - 0s 2ms/step - loss: 12.3339 - accuracy: 0.0000e+00
Epoch 852/900
33/33 [=====] - 0s 2ms/step - loss: 12.7918 - accuracy: 0.0000e+00
Epoch 853/900
33/33 [=====] - 0s 2ms/step - loss: 13.2582 - accuracy: 0.0000e+00
Epoch 854/900
33/33 [=====] - 0s 1ms/step - loss: 13.0626 - accuracy: 0.0000e+00
Epoch 855/900
33/33 [=====] - 0s 1ms/step - loss: 11.7067 - accuracy: 0.0000e+00
Epoch 856/900
33/33 [=====] - 0s 2ms/step - loss: 11.7769 - accuracy: 0.0000e+00
Epoch 857/900
33/33 [=====] - 0s 2ms/step - loss: 15.8205 - accuracy: 0.0000e+00
Epoch 858/900
33/33 [=====] - 0s 2ms/step - loss: 14.5466 - accuracy: 0.0000e+00
Epoch 859/900

33/33 [=====] - 0s 2ms/step - loss: 12.5598 - accuracy: 0.0000e+00
Epoch 860/900
33/33 [=====] - 0s 2ms/step - loss: 15.4192 - accuracy: 0.0000e+00
Epoch 861/900
33/33 [=====] - 0s 2ms/step - loss: 13.7788 - accuracy: 0.0000e+00
Epoch 862/900
33/33 [=====] - 0s 1ms/step - loss: 12.5279 - accuracy: 0.0000e+00
Epoch 863/900
33/33 [=====] - 0s 2ms/step - loss: 12.1680 - accuracy: 0.0000e+00
Epoch 864/900
33/33 [=====] - 0s 2ms/step - loss: 12.8231 - accuracy: 0.0000e+00
Epoch 865/900
33/33 [=====] - 0s 2ms/step - loss: 15.6572 - accuracy: 0.0000e+00
Epoch 866/900
33/33 [=====] - 0s 1ms/step - loss: 19.1451 - accuracy: 0.0000e+00
Epoch 867/900
33/33 [=====] - 0s 2ms/step - loss: 11.6476 - accuracy: 0.0000e+00
Epoch 868/900
33/33 [=====] - 0s 2ms/step - loss: 11.2556 - accuracy: 0.0000e+00
Epoch 869/900
33/33 [=====] - 0s 1ms/step - loss: 15.6971 - accuracy: 0.0000e+00
Epoch 870/900
33/33 [=====] - 0s 1ms/step - loss: 12.2814 - accuracy: 0.0000e+00
Epoch 871/900
33/33 [=====] - 0s 1ms/step - loss: 15.9880 - accuracy: 0.0000e+00
Epoch 872/900
33/33 [=====] - 0s 2ms/step - loss: 12.9750 - accuracy: 0.0000e+00
Epoch 873/900
33/33 [=====] - 0s 2ms/step - loss: 11.3072 - accuracy: 0.0000e+00
Epoch 874/900
33/33 [=====] - 0s 2ms/step - loss: 12.8776 - accuracy: 0.0000e+00
Epoch 875/900
33/33 [=====] - 0s 2ms/step - loss: 13.8531 - accuracy: 0.0000e+00
Epoch 876/900
33/33 [=====] - 0s 2ms/step - loss: 15.9898 - accuracy: 0.0000e+00
Epoch 877/900
33/33 [=====] - 0s 2ms/step - loss: 12.3740 - accuracy: 0.0000e+00
Epoch 878/900
33/33 [=====] - 0s 2ms/step - loss: 11.6110 - accuracy: 0.0000e+00
Epoch 879/900
33/33 [=====] - 0s 2ms/step - loss: 12.7893 - accuracy: 0.0000e+00
Epoch 880/900
33/33 [=====] - 0s 1ms/step - loss: 13.9054 - accuracy: 0.0000e+00
Epoch 881/900
33/33 [=====] - 0s 2ms/step - loss: 12.8446 - accuracy: 0.0000e+00
Epoch 882/900
33/33 [=====] - 0s 2ms/step - loss: 11.7055 - accuracy: 0.0000e+00
Epoch 883/900
33/33 [=====] - 0s 2ms/step - loss: 13.2041 - accuracy: 0.0000e+00
Epoch 884/900
33/33 [=====] - 0s 1ms/step - loss: 11.9626 - accuracy: 0.0000e+00
Epoch 885/900
33/33 [=====] - 0s 2ms/step - loss: 11.4635 - accuracy: 0.0000e+00
Epoch 886/900
33/33 [=====] - 0s 2ms/step - loss: 11.3393 - accuracy: 0.0000e+00
Epoch 887/900
33/33 [=====] - 0s 2ms/step - loss: 12.5255 - accuracy: 0.0000e+00
Epoch 888/900
33/33 [=====] - 0s 2ms/step - loss: 11.6026 - accuracy: 0.0000e+00
Epoch 889/900
33/33 [=====] - 0s 1ms/step - loss: 11.4186 - accuracy: 0.0000e+00
Epoch 890/900
33/33 [=====] - 0s 1ms/step - loss: 11.7405 - accuracy: 0.0000e+00
Epoch 891/900
33/33 [=====] - 0s 1ms/step - loss: 16.3753 - accuracy: 0.0000e+00
Epoch 892/900
33/33 [=====] - 0s 1ms/step - loss: 10.2565 - accuracy: 0.0000e+00
Epoch 893/900
33/33 [=====] - 0s 3ms/step - loss: 12.7880 - accuracy: 0.0000e+00
Epoch 894/900
33/33 [=====] - 0s 2ms/step - loss: 15.7739 - accuracy: 0.0000e+00
Epoch 895/900
33/33 [=====] - 0s 1ms/step - loss: 11.4150 - accuracy: 0.0000e+00
Epoch 896/900
33/33 [=====] - 0s 1ms/step - loss: 12.0033 - accuracy: 0.0000e+00
Epoch 897/900
33/33 [=====] - 0s 1ms/step - loss: 13.3760 - accuracy: 0.0000e+00


```
Epoch 898/900
33/33 [=====] - 0s 1ms/step - loss: 14.5264 - accuracy: 0.0000e+00
Epoch 899/900
33/33 [=====] - 0s 1ms/step - loss: 13.7660 - accuracy: 0.0000e+00
Epoch 900/900
33/33 [=====] - 0s 1ms/step - loss: 13.8131 - accuracy: 0.0000e+00
```

In [20]:

```
# we got high correlation
```

In []: