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Environment:

- Python 3.10.8
- Ubuntu 22.04.2 LTS x86_64
- Without GPU

In [ ]:
```
import tensorflow as tf
from tensorflow import keras
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
import numpy as np
from keras import regularizers
```

```
2023-05-10 21:39:36.314814: I tensorflow/tsl/cuda/cudart_stub.cc:28] Could not find cuda drivers on your machine, GP
U will not be used.
2023-05-10 21:39:36.337970: I tensorflow/tsl/cuda/cudart_stub.cc:28] Could not find cuda drivers on your machine, GP
U will not be used.
2023-05-10 21:39:36.338476: I tensorflow/core/platform/cpu_feature_guard.cc:182] This TensorFlow binary is optimized
to use available CPU instructions in performance-critical operations.
To enable the following instructions: AVX2 FMA, in other operations, rebuild TensorFlow with the appropriate compile
r flags.
2023-05-10 21:39:36.810297: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
```

In [ ]:
```
tf.__version__
```

Out[ ]: '2.12.0'

Load & preprocessing the dataset

In [ ]:
```
columns = ['fLength', 'fWidth', 'fSize', 'fConc', 'fConc1',
           'fAsym', 'fM3Long', 'fM3Trans', 'fAlpha', 'fDist', 'class']

df = pd.read_csv('./data/magic04.data', names=columns)
```

In [ ]:
```
df.head()
```

Out[ ]:

	fLength	fWidth	fSize	fConc	fConc1	fAsym	fM3Long	fM3Trans	fAlpha	fDist	class
0	28.7967	16.0021	2.6449	0.3918	0.1982	27.7004	22.0110	-8.2027	40.0920	81.8828	g
1	31.6036	11.7235	2.5185	0.5303	0.3773	26.2722	23.8238	-9.9574	6.3609	205.2610	g
2	162.0520	136.0310	4.0612	0.0374	0.0187	116.7410	-64.8580	-45.2160	76.9600	256.7880	g
3	23.8172	9.5728	2.3385	0.6147	0.3922	27.2107	-6.4633	-7.1513	10.4490	116.7370	g
4	75.1362	30.9205	3.1611	0.3168	0.1832	-5.5277	28.5525	21.8393	4.6480	356.4620	g

Label encoding the class column so that it can be fitted in ANN

In [ ]:
```
from sklearn import preprocessing
le = preprocessing.LabelEncoder()
df['class'] = le.fit_transform(df['class'])
```

In [ ]:
```
from sklearn.preprocessing import StandardScaler
scaler = StandardScaler()
for col in df.columns:
    if(col == 'class'): continue
    scalerData = scaler.fit_transform(df[col].values.reshape(-1, 1))
    df[col] =  scalerData
```

In [ ]:
```
df.head()
```

Out[ ]:

	fLength	fWidth	fSize	fConc	fConc1	fAsym	fM3Long	fM3Trans	fAlpha	fDist	class
0	-0.577226	-0.336804	-0.381130	0.062759	-0.148923	0.541042	0.224818	-0.405842	0.476816	-1.497866	0
1	-0.510969	-0.570027	-0.648595	0.820383	1.471776	0.516919	0.260364	-0.490094	-0.815418	0.153125	0
2	2.568278	6.205858	2.615783	-1.875883	-1.773241	2.044992	-1.478536	-2.183030	1.889224	0.842635	0
3	-0.694768	-0.687259	-1.029478	1.282069	1.606608	0.532771	-0.333515	-0.355359	-0.658804	-1.031463	0
4	0.516622	0.476384	0.711157	-0.347506	-0.284660	-0.020200	0.353086	1.036620	-0.881039	2.176427	0

Split the dataset by 70% training and 30% testing

In [ ]:
```
y = df['class']
X = df.drop(columns=['class'])
```

In [ ]:
```
X_train, X_test, y_train, y_test = train_test_split(X, y, train_size=70, random_state=42, shuffle=True)
```

In [ ]:
```
X_train.shape
```

Out[ ]:
```
(70, 10)
```

In [ ]:
```
num_classes = len(set(y))
```

In [ ]:
```
from keras.models import Sequential
from keras.layers import Flatten, Dense
```

In [ ]:
```
model = Sequential([
    Flatten(input_shape=(10,)),
    Dense(100, activation="relu", kernel_regularizer=regularizers.L1L2(1e-5, 1e-4)),
    Dense(100, activation="relu", kernel_regularizer=regularizers.L1L2(1e-5, 1e-4)),
    Dense(num_classes, activation="softmax")
])
```

In [ ]:
```
model.compile(loss="sparse_categorical_crossentropy",
                  optimizer="adam",
                  metrics=["sparse_categorical_accuracy"])
```

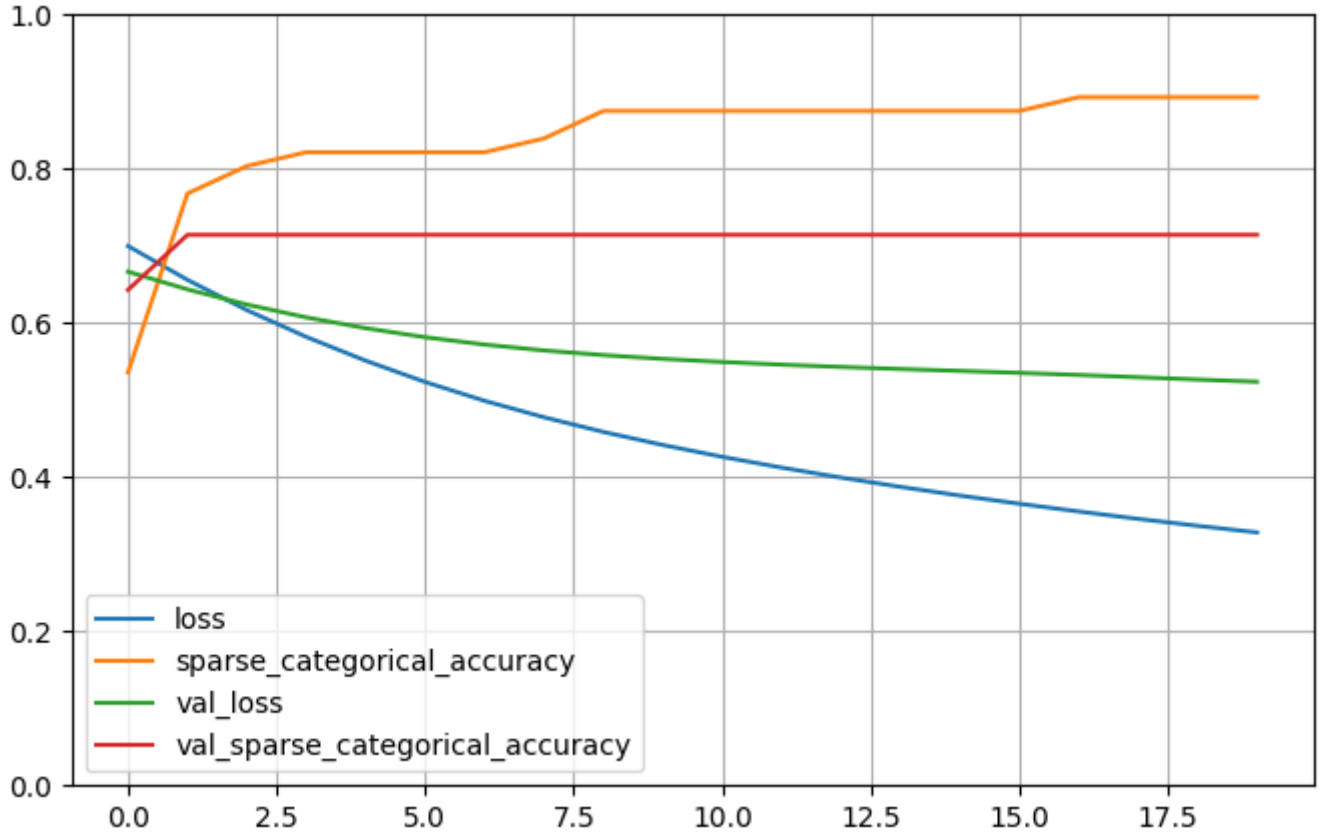
In [ ]:
```
history = model.fit(X_train, y_train, epochs=20, batch_size=100, validation_split=0.2)
```

```
Epoch 1/20
1/1 [==============================] - 0s 420ms/step - loss: 0.6998 - sparse_categorical_accuracy: 0.5357 - val_los
s: 0.6665 - val_sparse_categorical_accuracy: 0.6429
Epoch 2/20
1/1 [==============================] - 0s 12ms/step - loss: 0.6559 - sparse_categorical_accuracy: 0.7679 - val_loss:
0.6436 - val_sparse_categorical_accuracy: 0.7143
Epoch 3/20
1/1 [==============================] - 0s 12ms/step - loss: 0.6166 - sparse_categorical_accuracy: 0.8036 - val_loss:
0.6239 - val_sparse_categorical_accuracy: 0.7143
Epoch 4/20
1/1 [==============================] - 0s 13ms/step - loss: 0.5819 - sparse_categorical_accuracy: 0.8214 - val_loss:
0.6072 - val_sparse_categorical_accuracy: 0.7143
Epoch 5/20
1/1 [==============================] - 0s 12ms/step - loss: 0.5510 - sparse_categorical_accuracy: 0.8214 - val_loss:
0.5932 - val_sparse_categorical_accuracy: 0.7143
Epoch 6/20
1/1 [==============================] - 0s 12ms/step - loss: 0.5234 - sparse_categorical_accuracy: 0.8214 - val_loss:
0.5815 - val_sparse_categorical_accuracy: 0.7143
Epoch 7/20
1/1 [==============================] - 0s 12ms/step - loss: 0.4990 - sparse_categorical_accuracy: 0.8214 - val_loss:
0.5719 - val_sparse_categorical_accuracy: 0.7143
Epoch 8/20
1/1 [==============================] - 0s 12ms/step - loss: 0.4776 - sparse_categorical_accuracy: 0.8393 - val_loss:
0.5643 - val_sparse_categorical_accuracy: 0.7143
Epoch 9/20
1/1 [==============================] - 0s 11ms/step - loss: 0.4586 - sparse_categorical_accuracy: 0.8750 - val_loss:
0.5583 - val_sparse_categorical_accuracy: 0.7143
Epoch 10/20
1/1 [==============================] - 0s 11ms/step - loss: 0.4417 - sparse_categorical_accuracy: 0.8750 - val_loss:
0.5534 - val_sparse_categorical_accuracy: 0.7143
Epoch 11/20
1/1 [==============================] - 0s 12ms/step - loss: 0.4263 - sparse_categorical_accuracy: 0.8750 - val_loss:
0.5494 - val_sparse_categorical_accuracy: 0.7143
Epoch 12/20
1/1 [==============================] - 0s 12ms/step - loss: 0.4123 - sparse_categorical_accuracy: 0.8750 - val_loss:
0.5459 - val_sparse_categorical_accuracy: 0.7143
Epoch 13/20
1/1 [==============================] - 0s 12ms/step - loss: 0.3994 - sparse_categorical_accuracy: 0.8750 - val_loss:
0.5429 - val_sparse_categorical_accuracy: 0.7143
Epoch 14/20
```

```
1/1 [==============================] - 0s 12ms/step - loss: 0.3873 - sparse_categorical_accuracy: 0.8750 - val_loss:
0.5402 - val_sparse_categorical_accuracy: 0.7143
Epoch 15/20
1/1 [==============================] - 0s 12ms/step - loss: 0.3761 - sparse_categorical_accuracy: 0.8750 - val_loss:
0.5378 - val_sparse_categorical_accuracy: 0.7143
Epoch 16/20
1/1 [==============================] - 0s 11ms/step - loss: 0.3655 - sparse_categorical_accuracy: 0.8750 - val_loss:
0.5352 - val_sparse_categorical_accuracy: 0.7143
Epoch 17/20
1/1 [==============================] - 0s 11ms/step - loss: 0.3554 - sparse_categorical_accuracy: 0.8929 - val_loss:
0.5325 - val_sparse_categorical_accuracy: 0.7143
Epoch 18/20
1/1 [==============================] - 0s 11ms/step - loss: 0.3458 - sparse_categorical_accuracy: 0.8929 - val_loss:
0.5296 - val_sparse_categorical_accuracy: 0.7143
Epoch 19/20
1/1 [==============================] - 0s 12ms/step - loss: 0.3368 - sparse_categorical_accuracy: 0.8929 - val_loss:
0.5266 - val_sparse_categorical_accuracy: 0.7143
Epoch 20/20
1/1 [==============================] - 0s 11ms/step - loss: 0.3283 - sparse_categorical_accuracy: 0.8929 - val_loss:
0.5237 - val_sparse_categorical_accuracy: 0.7143
```

In [ ]:
```
pd.DataFrame(history.history).plot(figsize=(8, 5))
plt.grid(True)
plt.gca().set_ylim(0, 1)
```

Out[ ]:
```
(0.0, 1.0)
```



In [ ]:
```
model.evaluate(X_test, y_test)
```

```
593/593 [==============================] - 0s 409us/step - loss: 0.6266 - sparse_categorical_accuracy: 0.7085
```

Out[ ]:
```
[0.6266001462936401, 0.7084960341453552]
```

In [ ]:
```
prob = model.predict(X_test)
```

```
593/593 [==============================] - 0s 341us/step
```

In [ ]:
```
prob
```

Out[ ]:
```
array([[0.71945715, 0.28054285],
       [0.9580336 , 0.04196644],
       [0.8906502 , 0.10934976],
       ...,
       [0.87829596, 0.12170409],
       [0.8187299 , 0.18127017],
       [0.9477197 , 0.05228031]], dtype=float32)
```

In [ ]:
```
prediction = np.argmax(prob, axis=-1)
```

In [ ]:
```
prediction_with_label = le.inverse_transform(prediction)
```

In [ ]:
```
prediction_with_label
```

Out[ ]:
```
array(['g', 'g', 'g', ..., 'g', 'g', 'g'], dtype=object)
```

Hyperparameter fine-tunning

Here I created a function to build an ANN model with 4 hyperparameters:

- `n_hidden` : number of hidden layers
- `n_neurons` : number of neurons for each layer
- `optimizer` : optimization algorithm (e.g Adam, SGD)
- `l1` , `l2` : regulization parameters for L1 and L2, respectively

In [ ]:
```
def build_model(n_hidden=1, n_neurons=30, optimizer='adam', input_shape=(10,), l1=1e5, l2=1e-4):
    model = Sequential()
    model.add(Flatten(input_shape=input_shape))
    for _ in range(n_hidden):
        model.add(Dense(n_neurons, activation="relu", kernel_regularizer=regularizers.L1L2(l1,l2)))

    # output layer
    model.add(Dense(num_classes, activation="softmax"))
    model.compile(optimizer=optimizer,
                  loss="sparse_categorical_crossentropy",
```

```
                  metrics=["accuracy"])
    return model
```

In [ ]:
```
keras_clf = keras.wrappers.scikit_learn.KerasClassifier(build_model)
```

```
/tmp/ipykernel_1080623/1341954221.py:1: DeprecationWarning: KerasClassifier is deprecated, use Sci-Keras (https://github.com/adriangb/scikeras) instead. See https://www.adriangb.com/scikeras/stable/migration.html for help migrating.
  keras_clf = keras.wrappers.scikit_learn.KerasClassifier(build_model)
```

In [ ]:
```
from sklearn.model_selection import GridSearchCV
param_distribs = {
    "n_hidden": [2, 4, 6, 8, 10],
    "n_neurons": [100, 200, 300],
    "optimizer": ['SGD', 'adam'],
    "l1": [1e-5, 1e-4, 1e-2],
    "l2": [1e-5, 1e-4, 1e-2],
}
rnd_search_cv = GridSearchCV(keras_clf, param_distribs, cv=5, n_jobs=-1)
history = rnd_search_cv.fit(X_train, y_train, epochs=20, batch_size=100, verbose=0, validation_split=0.2)
```

```
2023-05-10 21:39:41.751580: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.836358: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.837974: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.881565: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.886144: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.891486: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.902959: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.907618: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.910774: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.914397: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.965393: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:41.978056: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:39:42.702314: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.754429: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.772462: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.803107: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
```

```
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.823407: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.828150: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.838723: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.857206: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.857424: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.857987: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.952326: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
2023-05-10 21:39:42.973489: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
```

```
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
```

```
1/1 [==============================] - 0s 18ms/step - loss: 0.6106 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.6274 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 0.6724 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 0.6978 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.5911 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.5440 - accuracy: 0.9286
1/1 [==============================] - 0s 15ms/step - loss: 0.2475 - accuracy: 0.9286
1/1 [==============================] - 0s 15ms/step - loss: 0.6131 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 0.2678 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 0.4951 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.5959 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.5209 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.6447 - accuracy: 0.6429
1/1 [==============================] - 0s 17ms/step - loss: 0.5819 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 0.6234 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.3064 - accuracy: 0.9286
1/1 [==============================] - 0s 12ms/step - loss: 0.2416 - accuracy: 0.9286
1/1 [==============================] - 0s 15ms/step - loss: 0.6352 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.6630 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.5572 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 0.6706 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.5381 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.5420 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6517 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.6685 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.3806 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 0.7168 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.3063 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.7164 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.6343 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 0.6609 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 0.6536 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 0.6049 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 0.6422 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6743 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 0.2857 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.7115 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 0.6937 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.7092 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.7063 - accuracy: 0.7143
```

```
1/1 [==============================] - 0s 17ms/step - loss: 0.7237 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.7072 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 0.2644 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 0.5898 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6809 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.4161 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 0.6450 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.3665 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.7276 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.7221 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 0.7932 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 0.7463 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 1.2551 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 0.9636 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 0.7759 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 0.8065 - accuracy: 0.9286
1/1 [==============================] - 0s 21ms/step - loss: 1.1556 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 0.5237 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 2.0036 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 1.3495 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.6594 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.6909 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6352 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.6459 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.6935 - accuracy: 0.7143
1/1 [==============================] - 0s 28ms/step - loss: 0.6194 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 0.2937 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 0.7426 - accuracy: 0.8571
1/1 [==============================] - 0s 25ms/step - loss: 0.2904 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.7653 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.6635 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.7644 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.7507 - accuracy: 0.8571
1/1 [==============================] - 0s 12ms/step - loss: 0.7358 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 0.7623 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 1.2516 - accuracy: 0.9286
1/1 [==============================] - 0s 14ms/step - loss: 0.9858 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 0.5911 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.8420 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.8797 - accuracy: 0.7143
```

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1/1 [==============================] - 0s 17ms/step - loss: 2.3717 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.8447 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.4830 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 0.8631 - accuracy: 0.7857
1/1 [==============================] - 0s 14ms/step - loss: 0.8828 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 2.4686 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 4.2027 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.8257 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 2.8574 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.6804 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.7104 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6859 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 2.8525 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.7052 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.6996 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.4900 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 0.8133 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.9877 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 0.4056 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.8275 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.8082 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 0.8330 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.8029 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 0.6658 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 0.7882 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 1.3015 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 2.4794 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 0.9731 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.9609 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 3.1309 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.9750 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 0.9557 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.9835 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.9753 - accuracy: 0.7857
1/1 [==============================] - 0s 26ms/step - loss: 2.8635 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 3.7759 - accuracy: 0.9286
1/1 [==============================] - 0s 23ms/step - loss: 9.5242 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 1.7871 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 0.7272 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 0.7199 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 17ms/step - loss: 5.8754 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 0.6962 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.7264 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 0.7391 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 5.3168 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 0.7718 - accuracy: 0.9286
1/1 [==============================] - 0s 14ms/step - loss: 0.8594 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.8823 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 1.5635 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 0.8687 - accuracy: 0.7857
1/1 [==============================] - 0s 12ms/step - loss: 0.8842 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.7071 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.8345 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.4421 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 0.8638 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 1.4623 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 3.5063 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.1426 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 1.0507 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 1.0462 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.0545 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 1.0882 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.0761 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 3.7622 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 4.9528 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 3.3465 - accuracy: 0.9286
1/1 [==============================] - 0s 15ms/step - loss: 0.6309 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.6455 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 3.5350 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.6372 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.5971 - accuracy: 0.7857
1/1 [==============================] - 0s 28ms/step - loss: 0.5867 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 1.6185 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.6543 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 3.9197 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.3491 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 0.6787 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 7.9845 - accuracy: 0.7857
1/1 [==============================] - 0s 14ms/step - loss: 0.5934 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.2921 - accuracy: 0.9286
```

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1/1 [==============================] - 0s 16ms/step - loss: 0.6739 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 0.5393 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.4998 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 0.6539 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 0.6819 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 0.8133 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.3085 - accuracy: 0.9286
1/1 [==============================] - 0s 21ms/step - loss: 0.2362 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.6634 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.5858 - accuracy: 0.9286
1/1 [==============================] - 0s 15ms/step - loss: 0.5586 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.6106 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.6581 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.6083 - accuracy: 0.7143
1/1 [==============================] - 0s 26ms/step - loss: 0.6872 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 0.4242 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.8964 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.3162 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.7098 - accuracy: 0.8571
1/1 [==============================] - 0s 12ms/step - loss: 0.7120 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 0.6091 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.6656 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 0.6338 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 0.6708 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.6534 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 0.2664 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 0.9226 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.2896 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.5802 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.7700 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.5370 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.7868 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.7261 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.6774 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.4325 - accuracy: 0.9286
1/1 [==============================] - 0s 14ms/step - loss: 0.9170 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 0.7672 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 0.3923 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 0.8584 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.1939 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 20ms/step - loss: 0.8501 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.9784 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.8186 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 0.8321 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 0.8396 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6168 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.5103 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 1.8983 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.6895 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 1.9056 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.5407 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.6889 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.7001 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.7256 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.7241 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6575 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.3379 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.2900 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.8637 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6600 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 0.8287 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.8136 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.8084 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.8544 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.8399 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 1.6427 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 1.8869 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.5501 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 0.8060 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 0.9938 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 1.6312 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 0.9960 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 1.0288 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 1.0097 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.9954 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 3.5382 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 2.2753 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 1.2522 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 0.7375 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 0.7761 - accuracy: 0.7143
```

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1/1 [==============================] - 0s 19ms/step - loss: 2.6123 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 0.7486 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 3.6739 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.7555 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.7635 - accuracy: 0.7857
1/1 [==============================] - 0s 25ms/step - loss: 0.6213 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 0.5569 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 0.9405 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.4374 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 0.9552 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.9352 - accuracy: 0.8571
1/1 [==============================] - 0s 12ms/step - loss: 0.8195 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.9159 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.9558 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.8083 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 1.6649 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 2.1144 - accuracy: 0.7857
1/1 [==============================] - 0s 14ms/step - loss: 1.0006 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 2.6644 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 1.1406 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.1686 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 1.1353 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 1.1554 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 1.1675 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 2.9117 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 3.0422 - accuracy: 0.9286
1/1 [==============================] - 0s 19ms/step - loss: 3.8674 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 1.5003 - accuracy: 0.9286
1/1 [==============================] - 0s 19ms/step - loss: 5.9902 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.7711 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.8124 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 0.7901 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 6.2355 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.7934 - accuracy: 0.7857
1/1 [==============================] - 0s 24ms/step - loss: 0.8163 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.5791 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 1.5854 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 1.0462 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 1.0212 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.3705 - accuracy: 0.9286
```

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1/1 [==============================] - 0s 21ms/step - loss: 1.6584 - accuracy: 0.8571
1/1 [==============================] - 0s 34ms/step - loss: 1.0163 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 1.0340 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 0.6593 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.0487 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 3.6520 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 1.6252 - accuracy: 0.9286
1/1 [==============================] - 0s 23ms/step - loss: 1.3457 - accuracy: 0.7857
1/1 [==============================] - 0s 26ms/step - loss: 1.3169 - accuracy: 0.7143
1/1 [==============================] - 0s 29ms/step - loss: 4.7471 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.2868 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.2987 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 1.3215 - accuracy: 0.7143
1/1 [==============================] - 0s 36ms/step - loss: 4.2830 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 1.3085 - accuracy: 0.7857
1/1 [==============================] - 0s 25ms/step - loss: 1.7208 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 1.7332 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.7500 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 3.7928 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 1.7768 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 8.0127 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 1.4243 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 1.7065 - accuracy: 0.8571
1/1 [==============================] - 0s 48ms/step - loss: 1.9945 - accuracy: 0.8571
1/1 [==============================] - 0s 35ms/step - loss: 1.6121 - accuracy: 0.7143
1/1 [==============================] - 0s 35ms/step - loss: 7.9037 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 1.4821 - accuracy: 0.8571
1/1 [==============================] - 0s 33ms/step - loss: 2.7546 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 1.5008 - accuracy: 0.7143
1/1 [==============================] - 0s 31ms/step - loss: 2.7963 - accuracy: 0.8571
1/1 [==============================] - 0s 38ms/step - loss: 9.2443 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 1.2628 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 2.7834 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 2.7969 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 2.7904 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 2.1716 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 1.8115 - accuracy: 0.9286
1/1 [==============================] - 0s 28ms/step - loss: 1.8052 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 3.8631 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 2.0847 - accuracy: 0.7143
```

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1/1 [==============================] - 0s 19ms/step - loss: 3.8038 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 2.0697 - accuracy: 0.8571
1/1 [==============================] - 0s 38ms/step - loss: 3.7797 - accuracy: 0.8571
1/1 [==============================] - 0s 28ms/step - loss: 2.2859 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 2.5711 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 3.7874 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 3.7598 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 2.5649 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 2.2039 - accuracy: 0.9286
1/1 [==============================] - 0s 26ms/step - loss: 2.5064 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 3.7962 - accuracy: 1.0000
1/1 [==============================] - 0s 19ms/step - loss: 3.8061 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 3.8205 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 3.8020 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 3.8248 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 2.7051 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 2.7218 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 6.8107 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 3.1287 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 2.9716 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 3.0085 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 6.8788 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 6.7650 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 6.8236 - accuracy: 0.7857
1/1 [==============================] - 0s 24ms/step - loss: 6.8673 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 4.6203 - accuracy: 0.7143
1/1 [==============================] - 0s 35ms/step - loss: 4.2929 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 4.2740 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 9.9026 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 9.8815 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 4.6104 - accuracy: 0.8571
1/1 [==============================] - 0s 12ms/step - loss: 9.8650 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 4.7131 - accuracy: 0.8571
1/1 [==============================] - 0s 13ms/step - loss: 5.5552 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 9.8526 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 5.8152 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 9.8937 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 5.9344 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 5.4600 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 5.8674 - accuracy: 0.7857
```

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1/1 [==============================] - 0s 18ms/step - loss: 5.7849 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 5.8110 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 5.7814 - accuracy: 0.7857
1/1 [==============================] - 0s 28ms/step - loss: 5.8393 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 5.8203 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 4.0713 - accuracy: 0.9286
1/1 [==============================] - 0s 21ms/step - loss: 4.2118 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 10.8299 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 4.3807 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 10.8761 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 4.3209 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 10.8489 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 4.3841 - accuracy: 0.7143
1/1 [==============================] - 0s 25ms/step - loss: 10.8519 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 10.8631 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 6.9974 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 15.9152 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 6.6641 - accuracy: 0.9286
1/1 [==============================] - 0s 19ms/step - loss: 15.9344 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 7.2339 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 6.5878 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 15.8575 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 15.9429 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 7.0147 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 15.8848 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 8.6619 - accuracy: 0.9286
1/1 [==============================] - 0s 24ms/step - loss: 9.0420 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 7.8327 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 8.6119 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 7.8337 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 7.8321 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 7.8202 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 9.1835 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 9.3250 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 7.8155 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 5.6816 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 6.0215 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 5.4824 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 14.8602 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 14.9141 - accuracy: 0.7143
```

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1/1 [==============================] - 0s 19ms/step - loss: 14.8911 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 14.9037 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 5.7173 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 14.8580 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 5.8501 - accuracy: 0.7143
1/1 [==============================] - 0s 27ms/step - loss: 9.0591 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 9.4158 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 21.9535 - accuracy: 0.8571
1/1 [==============================] - 0s 25ms/step - loss: 21.9686 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 9.0287 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 9.2879 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 21.9396 - accuracy: 0.8571
1/1 [==============================] - 0s 25ms/step - loss: 21.9626 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 21.9550 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 9.3154 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 11.9620 - accuracy: 0.8571
1/1 [==============================] - 0s 26ms/step - loss: 12.0860 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 11.7831 - accuracy: 0.8571
1/1 [==============================] - 0s 13ms/step - loss: 9.8032 - accuracy: 0.8571
1/1 [==============================] - 0s 25ms/step - loss: 12.2253 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 9.8142 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 9.8477 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 9.8166 - accuracy: 0.7143
1/1 [==============================] - 0s 32ms/step - loss: 9.7856 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 12.0977 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 7.1575 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 6.8937 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 6.9184 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 7.1992 - accuracy: 0.7857
1/1 [==============================] - 0s 13ms/step - loss: 18.9070 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 18.9382 - accuracy: 0.7143
1/1 [==============================] - 0s 37ms/step - loss: 18.9005 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 18.8869 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 18.9380 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 7.1357 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 11.4770 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 11.6296 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 11.4215 - accuracy: 0.8571
1/1 [==============================] - 0s 25ms/step - loss: 11.8047 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 28.0082 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 21ms/step - loss: 28.0256 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 27.9749 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 11.7533 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 28.0255 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 28.0429 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.7885 - accuracy: 0.6429
1/1 [==============================] - 0s 27ms/step - loss: 0.7215 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 14.8955 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 0.5994 - accuracy: 1.0000
1/1 [==============================] - 0s 20ms/step - loss: 0.6570 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.7056 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 15.2336 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.5096 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 0.6374 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 14.9229 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.3963 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 15.2317 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 15.0802 - accuracy: 0.7857
1/1 [==============================] - 0s 13ms/step - loss: 0.5804 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.6312 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.8360 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.9092 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 0.8281 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 0.8700 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.8878 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.5377 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 1.0276 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.1294 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 0.4507 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 1.0833 - accuracy: 0.7857
1/1 [==============================] - 0s 26ms/step - loss: 1.0158 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.8364 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 0.7877 - accuracy: 0.6429
1/1 [==============================] - 0s 16ms/step - loss: 1.1014 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 1.0583 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 0.6956 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 1.0819 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 0.6544 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 0.9173 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 1.0131 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 18ms/step - loss: 1.1338 - accuracy: 0.8571
1/1 [==============================] - 0s 37ms/step - loss: 0.9113 - accuracy: 0.7143
1/1 [==============================] - 0s 26ms/step - loss: 0.8979 - accuracy: 0.7857
1/1 [==============================] - 0s 39ms/step - loss: 0.9381 - accuracy: 0.6429
1/1 [==============================] - 0s 22ms/step - loss: 0.4950 - accuracy: 0.9286
1/1 [==============================] - 0s 22ms/step - loss: 0.8894 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 1.1071 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.7544 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 1.3428 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 1.2988 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.4595 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.8444 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 1.3913 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 1.3846 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 1.3745 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 1.0105 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 1.2186 - accuracy: 0.7857
1/1 [==============================] - 0s 24ms/step - loss: 1.0067 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.7025 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 1.9835 - accuracy: 0.9286
1/1 [==============================] - 0s 22ms/step - loss: 2.0118 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 1.9927 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 1.4580 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 2.0098 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.8753 - accuracy: 0.9286
1/1 [==============================] - 0s 29ms/step - loss: 2.0054 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 2.5228 - accuracy: 0.7143
1/1 [==============================] - 0s 35ms/step - loss: 1.5865 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 1.0360 - accuracy: 0.8571
1/1 [==============================] - 0s 12ms/step - loss: 1.0662 - accuracy: 0.8571
1/1 [==============================] - 0s 13ms/step - loss: 1.0909 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 2.4616 - accuracy: 0.7857
1/1 [==============================] - 0s 15ms/step - loss: 2.8117 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 1.0837 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 1.0781 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 0.5868 - accuracy: 0.9286
1/1 [==============================] - 0s 22ms/step - loss: 0.9633 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.9878 - accuracy: 0.8571
1/1 [==============================] - 0s 36ms/step - loss: 0.5990 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 0.9489 - accuracy: 0.7857
```

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1/1 [==============================] - 0s 18ms/step - loss: 1.8381 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.8636 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 1.8723 - accuracy: 0.7857
1/1 [==============================] - 0s 13ms/step - loss: 1.8982 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 1.8889 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 1.9266 - accuracy: 0.9286
1/1 [==============================] - 0s 22ms/step - loss: 2.8903 - accuracy: 0.8571
1/1 [==============================] - 0s 26ms/step - loss: 2.4006 - accuracy: 0.7143
1/1 [==============================] - 0s 28ms/step - loss: 2.9113 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 1.5471 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 2.7282 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 2.8896 - accuracy: 0.8571
1/1 [==============================] - 0s 26ms/step - loss: 2.7259 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 2.9248 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 2.8959 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 2.7271 - accuracy: 0.9286
1/1 [==============================] - 0s 26ms/step - loss: 4.6540 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 1.2398 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 1.2751 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 1.2428 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 2.7370 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.2524 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 4.4504 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.2683 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 4.2344 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.8605 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 1.2229 - accuracy: 0.7857
1/1 [==============================] - 0s 12ms/step - loss: 0.7650 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 2.3910 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 2.3862 - accuracy: 0.7143
1/1 [==============================] - 0s 32ms/step - loss: 2.3759 - accuracy: 0.7857
1/1 [==============================] - 0s 27ms/step - loss: 2.3541 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 2.3665 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.2358 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.3010 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 2.5373 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 3.1614 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 3.5727 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 3.8144 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 3.8324 - accuracy: 0.7143
```

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1/1 [==============================] - 0s 22ms/step - loss: 3.8088 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 3.7931 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 2.3341 - accuracy: 0.7857
1/1 [==============================] - 0s 54ms/step - loss: 3.1758 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 3.8324 - accuracy: 0.7143
1/1 [==============================] - 0s 33ms/step - loss: 3.7551 - accuracy: 0.9286
1/1 [==============================] - 0s 27ms/step - loss: 6.3579 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 6.5899 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 3.4165 - accuracy: 0.8571
1/1 [==============================] - 0s 32ms/step - loss: 1.4292 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 1.4294 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 1.4366 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.3894 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 1.4213 - accuracy: 0.7143
1/1 [==============================] - 0s 32ms/step - loss: 6.0537 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 1.1157 - accuracy: 0.9286
1/1 [==============================] - 0s 21ms/step - loss: 1.3080 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 2.8496 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 0.9943 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 2.8890 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 2.8410 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 1.5251 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 2.8576 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 1.5604 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 2.8855 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 2.8844 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 5.3679 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 4.7154 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 2.1120 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 4.1732 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 4.7208 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 4.7234 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 4.6068 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 4.7482 - accuracy: 0.7143
1/1 [==============================] - 0s 32ms/step - loss: 4.7332 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 0.7346 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 4.8751 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 7.4142 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 0.7101 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.6625 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 26ms/step - loss: 0.6931 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.6874 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 0.4135 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 7.4051 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 0.7081 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 3.8617 - accuracy: 0.7857
1/1 [==============================] - 0s 15ms/step - loss: 0.9277 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.5795 - accuracy: 0.8571
1/1 [==============================] - 0s 12ms/step - loss: 0.4247 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 8.5533 - accuracy: 0.7857
1/1 [==============================] - 0s 11ms/step - loss: 0.8189 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 0.8361 - accuracy: 0.8571
1/1 [==============================] - 0s 11ms/step - loss: 0.8863 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 0.8943 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.5785 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.5088 - accuracy: 0.9286
1/1 [==============================] - 0s 33ms/step - loss: 1.0230 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.4882 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 1.0933 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 1.0802 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 1.0741 - accuracy: 0.9286
1/1 [==============================] - 0s 35ms/step - loss: 0.7838 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 0.8242 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 1.1148 - accuracy: 0.6429
1/1 [==============================] - 0s 19ms/step - loss: 1.0688 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.7374 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 1.0794 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 0.6604 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 1.1130 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 1.0347 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 0.9343 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 0.9258 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.9136 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 0.8785 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 0.9204 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 0.5774 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 0.9500 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 0.4837 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 1.4336 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 0.8607 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 21ms/step - loss: 0.8544 - accuracy: 0.6429
1/1 [==============================] - 0s 31ms/step - loss: 1.3944 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 1.4371 - accuracy: 0.7857
1/1 [==============================] - 0s 15ms/step - loss: 1.4207 - accuracy: 0.7143
1/1 [==============================] - 0s 51ms/step - loss: 1.4351 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 1.0189 - accuracy: 0.9286
1/1 [==============================] - 0s 24ms/step - loss: 1.3496 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 0.9374 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 1.6908 - accuracy: 0.8571
1/1 [==============================] - 0s 31ms/step - loss: 2.0892 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 2.0224 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 2.0694 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 2.0965 - accuracy: 0.7143
1/1 [==============================] - 0s 26ms/step - loss: 2.0289 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 1.7466 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 1.6063 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 2.2393 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 3.0009 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 1.1410 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.1028 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 1.4979 - accuracy: 0.8571
1/1 [==============================] - 0s 29ms/step - loss: 1.1273 - accuracy: 0.7143
1/1 [==============================] - 0s 28ms/step - loss: 1.1228 - accuracy: 0.7857
1/1 [==============================] - 0s 25ms/step - loss: 2.2311 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 1.0862 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 0.8020 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 0.6702 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 1.0828 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 1.9514 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 1.0433 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 1.9765 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.1744 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 1.9382 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 1.9660 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 1.9790 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 2.1772 - accuracy: 0.9286
1/1 [==============================] - 0s 24ms/step - loss: 1.6906 - accuracy: 0.7857
1/1 [==============================] - 0s 12ms/step - loss: 1.9349 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 3.0564 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 3.0384 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 20ms/step - loss: 3.1073 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 2.5851 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 3.0339 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 3.0256 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 3.0491 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 3.4013 - accuracy: 0.8571
1/1 [==============================] - 0s 35ms/step - loss: 4.4633 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 2.6532 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 1.3082 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 1.2911 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 3.9559 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 1.3430 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 1.3333 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 4.2040 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 1.3182 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 0.8213 - accuracy: 0.9286
1/1 [==============================] - 0s 38ms/step - loss: 1.1932 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 0.8516 - accuracy: 0.8571
1/1 [==============================] - 0s 38ms/step - loss: 1.3329 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 1.3044 - accuracy: 0.7857
1/1 [==============================] - 0s 36ms/step - loss: 2.4672 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 2.4666 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 2.4901 - accuracy: 0.7857
1/1 [==============================] - 0s 29ms/step - loss: 2.5153 - accuracy: 0.7143
1/1 [==============================] - 0s 49ms/step - loss: 2.5119 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 4.1763 - accuracy: 0.7143
1/1 [==============================] - 0s 29ms/step - loss: 2.4903 - accuracy: 0.9286
1/1 [==============================] - 0s 38ms/step - loss: 2.3309 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 3.9877 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 4.0262 - accuracy: 0.7143
1/1 [==============================] - 0s 27ms/step - loss: 3.4936 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 3.9884 - accuracy: 0.8571
1/1 [==============================] - 0s 26ms/step - loss: 3.4246 - accuracy: 0.7143
1/1 [==============================] - 0s 25ms/step - loss: 4.0118 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 4.0151 - accuracy: 0.7857
1/1 [==============================] - 0s 46ms/step - loss: 4.1578 - accuracy: 0.9286
1/1 [==============================] - 0s 26ms/step - loss: 6.7988 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 1.4980 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 1.5131 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 1.4690 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 18ms/step - loss: 5.7635 - accuracy: 0.8571
1/1 [==============================] - 0s 36ms/step - loss: 1.5076 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 1.5361 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 3.7694 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 6.4849 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 1.5045 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 1.4437 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 3.0418 - accuracy: 0.7143
1/1 [==============================] - 0s 25ms/step - loss: 1.9875 - accuracy: 0.8571
1/1 [==============================] - 0s 31ms/step - loss: 0.9611 - accuracy: 0.8571
1/1 [==============================] - 0s 30ms/step - loss: 3.0474 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 1.6907 - accuracy: 0.8571
1/1 [==============================] - 0s 35ms/step - loss: 3.0119 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 3.0034 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 3.0270 - accuracy: 0.7857
1/1 [==============================] - 0s 26ms/step - loss: 4.8723 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 5.2013 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 4.4037 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 4.9395 - accuracy: 0.8571
1/1 [==============================] - 0s 25ms/step - loss: 2.4112 - accuracy: 0.9286
1/1 [==============================] - 0s 21ms/step - loss: 4.9902 - accuracy: 0.7143
1/1 [==============================] - 0s 29ms/step - loss: 4.9881 - accuracy: 0.7143
1/1 [==============================] - 0s 25ms/step - loss: 4.9557 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 4.9736 - accuracy: 0.7857
1/1 [==============================] - 0s 36ms/step - loss: 4.8643 - accuracy: 0.6429
1/1 [==============================] - 0s 21ms/step - loss: 1.9438 - accuracy: 0.6429
1/1 [==============================] - 0s 16ms/step - loss: 1.7853 - accuracy: 0.9286
1/1 [==============================] - 0s 21ms/step - loss: 1.8328 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 4.6323 - accuracy: 0.9286
1/1 [==============================] - 0s 14ms/step - loss: 1.8627 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 7.8704 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 1.8745 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 4.2075 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 1.4245 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 8.4535 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 3.1299 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 1.3033 - accuracy: 0.9286
1/1 [==============================] - 0s 26ms/step - loss: 1.6754 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 1.5397 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 3.0164 - accuracy: 0.7143
```

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1/1 [==============================] - 0s 19ms/step - loss: 2.9891 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 6.2709 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 1.5199 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 2.9950 - accuracy: 0.7857
1/1 [==============================] - 0s 13ms/step - loss: 3.0809 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 4.2021 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 4.2275 - accuracy: 0.9286
1/1 [==============================] - 0s 14ms/step - loss: 1.9932 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 4.2152 - accuracy: 0.7143
1/1 [==============================] - 0s 13ms/step - loss: 2.3812 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 2.2180 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 2.2403 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 4.1831 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 1.9708 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 2.5359 - accuracy: 0.9286
1/1 [==============================] - 0s 22ms/step - loss: 2.9852 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 4.2410 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 2.4828 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 2.7919 - accuracy: 0.7143
1/1 [==============================] - 0s 28ms/step - loss: 4.0403 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 2.7936 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 4.0754 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 4.0306 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 4.0304 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 4.0367 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 2.9502 - accuracy: 0.8571
1/1 [==============================] - 0s 13ms/step - loss: 3.3989 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 2.9290 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 7.4748 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 3.1487 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 7.4262 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 7.4846 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 7.5152 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 5.0835 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 4.7159 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 7.5158 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 3.1374 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 5.1161 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 11.0739 - accuracy: 0.8571
1/1 [==============================] - 0s 28ms/step - loss: 11.0618 - accuracy: 0.7143
```

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1/1 [==============================] - 0s 17ms/step - loss: 11.0618 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 5.0587 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 11.0844 - accuracy: 0.7143
1/1 [==============================] - 0s 33ms/step - loss: 11.0594 - accuracy: 0.7857
1/1 [==============================] - 0s 28ms/step - loss: 4.7087 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 6.2989 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 6.6002 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 6.2713 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 6.2137 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 6.1872 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 6.1786 - accuracy: 0.8571
1/1 [==============================] - 0s 33ms/step - loss: 6.7115 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 6.6704 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 6.2258 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 6.2160 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 4.5592 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 4.9463 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 11.9336 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 11.9667 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 11.9188 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 11.9538 - accuracy: 0.7857
1/1 [==============================] - 0s 15ms/step - loss: 4.4291 - accuracy: 0.9286
1/1 [==============================] - 0s 19ms/step - loss: 4.6710 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 12.0090 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 4.7429 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 7.4655 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 7.7048 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 7.8071 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 7.4189 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 17.9080 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 17.9646 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 7.8270 - accuracy: 0.6429
1/1 [==============================] - 0s 19ms/step - loss: 17.9151 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 17.9857 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 17.9883 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 9.9848 - accuracy: 0.9286
1/1 [==============================] - 0s 28ms/step - loss: 10.2658 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 10.4701 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 9.9584 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 8.2972 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 15ms/step - loss: 8.2928 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 8.4164 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 8.4082 - accuracy: 0.7143
1/1 [==============================] - 0s 27ms/step - loss: 10.5407 - accuracy: 0.6429
1/1 [==============================] - 0s 43ms/step - loss: 8.3129 - accuracy: 0.7857
1/1 [==============================] - 0s 26ms/step - loss: 6.2579 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 6.1108 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 5.9824 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 16.3977 - accuracy: 0.8571
1/1 [==============================] - 0s 37ms/step - loss: 6.0563 - accuracy: 0.7857
1/1 [==============================] - 0s 37ms/step - loss: 16.4297 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 6.2821 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 16.4113 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 16.3999 - accuracy: 0.7143
1/1 [==============================] - 0s 31ms/step - loss: 16.4021 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 10.5173 - accuracy: 0.7143
1/1 [==============================] - 0s 43ms/step - loss: 10.1436 - accuracy: 0.8571
1/1 [==============================] - 0s 12ms/step - loss: 24.8024 - accuracy: 0.7143
1/1 [==============================] - 0s 25ms/step - loss: 10.1326 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 24.8606 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 24.8011 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 10.3894 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 10.3980 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 24.7850 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 24.7942 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 14.0196 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 13.6250 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 14.0513 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 13.6367 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 10.5131 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 10.6278 - accuracy: 0.7143
1/1 [==============================] - 0s 30ms/step - loss: 10.4660 - accuracy: 0.7857
1/1 [==============================] - 0s 45ms/step - loss: 10.5614 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 10.5249 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 13.9741 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 7.5487 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 7.4566 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 20.9049 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 7.6117 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 20.8587 - accuracy: 0.8571
```

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1/1 [==============================] - 0s 21ms/step - loss: 7.7205 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 20.9075 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 20.8388 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 7.7195 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 20.9465 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 13.2410 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 12.8753 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 31.6378 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 31.6120 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 31.6225 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 31.6332 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 12.8248 - accuracy: 0.8571
1/1 [==============================] - 0s 33ms/step - loss: 31.6662 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 13.0364 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 10.2325 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 12.9838 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 17.3141 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 10.2019 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 17.6533 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 10.1196 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 10.2484 - accuracy: 0.6429
1/1 [==============================] - 0s 19ms/step - loss: 10.0676 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 17.5390 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 17.2845 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 8.1986 - accuracy: 0.9286
1/1 [==============================] - 0s 19ms/step - loss: 8.5667 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 8.4212 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 8.5126 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 17.5907 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 26.0770 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 8.4183 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 25.8647 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 26.1999 - accuracy: 0.7857
```

```
/home/huukhang1512/.local/share/virtualenvs/lab8-n1-oXRNz/lib/python3.11/site-packages/joblib/externals/loky/process
_executor.py:700: UserWarning: A worker stopped while some jobs were given to the executor. This can be caused by a
too short worker timeout or by a memory leak.
  warnings.warn(
```

```
1/1 [==============================] - 0s 34ms/step - loss: 25.9859 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 25.8631 - accuracy: 0.6429
1/1 [==============================] - 0s 20ms/step - loss: 19.2378 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 45.9428 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 19.2229 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 45.7853 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 19.0736 - accuracy: 0.9286
1/1 [==============================] - 0s 19ms/step - loss: 45.7794 - accuracy: 0.9286
1/1 [==============================] - 0s 20ms/step - loss: 45.9719 - accuracy: 0.7857
1/1 [==============================] - 0s 13ms/step - loss: 46.0103 - accuracy: 0.7143
1/1 [==============================] - 0s 27ms/step - loss: 19.1083 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 19.1595 - accuracy: 0.7143
2023-05-10 21:42:12.190810: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find TensorRT
1/1 [==============================] - 0s 19ms/step - loss: 31.1839 - accuracy: 0.7143
1/1 [==============================] - 0s 26ms/step - loss: 27.0132 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 27.2094 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 31.0030 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 27.1262 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 27.0869 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 27.1796 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 31.0832 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 31.0945 - accuracy: 0.8571
2023-05-10 21:42:13.201207: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU libraries. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follow the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your platform.
Skipping registering GPU devices...
```

```
1/1 [==============================] - 0s 25ms/step - loss: 21.9223 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 21.9249 - accuracy: 0.8571
1/1 [==============================] - 0s 37ms/step - loss: 21.9469 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 73.4146 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 73.3555 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 21.9574 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 73.2386 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 21.8961 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 73.6386 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 30.9929 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 73.1508 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 53.6472 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 53.7795 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 53.4541 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 53.5079 - accuracy: 0.7857
1/1 [==============================] - 0s 14ms/step - loss: 132.3034 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 132.3097 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 132.0298 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 53.5345 - accuracy: 0.7143
1/1 [==============================] - 0s 34ms/step - loss: 132.2451 - accuracy: 0.7143
1/1 [==============================] - 0s 31ms/step - loss: 132.5406 - accuracy: 0.7857
1/1 [==============================] - 0s 77ms/step - loss: 88.8765 - accuracy: 0.8571
1/1 [==============================] - 0s 37ms/step - loss: 89.3657 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 88.8416 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 44.1242 - accuracy: 0.7143
1/1 [==============================] - 0s 45ms/step - loss: 44.1116 - accuracy: 0.8571
1/1 [==============================] - 0s 41ms/step - loss: 44.0460 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 88.8636 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 44.1323 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 44.2576 - accuracy: 0.7143
1/1 [==============================] - 0s 28ms/step - loss: 88.9182 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 35.6115 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 35.6708 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 35.6688 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 35.5556 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 35.5410 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 121.0587 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 120.6532 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 120.6563 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 120.3913 - accuracy: 0.7143
```

```
1/1 [==============================] - 0s 24ms/step - loss: 120.7782 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 87.8887 - accuracy: 0.7143
1/1 [==============================] - 0s 26ms/step - loss: 88.0712 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 87.9957 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 218.5659 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 218.5564 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 218.6378 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 88.2117 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 218.9052 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 218.8032 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 87.8620 - accuracy: 0.7857
1/1 [==============================] - 0s 27ms/step - loss: 146.8058 - accuracy: 0.8571
1/1 [==============================] - 0s 31ms/step - loss: 147.0390 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 60.9487 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 60.8658 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 147.0363 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 147.1455 - accuracy: 0.7143
1/1 [==============================] - 0s 26ms/step - loss: 60.9022 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 147.1557 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 60.9841 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 49.1400 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 61.1344 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 48.9446 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 167.9323 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 168.3182 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 167.8596 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 168.0784 - accuracy: 0.7143
1/1 [==============================] - 0s 40ms/step - loss: 49.0525 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 48.9657 - accuracy: 0.7143
1/1 [==============================] - 0s 32ms/step - loss: 49.2337 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 168.1433 - accuracy: 0.7143
1/1 [==============================] - 0s 28ms/step - loss: 122.3165 - accuracy: 0.8571
1/1 [==============================] - 0s 45ms/step - loss: 122.2237 - accuracy: 0.8571
1/1 [==============================] - 0s 44ms/step - loss: 122.5622 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 122.4532 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 305.4082 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 305.0806 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 305.0368 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 122.2686 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 305.7473 - accuracy: 0.7143
```

```
1/1 [==============================] - 0s 24ms/step - loss: 205.1381 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 304.9940 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 205.4953 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 205.2111 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 78.0509 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 205.2908 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 77.8753 - accuracy: 0.7143
1/1 [==============================] - 0s 26ms/step - loss: 77.9898 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 205.0572 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 77.9192 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 77.9420 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 62.4299 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 62.7912 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 62.7928 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 215.4859 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 215.4342 - accuracy: 0.8571
1/1 [==============================] - 0s 25ms/step - loss: 62.8999 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 215.5767 - accuracy: 0.7857
1/1 [==============================] - 0s 25ms/step - loss: 215.6750 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 215.5843 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 62.8467 - accuracy: 0.7143
1/1 [==============================] - 0s 27ms/step - loss: 156.9780 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 157.0492 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 391.1619 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 157.0655 - accuracy: 0.8571
1/1 [==============================] - 0s 25ms/step - loss: 391.7534 - accuracy: 0.7143
1/1 [==============================] - 0s 27ms/step - loss: 391.3902 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 391.8617 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 391.6374 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 156.9408 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 156.9151 - accuracy: 0.7857
1/1 [==============================] - 0s 49ms/step - loss: 10.1664 - accuracy: 0.7857
1/1 [==============================] - 0s 26ms/step - loss: 263.1162 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 10.1071 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 262.9385 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 10.2723 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 262.8528 - accuracy: 0.8571
1/1 [==============================] - 0s 60ms/step - loss: 10.0673 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 10.1584 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 262.9080 - accuracy: 0.7857
```

```
1/1 [==============================] - 0s 23ms/step - loss: 8.4021 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 263.0945 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 8.5795 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 8.3405 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 26.0539 - accuracy: 0.8571
2023-05-10 21:42:36.657362: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find TensorRT
1/1 [==============================] - 0s 19ms/step - loss: 26.0203 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 25.9081 - accuracy: 0.9286
1/1 [==============================] - 0s 25ms/step - loss: 8.4563 - accuracy: 0.9286
1/1 [==============================] - 0s 19ms/step - loss: 26.0233 - accuracy: 0.6429
2023-05-10 21:42:37.316896: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find TensorRT
1/1 [==============================] - 0s 16ms/step - loss: 19.1283 - accuracy: 0.9286
2023-05-10 21:42:37.589813: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU libraries. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follow the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your platform.
Skipping registering GPU devices...
1/1 [==============================] - 0s 24ms/step - loss: 19.2180 - accuracy: 0.7143
2023-05-10 21:42:37.984107: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find TensorRT
1/1 [==============================] - 0s 19ms/step - loss: 45.8525 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 19.1932 - accuracy: 0.7143
1/1 [==============================] - 0s 28ms/step - loss: 19.1391 - accuracy: 0.8571
1/1 [==============================] - 0s 27ms/step - loss: 45.9247 - accuracy: 0.8571
2023-05-10 21:42:38.292528: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU libraries. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follow the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your platform.
Skipping registering GPU devices...
2023-05-10 21:42:38.399374: W tensorflow/core/data/root_dataset.cc:273] Optimization loop failed: CANCELLED: Operation was cancelled
1/1 [==============================] - 0s 17ms/step - loss: 45.9814 - accuracy: 0.7143
1/1 [==============================] - 0s 29ms/step - loss: 45.9014 - accuracy: 0.9286
```

```
2023-05-10 21:42:38.697475: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:42:38.978155: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
1/1 [==============================] - 0s 18ms/step - loss: 31.0979 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 8.4382 - accuracy: 0.6429
1/1 [==============================] - 0s 17ms/step - loss: 31.2481 - accuracy: 0.7143
2023-05-10 21:42:39.646494: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
```

```
1/1 [==============================] - 0s 18ms/step - loss: 25.9891 - accuracy: 0.7857
1/1 [==============================] - 0s 15ms/step - loss: 31.3113 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 31.2161 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 27.2039 - accuracy: 1.0000
1/1 [==============================] - 0s 14ms/step - loss: 27.1635 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 27.0939 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 31.0350 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 19.2535 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 27.0403 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 21.9488 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 27.3244 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 45.9206 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 21.8147 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 21.9457 - accuracy: 0.7857
1/1 [==============================] - 0s 14ms/step - loss: 22.2079 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 73.3140 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 22.0786 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 73.4648 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 73.5863 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 73.4241 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 73.4924 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 53.5417 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 53.5267 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 132.4704 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 132.2624 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 53.7122 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 53.5517 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 53.7349 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 132.6503 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 132.5446 - accuracy: 0.7143
2023-05-10 21:42:43.138213: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find TensorRT
1/1 [==============================] - 0s 24ms/step - loss: 132.1109 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 89.3009 - accuracy: 0.7143
2023-05-10 21:42:44.121526: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU libraries. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follow the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your platform.
Skipping registering GPU devices...
```

```
1/1 [==============================] - 0s 14ms/step - loss: 44.3293 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 44.0700 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 89.2140 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 44.1906 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 89.1278 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 44.1838 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 89.1675 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 35.4479 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 44.0161 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 35.5024 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 35.3320 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 89.2145 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 120.8504 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 120.8078 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 120.6771 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 120.8430 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 35.4508 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 35.5689 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 120.9419 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 88.2398 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 87.7835 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 87.8658 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 88.1099 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 218.9412 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 218.9331 - accuracy: 0.7857
1/1 [==============================] - 0s 12ms/step - loss: 219.2287 - accuracy: 0.7143
1/1 [==============================] - 0s 12ms/step - loss: 88.1585 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 219.0134 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 218.6611 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 147.2894 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 147.1807 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 146.8830 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 147.2838 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 147.1938 - accuracy: 0.7143
1/1 [==============================] - 0s 12ms/step - loss: 61.1614 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 60.9248 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 60.7978 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 61.0643 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 61.1567 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 49.1925 - accuracy: 0.8571
```

```
1/1 [==============================] - 0s 16ms/step - loss: 49.2875 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 49.1906 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 168.3379 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 168.2762 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 48.9025 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 168.1489 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 168.3933 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 168.3186 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 49.2463 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 122.7307 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 122.4164 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 122.4817 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 305.2764 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 305.4546 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 305.4083 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 305.1570 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 122.4089 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 304.8873 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 122.7065 - accuracy: 0.7143
1/1 [==============================] - 0s 23ms/step - loss: 205.1251 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 205.3210 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 205.4740 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 205.4459 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 77.9283 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 78.2972 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 78.1536 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 78.2273 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 77.9633 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 205.2767 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 62.8354 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 62.5656 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 62.5527 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 215.7837 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 62.9364 - accuracy: 0.7143
1/1 [==============================] - 0s 26ms/step - loss: 62.7708 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 215.7706 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 215.8799 - accuracy: 0.8571
2023-05-10 21:42:57.415785: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
```

```
1/1 [==============================] - 0s 21ms/step - loss: 215.8149 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 215.7887 - accuracy: 0.7143
2023-05-10 21:42:58.373894: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
1/1 [==============================] - 0s 17ms/step - loss: 157.0030 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 156.8294 - accuracy: 0.8571
1/1 [==============================] - 0s 24ms/step - loss: 392.2395 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 391.6894 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 391.8470 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 391.6072 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 391.8513 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 156.9086 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 156.9235 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 11.2923 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 263.3580 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 11.4258 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 11.3448 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 263.3163 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 11.2224 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 11.3157 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 156.9102 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 263.1187 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 9.1862 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 9.2727 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 263.3092 - accuracy: 0.7857
2023-05-10 21:43:01.815033: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
1/1 [==============================] - 0s 20ms/step - loss: 27.8251 - accuracy: 0.9286
1/1 [==============================] - 0s 23ms/step - loss: 9.3177 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 28.0472 - accuracy: 0.7857
1/1 [==============================] - 0s 22ms/step - loss: 27.9373 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 9.4170 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 262.9327 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 27.9391 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 27.8528 - accuracy: 0.7143
```

```
2023-05-10 21:43:02.750597: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
```

```
1/1 [==============================] - 0s 20ms/step - loss: 48.6812 - accuracy: 0.8571
1/1 [==============================] - 0s 13ms/step - loss: 20.5599 - accuracy: 0.7143
1/1 [==============================] - 0s 13ms/step - loss: 20.4108 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 48.5319 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 48.5994 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 48.5864 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 20.6044 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 48.6693 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 20.3895 - accuracy: 0.7857
1/1 [==============================] - 0s 15ms/step - loss: 20.2839 - accuracy: 0.9286
1/1 [==============================] - 0s 17ms/step - loss: 32.8704 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 9.1659 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 30.1879 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 32.8707 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 29.8857 - accuracy: 0.9286
1/1 [==============================] - 0s 14ms/step - loss: 32.7008 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 32.7332 - accuracy: 0.8571
1/1 [==============================] - 0s 12ms/step - loss: 29.9913 - accuracy: 0.9286
1/1 [==============================] - 0s 35ms/step - loss: 30.0240 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 32.8294 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 30.2879 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 24.1882 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 24.1734 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 78.9546 - accuracy: 0.9286
1/1 [==============================] - 0s 16ms/step - loss: 24.2781 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 24.2147 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 78.9271 - accuracy: 0.9286
1/1 [==============================] - 0s 18ms/step - loss: 78.9638 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 78.7541 - accuracy: 0.7143
1/1 [==============================] - 0s 12ms/step - loss: 78.8230 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 57.1102 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 57.5825 - accuracy: 0.7143
1/1 [==============================] - 0s 11ms/step - loss: 57.2436 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 24.1026 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 140.3925 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 140.2104 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 140.2979 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 57.3932 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 57.2519 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 140.1468 - accuracy: 0.7143
```

```
1/1 [==============================] - 0s 16ms/step - loss: 93.7713 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 140.7363 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 94.5061 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 93.7194 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 93.9137 - accuracy: 0.7857
1/1 [==============================] - 0s 21ms/step - loss: 48.7161 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 48.9016 - accuracy: 0.7143
1/1 [==============================] - 0s 13ms/step - loss: 48.8138 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 94.1386 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 48.7324 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 48.7787 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 39.2269 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 129.9907 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 39.1071 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 39.1279 - accuracy: 0.7143
1/1 [==============================] - 0s 22ms/step - loss: 130.0354 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 129.8215 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 130.2730 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 39.2454 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 94.2559 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 38.9562 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 129.9104 - accuracy: 0.7143
1/1 [==============================] - 0s 25ms/step - loss: 94.1180 - accuracy: 0.7143
1/1 [==============================] - 0s 24ms/step - loss: 232.2024 - accuracy: 0.8571
1/1 [==============================] - 0s 31ms/step - loss: 231.8118 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 232.0567 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 231.9906 - accuracy: 0.7143
1/1 [==============================] - 0s 30ms/step - loss: 93.9734 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 94.1919 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 93.6879 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 232.3119 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 155.1933 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 155.3326 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 155.0700 - accuracy: 0.7857
1/1 [==============================] - 0s 19ms/step - loss: 155.0927 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 67.6645 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 67.6229 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 67.9323 - accuracy: 0.7143
1/1 [==============================] - 0s 17ms/step - loss: 67.6095 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 155.0969 - accuracy: 0.7143
```

```
1/1 [==============================] - 0s 17ms/step - loss: 67.7173 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 53.9934 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 54.1423 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 181.2627 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 180.6998 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 180.9515 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 54.1757 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 54.1153 - accuracy: 0.7143
1/1 [==============================] - 0s 13ms/step - loss: 180.9133 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 54.0604 - accuracy: 0.8571
1/1 [==============================] - 0s 17ms/step - loss: 180.9352 - accuracy: 0.7857
1/1 [==============================] - 0s 18ms/step - loss: 130.9034 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 130.8112 - accuracy: 0.8571
1/1 [==============================] - 0s 21ms/step - loss: 131.5359 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 323.4438 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 323.6771 - accuracy: 0.8571
1/1 [==============================] - 0s 15ms/step - loss: 323.5235 - accuracy: 0.7143
1/1 [==============================] - 0s 15ms/step - loss: 130.7891 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 131.0928 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 323.6852 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 323.5529 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 216.1688 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 216.1965 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 216.2025 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 215.7467 - accuracy: 0.8571
1/1 [==============================] - 0s 14ms/step - loss: 216.4376 - accuracy: 0.7143
1/1 [==============================] - 0s 14ms/step - loss: 86.2732 - accuracy: 0.8571
1/1 [==============================] - 0s 23ms/step - loss: 86.4490 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 86.4174 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 86.4334 - accuracy: 0.7857
1/1 [==============================] - 0s 17ms/step - loss: 86.4622 - accuracy: 0.7143
2023-05-10 21:43:19.701307: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:43:20.438432: W tensorflow/compiler/tf2tensorrt/utils/py_utils.cc:38] TF-TRT Warning: Could not find T
ensorRT
2023-05-10 21:43:20.647517: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
```

```
1/1 [==============================] - 0s 18ms/step - loss: 69.0005 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 68.9780 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 232.2428 - accuracy: 0.8571
1/1 [==============================] - 0s 22ms/step - loss: 232.0578 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 231.8867 - accuracy: 0.7857
1/1 [==============================] - 0s 23ms/step - loss: 68.8167 - accuracy: 0.7143
1/1 [==============================] - 0s 16ms/step - loss: 232.1794 - accuracy: 0.7143
1/1 [==============================] - 0s 21ms/step - loss: 69.3904 - accuracy: 0.7857
2023-05-10 21:43:21.447037: W tensorflow/core/common_runtime/gpu/gpu_device.cc:1956] Cannot dlopen some GPU librarie
s. Please make sure the missing libraries mentioned above are installed properly if you would like to use GPU. Follo
w the guide at https://www.tensorflow.org/install/gpu for how to download and setup the required libraries for your
platform.
Skipping registering GPU devices...
1/1 [==============================] - 0s 19ms/step - loss: 168.2517 - accuracy: 0.7143
1/1 [==============================] - 0s 19ms/step - loss: 167.6411 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 414.9904 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 415.7638 - accuracy: 0.7143
1/1 [==============================] - 0s 18ms/step - loss: 167.4775 - accuracy: 0.8571
1/1 [==============================] - 0s 20ms/step - loss: 415.8316 - accuracy: 0.8571
1/1 [==============================] - 0s 18ms/step - loss: 167.3542 - accuracy: 0.7857
1/1 [==============================] - 0s 20ms/step - loss: 68.9284 - accuracy: 0.8571
1/1 [==============================] - 0s 16ms/step - loss: 415.4001 - accuracy: 0.7143
1/1 [==============================] - 0s 20ms/step - loss: 415.1515 - accuracy: 0.7857
1/1 [==============================] - 0s 16ms/step - loss: 231.7404 - accuracy: 0.8571
1/1 [==============================] - 0s 19ms/step - loss: 167.6696 - accuracy: 0.7143
1/1 [==============================] - 0s 11ms/step - loss: 277.2442 - accuracy: 0.8571
1/1 [==============================] - 0s 11ms/step - loss: 277.5710 - accuracy: 0.7143
1/1 [==============================] - 0s 12ms/step - loss: 277.5016 - accuracy: 0.8571
1/1 [==============================] - 0s 11ms/step - loss: 277.9145 - accuracy: 0.7857
1/1 [==============================] - 0s 10ms/step - loss: 277.3224 - accuracy: 0.7143
```

In [ ]:
```
best_params = rnd_search_cv.best_params_
best_params
```

Out[ ]:
```
{'l1': 1e-05,
 'l2': 1e-05,
 'n_hidden': 4,
 'n_neurons': 200,
 'optimizer': 'adam'}
```

In [ ]:
```
rnd_search_cv.best_score_
```

Out[ ]:
```
0.8571428537368775
```

In [ ]:
```
tuned_ann = rnd_search_cv.best_estimator_.model
tuned_ann.summary()
```

```
Model: "sequential_1"
_________________________________________________________________
 Layer (type)                 Output Shape              Param #
=================================================================
 flatten_1 (Flatten)          (None, 10)                0

 dense_3 (Dense)              (None, 200)               2200

 dense_4 (Dense)              (None, 200)               40200

 dense_5 (Dense)              (None, 200)               40200

 dense_6 (Dense)              (None, 200)               40200

 dense_7 (Dense)              (None, 2)                 402

=================================================================
Total params: 123,202
Trainable params: 123,202
Non-trainable params: 0
_________________________________________________________________
_________________________________________________________________
 Layer (type)                 Output Shape              Param #
=================================================================
 flatten_1 (Flatten)          (None, 10)                0

 dense_3 (Dense)              (None, 200)               2200

 dense_4 (Dense)              (None, 200)               40200

 dense_5 (Dense)              (None, 200)               40200

 dense_6 (Dense)              (None, 200)               40200

 dense_7 (Dense)              (None, 2)                 402

=================================================================
Total params: 123,202
Trainable params: 123,202
```

```
Non-trainable params: 0
_________________________________________________________________
```

In [ ]:

```
best_ann = build_model(
    n_hidden=best_params['n_hidden'], n_neurons=best_params['n_neurons'], optimizer=best_params['optimizer'], l1=be
)

best_history = best_ann.fit(X_train, y_train, batch_size=100, epochs=20, validation_split=0.2)
```

```
Epoch 1/20
1/1 [==============================] - 1s 545ms/step - loss: 0.7581 - accuracy: 0.7143 - val_loss: 0.7228 - val_accu
racy: 0.7143
Epoch 2/20
1/1 [==============================] - 0s 13ms/step - loss: 0.6833 - accuracy: 0.8393 - val_loss: 0.6869 - val_accur
acy: 0.7143
Epoch 3/20
1/1 [==============================] - 0s 13ms/step - loss: 0.6200 - accuracy: 0.8393 - val_loss: 0.6575 - val_accur
acy: 0.7143
Epoch 4/20
1/1 [==============================] - 0s 13ms/step - loss: 0.5644 - accuracy: 0.8393 - val_loss: 0.6394 - val_accur
acy: 0.7143
Epoch 5/20
1/1 [==============================] - 0s 19ms/step - loss: 0.5145 - accuracy: 0.8393 - val_loss: 0.6331 - val_accur
acy: 0.7143
Epoch 6/20
1/1 [==============================] - 0s 16ms/step - loss: 0.4725 - accuracy: 0.8393 - val_loss: 0.6380 - val_accur
acy: 0.7143
Epoch 7/20
1/1 [==============================] - 0s 14ms/step - loss: 0.4396 - accuracy: 0.8750 - val_loss: 0.6488 - val_accur
acy: 0.7143
Epoch 8/20
1/1 [==============================] - 0s 13ms/step - loss: 0.4135 - accuracy: 0.8750 - val_loss: 0.6547 - val_accur
acy: 0.7143
Epoch 9/20
1/1 [==============================] - 0s 13ms/step - loss: 0.3900 - accuracy: 0.8750 - val_loss: 0.6477 - val_accur
acy: 0.7143
Epoch 10/20
1/1 [==============================] - 0s 14ms/step - loss: 0.3655 - accuracy: 0.8929 - val_loss: 0.6296 - val_accur
acy: 0.7143
Epoch 11/20
1/1 [==============================] - 0s 13ms/step - loss: 0.3411 - accuracy: 0.9107 - val_loss: 0.6068 - val_accur
acy: 0.6429
Epoch 12/20
1/1 [==============================] - 0s 14ms/step - loss: 0.3199 - accuracy: 0.9286 - val_loss: 0.5903 - val_accur
acy: 0.7143
Epoch 13/20
1/1 [==============================] - 0s 15ms/step - loss: 0.3035 - accuracy: 0.9286 - val_loss: 0.5844 - val_accur
acy: 0.7143
Epoch 14/20
```

```
1/1 [==============================] - 0s 13ms/step - loss: 0.2922 - accuracy: 0.9286 - val_loss: 0.5865 - val_accur
acy: 0.7857
Epoch 15/20
1/1 [==============================] - 0s 13ms/step - loss: 0.2821 - accuracy: 0.9286 - val_loss: 0.5898 - val_accur
acy: 0.8571
Epoch 16/20
1/1 [==============================] - 0s 13ms/step - loss: 0.2698 - accuracy: 0.9464 - val_loss: 0.5908 - val_accur
acy: 0.8571
Epoch 17/20
1/1 [==============================] - 0s 13ms/step - loss: 0.2554 - accuracy: 0.9464 - val_loss: 0.5906 - val_accur
acy: 0.7857
Epoch 18/20
1/1 [==============================] - 0s 14ms/step - loss: 0.2406 - accuracy: 0.9464 - val_loss: 0.5887 - val_accur
acy: 0.7143
Epoch 19/20
1/1 [==============================] - 0s 14ms/step - loss: 0.2276 - accuracy: 0.9286 - val_loss: 0.5843 - val_accur
acy: 0.7143
Epoch 20/20
1/1 [==============================] - 0s 13ms/step - loss: 0.2156 - accuracy: 0.9286 - val_loss: 0.5767 - val_accur
acy: 0.7143
```

In [ ]:
```
probs = best_ann.predict(X_test)
```

```
593/593 [==============================] - 0s 418us/step
```

In [ ]:
```
predictions = np.argmax(probs, axis=-1)
```

In [ ]:
```
best_ann.evaluate(X_test, y_test)
```

```
593/593 [==============================] - 0s 510us/step - loss: 0.7351 - accuracy: 0.7770
```

Out[ ]:
```
[0.735068142414093, 0.7770448327064514]
```

=> Accuarcy improves from 70% to 77.7%

Learning curve and test accuracy

In [ ]:
```
pd.DataFrame(best_history.history).plot(figsize=(8, 5))
plt.grid(True)
```

```
plt.gca().set_ylim(0, 1)
```

Out[ ]: (0.0, 1.0)