

Pet Classification Project-03

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1.1 Project: Pet Classification Model Using CNN

1.1.1 OBJECTIVE-

You are provided with a collection of images of pets, that is, cats and dogs. These images are of different sizes with varied lighting conditions and they should be used as inputs for your model. You are expected to write the code for CNN image classification model using TensorFlow that trains on the data and calculates the accuracy score on the test data.

```
[1]: import tensorflow as tf
import warnings
warnings.filterwarnings("ignore")
```

```
[2]: from tensorflow.keras.preprocessing.image import ImageDataGenerator
```

```
[3]: train_img_gen=ImageDataGenerator(rescale=1./255, shear_range=0.2, zoom_range=0.
↪2, horizontal_flip=True)
```

```
[4]: train=train_img_gen.flow_from_directory("E:/SIMPLILEARN/Deep Learning/Project/3/
↪Dataset/train",
↪
↪target_size=(256,256), batch_size=32, class_mode="binary")
```

Found 40 images belonging to 2 classes.

```
[5]: train filenames[0]
```

```
[5]: 'cats\\1.jpg'
```

```
[6]: train filenames[25]
```

```
[6]: 'dogs\\14.jpg'
```

```
[7]: train image_shape
```

```
[7]: (256, 256, 3)
```

```
[8]: train.num_classes
```

```
[8]: 2
```

```
[9]: train.classes
```

```
[9]: array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1,
          1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1])
```

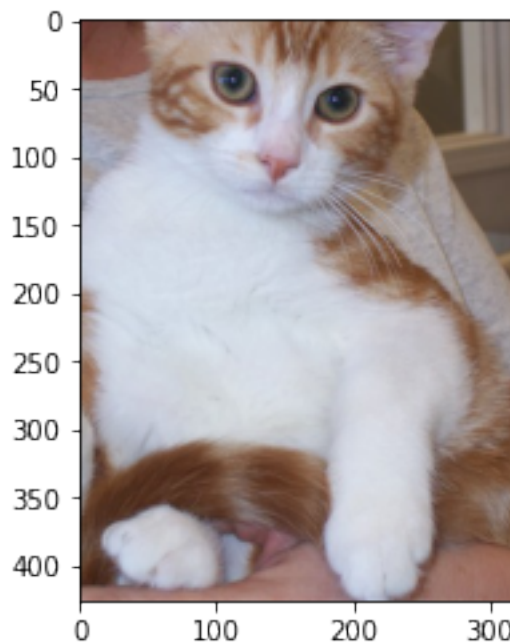
```
[10]: train.class_indices
```

```
[10]: {'cats': 0, 'dogs': 1}
```

```
[11]: from tensorflow.keras.preprocessing.image import load_img
```

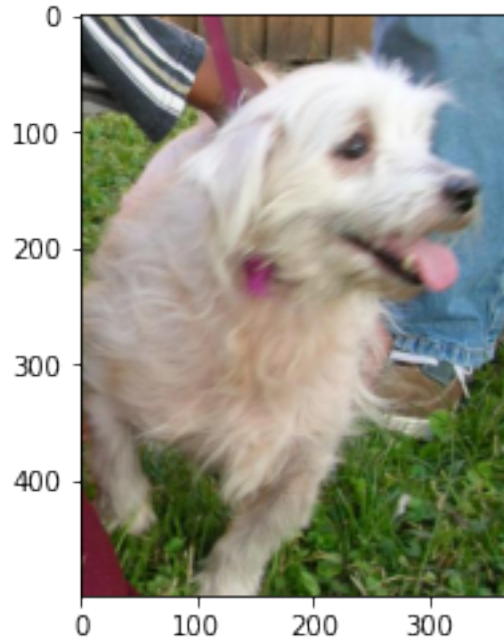
```
[12]: img1=load_img("E:/SIMPLILEARN/Deep Learning/Project/3/Dataset/train/cats/9.jpg")
import matplotlib.pyplot as plt
plt.imshow(img1)
```

```
[12]: <matplotlib.image.AxesImage at 0x1c12ddfc070>
```



```
[13]: img2=load_img("E:/SIMPLILEARN/Deep Learning/Project/3/Dataset/train/dogs/9.jpg")
plt.imshow(img2)
```

```
[13]: <matplotlib.image.AxesImage at 0x1c12feab700>
```



```
[14]: test_img_gen=ImageDataGenerator(rescale=1./255)
test=test_img_gen.flow_from_directory("E:/SIMPLILEARN/Deep Learning/Project/3/
↳Dataset/test",
↳target_size=(256,256),batch_size=32,class_mode="binary")
```

Found 20 images belonging to 2 classes.

```
[15]: test.class_indices
```

```
[15]: {'cats': 0, 'dogs': 1}
```

```
[16]: test.classes
```

```
[16]: array([0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 1, 1, 1, 1, 1, 1, 1, 1, 1])
```

```
[17]: from tensorflow.keras.models import Sequential
from tensorflow.keras.layers import Conv2D,MaxPooling2D,Flatten,Dense,Dropout
```

```
[18]: model=Sequential()
```

```
[19]: model.
↳add(Conv2D(filters=32,kernel_size=(5,5),activation="relu",input_shape=[256,256,3]))
model.add(MaxPooling2D(pool_size=(2,2),strides=2))
```

```
[20]: model.add(Conv2D(filters=64,kernel_size=(5,5),activation="relu"))
      model.add(MaxPooling2D(pool_size=(2,2),strides=2))
```

```
[21]: model.add(Flatten())
```

```
[22]: model.add(Dense(units=32,activation="relu"))
      model.add(Dropout(0.4,seed=25))
```

```
[23]: model.add(Dense(1,activation="softmax"))
```

```
[24]: model.summary()
```

Model: "sequential"

Layer (type)	Output Shape	Param #
conv2d (Conv2D)	(None, 252, 252, 32)	2432
max_pooling2d (MaxPooling2D)	(None, 126, 126, 32)	0
conv2d_1 (Conv2D)	(None, 122, 122, 64)	51264
max_pooling2d_1 (MaxPooling2D)	(None, 61, 61, 64)	0
flatten (Flatten)	(None, 238144)	0
dense (Dense)	(None, 32)	7620640
dropout (Dropout)	(None, 32)	0
dense_1 (Dense)	(None, 1)	33

```
=====  
Total params: 7,674,369  
Trainable params: 7,674,369  
Non-trainable params: 0  
=====
```

```
[25]: model.compile(optimizer="adam",loss="binary_crossentropy",metrics=["accuracy"])
```

```
[26]: model.fit(train,validation_data=test,epochs=100)
```

```
Epoch 1/100  
2/2 [=====] - 6s 2s/step - loss: 1.1536 - accuracy:  
0.5000 - val_loss: 0.8550 - val_accuracy: 0.5000
```

Epoch 2/100
2/2 [=====] - 6s 5s/step - loss: 1.0336 - accuracy: 0.5000 - val_loss: 0.7410 - val_accuracy: 0.5000

Epoch 3/100
2/2 [=====] - 6s 5s/step - loss: 0.7228 - accuracy: 0.5000 - val_loss: 0.7117 - val_accuracy: 0.5000

Epoch 4/100
2/2 [=====] - 6s 2s/step - loss: 0.6995 - accuracy: 0.5000 - val_loss: 0.6922 - val_accuracy: 0.5000

Epoch 5/100
2/2 [=====] - 7s 2s/step - loss: 0.6915 - accuracy: 0.5000 - val_loss: 0.6772 - val_accuracy: 0.5000

Epoch 6/100
2/2 [=====] - 6s 5s/step - loss: 0.7278 - accuracy: 0.5000 - val_loss: 0.6865 - val_accuracy: 0.5000

Epoch 7/100
2/2 [=====] - 6s 2s/step - loss: 0.7355 - accuracy: 0.5000 - val_loss: 0.6910 - val_accuracy: 0.5000

Epoch 8/100
2/2 [=====] - 6s 5s/step - loss: 0.6925 - accuracy: 0.5000 - val_loss: 0.6831 - val_accuracy: 0.5000

Epoch 9/100
2/2 [=====] - 6s 2s/step - loss: 0.6744 - accuracy: 0.5000 - val_loss: 0.6859 - val_accuracy: 0.5000

Epoch 10/100
2/2 [=====] - 6s 2s/step - loss: 0.6833 - accuracy: 0.5000 - val_loss: 0.6734 - val_accuracy: 0.5000

Epoch 11/100
2/2 [=====] - 6s 2s/step - loss: 0.6515 - accuracy: 0.5000 - val_loss: 0.6455 - val_accuracy: 0.5000

Epoch 12/100
2/2 [=====] - 6s 2s/step - loss: 0.6427 - accuracy: 0.5000 - val_loss: 0.6440 - val_accuracy: 0.5000

Epoch 13/100
2/2 [=====] - 6s 5s/step - loss: 0.6451 - accuracy: 0.5000 - val_loss: 0.6555 - val_accuracy: 0.5000

Epoch 14/100
2/2 [=====] - 6s 2s/step - loss: 0.6417 - accuracy: 0.5000 - val_loss: 0.6479 - val_accuracy: 0.5000

Epoch 15/100
2/2 [=====] - 6s 5s/step - loss: 0.6452 - accuracy: 0.5000 - val_loss: 0.6408 - val_accuracy: 0.5000

Epoch 16/100
2/2 [=====] - 7s 5s/step - loss: 0.5903 - accuracy: 0.5000 - val_loss: 0.6167 - val_accuracy: 0.5000

Epoch 17/100
2/2 [=====] - 6s 5s/step - loss: 0.6147 - accuracy: 0.5000 - val_loss: 0.6793 - val_accuracy: 0.5000

Epoch 18/100
2/2 [=====] - 7s 5s/step - loss: 0.6773 - accuracy: 0.5000 - val_loss: 0.6552 - val_accuracy: 0.5000

Epoch 19/100
2/2 [=====] - 6s 5s/step - loss: 0.5381 - accuracy: 0.5000 - val_loss: 0.7348 - val_accuracy: 0.5000

Epoch 20/100
2/2 [=====] - 6s 5s/step - loss: 0.4739 - accuracy: 0.5000 - val_loss: 0.7287 - val_accuracy: 0.5000

Epoch 21/100
2/2 [=====] - 7s 2s/step - loss: 0.4756 - accuracy: 0.5000 - val_loss: 1.0110 - val_accuracy: 0.5000

Epoch 22/100
2/2 [=====] - 7s 6s/step - loss: 1.1259 - accuracy: 0.5000 - val_loss: 0.6308 - val_accuracy: 0.5000

Epoch 23/100
2/2 [=====] - 7s 6s/step - loss: 0.4978 - accuracy: 0.5000 - val_loss: 0.6953 - val_accuracy: 0.5000

Epoch 24/100
2/2 [=====] - 7s 2s/step - loss: 0.4298 - accuracy: 0.5000 - val_loss: 0.8170 - val_accuracy: 0.5000

Epoch 25/100
2/2 [=====] - 7s 5s/step - loss: 0.4716 - accuracy: 0.5000 - val_loss: 0.9825 - val_accuracy: 0.5000

Epoch 26/100
2/2 [=====] - 6s 2s/step - loss: 0.4675 - accuracy: 0.5000 - val_loss: 0.8815 - val_accuracy: 0.5000

Epoch 27/100
2/2 [=====] - 6s 5s/step - loss: 0.4119 - accuracy: 0.5000 - val_loss: 0.8329 - val_accuracy: 0.5000

Epoch 28/100
2/2 [=====] - 7s 5s/step - loss: 0.6234 - accuracy: 0.5000 - val_loss: 0.7928 - val_accuracy: 0.5000

Epoch 29/100
2/2 [=====] - 6s 2s/step - loss: 0.2423 - accuracy: 0.5000 - val_loss: 0.8933 - val_accuracy: 0.5000

Epoch 30/100
2/2 [=====] - 6s 2s/step - loss: 0.3301 - accuracy: 0.5000 - val_loss: 0.8343 - val_accuracy: 0.5000

Epoch 31/100
2/2 [=====] - 6s 2s/step - loss: 0.2582 - accuracy: 0.5000 - val_loss: 1.0715 - val_accuracy: 0.5000

Epoch 32/100
2/2 [=====] - 7s 2s/step - loss: 0.2420 - accuracy: 0.5000 - val_loss: 1.5268 - val_accuracy: 0.5000

Epoch 33/100
2/2 [=====] - 7s 5s/step - loss: 0.4392 - accuracy: 0.5000 - val_loss: 1.7682 - val_accuracy: 0.5000

Epoch 34/100
2/2 [=====] - 6s 5s/step - loss: 0.3154 - accuracy: 0.5000 - val_loss: 1.5966 - val_accuracy: 0.5000

Epoch 35/100
2/2 [=====] - 6s 5s/step - loss: 0.3224 - accuracy: 0.5000 - val_loss: 1.5137 - val_accuracy: 0.5000

Epoch 36/100
2/2 [=====] - 6s 2s/step - loss: 0.2242 - accuracy: 0.5000 - val_loss: 2.0581 - val_accuracy: 0.5000

Epoch 37/100
2/2 [=====] - 7s 2s/step - loss: 0.4995 - accuracy: 0.5000 - val_loss: 2.3187 - val_accuracy: 0.5000

Epoch 38/100
2/2 [=====] - 6s 5s/step - loss: 0.3777 - accuracy: 0.5000 - val_loss: 1.3274 - val_accuracy: 0.5000

Epoch 39/100
2/2 [=====] - 6s 5s/step - loss: 0.2800 - accuracy: 0.5000 - val_loss: 1.3271 - val_accuracy: 0.5000

Epoch 40/100
2/2 [=====] - 6s 2s/step - loss: 0.2588 - accuracy: 0.5000 - val_loss: 1.6421 - val_accuracy: 0.5000

Epoch 41/100
2/2 [=====] - 6s 5s/step - loss: 0.2036 - accuracy: 0.5000 - val_loss: 2.1279 - val_accuracy: 0.5000

Epoch 42/100
2/2 [=====] - 6s 5s/step - loss: 0.4357 - accuracy: 0.5000 - val_loss: 2.2315 - val_accuracy: 0.5000

Epoch 43/100
2/2 [=====] - 7s 2s/step - loss: 0.2131 - accuracy: 0.5000 - val_loss: 2.0573 - val_accuracy: 0.5000

Epoch 44/100
2/2 [=====] - 7s 5s/step - loss: 0.1416 - accuracy: 0.5000 - val_loss: 1.9839 - val_accuracy: 0.5000

Epoch 45/100
2/2 [=====] - 7s 2s/step - loss: 0.2362 - accuracy: 0.5000 - val_loss: 1.8006 - val_accuracy: 0.5000

Epoch 46/100
2/2 [=====] - 7s 2s/step - loss: 0.1659 - accuracy: 0.5000 - val_loss: 1.6529 - val_accuracy: 0.5000

Epoch 47/100
2/2 [=====] - 7s 6s/step - loss: 0.0752 - accuracy: 0.5000 - val_loss: 2.0458 - val_accuracy: 0.5000

Epoch 48/100
2/2 [=====] - 8s 6s/step - loss: 0.2360 - accuracy: 0.5000 - val_loss: 2.2299 - val_accuracy: 0.5000

Epoch 49/100
2/2 [=====] - 8s 6s/step - loss: 0.0564 - accuracy: 0.5000 - val_loss: 2.1665 - val_accuracy: 0.5000

Epoch 50/100
2/2 [=====] - 7s 2s/step - loss: 0.0712 - accuracy: 0.5000 - val_loss: 2.0713 - val_accuracy: 0.5000
Epoch 51/100
2/2 [=====] - 6s 5s/step - loss: 0.0414 - accuracy: 0.5000 - val_loss: 2.0850 - val_accuracy: 0.5000
Epoch 52/100
2/2 [=====] - 7s 2s/step - loss: 0.1217 - accuracy: 0.5000 - val_loss: 2.0818 - val_accuracy: 0.5000
Epoch 53/100
2/2 [=====] - 6s 5s/step - loss: 0.0578 - accuracy: 0.5000 - val_loss: 2.1234 - val_accuracy: 0.5000
Epoch 54/100
2/2 [=====] - 6s 2s/step - loss: 0.1644 - accuracy: 0.5000 - val_loss: 1.9191 - val_accuracy: 0.5000
Epoch 55/100
2/2 [=====] - 6s 5s/step - loss: 0.0896 - accuracy: 0.5000 - val_loss: 2.0372 - val_accuracy: 0.5000
Epoch 56/100
2/2 [=====] - 6s 5s/step - loss: 0.0931 - accuracy: 0.5000 - val_loss: 2.2344 - val_accuracy: 0.5000
Epoch 57/100
2/2 [=====] - 6s 2s/step - loss: 0.1137 - accuracy: 0.5000 - val_loss: 2.5990 - val_accuracy: 0.5000
Epoch 58/100
2/2 [=====] - 6s 2s/step - loss: 0.0903 - accuracy: 0.5000 - val_loss: 2.8398 - val_accuracy: 0.5000
Epoch 59/100
2/2 [=====] - 6s 5s/step - loss: 0.0759 - accuracy: 0.5000 - val_loss: 2.3546 - val_accuracy: 0.5000
Epoch 60/100
2/2 [=====] - 6s 2s/step - loss: 0.0797 - accuracy: 0.5000 - val_loss: 1.8467 - val_accuracy: 0.5000
Epoch 61/100
2/2 [=====] - 6s 2s/step - loss: 0.0675 - accuracy: 0.5000 - val_loss: 1.7512 - val_accuracy: 0.5000
Epoch 62/100
2/2 [=====] - 6s 5s/step - loss: 0.0769 - accuracy: 0.5000 - val_loss: 1.9722 - val_accuracy: 0.5000
Epoch 63/100
2/2 [=====] - 6s 2s/step - loss: 0.0436 - accuracy: 0.5000 - val_loss: 2.3349 - val_accuracy: 0.5000
Epoch 64/100
2/2 [=====] - 6s 2s/step - loss: 0.1023 - accuracy: 0.5000 - val_loss: 2.3523 - val_accuracy: 0.5000
Epoch 65/100
2/2 [=====] - 6s 5s/step - loss: 0.0264 - accuracy: 0.5000 - val_loss: 2.5602 - val_accuracy: 0.5000

Epoch 66/100
2/2 [=====] - 6s 5s/step - loss: 0.0621 - accuracy: 0.5000 - val_loss: 2.7345 - val_accuracy: 0.5000
Epoch 67/100
2/2 [=====] - 6s 2s/step - loss: 0.0183 - accuracy: 0.5000 - val_loss: 2.7722 - val_accuracy: 0.5000
Epoch 68/100
2/2 [=====] - 6s 5s/step - loss: 0.0169 - accuracy: 0.5000 - val_loss: 2.8056 - val_accuracy: 0.5000
Epoch 69/100
2/2 [=====] - 6s 2s/step - loss: 0.0391 - accuracy: 0.5000 - val_loss: 2.7058 - val_accuracy: 0.5000
Epoch 70/100
2/2 [=====] - 6s 5s/step - loss: 0.0100 - accuracy: 0.5000 - val_loss: 2.6829 - val_accuracy: 0.5000
Epoch 71/100
2/2 [=====] - 6s 5s/step - loss: 0.0105 - accuracy: 0.5000 - val_loss: 2.8200 - val_accuracy: 0.5000
Epoch 72/100
2/2 [=====] - 6s 2s/step - loss: 0.0211 - accuracy: 0.5000 - val_loss: 2.5400 - val_accuracy: 0.5000
Epoch 73/100
2/2 [=====] - 6s 5s/step - loss: 0.0168 - accuracy: 0.5000 - val_loss: 2.4523 - val_accuracy: 0.5000
Epoch 74/100
2/2 [=====] - 6s 5s/step - loss: 0.1188 - accuracy: 0.5000 - val_loss: 2.9353 - val_accuracy: 0.5000
Epoch 75/100
2/2 [=====] - 6s 2s/step - loss: 0.0737 - accuracy: 0.5000 - val_loss: 3.8525 - val_accuracy: 0.5000
Epoch 76/100
2/2 [=====] - 6s 2s/step - loss: 0.2346 - accuracy: 0.5000 - val_loss: 2.6542 - val_accuracy: 0.5000
Epoch 77/100
2/2 [=====] - 6s 2s/step - loss: 0.0491 - accuracy: 0.5000 - val_loss: 1.5398 - val_accuracy: 0.5000
Epoch 78/100
2/2 [=====] - 6s 2s/step - loss: 0.1042 - accuracy: 0.5000 - val_loss: 1.0389 - val_accuracy: 0.5000
Epoch 79/100
2/2 [=====] - 6s 2s/step - loss: 0.1280 - accuracy: 0.5000 - val_loss: 1.0099 - val_accuracy: 0.5000
Epoch 80/100
2/2 [=====] - 6s 2s/step - loss: 0.2155 - accuracy: 0.5000 - val_loss: 0.8485 - val_accuracy: 0.5000
Epoch 81/100
2/2 [=====] - 6s 5s/step - loss: 0.1495 - accuracy: 0.5000 - val_loss: 0.7449 - val_accuracy: 0.5000

Epoch 82/100
2/2 [=====] - 6s 5s/step - loss: 0.1099 - accuracy:
0.5000 - val_loss: 0.8134 - val_accuracy: 0.5000
Epoch 83/100
2/2 [=====] - 6s 5s/step - loss: 0.0996 - accuracy:
0.5000 - val_loss: 0.8823 - val_accuracy: 0.5000
Epoch 84/100
2/2 [=====] - 6s 2s/step - loss: 0.1226 - accuracy:
0.5000 - val_loss: 0.9292 - val_accuracy: 0.5000
Epoch 85/100
2/2 [=====] - 6s 2s/step - loss: 0.1233 - accuracy:
0.5000 - val_loss: 1.0235 - val_accuracy: 0.5000
Epoch 86/100
2/2 [=====] - 6s 2s/step - loss: 0.0798 - accuracy:
0.5000 - val_loss: 1.0997 - val_accuracy: 0.5000
Epoch 87/100
2/2 [=====] - 6s 2s/step - loss: 0.0671 - accuracy:
0.5000 - val_loss: 1.0530 - val_accuracy: 0.5000
Epoch 88/100
2/2 [=====] - 6s 5s/step - loss: 0.0353 - accuracy:
0.5000 - val_loss: 1.2476 - val_accuracy: 0.5000
Epoch 89/100
2/2 [=====] - 6s 5s/step - loss: 0.0430 - accuracy:
0.5000 - val_loss: 1.3672 - val_accuracy: 0.5000
Epoch 90/100
2/2 [=====] - 6s 5s/step - loss: 0.0372 - accuracy:
0.5000 - val_loss: 1.8884 - val_accuracy: 0.5000
Epoch 91/100
2/2 [=====] - 6s 2s/step - loss: 0.0080 - accuracy:
0.5000 - val_loss: 2.8783 - val_accuracy: 0.5000
Epoch 92/100
2/2 [=====] - 6s 2s/step - loss: 0.1396 - accuracy:
0.5000 - val_loss: 2.4110 - val_accuracy: 0.5000
Epoch 93/100
2/2 [=====] - 6s 5s/step - loss: 0.0206 - accuracy:
0.5000 - val_loss: 2.3044 - val_accuracy: 0.5000
Epoch 94/100
2/2 [=====] - 6s 5s/step - loss: 0.0705 - accuracy:
0.5000 - val_loss: 2.2260 - val_accuracy: 0.5000
Epoch 95/100
2/2 [=====] - 6s 2s/step - loss: 0.0559 - accuracy:
0.5000 - val_loss: 2.0352 - val_accuracy: 0.5000
Epoch 96/100
2/2 [=====] - 6s 2s/step - loss: 0.0388 - accuracy:
0.5000 - val_loss: 1.8858 - val_accuracy: 0.5000
Epoch 97/100
2/2 [=====] - 6s 2s/step - loss: 0.0060 - accuracy:
0.5000 - val_loss: 1.7658 - val_accuracy: 0.5000

```
Epoch 98/100
2/2 [=====] - 6s 2s/step - loss: 0.0064 - accuracy:
0.5000 - val_loss: 1.7422 - val_accuracy: 0.5000
Epoch 99/100
2/2 [=====] - 6s 5s/step - loss: 0.0162 - accuracy:
0.5000 - val_loss: 1.8058 - val_accuracy: 0.5000
Epoch 100/100
2/2 [=====] - 6s 2s/step - loss: 0.0643 - accuracy:
0.5000 - val_loss: 2.0393 - val_accuracy: 0.5000
```

[26]: <keras.callbacks.History at 0x1c1302027c0>

[27]: `model.fit(train,validation_data=test,epochs=200)`

```
Epoch 1/200
2/2 [=====] - 6s 5s/step - loss: 0.0098 - accuracy:
0.5000 - val_loss: 2.2855 - val_accuracy: 0.5000
Epoch 2/200
2/2 [=====] - 6s 2s/step - loss: 0.0182 - accuracy:
0.5000 - val_loss: 2.4627 - val_accuracy: 0.5000
Epoch 3/200
2/2 [=====] - 6s 2s/step - loss: 0.0203 - accuracy:
0.5000 - val_loss: 2.5640 - val_accuracy: 0.5000
Epoch 4/200
2/2 [=====] - 6s 5s/step - loss: 0.0069 - accuracy:
0.5000 - val_loss: 2.6806 - val_accuracy: 0.5000
Epoch 5/200
2/2 [=====] - 6s 5s/step - loss: 0.0352 - accuracy:
0.5000 - val_loss: 2.7620 - val_accuracy: 0.5000
Epoch 6/200
2/2 [=====] - 6s 5s/step - loss: 0.0180 - accuracy:
0.5000 - val_loss: 2.6942 - val_accuracy: 0.5000
Epoch 7/200
2/2 [=====] - 6s 5s/step - loss: 0.0054 - accuracy:
0.5000 - val_loss: 2.6230 - val_accuracy: 0.5000
Epoch 8/200
2/2 [=====] - 7s 2s/step - loss: 0.0160 - accuracy:
0.5000 - val_loss: 2.6684 - val_accuracy: 0.5000
Epoch 9/200
2/2 [=====] - 7s 6s/step - loss: 0.0063 - accuracy:
0.5000 - val_loss: 2.7425 - val_accuracy: 0.5000
Epoch 10/200
2/2 [=====] - 7s 2s/step - loss: 0.0101 - accuracy:
0.5000 - val_loss: 2.7967 - val_accuracy: 0.5000
Epoch 11/200
2/2 [=====] - 6s 5s/step - loss: 0.0342 - accuracy:
0.5000 - val_loss: 3.9950 - val_accuracy: 0.5000
Epoch 12/200
```

2/2 [=====] - 6s 5s/step - loss: 0.2485 - accuracy:
0.5000 - val_loss: 2.7578 - val_accuracy: 0.5000
Epoch 13/200
2/2 [=====] - 6s 2s/step - loss: 0.0060 - accuracy:
0.5000 - val_loss: 2.5600 - val_accuracy: 0.5000
Epoch 14/200
2/2 [=====] - 6s 2s/step - loss: 0.0929 - accuracy:
0.5000 - val_loss: 2.4269 - val_accuracy: 0.5000
Epoch 15/200
2/2 [=====] - 6s 5s/step - loss: 0.1442 - accuracy:
0.5000 - val_loss: 2.7132 - val_accuracy: 0.5000
Epoch 16/200
2/2 [=====] - 6s 5s/step - loss: 0.0402 - accuracy:
0.5000 - val_loss: 3.3630 - val_accuracy: 0.5000
Epoch 17/200
2/2 [=====] - 6s 5s/step - loss: 0.0370 - accuracy:
0.5000 - val_loss: 3.8014 - val_accuracy: 0.5000
Epoch 18/200
2/2 [=====] - 6s 5s/step - loss: 0.0213 - accuracy:
0.5000 - val_loss: 4.2149 - val_accuracy: 0.5000
Epoch 19/200
2/2 [=====] - 6s 2s/step - loss: 0.0279 - accuracy:
0.5000 - val_loss: 4.3404 - val_accuracy: 0.5000
Epoch 20/200
2/2 [=====] - 6s 5s/step - loss: 0.0776 - accuracy:
0.5000 - val_loss: 2.4538 - val_accuracy: 0.5000
Epoch 21/200
2/2 [=====] - 6s 5s/step - loss: 0.0122 - accuracy:
0.5000 - val_loss: 2.4537 - val_accuracy: 0.5000
Epoch 22/200
2/2 [=====] - 6s 2s/step - loss: 0.0728 - accuracy:
0.5000 - val_loss: 1.8798 - val_accuracy: 0.5000
Epoch 23/200
2/2 [=====] - 6s 2s/step - loss: 0.0225 - accuracy:
0.5000 - val_loss: 1.1883 - val_accuracy: 0.5000
Epoch 24/200
2/2 [=====] - 6s 2s/step - loss: 0.0244 - accuracy:
0.5000 - val_loss: 0.8899 - val_accuracy: 0.5000
Epoch 25/200
2/2 [=====] - 6s 2s/step - loss: 0.1026 - accuracy:
0.5000 - val_loss: 0.7112 - val_accuracy: 0.5000
Epoch 26/200
2/2 [=====] - 6s 5s/step - loss: 0.0667 - accuracy:
0.5000 - val_loss: 0.6357 - val_accuracy: 0.5000
Epoch 27/200
2/2 [=====] - 6s 2s/step - loss: 0.0609 - accuracy:
0.5000 - val_loss: 0.6294 - val_accuracy: 0.5000
Epoch 28/200

2/2 [=====] - 6s 5s/step - loss: 0.1254 - accuracy: 0.5000 - val_loss: 0.8422 - val_accuracy: 0.5000
Epoch 29/200
2/2 [=====] - 6s 2s/step - loss: 0.0412 - accuracy: 0.5000 - val_loss: 1.2672 - val_accuracy: 0.5000
Epoch 30/200
2/2 [=====] - 6s 2s/step - loss: 0.0371 - accuracy: 0.5000 - val_loss: 1.7262 - val_accuracy: 0.5000
Epoch 31/200
2/2 [=====] - 6s 2s/step - loss: 0.0689 - accuracy: 0.5000 - val_loss: 1.7696 - val_accuracy: 0.5000
Epoch 32/200
2/2 [=====] - 6s 2s/step - loss: 0.0191 - accuracy: 0.5000 - val_loss: 1.7473 - val_accuracy: 0.5000
Epoch 33/200
2/2 [=====] - 6s 2s/step - loss: 0.0759 - accuracy: 0.5000 - val_loss: 2.2237 - val_accuracy: 0.5000
Epoch 34/200
2/2 [=====] - 6s 2s/step - loss: 0.0864 - accuracy: 0.5000 - val_loss: 1.9252 - val_accuracy: 0.5000
Epoch 35/200
2/2 [=====] - 6s 5s/step - loss: 0.0105 - accuracy: 0.5000 - val_loss: 2.0154 - val_accuracy: 0.5000
Epoch 36/200
2/2 [=====] - 6s 2s/step - loss: 0.0504 - accuracy: 0.5000 - val_loss: 2.0849 - val_accuracy: 0.5000
Epoch 37/200
2/2 [=====] - 6s 5s/step - loss: 0.0122 - accuracy: 0.5000 - val_loss: 2.1492 - val_accuracy: 0.5000
Epoch 38/200
2/2 [=====] - 6s 5s/step - loss: 0.0442 - accuracy: 0.5000 - val_loss: 2.2474 - val_accuracy: 0.5000
Epoch 39/200
2/2 [=====] - 6s 5s/step - loss: 0.0244 - accuracy: 0.5000 - val_loss: 2.2582 - val_accuracy: 0.5000
Epoch 40/200
2/2 [=====] - 6s 5s/step - loss: 0.0020 - accuracy: 0.5000 - val_loss: 2.2023 - val_accuracy: 0.5000
Epoch 41/200
2/2 [=====] - 6s 2s/step - loss: 0.0095 - accuracy: 0.5000 - val_loss: 2.2615 - val_accuracy: 0.5000
Epoch 42/200
2/2 [=====] - 6s 5s/step - loss: 0.0167 - accuracy: 0.5000 - val_loss: 2.4240 - val_accuracy: 0.5000
Epoch 43/200
2/2 [=====] - 6s 2s/step - loss: 0.0459 - accuracy: 0.5000 - val_loss: 2.2427 - val_accuracy: 0.5000
Epoch 44/200

2/2 [=====] - 6s 5s/step - loss: 0.0126 - accuracy:
0.5000 - val_loss: 2.0547 - val_accuracy: 0.5000
Epoch 45/200
2/2 [=====] - 6s 5s/step - loss: 0.0466 - accuracy:
0.5000 - val_loss: 2.0911 - val_accuracy: 0.5000
Epoch 46/200
2/2 [=====] - 6s 2s/step - loss: 0.0128 - accuracy:
0.5000 - val_loss: 2.1530 - val_accuracy: 0.5000
Epoch 47/200
2/2 [=====] - 6s 5s/step - loss: 0.0104 - accuracy:
0.5000 - val_loss: 2.2539 - val_accuracy: 0.5000
Epoch 48/200
2/2 [=====] - 6s 2s/step - loss: 0.0820 - accuracy:
0.5000 - val_loss: 2.2747 - val_accuracy: 0.5000
Epoch 49/200
2/2 [=====] - 6s 5s/step - loss: 0.0073 - accuracy:
0.5000 - val_loss: 2.3298 - val_accuracy: 0.5000
Epoch 50/200
2/2 [=====] - 6s 5s/step - loss: 0.0229 - accuracy:
0.5000 - val_loss: 2.3680 - val_accuracy: 0.5000
Epoch 51/200
2/2 [=====] - 6s 5s/step - loss: 0.0266 - accuracy:
0.5000 - val_loss: 2.2383 - val_accuracy: 0.5000
Epoch 52/200
2/2 [=====] - 6s 2s/step - loss: 0.0508 - accuracy:
0.5000 - val_loss: 1.9211 - val_accuracy: 0.5000
Epoch 53/200
2/2 [=====] - 6s 2s/step - loss: 0.0101 - accuracy:
0.5000 - val_loss: 2.0535 - val_accuracy: 0.5000
Epoch 54/200
2/2 [=====] - 6s 5s/step - loss: 0.0091 - accuracy:
0.5000 - val_loss: 2.3177 - val_accuracy: 0.5000
Epoch 55/200
2/2 [=====] - 6s 2s/step - loss: 0.0837 - accuracy:
0.5000 - val_loss: 2.3734 - val_accuracy: 0.5000
Epoch 56/200
2/2 [=====] - 6s 2s/step - loss: 0.0173 - accuracy:
0.5000 - val_loss: 2.2884 - val_accuracy: 0.5000
Epoch 57/200
2/2 [=====] - 6s 5s/step - loss: 0.0205 - accuracy:
0.5000 - val_loss: 2.0352 - val_accuracy: 0.5000
Epoch 58/200
2/2 [=====] - 6s 2s/step - loss: 0.0055 - accuracy:
0.5000 - val_loss: 1.7782 - val_accuracy: 0.5000
Epoch 59/200
2/2 [=====] - 6s 5s/step - loss: 0.0165 - accuracy:
0.5000 - val_loss: 1.6286 - val_accuracy: 0.5000
Epoch 60/200

2/2 [=====] - 6s 5s/step - loss: 0.0065 - accuracy:
 0.5000 - val_loss: 1.5618 - val_accuracy: 0.5000
 Epoch 61/200
 2/2 [=====] - 6s 5s/step - loss: 0.0100 - accuracy:
 0.5000 - val_loss: 1.5777 - val_accuracy: 0.5000
 Epoch 62/200
 2/2 [=====] - 6s 5s/step - loss: 0.0052 - accuracy:
 0.5000 - val_loss: 1.6910 - val_accuracy: 0.5000
 Epoch 63/200
 2/2 [=====] - 6s 2s/step - loss: 0.0021 - accuracy:
 0.5000 - val_loss: 1.8131 - val_accuracy: 0.5000
 Epoch 64/200
 2/2 [=====] - 6s 2s/step - loss: 0.0064 - accuracy:
 0.5000 - val_loss: 1.9556 - val_accuracy: 0.5000
 Epoch 65/200
 2/2 [=====] - 6s 2s/step - loss: 0.0060 - accuracy:
 0.5000 - val_loss: 2.1626 - val_accuracy: 0.5000
 Epoch 66/200
 2/2 [=====] - 6s 2s/step - loss: 0.0281 - accuracy:
 0.5000 - val_loss: 2.5187 - val_accuracy: 0.5000
 Epoch 67/200
 2/2 [=====] - 6s 2s/step - loss: 4.7090e-04 - accuracy:
 0.5000 - val_loss: 2.9030 - val_accuracy: 0.5000
 Epoch 68/200
 2/2 [=====] - 6s 2s/step - loss: 0.0042 - accuracy:
 0.5000 - val_loss: 3.2279 - val_accuracy: 0.5000
 Epoch 69/200
 2/2 [=====] - 6s 2s/step - loss: 3.2364e-04 - accuracy:
 0.5000 - val_loss: 3.5180 - val_accuracy: 0.5000
 Epoch 70/200
 2/2 [=====] - 6s 5s/step - loss: 0.0012 - accuracy:
 0.5000 - val_loss: 3.7434 - val_accuracy: 0.5000
 Epoch 71/200
 2/2 [=====] - 6s 2s/step - loss: 0.0522 - accuracy:
 0.5000 - val_loss: 2.7701 - val_accuracy: 0.5000
 Epoch 72/200
 2/2 [=====] - 6s 5s/step - loss: 0.0010 - accuracy:
 0.5000 - val_loss: 2.3437 - val_accuracy: 0.5000
 Epoch 73/200
 2/2 [=====] - 6s 5s/step - loss: 0.0031 - accuracy:
 0.5000 - val_loss: 2.1339 - val_accuracy: 0.5000
 Epoch 74/200
 2/2 [=====] - 6s 2s/step - loss: 0.0026 - accuracy:
 0.5000 - val_loss: 2.0377 - val_accuracy: 0.5000
 Epoch 75/200
 2/2 [=====] - 6s 5s/step - loss: 0.0337 - accuracy:
 0.5000 - val_loss: 1.9653 - val_accuracy: 0.5000
 Epoch 76/200

2/2 [=====] - 6s 5s/step - loss: 0.0100 - accuracy:
0.5000 - val_loss: 1.9257 - val_accuracy: 0.5000
Epoch 77/200
2/2 [=====] - 6s 5s/step - loss: 0.0151 - accuracy:
0.5000 - val_loss: 1.9590 - val_accuracy: 0.5000
Epoch 78/200
2/2 [=====] - 6s 5s/step - loss: 0.0033 - accuracy:
0.5000 - val_loss: 2.0065 - val_accuracy: 0.5000
Epoch 79/200
2/2 [=====] - 6s 5s/step - loss: 0.0078 - accuracy:
0.5000 - val_loss: 2.0602 - val_accuracy: 0.5000
Epoch 80/200
2/2 [=====] - 6s 2s/step - loss: 0.0038 - accuracy:
0.5000 - val_loss: 2.1215 - val_accuracy: 0.5000
Epoch 81/200
2/2 [=====] - 6s 5s/step - loss: 0.0060 - accuracy:
0.5000 - val_loss: 2.1828 - val_accuracy: 0.5000
Epoch 82/200
2/2 [=====] - 6s 2s/step - loss: 0.0028 - accuracy:
0.5000 - val_loss: 2.2452 - val_accuracy: 0.5000
Epoch 83/200
2/2 [=====] - 6s 2s/step - loss: 0.0182 - accuracy:
0.5000 - val_loss: 2.3415 - val_accuracy: 0.5000
Epoch 84/200
2/2 [=====] - 6s 5s/step - loss: 0.0034 - accuracy:
0.5000 - val_loss: 2.4427 - val_accuracy: 0.5000
Epoch 85/200
2/2 [=====] - 6s 2s/step - loss: 0.0040 - accuracy:
0.5000 - val_loss: 2.5537 - val_accuracy: 0.5000
Epoch 86/200
2/2 [=====] - 6s 5s/step - loss: 0.0057 - accuracy:
0.5000 - val_loss: 2.6539 - val_accuracy: 0.5000
Epoch 87/200
2/2 [=====] - 6s 5s/step - loss: 0.0028 - accuracy:
0.5000 - val_loss: 2.7410 - val_accuracy: 0.5000
Epoch 88/200
2/2 [=====] - 6s 5s/step - loss: 0.0025 - accuracy:
0.5000 - val_loss: 2.8212 - val_accuracy: 0.5000
Epoch 89/200
2/2 [=====] - 6s 5s/step - loss: 0.0044 - accuracy:
0.5000 - val_loss: 2.8979 - val_accuracy: 0.5000
Epoch 90/200
2/2 [=====] - 6s 5s/step - loss: 6.0389e-04 - accuracy:
0.5000 - val_loss: 2.9632 - val_accuracy: 0.5000
Epoch 91/200
2/2 [=====] - 6s 5s/step - loss: 0.0295 - accuracy:
0.5000 - val_loss: 2.9866 - val_accuracy: 0.5000
Epoch 92/200

2/2 [=====] - 6s 2s/step - loss: 9.9542e-04 - accuracy:
0.5000 - val_loss: 3.0115 - val_accuracy: 0.5000
Epoch 93/200
2/2 [=====] - 6s 5s/step - loss: 0.0014 - accuracy:
0.5000 - val_loss: 3.0736 - val_accuracy: 0.5000
Epoch 94/200
2/2 [=====] - 6s 5s/step - loss: 8.5098e-04 - accuracy:
0.5000 - val_loss: 3.1654 - val_accuracy: 0.5000
Epoch 95/200
2/2 [=====] - 6s 5s/step - loss: 4.8545e-05 - accuracy:
0.5000 - val_loss: 3.2753 - val_accuracy: 0.5000
Epoch 96/200
2/2 [=====] - 6s 5s/step - loss: 0.0011 - accuracy:
0.5000 - val_loss: 3.3711 - val_accuracy: 0.5000
Epoch 97/200
2/2 [=====] - 6s 2s/step - loss: 3.4397e-04 - accuracy:
0.5000 - val_loss: 3.4394 - val_accuracy: 0.5000
Epoch 98/200
2/2 [=====] - 6s 2s/step - loss: 0.0236 - accuracy:
0.5000 - val_loss: 3.1537 - val_accuracy: 0.5000
Epoch 99/200
2/2 [=====] - 6s 5s/step - loss: 2.7167e-04 - accuracy:
0.5000 - val_loss: 3.1297 - val_accuracy: 0.5000
Epoch 100/200
2/2 [=====] - 6s 2s/step - loss: 0.0077 - accuracy:
0.5000 - val_loss: 3.2425 - val_accuracy: 0.5000
Epoch 101/200
2/2 [=====] - 6s 5s/step - loss: 6.3726e-04 - accuracy:
0.5000 - val_loss: 3.3563 - val_accuracy: 0.5000
Epoch 102/200
2/2 [=====] - 6s 2s/step - loss: 0.0011 - accuracy:
0.5000 - val_loss: 3.4826 - val_accuracy: 0.5000
Epoch 103/200
2/2 [=====] - 6s 5s/step - loss: 0.0012 - accuracy:
0.5000 - val_loss: 3.6111 - val_accuracy: 0.5000
Epoch 104/200
2/2 [=====] - 6s 2s/step - loss: 0.0015 - accuracy:
0.5000 - val_loss: 3.7411 - val_accuracy: 0.5000
Epoch 105/200
2/2 [=====] - 6s 5s/step - loss: 0.0061 - accuracy:
0.5000 - val_loss: 3.8412 - val_accuracy: 0.5000
Epoch 106/200
2/2 [=====] - 6s 5s/step - loss: 0.0029 - accuracy:
0.5000 - val_loss: 3.9132 - val_accuracy: 0.5000
Epoch 107/200
2/2 [=====] - 6s 2s/step - loss: 0.0034 - accuracy:
0.5000 - val_loss: 3.9717 - val_accuracy: 0.5000
Epoch 108/200

2/2 [=====] - 6s 2s/step - loss: 0.0021 - accuracy:
0.5000 - val_loss: 4.0349 - val_accuracy: 0.5000
Epoch 109/200
2/2 [=====] - 6s 5s/step - loss: 0.0014 - accuracy:
0.5000 - val_loss: 4.1131 - val_accuracy: 0.5000
Epoch 110/200
2/2 [=====] - 6s 2s/step - loss: 0.0129 - accuracy:
0.5000 - val_loss: 4.1681 - val_accuracy: 0.5000
Epoch 111/200
2/2 [=====] - 6s 5s/step - loss: 0.0061 - accuracy:
0.5000 - val_loss: 4.2115 - val_accuracy: 0.5000
Epoch 112/200
2/2 [=====] - 6s 2s/step - loss: 0.0014 - accuracy:
0.5000 - val_loss: 4.2557 - val_accuracy: 0.5000
Epoch 113/200
2/2 [=====] - 6s 5s/step - loss: 0.0031 - accuracy:
0.5000 - val_loss: 4.3352 - val_accuracy: 0.5000
Epoch 114/200
2/2 [=====] - 6s 5s/step - loss: 0.0242 - accuracy:
0.5000 - val_loss: 3.6479 - val_accuracy: 0.5000
Epoch 115/200
2/2 [=====] - 6s 5s/step - loss: 0.0029 - accuracy:
0.5000 - val_loss: 2.9966 - val_accuracy: 0.5000
Epoch 116/200
2/2 [=====] - 6s 2s/step - loss: 0.0040 - accuracy:
0.5000 - val_loss: 2.6957 - val_accuracy: 0.5000
Epoch 117/200
2/2 [=====] - 6s 2s/step - loss: 0.0056 - accuracy:
0.5000 - val_loss: 2.5134 - val_accuracy: 0.5000
Epoch 118/200
2/2 [=====] - 6s 2s/step - loss: 0.0168 - accuracy:
0.5000 - val_loss: 2.4237 - val_accuracy: 0.5000
Epoch 119/200
2/2 [=====] - 6s 5s/step - loss: 0.0111 - accuracy:
0.5000 - val_loss: 2.3667 - val_accuracy: 0.5000
Epoch 120/200
2/2 [=====] - 6s 2s/step - loss: 0.0175 - accuracy:
0.5000 - val_loss: 2.2806 - val_accuracy: 0.5000
Epoch 121/200
2/2 [=====] - 6s 2s/step - loss: 0.0170 - accuracy:
0.5000 - val_loss: 2.2591 - val_accuracy: 0.5000
Epoch 122/200
2/2 [=====] - 6s 5s/step - loss: 0.0067 - accuracy:
0.5000 - val_loss: 2.2694 - val_accuracy: 0.5000
Epoch 123/200
2/2 [=====] - 6s 2s/step - loss: 0.0051 - accuracy:
0.5000 - val_loss: 2.3241 - val_accuracy: 0.5000
Epoch 124/200

2/2 [=====] - 6s 5s/step - loss: 0.0042 - accuracy:
 0.5000 - val_loss: 2.4056 - val_accuracy: 0.5000
 Epoch 125/200
 2/2 [=====] - 6s 5s/step - loss: 0.0033 - accuracy:
 0.5000 - val_loss: 2.4944 - val_accuracy: 0.5000
 Epoch 126/200
 2/2 [=====] - 6s 5s/step - loss: 0.0012 - accuracy:
 0.5000 - val_loss: 2.5861 - val_accuracy: 0.5000
 Epoch 127/200
 2/2 [=====] - 6s 2s/step - loss: 0.0039 - accuracy:
 0.5000 - val_loss: 2.6839 - val_accuracy: 0.5000
 Epoch 128/200
 2/2 [=====] - 6s 5s/step - loss: 4.6694e-04 - accuracy:
 0.5000 - val_loss: 2.7828 - val_accuracy: 0.5000
 Epoch 129/200
 2/2 [=====] - 6s 5s/step - loss: 1.3620e-04 - accuracy:
 0.5000 - val_loss: 2.8741 - val_accuracy: 0.5000
 Epoch 130/200
 2/2 [=====] - 6s 2s/step - loss: 0.0017 - accuracy:
 0.5000 - val_loss: 2.9514 - val_accuracy: 0.5000
 Epoch 131/200
 2/2 [=====] - 6s 5s/step - loss: 0.0019 - accuracy:
 0.5000 - val_loss: 3.0410 - val_accuracy: 0.5000
 Epoch 132/200
 2/2 [=====] - 6s 2s/step - loss: 4.7183e-04 - accuracy:
 0.5000 - val_loss: 3.1235 - val_accuracy: 0.5000
 Epoch 133/200
 2/2 [=====] - 6s 5s/step - loss: 5.2334e-05 - accuracy:
 0.5000 - val_loss: 3.1916 - val_accuracy: 0.5000
 Epoch 134/200
 2/2 [=====] - 6s 5s/step - loss: 1.2453e-04 - accuracy:
 0.5000 - val_loss: 3.2477 - val_accuracy: 0.5000
 Epoch 135/200
 2/2 [=====] - 6s 2s/step - loss: 0.0024 - accuracy:
 0.5000 - val_loss: 3.2822 - val_accuracy: 0.5000
 Epoch 136/200
 2/2 [=====] - 6s 5s/step - loss: 7.3387e-05 - accuracy:
 0.5000 - val_loss: 3.3125 - val_accuracy: 0.5000
 Epoch 137/200
 2/2 [=====] - 6s 2s/step - loss: 0.0081 - accuracy:
 0.5000 - val_loss: 3.2336 - val_accuracy: 0.5000
 Epoch 138/200
 2/2 [=====] - 6s 5s/step - loss: 0.0034 - accuracy:
 0.5000 - val_loss: 3.1767 - val_accuracy: 0.5000
 Epoch 139/200
 2/2 [=====] - 6s 5s/step - loss: 4.9755e-04 - accuracy:
 0.5000 - val_loss: 3.1285 - val_accuracy: 0.5000
 Epoch 140/200

2/2 [=====] - 6s 2s/step - loss: 0.0013 - accuracy:
 0.5000 - val_loss: 3.0893 - val_accuracy: 0.5000
 Epoch 141/200
 2/2 [=====] - 6s 5s/step - loss: 3.7354e-04 - accuracy:
 0.5000 - val_loss: 3.0485 - val_accuracy: 0.5000
 Epoch 142/200
 2/2 [=====] - 6s 2s/step - loss: 9.5287e-04 - accuracy:
 0.5000 - val_loss: 3.0203 - val_accuracy: 0.5000
 Epoch 143/200
 2/2 [=====] - 6s 5s/step - loss: 1.2437e-04 - accuracy:
 0.5000 - val_loss: 3.0410 - val_accuracy: 0.5000
 Epoch 144/200
 2/2 [=====] - 6s 2s/step - loss: 1.0188e-04 - accuracy:
 0.5000 - val_loss: 3.0764 - val_accuracy: 0.5000
 Epoch 145/200
 2/2 [=====] - 6s 5s/step - loss: 6.2359e-05 - accuracy:
 0.5000 - val_loss: 3.1034 - val_accuracy: 0.5000
 Epoch 146/200
 2/2 [=====] - 6s 2s/step - loss: 0.0016 - accuracy:
 0.5000 - val_loss: 3.1119 - val_accuracy: 0.5000
 Epoch 147/200
 2/2 [=====] - 6s 5s/step - loss: 9.1883e-05 - accuracy:
 0.5000 - val_loss: 3.1017 - val_accuracy: 0.5000
 Epoch 148/200
 2/2 [=====] - 6s 2s/step - loss: 1.3933e-04 - accuracy:
 0.5000 - val_loss: 3.0846 - val_accuracy: 0.5000
 Epoch 149/200
 2/2 [=====] - 6s 5s/step - loss: 1.9354e-04 - accuracy:
 0.5000 - val_loss: 3.0421 - val_accuracy: 0.5000
 Epoch 150/200
 2/2 [=====] - 6s 2s/step - loss: 1.7673e-04 - accuracy:
 0.5000 - val_loss: 3.0045 - val_accuracy: 0.5000
 Epoch 151/200
 2/2 [=====] - 6s 2s/step - loss: 0.0038 - accuracy:
 0.5000 - val_loss: 3.1703 - val_accuracy: 0.5000
 Epoch 152/200
 2/2 [=====] - 6s 2s/step - loss: 0.0040 - accuracy:
 0.5000 - val_loss: 3.5083 - val_accuracy: 0.5000
 Epoch 153/200
 2/2 [=====] - 6s 2s/step - loss: 9.6373e-05 - accuracy:
 0.5000 - val_loss: 3.8282 - val_accuracy: 0.5000
 Epoch 154/200
 2/2 [=====] - 6s 5s/step - loss: 7.4525e-05 - accuracy:
 0.5000 - val_loss: 4.0865 - val_accuracy: 0.5000
 Epoch 155/200
 2/2 [=====] - 6s 2s/step - loss: 1.7209e-04 - accuracy:
 0.5000 - val_loss: 4.3142 - val_accuracy: 0.5000
 Epoch 156/200

2/2 [=====] - 6s 2s/step - loss: 3.4325e-05 - accuracy:
 0.5000 - val_loss: 4.5044 - val_accuracy: 0.5000
 Epoch 157/200
 2/2 [=====] - 6s 5s/step - loss: 0.0066 - accuracy:
 0.5000 - val_loss: 4.5448 - val_accuracy: 0.5000
 Epoch 158/200
 2/2 [=====] - 6s 2s/step - loss: 1.9667e-05 - accuracy:
 0.5000 - val_loss: 4.4790 - val_accuracy: 0.5000
 Epoch 159/200
 2/2 [=====] - 6s 5s/step - loss: 2.8888e-04 - accuracy:
 0.5000 - val_loss: 4.4202 - val_accuracy: 0.5000
 Epoch 160/200
 2/2 [=====] - 6s 2s/step - loss: 3.7666e-04 - accuracy:
 0.5000 - val_loss: 4.3871 - val_accuracy: 0.5000
 Epoch 161/200
 2/2 [=====] - 6s 5s/step - loss: 4.1307e-04 - accuracy:
 0.5000 - val_loss: 4.3714 - val_accuracy: 0.5000
 Epoch 162/200
 2/2 [=====] - 6s 5s/step - loss: 4.3115e-05 - accuracy:
 0.5000 - val_loss: 4.3610 - val_accuracy: 0.5000
 Epoch 163/200
 2/2 [=====] - 6s 5s/step - loss: 0.0019 - accuracy:
 0.5000 - val_loss: 4.3526 - val_accuracy: 0.5000
 Epoch 164/200
 2/2 [=====] - 6s 5s/step - loss: 1.6697e-04 - accuracy:
 0.5000 - val_loss: 4.3392 - val_accuracy: 0.5000
 Epoch 165/200
 2/2 [=====] - 6s 5s/step - loss: 0.0010 - accuracy:
 0.5000 - val_loss: 4.3296 - val_accuracy: 0.5000
 Epoch 166/200
 2/2 [=====] - 6s 5s/step - loss: 5.7721e-04 - accuracy:
 0.5000 - val_loss: 4.3298 - val_accuracy: 0.5000
 Epoch 167/200
 2/2 [=====] - 6s 5s/step - loss: 4.1006e-04 - accuracy:
 0.5000 - val_loss: 4.3350 - val_accuracy: 0.5000
 Epoch 168/200
 2/2 [=====] - 6s 5s/step - loss: 0.0011 - accuracy:
 0.5000 - val_loss: 4.3336 - val_accuracy: 0.5000
 Epoch 169/200
 2/2 [=====] - 6s 5s/step - loss: 4.1834e-04 - accuracy:
 0.5000 - val_loss: 4.3206 - val_accuracy: 0.5000
 Epoch 170/200
 2/2 [=====] - 6s 2s/step - loss: 0.0013 - accuracy:
 0.5000 - val_loss: 4.3189 - val_accuracy: 0.5000
 Epoch 171/200
 2/2 [=====] - 6s 5s/step - loss: 0.0010 - accuracy:
 0.5000 - val_loss: 4.3178 - val_accuracy: 0.5000
 Epoch 172/200

2/2 [=====] - 6s 2s/step - loss: 0.0171 - accuracy:
 0.5000 - val_loss: 4.3197 - val_accuracy: 0.5000
 Epoch 173/200
 2/2 [=====] - 6s 2s/step - loss: 1.9889e-04 - accuracy:
 0.5000 - val_loss: 4.3405 - val_accuracy: 0.5000
 Epoch 174/200
 2/2 [=====] - 6s 2s/step - loss: 0.0089 - accuracy:
 0.5000 - val_loss: 4.1641 - val_accuracy: 0.5000
 Epoch 175/200
 2/2 [=====] - 6s 2s/step - loss: 0.0302 - accuracy:
 0.5000 - val_loss: 4.0616 - val_accuracy: 0.5000
 Epoch 176/200
 2/2 [=====] - 6s 2s/step - loss: 0.0146 - accuracy:
 0.5000 - val_loss: 3.6642 - val_accuracy: 0.5000
 Epoch 177/200
 2/2 [=====] - 6s 2s/step - loss: 0.0230 - accuracy:
 0.5000 - val_loss: 3.2532 - val_accuracy: 0.5000
 Epoch 178/200
 2/2 [=====] - 6s 5s/step - loss: 0.0092 - accuracy:
 0.5000 - val_loss: 3.0256 - val_accuracy: 0.5000
 Epoch 179/200
 2/2 [=====] - 6s 5s/step - loss: 0.0224 - accuracy:
 0.5000 - val_loss: 2.8056 - val_accuracy: 0.5000
 Epoch 180/200
 2/2 [=====] - 6s 5s/step - loss: 0.0064 - accuracy:
 0.5000 - val_loss: 2.5071 - val_accuracy: 0.5000
 Epoch 181/200
 2/2 [=====] - 6s 5s/step - loss: 0.0116 - accuracy:
 0.5000 - val_loss: 2.3869 - val_accuracy: 0.5000
 Epoch 182/200
 2/2 [=====] - 6s 5s/step - loss: 0.0021 - accuracy:
 0.5000 - val_loss: 2.3326 - val_accuracy: 0.5000
 Epoch 183/200
 2/2 [=====] - 6s 2s/step - loss: 0.0071 - accuracy:
 0.5000 - val_loss: 2.2976 - val_accuracy: 0.5000
 Epoch 184/200
 2/2 [=====] - 6s 5s/step - loss: 0.0014 - accuracy:
 0.5000 - val_loss: 2.2722 - val_accuracy: 0.5000
 Epoch 185/200
 2/2 [=====] - 6s 2s/step - loss: 0.0022 - accuracy:
 0.5000 - val_loss: 2.2741 - val_accuracy: 0.5000
 Epoch 186/200
 2/2 [=====] - 6s 2s/step - loss: 0.0011 - accuracy:
 0.5000 - val_loss: 2.3019 - val_accuracy: 0.5000
 Epoch 187/200
 2/2 [=====] - 6s 2s/step - loss: 7.9573e-04 - accuracy:
 0.5000 - val_loss: 2.3669 - val_accuracy: 0.5000
 Epoch 188/200

```

2/2 [=====] - 6s 5s/step - loss: 0.0017 - accuracy:
0.5000 - val_loss: 2.4278 - val_accuracy: 0.5000
Epoch 189/200
2/2 [=====] - 6s 5s/step - loss: 0.0011 - accuracy:
0.5000 - val_loss: 2.4978 - val_accuracy: 0.5000
Epoch 190/200
2/2 [=====] - 6s 2s/step - loss: 0.0013 - accuracy:
0.5000 - val_loss: 2.5695 - val_accuracy: 0.5000
Epoch 191/200
2/2 [=====] - 6s 5s/step - loss: 0.0046 - accuracy:
0.5000 - val_loss: 2.6282 - val_accuracy: 0.5000
Epoch 192/200
2/2 [=====] - 6s 2s/step - loss: 0.0012 - accuracy:
0.5000 - val_loss: 2.6337 - val_accuracy: 0.5000
Epoch 193/200
2/2 [=====] - 6s 5s/step - loss: 0.0011 - accuracy:
0.5000 - val_loss: 2.6458 - val_accuracy: 0.5000
Epoch 194/200
2/2 [=====] - 6s 5s/step - loss: 7.7296e-04 - accuracy:
0.5000 - val_loss: 2.6383 - val_accuracy: 0.5000
Epoch 195/200
2/2 [=====] - 6s 2s/step - loss: 0.0018 - accuracy:
0.5000 - val_loss: 2.6194 - val_accuracy: 0.5000
Epoch 196/200
2/2 [=====] - 6s 2s/step - loss: 0.0372 - accuracy:
0.5000 - val_loss: 2.4976 - val_accuracy: 0.5000
Epoch 197/200
2/2 [=====] - 6s 2s/step - loss: 4.4810e-04 - accuracy:
0.5000 - val_loss: 2.5773 - val_accuracy: 0.5000
Epoch 198/200
2/2 [=====] - 6s 2s/step - loss: 0.0068 - accuracy:
0.5000 - val_loss: 2.6480 - val_accuracy: 0.5000
Epoch 199/200
2/2 [=====] - 6s 2s/step - loss: 0.0017 - accuracy:
0.5000 - val_loss: 2.7258 - val_accuracy: 0.5000
Epoch 200/200
2/2 [=====] - 6s 5s/step - loss: 0.0011 - accuracy:
0.5000 - val_loss: 2.7954 - val_accuracy: 0.5000

```

[27]: <keras.callbacks.History at 0x1c1301f1a00>

[28]: `model.fit(train, validation_data=test, epochs=300)`

```

Epoch 1/300
2/2 [=====] - 6s 2s/step - loss: 7.4758e-04 - accuracy:
0.5000 - val_loss: 2.8581 - val_accuracy: 0.5000
Epoch 2/300
2/2 [=====] - 6s 5s/step - loss: 0.0035 - accuracy:

```

0.5000 - val_loss: 2.9383 - val_accuracy: 0.5000
 Epoch 3/300
 2/2 [=====] - 6s 2s/step - loss: 0.0027 - accuracy:
 0.5000 - val_loss: 3.0183 - val_accuracy: 0.5000
 Epoch 4/300
 2/2 [=====] - 6s 2s/step - loss: 0.0029 - accuracy:
 0.5000 - val_loss: 3.1154 - val_accuracy: 0.5000
 Epoch 5/300
 2/2 [=====] - 6s 5s/step - loss: 8.3303e-04 - accuracy:
 0.5000 - val_loss: 3.2284 - val_accuracy: 0.5000
 Epoch 6/300
 2/2 [=====] - 6s 2s/step - loss: 2.5976e-04 - accuracy:
 0.5000 - val_loss: 3.3178 - val_accuracy: 0.5000
 Epoch 7/300
 2/2 [=====] - 6s 5s/step - loss: 5.0184e-04 - accuracy:
 0.5000 - val_loss: 3.4036 - val_accuracy: 0.5000
 Epoch 8/300
 2/2 [=====] - 6s 2s/step - loss: 1.2206e-04 - accuracy:
 0.5000 - val_loss: 3.4877 - val_accuracy: 0.5000
 Epoch 9/300
 2/2 [=====] - 6s 2s/step - loss: 5.5798e-04 - accuracy:
 0.5000 - val_loss: 3.5678 - val_accuracy: 0.5000
 Epoch 10/300
 2/2 [=====] - 6s 5s/step - loss: 0.0105 - accuracy:
 0.5000 - val_loss: 4.1740 - val_accuracy: 0.5000
 Epoch 11/300
 2/2 [=====] - 6s 2s/step - loss: 5.2073e-04 - accuracy:
 0.5000 - val_loss: 4.5766 - val_accuracy: 0.5000
 Epoch 12/300
 2/2 [=====] - 6s 2s/step - loss: 0.0032 - accuracy:
 0.5000 - val_loss: 5.1264 - val_accuracy: 0.5000
 Epoch 13/300
 2/2 [=====] - 6s 5s/step - loss: 0.0010 - accuracy:
 0.5000 - val_loss: 5.6527 - val_accuracy: 0.5000
 Epoch 14/300
 2/2 [=====] - 6s 2s/step - loss: 0.0142 - accuracy:
 0.5000 - val_loss: 6.3309 - val_accuracy: 0.5000
 Epoch 15/300
 2/2 [=====] - 6s 2s/step - loss: 0.0012 - accuracy:
 0.5000 - val_loss: 6.9593 - val_accuracy: 0.5000
 Epoch 16/300
 2/2 [=====] - 6s 2s/step - loss: 4.9678e-04 - accuracy:
 0.5000 - val_loss: 7.4778 - val_accuracy: 0.5000
 Epoch 17/300
 2/2 [=====] - 7s 5s/step - loss: 0.0020 - accuracy:
 0.5000 - val_loss: 7.7551 - val_accuracy: 0.5000
 Epoch 18/300
 2/2 [=====] - 7s 2s/step - loss: 0.1907 - accuracy:

0.5000 - val_loss: 4.0357 - val_accuracy: 0.5000
 Epoch 19/300
 2/2 [=====] - 6s 5s/step - loss: 0.0035 - accuracy:
 0.5000 - val_loss: 3.3266 - val_accuracy: 0.5000
 Epoch 20/300
 2/2 [=====] - 6s 2s/step - loss: 0.0015 - accuracy:
 0.5000 - val_loss: 3.2860 - val_accuracy: 0.5000
 Epoch 21/300
 2/2 [=====] - 6s 5s/step - loss: 0.0101 - accuracy:
 0.5000 - val_loss: 3.3071 - val_accuracy: 0.5000
 Epoch 22/300
 2/2 [=====] - 6s 5s/step - loss: 0.0114 - accuracy:
 0.5000 - val_loss: 3.3821 - val_accuracy: 0.5000
 Epoch 23/300
 2/2 [=====] - 6s 5s/step - loss: 0.0073 - accuracy:
 0.5000 - val_loss: 3.4717 - val_accuracy: 0.5000
 Epoch 24/300
 2/2 [=====] - 6s 2s/step - loss: 0.0076 - accuracy:
 0.5000 - val_loss: 3.6523 - val_accuracy: 0.5000
 Epoch 25/300
 2/2 [=====] - 6s 2s/step - loss: 0.0096 - accuracy:
 0.5000 - val_loss: 3.8939 - val_accuracy: 0.5000
 Epoch 26/300
 2/2 [=====] - 6s 2s/step - loss: 0.0169 - accuracy:
 0.5000 - val_loss: 3.9476 - val_accuracy: 0.5000
 Epoch 27/300
 2/2 [=====] - 6s 5s/step - loss: 0.0030 - accuracy:
 0.5000 - val_loss: 4.0634 - val_accuracy: 0.5000
 Epoch 28/300
 2/2 [=====] - 6s 2s/step - loss: 0.0080 - accuracy:
 0.5000 - val_loss: 4.2984 - val_accuracy: 0.5000
 Epoch 29/300
 2/2 [=====] - 6s 5s/step - loss: 0.0101 - accuracy:
 0.5000 - val_loss: 4.4685 - val_accuracy: 0.5000
 Epoch 30/300
 2/2 [=====] - 6s 5s/step - loss: 0.0081 - accuracy:
 0.5000 - val_loss: 4.6645 - val_accuracy: 0.5000
 Epoch 31/300
 2/2 [=====] - 6s 5s/step - loss: 0.0332 - accuracy:
 0.5000 - val_loss: 4.3703 - val_accuracy: 0.5000
 Epoch 32/300
 2/2 [=====] - 6s 5s/step - loss: 0.0046 - accuracy:
 0.5000 - val_loss: 3.7814 - val_accuracy: 0.5000
 Epoch 33/300
 2/2 [=====] - 6s 5s/step - loss: 0.0049 - accuracy:
 0.5000 - val_loss: 3.4309 - val_accuracy: 0.5000
 Epoch 34/300
 2/2 [=====] - 6s 2s/step - loss: 0.0091 - accuracy:

0.5000 - val_loss: 3.2874 - val_accuracy: 0.5000
 Epoch 35/300
 2/2 [=====] - 6s 5s/step - loss: 0.0327 - accuracy:
 0.5000 - val_loss: 3.2148 - val_accuracy: 0.5000
 Epoch 36/300
 2/2 [=====] - 6s 2s/step - loss: 0.0065 - accuracy:
 0.5000 - val_loss: 3.3207 - val_accuracy: 0.5000
 Epoch 37/300
 2/2 [=====] - 6s 5s/step - loss: 0.0030 - accuracy:
 0.5000 - val_loss: 3.4507 - val_accuracy: 0.5000
 Epoch 38/300
 2/2 [=====] - 6s 2s/step - loss: 0.0053 - accuracy:
 0.5000 - val_loss: 3.6081 - val_accuracy: 0.5000
 Epoch 39/300
 2/2 [=====] - 6s 5s/step - loss: 0.0027 - accuracy:
 0.5000 - val_loss: 3.7753 - val_accuracy: 0.5000
 Epoch 40/300
 2/2 [=====] - 6s 2s/step - loss: 0.0040 - accuracy:
 0.5000 - val_loss: 3.9313 - val_accuracy: 0.5000
 Epoch 41/300
 2/2 [=====] - 6s 2s/step - loss: 5.8448e-04 - accuracy:
 0.5000 - val_loss: 4.0572 - val_accuracy: 0.5000
 Epoch 42/300
 2/2 [=====] - 6s 5s/step - loss: 0.0022 - accuracy:
 0.5000 - val_loss: 4.3522 - val_accuracy: 0.5000
 Epoch 43/300
 2/2 [=====] - 6s 5s/step - loss: 0.0497 - accuracy:
 0.5000 - val_loss: 5.4582 - val_accuracy: 0.5000
 Epoch 44/300
 2/2 [=====] - 6s 2s/step - loss: 0.2566 - accuracy:
 0.5000 - val_loss: 6.5617 - val_accuracy: 0.5000
 Epoch 45/300
 2/2 [=====] - 6s 2s/step - loss: 0.0292 - accuracy:
 0.5000 - val_loss: 6.8871 - val_accuracy: 0.5000
 Epoch 46/300
 2/2 [=====] - 6s 5s/step - loss: 0.1488 - accuracy:
 0.5000 - val_loss: 3.1499 - val_accuracy: 0.5000
 Epoch 47/300
 2/2 [=====] - 6s 5s/step - loss: 0.2101 - accuracy:
 0.5000 - val_loss: 1.8054 - val_accuracy: 0.5000
 Epoch 48/300
 2/2 [=====] - 6s 2s/step - loss: 0.1019 - accuracy:
 0.5000 - val_loss: 1.3412 - val_accuracy: 0.5000
 Epoch 49/300
 2/2 [=====] - 6s 2s/step - loss: 0.1970 - accuracy:
 0.5000 - val_loss: 1.4590 - val_accuracy: 0.5000
 Epoch 50/300
 2/2 [=====] - 6s 5s/step - loss: 0.1833 - accuracy:

0.5000 - val_loss: 3.2815 - val_accuracy: 0.5000
 Epoch 51/300
 2/2 [=====] - 6s 5s/step - loss: 0.2233 - accuracy:
 0.5000 - val_loss: 1.9473 - val_accuracy: 0.5000
 Epoch 52/300
 2/2 [=====] - 6s 5s/step - loss: 0.0825 - accuracy:
 0.5000 - val_loss: 1.3585 - val_accuracy: 0.5000
 Epoch 53/300
 2/2 [=====] - 6s 5s/step - loss: 0.0963 - accuracy:
 0.5000 - val_loss: 1.4075 - val_accuracy: 0.5000
 Epoch 54/300
 2/2 [=====] - 6s 2s/step - loss: 0.0507 - accuracy:
 0.5000 - val_loss: 2.3115 - val_accuracy: 0.5000
 Epoch 55/300
 2/2 [=====] - 7s 2s/step - loss: 0.2046 - accuracy:
 0.5000 - val_loss: 1.7116 - val_accuracy: 0.5000
 Epoch 56/300
 2/2 [=====] - 6s 2s/step - loss: 0.0605 - accuracy:
 0.5000 - val_loss: 2.1764 - val_accuracy: 0.5000
 Epoch 57/300
 2/2 [=====] - 6s 2s/step - loss: 0.1003 - accuracy:
 0.5000 - val_loss: 2.0632 - val_accuracy: 0.5000
 Epoch 58/300
 2/2 [=====] - 6s 2s/step - loss: 0.0711 - accuracy:
 0.5000 - val_loss: 2.4415 - val_accuracy: 0.5000
 Epoch 59/300
 2/2 [=====] - 6s 5s/step - loss: 0.2256 - accuracy:
 0.5000 - val_loss: 2.4325 - val_accuracy: 0.5000
 Epoch 60/300
 2/2 [=====] - 6s 2s/step - loss: 0.0585 - accuracy:
 0.5000 - val_loss: 2.0690 - val_accuracy: 0.5000
 Epoch 61/300
 2/2 [=====] - 6s 2s/step - loss: 0.0294 - accuracy:
 0.5000 - val_loss: 1.8479 - val_accuracy: 0.5000
 Epoch 62/300
 2/2 [=====] - 6s 2s/step - loss: 0.0941 - accuracy:
 0.5000 - val_loss: 1.8673 - val_accuracy: 0.5000
 Epoch 63/300
 2/2 [=====] - 6s 5s/step - loss: 0.0941 - accuracy:
 0.5000 - val_loss: 1.8034 - val_accuracy: 0.5000
 Epoch 64/300
 2/2 [=====] - 6s 2s/step - loss: 0.0278 - accuracy:
 0.5000 - val_loss: 1.4252 - val_accuracy: 0.5000
 Epoch 65/300
 2/2 [=====] - 7s 2s/step - loss: 0.0594 - accuracy:
 0.5000 - val_loss: 1.5547 - val_accuracy: 0.5000
 Epoch 66/300
 2/2 [=====] - 7s 5s/step - loss: 0.0508 - accuracy:

0.5000 - val_loss: 1.9692 - val_accuracy: 0.5000
 Epoch 67/300
 2/2 [=====] - 6s 5s/step - loss: 0.0377 - accuracy:
 0.5000 - val_loss: 2.2918 - val_accuracy: 0.5000
 Epoch 68/300
 2/2 [=====] - 7s 5s/step - loss: 0.0254 - accuracy:
 0.5000 - val_loss: 2.2891 - val_accuracy: 0.5000
 Epoch 69/300
 2/2 [=====] - 8s 2s/step - loss: 0.1136 - accuracy:
 0.5000 - val_loss: 1.7230 - val_accuracy: 0.5000
 Epoch 70/300
 2/2 [=====] - 7s 2s/step - loss: 0.0623 - accuracy:
 0.5000 - val_loss: 1.2474 - val_accuracy: 0.5000
 Epoch 71/300
 2/2 [=====] - 7s 6s/step - loss: 0.2568 - accuracy:
 0.5000 - val_loss: 1.2261 - val_accuracy: 0.5000
 Epoch 72/300
 2/2 [=====] - 6s 5s/step - loss: 0.0927 - accuracy:
 0.5000 - val_loss: 1.0924 - val_accuracy: 0.5000
 Epoch 73/300
 2/2 [=====] - 7s 6s/step - loss: 0.1094 - accuracy:
 0.5000 - val_loss: 0.8956 - val_accuracy: 0.5000
 Epoch 74/300
 2/2 [=====] - 7s 2s/step - loss: 0.0364 - accuracy:
 0.5000 - val_loss: 1.0717 - val_accuracy: 0.5000
 Epoch 75/300
 2/2 [=====] - 6s 2s/step - loss: 0.0485 - accuracy:
 0.5000 - val_loss: 1.4714 - val_accuracy: 0.5000
 Epoch 76/300
 2/2 [=====] - 6s 2s/step - loss: 0.0278 - accuracy:
 0.5000 - val_loss: 1.8399 - val_accuracy: 0.5000
 Epoch 77/300
 2/2 [=====] - 7s 2s/step - loss: 0.0323 - accuracy:
 0.5000 - val_loss: 2.0663 - val_accuracy: 0.5000
 Epoch 78/300
 2/2 [=====] - 6s 2s/step - loss: 0.0289 - accuracy:
 0.5000 - val_loss: 2.3227 - val_accuracy: 0.5000
 Epoch 79/300
 2/2 [=====] - 7s 5s/step - loss: 0.1546 - accuracy:
 0.5000 - val_loss: 1.6822 - val_accuracy: 0.5000
 Epoch 80/300
 2/2 [=====] - 6s 5s/step - loss: 0.0337 - accuracy:
 0.5000 - val_loss: 1.1147 - val_accuracy: 0.5000
 Epoch 81/300
 2/2 [=====] - 6s 2s/step - loss: 0.0330 - accuracy:
 0.5000 - val_loss: 0.9482 - val_accuracy: 0.5000
 Epoch 82/300
 2/2 [=====] - 6s 2s/step - loss: 0.0369 - accuracy:

0.5000 - val_loss: 0.9218 - val_accuracy: 0.5000
 Epoch 83/300
 2/2 [=====] - 6s 2s/step - loss: 0.1334 - accuracy:
 0.5000 - val_loss: 1.0016 - val_accuracy: 0.5000
 Epoch 84/300
 2/2 [=====] - 7s 2s/step - loss: 0.0510 - accuracy:
 0.5000 - val_loss: 1.0937 - val_accuracy: 0.5000
 Epoch 85/300
 2/2 [=====] - 6s 5s/step - loss: 0.1467 - accuracy:
 0.5000 - val_loss: 1.1952 - val_accuracy: 0.5000
 Epoch 86/300
 2/2 [=====] - 6s 5s/step - loss: 0.0330 - accuracy:
 0.5000 - val_loss: 1.3629 - val_accuracy: 0.5000
 Epoch 87/300
 2/2 [=====] - 6s 2s/step - loss: 0.0298 - accuracy:
 0.5000 - val_loss: 1.5592 - val_accuracy: 0.5000
 Epoch 88/300
 2/2 [=====] - 6s 5s/step - loss: 0.1084 - accuracy:
 0.5000 - val_loss: 1.6743 - val_accuracy: 0.5000
 Epoch 89/300
 2/2 [=====] - 6s 2s/step - loss: 0.3156 - accuracy:
 0.5000 - val_loss: 1.2557 - val_accuracy: 0.5000
 Epoch 90/300
 2/2 [=====] - 6s 5s/step - loss: 0.0157 - accuracy:
 0.5000 - val_loss: 1.1117 - val_accuracy: 0.5000
 Epoch 91/300
 2/2 [=====] - 7s 6s/step - loss: 0.0263 - accuracy:
 0.5000 - val_loss: 1.1041 - val_accuracy: 0.5000
 Epoch 92/300
 2/2 [=====] - 8s 6s/step - loss: 0.0405 - accuracy:
 0.5000 - val_loss: 1.2603 - val_accuracy: 0.5000
 Epoch 93/300
 2/2 [=====] - 7s 2s/step - loss: 0.0456 - accuracy:
 0.5000 - val_loss: 1.2260 - val_accuracy: 0.5000
 Epoch 94/300
 2/2 [=====] - 6s 2s/step - loss: 0.0932 - accuracy:
 0.5000 - val_loss: 1.3039 - val_accuracy: 0.5000
 Epoch 95/300
 2/2 [=====] - 6s 2s/step - loss: 0.0165 - accuracy:
 0.5000 - val_loss: 1.4068 - val_accuracy: 0.5000
 Epoch 96/300
 2/2 [=====] - 6s 5s/step - loss: 0.0438 - accuracy:
 0.5000 - val_loss: 1.5537 - val_accuracy: 0.5000
 Epoch 97/300
 2/2 [=====] - 6s 5s/step - loss: 0.0167 - accuracy:
 0.5000 - val_loss: 1.6927 - val_accuracy: 0.5000
 Epoch 98/300
 2/2 [=====] - 7s 2s/step - loss: 0.0558 - accuracy:

0.5000 - val_loss: 1.8231 - val_accuracy: 0.5000
 Epoch 99/300
 2/2 [=====] - 6s 2s/step - loss: 0.0292 - accuracy:
 0.5000 - val_loss: 1.9509 - val_accuracy: 0.5000
 Epoch 100/300
 2/2 [=====] - 7s 2s/step - loss: 0.0380 - accuracy:
 0.5000 - val_loss: 1.9612 - val_accuracy: 0.5000
 Epoch 101/300
 2/2 [=====] - 6s 2s/step - loss: 0.0638 - accuracy:
 0.5000 - val_loss: 1.6907 - val_accuracy: 0.5000
 Epoch 102/300
 2/2 [=====] - 6s 5s/step - loss: 0.0060 - accuracy:
 0.5000 - val_loss: 2.2535 - val_accuracy: 0.5000
 Epoch 103/300
 2/2 [=====] - 6s 2s/step - loss: 0.0282 - accuracy:
 0.5000 - val_loss: 3.7391 - val_accuracy: 0.5000
 Epoch 104/300
 2/2 [=====] - 6s 5s/step - loss: 0.4746 - accuracy:
 0.5000 - val_loss: 3.1796 - val_accuracy: 0.5000
 Epoch 105/300
 2/2 [=====] - 6s 2s/step - loss: 0.0182 - accuracy:
 0.5000 - val_loss: 4.8612 - val_accuracy: 0.5000
 Epoch 106/300
 2/2 [=====] - 6s 2s/step - loss: 0.0527 - accuracy:
 0.5000 - val_loss: 8.3556 - val_accuracy: 0.5000
 Epoch 107/300
 2/2 [=====] - 6s 5s/step - loss: 0.1069 - accuracy:
 0.5000 - val_loss: 4.6200 - val_accuracy: 0.5000
 Epoch 108/300
 2/2 [=====] - 6s 2s/step - loss: 0.0535 - accuracy:
 0.5000 - val_loss: 2.8468 - val_accuracy: 0.5000
 Epoch 109/300
 2/2 [=====] - 6s 2s/step - loss: 0.7592 - accuracy:
 0.5000 - val_loss: 2.5442 - val_accuracy: 0.5000
 Epoch 110/300
 2/2 [=====] - 6s 2s/step - loss: 0.0692 - accuracy:
 0.5000 - val_loss: 2.4297 - val_accuracy: 0.5000
 Epoch 111/300
 2/2 [=====] - 6s 2s/step - loss: 0.0525 - accuracy:
 0.5000 - val_loss: 2.3109 - val_accuracy: 0.5000
 Epoch 112/300
 2/2 [=====] - 6s 2s/step - loss: 0.0599 - accuracy:
 0.5000 - val_loss: 2.0703 - val_accuracy: 0.5000
 Epoch 113/300
 2/2 [=====] - 6s 5s/step - loss: 0.0345 - accuracy:
 0.5000 - val_loss: 2.0460 - val_accuracy: 0.5000
 Epoch 114/300
 2/2 [=====] - 6s 2s/step - loss: 0.1023 - accuracy:

0.5000 - val_loss: 1.9030 - val_accuracy: 0.5000
 Epoch 115/300
 2/2 [=====] - 6s 5s/step - loss: 0.0428 - accuracy:
 0.5000 - val_loss: 1.8448 - val_accuracy: 0.5000
 Epoch 116/300
 2/2 [=====] - 6s 5s/step - loss: 0.0325 - accuracy:
 0.5000 - val_loss: 1.8190 - val_accuracy: 0.5000
 Epoch 117/300
 2/2 [=====] - 6s 2s/step - loss: 0.0133 - accuracy:
 0.5000 - val_loss: 1.7868 - val_accuracy: 0.5000
 Epoch 118/300
 2/2 [=====] - 6s 5s/step - loss: 0.0359 - accuracy:
 0.5000 - val_loss: 1.7623 - val_accuracy: 0.5000
 Epoch 119/300
 2/2 [=====] - 6s 2s/step - loss: 0.0642 - accuracy:
 0.5000 - val_loss: 1.7076 - val_accuracy: 0.5000
 Epoch 120/300
 2/2 [=====] - 6s 2s/step - loss: 0.0166 - accuracy:
 0.5000 - val_loss: 1.6725 - val_accuracy: 0.5000
 Epoch 121/300
 2/2 [=====] - 6s 2s/step - loss: 0.0045 - accuracy:
 0.5000 - val_loss: 1.6443 - val_accuracy: 0.5000
 Epoch 122/300
 2/2 [=====] - 6s 5s/step - loss: 0.0877 - accuracy:
 0.5000 - val_loss: 1.4648 - val_accuracy: 0.5000
 Epoch 123/300
 2/2 [=====] - 6s 2s/step - loss: 0.0121 - accuracy:
 0.5000 - val_loss: 1.2865 - val_accuracy: 0.5000
 Epoch 124/300
 2/2 [=====] - 6s 2s/step - loss: 0.0991 - accuracy:
 0.5000 - val_loss: 1.1991 - val_accuracy: 0.5000
 Epoch 125/300
 2/2 [=====] - 6s 2s/step - loss: 0.0092 - accuracy:
 0.5000 - val_loss: 1.3440 - val_accuracy: 0.5000
 Epoch 126/300
 2/2 [=====] - 6s 2s/step - loss: 0.0237 - accuracy:
 0.5000 - val_loss: 1.4619 - val_accuracy: 0.5000
 Epoch 127/300
 2/2 [=====] - 6s 5s/step - loss: 0.0549 - accuracy:
 0.5000 - val_loss: 1.2687 - val_accuracy: 0.5000
 Epoch 128/300
 2/2 [=====] - 6s 2s/step - loss: 0.0389 - accuracy:
 0.5000 - val_loss: 1.4545 - val_accuracy: 0.5000
 Epoch 129/300
 2/2 [=====] - 6s 2s/step - loss: 0.0081 - accuracy:
 0.5000 - val_loss: 2.0080 - val_accuracy: 0.5000
 Epoch 130/300
 2/2 [=====] - 6s 5s/step - loss: 0.1275 - accuracy:

0.5000 - val_loss: 2.0778 - val_accuracy: 0.5000
 Epoch 131/300
 2/2 [=====] - 6s 2s/step - loss: 0.0246 - accuracy:
 0.5000 - val_loss: 3.3390 - val_accuracy: 0.5000
 Epoch 132/300
 2/2 [=====] - 6s 2s/step - loss: 0.2255 - accuracy:
 0.5000 - val_loss: 1.7847 - val_accuracy: 0.5000
 Epoch 133/300
 2/2 [=====] - 6s 2s/step - loss: 0.0348 - accuracy:
 0.5000 - val_loss: 1.5859 - val_accuracy: 0.5000
 Epoch 134/300
 2/2 [=====] - 8s 2s/step - loss: 0.1016 - accuracy:
 0.5000 - val_loss: 1.5855 - val_accuracy: 0.5000
 Epoch 135/300
 2/2 [=====] - 7s 2s/step - loss: 0.0394 - accuracy:
 0.5000 - val_loss: 1.6407 - val_accuracy: 0.5000
 Epoch 136/300
 2/2 [=====] - 6s 2s/step - loss: 0.0271 - accuracy:
 0.5000 - val_loss: 2.5356 - val_accuracy: 0.5000
 Epoch 137/300
 2/2 [=====] - 7s 2s/step - loss: 0.0977 - accuracy:
 0.5000 - val_loss: 2.3419 - val_accuracy: 0.5000
 Epoch 138/300
 2/2 [=====] - 6s 2s/step - loss: 0.0122 - accuracy:
 0.5000 - val_loss: 2.5384 - val_accuracy: 0.5000
 Epoch 139/300
 2/2 [=====] - 6s 5s/step - loss: 0.2702 - accuracy:
 0.5000 - val_loss: 2.3430 - val_accuracy: 0.5000
 Epoch 140/300
 2/2 [=====] - 6s 2s/step - loss: 0.0467 - accuracy:
 0.5000 - val_loss: 1.9559 - val_accuracy: 0.5000
 Epoch 141/300
 2/2 [=====] - 6s 2s/step - loss: 0.0826 - accuracy:
 0.5000 - val_loss: 1.6999 - val_accuracy: 0.5000
 Epoch 142/300
 2/2 [=====] - 6s 2s/step - loss: 0.0503 - accuracy:
 0.5000 - val_loss: 1.5675 - val_accuracy: 0.5000
 Epoch 143/300
 2/2 [=====] - 6s 2s/step - loss: 0.0510 - accuracy:
 0.5000 - val_loss: 1.5590 - val_accuracy: 0.5000
 Epoch 144/300
 2/2 [=====] - 6s 2s/step - loss: 0.0713 - accuracy:
 0.5000 - val_loss: 1.7027 - val_accuracy: 0.5000
 Epoch 145/300
 2/2 [=====] - 6s 5s/step - loss: 0.0889 - accuracy:
 0.5000 - val_loss: 1.9457 - val_accuracy: 0.5000
 Epoch 146/300
 2/2 [=====] - 6s 2s/step - loss: 0.0132 - accuracy:

0.5000 - val_loss: 2.2464 - val_accuracy: 0.5000
 Epoch 147/300
 2/2 [=====] - 6s 5s/step - loss: 0.0796 - accuracy:
 0.5000 - val_loss: 2.4399 - val_accuracy: 0.5000
 Epoch 148/300
 2/2 [=====] - 6s 5s/step - loss: 0.0160 - accuracy:
 0.5000 - val_loss: 2.8202 - val_accuracy: 0.5000
 Epoch 149/300
 2/2 [=====] - 6s 2s/step - loss: 0.0118 - accuracy:
 0.5000 - val_loss: 3.3732 - val_accuracy: 0.5000
 Epoch 150/300
 2/2 [=====] - 6s 5s/step - loss: 0.0296 - accuracy:
 0.5000 - val_loss: 3.7465 - val_accuracy: 0.5000
 Epoch 151/300
 2/2 [=====] - 6s 2s/step - loss: 0.0135 - accuracy:
 0.5000 - val_loss: 3.8768 - val_accuracy: 0.5000
 Epoch 152/300
 2/2 [=====] - 7s 5s/step - loss: 0.0057 - accuracy:
 0.5000 - val_loss: 3.8557 - val_accuracy: 0.5000
 Epoch 153/300
 2/2 [=====] - 6s 5s/step - loss: 0.0035 - accuracy:
 0.5000 - val_loss: 3.8658 - val_accuracy: 0.5000
 Epoch 154/300
 2/2 [=====] - 7s 2s/step - loss: 0.0099 - accuracy:
 0.5000 - val_loss: 3.8781 - val_accuracy: 0.5000
 Epoch 155/300
 2/2 [=====] - 6s 2s/step - loss: 0.0111 - accuracy:
 0.5000 - val_loss: 3.8786 - val_accuracy: 0.5000
 Epoch 156/300
 2/2 [=====] - 6s 5s/step - loss: 0.0074 - accuracy:
 0.5000 - val_loss: 3.9060 - val_accuracy: 0.5000
 Epoch 157/300
 2/2 [=====] - 6s 5s/step - loss: 1.2968e-04 - accuracy:
 0.5000 - val_loss: 4.0107 - val_accuracy: 0.5000
 Epoch 158/300
 2/2 [=====] - 6s 5s/step - loss: 0.0028 - accuracy:
 0.5000 - val_loss: 4.2397 - val_accuracy: 0.5000
 Epoch 159/300
 2/2 [=====] - 6s 5s/step - loss: 6.2122e-04 - accuracy:
 0.5000 - val_loss: 4.5379 - val_accuracy: 0.5000
 Epoch 160/300
 2/2 [=====] - 6s 5s/step - loss: 0.0523 - accuracy:
 0.5000 - val_loss: 3.3505 - val_accuracy: 0.5000
 Epoch 161/300
 2/2 [=====] - 6s 5s/step - loss: 0.0519 - accuracy:
 0.5000 - val_loss: 2.7270 - val_accuracy: 0.5000
 Epoch 162/300
 2/2 [=====] - 6s 2s/step - loss: 0.0211 - accuracy:

0.5000 - val_loss: 2.2854 - val_accuracy: 0.5000
 Epoch 163/300
 2/2 [=====] - 6s 2s/step - loss: 0.0103 - accuracy:
 0.5000 - val_loss: 2.0218 - val_accuracy: 0.5000
 Epoch 164/300
 2/2 [=====] - 7s 2s/step - loss: 0.0368 - accuracy:
 0.5000 - val_loss: 1.8787 - val_accuracy: 0.5000
 Epoch 165/300
 2/2 [=====] - 6s 5s/step - loss: 0.0253 - accuracy:
 0.5000 - val_loss: 1.8009 - val_accuracy: 0.5000
 Epoch 166/300
 2/2 [=====] - 6s 2s/step - loss: 0.0551 - accuracy:
 0.5000 - val_loss: 1.8339 - val_accuracy: 0.5000
 Epoch 167/300
 2/2 [=====] - 6s 2s/step - loss: 0.0584 - accuracy:
 0.5000 - val_loss: 1.9776 - val_accuracy: 0.5000
 Epoch 168/300
 2/2 [=====] - 6s 5s/step - loss: 0.0650 - accuracy:
 0.5000 - val_loss: 2.2072 - val_accuracy: 0.5000
 Epoch 169/300
 2/2 [=====] - 6s 2s/step - loss: 0.0448 - accuracy:
 0.5000 - val_loss: 2.4258 - val_accuracy: 0.5000
 Epoch 170/300
 2/2 [=====] - 6s 5s/step - loss: 0.0974 - accuracy:
 0.5000 - val_loss: 2.6293 - val_accuracy: 0.5000
 Epoch 171/300
 2/2 [=====] - 6s 2s/step - loss: 0.0675 - accuracy:
 0.5000 - val_loss: 2.9391 - val_accuracy: 0.5000
 Epoch 172/300
 2/2 [=====] - 6s 5s/step - loss: 0.0210 - accuracy:
 0.5000 - val_loss: 3.3116 - val_accuracy: 0.5000
 Epoch 173/300
 2/2 [=====] - 6s 5s/step - loss: 0.0157 - accuracy:
 0.5000 - val_loss: 3.6609 - val_accuracy: 0.5000
 Epoch 174/300
 2/2 [=====] - 6s 2s/step - loss: 0.0375 - accuracy:
 0.5000 - val_loss: 3.9465 - val_accuracy: 0.5000
 Epoch 175/300
 2/2 [=====] - 6s 2s/step - loss: 0.0511 - accuracy:
 0.5000 - val_loss: 4.1112 - val_accuracy: 0.5000
 Epoch 176/300
 2/2 [=====] - 6s 5s/step - loss: 0.0184 - accuracy:
 0.5000 - val_loss: 4.4819 - val_accuracy: 0.5000
 Epoch 177/300
 2/2 [=====] - 6s 2s/step - loss: 0.0371 - accuracy:
 0.5000 - val_loss: 4.3580 - val_accuracy: 0.5000
 Epoch 178/300
 2/2 [=====] - 6s 2s/step - loss: 0.0350 - accuracy:

0.5000 - val_loss: 4.2089 - val_accuracy: 0.5000
 Epoch 179/300
 2/2 [=====] - 7s 6s/step - loss: 0.1355 - accuracy:
 0.5000 - val_loss: 3.8851 - val_accuracy: 0.5000
 Epoch 180/300
 2/2 [=====] - 6s 2s/step - loss: 0.0027 - accuracy:
 0.5000 - val_loss: 3.4261 - val_accuracy: 0.5000
 Epoch 181/300
 2/2 [=====] - 6s 5s/step - loss: 0.0014 - accuracy:
 0.5000 - val_loss: 3.0860 - val_accuracy: 0.5000
 Epoch 182/300
 2/2 [=====] - 6s 2s/step - loss: 0.0059 - accuracy:
 0.5000 - val_loss: 2.8568 - val_accuracy: 0.5000
 Epoch 183/300
 2/2 [=====] - 6s 2s/step - loss: 0.0093 - accuracy:
 0.5000 - val_loss: 2.9997 - val_accuracy: 0.5000
 Epoch 184/300
 2/2 [=====] - 6s 2s/step - loss: 0.0139 - accuracy:
 0.5000 - val_loss: 3.5057 - val_accuracy: 0.5000
 Epoch 185/300
 2/2 [=====] - 6s 2s/step - loss: 0.0037 - accuracy:
 0.5000 - val_loss: 3.9981 - val_accuracy: 0.5000
 Epoch 186/300
 2/2 [=====] - 6s 2s/step - loss: 8.2225e-04 - accuracy:
 0.5000 - val_loss: 4.3157 - val_accuracy: 0.5000
 Epoch 187/300
 2/2 [=====] - 6s 5s/step - loss: 0.0040 - accuracy:
 0.5000 - val_loss: 4.5363 - val_accuracy: 0.5000
 Epoch 188/300
 2/2 [=====] - 6s 2s/step - loss: 6.0210e-04 - accuracy:
 0.5000 - val_loss: 4.7208 - val_accuracy: 0.5000
 Epoch 189/300
 2/2 [=====] - 6s 5s/step - loss: 2.3400e-04 - accuracy:
 0.5000 - val_loss: 4.8909 - val_accuracy: 0.5000
 Epoch 190/300
 2/2 [=====] - 6s 2s/step - loss: 0.0047 - accuracy:
 0.5000 - val_loss: 5.0631 - val_accuracy: 0.5000
 Epoch 191/300
 2/2 [=====] - 6s 2s/step - loss: 0.0048 - accuracy:
 0.5000 - val_loss: 5.2230 - val_accuracy: 0.5000
 Epoch 192/300
 2/2 [=====] - 6s 5s/step - loss: 0.0024 - accuracy:
 0.5000 - val_loss: 5.3668 - val_accuracy: 0.5000
 Epoch 193/300
 2/2 [=====] - 6s 2s/step - loss: 6.2482e-04 - accuracy:
 0.5000 - val_loss: 5.4890 - val_accuracy: 0.5000
 Epoch 194/300
 2/2 [=====] - 6s 5s/step - loss: 0.0034 - accuracy:

0.5000 - val_loss: 5.5961 - val_accuracy: 0.5000
 Epoch 195/300
 2/2 [=====] - 6s 5s/step - loss: 0.0260 - accuracy:
 0.5000 - val_loss: 3.7812 - val_accuracy: 0.5000
 Epoch 196/300
 2/2 [=====] - 6s 2s/step - loss: 3.6425e-04 - accuracy:
 0.5000 - val_loss: 2.3134 - val_accuracy: 0.5000
 Epoch 197/300
 2/2 [=====] - 6s 5s/step - loss: 0.0701 - accuracy:
 0.5000 - val_loss: 1.7224 - val_accuracy: 0.5000
 Epoch 198/300
 2/2 [=====] - 6s 2s/step - loss: 0.0211 - accuracy:
 0.5000 - val_loss: 1.7300 - val_accuracy: 0.5000
 Epoch 199/300
 2/2 [=====] - 6s 2s/step - loss: 0.0175 - accuracy:
 0.5000 - val_loss: 1.9089 - val_accuracy: 0.5000
 Epoch 200/300
 2/2 [=====] - 6s 2s/step - loss: 0.0330 - accuracy:
 0.5000 - val_loss: 2.1768 - val_accuracy: 0.5000
 Epoch 201/300
 2/2 [=====] - 6s 2s/step - loss: 0.0181 - accuracy:
 0.5000 - val_loss: 2.5065 - val_accuracy: 0.5000
 Epoch 202/300
 2/2 [=====] - 6s 2s/step - loss: 0.0246 - accuracy:
 0.5000 - val_loss: 2.9132 - val_accuracy: 0.5000
 Epoch 203/300
 2/2 [=====] - 6s 2s/step - loss: 0.1446 - accuracy:
 0.5000 - val_loss: 3.1590 - val_accuracy: 0.5000
 Epoch 204/300
 2/2 [=====] - 6s 2s/step - loss: 0.0132 - accuracy:
 0.5000 - val_loss: 3.3601 - val_accuracy: 0.5000
 Epoch 205/300
 2/2 [=====] - 6s 2s/step - loss: 0.0483 - accuracy:
 0.5000 - val_loss: 3.9509 - val_accuracy: 0.5000
 Epoch 206/300
 2/2 [=====] - 6s 2s/step - loss: 0.0066 - accuracy:
 0.5000 - val_loss: 4.9267 - val_accuracy: 0.5000
 Epoch 207/300
 2/2 [=====] - 6s 5s/step - loss: 0.0095 - accuracy:
 0.5000 - val_loss: 5.3511 - val_accuracy: 0.5000
 Epoch 208/300
 2/2 [=====] - 6s 5s/step - loss: 0.0023 - accuracy:
 0.5000 - val_loss: 5.5215 - val_accuracy: 0.5000
 Epoch 209/300
 2/2 [=====] - 6s 2s/step - loss: 0.0143 - accuracy:
 0.5000 - val_loss: 5.5278 - val_accuracy: 0.5000
 Epoch 210/300
 2/2 [=====] - 6s 2s/step - loss: 0.0067 - accuracy:

0.5000 - val_loss: 5.3299 - val_accuracy: 0.5000
 Epoch 211/300
 2/2 [=====] - 6s 5s/step - loss: 1.2504e-04 - accuracy:
 0.5000 - val_loss: 5.1983 - val_accuracy: 0.5000
 Epoch 212/300
 2/2 [=====] - 6s 5s/step - loss: 2.0412e-04 - accuracy:
 0.5000 - val_loss: 5.0823 - val_accuracy: 0.5000
 Epoch 213/300
 2/2 [=====] - 6s 5s/step - loss: 5.4214e-04 - accuracy:
 0.5000 - val_loss: 4.9654 - val_accuracy: 0.5000
 Epoch 214/300
 2/2 [=====] - 6s 2s/step - loss: 9.3326e-05 - accuracy:
 0.5000 - val_loss: 4.8483 - val_accuracy: 0.5000
 Epoch 215/300
 2/2 [=====] - 6s 5s/step - loss: 3.6587e-04 - accuracy:
 0.5000 - val_loss: 4.7417 - val_accuracy: 0.5000
 Epoch 216/300
 2/2 [=====] - 6s 5s/step - loss: 0.0103 - accuracy:
 0.5000 - val_loss: 4.6396 - val_accuracy: 0.5000
 Epoch 217/300
 2/2 [=====] - 6s 2s/step - loss: 2.0170e-04 - accuracy:
 0.5000 - val_loss: 4.5446 - val_accuracy: 0.5000
 Epoch 218/300
 2/2 [=====] - 6s 5s/step - loss: 0.1010 - accuracy:
 0.5000 - val_loss: 4.7961 - val_accuracy: 0.5000
 Epoch 219/300
 2/2 [=====] - 6s 2s/step - loss: 6.5170e-04 - accuracy:
 0.5000 - val_loss: 5.2243 - val_accuracy: 0.5000
 Epoch 220/300
 2/2 [=====] - 6s 2s/step - loss: 7.4260e-04 - accuracy:
 0.5000 - val_loss: 5.5078 - val_accuracy: 0.5000
 Epoch 221/300
 2/2 [=====] - 6s 2s/step - loss: 1.3350e-04 - accuracy:
 0.5000 - val_loss: 5.7035 - val_accuracy: 0.5000
 Epoch 222/300
 2/2 [=====] - 6s 5s/step - loss: 0.0307 - accuracy:
 0.5000 - val_loss: 5.7806 - val_accuracy: 0.5000
 Epoch 223/300
 2/2 [=====] - 6s 5s/step - loss: 0.0051 - accuracy:
 0.5000 - val_loss: 5.7607 - val_accuracy: 0.5000
 Epoch 224/300
 2/2 [=====] - 6s 5s/step - loss: 0.0044 - accuracy:
 0.5000 - val_loss: 5.7456 - val_accuracy: 0.5000
 Epoch 225/300
 2/2 [=====] - 6s 2s/step - loss: 0.0023 - accuracy:
 0.5000 - val_loss: 5.7336 - val_accuracy: 0.5000
 Epoch 226/300
 2/2 [=====] - 6s 2s/step - loss: 4.8471e-04 - accuracy:

0.5000 - val_loss: 5.7152 - val_accuracy: 0.5000
 Epoch 227/300
 2/2 [=====] - 6s 5s/step - loss: 0.0044 - accuracy:
 0.5000 - val_loss: 5.6977 - val_accuracy: 0.5000
 Epoch 228/300
 2/2 [=====] - 7s 2s/step - loss: 8.8653e-04 - accuracy:
 0.5000 - val_loss: 5.6769 - val_accuracy: 0.5000
 Epoch 229/300
 2/2 [=====] - 6s 5s/step - loss: 0.0050 - accuracy:
 0.5000 - val_loss: 5.6647 - val_accuracy: 0.5000
 Epoch 230/300
 2/2 [=====] - 6s 5s/step - loss: 8.3709e-04 - accuracy:
 0.5000 - val_loss: 5.6501 - val_accuracy: 0.5000
 Epoch 231/300
 2/2 [=====] - 6s 2s/step - loss: 0.0073 - accuracy:
 0.5000 - val_loss: 5.6098 - val_accuracy: 0.5000
 Epoch 232/300
 2/2 [=====] - 6s 2s/step - loss: 0.0086 - accuracy:
 0.5000 - val_loss: 5.5372 - val_accuracy: 0.5000
 Epoch 233/300
 2/2 [=====] - 6s 2s/step - loss: 7.9126e-04 - accuracy:
 0.5000 - val_loss: 5.4781 - val_accuracy: 0.5000
 Epoch 234/300
 2/2 [=====] - 6s 5s/step - loss: 0.0022 - accuracy:
 0.5000 - val_loss: 5.4374 - val_accuracy: 0.5000
 Epoch 235/300
 2/2 [=====] - 6s 2s/step - loss: 4.1506e-04 - accuracy:
 0.5000 - val_loss: 5.4093 - val_accuracy: 0.5000
 Epoch 236/300
 2/2 [=====] - 6s 2s/step - loss: 0.0030 - accuracy:
 0.5000 - val_loss: 5.3837 - val_accuracy: 0.5000
 Epoch 237/300
 2/2 [=====] - 6s 2s/step - loss: 8.0412e-04 - accuracy:
 0.5000 - val_loss: 5.3605 - val_accuracy: 0.5000
 Epoch 238/300
 2/2 [=====] - 7s 5s/step - loss: 0.0029 - accuracy:
 0.5000 - val_loss: 5.3508 - val_accuracy: 0.5000
 Epoch 239/300
 2/2 [=====] - 6s 5s/step - loss: 5.6797e-04 - accuracy:
 0.5000 - val_loss: 5.3513 - val_accuracy: 0.5000
 Epoch 240/300
 2/2 [=====] - 6s 2s/step - loss: 0.0025 - accuracy:
 0.5000 - val_loss: 5.3538 - val_accuracy: 0.5000
 Epoch 241/300
 2/2 [=====] - 6s 5s/step - loss: 2.7675e-04 - accuracy:
 0.5000 - val_loss: 5.3569 - val_accuracy: 0.5000
 Epoch 242/300
 2/2 [=====] - 6s 2s/step - loss: 3.8828e-04 - accuracy:

0.5000 - val_loss: 5.3612 - val_accuracy: 0.5000
 Epoch 243/300
 2/2 [=====] - 7s 5s/step - loss: 9.5502e-04 - accuracy:
 0.5000 - val_loss: 5.3705 - val_accuracy: 0.5000
 Epoch 244/300
 2/2 [=====] - 7s 6s/step - loss: 0.0024 - accuracy:
 0.5000 - val_loss: 5.3829 - val_accuracy: 0.5000
 Epoch 245/300
 2/2 [=====] - 7s 2s/step - loss: 0.0022 - accuracy:
 0.5000 - val_loss: 5.3963 - val_accuracy: 0.5000
 Epoch 246/300
 2/2 [=====] - 6s 5s/step - loss: 9.1921e-04 - accuracy:
 0.5000 - val_loss: 5.4085 - val_accuracy: 0.5000
 Epoch 247/300
 2/2 [=====] - 6s 5s/step - loss: 0.0028 - accuracy:
 0.5000 - val_loss: 5.4065 - val_accuracy: 0.5000
 Epoch 248/300
 2/2 [=====] - 6s 5s/step - loss: 0.0101 - accuracy:
 0.5000 - val_loss: 5.3864 - val_accuracy: 0.5000
 Epoch 249/300
 2/2 [=====] - 6s 2s/step - loss: 0.0115 - accuracy:
 0.5000 - val_loss: 5.4561 - val_accuracy: 0.5000
 Epoch 250/300
 2/2 [=====] - 7s 5s/step - loss: 0.0011 - accuracy:
 0.5000 - val_loss: 5.5210 - val_accuracy: 0.5000
 Epoch 251/300
 2/2 [=====] - 6s 5s/step - loss: 1.8579e-04 - accuracy:
 0.5000 - val_loss: 5.6017 - val_accuracy: 0.5000
 Epoch 252/300
 2/2 [=====] - 7s 2s/step - loss: 1.6574e-04 - accuracy:
 0.5000 - val_loss: 5.6724 - val_accuracy: 0.5000
 Epoch 253/300
 2/2 [=====] - 7s 6s/step - loss: 5.3516e-04 - accuracy:
 0.5000 - val_loss: 5.7335 - val_accuracy: 0.5000
 Epoch 254/300
 2/2 [=====] - 6s 2s/step - loss: 0.0012 - accuracy:
 0.5000 - val_loss: 5.7863 - val_accuracy: 0.5000
 Epoch 255/300
 2/2 [=====] - 6s 5s/step - loss: 3.5295e-05 - accuracy:
 0.5000 - val_loss: 5.8310 - val_accuracy: 0.5000
 Epoch 256/300
 2/2 [=====] - 7s 5s/step - loss: 0.0025 - accuracy:
 0.5000 - val_loss: 5.8581 - val_accuracy: 0.5000
 Epoch 257/300
 2/2 [=====] - 6s 2s/step - loss: 5.8792e-05 - accuracy:
 0.5000 - val_loss: 5.8732 - val_accuracy: 0.5000
 Epoch 258/300
 2/2 [=====] - 6s 5s/step - loss: 4.1759e-05 - accuracy:

0.5000 - val_loss: 5.8857 - val_accuracy: 0.5000
 Epoch 259/300
 2/2 [=====] - 6s 5s/step - loss: 0.0023 - accuracy:
 0.5000 - val_loss: 5.9021 - val_accuracy: 0.5000
 Epoch 260/300
 2/2 [=====] - 6s 5s/step - loss: 1.8411e-04 - accuracy:
 0.5000 - val_loss: 5.9220 - val_accuracy: 0.5000
 Epoch 261/300
 2/2 [=====] - 6s 5s/step - loss: 0.0070 - accuracy:
 0.5000 - val_loss: 5.3488 - val_accuracy: 0.5000
 Epoch 262/300
 2/2 [=====] - 6s 5s/step - loss: 2.2389e-04 - accuracy:
 0.5000 - val_loss: 4.5629 - val_accuracy: 0.5000
 Epoch 263/300
 2/2 [=====] - 6s 5s/step - loss: 4.0959e-04 - accuracy:
 0.5000 - val_loss: 4.0775 - val_accuracy: 0.5000
 Epoch 264/300
 2/2 [=====] - 6s 2s/step - loss: 0.0219 - accuracy:
 0.5000 - val_loss: 3.8915 - val_accuracy: 0.5000
 Epoch 265/300
 2/2 [=====] - 6s 2s/step - loss: 0.0102 - accuracy:
 0.5000 - val_loss: 3.7567 - val_accuracy: 0.5000
 Epoch 266/300
 2/2 [=====] - 6s 5s/step - loss: 0.0107 - accuracy:
 0.5000 - val_loss: 3.9653 - val_accuracy: 0.5000
 Epoch 267/300
 2/2 [=====] - 6s 5s/step - loss: 0.0015 - accuracy:
 0.5000 - val_loss: 4.1845 - val_accuracy: 0.5000
 Epoch 268/300
 2/2 [=====] - 6s 2s/step - loss: 7.3517e-04 - accuracy:
 0.5000 - val_loss: 4.3627 - val_accuracy: 0.5000
 Epoch 269/300
 2/2 [=====] - 7s 2s/step - loss: 4.3832e-04 - accuracy:
 0.5000 - val_loss: 4.5070 - val_accuracy: 0.5000
 Epoch 270/300
 2/2 [=====] - 6s 5s/step - loss: 4.0329e-04 - accuracy:
 0.5000 - val_loss: 4.6256 - val_accuracy: 0.5000
 Epoch 271/300
 2/2 [=====] - 6s 2s/step - loss: 5.8098e-04 - accuracy:
 0.5000 - val_loss: 4.7177 - val_accuracy: 0.5000
 Epoch 272/300
 2/2 [=====] - 6s 5s/step - loss: 8.3134e-04 - accuracy:
 0.5000 - val_loss: 4.7897 - val_accuracy: 0.5000
 Epoch 273/300
 2/2 [=====] - 7s 5s/step - loss: 0.0037 - accuracy:
 0.5000 - val_loss: 4.8525 - val_accuracy: 0.5000
 Epoch 274/300
 2/2 [=====] - 6s 2s/step - loss: 9.2192e-04 - accuracy:

0.5000 - val_loss: 4.9060 - val_accuracy: 0.5000
 Epoch 275/300
 2/2 [=====] - 6s 2s/step - loss: 0.0018 - accuracy:
 0.5000 - val_loss: 4.9521 - val_accuracy: 0.5000
 Epoch 276/300
 2/2 [=====] - 6s 5s/step - loss: 0.0036 - accuracy:
 0.5000 - val_loss: 4.9934 - val_accuracy: 0.5000
 Epoch 277/300
 2/2 [=====] - 7s 2s/step - loss: 0.0014 - accuracy:
 0.5000 - val_loss: 5.0308 - val_accuracy: 0.5000
 Epoch 278/300
 2/2 [=====] - 6s 2s/step - loss: 0.0023 - accuracy:
 0.5000 - val_loss: 4.9970 - val_accuracy: 0.5000
 Epoch 279/300
 2/2 [=====] - 7s 5s/step - loss: 0.0049 - accuracy:
 0.5000 - val_loss: 4.9111 - val_accuracy: 0.5000
 Epoch 280/300
 2/2 [=====] - 7s 2s/step - loss: 0.0130 - accuracy:
 0.5000 - val_loss: 4.8020 - val_accuracy: 0.5000
 Epoch 281/300
 2/2 [=====] - 8s 6s/step - loss: 8.4731e-04 - accuracy:
 0.5000 - val_loss: 4.7183 - val_accuracy: 0.5000
 Epoch 282/300
 2/2 [=====] - 8s 6s/step - loss: 0.0037 - accuracy:
 0.5000 - val_loss: 4.6525 - val_accuracy: 0.5000
 Epoch 283/300
 2/2 [=====] - 7s 6s/step - loss: 7.0350e-04 - accuracy:
 0.5000 - val_loss: 4.6018 - val_accuracy: 0.5000
 Epoch 284/300
 2/2 [=====] - 6s 5s/step - loss: 0.0015 - accuracy:
 0.5000 - val_loss: 4.5657 - val_accuracy: 0.5000
 Epoch 285/300
 2/2 [=====] - 6s 2s/step - loss: 0.0020 - accuracy:
 0.5000 - val_loss: 4.5468 - val_accuracy: 0.5000
 Epoch 286/300
 2/2 [=====] - 6s 5s/step - loss: 7.2775e-04 - accuracy:
 0.5000 - val_loss: 4.5440 - val_accuracy: 0.5000
 Epoch 287/300
 2/2 [=====] - 6s 5s/step - loss: 0.0045 - accuracy:
 0.5000 - val_loss: 4.5754 - val_accuracy: 0.5000
 Epoch 288/300
 2/2 [=====] - 8s 7s/step - loss: 0.0022 - accuracy:
 0.5000 - val_loss: 4.6046 - val_accuracy: 0.5000
 Epoch 289/300
 2/2 [=====] - 10s 3s/step - loss: 0.0011 - accuracy:
 0.5000 - val_loss: 4.6328 - val_accuracy: 0.5000
 Epoch 290/300
 2/2 [=====] - 9s 7s/step - loss: 0.0022 - accuracy:

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0.5000 - val_loss: 4.6657 - val_accuracy: 0.5000
Epoch 291/300
2/2 [=====] - 9s 3s/step - loss: 0.0015 - accuracy:
0.5000 - val_loss: 4.6952 - val_accuracy: 0.5000
Epoch 292/300
2/2 [=====] - 9s 3s/step - loss: 0.0010 - accuracy:
0.5000 - val_loss: 4.7217 - val_accuracy: 0.5000
Epoch 293/300
2/2 [=====] - 7s 6s/step - loss: 0.0054 - accuracy:
0.5000 - val_loss: 4.7490 - val_accuracy: 0.5000
Epoch 294/300
2/2 [=====] - 9s 3s/step - loss: 4.0864e-04 - accuracy:
0.5000 - val_loss: 4.7780 - val_accuracy: 0.5000
Epoch 295/300
2/2 [=====] - 9s 3s/step - loss: 0.0010 - accuracy:
0.5000 - val_loss: 4.8055 - val_accuracy: 0.5000
Epoch 296/300
2/2 [=====] - 10s 7s/step - loss: 8.7726e-05 -
accuracy: 0.5000 - val_loss: 4.8280 - val_accuracy: 0.5000
Epoch 297/300
2/2 [=====] - 7s 5s/step - loss: 3.0183e-04 - accuracy:
0.5000 - val_loss: 4.8470 - val_accuracy: 0.5000
Epoch 298/300
2/2 [=====] - 7s 6s/step - loss: 0.0014 - accuracy:
0.5000 - val_loss: 4.8653 - val_accuracy: 0.5000
Epoch 299/300
2/2 [=====] - 6s 5s/step - loss: 0.0011 - accuracy:
0.5000 - val_loss: 4.8836 - val_accuracy: 0.5000
Epoch 300/300
2/2 [=====] - 6s 5s/step - loss: 0.0048 - accuracy:
0.5000 - val_loss: 4.9013 - val_accuracy: 0.5000

```

[28]: <keras.callbacks.History at 0x1c12fed7340>

1.2 THANK YOU...!!!