

Introduction

```
In [1]: import pandas as pd
import numpy as np
import os , shutil
import glob
```

```
In [2]: import cv2
import matplotlib.image as mpimg
```

```
In [3]: import matplotlib.pyplot as plt
%matplotlib inline
import keras
from sklearn.model_selection import train_test_split
```

```
In [4]: from keras.models import Sequential
from keras.layers import Dense
import matplotlib.image as mpimg
```

```
In [5]: import time
import matplotlib.pyplot as plt
import scipy
from PIL import Image
from scipy import ndimage
from keras.preprocessing.image import ImageDataGenerator, array_to_img, img_to_array, load_img
```

```
In [6]: from matplotlib import image
from matplotlib import pyplot
import tensorflow as tf
from tensorflow import keras
from tensorflow.keras import layers
```

Initial MLP Creation

```
In [7]: NORMAL = glob.glob("C:\\Users\\rychu\\Desktop\\2021\\FLT\\P4-Project\\chest_xray\\train\\NORMAL\\*.jpeg")
PNEUMONIA = glob.glob("C:\\Users\\rychu\\Desktop\\2021\\FLT\\P4-Project\\chest_xray\\train\\PNEUMONIA\\*.jpeg")
```

```
In [8]: data = []
labels = []
```

```
In [9]: for i in NORMAL:
    image= tf.keras.preprocessing.image.load_img(i, color_mode='grayscale', target_size= (64,64))
    image=np.array(image)
    data.append(image)
    labels.append(0)

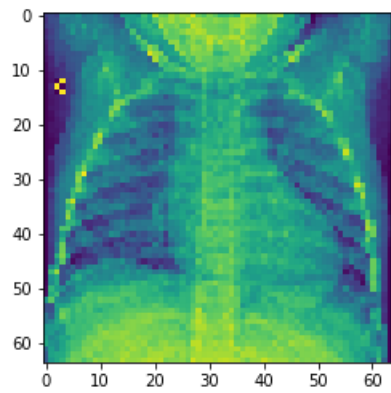
for i in PNEUMONIA:
    image= tf.keras.preprocessing.image.load_img(i, color_mode='grayscale', target_size= (64,64))
    image=np.array(image)
    data.append(image)
    labels.append(1)
```

```
In [10]: data = np.array(data)
labels = np.array(labels)

X_train, X_test, y_train, y_test = train_test_split(data, labels, test_size=0.2, random_state=42)
```

```
In [11]: sample_image = X_train[0]
sample_label = y_train[0]
display(plt.imshow(sample_image))
print('Label: {}'.format(sample_label))
```

<matplotlib.image.AxesImage at 0x22496f76910>
Label: 0



```
In [12]: sample_image
```

```
Out[12]: array([[ 47,  58,  53, ...,  93,  92,  84],
                [ 37,  60,  63, ..., 102,  99,  94],
                [ 43,  54,  63, ..., 119, 108,  86],
                ...,
                [ 90, 144, 124, ..., 154, 111,   0],
                [ 73, 147, 154, ..., 160, 107,   0],
                [ 72, 136, 152, ..., 175,  81,   0]], dtype=uint8)
```

```
In [13]: print(X_train.shape)
         X_test.shape
```

```
(4172, 64, 64)
```

```
Out[13]: (1044, 64, 64)
```

```
In [14]: X_train = X_train.reshape(4172, 4096).astype('float')
         X_test = X_test.reshape(1044, 4096).astype('float')
```

```
In [15]: print(X_train.shape)
         X_test.shape
```

```
(4172, 4096)
```

```
Out[15]: (1044, 4096)
```

```
In [16]: X_train /= 255.
         X_test /= 255.
```

```
In [17]: y_train[:2]
```

```
Out[17]: array([0, 1])
```

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

```
In [19]: y_train[0]
```

```
Out[19]: array([1., 0.], dtype=float32)
```

```
In [20]: Model_1 = Sequential()
         Model_1.add(Dense(64, activation = 'tanh', input_shape = (4096,)))
         Model_1.add(Dense(2, activation = 'softmax'))
```

```
In [21]: Model_1.compile(loss = 'categorical_crossentropy', optimizer = 'sgd', metrics = ['acc'])
```

```
In [22]: Model_1.summary()
```

```
Model: "sequential"
```

Layer (type)	Output Shape	Param #
dense (Dense)	(None, 64)	262208
dense_1 (Dense)	(None, 2)	130
Total params: 262,338		

Trainable params: 262,338
Non-trainable params: 0

```
In [23]: results_1 = Model_1.fit(X_train, y_train, epochs = 12, batch_size = 64, validation_data = (X_test, y_test))
```

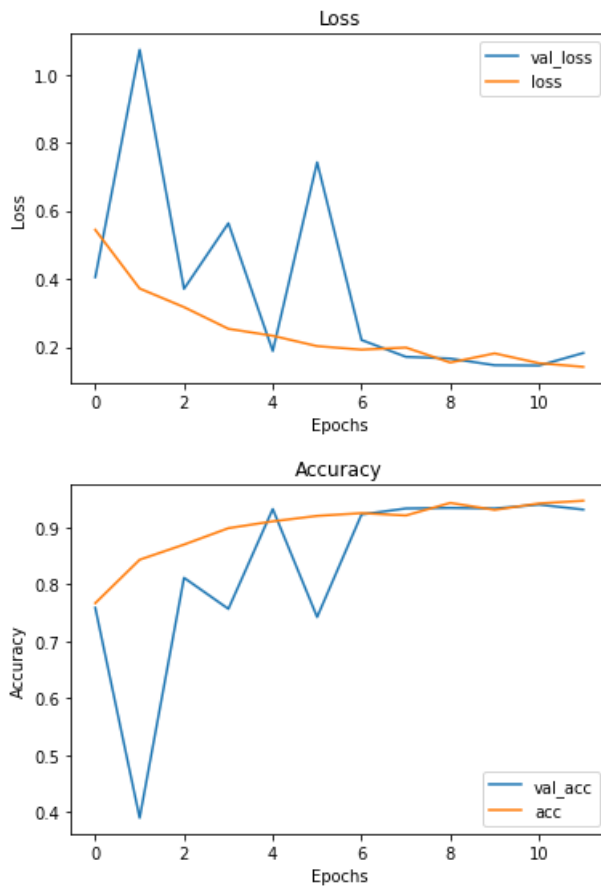
Epoch 1/12
66/66 [=====] - 0s 4ms/step - loss: 0.5442 - acc: 0.7668 - val_loss: 0.4050 - val_acc: 0.7586
Epoch 2/12
66/66 [=====] - 0s 2ms/step - loss: 0.3718 - acc: 0.8430 - val_loss: 1.0727 - val_acc: 0.3898
Epoch 3/12
66/66 [=====] - 0s 2ms/step - loss: 0.3172 - acc: 0.8696 - val_loss: 0.3709 - val_acc: 0.8113
Epoch 4/12
66/66 [=====] - 0s 2ms/step - loss: 0.2535 - acc: 0.8984 - val_loss: 0.5633 - val_acc: 0.7567
Epoch 5/12
66/66 [=====] - 0s 2ms/step - loss: 0.2331 - acc: 0.9104 - val_loss: 0.1884 - val_acc: 0.9320
Epoch 6/12
66/66 [=====] - 0s 2ms/step - loss: 0.2027 - acc: 0.9199 - val_loss: 0.7422 - val_acc: 0.7423
Epoch 7/12
66/66 [=====] - 0s 2ms/step - loss: 0.1923 - acc: 0.9247 - val_loss: 0.2207 - val_acc: 0.9224
Epoch 8/12
66/66 [=====] - 0s 2ms/step - loss: 0.1985 - acc: 0.9207 - val_loss: 0.1713 - val_acc: 0.9330
Epoch 9/12
66/66 [=====] - 0s 2ms/step - loss: 0.1545 - acc: 0.9427 - val_loss: 0.1663 - val_acc: 0.9339
Epoch 10/12
66/66 [=====] - 0s 2ms/step - loss: 0.1814 - acc: 0.9305 - val_loss: 0.1467 - val_acc: 0.9330
Epoch 11/12
66/66 [=====] - 0s 2ms/step - loss: 0.1527 - acc: 0.9418 - val_loss: 0.1457 - val_acc: 0.9397
Epoch 12/12
66/66 [=====] - 0s 2ms/step - loss: 0.1418 - acc: 0.9465 - val_loss: 0.1826 - val_acc: 0.9310

```
In [24]: def visualize_training_results(results):
```

```
    history = results.history
    plt.figure()
    plt.plot(history['val_loss'])
    plt.plot(history['loss'])
    plt.legend(['val_loss', 'loss'])
    plt.title('Loss')
    plt.xlabel('Epochs')
    plt.ylabel('Loss')
    plt.show()

    plt.figure()
    plt.plot(history['val_acc'])
    plt.plot(history['acc'])
    plt.legend(['val_acc', 'acc'])
    plt.title('Accuracy')
    plt.xlabel('Epochs')
    plt.ylabel('Accuracy')
    plt.show()
```

```
In [25]: visualize_training_results(results_1)
```



```
In [26]: Model_2 = Sequential()
Model_2.add(Dense(64, activation='tanh', input_shape=(4096,)))
Model_2.add(Dense(32, activation='tanh'))
Model_2.add(Dense(2, activation='softmax'))
```

```
In [27]: Model_2.summary()
```

Model: "sequential_1"

Layer (type)	Output Shape	Param #
dense_2 (Dense)	(None, 64)	262208
dense_3 (Dense)	(None, 32)	2080
dense_4 (Dense)	(None, 2)	66

Total params: 264,354
 Trainable params: 264,354
 Non-trainable params: 0

```
In [28]: Model_2.compile(loss='categorical_crossentropy', optimizer='sgd', metrics=['acc'])
```

```
In [29]: results_2 = Model_2.fit(X_train, y_train, batch_size=64, epochs=12, validation_data=(X_test, y_test))
```

```
Epoch 1/12
66/66 [=====] - 0s 3ms/step - loss: 0.4935 - acc: 0.7874 - val_loss: 1.1482 - val_acc: 0.2854
Epoch 2/12
66/66 [=====] - 0s 2ms/step - loss: 0.3782 - acc: 0.8305 - val_loss: 0.3231 - val_acc: 0.8841
Epoch 3/12
66/66 [=====] - 0s 2ms/step - loss: 0.3311 - acc: 0.8595 - val_loss: 0.4205 - val_acc: 0.7921
Epoch 4/12
66/66 [=====] - 0s 2ms/step - loss: 0.2507 - acc: 0.8950 - val_loss: 0.3052 - val_acc: 0.8745
Epoch 5/12
66/66 [=====] - 0s 2ms/step - loss: 0.2506 - acc: 0.9000 - val_loss: 0.4629 - val_acc: 0.7845
```

```

Epoch 6/12
66/66 [=====] - 0s 2ms/step - loss: 0.2101 - acc: 0.9147 - val_loss: 0.1805 - val_acc: 0.9301
Epoch 7/12
66/66 [=====] - 0s 2ms/step - loss: 0.2048 - acc: 0.9197 - val_loss: 0.2839 - val_acc: 0.8736
Epoch 8/12
66/66 [=====] - 0s 2ms/step - loss: 0.1857 - acc: 0.9238 - val_loss: 0.1516 - val_acc: 0.9330
Epoch 9/12
66/66 [=====] - 0s 2ms/step - loss: 0.1841 - acc: 0.9295 - val_loss: 1.0431 - val_acc: 0.5556
Epoch 10/12
66/66 [=====] - 0s 2ms/step - loss: 0.1963 - acc: 0.9286 - val_loss: 0.1477 - val_acc: 0.9339
Epoch 11/12
66/66 [=====] - 0s 2ms/step - loss: 0.1570 - acc: 0.9372 - val_loss: 0.1850 - val_acc: 0.9330
Epoch 12/12
66/66 [=====] - 0s 2ms/step - loss: 0.1456 - acc: 0.9434 - val_loss: 0.2628 - val_acc: 0.8918

```

```
In [30]: def visualize_training_results(results):
         history = results.history
```

```

         plt.figure()
         plt.plot(history['val_loss'])
         plt.plot(history['loss'])
         plt.legend(['val_loss', 'loss'])
         plt.title('Loss')
         plt.xlabel('Epochs')
         plt.ylabel('Loss')
         plt.show()

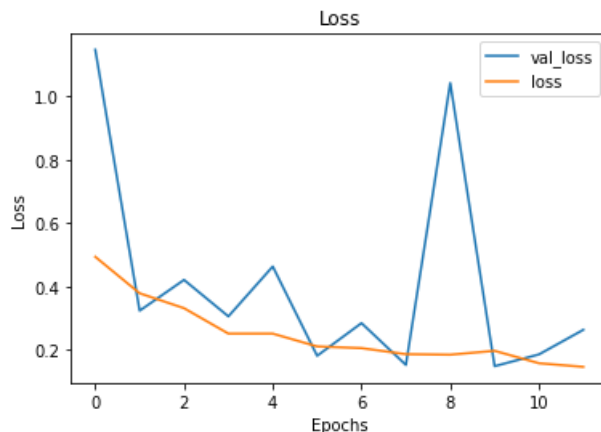
```

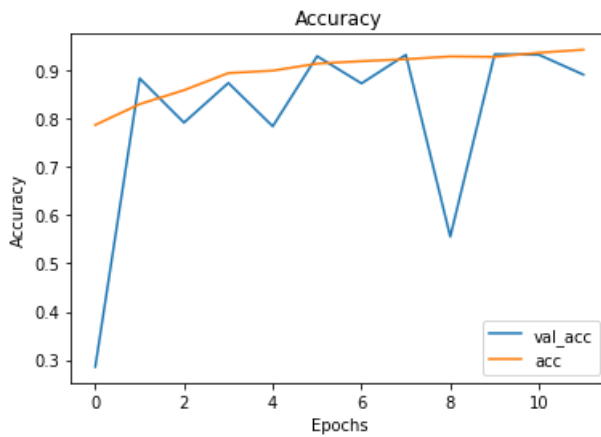
```

         plt.figure()
         plt.plot(history['val_acc'])
         plt.plot(history['acc'])
         plt.legend(['val_acc', 'acc'])
         plt.title('Accuracy')
         plt.xlabel('Epochs')
         plt.ylabel('Accuracy')
         plt.show()

```

```
In [31]: visualize_training_results(results_2)
```





```
In [32]: Model_3 = Sequential()
Model_3.add(Dense(64, activation='relu', input_shape=(4096,)))
Model_3.add(Dense(32, activation='relu'))
Model_3.add(Dense(2, activation='softmax'))
```

```
In [33]: Model_3.summary()
```

Model: "sequential_2"

Layer (type)	Output Shape	Param #
dense_5 (Dense)	(None, 64)	262208
dense_6 (Dense)	(None, 32)	2080
dense_7 (Dense)	(None, 2)	66

Total params: 264,354
 Trainable params: 264,354
 Non-trainable params: 0

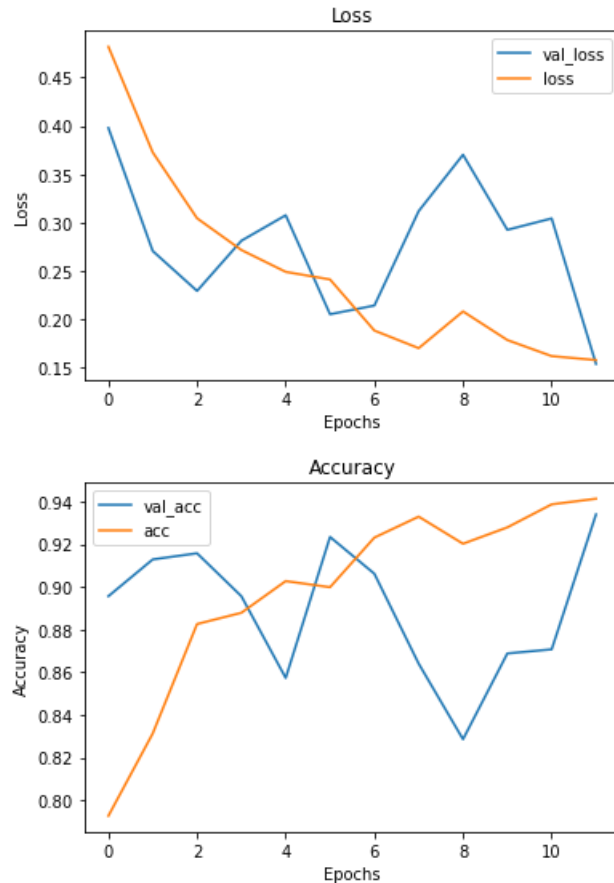
```
In [34]: Model_3.compile(loss='categorical_crossentropy', optimizer='sgd', metrics=['acc'])
```

```
In [35]: results_3 = Model_3.fit(X_train, y_train, epochs=12, batch_size=64, validation_data=(X_test, y_test))
```

```
Epoch 1/12
66/66 [=====] - 0s 3ms/step - loss: 0.4818 - acc: 0.7927 - val_loss: 0.3979 - val_acc: 0.8956
Epoch 2/12
66/66 [=====] - 0s 2ms/step - loss: 0.3727 - acc: 0.8313 - val_loss: 0.2708 - val_acc: 0.9128
Epoch 3/12
66/66 [=====] - 0s 2ms/step - loss: 0.3046 - acc: 0.8826 - val_loss: 0.2295 - val_acc: 0.9157
Epoch 4/12
66/66 [=====] - 0s 2ms/step - loss: 0.2718 - acc: 0.8878 - val_loss: 0.2814 - val_acc: 0.8956
Epoch 5/12
66/66 [=====] - 0s 2ms/step - loss: 0.2492 - acc: 0.9027 - val_loss: 0.3077 - val_acc: 0.8573
Epoch 6/12
66/66 [=====] - 0s 2ms/step - loss: 0.2414 - acc: 0.8998 - val_loss: 0.2055 - val_acc: 0.9234
Epoch 7/12
66/66 [=====] - 0s 2ms/step - loss: 0.1886 - acc: 0.9231 - val_loss: 0.2144 - val_acc: 0.9061
Epoch 8/12
66/66 [=====] - 0s 2ms/step - loss: 0.1704 - acc: 0.9329 - val_loss: 0.3120 - val_acc: 0.8640
Epoch 9/12
66/66 [=====] - 0s 2ms/step - loss: 0.2084 - acc: 0.9202 - val_loss: 0.3703 - val_acc: 0.8285
Epoch 10/12
66/66 [=====] - 0s 2ms/step - loss: 0.1788 - acc: 0.9279 - val_loss: 0.2927 - val_acc: 0.8688
Epoch 11/12
66/66 [=====] - 0s 2ms/step - loss: 0.1622 - acc: 0.9386 - val_loss: 0.3044 - val_acc: 0.8707
Epoch 12/12
```

```
66/66 [=====] - 0s 2ms/step - loss: 0.1581 - acc: 0.9413 - val_loss: 0.1542 - val_acc: 0.9339
```

```
In [36]: visualize_training_results(results_3)
```



```
In [37]: results_train = Model_3.evaluate(X_train, y_train)
```

```
131/131 [=====] - 0s 557us/step - loss: 0.1440 - acc: 0.9461
```

```
In [38]: results_test = Model_3.evaluate(X_test, y_test)
```

```
33/33 [=====] - 0s 621us/step - loss: 0.1542 - acc: 0.9339
```

```
In [39]: results_train
```

```
Out[39]: [0.14396408200263977, 0.9460690021514893]
```

```
In [40]: results_test
```

```
Out[40]: [0.15420790016651154, 0.9339080452919006]
```

Creation of CNN

```
In [41]: # Creating a CNN
```

```
In [42]: test_generator = ImageDataGenerator(rescale=1./255).flow_from_directory(
    "C:\\Users\\rychu\\Desktop\\2021\\FLT\\P4-Project\\chest_xray\\test",
    target_size=(64, 64), batch_size = 180)

val_generator = ImageDataGenerator(rescale=1./255).flow_from_directory(
    "C:\\Users\\rychu\\Desktop\\2021\\FLT\\P4-Project\\chest_xray\\val",
    target_size=(64, 64), batch_size = 200)

train_generator = ImageDataGenerator(rescale=1./255).flow_from_directory(
    "C:\\Users\\rychu\\Desktop\\2021\\FLT\\P4-Project\\chest_xray\\train",
    target_size=(64, 64), batch_size = 200)
```

```
Found 624 images belonging to 2 classes.
```

Found 16 images belonging to 2 classes.
Found 5216 images belonging to 2 classes.

```
In [43]: # Creating the data sets

train_images, train_labels = next(train_generator)
test_images, test_labels = next(test_generator)
val_images, val_labels = next(val_generator)
```

```
In [44]: # Explore your dataset again

m_train = train_images.shape[0]
num_px = train_images.shape[1]
m_test = test_images.shape[0]
m_val = val_images.shape[0]

print ("Number of training samples: " + str(m_train))
print ("Number of testing samples: " + str(m_test))
print ("Number of validation samples: " + str(m_val))
print ("train_images shape: " + str(train_images.shape))
print ("train_labels shape: " + str(train_labels.shape))
print ("test_images shape: " + str(test_images.shape))
print ("test_labels shape: " + str(test_labels.shape))
print ("val_images shape: " + str(val_images.shape))
print ("val_labels shape: " + str(val_labels.shape))
```

```
Number of training samples: 200
Number of testing samples: 180
Number of validation samples: 16
train_images shape: (200, 64, 64, 3)
train_labels shape: (200, 2)
test_images shape: (180, 64, 64, 3)
test_labels shape: (180, 2)
val_images shape: (16, 64, 64, 3)
val_labels shape: (16, 2)
```

```
In [45]: train_img = train_images.reshape(train_images.shape[0], -1)
test_img = test_images.reshape(test_images.shape[0], -1)
val_img = val_images.reshape(val_images.shape[0], -1)

print(train_img.shape)
print(test_img.shape)
print(val_img.shape)
```

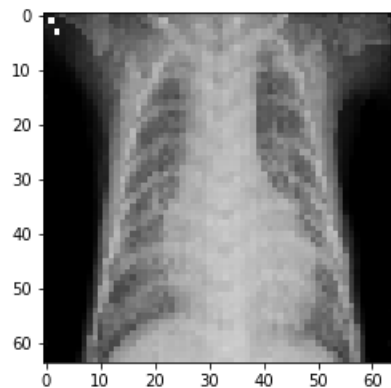
```
(200, 12288)
(180, 12288)
(16, 12288)
```

```
In [46]: train_y = np.reshape(train_labels[:,0], (200,1))
test_y = np.reshape(test_labels[:,0], (180,1))
val_y = np.reshape(val_labels[:,0], (16,1))
```

```
In [47]: # Sample Image Display from train
```

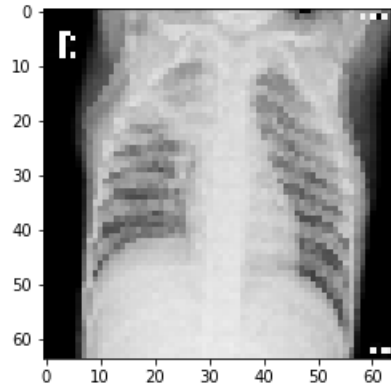
```
In [48]: display(plt.imshow(train_images[0]))

<matplotlib.image.AxesImage at 0x224b2142640>
```



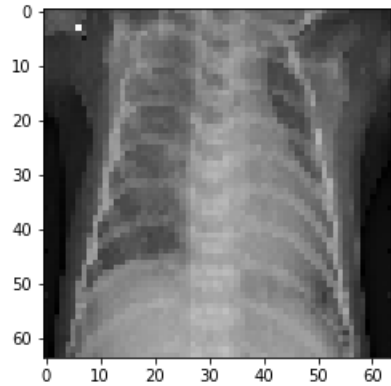
```
In [49]: display(plt.imshow(train_images[1]))
```


<matplotlib.image.AxesImage at 0x224b1cbb160>



```
In [50]: display(plt.imshow(train_images[2]))
```

<matplotlib.image.AxesImage at 0x224b1ceaeb0>



```
In [51]: from keras import models
from keras import layers
np.random.seed(123)

model = models.Sequential()
model.add(layers.Dense(20, activation='relu', input_shape=(12288,))) # 2 hidden layers
model.add(layers.Dense(7, activation='relu'))
model.add(layers.Dense(5, activation='relu'))
model.add(layers.Dense(1, activation='sigmoid'))
```

```
In [52]: model.compile(optimizer='sgd',
                      loss='binary_crossentropy',
                      metrics=['accuracy'])

history = model.fit(train_img,
                    train_y,
                    epochs=50,
                    batch_size=32,
                    validation_data=(val_img, val_y))
```

```
Epoch 1/50
7/7 [=====] - 0s 15ms/step - loss: 0.7130 - accuracy: 0.6050 - val_loss: 0.7101 - val_ac
curacy: 0.5000
Epoch 2/50
7/7 [=====] - 0s 3ms/step - loss: 0.6235 - accuracy: 0.7200 - val_loss: 0.7356 - val_acc
uracy: 0.5000
Epoch 3/50
7/7 [=====] - 0s 3ms/step - loss: 0.6052 - accuracy: 0.7200 - val_loss: 0.7606 - val_acc
uracy: 0.5000
Epoch 4/50
7/7 [=====] - 0s 3ms/step - loss: 0.5968 - accuracy: 0.7200 - val_loss: 0.7946 - val_acc
uracy: 0.5000
Epoch 5/50
7/7 [=====] - 0s 3ms/step - loss: 0.5930 - accuracy: 0.7200 - val_loss: 0.8161 - val_acc
uracy: 0.5000
Epoch 6/50
7/7 [=====] - 0s 3ms/step - loss: 0.5920 - accuracy: 0.7200 - val_loss: 0.7886 - val_acc
uracy: 0.5000
Epoch 7/50
```

7/7 [=====] - 0s 3ms/step - loss: 0.5896 - accuracy: 0.7200 - val_loss: 0.8016 - val_acc
uracy: 0.5000
Epoch 8/50
7/7 [=====] - 0s 3ms/step - loss: 0.5874 - accuracy: 0.7200 - val_loss: 0.8066 - val_acc
uracy: 0.5000
Epoch 9/50
7/7 [=====] - 0s 3ms/step - loss: 0.5836 - accuracy: 0.7200 - val_loss: 0.8416 - val_acc
uracy: 0.5000
Epoch 10/50
7/7 [=====] - 0s 3ms/step - loss: 0.5742 - accuracy: 0.7300 - val_loss: 0.6708 - val_acc
uracy: 0.5625
Epoch 11/50
7/7 [=====] - 0s 3ms/step - loss: 0.6190 - accuracy: 0.6350 - val_loss: 0.8152 - val_acc
uracy: 0.5000
Epoch 12/50
7/7 [=====] - 0s 3ms/step - loss: 0.5809 - accuracy: 0.7200 - val_loss: 0.8132 - val_acc
uracy: 0.5000
Epoch 13/50
7/7 [=====] - 0s 3ms/step - loss: 0.5784 - accuracy: 0.7200 - val_loss: 0.7902 - val_acc
uracy: 0.5000
Epoch 14/50
7/7 [=====] - 0s 3ms/step - loss: 0.5756 - accuracy: 0.7200 - val_loss: 0.7614 - val_acc
uracy: 0.5000
Epoch 15/50
7/7 [=====] - 0s 3ms/step - loss: 0.5754 - accuracy: 0.7200 - val_loss: 0.8048 - val_acc
uracy: 0.5000
Epoch 16/50
7/7 [=====] - 0s 3ms/step - loss: 0.5745 - accuracy: 0.7200 - val_loss: 0.7975 - val_acc
uracy: 0.5000
Epoch 17/50
7/7 [=====] - 0s 3ms/step - loss: 0.5720 - accuracy: 0.7200 - val_loss: 0.7553 - val_acc
uracy: 0.5000
Epoch 18/50
7/7 [=====] - 0s 3ms/step - loss: 0.5666 - accuracy: 0.7200 - val_loss: 0.7870 - val_acc
uracy: 0.5000
Epoch 19/50
7/7 [=====] - 0s 3ms/step - loss: 0.5624 - accuracy: 0.7200 - val_loss: 0.7958 - val_acc
uracy: 0.5000
Epoch 20/50
7/7 [=====] - 0s 3ms/step - loss: 0.5587 - accuracy: 0.7200 - val_loss: 0.7690 - val_acc
uracy: 0.5000
Epoch 21/50
7/7 [=====] - 0s 3ms/step - loss: 0.5575 - accuracy: 0.7200 - val_loss: 0.7636 - val_acc
uracy: 0.5000
Epoch 22/50
7/7 [=====] - 0s 3ms/step - loss: 0.5512 - accuracy: 0.7200 - val_loss: 0.7364 - val_acc
uracy: 0.5000
Epoch 23/50
7/7 [=====] - 0s 3ms/step - loss: 0.5463 - accuracy: 0.7200 - val_loss: 0.7665 - val_acc
uracy: 0.5000
Epoch 24/50
7/7 [=====] - 0s 3ms/step - loss: 0.5390 - accuracy: 0.7200 - val_loss: 0.8185 - val_acc
uracy: 0.5000
Epoch 25/50
7/7 [=====] - 0s 3ms/step - loss: 0.5353 - accuracy: 0.7200 - val_loss: 0.8098 - val_acc
uracy: 0.5000
Epoch 26/50
7/7 [=====] - 0s 3ms/step - loss: 0.5277 - accuracy: 0.7200 - val_loss: 0.7681 - val_acc
uracy: 0.5000
Epoch 27/50
7/7 [=====] - 0s 3ms/step - loss: 0.5198 - accuracy: 0.7200 - val_loss: 0.7207 - val_acc
uracy: 0.5000
Epoch 28/50
7/7 [=====] - 0s 3ms/step - loss: 0.5206 - accuracy: 0.7200 - val_loss: 0.6816 - val_acc
uracy: 0.5000
Epoch 29/50
7/7 [=====] - 0s 3ms/step - loss: 0.5103 - accuracy: 0.7200 - val_loss: 0.7081 - val_acc
uracy: 0.5000
Epoch 30/50
7/7 [=====] - 0s 3ms/step - loss: 0.4819 - accuracy: 0.7200 - val_loss: 0.6710 - val_acc
uracy: 0.5000
Epoch 31/50
7/7 [=====] - 0s 3ms/step - loss: 0.4952 - accuracy: 0.7200 - val_loss: 0.6865 - val_acc
uracy: 0.5000
Epoch 32/50
7/7 [=====] - 0s 4ms/step - loss: 0.4557 - accuracy: 0.7200 - val_loss: 0.9597 - val_acc
uracy: 0.5000
Epoch 33/50
7/7 [=====] - 0s 3ms/step - loss: 0.4927 - accuracy: 0.7200 - val_loss: 0.7294 - val_acc
uracy: 0.5000
Epoch 34/50

```

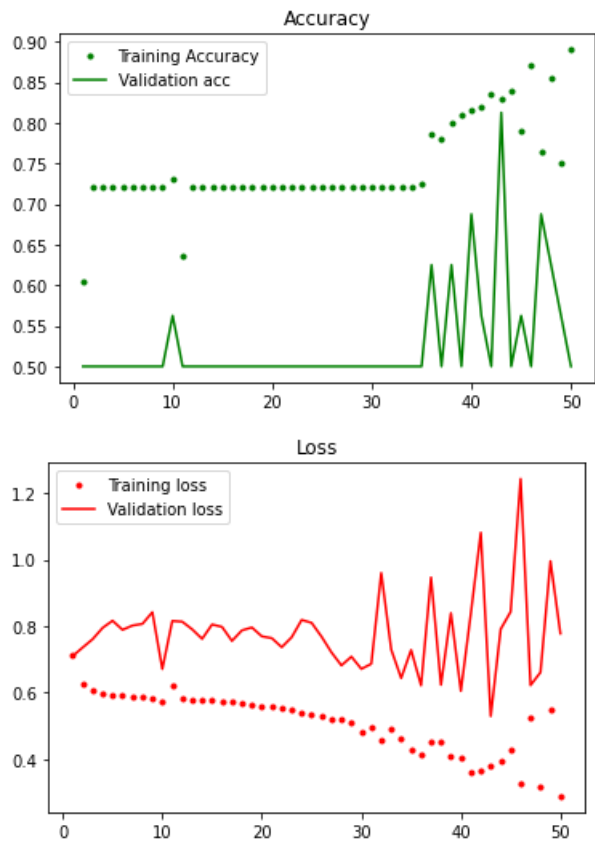
7/7 [=====] - 0s 3ms/step - loss: 0.4626 - accuracy: 0.7200 - val_loss: 0.6435 - val_acc
uracy: 0.5000
Epoch 35/50
7/7 [=====] - 0s 3ms/step - loss: 0.4270 - accuracy: 0.7250 - val_loss: 0.7281 - val_acc
uracy: 0.5000
Epoch 36/50
7/7 [=====] - 0s 3ms/step - loss: 0.4143 - accuracy: 0.7850 - val_loss: 0.6215 - val_acc
uracy: 0.6250
Epoch 37/50
7/7 [=====] - 0s 3ms/step - loss: 0.4518 - accuracy: 0.7800 - val_loss: 0.9463 - val_acc
uracy: 0.5000
Epoch 38/50
7/7 [=====] - 0s 3ms/step - loss: 0.4543 - accuracy: 0.8000 - val_loss: 0.6231 - val_acc
uracy: 0.6250
Epoch 39/50
7/7 [=====] - 0s 3ms/step - loss: 0.4095 - accuracy: 0.8100 - val_loss: 0.8389 - val_acc
uracy: 0.5000
Epoch 40/50
7/7 [=====] - 0s 3ms/step - loss: 0.4045 - accuracy: 0.8150 - val_loss: 0.6048 - val_acc
uracy: 0.6875
Epoch 41/50
7/7 [=====] - 0s 3ms/step - loss: 0.3590 - accuracy: 0.8200 - val_loss: 0.8374 - val_acc
uracy: 0.5625
Epoch 42/50
7/7 [=====] - 0s 3ms/step - loss: 0.3632 - accuracy: 0.8350 - val_loss: 1.0809 - val_acc
uracy: 0.5000
Epoch 43/50
7/7 [=====] - 0s 3ms/step - loss: 0.3791 - accuracy: 0.8300 - val_loss: 0.5289 - val_acc
uracy: 0.8125
Epoch 44/50
7/7 [=====] - 0s 3ms/step - loss: 0.3946 - accuracy: 0.8400 - val_loss: 0.7907 - val_acc
uracy: 0.5000
Epoch 45/50
7/7 [=====] - 0s 3ms/step - loss: 0.4271 - accuracy: 0.7900 - val_loss: 0.8430 - val_acc
uracy: 0.5625
Epoch 46/50
7/7 [=====] - 0s 3ms/step - loss: 0.3257 - accuracy: 0.8700 - val_loss: 1.2428 - val_acc
uracy: 0.5000
Epoch 47/50
7/7 [=====] - 0s 3ms/step - loss: 0.5240 - accuracy: 0.7650 - val_loss: 0.6219 - val_acc
uracy: 0.6875
Epoch 48/50
7/7 [=====] - 0s 3ms/step - loss: 0.3158 - accuracy: 0.8550 - val_loss: 0.6609 - val_acc
uracy: 0.6250
Epoch 49/50
7/7 [=====] - 0s 3ms/step - loss: 0.5505 - accuracy: 0.7500 - val_loss: 0.9954 - val_acc
uracy: 0.5625
Epoch 50/50
7/7 [=====] - 0s 3ms/step - loss: 0.2883 - accuracy: 0.8900 - val_loss: 0.7777 - val_acc
uracy: 0.5000

```

```

In [53]: train_acc = history.history['accuracy']
val_acc = history.history['val_accuracy']
train_loss = history.history['loss']
val_loss = history.history['val_loss']
epoch = range(1, len(train_acc) + 1)
plt.plot(epoch, train_acc, 'g.', label='Training Accuracy')
plt.plot(epoch, val_acc, 'g', label='Validation acc')
plt.title('Accuracy')
plt.legend()
plt.figure()
plt.plot(epoch, train_loss, 'r.', label='Training loss')
plt.plot(epoch, val_loss, 'r', label='Validation loss')
plt.title('Loss')
plt.legend()
plt.show()

```



```
In [54]: # visualize_training_results(history_A)
```

```
In [55]: results_train = model.evaluate(train_img, train_y)
```

```
7/7 [=====] - 0s 785us/step - loss: 0.8614 - accuracy: 0.4200
```

```
In [56]: results_test = model.evaluate(test_img, test_y)
```

```
6/6 [=====] - 0s 750us/step - loss: 0.7823 - accuracy: 0.5167
```

```
In [57]: results_train
```

```
Out[57]: [0.8613598346710205, 0.41999998688697815]
```

```
In [58]: results_test
```

```
Out[58]: [0.7822510600090027, 0.5166666507720947]
```

```
In [59]: # Building a CNN
```

```
In [60]: model = models.Sequential()
model.add(layers.Conv2D(32, (3, 3), activation='relu',
                        input_shape=(64, 64, 3)))
model.add(layers.MaxPooling2D((2, 2)))

model.add(layers.Conv2D(32, (4, 4), activation='relu'))
model.add(layers.MaxPooling2D((2, 2)))

model.add(layers.Conv2D(64, (3, 3), activation='relu'))
model.add(layers.MaxPooling2D((2, 2)))

model.add(layers.Flatten())
model.add(layers.Dense(64, activation='relu'))
model.add(layers.Dense(1, activation='sigmoid'))

model.compile(loss='binary_crossentropy',
              optimizer='sgd',
              metrics=['acc'])

history = model.fit(train_images,
```

```
train_y,  
epochs=30,  
batch_size=32,  
validation_data=(val_images, val_y))
```

```
Epoch 1/30  
7/7 [=====] - 0s 44ms/step - loss: 0.6716 - acc: 0.7200 - val_loss: 0.6982 - val_acc: 0.  
5000  
Epoch 2/30  
7/7 [=====] - 0s 34ms/step - loss: 0.6492 - acc: 0.7200 - val_loss: 0.7144 - val_acc: 0.  
5000  
Epoch 3/30  
7/7 [=====] - 0s 34ms/step - loss: 0.6231 - acc: 0.7200 - val_loss: 0.7259 - val_acc: 0.  
5000  
Epoch 4/30  
7/7 [=====] - 0s 34ms/step - loss: 0.6123 - acc: 0.7200 - val_loss: 0.7507 - val_acc: 0.  
5000  
Epoch 5/30  
7/7 [=====] - 0s 33ms/step - loss: 0.6035 - acc: 0.7200 - val_loss: 0.7767 - val_acc: 0.  
5000  
Epoch 6/30  
7/7 [=====] - 0s 34ms/step - loss: 0.5997 - acc: 0.7200 - val_loss: 0.7880 - val_acc: 0.  
5000  
Epoch 7/30  
7/7 [=====] - 0s 33ms/step - loss: 0.5950 - acc: 0.7200 - val_loss: 0.7963 - val_acc: 0.  
5000  
Epoch 8/30  
7/7 [=====] - 0s 32ms/step - loss: 0.5940 - acc: 0.7200 - val_loss: 0.8188 - val_acc: 0.  
5000  
Epoch 9/30  
7/7 [=====] - 0s 32ms/step - loss: 0.5941 - acc: 0.7200 - val_loss: 0.7893 - val_acc: 0.  
5000  
Epoch 10/30  
7/7 [=====] - 0s 36ms/step - loss: 0.5937 - acc: 0.7200 - val_loss: 0.7796 - val_acc: 0.  
5000  
Epoch 11/30  
7/7 [=====] - 0s 31ms/step - loss: 0.5933 - acc: 0.7200 - val_loss: 0.8118 - val_acc: 0.  
5000  
Epoch 12/30  
7/7 [=====] - 0s 34ms/step - loss: 0.5940 - acc: 0.7200 - val_loss: 0.7857 - val_acc: 0.  
5000  
Epoch 13/30  
7/7 [=====] - 0s 33ms/step - loss: 0.5936 - acc: 0.7200 - val_loss: 0.7857 - val_acc: 0.  
5000  
Epoch 14/30  
7/7 [=====] - 0s 36ms/step - loss: 0.5915 - acc: 0.7200 - val_loss: 0.7890 - val_acc: 0.  
5000  
Epoch 15/30  
7/7 [=====] - 0s 31ms/step - loss: 0.5896 - acc: 0.7200 - val_loss: 0.7988 - val_acc: 0.  
5000  
Epoch 16/30  
7/7 [=====] - 0s 34ms/step - loss: 0.5904 - acc: 0.7200 - val_loss: 0.7779 - val_acc: 0.  
5000  
Epoch 17/30  
7/7 [=====] - 0s 33ms/step - loss: 0.5901 - acc: 0.7200 - val_loss: 0.7928 - val_acc: 0.  
5000  
Epoch 18/30  
7/7 [=====] - 0s 34ms/step - loss: 0.5891 - acc: 0.7200 - val_loss: 0.8386 - val_acc: 0.  
5000  
Epoch 19/30  
7/7 [=====] - 0s 32ms/step - loss: 0.5938 - acc: 0.7200 - val_loss: 0.8422 - val_acc: 0.  
5000  
Epoch 20/30  
7/7 [=====] - 0s 33ms/step - loss: 0.5898 - acc: 0.7200 - val_loss: 0.7795 - val_acc: 0.  
5000  
Epoch 21/30  
7/7 [=====] - 0s 35ms/step - loss: 0.5859 - acc: 0.7200 - val_loss: 0.7695 - val_acc: 0.  
5000  
Epoch 22/30  
7/7 [=====] - 0s 31ms/step - loss: 0.5856 - acc: 0.7200 - val_loss: 0.7851 - val_acc: 0.  
5000  
Epoch 23/30  
7/7 [=====] - 0s 33ms/step - loss: 0.5854 - acc: 0.7200 - val_loss: 0.7983 - val_acc: 0.  
5000  
Epoch 24/30  
7/7 [=====] - 0s 33ms/step - loss: 0.5870 - acc: 0.7200 - val_loss: 0.7875 - val_acc: 0.  
5000  
Epoch 25/30  
7/7 [=====] - 0s 35ms/step - loss: 0.5832 - acc: 0.7200 - val_loss: 0.7702 - val_acc: 0.  
5000  
Epoch 26/30
```

```

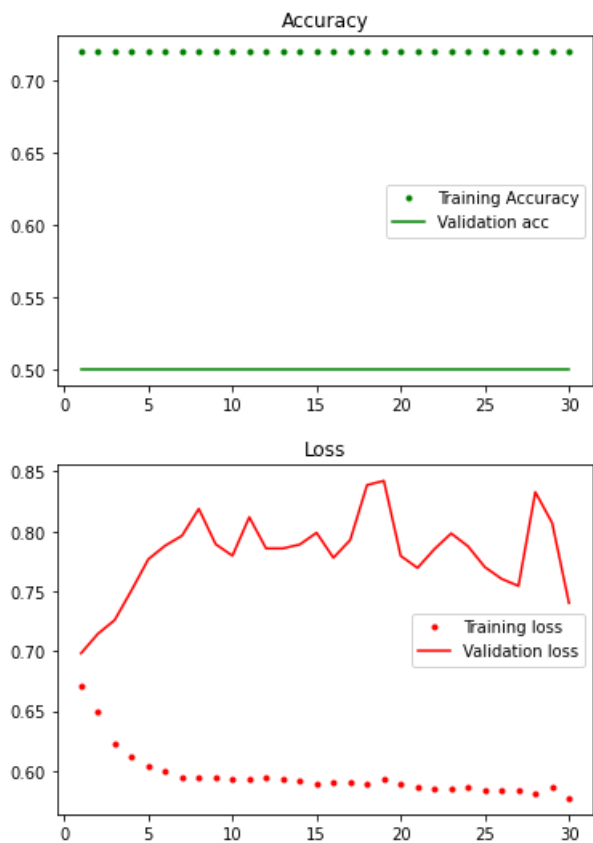
7/7 [=====] - 0s 32ms/step - loss: 0.5841 - acc: 0.7200 - val_loss: 0.7603 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.5837 - acc: 0.7200 - val_loss: 0.7544 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.5812 - acc: 0.7200 - val_loss: 0.8328 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.5860 - acc: 0.7200 - val_loss: 0.8071 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.5772 - acc: 0.7200 - val_loss: 0.7402 - val_acc: 0.
5000

```

```

In [61]: train_acc = history.history['acc']
val_acc = history.history['val_acc']
train_loss = history.history['loss']
val_loss = history.history['val_loss']
epoch = range(1, len(train_acc) + 1)
plt.plot(epoch, train_acc, 'g.', label='Training Accuracy')
plt.plot(epoch, val_acc, 'g', label='Validation acc')
plt.title('Accuracy')
plt.legend()
plt.figure()
plt.plot(epoch, train_loss, 'r.', label='Training loss')
plt.plot(epoch, val_loss, 'r', label='Validation loss')
plt.title('Loss')
plt.legend()
plt.show()

```



```

In [62]: # visualize_training_results(history_B)

```

```

In [63]: results_train = model.evaluate(train_images, train_y)

```

```

7/7 [=====] - 0s 6ms/step - loss: 0.5833 - acc: 0.7200

```

```

In [64]: results_test = model.evaluate(test_images, test_y)

```

```

6/6 [=====] - 0s 6ms/step - loss: 0.6482 - acc: 0.6278

```

```

In [65]: results_train

```

Out[65]: [0.5832634568214417, 0.7200000286102295]

In [66]: results_test

Out[66]: [0.648226261138916, 0.6277777552604675]

Grid Search Tuning

In [67]: pip install talos

```
Requirement already satisfied: talos in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (1.0)
Requirement already satisfied: kerasplotlib in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ta
los) (0.1.6)
Requirement already satisfied: requests in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from talos)
(2.24.0)
Requirement already satisfied: sklearn in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from talos)
(0.0)
Requirement already satisfied: pandas in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from talos)
(1.1.3)
Requirement already satisfied: wrangle in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from talos)
(0.6.9)
Requirement already satisfied: statsmodels>=0.11.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages
(from talos) (0.12.0)
Requirement already satisfied: astetik in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from talos)
(1.11.1)
Requirement already satisfied: numpy in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from talos)
(1.18.5)
Requirement already satisfied: tensorflow>=2.0.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (fr
om talos) (2.3.1)
Requirement already satisfied: chances in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from talos)
(0.1.9)
Requirement already satisfied: tqdm in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from talos) (4.
50.2)
Requirement already satisfied: ipython in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from keraspl
otlib->talos) (7.18.1)
Requirement already satisfied: idna<3,>=2.5 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from re
quests->talos) (2.10)
Requirement already satisfied: urllib3!=1.25.0,!=1.25.1,<1.26,>=1.21.1 in c:\users\rychu\anaconda3\envs\learn-env
\lib\site-packages (from requests->talos) (1.25.10)
Requirement already satisfied: certifi>=2017.4.17 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (f
rom requests->talos) (2021.10.8)
Requirement already satisfied: chardet<4,>=3.0.2 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (fr
om requests->talos) (3.0.4)
Requirement already satisfied: scikit-learn in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from sk
learn->talos) (0.23.2)
Requirement already satisfied: pytz>=2017.2 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from pa
ndas->talos) (2020.1)
Requirement already satisfied: python-dateutil>=2.7.3 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-package
s (from pandas->talos) (2.8.1)
Requirement already satisfied: scipy in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from wrangle->
talos) (1.5.0)
Requirement already satisfied: keras in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from wrangle->
talos) (2.4.3)
Requirement already satisfied: patsy>=0.5 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from stat
smodels>=0.11.0->talos) (0.5.1)
Requirement already satisfied: geonamescache in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from a
stetik->talos) (1.3.0)
Requirement already satisfied: seaborn in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from astetik
->talos) (0.11.0)
Requirement already satisfied: grpcio>=1.8.6 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from t
ensorflow>=2.0.0->talos) (1.31.0)
Requirement already satisfied: six>=1.12.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ten
sorflow>=2.0.0->talos) (1.15.0)
Requirement already satisfied: opt-einsum>=2.3.2 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (fr
om tensorflow>=2.0.0->talos) (3.3.0)
Requirement already satisfied: tensorflow-estimator<2.4.0,>=2.3.0 in c:\users\rychu\anaconda3\envs\learn-env\lib
\site-packages (from tensorflow>=2.0.0->talos) (2.3.0)
Requirement already satisfied: h5py<2.11.0,>=2.10.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages
(from tensorflow>=2.0.0->talos) (2.10.0)
Requirement already satisfied: keras-preprocessing<1.2,>=1.1.1 in c:\users\rychu\anaconda3\envs\learn-env\lib\sit
e-packages (from tensorflow>=2.0.0->talos) (1.1.2)
Requirement already satisfied: protobuf>=3.9.2 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from
tensorflow>=2.0.0->talos) (3.11.2)
Requirement already satisfied: absl-py>=0.7.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from
tensorflow>=2.0.0->talos) (0.10.0)
Requirement already satisfied: termcolor>=1.1.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (fro
m tensorflow>=2.0.0->talos) (1.1.0)
Requirement already satisfied: wheel>=0.26 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ten
```

tensorflow>=2.0.0->talos) (0.35.1)
Requirement already satisfied: tensorboard<3,>=2.3.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorflow>=2.0.0->talos) (2.3.0)
Requirement already satisfied: astunparse==1.6.3 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorflow>=2.0.0->talos) (1.6.3)
Requirement already satisfied: google-pasta>=0.1.8 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorflow>=2.0.0->talos) (0.2.0)
Requirement already satisfied: wrapt>=1.11.1 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorflow>=2.0.0->talos) (1.12.1)
Requirement already satisfied: gast==0.3.3 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorflow>=2.0.0->talos) (0.3.3)
Requirement already satisfied: pickleshare in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (0.7.5)
Requirement already satisfied: colorama; sys_platform == "win32" in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (0.4.3)
Requirement already satisfied: prompt-toolkit!=3.0.0,!<3.0.1,>=2.0.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (3.0.8)
Requirement already satisfied: backcall in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (0.2.0)
Requirement already satisfied: pygments in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (2.7.1)
Requirement already satisfied: jedi>=0.10 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (0.17.2)
Requirement already satisfied: decorator in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (4.4.2)
Requirement already satisfied: traitlets>=4.2 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (5.0.5)
Requirement already satisfied: setuptools>=18.5 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from ipython->kerasplotlib->talos) (50.3.0.post20201103)
Requirement already satisfied: threadpoolctl>=2.0.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from scikit-learn->sklearn->talos) (2.1.0)
Requirement already satisfied: joblib>=0.11 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from scikit-learn->sklearn->talos) (0.17.0)
Requirement already satisfied: pyyaml in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from keras->wangle->talos) (5.3.1)
Requirement already satisfied: matplotlib>=2.2 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from seaborn->astetik->talos) (3.3.1)
Requirement already satisfied: markdown>=2.6.8 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (3.3.2)
Requirement already satisfied: google-auth-oauthlib<0.5,>=0.4.1 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (0.4.1)
Requirement already satisfied: google-auth<2,>=1.6.3 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (1.22.0)
Requirement already satisfied: tensorboard-plugin-wit>=1.6.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (1.7.0)
Requirement already satisfied: werkzeug>=0.11.15 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (1.0.1)
Requirement already satisfied: wcwidth in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from prompt-toolkit!=3.0.0,!<3.0.1,>=2.0.0->ipython->kerasplotlib->talos) (0.2.5)
Requirement already satisfied: parso<0.8.0,>=0.7.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from jedi>=0.10->ipython->kerasplotlib->talos) (0.7.0)
Requirement already satisfied: ipython-genutils in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from traitlets>=4.2->ipython->kerasplotlib->talos) (0.2.0)
Requirement already satisfied: pillow>=6.2.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from matplotlib>=2.2->seaborn->astetik->talos) (8.0.0)
Requirement already satisfied: cycler>=0.10 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from matplotlib>=2.2->seaborn->astetik->talos) (0.10.0)
Requirement already satisfied: kiwisolver>=1.0.1 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from matplotlib>=2.2->seaborn->astetik->talos) (1.2.0)
Requirement already satisfied: pyparsing!=2.0.4,!<2.1.2,!>2.1.6,>=2.0.3 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from matplotlib>=2.2->seaborn->astetik->talos) (2.4.7)
Requirement already satisfied: requests-oauthlib>=0.7.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from google-auth-oauthlib<0.5,>=0.4.1->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (1.3.0)
Requirement already satisfied: cachetools<5.0,>=2.0.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (4.1.1)
Requirement already satisfied: rsa<5,>=3.1.4; python_version >= "3.5" in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (4.6)
Requirement already satisfied: pyasn1-modules>=0.2.1 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (0.2.7)
Requirement already satisfied: aiohttp<4.0.0dev,>=3.6.2; python_version >= "3.6" in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (3.6.3)
Requirement already satisfied: oauthlib>=3.0.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from requests-oauthlib>=0.7.0->google-auth-oauthlib<0.5,>=0.4.1->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (3.1.0)
Requirement already satisfied: pyasn1>=0.1.3 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from rsa<5,>=3.1.4; python_version >= "3.5"->google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (0.4.8)
Requirement already satisfied: yarl<1.6.0,>=1.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from aiohttp<4.0.0dev,>=3.6.2; python_version >= "3.6"->google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (1.5.1)

Requirement already satisfied: multidict<5.0,>=4.5 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from aiohttp<4.0.0dev,>=3.6.2; python_version >= "3.6"->google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (4.7.5)
Requirement already satisfied: async-timeout<4.0,>=3.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from aiohttp<4.0.0dev,>=3.6.2; python_version >= "3.6"->google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (3.0.1)
Requirement already satisfied: attrs>=17.3.0 in c:\users\rychu\anaconda3\envs\learn-env\lib\site-packages (from aiohttp<4.0.0dev,>=3.6.2; python_version >= "3.6"->google-auth<2,>=1.6.3->tensorboard<3,>=2.3.0->tensorflow>=2.0.0->talos) (20.2.0)
Note: you may need to restart the kernel to use updated packages.

```
In [68]: import talos
import numpy
```

```
In [69]: NORMAL_2 = glob.glob("C:\\Users\\rychu\\Desktop\\2021\\FLT\\P4-Project\\chest_xray\\train\\NORMAL\\*.jpeg")
PNEUMONIA_2 = glob.glob("C:\\Users\\rychu\\Desktop\\2021\\FLT\\P4-Project\\chest_xray\\train\\PNEUMONIA\\*.jpeg")
```

```
In [70]: data_2 = []
labels_2 = []
```

```
In [71]: for i in NORMAL_2:
image= tf.keras.preprocessing.image.load_img(i, color_mode='grayscale', target_size= (64,64))
image=np.array(image)
data_2.append(image)
labels_2.append(0)

for i in PNEUMONIA_2:
image= tf.keras.preprocessing.image.load_img(i, color_mode='grayscale', target_size= (64,64))
image=np.array(image)
data_2.append(image)
labels_2.append(1)
```

```
In [72]: data_2 = np.array(data_2)
labels_2 = np.array(labels_2)

X_train, X_test, y_train, y_test = train_test_split(data_2, labels_2, test_size=0.2, random_state=42)
```

```
In [73]: def dense_network(x_train, y_train, x_test, y_test, params):

    model = models.Sequential()

    # hidden layers
    model.add(layers.Conv2D(32, (3, 3), activation=params['activation1'], input_shape=(64, 64, 3)))
    model.add(layers.MaxPooling2D((2, 2)))

    model.add(layers.Conv2D(32, (4, 4), activation=params['activation2']))
    model.add(layers.MaxPooling2D((2, 2)))

    model.add(layers.Conv2D(64, (3, 3), activation=params['activation3']))
    model.add(layers.MaxPooling2D((2, 2)))

    model.add(layers.Flatten())

    model.add(layers.Dense(64, activation=params['activation4']))
    model.add(layers.Dropout(params['dropout']))

    # output layer
    model.add(layers.Dense(1, activation='sigmoid'))

    model.compile(loss='binary_crossentropy',
                  optimizer=params['optimizer'],
                  metrics=['acc'])

    out = model.fit(train_images,
                    train_y,
                    epochs=30,
                    batch_size=32,
                    validation_data=(val_images, val_y))

    return out, model
```

```
In [74]: params = {'dropout': [0.1, 0.3, 0.5],
                  'optimizer': ['adam', 'sgd'],
                  'activation1': ['relu', 'tanh'],
```

```
'activation2': ['relu', 'tanh'],
'activation3': ['relu', 'tanh'],
'activation4': ['relu', 'tanh'],}
```

```
In [75]: results = talos.Scan(X_train, y_train, params=params, model = dense_network, experiment_name='grid')
```

```
0%|          | 0/96 [00:00<?, ?it/s]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6015 - acc: 0.7200 - val_loss: 0.8595 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6026 - acc: 0.7200 - val_loss: 0.7301 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 36ms/step - loss: 0.5750 - acc: 0.7200 - val_loss: 0.8108 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5624 - acc: 0.7200 - val_loss: 0.6833 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5360 - acc: 0.7200 - val_loss: 0.7642 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.4626 - acc: 0.7300 - val_loss: 0.7470 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 37ms/step - loss: 0.3979 - acc: 0.8000 - val_loss: 0.5907 - val_acc: 0.8125
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.4433 - acc: 0.7900 - val_loss: 0.5953 - val_acc: 0.5625
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3587 - acc: 0.8700 - val_loss: 0.9422 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.2964 - acc: 0.8750 - val_loss: 0.6139 - val_acc: 0.5625
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.2543 - acc: 0.8850 - val_loss: 1.0837 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.2583 - acc: 0.8850 - val_loss: 0.7813 - val_acc: 0.6250
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.1889 - acc: 0.9350 - val_loss: 0.6400 - val_acc: 0.6875
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.1718 - acc: 0.9250 - val_loss: 0.7849 - val_acc: 0.6875
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.1978 - acc: 0.9150 - val_loss: 1.3446 - val_acc: 0.5625
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.2183 - acc: 0.9100 - val_loss: 0.9689 - val_acc: 0.5625
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.1726 - acc: 0.9250 - val_loss: 0.7107 - val_acc: 0.7500
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.1529 - acc: 0.9450 - val_loss: 0.8992 - val_acc: 0.7500
Epoch 19/30
7/7 [=====] - 0s 31ms/step - loss: 0.1351 - acc: 0.9500 - val_loss: 0.5133 - val_acc: 0.8125
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.1393 - acc: 0.9550 - val_loss: 1.2232 - val_acc: 0.5625
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.1107 - acc: 0.9600 - val_loss: 0.9270 - val_acc: 0.6250
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.0712 - acc: 0.9850 - val_loss: 0.7229 - val_acc: 0.7500
Epoch 23/30
7/7 [=====] - 0s 31ms/step - loss: 0.0817 - acc: 0.9800 - val_loss: 0.9961 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.0725 - acc: 0.9850 - val_loss: 1.3413 - val_acc: 0.6250
Epoch 25/30
```

```
7/7 [=====] - 0s 36ms/step - loss: 0.1109 - acc: 0.9750 - val_loss: 0.8114 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0808 - acc: 0.9700 - val_loss: 0.9541 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0801 - acc: 0.9800 - val_loss: 1.1467 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0542 - acc: 0.9900 - val_loss: 1.1385 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.0489 - acc: 0.9800 - val_loss: 1.0678 - val_acc: 0.
6875
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0345 - acc: 0.9900 - val_loss: 1.2521 - val_acc: 0.
5625
    1%|          | 1/96 [00:09<14:22, 9.08s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6630 - acc: 0.7050 - val_loss: 0.7184 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.6125 - acc: 0.7200 - val_loss: 0.7529 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.6063 - acc: 0.7200 - val_loss: 0.7893 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.6064 - acc: 0.7200 - val_loss: 0.7992 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5956 - acc: 0.7200 - val_loss: 0.7876 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.6018 - acc: 0.7200 - val_loss: 0.7464 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.6100 - acc: 0.7200 - val_loss: 0.7525 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 31ms/step - loss: 0.5952 - acc: 0.7200 - val_loss: 0.8098 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5988 - acc: 0.7200 - val_loss: 0.8060 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5943 - acc: 0.7200 - val_loss: 0.8014 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.5959 - acc: 0.7200 - val_loss: 0.7890 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5921 - acc: 0.7200 - val_loss: 0.8293 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5951 - acc: 0.7200 - val_loss: 0.8519 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.5928 - acc: 0.7200 - val_loss: 0.7925 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.5913 - acc: 0.7200 - val_loss: 0.7631 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 31ms/step - loss: 0.5928 - acc: 0.7200 - val_loss: 0.8236 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5908 - acc: 0.7200 - val_loss: 0.8822 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.5907 - acc: 0.7200 - val_loss: 0.8498 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 31ms/step - loss: 0.5858 - acc: 0.7200 - val_loss: 0.7956 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.5782 - acc: 0.7200 - val_loss: 0.7947 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5840 - acc: 0.7200 - val_loss: 0.7495 - val_acc: 0.
5000
```

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Epoch 22/30
7/7 [=====] - 0s 37ms/step - loss: 0.5840 - acc: 0.7200 - val_loss: 0.8320 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 31ms/step - loss: 0.5839 - acc: 0.7200 - val_loss: 0.7721 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.5778 - acc: 0.7200 - val_loss: 0.8016 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.5712 - acc: 0.7200 - val_loss: 0.7799 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 36ms/step - loss: 0.5805 - acc: 0.7200 - val_loss: 0.9050 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.5748 - acc: 0.7200 - val_loss: 0.7504 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.5684 - acc: 0.7200 - val_loss: 0.8198 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.5683 - acc: 0.7200 - val_loss: 0.8038 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.5631 - acc: 0.7200 - val_loss: 0.8011 - val_acc: 0.5000

 2%|          | 2/96 [00:17<14:07, 9.01s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6175 - acc: 0.6700 - val_loss: 1.1734 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 30ms/step - loss: 0.6655 - acc: 0.7200 - val_loss: 0.7034 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.6082 - acc: 0.7200 - val_loss: 0.7771 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.6026 - acc: 0.7200 - val_loss: 0.7439 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5842 - acc: 0.7200 - val_loss: 0.7703 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5264 - acc: 0.7200 - val_loss: 0.6726 - val_acc: 0.5625
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.4714 - acc: 0.7650 - val_loss: 0.9960 - val_acc: 0.5625
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.4455 - acc: 0.7750 - val_loss: 0.5777 - val_acc: 0.7500
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.4024 - acc: 0.8100 - val_loss: 0.6240 - val_acc: 0.6875
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.3226 - acc: 0.8800 - val_loss: 0.7494 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.2535 - acc: 0.8950 - val_loss: 1.0004 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.2533 - acc: 0.8750 - val_loss: 0.6902 - val_acc: 0.6875
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.2869 - acc: 0.8750 - val_loss: 1.0401 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.2093 - acc: 0.9050 - val_loss: 1.4343 - val_acc: 0.6250
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.2376 - acc: 0.8900 - val_loss: 1.5457 - val_acc: 0.6250
Epoch 16/30
7/7 [=====] - 0s 31ms/step - loss: 0.2200 - acc: 0.9050 - val_loss: 0.6098 - val_acc: 0.7500
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.2315 - acc: 0.8950 - val_loss: 0.8952 - val_acc: 0.6250
Epoch 18/30
```

```
7/7 [=====] - 0s 34ms/step - loss: 0.1786 - acc: 0.9350 - val_loss: 1.4953 - val_acc: 0.
5625
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1335 - acc: 0.9650 - val_loss: 1.1436 - val_acc: 0.
5625
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.1090 - acc: 0.9700 - val_loss: 0.9146 - val_acc: 0.
6875
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.1400 - acc: 0.9350 - val_loss: 0.4675 - val_acc: 0.
8750
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.1447 - acc: 0.9300 - val_loss: 1.4364 - val_acc: 0.
5625
Epoch 23/30
7/7 [=====] - 0s 31ms/step - loss: 0.0825 - acc: 0.9800 - val_loss: 1.0730 - val_acc: 0.
6875
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.1070 - acc: 0.9700 - val_loss: 3.0242 - val_acc: 0.
5625
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.1206 - acc: 0.9550 - val_loss: 0.6292 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.1100 - acc: 0.9700 - val_loss: 1.3049 - val_acc: 0.
5625
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.0731 - acc: 0.9800 - val_loss: 1.5623 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.1075 - acc: 0.9650 - val_loss: 1.3581 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0666 - acc: 0.9900 - val_loss: 2.2567 - val_acc: 0.
5625
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.0968 - acc: 0.9700 - val_loss: 1.0524 - val_acc: 0.
6875
    3%|          | 3/96 [00:26<13:55, 8.99s/it]
Epoch 1/30
7/7 [=====] - 0s 50ms/step - loss: 0.6830 - acc: 0.5750 - val_loss: 0.6989 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 31ms/step - loss: 0.6352 - acc: 0.7200 - val_loss: 0.7200 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.6068 - acc: 0.7200 - val_loss: 0.7578 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5951 - acc: 0.7200 - val_loss: 0.7864 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5919 - acc: 0.7200 - val_loss: 0.8157 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.5946 - acc: 0.7200 - val_loss: 0.8235 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.6017 - acc: 0.7200 - val_loss: 0.7995 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.5783 - acc: 0.7200 - val_loss: 0.8340 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 30ms/step - loss: 0.5973 - acc: 0.7200 - val_loss: 0.7976 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5854 - acc: 0.7200 - val_loss: 0.8243 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.5848 - acc: 0.7200 - val_loss: 0.8334 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.5988 - acc: 0.7200 - val_loss: 0.8162 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 30ms/step - loss: 0.5841 - acc: 0.7200 - val_loss: 0.8229 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.5880 - acc: 0.7200 - val_loss: 0.8168 - val_acc: 0.
```

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5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5918 - acc: 0.7200 - val_loss: 0.8297 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5865 - acc: 0.7200 - val_loss: 0.7729 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.5949 - acc: 0.7200 - val_loss: 0.7997 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.5925 - acc: 0.7200 - val_loss: 0.8000 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5804 - acc: 0.7200 - val_loss: 0.7640 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 30ms/step - loss: 0.5908 - acc: 0.7200 - val_loss: 0.7783 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5820 - acc: 0.7200 - val_loss: 0.8339 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.5882 - acc: 0.7200 - val_loss: 0.7892 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.5753 - acc: 0.7200 - val_loss: 0.7468 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 31ms/step - loss: 0.5838 - acc: 0.7200 - val_loss: 0.7525 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.5766 - acc: 0.7200 - val_loss: 0.7798 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.5731 - acc: 0.7200 - val_loss: 0.8403 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5688 - acc: 0.7200 - val_loss: 0.7410 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.5703 - acc: 0.7200 - val_loss: 0.7398 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.5675 - acc: 0.7200 - val_loss: 0.7915 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.5653 - acc: 0.7200 - val_loss: 0.7287 - val_acc: 0.
5000
4%|          | 4/96 [00:35<13:43, 8.95s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6506 - acc: 0.7250 - val_loss: 0.7181 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 30ms/step - loss: 0.6130 - acc: 0.7200 - val_loss: 0.8447 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5971 - acc: 0.7200 - val_loss: 0.7253 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.6230 - acc: 0.7200 - val_loss: 0.7747 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 37ms/step - loss: 0.6007 - acc: 0.7200 - val_loss: 0.7714 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5735 - acc: 0.7200 - val_loss: 0.7861 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5358 - acc: 0.7300 - val_loss: 0.7663 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.4693 - acc: 0.7450 - val_loss: 0.8823 - val_acc: 0.
5625
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.4196 - acc: 0.7650 - val_loss: 0.6190 - val_acc: 0.
6875
Epoch 10/30
7/7 [=====] - 0s 31ms/step - loss: 0.4476 - acc: 0.7700 - val_loss: 0.6010 - val_acc: 0.
8750
```

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Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.4233 - acc: 0.7900 - val_loss: 0.8329 - val_acc: 0.5625
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.3213 - acc: 0.8750 - val_loss: 0.9034 - val_acc: 0.5625
Epoch 13/30
7/7 [=====] - 0s 31ms/step - loss: 0.3005 - acc: 0.8500 - val_loss: 0.6388 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.2840 - acc: 0.8650 - val_loss: 1.0375 - val_acc: 0.5625
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.2387 - acc: 0.8750 - val_loss: 0.8998 - val_acc: 0.6250
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.2411 - acc: 0.8500 - val_loss: 1.2981 - val_acc: 0.5625
Epoch 17/30
7/7 [=====] - 0s 31ms/step - loss: 0.1860 - acc: 0.9150 - val_loss: 1.9334 - val_acc: 0.5625
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.2641 - acc: 0.8650 - val_loss: 1.4914 - val_acc: 0.6250
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.3079 - acc: 0.8450 - val_loss: 0.8535 - val_acc: 0.6250
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.2696 - acc: 0.9050 - val_loss: 1.0502 - val_acc: 0.6250
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.2695 - acc: 0.9050 - val_loss: 0.9389 - val_acc: 0.6250
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.2225 - acc: 0.9200 - val_loss: 1.9006 - val_acc: 0.6250
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.2799 - acc: 0.8700 - val_loss: 0.7656 - val_acc: 0.6875
Epoch 24/30
7/7 [=====] - 0s 31ms/step - loss: 0.2513 - acc: 0.8700 - val_loss: 1.0160 - val_acc: 0.6250
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.1824 - acc: 0.9350 - val_loss: 1.0090 - val_acc: 0.6250
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.2179 - acc: 0.9100 - val_loss: 1.4090 - val_acc: 0.5625
Epoch 27/30
7/7 [=====] - 0s 37ms/step - loss: 0.1435 - acc: 0.9400 - val_loss: 1.1626 - val_acc: 0.6250
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.1544 - acc: 0.9350 - val_loss: 0.3865 - val_acc: 0.8125
Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.2889 - acc: 0.8700 - val_loss: 0.9598 - val_acc: 0.5625
Epoch 30/30
7/7 [=====] - 0s 38ms/step - loss: 0.1749 - acc: 0.9250 - val_loss: 1.9234 - val_acc: 0.5625
5%|| | 5/96 [00:44<13:34, 8.95s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6887 - acc: 0.5500 - val_loss: 0.7050 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6405 - acc: 0.7150 - val_loss: 0.7474 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5981 - acc: 0.7250 - val_loss: 0.7827 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.6133 - acc: 0.7200 - val_loss: 0.7656 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.6116 - acc: 0.7150 - val_loss: 0.7921 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.5913 - acc: 0.7200 - val_loss: 0.7825 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.6055 - acc: 0.7200 - val_loss: 0.7780 - val_acc: 0.
```

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5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5855 - acc: 0.7200 - val_loss: 0.8290 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.5819 - acc: 0.7200 - val_loss: 0.7941 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5921 - acc: 0.7250 - val_loss: 0.8185 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.6001 - acc: 0.7200 - val_loss: 0.8283 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 36ms/step - loss: 0.5887 - acc: 0.7250 - val_loss: 0.7724 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.6057 - acc: 0.7150 - val_loss: 0.7429 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.6059 - acc: 0.7200 - val_loss: 0.7581 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.6099 - acc: 0.7200 - val_loss: 0.7687 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 37ms/step - loss: 0.5865 - acc: 0.7200 - val_loss: 0.8107 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5823 - acc: 0.7200 - val_loss: 0.7862 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.5786 - acc: 0.7250 - val_loss: 0.7850 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.6068 - acc: 0.7200 - val_loss: 0.6971 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.6073 - acc: 0.7200 - val_loss: 0.7142 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 31ms/step - loss: 0.5926 - acc: 0.7200 - val_loss: 0.7580 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.5741 - acc: 0.7200 - val_loss: 0.7489 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.5788 - acc: 0.7200 - val_loss: 0.7361 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 31ms/step - loss: 0.5762 - acc: 0.7200 - val_loss: 0.7117 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.5761 - acc: 0.7300 - val_loss: 0.7382 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 36ms/step - loss: 0.5846 - acc: 0.7300 - val_loss: 0.8021 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 36ms/step - loss: 0.5601 - acc: 0.7200 - val_loss: 0.8139 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.5617 - acc: 0.7200 - val_loss: 0.9219 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.5952 - acc: 0.7250 - val_loss: 0.8817 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 38ms/step - loss: 0.5496 - acc: 0.7200 - val_loss: 0.7251 - val_acc: 0.
5000
6%|█          | 6/96 [00:53<13:27, 8.97s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6626 - acc: 0.6800 - val_loss: 0.7243 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.5940 - acc: 0.7200 - val_loss: 0.8416 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.5709 - acc: 0.7200 - val_loss: 0.6505 - val_acc: 0.
6250
```


Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5047 - acc: 0.7600 - val_loss: 0.8044 - val_acc: 0.
6250

Epoch 5/30
7/7 [=====] - 0s 38ms/step - loss: 0.4250 - acc: 0.8100 - val_loss: 0.5731 - val_acc: 0.
6875

Epoch 6/30
7/7 [=====] - 0s 31ms/step - loss: 0.3189 - acc: 0.8600 - val_loss: 0.6155 - val_acc: 0.
6875

Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.2676 - acc: 0.8850 - val_loss: 0.4823 - val_acc: 0.
8750

Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.2166 - acc: 0.9150 - val_loss: 0.8757 - val_acc: 0.
6250

Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.1900 - acc: 0.9200 - val_loss: 1.4191 - val_acc: 0.
5625

Epoch 10/30
7/7 [=====] - 0s 31ms/step - loss: 0.1829 - acc: 0.9400 - val_loss: 1.0927 - val_acc: 0.
5625

Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.1458 - acc: 0.9500 - val_loss: 1.0300 - val_acc: 0.
6250

Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.1610 - acc: 0.9500 - val_loss: 0.6096 - val_acc: 0.
7500

Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.1622 - acc: 0.9450 - val_loss: 1.0049 - val_acc: 0.
6250

Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.0915 - acc: 0.9800 - val_loss: 1.7063 - val_acc: 0.
6250

Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.2073 - acc: 0.9100 - val_loss: 1.9292 - val_acc: 0.
5000

Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.2189 - acc: 0.9100 - val_loss: 0.6475 - val_acc: 0.
8125

Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.1936 - acc: 0.9050 - val_loss: 1.6528 - val_acc: 0.
6250

Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.1553 - acc: 0.9500 - val_loss: 0.9203 - val_acc: 0.
5625

Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.1313 - acc: 0.9650 - val_loss: 0.8121 - val_acc: 0.
6875

Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.0826 - acc: 0.9800 - val_loss: 0.8916 - val_acc: 0.
6875

Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.0665 - acc: 0.9800 - val_loss: 0.6626 - val_acc: 0.
7500

Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.0709 - acc: 0.9750 - val_loss: 1.7580 - val_acc: 0.
5625

Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.0551 - acc: 0.9850 - val_loss: 1.3345 - val_acc: 0.
6250

Epoch 24/30
7/7 [=====] - 0s 30ms/step - loss: 0.0440 - acc: 0.9800 - val_loss: 1.2209 - val_acc: 0.
6250

Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0224 - acc: 1.0000 - val_loss: 1.5664 - val_acc: 0.
5625

Epoch 26/30
7/7 [=====] - 0s 35ms/step - loss: 0.0200 - acc: 1.0000 - val_loss: 1.6057 - val_acc: 0.
5625

Epoch 27/30
7/7 [=====] - 0s 37ms/step - loss: 0.0155 - acc: 1.0000 - val_loss: 1.5466 - val_acc: 0.
6875

Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.0107 - acc: 1.0000 - val_loss: 1.6291 - val_acc: 0.
6875

Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.0073 - acc: 1.0000 - val_loss: 1.6850 - val_acc: 0.
6875

Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0073 - acc: 1.0000 - val_loss: 1.8301 - val_acc: 0.
6875

```
7%|█          | 7/96 [01:02<13:17, 8.96s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.6453 - acc: 0.7100 - val_loss: 0.7401 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6042 - acc: 0.7200 - val_loss: 0.8093 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.5987 - acc: 0.7200 - val_loss: 0.7907 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5952 - acc: 0.7200 - val_loss: 0.7522 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.5939 - acc: 0.7200 - val_loss: 0.8078 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 31ms/step - loss: 0.5907 - acc: 0.7200 - val_loss: 0.7850 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.5897 - acc: 0.7200 - val_loss: 0.8440 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.5852 - acc: 0.7200 - val_loss: 0.7460 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.5846 - acc: 0.7200 - val_loss: 0.7783 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 30ms/step - loss: 0.5847 - acc: 0.7200 - val_loss: 0.8166 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5902 - acc: 0.7200 - val_loss: 0.7986 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5834 - acc: 0.7200 - val_loss: 0.8424 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.5705 - acc: 0.7200 - val_loss: 0.7166 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5829 - acc: 0.7200 - val_loss: 0.8099 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5871 - acc: 0.7200 - val_loss: 0.7624 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.5765 - acc: 0.7200 - val_loss: 0.8101 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.5749 - acc: 0.7200 - val_loss: 0.8678 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5877 - acc: 0.7200 - val_loss: 0.8691 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.5691 - acc: 0.7200 - val_loss: 0.7022 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.5704 - acc: 0.7200 - val_loss: 0.7753 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5678 - acc: 0.7200 - val_loss: 0.9035 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.5748 - acc: 0.7200 - val_loss: 0.8312 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.5665 - acc: 0.7200 - val_loss: 0.8688 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5612 - acc: 0.7200 - val_loss: 0.9062 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.5518 - acc: 0.7200 - val_loss: 0.6782 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.5513 - acc: 0.7300 - val_loss: 0.6589 - val_acc: 0.5625
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.5565 - acc: 0.7650 - val_loss: 0.7794 - val_acc: 0.5000
```

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5000
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.5309 - acc: 0.7250 - val_loss: 0.7708 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.5372 - acc: 0.7250 - val_loss: 0.7977 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.5238 - acc: 0.7200 - val_loss: 0.8606 - val_acc: 0.
5000
      8%|█          | 8/96 [01:11<13:05, 8.93s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6719 - acc: 0.6450 - val_loss: 0.7186 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6077 - acc: 0.7200 - val_loss: 0.9000 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.6158 - acc: 0.7200 - val_loss: 0.7675 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5858 - acc: 0.7200 - val_loss: 0.8351 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 37ms/step - loss: 0.5614 - acc: 0.7200 - val_loss: 0.7716 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 36ms/step - loss: 0.4975 - acc: 0.7550 - val_loss: 0.8341 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.4281 - acc: 0.8000 - val_loss: 0.8484 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 37ms/step - loss: 0.3798 - acc: 0.7900 - val_loss: 0.8641 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.3059 - acc: 0.8850 - val_loss: 1.0016 - val_acc: 0.
5625
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.2561 - acc: 0.9000 - val_loss: 0.7831 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.2261 - acc: 0.9000 - val_loss: 0.5397 - val_acc: 0.
8125
Epoch 12/30
7/7 [=====] - 0s 36ms/step - loss: 0.2385 - acc: 0.8900 - val_loss: 0.7004 - val_acc: 0.
6875
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.1764 - acc: 0.9300 - val_loss: 1.4273 - val_acc: 0.
5625
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.1809 - acc: 0.9300 - val_loss: 0.9411 - val_acc: 0.
5625
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.1398 - acc: 0.9600 - val_loss: 1.3030 - val_acc: 0.
6250
Epoch 16/30
7/7 [=====] - 0s 37ms/step - loss: 0.1358 - acc: 0.9550 - val_loss: 1.1205 - val_acc: 0.
6875
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.1095 - acc: 0.9700 - val_loss: 1.5237 - val_acc: 0.
5625
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.1119 - acc: 0.9550 - val_loss: 0.9690 - val_acc: 0.
6875
Epoch 19/30
7/7 [=====] - 0s 38ms/step - loss: 0.0793 - acc: 0.9750 - val_loss: 1.2770 - val_acc: 0.
6875
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.0722 - acc: 0.9850 - val_loss: 1.3782 - val_acc: 0.
6250
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.0487 - acc: 0.9900 - val_loss: 1.0799 - val_acc: 0.
6875
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.0632 - acc: 0.9750 - val_loss: 1.6586 - val_acc: 0.
5625
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.0450 - acc: 0.9900 - val_loss: 1.2581 - val_acc: 0.
6875
```

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Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.0310 - acc: 0.9950 - val_loss: 1.7927 - val_acc: 0.
5625
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0203 - acc: 1.0000 - val_loss: 1.5438 - val_acc: 0.
6875
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0293 - acc: 0.9900 - val_loss: 1.5760 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.0193 - acc: 1.0000 - val_loss: 1.7604 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0097 - acc: 1.0000 - val_loss: 1.9002 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.0088 - acc: 1.0000 - val_loss: 2.0438 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.0054 - acc: 1.0000 - val_loss: 2.0705 - val_acc: 0.
5625
 9%|█          | 9/96 [01:20<13:04, 9.02s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6537 - acc: 0.6350 - val_loss: 0.7827 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.5994 - acc: 0.7200 - val_loss: 0.7999 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.6041 - acc: 0.7200 - val_loss: 0.7761 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.6015 - acc: 0.7200 - val_loss: 0.7455 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.6058 - acc: 0.7200 - val_loss: 0.8258 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 30ms/step - loss: 0.5925 - acc: 0.7200 - val_loss: 0.7619 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5971 - acc: 0.7200 - val_loss: 0.7782 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.5969 - acc: 0.7200 - val_loss: 0.7681 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.5916 - acc: 0.7200 - val_loss: 0.7455 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 30ms/step - loss: 0.6006 - acc: 0.7200 - val_loss: 0.7453 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.5966 - acc: 0.7200 - val_loss: 0.7348 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5792 - acc: 0.7200 - val_loss: 0.8525 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5942 - acc: 0.7200 - val_loss: 0.8167 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.5863 - acc: 0.7200 - val_loss: 0.8100 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.5750 - acc: 0.7200 - val_loss: 0.8347 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 37ms/step - loss: 0.5894 - acc: 0.7200 - val_loss: 0.8463 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 30ms/step - loss: 0.5839 - acc: 0.7200 - val_loss: 0.7972 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.5744 - acc: 0.7200 - val_loss: 0.8080 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.5756 - acc: 0.7200 - val_loss: 0.7174 - val_acc: 0.
5000
Epoch 20/30
```

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7/7 [=====] - 0s 35ms/step - loss: 0.5714 - acc: 0.7200 - val_loss: 0.7269 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 31ms/step - loss: 0.5642 - acc: 0.7200 - val_loss: 0.8631 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.5742 - acc: 0.7200 - val_loss: 0.7103 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 37ms/step - loss: 0.5590 - acc: 0.7200 - val_loss: 0.8172 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5595 - acc: 0.7200 - val_loss: 0.7265 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.5486 - acc: 0.7200 - val_loss: 0.6669 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.5672 - acc: 0.7400 - val_loss: 0.7740 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 36ms/step - loss: 0.5585 - acc: 0.7200 - val_loss: 0.7497 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5488 - acc: 0.7250 - val_loss: 0.6596 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.5488 - acc: 0.7800 - val_loss: 0.7589 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.5385 - acc: 0.7200 - val_loss: 0.7022 - val_acc: 0.
5000
10%|█          | 10/96 [01:29<12:52, 8.98s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6287 - acc: 0.6950 - val_loss: 0.6994 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6584 - acc: 0.6800 - val_loss: 0.8011 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.6030 - acc: 0.7200 - val_loss: 0.7644 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.5926 - acc: 0.7200 - val_loss: 0.7620 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.5659 - acc: 0.7200 - val_loss: 0.6890 - val_acc: 0.
5625
Epoch 6/30
7/7 [=====] - 0s 31ms/step - loss: 0.5176 - acc: 0.7200 - val_loss: 0.6508 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.5703 - acc: 0.6750 - val_loss: 0.8342 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.4315 - acc: 0.8350 - val_loss: 0.5616 - val_acc: 0.
7500
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.4077 - acc: 0.8200 - val_loss: 0.7572 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 31ms/step - loss: 0.2870 - acc: 0.9100 - val_loss: 0.8967 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.2287 - acc: 0.9250 - val_loss: 0.5485 - val_acc: 0.
8125
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.1838 - acc: 0.9200 - val_loss: 0.7071 - val_acc: 0.
6875
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.1603 - acc: 0.9300 - val_loss: 1.0691 - val_acc: 0.
5625
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.1793 - acc: 0.9250 - val_loss: 1.6138 - val_acc: 0.
6250
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.2128 - acc: 0.9000 - val_loss: 0.4865 - val_acc: 0.
7500
Epoch 16/30
7/7 [=====] - 0s 37ms/step - loss: 0.1570 - acc: 0.9400 - val_loss: 0.6089 - val_acc: 0.
6875
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Epoch 17/30
7/7 [=====] - 0s 31ms/step - loss: 0.1399 - acc: 0.9550 - val_loss: 1.2061 - val_acc: 0.6250
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.1113 - acc: 0.9650 - val_loss: 0.7808 - val_acc: 0.6875
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.0840 - acc: 0.9850 - val_loss: 0.9653 - val_acc: 0.6875
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.0722 - acc: 0.9900 - val_loss: 0.8716 - val_acc: 0.6875
Epoch 21/30
7/7 [=====] - 0s 34ms/step - loss: 0.0534 - acc: 0.9850 - val_loss: 1.5046 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.0455 - acc: 0.9900 - val_loss: 0.7815 - val_acc: 0.6875
Epoch 23/30
7/7 [=====] - 0s 37ms/step - loss: 0.0509 - acc: 0.9800 - val_loss: 1.7602 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.0378 - acc: 0.9950 - val_loss: 0.8662 - val_acc: 0.6250
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0590 - acc: 0.9750 - val_loss: 1.3797 - val_acc: 0.6250
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0474 - acc: 0.9950 - val_loss: 1.3996 - val_acc: 0.5625
Epoch 27/30
7/7 [=====] - 0s 36ms/step - loss: 0.0487 - acc: 0.9800 - val_loss: 1.2534 - val_acc: 0.6250
Epoch 28/30
7/7 [=====] - 0s 30ms/step - loss: 0.0394 - acc: 0.9850 - val_loss: 1.3125 - val_acc: 0.6250
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0270 - acc: 1.0000 - val_loss: 1.6363 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.0232 - acc: 1.0000 - val_loss: 1.2093 - val_acc: 0.6875
11%|█          | 11/96 [01:38<12:44, 8.99s/it]
Epoch 1/30
7/7 [=====] - 0s 42ms/step - loss: 0.6782 - acc: 0.5950 - val_loss: 0.7177 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.6258 - acc: 0.7200 - val_loss: 0.7664 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.6059 - acc: 0.7200 - val_loss: 0.7392 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.6072 - acc: 0.7200 - val_loss: 0.7732 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.5931 - acc: 0.7200 - val_loss: 0.8364 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.6018 - acc: 0.7200 - val_loss: 0.7837 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5985 - acc: 0.7200 - val_loss: 0.7469 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.6080 - acc: 0.7200 - val_loss: 0.7744 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.6001 - acc: 0.7200 - val_loss: 0.7949 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5937 - acc: 0.7200 - val_loss: 0.7807 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.6023 - acc: 0.7200 - val_loss: 0.8014 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5993 - acc: 0.7200 - val_loss: 0.7713 - val_acc: 0.5000
Epoch 13/30
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7/7 [=====] - 0s 34ms/step - loss: 0.5844 - acc: 0.7200 - val_loss: 0.8356 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5793 - acc: 0.7200 - val_loss: 0.8072 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.5898 - acc: 0.7200 - val_loss: 0.8407 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.5862 - acc: 0.7200 - val_loss: 0.8375 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 31ms/step - loss: 0.5893 - acc: 0.7200 - val_loss: 0.7182 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5846 - acc: 0.7200 - val_loss: 0.7532 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5756 - acc: 0.7200 - val_loss: 0.7687 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5730 - acc: 0.7200 - val_loss: 0.7832 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5676 - acc: 0.7200 - val_loss: 0.8109 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.5767 - acc: 0.7200 - val_loss: 0.8043 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.5739 - acc: 0.7200 - val_loss: 0.8911 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5805 - acc: 0.7200 - val_loss: 0.8270 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5702 - acc: 0.7200 - val_loss: 0.8401 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.5768 - acc: 0.7200 - val_loss: 0.7958 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.5620 - acc: 0.7200 - val_loss: 0.6783 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 30ms/step - loss: 0.5788 - acc: 0.7300 - val_loss: 0.7756 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.5554 - acc: 0.7200 - val_loss: 0.7224 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.5626 - acc: 0.7250 - val_loss: 0.7644 - val_acc: 0.
5000
12%|█          | 12/96 [01:47<12:31, 8.94s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6432 - acc: 0.7200 - val_loss: 0.7267 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6049 - acc: 0.7200 - val_loss: 0.7433 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.5977 - acc: 0.7200 - val_loss: 0.8197 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5815 - acc: 0.7200 - val_loss: 0.8797 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5224 - acc: 0.7200 - val_loss: 0.7772 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.4734 - acc: 0.7650 - val_loss: 1.2833 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.4454 - acc: 0.8350 - val_loss: 0.8023 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.3377 - acc: 0.8350 - val_loss: 0.5536 - val_acc: 0.
6875
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.3003 - acc: 0.8650 - val_loss: 0.5107 - val_acc: 0.
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7500
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.2548 - acc: 0.9050 - val_loss: 1.3482 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.2233 - acc: 0.9100 - val_loss: 0.8167 - val_acc: 0.6875
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.1426 - acc: 0.9350 - val_loss: 0.8281 - val_acc: 0.6875
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.1328 - acc: 0.9450 - val_loss: 0.6093 - val_acc: 0.7500
Epoch 14/30
7/7 [=====] - 0s 31ms/step - loss: 0.1507 - acc: 0.9600 - val_loss: 0.6925 - val_acc: 0.6250
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.1300 - acc: 0.9550 - val_loss: 0.6488 - val_acc: 0.6875
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.1324 - acc: 0.9550 - val_loss: 1.7937 - val_acc: 0.6250
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.0752 - acc: 0.9650 - val_loss: 0.3960 - val_acc: 0.7500
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.1080 - acc: 0.9550 - val_loss: 1.1466 - val_acc: 0.6875
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.0650 - acc: 0.9800 - val_loss: 1.2578 - val_acc: 0.6250
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.0431 - acc: 0.9800 - val_loss: 1.4576 - val_acc: 0.6250
Epoch 21/30
7/7 [=====] - 0s 34ms/step - loss: 0.0312 - acc: 0.9850 - val_loss: 1.1472 - val_acc: 0.6875
Epoch 22/30
7/7 [=====] - 0s 31ms/step - loss: 0.0374 - acc: 0.9850 - val_loss: 1.4032 - val_acc: 0.6250
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0207 - acc: 0.9950 - val_loss: 1.8773 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 40ms/step - loss: 0.0144 - acc: 1.0000 - val_loss: 1.8735 - val_acc: 0.6250
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.0074 - acc: 1.0000 - val_loss: 2.0832 - val_acc: 0.6250
Epoch 26/30
7/7 [=====] - 0s 36ms/step - loss: 0.0072 - acc: 1.0000 - val_loss: 1.7252 - val_acc: 0.6250
Epoch 27/30
7/7 [=====] - 0s 37ms/step - loss: 0.0074 - acc: 1.0000 - val_loss: 1.8622 - val_acc: 0.6250
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.0062 - acc: 1.0000 - val_loss: 1.7012 - val_acc: 0.6875
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0088 - acc: 1.0000 - val_loss: 2.0361 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.0164 - acc: 0.9950 - val_loss: 2.2866 - val_acc: 0.6250
14%|█          | 13/96 [01:56<12:23, 8.96s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6874 - acc: 0.5250 - val_loss: 0.7001 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6313 - acc: 0.7200 - val_loss: 0.7477 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.6046 - acc: 0.7200 - val_loss: 0.7848 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.6021 - acc: 0.7200 - val_loss: 0.8246 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5955 - acc: 0.7200 - val_loss: 0.8077 - val_acc: 0.5000
```



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Epoch 6/30
7/7 [=====] - 0s 37ms/step - loss: 0.5964 - acc: 0.7200 - val_loss: 0.8091 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.5880 - acc: 0.7200 - val_loss: 0.7752 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5857 - acc: 0.7200 - val_loss: 0.7492 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5983 - acc: 0.7200 - val_loss: 0.7683 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.5822 - acc: 0.7200 - val_loss: 0.8094 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 31ms/step - loss: 0.5838 - acc: 0.7200 - val_loss: 0.7980 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5823 - acc: 0.7200 - val_loss: 0.8272 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.5800 - acc: 0.7200 - val_loss: 0.8156 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5793 - acc: 0.7200 - val_loss: 0.8358 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5788 - acc: 0.7200 - val_loss: 0.7865 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5682 - acc: 0.7200 - val_loss: 0.8279 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.5714 - acc: 0.7200 - val_loss: 0.7892 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.5701 - acc: 0.7200 - val_loss: 0.7202 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5749 - acc: 0.7200 - val_loss: 0.7220 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.5695 - acc: 0.7200 - val_loss: 0.7746 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.5663 - acc: 0.7200 - val_loss: 0.6948 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 30ms/step - loss: 0.5715 - acc: 0.7200 - val_loss: 0.7177 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.5597 - acc: 0.7200 - val_loss: 0.9115 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 37ms/step - loss: 0.5614 - acc: 0.7200 - val_loss: 0.7592 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5570 - acc: 0.7200 - val_loss: 0.8368 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 35ms/step - loss: 0.5603 - acc: 0.7200 - val_loss: 0.8215 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.5519 - acc: 0.7200 - val_loss: 0.8102 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 37ms/step - loss: 0.5463 - acc: 0.7200 - val_loss: 0.8366 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.5507 - acc: 0.7200 - val_loss: 0.8513 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.5394 - acc: 0.7200 - val_loss: 0.7301 - val_acc: 0.5000
15%█ | 14/96 [02:05<12:14, 8.95s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6129 - acc: 0.7200 - val_loss: 0.8866 - val_acc: 0.5000
Epoch 2/30
```

7/7 [=====] - 0s 37ms/step - loss: 0.5914 - acc: 0.7200 - val_loss: 0.7728 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.5525 - acc: 0.7200 - val_loss: 0.8569 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.5530 - acc: 0.7300 - val_loss: 0.6824 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5095 - acc: 0.7350 - val_loss: 0.6558 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 39ms/step - loss: 0.4850 - acc: 0.7550 - val_loss: 0.7300 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.4480 - acc: 0.8300 - val_loss: 1.1008 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.4159 - acc: 0.7700 - val_loss: 0.7949 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.3373 - acc: 0.8300 - val_loss: 0.5233 - val_acc: 0.
7500
Epoch 10/30
7/7 [=====] - 0s 35ms/step - loss: 0.2782 - acc: 0.8850 - val_loss: 0.9042 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.2541 - acc: 0.9000 - val_loss: 0.5835 - val_acc: 0.
7500
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.2389 - acc: 0.9100 - val_loss: 0.7940 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.2162 - acc: 0.9250 - val_loss: 0.6646 - val_acc: 0.
7500
Epoch 14/30
7/7 [=====] - 0s 31ms/step - loss: 0.1820 - acc: 0.9200 - val_loss: 0.5396 - val_acc: 0.
8125
Epoch 15/30
7/7 [=====] - 0s 38ms/step - loss: 0.1806 - acc: 0.9200 - val_loss: 0.7366 - val_acc: 0.
7500
Epoch 16/30
7/7 [=====] - 0s 39ms/step - loss: 0.1407 - acc: 0.9400 - val_loss: 1.0011 - val_acc: 0.
7500
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.1361 - acc: 0.9700 - val_loss: 1.0835 - val_acc: 0.
6875
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.1160 - acc: 0.9650 - val_loss: 0.5343 - val_acc: 0.
8750
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.1671 - acc: 0.9300 - val_loss: 0.6754 - val_acc: 0.
7500
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.0947 - acc: 0.9800 - val_loss: 0.7934 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 37ms/step - loss: 0.0747 - acc: 0.9700 - val_loss: 0.6124 - val_acc: 0.
6875
Epoch 22/30
7/7 [=====] - 0s 39ms/step - loss: 0.0932 - acc: 0.9750 - val_loss: 1.0225 - val_acc: 0.
6875
Epoch 23/30
7/7 [=====] - 0s 42ms/step - loss: 0.0673 - acc: 0.9750 - val_loss: 0.7172 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0629 - acc: 0.9750 - val_loss: 1.1326 - val_acc: 0.
7500
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.0397 - acc: 0.9950 - val_loss: 0.7538 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.0395 - acc: 0.9900 - val_loss: 1.1370 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.0260 - acc: 0.9950 - val_loss: 1.0395 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - ETA: 0s - loss: 0.0265 - acc: 0.994 - 0s 38ms/step - loss: 0.0257 - acc:
0.9950 - val_loss: 1.0840 - val_acc: 0.7500
Epoch 29/30

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7/7 [=====] - 0s 34ms/step - loss: 0.0374 - acc: 0.9850 - val_loss: 0.9125 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 37ms/step - loss: 0.0162 - acc: 1.0000 - val_loss: 0.9665 - val_acc: 0.
7500
16%|█          | 15/96 [02:14<12:18, 9.12s/it]
Epoch 1/30
7/7 [=====] - 0s 51ms/step - loss: 0.6767 - acc: 0.6250 - val_loss: 0.7045 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6263 - acc: 0.7200 - val_loss: 0.7359 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.5980 - acc: 0.7200 - val_loss: 0.7589 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.6019 - acc: 0.7200 - val_loss: 0.8033 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5915 - acc: 0.7200 - val_loss: 0.8017 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 39ms/step - loss: 0.6008 - acc: 0.7200 - val_loss: 0.7893 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 37ms/step - loss: 0.6027 - acc: 0.7200 - val_loss: 0.7911 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 38ms/step - loss: 0.5838 - acc: 0.7200 - val_loss: 0.7673 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 31ms/step - loss: 0.5934 - acc: 0.7200 - val_loss: 0.7512 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.5747 - acc: 0.7200 - val_loss: 0.7902 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.6016 - acc: 0.7150 - val_loss: 0.7626 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 31ms/step - loss: 0.5847 - acc: 0.7200 - val_loss: 0.7510 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.5905 - acc: 0.7200 - val_loss: 0.7635 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5883 - acc: 0.7200 - val_loss: 0.7858 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.5997 - acc: 0.7200 - val_loss: 0.8440 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.5700 - acc: 0.7200 - val_loss: 0.8718 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 38ms/step - loss: 0.5918 - acc: 0.7200 - val_loss: 0.8007 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 38ms/step - loss: 0.5757 - acc: 0.7200 - val_loss: 0.7745 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 39ms/step - loss: 0.5792 - acc: 0.7200 - val_loss: 0.7758 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 37ms/step - loss: 0.5812 - acc: 0.7200 - val_loss: 0.8291 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 37ms/step - loss: 0.5794 - acc: 0.7200 - val_loss: 0.8178 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.5702 - acc: 0.7200 - val_loss: 0.8314 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 37ms/step - loss: 0.5670 - acc: 0.7200 - val_loss: 0.7629 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.5713 - acc: 0.7200 - val_loss: 0.8396 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.5635 - acc: 0.7200 - val_loss: 0.8332 - val_acc: 0.
5000
```

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Epoch 26/30
7/7 [=====] - 0s 30ms/step - loss: 0.5581 - acc: 0.7200 - val_loss: 0.8042 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5584 - acc: 0.7200 - val_loss: 0.7175 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.5699 - acc: 0.7200 - val_loss: 0.7185 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.5554 - acc: 0.7200 - val_loss: 0.8184 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.5588 - acc: 0.7200 - val_loss: 0.7369 - val_acc: 0.5000
17%|■■■■■■■■■■| 16/96 [02:24<12:13, 9.17s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6560 - acc: 0.6700 - val_loss: 0.6959 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.5928 - acc: 0.7200 - val_loss: 0.9213 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.6162 - acc: 0.7250 - val_loss: 0.6615 - val_acc: 0.6250
Epoch 4/30
7/7 [=====] - 0s 31ms/step - loss: 0.5931 - acc: 0.7100 - val_loss: 0.7523 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5812 - acc: 0.7500 - val_loss: 0.7633 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5249 - acc: 0.7250 - val_loss: 0.6231 - val_acc: 0.6875
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.4733 - acc: 0.7850 - val_loss: 0.6877 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.4436 - acc: 0.7400 - val_loss: 0.9148 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3825 - acc: 0.8650 - val_loss: 0.9649 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.3578 - acc: 0.8150 - val_loss: 0.4982 - val_acc: 0.8125
Epoch 11/30
7/7 [=====] - 0s 38ms/step - loss: 0.3423 - acc: 0.8600 - val_loss: 0.5426 - val_acc: 0.7500
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.3033 - acc: 0.8850 - val_loss: 0.6363 - val_acc: 0.6875
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.2620 - acc: 0.8650 - val_loss: 1.1811 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.2534 - acc: 0.8950 - val_loss: 0.4858 - val_acc: 0.8125
Epoch 15/30
7/7 [=====] - 0s 31ms/step - loss: 0.2342 - acc: 0.8850 - val_loss: 0.6882 - val_acc: 0.7500
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.1693 - acc: 0.9450 - val_loss: 1.0662 - val_acc: 0.6875
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.1550 - acc: 0.9400 - val_loss: 1.3692 - val_acc: 0.5625
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.1455 - acc: 0.9650 - val_loss: 0.9235 - val_acc: 0.7500
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.1160 - acc: 0.9650 - val_loss: 0.9062 - val_acc: 0.7500
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.1473 - acc: 0.9550 - val_loss: 1.7103 - val_acc: 0.6250
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.1108 - acc: 0.9600 - val_loss: 1.0419 - val_acc: 0.6875
Epoch 22/30
```

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7/7 [=====] - 0s 32ms/step - loss: 0.1127 - acc: 0.9650 - val_loss: 1.6888 - val_acc: 0.
6250
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.1164 - acc: 0.9700 - val_loss: 0.9805 - val_acc: 0.
6875
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.1041 - acc: 0.9650 - val_loss: 0.9287 - val_acc: 0.
7500
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.0890 - acc: 0.9700 - val_loss: 2.4849 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.1007 - acc: 0.9700 - val_loss: 1.0658 - val_acc: 0.
6250
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.1017 - acc: 0.9550 - val_loss: 1.2069 - val_acc: 0.
6875
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0619 - acc: 0.9850 - val_loss: 1.7334 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.0429 - acc: 0.9950 - val_loss: 1.8838 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0403 - acc: 0.9900 - val_loss: 1.3055 - val_acc: 0.
7500
18%|███      | 17/96 [02:33<11:59, 9.10s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.6448 - acc: 0.6950 - val_loss: 0.7327 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6077 - acc: 0.7250 - val_loss: 0.7489 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 43ms/step - loss: 0.5940 - acc: 0.7200 - val_loss: 0.7369 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.6048 - acc: 0.7300 - val_loss: 0.7933 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.6026 - acc: 0.7200 - val_loss: 0.8036 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.5905 - acc: 0.7200 - val_loss: 0.8282 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 37ms/step - loss: 0.5941 - acc: 0.7150 - val_loss: 0.7969 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5993 - acc: 0.7200 - val_loss: 0.7853 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.6035 - acc: 0.7200 - val_loss: 0.7550 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 37ms/step - loss: 0.5821 - acc: 0.7250 - val_loss: 0.7577 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5881 - acc: 0.7200 - val_loss: 0.7702 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.5912 - acc: 0.7250 - val_loss: 0.7175 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5907 - acc: 0.7200 - val_loss: 0.7192 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.6083 - acc: 0.7200 - val_loss: 0.7355 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 31ms/step - loss: 0.5787 - acc: 0.7200 - val_loss: 0.7692 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.5864 - acc: 0.7200 - val_loss: 0.7023 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 38ms/step - loss: 0.5899 - acc: 0.7150 - val_loss: 0.7869 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.5788 - acc: 0.7200 - val_loss: 0.7278 - val_acc: 0.
```

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5000
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.5652 - acc: 0.7300 - val_loss: 0.7506 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5833 - acc: 0.7200 - val_loss: 0.7455 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 37ms/step - loss: 0.5900 - acc: 0.7250 - val_loss: 0.8311 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.5697 - acc: 0.7250 - val_loss: 0.7702 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.5686 - acc: 0.7200 - val_loss: 0.7136 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 37ms/step - loss: 0.5687 - acc: 0.7150 - val_loss: 0.8233 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5599 - acc: 0.7250 - val_loss: 0.7897 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.5384 - acc: 0.7300 - val_loss: 0.8483 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5553 - acc: 0.7200 - val_loss: 0.8364 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.5647 - acc: 0.7150 - val_loss: 0.8173 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.5289 - acc: 0.7400 - val_loss: 0.8819 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.5761 - acc: 0.7250 - val_loss: 0.6904 - val_acc: 0.
5000
19%|███      | 18/96 [02:42<11:51, 9.13s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6807 - acc: 0.6550 - val_loss: 0.8967 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.5905 - acc: 0.7500 - val_loss: 0.6836 - val_acc: 0.
6250
Epoch 3/30
7/7 [=====] - 0s 37ms/step - loss: 0.5660 - acc: 0.7200 - val_loss: 0.6699 - val_acc: 0.
6250
Epoch 4/30
7/7 [=====] - 0s 31ms/step - loss: 0.4721 - acc: 0.7450 - val_loss: 0.8340 - val_acc: 0.
6250
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.4534 - acc: 0.7550 - val_loss: 1.5809 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 38ms/step - loss: 0.6380 - acc: 0.7450 - val_loss: 0.5577 - val_acc: 0.
8125
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.4556 - acc: 0.8250 - val_loss: 0.8211 - val_acc: 0.
5625
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.3486 - acc: 0.8450 - val_loss: 0.7198 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3469 - acc: 0.8350 - val_loss: 0.4985 - val_acc: 0.
8125
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.3012 - acc: 0.8550 - val_loss: 0.7846 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 31ms/step - loss: 0.2334 - acc: 0.9050 - val_loss: 0.5793 - val_acc: 0.
6875
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.2215 - acc: 0.8950 - val_loss: 0.5593 - val_acc: 0.
6875
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.1739 - acc: 0.9400 - val_loss: 0.8184 - val_acc: 0.
6250
Epoch 14/30
7/7 [=====] - 0s 31ms/step - loss: 0.1582 - acc: 0.9450 - val_loss: 0.8397 - val_acc: 0.
6250
```

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Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.1392 - acc: 0.9450 - val_loss: 0.5883 - val_acc: 0.6875
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.1044 - acc: 0.9650 - val_loss: 0.9213 - val_acc: 0.6250
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.0878 - acc: 0.9800 - val_loss: 0.8240 - val_acc: 0.6250
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.0707 - acc: 0.9750 - val_loss: 0.9358 - val_acc: 0.6250
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.0590 - acc: 0.9800 - val_loss: 0.7544 - val_acc: 0.6875
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.0535 - acc: 0.9850 - val_loss: 1.0593 - val_acc: 0.6250
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.0366 - acc: 0.9950 - val_loss: 0.9349 - val_acc: 0.6875
Epoch 22/30
7/7 [=====] - 0s 31ms/step - loss: 0.0299 - acc: 0.9950 - val_loss: 1.0249 - val_acc: 0.6250
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0231 - acc: 1.0000 - val_loss: 1.1894 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.0191 - acc: 1.0000 - val_loss: 1.3524 - val_acc: 0.6250
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.0149 - acc: 1.0000 - val_loss: 1.2094 - val_acc: 0.6250
Epoch 26/30
7/7 [=====] - 0s 31ms/step - loss: 0.0121 - acc: 1.0000 - val_loss: 1.3425 - val_acc: 0.6250
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.0117 - acc: 1.0000 - val_loss: 1.4832 - val_acc: 0.6250
Epoch 28/30
7/7 [=====] - 0s 36ms/step - loss: 0.0114 - acc: 1.0000 - val_loss: 1.2467 - val_acc: 0.6875
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0103 - acc: 1.0000 - val_loss: 1.5632 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 31ms/step - loss: 0.0078 - acc: 1.0000 - val_loss: 1.4267 - val_acc: 0.6250
20%|███ | 19/96 [02:51<11:37, 9.06s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6367 - acc: 0.6400 - val_loss: 0.8840 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.5890 - acc: 0.7200 - val_loss: 0.8369 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.5882 - acc: 0.7200 - val_loss: 0.7736 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 31ms/step - loss: 0.5894 - acc: 0.7200 - val_loss: 0.8391 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5893 - acc: 0.7200 - val_loss: 0.9254 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5966 - acc: 0.7200 - val_loss: 0.9144 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 38ms/step - loss: 0.5853 - acc: 0.7200 - val_loss: 0.7151 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5827 - acc: 0.7200 - val_loss: 0.8815 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.5715 - acc: 0.7200 - val_loss: 0.8128 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.5724 - acc: 0.7200 - val_loss: 0.7196 - val_acc: 0.5000
Epoch 11/30
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7/7 [=====] - 0s 35ms/step - loss: 0.5736 - acc: 0.7200 - val_loss: 0.7869 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5612 - acc: 0.7200 - val_loss: 0.9435 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.5727 - acc: 0.7200 - val_loss: 0.8373 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 38ms/step - loss: 0.5632 - acc: 0.7200 - val_loss: 0.8984 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 30ms/step - loss: 0.5518 - acc: 0.7200 - val_loss: 0.8484 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.5520 - acc: 0.7200 - val_loss: 0.7385 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 37ms/step - loss: 0.5419 - acc: 0.7200 - val_loss: 0.8737 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.5508 - acc: 0.7200 - val_loss: 0.7209 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.5483 - acc: 0.7200 - val_loss: 0.8085 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5414 - acc: 0.7200 - val_loss: 0.8831 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 38ms/step - loss: 0.5291 - acc: 0.7200 - val_loss: 0.6627 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 30ms/step - loss: 0.5521 - acc: 0.6750 - val_loss: 0.7057 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.5100 - acc: 0.7400 - val_loss: 1.1013 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.5311 - acc: 0.7200 - val_loss: 0.7743 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.5138 - acc: 0.7300 - val_loss: 0.9014 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 31ms/step - loss: 0.5158 - acc: 0.7300 - val_loss: 0.6689 - val_acc: 0.6250
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.4996 - acc: 0.7500 - val_loss: 0.7651 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 36ms/step - loss: 0.4904 - acc: 0.7250 - val_loss: 0.9703 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.4947 - acc: 0.7800 - val_loss: 0.9919 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.5012 - acc: 0.7600 - val_loss: 0.7559 - val_acc: 0.5000
21%|██████    | 20/96 [03:00<11:28, 9.05s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.7740 - acc: 0.5500 - val_loss: 0.8854 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6296 - acc: 0.7200 - val_loss: 0.7259 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 39ms/step - loss: 0.6030 - acc: 0.7200 - val_loss: 0.8740 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5677 - acc: 0.7200 - val_loss: 0.6493 - val_acc: 0.6875
Epoch 5/30
7/7 [=====] - 0s 37ms/step - loss: 0.5851 - acc: 0.6950 - val_loss: 0.9588 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 37ms/step - loss: 0.5312 - acc: 0.7300 - val_loss: 0.6593 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.4936 - acc: 0.7750 - val_loss: 0.8332 - val_acc: 0.6250
```


Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.3971 - acc: 0.8200 - val_loss: 1.1211 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.3428 - acc: 0.8250 - val_loss: 0.4536 - val_acc: 0.8125
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.3849 - acc: 0.8100 - val_loss: 0.9594 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.3122 - acc: 0.8950 - val_loss: 0.6670 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 37ms/step - loss: 0.2432 - acc: 0.9100 - val_loss: 0.7133 - val_acc: 0.6250
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.2099 - acc: 0.9200 - val_loss: 0.9852 - val_acc: 0.5625
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.2077 - acc: 0.9050 - val_loss: 0.5785 - val_acc: 0.8125
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.1732 - acc: 0.9350 - val_loss: 1.1873 - val_acc: 0.5625
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.1416 - acc: 0.9600 - val_loss: 0.5971 - val_acc: 0.6875
Epoch 17/30
7/7 [=====] - 0s 37ms/step - loss: 0.1447 - acc: 0.9450 - val_loss: 1.0675 - val_acc: 0.5625
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.0948 - acc: 0.9750 - val_loss: 0.7147 - val_acc: 0.7500
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.0769 - acc: 0.9800 - val_loss: 1.2192 - val_acc: 0.5625
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.0671 - acc: 0.9850 - val_loss: 0.8071 - val_acc: 0.6875
Epoch 21/30
7/7 [=====] - 0s 30ms/step - loss: 0.0676 - acc: 0.9750 - val_loss: 0.8256 - val_acc: 0.7500
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.0690 - acc: 0.9750 - val_loss: 1.4621 - val_acc: 0.5625
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0485 - acc: 0.9900 - val_loss: 0.7784 - val_acc: 0.6875
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.0410 - acc: 0.9950 - val_loss: 1.0071 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.0284 - acc: 0.9950 - val_loss: 1.1473 - val_acc: 0.7500
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.0206 - acc: 0.9950 - val_loss: 1.4724 - val_acc: 0.5625
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.0176 - acc: 1.0000 - val_loss: 1.3660 - val_acc: 0.5625
Epoch 28/30
7/7 [=====] - 0s 37ms/step - loss: 0.0156 - acc: 1.0000 - val_loss: 1.3852 - val_acc: 0.6250
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.0119 - acc: 1.0000 - val_loss: 1.4119 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 37ms/step - loss: 0.0127 - acc: 1.0000 - val_loss: 1.3154 - val_acc: 0.7500

22%|█ | 21/96 [03:09<11:22, 9.10s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6242 - acc: 0.7150 - val_loss: 0.7878 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6018 - acc: 0.7200 - val_loss: 0.7480 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5993 - acc: 0.7200 - val_loss: 0.7642 - val_acc: 0.5000
Epoch 4/30

7/7 [=====] - 0s 36ms/step - loss: 0.5923 - acc: 0.7200 - val_loss: 0.8113 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.5839 - acc: 0.7200 - val_loss: 0.8006 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.5938 - acc: 0.7200 - val_loss: 0.8416 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5925 - acc: 0.7200 - val_loss: 0.8020 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5814 - acc: 0.7200 - val_loss: 0.7921 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 39ms/step - loss: 0.5836 - acc: 0.7200 - val_loss: 0.8245 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5895 - acc: 0.7200 - val_loss: 0.8245 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.5829 - acc: 0.7200 - val_loss: 0.7610 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5745 - acc: 0.7200 - val_loss: 0.7238 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5764 - acc: 0.7200 - val_loss: 0.7544 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.5860 - acc: 0.7200 - val_loss: 0.7508 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.5718 - acc: 0.7200 - val_loss: 0.8269 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.5787 - acc: 0.7200 - val_loss: 0.8447 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5663 - acc: 0.7200 - val_loss: 0.8479 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.5646 - acc: 0.7200 - val_loss: 0.8002 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5631 - acc: 0.7200 - val_loss: 0.7967 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 38ms/step - loss: 0.5620 - acc: 0.7200 - val_loss: 0.8859 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5607 - acc: 0.7200 - val_loss: 0.7836 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.5426 - acc: 0.7200 - val_loss: 0.8912 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 38ms/step - loss: 0.5450 - acc: 0.7200 - val_loss: 0.7607 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5432 - acc: 0.7200 - val_loss: 0.7656 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 35ms/step - loss: 0.5338 - acc: 0.7200 - val_loss: 0.7255 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.5418 - acc: 0.7200 - val_loss: 0.7588 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 39ms/step - loss: 0.5379 - acc: 0.7250 - val_loss: 0.7946 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.5523 - acc: 0.7200 - val_loss: 0.7649 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.5345 - acc: 0.7200 - val_loss: 0.8433 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 38ms/step - loss: 0.5290 - acc: 0.7200 - val_loss: 0.6451 - val_acc: 0.
7500

23%|██████| 22/96 [03:18<11:16, 9.14s/it]

Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.7083 - acc: 0.6100 - val_loss: 0.7581 - val_acc: 0.5000

Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.5911 - acc: 0.7200 - val_loss: 0.7785 - val_acc: 0.5000

Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5575 - acc: 0.7200 - val_loss: 0.8609 - val_acc: 0.5000

Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.5581 - acc: 0.7500 - val_loss: 0.8462 - val_acc: 0.5000

Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.4998 - acc: 0.7300 - val_loss: 0.7074 - val_acc: 0.6250

Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.4443 - acc: 0.7800 - val_loss: 0.6470 - val_acc: 0.6250

Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.3778 - acc: 0.8200 - val_loss: 1.6479 - val_acc: 0.5000

Epoch 8/30
7/7 [=====] - 0s 36ms/step - loss: 0.4571 - acc: 0.7800 - val_loss: 1.0365 - val_acc: 0.6250

Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.3452 - acc: 0.8800 - val_loss: 0.7246 - val_acc: 0.6250

Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.3019 - acc: 0.8950 - val_loss: 0.5663 - val_acc: 0.7500

Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.2588 - acc: 0.8850 - val_loss: 0.5077 - val_acc: 0.7500

Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.2832 - acc: 0.8850 - val_loss: 1.1956 - val_acc: 0.5625

Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.2450 - acc: 0.8950 - val_loss: 0.7281 - val_acc: 0.6875

Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.1997 - acc: 0.9250 - val_loss: 0.6298 - val_acc: 0.6875

Epoch 15/30
7/7 [=====] - 0s 37ms/step - loss: 0.1602 - acc: 0.9450 - val_loss: 0.5268 - val_acc: 0.8125

Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.1320 - acc: 0.9650 - val_loss: 0.8904 - val_acc: 0.6875

Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.1071 - acc: 0.9650 - val_loss: 0.7115 - val_acc: 0.6875

Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.0963 - acc: 0.9700 - val_loss: 0.6997 - val_acc: 0.6875

Epoch 19/30
7/7 [=====] - 0s 36ms/step - loss: 0.0925 - acc: 0.9800 - val_loss: 0.5978 - val_acc: 0.7500

Epoch 20/30
7/7 [=====] - 0s 31ms/step - loss: 0.0815 - acc: 0.9700 - val_loss: 1.2115 - val_acc: 0.6250

Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.0639 - acc: 0.9750 - val_loss: 0.8547 - val_acc: 0.6875

Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.0452 - acc: 0.9950 - val_loss: 0.5748 - val_acc: 0.8125

Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.0577 - acc: 0.9850 - val_loss: 0.9337 - val_acc: 0.6875

Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.0428 - acc: 0.9950 - val_loss: 1.5306 - val_acc: 0.5625

Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.0501 - acc: 0.9850 - val_loss: 0.9393 - val_acc: 0.6875

Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.0285 - acc: 1.0000 - val_loss: 0.9374 - val_acc: 0.6875

Epoch 27/30
7/7 [=====] - 0s 31ms/step - loss: 0.0199 - acc: 1.0000 - val_loss: 1.1533 - val_acc: 0.

```
6875
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.0189 - acc: 1.0000 - val_loss: 1.4092 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.0176 - acc: 1.0000 - val_loss: 1.1017 - val_acc: 0.
6875
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.0119 - acc: 1.0000 - val_loss: 1.4848 - val_acc: 0.
6250
24%|██████| 23/96 [03:27<11:07, 9.14s/it]
Epoch 1/30
7/7 [=====] - 0s 51ms/step - loss: 0.6527 - acc: 0.6700 - val_loss: 0.7304 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 31ms/step - loss: 0.6235 - acc: 0.7200 - val_loss: 0.8289 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.6178 - acc: 0.7200 - val_loss: 0.7770 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.5924 - acc: 0.7200 - val_loss: 0.7929 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 37ms/step - loss: 0.6066 - acc: 0.7200 - val_loss: 0.7687 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.6073 - acc: 0.7200 - val_loss: 0.8037 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.6066 - acc: 0.7200 - val_loss: 0.7451 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 36ms/step - loss: 0.6007 - acc: 0.7200 - val_loss: 0.7617 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.6024 - acc: 0.7200 - val_loss: 0.7623 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5835 - acc: 0.7200 - val_loss: 0.7465 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.5874 - acc: 0.7200 - val_loss: 0.8163 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 36ms/step - loss: 0.5854 - acc: 0.7200 - val_loss: 0.8388 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.5891 - acc: 0.7200 - val_loss: 0.7394 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.6011 - acc: 0.7200 - val_loss: 0.7625 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 38ms/step - loss: 0.5847 - acc: 0.7200 - val_loss: 0.8144 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5892 - acc: 0.7200 - val_loss: 0.7319 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5772 - acc: 0.7200 - val_loss: 0.7131 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.5930 - acc: 0.7200 - val_loss: 0.7598 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.5796 - acc: 0.7200 - val_loss: 0.7899 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 31ms/step - loss: 0.5864 - acc: 0.7200 - val_loss: 0.7560 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5760 - acc: 0.7200 - val_loss: 0.7679 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.5729 - acc: 0.7200 - val_loss: 0.7175 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 31ms/step - loss: 0.5801 - acc: 0.7250 - val_loss: 0.7507 - val_acc: 0.
5000
```

```
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5763 - acc: 0.7200 - val_loss: 0.7332 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.5715 - acc: 0.7200 - val_loss: 0.7642 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.5570 - acc: 0.7200 - val_loss: 0.8189 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.5640 - acc: 0.7200 - val_loss: 0.9241 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5852 - acc: 0.7200 - val_loss: 0.7719 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.5598 - acc: 0.7200 - val_loss: 0.7097 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.5689 - acc: 0.7250 - val_loss: 0.6893 - val_acc: 0.5000
25%|██████| 24/96 [03:36<10:55, 9.11s/it]
Epoch 1/30
7/7 [=====] - 0s 52ms/step - loss: 0.6808 - acc: 0.6300 - val_loss: 0.6885 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 29ms/step - loss: 0.6527 - acc: 0.7200 - val_loss: 0.8291 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.6211 - acc: 0.7200 - val_loss: 0.7597 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.5955 - acc: 0.7200 - val_loss: 0.8222 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5797 - acc: 0.7200 - val_loss: 0.8161 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.5511 - acc: 0.7200 - val_loss: 0.7570 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.4893 - acc: 0.7200 - val_loss: 0.9758 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 36ms/step - loss: 0.4564 - acc: 0.7200 - val_loss: 0.7359 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.4047 - acc: 0.7200 - val_loss: 0.6583 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 35ms/step - loss: 0.3634 - acc: 0.7900 - val_loss: 0.6261 - val_acc: 0.6875
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.3526 - acc: 0.8500 - val_loss: 0.5497 - val_acc: 0.8125
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.3511 - acc: 0.8400 - val_loss: 0.4808 - val_acc: 0.8750
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.2861 - acc: 0.8700 - val_loss: 0.6791 - val_acc: 0.5625
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.2554 - acc: 0.8900 - val_loss: 0.6911 - val_acc: 0.6875
Epoch 15/30
7/7 [=====] - 0s 39ms/step - loss: 0.1909 - acc: 0.9350 - val_loss: 1.1148 - val_acc: 0.5625
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.2128 - acc: 0.9200 - val_loss: 1.1518 - val_acc: 0.6250
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.2071 - acc: 0.9100 - val_loss: 1.3196 - val_acc: 0.5625
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.1977 - acc: 0.9200 - val_loss: 0.7676 - val_acc: 0.6875
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1759 - acc: 0.9350 - val_loss: 0.5556 - val_acc: 0.8125
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.1682 - acc: 0.9450 - val_loss: 1.2069 - val_acc: 0.
```

5625
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.1528 - acc: 0.9550 - val_loss: 0.9065 - val_acc: 0.6875
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.1209 - acc: 0.9600 - val_loss: 0.5984 - val_acc: 0.7500
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.1169 - acc: 0.9650 - val_loss: 1.0769 - val_acc: 0.6875
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.1144 - acc: 0.9650 - val_loss: 1.1601 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.0819 - acc: 0.9850 - val_loss: 0.8059 - val_acc: 0.7500
Epoch 26/30
7/7 [=====] - 0s 36ms/step - loss: 0.0713 - acc: 0.9800 - val_loss: 1.9001 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0650 - acc: 0.9750 - val_loss: 1.2885 - val_acc: 0.6875
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0593 - acc: 0.9800 - val_loss: 1.2644 - val_acc: 0.6875
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.0572 - acc: 0.9850 - val_loss: 1.2859 - val_acc: 0.6875
Epoch 30/30
7/7 [=====] - 0s 31ms/step - loss: 0.0601 - acc: 0.9850 - val_loss: 1.1312 - val_acc: 0.6875
26%|██████████| 25/96 [03:45<10:45, 9.10s/it]
Epoch 1/30
7/7 [=====] - 0s 51ms/step - loss: 0.6482 - acc: 0.7300 - val_loss: 0.7392 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 29ms/step - loss: 0.6045 - acc: 0.7200 - val_loss: 0.7853 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 36ms/step - loss: 0.5959 - acc: 0.7200 - val_loss: 0.8191 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.5963 - acc: 0.7200 - val_loss: 0.7993 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5922 - acc: 0.7200 - val_loss: 0.7568 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5928 - acc: 0.7200 - val_loss: 0.7327 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.5972 - acc: 0.7200 - val_loss: 0.7285 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 38ms/step - loss: 0.5897 - acc: 0.7200 - val_loss: 0.7951 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.5907 - acc: 0.7200 - val_loss: 0.8246 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5881 - acc: 0.7200 - val_loss: 0.7739 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 37ms/step - loss: 0.5863 - acc: 0.7200 - val_loss: 0.8150 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5871 - acc: 0.7200 - val_loss: 0.7366 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5921 - acc: 0.7200 - val_loss: 0.7891 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.5821 - acc: 0.7200 - val_loss: 0.7989 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 37ms/step - loss: 0.5745 - acc: 0.7200 - val_loss: 0.7730 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5835 - acc: 0.7200 - val_loss: 0.8147 - val_acc: 0.5000
Epoch 17/30

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7/7 [=====] - 0s 35ms/step - loss: 0.5753 - acc: 0.7200 - val_loss: 0.7597 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 38ms/step - loss: 0.5718 - acc: 0.7200 - val_loss: 0.8238 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.5814 - acc: 0.7200 - val_loss: 0.7725 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5713 - acc: 0.7200 - val_loss: 0.8366 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.5758 - acc: 0.7200 - val_loss: 0.8088 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.5726 - acc: 0.7200 - val_loss: 0.7566 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.5666 - acc: 0.7200 - val_loss: 0.7706 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.5596 - acc: 0.7200 - val_loss: 0.7664 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 37ms/step - loss: 0.5561 - acc: 0.7200 - val_loss: 0.8353 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.5591 - acc: 0.7200 - val_loss: 0.7640 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.5631 - acc: 0.7200 - val_loss: 0.7408 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 36ms/step - loss: 0.5574 - acc: 0.7200 - val_loss: 0.8258 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.5529 - acc: 0.7200 - val_loss: 0.7424 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.5656 - acc: 0.7200 - val_loss: 0.7085 - val_acc: 0.
5000
27%|███| 26/96 [03:55<10:40, 9.14s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6536 - acc: 0.6400 - val_loss: 0.7518 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.5957 - acc: 0.7200 - val_loss: 0.7559 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 37ms/step - loss: 0.5807 - acc: 0.7200 - val_loss: 0.7205 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5827 - acc: 0.7300 - val_loss: 0.8359 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.5363 - acc: 0.7300 - val_loss: 0.8276 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.4722 - acc: 0.7650 - val_loss: 0.9705 - val_acc: 0.
5625
Epoch 7/30
7/7 [=====] - 0s 38ms/step - loss: 0.4693 - acc: 0.7850 - val_loss: 0.7808 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.4059 - acc: 0.7900 - val_loss: 0.5658 - val_acc: 0.
8125
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.3622 - acc: 0.8650 - val_loss: 0.9882 - val_acc: 0.
5625
Epoch 10/30
7/7 [=====] - 0s 37ms/step - loss: 0.2927 - acc: 0.8750 - val_loss: 0.6441 - val_acc: 0.
6875
Epoch 11/30
7/7 [=====] - 0s 31ms/step - loss: 0.2696 - acc: 0.8950 - val_loss: 0.6444 - val_acc: 0.
6875
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.2107 - acc: 0.9200 - val_loss: 1.3198 - val_acc: 0.
5625
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.2011 - acc: 0.9300 - val_loss: 1.3130 - val_acc: 0.
```

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6250
Epoch 14/30
7/7 [=====] - 0s 37ms/step - loss: 0.2296 - acc: 0.9050 - val_loss: 0.7165 - val_acc: 0.
8125
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.1929 - acc: 0.9450 - val_loss: 1.0541 - val_acc: 0.
6250
Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.1592 - acc: 0.9400 - val_loss: 1.6088 - val_acc: 0.
6250
Epoch 17/30
7/7 [=====] - 0s 37ms/step - loss: 0.1643 - acc: 0.9350 - val_loss: 1.0352 - val_acc: 0.
6250
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.1540 - acc: 0.9400 - val_loss: 1.6376 - val_acc: 0.
5625
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1350 - acc: 0.9550 - val_loss: 1.0978 - val_acc: 0.
6875
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.1088 - acc: 0.9700 - val_loss: 1.3296 - val_acc: 0.
6250
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.0834 - acc: 0.9650 - val_loss: 1.4432 - val_acc: 0.
6875
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.0713 - acc: 0.9700 - val_loss: 1.4027 - val_acc: 0.
6875
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.0979 - acc: 0.9650 - val_loss: 0.9276 - val_acc: 0.
6250
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.0980 - acc: 0.9500 - val_loss: 1.0925 - val_acc: 0.
6250
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.0908 - acc: 0.9650 - val_loss: 1.7909 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0766 - acc: 0.9800 - val_loss: 0.8715 - val_acc: 0.
6250
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0708 - acc: 0.9800 - val_loss: 1.6755 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.0406 - acc: 0.9900 - val_loss: 1.1618 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.0565 - acc: 0.9850 - val_loss: 1.9908 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0626 - acc: 0.9800 - val_loss: 0.9757 - val_acc: 0.
7500
28%|███      | 27/96 [04:04<10:31, 9.15s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6546 - acc: 0.6350 - val_loss: 0.7619 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.6005 - acc: 0.7200 - val_loss: 0.8671 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.6113 - acc: 0.7200 - val_loss: 0.8457 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 31ms/step - loss: 0.6025 - acc: 0.7200 - val_loss: 0.7599 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5941 - acc: 0.7200 - val_loss: 0.7801 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.5972 - acc: 0.7200 - val_loss: 0.8223 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5910 - acc: 0.7200 - val_loss: 0.8041 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5791 - acc: 0.7200 - val_loss: 0.7817 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.5858 - acc: 0.7250 - val_loss: 0.8088 - val_acc: 0.
5000
```


Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5827 - acc: 0.7200 - val_loss: 0.7308 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 30ms/step - loss: 0.5645 - acc: 0.7200 - val_loss: 0.8073 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5824 - acc: 0.7200 - val_loss: 0.8300 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.5680 - acc: 0.7250 - val_loss: 0.7210 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.5776 - acc: 0.7200 - val_loss: 0.8368 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 30ms/step - loss: 0.5645 - acc: 0.7200 - val_loss: 0.8669 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5700 - acc: 0.7200 - val_loss: 0.9442 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.5689 - acc: 0.7200 - val_loss: 0.8692 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.5511 - acc: 0.7200 - val_loss: 0.7996 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5614 - acc: 0.7200 - val_loss: 0.8818 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.5847 - acc: 0.7200 - val_loss: 0.7306 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 34ms/step - loss: 0.5331 - acc: 0.7250 - val_loss: 0.8040 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 37ms/step - loss: 0.5548 - acc: 0.7300 - val_loss: 0.6706 - val_acc: 0.5625
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.5595 - acc: 0.7200 - val_loss: 0.6745 - val_acc: 0.5625
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.5503 - acc: 0.7100 - val_loss: 0.9361 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.5595 - acc: 0.7200 - val_loss: 0.7409 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 30ms/step - loss: 0.5321 - acc: 0.7300 - val_loss: 0.7222 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5376 - acc: 0.7450 - val_loss: 0.6639 - val_acc: 0.6250
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5245 - acc: 0.7450 - val_loss: 0.8702 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 38ms/step - loss: 0.5157 - acc: 0.7150 - val_loss: 0.8732 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.5188 - acc: 0.7250 - val_loss: 0.7078 - val_acc: 0.5000

29%|██████| 28/96 [04:13<10:14, 9.03s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.6576 - acc: 0.6850 - val_loss: 0.7003 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.6403 - acc: 0.6750 - val_loss: 0.7751 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.6164 - acc: 0.7200 - val_loss: 0.7273 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.6147 - acc: 0.7200 - val_loss: 0.7731 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 37ms/step - loss: 0.5761 - acc: 0.7200 - val_loss: 0.8248 - val_acc: 0.5000
Epoch 6/30

```
7/7 [=====] - 0s 34ms/step - loss: 0.5709 - acc: 0.7150 - val_loss: 0.9483 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 37ms/step - loss: 0.5395 - acc: 0.7400 - val_loss: 0.7027 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.4926 - acc: 0.7700 - val_loss: 0.8689 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.5024 - acc: 0.7150 - val_loss: 1.3644 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 38ms/step - loss: 0.5256 - acc: 0.7550 - val_loss: 0.6159 - val_acc: 0.
7500
Epoch 11/30
7/7 [=====] - 0s 31ms/step - loss: 0.4344 - acc: 0.8050 - val_loss: 0.9115 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.4124 - acc: 0.7900 - val_loss: 0.6305 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.3469 - acc: 0.8500 - val_loss: 0.5343 - val_acc: 0.
8750
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.3607 - acc: 0.8250 - val_loss: 1.0798 - val_acc: 0.
5625
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.3188 - acc: 0.8500 - val_loss: 0.7014 - val_acc: 0.
6250
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.2831 - acc: 0.8850 - val_loss: 0.5177 - val_acc: 0.
8750
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.2790 - acc: 0.8800 - val_loss: 0.8328 - val_acc: 0.
5625
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.2127 - acc: 0.9100 - val_loss: 0.8933 - val_acc: 0.
6250
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.2062 - acc: 0.9250 - val_loss: 0.9437 - val_acc: 0.
6875
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.1793 - acc: 0.9150 - val_loss: 0.6654 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.1770 - acc: 0.9300 - val_loss: 1.3876 - val_acc: 0.
5625
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.1533 - acc: 0.9550 - val_loss: 1.0745 - val_acc: 0.
6875
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.1074 - acc: 0.9550 - val_loss: 0.8514 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.1416 - acc: 0.9450 - val_loss: 1.7899 - val_acc: 0.
5625
Epoch 25/30
7/7 [=====] - 0s 30ms/step - loss: 0.1052 - acc: 0.9700 - val_loss: 1.7687 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.1139 - acc: 0.9600 - val_loss: 1.0820 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.1292 - acc: 0.9450 - val_loss: 1.2191 - val_acc: 0.
6875
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.0871 - acc: 0.9750 - val_loss: 1.1115 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0745 - acc: 0.9750 - val_loss: 1.9614 - val_acc: 0.
5625
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.1629 - acc: 0.9250 - val_loss: 2.8265 - val_acc: 0.
5625
30%|██████| 29/96 [04:22<10:08, 9.08s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6755 - acc: 0.5550 - val_loss: 0.7042 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6226 - acc: 0.7250 - val_loss: 0.7535 - val_acc: 0.
5000
```

Epoch 3/30
7/7 [=====] - 0s 38ms/step - loss: 0.6069 - acc: 0.7200 - val_loss: 0.7709 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.6033 - acc: 0.7200 - val_loss: 0.7446 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.6036 - acc: 0.7200 - val_loss: 0.7512 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.6055 - acc: 0.7200 - val_loss: 0.7942 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.6010 - acc: 0.7200 - val_loss: 0.7869 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5924 - acc: 0.7200 - val_loss: 0.7994 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.6111 - acc: 0.7200 - val_loss: 0.8040 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 39ms/step - loss: 0.6061 - acc: 0.7200 - val_loss: 0.7468 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 31ms/step - loss: 0.5903 - acc: 0.7200 - val_loss: 0.7380 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.6004 - acc: 0.7200 - val_loss: 0.7996 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.6099 - acc: 0.7200 - val_loss: 0.7745 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 38ms/step - loss: 0.5755 - acc: 0.7200 - val_loss: 0.7855 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5893 - acc: 0.7200 - val_loss: 0.8030 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5698 - acc: 0.7200 - val_loss: 0.8635 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.5954 - acc: 0.7200 - val_loss: 0.8087 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5956 - acc: 0.7200 - val_loss: 0.8276 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.5872 - acc: 0.7200 - val_loss: 0.8026 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.5903 - acc: 0.7200 - val_loss: 0.8414 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.6019 - acc: 0.7200 - val_loss: 0.7638 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.5922 - acc: 0.7200 - val_loss: 0.7393 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.5667 - acc: 0.7200 - val_loss: 0.7551 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.5824 - acc: 0.7200 - val_loss: 0.7779 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.5676 - acc: 0.7200 - val_loss: 0.7626 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 35ms/step - loss: 0.5732 - acc: 0.7200 - val_loss: 0.7973 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5839 - acc: 0.7200 - val_loss: 0.7196 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.5721 - acc: 0.7200 - val_loss: 0.7955 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.5711 - acc: 0.7200 - val_loss: 0.7256 - val_acc: 0.
5000

Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.5474 - acc: 0.7200 - val_loss: 0.8127 - val_acc: 0.5000
31%|██████| 30/96 [04:31<09:59, 9.08s/it]

Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6923 - acc: 0.6850 - val_loss: 0.7306 - val_acc: 0.5000

Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.5717 - acc: 0.7200 - val_loss: 1.1074 - val_acc: 0.5000

Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.6019 - acc: 0.7100 - val_loss: 0.7612 - val_acc: 0.5000

Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5065 - acc: 0.7300 - val_loss: 0.6869 - val_acc: 0.6250

Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.4620 - acc: 0.7800 - val_loss: 0.5564 - val_acc: 0.7500

Epoch 6/30
7/7 [=====] - 0s 36ms/step - loss: 0.3710 - acc: 0.8450 - val_loss: 0.6024 - val_acc: 0.6250

Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.3102 - acc: 0.8500 - val_loss: 0.4590 - val_acc: 0.8125

Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.3203 - acc: 0.8650 - val_loss: 0.6470 - val_acc: 0.6875

Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.2277 - acc: 0.9150 - val_loss: 0.4512 - val_acc: 0.8750

Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.2089 - acc: 0.9200 - val_loss: 0.7606 - val_acc: 0.6875

Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.1805 - acc: 0.9400 - val_loss: 0.8932 - val_acc: 0.6250

Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.1767 - acc: 0.9400 - val_loss: 0.6756 - val_acc: 0.6875

Epoch 13/30
7/7 [=====] - 0s 39ms/step - loss: 0.1604 - acc: 0.9400 - val_loss: 1.0267 - val_acc: 0.6250

Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.1489 - acc: 0.9450 - val_loss: 0.4670 - val_acc: 0.8125

Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.1662 - acc: 0.9400 - val_loss: 0.6579 - val_acc: 0.7500

Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.1173 - acc: 0.9650 - val_loss: 0.6980 - val_acc: 0.7500

Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.0956 - acc: 0.9700 - val_loss: 0.7896 - val_acc: 0.7500

Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.0977 - acc: 0.9600 - val_loss: 1.0251 - val_acc: 0.6875

Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.0749 - acc: 0.9750 - val_loss: 0.5058 - val_acc: 0.6875

Epoch 20/30
7/7 [=====] - 0s 39ms/step - loss: 0.0615 - acc: 0.9700 - val_loss: 0.7608 - val_acc: 0.7500

Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.0451 - acc: 0.9850 - val_loss: 0.8422 - val_acc: 0.7500

Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.0395 - acc: 0.9950 - val_loss: 0.6246 - val_acc: 0.7500

Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.0322 - acc: 0.9950 - val_loss: 0.6711 - val_acc: 0.7500

Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.0251 - acc: 0.9900 - val_loss: 0.8561 - val_acc: 0.7500

Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.0185 - acc: 1.0000 - val_loss: 0.8223 - val_acc: 0.7500

Epoch 26/30

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7/7 [=====] - 0s 34ms/step - loss: 0.0150 - acc: 1.0000 - val_loss: 0.9487 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.0127 - acc: 1.0000 - val_loss: 0.8489 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.0117 - acc: 1.0000 - val_loss: 0.7506 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.0088 - acc: 1.0000 - val_loss: 1.0617 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.0062 - acc: 1.0000 - val_loss: 0.8925 - val_acc: 0.
7500
32%|██████| 31/96 [04:40<09:51, 9.10s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6683 - acc: 0.6650 - val_loss: 0.7115 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6078 - acc: 0.7200 - val_loss: 0.7786 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5927 - acc: 0.7200 - val_loss: 0.7937 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5902 - acc: 0.7200 - val_loss: 0.7587 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.5872 - acc: 0.7200 - val_loss: 0.7566 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 38ms/step - loss: 0.5859 - acc: 0.7200 - val_loss: 0.7672 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.5886 - acc: 0.7200 - val_loss: 0.7731 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.5818 - acc: 0.7200 - val_loss: 0.7388 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.5861 - acc: 0.7200 - val_loss: 0.7670 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5771 - acc: 0.7200 - val_loss: 0.7569 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.5793 - acc: 0.7200 - val_loss: 0.7902 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5752 - acc: 0.7200 - val_loss: 0.7314 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.5838 - acc: 0.7200 - val_loss: 0.7313 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5728 - acc: 0.7200 - val_loss: 0.8279 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.5707 - acc: 0.7200 - val_loss: 0.8500 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5738 - acc: 0.7200 - val_loss: 0.7837 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5712 - acc: 0.7200 - val_loss: 0.8307 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.5592 - acc: 0.7200 - val_loss: 0.7507 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5620 - acc: 0.7200 - val_loss: 0.7938 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5553 - acc: 0.7200 - val_loss: 0.7238 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5586 - acc: 0.7200 - val_loss: 0.7090 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.5580 - acc: 0.7200 - val_loss: 0.6731 - val_acc: 0.
```

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5625
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.5647 - acc: 0.7300 - val_loss: 0.7833 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.5482 - acc: 0.7200 - val_loss: 0.7825 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5489 - acc: 0.7200 - val_loss: 0.7139 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.5459 - acc: 0.7200 - val_loss: 0.7181 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.5365 - acc: 0.7200 - val_loss: 0.6914 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.5338 - acc: 0.7250 - val_loss: 0.7997 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.5351 - acc: 0.7200 - val_loss: 0.8235 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.5252 - acc: 0.7200 - val_loss: 0.8486 - val_acc: 0.5000
33%|██████| 32/96 [04:49<09:38, 9.04s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6199 - acc: 0.6600 - val_loss: 0.7150 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.5760 - acc: 0.7200 - val_loss: 0.8474 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5219 - acc: 0.7500 - val_loss: 0.6954 - val_acc: 0.6250
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.4469 - acc: 0.7950 - val_loss: 0.9737 - val_acc: 0.6250
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.4015 - acc: 0.7950 - val_loss: 0.7294 - val_acc: 0.6250
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.3394 - acc: 0.8650 - val_loss: 0.7197 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.2901 - acc: 0.8650 - val_loss: 0.8973 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 36ms/step - loss: 0.2591 - acc: 0.9100 - val_loss: 1.2443 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.2923 - acc: 0.8500 - val_loss: 1.2424 - val_acc: 0.5625
Epoch 10/30
7/7 [=====] - 0s 31ms/step - loss: 0.2251 - acc: 0.9000 - val_loss: 0.6126 - val_acc: 0.6875
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.2099 - acc: 0.9150 - val_loss: 0.9639 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.1697 - acc: 0.9300 - val_loss: 1.1597 - val_acc: 0.6250
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.1557 - acc: 0.9450 - val_loss: 0.9735 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.1053 - acc: 0.9750 - val_loss: 0.8759 - val_acc: 0.6250
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.1067 - acc: 0.9750 - val_loss: 0.9440 - val_acc: 0.6250
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.0838 - acc: 0.9700 - val_loss: 1.1393 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.0619 - acc: 0.9900 - val_loss: 1.5099 - val_acc: 0.5625
Epoch 18/30
7/7 [=====] - 0s 31ms/step - loss: 0.0475 - acc: 0.9950 - val_loss: 1.7075 - val_acc: 0.5000
```

```
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.0587 - acc: 0.9800 - val_loss: 1.3109 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.0305 - acc: 0.9950 - val_loss: 1.4885 - val_acc: 0.5625
Epoch 21/30
7/7 [=====] - 0s 31ms/step - loss: 0.0352 - acc: 0.9900 - val_loss: 1.2388 - val_acc: 0.6250
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.0263 - acc: 1.0000 - val_loss: 1.7426 - val_acc: 0.5625
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.0287 - acc: 0.9950 - val_loss: 1.9099 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0203 - acc: 1.0000 - val_loss: 1.3918 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.0223 - acc: 0.9900 - val_loss: 1.3599 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0196 - acc: 0.9950 - val_loss: 2.5635 - val_acc: 0.5625
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.0213 - acc: 0.9900 - val_loss: 1.1931 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.0160 - acc: 1.0000 - val_loss: 2.7229 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.0134 - acc: 0.9950 - val_loss: 1.4371 - val_acc: 0.5625
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.0204 - acc: 0.9950 - val_loss: 0.9853 - val_acc: 0.6250
34%|██████| 33/96 [04:58<09:27, 9.00s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6211 - acc: 0.7200 - val_loss: 0.7356 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.6214 - acc: 0.7200 - val_loss: 0.7587 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.6056 - acc: 0.7200 - val_loss: 0.7741 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 30ms/step - loss: 0.5916 - acc: 0.7200 - val_loss: 0.8111 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5890 - acc: 0.7200 - val_loss: 0.8151 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5975 - acc: 0.7200 - val_loss: 0.7891 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5847 - acc: 0.7200 - val_loss: 0.7977 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 31ms/step - loss: 0.5823 - acc: 0.7200 - val_loss: 0.7671 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5893 - acc: 0.7200 - val_loss: 0.8050 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5826 - acc: 0.7200 - val_loss: 0.7963 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 30ms/step - loss: 0.5797 - acc: 0.7200 - val_loss: 0.7133 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5859 - acc: 0.7200 - val_loss: 0.7505 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5807 - acc: 0.7200 - val_loss: 0.7787 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.5755 - acc: 0.7200 - val_loss: 0.8267 - val_acc: 0.5000
Epoch 15/30
```

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7/7 [=====] - 0s 31ms/step - loss: 0.5628 - acc: 0.7200 - val_loss: 0.7747 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5737 - acc: 0.7200 - val_loss: 0.7082 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5756 - acc: 0.7200 - val_loss: 0.7665 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.5800 - acc: 0.7200 - val_loss: 0.7257 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 31ms/step - loss: 0.5682 - acc: 0.7200 - val_loss: 0.8357 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.5478 - acc: 0.7200 - val_loss: 0.7403 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.5685 - acc: 0.7200 - val_loss: 0.6978 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 31ms/step - loss: 0.5592 - acc: 0.7200 - val_loss: 0.7652 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.5629 - acc: 0.7200 - val_loss: 0.8284 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5475 - acc: 0.7200 - val_loss: 0.6940 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.5499 - acc: 0.7250 - val_loss: 0.6898 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 30ms/step - loss: 0.5461 - acc: 0.7200 - val_loss: 0.7245 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.5475 - acc: 0.7200 - val_loss: 0.8466 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.5334 - acc: 0.7200 - val_loss: 0.7084 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.5267 - acc: 0.7200 - val_loss: 0.6657 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 30ms/step - loss: 0.5364 - acc: 0.7350 - val_loss: 0.7897 - val_acc: 0.
5000
35%|██████    | 34/96 [05:07<09:12, 8.90s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.7351 - acc: 0.6850 - val_loss: 0.7138 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6175 - acc: 0.7200 - val_loss: 0.7221 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.5875 - acc: 0.7150 - val_loss: 0.7279 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.5343 - acc: 0.7300 - val_loss: 0.8596 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5049 - acc: 0.7500 - val_loss: 0.8949 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.4549 - acc: 0.7900 - val_loss: 0.6105 - val_acc: 0.
6875
Epoch 7/30
7/7 [=====] - 0s 36ms/step - loss: 0.3474 - acc: 0.8500 - val_loss: 1.1717 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 31ms/step - loss: 0.4406 - acc: 0.7850 - val_loss: 0.6084 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3710 - acc: 0.8450 - val_loss: 0.5015 - val_acc: 0.
8125
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.3147 - acc: 0.8850 - val_loss: 0.7410 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.2509 - acc: 0.9100 - val_loss: 0.7823 - val_acc: 0.
6250
```


Epoch 12/30
7/7 [=====] - 0s 30ms/step - loss: 0.2145 - acc: 0.9200 - val_loss: 0.5532 - val_acc: 0.8125
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.1752 - acc: 0.9300 - val_loss: 0.4460 - val_acc: 0.7500
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.1726 - acc: 0.9450 - val_loss: 0.6492 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.1305 - acc: 0.9650 - val_loss: 0.4341 - val_acc: 0.8750
Epoch 16/30
7/7 [=====] - 0s 31ms/step - loss: 0.2286 - acc: 0.9100 - val_loss: 0.4719 - val_acc: 0.8125
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.1538 - acc: 0.9450 - val_loss: 0.6068 - val_acc: 0.7500
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.1608 - acc: 0.9550 - val_loss: 0.9849 - val_acc: 0.6250
Epoch 19/30
7/7 [=====] - 0s 30ms/step - loss: 0.1134 - acc: 0.9750 - val_loss: 0.6763 - val_acc: 0.7500
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.0868 - acc: 0.9800 - val_loss: 0.6687 - val_acc: 0.7500
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.0622 - acc: 0.9850 - val_loss: 0.7508 - val_acc: 0.7500
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.0531 - acc: 0.9850 - val_loss: 0.8199 - val_acc: 0.7500
Epoch 23/30
7/7 [=====] - 0s 30ms/step - loss: 0.0378 - acc: 1.0000 - val_loss: 0.7962 - val_acc: 0.6875
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.0329 - acc: 0.9950 - val_loss: 0.9588 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0346 - acc: 0.9900 - val_loss: 0.9270 - val_acc: 0.6875
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.0211 - acc: 0.9950 - val_loss: 0.8421 - val_acc: 0.7500
Epoch 27/30
7/7 [=====] - 0s 31ms/step - loss: 0.0197 - acc: 1.0000 - val_loss: 1.1810 - val_acc: 0.5625
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0186 - acc: 1.0000 - val_loss: 0.5383 - val_acc: 0.8125
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.0608 - acc: 0.9750 - val_loss: 1.7856 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0682 - acc: 0.9700 - val_loss: 1.3980 - val_acc: 0.6250
36%|██████| 35/96 [05:15<09:02, 8.89s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.5944 - acc: 0.7100 - val_loss: 0.7917 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 29ms/step - loss: 0.5992 - acc: 0.7100 - val_loss: 0.7336 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.6004 - acc: 0.6900 - val_loss: 0.7647 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5963 - acc: 0.7200 - val_loss: 0.7769 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.5907 - acc: 0.7150 - val_loss: 0.8018 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 31ms/step - loss: 0.5940 - acc: 0.7200 - val_loss: 0.8305 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.6140 - acc: 0.7200 - val_loss: 0.7748 - val_acc: 0.5000
Epoch 8/30

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7/7 [=====] - 0s 32ms/step - loss: 0.5705 - acc: 0.7200 - val_loss: 0.8521 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5836 - acc: 0.7200 - val_loss: 0.9554 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 31ms/step - loss: 0.5827 - acc: 0.7200 - val_loss: 0.8605 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.6049 - acc: 0.7200 - val_loss: 0.7029 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.5829 - acc: 0.7150 - val_loss: 0.8464 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 31ms/step - loss: 0.5724 - acc: 0.7200 - val_loss: 0.7789 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5622 - acc: 0.7300 - val_loss: 0.9293 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.5687 - acc: 0.7300 - val_loss: 0.8002 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 37ms/step - loss: 0.5567 - acc: 0.7200 - val_loss: 0.8752 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.5757 - acc: 0.7150 - val_loss: 0.7647 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5658 - acc: 0.7250 - val_loss: 0.7938 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5309 - acc: 0.7250 - val_loss: 0.7972 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.5677 - acc: 0.7150 - val_loss: 0.6788 - val_acc: 0.6250
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5455 - acc: 0.7200 - val_loss: 0.6702 - val_acc: 0.6250
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.5486 - acc: 0.7550 - val_loss: 0.7641 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.5360 - acc: 0.7200 - val_loss: 0.7058 - val_acc: 0.5625
Epoch 24/30
7/7 [=====] - 0s 31ms/step - loss: 0.5413 - acc: 0.7200 - val_loss: 0.7452 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5248 - acc: 0.7500 - val_loss: 0.6829 - val_acc: 0.6250
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.5225 - acc: 0.7200 - val_loss: 0.8474 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.5000 - acc: 0.7150 - val_loss: 0.7935 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.5168 - acc: 0.7450 - val_loss: 0.9129 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.5161 - acc: 0.7350 - val_loss: 0.6465 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.5368 - acc: 0.7500 - val_loss: 0.7346 - val_acc: 0.5625
38%|██████| 36/96 [05:24<08:51, 8.85s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6382 - acc: 0.6600 - val_loss: 0.7848 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.5646 - acc: 0.7200 - val_loss: 0.7986 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5201 - acc: 0.7350 - val_loss: 0.9080 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.4840 - acc: 0.7900 - val_loss: 1.0269 - val_acc: 0.
```

5625
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.4298 - acc: 0.8000 - val_loss: 1.1184 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 31ms/step - loss: 0.3957 - acc: 0.8200 - val_loss: 0.8873 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.3403 - acc: 0.8400 - val_loss: 0.6278 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.3020 - acc: 0.8450 - val_loss: 0.4924 - val_acc: 0.
9375
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.2786 - acc: 0.8700 - val_loss: 1.5114 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 30ms/step - loss: 0.2809 - acc: 0.8800 - val_loss: 0.5114 - val_acc: 0.
8750
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.2438 - acc: 0.9150 - val_loss: 0.9018 - val_acc: 0.
6250
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.2097 - acc: 0.9150 - val_loss: 0.7204 - val_acc: 0.
7500
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.1827 - acc: 0.9350 - val_loss: 0.5214 - val_acc: 0.
8125
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.1477 - acc: 0.9400 - val_loss: 0.8698 - val_acc: 0.
6875
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.1307 - acc: 0.9700 - val_loss: 0.6037 - val_acc: 0.
7500
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.1010 - acc: 0.9750 - val_loss: 0.9283 - val_acc: 0.
6875
Epoch 17/30
7/7 [=====] - 0s 31ms/step - loss: 0.0950 - acc: 0.9600 - val_loss: 0.5870 - val_acc: 0.
8125
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.0904 - acc: 0.9700 - val_loss: 0.5994 - val_acc: 0.
7500
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.0875 - acc: 0.9700 - val_loss: 1.3831 - val_acc: 0.
6875
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.0821 - acc: 0.9750 - val_loss: 0.6810 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 31ms/step - loss: 0.0821 - acc: 0.9750 - val_loss: 1.3910 - val_acc: 0.
6875
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.0557 - acc: 0.9850 - val_loss: 0.8104 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.0492 - acc: 0.9900 - val_loss: 1.2129 - val_acc: 0.
6875
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.0512 - acc: 0.9750 - val_loss: 0.6312 - val_acc: 0.
8125
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0451 - acc: 0.9850 - val_loss: 1.2909 - val_acc: 0.
6875
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0371 - acc: 0.9850 - val_loss: 1.0007 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 36ms/step - loss: 0.0292 - acc: 0.9900 - val_loss: 1.0903 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0202 - acc: 0.9950 - val_loss: 1.0322 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.0181 - acc: 0.9950 - val_loss: 1.0610 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.0178 - acc: 1.0000 - val_loss: 1.0901 - val_acc: 0.
7500

39% |██████████| 37/96 [05:33<08:43, 8.87s/it]

Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6431 - acc: 0.6900 - val_loss: 0.7685 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6010 - acc: 0.7200 - val_loss: 0.8143 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5955 - acc: 0.7200 - val_loss: 0.7663 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5973 - acc: 0.7200 - val_loss: 0.8144 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5950 - acc: 0.7200 - val_loss: 0.7836 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.5915 - acc: 0.7200 - val_loss: 0.7558 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.5922 - acc: 0.7200 - val_loss: 0.7723 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5888 - acc: 0.7200 - val_loss: 0.7975 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.5884 - acc: 0.7200 - val_loss: 0.8834 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5882 - acc: 0.7200 - val_loss: 0.7915 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.5763 - acc: 0.7200 - val_loss: 0.8158 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5794 - acc: 0.7200 - val_loss: 0.8398 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.5787 - acc: 0.7200 - val_loss: 0.8070 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 31ms/step - loss: 0.5692 - acc: 0.7200 - val_loss: 0.7820 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.5810 - acc: 0.7200 - val_loss: 0.7917 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5768 - acc: 0.7200 - val_loss: 0.7693 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5663 - acc: 0.7200 - val_loss: 0.7893 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 31ms/step - loss: 0.5675 - acc: 0.7200 - val_loss: 0.7591 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5654 - acc: 0.7200 - val_loss: 0.7990 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5650 - acc: 0.7200 - val_loss: 0.7688 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5621 - acc: 0.7200 - val_loss: 0.7899 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.5541 - acc: 0.7200 - val_loss: 0.8020 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.5627 - acc: 0.7200 - val_loss: 0.7634 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.5578 - acc: 0.7200 - val_loss: 0.7773 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.5461 - acc: 0.7200 - val_loss: 0.7241 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.5485 - acc: 0.7200 - val_loss: 0.7156 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.5458 - acc: 0.7200 - val_loss: 0.8766 - val_acc: 0.5000

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Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.5386 - acc: 0.7200 - val_loss: 0.8400 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.5448 - acc: 0.7200 - val_loss: 0.7079 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.5305 - acc: 0.7200 - val_loss: 0.7664 - val_acc: 0.5000
40%|██████| 38/96 [05:42<08:34, 8.88s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6495 - acc: 0.6500 - val_loss: 0.8857 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.5920 - acc: 0.7200 - val_loss: 0.7603 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5895 - acc: 0.7200 - val_loss: 0.8263 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 31ms/step - loss: 0.5548 - acc: 0.7200 - val_loss: 0.7429 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.4987 - acc: 0.7300 - val_loss: 0.7101 - val_acc: 0.6250
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.4339 - acc: 0.7900 - val_loss: 1.8746 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.5209 - acc: 0.7800 - val_loss: 1.0078 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.3887 - acc: 0.7950 - val_loss: 0.5372 - val_acc: 0.8750
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3769 - acc: 0.8500 - val_loss: 1.0533 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.3093 - acc: 0.8450 - val_loss: 0.4891 - val_acc: 0.8125
Epoch 11/30
7/7 [=====] - 0s 31ms/step - loss: 0.3025 - acc: 0.8250 - val_loss: 0.4803 - val_acc: 0.8125
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.2567 - acc: 0.9050 - val_loss: 0.7569 - val_acc: 0.6250
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.2175 - acc: 0.9200 - val_loss: 0.5234 - val_acc: 0.8125
Epoch 14/30
7/7 [=====] - 0s 30ms/step - loss: 0.2091 - acc: 0.9050 - val_loss: 0.8221 - val_acc: 0.6250
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.1912 - acc: 0.9150 - val_loss: 0.7496 - val_acc: 0.6875
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.1425 - acc: 0.9450 - val_loss: 0.5362 - val_acc: 0.8125
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.1423 - acc: 0.9450 - val_loss: 0.6186 - val_acc: 0.8125
Epoch 18/30
7/7 [=====] - 0s 31ms/step - loss: 0.1364 - acc: 0.9500 - val_loss: 0.6381 - val_acc: 0.8125
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.0960 - acc: 0.9750 - val_loss: 0.5174 - val_acc: 0.8125
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.0811 - acc: 0.9800 - val_loss: 1.0514 - val_acc: 0.6875
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.1050 - acc: 0.9650 - val_loss: 1.1324 - val_acc: 0.6875
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.1105 - acc: 0.9550 - val_loss: 0.4539 - val_acc: 0.8125
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.0926 - acc: 0.9650 - val_loss: 1.0869 - val_acc: 0.6875
Epoch 24/30
```

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7/7 [=====] - 0s 32ms/step - loss: 0.0809 - acc: 0.9600 - val_loss: 0.4796 - val_acc: 0.
9375
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0737 - acc: 0.9800 - val_loss: 1.1974 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0499 - acc: 0.9850 - val_loss: 0.8565 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.0378 - acc: 0.9900 - val_loss: 0.8050 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.0257 - acc: 1.0000 - val_loss: 1.0545 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.0228 - acc: 0.9950 - val_loss: 1.0152 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0201 - acc: 1.0000 - val_loss: 1.1316 - val_acc: 0.
7500
41%|██████| 39/96 [05:51<08:24, 8.84s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6939 - acc: 0.5200 - val_loss: 0.6945 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.6469 - acc: 0.7200 - val_loss: 0.7079 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.6266 - acc: 0.7200 - val_loss: 0.7377 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.6093 - acc: 0.7200 - val_loss: 0.7564 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5982 - acc: 0.7200 - val_loss: 0.7844 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.6031 - acc: 0.7200 - val_loss: 0.7738 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5909 - acc: 0.7200 - val_loss: 0.7918 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 30ms/step - loss: 0.5928 - acc: 0.7200 - val_loss: 0.8252 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.5835 - acc: 0.7200 - val_loss: 0.8241 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.6003 - acc: 0.7200 - val_loss: 0.8213 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.5911 - acc: 0.7200 - val_loss: 0.8321 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 30ms/step - loss: 0.5890 - acc: 0.7200 - val_loss: 0.8249 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5760 - acc: 0.7200 - val_loss: 0.8040 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5986 - acc: 0.7200 - val_loss: 0.7975 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5970 - acc: 0.7200 - val_loss: 0.7859 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 31ms/step - loss: 0.5937 - acc: 0.7200 - val_loss: 0.7768 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.6006 - acc: 0.7200 - val_loss: 0.7678 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5742 - acc: 0.7200 - val_loss: 0.8077 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 30ms/step - loss: 0.5841 - acc: 0.7200 - val_loss: 0.7692 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.5886 - acc: 0.7200 - val_loss: 0.7612 - val_acc: 0.
5000
```

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Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5752 - acc: 0.7200 - val_loss: 0.7965 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.5693 - acc: 0.7200 - val_loss: 0.7792 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 30ms/step - loss: 0.5720 - acc: 0.7200 - val_loss: 0.8267 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.5687 - acc: 0.7200 - val_loss: 0.8589 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5753 - acc: 0.7200 - val_loss: 0.7959 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 35ms/step - loss: 0.5772 - acc: 0.7200 - val_loss: 0.7971 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 31ms/step - loss: 0.5615 - acc: 0.7200 - val_loss: 0.7852 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5656 - acc: 0.7200 - val_loss: 0.7115 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.5627 - acc: 0.7200 - val_loss: 0.8131 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.5582 - acc: 0.7200 - val_loss: 0.8289 - val_acc: 0.5000
42%|██████| 40/96 [05:59<08:11, 8.78s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.6423 - acc: 0.6900 - val_loss: 0.7779 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 30ms/step - loss: 0.6008 - acc: 0.7250 - val_loss: 0.8379 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.5391 - acc: 0.7250 - val_loss: 0.7820 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5596 - acc: 0.7250 - val_loss: 0.6762 - val_acc: 0.6250
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.4839 - acc: 0.7350 - val_loss: 0.7126 - val_acc: 0.6250
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.4937 - acc: 0.7600 - val_loss: 0.6070 - val_acc: 0.7500
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.4588 - acc: 0.8100 - val_loss: 1.0157 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.3808 - acc: 0.8550 - val_loss: 0.8093 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 31ms/step - loss: 0.4365 - acc: 0.7550 - val_loss: 0.5402 - val_acc: 0.8125
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.5072 - acc: 0.7550 - val_loss: 0.6585 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.3949 - acc: 0.8250 - val_loss: 0.5889 - val_acc: 0.6875
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.3393 - acc: 0.8500 - val_loss: 0.5874 - val_acc: 0.6875
Epoch 13/30
7/7 [=====] - 0s 31ms/step - loss: 0.2804 - acc: 0.9100 - val_loss: 0.8404 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.2372 - acc: 0.9150 - val_loss: 0.6977 - val_acc: 0.6875
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.1991 - acc: 0.9300 - val_loss: 1.1592 - val_acc: 0.6250
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.1606 - acc: 0.9350 - val_loss: 0.5560 - val_acc: 0.8125
Epoch 17/30
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7/7 [=====] - 0s 31ms/step - loss: 0.2063 - acc: 0.9150 - val_loss: 0.5460 - val_acc: 0.8125
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.1847 - acc: 0.9400 - val_loss: 0.9563 - val_acc: 0.6875
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1276 - acc: 0.9600 - val_loss: 0.7851 - val_acc: 0.7500
Epoch 20/30
7/7 [=====] - 0s 30ms/step - loss: 0.1138 - acc: 0.9550 - val_loss: 1.5422 - val_acc: 0.6250
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.1780 - acc: 0.9300 - val_loss: 0.6191 - val_acc: 0.7500
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.0917 - acc: 0.9650 - val_loss: 1.0802 - val_acc: 0.6875
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.0913 - acc: 0.9700 - val_loss: 0.6562 - val_acc: 0.8125
Epoch 24/30
7/7 [=====] - 0s 30ms/step - loss: 0.0796 - acc: 0.9700 - val_loss: 1.5233 - val_acc: 0.6250
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.1013 - acc: 0.9700 - val_loss: 0.5655 - val_acc: 0.8750
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.1018 - acc: 0.9600 - val_loss: 1.0359 - val_acc: 0.6875
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.0614 - acc: 0.9900 - val_loss: 0.7048 - val_acc: 0.7500
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.0621 - acc: 0.9800 - val_loss: 1.2211 - val_acc: 0.7500
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.0426 - acc: 0.9850 - val_loss: 1.0925 - val_acc: 0.7500
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0558 - acc: 0.9800 - val_loss: 1.4091 - val_acc: 0.6875
43%|██████| 41/96 [06:08<08:02, 8.77s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6618 - acc: 0.6000 - val_loss: 0.7274 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6185 - acc: 0.7200 - val_loss: 0.7525 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5877 - acc: 0.7200 - val_loss: 0.7859 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.6256 - acc: 0.7200 - val_loss: 0.7652 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.6107 - acc: 0.7200 - val_loss: 0.7213 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.6041 - acc: 0.7200 - val_loss: 0.7731 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.5831 - acc: 0.7200 - val_loss: 0.8077 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5889 - acc: 0.7200 - val_loss: 0.8058 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5962 - acc: 0.7200 - val_loss: 0.7954 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5877 - acc: 0.7200 - val_loss: 0.7720 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.5979 - acc: 0.7200 - val_loss: 0.7496 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5667 - acc: 0.7200 - val_loss: 0.7577 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5675 - acc: 0.7200 - val_loss: 0.7688 - val_acc: 0.
```



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5000
Epoch 14/30
7/7 [=====] - 0s 31ms/step - loss: 0.5520 - acc: 0.7200 - val_loss: 0.7638 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 31ms/step - loss: 0.5648 - acc: 0.7150 - val_loss: 0.7631 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.5573 - acc: 0.7250 - val_loss: 0.7937 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5494 - acc: 0.7200 - val_loss: 0.8748 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 31ms/step - loss: 0.5526 - acc: 0.7200 - val_loss: 0.7742 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5513 - acc: 0.7200 - val_loss: 0.7973 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.5420 - acc: 0.7250 - val_loss: 0.8466 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5381 - acc: 0.7200 - val_loss: 0.7700 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 30ms/step - loss: 0.5448 - acc: 0.7150 - val_loss: 0.6998 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.5313 - acc: 0.7250 - val_loss: 0.6778 - val_acc: 0.
6250
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5266 - acc: 0.7450 - val_loss: 0.6908 - val_acc: 0.
5625
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.5149 - acc: 0.7500 - val_loss: 0.8312 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.5284 - acc: 0.7300 - val_loss: 0.8074 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5210 - acc: 0.7250 - val_loss: 0.7770 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.5089 - acc: 0.7200 - val_loss: 0.7902 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 30ms/step - loss: 0.5035 - acc: 0.7400 - val_loss: 0.7661 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.4986 - acc: 0.7450 - val_loss: 0.8719 - val_acc: 0.
5000
44%|██████    | 42/96 [06:17<07:51, 8.72s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.7831 - acc: 0.5750 - val_loss: 0.8455 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.5643 - acc: 0.7500 - val_loss: 0.7908 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.4797 - acc: 0.7450 - val_loss: 0.7397 - val_acc: 0.
6250
Epoch 4/30
7/7 [=====] - 0s 31ms/step - loss: 0.3832 - acc: 0.8250 - val_loss: 0.6413 - val_acc: 0.
6875
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.3561 - acc: 0.8150 - val_loss: 0.5358 - val_acc: 0.
7500
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.3124 - acc: 0.8650 - val_loss: 0.8005 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.2576 - acc: 0.8800 - val_loss: 0.4260 - val_acc: 0.
8125
Epoch 8/30
7/7 [=====] - 0s 31ms/step - loss: 0.3079 - acc: 0.8800 - val_loss: 0.9226 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.2100 - acc: 0.9350 - val_loss: 0.4683 - val_acc: 0.
8750
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Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.1694 - acc: 0.9450 - val_loss: 0.5391 - val_acc: 0.7500
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.1411 - acc: 0.9600 - val_loss: 0.8476 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.1411 - acc: 0.9600 - val_loss: 0.4836 - val_acc: 0.8750
Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.1068 - acc: 0.9600 - val_loss: 0.4983 - val_acc: 0.8750
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.0903 - acc: 0.9700 - val_loss: 0.5399 - val_acc: 0.8125
Epoch 15/30
7/7 [=====] - 0s 30ms/step - loss: 0.0786 - acc: 0.9750 - val_loss: 0.6826 - val_acc: 0.8125
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.0675 - acc: 0.9750 - val_loss: 0.4825 - val_acc: 0.7500
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.0786 - acc: 0.9650 - val_loss: 0.5099 - val_acc: 0.8125
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.1082 - acc: 0.9650 - val_loss: 0.6482 - val_acc: 0.8125
Epoch 19/30
7/7 [=====] - 0s 30ms/step - loss: 0.0507 - acc: 0.9950 - val_loss: 0.9362 - val_acc: 0.7500
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.0460 - acc: 0.9900 - val_loss: 0.7608 - val_acc: 0.7500
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.0516 - acc: 0.9850 - val_loss: 0.9878 - val_acc: 0.6875
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.0368 - acc: 0.9900 - val_loss: 0.6756 - val_acc: 0.8125
Epoch 23/30
7/7 [=====] - 0s 31ms/step - loss: 0.0249 - acc: 0.9950 - val_loss: 0.9088 - val_acc: 0.7500
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.0157 - acc: 1.0000 - val_loss: 0.9673 - val_acc: 0.7500
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.0123 - acc: 1.0000 - val_loss: 1.1125 - val_acc: 0.7500
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0115 - acc: 1.0000 - val_loss: 1.0292 - val_acc: 0.7500
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0097 - acc: 1.0000 - val_loss: 0.8676 - val_acc: 0.7500
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0066 - acc: 1.0000 - val_loss: 1.2538 - val_acc: 0.6875
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.0071 - acc: 1.0000 - val_loss: 0.9753 - val_acc: 0.7500
Epoch 30/30
7/7 [=====] - 0s 30ms/step - loss: 0.0052 - acc: 1.0000 - val_loss: 1.0863 - val_acc: 0.7500
45%|██████| 43/96 [06:25<07:42, 8.72s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6290 - acc: 0.6550 - val_loss: 0.8153 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 29ms/step - loss: 0.6090 - acc: 0.7200 - val_loss: 0.7898 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.5926 - acc: 0.7200 - val_loss: 0.8065 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5924 - acc: 0.7200 - val_loss: 0.7954 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5931 - acc: 0.7200 - val_loss: 0.7809 - val_acc: 0.5000
Epoch 6/30

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7/7 [=====] - 0s 32ms/step - loss: 0.5842 - acc: 0.7200 - val_loss: 0.7782 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5926 - acc: 0.7200 - val_loss: 0.7345 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.5833 - acc: 0.7200 - val_loss: 0.7802 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 30ms/step - loss: 0.5738 - acc: 0.7200 - val_loss: 0.7198 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5759 - acc: 0.7200 - val_loss: 0.7790 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5651 - acc: 0.7200 - val_loss: 0.9232 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.5696 - acc: 0.7200 - val_loss: 0.7494 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 30ms/step - loss: 0.5680 - acc: 0.7200 - val_loss: 0.7617 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.5579 - acc: 0.7200 - val_loss: 0.8205 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5524 - acc: 0.7200 - val_loss: 0.8893 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5581 - acc: 0.7200 - val_loss: 0.9080 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 31ms/step - loss: 0.5481 - acc: 0.7200 - val_loss: 0.9143 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5472 - acc: 0.7200 - val_loss: 0.7819 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5466 - acc: 0.7200 - val_loss: 0.6708 - val_acc: 0.
6250
Epoch 20/30
7/7 [=====] - 0s 30ms/step - loss: 0.5371 - acc: 0.7300 - val_loss: 0.7690 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5295 - acc: 0.7150 - val_loss: 0.8356 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.5240 - acc: 0.7200 - val_loss: 0.7296 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.5149 - acc: 0.7350 - val_loss: 0.7597 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 31ms/step - loss: 0.5057 - acc: 0.7300 - val_loss: 0.6492 - val_acc: 0.
6250
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5073 - acc: 0.7600 - val_loss: 0.7519 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.4977 - acc: 0.7400 - val_loss: 0.8585 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.5062 - acc: 0.7600 - val_loss: 0.7669 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 30ms/step - loss: 0.4844 - acc: 0.7400 - val_loss: 0.6680 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.4903 - acc: 0.7400 - val_loss: 0.9413 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.4637 - acc: 0.7350 - val_loss: 0.6494 - val_acc: 0.
6250
46%[██████] | 44/96 [06:34<07:32, 8.70s/it]
Epoch 1/30
7/7 [=====] - 0s 43ms/step - loss: 0.6739 - acc: 0.6500 - val_loss: 1.0943 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.5631 - acc: 0.7300 - val_loss: 0.6165 - val_acc: 0.
6875
```

Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.4801 - acc: 0.7600 - val_loss: 0.6735 - val_acc: 0.6250
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.4098 - acc: 0.8200 - val_loss: 0.6928 - val_acc: 0.6875
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.3516 - acc: 0.8450 - val_loss: 0.8235 - val_acc: 0.6250
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.4745 - acc: 0.8150 - val_loss: 0.5070 - val_acc: 0.7500
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.4241 - acc: 0.7850 - val_loss: 0.9319 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.3430 - acc: 0.8300 - val_loss: 0.5608 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.2756 - acc: 0.8850 - val_loss: 0.5209 - val_acc: 0.8125
Epoch 10/30
7/7 [=====] - 0s 31ms/step - loss: 0.2313 - acc: 0.9200 - val_loss: 0.9660 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.2327 - acc: 0.8850 - val_loss: 0.4912 - val_acc: 0.7500
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.1731 - acc: 0.9400 - val_loss: 0.6875 - val_acc: 0.7500
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.1471 - acc: 0.9450 - val_loss: 0.4981 - val_acc: 0.8125
Epoch 14/30
7/7 [=====] - 0s 31ms/step - loss: 0.1448 - acc: 0.9550 - val_loss: 0.7793 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.1142 - acc: 0.9700 - val_loss: 0.5656 - val_acc: 0.7500
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.1140 - acc: 0.9750 - val_loss: 0.7479 - val_acc: 0.7500
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.0826 - acc: 0.9800 - val_loss: 0.7273 - val_acc: 0.7500
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.0774 - acc: 0.9750 - val_loss: 0.9088 - val_acc: 0.6875
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.0889 - acc: 0.9650 - val_loss: 0.5628 - val_acc: 0.8125
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.0675 - acc: 0.9900 - val_loss: 0.8290 - val_acc: 0.7500
Epoch 21/30
7/7 [=====] - 0s 31ms/step - loss: 0.0489 - acc: 0.9900 - val_loss: 0.7868 - val_acc: 0.7500
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.0388 - acc: 1.0000 - val_loss: 1.1535 - val_acc: 0.6250
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.0339 - acc: 0.9900 - val_loss: 0.7687 - val_acc: 0.7500
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0295 - acc: 0.9900 - val_loss: 0.9314 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.0327 - acc: 0.9950 - val_loss: 0.9622 - val_acc: 0.6875
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0269 - acc: 1.0000 - val_loss: 0.9420 - val_acc: 0.7500
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.0353 - acc: 0.9900 - val_loss: 1.0838 - val_acc: 0.6875
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.0191 - acc: 1.0000 - val_loss: 1.2420 - val_acc: 0.6875
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0111 - acc: 1.0000 - val_loss: 0.7715 - val_acc: 0.7500

Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.0120 - acc: 1.0000 - val_loss: 1.1975 - val_acc: 0.6875
47%|██████| 45/96 [06:43<07:25, 8.73s/it]

Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6325 - acc: 0.6700 - val_loss: 0.7380 - val_acc: 0.5000

Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.5975 - acc: 0.7200 - val_loss: 0.7458 - val_acc: 0.5000

Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.5963 - acc: 0.7200 - val_loss: 0.7576 - val_acc: 0.5000

Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5922 - acc: 0.7200 - val_loss: 0.7712 - val_acc: 0.5000

Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5807 - acc: 0.7200 - val_loss: 0.7363 - val_acc: 0.5000

Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5882 - acc: 0.7200 - val_loss: 0.7375 - val_acc: 0.5000

Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.5843 - acc: 0.7200 - val_loss: 0.8057 - val_acc: 0.5000

Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5688 - acc: 0.7200 - val_loss: 0.7580 - val_acc: 0.5000

Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5725 - acc: 0.7200 - val_loss: 0.7708 - val_acc: 0.5000

Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.5579 - acc: 0.7200 - val_loss: 0.8000 - val_acc: 0.5000

Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.5510 - acc: 0.7200 - val_loss: 0.7780 - val_acc: 0.5000

Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.5495 - acc: 0.7200 - val_loss: 0.7845 - val_acc: 0.5000

Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5528 - acc: 0.7200 - val_loss: 0.7783 - val_acc: 0.5000

Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.5381 - acc: 0.7200 - val_loss: 0.8500 - val_acc: 0.5000

Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.5418 - acc: 0.7200 - val_loss: 0.8873 - val_acc: 0.5000

Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.5340 - acc: 0.7200 - val_loss: 0.8697 - val_acc: 0.5000

Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.5352 - acc: 0.7200 - val_loss: 0.6938 - val_acc: 0.5000

Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.5261 - acc: 0.7300 - val_loss: 0.6965 - val_acc: 0.5000

Epoch 19/30
7/7 [=====] - 0s 36ms/step - loss: 0.5312 - acc: 0.7300 - val_loss: 0.7942 - val_acc: 0.5000

Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.5147 - acc: 0.7200 - val_loss: 0.7195 - val_acc: 0.5000

Epoch 21/30
7/7 [=====] - 0s 39ms/step - loss: 0.5093 - acc: 0.7500 - val_loss: 0.7656 - val_acc: 0.5000

Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.5112 - acc: 0.7300 - val_loss: 0.6487 - val_acc: 0.6250

Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.4966 - acc: 0.7750 - val_loss: 0.8604 - val_acc: 0.5000

Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.4876 - acc: 0.7400 - val_loss: 0.7480 - val_acc: 0.5000

Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.4840 - acc: 0.7350 - val_loss: 0.7808 - val_acc: 0.5000

Epoch 26/30

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7/7 [=====] - 0s 34ms/step - loss: 0.4730 - acc: 0.7550 - val_loss: 0.6642 - val_acc: 0.
6250
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.4650 - acc: 0.7750 - val_loss: 0.8101 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.4604 - acc: 0.7650 - val_loss: 0.6012 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.4685 - acc: 0.7950 - val_loss: 0.9153 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.4615 - acc: 0.7550 - val_loss: 0.6838 - val_acc: 0.
6250
48%|██████| 46/96 [06:52<07:21, 8.82s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.7426 - acc: 0.6200 - val_loss: 1.1318 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 38ms/step - loss: 0.6113 - acc: 0.7250 - val_loss: 0.6878 - val_acc: 0.
6250
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5329 - acc: 0.7250 - val_loss: 0.6915 - val_acc: 0.
6250
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.4385 - acc: 0.7900 - val_loss: 0.6295 - val_acc: 0.
6250
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.3625 - acc: 0.8650 - val_loss: 1.2921 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 37ms/step - loss: 0.4072 - acc: 0.7850 - val_loss: 1.3222 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.3550 - acc: 0.8700 - val_loss: 0.4656 - val_acc: 0.
8125
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.2960 - acc: 0.8800 - val_loss: 0.8861 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.2557 - acc: 0.8900 - val_loss: 0.6145 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.2760 - acc: 0.8700 - val_loss: 0.4934 - val_acc: 0.
8125
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.2707 - acc: 0.9100 - val_loss: 0.4550 - val_acc: 0.
8750
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.2023 - acc: 0.9350 - val_loss: 0.7872 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.1450 - acc: 0.9400 - val_loss: 0.4086 - val_acc: 0.
9375
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.1330 - acc: 0.9450 - val_loss: 1.0463 - val_acc: 0.
6250
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.1370 - acc: 0.9450 - val_loss: 0.4705 - val_acc: 0.
8750
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.1000 - acc: 0.9750 - val_loss: 0.6456 - val_acc: 0.
7500
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.0858 - acc: 0.9800 - val_loss: 0.5741 - val_acc: 0.
7500
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.0862 - acc: 0.9800 - val_loss: 0.8595 - val_acc: 0.
7500
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1029 - acc: 0.9500 - val_loss: 0.3908 - val_acc: 0.
9375
Epoch 20/30
7/7 [=====] - 0s 37ms/step - loss: 0.0954 - acc: 0.9600 - val_loss: 0.8802 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.0770 - acc: 0.9750 - val_loss: 0.4737 - val_acc: 0.
8750
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.0513 - acc: 0.9900 - val_loss: 0.7604 - val_acc: 0.
```

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7500
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0496 - acc: 0.9850 - val_loss: 0.8064 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0356 - acc: 0.9950 - val_loss: 0.6382 - val_acc: 0.
7500
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.0316 - acc: 0.9950 - val_loss: 0.8902 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0213 - acc: 1.0000 - val_loss: 0.5398 - val_acc: 0.
8750
Epoch 27/30
7/7 [=====] - 0s 38ms/step - loss: 0.0212 - acc: 1.0000 - val_loss: 0.7479 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0154 - acc: 1.0000 - val_loss: 0.9670 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.0123 - acc: 1.0000 - val_loss: 0.9206 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.0140 - acc: 1.0000 - val_loss: 0.8855 - val_acc: 0.
7500
49%|██████| 47/96 [07:01<07:17, 8.92s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6631 - acc: 0.6100 - val_loss: 0.7321 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.5970 - acc: 0.7200 - val_loss: 0.8376 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.6032 - acc: 0.7200 - val_loss: 0.6916 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.6045 - acc: 0.7100 - val_loss: 0.7450 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5849 - acc: 0.7250 - val_loss: 0.8240 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 38ms/step - loss: 0.5773 - acc: 0.7200 - val_loss: 0.8325 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.5841 - acc: 0.7200 - val_loss: 0.7907 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5932 - acc: 0.7200 - val_loss: 0.7589 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.5762 - acc: 0.7200 - val_loss: 0.7870 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 31ms/step - loss: 0.5796 - acc: 0.7200 - val_loss: 0.7338 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 31ms/step - loss: 0.5616 - acc: 0.7250 - val_loss: 0.7412 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5628 - acc: 0.7200 - val_loss: 0.6906 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5616 - acc: 0.7350 - val_loss: 0.8658 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.5567 - acc: 0.7200 - val_loss: 0.7233 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.5548 - acc: 0.7200 - val_loss: 0.7916 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5570 - acc: 0.7200 - val_loss: 0.7043 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5378 - acc: 0.7200 - val_loss: 0.7606 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5424 - acc: 0.7250 - val_loss: 0.7231 - val_acc: 0.
5000
```

```
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5453 - acc: 0.7150 - val_loss: 0.6521 - val_acc: 0.6250
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5401 - acc: 0.7600 - val_loss: 0.8506 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5287 - acc: 0.7200 - val_loss: 0.7045 - val_acc: 0.5625
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.5308 - acc: 0.7250 - val_loss: 0.6985 - val_acc: 0.6250
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.5246 - acc: 0.7550 - val_loss: 0.6922 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.5018 - acc: 0.7550 - val_loss: 0.8937 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.5153 - acc: 0.7250 - val_loss: 0.7873 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.5216 - acc: 0.7150 - val_loss: 0.6826 - val_acc: 0.6250
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.5156 - acc: 0.7450 - val_loss: 0.8861 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.5082 - acc: 0.7200 - val_loss: 0.8215 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.4947 - acc: 0.7600 - val_loss: 1.0250 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.5084 - acc: 0.7550 - val_loss: 0.6698 - val_acc: 0.6250
50%|██████| 48/96 [07:10<07:07, 8.91s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6419 - acc: 0.7200 - val_loss: 0.7202 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6025 - acc: 0.7200 - val_loss: 0.8030 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5826 - acc: 0.7200 - val_loss: 0.9556 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.6022 - acc: 0.7200 - val_loss: 0.6809 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5569 - acc: 0.7300 - val_loss: 0.9466 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 37ms/step - loss: 0.5660 - acc: 0.7200 - val_loss: 0.7052 - val_acc: 0.5625
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5117 - acc: 0.7200 - val_loss: 0.6600 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 37ms/step - loss: 0.4526 - acc: 0.8000 - val_loss: 0.6396 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 38ms/step - loss: 0.3741 - acc: 0.8650 - val_loss: 0.5393 - val_acc: 0.8125
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.3688 - acc: 0.8300 - val_loss: 0.8186 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.3001 - acc: 0.8650 - val_loss: 1.0607 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 36ms/step - loss: 0.3119 - acc: 0.8700 - val_loss: 0.7614 - val_acc: 0.5625
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.2499 - acc: 0.8900 - val_loss: 1.4321 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.3518 - acc: 0.8350 - val_loss: 0.4881 - val_acc: 0.8750
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.2480 - acc: 0.9200 - val_loss: 0.9214 - val_acc: 0.
```



```
6250
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.2200 - acc: 0.8900 - val_loss: 0.5313 - val_acc: 0.
7500
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.1809 - acc: 0.9300 - val_loss: 0.5415 - val_acc: 0.
7500
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.1772 - acc: 0.9250 - val_loss: 0.4454 - val_acc: 0.
8750
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1935 - acc: 0.9400 - val_loss: 0.5436 - val_acc: 0.
7500
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.1969 - acc: 0.9300 - val_loss: 0.8245 - val_acc: 0.
6250
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.1556 - acc: 0.9500 - val_loss: 0.5951 - val_acc: 0.
7500
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.1233 - acc: 0.9650 - val_loss: 0.5285 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 37ms/step - loss: 0.1046 - acc: 0.9700 - val_loss: 0.4767 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.1060 - acc: 0.9600 - val_loss: 0.4904 - val_acc: 0.
7500
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.0923 - acc: 0.9700 - val_loss: 0.4794 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0891 - acc: 0.9650 - val_loss: 1.0007 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.0829 - acc: 0.9700 - val_loss: 0.5007 - val_acc: 0.
6875
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0904 - acc: 0.9800 - val_loss: 0.5512 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.0801 - acc: 0.9700 - val_loss: 0.6710 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.0746 - acc: 0.9750 - val_loss: 1.1663 - val_acc: 0.
7500
51%|██████    | 49/96 [07:19<07:03, 9.02s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6876 - acc: 0.5650 - val_loss: 0.7082 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 31ms/step - loss: 0.6288 - acc: 0.7200 - val_loss: 0.7494 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.6074 - acc: 0.7200 - val_loss: 0.7504 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 37ms/step - loss: 0.6072 - acc: 0.7200 - val_loss: 0.7825 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 40ms/step - loss: 0.5950 - acc: 0.7200 - val_loss: 0.7495 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5906 - acc: 0.7200 - val_loss: 0.8332 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 36ms/step - loss: 0.5896 - acc: 0.7200 - val_loss: 0.8094 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 37ms/step - loss: 0.5819 - acc: 0.7200 - val_loss: 0.7684 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5809 - acc: 0.7200 - val_loss: 0.8607 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 35ms/step - loss: 0.5906 - acc: 0.7200 - val_loss: 0.7295 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5873 - acc: 0.7200 - val_loss: 0.7367 - val_acc: 0.
5000
Epoch 12/30
```

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7/7 [=====] - 0s 36ms/step - loss: 0.5832 - acc: 0.7200 - val_loss: 0.8641 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.5756 - acc: 0.7200 - val_loss: 0.8205 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.5657 - acc: 0.7200 - val_loss: 0.8094 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 37ms/step - loss: 0.5692 - acc: 0.7200 - val_loss: 0.7735 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.5662 - acc: 0.7200 - val_loss: 0.8179 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.5660 - acc: 0.7200 - val_loss: 0.6811 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.5557 - acc: 0.7300 - val_loss: 0.7989 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 37ms/step - loss: 0.5569 - acc: 0.7200 - val_loss: 0.7103 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.5569 - acc: 0.7200 - val_loss: 0.8230 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.5615 - acc: 0.7200 - val_loss: 0.6685 - val_acc: 0.
6250
Epoch 22/30
7/7 [=====] - 0s 39ms/step - loss: 0.5380 - acc: 0.7650 - val_loss: 0.7296 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.5458 - acc: 0.7200 - val_loss: 0.6977 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.5336 - acc: 0.7250 - val_loss: 0.9046 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 37ms/step - loss: 0.5257 - acc: 0.7200 - val_loss: 0.6940 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.5285 - acc: 0.7450 - val_loss: 0.9731 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.5297 - acc: 0.7200 - val_loss: 0.6587 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.5137 - acc: 0.7550 - val_loss: 1.1460 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 42ms/step - loss: 0.5499 - acc: 0.7400 - val_loss: 0.8130 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.4975 - acc: 0.7450 - val_loss: 0.8198 - val_acc: 0.
5000
52%|██████    | 50/96 [07:29<07:00, 9.14s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6233 - acc: 0.6800 - val_loss: 0.7357 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.6004 - acc: 0.7200 - val_loss: 0.7232 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 41ms/step - loss: 0.5942 - acc: 0.7300 - val_loss: 0.9717 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5934 - acc: 0.7200 - val_loss: 0.6963 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 37ms/step - loss: 0.6276 - acc: 0.7150 - val_loss: 0.7809 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.6090 - acc: 0.7200 - val_loss: 0.7006 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 36ms/step - loss: 0.5640 - acc: 0.7200 - val_loss: 0.7503 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.4934 - acc: 0.7500 - val_loss: 1.2371 - val_acc: 0.
```

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5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5707 - acc: 0.7750 - val_loss: 0.7771 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 38ms/step - loss: 0.4931 - acc: 0.7250 - val_loss: 0.7161 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.4032 - acc: 0.8450 - val_loss: 0.8675 - val_acc: 0.
6250
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.3494 - acc: 0.8450 - val_loss: 0.5944 - val_acc: 0.
7500
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.3361 - acc: 0.8500 - val_loss: 0.6542 - val_acc: 0.
6250
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.2759 - acc: 0.8600 - val_loss: 0.8635 - val_acc: 0.
6250
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.3205 - acc: 0.8400 - val_loss: 1.0372 - val_acc: 0.
5625
Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.2382 - acc: 0.9050 - val_loss: 0.5495 - val_acc: 0.
6875
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.2989 - acc: 0.8750 - val_loss: 1.0926 - val_acc: 0.
5625
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.2267 - acc: 0.9000 - val_loss: 0.6712 - val_acc: 0.
7500
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.2405 - acc: 0.9150 - val_loss: 0.8139 - val_acc: 0.
6250
Epoch 20/30
7/7 [=====] - 0s 39ms/step - loss: 0.2141 - acc: 0.9150 - val_loss: 0.7998 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.2020 - acc: 0.8950 - val_loss: 0.6290 - val_acc: 0.
8125
Epoch 22/30
7/7 [=====] - 0s 37ms/step - loss: 0.1524 - acc: 0.9300 - val_loss: 0.6249 - val_acc: 0.
8125
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.1324 - acc: 0.9500 - val_loss: 2.0134 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 37ms/step - loss: 0.1972 - acc: 0.9300 - val_loss: 0.6213 - val_acc: 0.
8125
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.2126 - acc: 0.8900 - val_loss: 0.8041 - val_acc: 0.
6875
Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.1515 - acc: 0.9400 - val_loss: 0.7346 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 37ms/step - loss: 0.1448 - acc: 0.9400 - val_loss: 0.9245 - val_acc: 0.
6875
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.1120 - acc: 0.9650 - val_loss: 1.0873 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.1353 - acc: 0.9550 - val_loss: 1.0172 - val_acc: 0.
6875
Epoch 30/30
7/7 [=====] - 0s 37ms/step - loss: 0.1036 - acc: 0.9600 - val_loss: 1.1325 - val_acc: 0.
6875
53%|███████| 51/96 [07:38<06:55, 9.23s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.7046 - acc: 0.4750 - val_loss: 0.6973 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6547 - acc: 0.7200 - val_loss: 0.7183 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.6235 - acc: 0.7200 - val_loss: 0.7207 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.6132 - acc: 0.7200 - val_loss: 0.7574 - val_acc: 0.
5000
```

Epoch 5/30
7/7 [=====] - 0s 39ms/step - loss: 0.6040 - acc: 0.7200 - val_loss: 0.7492 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5953 - acc: 0.7200 - val_loss: 0.7692 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5914 - acc: 0.7200 - val_loss: 0.8078 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.6095 - acc: 0.7200 - val_loss: 0.7439 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 40ms/step - loss: 0.6024 - acc: 0.7200 - val_loss: 0.7356 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.6010 - acc: 0.7200 - val_loss: 0.7890 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 38ms/step - loss: 0.5867 - acc: 0.7200 - val_loss: 0.7831 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 40ms/step - loss: 0.5954 - acc: 0.7200 - val_loss: 0.7681 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.5783 - acc: 0.7200 - val_loss: 0.8203 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.5832 - acc: 0.7200 - val_loss: 0.8233 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 38ms/step - loss: 0.5863 - acc: 0.7200 - val_loss: 0.8318 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.5844 - acc: 0.7200 - val_loss: 0.7251 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 37ms/step - loss: 0.5932 - acc: 0.7200 - val_loss: 0.7587 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.5836 - acc: 0.7200 - val_loss: 0.8298 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.5803 - acc: 0.7200 - val_loss: 0.7578 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5834 - acc: 0.7200 - val_loss: 0.7349 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 34ms/step - loss: 0.5838 - acc: 0.7200 - val_loss: 0.8038 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 43ms/step - loss: 0.5854 - acc: 0.7200 - val_loss: 0.8496 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.5813 - acc: 0.7200 - val_loss: 0.7513 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 38ms/step - loss: 0.5770 - acc: 0.7200 - val_loss: 0.7846 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 35ms/step - loss: 0.5801 - acc: 0.7200 - val_loss: 0.7625 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 35ms/step - loss: 0.5739 - acc: 0.7200 - val_loss: 0.7496 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.5728 - acc: 0.7200 - val_loss: 0.7443 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.5623 - acc: 0.7250 - val_loss: 0.7376 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 41ms/step - loss: 0.5686 - acc: 0.7200 - val_loss: 0.8294 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.5622 - acc: 0.7200 - val_loss: 0.7474 - val_acc: 0.
5000
54%|██████| 52/96 [07:48<06:49, 9.32s/it]
Epoch 1/30

7/7 [=====] - 0s 46ms/step - loss: 0.6564 - acc: 0.7250 - val_loss: 0.7671 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.6207 - acc: 0.7150 - val_loss: 0.7395 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 38ms/step - loss: 0.6016 - acc: 0.7200 - val_loss: 0.8324 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5828 - acc: 0.7200 - val_loss: 0.7397 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5330 - acc: 0.7200 - val_loss: 0.7416 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5211 - acc: 0.7500 - val_loss: 0.9575 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 39ms/step - loss: 0.5249 - acc: 0.7500 - val_loss: 0.7776 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.4374 - acc: 0.8150 - val_loss: 1.1509 - val_acc: 0.
5625
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5300 - acc: 0.7150 - val_loss: 1.0503 - val_acc: 0.
5625
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.4283 - acc: 0.8050 - val_loss: 0.9534 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.3707 - acc: 0.8050 - val_loss: 0.5657 - val_acc: 0.
8750
Epoch 12/30
7/7 [=====] - 0s 38ms/step - loss: 0.3664 - acc: 0.8500 - val_loss: 0.9944 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.3318 - acc: 0.8600 - val_loss: 0.6782 - val_acc: 0.
6250
Epoch 14/30
7/7 [=====] - 0s 39ms/step - loss: 0.3045 - acc: 0.8600 - val_loss: 0.6232 - val_acc: 0.
6875
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.2710 - acc: 0.9000 - val_loss: 0.6494 - val_acc: 0.
6875
Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.2389 - acc: 0.9100 - val_loss: 0.7462 - val_acc: 0.
6875
Epoch 17/30
7/7 [=====] - 0s 42ms/step - loss: 0.1971 - acc: 0.9300 - val_loss: 0.7076 - val_acc: 0.
7500
Epoch 18/30
7/7 [=====] - 0s 37ms/step - loss: 0.1978 - acc: 0.9150 - val_loss: 0.5121 - val_acc: 0.
8750
Epoch 19/30
7/7 [=====] - 0s 42ms/step - loss: 0.1490 - acc: 0.9600 - val_loss: 0.8815 - val_acc: 0.
6875
Epoch 20/30
7/7 [=====] - 0s 40ms/step - loss: 0.1468 - acc: 0.9600 - val_loss: 0.8658 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.1484 - acc: 0.9350 - val_loss: 1.9005 - val_acc: 0.
5625
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.2897 - acc: 0.8700 - val_loss: 0.8160 - val_acc: 0.
6875
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.1889 - acc: 0.9150 - val_loss: 0.9572 - val_acc: 0.
6875
Epoch 24/30
7/7 [=====] - ETA: 0s - loss: 0.1717 - acc: 0.930 - 0s 39ms/step - loss: 0.1717 - acc:
0.9300 - val_loss: 1.8335 - val_acc: 0.6250
Epoch 25/30
7/7 [=====] - 0s 44ms/step - loss: 0.1809 - acc: 0.9350 - val_loss: 0.8370 - val_acc: 0.
6875
Epoch 26/30
7/7 [=====] - 0s 38ms/step - loss: 0.1423 - acc: 0.9400 - val_loss: 0.6156 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.1417 - acc: 0.9500 - val_loss: 1.1149 - val_acc: 0.
6875
Epoch 28/30

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7/7 [=====] - 0s 38ms/step - loss: 0.1196 - acc: 0.9550 - val_loss: 0.8715 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 38ms/step - loss: 0.1094 - acc: 0.9550 - val_loss: 0.6420 - val_acc: 0.
8750
Epoch 30/30
7/7 [=====] - 0s 38ms/step - loss: 0.1082 - acc: 0.9750 - val_loss: 2.3674 - val_acc: 0.
5625
55%|███████| 53/96 [07:57<06:46, 9.45s/it]
Epoch 1/30
7/7 [=====] - 0s 56ms/step - loss: 0.6756 - acc: 0.6000 - val_loss: 0.7142 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.6319 - acc: 0.7200 - val_loss: 0.7284 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 36ms/step - loss: 0.6169 - acc: 0.7200 - val_loss: 0.7186 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 40ms/step - loss: 0.6251 - acc: 0.7150 - val_loss: 0.7382 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.6135 - acc: 0.7200 - val_loss: 0.7700 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 38ms/step - loss: 0.6129 - acc: 0.7200 - val_loss: 0.7695 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 39ms/step - loss: 0.5956 - acc: 0.7200 - val_loss: 0.7754 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.5967 - acc: 0.7200 - val_loss: 0.8087 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.6108 - acc: 0.7200 - val_loss: 0.7765 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 35ms/step - loss: 0.5910 - acc: 0.7150 - val_loss: 0.8217 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.5920 - acc: 0.7200 - val_loss: 0.8572 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5920 - acc: 0.7200 - val_loss: 0.8840 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.5879 - acc: 0.7200 - val_loss: 0.8426 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 39ms/step - loss: 0.5797 - acc: 0.7200 - val_loss: 0.8024 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.5732 - acc: 0.7200 - val_loss: 0.8149 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 37ms/step - loss: 0.6000 - acc: 0.7200 - val_loss: 0.8457 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.6029 - acc: 0.7200 - val_loss: 0.7609 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.5908 - acc: 0.7100 - val_loss: 0.8315 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5882 - acc: 0.7200 - val_loss: 0.8511 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5908 - acc: 0.7250 - val_loss: 0.8522 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 40ms/step - loss: 0.5961 - acc: 0.7200 - val_loss: 0.7535 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.5722 - acc: 0.7200 - val_loss: 0.6978 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 38ms/step - loss: 0.5630 - acc: 0.7200 - val_loss: 0.7553 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 38ms/step - loss: 0.5708 - acc: 0.7150 - val_loss: 0.9244 - val_acc: 0.
5000
```

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Epoch 25/30
7/7 [=====] - 0s 38ms/step - loss: 0.5858 - acc: 0.7150 - val_loss: 0.8287 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 39ms/step - loss: 0.5677 - acc: 0.7200 - val_loss: 0.7541 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 38ms/step - loss: 0.5836 - acc: 0.7250 - val_loss: 0.7123 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5557 - acc: 0.7400 - val_loss: 0.6906 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.5647 - acc: 0.7100 - val_loss: 0.7076 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.5551 - acc: 0.7400 - val_loss: 0.7232 - val_acc: 0.5000
56%|██████| 54/96 [08:07<06:38, 9.50s/it]
Epoch 1/30
7/7 [=====] - 0s 50ms/step - loss: 0.6096 - acc: 0.7200 - val_loss: 0.6806 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 39ms/step - loss: 0.5487 - acc: 0.7200 - val_loss: 0.7706 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.4664 - acc: 0.7550 - val_loss: 0.9371 - val_acc: 0.6250
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.3942 - acc: 0.8150 - val_loss: 0.5198 - val_acc: 0.7500
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.3703 - acc: 0.7900 - val_loss: 0.6801 - val_acc: 0.6250
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.2824 - acc: 0.8950 - val_loss: 0.7181 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.2606 - acc: 0.9000 - val_loss: 0.6795 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.2759 - acc: 0.8450 - val_loss: 0.4959 - val_acc: 0.8125
Epoch 9/30
7/7 [=====] - 0s 38ms/step - loss: 0.1957 - acc: 0.9300 - val_loss: 0.4716 - val_acc: 0.8125
Epoch 10/30
7/7 [=====] - 0s 38ms/step - loss: 0.1782 - acc: 0.9500 - val_loss: 0.4855 - val_acc: 0.8125
Epoch 11/30
7/7 [=====] - 0s 37ms/step - loss: 0.1375 - acc: 0.9600 - val_loss: 0.8676 - val_acc: 0.5625
Epoch 12/30
7/7 [=====] - 0s 40ms/step - loss: 0.1340 - acc: 0.9650 - val_loss: 0.9839 - val_acc: 0.5625
Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.1228 - acc: 0.9650 - val_loss: 0.8052 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 39ms/step - loss: 0.1116 - acc: 0.9600 - val_loss: 0.5338 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 38ms/step - loss: 0.0768 - acc: 0.9800 - val_loss: 0.4686 - val_acc: 0.8750
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.0639 - acc: 0.9800 - val_loss: 0.8633 - val_acc: 0.7500
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.0518 - acc: 0.9800 - val_loss: 1.5096 - val_acc: 0.5625
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.0573 - acc: 0.9750 - val_loss: 1.4705 - val_acc: 0.6250
Epoch 19/30
7/7 [=====] - 0s 39ms/step - loss: 0.0631 - acc: 0.9800 - val_loss: 0.7384 - val_acc: 0.6875
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.0300 - acc: 0.9950 - val_loss: 0.6794 - val_acc: 0.7500
Epoch 21/30
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7/7 [=====] - 0s 39ms/step - loss: 0.0196 - acc: 1.0000 - val_loss: 1.0267 - val_acc: 0.
6875
Epoch 22/30
7/7 [=====] - 0s 43ms/step - loss: 0.0165 - acc: 1.0000 - val_loss: 1.2795 - val_acc: 0.
6250
Epoch 23/30
7/7 [=====] - 0s 38ms/step - loss: 0.0131 - acc: 1.0000 - val_loss: 0.6903 - val_acc: 0.
8125
Epoch 24/30
7/7 [=====] - 0s 39ms/step - loss: 0.0101 - acc: 1.0000 - val_loss: 0.9092 - val_acc: 0.
8125
Epoch 25/30
7/7 [=====] - 0s 42ms/step - loss: 0.0062 - acc: 1.0000 - val_loss: 0.9985 - val_acc: 0.
6875
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0057 - acc: 1.0000 - val_loss: 0.7597 - val_acc: 0.
8125
Epoch 27/30
7/7 [=====] - 0s 37ms/step - loss: 0.0056 - acc: 1.0000 - val_loss: 1.2126 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 39ms/step - loss: 0.0046 - acc: 1.0000 - val_loss: 1.0654 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.0038 - acc: 1.0000 - val_loss: 1.4004 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.0056 - acc: 1.0000 - val_loss: 1.5979 - val_acc: 0.
6250
57%|██████| 55/96 [08:17<06:32, 9.58s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6889 - acc: 0.5600 - val_loss: 0.8092 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 37ms/step - loss: 0.6014 - acc: 0.7200 - val_loss: 0.8743 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 39ms/step - loss: 0.5947 - acc: 0.7200 - val_loss: 0.7761 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.6018 - acc: 0.7200 - val_loss: 0.7461 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.5912 - acc: 0.7200 - val_loss: 0.8202 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 38ms/step - loss: 0.5836 - acc: 0.7200 - val_loss: 0.8315 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5812 - acc: 0.7200 - val_loss: 0.7967 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.5837 - acc: 0.7200 - val_loss: 0.8000 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5804 - acc: 0.7200 - val_loss: 0.6816 - val_acc: 0.
5625
Epoch 10/30
7/7 [=====] - 0s 38ms/step - loss: 0.5918 - acc: 0.7500 - val_loss: 0.8456 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.5791 - acc: 0.7200 - val_loss: 0.7461 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.5755 - acc: 0.7200 - val_loss: 0.7697 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.5704 - acc: 0.7200 - val_loss: 0.8187 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.5699 - acc: 0.7200 - val_loss: 0.6835 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5816 - acc: 0.7300 - val_loss: 0.7213 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.5745 - acc: 0.7200 - val_loss: 0.8175 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 38ms/step - loss: 0.5562 - acc: 0.7200 - val_loss: 0.7877 - val_acc: 0.
```



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5000
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.5680 - acc: 0.7200 - val_loss: 0.7572 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 37ms/step - loss: 0.5557 - acc: 0.7200 - val_loss: 0.7717 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 38ms/step - loss: 0.5578 - acc: 0.7200 - val_loss: 0.7825 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5409 - acc: 0.7200 - val_loss: 0.6898 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.5448 - acc: 0.7200 - val_loss: 0.7892 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.5354 - acc: 0.7200 - val_loss: 0.7723 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.5296 - acc: 0.7200 - val_loss: 0.6536 - val_acc: 0.
6250
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.5441 - acc: 0.7250 - val_loss: 0.6908 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 39ms/step - loss: 0.5461 - acc: 0.7250 - val_loss: 0.6598 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.5486 - acc: 0.7100 - val_loss: 0.6700 - val_acc: 0.
5625
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.5157 - acc: 0.7250 - val_loss: 0.7876 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.5195 - acc: 0.7200 - val_loss: 0.6658 - val_acc: 0.
5625
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.5080 - acc: 0.7400 - val_loss: 0.9520 - val_acc: 0.
5000
58%|██████    | 56/96 [08:26<06:21, 9.53s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6620 - acc: 0.6600 - val_loss: 0.6937 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.5880 - acc: 0.7200 - val_loss: 1.1690 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.6602 - acc: 0.7200 - val_loss: 0.7306 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5782 - acc: 0.7200 - val_loss: 0.8229 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.5635 - acc: 0.7200 - val_loss: 0.8626 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.5733 - acc: 0.7300 - val_loss: 0.6285 - val_acc: 0.
7500
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5283 - acc: 0.7650 - val_loss: 0.6866 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.4360 - acc: 0.8400 - val_loss: 0.8750 - val_acc: 0.
5625
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.3379 - acc: 0.8550 - val_loss: 0.8329 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 31ms/step - loss: 0.3180 - acc: 0.8550 - val_loss: 0.6415 - val_acc: 0.
5625
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.3058 - acc: 0.8700 - val_loss: 0.7901 - val_acc: 0.
6250
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.2274 - acc: 0.9100 - val_loss: 0.8627 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.2424 - acc: 0.8900 - val_loss: 0.4186 - val_acc: 0.
7500
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Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.2296 - acc: 0.9100 - val_loss: 0.7061 - val_acc: 0.
6875
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.1669 - acc: 0.9400 - val_loss: 0.4547 - val_acc: 0.
8125
Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.1752 - acc: 0.9250 - val_loss: 0.5329 - val_acc: 0.
8125
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.1547 - acc: 0.9500 - val_loss: 0.5366 - val_acc: 0.
7500
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.1544 - acc: 0.9550 - val_loss: 0.7871 - val_acc: 0.
6875
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1480 - acc: 0.9450 - val_loss: 0.5673 - val_acc: 0.
7500
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.1116 - acc: 0.9650 - val_loss: 0.4621 - val_acc: 0.
8125
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.1035 - acc: 0.9700 - val_loss: 0.3995 - val_acc: 0.
8750
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.1286 - acc: 0.9600 - val_loss: 0.4875 - val_acc: 0.
8125
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.0937 - acc: 0.9700 - val_loss: 0.8433 - val_acc: 0.
6875
Epoch 24/30
7/7 [=====] - 0s 31ms/step - loss: 0.0865 - acc: 0.9800 - val_loss: 0.4016 - val_acc: 0.
8125
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.0686 - acc: 0.9750 - val_loss: 1.3300 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0545 - acc: 0.9900 - val_loss: 0.3981 - val_acc: 0.
8125
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.1009 - acc: 0.9650 - val_loss: 0.6694 - val_acc: 0.
8125
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0718 - acc: 0.9750 - val_loss: 0.4019 - val_acc: 0.
8750
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.1105 - acc: 0.9550 - val_loss: 1.4678 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.1383 - acc: 0.9150 - val_loss: 0.3704 - val_acc: 0.
8125
59%|███████ | 57/96 [08:35<06:04, 9.35s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6445 - acc: 0.6900 - val_loss: 0.7432 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6035 - acc: 0.7200 - val_loss: 0.7170 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 37ms/step - loss: 0.6024 - acc: 0.7200 - val_loss: 0.7169 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 38ms/step - loss: 0.6007 - acc: 0.7200 - val_loss: 0.7758 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 46ms/step - loss: 0.6030 - acc: 0.7200 - val_loss: 0.7692 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5932 - acc: 0.7200 - val_loss: 0.7483 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 38ms/step - loss: 0.5857 - acc: 0.7200 - val_loss: 0.8241 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 39ms/step - loss: 0.5822 - acc: 0.7200 - val_loss: 0.7228 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5740 - acc: 0.7200 - val_loss: 0.8822 - val_acc: 0.
5000
Epoch 10/30

```
7/7 [=====] - 0s 38ms/step - loss: 0.6006 - acc: 0.7200 - val_loss: 0.7830 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 37ms/step - loss: 0.5803 - acc: 0.7200 - val_loss: 0.8418 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 38ms/step - loss: 0.5781 - acc: 0.7200 - val_loss: 0.7252 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.5731 - acc: 0.7200 - val_loss: 0.7507 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.5671 - acc: 0.7200 - val_loss: 0.7922 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.5691 - acc: 0.7200 - val_loss: 0.8988 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5606 - acc: 0.7200 - val_loss: 0.9396 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.5627 - acc: 0.7200 - val_loss: 0.7126 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 37ms/step - loss: 0.5514 - acc: 0.7250 - val_loss: 0.9816 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5702 - acc: 0.7200 - val_loss: 0.8247 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5623 - acc: 0.7200 - val_loss: 0.8381 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 37ms/step - loss: 0.5400 - acc: 0.7200 - val_loss: 0.7488 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 38ms/step - loss: 0.5352 - acc: 0.7200 - val_loss: 0.7935 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.5347 - acc: 0.7200 - val_loss: 0.6593 - val_acc: 0.
6250
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.5430 - acc: 0.7450 - val_loss: 0.8054 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 39ms/step - loss: 0.5280 - acc: 0.7300 - val_loss: 0.7549 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 35ms/step - loss: 0.5225 - acc: 0.7250 - val_loss: 0.7690 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 39ms/step - loss: 0.5147 - acc: 0.7200 - val_loss: 0.8728 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 36ms/step - loss: 0.5247 - acc: 0.7250 - val_loss: 0.7595 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.5112 - acc: 0.7400 - val_loss: 0.6965 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 37ms/step - loss: 0.5470 - acc: 0.6700 - val_loss: 0.7111 - val_acc: 0.
5625
60%|██████    | 58/96 [08:45<05:59, 9.45s/it]
Epoch 1/30
7/7 [=====] - 0s 50ms/step - loss: 0.7020 - acc: 0.4900 - val_loss: 0.8405 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6174 - acc: 0.7200 - val_loss: 0.7177 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 38ms/step - loss: 0.5866 - acc: 0.7250 - val_loss: 0.9123 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.5957 - acc: 0.7200 - val_loss: 0.7651 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.5812 - acc: 0.7200 - val_loss: 0.6984 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 37ms/step - loss: 0.5859 - acc: 0.7450 - val_loss: 0.7953 - val_acc: 0.
5000
```

Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.5235 - acc: 0.7200 - val_loss: 0.6754 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.4955 - acc: 0.7800 - val_loss: 0.9690 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.4362 - acc: 0.8150 - val_loss: 0.6825 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.3407 - acc: 0.8500 - val_loss: 0.5438 - val_acc: 0.7500
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.3196 - acc: 0.8750 - val_loss: 0.5656 - val_acc: 0.7500
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.2461 - acc: 0.9200 - val_loss: 0.5652 - val_acc: 0.7500
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.2016 - acc: 0.9200 - val_loss: 1.0205 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.2441 - acc: 0.9050 - val_loss: 0.6539 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 37ms/step - loss: 0.1739 - acc: 0.9200 - val_loss: 0.5373 - val_acc: 0.6875
Epoch 16/30
7/7 [=====] - 0s 38ms/step - loss: 0.2974 - acc: 0.8650 - val_loss: 1.1260 - val_acc: 0.6250
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.2103 - acc: 0.9300 - val_loss: 0.4769 - val_acc: 0.8125
Epoch 18/30
7/7 [=====] - 0s 39ms/step - loss: 0.2075 - acc: 0.9150 - val_loss: 0.4743 - val_acc: 0.8750
Epoch 19/30
7/7 [=====] - 0s 39ms/step - loss: 0.1833 - acc: 0.9500 - val_loss: 1.2349 - val_acc: 0.6250
Epoch 20/30
7/7 [=====] - 0s 37ms/step - loss: 0.1306 - acc: 0.9600 - val_loss: 0.4438 - val_acc: 0.8125
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.1590 - acc: 0.9350 - val_loss: 0.5461 - val_acc: 0.7500
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.1173 - acc: 0.9450 - val_loss: 0.9589 - val_acc: 0.6875
Epoch 23/30
7/7 [=====] - 0s 39ms/step - loss: 0.0984 - acc: 0.9600 - val_loss: 1.0814 - val_acc: 0.6875
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0755 - acc: 0.9700 - val_loss: 0.5827 - val_acc: 0.7500
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.1107 - acc: 0.9600 - val_loss: 0.7160 - val_acc: 0.7500
Epoch 26/30
7/7 [=====] - 0s 42ms/step - loss: 0.0718 - acc: 0.9800 - val_loss: 0.6556 - val_acc: 0.7500
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0717 - acc: 0.9750 - val_loss: 0.8413 - val_acc: 0.7500
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0506 - acc: 0.9850 - val_loss: 0.5404 - val_acc: 0.8125
Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.0609 - acc: 0.9800 - val_loss: 0.6603 - val_acc: 0.6875
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.0933 - acc: 0.9650 - val_loss: 1.7363 - val_acc: 0.6250
61%[██████████] | 59/96 [08:54<05:51, 9.50s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6762 - acc: 0.6550 - val_loss: 0.7081 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 30ms/step - loss: 0.6308 - acc: 0.7200 - val_loss: 0.7226 - val_acc: 0.5000
Epoch 3/30

7/7 [=====] - 0s 33ms/step - loss: 0.6157 - acc: 0.7200 - val_loss: 0.7563 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.6010 - acc: 0.7200 - val_loss: 0.7865 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.5994 - acc: 0.7200 - val_loss: 0.7859 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.6086 - acc: 0.7200 - val_loss: 0.8029 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5979 - acc: 0.7200 - val_loss: 0.8283 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 37ms/step - loss: 0.6049 - acc: 0.7200 - val_loss: 0.8158 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 31ms/step - loss: 0.6130 - acc: 0.7200 - val_loss: 0.8160 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.6059 - acc: 0.7200 - val_loss: 0.8193 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5982 - acc: 0.7200 - val_loss: 0.7776 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 36ms/step - loss: 0.5882 - acc: 0.7200 - val_loss: 0.8305 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.5905 - acc: 0.7200 - val_loss: 0.7841 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.6009 - acc: 0.7200 - val_loss: 0.7547 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.5909 - acc: 0.7200 - val_loss: 0.7818 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.5966 - acc: 0.7200 - val_loss: 0.7581 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5908 - acc: 0.7200 - val_loss: 0.7751 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5925 - acc: 0.7200 - val_loss: 0.7794 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 36ms/step - loss: 0.5805 - acc: 0.7200 - val_loss: 0.7624 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.5932 - acc: 0.7200 - val_loss: 0.7792 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5927 - acc: 0.7200 - val_loss: 0.7408 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.5701 - acc: 0.7200 - val_loss: 0.7369 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.5834 - acc: 0.7200 - val_loss: 0.7383 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.5773 - acc: 0.7200 - val_loss: 0.7437 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.5632 - acc: 0.7200 - val_loss: 0.7698 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.5945 - acc: 0.7200 - val_loss: 0.7056 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.5670 - acc: 0.7200 - val_loss: 0.8847 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.5814 - acc: 0.7200 - val_loss: 0.8272 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.5687 - acc: 0.7200 - val_loss: 0.7398 - val_acc: 0.
5000
Epoch 30/30

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7/7 [=====] - 0s 37ms/step - loss: 0.5624 - acc: 0.7200 - val_loss: 0.7425 - val_acc: 0.5000
62%|███████| 60/96 [09:03<05:36, 9.34s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6214 - acc: 0.6450 - val_loss: 0.8227 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 30ms/step - loss: 0.5858 - acc: 0.7200 - val_loss: 0.9776 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5617 - acc: 0.7250 - val_loss: 0.7365 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.4991 - acc: 0.7300 - val_loss: 0.7921 - val_acc: 0.6250
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.4508 - acc: 0.7600 - val_loss: 0.5952 - val_acc: 0.7500
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.4889 - acc: 0.7700 - val_loss: 0.8156 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.4251 - acc: 0.8450 - val_loss: 0.6454 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 36ms/step - loss: 0.3370 - acc: 0.8550 - val_loss: 0.5339 - val_acc: 0.7500
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.2988 - acc: 0.8850 - val_loss: 0.8943 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.2382 - acc: 0.9050 - val_loss: 0.6029 - val_acc: 0.7500
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.2200 - acc: 0.9100 - val_loss: 0.5544 - val_acc: 0.8125
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.1988 - acc: 0.9200 - val_loss: 0.4486 - val_acc: 0.8750
Epoch 13/30
7/7 [=====] - 0s 32ms/step - loss: 0.1861 - acc: 0.9350 - val_loss: 0.5483 - val_acc: 0.7500
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.1301 - acc: 0.9650 - val_loss: 0.5726 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.1389 - acc: 0.9500 - val_loss: 0.8691 - val_acc: 0.6875
Epoch 16/30
7/7 [=====] - 0s 31ms/step - loss: 0.1318 - acc: 0.9650 - val_loss: 0.4217 - val_acc: 0.8750
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.1338 - acc: 0.9550 - val_loss: 0.4696 - val_acc: 0.7500
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.1036 - acc: 0.9700 - val_loss: 0.7930 - val_acc: 0.7500
Epoch 19/30
7/7 [=====] - 0s 36ms/step - loss: 0.0959 - acc: 0.9550 - val_loss: 0.4994 - val_acc: 0.7500
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.0792 - acc: 0.9750 - val_loss: 0.6465 - val_acc: 0.7500
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.0752 - acc: 0.9850 - val_loss: 0.5900 - val_acc: 0.7500
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.0621 - acc: 0.9750 - val_loss: 0.8369 - val_acc: 0.7500
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.0623 - acc: 0.9800 - val_loss: 0.5815 - val_acc: 0.8125
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0454 - acc: 0.9950 - val_loss: 0.8935 - val_acc: 0.7500
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.0413 - acc: 0.9850 - val_loss: 0.6147 - val_acc: 0.8125
Epoch 26/30
7/7 [=====] - 0s 36ms/step - loss: 0.0265 - acc: 1.0000 - val_loss: 0.7927 - val_acc: 0.
```

```
7500
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.0236 - acc: 1.0000 - val_loss: 0.6750 - val_acc: 0.
8125
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0393 - acc: 0.9900 - val_loss: 1.1333 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.0399 - acc: 0.9850 - val_loss: 0.5058 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.0288 - acc: 0.9950 - val_loss: 0.8230 - val_acc: 0.
7500
64%|██████| 61/96 [09:12<05:23, 9.26s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6769 - acc: 0.5850 - val_loss: 0.7100 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 31ms/step - loss: 0.6241 - acc: 0.7200 - val_loss: 0.7280 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.6112 - acc: 0.7200 - val_loss: 0.7536 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 37ms/step - loss: 0.5981 - acc: 0.7200 - val_loss: 0.7849 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5927 - acc: 0.7200 - val_loss: 0.7862 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5948 - acc: 0.7200 - val_loss: 0.8087 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.5984 - acc: 0.7200 - val_loss: 0.8301 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 37ms/step - loss: 0.5883 - acc: 0.7200 - val_loss: 0.8016 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 31ms/step - loss: 0.5877 - acc: 0.7200 - val_loss: 0.8186 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5879 - acc: 0.7200 - val_loss: 0.7947 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5809 - acc: 0.7200 - val_loss: 0.8250 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.5956 - acc: 0.7200 - val_loss: 0.8501 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5857 - acc: 0.7200 - val_loss: 0.7225 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.5889 - acc: 0.7200 - val_loss: 0.7742 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 37ms/step - loss: 0.5744 - acc: 0.7200 - val_loss: 0.8150 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5745 - acc: 0.7200 - val_loss: 0.8023 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.5767 - acc: 0.7200 - val_loss: 0.7505 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.5717 - acc: 0.7200 - val_loss: 0.7421 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5741 - acc: 0.7200 - val_loss: 0.7856 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.5577 - acc: 0.7200 - val_loss: 0.8577 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 34ms/step - loss: 0.5765 - acc: 0.7200 - val_loss: 0.8421 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 37ms/step - loss: 0.5569 - acc: 0.7200 - val_loss: 0.7937 - val_acc: 0.
5000
```

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Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.5550 - acc: 0.7200 - val_loss: 0.6840 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.5599 - acc: 0.7200 - val_loss: 0.9208 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.5595 - acc: 0.7200 - val_loss: 0.7198 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 36ms/step - loss: 0.5360 - acc: 0.7200 - val_loss: 0.6801 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.5427 - acc: 0.7150 - val_loss: 0.7356 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.5318 - acc: 0.7200 - val_loss: 0.7340 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 37ms/step - loss: 0.5305 - acc: 0.7250 - val_loss: 0.8428 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.5280 - acc: 0.7200 - val_loss: 0.9407 - val_acc: 0.5000
65%|██████| 62/96 [09:22<05:13, 9.23s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.6519 - acc: 0.7050 - val_loss: 1.1118 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.6583 - acc: 0.7200 - val_loss: 0.7275 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.5690 - acc: 0.7200 - val_loss: 0.8058 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5257 - acc: 0.7200 - val_loss: 0.6635 - val_acc: 0.6250
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5621 - acc: 0.7950 - val_loss: 0.9736 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5082 - acc: 0.7200 - val_loss: 0.6706 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 37ms/step - loss: 0.4325 - acc: 0.7700 - val_loss: 0.8344 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.4404 - acc: 0.7800 - val_loss: 0.7226 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.3790 - acc: 0.8100 - val_loss: 0.5572 - val_acc: 0.7500
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.3433 - acc: 0.8650 - val_loss: 0.6510 - val_acc: 0.6875
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.3103 - acc: 0.8700 - val_loss: 0.9035 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.2727 - acc: 0.8750 - val_loss: 0.5208 - val_acc: 0.8125
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.2381 - acc: 0.9100 - val_loss: 0.6503 - val_acc: 0.7500
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.2097 - acc: 0.9350 - val_loss: 0.6944 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.2088 - acc: 0.9300 - val_loss: 0.6202 - val_acc: 0.7500
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.1630 - acc: 0.9500 - val_loss: 0.9135 - val_acc: 0.7500
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.1794 - acc: 0.9450 - val_loss: 0.5295 - val_acc: 0.8125
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.1545 - acc: 0.9600 - val_loss: 0.7314 - val_acc: 0.7500
Epoch 19/30
```



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7/7 [=====] - 0s 34ms/step - loss: 0.1289 - acc: 0.9500 - val_loss: 1.0918 - val_acc: 0.
7500
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.1392 - acc: 0.9500 - val_loss: 0.8851 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 37ms/step - loss: 0.1148 - acc: 0.9650 - val_loss: 0.9897 - val_acc: 0.
7500
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.0859 - acc: 0.9700 - val_loss: 0.8893 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0875 - acc: 0.9800 - val_loss: 0.9204 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0814 - acc: 0.9800 - val_loss: 0.9789 - val_acc: 0.
7500
Epoch 25/30
7/7 [=====] - 0s 35ms/step - loss: 0.0598 - acc: 0.9850 - val_loss: 1.1033 - val_acc: 0.
6875
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.0687 - acc: 0.9700 - val_loss: 0.7510 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.0595 - acc: 0.9800 - val_loss: 1.6330 - val_acc: 0.
6875
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.0576 - acc: 0.9800 - val_loss: 0.8147 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.0434 - acc: 0.9900 - val_loss: 1.5067 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.0410 - acc: 0.9900 - val_loss: 0.9449 - val_acc: 0.
7500
66%|███████| 63/96 [09:31<05:04, 9.22s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6642 - acc: 0.6150 - val_loss: 0.7267 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6045 - acc: 0.7200 - val_loss: 0.7629 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.6000 - acc: 0.7200 - val_loss: 0.7816 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5898 - acc: 0.7200 - val_loss: 0.8006 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5978 - acc: 0.7200 - val_loss: 0.8031 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.5983 - acc: 0.7200 - val_loss: 0.7979 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5873 - acc: 0.7200 - val_loss: 0.7371 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5875 - acc: 0.7200 - val_loss: 0.7367 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5872 - acc: 0.7200 - val_loss: 0.7652 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.5859 - acc: 0.7200 - val_loss: 0.8168 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.5908 - acc: 0.7200 - val_loss: 0.7387 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5771 - acc: 0.7200 - val_loss: 0.7935 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5699 - acc: 0.7200 - val_loss: 0.7592 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.5865 - acc: 0.7200 - val_loss: 0.7417 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.5715 - acc: 0.7200 - val_loss: 0.7842 - val_acc: 0.
5000
```

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Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5685 - acc: 0.7200 - val_loss: 0.8850 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5647 - acc: 0.7200 - val_loss: 0.7904 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5667 - acc: 0.7150 - val_loss: 0.7031 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5529 - acc: 0.7250 - val_loss: 0.7617 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5619 - acc: 0.7150 - val_loss: 0.7563 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.5483 - acc: 0.7200 - val_loss: 0.7627 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 31ms/step - loss: 0.5459 - acc: 0.7250 - val_loss: 0.8000 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.5463 - acc: 0.7200 - val_loss: 0.7663 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5392 - acc: 0.7200 - val_loss: 0.7831 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.5599 - acc: 0.7200 - val_loss: 0.7179 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 31ms/step - loss: 0.5247 - acc: 0.7300 - val_loss: 0.7644 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5289 - acc: 0.7200 - val_loss: 0.7851 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5234 - acc: 0.7300 - val_loss: 0.6726 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.5166 - acc: 0.7200 - val_loss: 0.6706 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.5319 - acc: 0.7300 - val_loss: 0.6780 - val_acc: 0.
6250
67%|███████ | 64/96 [09:40<04:51, 9.12s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6487 - acc: 0.6800 - val_loss: 0.7132 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6019 - acc: 0.7250 - val_loss: 0.8306 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.5803 - acc: 0.7200 - val_loss: 0.9458 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.6187 - acc: 0.7200 - val_loss: 0.6805 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5303 - acc: 0.7400 - val_loss: 0.7999 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.4723 - acc: 0.7750 - val_loss: 0.9561 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 37ms/step - loss: 0.4428 - acc: 0.8100 - val_loss: 0.7218 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 31ms/step - loss: 0.3585 - acc: 0.8500 - val_loss: 0.5039 - val_acc: 0.
8750
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.3759 - acc: 0.8350 - val_loss: 0.5556 - val_acc: 0.
7500
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.3152 - acc: 0.8500 - val_loss: 1.1643 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.2714 - acc: 0.8750 - val_loss: 0.4618 - val_acc: 0.
9375
Epoch 12/30
```

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7/7 [=====] - 0s 33ms/step - loss: 0.2341 - acc: 0.9050 - val_loss: 0.6257 - val_acc: 0.7500
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.2354 - acc: 0.9050 - val_loss: 0.9582 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.2168 - acc: 0.9000 - val_loss: 0.6280 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 31ms/step - loss: 0.1777 - acc: 0.9400 - val_loss: 0.4310 - val_acc: 0.8750
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.1791 - acc: 0.9250 - val_loss: 1.2539 - val_acc: 0.5625
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.1903 - acc: 0.9400 - val_loss: 0.6855 - val_acc: 0.6875
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.1277 - acc: 0.9550 - val_loss: 0.9914 - val_acc: 0.7500
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.1339 - acc: 0.9600 - val_loss: 0.8000 - val_acc: 0.7500
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.1276 - acc: 0.9500 - val_loss: 1.1782 - val_acc: 0.6875
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.0860 - acc: 0.9750 - val_loss: 1.4386 - val_acc: 0.5625
Epoch 22/30
7/7 [=====] - 0s 31ms/step - loss: 0.1172 - acc: 0.9700 - val_loss: 0.6358 - val_acc: 0.7500
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0947 - acc: 0.9700 - val_loss: 1.0482 - val_acc: 0.6875
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.0528 - acc: 0.9850 - val_loss: 1.3572 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.0543 - acc: 0.9800 - val_loss: 0.9950 - val_acc: 0.6875
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0431 - acc: 0.9950 - val_loss: 1.6027 - val_acc: 0.6250
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.0429 - acc: 0.9850 - val_loss: 0.9927 - val_acc: 0.7500
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0419 - acc: 0.9900 - val_loss: 1.5745 - val_acc: 0.5625
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.0301 - acc: 0.9950 - val_loss: 1.0129 - val_acc: 0.7500
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0428 - acc: 0.9850 - val_loss: 2.2321 - val_acc: 0.5625
68%|███████ | 65/96 [09:49<04:41, 9.08s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6672 - acc: 0.5950 - val_loss: 0.7606 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6135 - acc: 0.7050 - val_loss: 0.8064 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.6017 - acc: 0.7200 - val_loss: 0.7907 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.6014 - acc: 0.7250 - val_loss: 0.7640 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.6012 - acc: 0.7300 - val_loss: 0.7737 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5847 - acc: 0.7200 - val_loss: 0.8391 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 36ms/step - loss: 0.5868 - acc: 0.7200 - val_loss: 0.7761 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5883 - acc: 0.7200 - val_loss: 0.7212 - val_acc: 0.
```

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5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5841 - acc: 0.7150 - val_loss: 0.7472 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5864 - acc: 0.7200 - val_loss: 0.8468 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.5882 - acc: 0.7150 - val_loss: 0.8482 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5766 - acc: 0.7200 - val_loss: 0.7523 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.5605 - acc: 0.7250 - val_loss: 0.7693 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.5855 - acc: 0.7250 - val_loss: 0.7397 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.5625 - acc: 0.7250 - val_loss: 0.7145 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5629 - acc: 0.7250 - val_loss: 0.7062 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5486 - acc: 0.7250 - val_loss: 0.7113 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.5308 - acc: 0.7300 - val_loss: 0.8527 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5482 - acc: 0.7200 - val_loss: 0.8104 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5694 - acc: 0.7200 - val_loss: 0.7000 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 34ms/step - loss: 0.5495 - acc: 0.7200 - val_loss: 0.8630 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.5607 - acc: 0.7250 - val_loss: 0.8950 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.5517 - acc: 0.7200 - val_loss: 0.7381 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.5361 - acc: 0.7300 - val_loss: 0.6629 - val_acc: 0.
6250
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.5402 - acc: 0.7300 - val_loss: 0.9013 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 31ms/step - loss: 0.5312 - acc: 0.7250 - val_loss: 0.7078 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5288 - acc: 0.7350 - val_loss: 0.8703 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5345 - acc: 0.7400 - val_loss: 0.8381 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.5193 - acc: 0.7450 - val_loss: 0.9833 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.5195 - acc: 0.7300 - val_loss: 0.6484 - val_acc: 0.
6250
69%|███████ | 66/96 [09:58<04:31, 9.04s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.7561 - acc: 0.5100 - val_loss: 0.8523 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.5962 - acc: 0.7200 - val_loss: 0.7284 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5961 - acc: 0.7200 - val_loss: 0.7478 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.5605 - acc: 0.7200 - val_loss: 0.7969 - val_acc: 0.
5000
```

Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5348 - acc: 0.7650 - val_loss: 0.8442 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.4825 - acc: 0.7550 - val_loss: 0.5614 - val_acc: 0.
8125
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.4017 - acc: 0.8250 - val_loss: 0.6181 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.3544 - acc: 0.8450 - val_loss: 1.3287 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3905 - acc: 0.8150 - val_loss: 1.0295 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.3236 - acc: 0.8350 - val_loss: 0.4968 - val_acc: 0.
8125
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.2538 - acc: 0.9150 - val_loss: 0.6695 - val_acc: 0.
6250
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.2341 - acc: 0.9150 - val_loss: 0.7421 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.2008 - acc: 0.9250 - val_loss: 0.7188 - val_acc: 0.
6250
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.1702 - acc: 0.9550 - val_loss: 0.5147 - val_acc: 0.
8125
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.1369 - acc: 0.9650 - val_loss: 0.5884 - val_acc: 0.
7500
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.1277 - acc: 0.9600 - val_loss: 0.7475 - val_acc: 0.
6875
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.1143 - acc: 0.9750 - val_loss: 0.6126 - val_acc: 0.
8125
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.1183 - acc: 0.9600 - val_loss: 0.4526 - val_acc: 0.
8750
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.1192 - acc: 0.9650 - val_loss: 0.5024 - val_acc: 0.
8125
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.0767 - acc: 0.9800 - val_loss: 1.4044 - val_acc: 0.
6250
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.1009 - acc: 0.9650 - val_loss: 1.0684 - val_acc: 0.
6250
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.0646 - acc: 0.9800 - val_loss: 0.7145 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.0546 - acc: 0.9900 - val_loss: 0.5717 - val_acc: 0.
8125
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.0665 - acc: 0.9800 - val_loss: 1.1106 - val_acc: 0.
5625
Epoch 25/30
7/7 [=====] - 0s 35ms/step - loss: 0.0561 - acc: 0.9850 - val_loss: 1.1265 - val_acc: 0.
6875
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0358 - acc: 1.0000 - val_loss: 0.7385 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.0294 - acc: 0.9950 - val_loss: 1.0605 - val_acc: 0.
6875
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0247 - acc: 0.9950 - val_loss: 0.7990 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.0208 - acc: 1.0000 - val_loss: 1.3932 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0177 - acc: 1.0000 - val_loss: 0.9347 - val_acc: 0.
7500
70%|██████████ | 67/96 [10:07<04:21, 9.00s/it]
Epoch 1/30

7/7 [=====] - 0s 48ms/step - loss: 0.6290 - acc: 0.7100 - val_loss: 0.7413 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 30ms/step - loss: 0.5976 - acc: 0.7200 - val_loss: 0.7766 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5871 - acc: 0.7200 - val_loss: 0.8453 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.5887 - acc: 0.7200 - val_loss: 0.7876 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5704 - acc: 0.7200 - val_loss: 0.7943 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5670 - acc: 0.7200 - val_loss: 0.8071 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5622 - acc: 0.7200 - val_loss: 0.9535 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 36ms/step - loss: 0.5607 - acc: 0.7200 - val_loss: 0.7981 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.5395 - acc: 0.7200 - val_loss: 0.7668 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.5471 - acc: 0.7200 - val_loss: 0.6780 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.5370 - acc: 0.7300 - val_loss: 0.7768 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5275 - acc: 0.7250 - val_loss: 1.0154 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5421 - acc: 0.7200 - val_loss: 0.7495 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.5097 - acc: 0.7200 - val_loss: 0.7745 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.5149 - acc: 0.7250 - val_loss: 0.8872 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.4973 - acc: 0.7300 - val_loss: 0.9461 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5137 - acc: 0.7250 - val_loss: 0.7646 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.4875 - acc: 0.7400 - val_loss: 0.6190 - val_acc: 0.
6250
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.5170 - acc: 0.7550 - val_loss: 0.6160 - val_acc: 0.
6250
Epoch 20/30
7/7 [=====] - 0s 32ms/step - loss: 0.4884 - acc: 0.7600 - val_loss: 0.7089 - val_acc: 0.
6250
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.4627 - acc: 0.7700 - val_loss: 0.6452 - val_acc: 0.
6250
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.4604 - acc: 0.7850 - val_loss: 0.6348 - val_acc: 0.
6250
Epoch 23/30
7/7 [=====] - 0s 31ms/step - loss: 0.4665 - acc: 0.7900 - val_loss: 1.1327 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.4652 - acc: 0.7800 - val_loss: 0.8031 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.4367 - acc: 0.8000 - val_loss: 0.6369 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 35ms/step - loss: 0.4210 - acc: 0.8250 - val_loss: 0.9500 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.4631 - acc: 0.7600 - val_loss: 0.7112 - val_acc: 0.
6250
Epoch 28/30

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7/7 [=====] - 0s 34ms/step - loss: 0.3974 - acc: 0.8400 - val_loss: 1.0213 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.4198 - acc: 0.8000 - val_loss: 0.6719 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.4168 - acc: 0.7950 - val_loss: 0.7605 - val_acc: 0.
6250
71%|███████ | 68/96 [10:15<04:10, 8.96s/it]
Epoch 1/30
7/7 [=====] - 0s 49ms/step - loss: 0.6964 - acc: 0.6150 - val_loss: 0.7291 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 30ms/step - loss: 0.5330 - acc: 0.7200 - val_loss: 1.2345 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5886 - acc: 0.7350 - val_loss: 1.0114 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 38ms/step - loss: 0.4893 - acc: 0.7650 - val_loss: 0.8829 - val_acc: 0.
6250
Epoch 5/30
7/7 [=====] - 0s 31ms/step - loss: 0.4194 - acc: 0.8050 - val_loss: 1.1436 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.3943 - acc: 0.8200 - val_loss: 0.8133 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.3195 - acc: 0.8700 - val_loss: 0.5167 - val_acc: 0.
7500
Epoch 8/30
7/7 [=====] - 0s 36ms/step - loss: 0.3399 - acc: 0.8550 - val_loss: 1.1980 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.2858 - acc: 0.8850 - val_loss: 0.6377 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.2402 - acc: 0.8950 - val_loss: 0.5001 - val_acc: 0.
7500
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.2120 - acc: 0.9150 - val_loss: 0.4894 - val_acc: 0.
8125
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.1884 - acc: 0.9400 - val_loss: 0.5032 - val_acc: 0.
7500
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.2295 - acc: 0.9000 - val_loss: 0.5284 - val_acc: 0.
7500
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.1915 - acc: 0.9250 - val_loss: 0.9650 - val_acc: 0.
5625
Epoch 15/30
7/7 [=====] - 0s 37ms/step - loss: 0.1819 - acc: 0.9200 - val_loss: 0.4129 - val_acc: 0.
8125
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.1580 - acc: 0.9350 - val_loss: 0.7291 - val_acc: 0.
7500
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.1388 - acc: 0.9500 - val_loss: 0.6926 - val_acc: 0.
7500
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.0969 - acc: 0.9700 - val_loss: 0.6686 - val_acc: 0.
7500
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.0918 - acc: 0.9650 - val_loss: 0.4877 - val_acc: 0.
8125
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.0891 - acc: 0.9750 - val_loss: 0.9277 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.0855 - acc: 0.9700 - val_loss: 0.6160 - val_acc: 0.
7500
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.0690 - acc: 0.9800 - val_loss: 0.7686 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0501 - acc: 0.9900 - val_loss: 0.8034 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.0443 - acc: 0.9900 - val_loss: 0.7868 - val_acc: 0.
7500
```

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Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.0343 - acc: 0.9900 - val_loss: 0.8783 - val_acc: 0.7500
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0334 - acc: 0.9900 - val_loss: 0.8573 - val_acc: 0.7500
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.0293 - acc: 1.0000 - val_loss: 1.0789 - val_acc: 0.7500
Epoch 28/30
7/7 [=====] - 0s 36ms/step - loss: 0.0249 - acc: 0.9950 - val_loss: 0.9462 - val_acc: 0.7500
Epoch 29/30
7/7 [=====] - 0s 38ms/step - loss: 0.0210 - acc: 1.0000 - val_loss: 1.0204 - val_acc: 0.7500
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0120 - acc: 1.0000 - val_loss: 1.1206 - val_acc: 0.7500
72%|███████| 69/96 [10:25<04:03, 9.03s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6410 - acc: 0.6750 - val_loss: 0.7284 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.6021 - acc: 0.7200 - val_loss: 0.7855 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5902 - acc: 0.7200 - val_loss: 0.7196 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.6022 - acc: 0.7200 - val_loss: 0.7633 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5958 - acc: 0.7200 - val_loss: 0.7683 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 37ms/step - loss: 0.5885 - acc: 0.7200 - val_loss: 0.7288 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.5903 - acc: 0.7200 - val_loss: 0.8324 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5879 - acc: 0.7200 - val_loss: 0.8231 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5755 - acc: 0.7200 - val_loss: 0.8451 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5699 - acc: 0.7200 - val_loss: 0.8021 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.5769 - acc: 0.7200 - val_loss: 0.8481 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5601 - acc: 0.7200 - val_loss: 0.7822 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5647 - acc: 0.7200 - val_loss: 0.9386 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.5753 - acc: 0.7200 - val_loss: 0.7510 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 31ms/step - loss: 0.5550 - acc: 0.7200 - val_loss: 0.7191 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5589 - acc: 0.7200 - val_loss: 0.9230 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5552 - acc: 0.7200 - val_loss: 0.7766 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 37ms/step - loss: 0.5488 - acc: 0.7200 - val_loss: 0.9734 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 31ms/step - loss: 0.5558 - acc: 0.7200 - val_loss: 0.7905 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5528 - acc: 0.7200 - val_loss: 0.7118 - val_acc: 0.5000
Epoch 21/30
```



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7/7 [=====] - 0s 33ms/step - loss: 0.5339 - acc: 0.7200 - val_loss: 0.7207 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.5291 - acc: 0.7250 - val_loss: 0.7420 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.5281 - acc: 0.7200 - val_loss: 0.8779 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.5199 - acc: 0.7250 - val_loss: 0.7620 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.5078 - acc: 0.7200 - val_loss: 0.6353 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.5136 - acc: 0.7700 - val_loss: 0.8581 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.5269 - acc: 0.7150 - val_loss: 0.6776 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.4924 - acc: 0.7250 - val_loss: 0.6757 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.4959 - acc: 0.7300 - val_loss: 0.6366 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.5224 - acc: 0.7750 - val_loss: 0.6479 - val_acc: 0.
6250
73%|██████| 70/96 [10:34<03:54, 9.03s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.7097 - acc: 0.6150 - val_loss: 0.7105 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.5744 - acc: 0.7250 - val_loss: 0.7628 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.5278 - acc: 0.7400 - val_loss: 0.8711 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.5011 - acc: 0.7750 - val_loss: 0.7706 - val_acc: 0.
6250
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.4414 - acc: 0.8150 - val_loss: 0.8914 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.3666 - acc: 0.8600 - val_loss: 0.5262 - val_acc: 0.
6875
Epoch 7/30
7/7 [=====] - 0s 36ms/step - loss: 0.3144 - acc: 0.8650 - val_loss: 0.5724 - val_acc: 0.
6875
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.2839 - acc: 0.9000 - val_loss: 0.4863 - val_acc: 0.
8750
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.2442 - acc: 0.9050 - val_loss: 0.7036 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.2070 - acc: 0.9300 - val_loss: 0.9745 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.2964 - acc: 0.8650 - val_loss: 0.4224 - val_acc: 0.
8750
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.2156 - acc: 0.9100 - val_loss: 0.4325 - val_acc: 0.
8750
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.1808 - acc: 0.9350 - val_loss: 0.5257 - val_acc: 0.
7500
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.1491 - acc: 0.9550 - val_loss: 0.6677 - val_acc: 0.
6875
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.1445 - acc: 0.9500 - val_loss: 0.4879 - val_acc: 0.
8125
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.1201 - acc: 0.9650 - val_loss: 0.4371 - val_acc: 0.
9375
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.0986 - acc: 0.9650 - val_loss: 0.5857 - val_acc: 0.
```

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7500
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.0950 - acc: 0.9750 - val_loss: 0.6696 - val_acc: 0.
7500
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.0956 - acc: 0.9750 - val_loss: 0.3686 - val_acc: 0.
8125
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.0948 - acc: 0.9700 - val_loss: 0.4119 - val_acc: 0.
8125
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.0770 - acc: 0.9800 - val_loss: 0.5767 - val_acc: 0.
7500
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.0621 - acc: 0.9700 - val_loss: 0.5434 - val_acc: 0.
8125
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.0574 - acc: 0.9850 - val_loss: 0.8225 - val_acc: 0.
6875
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.0668 - acc: 0.9800 - val_loss: 0.4627 - val_acc: 0.
8125
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.0517 - acc: 0.9900 - val_loss: 0.6205 - val_acc: 0.
8125
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0342 - acc: 0.9900 - val_loss: 0.7522 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.0297 - acc: 0.9900 - val_loss: 0.8368 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.0208 - acc: 0.9950 - val_loss: 0.5256 - val_acc: 0.
8125
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0316 - acc: 0.9900 - val_loss: 0.8273 - val_acc: 0.
6875
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.0182 - acc: 0.9950 - val_loss: 0.6163 - val_acc: 0.
8125
74%|██████████ | 71/96 [10:43<03:46, 9.05s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6539 - acc: 0.6200 - val_loss: 0.7438 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.6089 - acc: 0.7200 - val_loss: 0.8054 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.5978 - acc: 0.7200 - val_loss: 0.9302 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.6075 - acc: 0.7200 - val_loss: 0.8301 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.5917 - acc: 0.7200 - val_loss: 0.8176 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5966 - acc: 0.7200 - val_loss: 0.8293 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 36ms/step - loss: 0.5858 - acc: 0.7200 - val_loss: 0.8049 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5937 - acc: 0.7200 - val_loss: 0.7248 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5914 - acc: 0.7200 - val_loss: 0.8024 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5622 - acc: 0.7200 - val_loss: 0.7358 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.5642 - acc: 0.7200 - val_loss: 0.7989 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.5788 - acc: 0.7200 - val_loss: 0.8694 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.5657 - acc: 0.7200 - val_loss: 0.7591 - val_acc: 0.
5000
```

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Epoch 14/30
7/7 [=====] - 0s 37ms/step - loss: 0.5490 - acc: 0.7200 - val_loss: 0.7443 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.5335 - acc: 0.7200 - val_loss: 0.9066 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5759 - acc: 0.7200 - val_loss: 0.7540 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5401 - acc: 0.7200 - val_loss: 0.7920 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.5327 - acc: 0.7200 - val_loss: 0.7188 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5421 - acc: 0.7200 - val_loss: 0.7342 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5391 - acc: 0.7350 - val_loss: 0.7649 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.5305 - acc: 0.7250 - val_loss: 0.8054 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.5166 - acc: 0.7300 - val_loss: 0.7816 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.5130 - acc: 0.7200 - val_loss: 0.6944 - val_acc: 0.5625
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.5141 - acc: 0.7500 - val_loss: 0.6644 - val_acc: 0.6250
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.4924 - acc: 0.7350 - val_loss: 0.7592 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.4835 - acc: 0.7400 - val_loss: 0.6489 - val_acc: 0.6250
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.4996 - acc: 0.7500 - val_loss: 0.7912 - val_acc: 0.5000
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.4928 - acc: 0.7550 - val_loss: 0.6188 - val_acc: 0.6250
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.4876 - acc: 0.7750 - val_loss: 0.7383 - val_acc: 0.5625
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.4812 - acc: 0.7400 - val_loss: 0.6001 - val_acc: 0.8125
75%|██████████ | 72/96 [10:52<03:36, 9.04s/it]
Epoch 1/30
7/7 [=====] - 0s 46ms/step - loss: 0.6144 - acc: 0.7100 - val_loss: 0.7666 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.5730 - acc: 0.7200 - val_loss: 0.7132 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 37ms/step - loss: 0.5191 - acc: 0.7250 - val_loss: 0.6420 - val_acc: 0.7500
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5539 - acc: 0.7750 - val_loss: 0.8858 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.4632 - acc: 0.7750 - val_loss: 0.8629 - val_acc: 0.6250
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.3969 - acc: 0.7900 - val_loss: 0.5817 - val_acc: 0.7500
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.4160 - acc: 0.8100 - val_loss: 0.5795 - val_acc: 0.6875
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.3793 - acc: 0.8350 - val_loss: 0.7671 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.2940 - acc: 0.8950 - val_loss: 0.9103 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.2620 - acc: 0.8900 - val_loss: 0.6160 - val_acc: 0.
```

```
7500
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.2376 - acc: 0.9250 - val_loss: 0.5298 - val_acc: 0.
7500
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.2133 - acc: 0.9250 - val_loss: 0.7319 - val_acc: 0.
7500
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.1664 - acc: 0.9500 - val_loss: 1.2480 - val_acc: 0.
5625
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.1983 - acc: 0.9100 - val_loss: 1.4035 - val_acc: 0.
5625
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.1946 - acc: 0.9000 - val_loss: 0.5704 - val_acc: 0.
7500
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.2164 - acc: 0.9300 - val_loss: 0.5771 - val_acc: 0.
7500
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.1520 - acc: 0.9450 - val_loss: 0.8414 - val_acc: 0.
6875
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.1060 - acc: 0.9650 - val_loss: 0.6479 - val_acc: 0.
6875
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1389 - acc: 0.9450 - val_loss: 0.5513 - val_acc: 0.
8125
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.1854 - acc: 0.9350 - val_loss: 0.9691 - val_acc: 0.
6875
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.0936 - acc: 0.9700 - val_loss: 1.0571 - val_acc: 0.
7500
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.1169 - acc: 0.9600 - val_loss: 1.1835 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.0735 - acc: 0.9700 - val_loss: 1.0966 - val_acc: 0.
6875
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.0974 - acc: 0.9750 - val_loss: 0.6003 - val_acc: 0.
6875
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0781 - acc: 0.9800 - val_loss: 1.4422 - val_acc: 0.
6875
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.0669 - acc: 0.9700 - val_loss: 0.6650 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 37ms/step - loss: 0.0576 - acc: 0.9750 - val_loss: 1.6763 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 39ms/step - loss: 0.0460 - acc: 0.9900 - val_loss: 0.7892 - val_acc: 0.
5625
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.0551 - acc: 0.9850 - val_loss: 1.2307 - val_acc: 0.
6875
Epoch 30/30
7/7 [=====] - 0s 37ms/step - loss: 0.0396 - acc: 0.9900 - val_loss: 1.3644 - val_acc: 0.
7500
76%|██████████ | 73/96 [11:01<03:29, 9.10s/it]
Epoch 1/30
7/7 [=====] - 0s 51ms/step - loss: 0.6594 - acc: 0.6400 - val_loss: 0.7346 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 40ms/step - loss: 0.6075 - acc: 0.7200 - val_loss: 0.7499 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.5910 - acc: 0.7200 - val_loss: 0.7573 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5905 - acc: 0.7200 - val_loss: 0.7664 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5823 - acc: 0.7200 - val_loss: 0.7750 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 41ms/step - loss: 0.5762 - acc: 0.7200 - val_loss: 0.8214 - val_acc: 0.
5000
Epoch 7/30
```

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7/7 [=====] - 0s 34ms/step - loss: 0.5818 - acc: 0.7200 - val_loss: 0.7996 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5781 - acc: 0.7200 - val_loss: 0.8478 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.5804 - acc: 0.7200 - val_loss: 0.7381 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5665 - acc: 0.7200 - val_loss: 0.7590 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 38ms/step - loss: 0.5757 - acc: 0.7200 - val_loss: 0.7923 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 37ms/step - loss: 0.5626 - acc: 0.7200 - val_loss: 0.8194 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 38ms/step - loss: 0.5610 - acc: 0.7200 - val_loss: 0.7912 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.5607 - acc: 0.7200 - val_loss: 0.7845 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.5616 - acc: 0.7200 - val_loss: 0.7430 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 40ms/step - loss: 0.5510 - acc: 0.7200 - val_loss: 0.7192 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5466 - acc: 0.7200 - val_loss: 0.7777 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 40ms/step - loss: 0.5489 - acc: 0.7200 - val_loss: 0.8670 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 40ms/step - loss: 0.5507 - acc: 0.7200 - val_loss: 0.7950 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5351 - acc: 0.7200 - val_loss: 0.8405 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.5395 - acc: 0.7200 - val_loss: 0.8503 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.5430 - acc: 0.7200 - val_loss: 0.8673 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.5281 - acc: 0.7200 - val_loss: 0.7683 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.5266 - acc: 0.7200 - val_loss: 0.7864 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.5195 - acc: 0.7200 - val_loss: 0.7971 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.5267 - acc: 0.7300 - val_loss: 0.6473 - val_acc: 0.6250
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5318 - acc: 0.7400 - val_loss: 0.6432 - val_acc: 0.6250
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.5327 - acc: 0.7350 - val_loss: 0.6486 - val_acc: 0.6250
Epoch 29/30
7/7 [=====] - 0s 37ms/step - loss: 0.5133 - acc: 0.7450 - val_loss: 0.6997 - val_acc: 0.5625
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.4977 - acc: 0.7300 - val_loss: 0.9238 - val_acc: 0.5000

77%|██████████ | 74/96 [11:10<03:23, 9.23s/it]
Epoch 1/30
7/7 [=====] - 0s 51ms/step - loss: 0.6029 - acc: 0.7200 - val_loss: 0.8709 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6274 - acc: 0.7200 - val_loss: 0.7176 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 42ms/step - loss: 0.5916 - acc: 0.7200 - val_loss: 0.6942 - val_acc: 0.
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5000
Epoch 4/30
7/7 [=====] - 0s 35ms/step - loss: 0.5482 - acc: 0.7300 - val_loss: 0.8180 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.5364 - acc: 0.7200 - val_loss: 0.6473 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 36ms/step - loss: 0.5321 - acc: 0.7350 - val_loss: 0.6482 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 36ms/step - loss: 0.4879 - acc: 0.7850 - val_loss: 0.8280 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.4250 - acc: 0.8000 - val_loss: 0.6205 - val_acc: 0.
6250
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.3825 - acc: 0.8250 - val_loss: 0.5297 - val_acc: 0.
8125
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.3197 - acc: 0.8900 - val_loss: 0.6648 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.2616 - acc: 0.8900 - val_loss: 0.4861 - val_acc: 0.
8125
Epoch 12/30
7/7 [=====] - 0s 37ms/step - loss: 0.2536 - acc: 0.8850 - val_loss: 1.0264 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.2788 - acc: 0.8700 - val_loss: 0.5590 - val_acc: 0.
8125
Epoch 14/30
7/7 [=====] - 0s 37ms/step - loss: 0.2243 - acc: 0.8750 - val_loss: 0.5667 - val_acc: 0.
7500
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.1931 - acc: 0.9350 - val_loss: 1.5510 - val_acc: 0.
5625
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.2945 - acc: 0.8600 - val_loss: 0.5384 - val_acc: 0.
7500
Epoch 17/30
7/7 [=====] - 0s 38ms/step - loss: 0.1846 - acc: 0.9350 - val_loss: 1.3269 - val_acc: 0.
5625
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.2148 - acc: 0.9050 - val_loss: 0.4547 - val_acc: 0.
8750
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.2114 - acc: 0.9100 - val_loss: 0.5490 - val_acc: 0.
7500
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.1384 - acc: 0.9700 - val_loss: 0.5073 - val_acc: 0.
8125
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.1104 - acc: 0.9700 - val_loss: 0.8130 - val_acc: 0.
7500
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.1400 - acc: 0.9450 - val_loss: 0.6014 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.1406 - acc: 0.9350 - val_loss: 0.5740 - val_acc: 0.
8750
Epoch 24/30
7/7 [=====] - 0s 38ms/step - loss: 0.1162 - acc: 0.9600 - val_loss: 0.7152 - val_acc: 0.
7500
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.1049 - acc: 0.9750 - val_loss: 0.7338 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.0796 - acc: 0.9750 - val_loss: 0.5618 - val_acc: 0.
8125
Epoch 27/30
7/7 [=====] - 0s 40ms/step - loss: 0.0755 - acc: 0.9700 - val_loss: 0.9174 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0622 - acc: 0.9900 - val_loss: 0.6427 - val_acc: 0.
8125
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.0603 - acc: 0.9850 - val_loss: 0.6915 - val_acc: 0.
6875
Epoch 30/30

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7/7 [=====] - 0s 34ms/step - loss: 0.0796 - acc: 0.9650 - val_loss: 1.1786 - val_acc: 0.6250
78%|██████████ | 75/96 [11:20<03:15, 9.32s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.6659 - acc: 0.6500 - val_loss: 0.7185 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6229 - acc: 0.7200 - val_loss: 0.7545 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.6032 - acc: 0.7200 - val_loss: 0.7880 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.5995 - acc: 0.7200 - val_loss: 0.7800 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5958 - acc: 0.7200 - val_loss: 0.8443 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 39ms/step - loss: 0.6035 - acc: 0.7200 - val_loss: 0.8289 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5911 - acc: 0.7200 - val_loss: 0.7895 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.5898 - acc: 0.7200 - val_loss: 0.7624 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.5821 - acc: 0.7200 - val_loss: 0.8466 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5844 - acc: 0.7200 - val_loss: 0.7983 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.6013 - acc: 0.7200 - val_loss: 0.8478 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5966 - acc: 0.7200 - val_loss: 0.8249 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5750 - acc: 0.7200 - val_loss: 0.7413 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 31ms/step - loss: 0.5844 - acc: 0.7200 - val_loss: 0.8103 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.5859 - acc: 0.7200 - val_loss: 0.7962 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5827 - acc: 0.7200 - val_loss: 0.7961 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5709 - acc: 0.7200 - val_loss: 0.7267 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5738 - acc: 0.7200 - val_loss: 0.7767 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5815 - acc: 0.7200 - val_loss: 0.7844 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5749 - acc: 0.7200 - val_loss: 0.7069 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5739 - acc: 0.7200 - val_loss: 0.7133 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.5789 - acc: 0.7200 - val_loss: 0.7514 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.5659 - acc: 0.7200 - val_loss: 0.7034 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.5664 - acc: 0.7200 - val_loss: 0.7684 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5623 - acc: 0.7200 - val_loss: 0.7490 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.5663 - acc: 0.7200 - val_loss: 0.7001 - val_acc: 0.5000
```

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5000
Epoch 27/30
7/7 [=====] - 0s 36ms/step - loss: 0.5424 - acc: 0.7300 - val_loss: 0.7344 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.5533 - acc: 0.7200 - val_loss: 0.7746 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.5466 - acc: 0.7150 - val_loss: 0.7856 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.5316 - acc: 0.7250 - val_loss: 0.8293 - val_acc: 0.
5000
79%|███████ | 76/96 [11:29<03:04, 9.22s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6428 - acc: 0.6600 - val_loss: 0.7088 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6010 - acc: 0.7200 - val_loss: 0.8206 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.6199 - acc: 0.7050 - val_loss: 0.7476 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5978 - acc: 0.7200 - val_loss: 0.7976 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5680 - acc: 0.7200 - val_loss: 0.7810 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 36ms/step - loss: 0.5731 - acc: 0.7200 - val_loss: 0.7074 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.5406 - acc: 0.7300 - val_loss: 0.9155 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.5387 - acc: 0.7500 - val_loss: 0.8665 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.5362 - acc: 0.7400 - val_loss: 0.6122 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.4509 - acc: 0.7900 - val_loss: 0.9587 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.3979 - acc: 0.8050 - val_loss: 0.6286 - val_acc: 0.
6250
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.3676 - acc: 0.8250 - val_loss: 0.5233 - val_acc: 0.
9375
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.3190 - acc: 0.8900 - val_loss: 0.8376 - val_acc: 0.
6250
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.2748 - acc: 0.8800 - val_loss: 1.2106 - val_acc: 0.
6250
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.3187 - acc: 0.8500 - val_loss: 0.8096 - val_acc: 0.
5625
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.3008 - acc: 0.8900 - val_loss: 0.6365 - val_acc: 0.
6250
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.2240 - acc: 0.9250 - val_loss: 0.7568 - val_acc: 0.
6250
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.2228 - acc: 0.9100 - val_loss: 0.4727 - val_acc: 0.
8750
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1878 - acc: 0.9350 - val_loss: 0.5046 - val_acc: 0.
7500
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.1681 - acc: 0.9350 - val_loss: 0.4848 - val_acc: 0.
8750
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.1515 - acc: 0.9350 - val_loss: 0.4858 - val_acc: 0.
8125
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.1363 - acc: 0.9500 - val_loss: 0.8860 - val_acc: 0.
6875
```


Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.1358 - acc: 0.9550 - val_loss: 0.5270 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.1498 - acc: 0.9300 - val_loss: 0.8573 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.0964 - acc: 0.9700 - val_loss: 0.4123 - val_acc: 0.7500
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.1381 - acc: 0.9500 - val_loss: 0.9505 - val_acc: 0.6875
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.0961 - acc: 0.9700 - val_loss: 0.6372 - val_acc: 0.6875
Epoch 28/30
7/7 [=====] - 0s 31ms/step - loss: 0.1038 - acc: 0.9500 - val_loss: 0.7228 - val_acc: 0.7500
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.0799 - acc: 0.9750 - val_loss: 0.8093 - val_acc: 0.6875
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.0671 - acc: 0.9700 - val_loss: 0.5756 - val_acc: 0.6875
80%|██████████ | 77/96 [11:38<02:53, 9.15s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6497 - acc: 0.6600 - val_loss: 0.7346 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6135 - acc: 0.7100 - val_loss: 0.7051 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.5871 - acc: 0.7150 - val_loss: 0.7953 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5849 - acc: 0.7200 - val_loss: 0.8311 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5900 - acc: 0.7200 - val_loss: 0.7426 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 37ms/step - loss: 0.5881 - acc: 0.7150 - val_loss: 0.7564 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.5708 - acc: 0.7100 - val_loss: 0.7990 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.5889 - acc: 0.7200 - val_loss: 0.7971 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5764 - acc: 0.7200 - val_loss: 0.7924 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5981 - acc: 0.7250 - val_loss: 0.8534 - val_acc: 0.5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5873 - acc: 0.7200 - val_loss: 0.8009 - val_acc: 0.5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5973 - acc: 0.7150 - val_loss: 0.7235 - val_acc: 0.5000
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.5690 - acc: 0.7200 - val_loss: 0.7709 - val_acc: 0.5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5757 - acc: 0.7250 - val_loss: 0.7717 - val_acc: 0.5000
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.5706 - acc: 0.7200 - val_loss: 0.7410 - val_acc: 0.5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5606 - acc: 0.7250 - val_loss: 0.8320 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.5779 - acc: 0.7200 - val_loss: 0.7641 - val_acc: 0.5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5739 - acc: 0.7250 - val_loss: 0.6989 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5582 - acc: 0.7450 - val_loss: 0.7912 - val_acc: 0.

```
5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5525 - acc: 0.7200 - val_loss: 0.6615 - val_acc: 0.
6250
Epoch 21/30
7/7 [=====] - 0s 32ms/step - loss: 0.5897 - acc: 0.6900 - val_loss: 0.7986 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.5708 - acc: 0.7250 - val_loss: 0.7026 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.5721 - acc: 0.7100 - val_loss: 0.7552 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.5504 - acc: 0.7250 - val_loss: 0.7799 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.5357 - acc: 0.7200 - val_loss: 0.7854 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.5719 - acc: 0.7200 - val_loss: 0.7422 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.5362 - acc: 0.7300 - val_loss: 0.8307 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.5478 - acc: 0.7200 - val_loss: 0.7295 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.5413 - acc: 0.7250 - val_loss: 0.7060 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.5414 - acc: 0.7300 - val_loss: 0.7629 - val_acc: 0.
5000
81%|██████████ | 78/96 [11:47<02:43, 9.09s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6428 - acc: 0.7100 - val_loss: 0.8049 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.5539 - acc: 0.7750 - val_loss: 0.7998 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.4997 - acc: 0.7550 - val_loss: 1.0400 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.4690 - acc: 0.7950 - val_loss: 0.7284 - val_acc: 0.
6250
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.3733 - acc: 0.8500 - val_loss: 0.5720 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 37ms/step - loss: 0.3037 - acc: 0.8850 - val_loss: 0.9535 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.3138 - acc: 0.8500 - val_loss: 0.9543 - val_acc: 0.
6250
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.3137 - acc: 0.8750 - val_loss: 0.5018 - val_acc: 0.
7500
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.3658 - acc: 0.8300 - val_loss: 0.6145 - val_acc: 0.
7500
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.2376 - acc: 0.9200 - val_loss: 0.6534 - val_acc: 0.
6250
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.2387 - acc: 0.9100 - val_loss: 0.5360 - val_acc: 0.
7500
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.2092 - acc: 0.8900 - val_loss: 0.4397 - val_acc: 0.
8750
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.1649 - acc: 0.9450 - val_loss: 0.6686 - val_acc: 0.
6875
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.1386 - acc: 0.9600 - val_loss: 0.6835 - val_acc: 0.
6875
Epoch 15/30
7/7 [=====] - 0s 34ms/step - loss: 0.1161 - acc: 0.9600 - val_loss: 0.6237 - val_acc: 0.
7500
```

Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.0880 - acc: 0.9650 - val_loss: 0.5402 - val_acc: 0.8125
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.0656 - acc: 0.9800 - val_loss: 0.5265 - val_acc: 0.8125
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.0517 - acc: 0.9850 - val_loss: 0.5493 - val_acc: 0.8125
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.0408 - acc: 0.9900 - val_loss: 0.8457 - val_acc: 0.7500
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.0241 - acc: 1.0000 - val_loss: 0.5223 - val_acc: 0.7500
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.0284 - acc: 0.9950 - val_loss: 0.8610 - val_acc: 0.7500
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.0178 - acc: 1.0000 - val_loss: 0.7854 - val_acc: 0.7500
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.0166 - acc: 1.0000 - val_loss: 0.7793 - val_acc: 0.7500
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.0136 - acc: 1.0000 - val_loss: 1.0275 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.0109 - acc: 1.0000 - val_loss: 0.6967 - val_acc: 0.8125
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.0083 - acc: 1.0000 - val_loss: 0.8785 - val_acc: 0.6875
Epoch 27/30
7/7 [=====] - 0s 36ms/step - loss: 0.0062 - acc: 1.0000 - val_loss: 1.1888 - val_acc: 0.6875
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0082 - acc: 1.0000 - val_loss: 0.5828 - val_acc: 0.8125
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.0095 - acc: 1.0000 - val_loss: 1.0334 - val_acc: 0.6875
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.0076 - acc: 1.0000 - val_loss: 1.0311 - val_acc: 0.7500
82%|██████████ | 79/96 [11:56<02:35, 9.13s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6430 - acc: 0.6450 - val_loss: 0.7403 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.5911 - acc: 0.7200 - val_loss: 0.8169 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.5937 - acc: 0.7200 - val_loss: 0.7295 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5859 - acc: 0.7200 - val_loss: 0.7211 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 36ms/step - loss: 0.5775 - acc: 0.7200 - val_loss: 0.8543 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 32ms/step - loss: 0.5732 - acc: 0.7200 - val_loss: 0.7425 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5719 - acc: 0.7200 - val_loss: 0.7964 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.5648 - acc: 0.7200 - val_loss: 0.7384 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.5595 - acc: 0.7200 - val_loss: 0.7733 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5573 - acc: 0.7200 - val_loss: 0.6669 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.5610 - acc: 0.7350 - val_loss: 0.8139 - val_acc: 0.5000
Epoch 12/30

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7/7 [=====] - 0s 34ms/step - loss: 0.5440 - acc: 0.7200 - val_loss: 0.7393 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5392 - acc: 0.7200 - val_loss: 0.7185 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5336 - acc: 0.7200 - val_loss: 0.8156 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5254 - acc: 0.7200 - val_loss: 1.0092 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 37ms/step - loss: 0.5446 - acc: 0.7150 - val_loss: 0.8982 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.5250 - acc: 0.7250 - val_loss: 0.9743 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5236 - acc: 0.7200 - val_loss: 0.8447 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5297 - acc: 0.7150 - val_loss: 0.8293 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.4950 - acc: 0.7250 - val_loss: 0.6299 - val_acc: 0.
6250
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5073 - acc: 0.7700 - val_loss: 0.7825 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.4919 - acc: 0.7500 - val_loss: 0.7507 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.4747 - acc: 0.7450 - val_loss: 0.6589 - val_acc: 0.
6250
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.4909 - acc: 0.7600 - val_loss: 0.6225 - val_acc: 0.
5625
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.4970 - acc: 0.7250 - val_loss: 0.8231 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.4759 - acc: 0.7650 - val_loss: 0.7981 - val_acc: 0.
5625
Epoch 27/30
7/7 [=====] - 0s 36ms/step - loss: 0.4599 - acc: 0.7700 - val_loss: 0.9849 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.4663 - acc: 0.7600 - val_loss: 0.9257 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.4580 - acc: 0.7650 - val_loss: 0.9833 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.4340 - acc: 0.7800 - val_loss: 1.0035 - val_acc: 0.
5000
83%|██████████ | 80/96 [12:05<02:25, 9.09s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.7143 - acc: 0.7200 - val_loss: 0.8818 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.6108 - acc: 0.7150 - val_loss: 0.7736 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5431 - acc: 0.7250 - val_loss: 0.7560 - val_acc: 0.
6250
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.4807 - acc: 0.7550 - val_loss: 0.7290 - val_acc: 0.
6250
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.3975 - acc: 0.8650 - val_loss: 0.6673 - val_acc: 0.
6250
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.3509 - acc: 0.8450 - val_loss: 0.4821 - val_acc: 0.
7500
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.3504 - acc: 0.8450 - val_loss: 0.4476 - val_acc: 0.
8750
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.3831 - acc: 0.8050 - val_loss: 0.6839 - val_acc: 0.
```

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6250
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.2542 - acc: 0.9000 - val_loss: 0.6555 - val_acc: 0.
6250
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.2436 - acc: 0.9000 - val_loss: 0.4713 - val_acc: 0.
8750
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.1822 - acc: 0.9550 - val_loss: 0.6014 - val_acc: 0.
7500
Epoch 12/30
7/7 [=====] - 0s 37ms/step - loss: 0.1491 - acc: 0.9600 - val_loss: 0.7038 - val_acc: 0.
6875
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.1480 - acc: 0.9350 - val_loss: 0.4450 - val_acc: 0.
8750
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.1328 - acc: 0.9500 - val_loss: 0.7583 - val_acc: 0.
7500
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.1325 - acc: 0.9600 - val_loss: 1.0127 - val_acc: 0.
6250
Epoch 16/30
7/7 [=====] - 0s 38ms/step - loss: 0.0971 - acc: 0.9600 - val_loss: 0.7033 - val_acc: 0.
7500
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.0914 - acc: 0.9700 - val_loss: 0.5250 - val_acc: 0.
7500
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.1071 - acc: 0.9650 - val_loss: 0.7249 - val_acc: 0.
7500
Epoch 19/30
7/7 [=====] - 0s 37ms/step - loss: 0.0794 - acc: 0.9750 - val_loss: 1.2729 - val_acc: 0.
6250
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.0788 - acc: 0.9700 - val_loss: 0.4808 - val_acc: 0.
8750
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.0513 - acc: 0.9800 - val_loss: 1.0611 - val_acc: 0.
6250
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.0460 - acc: 0.9900 - val_loss: 0.6729 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.0473 - acc: 0.9850 - val_loss: 0.5615 - val_acc: 0.
8125
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.0594 - acc: 0.9700 - val_loss: 0.9962 - val_acc: 0.
6875
Epoch 25/30
7/7 [=====] - 0s 35ms/step - loss: 0.0234 - acc: 1.0000 - val_loss: 0.7337 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 37ms/step - loss: 0.0209 - acc: 1.0000 - val_loss: 1.2569 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0238 - acc: 0.9950 - val_loss: 0.7566 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.0155 - acc: 1.0000 - val_loss: 1.4045 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.0174 - acc: 0.9950 - val_loss: 0.7709 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 36ms/step - loss: 0.0170 - acc: 1.0000 - val_loss: 1.6815 - val_acc: 0.
5625
84%[██████████] | 81/96 [12:14<02:16, 9.13s/it]
Epoch 1/30
7/7 [=====] - 0s 49ms/step - loss: 0.6634 - acc: 0.6200 - val_loss: 0.7756 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.5881 - acc: 0.7200 - val_loss: 0.7774 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.5932 - acc: 0.7200 - val_loss: 0.8030 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.5829 - acc: 0.7200 - val_loss: 0.8842 - val_acc: 0.
5000
```

Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.5823 - acc: 0.7200 - val_loss: 0.8633 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5730 - acc: 0.7200 - val_loss: 0.6878 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.5618 - acc: 0.7400 - val_loss: 0.8323 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 37ms/step - loss: 0.5621 - acc: 0.7200 - val_loss: 0.8441 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 32ms/step - loss: 0.5583 - acc: 0.7200 - val_loss: 0.7663 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5611 - acc: 0.7200 - val_loss: 0.7895 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.5439 - acc: 0.7200 - val_loss: 0.7038 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 36ms/step - loss: 0.5415 - acc: 0.7200 - val_loss: 0.7980 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5287 - acc: 0.7200 - val_loss: 0.7934 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.5304 - acc: 0.7200 - val_loss: 0.8579 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.5440 - acc: 0.7350 - val_loss: 0.7862 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.5170 - acc: 0.7250 - val_loss: 0.6961 - val_acc: 0.
5625
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.5187 - acc: 0.7300 - val_loss: 0.8764 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 38ms/step - loss: 0.5240 - acc: 0.7200 - val_loss: 0.8031 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5023 - acc: 0.7300 - val_loss: 0.8893 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.5068 - acc: 0.7450 - val_loss: 0.7180 - val_acc: 0.
5625
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.4820 - acc: 0.7400 - val_loss: 0.8948 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 38ms/step - loss: 0.4800 - acc: 0.7300 - val_loss: 0.7870 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.4733 - acc: 0.7650 - val_loss: 0.9018 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.4862 - acc: 0.7450 - val_loss: 0.6157 - val_acc: 0.
6250
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.4756 - acc: 0.7950 - val_loss: 0.7813 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.4635 - acc: 0.7550 - val_loss: 0.6120 - val_acc: 0.
6250
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.4692 - acc: 0.7900 - val_loss: 0.6687 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.4431 - acc: 0.7950 - val_loss: 0.5956 - val_acc: 0.
8125
Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.4559 - acc: 0.7800 - val_loss: 1.2042 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.4513 - acc: 0.7850 - val_loss: 0.7619 - val_acc: 0.
6250
85%|██████████ | 82/96 [12:23<02:07, 9.13s/it]
Epoch 1/30
7/7 [=====] - 0s 47ms/step - loss: 0.6659 - acc: 0.6250 - val_loss: 0.8684 - val_acc: 0.

5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.5677 - acc: 0.7200 - val_loss: 1.0337 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5723 - acc: 0.7200 - val_loss: 0.6763 - val_acc: 0.
6250
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.4951 - acc: 0.7300 - val_loss: 0.6788 - val_acc: 0.
6250
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.4168 - acc: 0.7800 - val_loss: 0.5551 - val_acc: 0.
6875
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.4598 - acc: 0.7800 - val_loss: 0.5812 - val_acc: 0.
6250
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.4641 - acc: 0.7450 - val_loss: 0.9589 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.3501 - acc: 0.8800 - val_loss: 0.5608 - val_acc: 0.
6875
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3088 - acc: 0.8750 - val_loss: 0.5915 - val_acc: 0.
6875
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.2510 - acc: 0.9150 - val_loss: 0.5046 - val_acc: 0.
8125
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.2238 - acc: 0.9100 - val_loss: 0.5432 - val_acc: 0.
7500
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.1666 - acc: 0.9400 - val_loss: 1.1954 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.2372 - acc: 0.9050 - val_loss: 0.9593 - val_acc: 0.
5625
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.1478 - acc: 0.9350 - val_loss: 0.8529 - val_acc: 0.
7500
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.1627 - acc: 0.9500 - val_loss: 0.6282 - val_acc: 0.
7500
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.1259 - acc: 0.9550 - val_loss: 0.5360 - val_acc: 0.
7500
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.1189 - acc: 0.9500 - val_loss: 0.8707 - val_acc: 0.
6250
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.1132 - acc: 0.9550 - val_loss: 0.8612 - val_acc: 0.
7500
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.0949 - acc: 0.9650 - val_loss: 0.5410 - val_acc: 0.
7500
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.0807 - acc: 0.9700 - val_loss: 0.8673 - val_acc: 0.
6875
Epoch 21/30
7/7 [=====] - 0s 34ms/step - loss: 0.0730 - acc: 0.9800 - val_loss: 0.9385 - val_acc: 0.
6250
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.0682 - acc: 0.9750 - val_loss: 1.0608 - val_acc: 0.
6250
Epoch 23/30
7/7 [=====] - 0s 32ms/step - loss: 0.0569 - acc: 0.9800 - val_loss: 0.7361 - val_acc: 0.
6875
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.0572 - acc: 0.9850 - val_loss: 0.9496 - val_acc: 0.
6875
Epoch 25/30
7/7 [=====] - 0s 36ms/step - loss: 0.0452 - acc: 0.9950 - val_loss: 0.8241 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.0424 - acc: 0.9900 - val_loss: 1.2603 - val_acc: 0.
5625
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0292 - acc: 1.0000 - val_loss: 0.5908 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0314 - acc: 0.9850 - val_loss: 0.7019 - val_acc: 0.

```
6250
Epoch 29/30
7/7 [=====] - 0s 36ms/step - loss: 0.0194 - acc: 1.0000 - val_loss: 1.0167 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0190 - acc: 1.0000 - val_loss: 0.8307 - val_acc: 0.
6250
86%|███████ | 83/96 [12:33<01:58, 9.10s/it]
Epoch 1/30
7/7 [=====] - 0s 48ms/step - loss: 0.6406 - acc: 0.6500 - val_loss: 0.7424 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.6022 - acc: 0.7100 - val_loss: 0.7207 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.6047 - acc: 0.7250 - val_loss: 0.8672 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.5845 - acc: 0.7200 - val_loss: 0.7924 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5962 - acc: 0.7250 - val_loss: 0.8158 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5896 - acc: 0.7200 - val_loss: 0.8070 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5866 - acc: 0.7200 - val_loss: 0.7619 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.5802 - acc: 0.7200 - val_loss: 0.7386 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5790 - acc: 0.7200 - val_loss: 0.7413 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.5889 - acc: 0.7200 - val_loss: 0.8253 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.5840 - acc: 0.7200 - val_loss: 0.7937 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.5721 - acc: 0.7200 - val_loss: 0.7285 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5600 - acc: 0.7200 - val_loss: 0.7473 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.5764 - acc: 0.7200 - val_loss: 0.7729 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.5550 - acc: 0.7200 - val_loss: 0.6831 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.5597 - acc: 0.7250 - val_loss: 0.6684 - val_acc: 0.
5625
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.5774 - acc: 0.7350 - val_loss: 0.7482 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5573 - acc: 0.7200 - val_loss: 0.8029 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5437 - acc: 0.7200 - val_loss: 0.7374 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.5372 - acc: 0.7200 - val_loss: 0.8089 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5448 - acc: 0.7350 - val_loss: 0.8578 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.5242 - acc: 0.7250 - val_loss: 0.7098 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 31ms/step - loss: 0.5250 - acc: 0.7200 - val_loss: 0.7540 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5254 - acc: 0.7250 - val_loss: 0.8000 - val_acc: 0.
5000
```


Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.5111 - acc: 0.7200 - val_loss: 0.6530 - val_acc: 0.6250
Epoch 26/30
7/7 [=====] - 0s 35ms/step - loss: 0.5088 - acc: 0.7400 - val_loss: 0.6748 - val_acc: 0.5625
Epoch 27/30
7/7 [=====] - 0s 32ms/step - loss: 0.5327 - acc: 0.7300 - val_loss: 0.6514 - val_acc: 0.6250
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5125 - acc: 0.7450 - val_loss: 0.7336 - val_acc: 0.5000
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.4973 - acc: 0.7450 - val_loss: 0.6336 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.4953 - acc: 0.7850 - val_loss: 0.6168 - val_acc: 0.6250
88%|██████████ | 84/96 [12:41<01:48, 9.04s/it]
Epoch 1/30
7/7 [=====] - 0s 50ms/step - loss: 0.5945 - acc: 0.7250 - val_loss: 0.6856 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 31ms/step - loss: 0.5317 - acc: 0.7250 - val_loss: 0.6494 - val_acc: 0.6250
Epoch 3/30
7/7 [=====] - 0s 34ms/step - loss: 0.4447 - acc: 0.7750 - val_loss: 0.6743 - val_acc: 0.6250
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.3524 - acc: 0.8400 - val_loss: 1.0898 - val_acc: 0.6250
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.4789 - acc: 0.7600 - val_loss: 0.5896 - val_acc: 0.6875
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.3099 - acc: 0.8600 - val_loss: 0.5855 - val_acc: 0.7500
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.2715 - acc: 0.8950 - val_loss: 1.1798 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 35ms/step - loss: 0.3084 - acc: 0.8500 - val_loss: 0.5333 - val_acc: 0.7500
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.2809 - acc: 0.8650 - val_loss: 0.9520 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.2301 - acc: 0.9100 - val_loss: 0.4804 - val_acc: 0.8750
Epoch 11/30
7/7 [=====] - 0s 35ms/step - loss: 0.1575 - acc: 0.9400 - val_loss: 0.9827 - val_acc: 0.6875
Epoch 12/30
7/7 [=====] - 0s 32ms/step - loss: 0.1786 - acc: 0.9300 - val_loss: 0.4938 - val_acc: 0.8125
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.1257 - acc: 0.9600 - val_loss: 0.8837 - val_acc: 0.7500
Epoch 14/30
7/7 [=====] - 0s 34ms/step - loss: 0.1277 - acc: 0.9500 - val_loss: 0.5453 - val_acc: 0.8125
Epoch 15/30
7/7 [=====] - 0s 36ms/step - loss: 0.1099 - acc: 0.9650 - val_loss: 0.7880 - val_acc: 0.7500
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.0873 - acc: 0.9750 - val_loss: 0.5810 - val_acc: 0.8125
Epoch 17/30
7/7 [=====] - 0s 34ms/step - loss: 0.0942 - acc: 0.9700 - val_loss: 1.0621 - val_acc: 0.7500
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.0808 - acc: 0.9750 - val_loss: 0.8402 - val_acc: 0.7500
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1184 - acc: 0.9550 - val_loss: 0.4903 - val_acc: 0.8750
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.1065 - acc: 0.9550 - val_loss: 0.7455 - val_acc: 0.6875
Epoch 21/30

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7/7 [=====] - 0s 34ms/step - loss: 0.0823 - acc: 0.9750 - val_loss: 0.5518 - val_acc: 0.
7500
Epoch 22/30
7/7 [=====] - 0s 36ms/step - loss: 0.0709 - acc: 0.9750 - val_loss: 0.7913 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0499 - acc: 0.9750 - val_loss: 0.9341 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.0424 - acc: 0.9850 - val_loss: 0.8841 - val_acc: 0.
6875
Epoch 25/30
7/7 [=====] - 0s 38ms/step - loss: 0.0344 - acc: 0.9950 - val_loss: 0.7448 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 36ms/step - loss: 0.0216 - acc: 1.0000 - val_loss: 0.9089 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.0228 - acc: 0.9950 - val_loss: 0.7688 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.0194 - acc: 0.9950 - val_loss: 0.9642 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 37ms/step - loss: 0.0144 - acc: 1.0000 - val_loss: 0.7701 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.0125 - acc: 1.0000 - val_loss: 1.1513 - val_acc: 0.
7500
89%|██████████ | 85/96 [12:51<01:39, 9.07s/it]
Epoch 1/30
7/7 [=====] - 0s 49ms/step - loss: 0.6219 - acc: 0.6900 - val_loss: 0.8555 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 32ms/step - loss: 0.5977 - acc: 0.7200 - val_loss: 0.9465 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 33ms/step - loss: 0.5987 - acc: 0.7200 - val_loss: 0.9107 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 36ms/step - loss: 0.5974 - acc: 0.7200 - val_loss: 0.7369 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 32ms/step - loss: 0.5922 - acc: 0.7200 - val_loss: 0.7276 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 36ms/step - loss: 0.5821 - acc: 0.7200 - val_loss: 0.8176 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 39ms/step - loss: 0.5792 - acc: 0.7200 - val_loss: 0.8012 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5736 - acc: 0.7200 - val_loss: 0.7014 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 34ms/step - loss: 0.5816 - acc: 0.7200 - val_loss: 0.7500 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 33ms/step - loss: 0.5606 - acc: 0.7200 - val_loss: 0.8058 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 36ms/step - loss: 0.5615 - acc: 0.7200 - val_loss: 0.6994 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5689 - acc: 0.7200 - val_loss: 0.7708 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 37ms/step - loss: 0.5504 - acc: 0.7200 - val_loss: 0.8437 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 39ms/step - loss: 0.5600 - acc: 0.7200 - val_loss: 0.7756 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.5441 - acc: 0.7200 - val_loss: 0.8195 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.5402 - acc: 0.7200 - val_loss: 0.8551 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.5507 - acc: 0.7200 - val_loss: 0.6848 - val_acc: 0.
```

5625
Epoch 18/30
7/7 [=====] - 0s 35ms/step - loss: 0.5352 - acc: 0.7300 - val_loss: 0.9434 - val_acc: 0.5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5530 - acc: 0.7200 - val_loss: 0.8449 - val_acc: 0.5000
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.5295 - acc: 0.7200 - val_loss: 0.7205 - val_acc: 0.5000
Epoch 21/30
7/7 [=====] - 0s 37ms/step - loss: 0.5271 - acc: 0.7200 - val_loss: 0.6969 - val_acc: 0.5000
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.5238 - acc: 0.7200 - val_loss: 0.7427 - val_acc: 0.5000
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.5232 - acc: 0.7200 - val_loss: 0.6874 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.5154 - acc: 0.7250 - val_loss: 0.8558 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 37ms/step - loss: 0.5153 - acc: 0.7200 - val_loss: 0.8489 - val_acc: 0.5000
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.5065 - acc: 0.7200 - val_loss: 0.8329 - val_acc: 0.5000
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.4939 - acc: 0.7300 - val_loss: 0.7246 - val_acc: 0.5625
Epoch 28/30
7/7 [=====] - 0s 36ms/step - loss: 0.4926 - acc: 0.7300 - val_loss: 0.6815 - val_acc: 0.6250
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.4923 - acc: 0.7400 - val_loss: 0.7182 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.4897 - acc: 0.7300 - val_loss: 0.6406 - val_acc: 0.7500
90%|██████████ | 86/96 [13:00<01:31, 9.12s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6567 - acc: 0.6300 - val_loss: 0.8829 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6244 - acc: 0.7050 - val_loss: 0.9250 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 37ms/step - loss: 0.5700 - acc: 0.7200 - val_loss: 0.7762 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5176 - acc: 0.7200 - val_loss: 0.7731 - val_acc: 0.5625
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.4663 - acc: 0.7500 - val_loss: 0.6370 - val_acc: 0.5625
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5436 - acc: 0.6700 - val_loss: 1.0190 - val_acc: 0.5625
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.4147 - acc: 0.8100 - val_loss: 0.9152 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.3785 - acc: 0.7950 - val_loss: 0.5785 - val_acc: 0.6875
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3042 - acc: 0.9100 - val_loss: 0.6311 - val_acc: 0.6875
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.2591 - acc: 0.9050 - val_loss: 0.6505 - val_acc: 0.7500
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.2575 - acc: 0.9050 - val_loss: 0.6503 - val_acc: 0.8125
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.1926 - acc: 0.9350 - val_loss: 0.9934 - val_acc: 0.6250
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.2610 - acc: 0.8700 - val_loss: 1.9473 - val_acc: 0.6250

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Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.2908 - acc: 0.8650 - val_loss: 0.5670 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.2760 - acc: 0.9000 - val_loss: 0.8069 - val_acc: 0.6250
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.1921 - acc: 0.9300 - val_loss: 0.8924 - val_acc: 0.6250
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.1618 - acc: 0.9550 - val_loss: 0.4725 - val_acc: 0.8750
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.1358 - acc: 0.9450 - val_loss: 0.5651 - val_acc: 0.8750
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1325 - acc: 0.9600 - val_loss: 0.6062 - val_acc: 0.8125
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.1402 - acc: 0.9500 - val_loss: 0.8661 - val_acc: 0.6875
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.1422 - acc: 0.9400 - val_loss: 0.4851 - val_acc: 0.8125
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.1050 - acc: 0.9600 - val_loss: 1.0668 - val_acc: 0.7500
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.1070 - acc: 0.9700 - val_loss: 0.5362 - val_acc: 0.8125
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.0823 - acc: 0.9700 - val_loss: 0.9256 - val_acc: 0.7500
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0957 - acc: 0.9550 - val_loss: 0.5830 - val_acc: 0.8125
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0739 - acc: 0.9700 - val_loss: 0.8223 - val_acc: 0.7500
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.0717 - acc: 0.9750 - val_loss: 1.0239 - val_acc: 0.7500
Epoch 28/30
7/7 [=====] - 0s 37ms/step - loss: 0.0589 - acc: 0.9800 - val_loss: 0.7022 - val_acc: 0.6875
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.0739 - acc: 0.9700 - val_loss: 1.2121 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 34ms/step - loss: 0.0707 - acc: 0.9800 - val_loss: 0.5633 - val_acc: 0.8125
91%|██████████| 87/96 [13:09<01:21, 9.09s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.5951 - acc: 0.7150 - val_loss: 0.8139 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 34ms/step - loss: 0.5902 - acc: 0.7200 - val_loss: 0.7932 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 38ms/step - loss: 0.5873 - acc: 0.7200 - val_loss: 0.7598 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5960 - acc: 0.7200 - val_loss: 0.8230 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5883 - acc: 0.7200 - val_loss: 0.7563 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5721 - acc: 0.7200 - val_loss: 0.7979 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 36ms/step - loss: 0.5775 - acc: 0.7200 - val_loss: 0.7477 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5860 - acc: 0.7200 - val_loss: 0.7739 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.5716 - acc: 0.7200 - val_loss: 0.7001 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 39ms/step - loss: 0.5709 - acc: 0.7250 - val_loss: 0.7864 - val_acc: 0.
```

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5000
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.5651 - acc: 0.7200 - val_loss: 0.7131 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 34ms/step - loss: 0.5607 - acc: 0.7200 - val_loss: 0.8257 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.5460 - acc: 0.7200 - val_loss: 0.7996 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.5784 - acc: 0.7200 - val_loss: 0.7649 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 35ms/step - loss: 0.5726 - acc: 0.7200 - val_loss: 0.9135 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5566 - acc: 0.7200 - val_loss: 0.9205 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 37ms/step - loss: 0.5643 - acc: 0.7200 - val_loss: 0.7279 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 34ms/step - loss: 0.5417 - acc: 0.7200 - val_loss: 0.6939 - val_acc: 0.
5625
Epoch 19/30
7/7 [=====] - 0s 35ms/step - loss: 0.5331 - acc: 0.7150 - val_loss: 0.7618 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.5320 - acc: 0.7200 - val_loss: 0.8501 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5390 - acc: 0.7250 - val_loss: 0.6987 - val_acc: 0.
5625
Epoch 22/30
7/7 [=====] - 0s 35ms/step - loss: 0.5333 - acc: 0.7250 - val_loss: 0.7835 - val_acc: 0.
5000
Epoch 23/30
7/7 [=====] - 0s 35ms/step - loss: 0.5302 - acc: 0.7250 - val_loss: 0.7485 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.5212 - acc: 0.7200 - val_loss: 0.8466 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.5211 - acc: 0.7200 - val_loss: 0.8869 - val_acc: 0.
5000
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.5125 - acc: 0.7350 - val_loss: 0.8799 - val_acc: 0.
5000
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.4963 - acc: 0.7200 - val_loss: 0.6803 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 33ms/step - loss: 0.5035 - acc: 0.7400 - val_loss: 1.0623 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 35ms/step - loss: 0.5272 - acc: 0.7400 - val_loss: 0.8063 - val_acc: 0.
5000
Epoch 30/30
7/7 [=====] - 0s 37ms/step - loss: 0.5085 - acc: 0.7400 - val_loss: 0.8112 - val_acc: 0.
5000
92%|██████████| 88/96 [13:18<01:13, 9.13s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6636 - acc: 0.6600 - val_loss: 0.9486 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6010 - acc: 0.7000 - val_loss: 0.9240 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5745 - acc: 0.7200 - val_loss: 0.6721 - val_acc: 0.
6250
Epoch 4/30
7/7 [=====] - 0s 34ms/step - loss: 0.5745 - acc: 0.7350 - val_loss: 0.8455 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.5693 - acc: 0.7300 - val_loss: 0.7465 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.4716 - acc: 0.7150 - val_loss: 0.7692 - val_acc: 0.
6250
```

Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.4474 - acc: 0.7900 - val_loss: 0.9086 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.4008 - acc: 0.8000 - val_loss: 0.7471 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.3278 - acc: 0.8500 - val_loss: 0.6634 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.3074 - acc: 0.8750 - val_loss: 0.5273 - val_acc: 0.8750
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.3779 - acc: 0.8150 - val_loss: 0.8010 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 35ms/step - loss: 0.2917 - acc: 0.8800 - val_loss: 0.5556 - val_acc: 0.8125
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.2595 - acc: 0.9050 - val_loss: 0.7225 - val_acc: 0.6875
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.2346 - acc: 0.9000 - val_loss: 0.7102 - val_acc: 0.6875
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.2432 - acc: 0.9000 - val_loss: 0.4949 - val_acc: 0.8750
Epoch 16/30
7/7 [=====] - 0s 37ms/step - loss: 0.2287 - acc: 0.8850 - val_loss: 0.7856 - val_acc: 0.6875
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.1851 - acc: 0.9200 - val_loss: 0.4814 - val_acc: 0.8750
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.2072 - acc: 0.9200 - val_loss: 0.7322 - val_acc: 0.7500
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1720 - acc: 0.9450 - val_loss: 0.6176 - val_acc: 0.7500
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.1807 - acc: 0.9150 - val_loss: 0.5944 - val_acc: 0.8125
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.1612 - acc: 0.9450 - val_loss: 0.7381 - val_acc: 0.7500
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.1678 - acc: 0.9450 - val_loss: 0.5353 - val_acc: 0.8750
Epoch 23/30
7/7 [=====] - 0s 36ms/step - loss: 0.1388 - acc: 0.9700 - val_loss: 0.9358 - val_acc: 0.7500
Epoch 24/30
7/7 [=====] - 0s 32ms/step - loss: 0.1144 - acc: 0.9600 - val_loss: 0.6766 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.1264 - acc: 0.9600 - val_loss: 0.7642 - val_acc: 0.6875
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.1054 - acc: 0.9600 - val_loss: 0.7115 - val_acc: 0.7500
Epoch 27/30
7/7 [=====] - 0s 36ms/step - loss: 0.0791 - acc: 0.9750 - val_loss: 1.0731 - val_acc: 0.7500
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0844 - acc: 0.9650 - val_loss: 0.5758 - val_acc: 0.8750
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.0803 - acc: 0.9750 - val_loss: 1.4402 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.1015 - acc: 0.9700 - val_loss: 0.6309 - val_acc: 0.8125
93%|██████████ | 89/96 [13:27<01:03, 9.12s/it]
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6170 - acc: 0.6900 - val_loss: 0.7109 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.5919 - acc: 0.7100 - val_loss: 0.7978 - val_acc: 0.5000
Epoch 3/30

7/7 [=====] - 0s 31ms/step - loss: 0.5865 - acc: 0.7250 - val_loss: 0.8834 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5972 - acc: 0.7250 - val_loss: 0.7406 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5968 - acc: 0.7200 - val_loss: 0.7522 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.5899 - acc: 0.7150 - val_loss: 0.7566 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5742 - acc: 0.7150 - val_loss: 0.7622 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.5767 - acc: 0.7150 - val_loss: 0.7209 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 37ms/step - loss: 0.5729 - acc: 0.7100 - val_loss: 0.8125 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5786 - acc: 0.7250 - val_loss: 0.8444 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5646 - acc: 0.7200 - val_loss: 0.7463 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5563 - acc: 0.7250 - val_loss: 0.7126 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.5641 - acc: 0.7200 - val_loss: 0.7509 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5521 - acc: 0.7300 - val_loss: 0.7885 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5493 - acc: 0.7200 - val_loss: 0.6979 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 36ms/step - loss: 0.5292 - acc: 0.7350 - val_loss: 0.8308 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 32ms/step - loss: 0.5489 - acc: 0.7250 - val_loss: 0.7840 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.5254 - acc: 0.7300 - val_loss: 0.8955 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.5258 - acc: 0.7200 - val_loss: 0.7807 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.5240 - acc: 0.7400 - val_loss: 0.7432 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.5108 - acc: 0.7500 - val_loss: 0.8333 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.5239 - acc: 0.7350 - val_loss: 0.7247 - val_acc: 0.
5625
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.5172 - acc: 0.7250 - val_loss: 0.8027 - val_acc: 0.
5000
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.5248 - acc: 0.7450 - val_loss: 0.7183 - val_acc: 0.
5625
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.5230 - acc: 0.7350 - val_loss: 0.6784 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.4966 - acc: 0.7550 - val_loss: 0.7334 - val_acc: 0.
5625
Epoch 27/30
7/7 [=====] - 0s 35ms/step - loss: 0.5085 - acc: 0.7550 - val_loss: 0.6916 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.4968 - acc: 0.7600 - val_loss: 0.8115 - val_acc: 0.
5000
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.4867 - acc: 0.7550 - val_loss: 0.7020 - val_acc: 0.
6250
Epoch 30/30

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7/7 [=====] - 0s 33ms/step - loss: 0.4627 - acc: 0.7650 - val_loss: 0.6603 - val_acc: 0.6250
94%|██████████| 90/96 [13:36<00:54, 9.06s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.8008 - acc: 0.5750 - val_loss: 1.2569 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6559 - acc: 0.6200 - val_loss: 0.8450 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5498 - acc: 0.7250 - val_loss: 0.6253 - val_acc: 0.8750
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5132 - acc: 0.7900 - val_loss: 0.9141 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.4173 - acc: 0.7750 - val_loss: 0.5424 - val_acc: 0.7500
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.3903 - acc: 0.8250 - val_loss: 0.7716 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.3444 - acc: 0.8500 - val_loss: 0.8807 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.2931 - acc: 0.8950 - val_loss: 0.8020 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 36ms/step - loss: 0.2491 - acc: 0.9050 - val_loss: 0.4731 - val_acc: 0.8125
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.2174 - acc: 0.9200 - val_loss: 1.2041 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.2035 - acc: 0.9100 - val_loss: 0.4438 - val_acc: 0.8125
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.2474 - acc: 0.8950 - val_loss: 0.7453 - val_acc: 0.6875
Epoch 13/30
7/7 [=====] - 0s 35ms/step - loss: 0.1524 - acc: 0.9400 - val_loss: 0.5555 - val_acc: 0.7500
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.1463 - acc: 0.9500 - val_loss: 0.6070 - val_acc: 0.7500
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.1236 - acc: 0.9600 - val_loss: 0.8797 - val_acc: 0.6875
Epoch 16/30
7/7 [=====] - 0s 35ms/step - loss: 0.1044 - acc: 0.9650 - val_loss: 0.7421 - val_acc: 0.7500
Epoch 17/30
7/7 [=====] - 0s 31ms/step - loss: 0.0885 - acc: 0.9700 - val_loss: 0.4967 - val_acc: 0.8750
Epoch 18/30
7/7 [=====] - 0s 33ms/step - loss: 0.1053 - acc: 0.9650 - val_loss: 1.2578 - val_acc: 0.5625
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.0793 - acc: 0.9700 - val_loss: 0.5112 - val_acc: 0.8125
Epoch 20/30
7/7 [=====] - 0s 37ms/step - loss: 0.0691 - acc: 0.9850 - val_loss: 1.0165 - val_acc: 0.6875
Epoch 21/30
7/7 [=====] - 0s 31ms/step - loss: 0.0789 - acc: 0.9700 - val_loss: 1.0775 - val_acc: 0.6250
Epoch 22/30
7/7 [=====] - 0s 34ms/step - loss: 0.0957 - acc: 0.9550 - val_loss: 0.4928 - val_acc: 0.8125
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0571 - acc: 0.9750 - val_loss: 1.0437 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0392 - acc: 0.9950 - val_loss: 0.8734 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 33ms/step - loss: 0.0303 - acc: 0.9950 - val_loss: 0.9522 - val_acc: 0.6875
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0328 - acc: 0.9950 - val_loss: 1.5589 - val_acc: 0.
```



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6250
Epoch 27/30
7/7 [=====] - 0s 37ms/step - loss: 0.0304 - acc: 0.9950 - val_loss: 0.7613 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 32ms/step - loss: 0.0207 - acc: 1.0000 - val_loss: 1.0061 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 34ms/step - loss: 0.0151 - acc: 1.0000 - val_loss: 0.9809 - val_acc: 0.
6875
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.0180 - acc: 1.0000 - val_loss: 0.9151 - val_acc: 0.
7500
95%|██████████| 91/96 [13:45<00:45, 9.04s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6352 - acc: 0.6600 - val_loss: 0.7252 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 36ms/step - loss: 0.6006 - acc: 0.7200 - val_loss: 0.7496 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 31ms/step - loss: 0.5932 - acc: 0.7200 - val_loss: 0.7269 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.5928 - acc: 0.7200 - val_loss: 0.8111 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5794 - acc: 0.7200 - val_loss: 0.8031 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 35ms/step - loss: 0.5858 - acc: 0.7200 - val_loss: 0.7174 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.5776 - acc: 0.7200 - val_loss: 0.8170 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5758 - acc: 0.7200 - val_loss: 0.7167 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 35ms/step - loss: 0.5553 - acc: 0.7200 - val_loss: 0.8801 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 32ms/step - loss: 0.5605 - acc: 0.7200 - val_loss: 0.8282 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.5470 - acc: 0.7200 - val_loss: 0.7022 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5531 - acc: 0.7200 - val_loss: 0.8370 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.5470 - acc: 0.7200 - val_loss: 0.9199 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.5474 - acc: 0.7200 - val_loss: 0.6863 - val_acc: 0.
5625
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.5510 - acc: 0.7300 - val_loss: 0.8317 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.5246 - acc: 0.7200 - val_loss: 0.8487 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.5256 - acc: 0.7200 - val_loss: 0.7595 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.5180 - acc: 0.7250 - val_loss: 0.8391 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.5191 - acc: 0.7250 - val_loss: 0.7003 - val_acc: 0.
6250
Epoch 20/30
7/7 [=====] - 0s 36ms/step - loss: 0.5186 - acc: 0.7200 - val_loss: 0.8551 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 31ms/step - loss: 0.5165 - acc: 0.7250 - val_loss: 0.7652 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 33ms/step - loss: 0.4978 - acc: 0.7300 - val_loss: 0.6463 - val_acc: 0.
6250
```

Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.4976 - acc: 0.7350 - val_loss: 0.8463 - val_acc: 0.5000
Epoch 24/30
7/7 [=====] - 0s 36ms/step - loss: 0.4863 - acc: 0.7400 - val_loss: 0.8774 - val_acc: 0.5000
Epoch 25/30
7/7 [=====] - 0s 31ms/step - loss: 0.4804 - acc: 0.7200 - val_loss: 0.6444 - val_acc: 0.6250
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.5011 - acc: 0.7250 - val_loss: 0.6128 - val_acc: 0.6875
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.4820 - acc: 0.7600 - val_loss: 0.6086 - val_acc: 0.7500
Epoch 28/30
7/7 [=====] - 0s 34ms/step - loss: 0.4739 - acc: 0.7600 - val_loss: 0.6060 - val_acc: 0.6875
Epoch 29/30
7/7 [=====] - 0s 33ms/step - loss: 0.4760 - acc: 0.7650 - val_loss: 0.9070 - val_acc: 0.5000
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.4504 - acc: 0.7600 - val_loss: 0.6930 - val_acc: 0.6250
96%|██████████| 92/96 [13:54<00:35, 8.99s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.9076 - acc: 0.6200 - val_loss: 1.0633 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.5778 - acc: 0.7750 - val_loss: 0.7325 - val_acc: 0.5625
Epoch 3/30
7/7 [=====] - 0s 32ms/step - loss: 0.4940 - acc: 0.7550 - val_loss: 0.6234 - val_acc: 0.6250
Epoch 4/30
7/7 [=====] - 0s 33ms/step - loss: 0.4296 - acc: 0.8000 - val_loss: 0.5750 - val_acc: 0.6875
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.3833 - acc: 0.8250 - val_loss: 0.5291 - val_acc: 0.7500
Epoch 6/30
7/7 [=====] - 0s 36ms/step - loss: 0.3333 - acc: 0.8450 - val_loss: 0.7138 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 32ms/step - loss: 0.2804 - acc: 0.8950 - val_loss: 0.7585 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 34ms/step - loss: 0.2649 - acc: 0.8850 - val_loss: 0.6969 - val_acc: 0.6250
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.2320 - acc: 0.9250 - val_loss: 0.7315 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.1861 - acc: 0.9500 - val_loss: 0.4488 - val_acc: 0.8125
Epoch 11/30
7/7 [=====] - 0s 33ms/step - loss: 0.1811 - acc: 0.9300 - val_loss: 0.6732 - val_acc: 0.7500
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.1667 - acc: 0.9500 - val_loss: 1.0026 - val_acc: 0.6250
Epoch 13/30
7/7 [=====] - 0s 36ms/step - loss: 0.1831 - acc: 0.9150 - val_loss: 0.8367 - val_acc: 0.6250
Epoch 14/30
7/7 [=====] - 0s 32ms/step - loss: 0.2084 - acc: 0.9150 - val_loss: 0.4195 - val_acc: 0.8125
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.1410 - acc: 0.9450 - val_loss: 0.7196 - val_acc: 0.7500
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.1085 - acc: 0.9650 - val_loss: 0.4580 - val_acc: 0.8125
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.0955 - acc: 0.9750 - val_loss: 0.7585 - val_acc: 0.7500
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.0843 - acc: 0.9750 - val_loss: 0.5739 - val_acc: 0.8125
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.0616 - acc: 0.9800 - val_loss: 0.8793 - val_acc: 0.

```
7500
Epoch 20/30
7/7 [=====] - 0s 34ms/step - loss: 0.0744 - acc: 0.9800 - val_loss: 0.4614 - val_acc: 0.
7500
Epoch 21/30
7/7 [=====] - 0s 33ms/step - loss: 0.0613 - acc: 0.9800 - val_loss: 0.7719 - val_acc: 0.
7500
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.0538 - acc: 0.9900 - val_loss: 0.7654 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.0488 - acc: 0.9900 - val_loss: 0.5241 - val_acc: 0.
8125
Epoch 24/30
7/7 [=====] - 0s 35ms/step - loss: 0.0390 - acc: 0.9900 - val_loss: 0.8976 - val_acc: 0.
7500
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.0302 - acc: 0.9900 - val_loss: 0.5655 - val_acc: 0.
8125
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0295 - acc: 0.9900 - val_loss: 0.7457 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.0205 - acc: 0.9950 - val_loss: 0.7686 - val_acc: 0.
7500
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.0180 - acc: 1.0000 - val_loss: 0.7334 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0153 - acc: 1.0000 - val_loss: 0.9767 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.0134 - acc: 1.0000 - val_loss: 0.8422 - val_acc: 0.
7500
97%|██████████| 93/96 [14:03<00:26, 8.98s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6002 - acc: 0.7200 - val_loss: 0.7829 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.5767 - acc: 0.7200 - val_loss: 0.7786 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 36ms/step - loss: 0.5724 - acc: 0.7200 - val_loss: 0.9439 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5658 - acc: 0.7200 - val_loss: 0.9065 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 34ms/step - loss: 0.5756 - acc: 0.7200 - val_loss: 0.7718 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 36ms/step - loss: 0.5691 - acc: 0.7200 - val_loss: 0.7396 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 33ms/step - loss: 0.5493 - acc: 0.7200 - val_loss: 0.9239 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5521 - acc: 0.7200 - val_loss: 0.8355 - val_acc: 0.
5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5419 - acc: 0.7150 - val_loss: 0.6890 - val_acc: 0.
5625
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.5334 - acc: 0.7250 - val_loss: 0.8261 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.5348 - acc: 0.7100 - val_loss: 0.9940 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5341 - acc: 0.7200 - val_loss: 0.6839 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 34ms/step - loss: 0.5179 - acc: 0.7350 - val_loss: 0.8284 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.5103 - acc: 0.7300 - val_loss: 0.6796 - val_acc: 0.
6250
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.4936 - acc: 0.7550 - val_loss: 0.8663 - val_acc: 0.
5000
```

Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5105 - acc: 0.7350 - val_loss: 0.7828 - val_acc: 0.5000
Epoch 17/30
7/7 [=====] - 0s 36ms/step - loss: 0.4960 - acc: 0.7400 - val_loss: 0.6272 - val_acc: 0.6250
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.4926 - acc: 0.7700 - val_loss: 0.6882 - val_acc: 0.6250
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.4834 - acc: 0.7350 - val_loss: 0.6748 - val_acc: 0.6250
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.4560 - acc: 0.7650 - val_loss: 0.7065 - val_acc: 0.6250
Epoch 21/30
7/7 [=====] - 0s 35ms/step - loss: 0.4499 - acc: 0.7800 - val_loss: 0.6509 - val_acc: 0.6250
Epoch 22/30
7/7 [=====] - 0s 31ms/step - loss: 0.4490 - acc: 0.7900 - val_loss: 0.5987 - val_acc: 0.7500
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.4546 - acc: 0.7700 - val_loss: 0.8025 - val_acc: 0.6250
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.4460 - acc: 0.7950 - val_loss: 0.6890 - val_acc: 0.6250
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.4290 - acc: 0.8050 - val_loss: 0.9797 - val_acc: 0.5625
Epoch 26/30
7/7 [=====] - 0s 32ms/step - loss: 0.4196 - acc: 0.7700 - val_loss: 0.7903 - val_acc: 0.6250
Epoch 27/30
7/7 [=====] - 0s 34ms/step - loss: 0.4189 - acc: 0.8150 - val_loss: 0.7148 - val_acc: 0.6250
Epoch 28/30
7/7 [=====] - 0s 36ms/step - loss: 0.4077 - acc: 0.8100 - val_loss: 0.5855 - val_acc: 0.6875
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.4056 - acc: 0.8250 - val_loss: 0.7525 - val_acc: 0.6250
Epoch 30/30
7/7 [=====] - 0s 35ms/step - loss: 0.4051 - acc: 0.8100 - val_loss: 0.5598 - val_acc: 0.8125
98%|██████████| 94/96 [14:12<00:17, 8.96s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 1.2589 - acc: 0.5100 - val_loss: 1.3005 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.7286 - acc: 0.6100 - val_loss: 1.2303 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 36ms/step - loss: 0.6037 - acc: 0.7300 - val_loss: 0.6727 - val_acc: 0.6250
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5369 - acc: 0.7550 - val_loss: 0.5784 - val_acc: 0.6875
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.4866 - acc: 0.7600 - val_loss: 0.7256 - val_acc: 0.6250
Epoch 6/30
7/7 [=====] - 0s 33ms/step - loss: 0.3900 - acc: 0.8850 - val_loss: 0.6455 - val_acc: 0.6250
Epoch 7/30
7/7 [=====] - 0s 34ms/step - loss: 0.3375 - acc: 0.9050 - val_loss: 1.2636 - val_acc: 0.6250
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.3774 - acc: 0.8200 - val_loss: 0.5762 - val_acc: 0.6875
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.3114 - acc: 0.8550 - val_loss: 0.6283 - val_acc: 0.6250
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.2942 - acc: 0.8700 - val_loss: 0.6156 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 32ms/step - loss: 0.2424 - acc: 0.9200 - val_loss: 0.7934 - val_acc: 0.6250
Epoch 12/30

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7/7 [=====] - 0s 33ms/step - loss: 0.2246 - acc: 0.9150 - val_loss: 0.8051 - val_acc: 0.
6250
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.2387 - acc: 0.8900 - val_loss: 0.4959 - val_acc: 0.
8125
Epoch 14/30
7/7 [=====] - 0s 35ms/step - loss: 0.2108 - acc: 0.9050 - val_loss: 0.6853 - val_acc: 0.
6875
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.1627 - acc: 0.9500 - val_loss: 0.5399 - val_acc: 0.
7500
Epoch 16/30
7/7 [=====] - 0s 34ms/step - loss: 0.1609 - acc: 0.9400 - val_loss: 0.7804 - val_acc: 0.
6875
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.1294 - acc: 0.9600 - val_loss: 0.4851 - val_acc: 0.
8125
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.1167 - acc: 0.9600 - val_loss: 0.7564 - val_acc: 0.
6875
Epoch 19/30
7/7 [=====] - 0s 33ms/step - loss: 0.1121 - acc: 0.9700 - val_loss: 0.6582 - val_acc: 0.
7500
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.1016 - acc: 0.9750 - val_loss: 0.7391 - val_acc: 0.
6875
Epoch 21/30
7/7 [=====] - 0s 36ms/step - loss: 0.0901 - acc: 0.9750 - val_loss: 0.8081 - val_acc: 0.
6875
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.0847 - acc: 0.9800 - val_loss: 0.6361 - val_acc: 0.
7500
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.0794 - acc: 0.9800 - val_loss: 0.7023 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 33ms/step - loss: 0.0699 - acc: 0.9800 - val_loss: 0.6344 - val_acc: 0.
7500
Epoch 25/30
7/7 [=====] - 0s 34ms/step - loss: 0.0769 - acc: 0.9700 - val_loss: 0.7352 - val_acc: 0.
7500
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0648 - acc: 0.9800 - val_loss: 0.6986 - val_acc: 0.
7500
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0593 - acc: 0.9850 - val_loss: 0.9242 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.0510 - acc: 0.9900 - val_loss: 0.6770 - val_acc: 0.
7500
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0462 - acc: 0.9850 - val_loss: 0.6648 - val_acc: 0.
7500
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.0477 - acc: 0.9850 - val_loss: 0.4964 - val_acc: 0.
8750
99%|██████████| 95/96 [14:21<00:08, 8.96s/it]
Epoch 1/30
7/7 [=====] - 0s 44ms/step - loss: 0.6302 - acc: 0.6800 - val_loss: 0.7232 - val_acc: 0.
5000
Epoch 2/30
7/7 [=====] - 0s 33ms/step - loss: 0.6272 - acc: 0.7100 - val_loss: 0.8191 - val_acc: 0.
5000
Epoch 3/30
7/7 [=====] - 0s 35ms/step - loss: 0.5770 - acc: 0.7200 - val_loss: 0.7118 - val_acc: 0.
5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.5950 - acc: 0.7200 - val_loss: 0.7771 - val_acc: 0.
5000
Epoch 5/30
7/7 [=====] - 0s 33ms/step - loss: 0.5728 - acc: 0.7200 - val_loss: 0.8432 - val_acc: 0.
5000
Epoch 6/30
7/7 [=====] - 0s 34ms/step - loss: 0.5797 - acc: 0.7200 - val_loss: 0.6931 - val_acc: 0.
5000
Epoch 7/30
7/7 [=====] - 0s 35ms/step - loss: 0.5892 - acc: 0.7250 - val_loss: 0.7621 - val_acc: 0.
5000
Epoch 8/30
7/7 [=====] - 0s 32ms/step - loss: 0.5691 - acc: 0.7200 - val_loss: 0.7429 - val_acc: 0.
```

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5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5621 - acc: 0.7200 - val_loss: 0.7911 - val_acc: 0.
5000
Epoch 10/30
7/7 [=====] - 0s 34ms/step - loss: 0.5465 - acc: 0.7200 - val_loss: 0.9563 - val_acc: 0.
5000
Epoch 11/30
7/7 [=====] - 0s 34ms/step - loss: 0.5585 - acc: 0.7200 - val_loss: 0.7384 - val_acc: 0.
5000
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.5561 - acc: 0.7250 - val_loss: 0.7060 - val_acc: 0.
5000
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.5434 - acc: 0.7250 - val_loss: 0.7803 - val_acc: 0.
5000
Epoch 14/30
7/7 [=====] - 0s 36ms/step - loss: 0.5338 - acc: 0.7200 - val_loss: 0.7126 - val_acc: 0.
5000
Epoch 15/30
7/7 [=====] - 0s 32ms/step - loss: 0.5314 - acc: 0.7200 - val_loss: 0.9342 - val_acc: 0.
5000
Epoch 16/30
7/7 [=====] - 0s 33ms/step - loss: 0.5332 - acc: 0.7200 - val_loss: 0.7357 - val_acc: 0.
5000
Epoch 17/30
7/7 [=====] - 0s 33ms/step - loss: 0.5262 - acc: 0.7350 - val_loss: 0.8594 - val_acc: 0.
5000
Epoch 18/30
7/7 [=====] - 0s 36ms/step - loss: 0.4990 - acc: 0.7300 - val_loss: 0.7120 - val_acc: 0.
5000
Epoch 19/30
7/7 [=====] - 0s 32ms/step - loss: 0.5033 - acc: 0.7350 - val_loss: 0.8958 - val_acc: 0.
5000
Epoch 20/30
7/7 [=====] - 0s 35ms/step - loss: 0.4912 - acc: 0.7400 - val_loss: 0.8435 - val_acc: 0.
5000
Epoch 21/30
7/7 [=====] - 0s 37ms/step - loss: 0.4895 - acc: 0.7400 - val_loss: 0.8540 - val_acc: 0.
5000
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.5053 - acc: 0.7500 - val_loss: 0.7348 - val_acc: 0.
5625
Epoch 23/30
7/7 [=====] - 0s 34ms/step - loss: 0.4716 - acc: 0.7550 - val_loss: 0.6091 - val_acc: 0.
7500
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.4823 - acc: 0.7850 - val_loss: 0.9260 - val_acc: 0.
5000
Epoch 25/30
7/7 [=====] - 0s 35ms/step - loss: 0.4959 - acc: 0.7600 - val_loss: 0.6234 - val_acc: 0.
6250
Epoch 26/30
7/7 [=====] - 0s 34ms/step - loss: 0.4669 - acc: 0.7750 - val_loss: 0.6634 - val_acc: 0.
6250
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.4610 - acc: 0.7600 - val_loss: 0.6468 - val_acc: 0.
5000
Epoch 28/30
7/7 [=====] - 0s 36ms/step - loss: 0.4795 - acc: 0.7200 - val_loss: 0.6469 - val_acc: 0.
6250
Epoch 29/30
7/7 [=====] - 0s 31ms/step - loss: 0.4433 - acc: 0.7950 - val_loss: 0.7472 - val_acc: 0.
6250
Epoch 30/30
7/7 [=====] - 0s 33ms/step - loss: 0.4280 - acc: 0.8100 - val_loss: 0.6939 - val_acc: 0.
6250
100%|██████████| 96/96 [14:30<00:00, 9.06s/it]

```

```
In [76]: df = pd.read_csv("C:\\Users\\rychu\\Desktop\\2021\\FLT\\P4-Project\\grid\\120521110247.csv")
```

```
In [77]: df
```

```
Out[77]:
```

	round_epochs	loss	acc	val_loss	val_acc	activation1	activation2	activation3	activation4	dropout	optimizer
0	30	0.089284	0.960	0.446432	0.6875	relu	relu	relu	relu	0.1	adam
1	30	0.528955	0.745	0.739977	0.5000	relu	relu	relu	relu	0.1	sgd
2	30	0.058747	0.985	2.058926	0.5625	relu	relu	relu	relu	0.3	adam

	round_epochs	loss	acc	val_loss	val_acc	activation1	activation2	activation3	activation4	dropout	optimizer
3	30	0.559607	0.745	0.833800	0.5000	relu	relu	relu	relu	0.3	sgd
4	30	0.116597	0.960	0.894400	0.7500	relu	relu	relu	relu	0.5	adam
...
91	30	0.433013	0.785	1.026122	0.5000	tanh	tanh	tanh	tanh	0.1	sgd
92	30	0.041294	0.995	0.936369	0.7500	tanh	tanh	tanh	tanh	0.3	adam
93	30	0.399291	0.785	0.619420	0.6250	tanh	tanh	tanh	tanh	0.3	sgd
94	30	0.048348	0.985	0.521753	0.8125	tanh	tanh	tanh	tanh	0.5	adam
95	30	0.391594	0.820	0.902743	0.6250	tanh	tanh	tanh	tanh	0.5	sgd

96 rows × 11 columns

```
In [78]: df.sort_values('val_acc', ascending=False)
```

Out[78]:

	round_epochs	loss	acc	val_loss	val_acc	activation1	activation2	activation3	activation4	dropout	optimizer
14	30	0.045584	0.990	0.355963	0.9375	relu	relu	tanh	relu	0.3	adam
90	30	0.015954	1.000	0.637691	0.8750	tanh	tanh	tanh	tanh	0.1	adam
46	30	0.038556	0.990	0.404017	0.8750	relu	tanh	tanh	tanh	0.5	adam
32	30	0.088186	0.965	0.428396	0.8750	relu	tanh	relu	tanh	0.3	adam
16	30	0.124078	0.950	0.396825	0.8750	relu	relu	tanh	relu	0.5	adam
...
45	30	0.424899	0.795	0.986641	0.5000	relu	tanh	tanh	tanh	0.3	sgd
17	30	0.538083	0.745	0.735461	0.5000	relu	relu	tanh	relu	0.5	sgd
71	30	0.479030	0.765	0.899852	0.5000	tanh	relu	tanh	tanh	0.5	sgd
15	30	0.543857	0.745	0.854714	0.5000	relu	relu	tanh	relu	0.3	sgd
73	30	0.517773	0.745	0.777227	0.5000	tanh	tanh	relu	relu	0.1	sgd

96 rows × 11 columns

```
In [79]: # Make note of most accurate model with respect to val_acc and acutal acc
```

Final Model

```
In [80]: model = models.Sequential()

# hidden layers
model.add(layers.Conv2D(32, (3, 3), activation='relu', input_shape=(64, 64, 3)))
model.add(layers.MaxPooling2D((2, 2)))

model.add(layers.Conv2D(32, (4, 4), activation='relu'))
model.add(layers.MaxPooling2D((2, 2)))

model.add(layers.Conv2D(64, (3, 3), activation='tanh'))
model.add(layers.MaxPooling2D((2, 2)))

model.add(layers.Flatten())

model.add(layers.Dense(64, activation='relu'))
model.add(layers.Dropout(0.3))

# output layer
model.add(layers.Dense(1, activation='sigmoid'))

model.compile(loss='binary_crossentropy',
              optimizer='adam',
              metrics=['acc'])
```

```
history = model.fit(train_images,
                    train_y,
                    epochs=30,
                    batch_size=32,
                    validation_data=(val_images, val_y))
```

```
Epoch 1/30
7/7 [=====] - 0s 45ms/step - loss: 0.6716 - acc: 0.6850 - val_loss: 0.6926 - val_acc: 0.5000
Epoch 2/30
7/7 [=====] - 0s 35ms/step - loss: 0.6719 - acc: 0.6600 - val_loss: 0.7277 - val_acc: 0.5000
Epoch 3/30
7/7 [=====] - 0s 36ms/step - loss: 0.5840 - acc: 0.7150 - val_loss: 0.8191 - val_acc: 0.5000
Epoch 4/30
7/7 [=====] - 0s 32ms/step - loss: 0.6257 - acc: 0.6650 - val_loss: 1.0019 - val_acc: 0.5000
Epoch 5/30
7/7 [=====] - 0s 35ms/step - loss: 0.6211 - acc: 0.7200 - val_loss: 0.7533 - val_acc: 0.5000
Epoch 6/30
7/7 [=====] - 0s 36ms/step - loss: 0.5730 - acc: 0.7200 - val_loss: 0.8516 - val_acc: 0.5000
Epoch 7/30
7/7 [=====] - 0s 31ms/step - loss: 0.5927 - acc: 0.7200 - val_loss: 0.7182 - val_acc: 0.5000
Epoch 8/30
7/7 [=====] - 0s 33ms/step - loss: 0.5927 - acc: 0.7300 - val_loss: 0.7502 - val_acc: 0.5000
Epoch 9/30
7/7 [=====] - 0s 33ms/step - loss: 0.5364 - acc: 0.7200 - val_loss: 0.8300 - val_acc: 0.5000
Epoch 10/30
7/7 [=====] - 0s 36ms/step - loss: 0.5023 - acc: 0.7500 - val_loss: 0.9373 - val_acc: 0.6250
Epoch 11/30
7/7 [=====] - 0s 31ms/step - loss: 0.5154 - acc: 0.7200 - val_loss: 0.8169 - val_acc: 0.6250
Epoch 12/30
7/7 [=====] - 0s 33ms/step - loss: 0.3921 - acc: 0.8150 - val_loss: 0.6314 - val_acc: 0.6875
Epoch 13/30
7/7 [=====] - 0s 33ms/step - loss: 0.3518 - acc: 0.8550 - val_loss: 0.6874 - val_acc: 0.6875
Epoch 14/30
7/7 [=====] - 0s 33ms/step - loss: 0.3276 - acc: 0.8700 - val_loss: 0.6525 - val_acc: 0.6250
Epoch 15/30
7/7 [=====] - 0s 33ms/step - loss: 0.2974 - acc: 0.8650 - val_loss: 0.4168 - val_acc: 0.8750
Epoch 16/30
7/7 [=====] - 0s 32ms/step - loss: 0.2929 - acc: 0.8500 - val_loss: 0.8835 - val_acc: 0.6250
Epoch 17/30
7/7 [=====] - 0s 35ms/step - loss: 0.2393 - acc: 0.9200 - val_loss: 0.5939 - val_acc: 0.6875
Epoch 18/30
7/7 [=====] - 0s 32ms/step - loss: 0.1922 - acc: 0.9350 - val_loss: 1.2306 - val_acc: 0.6250
Epoch 19/30
7/7 [=====] - 0s 34ms/step - loss: 0.1922 - acc: 0.9300 - val_loss: 0.5011 - val_acc: 0.8750
Epoch 20/30
7/7 [=====] - 0s 33ms/step - loss: 0.1636 - acc: 0.9450 - val_loss: 0.7258 - val_acc: 0.6875
Epoch 21/30
7/7 [=====] - 0s 39ms/step - loss: 0.1548 - acc: 0.9650 - val_loss: 0.7328 - val_acc: 0.6875
Epoch 22/30
7/7 [=====] - 0s 32ms/step - loss: 0.1274 - acc: 0.9550 - val_loss: 0.9730 - val_acc: 0.6875
Epoch 23/30
7/7 [=====] - 0s 33ms/step - loss: 0.1267 - acc: 0.9650 - val_loss: 0.7721 - val_acc: 0.6875
Epoch 24/30
7/7 [=====] - 0s 34ms/step - loss: 0.1184 - acc: 0.9650 - val_loss: 0.8092 - val_acc: 0.6875
Epoch 25/30
7/7 [=====] - 0s 32ms/step - loss: 0.1098 - acc: 0.9650 - val_loss: 1.2689 - val_acc: 0.
```



```

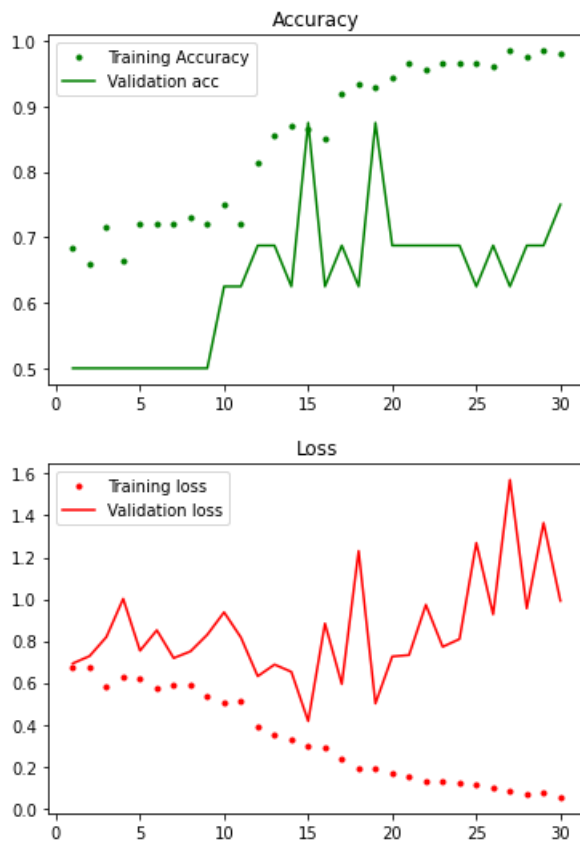
6250
Epoch 26/30
7/7 [=====] - 0s 33ms/step - loss: 0.0991 - acc: 0.9600 - val_loss: 0.9274 - val_acc: 0.
6875
Epoch 27/30
7/7 [=====] - 0s 33ms/step - loss: 0.0817 - acc: 0.9850 - val_loss: 1.5708 - val_acc: 0.
6250
Epoch 28/30
7/7 [=====] - 0s 35ms/step - loss: 0.0681 - acc: 0.9750 - val_loss: 0.9559 - val_acc: 0.
6875
Epoch 29/30
7/7 [=====] - 0s 32ms/step - loss: 0.0729 - acc: 0.9850 - val_loss: 1.3647 - val_acc: 0.
6875
Epoch 30/30
7/7 [=====] - 0s 32ms/step - loss: 0.0527 - acc: 0.9800 - val_loss: 0.9919 - val_acc: 0.
7500

```

```

In [81]: train_acc = history.history['acc']
val_acc = history.history['val_acc']
train_loss = history.history['loss']
val_loss = history.history['val_loss']
epoch = range(1, len(train_acc) + 1)
plt.plot(epoch, train_acc, 'g.', label='Training Accuracy')
plt.plot(epoch, val_acc, 'g', label='Validation acc')
plt.title('Accuracy')
plt.legend()
plt.figure()
plt.plot(epoch, train_loss, 'r.', label='Training loss')
plt.plot(epoch, val_loss, 'r', label='Validation loss')
plt.title('Loss')
plt.legend()
plt.show()

```



```

In [82]: results_train = model.evaluate(train_images, train_y)
7/7 [=====] - 0s 6ms/step - loss: 0.0452 - acc: 0.9900

```

```

In [83]: results_test = model.evaluate(test_images, test_y)
6/6 [=====] - 0s 6ms/step - loss: 0.6835 - acc: 0.7667

```

```

In [84]: results_train

```

Out[84]: [0.04520443454384804, 0.9900000095367432]

In [85]: results_test

Out[85]: [0.6835276484489441, 0.7666666507720947]

Misc

X = [] files = glob.glob("C:\Users\rychu\Desktop\2021\FLT\P4-Project\chest_xray\test\NORMAL*.jpeg") for myFile in files:

print(myFile) image = cv2.imread(myFile) X.append(image) print('X shape:', np.array(X).shape)

y = [] files = glob.glob("C:\Users\rychu\Desktop\2021\FLT\P4-Project\chest_xray\test\PNEUMONIA*.jpeg") for myFile in files:

print(myFile) image = cv2.imread(myFile) y.append(image) print('y shape:', np.array(y).shape)

load image as pixel array image = image.imread("C:\Users\rychu\Desktop\2021\FLT\P4-Project\chest_xray\train\NORMAL\IM-0151-0001.jpeg") summarize shape of the pixel array print(image.dtype) print(image.shape) display the array of pixels as an image
pyplot.imshow(image) pyplot.show()