CS6375 - Machine Learning

Assignment 2

Team:

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Dataset used:

Iris Dataset (LINK: https://archive.ics.uci.edu/ml/datasets/iris)

Data Set Information:

Source/ Creator:

R.A. Fisher

Donor:

Michael Marshall (MARSHALL%PLU '@' io.arc.nasa.gov)

This is perhaps the best known database to be found in the pattern recognition literature. Fisher's paper is a classic in the field and is referenced frequently to this day. (See Duda & Hart, for example.) The data set contains 3 classes of 50 instances each, where each class refers to a type of iris plant. One class is linearly separable from the other 2; the latter are NOT linearly separable from each other.

Predicted attribute: class of iris plant.

This is an exceedingly simple domain.

This data differs from the data presented in Fishers article (identified by Steve Chadwick, spchadwick '@' espeedaz.net). The 35th sample should be: 4.9,3.1,1.5,0.2,"Iris-setosa" where the error is in the fourth feature. The 38th sample: 4.9,3.6,1.4,0.1,"Iris-setosa" where the errors are in the second and third features.

Attribute Information:

FEATURES

1. sepal length in cm

2. sepal width in cm

3. petal length in cm

4. petal width in cm

5. class: (TARGET VARIABLE) -- Iris Setosa -- Iris Versicolour -- Iris Virginica

Relevant Papers:

Fisher,R.A. "The use of multiple measurements in taxonomic problems" Annual Eugenics, 7, Part II, 179-188 (1936); also in "Contributions to Mathematical Statistics" (John Wiley, NY, 1950). [Web Link]

Duda,R.O., & Hart,P.E. (1973) Pattern Classification and Scene Analysis. (Q327.D83) John Wiley & Sons. ISBN 0-471-22361-1. See page 218. [Web Link]

Dasarathy, B.V. (1980) "Nosing Around the Neighborhood: A New System Structure and Classification Rule for Recognition in Partially Exposed Environments". IEEE Transactions on Pattern Analysis and Machine Intelligence, Vol. PAMI-2, No. 1, 67-71. [Web Link]

Gates, G.W. (1972) "The Reduced Nearest Neighbor Rule". IEEE Transactions on Information Theory, May 1972, 431-433. [Web Link]

Import Libraries

```python
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
from sklearn.model_selection import train_test_split
from sklearn.preprocessing import OneHotEncoder, StandardScaler
import warnings
warnings.simplefilter(action='ignore', category=FutureWarning)
warnings.simplefilter(action='ignore', category=DeprecationWarning)
from keras.models import Sequential
from keras.layers import Dense
from keras import optimizers
from keras.callbacks import TensorBoard
plt.style.use('ggplot')

import os
os.environ["TF_CPP_MIN_LOG_LEVEL"] = "2"
import tensorflow as tf
```

Class to define to create, train and evaluate Neural Network

```python
class NeuralNet:
    def __init__(self):
        #define column names
        columns =
['SEPAL_LENGTH','SEPAL_WIDTH','PETAL_LENGTH','PETAL_WIDTH','SPECIES']
        #load the dataset
        self.df = pd.read_csv('https://archive.ics.uci.edu/ml/machine-
learning-databases/iris/iris.data',names = columns)

    def preprocess(self):
         #drop missing values
        self.df.dropna( inplace = True )
```

```python
        #drop duplicates from the dataset
        self.df.drop_duplicates()

        #seperate X and y from dataframe
        X = self.df.iloc[:,:-1]
        y = self.df.iloc[:,-1]

        #encode categorical values
        enc = OneHotEncoder()
        y = enc.fit_transform(y[:, np.newaxis]).toarray()

        #standardize the data
        scaler = StandardScaler()
        X_scaled = scaler.fit_transform(X)

        #split the data set into train and test set
        self.X_train, self.X_test, self.y_train, self.y_test =
train_test_split(
            X_scaled, y, test_size=0.2, random_state=42)

        #length of input features and output classes
        self.n_features = X.shape[1]
        self.n_classes = y.shape[1]

    def train_evaluate(self):
        #define the lists for possible activation functions, learning
rate and iterations to be tried out
        activations = ['sigmoid', 'tanh', 'relu'] #NOTE: In keras,
Logistic activation is actually Sigmoid activation
        learning_rate = [0.01, 0.1]
        iterations = [100, 200]

        #define dictionaries to store the history_callback metrics for
the models which we will be creating
        hist_train = {}
        hist_test = {}

        #define tensorboard object which is required for callback
        cb = TensorBoard()

        #MODEL WITH TWO HIDDEN LAYER

        #iterate through all the possible activation functions,
learning rate and iterations
        for act in activations:
            for lr in learning_rate:
                for itr in iterations:
                    name = "Model_"+str(act)+"_LR_"+str(lr)
+"_Iterations_"+str(itr)+"_HL_2"
```

```python
                print(name)

                #create model
                model = Sequential(name=name) #define sequential
model
                model.add(Dense(3, input_dim=self.n_features,
activation= act)) #first layer/ input layer
                model.add(Dense(self.n_classes, activation=act))
#second layer/output layer

                opt = optimizers.SGD(learning_rate=lr) #use SGD as
the optimizer
                model.compile(loss='mean_squared_error',
                            optimizer=opt,
                            metrics=['accuracy']) #use MSE as
the loss function and tweak the model on the basis of accuracy

                #fit the model
                history_callback = model.fit(self.X_train,
self.y_train,
                                            epochs=itr,
                                            verbose=2,

validation_data=(self.X_train, self.y_train),
                                            callbacks=[cb])

                #calculate model error on training data to compute
train error
                score = model.evaluate(self.X_train, self.y_train,
verbose=0)
                print("Activation: "+str(act)+" LR: "+str(lr)+"
Itertions: "+str(itr)+" || Train loss:", score[0])
                print("Activation: "+str(act)+" LR: "+str(lr)+"
Itertions: "+str(itr)+" || Train Accuracy:", score[1])

                #store the model metrics in the hashmap/dictionary
hist_train
                hist_train[model.name] = [history_callback, model]

                history_callback = model.fit(self.X_train,
self.y_train,
                                            epochs=itr,
                                            verbose=2,

validation_data=(self.X_test, self.y_test),
                                            callbacks=[cb])

                #calculate model error on testing data to compute
test error
```

```python
                    score = model.evaluate(self.X_test, self.y_test,
verbose=0)
                    print("Activation: "+str(act)+" LR: "+str(lr)+"
Iterations: "+str(itr)+" || Test loss:", score[0])
                    print("Activation: "+str(act)+" LR: "+str(lr)+"
Iterations: "+str(itr)+" || Test Accuracy:", score[1])

                    #store the model metrics in the hashmap/dictionary
hist_test
                    hist_test[model.name] = [history_callback, model]


print("==========================================================
==============")


        #MODEL WITH THREE HIDDEN LAYERS

        for act in activations:
            for lr in learning_rate:
                for itr in iterations:
                    name = "Model_"+str(act)+"_LR_"+str(lr)
+"_Iterations_"+str(itr)+"_HL_3"
                    print(name)
                    model = Sequential(name=name)
                    model.add(Dense(3, input_dim=self.n_features,
activation= act)) #first layer/input layer
                    model.add(Dense(4, activation=act)) #second layer
                    model.add(Dense(self.n_classes, activation=act))
#third layer

                    opt = optimizers.SGD(learning_rate=lr) #use SGD as
the optimizer
                    model.compile(loss='mean_squared_error',
                            optimizer=opt,
                            metrics=['accuracy']) #tweak model
on the basis of accuracy

                    history_callback = model.fit(self.X_train,
self.y_train,
                                        epochs=itr,
                                        verbose=2,

validation_data=(self.X_train, self.y_train),
                                        callbacks=[cb])

                    #calculate model error on training data to compute
train error
                    score = model.evaluate(self.X_train, self.y_train,
verbose=0)
```

```python
                print("Activation: "+str(act)+" LR: "+str(lr)+"
Itertions: "+str(itr)+" || Train loss:", score[0])
                print("Activation: "+str(act)+" LR: "+str(lr)+"
Itertions: "+str(itr)+" || Train Accuracy:", score[1])

                #store the model metrics in the hashmap/dictionary
hist_train
                hist_train[model.name] = [history_callback, model]


                history_callback = model.fit(self.X_train,
self.y_train,
                                                epochs=itr,
                                                verbose=2,

validation_data=(self.X_test, self.y_test),
                                                callbacks=[cb])

                #calculate model error on testing data to compute
test error
                score = model.evaluate(self.X_test, self.y_test,
verbose=0)
                print("Activation: "+str(act)+" LR: "+str(lr)+"
Iterations: "+str(itr)+" || Test loss:", score[0])
                print("Activation: "+str(act)+" LR: "+str(lr)+"
Iterations: "+str(itr)+" || Test Accuracy:", score[1])

                #store the model metrics in the hashmap/dictionary
hist_test
                hist_test[model.name] = [history_callback, model]


print("===========================================================
==============")

        #plot the metrics stored in the hashmap hist_train and
hist_test
        fig, (ax1, ax2) = plt.subplots(2, figsize=(30, 30))

        for model_name in hist_train:
            val_accuracy = hist_train[model_name]
[0].history['val_accuracy']
            val_loss = hist_train[model_name][0].history['val_loss']
            ax1.plot(val_accuracy, label=model_name)
            ax2.plot(val_loss, label=model_name)

        ax1.set_ylabel('Accuracy')
        ax2.set_ylabel('Loss')
        ax2.set_xlabel('Epochs')
        ax1.legend()
```

```
        ax2.legend()

        fig, (ax1, ax2) = plt.subplots(2, figsize=(30, 30))

        for model_name in hist_test:
            val_accuracy = hist_test[model_name]
[0].history['val_accuracy']
            val_loss = hist_test[model_name][0].history['val_loss']
            ax1.plot(val_accuracy, label=model_name)
            ax2.plot(val_loss, label=model_name)

        ax1.set_ylabel('Accuracy')
        ax2.set_ylabel('Loss')
        ax2.set_xlabel('Epochs')
        ax1.legend()
        ax2.legend()

#create an object of class NeuralNet
nn = NeuralNet()

#call preprocess function
nn.preprocess()

#call train_evaluate function
nn.train_evaluate()

Model_sigmoid_LR_0.01_Iterations_100_HL_2
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.1299s). Check your callbacks.
4/4 - 0s - loss: 0.2518 - accuracy: 0.3250 - val_loss: 0.2516 -
val_accuracy: 0.3250
Epoch 2/100
4/4 - 0s - loss: 0.2516 - accuracy: 0.3250 - val_loss: 0.2514 -
val_accuracy: 0.3250
Epoch 3/100
4/4 - 0s - loss: 0.2513 - accuracy: 0.3250 - val_loss: 0.2512 -
val_accuracy: 0.3250
Epoch 4/100
4/4 - 0s - loss: 0.2511 - accuracy: 0.3250 - val_loss: 0.2510 -
val_accuracy: 0.3250
Epoch 5/100
4/4 - 0s - loss: 0.2509 - accuracy: 0.3250 - val_loss: 0.2507 -
val_accuracy: 0.3250
Epoch 6/100
4/4 - 0s - loss: 0.2507 - accuracy: 0.3250 - val_loss: 0.2505 -
val_accuracy: 0.3250
Epoch 7/100
4/4 - 0s - loss: 0.2504 - accuracy: 0.3250 - val_loss: 0.2503 -
```

val_accuracy: 0.3250
Epoch 8/100
4/4 - 0s - loss: 0.2502 - accuracy: 0.3250 - val_loss: 0.2501 -
val_accuracy: 0.3250
Epoch 9/100
4/4 - 0s - loss: 0.2500 - accuracy: 0.3250 - val_loss: 0.2499 -
val_accuracy: 0.3250
Epoch 10/100
4/4 - 0s - loss: 0.2498 - accuracy: 0.3250 - val_loss: 0.2496 -
val_accuracy: 0.3250
Epoch 11/100
4/4 - 0s - loss: 0.2496 - accuracy: 0.3250 - val_loss: 0.2494 -
val_accuracy: 0.3250
Epoch 12/100
4/4 - 0s - loss: 0.2493 - accuracy: 0.3250 - val_loss: 0.2492 -
val_accuracy: 0.3250
Epoch 13/100
4/4 - 0s - loss: 0.2491 - accuracy: 0.3250 - val_loss: 0.2490 -
val_accuracy: 0.3250
Epoch 14/100
4/4 - 0s - loss: 0.2489 - accuracy: 0.3250 - val_loss: 0.2488 -
val_accuracy: 0.3250
Epoch 15/100
4/4 - 0s - loss: 0.2487 - accuracy: 0.3250 - val_loss: 0.2486 -
val_accuracy: 0.3250
Epoch 16/100
4/4 - 0s - loss: 0.2485 - accuracy: 0.3250 - val_loss: 0.2483 -
val_accuracy: 0.3250
Epoch 17/100
4/4 - 0s - loss: 0.2483 - accuracy: 0.3250 - val_loss: 0.2481 -
val_accuracy: 0.3250
Epoch 18/100
4/4 - 0s - loss: 0.2481 - accuracy: 0.3250 - val_loss: 0.2479 -
val_accuracy: 0.3250
Epoch 19/100
4/4 - 0s - loss: 0.2478 - accuracy: 0.3250 - val_loss: 0.2477 -
val_accuracy: 0.3250
Epoch 20/100
4/4 - 0s - loss: 0.2476 - accuracy: 0.3250 - val_loss: 0.2475 -
val_accuracy: 0.3250
Epoch 21/100
4/4 - 0s - loss: 0.2474 - accuracy: 0.3250 - val_loss: 0.2473 -
val_accuracy: 0.3250
Epoch 22/100
4/4 - 0s - loss: 0.2472 - accuracy: 0.3250 - val_loss: 0.2471 -
val_accuracy: 0.3250
Epoch 23/100
4/4 - 0s - loss: 0.2470 - accuracy: 0.3250 - val_loss: 0.2469 -
val_accuracy: 0.3250
Epoch 24/100

```
4/4 - 0s - loss: 0.2468 - accuracy: 0.3250 - val_loss: 0.2467 -
val_accuracy: 0.3250
Epoch 25/100
4/4 - 0s - loss: 0.2466 - accuracy: 0.3250 - val_loss: 0.2465 -
val_accuracy: 0.3250
Epoch 26/100
4/4 - 0s - loss: 0.2464 - accuracy: 0.3250 - val_loss: 0.2463 -
val_accuracy: 0.3250
Epoch 27/100
4/4 - 0s - loss: 0.2462 - accuracy: 0.3250 - val_loss: 0.2461 -
val_accuracy: 0.3250
Epoch 28/100
4/4 - 0s - loss: 0.2460 - accuracy: 0.3250 - val_loss: 0.2459 -
val_accuracy: 0.3250
Epoch 29/100
4/4 - 0s - loss: 0.2458 - accuracy: 0.3250 - val_loss: 0.2457 -
val_accuracy: 0.3250
Epoch 30/100
4/4 - 0s - loss: 0.2456 - accuracy: 0.3250 - val_loss: 0.2455 -
val_accuracy: 0.3250
Epoch 31/100
4/4 - 0s - loss: 0.2454 - accuracy: 0.3250 - val_loss: 0.2453 -
val_accuracy: 0.3250
Epoch 32/100
4/4 - 0s - loss: 0.2452 - accuracy: 0.3250 - val_loss: 0.2451 -
val_accuracy: 0.3250
Epoch 33/100
4/4 - 0s - loss: 0.2450 - accuracy: 0.3250 - val_loss: 0.2449 -
val_accuracy: 0.3250
Epoch 34/100
4/4 - 0s - loss: 0.2448 - accuracy: 0.3250 - val_loss: 0.2447 -
val_accuracy: 0.3250
Epoch 35/100
4/4 - 0s - loss: 0.2446 - accuracy: 0.3250 - val_loss: 0.2445 -
val_accuracy: 0.3250
Epoch 36/100
4/4 - 0s - loss: 0.2444 - accuracy: 0.3250 - val_loss: 0.2443 -
val_accuracy: 0.3250
Epoch 37/100
4/4 - 0s - loss: 0.2442 - accuracy: 0.3250 - val_loss: 0.2441 -
val_accuracy: 0.3250
Epoch 38/100
4/4 - 0s - loss: 0.2440 - accuracy: 0.3250 - val_loss: 0.2439 -
val_accuracy: 0.3250
Epoch 39/100
4/4 - 0s - loss: 0.2438 - accuracy: 0.3250 - val_loss: 0.2437 -
val_accuracy: 0.3250
Epoch 40/100
4/4 - 0s - loss: 0.2436 - accuracy: 0.3250 - val_loss: 0.2435 -
val_accuracy: 0.3250
```

```
Epoch 41/100
4/4 - 0s - loss: 0.2435 - accuracy: 0.3250 - val_loss: 0.2433 -
val_accuracy: 0.3250
Epoch 42/100
4/4 - 0s - loss: 0.2433 - accuracy: 0.3250 - val_loss: 0.2431 -
val_accuracy: 0.3250
Epoch 43/100
4/4 - 0s - loss: 0.2431 - accuracy: 0.3250 - val_loss: 0.2430 -
val_accuracy: 0.3250
Epoch 44/100
4/4 - 0s - loss: 0.2429 - accuracy: 0.3250 - val_loss: 0.2428 -
val_accuracy: 0.3250
Epoch 45/100
4/4 - 0s - loss: 0.2427 - accuracy: 0.3250 - val_loss: 0.2426 -
val_accuracy: 0.3250
Epoch 46/100
4/4 - 0s - loss: 0.2425 - accuracy: 0.3250 - val_loss: 0.2424 -
val_accuracy: 0.3250
Epoch 47/100
4/4 - 0s - loss: 0.2423 - accuracy: 0.3250 - val_loss: 0.2422 -
val_accuracy: 0.3250
Epoch 48/100
4/4 - 0s - loss: 0.2422 - accuracy: 0.3250 - val_loss: 0.2420 -
val_accuracy: 0.3250
Epoch 49/100
4/4 - 0s - loss: 0.2420 - accuracy: 0.3250 - val_loss: 0.2419 -
val_accuracy: 0.3250
Epoch 50/100
4/4 - 0s - loss: 0.2418 - accuracy: 0.3250 - val_loss: 0.2417 -
val_accuracy: 0.3250
Epoch 51/100
4/4 - 0s - loss: 0.2416 - accuracy: 0.3250 - val_loss: 0.2415 -
val_accuracy: 0.3250
Epoch 52/100
4/4 - 0s - loss: 0.2414 - accuracy: 0.3250 - val_loss: 0.2413 -
val_accuracy: 0.3250
Epoch 53/100
4/4 - 0s - loss: 0.2413 - accuracy: 0.3250 - val_loss: 0.2411 -
val_accuracy: 0.3250
Epoch 54/100
4/4 - 0s - loss: 0.2411 - accuracy: 0.3250 - val_loss: 0.2410 -
val_accuracy: 0.3250
Epoch 55/100
4/4 - 0s - loss: 0.2409 - accuracy: 0.3250 - val_loss: 0.2408 -
val_accuracy: 0.3250
Epoch 56/100
4/4 - 0s - loss: 0.2407 - accuracy: 0.3250 - val_loss: 0.2406 -
val_accuracy: 0.3250
Epoch 57/100
4/4 - 0s - loss: 0.2405 - accuracy: 0.3250 - val_loss: 0.2404 -
```

```
val_accuracy: 0.3250
Epoch 58/100
4/4 - 0s - loss: 0.2404 - accuracy: 0.3250 - val_loss: 0.2403 -
val_accuracy: 0.3250
Epoch 59/100
4/4 - 0s - loss: 0.2402 - accuracy: 0.3250 - val_loss: 0.2401 -
val_accuracy: 0.3250
Epoch 60/100
4/4 - 0s - loss: 0.2400 - accuracy: 0.3250 - val_loss: 0.2399 -
val_accuracy: 0.3250
Epoch 61/100
4/4 - 0s - loss: 0.2398 - accuracy: 0.3250 - val_loss: 0.2397 -
val_accuracy: 0.3250
Epoch 62/100
4/4 - 0s - loss: 0.2397 - accuracy: 0.3250 - val_loss: 0.2396 -
val_accuracy: 0.3250
Epoch 63/100
4/4 - 0s - loss: 0.2395 - accuracy: 0.3250 - val_loss: 0.2394 -
val_accuracy: 0.3250
Epoch 64/100
4/4 - 0s - loss: 0.2393 - accuracy: 0.3250 - val_loss: 0.2392 -
val_accuracy: 0.3250
Epoch 65/100
4/4 - 0s - loss: 0.2392 - accuracy: 0.3250 - val_loss: 0.2391 -
val_accuracy: 0.3250
Epoch 66/100
4/4 - 0s - loss: 0.2390 - accuracy: 0.3250 - val_loss: 0.2389 -
val_accuracy: 0.3333
Epoch 67/100
4/4 - 0s - loss: 0.2388 - accuracy: 0.3333 - val_loss: 0.2387 -
val_accuracy: 0.3333
Epoch 68/100
4/4 - 0s - loss: 0.2387 - accuracy: 0.3333 - val_loss: 0.2386 -
val_accuracy: 0.3333
Epoch 69/100
4/4 - 0s - loss: 0.2385 - accuracy: 0.3333 - val_loss: 0.2384 -
val_accuracy: 0.3333
Epoch 70/100
4/4 - 0s - loss: 0.2383 - accuracy: 0.3333 - val_loss: 0.2382 -
val_accuracy: 0.3333
Epoch 71/100
4/4 - 0s - loss: 0.2382 - accuracy: 0.3333 - val_loss: 0.2381 -
val_accuracy: 0.3333
Epoch 72/100
4/4 - 0s - loss: 0.2380 - accuracy: 0.3333 - val_loss: 0.2379 -
val_accuracy: 0.3333
Epoch 73/100
4/4 - 0s - loss: 0.2379 - accuracy: 0.3333 - val_loss: 0.2378 -
val_accuracy: 0.3333
Epoch 74/100
```

```
4/4 - 0s - loss: 0.2377 - accuracy: 0.3333 - val_loss: 0.2376 -
val_accuracy: 0.3333
Epoch 75/100
4/4 - 0s - loss: 0.2375 - accuracy: 0.3333 - val_loss: 0.2374 -
val_accuracy: 0.3333
Epoch 76/100
4/4 - 0s - loss: 0.2374 - accuracy: 0.3333 - val_loss: 0.2373 -
val_accuracy: 0.3333
Epoch 77/100
4/4 - 0s - loss: 0.2372 - accuracy: 0.3333 - val_loss: 0.2371 -
val_accuracy: 0.3333
Epoch 78/100
4/4 - 0s - loss: 0.2371 - accuracy: 0.3333 - val_loss: 0.2370 -
val_accuracy: 0.3333
Epoch 79/100
4/4 - 0s - loss: 0.2369 - accuracy: 0.3333 - val_loss: 0.2368 -
val_accuracy: 0.3333
Epoch 80/100
4/4 - 0s - loss: 0.2368 - accuracy: 0.3333 - val_loss: 0.2367 -
val_accuracy: 0.3333
Epoch 81/100
4/4 - 0s - loss: 0.2366 - accuracy: 0.3333 - val_loss: 0.2365 -
val_accuracy: 0.3333
Epoch 82/100
4/4 - 0s - loss: 0.2364 - accuracy: 0.3333 - val_loss: 0.2363 -
val_accuracy: 0.3333

Epoch 83/100
4/4 - 0s - loss: 0.2363 - accuracy: 0.3333 - val_loss: 0.2362 -
val_accuracy: 0.3333
Epoch 84/100
4/4 - 0s - loss: 0.2361 - accuracy: 0.3333 - val_loss: 0.2360 -
val_accuracy: 0.3333
Epoch 85/100
4/4 - 0s - loss: 0.2360 - accuracy: 0.3333 - val_loss: 0.2359 -
val_accuracy: 0.3333
Epoch 86/100
4/4 - 0s - loss: 0.2358 - accuracy: 0.3333 - val_loss: 0.2357 -
val_accuracy: 0.3333
Epoch 87/100
4/4 - 0s - loss: 0.2357 - accuracy: 0.3333 - val_loss: 0.2356 -
val_accuracy: 0.3333
Epoch 88/100
4/4 - 0s - loss: 0.2355 - accuracy: 0.3333 - val_loss: 0.2354 -
val_accuracy: 0.3333
Epoch 89/100
4/4 - 0s - loss: 0.2354 - accuracy: 0.3333 - val_loss: 0.2353 -
val_accuracy: 0.3333
Epoch 90/100
4/4 - 0s - loss: 0.2352 - accuracy: 0.3333 - val_loss: 0.2351 -
```

val_accuracy: 0.3333
Epoch 91/100
4/4 - 0s - loss: 0.2351 - accuracy: 0.3333 - val_loss: 0.2350 -
val_accuracy: 0.3333
Epoch 92/100
4/4 - 0s - loss: 0.2349 - accuracy: 0.3333 - val_loss: 0.2348 -
val_accuracy: 0.3333
Epoch 93/100
4/4 - 0s - loss: 0.2348 - accuracy: 0.3333 - val_loss: 0.2347 -
val_accuracy: 0.3333
Epoch 94/100
4/4 - 0s - loss: 0.2346 - accuracy: 0.3333 - val_loss: 0.2345 -
val_accuracy: 0.3417
Epoch 95/100
4/4 - 0s - loss: 0.2345 - accuracy: 0.3417 - val_loss: 0.2344 -
val_accuracy: 0.3417
Epoch 96/100
4/4 - 0s - loss: 0.2344 - accuracy: 0.3417 - val_loss: 0.2343 -
val_accuracy: 0.3500
Epoch 97/100
4/4 - 0s - loss: 0.2342 - accuracy: 0.3500 - val_loss: 0.2341 -
val_accuracy: 0.3500
Epoch 98/100
4/4 - 0s - loss: 0.2341 - accuracy: 0.3583 - val_loss: 0.2340 -
val_accuracy: 0.3667
Epoch 99/100
4/4 - 0s - loss: 0.2339 - accuracy: 0.3667 - val_loss: 0.2338 -
val_accuracy: 0.3667
Epoch 100/100
4/4 - 0s - loss: 0.2338 - accuracy: 0.3667 - val_loss: 0.2337 -
val_accuracy: 0.3667
Activation: sigmoid LR: 0.01 Itertions: 100 || Train loss:
0.2336912304162979
Activation: sigmoid LR: 0.01 Itertions: 100 || Train Accuracy:
0.36666667461395264
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.0946s). Check your callbacks.
4/4 - 0s - loss: 0.2336 - accuracy: 0.3833 - val_loss: 0.2328 -
val_accuracy: 0.4333
Epoch 2/100
4/4 - 0s - loss: 0.2335 - accuracy: 0.3917 - val_loss: 0.2326 -
val_accuracy: 0.5000
Epoch 3/100
4/4 - 0s - loss: 0.2334 - accuracy: 0.4000 - val_loss: 0.2325 -
val_accuracy: 0.5333
Epoch 4/100
4/4 - 0s - loss: 0.2332 - accuracy: 0.4000 - val_loss: 0.2324 -
val_accuracy: 0.5667

```
Epoch 5/100
4/4 - 0s - loss: 0.2331 - accuracy: 0.4167 - val_loss: 0.2322 -
val_accuracy: 0.5667
Epoch 6/100
4/4 - 0s - loss: 0.2329 - accuracy: 0.4333 - val_loss: 0.2321 -
val_accuracy: 0.5333
Epoch 7/100
4/4 - 0s - loss: 0.2328 - accuracy: 0.4417 - val_loss: 0.2320 -
val_accuracy: 0.5333
Epoch 8/100
4/4 - 0s - loss: 0.2327 - accuracy: 0.4583 - val_loss: 0.2318 -
val_accuracy: 0.5333
Epoch 9/100
4/4 - 0s - loss: 0.2325 - accuracy: 0.4583 - val_loss: 0.2317 -
val_accuracy: 0.5667
Epoch 10/100
4/4 - 0s - loss: 0.2324 - accuracy: 0.4750 - val_loss: 0.2316 -
val_accuracy: 0.6000
Epoch 11/100
4/4 - 0s - loss: 0.2323 - accuracy: 0.5083 - val_loss: 0.2315 -
val_accuracy: 0.6000
Epoch 12/100
4/4 - 0s - loss: 0.2321 - accuracy: 0.5250 - val_loss: 0.2313 -
val_accuracy: 0.6000
Epoch 13/100
4/4 - 0s - loss: 0.2320 - accuracy: 0.5250 - val_loss: 0.2312 -
val_accuracy: 0.6000
Epoch 14/100
4/4 - 0s - loss: 0.2319 - accuracy: 0.5417 - val_loss: 0.2311 -
val_accuracy: 0.6000
Epoch 15/100
4/4 - 0s - loss: 0.2317 - accuracy: 0.5583 - val_loss: 0.2310 -
val_accuracy: 0.6333
Epoch 16/100
4/4 - 0s - loss: 0.2316 - accuracy: 0.5583 - val_loss: 0.2308 -
val_accuracy: 0.6333
Epoch 17/100
4/4 - 0s - loss: 0.2315 - accuracy: 0.5750 - val_loss: 0.2307 -
val_accuracy: 0.6333
Epoch 18/100
4/4 - 0s - loss: 0.2314 - accuracy: 0.5917 - val_loss: 0.2306 -
val_accuracy: 0.6333
Epoch 19/100
4/4 - 0s - loss: 0.2312 - accuracy: 0.5917 - val_loss: 0.2305 -
val_accuracy: 0.6333
Epoch 20/100
4/4 - 0s - loss: 0.2311 - accuracy: 0.5917 - val_loss: 0.2303 -
val_accuracy: 0.6333
Epoch 21/100
4/4 - 0s - loss: 0.2310 - accuracy: 0.6000 - val_loss: 0.2302 -
```

val_accuracy: 0.6333
Epoch 22/100
4/4 - 0s - loss: 0.2308 - accuracy: 0.6083 - val_loss: 0.2301 -
val_accuracy: 0.6667
Epoch 23/100
4/4 - 0s - loss: 0.2307 - accuracy: 0.6083 - val_loss: 0.2300 -
val_accuracy: 0.6667
Epoch 24/100
4/4 - 0s - loss: 0.2306 - accuracy: 0.6083 - val_loss: 0.2299 -
val_accuracy: 0.6667
Epoch 25/100
4/4 - 0s - loss: 0.2305 - accuracy: 0.6167 - val_loss: 0.2297 -
val_accuracy: 0.6667
Epoch 26/100
4/4 - 0s - loss: 0.2303 - accuracy: 0.6333 - val_loss: 0.2296 -
val_accuracy: 0.6667
Epoch 27/100
4/4 - 0s - loss: 0.2302 - accuracy: 0.6333 - val_loss: 0.2295 -
val_accuracy: 0.6667
Epoch 28/100
4/4 - 0s - loss: 0.2301 - accuracy: 0.6417 - val_loss: 0.2294 -
val_accuracy: 0.6667
Epoch 29/100
4/4 - 0s - loss: 0.2300 - accuracy: 0.6417 - val_loss: 0.2293 -
val_accuracy: 0.6667
Epoch 30/100
4/4 - 0s - loss: 0.2299 - accuracy: 0.6500 - val_loss: 0.2292 -
val_accuracy: 0.6667
Epoch 31/100
4/4 - 0s - loss: 0.2297 - accuracy: 0.6500 - val_loss: 0.2291 -
val_accuracy: 0.6667
Epoch 32/100
4/4 - 0s - loss: 0.2296 - accuracy: 0.6500 - val_loss: 0.2289 -
val_accuracy: 0.6667
Epoch 33/100
4/4 - 0s - loss: 0.2295 - accuracy: 0.6500 - val_loss: 0.2288 -
val_accuracy: 0.6667
Epoch 34/100
4/4 - 0s - loss: 0.2294 - accuracy: 0.6500 - val_loss: 0.2287 -
val_accuracy: 0.6667
Epoch 35/100
4/4 - 0s - loss: 0.2293 - accuracy: 0.6500 - val_loss: 0.2286 -
val_accuracy: 0.6667
Epoch 36/100
4/4 - 0s - loss: 0.2291 - accuracy: 0.6500 - val_loss: 0.2285 -
val_accuracy: 0.6667
Epoch 37/100
4/4 - 0s - loss: 0.2290 - accuracy: 0.6500 - val_loss: 0.2284 -
val_accuracy: 0.6667
Epoch 38/100

```
4/4 - 0s - loss: 0.2289 - accuracy: 0.6500 - val_loss: 0.2283 -
val_accuracy: 0.6667
Epoch 39/100
4/4 - 0s - loss: 0.2288 - accuracy: 0.6500 - val_loss: 0.2282 -
val_accuracy: 0.6667
Epoch 40/100
4/4 - 0s - loss: 0.2287 - accuracy: 0.6500 - val_loss: 0.2280 -
val_accuracy: 0.6667
Epoch 41/100
4/4 - 0s - loss: 0.2286 - accuracy: 0.6500 - val_loss: 0.2279 -
val_accuracy: 0.6667
Epoch 42/100
4/4 - 0s - loss: 0.2285 - accuracy: 0.6500 - val_loss: 0.2278 -
val_accuracy: 0.6667
Epoch 43/100
4/4 - 0s - loss: 0.2283 - accuracy: 0.6500 - val_loss: 0.2277 -
val_accuracy: 0.6667
Epoch 44/100
4/4 - 0s - loss: 0.2282 - accuracy: 0.6500 - val_loss: 0.2276 -
val_accuracy: 0.6667
Epoch 45/100
4/4 - 0s - loss: 0.2281 - accuracy: 0.6500 - val_loss: 0.2275 -
val_accuracy: 0.6667
Epoch 46/100
4/4 - 0s - loss: 0.2280 - accuracy: 0.6500 - val_loss: 0.2274 -
val_accuracy: 0.6667
Epoch 47/100
4/4 - 0s - loss: 0.2279 - accuracy: 0.6500 - val_loss: 0.2273 -
val_accuracy: 0.6667
Epoch 48/100
4/4 - 0s - loss: 0.2278 - accuracy: 0.6500 - val_loss: 0.2272 -
val_accuracy: 0.6667
Epoch 49/100
4/4 - 0s - loss: 0.2277 - accuracy: 0.6500 - val_loss: 0.2271 -
val_accuracy: 0.6667
Epoch 50/100
4/4 - 0s - loss: 0.2276 - accuracy: 0.6417 - val_loss: 0.2270 -
val_accuracy: 0.6667
Epoch 51/100
4/4 - 0s - loss: 0.2274 - accuracy: 0.6417 - val_loss: 0.2269 -
val_accuracy: 0.6667
Epoch 52/100
4/4 - 0s - loss: 0.2273 - accuracy: 0.6417 - val_loss: 0.2268 -
val_accuracy: 0.6667
Epoch 53/100
4/4 - 0s - loss: 0.2272 - accuracy: 0.6417 - val_loss: 0.2267 -
val_accuracy: 0.6667
Epoch 54/100
4/4 - 0s - loss: 0.2271 - accuracy: 0.6417 - val_loss: 0.2266 -
val_accuracy: 0.6667
```

```
Epoch 55/100
4/4 - 0s - loss: 0.2270 - accuracy: 0.6250 - val_loss: 0.2265 -
val_accuracy: 0.6667
Epoch 56/100
4/4 - 0s - loss: 0.2269 - accuracy: 0.6250 - val_loss: 0.2264 -
val_accuracy: 0.6667
Epoch 57/100
4/4 - 0s - loss: 0.2268 - accuracy: 0.6250 - val_loss: 0.2263 -
val_accuracy: 0.6667
Epoch 58/100
4/4 - 0s - loss: 0.2267 - accuracy: 0.6250 - val_loss: 0.2262 -
val_accuracy: 0.6667
Epoch 59/100
4/4 - 0s - loss: 0.2266 - accuracy: 0.6250 - val_loss: 0.2261 -
val_accuracy: 0.6667
Epoch 60/100
4/4 - 0s - loss: 0.2265 - accuracy: 0.6250 - val_loss: 0.2260 -
val_accuracy: 0.6667
Epoch 61/100
4/4 - 0s - loss: 0.2264 - accuracy: 0.6250 - val_loss: 0.2259 -
val_accuracy: 0.6667
Epoch 62/100
4/4 - 0s - loss: 0.2263 - accuracy: 0.6250 - val_loss: 0.2258 -
val_accuracy: 0.6667
Epoch 63/100
4/4 - 0s - loss: 0.2262 - accuracy: 0.6250 - val_loss: 0.2257 -
val_accuracy: 0.6667

Epoch 64/100
4/4 - 0s - loss: 0.2261 - accuracy: 0.6250 - val_loss: 0.2256 -
val_accuracy: 0.6667
Epoch 65/100
4/4 - 0s - loss: 0.2260 - accuracy: 0.6250 - val_loss: 0.2255 -
val_accuracy: 0.6667
Epoch 66/100
4/4 - 0s - loss: 0.2259 - accuracy: 0.6250 - val_loss: 0.2254 -
val_accuracy: 0.6667
Epoch 67/100
4/4 - 0s - loss: 0.2258 - accuracy: 0.6250 - val_loss: 0.2253 -
val_accuracy: 0.6667
Epoch 68/100
4/4 - 0s - loss: 0.2257 - accuracy: 0.6250 - val_loss: 0.2252 -
val_accuracy: 0.6667
Epoch 69/100
4/4 - 0s - loss: 0.2256 - accuracy: 0.6250 - val_loss: 0.2251 -
val_accuracy: 0.6667
Epoch 70/100
4/4 - 0s - loss: 0.2255 - accuracy: 0.6250 - val_loss: 0.2250 -
val_accuracy: 0.6667
Epoch 71/100
```

```
4/4 - 0s - loss: 0.2254 - accuracy: 0.6250 - val_loss: 0.2249 -
val_accuracy: 0.6667
Epoch 72/100
4/4 - 0s - loss: 0.2253 - accuracy: 0.6250 - val_loss: 0.2248 -
val_accuracy: 0.6667
Epoch 73/100
4/4 - 0s - loss: 0.2252 - accuracy: 0.6250 - val_loss: 0.2247 -
val_accuracy: 0.6667
Epoch 74/100
4/4 - 0s - loss: 0.2251 - accuracy: 0.6250 - val_loss: 0.2246 -
val_accuracy: 0.6667
Epoch 75/100
4/4 - 0s - loss: 0.2250 - accuracy: 0.6250 - val_loss: 0.2245 -
val_accuracy: 0.6667
Epoch 76/100
4/4 - 0s - loss: 0.2249 - accuracy: 0.6250 - val_loss: 0.2244 -
val_accuracy: 0.6667
Epoch 77/100
4/4 - 0s - loss: 0.2248 - accuracy: 0.6167 - val_loss: 0.2243 -
val_accuracy: 0.6667
Epoch 78/100
4/4 - 0s - loss: 0.2247 - accuracy: 0.6167 - val_loss: 0.2242 -
val_accuracy: 0.6667
Epoch 79/100
4/4 - 0s - loss: 0.2246 - accuracy: 0.6167 - val_loss: 0.2242 -
val_accuracy: 0.6667
Epoch 80/100
4/4 - 0s - loss: 0.2245 - accuracy: 0.6167 - val_loss: 0.2241 -
val_accuracy: 0.6667
Epoch 81/100
4/4 - 0s - loss: 0.2244 - accuracy: 0.6167 - val_loss: 0.2240 -
val_accuracy: 0.6667
Epoch 82/100
4/4 - 0s - loss: 0.2243 - accuracy: 0.6083 - val_loss: 0.2239 -
val_accuracy: 0.6667
Epoch 83/100
4/4 - 0s - loss: 0.2242 - accuracy: 0.6083 - val_loss: 0.2238 -
val_accuracy: 0.6667
Epoch 84/100
4/4 - 0s - loss: 0.2241 - accuracy: 0.6083 - val_loss: 0.2237 -
val_accuracy: 0.6667
Epoch 85/100
4/4 - 0s - loss: 0.2240 - accuracy: 0.6083 - val_loss: 0.2236 -
val_accuracy: 0.6667
Epoch 86/100
4/4 - 0s - loss: 0.2239 - accuracy: 0.6083 - val_loss: 0.2235 -
val_accuracy: 0.6667
Epoch 87/100
4/4 - 0s - loss: 0.2238 - accuracy: 0.6083 - val_loss: 0.2234 -
val_accuracy: 0.6667
```

```
Epoch 88/100
4/4 - 0s - loss: 0.2237 - accuracy: 0.6083 - val_loss: 0.2233 -
val_accuracy: 0.6667
Epoch 89/100
4/4 - 0s - loss: 0.2236 - accuracy: 0.6083 - val_loss: 0.2233 -
val_accuracy: 0.6667
Epoch 90/100
4/4 - 0s - loss: 0.2236 - accuracy: 0.6000 - val_loss: 0.2232 -
val_accuracy: 0.6667
Epoch 91/100
4/4 - 0s - loss: 0.2235 - accuracy: 0.6083 - val_loss: 0.2231 -
val_accuracy: 0.6667
Epoch 92/100
4/4 - 0s - loss: 0.2234 - accuracy: 0.6000 - val_loss: 0.2230 -
val_accuracy: 0.6667
Epoch 93/100
4/4 - 0s - loss: 0.2233 - accuracy: 0.6000 - val_loss: 0.2229 -
val_accuracy: 0.6667
Epoch 94/100
4/4 - 0s - loss: 0.2232 - accuracy: 0.5917 - val_loss: 0.2228 -
val_accuracy: 0.6667
Epoch 95/100
4/4 - 0s - loss: 0.2231 - accuracy: 0.5917 - val_loss: 0.2227 -
val_accuracy: 0.6667
Epoch 96/100
4/4 - 0s - loss: 0.2230 - accuracy: 0.5917 - val_loss: 0.2227 -
val_accuracy: 0.6667
Epoch 97/100
4/4 - 0s - loss: 0.2229 - accuracy: 0.5917 - val_loss: 0.2226 -
val_accuracy: 0.6667
Epoch 98/100
4/4 - 0s - loss: 0.2228 - accuracy: 0.5833 - val_loss: 0.2225 -
val_accuracy: 0.6667
Epoch 99/100
4/4 - 0s - loss: 0.2228 - accuracy: 0.5833 - val_loss: 0.2224 -
val_accuracy: 0.6333
Epoch 100/100
4/4 - 0s - loss: 0.2227 - accuracy: 0.5667 - val_loss: 0.2223 -
val_accuracy: 0.6333
Activation: sigmoid LR: 0.01 Iterations: 100 || Test loss:
0.22232586145401
Activation: sigmoid LR: 0.01 Iterations: 100 || Test Accuracy:
0.6333333253860474
========================================================================
=======
Model_sigmoid_LR_0.01_Iterations_200_HL_2
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.1445s). Check your callbacks.
```

```
4/4 - 0s - loss: 0.2758 - accuracy: 0.0083 - val_loss: 0.2756 -
val_accuracy: 0.0083
Epoch 2/200
4/4 - 0s - loss: 0.2755 - accuracy: 0.0083 - val_loss: 0.2753 -
val_accuracy: 0.0083
Epoch 3/200
4/4 - 0s - loss: 0.2753 - accuracy: 0.0083 - val_loss: 0.2751 -
val_accuracy: 0.0083
Epoch 4/200
4/4 - 0s - loss: 0.2750 - accuracy: 0.0083 - val_loss: 0.2749 -
val_accuracy: 0.0083
Epoch 5/200
4/4 - 0s - loss: 0.2748 - accuracy: 0.0083 - val_loss: 0.2746 -
val_accuracy: 0.0083
Epoch 6/200
4/4 - 0s - loss: 0.2745 - accuracy: 0.0083 - val_loss: 0.2744 -
val_accuracy: 0.0083
Epoch 7/200
4/4 - 0s - loss: 0.2743 - accuracy: 0.0083 - val_loss: 0.2741 -
val_accuracy: 0.0000e+00
Epoch 8/200
4/4 - 0s - loss: 0.2741 - accuracy: 0.0000e+00 - val_loss: 0.2739 -
val_accuracy: 0.0000e+00
Epoch 9/200
4/4 - 0s - loss: 0.2738 - accuracy: 0.0000e+00 - val_loss: 0.2737 -
val_accuracy: 0.0000e+00
Epoch 10/200
4/4 - 0s - loss: 0.2736 - accuracy: 0.0000e+00 - val_loss: 0.2734 -
val_accuracy: 0.0000e+00
Epoch 11/200
4/4 - 0s - loss: 0.2734 - accuracy: 0.0000e+00 - val_loss: 0.2732 -
val_accuracy: 0.0000e+00
Epoch 12/200
4/4 - 0s - loss: 0.2731 - accuracy: 0.0000e+00 - val_loss: 0.2730 -
val_accuracy: 0.0000e+00
Epoch 13/200
4/4 - 0s - loss: 0.2729 - accuracy: 0.0000e+00 - val_loss: 0.2727 -
val_accuracy: 0.0000e+00
Epoch 14/200
4/4 - 0s - loss: 0.2726 - accuracy: 0.0000e+00 - val_loss: 0.2725 -
val_accuracy: 0.0000e+00
Epoch 15/200
4/4 - 0s - loss: 0.2724 - accuracy: 0.0000e+00 - val_loss: 0.2723 -
val_accuracy: 0.0000e+00
Epoch 16/200
4/4 - 0s - loss: 0.2722 - accuracy: 0.0000e+00 - val_loss: 0.2720 -
val_accuracy: 0.0000e+00
Epoch 17/200
4/4 - 0s - loss: 0.2719 - accuracy: 0.0000e+00 - val_loss: 0.2718 -
val_accuracy: 0.0000e+00
```

```
Epoch 18/200
4/4 - 0s - loss: 0.2717 - accuracy: 0.0000e+00 - val_loss: 0.2716 -
val_accuracy: 0.0000e+00
Epoch 19/200
4/4 - 0s - loss: 0.2715 - accuracy: 0.0000e+00 - val_loss: 0.2713 -
val_accuracy: 0.0000e+00
Epoch 20/200
4/4 - 0s - loss: 0.2713 - accuracy: 0.0000e+00 - val_loss: 0.2711 -
val_accuracy: 0.0000e+00
Epoch 21/200
4/4 - 0s - loss: 0.2710 - accuracy: 0.0000e+00 - val_loss: 0.2709 -
val_accuracy: 0.0000e+00
Epoch 22/200
4/4 - 0s - loss: 0.2708 - accuracy: 0.0000e+00 - val_loss: 0.2706 -
val_accuracy: 0.0000e+00
Epoch 23/200
4/4 - 0s - loss: 0.2706 - accuracy: 0.0000e+00 - val_loss: 0.2704 -
val_accuracy: 0.0000e+00
Epoch 24/200
4/4 - 0s - loss: 0.2703 - accuracy: 0.0000e+00 - val_loss: 0.2702 -
val_accuracy: 0.0000e+00
Epoch 25/200
4/4 - 0s - loss: 0.2701 - accuracy: 0.0000e+00 - val_loss: 0.2700 -
val_accuracy: 0.0000e+00
Epoch 26/200
4/4 - 0s - loss: 0.2699 - accuracy: 0.0000e+00 - val_loss: 0.2697 -
val_accuracy: 0.0000e+00
Epoch 27/200
4/4 - 0s - loss: 0.2697 - accuracy: 0.0000e+00 - val_loss: 0.2695 -
val_accuracy: 0.0000e+00
Epoch 28/200
4/4 - 0s - loss: 0.2694 - accuracy: 0.0000e+00 - val_loss: 0.2693 -
val_accuracy: 0.0000e+00
Epoch 29/200
4/4 - 0s - loss: 0.2692 - accuracy: 0.0000e+00 - val_loss: 0.2691 -
val_accuracy: 0.0000e+00
Epoch 30/200
4/4 - 0s - loss: 0.2690 - accuracy: 0.0000e+00 - val_loss: 0.2689 -
val_accuracy: 0.0000e+00
Epoch 31/200
4/4 - 0s - loss: 0.2688 - accuracy: 0.0000e+00 - val_loss: 0.2686 -
val_accuracy: 0.0000e+00
Epoch 32/200
4/4 - 0s - loss: 0.2686 - accuracy: 0.0000e+00 - val_loss: 0.2684 -
val_accuracy: 0.0000e+00
Epoch 33/200
4/4 - 0s - loss: 0.2684 - accuracy: 0.0000e+00 - val_loss: 0.2682 -
val_accuracy: 0.0000e+00
Epoch 34/200
4/4 - 0s - loss: 0.2681 - accuracy: 0.0000e+00 - val_loss: 0.2680 -
```

```
val_accuracy: 0.0000e+00
Epoch 35/200
4/4 - 0s - loss: 0.2679 - accuracy: 0.0000e+00 - val_loss: 0.2678 -
val_accuracy: 0.0000e+00
Epoch 36/200
4/4 - 0s - loss: 0.2677 - accuracy: 0.0000e+00 - val_loss: 0.2676 -
val_accuracy: 0.0000e+00
Epoch 37/200
4/4 - 0s - loss: 0.2675 - accuracy: 0.0000e+00 - val_loss: 0.2673 -
val_accuracy: 0.0000e+00
Epoch 38/200
4/4 - 0s - loss: 0.2673 - accuracy: 0.0000e+00 - val_loss: 0.2671 -
val_accuracy: 0.0000e+00
Epoch 39/200
4/4 - 0s - loss: 0.2671 - accuracy: 0.0000e+00 - val_loss: 0.2669 -
val_accuracy: 0.0000e+00
Epoch 40/200
4/4 - 0s - loss: 0.2669 - accuracy: 0.0000e+00 - val_loss: 0.2667 -
val_accuracy: 0.0000e+00

Epoch 41/200
4/4 - 0s - loss: 0.2666 - accuracy: 0.0000e+00 - val_loss: 0.2665 -
val_accuracy: 0.0000e+00
Epoch 42/200
4/4 - 0s - loss: 0.2664 - accuracy: 0.0000e+00 - val_loss: 0.2663 -
val_accuracy: 0.0000e+00
Epoch 43/200
4/4 - 0s - loss: 0.2662 - accuracy: 0.0000e+00 - val_loss: 0.2661 -
val_accuracy: 0.0000e+00
Epoch 44/200
4/4 - 0s - loss: 0.2660 - accuracy: 0.0000e+00 - val_loss: 0.2659 -
val_accuracy: 0.0000e+00
Epoch 45/200
4/4 - 0s - loss: 0.2658 - accuracy: 0.0000e+00 - val_loss: 0.2657 -
val_accuracy: 0.0000e+00
Epoch 46/200
4/4 - 0s - loss: 0.2656 - accuracy: 0.0000e+00 - val_loss: 0.2655 -
val_accuracy: 0.0000e+00
Epoch 47/200
4/4 - 0s - loss: 0.2654 - accuracy: 0.0000e+00 - val_loss: 0.2653 -
val_accuracy: 0.0000e+00
Epoch 48/200
4/4 - 0s - loss: 0.2652 - accuracy: 0.0000e+00 - val_loss: 0.2651 -
val_accuracy: 0.0000e+00
Epoch 49/200
4/4 - 0s - loss: 0.2650 - accuracy: 0.0000e+00 - val_loss: 0.2649 -
val_accuracy: 0.0000e+00
Epoch 50/200
4/4 - 0s - loss: 0.2648 - accuracy: 0.0000e+00 - val_loss: 0.2647 -
val_accuracy: 0.0000e+00
```

```
Epoch 51/200
4/4 - 0s - loss: 0.2646 - accuracy: 0.0000e+00 - val_loss: 0.2645 -
val_accuracy: 0.0000e+00
Epoch 52/200
4/4 - 0s - loss: 0.2644 - accuracy: 0.0000e+00 - val_loss: 0.2643 -
val_accuracy: 0.0000e+00
Epoch 53/200
4/4 - 0s - loss: 0.2642 - accuracy: 0.0000e+00 - val_loss: 0.2641 -
val_accuracy: 0.0000e+00
Epoch 54/200
4/4 - 0s - loss: 0.2640 - accuracy: 0.0000e+00 - val_loss: 0.2639 -
val_accuracy: 0.0000e+00
Epoch 55/200
4/4 - 0s - loss: 0.2638 - accuracy: 0.0000e+00 - val_loss: 0.2637 -
val_accuracy: 0.0000e+00
Epoch 56/200
4/4 - 0s - loss: 0.2636 - accuracy: 0.0000e+00 - val_loss: 0.2635 -
val_accuracy: 0.0000e+00
Epoch 57/200
4/4 - 0s - loss: 0.2634 - accuracy: 0.0000e+00 - val_loss: 0.2633 -
val_accuracy: 0.0000e+00
Epoch 58/200
4/4 - 0s - loss: 0.2632 - accuracy: 0.0000e+00 - val_loss: 0.2631 -
val_accuracy: 0.0000e+00
Epoch 59/200
4/4 - 0s - loss: 0.2630 - accuracy: 0.0000e+00 - val_loss: 0.2629 -
val_accuracy: 0.0000e+00
Epoch 60/200
4/4 - 0s - loss: 0.2628 - accuracy: 0.0000e+00 - val_loss: 0.2627 -
val_accuracy: 0.0000e+00
Epoch 61/200
4/4 - 0s - loss: 0.2626 - accuracy: 0.0000e+00 - val_loss: 0.2625 -
val_accuracy: 0.0000e+00
Epoch 62/200
4/4 - 0s - loss: 0.2624 - accuracy: 0.0000e+00 - val_loss: 0.2623 -
val_accuracy: 0.0000e+00
Epoch 63/200
4/4 - 0s - loss: 0.2622 - accuracy: 0.0000e+00 - val_loss: 0.2621 -
val_accuracy: 0.0000e+00
Epoch 64/200
4/4 - 0s - loss: 0.2620 - accuracy: 0.0000e+00 - val_loss: 0.2619 -
val_accuracy: 0.0000e+00
Epoch 65/200
4/4 - 0s - loss: 0.2618 - accuracy: 0.0000e+00 - val_loss: 0.2617 -
val_accuracy: 0.0000e+00
Epoch 66/200
4/4 - 0s - loss: 0.2616 - accuracy: 0.0000e+00 - val_loss: 0.2615 -
val_accuracy: 0.0000e+00
Epoch 67/200
4/4 - 0s - loss: 0.2615 - accuracy: 0.0000e+00 - val_loss: 0.2613 -
```

```
val_accuracy: 0.0000e+00
Epoch 68/200
4/4 - 0s - loss: 0.2613 - accuracy: 0.0000e+00 - val_loss: 0.2611 -
val_accuracy: 0.0000e+00
Epoch 69/200
4/4 - 0s - loss: 0.2611 - accuracy: 0.0000e+00 - val_loss: 0.2610 -
val_accuracy: 0.0000e+00
Epoch 70/200
4/4 - 0s - loss: 0.2609 - accuracy: 0.0000e+00 - val_loss: 0.2608 -
val_accuracy: 0.0000e+00
Epoch 71/200
4/4 - 0s - loss: 0.2607 - accuracy: 0.0000e+00 - val_loss: 0.2606 -
val_accuracy: 0.0000e+00
Epoch 72/200
4/4 - 0s - loss: 0.2605 - accuracy: 0.0000e+00 - val_loss: 0.2604 -
val_accuracy: 0.0000e+00
Epoch 73/200
4/4 - 0s - loss: 0.2604 - accuracy: 0.0000e+00 - val_loss: 0.2602 -
val_accuracy: 0.0000e+00
Epoch 74/200
4/4 - 0s - loss: 0.2602 - accuracy: 0.0000e+00 - val_loss: 0.2600 -
val_accuracy: 0.0000e+00
Epoch 75/200
4/4 - 0s - loss: 0.2600 - accuracy: 0.0000e+00 - val_loss: 0.2599 -
val_accuracy: 0.0000e+00
Epoch 76/200
4/4 - 0s - loss: 0.2598 - accuracy: 0.0000e+00 - val_loss: 0.2597 -
val_accuracy: 0.0000e+00
Epoch 77/200
4/4 - 0s - loss: 0.2596 - accuracy: 0.0000e+00 - val_loss: 0.2595 -
val_accuracy: 0.0000e+00
Epoch 78/200
4/4 - 0s - loss: 0.2594 - accuracy: 0.0000e+00 - val_loss: 0.2593 -
val_accuracy: 0.0000e+00
Epoch 79/200
4/4 - 0s - loss: 0.2593 - accuracy: 0.0000e+00 - val_loss: 0.2591 -
val_accuracy: 0.0000e+00
Epoch 80/200
4/4 - 0s - loss: 0.2591 - accuracy: 0.0000e+00 - val_loss: 0.2590 -
val_accuracy: 0.0000e+00
Epoch 81/200
4/4 - 0s - loss: 0.2589 - accuracy: 0.0000e+00 - val_loss: 0.2588 -
val_accuracy: 0.0000e+00
Epoch 82/200
4/4 - 0s - loss: 0.2587 - accuracy: 0.0000e+00 - val_loss: 0.2586 -
val_accuracy: 0.0000e+00
Epoch 83/200
4/4 - 0s - loss: 0.2586 - accuracy: 0.0000e+00 - val_loss: 0.2584 -
val_accuracy: 0.0000e+00
Epoch 84/200
```

```
4/4 - 0s - loss: 0.2584 - accuracy: 0.0000e+00 - val_loss: 0.2583 -
val_accuracy: 0.0000e+00
Epoch 85/200
4/4 - 0s - loss: 0.2582 - accuracy: 0.0000e+00 - val_loss: 0.2581 -
val_accuracy: 0.0000e+00
Epoch 86/200
4/4 - 0s - loss: 0.2580 - accuracy: 0.0000e+00 - val_loss: 0.2579 -
val_accuracy: 0.0000e+00
Epoch 87/200
4/4 - 0s - loss: 0.2579 - accuracy: 0.0000e+00 - val_loss: 0.2577 -
val_accuracy: 0.0000e+00
Epoch 88/200
4/4 - 0s - loss: 0.2577 - accuracy: 0.0000e+00 - val_loss: 0.2576 -
val_accuracy: 0.0000e+00
Epoch 89/200
4/4 - 0s - loss: 0.2575 - accuracy: 0.0000e+00 - val_loss: 0.2574 -
val_accuracy: 0.0000e+00
Epoch 90/200
4/4 - 0s - loss: 0.2573 - accuracy: 0.0000e+00 - val_loss: 0.2572 -
val_accuracy: 0.0000e+00
Epoch 91/200
4/4 - 0s - loss: 0.2572 - accuracy: 0.0000e+00 - val_loss: 0.2571 -
val_accuracy: 0.0000e+00
Epoch 92/200
4/4 - 0s - loss: 0.2570 - accuracy: 0.0000e+00 - val_loss: 0.2569 -
val_accuracy: 0.0000e+00
Epoch 93/200
4/4 - 0s - loss: 0.2568 - accuracy: 0.0000e+00 - val_loss: 0.2567 -
val_accuracy: 0.0000e+00
Epoch 94/200
4/4 - 0s - loss: 0.2567 - accuracy: 0.0000e+00 - val_loss: 0.2565 -
val_accuracy: 0.0000e+00
Epoch 95/200
4/4 - 0s - loss: 0.2565 - accuracy: 0.0000e+00 - val_loss: 0.2564 -
val_accuracy: 0.0000e+00
Epoch 96/200
4/4 - 0s - loss: 0.2563 - accuracy: 0.0000e+00 - val_loss: 0.2562 -
val_accuracy: 0.0000e+00
Epoch 97/200
4/4 - 0s - loss: 0.2562 - accuracy: 0.0000e+00 - val_loss: 0.2561 -
val_accuracy: 0.0000e+00
Epoch 98/200
4/4 - 0s - loss: 0.2560 - accuracy: 0.0000e+00 - val_loss: 0.2559 -
val_accuracy: 0.0000e+00
Epoch 99/200
4/4 - 0s - loss: 0.2558 - accuracy: 0.0000e+00 - val_loss: 0.2557 -
val_accuracy: 0.0000e+00
Epoch 100/200
4/4 - 0s - loss: 0.2557 - accuracy: 0.0000e+00 - val_loss: 0.2556 -
val_accuracy: 0.0000e+00
```

```
Epoch 101/200
4/4 - 0s - loss: 0.2555 - accuracy: 0.0000e+00 - val_loss: 0.2554 -
val_accuracy: 0.0000e+00
Epoch 102/200
4/4 - 0s - loss: 0.2553 - accuracy: 0.0000e+00 - val_loss: 0.2552 -
val_accuracy: 0.0000e+00
Epoch 103/200
4/4 - 0s - loss: 0.2552 - accuracy: 0.0000e+00 - val_loss: 0.2551 -
val_accuracy: 0.0000e+00
Epoch 104/200
4/4 - 0s - loss: 0.2550 - accuracy: 0.0000e+00 - val_loss: 0.2549 -
val_accuracy: 0.0000e+00
Epoch 105/200
4/4 - 0s - loss: 0.2549 - accuracy: 0.0000e+00 - val_loss: 0.2548 -
val_accuracy: 0.0000e+00
Epoch 106/200
4/4 - 0s - loss: 0.2547 - accuracy: 0.0000e+00 - val_loss: 0.2546 -
val_accuracy: 0.0000e+00
Epoch 107/200
4/4 - 0s - loss: 0.2545 - accuracy: 0.0000e+00 - val_loss: 0.2544 -
val_accuracy: 0.0000e+00
Epoch 108/200
4/4 - 0s - loss: 0.2544 - accuracy: 0.0000e+00 - val_loss: 0.2543 -
val_accuracy: 0.0000e+00
Epoch 109/200
4/4 - 0s - loss: 0.2542 - accuracy: 0.0000e+00 - val_loss: 0.2541 -
val_accuracy: 0.0000e+00
Epoch 110/200
4/4 - 0s - loss: 0.2541 - accuracy: 0.0000e+00 - val_loss: 0.2540 -
val_accuracy: 0.0000e+00
Epoch 111/200
4/4 - 0s - loss: 0.2539 - accuracy: 0.0000e+00 - val_loss: 0.2538 -
val_accuracy: 0.0000e+00
Epoch 112/200
4/4 - 0s - loss: 0.2538 - accuracy: 0.0000e+00 - val_loss: 0.2537 -
val_accuracy: 0.0000e+00
Epoch 113/200
4/4 - 0s - loss: 0.2536 - accuracy: 0.0000e+00 - val_loss: 0.2535 -
val_accuracy: 0.0000e+00
Epoch 114/200
4/4 - 0s - loss: 0.2535 - accuracy: 0.0000e+00 - val_loss: 0.2534 -
val_accuracy: 0.0000e+00
Epoch 115/200
4/4 - 0s - loss: 0.2533 - accuracy: 0.0000e+00 - val_loss: 0.2532 -
val_accuracy: 0.0000e+00
Epoch 116/200
4/4 - 0s - loss: 0.2532 - accuracy: 0.0000e+00 - val_loss: 0.2531 -
val_accuracy: 0.0000e+00
Epoch 117/200
4/4 - 0s - loss: 0.2530 - accuracy: 0.0000e+00 - val_loss: 0.2529 -
```

```
val_accuracy: 0.0000e+00
Epoch 118/200
4/4 - 0s - loss: 0.2529 - accuracy: 0.0000e+00 - val_loss: 0.2528 -
val_accuracy: 0.0000e+00

Epoch 119/200
4/4 - 0s - loss: 0.2527 - accuracy: 0.0000e+00 - val_loss: 0.2526 -
val_accuracy: 0.0000e+00
Epoch 120/200
4/4 - 0s - loss: 0.2525 - accuracy: 0.0000e+00 - val_loss: 0.2525 -
val_accuracy: 0.0000e+00
Epoch 121/200
4/4 - 0s - loss: 0.2524 - accuracy: 0.0000e+00 - val_loss: 0.2523 -
val_accuracy: 0.0000e+00
Epoch 122/200
4/4 - 0s - loss: 0.2523 - accuracy: 0.0000e+00 - val_loss: 0.2522 -
val_accuracy: 0.0000e+00
Epoch 123/200
4/4 - 0s - loss: 0.2521 - accuracy: 0.0000e+00 - val_loss: 0.2520 -
val_accuracy: 0.0000e+00
Epoch 124/200
4/4 - 0s - loss: 0.2520 - accuracy: 0.0000e+00 - val_loss: 0.2519 -
val_accuracy: 0.0000e+00
Epoch 125/200
4/4 - 0s - loss: 0.2518 - accuracy: 0.0000e+00 - val_loss: 0.2517 -
val_accuracy: 0.0000e+00
Epoch 126/200
4/4 - 0s - loss: 0.2517 - accuracy: 0.0000e+00 - val_loss: 0.2516 -
val_accuracy: 0.0000e+00
Epoch 127/200
4/4 - 0s - loss: 0.2515 - accuracy: 0.0000e+00 - val_loss: 0.2514 -
val_accuracy: 0.0000e+00
Epoch 128/200
4/4 - 0s - loss: 0.2514 - accuracy: 0.0000e+00 - val_loss: 0.2513 -
val_accuracy: 0.0000e+00
Epoch 129/200
4/4 - 0s - loss: 0.2512 - accuracy: 0.0000e+00 - val_loss: 0.2511 -
val_accuracy: 0.0000e+00
Epoch 130/200
4/4 - 0s - loss: 0.2511 - accuracy: 0.0083 - val_loss: 0.2510 -
val_accuracy: 0.0083
Epoch 131/200
4/4 - 0s - loss: 0.2510 - accuracy: 0.0167 - val_loss: 0.2509 -
val_accuracy: 0.0167
Epoch 132/200
4/4 - 0s - loss: 0.2508 - accuracy: 0.0167 - val_loss: 0.2507 -
val_accuracy: 0.0167
Epoch 133/200
4/4 - 0s - loss: 0.2507 - accuracy: 0.0167 - val_loss: 0.2506 -
val_accuracy: 0.0167
```

```
Epoch 134/200
4/4 - 0s - loss: 0.2505 - accuracy: 0.0167 - val_loss: 0.2504 -
val_accuracy: 0.0167
Epoch 135/200
4/4 - 0s - loss: 0.2504 - accuracy: 0.0167 - val_loss: 0.2503 -
val_accuracy: 0.0167
Epoch 136/200
4/4 - 0s - loss: 0.2503 - accuracy: 0.0167 - val_loss: 0.2502 -
val_accuracy: 0.0167
Epoch 137/200
4/4 - 0s - loss: 0.2501 - accuracy: 0.0167 - val_loss: 0.2500 -
val_accuracy: 0.0250
Epoch 138/200
4/4 - 0s - loss: 0.2500 - accuracy: 0.0250 - val_loss: 0.2499 -
val_accuracy: 0.0250
Epoch 139/200
4/4 - 0s - loss: 0.2498 - accuracy: 0.0250 - val_loss: 0.2497 -
val_accuracy: 0.0250
Epoch 140/200
4/4 - 0s - loss: 0.2497 - accuracy: 0.0250 - val_loss: 0.2496 -
val_accuracy: 0.0333
Epoch 141/200
4/4 - 0s - loss: 0.2496 - accuracy: 0.0333 - val_loss: 0.2495 -
val_accuracy: 0.0333
Epoch 142/200
4/4 - 0s - loss: 0.2494 - accuracy: 0.0333 - val_loss: 0.2493 -
val_accuracy: 0.0333
Epoch 143/200
4/4 - 0s - loss: 0.2493 - accuracy: 0.0333 - val_loss: 0.2492 -
val_accuracy: 0.0333
Epoch 144/200
4/4 - 0s - loss: 0.2492 - accuracy: 0.0333 - val_loss: 0.2491 -
val_accuracy: 0.0333
Epoch 145/200
4/4 - 0s - loss: 0.2490 - accuracy: 0.0333 - val_loss: 0.2489 -
val_accuracy: 0.0333
Epoch 146/200
4/4 - 0s - loss: 0.2489 - accuracy: 0.0333 - val_loss: 0.2488 -
val_accuracy: 0.0333
Epoch 147/200
4/4 - 0s - loss: 0.2488 - accuracy: 0.0333 - val_loss: 0.2487 -
val_accuracy: 0.0417
Epoch 148/200
4/4 - 0s - loss: 0.2486 - accuracy: 0.0417 - val_loss: 0.2485 -
val_accuracy: 0.0417
Epoch 149/200
4/4 - 0s - loss: 0.2485 - accuracy: 0.0417 - val_loss: 0.2484 -
val_accuracy: 0.0500
Epoch 150/200
4/4 - 0s - loss: 0.2484 - accuracy: 0.0583 - val_loss: 0.2483 -
```

```
val_accuracy: 0.0583
Epoch 151/200
4/4 - 0s - loss: 0.2482 - accuracy: 0.0583 - val_loss: 0.2482 -
val_accuracy: 0.0583
Epoch 152/200
4/4 - 0s - loss: 0.2481 - accuracy: 0.0583 - val_loss: 0.2480 -
val_accuracy: 0.0583
Epoch 153/200
4/4 - 0s - loss: 0.2480 - accuracy: 0.0583 - val_loss: 0.2479 -
val_accuracy: 0.0583
Epoch 154/200
4/4 - 0s - loss: 0.2479 - accuracy: 0.0583 - val_loss: 0.2478 -
val_accuracy: 0.0583
Epoch 155/200
4/4 - 0s - loss: 0.2477 - accuracy: 0.0583 - val_loss: 0.2476 -
val_accuracy: 0.0583
Epoch 156/200
4/4 - 0s - loss: 0.2476 - accuracy: 0.0583 - val_loss: 0.2475 -
val_accuracy: 0.0667
Epoch 157/200
4/4 - 0s - loss: 0.2475 - accuracy: 0.0667 - val_loss: 0.2474 -
val_accuracy: 0.0667
Epoch 158/200
4/4 - 0s - loss: 0.2474 - accuracy: 0.0667 - val_loss: 0.2473 -
val_accuracy: 0.0667
Epoch 159/200
4/4 - 0s - loss: 0.2472 - accuracy: 0.0667 - val_loss: 0.2471 -
val_accuracy: 0.0667
Epoch 160/200
4/4 - 0s - loss: 0.2471 - accuracy: 0.0667 - val_loss: 0.2470 -
val_accuracy: 0.0667
Epoch 161/200
4/4 - 0s - loss: 0.2470 - accuracy: 0.0667 - val_loss: 0.2469 -
val_accuracy: 0.0750
Epoch 162/200
4/4 - 0s - loss: 0.2469 - accuracy: 0.0750 - val_loss: 0.2468 -
val_accuracy: 0.0750
Epoch 163/200
4/4 - 0s - loss: 0.2467 - accuracy: 0.0833 - val_loss: 0.2467 -
val_accuracy: 0.0833
Epoch 164/200
4/4 - 0s - loss: 0.2466 - accuracy: 0.0833 - val_loss: 0.2465 -
val_accuracy: 0.0917
Epoch 165/200
4/4 - 0s - loss: 0.2465 - accuracy: 0.0833 - val_loss: 0.2464 -
val_accuracy: 0.0917
Epoch 166/200
4/4 - 0s - loss: 0.2464 - accuracy: 0.0917 - val_loss: 0.2463 -
val_accuracy: 0.1000
Epoch 167/200
```

```
4/4 - 0s - loss: 0.2462 - accuracy: 0.1000 - val_loss: 0.2462 -
val_accuracy: 0.1000
Epoch 168/200
4/4 - 0s - loss: 0.2461 - accuracy: 0.1000 - val_loss: 0.2461 -
val_accuracy: 0.1000
Epoch 169/200
4/4 - 0s - loss: 0.2460 - accuracy: 0.1000 - val_loss: 0.2459 -
val_accuracy: 0.1000
Epoch 170/200
4/4 - 0s - loss: 0.2459 - accuracy: 0.1000 - val_loss: 0.2458 -
val_accuracy: 0.1000
Epoch 171/200
4/4 - 0s - loss: 0.2458 - accuracy: 0.1000 - val_loss: 0.2457 -
val_accuracy: 0.1000
Epoch 172/200
4/4 - 0s - loss: 0.2457 - accuracy: 0.1000 - val_loss: 0.2456 -
val_accuracy: 0.1000
Epoch 173/200
4/4 - 0s - loss: 0.2455 - accuracy: 0.1000 - val_loss: 0.2455 -
val_accuracy: 0.1000
Epoch 174/200
4/4 - 0s - loss: 0.2454 - accuracy: 0.1000 - val_loss: 0.2453 -
val_accuracy: 0.1000
Epoch 175/200
4/4 - 0s - loss: 0.2453 - accuracy: 0.1083 - val_loss: 0.2452 -
val_accuracy: 0.1167
Epoch 176/200
4/4 - 0s - loss: 0.2452 - accuracy: 0.1167 - val_loss: 0.2451 -
val_accuracy: 0.1167
Epoch 177/200
4/4 - 0s - loss: 0.2451 - accuracy: 0.1333 - val_loss: 0.2450 -
val_accuracy: 0.1417
Epoch 178/200
4/4 - 0s - loss: 0.2450 - accuracy: 0.1417 - val_loss: 0.2449 -
val_accuracy: 0.1500
Epoch 179/200
4/4 - 0s - loss: 0.2448 - accuracy: 0.1500 - val_loss: 0.2448 -
val_accuracy: 0.1500
Epoch 180/200
4/4 - 0s - loss: 0.2447 - accuracy: 0.1500 - val_loss: 0.2447 -
val_accuracy: 0.1500
Epoch 181/200
4/4 - 0s - loss: 0.2446 - accuracy: 0.1500 - val_loss: 0.2445 -
val_accuracy: 0.1500
Epoch 182/200
4/4 - 0s - loss: 0.2445 - accuracy: 0.1500 - val_loss: 0.2444 -
val_accuracy: 0.1500
Epoch 183/200
4/4 - 0s - loss: 0.2444 - accuracy: 0.1500 - val_loss: 0.2443 -
val_accuracy: 0.1500
```

```
Epoch 184/200
4/4 - 0s - loss: 0.2443 - accuracy: 0.1500 - val_loss: 0.2442 -
val_accuracy: 0.1583
Epoch 185/200
4/4 - 0s - loss: 0.2442 - accuracy: 0.1583 - val_loss: 0.2441 -
val_accuracy: 0.1667
Epoch 186/200
4/4 - 0s - loss: 0.2441 - accuracy: 0.1667 - val_loss: 0.2440 -
val_accuracy: 0.1667
Epoch 187/200
4/4 - 0s - loss: 0.2440 - accuracy: 0.1667 - val_loss: 0.2439 -
val_accuracy: 0.1667
Epoch 188/200
4/4 - 0s - loss: 0.2438 - accuracy: 0.1667 - val_loss: 0.2438 -
val_accuracy: 0.1667
Epoch 189/200
4/4 - 0s - loss: 0.2437 - accuracy: 0.1667 - val_loss: 0.2437 -
val_accuracy: 0.1667
Epoch 190/200
4/4 - 0s - loss: 0.2436 - accuracy: 0.1667 - val_loss: 0.2436 -
val_accuracy: 0.1667
Epoch 191/200
4/4 - 0s - loss: 0.2435 - accuracy: 0.1667 - val_loss: 0.2434 -
val_accuracy: 0.1667
Epoch 192/200
4/4 - 0s - loss: 0.2434 - accuracy: 0.1667 - val_loss: 0.2433 -
val_accuracy: 0.1667
Epoch 193/200
4/4 - 0s - loss: 0.2433 - accuracy: 0.1667 - val_loss: 0.2432 -
val_accuracy: 0.1667
Epoch 194/200
4/4 - 0s - loss: 0.2432 - accuracy: 0.1667 - val_loss: 0.2431 -
val_accuracy: 0.1667
Epoch 195/200
4/4 - 0s - loss: 0.2431 - accuracy: 0.1667 - val_loss: 0.2430 -
val_accuracy: 0.1667
Epoch 196/200
4/4 - 0s - loss: 0.2430 - accuracy: 0.1667 - val_loss: 0.2429 -
val_accuracy: 0.1667
Epoch 197/200
4/4 - 0s - loss: 0.2429 - accuracy: 0.1667 - val_loss: 0.2428 -
val_accuracy: 0.1667
Epoch 198/200
4/4 - 0s - loss: 0.2428 - accuracy: 0.1667 - val_loss: 0.2427 -
val_accuracy: 0.1667
Epoch 199/200
4/4 - 0s - loss: 0.2427 - accuracy: 0.1667 - val_loss: 0.2426 -
val_accuracy: 0.1667
Epoch 200/200
```

```
4/4 - 0s - loss: 0.2426 - accuracy: 0.1667 - val_loss: 0.2425 -
val_accuracy: 0.1667

Activation: sigmoid LR: 0.01 Itertions: 200 || Train loss:
0.24250197410583496
Activation: sigmoid LR: 0.01 Itertions: 200 || Train Accuracy:
0.1666666716337204
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.0746s). Check your callbacks.
4/4 - 0s - loss: 0.2425 - accuracy: 0.1667 - val_loss: 0.2442 -
val_accuracy: 0.1667
Epoch 2/200
4/4 - 0s - loss: 0.2424 - accuracy: 0.1833 - val_loss: 0.2441 -
val_accuracy: 0.1667
Epoch 3/200
4/4 - 0s - loss: 0.2423 - accuracy: 0.1833 - val_loss: 0.2440 -
val_accuracy: 0.1667
Epoch 4/200
4/4 - 0s - loss: 0.2422 - accuracy: 0.1917 - val_loss: 0.2439 -
val_accuracy: 0.1667
Epoch 5/200
4/4 - 0s - loss: 0.2421 - accuracy: 0.1917 - val_loss: 0.2438 -
val_accuracy: 0.1667
Epoch 6/200
4/4 - 0s - loss: 0.2420 - accuracy: 0.1917 - val_loss: 0.2437 -
val_accuracy: 0.1667
Epoch 7/200
4/4 - 0s - loss: 0.2419 - accuracy: 0.1917 - val_loss: 0.2436 -
val_accuracy: 0.2000
Epoch 8/200
4/4 - 0s - loss: 0.2418 - accuracy: 0.1917 - val_loss: 0.2435 -
val_accuracy: 0.2000
Epoch 9/200
4/4 - 0s - loss: 0.2417 - accuracy: 0.1917 - val_loss: 0.2434 -
val_accuracy: 0.2000
Epoch 10/200
4/4 - 0s - loss: 0.2416 - accuracy: 0.1917 - val_loss: 0.2433 -
val_accuracy: 0.2000
Epoch 11/200
4/4 - 0s - loss: 0.2415 - accuracy: 0.1917 - val_loss: 0.2432 -
val_accuracy: 0.2000
Epoch 12/200
4/4 - 0s - loss: 0.2414 - accuracy: 0.1917 - val_loss: 0.2431 -
val_accuracy: 0.2000
Epoch 13/200
4/4 - 0s - loss: 0.2413 - accuracy: 0.1917 - val_loss: 0.2430 -
val_accuracy: 0.2000
Epoch 14/200
```

```
4/4 - 0s - loss: 0.2412 - accuracy: 0.2000 - val_loss: 0.2429 -
val_accuracy: 0.2000
Epoch 15/200
4/4 - 0s - loss: 0.2411 - accuracy: 0.2000 - val_loss: 0.2428 -
val_accuracy: 0.2000
Epoch 16/200
4/4 - 0s - loss: 0.2410 - accuracy: 0.2083 - val_loss: 0.2427 -
val_accuracy: 0.2000
Epoch 17/200
4/4 - 0s - loss: 0.2409 - accuracy: 0.2167 - val_loss: 0.2426 -
val_accuracy: 0.2000
Epoch 18/200
4/4 - 0s - loss: 0.2408 - accuracy: 0.2167 - val_loss: 0.2425 -
val_accuracy: 0.2000
Epoch 19/200
4/4 - 0s - loss: 0.2407 - accuracy: 0.2167 - val_loss: 0.2424 -
val_accuracy: 0.2000
Epoch 20/200
4/4 - 0s - loss: 0.2406 - accuracy: 0.2167 - val_loss: 0.2423 -
val_accuracy: 0.2000
Epoch 21/200
4/4 - 0s - loss: 0.2405 - accuracy: 0.2167 - val_loss: 0.2422 -
val_accuracy: 0.2000
Epoch 22/200
4/4 - 0s - loss: 0.2404 - accuracy: 0.2167 - val_loss: 0.2421 -
val_accuracy: 0.2000
Epoch 23/200
4/4 - 0s - loss: 0.2403 - accuracy: 0.2167 - val_loss: 0.2420 -
val_accuracy: 0.2000
Epoch 24/200
4/4 - 0s - loss: 0.2402 - accuracy: 0.2250 - val_loss: 0.2419 -
val_accuracy: 0.2000
Epoch 25/200
4/4 - 0s - loss: 0.2401 - accuracy: 0.2250 - val_loss: 0.2418 -
val_accuracy: 0.2000
Epoch 26/200
4/4 - 0s - loss: 0.2400 - accuracy: 0.2250 - val_loss: 0.2417 -
val_accuracy: 0.2000
Epoch 27/200
4/4 - 0s - loss: 0.2399 - accuracy: 0.2250 - val_loss: 0.2416 -
val_accuracy: 0.2000
Epoch 28/200
4/4 - 0s - loss: 0.2398 - accuracy: 0.2250 - val_loss: 0.2416 -
val_accuracy: 0.2000
Epoch 29/200
4/4 - 0s - loss: 0.2398 - accuracy: 0.2250 - val_loss: 0.2415 -
val_accuracy: 0.2000
Epoch 30/200
4/4 - 0s - loss: 0.2397 - accuracy: 0.2250 - val_loss: 0.2414 -
val_accuracy: 0.2000
```

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Epoch 31/200
4/4 - 0s - loss: 0.2396 - accuracy: 0.2250 - val_loss: 0.2413 -
val_accuracy: 0.2000
Epoch 32/200
4/4 - 0s - loss: 0.2395 - accuracy: 0.2333 - val_loss: 0.2412 -
val_accuracy: 0.2000
Epoch 33/200
4/4 - 0s - loss: 0.2394 - accuracy: 0.2333 - val_loss: 0.2411 -
val_accuracy: 0.2000
Epoch 34/200
4/4 - 0s - loss: 0.2393 - accuracy: 0.2333 - val_loss: 0.2410 -
val_accuracy: 0.2000
Epoch 35/200
4/4 - 0s - loss: 0.2392 - accuracy: 0.2417 - val_loss: 0.2409 -
val_accuracy: 0.2000
Epoch 36/200
4/4 - 0s - loss: 0.2391 - accuracy: 0.2417 - val_loss: 0.2408 -
val_accuracy: 0.2000
Epoch 37/200
4/4 - 0s - loss: 0.2390 - accuracy: 0.2500 - val_loss: 0.2407 -
val_accuracy: 0.2000
Epoch 38/200
4/4 - 0s - loss: 0.2390 - accuracy: 0.2500 - val_loss: 0.2406 -
val_accuracy: 0.2000
Epoch 39/200
4/4 - 0s - loss: 0.2389 - accuracy: 0.2583 - val_loss: 0.2406 -
val_accuracy: 0.2000
Epoch 40/200
4/4 - 0s - loss: 0.2388 - accuracy: 0.2667 - val_loss: 0.2405 -
val_accuracy: 0.2000
Epoch 41/200
4/4 - 0s - loss: 0.2387 - accuracy: 0.2667 - val_loss: 0.2404 -
val_accuracy: 0.2000
Epoch 42/200
4/4 - 0s - loss: 0.2386 - accuracy: 0.2667 - val_loss: 0.2403 -
val_accuracy: 0.2000
Epoch 43/200
4/4 - 0s - loss: 0.2385 - accuracy: 0.2667 - val_loss: 0.2402 -
val_accuracy: 0.2000
Epoch 44/200
4/4 - 0s - loss: 0.2384 - accuracy: 0.2750 - val_loss: 0.2401 -
val_accuracy: 0.2000
Epoch 45/200
4/4 - 0s - loss: 0.2384 - accuracy: 0.2750 - val_loss: 0.2400 -
val_accuracy: 0.2333
Epoch 46/200
4/4 - 0s - loss: 0.2383 - accuracy: 0.2750 - val_loss: 0.2400 -
val_accuracy: 0.2333
Epoch 47/200
4/4 - 0s - loss: 0.2382 - accuracy: 0.2750 - val_loss: 0.2399 -
```

```
val_accuracy: 0.2333
Epoch 48/200
4/4 - 0s - loss: 0.2381 - accuracy: 0.2750 - val_loss: 0.2398 -
val_accuracy: 0.2333
Epoch 49/200
4/4 - 0s - loss: 0.2380 - accuracy: 0.2750 - val_loss: 0.2397 -
val_accuracy: 0.2333
Epoch 50/200
4/4 - 0s - loss: 0.2379 - accuracy: 0.2750 - val_loss: 0.2396 -
val_accuracy: 0.2333
Epoch 51/200
4/4 - 0s - loss: 0.2378 - accuracy: 0.2833 - val_loss: 0.2395 -
val_accuracy: 0.2333
Epoch 52/200
4/4 - 0s - loss: 0.2378 - accuracy: 0.2833 - val_loss: 0.2394 -
val_accuracy: 0.2333
Epoch 53/200
4/4 - 0s - loss: 0.2377 - accuracy: 0.2833 - val_loss: 0.2394 -
val_accuracy: 0.2667
Epoch 54/200
4/4 - 0s - loss: 0.2376 - accuracy: 0.2833 - val_loss: 0.2393 -
val_accuracy: 0.2667
Epoch 55/200
4/4 - 0s - loss: 0.2375 - accuracy: 0.2833 - val_loss: 0.2392 -
val_accuracy: 0.2667
Epoch 56/200
4/4 - 0s - loss: 0.2374 - accuracy: 0.2833 - val_loss: 0.2391 -
val_accuracy: 0.2667
Epoch 57/200
4/4 - 0s - loss: 0.2374 - accuracy: 0.2833 - val_loss: 0.2390 -
val_accuracy: 0.2667
Epoch 58/200
4/4 - 0s - loss: 0.2373 - accuracy: 0.2833 - val_loss: 0.2389 -
val_accuracy: 0.2667
Epoch 59/200
4/4 - 0s - loss: 0.2372 - accuracy: 0.2833 - val_loss: 0.2389 -
val_accuracy: 0.2667
Epoch 60/200
4/4 - 0s - loss: 0.2371 - accuracy: 0.2833 - val_loss: 0.2388 -
val_accuracy: 0.2667
Epoch 61/200
4/4 - 0s - loss: 0.2370 - accuracy: 0.2833 - val_loss: 0.2387 -
val_accuracy: 0.2667
Epoch 62/200
4/4 - 0s - loss: 0.2370 - accuracy: 0.2833 - val_loss: 0.2386 -
val_accuracy: 0.2667
Epoch 63/200
4/4 - 0s - loss: 0.2369 - accuracy: 0.2833 - val_loss: 0.2385 -
val_accuracy: 0.2667
Epoch 64/200
```

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4/4 - 0s - loss: 0.2368 - accuracy: 0.2833 - val_loss: 0.2385 -
val_accuracy: 0.2667
Epoch 65/200
4/4 - 0s - loss: 0.2367 - accuracy: 0.2833 - val_loss: 0.2384 -
val_accuracy: 0.2667
Epoch 66/200
4/4 - 0s - loss: 0.2366 - accuracy: 0.2833 - val_loss: 0.2383 -
val_accuracy: 0.2667
Epoch 67/200
4/4 - 0s - loss: 0.2366 - accuracy: 0.2917 - val_loss: 0.2382 -
val_accuracy: 0.2667
Epoch 68/200
4/4 - 0s - loss: 0.2365 - accuracy: 0.2917 - val_loss: 0.2382 -
val_accuracy: 0.2667
Epoch 69/200
4/4 - 0s - loss: 0.2364 - accuracy: 0.2917 - val_loss: 0.2381 -
val_accuracy: 0.2667
Epoch 70/200
4/4 - 0s - loss: 0.2363 - accuracy: 0.2917 - val_loss: 0.2380 -
val_accuracy: 0.2667
Epoch 71/200
4/4 - 0s - loss: 0.2363 - accuracy: 0.2917 - val_loss: 0.2379 -
val_accuracy: 0.2667
Epoch 72/200
4/4 - 0s - loss: 0.2362 - accuracy: 0.2917 - val_loss: 0.2378 -
val_accuracy: 0.2667
Epoch 73/200
4/4 - 0s - loss: 0.2361 - accuracy: 0.3000 - val_loss: 0.2378 -
val_accuracy: 0.2667
Epoch 74/200
4/4 - 0s - loss: 0.2360 - accuracy: 0.3000 - val_loss: 0.2377 -
val_accuracy: 0.2667
Epoch 75/200
4/4 - 0s - loss: 0.2360 - accuracy: 0.3000 - val_loss: 0.2376 -
val_accuracy: 0.2667
Epoch 76/200
4/4 - 0s - loss: 0.2359 - accuracy: 0.3000 - val_loss: 0.2375 -
val_accuracy: 0.2667
Epoch 77/200
4/4 - 0s - loss: 0.2358 - accuracy: 0.3000 - val_loss: 0.2375 -
val_accuracy: 0.2667
Epoch 78/200
4/4 - 0s - loss: 0.2357 - accuracy: 0.3000 - val_loss: 0.2374 -
val_accuracy: 0.2667
Epoch 79/200
4/4 - 0s - loss: 0.2357 - accuracy: 0.3000 - val_loss: 0.2373 -
val_accuracy: 0.2667
Epoch 80/200
4/4 - 0s - loss: 0.2356 - accuracy: 0.3000 - val_loss: 0.2372 -
val_accuracy: 0.3000
```

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Epoch 81/200
4/4 - 0s - loss: 0.2355 - accuracy: 0.3000 - val_loss: 0.2372 -
val_accuracy: 0.3000

Epoch 82/200
4/4 - 0s - loss: 0.2354 - accuracy: 0.3000 - val_loss: 0.2371 -
val_accuracy: 0.3000
Epoch 83/200
4/4 - 0s - loss: 0.2354 - accuracy: 0.3000 - val_loss: 0.2370 -
val_accuracy: 0.3000
Epoch 84/200
4/4 - 0s - loss: 0.2353 - accuracy: 0.3000 - val_loss: 0.2369 -
val_accuracy: 0.3000
Epoch 85/200
4/4 - 0s - loss: 0.2352 - accuracy: 0.3000 - val_loss: 0.2369 -
val_accuracy: 0.3000
Epoch 86/200
4/4 - 0s - loss: 0.2351 - accuracy: 0.3000 - val_loss: 0.2368 -
val_accuracy: 0.3000
Epoch 87/200
4/4 - 0s - loss: 0.2351 - accuracy: 0.3083 - val_loss: 0.2367 -
val_accuracy: 0.3000
Epoch 88/200
4/4 - 0s - loss: 0.2350 - accuracy: 0.3083 - val_loss: 0.2367 -
val_accuracy: 0.3000
Epoch 89/200
4/4 - 0s - loss: 0.2349 - accuracy: 0.3083 - val_loss: 0.2366 -
val_accuracy: 0.3000
Epoch 90/200
4/4 - 0s - loss: 0.2349 - accuracy: 0.3083 - val_loss: 0.2365 -
val_accuracy: 0.3000
Epoch 91/200
4/4 - 0s - loss: 0.2348 - accuracy: 0.3083 - val_loss: 0.2364 -
val_accuracy: 0.3000
Epoch 92/200
4/4 - 0s - loss: 0.2347 - accuracy: 0.3083 - val_loss: 0.2364 -
val_accuracy: 0.3000
Epoch 93/200
4/4 - 0s - loss: 0.2346 - accuracy: 0.3083 - val_loss: 0.2363 -
val_accuracy: 0.3000
Epoch 94/200
4/4 - 0s - loss: 0.2346 - accuracy: 0.3083 - val_loss: 0.2362 -
val_accuracy: 0.3000
Epoch 95/200
4/4 - 0s - loss: 0.2345 - accuracy: 0.3083 - val_loss: 0.2362 -
val_accuracy: 0.3000
Epoch 96/200
4/4 - 0s - loss: 0.2344 - accuracy: 0.3083 - val_loss: 0.2361 -
val_accuracy: 0.3000
Epoch 97/200
```

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4/4 - 0s - loss: 0.2344 - accuracy: 0.3083 - val_loss: 0.2360 -
val_accuracy: 0.3000
Epoch 98/200
4/4 - 0s - loss: 0.2343 - accuracy: 0.3083 - val_loss: 0.2360 -
val_accuracy: 0.3000
Epoch 99/200
4/4 - 0s - loss: 0.2342 - accuracy: 0.3083 - val_loss: 0.2359 -
val_accuracy: 0.3000
Epoch 100/200
4/4 - 0s - loss: 0.2342 - accuracy: 0.3083 - val_loss: 0.2358 -
val_accuracy: 0.3000
Epoch 101/200
4/4 - 0s - loss: 0.2341 - accuracy: 0.3083 - val_loss: 0.2357 -
val_accuracy: 0.3000
Epoch 102/200
4/4 - 0s - loss: 0.2340 - accuracy: 0.3083 - val_loss: 0.2357 -
val_accuracy: 0.3000
Epoch 103/200
4/4 - 0s - loss: 0.2340 - accuracy: 0.3083 - val_loss: 0.2356 -
val_accuracy: 0.3000
Epoch 104/200
4/4 - 0s - loss: 0.2339 - accuracy: 0.3083 - val_loss: 0.2355 -
val_accuracy: 0.3000
Epoch 105/200
4/4 - 0s - loss: 0.2338 - accuracy: 0.3083 - val_loss: 0.2355 -
val_accuracy: 0.3000
Epoch 106/200
4/4 - 0s - loss: 0.2338 - accuracy: 0.3083 - val_loss: 0.2354 -
val_accuracy: 0.3000
Epoch 107/200
4/4 - 0s - loss: 0.2337 - accuracy: 0.3083 - val_loss: 0.2353 -
val_accuracy: 0.3000
Epoch 108/200
4/4 - 0s - loss: 0.2336 - accuracy: 0.3083 - val_loss: 0.2353 -
val_accuracy: 0.3000
Epoch 109/200
4/4 - 0s - loss: 0.2336 - accuracy: 0.3083 - val_loss: 0.2352 -
val_accuracy: 0.3000
Epoch 110/200
4/4 - 0s - loss: 0.2335 - accuracy: 0.3083 - val_loss: 0.2351 -
val_accuracy: 0.3000
Epoch 111/200
4/4 - 0s - loss: 0.2334 - accuracy: 0.3083 - val_loss: 0.2351 -
val_accuracy: 0.3000
Epoch 112/200
4/4 - 0s - loss: 0.2334 - accuracy: 0.3083 - val_loss: 0.2350 -
val_accuracy: 0.3000
Epoch 113/200
4/4 - 0s - loss: 0.2333 - accuracy: 0.3083 - val_loss: 0.2349 -
val_accuracy: 0.3000
```

```
Epoch 114/200
4/4 - 0s - loss: 0.2332 - accuracy: 0.3083 - val_loss: 0.2349 -
val_accuracy: 0.3000
Epoch 115/200
4/4 - 0s - loss: 0.2332 - accuracy: 0.3083 - val_loss: 0.2348 -
val_accuracy: 0.3000
Epoch 116/200
4/4 - 0s - loss: 0.2331 - accuracy: 0.3083 - val_loss: 0.2348 -
val_accuracy: 0.3000
Epoch 117/200
4/4 - 0s - loss: 0.2330 - accuracy: 0.3083 - val_loss: 0.2347 -
val_accuracy: 0.3000
Epoch 118/200
4/4 - 0s - loss: 0.2330 - accuracy: 0.3083 - val_loss: 0.2346 -
val_accuracy: 0.3000
Epoch 119/200
4/4 - 0s - loss: 0.2329 - accuracy: 0.3083 - val_loss: 0.2346 -
val_accuracy: 0.3000
Epoch 120/200
4/4 - 0s - loss: 0.2329 - accuracy: 0.3083 - val_loss: 0.2345 -
val_accuracy: 0.3000
Epoch 121/200
4/4 - 0s - loss: 0.2328 - accuracy: 0.3083 - val_loss: 0.2344 -
val_accuracy: 0.3000
Epoch 122/200
4/4 - 0s - loss: 0.2327 - accuracy: 0.3083 - val_loss: 0.2344 -
val_accuracy: 0.3000
Epoch 123/200
4/4 - 0s - loss: 0.2327 - accuracy: 0.3083 - val_loss: 0.2343 -
val_accuracy: 0.3000
Epoch 124/200
4/4 - 0s - loss: 0.2326 - accuracy: 0.3083 - val_loss: 0.2342 -
val_accuracy: 0.3000
Epoch 125/200
4/4 - 0s - loss: 0.2325 - accuracy: 0.3083 - val_loss: 0.2342 -
val_accuracy: 0.3000
Epoch 126/200
4/4 - 0s - loss: 0.2325 - accuracy: 0.3083 - val_loss: 0.2341 -
val_accuracy: 0.3000
Epoch 127/200
4/4 - 0s - loss: 0.2324 - accuracy: 0.3083 - val_loss: 0.2341 -
val_accuracy: 0.3000
Epoch 128/200
4/4 - 0s - loss: 0.2324 - accuracy: 0.3083 - val_loss: 0.2340 -
val_accuracy: 0.3000
Epoch 129/200
4/4 - 0s - loss: 0.2323 - accuracy: 0.3083 - val_loss: 0.2339 -
val_accuracy: 0.3000
Epoch 130/200
4/4 - 0s - loss: 0.2322 - accuracy: 0.3083 - val_loss: 0.2339 -
```

```
val_accuracy: 0.3000
Epoch 131/200
4/4 - 0s - loss: 0.2322 - accuracy: 0.3083 - val_loss: 0.2338 -
val_accuracy: 0.3000
Epoch 132/200
4/4 - 0s - loss: 0.2321 - accuracy: 0.3083 - val_loss: 0.2337 -
val_accuracy: 0.3000
Epoch 133/200
4/4 - 0s - loss: 0.2321 - accuracy: 0.3083 - val_loss: 0.2337 -
val_accuracy: 0.3000
Epoch 134/200
4/4 - 0s - loss: 0.2320 - accuracy: 0.3083 - val_loss: 0.2336 -
val_accuracy: 0.3000
Epoch 135/200
4/4 - 0s - loss: 0.2319 - accuracy: 0.3083 - val_loss: 0.2336 -
val_accuracy: 0.3000
Epoch 136/200
4/4 - 0s - loss: 0.2319 - accuracy: 0.3083 - val_loss: 0.2335 -
val_accuracy: 0.3000
Epoch 137/200
4/4 - 0s - loss: 0.2318 - accuracy: 0.3083 - val_loss: 0.2334 -
val_accuracy: 0.3000
Epoch 138/200
4/4 - 0s - loss: 0.2318 - accuracy: 0.3083 - val_loss: 0.2334 -
val_accuracy: 0.3000
Epoch 139/200
4/4 - 0s - loss: 0.2317 - accuracy: 0.3167 - val_loss: 0.2333 -
val_accuracy: 0.3000
Epoch 140/200
4/4 - 0s - loss: 0.2316 - accuracy: 0.3167 - val_loss: 0.2333 -
val_accuracy: 0.3000
Epoch 141/200
4/4 - 0s - loss: 0.2316 - accuracy: 0.3167 - val_loss: 0.2332 -
val_accuracy: 0.3000
Epoch 142/200
4/4 - 0s - loss: 0.2315 - accuracy: 0.3167 - val_loss: 0.2331 -
val_accuracy: 0.3000
Epoch 143/200
4/4 - 0s - loss: 0.2315 - accuracy: 0.3167 - val_loss: 0.2331 -
val_accuracy: 0.3000
Epoch 144/200
4/4 - 0s - loss: 0.2314 - accuracy: 0.3167 - val_loss: 0.2330 -
val_accuracy: 0.3000
Epoch 145/200
4/4 - 0s - loss: 0.2313 - accuracy: 0.3167 - val_loss: 0.2330 -
val_accuracy: 0.3000
Epoch 146/200
4/4 - 0s - loss: 0.2313 - accuracy: 0.3167 - val_loss: 0.2329 -
val_accuracy: 0.3000
Epoch 147/200
```

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4/4 - 0s - loss: 0.2312 - accuracy: 0.3167 - val_loss: 0.2328 -
val_accuracy: 0.3000
Epoch 148/200
4/4 - 0s - loss: 0.2312 - accuracy: 0.3167 - val_loss: 0.2328 -
val_accuracy: 0.3000
Epoch 149/200
4/4 - 0s - loss: 0.2311 - accuracy: 0.3167 - val_loss: 0.2327 -
val_accuracy: 0.3000
Epoch 150/200
4/4 - 0s - loss: 0.2311 - accuracy: 0.3167 - val_loss: 0.2327 -
val_accuracy: 0.3000
Epoch 151/200
4/4 - 0s - loss: 0.2310 - accuracy: 0.3167 - val_loss: 0.2326 -
val_accuracy: 0.3000
Epoch 152/200
4/4 - 0s - loss: 0.2309 - accuracy: 0.3167 - val_loss: 0.2326 -
val_accuracy: 0.3000
Epoch 153/200
4/4 - 0s - loss: 0.2309 - accuracy: 0.3167 - val_loss: 0.2325 -
val_accuracy: 0.3000
Epoch 154/200
4/4 - 0s - loss: 0.2308 - accuracy: 0.3167 - val_loss: 0.2324 -
val_accuracy: 0.3000
Epoch 155/200
4/4 - 0s - loss: 0.2308 - accuracy: 0.3167 - val_loss: 0.2324 -
val_accuracy: 0.3000
Epoch 156/200
4/4 - 0s - loss: 0.2307 - accuracy: 0.3167 - val_loss: 0.2323 -
val_accuracy: 0.3000
Epoch 157/200
4/4 - 0s - loss: 0.2307 - accuracy: 0.3167 - val_loss: 0.2323 -
val_accuracy: 0.3000
Epoch 158/200
4/4 - 0s - loss: 0.2306 - accuracy: 0.3167 - val_loss: 0.2322 -
val_accuracy: 0.3000
Epoch 159/200
4/4 - 0s - loss: 0.2306 - accuracy: 0.3250 - val_loss: 0.2322 -
val_accuracy: 0.3000
Epoch 160/200
4/4 - 0s - loss: 0.2305 - accuracy: 0.3250 - val_loss: 0.2321 -
val_accuracy: 0.3000
Epoch 161/200
4/4 - 0s - loss: 0.2305 - accuracy: 0.3250 - val_loss: 0.2321 -
val_accuracy: 0.3000
Epoch 162/200
4/4 - 0s - loss: 0.2304 - accuracy: 0.3250 - val_loss: 0.2320 -
val_accuracy: 0.3000
Epoch 163/200
4/4 - 0s - loss: 0.2303 - accuracy: 0.3250 - val_loss: 0.2319 -
val_accuracy: 0.3000
```

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Epoch 164/200
4/4 - 0s - loss: 0.2303 - accuracy: 0.3250 - val_loss: 0.2319 -
val_accuracy: 0.3000

Epoch 165/200
4/4 - 0s - loss: 0.2302 - accuracy: 0.3250 - val_loss: 0.2318 -
val_accuracy: 0.3000
Epoch 166/200
4/4 - 0s - loss: 0.2302 - accuracy: 0.3250 - val_loss: 0.2318 -
val_accuracy: 0.3000
Epoch 167/200
4/4 - 0s - loss: 0.2301 - accuracy: 0.3250 - val_loss: 0.2317 -
val_accuracy: 0.3000
Epoch 168/200
4/4 - 0s - loss: 0.2301 - accuracy: 0.3250 - val_loss: 0.2317 -
val_accuracy: 0.3000
Epoch 169/200
4/4 - 0s - loss: 0.2300 - accuracy: 0.3250 - val_loss: 0.2316 -
val_accuracy: 0.3000
Epoch 170/200
4/4 - 0s - loss: 0.2300 - accuracy: 0.3250 - val_loss: 0.2316 -
val_accuracy: 0.3000
Epoch 171/200
4/4 - 0s - loss: 0.2299 - accuracy: 0.3250 - val_loss: 0.2315 -
val_accuracy: 0.3000
Epoch 172/200
4/4 - 0s - loss: 0.2299 - accuracy: 0.3250 - val_loss: 0.2315 -
val_accuracy: 0.3000
Epoch 173/200
4/4 - 0s - loss: 0.2298 - accuracy: 0.3250 - val_loss: 0.2314 -
val_accuracy: 0.3000
Epoch 174/200
4/4 - 0s - loss: 0.2298 - accuracy: 0.3250 - val_loss: 0.2314 -
val_accuracy: 0.3000
Epoch 175/200
4/4 - 0s - loss: 0.2297 - accuracy: 0.3250 - val_loss: 0.2313 -
val_accuracy: 0.3000
Epoch 176/200
4/4 - 0s - loss: 0.2297 - accuracy: 0.3250 - val_loss: 0.2313 -
val_accuracy: 0.3000
Epoch 177/200
4/4 - 0s - loss: 0.2296 - accuracy: 0.3250 - val_loss: 0.2312 -
val_accuracy: 0.3000
Epoch 178/200
4/4 - 0s - loss: 0.2295 - accuracy: 0.3250 - val_loss: 0.2311 -
val_accuracy: 0.3000
Epoch 179/200
4/4 - 0s - loss: 0.2295 - accuracy: 0.3250 - val_loss: 0.2311 -
val_accuracy: 0.3000
Epoch 180/200
```

```
4/4 - 0s - loss: 0.2294 - accuracy: 0.3250 - val_loss: 0.2310 -
val_accuracy: 0.3000
Epoch 181/200
4/4 - 0s - loss: 0.2294 - accuracy: 0.3250 - val_loss: 0.2310 -
val_accuracy: 0.3000
Epoch 182/200
4/4 - 0s - loss: 0.2293 - accuracy: 0.3250 - val_loss: 0.2309 -
val_accuracy: 0.3000
Epoch 183/200
4/4 - 0s - loss: 0.2293 - accuracy: 0.3250 - val_loss: 0.2309 -
val_accuracy: 0.3000
Epoch 184/200
4/4 - 0s - loss: 0.2293 - accuracy: 0.3250 - val_loss: 0.2308 -
val_accuracy: 0.3000
Epoch 185/200
4/4 - 0s - loss: 0.2292 - accuracy: 0.3250 - val_loss: 0.2308 -
val_accuracy: 0.3000
Epoch 186/200
4/4 - 0s - loss: 0.2291 - accuracy: 0.3250 - val_loss: 0.2307 -
val_accuracy: 0.3000
Epoch 187/200
4/4 - 0s - loss: 0.2291 - accuracy: 0.3250 - val_loss: 0.2307 -
val_accuracy: 0.3000
Epoch 188/200
4/4 - 0s - loss: 0.2290 - accuracy: 0.3250 - val_loss: 0.2306 -
val_accuracy: 0.3000
Epoch 189/200
4/4 - 0s - loss: 0.2290 - accuracy: 0.3250 - val_loss: 0.2306 -
val_accuracy: 0.3000
Epoch 190/200
4/4 - 0s - loss: 0.2289 - accuracy: 0.3250 - val_loss: 0.2305 -
val_accuracy: 0.3000
Epoch 191/200
4/4 - 0s - loss: 0.2289 - accuracy: 0.3250 - val_loss: 0.2305 -
val_accuracy: 0.3000
Epoch 192/200
4/4 - 0s - loss: 0.2288 - accuracy: 0.3333 - val_loss: 0.2304 -
val_accuracy: 0.3000
Epoch 193/200
4/4 - 0s - loss: 0.2288 - accuracy: 0.3333 - val_loss: 0.2304 -
val_accuracy: 0.3000
Epoch 194/200
4/4 - 0s - loss: 0.2287 - accuracy: 0.3333 - val_loss: 0.2303 -
val_accuracy: 0.3000
Epoch 195/200
4/4 - 0s - loss: 0.2287 - accuracy: 0.3333 - val_loss: 0.2303 -
val_accuracy: 0.3000
Epoch 196/200
4/4 - 0s - loss: 0.2286 - accuracy: 0.3333 - val_loss: 0.2302 -
val_accuracy: 0.3000
```

Epoch 197/200
4/4 - 0s - loss: 0.2286 - accuracy: 0.3333 - val_loss: 0.2302 - val_accuracy: 0.3000
Epoch 198/200
4/4 - 0s - loss: 0.2286 - accuracy: 0.3333 - val_loss: 0.2301 - val_accuracy: 0.3000
Epoch 199/200
4/4 - 0s - loss: 0.2285 - accuracy: 0.3333 - val_loss: 0.2301 - val_accuracy: 0.3000
Epoch 200/200
4/4 - 0s - loss: 0.2285 - accuracy: 0.3333 - val_loss: 0.2300 - val_accuracy: 0.3000
Activation: sigmoid LR: 0.01 Iterations: 200 || Test loss: 0.23004157841205597
Activation: sigmoid LR: 0.01 Iterations: 200 || Test Accuracy: 0.30000001192092896
==
=======
Model_sigmoid_LR_0.1_Iterations_100_HL_2
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow compared to the batch time (batch time: 0.0006s vs `on_train_batch_end` time: 0.1115s). Check your callbacks.
4/4 - 0s - loss: 0.2684 - accuracy: 0.3250 - val_loss: 0.2667 - val_accuracy: 0.3250
Epoch 2/100
4/4 - 0s - loss: 0.2660 - accuracy: 0.3250 - val_loss: 0.2644 - val_accuracy: 0.3250
Epoch 3/100
4/4 - 0s - loss: 0.2637 - accuracy: 0.3250 - val_loss: 0.2622 - val_accuracy: 0.3250
Epoch 4/100
4/4 - 0s - loss: 0.2614 - accuracy: 0.3250 - val_loss: 0.2600 - val_accuracy: 0.3250
Epoch 5/100
4/4 - 0s - loss: 0.2593 - accuracy: 0.3250 - val_loss: 0.2579 - val_accuracy: 0.3250
Epoch 6/100
4/4 - 0s - loss: 0.2573 - accuracy: 0.3250 - val_loss: 0.2560 - val_accuracy: 0.3250
Epoch 7/100
4/4 - 0s - loss: 0.2554 - accuracy: 0.3250 - val_loss: 0.2542 - val_accuracy: 0.3250
Epoch 8/100
4/4 - 0s - loss: 0.2537 - accuracy: 0.3250 - val_loss: 0.2524 - val_accuracy: 0.3250
Epoch 9/100
4/4 - 0s - loss: 0.2519 - accuracy: 0.3250 - val_loss: 0.2508 - val_accuracy: 0.3250
Epoch 10/100

```
4/4 - 0s - loss: 0.2502 - accuracy: 0.3250 - val_loss: 0.2492 -
val_accuracy: 0.3250
Epoch 11/100
4/4 - 0s - loss: 0.2487 - accuracy: 0.3250 - val_loss: 0.2477 -
val_accuracy: 0.3250
Epoch 12/100
4/4 - 0s - loss: 0.2472 - accuracy: 0.3250 - val_loss: 0.2462 -
val_accuracy: 0.3250
Epoch 13/100
4/4 - 0s - loss: 0.2458 - accuracy: 0.3250 - val_loss: 0.2448 -
val_accuracy: 0.3250
Epoch 14/100
4/4 - 0s - loss: 0.2444 - accuracy: 0.3250 - val_loss: 0.2435 -
val_accuracy: 0.3250
Epoch 15/100
4/4 - 0s - loss: 0.2431 - accuracy: 0.3250 - val_loss: 0.2423 -
val_accuracy: 0.3250
Epoch 16/100
4/4 - 0s - loss: 0.2419 - accuracy: 0.3250 - val_loss: 0.2411 -
val_accuracy: 0.3250
Epoch 17/100
4/4 - 0s - loss: 0.2408 - accuracy: 0.3250 - val_loss: 0.2400 -
val_accuracy: 0.3250
Epoch 18/100
4/4 - 0s - loss: 0.2396 - accuracy: 0.3250 - val_loss: 0.2389 -
val_accuracy: 0.3250
Epoch 19/100
4/4 - 0s - loss: 0.2386 - accuracy: 0.3250 - val_loss: 0.2379 -
val_accuracy: 0.3250
Epoch 20/100
4/4 - 0s - loss: 0.2376 - accuracy: 0.3250 - val_loss: 0.2369 -
val_accuracy: 0.3250
Epoch 21/100
4/4 - 0s - loss: 0.2366 - accuracy: 0.3250 - val_loss: 0.2360 -
val_accuracy: 0.3250
Epoch 22/100
4/4 - 0s - loss: 0.2358 - accuracy: 0.3250 - val_loss: 0.2351 -
val_accuracy: 0.3250
Epoch 23/100
4/4 - 0s - loss: 0.2349 - accuracy: 0.3250 - val_loss: 0.2343 -
val_accuracy: 0.3250
Epoch 24/100
4/4 - 0s - loss: 0.2340 - accuracy: 0.3250 - val_loss: 0.2335 -
val_accuracy: 0.3250
Epoch 25/100
4/4 - 0s - loss: 0.2332 - accuracy: 0.3250 - val_loss: 0.2327 -
val_accuracy: 0.3250
Epoch 26/100
4/4 - 0s - loss: 0.2325 - accuracy: 0.3250 - val_loss: 0.2320 -
val_accuracy: 0.3250
```

```
Epoch 27/100
4/4 - 0s - loss: 0.2317 - accuracy: 0.3250 - val_loss: 0.2312 -
val_accuracy: 0.3250
Epoch 28/100
4/4 - 0s - loss: 0.2310 - accuracy: 0.3250 - val_loss: 0.2306 -
val_accuracy: 0.3250
Epoch 29/100
4/4 - 0s - loss: 0.2304 - accuracy: 0.3250 - val_loss: 0.2299 -
val_accuracy: 0.3250
Epoch 30/100
4/4 - 0s - loss: 0.2298 - accuracy: 0.3250 - val_loss: 0.2293 -
val_accuracy: 0.3250
Epoch 31/100
4/4 - 0s - loss: 0.2291 - accuracy: 0.3250 - val_loss: 0.2287 -
val_accuracy: 0.3250
Epoch 32/100
4/4 - 0s - loss: 0.2286 - accuracy: 0.3250 - val_loss: 0.2281 -
val_accuracy: 0.3250
Epoch 33/100
4/4 - 0s - loss: 0.2280 - accuracy: 0.3250 - val_loss: 0.2276 -
val_accuracy: 0.3250
Epoch 34/100
4/4 - 0s - loss: 0.2274 - accuracy: 0.3250 - val_loss: 0.2271 -
val_accuracy: 0.3250
Epoch 35/100
4/4 - 0s - loss: 0.2269 - accuracy: 0.3250 - val_loss: 0.2265 -
val_accuracy: 0.3250
Epoch 36/100
4/4 - 0s - loss: 0.2264 - accuracy: 0.3250 - val_loss: 0.2260 -
val_accuracy: 0.3250
Epoch 37/100
4/4 - 0s - loss: 0.2259 - accuracy: 0.3250 - val_loss: 0.2256 -
val_accuracy: 0.3250
Epoch 38/100
4/4 - 0s - loss: 0.2254 - accuracy: 0.3250 - val_loss: 0.2251 -
val_accuracy: 0.3250
Epoch 39/100
4/4 - 0s - loss: 0.2250 - accuracy: 0.3250 - val_loss: 0.2247 -
val_accuracy: 0.3250
Epoch 40/100
4/4 - 0s - loss: 0.2246 - accuracy: 0.3250 - val_loss: 0.2242 -
val_accuracy: 0.3250
Epoch 41/100
4/4 - 0s - loss: 0.2241 - accuracy: 0.3250 - val_loss: 0.2238 -
val_accuracy: 0.3250
Epoch 42/100
4/4 - 0s - loss: 0.2237 - accuracy: 0.3250 - val_loss: 0.2234 -
val_accuracy: 0.3250
Epoch 43/100
```

```
4/4 - 0s - loss: 0.2233 - accuracy: 0.3250 - val_loss: 0.2230 -
val_accuracy: 0.3250

Epoch 44/100
4/4 - 0s - loss: 0.2229 - accuracy: 0.3250 - val_loss: 0.2226 -
val_accuracy: 0.3250
Epoch 45/100
4/4 - 0s - loss: 0.2225 - accuracy: 0.3250 - val_loss: 0.2223 -
val_accuracy: 0.3250
Epoch 46/100
4/4 - 0s - loss: 0.2222 - accuracy: 0.3250 - val_loss: 0.2219 -
val_accuracy: 0.3250
Epoch 47/100
4/4 - 0s - loss: 0.2218 - accuracy: 0.3250 - val_loss: 0.2216 -
val_accuracy: 0.3250
Epoch 48/100
4/4 - 0s - loss: 0.2214 - accuracy: 0.3250 - val_loss: 0.2212 -
val_accuracy: 0.3250
Epoch 49/100
4/4 - 0s - loss: 0.2211 - accuracy: 0.3250 - val_loss: 0.2209 -
val_accuracy: 0.3250
Epoch 50/100
4/4 - 0s - loss: 0.2208 - accuracy: 0.3250 - val_loss: 0.2205 -
val_accuracy: 0.3250
Epoch 51/100
4/4 - 0s - loss: 0.2204 - accuracy: 0.3250 - val_loss: 0.2202 -
val_accuracy: 0.3250
Epoch 52/100
4/4 - 0s - loss: 0.2202 - accuracy: 0.3250 - val_loss: 0.2199 -
val_accuracy: 0.3250
Epoch 53/100
4/4 - 0s - loss: 0.2198 - accuracy: 0.3250 - val_loss: 0.2196 -
val_accuracy: 0.3250
Epoch 54/100
4/4 - 0s - loss: 0.2195 - accuracy: 0.3250 - val_loss: 0.2193 -
val_accuracy: 0.3250
Epoch 55/100
4/4 - 0s - loss: 0.2192 - accuracy: 0.3333 - val_loss: 0.2190 -
val_accuracy: 0.3333
Epoch 56/100
4/4 - 0s - loss: 0.2189 - accuracy: 0.3500 - val_loss: 0.2187 -
val_accuracy: 0.3333
Epoch 57/100
4/4 - 0s - loss: 0.2186 - accuracy: 0.3417 - val_loss: 0.2184 -
val_accuracy: 0.3583
Epoch 58/100
4/4 - 0s - loss: 0.2184 - accuracy: 0.3583 - val_loss: 0.2181 -
val_accuracy: 0.3583
Epoch 59/100
4/4 - 0s - loss: 0.2181 - accuracy: 0.3583 - val_loss: 0.2179 -
```

val_accuracy: 0.3750
Epoch 60/100
4/4 - 0s - loss: 0.2178 - accuracy: 0.3833 - val_loss: 0.2176 -
val_accuracy: 0.3833
Epoch 61/100
4/4 - 0s - loss: 0.2175 - accuracy: 0.3833 - val_loss: 0.2173 -
val_accuracy: 0.3917
Epoch 62/100
4/4 - 0s - loss: 0.2173 - accuracy: 0.3833 - val_loss: 0.2170 -
val_accuracy: 0.3917
Epoch 63/100
4/4 - 0s - loss: 0.2170 - accuracy: 0.3833 - val_loss: 0.2168 -
val_accuracy: 0.3917
Epoch 64/100
4/4 - 0s - loss: 0.2167 - accuracy: 0.3917 - val_loss: 0.2165 -
val_accuracy: 0.3917
Epoch 65/100
4/4 - 0s - loss: 0.2164 - accuracy: 0.3917 - val_loss: 0.2162 -
val_accuracy: 0.3917
Epoch 66/100
4/4 - 0s - loss: 0.2162 - accuracy: 0.4000 - val_loss: 0.2160 -
val_accuracy: 0.4083
Epoch 67/100
4/4 - 0s - loss: 0.2159 - accuracy: 0.4083 - val_loss: 0.2157 -
val_accuracy: 0.4167
Epoch 68/100
4/4 - 0s - loss: 0.2157 - accuracy: 0.4083 - val_loss: 0.2155 -
val_accuracy: 0.4250
Epoch 69/100
4/4 - 0s - loss: 0.2154 - accuracy: 0.4250 - val_loss: 0.2152 -
val_accuracy: 0.4250
Epoch 70/100
4/4 - 0s - loss: 0.2152 - accuracy: 0.4333 - val_loss: 0.2149 -
val_accuracy: 0.4333
Epoch 71/100
4/4 - 0s - loss: 0.2149 - accuracy: 0.4333 - val_loss: 0.2147 -
val_accuracy: 0.4333
Epoch 72/100
4/4 - 0s - loss: 0.2146 - accuracy: 0.4333 - val_loss: 0.2144 -
val_accuracy: 0.4333
Epoch 73/100
4/4 - 0s - loss: 0.2144 - accuracy: 0.4333 - val_loss: 0.2142 -
val_accuracy: 0.4333
Epoch 74/100
4/4 - 0s - loss: 0.2142 - accuracy: 0.4417 - val_loss: 0.2139 -
val_accuracy: 0.4333
Epoch 75/100
4/4 - 0s - loss: 0.2139 - accuracy: 0.4333 - val_loss: 0.2137 -
val_accuracy: 0.4417
Epoch 76/100

```
4/4 - 0s - loss: 0.2137 - accuracy: 0.4417 - val_loss: 0.2135 -
val_accuracy: 0.4417
Epoch 77/100
4/4 - 0s - loss: 0.2135 - accuracy: 0.4417 - val_loss: 0.2132 -
val_accuracy: 0.4417
Epoch 78/100
4/4 - 0s - loss: 0.2132 - accuracy: 0.4333 - val_loss: 0.2130 -
val_accuracy: 0.4417
Epoch 79/100
4/4 - 0s - loss: 0.2129 - accuracy: 0.4417 - val_loss: 0.2127 -
val_accuracy: 0.4500
Epoch 80/100
4/4 - 0s - loss: 0.2127 - accuracy: 0.4417 - val_loss: 0.2125 -
val_accuracy: 0.4500
Epoch 81/100
4/4 - 0s - loss: 0.2124 - accuracy: 0.4500 - val_loss: 0.2122 -
val_accuracy: 0.4500
Epoch 82/100
4/4 - 0s - loss: 0.2122 - accuracy: 0.4500 - val_loss: 0.2120 -
val_accuracy: 0.4417
Epoch 83/100
4/4 - 0s - loss: 0.2119 - accuracy: 0.4333 - val_loss: 0.2117 -
val_accuracy: 0.4333
Epoch 84/100
4/4 - 0s - loss: 0.2117 - accuracy: 0.4417 - val_loss: 0.2115 -
val_accuracy: 0.4417
Epoch 85/100
4/4 - 0s - loss: 0.2114 - accuracy: 0.4333 - val_loss: 0.2112 -
val_accuracy: 0.4417
Epoch 86/100
4/4 - 0s - loss: 0.2112 - accuracy: 0.4417 - val_loss: 0.2110 -
val_accuracy: 0.4500
Epoch 87/100
4/4 - 0s - loss: 0.2109 - accuracy: 0.4500 - val_loss: 0.2107 -
val_accuracy: 0.4500
Epoch 88/100
4/4 - 0s - loss: 0.2107 - accuracy: 0.4417 - val_loss: 0.2105 -
val_accuracy: 0.4500
Epoch 89/100
4/4 - 0s - loss: 0.2105 - accuracy: 0.4500 - val_loss: 0.2102 -
val_accuracy: 0.4667
Epoch 90/100
4/4 - 0s - loss: 0.2102 - accuracy: 0.4500 - val_loss: 0.2100 -
val_accuracy: 0.4833
Epoch 91/100
4/4 - 0s - loss: 0.2099 - accuracy: 0.4917 - val_loss: 0.2097 -
val_accuracy: 0.4917
Epoch 92/100
4/4 - 0s - loss: 0.2097 - accuracy: 0.4917 - val_loss: 0.2095 -
val_accuracy: 0.5000
```

Epoch 93/100
4/4 - 0s - loss: 0.2094 - accuracy: 0.5250 - val_loss: 0.2092 -
val_accuracy: 0.5083
Epoch 94/100
4/4 - 0s - loss: 0.2092 - accuracy: 0.5083 - val_loss: 0.2090 -
val_accuracy: 0.5500
Epoch 95/100
4/4 - 0s - loss: 0.2089 - accuracy: 0.5500 - val_loss: 0.2087 -
val_accuracy: 0.5500
Epoch 96/100
4/4 - 0s - loss: 0.2087 - accuracy: 0.5583 - val_loss: 0.2085 -
val_accuracy: 0.5500
Epoch 97/100
4/4 - 0s - loss: 0.2084 - accuracy: 0.5417 - val_loss: 0.2082 -
val_accuracy: 0.5500
Epoch 98/100
4/4 - 0s - loss: 0.2081 - accuracy: 0.5583 - val_loss: 0.2080 -
val_accuracy: 0.5500
Epoch 99/100
4/4 - 0s - loss: 0.2079 - accuracy: 0.5750 - val_loss: 0.2077 -
val_accuracy: 0.5833
Epoch 100/100
4/4 - 0s - loss: 0.2077 - accuracy: 0.5750 - val_loss: 0.2075 -
val_accuracy: 0.5917
Activation: sigmoid LR: 0.1 Itertions: 100 || Train loss:
0.20746561884880066
Activation: sigmoid LR: 0.1 Itertions: 100 || Train Accuracy:
0.5916666388511658
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.1854s). Check your callbacks.
4/4 - 0s - loss: 0.2074 - accuracy: 0.5917 - val_loss: 0.2063 -
val_accuracy: 0.6000
Epoch 2/100
4/4 - 0s - loss: 0.2071 - accuracy: 0.6000 - val_loss: 0.2061 -
val_accuracy: 0.6000
Epoch 3/100
4/4 - 0s - loss: 0.2069 - accuracy: 0.6167 - val_loss: 0.2058 -
val_accuracy: 0.6333
Epoch 4/100
4/4 - 0s - loss: 0.2066 - accuracy: 0.6083 - val_loss: 0.2055 -
val_accuracy: 0.6333
Epoch 5/100
4/4 - 0s - loss: 0.2063 - accuracy: 0.6333 - val_loss: 0.2053 -
val_accuracy: 0.7000
Epoch 6/100
4/4 - 0s - loss: 0.2061 - accuracy: 0.6333 - val_loss: 0.2050 -
val_accuracy: 0.7000
Epoch 7/100

```
4/4 - 0s - loss: 0.2058 - accuracy: 0.6417 - val_loss: 0.2048 -
val_accuracy: 0.7000
Epoch 8/100
4/4 - 0s - loss: 0.2055 - accuracy: 0.6500 - val_loss: 0.2045 -
val_accuracy: 0.7667
Epoch 9/100
4/4 - 0s - loss: 0.2053 - accuracy: 0.6583 - val_loss: 0.2042 -
val_accuracy: 0.7667
Epoch 10/100
4/4 - 0s - loss: 0.2050 - accuracy: 0.6750 - val_loss: 0.2040 -
val_accuracy: 0.7667
Epoch 11/100
4/4 - 0s - loss: 0.2048 - accuracy: 0.6667 - val_loss: 0.2037 -
val_accuracy: 0.7667
Epoch 12/100
4/4 - 0s - loss: 0.2045 - accuracy: 0.6583 - val_loss: 0.2034 -
val_accuracy: 0.7667
Epoch 13/100
4/4 - 0s - loss: 0.2042 - accuracy: 0.6667 - val_loss: 0.2031 -
val_accuracy: 0.7667
Epoch 14/100
4/4 - 0s - loss: 0.2039 - accuracy: 0.6750 - val_loss: 0.2029 -
val_accuracy: 0.8000
Epoch 15/100
4/4 - 0s - loss: 0.2037 - accuracy: 0.6833 - val_loss: 0.2026 -
val_accuracy: 0.8000
Epoch 16/100
4/4 - 0s - loss: 0.2034 - accuracy: 0.6833 - val_loss: 0.2023 -
val_accuracy: 0.8000
Epoch 17/100
4/4 - 0s - loss: 0.2031 - accuracy: 0.6917 - val_loss: 0.2020 -
val_accuracy: 0.8000
Epoch 18/100
4/4 - 0s - loss: 0.2028 - accuracy: 0.6917 - val_loss: 0.2018 -
val_accuracy: 0.8000
Epoch 19/100
4/4 - 0s - loss: 0.2025 - accuracy: 0.7000 - val_loss: 0.2014 -
val_accuracy: 0.8333
Epoch 20/100
4/4 - 0s - loss: 0.2023 - accuracy: 0.6833 - val_loss: 0.2012 -
val_accuracy: 0.8333
Epoch 21/100
4/4 - 0s - loss: 0.2020 - accuracy: 0.6833 - val_loss: 0.2009 -
val_accuracy: 0.8333
Epoch 22/100
4/4 - 0s - loss: 0.2016 - accuracy: 0.7083 - val_loss: 0.2006 -
val_accuracy: 0.8333
Epoch 23/100
4/4 - 0s - loss: 0.2014 - accuracy: 0.7000 - val_loss: 0.2003 -
val_accuracy: 0.8333
```

```
Epoch 24/100
4/4 - 0s - loss: 0.2011 - accuracy: 0.7083 - val_loss: 0.2000 -
val_accuracy: 0.8333

Epoch 25/100
4/4 - 0s - loss: 0.2008 - accuracy: 0.7167 - val_loss: 0.1997 -
val_accuracy: 0.8333
Epoch 26/100
4/4 - 0s - loss: 0.2005 - accuracy: 0.7083 - val_loss: 0.1994 -
val_accuracy: 0.8667
Epoch 27/100
4/4 - 0s - loss: 0.2002 - accuracy: 0.7167 - val_loss: 0.1991 -
val_accuracy: 0.9000
Epoch 28/100
4/4 - 0s - loss: 0.1999 - accuracy: 0.7250 - val_loss: 0.1988 -
val_accuracy: 0.9000
Epoch 29/100
4/4 - 0s - loss: 0.1996 - accuracy: 0.7167 - val_loss: 0.1985 -
val_accuracy: 0.9000
Epoch 30/100
4/4 - 0s - loss: 0.1993 - accuracy: 0.7333 - val_loss: 0.1982 -
val_accuracy: 0.9000
Epoch 31/100
4/4 - 0s - loss: 0.1990 - accuracy: 0.7333 - val_loss: 0.1979 -
val_accuracy: 0.9000
Epoch 32/100
4/4 - 0s - loss: 0.1987 - accuracy: 0.7333 - val_loss: 0.1976 -
val_accuracy: 0.9000
Epoch 33/100
4/4 - 0s - loss: 0.1984 - accuracy: 0.7417 - val_loss: 0.1972 -
val_accuracy: 0.9000
Epoch 34/100
4/4 - 0s - loss: 0.1981 - accuracy: 0.7417 - val_loss: 0.1969 -
val_accuracy: 0.9000
Epoch 35/100
4/4 - 0s - loss: 0.1977 - accuracy: 0.7500 - val_loss: 0.1966 -
val_accuracy: 0.9000
Epoch 36/100
4/4 - 0s - loss: 0.1974 - accuracy: 0.7417 - val_loss: 0.1963 -
val_accuracy: 0.9000
Epoch 37/100
4/4 - 0s - loss: 0.1971 - accuracy: 0.7500 - val_loss: 0.1959 -
val_accuracy: 0.9000
Epoch 38/100
4/4 - 0s - loss: 0.1968 - accuracy: 0.7417 - val_loss: 0.1956 -
val_accuracy: 0.9000
Epoch 39/100
4/4 - 0s - loss: 0.1965 - accuracy: 0.7417 - val_loss: 0.1953 -
val_accuracy: 0.9000
Epoch 40/100
```

```
4/4 - 0s - loss: 0.1961 - accuracy: 0.7417 - val_loss: 0.1950 -
val_accuracy: 0.9000
Epoch 41/100
4/4 - 0s - loss: 0.1958 - accuracy: 0.7500 - val_loss: 0.1946 -
val_accuracy: 0.9000
Epoch 42/100
4/4 - 0s - loss: 0.1955 - accuracy: 0.7500 - val_loss: 0.1943 -
val_accuracy: 0.9000
Epoch 43/100
4/4 - 0s - loss: 0.1952 - accuracy: 0.7333 - val_loss: 0.1940 -
val_accuracy: 0.9000
Epoch 44/100
4/4 - 0s - loss: 0.1948 - accuracy: 0.7500 - val_loss: 0.1936 -
val_accuracy: 0.9000
Epoch 45/100
4/4 - 0s - loss: 0.1945 - accuracy: 0.7417 - val_loss: 0.1933 -
val_accuracy: 0.9000
Epoch 46/100
4/4 - 0s - loss: 0.1942 - accuracy: 0.7500 - val_loss: 0.1930 -
val_accuracy: 0.9000
Epoch 47/100
4/4 - 0s - loss: 0.1939 - accuracy: 0.7417 - val_loss: 0.1926 -
val_accuracy: 0.9000
Epoch 48/100
4/4 - 0s - loss: 0.1935 - accuracy: 0.7417 - val_loss: 0.1923 -
val_accuracy: 0.9000
Epoch 49/100
4/4 - 0s - loss: 0.1932 - accuracy: 0.7417 - val_loss: 0.1919 -
val_accuracy: 0.9000
Epoch 50/100
4/4 - 0s - loss: 0.1929 - accuracy: 0.7417 - val_loss: 0.1915 -
val_accuracy: 0.9333
Epoch 51/100
4/4 - 0s - loss: 0.1925 - accuracy: 0.7333 - val_loss: 0.1912 -
val_accuracy: 0.9333
Epoch 52/100
4/4 - 0s - loss: 0.1922 - accuracy: 0.7583 - val_loss: 0.1908 -
val_accuracy: 0.9333
Epoch 53/100
4/4 - 0s - loss: 0.1918 - accuracy: 0.7500 - val_loss: 0.1904 -
val_accuracy: 0.9333
Epoch 54/100
4/4 - 0s - loss: 0.1915 - accuracy: 0.7667 - val_loss: 0.1901 -
val_accuracy: 0.9333
Epoch 55/100
4/4 - 0s - loss: 0.1912 - accuracy: 0.7583 - val_loss: 0.1897 -
val_accuracy: 0.9333
Epoch 56/100
4/4 - 0s - loss: 0.1908 - accuracy: 0.7750 - val_loss: 0.1894 -
val_accuracy: 0.9333
```

```
Epoch 57/100
4/4 - 0s - loss: 0.1905 - accuracy: 0.7750 - val_loss: 0.1890 -
val_accuracy: 0.9333
Epoch 58/100
4/4 - 0s - loss: 0.1901 - accuracy: 0.7750 - val_loss: 0.1887 -
val_accuracy: 0.9333
Epoch 59/100
4/4 - 0s - loss: 0.1898 - accuracy: 0.7667 - val_loss: 0.1883 -
val_accuracy: 0.9333
Epoch 60/100
4/4 - 0s - loss: 0.1894 - accuracy: 0.7833 - val_loss: 0.1879 -
val_accuracy: 0.9333
Epoch 61/100
4/4 - 0s - loss: 0.1891 - accuracy: 0.7750 - val_loss: 0.1875 -
val_accuracy: 0.9333
Epoch 62/100
4/4 - 0s - loss: 0.1887 - accuracy: 0.7833 - val_loss: 0.1872 -
val_accuracy: 0.9333
Epoch 63/100
4/4 - 0s - loss: 0.1884 - accuracy: 0.7750 - val_loss: 0.1868 -
val_accuracy: 0.9333
Epoch 64/100
4/4 - 0s - loss: 0.1880 - accuracy: 0.7750 - val_loss: 0.1864 -
val_accuracy: 0.9333
Epoch 65/100
4/4 - 0s - loss: 0.1876 - accuracy: 0.7750 - val_loss: 0.1860 -
val_accuracy: 0.9333
Epoch 66/100
4/4 - 0s - loss: 0.1873 - accuracy: 0.7833 - val_loss: 0.1857 -
val_accuracy: 0.9333
Epoch 67/100
4/4 - 0s - loss: 0.1869 - accuracy: 0.7750 - val_loss: 0.1853 -
val_accuracy: 0.9333
Epoch 68/100
4/4 - 0s - loss: 0.1866 - accuracy: 0.7833 - val_loss: 0.1849 -
val_accuracy: 0.9333
Epoch 69/100
4/4 - 0s - loss: 0.1862 - accuracy: 0.7833 - val_loss: 0.1845 -
val_accuracy: 0.9333
Epoch 70/100
4/4 - 0s - loss: 0.1858 - accuracy: 0.7833 - val_loss: 0.1841 -
val_accuracy: 0.9333
Epoch 71/100
4/4 - 0s - loss: 0.1855 - accuracy: 0.7750 - val_loss: 0.1837 -
val_accuracy: 0.9333
Epoch 72/100
4/4 - 0s - loss: 0.1851 - accuracy: 0.7833 - val_loss: 0.1833 -
val_accuracy: 0.9333
Epoch 73/100
4/4 - 0s - loss: 0.1847 - accuracy: 0.7750 - val_loss: 0.1829 -
```

val_accuracy: 0.9333
Epoch 74/100
4/4 - 0s - loss: 0.1845 - accuracy: 0.7833 - val_loss: 0.1826 -
val_accuracy: 0.9333
Epoch 75/100
4/4 - 0s - loss: 0.1841 - accuracy: 0.7833 - val_loss: 0.1822 -
val_accuracy: 0.9333
Epoch 76/100
4/4 - 0s - loss: 0.1837 - accuracy: 0.7750 - val_loss: 0.1818 -
val_accuracy: 0.9333
Epoch 77/100
4/4 - 0s - loss: 0.1833 - accuracy: 0.7833 - val_loss: 0.1814 -
val_accuracy: 0.9333
Epoch 78/100
4/4 - 0s - loss: 0.1830 - accuracy: 0.7833 - val_loss: 0.1810 -
val_accuracy: 0.9333
Epoch 79/100
4/4 - 0s - loss: 0.1826 - accuracy: 0.7833 - val_loss: 0.1806 -
val_accuracy: 0.9333
Epoch 80/100
4/4 - 0s - loss: 0.1822 - accuracy: 0.7750 - val_loss: 0.1802 -
val_accuracy: 0.9333
Epoch 81/100
4/4 - 0s - loss: 0.1819 - accuracy: 0.7833 - val_loss: 0.1798 -
val_accuracy: 0.9333
Epoch 82/100
4/4 - 0s - loss: 0.1815 - accuracy: 0.7750 - val_loss: 0.1794 -
val_accuracy: 0.9333
Epoch 83/100
4/4 - 0s - loss: 0.1811 - accuracy: 0.7833 - val_loss: 0.1791 -
val_accuracy: 0.9333
Epoch 84/100
4/4 - 0s - loss: 0.1807 - accuracy: 0.7750 - val_loss: 0.1787 -
val_accuracy: 0.9333
Epoch 85/100
4/4 - 0s - loss: 0.1804 - accuracy: 0.7833 - val_loss: 0.1783 -
val_accuracy: 0.9333
Epoch 86/100
4/4 - 0s - loss: 0.1800 - accuracy: 0.7833 - val_loss: 0.1779 -
val_accuracy: 0.9333
Epoch 87/100
4/4 - 0s - loss: 0.1796 - accuracy: 0.7917 - val_loss: 0.1775 -
val_accuracy: 0.9333
Epoch 88/100
4/4 - 0s - loss: 0.1793 - accuracy: 0.7833 - val_loss: 0.1771 -
val_accuracy: 0.9333
Epoch 89/100
4/4 - 0s - loss: 0.1788 - accuracy: 0.7833 - val_loss: 0.1767 -
val_accuracy: 0.9333
Epoch 90/100

```
4/4 - 0s - loss: 0.1785 - accuracy: 0.7833 - val_loss: 0.1763 -
val_accuracy: 0.9333
Epoch 91/100
4/4 - 0s - loss: 0.1782 - accuracy: 0.7917 - val_loss: 0.1759 -
val_accuracy: 0.9333
Epoch 92/100
4/4 - 0s - loss: 0.1777 - accuracy: 0.7917 - val_loss: 0.1755 -
val_accuracy: 0.9333
Epoch 93/100
4/4 - 0s - loss: 0.1774 - accuracy: 0.7833 - val_loss: 0.1750 -
val_accuracy: 0.9333
Epoch 94/100
4/4 - 0s - loss: 0.1770 - accuracy: 0.7917 - val_loss: 0.1747 -
val_accuracy: 0.9333
Epoch 95/100
4/4 - 0s - loss: 0.1766 - accuracy: 0.7917 - val_loss: 0.1743 -
val_accuracy: 0.9333
Epoch 96/100
4/4 - 0s - loss: 0.1763 - accuracy: 0.7917 - val_loss: 0.1738 -
val_accuracy: 0.9333
Epoch 97/100
4/4 - 0s - loss: 0.1759 - accuracy: 0.7917 - val_loss: 0.1735 -
val_accuracy: 0.9333
Epoch 98/100
4/4 - 0s - loss: 0.1755 - accuracy: 0.7917 - val_loss: 0.1731 -
val_accuracy: 0.9333
Epoch 99/100
4/4 - 0s - loss: 0.1751 - accuracy: 0.7917 - val_loss: 0.1726 -
val_accuracy: 0.9333
Epoch 100/100
4/4 - 0s - loss: 0.1747 - accuracy: 0.7917 - val_loss: 0.1722 -
val_accuracy: 0.9333
Activation: sigmoid LR: 0.1 Iterations: 100 || Test loss:
0.1722399741411209
Activation: sigmoid LR: 0.1 Iterations: 100 || Test Accuracy:
0.9333333373069763
======================================================================
======
Model_sigmoid_LR_0.1_Iterations_200_HL_2
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.1169s). Check your callbacks.
4/4 - 0s - loss: 0.2703 - accuracy: 0.0000e+00 - val_loss: 0.2688 -
val_accuracy: 0.0000e+00
Epoch 2/200
4/4 - 0s - loss: 0.2681 - accuracy: 0.0000e+00 - val_loss: 0.2666 -
val_accuracy: 0.0000e+00
Epoch 3/200
```

```
4/4 - 0s - loss: 0.2659 - accuracy: 0.0000e+00 - val_loss: 0.2645 -
val_accuracy: 0.0000e+00

Epoch 4/200
4/4 - 0s - loss: 0.2638 - accuracy: 0.0083 - val_loss: 0.2624 -
val_accuracy: 0.0083
Epoch 5/200
4/4 - 0s - loss: 0.2618 - accuracy: 0.0167 - val_loss: 0.2604 -
val_accuracy: 0.0167
Epoch 6/200
4/4 - 0s - loss: 0.2598 - accuracy: 0.0167 - val_loss: 0.2584 -
val_accuracy: 0.0250
Epoch 7/200
4/4 - 0s - loss: 0.2579 - accuracy: 0.0250 - val_loss: 0.2566 -
val_accuracy: 0.0250
Epoch 8/200
4/4 - 0s - loss: 0.2559 - accuracy: 0.0250 - val_loss: 0.2547 -
val_accuracy: 0.0417
Epoch 9/200
4/4 - 0s - loss: 0.2541 - accuracy: 0.0417 - val_loss: 0.2529 -
val_accuracy: 0.0500
Epoch 10/200
4/4 - 0s - loss: 0.2524 - accuracy: 0.0500 - val_loss: 0.2512 -
val_accuracy: 0.0500
Epoch 11/200
4/4 - 0s - loss: 0.2506 - accuracy: 0.0500 - val_loss: 0.2495 -
val_accuracy: 0.0583
Epoch 12/200
4/4 - 0s - loss: 0.2490 - accuracy: 0.0583 - val_loss: 0.2479 -
val_accuracy: 0.0667
Epoch 13/200
4/4 - 0s - loss: 0.2474 - accuracy: 0.0667 - val_loss: 0.2463 -
val_accuracy: 0.0667
Epoch 14/200
4/4 - 0s - loss: 0.2458 - accuracy: 0.0750 - val_loss: 0.2448 -
val_accuracy: 0.0750
Epoch 15/200
4/4 - 0s - loss: 0.2443 - accuracy: 0.0750 - val_loss: 0.2433 -
val_accuracy: 0.0833
Epoch 16/200
4/4 - 0s - loss: 0.2428 - accuracy: 0.0833 - val_loss: 0.2418 -
val_accuracy: 0.0833
Epoch 17/200
4/4 - 0s - loss: 0.2414 - accuracy: 0.0833 - val_loss: 0.2404 -
val_accuracy: 0.0833
Epoch 18/200
4/4 - 0s - loss: 0.2400 - accuracy: 0.0917 - val_loss: 0.2390 -
val_accuracy: 0.1000
Epoch 19/200
4/4 - 0s - loss: 0.2386 - accuracy: 0.1000 - val_loss: 0.2377 -
```

```
val_accuracy: 0.1000
Epoch 20/200
4/4 - 0s - loss: 0.2373 - accuracy: 0.1000 - val_loss: 0.2364 -
val_accuracy: 0.1167
Epoch 21/200
4/4 - 0s - loss: 0.2360 - accuracy: 0.1250 - val_loss: 0.2351 -
val_accuracy: 0.1333
Epoch 22/200
4/4 - 0s - loss: 0.2347 - accuracy: 0.1250 - val_loss: 0.2339 -
val_accuracy: 0.1333
Epoch 23/200
4/4 - 0s - loss: 0.2335 - accuracy: 0.1333 - val_loss: 0.2327 -
val_accuracy: 0.1417
Epoch 24/200
4/4 - 0s - loss: 0.2323 - accuracy: 0.1417 - val_loss: 0.2315 -
val_accuracy: 0.1583
Epoch 25/200
4/4 - 0s - loss: 0.2312 - accuracy: 0.1500 - val_loss: 0.2304 -
val_accuracy: 0.1583
Epoch 26/200
4/4 - 0s - loss: 0.2300 - accuracy: 0.1583 - val_loss: 0.2293 -
val_accuracy: 0.1583
Epoch 27/200
4/4 - 0s - loss: 0.2289 - accuracy: 0.1750 - val_loss: 0.2282 -
val_accuracy: 0.1750
Epoch 28/200
4/4 - 0s - loss: 0.2278 - accuracy: 0.1750 - val_loss: 0.2271 -
val_accuracy: 0.1750
Epoch 29/200
4/4 - 0s - loss: 0.2268 - accuracy: 0.1833 - val_loss: 0.2261 -
val_accuracy: 0.1917
Epoch 30/200
4/4 - 0s - loss: 0.2258 - accuracy: 0.2083 - val_loss: 0.2251 -
val_accuracy: 0.2167
Epoch 31/200
4/4 - 0s - loss: 0.2248 - accuracy: 0.2167 - val_loss: 0.2241 -
val_accuracy: 0.2417
Epoch 32/200
4/4 - 0s - loss: 0.2238 - accuracy: 0.2333 - val_loss: 0.2231 -
val_accuracy: 0.2500
Epoch 33/200
4/4 - 0s - loss: 0.2228 - accuracy: 0.2583 - val_loss: 0.2221 -
val_accuracy: 0.2667
Epoch 34/200
4/4 - 0s - loss: 0.2218 - accuracy: 0.2667 - val_loss: 0.2212 -
val_accuracy: 0.2667
Epoch 35/200
4/4 - 0s - loss: 0.2209 - accuracy: 0.2750 - val_loss: 0.2203 -
val_accuracy: 0.2833
Epoch 36/200
```

```
4/4 - 0s - loss: 0.2200 - accuracy: 0.2833 - val_loss: 0.2194 -
val_accuracy: 0.3083
Epoch 37/200
4/4 - 0s - loss: 0.2192 - accuracy: 0.3167 - val_loss: 0.2185 -
val_accuracy: 0.3167
Epoch 38/200
4/4 - 0s - loss: 0.2183 - accuracy: 0.3167 - val_loss: 0.2176 -
val_accuracy: 0.3333
Epoch 39/200
4/4 - 0s - loss: 0.2174 - accuracy: 0.3333 - val_loss: 0.2168 -
val_accuracy: 0.3417
Epoch 40/200
4/4 - 0s - loss: 0.2166 - accuracy: 0.3500 - val_loss: 0.2160 -
val_accuracy: 0.3583
Epoch 41/200
4/4 - 0s - loss: 0.2157 - accuracy: 0.3667 - val_loss: 0.2151 -
val_accuracy: 0.3583
Epoch 42/200
4/4 - 0s - loss: 0.2149 - accuracy: 0.3667 - val_loss: 0.2143 -
val_accuracy: 0.3750
Epoch 43/200
4/4 - 0s - loss: 0.2141 - accuracy: 0.3750 - val_loss: 0.2135 -
val_accuracy: 0.3917
Epoch 44/200
4/4 - 0s - loss: 0.2133 - accuracy: 0.3917 - val_loss: 0.2127 -
val_accuracy: 0.4083
Epoch 45/200
4/4 - 0s - loss: 0.2125 - accuracy: 0.4083 - val_loss: 0.2119 -
val_accuracy: 0.4167
Epoch 46/200
4/4 - 0s - loss: 0.2117 - accuracy: 0.4250 - val_loss: 0.2112 -
val_accuracy: 0.4167
Epoch 47/200
4/4 - 0s - loss: 0.2109 - accuracy: 0.4333 - val_loss: 0.2104 -
val_accuracy: 0.4250
Epoch 48/200
4/4 - 0s - loss: 0.2102 - accuracy: 0.4333 - val_loss: 0.2097 -
val_accuracy: 0.4417
Epoch 49/200
4/4 - 0s - loss: 0.2095 - accuracy: 0.4500 - val_loss: 0.2089 -
val_accuracy: 0.4667
Epoch 50/200
4/4 - 0s - loss: 0.2087 - accuracy: 0.4667 - val_loss: 0.2082 -
val_accuracy: 0.4667
Epoch 51/200
4/4 - 0s - loss: 0.2080 - accuracy: 0.4750 - val_loss: 0.2075 -
val_accuracy: 0.4750
Epoch 52/200
4/4 - 0s - loss: 0.2073 - accuracy: 0.4833 - val_loss: 0.2068 -
val_accuracy: 0.4833
```

```
Epoch 53/200
4/4 - 0s - loss: 0.2066 - accuracy: 0.4833 - val_loss: 0.2061 -
val_accuracy: 0.4917
Epoch 54/200
4/4 - 0s - loss: 0.2059 - accuracy: 0.4917 - val_loss: 0.2054 -
val_accuracy: 0.5000
Epoch 55/200
4/4 - 0s - loss: 0.2052 - accuracy: 0.5083 - val_loss: 0.2047 -
val_accuracy: 0.5083
Epoch 56/200
4/4 - 0s - loss: 0.2045 - accuracy: 0.5083 - val_loss: 0.2040 -
val_accuracy: 0.5000
Epoch 57/200
4/4 - 0s - loss: 0.2038 - accuracy: 0.5000 - val_loss: 0.2033 -
val_accuracy: 0.5083
Epoch 58/200
4/4 - 0s - loss: 0.2032 - accuracy: 0.5083 - val_loss: 0.2026 -
val_accuracy: 0.5083
Epoch 59/200
4/4 - 0s - loss: 0.2024 - accuracy: 0.5083 - val_loss: 0.2020 -
val_accuracy: 0.5250
Epoch 60/200
4/4 - 0s - loss: 0.2018 - accuracy: 0.5250 - val_loss: 0.2013 -
val_accuracy: 0.5333
Epoch 61/200
4/4 - 0s - loss: 0.2011 - accuracy: 0.5333 - val_loss: 0.2006 -
val_accuracy: 0.5417
Epoch 62/200
4/4 - 0s - loss: 0.2004 - accuracy: 0.5417 - val_loss: 0.2000 -
val_accuracy: 0.5417
Epoch 63/200
4/4 - 0s - loss: 0.1998 - accuracy: 0.5417 - val_loss: 0.1993 -
val_accuracy: 0.5583
Epoch 64/200
4/4 - 0s - loss: 0.1991 - accuracy: 0.5583 - val_loss: 0.1987 -
val_accuracy: 0.5583
Epoch 65/200
4/4 - 0s - loss: 0.1985 - accuracy: 0.5583 - val_loss: 0.1980 -
val_accuracy: 0.5667
Epoch 66/200
4/4 - 0s - loss: 0.1979 - accuracy: 0.5667 - val_loss: 0.1974 -
val_accuracy: 0.5667
Epoch 67/200
4/4 - 0s - loss: 0.1972 - accuracy: 0.5750 - val_loss: 0.1968 -
val_accuracy: 0.5833
Epoch 68/200
4/4 - 0s - loss: 0.1966 - accuracy: 0.5833 - val_loss: 0.1962 -
val_accuracy: 0.5833
Epoch 69/200
4/4 - 0s - loss: 0.1960 - accuracy: 0.5833 - val_loss: 0.1955 -
```

```
val_accuracy: 0.5833
Epoch 70/200
4/4 - 0s - loss: 0.1953 - accuracy: 0.5833 - val_loss: 0.1949 -
val_accuracy: 0.6000
Epoch 71/200
4/4 - 0s - loss: 0.1948 - accuracy: 0.6000 - val_loss: 0.1943 -
val_accuracy: 0.6000
Epoch 72/200
4/4 - 0s - loss: 0.1941 - accuracy: 0.6000 - val_loss: 0.1937 -
val_accuracy: 0.6000
Epoch 73/200
4/4 - 0s - loss: 0.1935 - accuracy: 0.5917 - val_loss: 0.1931 -
val_accuracy: 0.5917
Epoch 74/200
4/4 - 0s - loss: 0.1929 - accuracy: 0.6000 - val_loss: 0.1925 -
val_accuracy: 0.6083
Epoch 75/200
4/4 - 0s - loss: 0.1923 - accuracy: 0.6083 - val_loss: 0.1919 -
val_accuracy: 0.6083
Epoch 76/200
4/4 - 0s - loss: 0.1917 - accuracy: 0.6250 - val_loss: 0.1913 -
val_accuracy: 0.6250
Epoch 77/200
4/4 - 0s - loss: 0.1911 - accuracy: 0.6250 - val_loss: 0.1907 -
val_accuracy: 0.6333
Epoch 78/200
4/4 - 0s - loss: 0.1905 - accuracy: 0.6333 - val_loss: 0.1901 -
val_accuracy: 0.6500
Epoch 79/200
4/4 - 0s - loss: 0.1899 - accuracy: 0.6667 - val_loss: 0.1895 -
val_accuracy: 0.6667
Epoch 80/200
4/4 - 0s - loss: 0.1893 - accuracy: 0.6667 - val_loss: 0.1889 -
val_accuracy: 0.6750
Epoch 81/200
4/4 - 0s - loss: 0.1887 - accuracy: 0.6750 - val_loss: 0.1883 -
val_accuracy: 0.6750
Epoch 82/200
4/4 - 0s - loss: 0.1881 - accuracy: 0.6750 - val_loss: 0.1877 -
val_accuracy: 0.6750
Epoch 83/200
4/4 - 0s - loss: 0.1876 - accuracy: 0.6750 - val_loss: 0.1871 -
val_accuracy: 0.6833
Epoch 84/200
4/4 - 0s - loss: 0.1870 - accuracy: 0.6833 - val_loss: 0.1865 -
val_accuracy: 0.6917
Epoch 85/200
4/4 - 0s - loss: 0.1864 - accuracy: 0.6917 - val_loss: 0.1860 -
val_accuracy: 0.6917
Epoch 86/200
```

```
4/4 - 0s - loss: 0.1858 - accuracy: 0.6750 - val_loss: 0.1854 -
val_accuracy: 0.7000
Epoch 87/200
4/4 - 0s - loss: 0.1852 - accuracy: 0.7000 - val_loss: 0.1848 -
val_accuracy: 0.6917

Epoch 88/200
4/4 - 0s - loss: 0.1846 - accuracy: 0.6833 - val_loss: 0.1842 -
val_accuracy: 0.6917
Epoch 89/200
4/4 - 0s - loss: 0.1841 - accuracy: 0.6917 - val_loss: 0.1837 -
val_accuracy: 0.6833
Epoch 90/200
4/4 - 0s - loss: 0.1835 - accuracy: 0.6750 - val_loss: 0.1831 -
val_accuracy: 0.6833
Epoch 91/200
4/4 - 0s - loss: 0.1829 - accuracy: 0.6833 - val_loss: 0.1825 -
val_accuracy: 0.6833
Epoch 92/200
4/4 - 0s - loss: 0.1824 - accuracy: 0.6667 - val_loss: 0.1820 -
val_accuracy: 0.6750
Epoch 93/200
4/4 - 0s - loss: 0.1818 - accuracy: 0.6750 - val_loss: 0.1814 -
val_accuracy: 0.6750
Epoch 94/200
4/4 - 0s - loss: 0.1812 - accuracy: 0.6833 - val_loss: 0.1809 -
val_accuracy: 0.6833
Epoch 95/200
4/4 - 0s - loss: 0.1807 - accuracy: 0.6833 - val_loss: 0.1803 -
val_accuracy: 0.6833
Epoch 96/200
4/4 - 0s - loss: 0.1801 - accuracy: 0.6833 - val_loss: 0.1798 -
val_accuracy: 0.6917
Epoch 97/200
4/4 - 0s - loss: 0.1796 - accuracy: 0.6917 - val_loss: 0.1792 -
val_accuracy: 0.6917
Epoch 98/200
4/4 - 0s - loss: 0.1790 - accuracy: 0.6917 - val_loss: 0.1786 -
val_accuracy: 0.6917
Epoch 99/200
4/4 - 0s - loss: 0.1785 - accuracy: 0.7000 - val_loss: 0.1781 -
val_accuracy: 0.6917
Epoch 100/200
4/4 - 0s - loss: 0.1779 - accuracy: 0.6917 - val_loss: 0.1776 -
val_accuracy: 0.6917
Epoch 101/200
4/4 - 0s - loss: 0.1774 - accuracy: 0.6917 - val_loss: 0.1770 -
val_accuracy: 0.6917
Epoch 102/200
4/4 - 0s - loss: 0.1768 - accuracy: 0.7000 - val_loss: 0.1765 -
```

val_accuracy: 0.6917
Epoch 103/200
4/4 - 0s - loss: 0.1763 - accuracy: 0.7000 - val_loss: 0.1759 -
val_accuracy: 0.7083
Epoch 104/200
4/4 - 0s - loss: 0.1758 - accuracy: 0.7083 - val_loss: 0.1754 -
val_accuracy: 0.7083
Epoch 105/200
4/4 - 0s - loss: 0.1752 - accuracy: 0.7083 - val_loss: 0.1749 -
val_accuracy: 0.6917
Epoch 106/200
4/4 - 0s - loss: 0.1747 - accuracy: 0.6917 - val_loss: 0.1743 -
val_accuracy: 0.6917
Epoch 107/200
4/4 - 0s - loss: 0.1742 - accuracy: 0.6917 - val_loss: 0.1738 -
val_accuracy: 0.6917
Epoch 108/200
4/4 - 0s - loss: 0.1737 - accuracy: 0.6917 - val_loss: 0.1733 -
val_accuracy: 0.6917
Epoch 109/200
4/4 - 0s - loss: 0.1731 - accuracy: 0.6917 - val_loss: 0.1728 -
val_accuracy: 0.6917
Epoch 110/200
4/4 - 0s - loss: 0.1726 - accuracy: 0.6917 - val_loss: 0.1722 -
val_accuracy: 0.6917
Epoch 111/200
4/4 - 0s - loss: 0.1721 - accuracy: 0.6917 - val_loss: 0.1717 -
val_accuracy: 0.6917
Epoch 112/200
4/4 - 0s - loss: 0.1716 - accuracy: 0.6917 - val_loss: 0.1712 -
val_accuracy: 0.6917
Epoch 113/200
4/4 - 0s - loss: 0.1711 - accuracy: 0.6917 - val_loss: 0.1707 -
val_accuracy: 0.6917
Epoch 114/200
4/4 - 0s - loss: 0.1706 - accuracy: 0.6917 - val_loss: 0.1702 -
val_accuracy: 0.6917
Epoch 115/200
4/4 - 0s - loss: 0.1700 - accuracy: 0.6833 - val_loss: 0.1697 -
val_accuracy: 0.6917
Epoch 116/200
4/4 - 0s - loss: 0.1695 - accuracy: 0.6917 - val_loss: 0.1692 -
val_accuracy: 0.6917
Epoch 117/200
4/4 - 0s - loss: 0.1690 - accuracy: 0.7000 - val_loss: 0.1687 -
val_accuracy: 0.7083
Epoch 118/200
4/4 - 0s - loss: 0.1685 - accuracy: 0.7167 - val_loss: 0.1682 -
val_accuracy: 0.7167
Epoch 119/200

```
4/4 - 0s - loss: 0.1681 - accuracy: 0.7167 - val_loss: 0.1677 -
val_accuracy: 0.7250
Epoch 120/200
4/4 - 0s - loss: 0.1675 - accuracy: 0.7250 - val_loss: 0.1672 -
val_accuracy: 0.7250
Epoch 121/200
4/4 - 0s - loss: 0.1671 - accuracy: 0.7250 - val_loss: 0.1667 -
val_accuracy: 0.7333
Epoch 122/200
4/4 - 0s - loss: 0.1666 - accuracy: 0.7250 - val_loss: 0.1662 -
val_accuracy: 0.7333
Epoch 123/200
4/4 - 0s - loss: 0.1661 - accuracy: 0.7333 - val_loss: 0.1657 -
val_accuracy: 0.7417
Epoch 124/200
4/4 - 0s - loss: 0.1656 - accuracy: 0.7417 - val_loss: 0.1653 -
val_accuracy: 0.7417
Epoch 125/200
4/4 - 0s - loss: 0.1651 - accuracy: 0.7417 - val_loss: 0.1648 -
val_accuracy: 0.7417
Epoch 126/200
4/4 - 0s - loss: 0.1646 - accuracy: 0.7417 - val_loss: 0.1643 -
val_accuracy: 0.7417
Epoch 127/200
4/4 - 0s - loss: 0.1642 - accuracy: 0.7417 - val_loss: 0.1639 -
val_accuracy: 0.7417
Epoch 128/200
4/4 - 0s - loss: 0.1637 - accuracy: 0.7417 - val_loss: 0.1634 -
val_accuracy: 0.7417
Epoch 129/200
4/4 - 0s - loss: 0.1632 - accuracy: 0.7417 - val_loss: 0.1629 -
val_accuracy: 0.7417
Epoch 130/200
4/4 - 0s - loss: 0.1628 - accuracy: 0.7417 - val_loss: 0.1625 -
val_accuracy: 0.7417
Epoch 131/200
4/4 - 0s - loss: 0.1624 - accuracy: 0.7417 - val_loss: 0.1620 -
val_accuracy: 0.7417
Epoch 132/200
4/4 - 0s - loss: 0.1619 - accuracy: 0.7417 - val_loss: 0.1616 -
val_accuracy: 0.7417
Epoch 133/200
4/4 - 0s - loss: 0.1614 - accuracy: 0.7417 - val_loss: 0.1611 -
val_accuracy: 0.7417
Epoch 134/200
4/4 - 0s - loss: 0.1610 - accuracy: 0.7417 - val_loss: 0.1607 -
val_accuracy: 0.7417
Epoch 135/200
4/4 - 0s - loss: 0.1605 - accuracy: 0.7417 - val_loss: 0.1602 -
val_accuracy: 0.7417
```

```
Epoch 136/200
4/4 - 0s - loss: 0.1601 - accuracy: 0.7417 - val_loss: 0.1598 -
val_accuracy: 0.7417
Epoch 137/200
4/4 - 0s - loss: 0.1596 - accuracy: 0.7417 - val_loss: 0.1593 -
val_accuracy: 0.7417
Epoch 138/200
4/4 - 0s - loss: 0.1592 - accuracy: 0.7417 - val_loss: 0.1589 -
val_accuracy: 0.7417
Epoch 139/200
4/4 - 0s - loss: 0.1588 - accuracy: 0.7417 - val_loss: 0.1584 -
val_accuracy: 0.7417
Epoch 140/200
4/4 - 0s - loss: 0.1583 - accuracy: 0.7417 - val_loss: 0.1580 -
val_accuracy: 0.7417
Epoch 141/200
4/4 - 0s - loss: 0.1579 - accuracy: 0.7417 - val_loss: 0.1576 -
val_accuracy: 0.7417
Epoch 142/200
4/4 - 0s - loss: 0.1575 - accuracy: 0.7417 - val_loss: 0.1572 -
val_accuracy: 0.7417
Epoch 143/200
4/4 - 0s - loss: 0.1570 - accuracy: 0.7417 - val_loss: 0.1567 -
val_accuracy: 0.7417
Epoch 144/200
4/4 - 0s - loss: 0.1567 - accuracy: 0.7417 - val_loss: 0.1563 -
val_accuracy: 0.7417
Epoch 145/200
4/4 - 0s - loss: 0.1562 - accuracy: 0.7417 - val_loss: 0.1559 -
val_accuracy: 0.7417
Epoch 146/200
4/4 - 0s - loss: 0.1558 - accuracy: 0.7417 - val_loss: 0.1555 -
val_accuracy: 0.7417
Epoch 147/200
4/4 - 0s - loss: 0.1554 - accuracy: 0.7417 - val_loss: 0.1551 -
val_accuracy: 0.7500
Epoch 148/200
4/4 - 0s - loss: 0.1550 - accuracy: 0.7500 - val_loss: 0.1547 -
val_accuracy: 0.7500
Epoch 149/200
4/4 - 0s - loss: 0.1546 - accuracy: 0.7333 - val_loss: 0.1543 -
val_accuracy: 0.7500
Epoch 150/200
4/4 - 0s - loss: 0.1541 - accuracy: 0.7500 - val_loss: 0.1539 -
val_accuracy: 0.7500
Epoch 151/200
4/4 - 0s - loss: 0.1537 - accuracy: 0.7417 - val_loss: 0.1535 -
val_accuracy: 0.7583
Epoch 152/200
4/4 - 0s - loss: 0.1534 - accuracy: 0.7500 - val_loss: 0.1531 -
```

```
val_accuracy: 0.7583
Epoch 153/200
4/4 - 0s - loss: 0.1530 - accuracy: 0.7500 - val_loss: 0.1527 -
val_accuracy: 0.7500
Epoch 154/200
4/4 - 0s - loss: 0.1526 - accuracy: 0.7500 - val_loss: 0.1523 -
val_accuracy: 0.7500
Epoch 155/200
4/4 - 0s - loss: 0.1522 - accuracy: 0.7417 - val_loss: 0.1519 -
val_accuracy: 0.7500
Epoch 156/200
4/4 - 0s - loss: 0.1518 - accuracy: 0.7417 - val_loss: 0.1515 -
val_accuracy: 0.7500
Epoch 157/200
4/4 - 0s - loss: 0.1514 - accuracy: 0.7500 - val_loss: 0.1511 -
val_accuracy: 0.7500
Epoch 158/200
4/4 - 0s - loss: 0.1510 - accuracy: 0.7500 - val_loss: 0.1508 -
val_accuracy: 0.7417
Epoch 159/200
4/4 - 0s - loss: 0.1507 - accuracy: 0.7417 - val_loss: 0.1504 -
val_accuracy: 0.7500
Epoch 160/200
4/4 - 0s - loss: 0.1503 - accuracy: 0.7417 - val_loss: 0.1500 -
val_accuracy: 0.7500
Epoch 161/200
4/4 - 0s - loss: 0.1499 - accuracy: 0.7500 - val_loss: 0.1496 -
val_accuracy: 0.7417
Epoch 162/200
4/4 - 0s - loss: 0.1495 - accuracy: 0.7417 - val_loss: 0.1493 -
val_accuracy: 0.7417
Epoch 163/200
4/4 - 0s - loss: 0.1492 - accuracy: 0.7500 - val_loss: 0.1489 -
val_accuracy: 0.7500
Epoch 164/200
4/4 - 0s - loss: 0.1488 - accuracy: 0.7500 - val_loss: 0.1485 -
val_accuracy: 0.7500
Epoch 165/200
4/4 - 0s - loss: 0.1485 - accuracy: 0.7500 - val_loss: 0.1482 -
val_accuracy: 0.7500
Epoch 166/200
4/4 - 0s - loss: 0.1481 - accuracy: 0.7500 - val_loss: 0.1478 -
val_accuracy: 0.7500
Epoch 167/200
4/4 - 0s - loss: 0.1477 - accuracy: 0.7500 - val_loss: 0.1475 -
val_accuracy: 0.7667
Epoch 168/200
4/4 - 0s - loss: 0.1474 - accuracy: 0.7583 - val_loss: 0.1471 -
val_accuracy: 0.7667
Epoch 169/200
```

```
4/4 - 0s - loss: 0.1470 - accuracy: 0.7583 - val_loss: 0.1468 -
val_accuracy: 0.7667
Epoch 170/200
4/4 - 0s - loss: 0.1467 - accuracy: 0.7583 - val_loss: 0.1464 -
val_accuracy: 0.7583

Epoch 171/200
4/4 - 0s - loss: 0.1463 - accuracy: 0.7583 - val_loss: 0.1461 -
val_accuracy: 0.7667
Epoch 172/200
4/4 - 0s - loss: 0.1460 - accuracy: 0.7667 - val_loss: 0.1458 -
val_accuracy: 0.7750
Epoch 173/200
4/4 - 0s - loss: 0.1457 - accuracy: 0.7750 - val_loss: 0.1454 -
val_accuracy: 0.7750
Epoch 174/200
4/4 - 0s - loss: 0.1453 - accuracy: 0.7750 - val_loss: 0.1451 -
val_accuracy: 0.7833
Epoch 175/200
4/4 - 0s - loss: 0.1450 - accuracy: 0.7750 - val_loss: 0.1448 -
val_accuracy: 0.7833
Epoch 176/200
4/4 - 0s - loss: 0.1447 - accuracy: 0.7833 - val_loss: 0.1444 -
val_accuracy: 0.7833
Epoch 177/200
4/4 - 0s - loss: 0.1443 - accuracy: 0.7833 - val_loss: 0.1441 -
val_accuracy: 0.7833
Epoch 178/200
4/4 - 0s - loss: 0.1440 - accuracy: 0.7833 - val_loss: 0.1438 -
val_accuracy: 0.7833
Epoch 179/200
4/4 - 0s - loss: 0.1437 - accuracy: 0.7833 - val_loss: 0.1435 -
val_accuracy: 0.7833
Epoch 180/200
4/4 - 0s - loss: 0.1434 - accuracy: 0.7833 - val_loss: 0.1431 -
val_accuracy: 0.7833
Epoch 181/200
4/4 - 0s - loss: 0.1431 - accuracy: 0.7833 - val_loss: 0.1428 -
val_accuracy: 0.7833
Epoch 182/200
4/4 - 0s - loss: 0.1427 - accuracy: 0.7833 - val_loss: 0.1425 -
val_accuracy: 0.7833
Epoch 183/200
4/4 - 0s - loss: 0.1424 - accuracy: 0.7833 - val_loss: 0.1422 -
val_accuracy: 0.7833
Epoch 184/200
4/4 - 0s - loss: 0.1421 - accuracy: 0.7833 - val_loss: 0.1419 -
val_accuracy: 0.7833
Epoch 185/200
4/4 - 0s - loss: 0.1418 - accuracy: 0.7833 - val_loss: 0.1416 -
```

val_accuracy: 0.7833
Epoch 186/200
4/4 - 0s - loss: 0.1415 - accuracy: 0.7750 - val_loss: 0.1413 -
val_accuracy: 0.7833
Epoch 187/200
4/4 - 0s - loss: 0.1412 - accuracy: 0.7833 - val_loss: 0.1410 -
val_accuracy: 0.7833
Epoch 188/200
4/4 - 0s - loss: 0.1409 - accuracy: 0.7833 - val_loss: 0.1407 -
val_accuracy: 0.7833
Epoch 189/200
4/4 - 0s - loss: 0.1406 - accuracy: 0.7833 - val_loss: 0.1404 -
val_accuracy: 0.7750
Epoch 190/200
4/4 - 0s - loss: 0.1403 - accuracy: 0.7750 - val_loss: 0.1401 -
val_accuracy: 0.7750
Epoch 191/200
4/4 - 0s - loss: 0.1401 - accuracy: 0.7750 - val_loss: 0.1398 -
val_accuracy: 0.7750
Epoch 192/200
4/4 - 0s - loss: 0.1398 - accuracy: 0.7750 - val_loss: 0.1395 -
val_accuracy: 0.7833
Epoch 193/200
4/4 - 0s - loss: 0.1394 - accuracy: 0.7833 - val_loss: 0.1392 -
val_accuracy: 0.7833
Epoch 194/200
4/4 - 0s - loss: 0.1392 - accuracy: 0.7833 - val_loss: 0.1390 -
val_accuracy: 0.7833
Epoch 195/200
4/4 - 0s - loss: 0.1389 - accuracy: 0.7833 - val_loss: 0.1387 -
val_accuracy: 0.7833
Epoch 196/200
4/4 - 0s - loss: 0.1386 - accuracy: 0.7833 - val_loss: 0.1384 -
val_accuracy: 0.7833
Epoch 197/200
4/4 - 0s - loss: 0.1383 - accuracy: 0.7833 - val_loss: 0.1381 -
val_accuracy: 0.7833
Epoch 198/200
4/4 - 0s - loss: 0.1381 - accuracy: 0.7833 - val_loss: 0.1379 -
val_accuracy: 0.7833
Epoch 199/200
4/4 - 0s - loss: 0.1378 - accuracy: 0.7833 - val_loss: 0.1376 -
val_accuracy: 0.7833
Epoch 200/200
4/4 - 0s - loss: 0.1376 - accuracy: 0.7833 - val_loss: 0.1373 -
val_accuracy: 0.7833
Activation: sigmoid LR: 0.1 Itertions: 200 || Train loss:
0.13732068240642548
Activation: sigmoid LR: 0.1 Itertions: 200 || Train Accuracy:
0.7833333611488342

```
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0008s vs
`on_train_batch_end` time: 0.0735s). Check your callbacks.
4/4 - 0s - loss: 0.1373 - accuracy: 0.7833 - val_loss: 0.1285 -
val_accuracy: 0.8667
Epoch 2/200
4/4 - 0s - loss: 0.1370 - accuracy: 0.7833 - val_loss: 0.1282 -
val_accuracy: 0.8667
Epoch 3/200
4/4 - 0s - loss: 0.1367 - accuracy: 0.7833 - val_loss: 0.1279 -
val_accuracy: 0.8667
Epoch 4/200
4/4 - 0s - loss: 0.1364 - accuracy: 0.7833 - val_loss: 0.1277 -
val_accuracy: 0.8667
Epoch 5/200
4/4 - 0s - loss: 0.1362 - accuracy: 0.7833 - val_loss: 0.1274 -
val_accuracy: 0.8667
Epoch 6/200
4/4 - 0s - loss: 0.1359 - accuracy: 0.7833 - val_loss: 0.1271 -
val_accuracy: 0.8667
Epoch 7/200
4/4 - 0s - loss: 0.1357 - accuracy: 0.7833 - val_loss: 0.1269 -
val_accuracy: 0.8667
Epoch 8/200
4/4 - 0s - loss: 0.1354 - accuracy: 0.7833 - val_loss: 0.1266 -
val_accuracy: 0.8667
Epoch 9/200
4/4 - 0s - loss: 0.1352 - accuracy: 0.7833 - val_loss: 0.1263 -
val_accuracy: 0.8667
Epoch 10/200
4/4 - 0s - loss: 0.1349 - accuracy: 0.7833 - val_loss: 0.1261 -
val_accuracy: 0.8667
Epoch 11/200
4/4 - 0s - loss: 0.1347 - accuracy: 0.7833 - val_loss: 0.1258 -
val_accuracy: 0.8667
Epoch 12/200
4/4 - 0s - loss: 0.1344 - accuracy: 0.7833 - val_loss: 0.1256 -
val_accuracy: 0.8667
Epoch 13/200
4/4 - 0s - loss: 0.1342 - accuracy: 0.7833 - val_loss: 0.1253 -
val_accuracy: 0.8667
Epoch 14/200
4/4 - 0s - loss: 0.1340 - accuracy: 0.7833 - val_loss: 0.1251 -
val_accuracy: 0.8667
Epoch 15/200
4/4 - 0s - loss: 0.1337 - accuracy: 0.7833 - val_loss: 0.1248 -
val_accuracy: 0.8667
Epoch 16/200
4/4 - 0s - loss: 0.1335 - accuracy: 0.7833 - val_loss: 0.1246 -
```

```
val_accuracy: 0.8667
Epoch 17/200
4/4 - 0s - loss: 0.1333 - accuracy: 0.7833 - val_loss: 0.1244 -
val_accuracy: 0.8667
Epoch 18/200
4/4 - 0s - loss: 0.1330 - accuracy: 0.7833 - val_loss: 0.1241 -
val_accuracy: 0.8667
Epoch 19/200
4/4 - 0s - loss: 0.1327 - accuracy: 0.7833 - val_loss: 0.1239 -
val_accuracy: 0.8667
Epoch 20/200
4/4 - 0s - loss: 0.1325 - accuracy: 0.7833 - val_loss: 0.1236 -
val_accuracy: 0.8667
Epoch 21/200
4/4 - 0s - loss: 0.1323 - accuracy: 0.7833 - val_loss: 0.1234 -
val_accuracy: 0.8667
Epoch 22/200
4/4 - 0s - loss: 0.1321 - accuracy: 0.7833 - val_loss: 0.1232 -
val_accuracy: 0.8667
Epoch 23/200
4/4 - 0s - loss: 0.1318 - accuracy: 0.7833 - val_loss: 0.1229 -
val_accuracy: 0.8667
Epoch 24/200
4/4 - 0s - loss: 0.1316 - accuracy: 0.7833 - val_loss: 0.1227 -
val_accuracy: 0.8667
Epoch 25/200
4/4 - 0s - loss: 0.1314 - accuracy: 0.7833 - val_loss: 0.1225 -
val_accuracy: 0.8667
Epoch 26/200
4/4 - 0s - loss: 0.1312 - accuracy: 0.7833 - val_loss: 0.1222 -
val_accuracy: 0.8667
Epoch 27/200
4/4 - 0s - loss: 0.1309 - accuracy: 0.7833 - val_loss: 0.1220 -
val_accuracy: 0.8667
Epoch 28/200
4/4 - 0s - loss: 0.1307 - accuracy: 0.7833 - val_loss: 0.1218 -
val_accuracy: 0.8667
Epoch 29/200
4/4 - 0s - loss: 0.1305 - accuracy: 0.7833 - val_loss: 0.1215 -
val_accuracy: 0.8667
Epoch 30/200
4/4 - 0s - loss: 0.1303 - accuracy: 0.7917 - val_loss: 0.1213 -
val_accuracy: 0.8667
Epoch 31/200
4/4 - 0s - loss: 0.1301 - accuracy: 0.7917 - val_loss: 0.1211 -
val_accuracy: 0.8667
Epoch 32/200
4/4 - 0s - loss: 0.1299 - accuracy: 0.7917 - val_loss: 0.1209 -
val_accuracy: 0.8667
Epoch 33/200
```

```
4/4 - 0s - loss: 0.1297 - accuracy: 0.7917 - val_loss: 0.1207 -
val_accuracy: 0.8667
Epoch 34/200
4/4 - 0s - loss: 0.1295 - accuracy: 0.7917 - val_loss: 0.1205 -
val_accuracy: 0.8667
Epoch 35/200
4/4 - 0s - loss: 0.1293 - accuracy: 0.7917 - val_loss: 0.1203 -
val_accuracy: 0.8667
Epoch 36/200
4/4 - 0s - loss: 0.1291 - accuracy: 0.7917 - val_loss: 0.1200 -
val_accuracy: 0.8667
Epoch 37/200
4/4 - 0s - loss: 0.1289 - accuracy: 0.7917 - val_loss: 0.1198 -
val_accuracy: 0.8667
Epoch 38/200
4/4 - 0s - loss: 0.1287 - accuracy: 0.8000 - val_loss: 0.1196 -
val_accuracy: 0.8667
Epoch 39/200
4/4 - 0s - loss: 0.1284 - accuracy: 0.7917 - val_loss: 0.1194 -
val_accuracy: 0.8667
Epoch 40/200
4/4 - 0s - loss: 0.1282 - accuracy: 0.7917 - val_loss: 0.1192 -
val_accuracy: 0.8667
Epoch 41/200
4/4 - 0s - loss: 0.1281 - accuracy: 0.7917 - val_loss: 0.1190 -
val_accuracy: 0.8667
Epoch 42/200
4/4 - 0s - loss: 0.1278 - accuracy: 0.7917 - val_loss: 0.1188 -
val_accuracy: 0.8667
Epoch 43/200
4/4 - 0s - loss: 0.1276 - accuracy: 0.7917 - val_loss: 0.1186 -
val_accuracy: 0.8667
Epoch 44/200
4/4 - 0s - loss: 0.1275 - accuracy: 0.8000 - val_loss: 0.1184 -
val_accuracy: 0.8667
Epoch 45/200
4/4 - 0s - loss: 0.1273 - accuracy: 0.7917 - val_loss: 0.1182 -
val_accuracy: 0.8667
Epoch 46/200
4/4 - 0s - loss: 0.1271 - accuracy: 0.7917 - val_loss: 0.1180 -
val_accuracy: 0.8667
Epoch 47/200
4/4 - 0s - loss: 0.1269 - accuracy: 0.8083 - val_loss: 0.1178 -
val_accuracy: 0.8667
Epoch 48/200
4/4 - 0s - loss: 0.1267 - accuracy: 0.8083 - val_loss: 0.1177 -
val_accuracy: 0.8667
Epoch 49/200
4/4 - 0s - loss: 0.1265 - accuracy: 0.8000 - val_loss: 0.1175 -
val_accuracy: 0.8667
```

```
Epoch 50/200
4/4 - 0s - loss: 0.1263 - accuracy: 0.8083 - val_loss: 0.1173 -
val_accuracy: 0.8667

Epoch 51/200
4/4 - 0s - loss: 0.1261 - accuracy: 0.8083 - val_loss: 0.1171 -
val_accuracy: 0.8667
Epoch 52/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.8083 - val_loss: 0.1169 -
val_accuracy: 0.8667
Epoch 53/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.8083 - val_loss: 0.1167 -
val_accuracy: 0.8667
Epoch 54/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.8083 - val_loss: 0.1165 -
val_accuracy: 0.8667
Epoch 55/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.8083 - val_loss: 0.1163 -
val_accuracy: 0.8667
Epoch 56/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.8083 - val_loss: 0.1162 -
val_accuracy: 0.8667
Epoch 57/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.8083 - val_loss: 0.1160 -
val_accuracy: 0.8667
Epoch 58/200
4/4 - 0s - loss: 0.1249 - accuracy: 0.8083 - val_loss: 0.1158 -
val_accuracy: 0.8667
Epoch 59/200
4/4 - 0s - loss: 0.1247 - accuracy: 0.8083 - val_loss: 0.1156 -
val_accuracy: 0.8667
Epoch 60/200
4/4 - 0s - loss: 0.1245 - accuracy: 0.8083 - val_loss: 0.1154 -
val_accuracy: 0.8667
Epoch 61/200
4/4 - 0s - loss: 0.1244 - accuracy: 0.8083 - val_loss: 0.1153 -
val_accuracy: 0.8667
Epoch 62/200
4/4 - 0s - loss: 0.1242 - accuracy: 0.8083 - val_loss: 0.1151 -
val_accuracy: 0.8667
Epoch 63/200
4/4 - 0s - loss: 0.1241 - accuracy: 0.8083 - val_loss: 0.1149 -
val_accuracy: 0.8667
Epoch 64/200
4/4 - 0s - loss: 0.1238 - accuracy: 0.8083 - val_loss: 0.1148 -
val_accuracy: 0.8667
Epoch 65/200
4/4 - 0s - loss: 0.1237 - accuracy: 0.8083 - val_loss: 0.1146 -
val_accuracy: 0.8667
Epoch 66/200
```

```
4/4 - 0s - loss: 0.1235 - accuracy: 0.8083 - val_loss: 0.1144 -
val_accuracy: 0.8667
Epoch 67/200
4/4 - 0s - loss: 0.1233 - accuracy: 0.8083 - val_loss: 0.1143 -
val_accuracy: 0.8667
Epoch 68/200
4/4 - 0s - loss: 0.1232 - accuracy: 0.8083 - val_loss: 0.1141 -
val_accuracy: 0.8667
Epoch 69/200
4/4 - 0s - loss: 0.1230 - accuracy: 0.8167 - val_loss: 0.1140 -
val_accuracy: 0.8667
Epoch 70/200
4/4 - 0s - loss: 0.1229 - accuracy: 0.8167 - val_loss: 0.1138 -
val_accuracy: 0.8667
Epoch 71/200
4/4 - 0s - loss: 0.1227 - accuracy: 0.8167 - val_loss: 0.1136 -
val_accuracy: 0.8667
Epoch 72/200
4/4 - 0s - loss: 0.1225 - accuracy: 0.8167 - val_loss: 0.1135 -
val_accuracy: 0.8667
Epoch 73/200
4/4 - 0s - loss: 0.1224 - accuracy: 0.8167 - val_loss: 0.1133 -
val_accuracy: 0.8667
Epoch 74/200
4/4 - 0s - loss: 0.1222 - accuracy: 0.8167 - val_loss: 0.1131 -
val_accuracy: 0.8667
Epoch 75/200
4/4 - 0s - loss: 0.1221 - accuracy: 0.8167 - val_loss: 0.1130 -
val_accuracy: 0.8667
Epoch 76/200
4/4 - 0s - loss: 0.1219 - accuracy: 0.8167 - val_loss: 0.1128 -
val_accuracy: 0.8667
Epoch 77/200
4/4 - 0s - loss: 0.1217 - accuracy: 0.8167 - val_loss: 0.1127 -
val_accuracy: 0.8667
Epoch 78/200
4/4 - 0s - loss: 0.1216 - accuracy: 0.8167 - val_loss: 0.1125 -
val_accuracy: 0.8667
Epoch 79/200
4/4 - 0s - loss: 0.1215 - accuracy: 0.8167 - val_loss: 0.1123 -
val_accuracy: 0.8667
Epoch 80/200
4/4 - 0s - loss: 0.1213 - accuracy: 0.8167 - val_loss: 0.1122 -
val_accuracy: 0.8667
Epoch 81/200
4/4 - 0s - loss: 0.1212 - accuracy: 0.8167 - val_loss: 0.1120 -
val_accuracy: 0.8667
Epoch 82/200
4/4 - 0s - loss: 0.1210 - accuracy: 0.8250 - val_loss: 0.1119 -
val_accuracy: 0.8667
```

```
Epoch 83/200
4/4 - 0s - loss: 0.1208 - accuracy: 0.8167 - val_loss: 0.1117 -
val_accuracy: 0.8667
Epoch 84/200
4/4 - 0s - loss: 0.1207 - accuracy: 0.8167 - val_loss: 0.1116 -
val_accuracy: 0.8667
Epoch 85/200
4/4 - 0s - loss: 0.1205 - accuracy: 0.8167 - val_loss: 0.1114 -
val_accuracy: 0.8667
Epoch 86/200
4/4 - 0s - loss: 0.1204 - accuracy: 0.8167 - val_loss: 0.1113 -
val_accuracy: 0.8667
Epoch 87/200
4/4 - 0s - loss: 0.1203 - accuracy: 0.8167 - val_loss: 0.1111 -
val_accuracy: 0.8667
Epoch 88/200
4/4 - 0s - loss: 0.1201 - accuracy: 0.8250 - val_loss: 0.1110 -
val_accuracy: 0.8667
Epoch 89/200
4/4 - 0s - loss: 0.1199 - accuracy: 0.8167 - val_loss: 0.1108 -
val_accuracy: 0.8667
Epoch 90/200
4/4 - 0s - loss: 0.1198 - accuracy: 0.8250 - val_loss: 0.1107 -
val_accuracy: 0.8667
Epoch 91/200
4/4 - 0s - loss: 0.1197 - accuracy: 0.8167 - val_loss: 0.1105 -
val_accuracy: 0.8667
Epoch 92/200
4/4 - 0s - loss: 0.1196 - accuracy: 0.8250 - val_loss: 0.1104 -
val_accuracy: 0.9000
Epoch 93/200
4/4 - 0s - loss: 0.1194 - accuracy: 0.8250 - val_loss: 0.1103 -
val_accuracy: 0.9000
Epoch 94/200
4/4 - 0s - loss: 0.1193 - accuracy: 0.8250 - val_loss: 0.1101 -
val_accuracy: 0.9000
Epoch 95/200
4/4 - 0s - loss: 0.1191 - accuracy: 0.8250 - val_loss: 0.1100 -
val_accuracy: 0.9000
Epoch 96/200
4/4 - 0s - loss: 0.1190 - accuracy: 0.8250 - val_loss: 0.1098 -
val_accuracy: 0.9000
Epoch 97/200
4/4 - 0s - loss: 0.1189 - accuracy: 0.8167 - val_loss: 0.1097 -
val_accuracy: 0.9000
Epoch 98/200
4/4 - 0s - loss: 0.1187 - accuracy: 0.8250 - val_loss: 0.1095 -
val_accuracy: 0.9000
Epoch 99/200
4/4 - 0s - loss: 0.1186 - accuracy: 0.8250 - val_loss: 0.1094 -
```

```
val_accuracy: 0.9000
Epoch 100/200
4/4 - 0s - loss: 0.1184 - accuracy: 0.8167 - val_loss: 0.1092 -
val_accuracy: 0.9000
Epoch 101/200
4/4 - 0s - loss: 0.1183 - accuracy: 0.8167 - val_loss: 0.1091 -
val_accuracy: 0.9000
Epoch 102/200
4/4 - 0s - loss: 0.1182 - accuracy: 0.8250 - val_loss: 0.1090 -
val_accuracy: 0.9000
Epoch 103/200
4/4 - 0s - loss: 0.1180 - accuracy: 0.8250 - val_loss: 0.1089 -
val_accuracy: 0.9000
Epoch 104/200
4/4 - 0s - loss: 0.1179 - accuracy: 0.8250 - val_loss: 0.1087 -
val_accuracy: 0.9000
Epoch 105/200
4/4 - 0s - loss: 0.1178 - accuracy: 0.8333 - val_loss: 0.1086 -
val_accuracy: 0.9000
Epoch 106/200
4/4 - 0s - loss: 0.1176 - accuracy: 0.8250 - val_loss: 0.1084 -
val_accuracy: 0.9000
Epoch 107/200
4/4 - 0s - loss: 0.1175 - accuracy: 0.8250 - val_loss: 0.1083 -
val_accuracy: 0.9000
Epoch 108/200
4/4 - 0s - loss: 0.1174 - accuracy: 0.8333 - val_loss: 0.1082 -
val_accuracy: 0.9000
Epoch 109/200
4/4 - 0s - loss: 0.1172 - accuracy: 0.8333 - val_loss: 0.1080 -
val_accuracy: 0.9000
Epoch 110/200
4/4 - 0s - loss: 0.1171 - accuracy: 0.8250 - val_loss: 0.1079 -
val_accuracy: 0.9000
Epoch 111/200
4/4 - 0s - loss: 0.1170 - accuracy: 0.8167 - val_loss: 0.1078 -
val_accuracy: 0.9000
Epoch 112/200
4/4 - 0s - loss: 0.1169 - accuracy: 0.8333 - val_loss: 0.1076 -
val_accuracy: 0.9000
Epoch 113/200
4/4 - 0s - loss: 0.1167 - accuracy: 0.8250 - val_loss: 0.1075 -
val_accuracy: 0.9000
Epoch 114/200
4/4 - 0s - loss: 0.1166 - accuracy: 0.8250 - val_loss: 0.1074 -
val_accuracy: 0.9000
Epoch 115/200
4/4 - 0s - loss: 0.1165 - accuracy: 0.8333 - val_loss: 0.1073 -
val_accuracy: 0.9000
Epoch 116/200
```

```
4/4 - 0s - loss: 0.1164 - accuracy: 0.8250 - val_loss: 0.1071 -
val_accuracy: 0.9000
Epoch 117/200
4/4 - 0s - loss: 0.1162 - accuracy: 0.8250 - val_loss: 0.1070 -
val_accuracy: 0.9000
Epoch 118/200
4/4 - 0s - loss: 0.1161 - accuracy: 0.8333 - val_loss: 0.1069 -
val_accuracy: 0.9000
Epoch 119/200
4/4 - 0s - loss: 0.1160 - accuracy: 0.8333 - val_loss: 0.1068 -
val_accuracy: 0.9000
Epoch 120/200
4/4 - 0s - loss: 0.1158 - accuracy: 0.8333 - val_loss: 0.1067 -
val_accuracy: 0.9000
Epoch 121/200
4/4 - 0s - loss: 0.1157 - accuracy: 0.8333 - val_loss: 0.1065 -
val_accuracy: 0.9000
Epoch 122/200
4/4 - 0s - loss: 0.1156 - accuracy: 0.8333 - val_loss: 0.1064 -
val_accuracy: 0.9000
Epoch 123/200
4/4 - 0s - loss: 0.1155 - accuracy: 0.8333 - val_loss: 0.1063 -
val_accuracy: 0.9000
Epoch 124/200
4/4 - 0s - loss: 0.1154 - accuracy: 0.8250 - val_loss: 0.1062 -
val_accuracy: 0.9000
Epoch 125/200
4/4 - 0s - loss: 0.1153 - accuracy: 0.8333 - val_loss: 0.1060 -
val_accuracy: 0.9000
Epoch 126/200
4/4 - 0s - loss: 0.1151 - accuracy: 0.8333 - val_loss: 0.1059 -
val_accuracy: 0.9000
Epoch 127/200
4/4 - 0s - loss: 0.1150 - accuracy: 0.8333 - val_loss: 0.1058 -
val_accuracy: 0.9000
Epoch 128/200
4/4 - 0s - loss: 0.1149 - accuracy: 0.8333 - val_loss: 0.1057 -
val_accuracy: 0.9000
Epoch 129/200
4/4 - 0s - loss: 0.1148 - accuracy: 0.8250 - val_loss: 0.1056 -
val_accuracy: 0.9000
Epoch 130/200
4/4 - 0s - loss: 0.1146 - accuracy: 0.8333 - val_loss: 0.1054 -
val_accuracy: 0.9000
Epoch 131/200
4/4 - 0s - loss: 0.1145 - accuracy: 0.8333 - val_loss: 0.1053 -
val_accuracy: 0.9000
Epoch 132/200
4/4 - 0s - loss: 0.1144 - accuracy: 0.8333 - val_loss: 0.1052 -
val_accuracy: 0.9000
```

```
Epoch 133/200
4/4 - 0s - loss: 0.1143 - accuracy: 0.8250 - val_loss: 0.1051 -
val_accuracy: 0.9000
Epoch 134/200
4/4 - 0s - loss: 0.1142 - accuracy: 0.8250 - val_loss: 0.1050 -
val_accuracy: 0.9000

Epoch 135/200
4/4 - 0s - loss: 0.1141 - accuracy: 0.8250 - val_loss: 0.1049 -
val_accuracy: 0.9000
Epoch 136/200
4/4 - 0s - loss: 0.1140 - accuracy: 0.8250 - val_loss: 0.1047 -
val_accuracy: 0.9000
Epoch 137/200
4/4 - 0s - loss: 0.1138 - accuracy: 0.8250 - val_loss: 0.1046 -
val_accuracy: 0.9000
Epoch 138/200
4/4 - 0s - loss: 0.1138 - accuracy: 0.8250 - val_loss: 0.1045 -
val_accuracy: 0.9000
Epoch 139/200
4/4 - 0s - loss: 0.1136 - accuracy: 0.8333 - val_loss: 0.1044 -
val_accuracy: 0.9000
Epoch 140/200
4/4 - 0s - loss: 0.1136 - accuracy: 0.8250 - val_loss: 0.1043 -
val_accuracy: 0.9000
Epoch 141/200
4/4 - 0s - loss: 0.1134 - accuracy: 0.8250 - val_loss: 0.1042 -
val_accuracy: 0.9000
Epoch 142/200
4/4 - 0s - loss: 0.1133 - accuracy: 0.8250 - val_loss: 0.1040 -
val_accuracy: 0.9000
Epoch 143/200
4/4 - 0s - loss: 0.1132 - accuracy: 0.8250 - val_loss: 0.1039 -
val_accuracy: 0.9000
Epoch 144/200
4/4 - 0s - loss: 0.1131 - accuracy: 0.8333 - val_loss: 0.1038 -
val_accuracy: 0.9000
Epoch 145/200
4/4 - 0s - loss: 0.1130 - accuracy: 0.8250 - val_loss: 0.1037 -
val_accuracy: 0.9000
Epoch 146/200
4/4 - 0s - loss: 0.1129 - accuracy: 0.8250 - val_loss: 0.1036 -
val_accuracy: 0.9000
Epoch 147/200
4/4 - 0s - loss: 0.1128 - accuracy: 0.8250 - val_loss: 0.1035 -
val_accuracy: 0.9000
Epoch 148/200
4/4 - 0s - loss: 0.1127 - accuracy: 0.8250 - val_loss: 0.1034 -
val_accuracy: 0.9000
Epoch 149/200
```

```
4/4 - 0s - loss: 0.1126 - accuracy: 0.8250 - val_loss: 0.1033 -
val_accuracy: 0.9000
Epoch 150/200
4/4 - 0s - loss: 0.1124 - accuracy: 0.8250 - val_loss: 0.1032 -
val_accuracy: 0.9000
Epoch 151/200
4/4 - 0s - loss: 0.1123 - accuracy: 0.8250 - val_loss: 0.1030 -
val_accuracy: 0.9000
Epoch 152/200
4/4 - 0s - loss: 0.1122 - accuracy: 0.8250 - val_loss: 0.1029 -
val_accuracy: 0.9000
Epoch 153/200
4/4 - 0s - loss: 0.1121 - accuracy: 0.8250 - val_loss: 0.1028 -
val_accuracy: 0.9000
Epoch 154/200
4/4 - 0s - loss: 0.1120 - accuracy: 0.8250 - val_loss: 0.1027 -
val_accuracy: 0.9000
Epoch 155/200
4/4 - 0s - loss: 0.1119 - accuracy: 0.8250 - val_loss: 0.1026 -
val_accuracy: 0.9000
Epoch 156/200
4/4 - 0s - loss: 0.1118 - accuracy: 0.8250 - val_loss: 0.1025 -
val_accuracy: 0.9000
Epoch 157/200
4/4 - 0s - loss: 0.1117 - accuracy: 0.8250 - val_loss: 0.1024 -
val_accuracy: 0.9000
Epoch 158/200
4/4 - 0s - loss: 0.1116 - accuracy: 0.8250 - val_loss: 0.1023 -
val_accuracy: 0.9000
Epoch 159/200
4/4 - 0s - loss: 0.1115 - accuracy: 0.8250 - val_loss: 0.1022 -
val_accuracy: 0.9000
Epoch 160/200
4/4 - 0s - loss: 0.1114 - accuracy: 0.8250 - val_loss: 0.1021 -
val_accuracy: 0.9000
Epoch 161/200
4/4 - 0s - loss: 0.1113 - accuracy: 0.8250 - val_loss: 0.1020 -
val_accuracy: 0.9000
Epoch 162/200
4/4 - 0s - loss: 0.1112 - accuracy: 0.8250 - val_loss: 0.1019 -
val_accuracy: 0.9000
Epoch 163/200
4/4 - 0s - loss: 0.1111 - accuracy: 0.8250 - val_loss: 0.1018 -
val_accuracy: 0.9000
Epoch 164/200
4/4 - 0s - loss: 0.1110 - accuracy: 0.8250 - val_loss: 0.1017 -
val_accuracy: 0.9000
Epoch 165/200
4/4 - 0s - loss: 0.1109 - accuracy: 0.8250 - val_loss: 0.1016 -
val_accuracy: 0.9000
```

```
Epoch 166/200
4/4 - 0s - loss: 0.1108 - accuracy: 0.8250 - val_loss: 0.1015 -
val_accuracy: 0.9000
Epoch 167/200
4/4 - 0s - loss: 0.1107 - accuracy: 0.8250 - val_loss: 0.1014 -
val_accuracy: 0.9000
Epoch 168/200
4/4 - 0s - loss: 0.1106 - accuracy: 0.8250 - val_loss: 0.1013 -
val_accuracy: 0.9000
Epoch 169/200
4/4 - 0s - loss: 0.1105 - accuracy: 0.8250 - val_loss: 0.1012 -
val_accuracy: 0.9000
Epoch 170/200
4/4 - 0s - loss: 0.1104 - accuracy: 0.8250 - val_loss: 0.1011 -
val_accuracy: 0.9000
Epoch 171/200
4/4 - 0s - loss: 0.1103 - accuracy: 0.8250 - val_loss: 0.1010 -
val_accuracy: 0.9000
Epoch 172/200
4/4 - 0s - loss: 0.1102 - accuracy: 0.8250 - val_loss: 0.1009 -
val_accuracy: 0.9000
Epoch 173/200
4/4 - 0s - loss: 0.1101 - accuracy: 0.8250 - val_loss: 0.1008 -
val_accuracy: 0.9000
Epoch 174/200
4/4 - 0s - loss: 0.1100 - accuracy: 0.8250 - val_loss: 0.1007 -
val_accuracy: 0.9000
Epoch 175/200
4/4 - 0s - loss: 0.1099 - accuracy: 0.8250 - val_loss: 0.1006 -
val_accuracy: 0.9000
Epoch 176/200
4/4 - 0s - loss: 0.1098 - accuracy: 0.8250 - val_loss: 0.1005 -
val_accuracy: 0.9000
Epoch 177/200
4/4 - 0s - loss: 0.1097 - accuracy: 0.8250 - val_loss: 0.1004 -
val_accuracy: 0.9000
Epoch 178/200
4/4 - 0s - loss: 0.1096 - accuracy: 0.8250 - val_loss: 0.1003 -
val_accuracy: 0.9000
Epoch 179/200
4/4 - 0s - loss: 0.1095 - accuracy: 0.8250 - val_loss: 0.1002 -
val_accuracy: 0.9000
Epoch 180/200
4/4 - 0s - loss: 0.1094 - accuracy: 0.8250 - val_loss: 0.1001 -
val_accuracy: 0.9000
Epoch 181/200
4/4 - 0s - loss: 0.1093 - accuracy: 0.8250 - val_loss: 0.1000 -
val_accuracy: 0.9000
Epoch 182/200
4/4 - 0s - loss: 0.1092 - accuracy: 0.8250 - val_loss: 0.0999 -
```

```
val_accuracy: 0.9000
Epoch 183/200
4/4 - 0s - loss: 0.1092 - accuracy: 0.8250 - val_loss: 0.0998 -
val_accuracy: 0.9000
Epoch 184/200
4/4 - 0s - loss: 0.1091 - accuracy: 0.8250 - val_loss: 0.0997 -
val_accuracy: 0.9000
Epoch 185/200
4/4 - 0s - loss: 0.1090 - accuracy: 0.8250 - val_loss: 0.0996 -
val_accuracy: 0.9000
Epoch 186/200
4/4 - 0s - loss: 0.1089 - accuracy: 0.8250 - val_loss: 0.0995 -
val_accuracy: 0.9000
Epoch 187/200
4/4 - 0s - loss: 0.1088 - accuracy: 0.8250 - val_loss: 0.0994 -
val_accuracy: 0.9000
Epoch 188/200
4/4 - 0s - loss: 0.1087 - accuracy: 0.8250 - val_loss: 0.0993 -
val_accuracy: 0.9000
Epoch 189/200
4/4 - 0s - loss: 0.1086 - accuracy: 0.8250 - val_loss: 0.0992 -
val_accuracy: 0.9000
Epoch 190/200
4/4 - 0s - loss: 0.1085 - accuracy: 0.8250 - val_loss: 0.0991 -
val_accuracy: 0.9000
Epoch 191/200
4/4 - 0s - loss: 0.1084 - accuracy: 0.8250 - val_loss: 0.0990 -
val_accuracy: 0.9000
Epoch 192/200
4/4 - 0s - loss: 0.1083 - accuracy: 0.8250 - val_loss: 0.0989 -
val_accuracy: 0.9000
Epoch 193/200
4/4 - 0s - loss: 0.1082 - accuracy: 0.8250 - val_loss: 0.0988 -
val_accuracy: 0.9000
Epoch 194/200
4/4 - 0s - loss: 0.1082 - accuracy: 0.8250 - val_loss: 0.0987 -
val_accuracy: 0.9000
Epoch 195/200
4/4 - 0s - loss: 0.1080 - accuracy: 0.8250 - val_loss: 0.0986 -
val_accuracy: 0.9000
Epoch 196/200
4/4 - 0s - loss: 0.1080 - accuracy: 0.8250 - val_loss: 0.0985 -
val_accuracy: 0.9000
Epoch 197/200
4/4 - 0s - loss: 0.1079 - accuracy: 0.8250 - val_loss: 0.0984 -
val_accuracy: 0.9000
Epoch 198/200
4/4 - 0s - loss: 0.1078 - accuracy: 0.8250 - val_loss: 0.0983 -
val_accuracy: 0.9000
Epoch 199/200
```

```
4/4 - 0s - loss: 0.1077 - accuracy: 0.8250 - val_loss: 0.0983 -
val_accuracy: 0.9000
Epoch 200/200
4/4 - 0s - loss: 0.1076 - accuracy: 0.8250 - val_loss: 0.0982 -
val_accuracy: 0.9000
Activation: sigmoid LR: 0.1 Iterations: 200 || Test loss:
0.09816855937242508
Activation: sigmoid LR: 0.1 Iterations: 200 || Test Accuracy:
0.8999999761581421
========================================================================
=======
Model_tanh_LR_0.01_Iterations_100_HL_2
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0006s vs
`on_train_batch_end` time: 0.1179s). Check your callbacks.
4/4 - 0s - loss: 0.9926 - accuracy: 0.0167 - val_loss: 0.9773 -
val_accuracy: 0.0167
Epoch 2/100
4/4 - 0s - loss: 0.9692 - accuracy: 0.0167 - val_loss: 0.9537 -
val_accuracy: 0.0167
Epoch 3/100
4/4 - 0s - loss: 0.9454 - accuracy: 0.0167 - val_loss: 0.9295 -
val_accuracy: 0.0167
Epoch 4/100
4/4 - 0s - loss: 0.9212 - accuracy: 0.0250 - val_loss: 0.9052 -
val_accuracy: 0.0250
Epoch 5/100
4/4 - 0s - loss: 0.8968 - accuracy: 0.0250 - val_loss: 0.8807 -
val_accuracy: 0.0250
Epoch 6/100
4/4 - 0s - loss: 0.8722 - accuracy: 0.0250 - val_loss: 0.8561 -
val_accuracy: 0.0250
Epoch 7/100
4/4 - 0s - loss: 0.8476 - accuracy: 0.0250 - val_loss: 0.8315 -
val_accuracy: 0.0250
Epoch 8/100
4/4 - 0s - loss: 0.8232 - accuracy: 0.0250 - val_loss: 0.8073 -
val_accuracy: 0.0250
Epoch 9/100
4/4 - 0s - loss: 0.7989 - accuracy: 0.0250 - val_loss: 0.7828 -
val_accuracy: 0.0250
Epoch 10/100
4/4 - 0s - loss: 0.7745 - accuracy: 0.0333 - val_loss: 0.7589 -
val_accuracy: 0.0333
Epoch 11/100
4/4 - 0s - loss: 0.7506 - accuracy: 0.0333 - val_loss: 0.7349 -
val_accuracy: 0.0500
Epoch 12/100
4/4 - 0s - loss: 0.7269 - accuracy: 0.0500 - val_loss: 0.7113 -
```

```
val_accuracy: 0.0583
Epoch 13/100
4/4 - 0s - loss: 0.7034 - accuracy: 0.0583 - val_loss: 0.6882 -
val_accuracy: 0.0583

Epoch 14/100
4/4 - 0s - loss: 0.6804 - accuracy: 0.0667 - val_loss: 0.6651 -
val_accuracy: 0.0667
Epoch 15/100
4/4 - 0s - loss: 0.6572 - accuracy: 0.0750 - val_loss: 0.6423 -
val_accuracy: 0.0833
Epoch 16/100
4/4 - 0s - loss: 0.6347 - accuracy: 0.0833 - val_loss: 0.6198 -
val_accuracy: 0.1000
Epoch 17/100
4/4 - 0s - loss: 0.6120 - accuracy: 0.1000 - val_loss: 0.5976 -
val_accuracy: 0.1083
Epoch 18/100
4/4 - 0s - loss: 0.5902 - accuracy: 0.1083 - val_loss: 0.5759 -
val_accuracy: 0.1000
Epoch 19/100
4/4 - 0s - loss: 0.5685 - accuracy: 0.1000 - val_loss: 0.5543 -
val_accuracy: 0.1000
Epoch 20/100
4/4 - 0s - loss: 0.5471 - accuracy: 0.1000 - val_loss: 0.5334 -
val_accuracy: 0.1000
Epoch 21/100
4/4 - 0s - loss: 0.5264 - accuracy: 0.1000 - val_loss: 0.5126 -
val_accuracy: 0.1250
Epoch 22/100
4/4 - 0s - loss: 0.5056 - accuracy: 0.1250 - val_loss: 0.4924 -
val_accuracy: 0.1250
Epoch 23/100
4/4 - 0s - loss: 0.4858 - accuracy: 0.1167 - val_loss: 0.4729 -
val_accuracy: 0.1167
Epoch 24/100
4/4 - 0s - loss: 0.4665 - accuracy: 0.1167 - val_loss: 0.4542 -
val_accuracy: 0.1250
Epoch 25/100
4/4 - 0s - loss: 0.4480 - accuracy: 0.1333 - val_loss: 0.4364 -
val_accuracy: 0.1333
Epoch 26/100
4/4 - 0s - loss: 0.4305 - accuracy: 0.1333 - val_loss: 0.4190 -
val_accuracy: 0.1333
Epoch 27/100
4/4 - 0s - loss: 0.4133 - accuracy: 0.1500 - val_loss: 0.4026 -
val_accuracy: 0.1500
Epoch 28/100
4/4 - 0s - loss: 0.3972 - accuracy: 0.1583 - val_loss: 0.3870 -
val_accuracy: 0.1667
```

```
Epoch 29/100
4/4 - 0s - loss: 0.3818 - accuracy: 0.1667 - val_loss: 0.3719 -
val_accuracy: 0.1750
Epoch 30/100
4/4 - 0s - loss: 0.3670 - accuracy: 0.1833 - val_loss: 0.3578 -
val_accuracy: 0.2000
Epoch 31/100
4/4 - 0s - loss: 0.3533 - accuracy: 0.2000 - val_loss: 0.3447 -
val_accuracy: 0.2083
Epoch 32/100
4/4 - 0s - loss: 0.3404 - accuracy: 0.2083 - val_loss: 0.3323 -
val_accuracy: 0.2250
Epoch 33/100
4/4 - 0s - loss: 0.3284 - accuracy: 0.2250 - val_loss: 0.3206 -
val_accuracy: 0.2333
Epoch 34/100
4/4 - 0s - loss: 0.3170 - accuracy: 0.2333 - val_loss: 0.3098 -
val_accuracy: 0.2417
Epoch 35/100
4/4 - 0s - loss: 0.3063 - accuracy: 0.2500 - val_loss: 0.2995 -
val_accuracy: 0.2750
Epoch 36/100
4/4 - 0s - loss: 0.2963 - accuracy: 0.2750 - val_loss: 0.2901 -
val_accuracy: 0.2833
Epoch 37/100
4/4 - 0s - loss: 0.2870 - accuracy: 0.2833 - val_loss: 0.2809 -
val_accuracy: 0.2917
Epoch 38/100
4/4 - 0s - loss: 0.2780 - accuracy: 0.3000 - val_loss: 0.2724 -
val_accuracy: 0.3083
Epoch 39/100
4/4 - 0s - loss: 0.2698 - accuracy: 0.3417 - val_loss: 0.2645 -
val_accuracy: 0.3667
Epoch 40/100
4/4 - 0s - loss: 0.2620 - accuracy: 0.3667 - val_loss: 0.2572 -
val_accuracy: 0.3667
Epoch 41/100
4/4 - 0s - loss: 0.2549 - accuracy: 0.3750 - val_loss: 0.2504 -
val_accuracy: 0.3917
Epoch 42/100
4/4 - 0s - loss: 0.2483 - accuracy: 0.3917 - val_loss: 0.2440 -
val_accuracy: 0.3917
Epoch 43/100
4/4 - 0s - loss: 0.2419 - accuracy: 0.3917 - val_loss: 0.2380 -
val_accuracy: 0.4000
Epoch 44/100
4/4 - 0s - loss: 0.2361 - accuracy: 0.4000 - val_loss: 0.2323 -
val_accuracy: 0.4083
Epoch 45/100
4/4 - 0s - loss: 0.2306 - accuracy: 0.4083 - val_loss: 0.2269 -
```

val_accuracy: 0.4167
Epoch 46/100
4/4 - 0s - loss: 0.2252 - accuracy: 0.4167 - val_loss: 0.2220 -
val_accuracy: 0.4167
Epoch 47/100
4/4 - 0s - loss: 0.2204 - accuracy: 0.4167 - val_loss: 0.2173 -
val_accuracy: 0.4250
Epoch 48/100
4/4 - 0s - loss: 0.2158 - accuracy: 0.4333 - val_loss: 0.2129 -
val_accuracy: 0.4500
Epoch 49/100
4/4 - 0s - loss: 0.2115 - accuracy: 0.4417 - val_loss: 0.2088 -
val_accuracy: 0.4667
Epoch 50/100
4/4 - 0s - loss: 0.2075 - accuracy: 0.4750 - val_loss: 0.2049 -
val_accuracy: 0.4750
Epoch 51/100
4/4 - 0s - loss: 0.2037 - accuracy: 0.4750 - val_loss: 0.2012 -
val_accuracy: 0.4917
Epoch 52/100
4/4 - 0s - loss: 0.2001 - accuracy: 0.5000 - val_loss: 0.1978 -
val_accuracy: 0.5000
Epoch 53/100
4/4 - 0s - loss: 0.1967 - accuracy: 0.5167 - val_loss: 0.1945 -
val_accuracy: 0.5250
Epoch 54/100
4/4 - 0s - loss: 0.1935 - accuracy: 0.5333 - val_loss: 0.1914 -
val_accuracy: 0.5667
Epoch 55/100
4/4 - 0s - loss: 0.1904 - accuracy: 0.5833 - val_loss: 0.1885 -
val_accuracy: 0.5917
Epoch 56/100
4/4 - 0s - loss: 0.1876 - accuracy: 0.5917 - val_loss: 0.1856 -
val_accuracy: 0.5917
Epoch 57/100
4/4 - 0s - loss: 0.1848 - accuracy: 0.6083 - val_loss: 0.1830 -
val_accuracy: 0.6417
Epoch 58/100
4/4 - 0s - loss: 0.1822 - accuracy: 0.6417 - val_loss: 0.1805 -
val_accuracy: 0.6583
Epoch 59/100
4/4 - 0s - loss: 0.1797 - accuracy: 0.6667 - val_loss: 0.1780 -
val_accuracy: 0.6750
Epoch 60/100
4/4 - 0s - loss: 0.1773 - accuracy: 0.6833 - val_loss: 0.1757 -
val_accuracy: 0.6833
Epoch 61/100
4/4 - 0s - loss: 0.1750 - accuracy: 0.6833 - val_loss: 0.1735 -
val_accuracy: 0.6833
Epoch 62/100

```
4/4 - 0s - loss: 0.1728 - accuracy: 0.6833 - val_loss: 0.1714 -
val_accuracy: 0.6833
Epoch 63/100
4/4 - 0s - loss: 0.1708 - accuracy: 0.6833 - val_loss: 0.1695 -
val_accuracy: 0.6833
Epoch 64/100
4/4 - 0s - loss: 0.1689 - accuracy: 0.6833 - val_loss: 0.1676 -
val_accuracy: 0.6833
Epoch 65/100
4/4 - 0s - loss: 0.1669 - accuracy: 0.6833 - val_loss: 0.1657 -
val_accuracy: 0.6833
Epoch 66/100
4/4 - 0s - loss: 0.1652 - accuracy: 0.6833 - val_loss: 0.1640 -
val_accuracy: 0.6833
Epoch 67/100
4/4 - 0s - loss: 0.1634 - accuracy: 0.6833 - val_loss: 0.1623 -
val_accuracy: 0.6833
Epoch 68/100
4/4 - 0s - loss: 0.1618 - accuracy: 0.6833 - val_loss: 0.1607 -
val_accuracy: 0.6833
Epoch 69/100
4/4 - 0s - loss: 0.1602 - accuracy: 0.6833 - val_loss: 0.1592 -
val_accuracy: 0.6833
Epoch 70/100
4/4 - 0s - loss: 0.1587 - accuracy: 0.6833 - val_loss: 0.1577 -
val_accuracy: 0.6917
Epoch 71/100
4/4 - 0s - loss: 0.1573 - accuracy: 0.6917 - val_loss: 0.1563 -
val_accuracy: 0.6917
Epoch 72/100
4/4 - 0s - loss: 0.1559 - accuracy: 0.6917 - val_loss: 0.1549 -
val_accuracy: 0.7083
Epoch 73/100
4/4 - 0s - loss: 0.1545 - accuracy: 0.7000 - val_loss: 0.1536 -
val_accuracy: 0.7083
Epoch 74/100
4/4 - 0s - loss: 0.1532 - accuracy: 0.6917 - val_loss: 0.1523 -
val_accuracy: 0.7083
Epoch 75/100
4/4 - 0s - loss: 0.1519 - accuracy: 0.7083 - val_loss: 0.1511 -
val_accuracy: 0.7083
Epoch 76/100
4/4 - 0s - loss: 0.1507 - accuracy: 0.7083 - val_loss: 0.1499 -
val_accuracy: 0.7083
Epoch 77/100
4/4 - 0s - loss: 0.1496 - accuracy: 0.7083 - val_loss: 0.1487 -
val_accuracy: 0.7167
Epoch 78/100
4/4 - 0s - loss: 0.1484 - accuracy: 0.7167 - val_loss: 0.1476 -
val_accuracy: 0.7167
```

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Epoch 79/100
4/4 - 0s - loss: 0.1473 - accuracy: 0.7000 - val_loss: 0.1465 -
val_accuracy: 0.7167
Epoch 80/100
4/4 - 0s - loss: 0.1462 - accuracy: 0.7167 - val_loss: 0.1455 -
val_accuracy: 0.7167
Epoch 81/100
4/4 - 0s - loss: 0.1452 - accuracy: 0.7083 - val_loss: 0.1445 -
val_accuracy: 0.7167
Epoch 82/100
4/4 - 0s - loss: 0.1442 - accuracy: 0.7083 - val_loss: 0.1435 -
val_accuracy: 0.7000
Epoch 83/100
4/4 - 0s - loss: 0.1432 - accuracy: 0.6917 - val_loss: 0.1426 -
val_accuracy: 0.7000
Epoch 84/100
4/4 - 0s - loss: 0.1423 - accuracy: 0.7000 - val_loss: 0.1416 -
val_accuracy: 0.7000
Epoch 85/100
4/4 - 0s - loss: 0.1414 - accuracy: 0.7000 - val_loss: 0.1408 -
val_accuracy: 0.7000
Epoch 86/100
4/4 - 0s - loss: 0.1405 - accuracy: 0.7000 - val_loss: 0.1399 -
val_accuracy: 0.7000
Epoch 87/100
4/4 - 0s - loss: 0.1396 - accuracy: 0.7000 - val_loss: 0.1390 -
val_accuracy: 0.7000
Epoch 88/100
4/4 - 0s - loss: 0.1388 - accuracy: 0.7000 - val_loss: 0.1382 -
val_accuracy: 0.7000
Epoch 89/100
4/4 - 0s - loss: 0.1379 - accuracy: 0.7000 - val_loss: 0.1374 -
val_accuracy: 0.7000
Epoch 90/100
4/4 - 0s - loss: 0.1371 - accuracy: 0.7000 - val_loss: 0.1366 -
val_accuracy: 0.7000
Epoch 91/100
4/4 - 0s - loss: 0.1364 - accuracy: 0.7167 - val_loss: 0.1358 -
val_accuracy: 0.7000
Epoch 92/100
4/4 - 0s - loss: 0.1356 - accuracy: 0.7083 - val_loss: 0.1351 -
val_accuracy: 0.7083
Epoch 93/100
4/4 - 0s - loss: 0.1349 - accuracy: 0.7167 - val_loss: 0.1344 -
val_accuracy: 0.7167
Epoch 94/100
4/4 - 0s - loss: 0.1342 - accuracy: 0.7167 - val_loss: 0.1337 -
val_accuracy: 0.7167
Epoch 95/100
4/4 - 0s - loss: 0.1334 - accuracy: 0.7167 - val_loss: 0.1330 -
```

val_accuracy: 0.7167
Epoch 96/100
4/4 - 0s - loss: 0.1328 - accuracy: 0.7167 - val_loss: 0.1323 -
val_accuracy: 0.7167
Epoch 97/100
4/4 - 0s - loss: 0.1321 - accuracy: 0.7167 - val_loss: 0.1316 -
val_accuracy: 0.7167

Epoch 98/100
4/4 - 0s - loss: 0.1315 - accuracy: 0.7250 - val_loss: 0.1310 -
val_accuracy: 0.7250
Epoch 99/100
4/4 - 0s - loss: 0.1308 - accuracy: 0.7333 - val_loss: 0.1304 -
val_accuracy: 0.7333
Epoch 100/100
4/4 - 0s - loss: 0.1302 - accuracy: 0.7333 - val_loss: 0.1297 -
val_accuracy: 0.7333
Activation: tanh LR: 0.01 Itertions: 100 || Train loss:
0.12973828613758087
Activation: tanh LR: 0.01 Itertions: 100 || Train Accuracy:
0.7333333492279053
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.1784s). Check your callbacks.
4/4 - 0s - loss: 0.1296 - accuracy: 0.7333 - val_loss: 0.1224 -
val_accuracy: 0.7333
Epoch 2/100
4/4 - 0s - loss: 0.1290 - accuracy: 0.7333 - val_loss: 0.1218 -
val_accuracy: 0.7667
Epoch 3/100
4/4 - 0s - loss: 0.1284 - accuracy: 0.7417 - val_loss: 0.1212 -
val_accuracy: 0.7667
Epoch 4/100
4/4 - 0s - loss: 0.1278 - accuracy: 0.7417 - val_loss: 0.1206 -
val_accuracy: 0.7667
Epoch 5/100
4/4 - 0s - loss: 0.1272 - accuracy: 0.7333 - val_loss: 0.1201 -
val_accuracy: 0.7333
Epoch 6/100
4/4 - 0s - loss: 0.1267 - accuracy: 0.7333 - val_loss: 0.1195 -
val_accuracy: 0.7333
Epoch 7/100
4/4 - 0s - loss: 0.1261 - accuracy: 0.7333 - val_loss: 0.1189 -
val_accuracy: 0.7333
Epoch 8/100
4/4 - 0s - loss: 0.1256 - accuracy: 0.7333 - val_loss: 0.1184 -
val_accuracy: 0.7667
Epoch 9/100
4/4 - 0s - loss: 0.1251 - accuracy: 0.7250 - val_loss: 0.1178 -

```
val_accuracy: 0.7667
Epoch 10/100
4/4 - 0s - loss: 0.1246 - accuracy: 0.7500 - val_loss: 0.1173 -
val_accuracy: 0.7667
Epoch 11/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.7500 - val_loss: 0.1168 -
val_accuracy: 0.7667
Epoch 12/100
4/4 - 0s - loss: 0.1236 - accuracy: 0.7417 - val_loss: 0.1163 -
val_accuracy: 0.7667
Epoch 13/100
4/4 - 0s - loss: 0.1231 - accuracy: 0.7500 - val_loss: 0.1158 -
val_accuracy: 0.7667
Epoch 14/100
4/4 - 0s - loss: 0.1226 - accuracy: 0.7500 - val_loss: 0.1153 -
val_accuracy: 0.7667
Epoch 15/100
4/4 - 0s - loss: 0.1221 - accuracy: 0.7583 - val_loss: 0.1148 -
val_accuracy: 0.7667
Epoch 16/100
4/4 - 0s - loss: 0.1216 - accuracy: 0.7583 - val_loss: 0.1143 -
val_accuracy: 0.7667
Epoch 17/100
4/4 - 0s - loss: 0.1212 - accuracy: 0.7500 - val_loss: 0.1139 -
val_accuracy: 0.7667
Epoch 18/100
4/4 - 0s - loss: 0.1207 - accuracy: 0.7500 - val_loss: 0.1134 -
val_accuracy: 0.7667
Epoch 19/100
4/4 - 0s - loss: 0.1203 - accuracy: 0.7583 - val_loss: 0.1130 -
val_accuracy: 0.7667
Epoch 20/100
4/4 - 0s - loss: 0.1199 - accuracy: 0.7500 - val_loss: 0.1125 -
val_accuracy: 0.7667
Epoch 21/100
4/4 - 0s - loss: 0.1195 - accuracy: 0.7500 - val_loss: 0.1121 -
val_accuracy: 0.8000
Epoch 22/100
4/4 - 0s - loss: 0.1191 - accuracy: 0.7417 - val_loss: 0.1117 -
val_accuracy: 0.8000
Epoch 23/100
4/4 - 0s - loss: 0.1187 - accuracy: 0.7500 - val_loss: 0.1113 -
val_accuracy: 0.8000
Epoch 24/100
4/4 - 0s - loss: 0.1183 - accuracy: 0.7500 - val_loss: 0.1108 -
val_accuracy: 0.8000
Epoch 25/100
4/4 - 0s - loss: 0.1179 - accuracy: 0.7500 - val_loss: 0.1104 -
val_accuracy: 0.8000
Epoch 26/100
```

```
4/4 - 0s - loss: 0.1175 - accuracy: 0.7583 - val_loss: 0.1100 -
val_accuracy: 0.8000
Epoch 27/100
4/4 - 0s - loss: 0.1171 - accuracy: 0.7583 - val_loss: 0.1096 -
val_accuracy: 0.8000
Epoch 28/100
4/4 - 0s - loss: 0.1167 - accuracy: 0.7500 - val_loss: 0.1092 -
val_accuracy: 0.8000
Epoch 29/100
4/4 - 0s - loss: 0.1164 - accuracy: 0.7417 - val_loss: 0.1088 -
val_accuracy: 0.8000
Epoch 30/100
4/4 - 0s - loss: 0.1160 - accuracy: 0.7417 - val_loss: 0.1085 -
val_accuracy: 0.8000
Epoch 31/100
4/4 - 0s - loss: 0.1156 - accuracy: 0.7500 - val_loss: 0.1081 -
val_accuracy: 0.8000
Epoch 32/100
4/4 - 0s - loss: 0.1152 - accuracy: 0.7500 - val_loss: 0.1077 -
val_accuracy: 0.8000
Epoch 33/100
4/4 - 0s - loss: 0.1149 - accuracy: 0.7500 - val_loss: 0.1073 -
val_accuracy: 0.8000
Epoch 34/100
4/4 - 0s - loss: 0.1145 - accuracy: 0.7500 - val_loss: 0.1070 -
val_accuracy: 0.8000
Epoch 35/100
4/4 - 0s - loss: 0.1142 - accuracy: 0.7500 - val_loss: 0.1066 -
val_accuracy: 0.8000
Epoch 36/100
4/4 - 0s - loss: 0.1138 - accuracy: 0.7583 - val_loss: 0.1062 -
val_accuracy: 0.8000
Epoch 37/100
4/4 - 0s - loss: 0.1135 - accuracy: 0.7583 - val_loss: 0.1058 -
val_accuracy: 0.8000
Epoch 38/100
4/4 - 0s - loss: 0.1132 - accuracy: 0.7583 - val_loss: 0.1055 -
val_accuracy: 0.8333
Epoch 39/100
4/4 - 0s - loss: 0.1128 - accuracy: 0.7583 - val_loss: 0.1051 -
val_accuracy: 0.8333
Epoch 40/100
4/4 - 0s - loss: 0.1125 - accuracy: 0.7583 - val_loss: 0.1048 -
val_accuracy: 0.8333
Epoch 41/100
4/4 - 0s - loss: 0.1122 - accuracy: 0.7583 - val_loss: 0.1045 -
val_accuracy: 0.8333
Epoch 42/100
4/4 - 0s - loss: 0.1119 - accuracy: 0.7583 - val_loss: 0.1041 -
val_accuracy: 0.8333
```

```
Epoch 43/100
4/4 - 0s - loss: 0.1116 - accuracy: 0.7667 - val_loss: 0.1038 -
val_accuracy: 0.8333
Epoch 44/100
4/4 - 0s - loss: 0.1112 - accuracy: 0.7667 - val_loss: 0.1035 -
val_accuracy: 0.8333
Epoch 45/100
4/4 - 0s - loss: 0.1109 - accuracy: 0.7667 - val_loss: 0.1032 -
val_accuracy: 0.8333
Epoch 46/100
4/4 - 0s - loss: 0.1106 - accuracy: 0.7667 - val_loss: 0.1028 -
val_accuracy: 0.8333
Epoch 47/100
4/4 - 0s - loss: 0.1103 - accuracy: 0.7667 - val_loss: 0.1025 -
val_accuracy: 0.8333
Epoch 48/100
4/4 - 0s - loss: 0.1100 - accuracy: 0.7667 - val_loss: 0.1022 -
val_accuracy: 0.8333
Epoch 49/100
4/4 - 0s - loss: 0.1097 - accuracy: 0.7667 - val_loss: 0.1019 -
val_accuracy: 0.8333
Epoch 50/100
4/4 - 0s - loss: 0.1095 - accuracy: 0.7667 - val_loss: 0.1016 -
val_accuracy: 0.8333
Epoch 51/100
4/4 - 0s - loss: 0.1092 - accuracy: 0.7667 - val_loss: 0.1013 -
val_accuracy: 0.8333
Epoch 52/100
4/4 - 0s - loss: 0.1090 - accuracy: 0.7833 - val_loss: 0.1010 -
val_accuracy: 0.8333
Epoch 53/100
4/4 - 0s - loss: 0.1086 - accuracy: 0.7833 - val_loss: 0.1007 -
val_accuracy: 0.8333
Epoch 54/100
4/4 - 0s - loss: 0.1084 - accuracy: 0.7833 - val_loss: 0.1005 -
val_accuracy: 0.8333
Epoch 55/100
4/4 - 0s - loss: 0.1081 - accuracy: 0.7833 - val_loss: 0.1002 -
val_accuracy: 0.8667
Epoch 56/100
4/4 - 0s - loss: 0.1078 - accuracy: 0.7917 - val_loss: 0.0999 -
val_accuracy: 0.8667
Epoch 57/100
4/4 - 0s - loss: 0.1075 - accuracy: 0.8083 - val_loss: 0.0996 -
val_accuracy: 0.8667
Epoch 58/100
4/4 - 0s - loss: 0.1073 - accuracy: 0.8083 - val_loss: 0.0993 -
val_accuracy: 0.8667
Epoch 59/100
4/4 - 0s - loss: 0.1070 - accuracy: 0.8167 - val_loss: 0.0990 -
```

```
val_accuracy: 0.8667
Epoch 60/100
4/4 - 0s - loss: 0.1068 - accuracy: 0.8167 - val_loss: 0.0988 -
val_accuracy: 0.8667
Epoch 61/100
4/4 - 0s - loss: 0.1065 - accuracy: 0.8167 - val_loss: 0.0985 -
val_accuracy: 0.8667
Epoch 62/100
4/4 - 0s - loss: 0.1063 - accuracy: 0.8167 - val_loss: 0.0983 -
val_accuracy: 0.8667
Epoch 63/100
4/4 - 0s - loss: 0.1060 - accuracy: 0.8167 - val_loss: 0.0980 -
val_accuracy: 0.8667
Epoch 64/100
4/4 - 0s - loss: 0.1058 - accuracy: 0.8167 - val_loss: 0.0978 -
val_accuracy: 0.8667
Epoch 65/100
4/4 - 0s - loss: 0.1055 - accuracy: 0.8167 - val_loss: 0.0975 -
val_accuracy: 0.8667
Epoch 66/100
4/4 - 0s - loss: 0.1053 - accuracy: 0.8167 - val_loss: 0.0973 -
val_accuracy: 0.8667
Epoch 67/100
4/4 - 0s - loss: 0.1051 - accuracy: 0.8167 - val_loss: 0.0970 -
val_accuracy: 0.8667
Epoch 68/100
4/4 - 0s - loss: 0.1048 - accuracy: 0.8250 - val_loss: 0.0968 -
val_accuracy: 0.8667
Epoch 69/100
4/4 - 0s - loss: 0.1046 - accuracy: 0.8250 - val_loss: 0.0965 -
val_accuracy: 0.8667
Epoch 70/100
4/4 - 0s - loss: 0.1044 - accuracy: 0.8167 - val_loss: 0.0963 -
val_accuracy: 0.8667
Epoch 71/100
4/4 - 0s - loss: 0.1041 - accuracy: 0.8250 - val_loss: 0.0960 -
val_accuracy: 0.8667
Epoch 72/100
4/4 - 0s - loss: 0.1039 - accuracy: 0.8167 - val_loss: 0.0958 -
val_accuracy: 0.8667
Epoch 73/100
4/4 - 0s - loss: 0.1037 - accuracy: 0.8167 - val_loss: 0.0956 -
val_accuracy: 0.8667
Epoch 74/100
4/4 - 0s - loss: 0.1034 - accuracy: 0.8167 - val_loss: 0.0953 -
val_accuracy: 0.9000
Epoch 75/100
4/4 - 0s - loss: 0.1033 - accuracy: 0.8167 - val_loss: 0.0951 -
val_accuracy: 0.9000
Epoch 76/100
```

```
4/4 - 0s - loss: 0.1030 - accuracy: 0.8167 - val_loss: 0.0948 -
val_accuracy: 0.9000
Epoch 77/100
4/4 - 0s - loss: 0.1028 - accuracy: 0.8167 - val_loss: 0.0946 -
val_accuracy: 0.9000
Epoch 78/100
4/4 - 0s - loss: 0.1026 - accuracy: 0.8167 - val_loss: 0.0944 -
val_accuracy: 0.9000

Epoch 79/100
4/4 - 0s - loss: 0.1024 - accuracy: 0.8167 - val_loss: 0.0941 -
val_accuracy: 0.9000
Epoch 80/100
4/4 - 0s - loss: 0.1022 - accuracy: 0.8167 - val_loss: 0.0939 -
val_accuracy: 0.9000
Epoch 81/100
4/4 - 0s - loss: 0.1019 - accuracy: 0.8167 - val_loss: 0.0937 -
val_accuracy: 0.9000
Epoch 82/100
4/4 - 0s - loss: 0.1017 - accuracy: 0.8167 - val_loss: 0.0935 -
val_accuracy: 0.9000
Epoch 83/100
4/4 - 0s - loss: 0.1015 - accuracy: 0.8167 - val_loss: 0.0933 -
val_accuracy: 0.9000
Epoch 84/100
4/4 - 0s - loss: 0.1013 - accuracy: 0.8167 - val_loss: 0.0930 -
val_accuracy: 0.9000
Epoch 85/100
4/4 - 0s - loss: 0.1011 - accuracy: 0.8167 - val_loss: 0.0928 -
val_accuracy: 0.9000
Epoch 86/100
4/4 - 0s - loss: 0.1009 - accuracy: 0.8167 - val_loss: 0.0926 -
val_accuracy: 0.9000
Epoch 87/100
4/4 - 0s - loss: 0.1007 - accuracy: 0.8167 - val_loss: 0.0924 -
val_accuracy: 0.9000
Epoch 88/100
4/4 - 0s - loss: 0.1005 - accuracy: 0.8167 - val_loss: 0.0922 -
val_accuracy: 0.9000
Epoch 89/100
4/4 - 0s - loss: 0.1003 - accuracy: 0.8167 - val_loss: 0.0920 -
val_accuracy: 0.9000
Epoch 90/100
4/4 - 0s - loss: 0.1001 - accuracy: 0.8167 - val_loss: 0.0918 -
val_accuracy: 0.9000
Epoch 91/100
4/4 - 0s - loss: 0.0999 - accuracy: 0.8167 - val_loss: 0.0916 -
val_accuracy: 0.9000
Epoch 92/100
4/4 - 0s - loss: 0.0997 - accuracy: 0.8250 - val_loss: 0.0914 -
```

val_accuracy: 0.9000
Epoch 93/100
4/4 - 0s - loss: 0.0995 - accuracy: 0.8250 - val_loss: 0.0912 -
val_accuracy: 0.9000
Epoch 94/100
4/4 - 0s - loss: 0.0993 - accuracy: 0.8250 - val_loss: 0.0910 -
val_accuracy: 0.9000
Epoch 95/100
4/4 - 0s - loss: 0.0992 - accuracy: 0.8250 - val_loss: 0.0908 -
val_accuracy: 0.9000
Epoch 96/100
4/4 - 0s - loss: 0.0990 - accuracy: 0.8250 - val_loss: 0.0906 -
val_accuracy: 0.9000
Epoch 97/100
4/4 - 0s - loss: 0.0988 - accuracy: 0.8250 - val_loss: 0.0904 -
val_accuracy: 0.9000
Epoch 98/100
4/4 - 0s - loss: 0.0986 - accuracy: 0.8250 - val_loss: 0.0902 -
val_accuracy: 0.8667
Epoch 99/100
4/4 - 0s - loss: 0.0985 - accuracy: 0.8250 - val_loss: 0.0900 -
val_accuracy: 0.8667
Epoch 100/100
4/4 - 0s - loss: 0.0982 - accuracy: 0.8250 - val_loss: 0.0898 -
val_accuracy: 0.8667
Activation: tanh LR: 0.01 Iterations: 100 || Test loss:
0.08982750773342987
Activation: tanh LR: 0.01 Iterations: 100 || Test Accuracy:
0.8666666746139526
==
=======
Model_tanh_LR_0.01_Iterations_200_HL_2
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.1111s). Check your callbacks.
4/4 - 0s - loss: 0.8820 - accuracy: 0.2500 - val_loss: 0.8774 -
val_accuracy: 0.2417
Epoch 2/200
4/4 - 0s - loss: 0.8751 - accuracy: 0.2417 - val_loss: 0.8707 -
val_accuracy: 0.2417
Epoch 3/200
4/4 - 0s - loss: 0.8684 - accuracy: 0.2417 - val_loss: 0.8640 -
val_accuracy: 0.2500
Epoch 4/200
4/4 - 0s - loss: 0.8617 - accuracy: 0.2500 - val_loss: 0.8573 -
val_accuracy: 0.2417
Epoch 5/200
4/4 - 0s - loss: 0.8551 - accuracy: 0.2417 - val_loss: 0.8507 -
val_accuracy: 0.2417

```
Epoch 6/200
4/4 - 0s - loss: 0.8485 - accuracy: 0.2417 - val_loss: 0.8441 -
val_accuracy: 0.2417
Epoch 7/200
4/4 - 0s - loss: 0.8418 - accuracy: 0.2500 - val_loss: 0.8373 -
val_accuracy: 0.2667
Epoch 8/200
4/4 - 0s - loss: 0.8351 - accuracy: 0.2667 - val_loss: 0.8307 -
val_accuracy: 0.2667
Epoch 9/200
4/4 - 0s - loss: 0.8284 - accuracy: 0.2667 - val_loss: 0.8239 -
val_accuracy: 0.2667
Epoch 10/200
4/4 - 0s - loss: 0.8216 - accuracy: 0.2583 - val_loss: 0.8171 -
val_accuracy: 0.2583
Epoch 11/200
4/4 - 0s - loss: 0.8149 - accuracy: 0.2583 - val_loss: 0.8104 -
val_accuracy: 0.2583
Epoch 12/200
4/4 - 0s - loss: 0.8082 - accuracy: 0.2583 - val_loss: 0.8037 -
val_accuracy: 0.2583
Epoch 13/200
4/4 - 0s - loss: 0.8014 - accuracy: 0.2583 - val_loss: 0.7970 -
val_accuracy: 0.2583
Epoch 14/200
4/4 - 0s - loss: 0.7948 - accuracy: 0.2583 - val_loss: 0.7902 -
val_accuracy: 0.2583
Epoch 15/200
4/4 - 0s - loss: 0.7879 - accuracy: 0.2583 - val_loss: 0.7834 -
val_accuracy: 0.2583
Epoch 16/200
4/4 - 0s - loss: 0.7812 - accuracy: 0.2667 - val_loss: 0.7766 -
val_accuracy: 0.2833
Epoch 17/200
4/4 - 0s - loss: 0.7745 - accuracy: 0.2833 - val_loss: 0.7700 -
val_accuracy: 0.2833
Epoch 18/200
4/4 - 0s - loss: 0.7677 - accuracy: 0.2833 - val_loss: 0.7632 -
val_accuracy: 0.2833
Epoch 19/200
4/4 - 0s - loss: 0.7610 - accuracy: 0.2833 - val_loss: 0.7564 -
val_accuracy: 0.2917
Epoch 20/200
4/4 - 0s - loss: 0.7542 - accuracy: 0.3000 - val_loss: 0.7497 -
val_accuracy: 0.3000
Epoch 21/200
4/4 - 0s - loss: 0.7475 - accuracy: 0.3083 - val_loss: 0.7431 -
val_accuracy: 0.3083
Epoch 22/200
4/4 - 0s - loss: 0.7409 - accuracy: 0.3000 - val_loss: 0.7363 -
```

val_accuracy: 0.2917
Epoch 23/200
4/4 - 0s - loss: 0.7341 - accuracy: 0.2833 - val_loss: 0.7296 -
val_accuracy: 0.2833
Epoch 24/200
4/4 - 0s - loss: 0.7275 - accuracy: 0.2833 - val_loss: 0.7229 -
val_accuracy: 0.2833
Epoch 25/200
4/4 - 0s - loss: 0.7207 - accuracy: 0.2750 - val_loss: 0.7162 -
val_accuracy: 0.2750
Epoch 26/200
4/4 - 0s - loss: 0.7140 - accuracy: 0.2750 - val_loss: 0.7095 -
val_accuracy: 0.2750
Epoch 27/200
4/4 - 0s - loss: 0.7072 - accuracy: 0.2750 - val_loss: 0.7026 -
val_accuracy: 0.2750
Epoch 28/200
4/4 - 0s - loss: 0.7003 - accuracy: 0.2750 - val_loss: 0.6957 -
val_accuracy: 0.2667
Epoch 29/200
4/4 - 0s - loss: 0.6934 - accuracy: 0.2667 - val_loss: 0.6886 -
val_accuracy: 0.2750
Epoch 30/200
4/4 - 0s - loss: 0.6862 - accuracy: 0.2750 - val_loss: 0.6815 -
val_accuracy: 0.2750
Epoch 31/200
4/4 - 0s - loss: 0.6792 - accuracy: 0.2750 - val_loss: 0.6746 -
val_accuracy: 0.2750
Epoch 32/200
4/4 - 0s - loss: 0.6722 - accuracy: 0.2750 - val_loss: 0.6675 -
val_accuracy: 0.2750
Epoch 33/200
4/4 - 0s - loss: 0.6650 - accuracy: 0.2750 - val_loss: 0.6602 -
val_accuracy: 0.2750
Epoch 34/200
4/4 - 0s - loss: 0.6578 - accuracy: 0.2750 - val_loss: 0.6528 -
val_accuracy: 0.2750
Epoch 35/200
4/4 - 0s - loss: 0.6504 - accuracy: 0.2667 - val_loss: 0.6454 -
val_accuracy: 0.2750
Epoch 36/200
4/4 - 0s - loss: 0.6428 - accuracy: 0.2750 - val_loss: 0.6376 -
val_accuracy: 0.2750
Epoch 37/200
4/4 - 0s - loss: 0.6350 - accuracy: 0.2750 - val_loss: 0.6299 -
val_accuracy: 0.2833
Epoch 38/200
4/4 - 0s - loss: 0.6272 - accuracy: 0.2833 - val_loss: 0.6219 -
val_accuracy: 0.2833
Epoch 39/200

```
4/4 - 0s - loss: 0.6192 - accuracy: 0.2833 - val_loss: 0.6136 -
val_accuracy: 0.2833
Epoch 40/200
4/4 - 0s - loss: 0.6107 - accuracy: 0.2833 - val_loss: 0.6051 -
val_accuracy: 0.2833
Epoch 41/200
4/4 - 0s - loss: 0.6021 - accuracy: 0.2833 - val_loss: 0.5964 -
val_accuracy: 0.2833
Epoch 42/200
4/4 - 0s - loss: 0.5935 - accuracy: 0.2833 - val_loss: 0.5877 -
val_accuracy: 0.2833
Epoch 43/200
4/4 - 0s - loss: 0.5847 - accuracy: 0.2833 - val_loss: 0.5786 -
val_accuracy: 0.2833
Epoch 44/200
4/4 - 0s - loss: 0.5754 - accuracy: 0.2833 - val_loss: 0.5692 -
val_accuracy: 0.2833
Epoch 45/200
4/4 - 0s - loss: 0.5659 - accuracy: 0.2833 - val_loss: 0.5595 -
val_accuracy: 0.2750
Epoch 46/200
4/4 - 0s - loss: 0.5562 - accuracy: 0.2833 - val_loss: 0.5494 -
val_accuracy: 0.2833
Epoch 47/200
4/4 - 0s - loss: 0.5460 - accuracy: 0.2833 - val_loss: 0.5393 -
val_accuracy: 0.2917
Epoch 48/200
4/4 - 0s - loss: 0.5357 - accuracy: 0.3000 - val_loss: 0.5287 -
val_accuracy: 0.3083
Epoch 49/200
4/4 - 0s - loss: 0.5251 - accuracy: 0.3083 - val_loss: 0.5181 -
val_accuracy: 0.3083
Epoch 50/200
4/4 - 0s - loss: 0.5144 - accuracy: 0.3083 - val_loss: 0.5072 -
val_accuracy: 0.3167
Epoch 51/200
4/4 - 0s - loss: 0.5033 - accuracy: 0.3167 - val_loss: 0.4958 -
val_accuracy: 0.3167
Epoch 52/200
4/4 - 0s - loss: 0.4918 - accuracy: 0.3167 - val_loss: 0.4843 -
val_accuracy: 0.3250
Epoch 53/200
4/4 - 0s - loss: 0.4804 - accuracy: 0.3250 - val_loss: 0.4726 -
val_accuracy: 0.3250
Epoch 54/200
4/4 - 0s - loss: 0.4686 - accuracy: 0.3083 - val_loss: 0.4609 -
val_accuracy: 0.3000
Epoch 55/200
4/4 - 0s - loss: 0.4568 - accuracy: 0.3000 - val_loss: 0.4489 -
val_accuracy: 0.3250
```

```
Epoch 56/200
4/4 - 0s - loss: 0.4447 - accuracy: 0.3333 - val_loss: 0.4366 -
val_accuracy: 0.3583
Epoch 57/200
4/4 - 0s - loss: 0.4325 - accuracy: 0.3583 - val_loss: 0.4245 -
val_accuracy: 0.3833
Epoch 58/200
4/4 - 0s - loss: 0.4204 - accuracy: 0.4083 - val_loss: 0.4124 -
val_accuracy: 0.4250

Epoch 59/200
4/4 - 0s - loss: 0.4083 - accuracy: 0.4333 - val_loss: 0.4005 -
val_accuracy: 0.4333
Epoch 60/200
4/4 - 0s - loss: 0.3965 - accuracy: 0.4417 - val_loss: 0.3889 -
val_accuracy: 0.4583
Epoch 61/200
4/4 - 0s - loss: 0.3850 - accuracy: 0.4583 - val_loss: 0.3776 -
val_accuracy: 0.4667
Epoch 62/200
4/4 - 0s - loss: 0.3738 - accuracy: 0.4667 - val_loss: 0.3667 -
val_accuracy: 0.4750
Epoch 63/200
4/4 - 0s - loss: 0.3631 - accuracy: 0.4750 - val_loss: 0.3561 -
val_accuracy: 0.4833
Epoch 64/200
4/4 - 0s - loss: 0.3527 - accuracy: 0.4833 - val_loss: 0.3459 -
val_accuracy: 0.5083
Epoch 65/200
4/4 - 0s - loss: 0.3426 - accuracy: 0.5250 - val_loss: 0.3365 -
val_accuracy: 0.5417
Epoch 66/200
4/4 - 0s - loss: 0.3335 - accuracy: 0.5500 - val_loss: 0.3276 -
val_accuracy: 0.5583
Epoch 67/200
4/4 - 0s - loss: 0.3247 - accuracy: 0.5583 - val_loss: 0.3189 -
val_accuracy: 0.5667
Epoch 68/200
4/4 - 0s - loss: 0.3161 - accuracy: 0.5667 - val_loss: 0.3106 -
val_accuracy: 0.5750
Epoch 69/200
4/4 - 0s - loss: 0.3080 - accuracy: 0.5750 - val_loss: 0.3031 -
val_accuracy: 0.5833
Epoch 70/200
4/4 - 0s - loss: 0.3007 - accuracy: 0.6000 - val_loss: 0.2961 -
val_accuracy: 0.6083
Epoch 71/200
4/4 - 0s - loss: 0.2939 - accuracy: 0.6167 - val_loss: 0.2893 -
val_accuracy: 0.6167
Epoch 72/200
```

```
4/4 - 0s - loss: 0.2872 - accuracy: 0.6167 - val_loss: 0.2832 -
val_accuracy: 0.6167
Epoch 73/200
4/4 - 0s - loss: 0.2813 - accuracy: 0.6167 - val_loss: 0.2777 -
val_accuracy: 0.6250
Epoch 74/200
4/4 - 0s - loss: 0.2759 - accuracy: 0.6250 - val_loss: 0.2724 -
val_accuracy: 0.6250
Epoch 75/200
4/4 - 0s - loss: 0.2707 - accuracy: 0.6250 - val_loss: 0.2675 -
val_accuracy: 0.6333
Epoch 76/200
4/4 - 0s - loss: 0.2660 - accuracy: 0.6333 - val_loss: 0.2631 -
val_accuracy: 0.6333
Epoch 77/200
4/4 - 0s - loss: 0.2616 - accuracy: 0.6333 - val_loss: 0.2588 -
val_accuracy: 0.6333
Epoch 78/200
4/4 - 0s - loss: 0.2574 - accuracy: 0.6333 - val_loss: 0.2548 -
val_accuracy: 0.6250
Epoch 79/200
4/4 - 0s - loss: 0.2537 - accuracy: 0.6250 - val_loss: 0.2512 -
val_accuracy: 0.6250
Epoch 80/200
4/4 - 0s - loss: 0.2501 - accuracy: 0.6250 - val_loss: 0.2477 -
val_accuracy: 0.6250
Epoch 81/200
4/4 - 0s - loss: 0.2466 - accuracy: 0.6250 - val_loss: 0.2445 -
val_accuracy: 0.6250
Epoch 82/200
4/4 - 0s - loss: 0.2435 - accuracy: 0.6250 - val_loss: 0.2414 -
val_accuracy: 0.6333
Epoch 83/200
4/4 - 0s - loss: 0.2405 - accuracy: 0.6333 - val_loss: 0.2386 -
val_accuracy: 0.6417
Epoch 84/200
4/4 - 0s - loss: 0.2376 - accuracy: 0.6417 - val_loss: 0.2358 -
val_accuracy: 0.6333
Epoch 85/200
4/4 - 0s - loss: 0.2349 - accuracy: 0.6333 - val_loss: 0.2332 -
val_accuracy: 0.6333
Epoch 86/200
4/4 - 0s - loss: 0.2325 - accuracy: 0.6333 - val_loss: 0.2308 -
val_accuracy: 0.6333
Epoch 87/200
4/4 - 0s - loss: 0.2301 - accuracy: 0.6333 - val_loss: 0.2285 -
val_accuracy: 0.6250
Epoch 88/200
4/4 - 0s - loss: 0.2278 - accuracy: 0.6250 - val_loss: 0.2263 -
val_accuracy: 0.6250
```

```
Epoch 89/200
4/4 - 0s - loss: 0.2257 - accuracy: 0.6333 - val_loss: 0.2243 -
val_accuracy: 0.6333
Epoch 90/200
4/4 - 0s - loss: 0.2236 - accuracy: 0.6333 - val_loss: 0.2223 -
val_accuracy: 0.6333
Epoch 91/200
4/4 - 0s - loss: 0.2216 - accuracy: 0.6417 - val_loss: 0.2204 -
val_accuracy: 0.6417
Epoch 92/200
4/4 - 0s - loss: 0.2198 - accuracy: 0.6417 - val_loss: 0.2186 -
val_accuracy: 0.6417
Epoch 93/200
4/4 - 0s - loss: 0.2180 - accuracy: 0.6417 - val_loss: 0.2168 -
val_accuracy: 0.6500
Epoch 94/200
4/4 - 0s - loss: 0.2163 - accuracy: 0.6500 - val_loss: 0.2152 -
val_accuracy: 0.6500
Epoch 95/200
4/4 - 0s - loss: 0.2147 - accuracy: 0.6500 - val_loss: 0.2137 -
val_accuracy: 0.6500
Epoch 96/200
4/4 - 0s - loss: 0.2131 - accuracy: 0.6500 - val_loss: 0.2121 -
val_accuracy: 0.6500
Epoch 97/200
4/4 - 0s - loss: 0.2117 - accuracy: 0.6500 - val_loss: 0.2107 -
val_accuracy: 0.6500
Epoch 98/200
4/4 - 0s - loss: 0.2103 - accuracy: 0.6500 - val_loss: 0.2093 -
val_accuracy: 0.6500
Epoch 99/200
4/4 - 0s - loss: 0.2089 - accuracy: 0.6500 - val_loss: 0.2080 -
val_accuracy: 0.6500
Epoch 100/200
4/4 - 0s - loss: 0.2076 - accuracy: 0.6500 - val_loss: 0.2067 -
val_accuracy: 0.6500
Epoch 101/200
4/4 - 0s - loss: 0.2063 - accuracy: 0.6500 - val_loss: 0.2055 -
val_accuracy: 0.6500
Epoch 102/200
4/4 - 0s - loss: 0.2051 - accuracy: 0.6417 - val_loss: 0.2043 -
val_accuracy: 0.6417
Epoch 103/200
4/4 - 0s - loss: 0.2040 - accuracy: 0.6417 - val_loss: 0.2032 -
val_accuracy: 0.6417
Epoch 104/200
4/4 - 0s - loss: 0.2028 - accuracy: 0.6417 - val_loss: 0.2021 -
val_accuracy: 0.6417
Epoch 105/200
4/4 - 0s - loss: 0.2017 - accuracy: 0.6417 - val_loss: 0.2010 -
```

```
val_accuracy: 0.6500
Epoch 106/200
4/4 - 0s - loss: 0.2007 - accuracy: 0.6500 - val_loss: 0.2000 -
val_accuracy: 0.6500
Epoch 107/200
4/4 - 0s - loss: 0.1997 - accuracy: 0.6500 - val_loss: 0.1990 -
val_accuracy: 0.6500
Epoch 108/200
4/4 - 0s - loss: 0.1987 - accuracy: 0.6500 - val_loss: 0.1980 -
val_accuracy: 0.6500
Epoch 109/200
4/4 - 0s - loss: 0.1977 - accuracy: 0.6500 - val_loss: 0.1971 -
val_accuracy: 0.6500
Epoch 110/200
4/4 - 0s - loss: 0.1968 - accuracy: 0.6500 - val_loss: 0.1962 -
val_accuracy: 0.6500
Epoch 111/200
4/4 - 0s - loss: 0.1959 - accuracy: 0.6500 - val_loss: 0.1953 -
val_accuracy: 0.6500
Epoch 112/200
4/4 - 0s - loss: 0.1950 - accuracy: 0.6500 - val_loss: 0.1945 -
val_accuracy: 0.6500
Epoch 113/200
4/4 - 0s - loss: 0.1942 - accuracy: 0.6500 - val_loss: 0.1936 -
val_accuracy: 0.6500
Epoch 114/200
4/4 - 0s - loss: 0.1934 - accuracy: 0.6500 - val_loss: 0.1928 -
val_accuracy: 0.6500
Epoch 115/200
4/4 - 0s - loss: 0.1926 - accuracy: 0.6500 - val_loss: 0.1921 -
val_accuracy: 0.6500
Epoch 116/200
4/4 - 0s - loss: 0.1918 - accuracy: 0.6500 - val_loss: 0.1913 -
val_accuracy: 0.6500
Epoch 117/200
4/4 - 0s - loss: 0.1911 - accuracy: 0.6500 - val_loss: 0.1905 -
val_accuracy: 0.6500
Epoch 118/200
4/4 - 0s - loss: 0.1903 - accuracy: 0.6500 - val_loss: 0.1898 -
val_accuracy: 0.6500
Epoch 119/200
4/4 - 0s - loss: 0.1896 - accuracy: 0.6500 - val_loss: 0.1891 -
val_accuracy: 0.6500
Epoch 120/200
4/4 - 0s - loss: 0.1889 - accuracy: 0.6500 - val_loss: 0.1884 -
val_accuracy: 0.6500
Epoch 121/200
4/4 - 0s - loss: 0.1882 - accuracy: 0.6500 - val_loss: 0.1878 -
val_accuracy: 0.6500
Epoch 122/200
```

```
4/4 - 0s - loss: 0.1876 - accuracy: 0.6500 - val_loss: 0.1871 -
val_accuracy: 0.6500
Epoch 123/200
4/4 - 0s - loss: 0.1869 - accuracy: 0.6500 - val_loss: 0.1865 -
val_accuracy: 0.6500
Epoch 124/200
4/4 - 0s - loss: 0.1863 - accuracy: 0.6500 - val_loss: 0.1858 -
val_accuracy: 0.6500
Epoch 125/200
4/4 - 0s - loss: 0.1857 - accuracy: 0.6500 - val_loss: 0.1852 -
val_accuracy: 0.6500
Epoch 126/200
4/4 - 0s - loss: 0.1850 - accuracy: 0.6500 - val_loss: 0.1846 -
val_accuracy: 0.6500
Epoch 127/200
4/4 - 0s - loss: 0.1845 - accuracy: 0.6500 - val_loss: 0.1840 -
val_accuracy: 0.6500
Epoch 128/200
4/4 - 0s - loss: 0.1839 - accuracy: 0.6500 - val_loss: 0.1835 -
val_accuracy: 0.6500
Epoch 129/200
4/4 - 0s - loss: 0.1833 - accuracy: 0.6500 - val_loss: 0.1829 -
val_accuracy: 0.6500
Epoch 130/200
4/4 - 0s - loss: 0.1828 - accuracy: 0.6500 - val_loss: 0.1824 -
val_accuracy: 0.6500
Epoch 131/200
4/4 - 0s - loss: 0.1822 - accuracy: 0.6500 - val_loss: 0.1818 -
val_accuracy: 0.6500
Epoch 132/200
4/4 - 0s - loss: 0.1817 - accuracy: 0.6500 - val_loss: 0.1813 -
val_accuracy: 0.6500
Epoch 133/200
4/4 - 0s - loss: 0.1812 - accuracy: 0.6500 - val_loss: 0.1808 -
val_accuracy: 0.6500
Epoch 134/200
4/4 - 0s - loss: 0.1807 - accuracy: 0.6500 - val_loss: 0.1803 -
val_accuracy: 0.6500
Epoch 135/200
4/4 - 0s - loss: 0.1801 - accuracy: 0.6500 - val_loss: 0.1798 -
val_accuracy: 0.6500
Epoch 136/200
4/4 - 0s - loss: 0.1796 - accuracy: 0.6500 - val_loss: 0.1793 -
val_accuracy: 0.6500
Epoch 137/200
4/4 - 0s - loss: 0.1792 - accuracy: 0.6500 - val_loss: 0.1788 -
val_accuracy: 0.6500
Epoch 138/200
4/4 - 0s - loss: 0.1787 - accuracy: 0.6500 - val_loss: 0.1784 -
val_accuracy: 0.6500
```

```
Epoch 139/200
4/4 - 0s - loss: 0.1782 - accuracy: 0.6500 - val_loss: 0.1779 -
val_accuracy: 0.6500
Epoch 140/200
4/4 - 0s - loss: 0.1778 - accuracy: 0.6500 - val_loss: 0.1774 -
val_accuracy: 0.6500
Epoch 141/200
4/4 - 0s - loss: 0.1773 - accuracy: 0.6500 - val_loss: 0.1770 -
val_accuracy: 0.6500
Epoch 142/200
4/4 - 0s - loss: 0.1769 - accuracy: 0.6500 - val_loss: 0.1765 -
val_accuracy: 0.6500

Epoch 143/200
4/4 - 0s - loss: 0.1764 - accuracy: 0.6500 - val_loss: 0.1761 -
val_accuracy: 0.6500
Epoch 144/200
4/4 - 0s - loss: 0.1760 - accuracy: 0.6500 - val_loss: 0.1757 -
val_accuracy: 0.6583
Epoch 145/200
4/4 - 0s - loss: 0.1756 - accuracy: 0.6583 - val_loss: 0.1753 -
val_accuracy: 0.6583
Epoch 146/200
4/4 - 0s - loss: 0.1751 - accuracy: 0.6583 - val_loss: 0.1749 -
val_accuracy: 0.6583
Epoch 147/200
4/4 - 0s - loss: 0.1748 - accuracy: 0.6583 - val_loss: 0.1744 -
val_accuracy: 0.6583
Epoch 148/200
4/4 - 0s - loss: 0.1744 - accuracy: 0.6583 - val_loss: 0.1740 -
val_accuracy: 0.6583
Epoch 149/200
4/4 - 0s - loss: 0.1740 - accuracy: 0.6583 - val_loss: 0.1737 -
val_accuracy: 0.6583
Epoch 150/200
4/4 - 0s - loss: 0.1736 - accuracy: 0.6583 - val_loss: 0.1733 -
val_accuracy: 0.6583
Epoch 151/200
4/4 - 0s - loss: 0.1732 - accuracy: 0.6583 - val_loss: 0.1729 -
val_accuracy: 0.6583
Epoch 152/200
4/4 - 0s - loss: 0.1728 - accuracy: 0.6583 - val_loss: 0.1725 -
val_accuracy: 0.6583
Epoch 153/200
4/4 - 0s - loss: 0.1724 - accuracy: 0.6583 - val_loss: 0.1721 -
val_accuracy: 0.6583
Epoch 154/200
4/4 - 0s - loss: 0.1720 - accuracy: 0.6583 - val_loss: 0.1718 -
val_accuracy: 0.6583
Epoch 155/200
```

```
4/4 - 0s - loss: 0.1717 - accuracy: 0.6583 - val_loss: 0.1714 -
val_accuracy: 0.6583
Epoch 156/200
4/4 - 0s - loss: 0.1713 - accuracy: 0.6583 - val_loss: 0.1710 -
val_accuracy: 0.6583
Epoch 157/200
4/4 - 0s - loss: 0.1710 - accuracy: 0.6583 - val_loss: 0.1707 -
val_accuracy: 0.6583
Epoch 158/200
4/4 - 0s - loss: 0.1706 - accuracy: 0.6583 - val_loss: 0.1703 -
val_accuracy: 0.6583
Epoch 159/200
4/4 - 0s - loss: 0.1703 - accuracy: 0.6583 - val_loss: 0.1700 -
val_accuracy: 0.6583
Epoch 160/200
4/4 - 0s - loss: 0.1699 - accuracy: 0.6583 - val_loss: 0.1696 -
val_accuracy: 0.6583
Epoch 161/200
4/4 - 0s - loss: 0.1696 - accuracy: 0.6583 - val_loss: 0.1693 -
val_accuracy: 0.6583
Epoch 162/200
4/4 - 0s - loss: 0.1692 - accuracy: 0.6583 - val_loss: 0.1690 -
val_accuracy: 0.6583
Epoch 163/200
4/4 - 0s - loss: 0.1689 - accuracy: 0.6583 - val_loss: 0.1686 -
val_accuracy: 0.6583
Epoch 164/200
4/4 - 0s - loss: 0.1686 - accuracy: 0.6583 - val_loss: 0.1683 -
val_accuracy: 0.6583
Epoch 165/200
4/4 - 0s - loss: 0.1682 - accuracy: 0.6583 - val_loss: 0.1680 -
val_accuracy: 0.6583
Epoch 166/200
4/4 - 0s - loss: 0.1679 - accuracy: 0.6583 - val_loss: 0.1677 -
val_accuracy: 0.6583
Epoch 167/200
4/4 - 0s - loss: 0.1676 - accuracy: 0.6583 - val_loss: 0.1673 -
val_accuracy: 0.6583
Epoch 168/200
4/4 - 0s - loss: 0.1673 - accuracy: 0.6583 - val_loss: 0.1670 -
val_accuracy: 0.6583
Epoch 169/200
4/4 - 0s - loss: 0.1670 - accuracy: 0.6583 - val_loss: 0.1667 -
val_accuracy: 0.6583
Epoch 170/200
4/4 - 0s - loss: 0.1667 - accuracy: 0.6583 - val_loss: 0.1664 -
val_accuracy: 0.6583
Epoch 171/200
4/4 - 0s - loss: 0.1664 - accuracy: 0.6583 - val_loss: 0.1661 -
val_accuracy: 0.6583
```

```
Epoch 172/200
4/4 - 0s - loss: 0.1660 - accuracy: 0.6583 - val_loss: 0.1658 -
val_accuracy: 0.6583
Epoch 173/200
4/4 - 0s - loss: 0.1657 - accuracy: 0.6583 - val_loss: 0.1655 -
val_accuracy: 0.6583
Epoch 174/200
4/4 - 0s - loss: 0.1654 - accuracy: 0.6583 - val_loss: 0.1652 -
val_accuracy: 0.6583
Epoch 175/200
4/4 - 0s - loss: 0.1652 - accuracy: 0.6583 - val_loss: 0.1649 -
val_accuracy: 0.6583
Epoch 176/200
4/4 - 0s - loss: 0.1649 - accuracy: 0.6583 - val_loss: 0.1646 -
val_accuracy: 0.6583
Epoch 177/200
4/4 - 0s - loss: 0.1646 - accuracy: 0.6583 - val_loss: 0.1644 -
val_accuracy: 0.6583
Epoch 178/200
4/4 - 0s - loss: 0.1643 - accuracy: 0.6583 - val_loss: 0.1641 -
val_accuracy: 0.6583
Epoch 179/200
4/4 - 0s - loss: 0.1640 - accuracy: 0.6583 - val_loss: 0.1638 -
val_accuracy: 0.6583
Epoch 180/200
4/4 - 0s - loss: 0.1637 - accuracy: 0.6583 - val_loss: 0.1635 -
val_accuracy: 0.6583
Epoch 181/200
4/4 - 0s - loss: 0.1634 - accuracy: 0.6583 - val_loss: 0.1633 -
val_accuracy: 0.6583
Epoch 182/200
4/4 - 0s - loss: 0.1632 - accuracy: 0.6583 - val_loss: 0.1630 -
val_accuracy: 0.6583
Epoch 183/200
4/4 - 0s - loss: 0.1629 - accuracy: 0.6583 - val_loss: 0.1627 -
val_accuracy: 0.6583
Epoch 184/200
4/4 - 0s - loss: 0.1627 - accuracy: 0.6583 - val_loss: 0.1624 -
val_accuracy: 0.6583
Epoch 185/200
4/4 - 0s - loss: 0.1624 - accuracy: 0.6583 - val_loss: 0.1622 -
val_accuracy: 0.6583
Epoch 186/200
4/4 - 0s - loss: 0.1621 - accuracy: 0.6583 - val_loss: 0.1619 -
val_accuracy: 0.6583
Epoch 187/200
4/4 - 0s - loss: 0.1618 - accuracy: 0.6583 - val_loss: 0.1617 -
val_accuracy: 0.6583
Epoch 188/200
4/4 - 0s - loss: 0.1616 - accuracy: 0.6583 - val_loss: 0.1614 -
```

val_accuracy: 0.6583
Epoch 189/200
4/4 - 0s - loss: 0.1613 - accuracy: 0.6583 - val_loss: 0.1611 -
val_accuracy: 0.6583
Epoch 190/200
4/4 - 0s - loss: 0.1611 - accuracy: 0.6583 - val_loss: 0.1609 -
val_accuracy: 0.6583
Epoch 191/200
4/4 - 0s - loss: 0.1608 - accuracy: 0.6583 - val_loss: 0.1606 -
val_accuracy: 0.6583
Epoch 192/200
4/4 - 0s - loss: 0.1606 - accuracy: 0.6583 - val_loss: 0.1604 -
val_accuracy: 0.6583
Epoch 193/200
4/4 - 0s - loss: 0.1603 - accuracy: 0.6583 - val_loss: 0.1601 -
val_accuracy: 0.6583
Epoch 194/200
4/4 - 0s - loss: 0.1600 - accuracy: 0.6583 - val_loss: 0.1599 -
val_accuracy: 0.6583
Epoch 195/200
4/4 - 0s - loss: 0.1598 - accuracy: 0.6583 - val_loss: 0.1596 -
val_accuracy: 0.6583
Epoch 196/200
4/4 - 0s - loss: 0.1595 - accuracy: 0.6583 - val_loss: 0.1594 -
val_accuracy: 0.6583
Epoch 197/200
4/4 - 0s - loss: 0.1593 - accuracy: 0.6583 - val_loss: 0.1591 -
val_accuracy: 0.6583
Epoch 198/200
4/4 - 0s - loss: 0.1591 - accuracy: 0.6583 - val_loss: 0.1589 -
val_accuracy: 0.6583
Epoch 199/200
4/4 - 0s - loss: 0.1588 - accuracy: 0.6583 - val_loss: 0.1587 -
val_accuracy: 0.6583
Epoch 200/200
4/4 - 0s - loss: 0.1586 - accuracy: 0.6583 - val_loss: 0.1584 -
val_accuracy: 0.6667
Activation: tanh LR: 0.01 Itertions: 200 || Train loss:
0.1584143489599228
Activation: tanh LR: 0.01 Itertions: 200 || Train Accuracy:
0.6666666865348816
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.0746s). Check your callbacks.
4/4 - 0s - loss: 0.1584 - accuracy: 0.6667 - val_loss: 0.1611 -
val_accuracy: 0.6333
Epoch 2/200
4/4 - 0s - loss: 0.1581 - accuracy: 0.6667 - val_loss: 0.1609 -
val_accuracy: 0.6333

```
Epoch 3/200
4/4 - 0s - loss: 0.1579 - accuracy: 0.6667 - val_loss: 0.1607 -
val_accuracy: 0.6333
Epoch 4/200
4/4 - 0s - loss: 0.1577 - accuracy: 0.6667 - val_loss: 0.1605 -
val_accuracy: 0.6333
Epoch 5/200
4/4 - 0s - loss: 0.1574 - accuracy: 0.6667 - val_loss: 0.1602 -
val_accuracy: 0.6333
Epoch 6/200
4/4 - 0s - loss: 0.1572 - accuracy: 0.6667 - val_loss: 0.1600 -
val_accuracy: 0.6333
Epoch 7/200
4/4 - 0s - loss: 0.1570 - accuracy: 0.6667 - val_loss: 0.1598 -
val_accuracy: 0.6333
Epoch 8/200
4/4 - 0s - loss: 0.1567 - accuracy: 0.6667 - val_loss: 0.1596 -
val_accuracy: 0.6333
Epoch 9/200
4/4 - 0s - loss: 0.1565 - accuracy: 0.6667 - val_loss: 0.1594 -
val_accuracy: 0.6333
Epoch 10/200
4/4 - 0s - loss: 0.1563 - accuracy: 0.6667 - val_loss: 0.1591 -
val_accuracy: 0.6333
Epoch 11/200
4/4 - 0s - loss: 0.1561 - accuracy: 0.6667 - val_loss: 0.1589 -
val_accuracy: 0.6333
Epoch 12/200
4/4 - 0s - loss: 0.1558 - accuracy: 0.6667 - val_loss: 0.1587 -
val_accuracy: 0.6333
Epoch 13/200
4/4 - 0s - loss: 0.1556 - accuracy: 0.6667 - val_loss: 0.1585 -
val_accuracy: 0.6333
Epoch 14/200
4/4 - 0s - loss: 0.1554 - accuracy: 0.6667 - val_loss: 0.1583 -
val_accuracy: 0.6333
Epoch 15/200
4/4 - 0s - loss: 0.1552 - accuracy: 0.6667 - val_loss: 0.1581 -
val_accuracy: 0.6333
Epoch 16/200
4/4 - 0s - loss: 0.1550 - accuracy: 0.6667 - val_loss: 0.1578 -
val_accuracy: 0.6333
Epoch 17/200
4/4 - 0s - loss: 0.1548 - accuracy: 0.6667 - val_loss: 0.1576 -
val_accuracy: 0.6333
Epoch 18/200
4/4 - 0s - loss: 0.1546 - accuracy: 0.6667 - val_loss: 0.1574 -
val_accuracy: 0.6333
Epoch 19/200
4/4 - 0s - loss: 0.1543 - accuracy: 0.6667 - val_loss: 0.1572 -
```

val_accuracy: 0.6333
Epoch 20/200
4/4 - 0s - loss: 0.1541 - accuracy: 0.6667 - val_loss: 0.1570 -
val_accuracy: 0.6333
Epoch 21/200
4/4 - 0s - loss: 0.1539 - accuracy: 0.6667 - val_loss: 0.1568 -
val_accuracy: 0.6333
Epoch 22/200
4/4 - 0s - loss: 0.1537 - accuracy: 0.6667 - val_loss: 0.1566 -
val_accuracy: 0.6333

Epoch 23/200
4/4 - 0s - loss: 0.1535 - accuracy: 0.6667 - val_loss: 0.1564 -
val_accuracy: 0.6333
Epoch 24/200
4/4 - 0s - loss: 0.1533 - accuracy: 0.6667 - val_loss: 0.1562 -
val_accuracy: 0.6333
Epoch 25/200
4/4 - 0s - loss: 0.1531 - accuracy: 0.6667 - val_loss: 0.1560 -
val_accuracy: 0.6333
Epoch 26/200
4/4 - 0s - loss: 0.1529 - accuracy: 0.6667 - val_loss: 0.1558 -
val_accuracy: 0.6333
Epoch 27/200
4/4 - 0s - loss: 0.1527 - accuracy: 0.6667 - val_loss: 0.1556 -
val_accuracy: 0.6333
Epoch 28/200
4/4 - 0s - loss: 0.1525 - accuracy: 0.6667 - val_loss: 0.1554 -
val_accuracy: 0.6333
Epoch 29/200
4/4 - 0s - loss: 0.1523 - accuracy: 0.6667 - val_loss: 0.1552 -
val_accuracy: 0.6333
Epoch 30/200
4/4 - 0s - loss: 0.1521 - accuracy: 0.6667 - val_loss: 0.1550 -
val_accuracy: 0.6333
Epoch 31/200
4/4 - 0s - loss: 0.1519 - accuracy: 0.6667 - val_loss: 0.1548 -
val_accuracy: 0.6333
Epoch 32/200
4/4 - 0s - loss: 0.1517 - accuracy: 0.6667 - val_loss: 0.1546 -
val_accuracy: 0.6333
Epoch 33/200
4/4 - 0s - loss: 0.1515 - accuracy: 0.6583 - val_loss: 0.1544 -
val_accuracy: 0.6333
Epoch 34/200
4/4 - 0s - loss: 0.1513 - accuracy: 0.6583 - val_loss: 0.1542 -
val_accuracy: 0.6333
Epoch 35/200
4/4 - 0s - loss: 0.1511 - accuracy: 0.6583 - val_loss: 0.1540 -
val_accuracy: 0.6333

```
Epoch 36/200
4/4 - 0s - loss: 0.1509 - accuracy: 0.6583 - val_loss: 0.1538 -
val_accuracy: 0.6333
Epoch 37/200
4/4 - 0s - loss: 0.1507 - accuracy: 0.6583 - val_loss: 0.1536 -
val_accuracy: 0.6333
Epoch 38/200
4/4 - 0s - loss: 0.1505 - accuracy: 0.6583 - val_loss: 0.1534 -
val_accuracy: 0.6333
Epoch 39/200
4/4 - 0s - loss: 0.1503 - accuracy: 0.6583 - val_loss: 0.1532 -
val_accuracy: 0.6333
Epoch 40/200
4/4 - 0s - loss: 0.1501 - accuracy: 0.6500 - val_loss: 0.1530 -
val_accuracy: 0.6333
Epoch 41/200
4/4 - 0s - loss: 0.1499 - accuracy: 0.6500 - val_loss: 0.1528 -
val_accuracy: 0.6333
Epoch 42/200
4/4 - 0s - loss: 0.1497 - accuracy: 0.6583 - val_loss: 0.1526 -
val_accuracy: 0.6333
Epoch 43/200
4/4 - 0s - loss: 0.1496 - accuracy: 0.6500 - val_loss: 0.1524 -
val_accuracy: 0.6333
Epoch 44/200
4/4 - 0s - loss: 0.1494 - accuracy: 0.6500 - val_loss: 0.1522 -
val_accuracy: 0.6333
Epoch 45/200
4/4 - 0s - loss: 0.1492 - accuracy: 0.6500 - val_loss: 0.1520 -
val_accuracy: 0.6333
Epoch 46/200
4/4 - 0s - loss: 0.1490 - accuracy: 0.6500 - val_loss: 0.1518 -
val_accuracy: 0.6333
Epoch 47/200
4/4 - 0s - loss: 0.1488 - accuracy: 0.6500 - val_loss: 0.1516 -
val_accuracy: 0.6333
Epoch 48/200
4/4 - 0s - loss: 0.1486 - accuracy: 0.6500 - val_loss: 0.1514 -
val_accuracy: 0.6333
Epoch 49/200
4/4 - 0s - loss: 0.1485 - accuracy: 0.6500 - val_loss: 0.1512 -
val_accuracy: 0.6333
Epoch 50/200
4/4 - 0s - loss: 0.1483 - accuracy: 0.6583 - val_loss: 0.1510 -
val_accuracy: 0.6333
Epoch 51/200
4/4 - 0s - loss: 0.1481 - accuracy: 0.6500 - val_loss: 0.1509 -
val_accuracy: 0.6333
Epoch 52/200
4/4 - 0s - loss: 0.1479 - accuracy: 0.6500 - val_loss: 0.1507 -
```

val_accuracy: 0.6333
Epoch 53/200
4/4 - 0s - loss: 0.1477 - accuracy: 0.6500 - val_loss: 0.1505 -
val_accuracy: 0.6333
Epoch 54/200
4/4 - 0s - loss: 0.1476 - accuracy: 0.6500 - val_loss: 0.1503 -
val_accuracy: 0.6333
Epoch 55/200
4/4 - 0s - loss: 0.1474 - accuracy: 0.6500 - val_loss: 0.1501 -
val_accuracy: 0.6333
Epoch 56/200
4/4 - 0s - loss: 0.1472 - accuracy: 0.6500 - val_loss: 0.1499 -
val_accuracy: 0.6333
Epoch 57/200
4/4 - 0s - loss: 0.1470 - accuracy: 0.6417 - val_loss: 0.1498 -
val_accuracy: 0.6333
Epoch 58/200
4/4 - 0s - loss: 0.1469 - accuracy: 0.6417 - val_loss: 0.1496 -
val_accuracy: 0.6333
Epoch 59/200
4/4 - 0s - loss: 0.1467 - accuracy: 0.6417 - val_loss: 0.1494 -
val_accuracy: 0.6333
Epoch 60/200
4/4 - 0s - loss: 0.1465 - accuracy: 0.6417 - val_loss: 0.1492 -
val_accuracy: 0.6333
Epoch 61/200
4/4 - 0s - loss: 0.1463 - accuracy: 0.6417 - val_loss: 0.1490 -
val_accuracy: 0.6333
Epoch 62/200
4/4 - 0s - loss: 0.1462 - accuracy: 0.6417 - val_loss: 0.1488 -
val_accuracy: 0.6333
Epoch 63/200
4/4 - 0s - loss: 0.1460 - accuracy: 0.6417 - val_loss: 0.1486 -
val_accuracy: 0.6333
Epoch 64/200
4/4 - 0s - loss: 0.1458 - accuracy: 0.6417 - val_loss: 0.1485 -
val_accuracy: 0.6333
Epoch 65/200
4/4 - 0s - loss: 0.1456 - accuracy: 0.6417 - val_loss: 0.1483 -
val_accuracy: 0.6333
Epoch 66/200
4/4 - 0s - loss: 0.1455 - accuracy: 0.6500 - val_loss: 0.1481 -
val_accuracy: 0.6333
Epoch 67/200
4/4 - 0s - loss: 0.1453 - accuracy: 0.6500 - val_loss: 0.1479 -
val_accuracy: 0.6333
Epoch 68/200
4/4 - 0s - loss: 0.1451 - accuracy: 0.6500 - val_loss: 0.1477 -
val_accuracy: 0.6333
Epoch 69/200

```
4/4 - 0s - loss: 0.1449 - accuracy: 0.6500 - val_loss: 0.1475 -
val_accuracy: 0.6333
Epoch 70/200
4/4 - 0s - loss: 0.1448 - accuracy: 0.6500 - val_loss: 0.1474 -
val_accuracy: 0.6333
Epoch 71/200
4/4 - 0s - loss: 0.1446 - accuracy: 0.6583 - val_loss: 0.1472 -
val_accuracy: 0.6333
Epoch 72/200
4/4 - 0s - loss: 0.1445 - accuracy: 0.6583 - val_loss: 0.1470 -
val_accuracy: 0.6333
Epoch 73/200
4/4 - 0s - loss: 0.1443 - accuracy: 0.6583 - val_loss: 0.1468 -
val_accuracy: 0.6333
Epoch 74/200
4/4 - 0s - loss: 0.1442 - accuracy: 0.6583 - val_loss: 0.1467 -
val_accuracy: 0.6333
Epoch 75/200
4/4 - 0s - loss: 0.1440 - accuracy: 0.6583 - val_loss: 0.1465 -
val_accuracy: 0.6333
Epoch 76/200
4/4 - 0s - loss: 0.1438 - accuracy: 0.6583 - val_loss: 0.1463 -
val_accuracy: 0.6333
Epoch 77/200
4/4 - 0s - loss: 0.1437 - accuracy: 0.6583 - val_loss: 0.1461 -
val_accuracy: 0.6333
Epoch 78/200
4/4 - 0s - loss: 0.1435 - accuracy: 0.6583 - val_loss: 0.1459 -
val_accuracy: 0.6333
Epoch 79/200
4/4 - 0s - loss: 0.1434 - accuracy: 0.6583 - val_loss: 0.1458 -
val_accuracy: 0.6333
Epoch 80/200
4/4 - 0s - loss: 0.1432 - accuracy: 0.6583 - val_loss: 0.1456 -
val_accuracy: 0.6333
Epoch 81/200
4/4 - 0s - loss: 0.1430 - accuracy: 0.6583 - val_loss: 0.1454 -
val_accuracy: 0.6333
Epoch 82/200
4/4 - 0s - loss: 0.1429 - accuracy: 0.6583 - val_loss: 0.1453 -
val_accuracy: 0.6333
Epoch 83/200
4/4 - 0s - loss: 0.1427 - accuracy: 0.6583 - val_loss: 0.1451 -
val_accuracy: 0.6333
Epoch 84/200
4/4 - 0s - loss: 0.1426 - accuracy: 0.6583 - val_loss: 0.1449 -
val_accuracy: 0.6333
Epoch 85/200
4/4 - 0s - loss: 0.1424 - accuracy: 0.6583 - val_loss: 0.1448 -
val_accuracy: 0.6333
```

```
Epoch 86/200
4/4 - 0s - loss: 0.1422 - accuracy: 0.6583 - val_loss: 0.1446 -
val_accuracy: 0.6333
Epoch 87/200
4/4 - 0s - loss: 0.1421 - accuracy: 0.6583 - val_loss: 0.1444 -
val_accuracy: 0.6333
Epoch 88/200
4/4 - 0s - loss: 0.1420 - accuracy: 0.6583 - val_loss: 0.1443 -
val_accuracy: 0.6333
Epoch 89/200
4/4 - 0s - loss: 0.1418 - accuracy: 0.6583 - val_loss: 0.1441 -
val_accuracy: 0.6333
Epoch 90/200
4/4 - 0s - loss: 0.1417 - accuracy: 0.6583 - val_loss: 0.1439 -
val_accuracy: 0.6333
Epoch 91/200
4/4 - 0s - loss: 0.1415 - accuracy: 0.6583 - val_loss: 0.1438 -
val_accuracy: 0.6333
Epoch 92/200
4/4 - 0s - loss: 0.1414 - accuracy: 0.6583 - val_loss: 0.1436 -
val_accuracy: 0.6333
Epoch 93/200
4/4 - 0s - loss: 0.1412 - accuracy: 0.6583 - val_loss: 0.1434 -
val_accuracy: 0.6333
Epoch 94/200
4/4 - 0s - loss: 0.1411 - accuracy: 0.6583 - val_loss: 0.1433 -
val_accuracy: 0.6333
Epoch 95/200
4/4 - 0s - loss: 0.1409 - accuracy: 0.6583 - val_loss: 0.1431 -
val_accuracy: 0.6333
Epoch 96/200
4/4 - 0s - loss: 0.1408 - accuracy: 0.6583 - val_loss: 0.1429 -
val_accuracy: 0.6333
Epoch 97/200
4/4 - 0s - loss: 0.1406 - accuracy: 0.6583 - val_loss: 0.1428 -
val_accuracy: 0.6333
Epoch 98/200
4/4 - 0s - loss: 0.1405 - accuracy: 0.6583 - val_loss: 0.1426 -
val_accuracy: 0.6333
Epoch 99/200
4/4 - 0s - loss: 0.1403 - accuracy: 0.6583 - val_loss: 0.1424 -
val_accuracy: 0.6333
Epoch 100/200
4/4 - 0s - loss: 0.1402 - accuracy: 0.6583 - val_loss: 0.1423 -
val_accuracy: 0.6333
Epoch 101/200
4/4 - 0s - loss: 0.1401 - accuracy: 0.6583 - val_loss: 0.1421 -
val_accuracy: 0.6333
Epoch 102/200
4/4 - 0s - loss: 0.1399 - accuracy: 0.6583 - val_loss: 0.1419 -
```

```
val_accuracy: 0.6333
Epoch 103/200
4/4 - 0s - loss: 0.1398 - accuracy: 0.6583 - val_loss: 0.1418 -
val_accuracy: 0.6333
Epoch 104/200
4/4 - 0s - loss: 0.1396 - accuracy: 0.6583 - val_loss: 0.1416 -
val_accuracy: 0.6333
Epoch 105/200
4/4 - 0s - loss: 0.1394 - accuracy: 0.6583 - val_loss: 0.1414 -
val_accuracy: 0.6333
Epoch 106/200
4/4 - 0s - loss: 0.1393 - accuracy: 0.6583 - val_loss: 0.1413 -
val_accuracy: 0.6333

Epoch 107/200
4/4 - 0s - loss: 0.1392 - accuracy: 0.6667 - val_loss: 0.1411 -
val_accuracy: 0.6333
Epoch 108/200
4/4 - 0s - loss: 0.1390 - accuracy: 0.6667 - val_loss: 0.1410 -
val_accuracy: 0.6333
Epoch 109/200
4/4 - 0s - loss: 0.1389 - accuracy: 0.6667 - val_loss: 0.1408 -
val_accuracy: 0.6333
Epoch 110/200
4/4 - 0s - loss: 0.1387 - accuracy: 0.6667 - val_loss: 0.1406 -
val_accuracy: 0.6333
Epoch 111/200
4/4 - 0s - loss: 0.1386 - accuracy: 0.6667 - val_loss: 0.1405 -
val_accuracy: 0.6333
Epoch 112/200
4/4 - 0s - loss: 0.1385 - accuracy: 0.6667 - val_loss: 0.1403 -
val_accuracy: 0.6333
Epoch 113/200
4/4 - 0s - loss: 0.1383 - accuracy: 0.6583 - val_loss: 0.1402 -
val_accuracy: 0.6333
Epoch 114/200
4/4 - 0s - loss: 0.1382 - accuracy: 0.6500 - val_loss: 0.1400 -
val_accuracy: 0.6333
Epoch 115/200
4/4 - 0s - loss: 0.1381 - accuracy: 0.6500 - val_loss: 0.1398 -
val_accuracy: 0.6333
Epoch 116/200
4/4 - 0s - loss: 0.1379 - accuracy: 0.6500 - val_loss: 0.1397 -
val_accuracy: 0.6333
Epoch 117/200
4/4 - 0s - loss: 0.1378 - accuracy: 0.6583 - val_loss: 0.1395 -
val_accuracy: 0.6333
Epoch 118/200
4/4 - 0s - loss: 0.1377 - accuracy: 0.6583 - val_loss: 0.1394 -
val_accuracy: 0.6333
```

```
Epoch 119/200
4/4 - 0s - loss: 0.1375 - accuracy: 0.6667 - val_loss: 0.1392 -
val_accuracy: 0.6333
Epoch 120/200
4/4 - 0s - loss: 0.1374 - accuracy: 0.6667 - val_loss: 0.1391 -
val_accuracy: 0.6000
Epoch 121/200
4/4 - 0s - loss: 0.1373 - accuracy: 0.6667 - val_loss: 0.1389 -
val_accuracy: 0.6000
Epoch 122/200
4/4 - 0s - loss: 0.1371 - accuracy: 0.6667 - val_loss: 0.1387 -
val_accuracy: 0.6000
Epoch 123/200
4/4 - 0s - loss: 0.1370 - accuracy: 0.6667 - val_loss: 0.1386 -
val_accuracy: 0.6000
Epoch 124/200
4/4 - 0s - loss: 0.1369 - accuracy: 0.6667 - val_loss: 0.1384 -
val_accuracy: 0.6000
Epoch 125/200
4/4 - 0s - loss: 0.1368 - accuracy: 0.6667 - val_loss: 0.1383 -
val_accuracy: 0.6000
Epoch 126/200
4/4 - 0s - loss: 0.1366 - accuracy: 0.6667 - val_loss: 0.1381 -
val_accuracy: 0.6000
Epoch 127/200
4/4 - 0s - loss: 0.1365 - accuracy: 0.6667 - val_loss: 0.1380 -
val_accuracy: 0.6000
Epoch 128/200
4/4 - 0s - loss: 0.1363 - accuracy: 0.6667 - val_loss: 0.1378 -
val_accuracy: 0.6333
Epoch 129/200
4/4 - 0s - loss: 0.1362 - accuracy: 0.6667 - val_loss: 0.1377 -
val_accuracy: 0.6333
Epoch 130/200
4/4 - 0s - loss: 0.1361 - accuracy: 0.6667 - val_loss: 0.1375 -
val_accuracy: 0.6333
Epoch 131/200
4/4 - 0s - loss: 0.1360 - accuracy: 0.6667 - val_loss: 0.1374 -
val_accuracy: 0.6333
Epoch 132/200
4/4 - 0s - loss: 0.1358 - accuracy: 0.6667 - val_loss: 0.1372 -
val_accuracy: 0.6333
Epoch 133/200
4/4 - 0s - loss: 0.1357 - accuracy: 0.6667 - val_loss: 0.1371 -
val_accuracy: 0.6333
Epoch 134/200
4/4 - 0s - loss: 0.1356 - accuracy: 0.6750 - val_loss: 0.1369 -
val_accuracy: 0.6333
Epoch 135/200
4/4 - 0s - loss: 0.1355 - accuracy: 0.6750 - val_loss: 0.1368 -
```

```
val_accuracy: 0.6333
Epoch 136/200
4/4 - 0s - loss: 0.1353 - accuracy: 0.6750 - val_loss: 0.1367 -
val_accuracy: 0.6333
Epoch 137/200
4/4 - 0s - loss: 0.1352 - accuracy: 0.6750 - val_loss: 0.1365 -
val_accuracy: 0.6333
Epoch 138/200
4/4 - 0s - loss: 0.1351 - accuracy: 0.6750 - val_loss: 0.1364 -
val_accuracy: 0.6333
Epoch 139/200
4/4 - 0s - loss: 0.1350 - accuracy: 0.6750 - val_loss: 0.1363 -
val_accuracy: 0.6333
Epoch 140/200
4/4 - 0s - loss: 0.1349 - accuracy: 0.6750 - val_loss: 0.1361 -
val_accuracy: 0.6333
Epoch 141/200
4/4 - 0s - loss: 0.1347 - accuracy: 0.6750 - val_loss: 0.1359 -
val_accuracy: 0.6333
Epoch 142/200
4/4 - 0s - loss: 0.1346 - accuracy: 0.6750 - val_loss: 0.1358 -
val_accuracy: 0.6333
Epoch 143/200
4/4 - 0s - loss: 0.1345 - accuracy: 0.6750 - val_loss: 0.1356 -
val_accuracy: 0.6333
Epoch 144/200
4/4 - 0s - loss: 0.1344 - accuracy: 0.6750 - val_loss: 0.1355 -
val_accuracy: 0.6333
Epoch 145/200
4/4 - 0s - loss: 0.1343 - accuracy: 0.6750 - val_loss: 0.1353 -
val_accuracy: 0.6333
Epoch 146/200
4/4 - 0s - loss: 0.1342 - accuracy: 0.6833 - val_loss: 0.1352 -
val_accuracy: 0.6333
Epoch 147/200
4/4 - 0s - loss: 0.1340 - accuracy: 0.6833 - val_loss: 0.1351 -
val_accuracy: 0.6333
Epoch 148/200
4/4 - 0s - loss: 0.1339 - accuracy: 0.6833 - val_loss: 0.1350 -
val_accuracy: 0.6333
Epoch 149/200
4/4 - 0s - loss: 0.1338 - accuracy: 0.6833 - val_loss: 0.1348 -
val_accuracy: 0.6333
Epoch 150/200
4/4 - 0s - loss: 0.1337 - accuracy: 0.6833 - val_loss: 0.1347 -
val_accuracy: 0.6333
Epoch 151/200
4/4 - 0s - loss: 0.1336 - accuracy: 0.6833 - val_loss: 0.1346 -
val_accuracy: 0.6333
Epoch 152/200
```

```
4/4 - 0s - loss: 0.1335 - accuracy: 0.6833 - val_loss: 0.1344 -
val_accuracy: 0.6333
Epoch 153/200
4/4 - 0s - loss: 0.1333 - accuracy: 0.6833 - val_loss: 0.1343 -
val_accuracy: 0.6333
Epoch 154/200
4/4 - 0s - loss: 0.1332 - accuracy: 0.6833 - val_loss: 0.1342 -
val_accuracy: 0.6333
Epoch 155/200
4/4 - 0s - loss: 0.1331 - accuracy: 0.6833 - val_loss: 0.1340 -
val_accuracy: 0.6333
Epoch 156/200
4/4 - 0s - loss: 0.1330 - accuracy: 0.6833 - val_loss: 0.1339 -
val_accuracy: 0.6333
Epoch 157/200
4/4 - 0s - loss: 0.1329 - accuracy: 0.6833 - val_loss: 0.1337 -
val_accuracy: 0.6333
Epoch 158/200
4/4 - 0s - loss: 0.1328 - accuracy: 0.6833 - val_loss: 0.1336 -
val_accuracy: 0.6333
Epoch 159/200
4/4 - 0s - loss: 0.1327 - accuracy: 0.6833 - val_loss: 0.1335 -
val_accuracy: 0.6333
Epoch 160/200
4/4 - 0s - loss: 0.1326 - accuracy: 0.6833 - val_loss: 0.1333 -
val_accuracy: 0.6333
Epoch 161/200
4/4 - 0s - loss: 0.1325 - accuracy: 0.6833 - val_loss: 0.1332 -
val_accuracy: 0.6333
Epoch 162/200
4/4 - 0s - loss: 0.1323 - accuracy: 0.6833 - val_loss: 0.1331 -
val_accuracy: 0.6333
Epoch 163/200
4/4 - 0s - loss: 0.1322 - accuracy: 0.6833 - val_loss: 0.1329 -
val_accuracy: 0.6333
Epoch 164/200
4/4 - 0s - loss: 0.1321 - accuracy: 0.6833 - val_loss: 0.1328 -
val_accuracy: 0.6333
Epoch 165/200
4/4 - 0s - loss: 0.1321 - accuracy: 0.6833 - val_loss: 0.1327 -
val_accuracy: 0.6333
Epoch 166/200
4/4 - 0s - loss: 0.1319 - accuracy: 0.6833 - val_loss: 0.1325 -
val_accuracy: 0.6333
Epoch 167/200
4/4 - 0s - loss: 0.1318 - accuracy: 0.6833 - val_loss: 0.1324 -
val_accuracy: 0.6333
Epoch 168/200
4/4 - 0s - loss: 0.1317 - accuracy: 0.6833 - val_loss: 0.1323 -
val_accuracy: 0.6333
```

```
Epoch 169/200
4/4 - 0s - loss: 0.1316 - accuracy: 0.6833 - val_loss: 0.1322 -
val_accuracy: 0.6333
Epoch 170/200
4/4 - 0s - loss: 0.1315 - accuracy: 0.6833 - val_loss: 0.1320 -
val_accuracy: 0.6333
Epoch 171/200
4/4 - 0s - loss: 0.1314 - accuracy: 0.6750 - val_loss: 0.1319 -
val_accuracy: 0.6333
Epoch 172/200
4/4 - 0s - loss: 0.1313 - accuracy: 0.6750 - val_loss: 0.1318 -
val_accuracy: 0.6333
Epoch 173/200
4/4 - 0s - loss: 0.1312 - accuracy: 0.6750 - val_loss: 0.1316 -
val_accuracy: 0.6333
Epoch 174/200
4/4 - 0s - loss: 0.1311 - accuracy: 0.6750 - val_loss: 0.1315 -
val_accuracy: 0.6333
Epoch 175/200
4/4 - 0s - loss: 0.1310 - accuracy: 0.6750 - val_loss: 0.1314 -
val_accuracy: 0.6333
Epoch 176/200
4/4 - 0s - loss: 0.1309 - accuracy: 0.6750 - val_loss: 0.1313 -
val_accuracy: 0.6333
Epoch 177/200
4/4 - 0s - loss: 0.1308 - accuracy: 0.6833 - val_loss: 0.1311 -
val_accuracy: 0.6333
Epoch 178/200
4/4 - 0s - loss: 0.1307 - accuracy: 0.6833 - val_loss: 0.1310 -
val_accuracy: 0.6333
Epoch 179/200
4/4 - 0s - loss: 0.1306 - accuracy: 0.6833 - val_loss: 0.1309 -
val_accuracy: 0.6333
Epoch 180/200
4/4 - 0s - loss: 0.1305 - accuracy: 0.7000 - val_loss: 0.1308 -
val_accuracy: 0.6333
Epoch 181/200
4/4 - 0s - loss: 0.1304 - accuracy: 0.7000 - val_loss: 0.1307 -
val_accuracy: 0.6333
Epoch 182/200
4/4 - 0s - loss: 0.1303 - accuracy: 0.7000 - val_loss: 0.1306 -
val_accuracy: 0.6333
Epoch 183/200
4/4 - 0s - loss: 0.1302 - accuracy: 0.7000 - val_loss: 0.1305 -
val_accuracy: 0.6333
Epoch 184/200
4/4 - 0s - loss: 0.1301 - accuracy: 0.7000 - val_loss: 0.1303 -
val_accuracy: 0.6333
Epoch 185/200
4/4 - 0s - loss: 0.1300 - accuracy: 0.7000 - val_loss: 0.1302 -
```

val_accuracy: 0.6667
Epoch 186/200
4/4 - 0s - loss: 0.1299 - accuracy: 0.7000 - val_loss: 0.1301 -
val_accuracy: 0.6667
Epoch 187/200
4/4 - 0s - loss: 0.1298 - accuracy: 0.7000 - val_loss: 0.1300 -
val_accuracy: 0.6667
Epoch 188/200
4/4 - 0s - loss: 0.1297 - accuracy: 0.7000 - val_loss: 0.1299 -
val_accuracy: 0.6667
Epoch 189/200
4/4 - 0s - loss: 0.1296 - accuracy: 0.7000 - val_loss: 0.1298 -
val_accuracy: 0.6667

Epoch 190/200
4/4 - 0s - loss: 0.1295 - accuracy: 0.7000 - val_loss: 0.1297 -
val_accuracy: 0.6667
Epoch 191/200
4/4 - 0s - loss: 0.1294 - accuracy: 0.7000 - val_loss: 0.1296 -
val_accuracy: 0.6667
Epoch 192/200
4/4 - 0s - loss: 0.1294 - accuracy: 0.7000 - val_loss: 0.1294 -
val_accuracy: 0.6667
Epoch 193/200
4/4 - 0s - loss: 0.1292 - accuracy: 0.7000 - val_loss: 0.1293 -
val_accuracy: 0.6667
Epoch 194/200
4/4 - 0s - loss: 0.1291 - accuracy: 0.7000 - val_loss: 0.1292 -
val_accuracy: 0.6667
Epoch 195/200
4/4 - 0s - loss: 0.1290 - accuracy: 0.7000 - val_loss: 0.1291 -
val_accuracy: 0.6667
Epoch 196/200
4/4 - 0s - loss: 0.1289 - accuracy: 0.7000 - val_loss: 0.1290 -
val_accuracy: 0.6667
Epoch 197/200
4/4 - 0s - loss: 0.1289 - accuracy: 0.7000 - val_loss: 0.1289 -
val_accuracy: 0.6667
Epoch 198/200
4/4 - 0s - loss: 0.1288 - accuracy: 0.7000 - val_loss: 0.1288 -
val_accuracy: 0.6667
Epoch 199/200
4/4 - 0s - loss: 0.1287 - accuracy: 0.7000 - val_loss: 0.1287 -
val_accuracy: 0.6667
Epoch 200/200
4/4 - 0s - loss: 0.1286 - accuracy: 0.7000 - val_loss: 0.1286 -
val_accuracy: 0.6667
Activation: tanh LR: 0.01 Iterations: 200 || Test loss:
0.1285834163427353
Activation: tanh LR: 0.01 Iterations: 200 || Test Accuracy:

0.6666666865348816
==
=======
Model_tanh_LR_0.1_Iterations_100_HL_2
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0005s vs
`on_train_batch_end` time: 0.1219s). Check your callbacks.
4/4 - 0s - loss: 0.4671 - accuracy: 0.3417 - val_loss: 0.3899 -
val_accuracy: 0.3833
Epoch 2/100
4/4 - 0s - loss: 0.3620 - accuracy: 0.4083 - val_loss: 0.3145 -
val_accuracy: 0.4417
Epoch 3/100
4/4 - 0s - loss: 0.2969 - accuracy: 0.4583 - val_loss: 0.2645 -
val_accuracy: 0.5167
Epoch 4/100
4/4 - 0s - loss: 0.2534 - accuracy: 0.5083 - val_loss: 0.2322 -
val_accuracy: 0.5417
Epoch 5/100
4/4 - 0s - loss: 0.2240 - accuracy: 0.5500 - val_loss: 0.2094 -
val_accuracy: 0.5667
Epoch 6/100
4/4 - 0s - loss: 0.2037 - accuracy: 0.5833 - val_loss: 0.1921 -
val_accuracy: 0.6000
Epoch 7/100
4/4 - 0s - loss: 0.1876 - accuracy: 0.6083 - val_loss: 0.1782 -
val_accuracy: 0.6500
Epoch 8/100
4/4 - 0s - loss: 0.1746 - accuracy: 0.6667 - val_loss: 0.1669 -
val_accuracy: 0.6750
Epoch 9/100
4/4 - 0s - loss: 0.1641 - accuracy: 0.6833 - val_loss: 0.1577 -
val_accuracy: 0.7250
Epoch 10/100
4/4 - 0s - loss: 0.1553 - accuracy: 0.7333 - val_loss: 0.1498 -
val_accuracy: 0.7500
Epoch 11/100
4/4 - 0s - loss: 0.1479 - accuracy: 0.7583 - val_loss: 0.1435 -
val_accuracy: 0.7667
Epoch 12/100
4/4 - 0s - loss: 0.1420 - accuracy: 0.8000 - val_loss: 0.1381 -
val_accuracy: 0.8000
Epoch 13/100
4/4 - 0s - loss: 0.1367 - accuracy: 0.8000 - val_loss: 0.1337 -
val_accuracy: 0.8167
Epoch 14/100
4/4 - 0s - loss: 0.1327 - accuracy: 0.8083 - val_loss: 0.1299 -
val_accuracy: 0.8250
Epoch 15/100

```
4/4 - 0s - loss: 0.1292 - accuracy: 0.8250 - val_loss: 0.1268 -
val_accuracy: 0.8333
Epoch 16/100
4/4 - 0s - loss: 0.1261 - accuracy: 0.8250 - val_loss: 0.1242 -
val_accuracy: 0.8333
Epoch 17/100
4/4 - 0s - loss: 0.1235 - accuracy: 0.8417 - val_loss: 0.1219 -
val_accuracy: 0.8333
Epoch 18/100
4/4 - 0s - loss: 0.1214 - accuracy: 0.8333 - val_loss: 0.1200 -
val_accuracy: 0.8333
Epoch 19/100
4/4 - 0s - loss: 0.1197 - accuracy: 0.8333 - val_loss: 0.1184 -
val_accuracy: 0.8417
Epoch 20/100
4/4 - 0s - loss: 0.1184 - accuracy: 0.8500 - val_loss: 0.1170 -
val_accuracy: 0.8333
Epoch 21/100
4/4 - 0s - loss: 0.1167 - accuracy: 0.8333 - val_loss: 0.1157 -
val_accuracy: 0.8417
Epoch 22/100
4/4 - 0s - loss: 0.1155 - accuracy: 0.8417 - val_loss: 0.1146 -
val_accuracy: 0.8417
Epoch 23/100
4/4 - 0s - loss: 0.1145 - accuracy: 0.8417 - val_loss: 0.1137 -
val_accuracy: 0.8417
Epoch 24/100
4/4 - 0s - loss: 0.1136 - accuracy: 0.8417 - val_loss: 0.1128 -
val_accuracy: 0.8500
Epoch 25/100
4/4 - 0s - loss: 0.1127 - accuracy: 0.8417 - val_loss: 0.1121 -
val_accuracy: 0.8500
Epoch 26/100
4/4 - 0s - loss: 0.1120 - accuracy: 0.8500 - val_loss: 0.1114 -
val_accuracy: 0.8500
Epoch 27/100
4/4 - 0s - loss: 0.1114 - accuracy: 0.8500 - val_loss: 0.1108 -
val_accuracy: 0.8500
Epoch 28/100
4/4 - 0s - loss: 0.1110 - accuracy: 0.8500 - val_loss: 0.1102 -
val_accuracy: 0.8500
Epoch 29/100
4/4 - 0s - loss: 0.1102 - accuracy: 0.8500 - val_loss: 0.1096 -
val_accuracy: 0.8500
Epoch 30/100
4/4 - 0s - loss: 0.1098 - accuracy: 0.8500 - val_loss: 0.1091 -
val_accuracy: 0.8500
Epoch 31/100
4/4 - 0s - loss: 0.1094 - accuracy: 0.8500 - val_loss: 0.1087 -
val_accuracy: 0.8500
```

```
Epoch 32/100
4/4 - 0s - loss: 0.1089 - accuracy: 0.8500 - val_loss: 0.1082 -
val_accuracy: 0.8500
Epoch 33/100
4/4 - 0s - loss: 0.1083 - accuracy: 0.8417 - val_loss: 0.1078 -
val_accuracy: 0.8500
Epoch 34/100
4/4 - 0s - loss: 0.1082 - accuracy: 0.8417 - val_loss: 0.1074 -
val_accuracy: 0.8500
Epoch 35/100
4/4 - 0s - loss: 0.1075 - accuracy: 0.8500 - val_loss: 0.1070 -
val_accuracy: 0.8500
Epoch 36/100
4/4 - 0s - loss: 0.1073 - accuracy: 0.8500 - val_loss: 0.1066 -
val_accuracy: 0.8417
Epoch 37/100
4/4 - 0s - loss: 0.1067 - accuracy: 0.8417 - val_loss: 0.1063 -
val_accuracy: 0.8417
Epoch 38/100
4/4 - 0s - loss: 0.1068 - accuracy: 0.8417 - val_loss: 0.1059 -
val_accuracy: 0.8417
Epoch 39/100
4/4 - 0s - loss: 0.1062 - accuracy: 0.8417 - val_loss: 0.1056 -
val_accuracy: 0.8500
Epoch 40/100
4/4 - 0s - loss: 0.1057 - accuracy: 0.8500 - val_loss: 0.1053 -
val_accuracy: 0.8417
Epoch 41/100
4/4 - 0s - loss: 0.1053 - accuracy: 0.8417 - val_loss: 0.1049 -
val_accuracy: 0.8417
Epoch 42/100
4/4 - 0s - loss: 0.1050 - accuracy: 0.8417 - val_loss: 0.1046 -
val_accuracy: 0.8417
Epoch 43/100
4/4 - 0s - loss: 0.1046 - accuracy: 0.8417 - val_loss: 0.1043 -
val_accuracy: 0.8417
Epoch 44/100
4/4 - 0s - loss: 0.1045 - accuracy: 0.8417 - val_loss: 0.1040 -
val_accuracy: 0.8417
Epoch 45/100
4/4 - 0s - loss: 0.1041 - accuracy: 0.8417 - val_loss: 0.1037 -
val_accuracy: 0.8417
Epoch 46/100
4/4 - 0s - loss: 0.1042 - accuracy: 0.8583 - val_loss: 0.1034 -
val_accuracy: 0.8417
Epoch 47/100
4/4 - 0s - loss: 0.1036 - accuracy: 0.8500 - val_loss: 0.1031 -
val_accuracy: 0.8417
Epoch 48/100
4/4 - 0s - loss: 0.1032 - accuracy: 0.8417 - val_loss: 0.1028 -
```

```
val_accuracy: 0.8500
Epoch 49/100
4/4 - 0s - loss: 0.1030 - accuracy: 0.8500 - val_loss: 0.1025 -
val_accuracy: 0.8500
Epoch 50/100
4/4 - 0s - loss: 0.1026 - accuracy: 0.8500 - val_loss: 0.1022 -
val_accuracy: 0.8417
Epoch 51/100
4/4 - 0s - loss: 0.1023 - accuracy: 0.8500 - val_loss: 0.1019 -
val_accuracy: 0.8417
Epoch 52/100
4/4 - 0s - loss: 0.1020 - accuracy: 0.8500 - val_loss: 0.1016 -
val_accuracy: 0.8500
Epoch 53/100
4/4 - 0s - loss: 0.1019 - accuracy: 0.8500 - val_loss: 0.1013 -
val_accuracy: 0.8500
Epoch 54/100
4/4 - 0s - loss: 0.1014 - accuracy: 0.8583 - val_loss: 0.1010 -
val_accuracy: 0.8500
Epoch 55/100
4/4 - 0s - loss: 0.1013 - accuracy: 0.8500 - val_loss: 0.1007 -
val_accuracy: 0.8583
Epoch 56/100
4/4 - 0s - loss: 0.1007 - accuracy: 0.8417 - val_loss: 0.1004 -
val_accuracy: 0.8583
Epoch 57/100
4/4 - 0s - loss: 0.1003 - accuracy: 0.8583 - val_loss: 0.1000 -
val_accuracy: 0.8583
Epoch 58/100
4/4 - 0s - loss: 0.1002 - accuracy: 0.8583 - val_loss: 0.0997 -
val_accuracy: 0.8667
Epoch 59/100
4/4 - 0s - loss: 0.1002 - accuracy: 0.8500 - val_loss: 0.0994 -
val_accuracy: 0.8583
Epoch 60/100
4/4 - 0s - loss: 0.0994 - accuracy: 0.8667 - val_loss: 0.0991 -
val_accuracy: 0.8667
Epoch 61/100
4/4 - 0s - loss: 0.0992 - accuracy: 0.8750 - val_loss: 0.0987 -
val_accuracy: 0.8667
Epoch 62/100
4/4 - 0s - loss: 0.0989 - accuracy: 0.8667 - val_loss: 0.0984 -
val_accuracy: 0.8750
Epoch 63/100
4/4 - 0s - loss: 0.0986 - accuracy: 0.8750 - val_loss: 0.0981 -
val_accuracy: 0.8750
Epoch 64/100
4/4 - 0s - loss: 0.0982 - accuracy: 0.8750 - val_loss: 0.0977 -
val_accuracy: 0.8750
Epoch 65/100
```

```
4/4 - 0s - loss: 0.0980 - accuracy: 0.8750 - val_loss: 0.0974 -
val_accuracy: 0.8750
Epoch 66/100
4/4 - 0s - loss: 0.0975 - accuracy: 0.8750 - val_loss: 0.0970 -
val_accuracy: 0.8750
Epoch 67/100
4/4 - 0s - loss: 0.0971 - accuracy: 0.8667 - val_loss: 0.0967 -
val_accuracy: 0.8750
Epoch 68/100
4/4 - 0s - loss: 0.0967 - accuracy: 0.8750 - val_loss: 0.0963 -
val_accuracy: 0.8750
Epoch 69/100
4/4 - 0s - loss: 0.0964 - accuracy: 0.8750 - val_loss: 0.0959 -
val_accuracy: 0.8750

Epoch 70/100
4/4 - 0s - loss: 0.0963 - accuracy: 0.8750 - val_loss: 0.0955 -
val_accuracy: 0.8750
Epoch 71/100
4/4 - 0s - loss: 0.0955 - accuracy: 0.8750 - val_loss: 0.0951 -
val_accuracy: 0.8750
Epoch 72/100
4/4 - 0s - loss: 0.0954 - accuracy: 0.8750 - val_loss: 0.0947 -
val_accuracy: 0.8750
Epoch 73/100
4/4 - 0s - loss: 0.0952 - accuracy: 0.8750 - val_loss: 0.0943 -
val_accuracy: 0.8750
Epoch 74/100
4/4 - 0s - loss: 0.0944 - accuracy: 0.8750 - val_loss: 0.0939 -
val_accuracy: 0.8750
Epoch 75/100
4/4 - 0s - loss: 0.0940 - accuracy: 0.8750 - val_loss: 0.0935 -
val_accuracy: 0.8750
Epoch 76/100
4/4 - 0s - loss: 0.0935 - accuracy: 0.8750 - val_loss: 0.0931 -
val_accuracy: 0.8750
Epoch 77/100
4/4 - 0s - loss: 0.0932 - accuracy: 0.8833 - val_loss: 0.0927 -
val_accuracy: 0.8750
Epoch 78/100
4/4 - 0s - loss: 0.0928 - accuracy: 0.8750 - val_loss: 0.0922 -
val_accuracy: 0.8750
Epoch 79/100
4/4 - 0s - loss: 0.0927 - accuracy: 0.8750 - val_loss: 0.0918 -
val_accuracy: 0.8750
Epoch 80/100
4/4 - 0s - loss: 0.0918 - accuracy: 0.8750 - val_loss: 0.0913 -
val_accuracy: 0.8750
Epoch 81/100
4/4 - 0s - loss: 0.0918 - accuracy: 0.8750 - val_loss: 0.0909 -
```

```
val_accuracy: 0.8750
Epoch 82/100
4/4 - 0s - loss: 0.0911 - accuracy: 0.8750 - val_loss: 0.0904 -
val_accuracy: 0.8833
Epoch 83/100
4/4 - 0s - loss: 0.0904 - accuracy: 0.8833 - val_loss: 0.0899 -
val_accuracy: 0.8833
Epoch 84/100
4/4 - 0s - loss: 0.0903 - accuracy: 0.8833 - val_loss: 0.0894 -
val_accuracy: 0.8833
Epoch 85/100
4/4 - 0s - loss: 0.0894 - accuracy: 0.8833 - val_loss: 0.0890 -
val_accuracy: 0.8833
Epoch 86/100
4/4 - 0s - loss: 0.0890 - accuracy: 0.8833 - val_loss: 0.0885 -
val_accuracy: 0.8833
Epoch 87/100
4/4 - 0s - loss: 0.0885 - accuracy: 0.8833 - val_loss: 0.0880 -
val_accuracy: 0.8833
Epoch 88/100
4/4 - 0s - loss: 0.0879 - accuracy: 0.8833 - val_loss: 0.0874 -
val_accuracy: 0.8833
Epoch 89/100
4/4 - 0s - loss: 0.0876 - accuracy: 0.8833 - val_loss: 0.0869 -
val_accuracy: 0.8833
Epoch 90/100
4/4 - 0s - loss: 0.0869 - accuracy: 0.8833 - val_loss: 0.0864 -
val_accuracy: 0.8833
Epoch 91/100
4/4 - 0s - loss: 0.0864 - accuracy: 0.8833 - val_loss: 0.0859 -
val_accuracy: 0.8833
Epoch 92/100
4/4 - 0s - loss: 0.0860 - accuracy: 0.8833 - val_loss: 0.0854 -
val_accuracy: 0.8833
Epoch 93/100
4/4 - 0s - loss: 0.0853 - accuracy: 0.8833 - val_loss: 0.0848 -
val_accuracy: 0.8833
Epoch 94/100
4/4 - 0s - loss: 0.0850 - accuracy: 0.8833 - val_loss: 0.0843 -
val_accuracy: 0.8833
Epoch 95/100
4/4 - 0s - loss: 0.0843 - accuracy: 0.8833 - val_loss: 0.0837 -
val_accuracy: 0.8833
Epoch 96/100
4/4 - 0s - loss: 0.0840 - accuracy: 0.8833 - val_loss: 0.0832 -
val_accuracy: 0.8833
Epoch 97/100
4/4 - 0s - loss: 0.0831 - accuracy: 0.8833 - val_loss: 0.0826 -
val_accuracy: 0.8833
Epoch 98/100
```

```
4/4 - 0s - loss: 0.0827 - accuracy: 0.8833 - val_loss: 0.0821 -
val_accuracy: 0.8833
Epoch 99/100
4/4 - 0s - loss: 0.0820 - accuracy: 0.8833 - val_loss: 0.0815 -
val_accuracy: 0.8833
Epoch 100/100
4/4 - 0s - loss: 0.0816 - accuracy: 0.8833 - val_loss: 0.0809 -
val_accuracy: 0.8833
Activation: tanh LR: 0.1 Itertions: 100 || Train loss:
0.080893874168396
Activation: tanh LR: 0.1 Itertions: 100 || Train Accuracy:
0.8833333253860474
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.0750s). Check your callbacks.
4/4 - 0s - loss: 0.0809 - accuracy: 0.8917 - val_loss: 0.0649 -
val_accuracy: 0.9333
Epoch 2/100
4/4 - 0s - loss: 0.0803 - accuracy: 0.8917 - val_loss: 0.0642 -
val_accuracy: 0.9333
Epoch 3/100
4/4 - 0s - loss: 0.0797 - accuracy: 0.8917 - val_loss: 0.0636 -
val_accuracy: 0.9667
Epoch 4/100
4/4 - 0s - loss: 0.0792 - accuracy: 0.8917 - val_loss: 0.0629 -
val_accuracy: 0.9333
Epoch 5/100
4/4 - 0s - loss: 0.0786 - accuracy: 0.8917 - val_loss: 0.0622 -
val_accuracy: 0.9667
Epoch 6/100
4/4 - 0s - loss: 0.0779 - accuracy: 0.8917 - val_loss: 0.0616 -
val_accuracy: 0.9667
Epoch 7/100
4/4 - 0s - loss: 0.0775 - accuracy: 0.8917 - val_loss: 0.0610 -
val_accuracy: 0.9667
Epoch 8/100
4/4 - 0s - loss: 0.0766 - accuracy: 0.8917 - val_loss: 0.0604 -
val_accuracy: 0.9667
Epoch 9/100
4/4 - 0s - loss: 0.0763 - accuracy: 0.8917 - val_loss: 0.0597 -
val_accuracy: 0.9667
Epoch 10/100
4/4 - 0s - loss: 0.0755 - accuracy: 0.8917 - val_loss: 0.0591 -
val_accuracy: 0.9667
Epoch 11/100
4/4 - 0s - loss: 0.0750 - accuracy: 0.8917 - val_loss: 0.0584 -
val_accuracy: 0.9667
Epoch 12/100
4/4 - 0s - loss: 0.0741 - accuracy: 0.8917 - val_loss: 0.0577 -
```

val_accuracy: 0.9667
Epoch 13/100
4/4 - 0s - loss: 0.0739 - accuracy: 0.8917 - val_loss: 0.0572 -
val_accuracy: 0.9667
Epoch 14/100
4/4 - 0s - loss: 0.0730 - accuracy: 0.8917 - val_loss: 0.0565 -
val_accuracy: 0.9667
Epoch 15/100
4/4 - 0s - loss: 0.0724 - accuracy: 0.8917 - val_loss: 0.0559 -
val_accuracy: 0.9667
Epoch 16/100
4/4 - 0s - loss: 0.0718 - accuracy: 0.8917 - val_loss: 0.0552 -
val_accuracy: 0.9667
Epoch 17/100
4/4 - 0s - loss: 0.0712 - accuracy: 0.8917 - val_loss: 0.0545 -
val_accuracy: 0.9667
Epoch 18/100
4/4 - 0s - loss: 0.0705 - accuracy: 0.9000 - val_loss: 0.0539 -
val_accuracy: 0.9667
Epoch 19/100
4/4 - 0s - loss: 0.0698 - accuracy: 0.9000 - val_loss: 0.0533 -
val_accuracy: 0.9667
Epoch 20/100
4/4 - 0s - loss: 0.0693 - accuracy: 0.9000 - val_loss: 0.0526 -
val_accuracy: 0.9667
Epoch 21/100
4/4 - 0s - loss: 0.0686 - accuracy: 0.9000 - val_loss: 0.0520 -
val_accuracy: 0.9667
Epoch 22/100
4/4 - 0s - loss: 0.0680 - accuracy: 0.9000 - val_loss: 0.0514 -
val_accuracy: 0.9667
Epoch 23/100
4/4 - 0s - loss: 0.0675 - accuracy: 0.9083 - val_loss: 0.0508 -
val_accuracy: 0.9667
Epoch 24/100
4/4 - 0s - loss: 0.0670 - accuracy: 0.9000 - val_loss: 0.0502 -
val_accuracy: 0.9667
Epoch 25/100
4/4 - 0s - loss: 0.0663 - accuracy: 0.9083 - val_loss: 0.0496 -
val_accuracy: 0.9667
Epoch 26/100
4/4 - 0s - loss: 0.0656 - accuracy: 0.9167 - val_loss: 0.0490 -
val_accuracy: 0.9667
Epoch 27/100
4/4 - 0s - loss: 0.0652 - accuracy: 0.9167 - val_loss: 0.0484 -
val_accuracy: 0.9667
Epoch 28/100
4/4 - 0s - loss: 0.0645 - accuracy: 0.9167 - val_loss: 0.0478 -
val_accuracy: 0.9667
Epoch 29/100

```
4/4 - 0s - loss: 0.0639 - accuracy: 0.9167 - val_loss: 0.0472 -
val_accuracy: 0.9667
Epoch 30/100
4/4 - 0s - loss: 0.0633 - accuracy: 0.9167 - val_loss: 0.0466 -
val_accuracy: 0.9667
Epoch 31/100
4/4 - 0s - loss: 0.0628 - accuracy: 0.9167 - val_loss: 0.0461 -
val_accuracy: 0.9667
Epoch 32/100
4/4 - 0s - loss: 0.0625 - accuracy: 0.9167 - val_loss: 0.0455 -
val_accuracy: 0.9667
Epoch 33/100
4/4 - 0s - loss: 0.0616 - accuracy: 0.9167 - val_loss: 0.0451 -
val_accuracy: 0.9667
Epoch 34/100
4/4 - 0s - loss: 0.0610 - accuracy: 0.9167 - val_loss: 0.0445 -
val_accuracy: 0.9667
Epoch 35/100
4/4 - 0s - loss: 0.0604 - accuracy: 0.9167 - val_loss: 0.0439 -
val_accuracy: 0.9667
Epoch 36/100
4/4 - 0s - loss: 0.0598 - accuracy: 0.9250 - val_loss: 0.0434 -
val_accuracy: 0.9667
Epoch 37/100
4/4 - 0s - loss: 0.0594 - accuracy: 0.9250 - val_loss: 0.0429 -
val_accuracy: 0.9667
Epoch 38/100
4/4 - 0s - loss: 0.0588 - accuracy: 0.9333 - val_loss: 0.0424 -
val_accuracy: 0.9667
Epoch 39/100
4/4 - 0s - loss: 0.0581 - accuracy: 0.9333 - val_loss: 0.0419 -
val_accuracy: 0.9667
Epoch 40/100
4/4 - 0s - loss: 0.0577 - accuracy: 0.9333 - val_loss: 0.0414 -
val_accuracy: 0.9667
Epoch 41/100
4/4 - 0s - loss: 0.0571 - accuracy: 0.9333 - val_loss: 0.0410 -
val_accuracy: 0.9667
Epoch 42/100
4/4 - 0s - loss: 0.0567 - accuracy: 0.9333 - val_loss: 0.0405 -
val_accuracy: 0.9667
Epoch 43/100
4/4 - 0s - loss: 0.0561 - accuracy: 0.9333 - val_loss: 0.0401 -
val_accuracy: 0.9667
Epoch 44/100
4/4 - 0s - loss: 0.0555 - accuracy: 0.9333 - val_loss: 0.0395 -
val_accuracy: 0.9667
Epoch 45/100
4/4 - 0s - loss: 0.0551 - accuracy: 0.9333 - val_loss: 0.0391 -
val_accuracy: 0.9667
```

```
Epoch 46/100
4/4 - 0s - loss: 0.0546 - accuracy: 0.9417 - val_loss: 0.0387 -
val_accuracy: 0.9667
Epoch 47/100
4/4 - 0s - loss: 0.0539 - accuracy: 0.9333 - val_loss: 0.0383 -
val_accuracy: 0.9667
Epoch 48/100
4/4 - 0s - loss: 0.0534 - accuracy: 0.9417 - val_loss: 0.0378 -
val_accuracy: 0.9667
Epoch 49/100
4/4 - 0s - loss: 0.0533 - accuracy: 0.9417 - val_loss: 0.0374 -
val_accuracy: 0.9667
Epoch 50/100
4/4 - 0s - loss: 0.0526 - accuracy: 0.9417 - val_loss: 0.0370 -
val_accuracy: 0.9667

Epoch 51/100
4/4 - 0s - loss: 0.0520 - accuracy: 0.9417 - val_loss: 0.0366 -
val_accuracy: 0.9667
Epoch 52/100
4/4 - 0s - loss: 0.0515 - accuracy: 0.9417 - val_loss: 0.0361 -
val_accuracy: 0.9667
Epoch 53/100
4/4 - 0s - loss: 0.0510 - accuracy: 0.9417 - val_loss: 0.0357 -
val_accuracy: 0.9667
Epoch 54/100
4/4 - 0s - loss: 0.0505 - accuracy: 0.9417 - val_loss: 0.0353 -
val_accuracy: 0.9667
Epoch 55/100
4/4 - 0s - loss: 0.0500 - accuracy: 0.9417 - val_loss: 0.0349 -
val_accuracy: 0.9667
Epoch 56/100
4/4 - 0s - loss: 0.0497 - accuracy: 0.9417 - val_loss: 0.0345 -
val_accuracy: 0.9667
Epoch 57/100
4/4 - 0s - loss: 0.0492 - accuracy: 0.9417 - val_loss: 0.0341 -
val_accuracy: 0.9667
Epoch 58/100
4/4 - 0s - loss: 0.0488 - accuracy: 0.9417 - val_loss: 0.0337 -
val_accuracy: 0.9667
Epoch 59/100
4/4 - 0s - loss: 0.0484 - accuracy: 0.9417 - val_loss: 0.0335 -
val_accuracy: 0.9667
Epoch 60/100
4/4 - 0s - loss: 0.0479 - accuracy: 0.9417 - val_loss: 0.0332 -
val_accuracy: 0.9667
Epoch 61/100
4/4 - 0s - loss: 0.0474 - accuracy: 0.9417 - val_loss: 0.0330 -
val_accuracy: 0.9667
Epoch 62/100
```

```
4/4 - 0s - loss: 0.0470 - accuracy: 0.9417 - val_loss: 0.0326 -
val_accuracy: 0.9667
Epoch 63/100
4/4 - 0s - loss: 0.0465 - accuracy: 0.9417 - val_loss: 0.0323 -
val_accuracy: 0.9667
Epoch 64/100
4/4 - 0s - loss: 0.0461 - accuracy: 0.9417 - val_loss: 0.0320 -
val_accuracy: 0.9667
Epoch 65/100
4/4 - 0s - loss: 0.0459 - accuracy: 0.9417 - val_loss: 0.0319 -
val_accuracy: 0.9667
Epoch 66/100
4/4 - 0s - loss: 0.0455 - accuracy: 0.9500 - val_loss: 0.0315 -
val_accuracy: 0.9667
Epoch 67/100
4/4 - 0s - loss: 0.0451 - accuracy: 0.9500 - val_loss: 0.0312 -
val_accuracy: 0.9667
Epoch 68/100
4/4 - 0s - loss: 0.0449 - accuracy: 0.9417 - val_loss: 0.0309 -
val_accuracy: 0.9667
Epoch 69/100
4/4 - 0s - loss: 0.0442 - accuracy: 0.9500 - val_loss: 0.0307 -
val_accuracy: 0.9667
Epoch 70/100
4/4 - 0s - loss: 0.0438 - accuracy: 0.9500 - val_loss: 0.0304 -
val_accuracy: 1.0000
Epoch 71/100
4/4 - 0s - loss: 0.0435 - accuracy: 0.9500 - val_loss: 0.0302 -
val_accuracy: 1.0000
Epoch 72/100
4/4 - 0s - loss: 0.0431 - accuracy: 0.9500 - val_loss: 0.0299 -
val_accuracy: 1.0000
Epoch 73/100
4/4 - 0s - loss: 0.0428 - accuracy: 0.9500 - val_loss: 0.0298 -
val_accuracy: 1.0000
Epoch 74/100
4/4 - 0s - loss: 0.0425 - accuracy: 0.9500 - val_loss: 0.0296 -
val_accuracy: 1.0000
Epoch 75/100
4/4 - 0s - loss: 0.0421 - accuracy: 0.9500 - val_loss: 0.0294 -
val_accuracy: 1.0000
Epoch 76/100
4/4 - 0s - loss: 0.0419 - accuracy: 0.9500 - val_loss: 0.0291 -
val_accuracy: 1.0000
Epoch 77/100
4/4 - 0s - loss: 0.0413 - accuracy: 0.9583 - val_loss: 0.0289 -
val_accuracy: 1.0000
Epoch 78/100
4/4 - 0s - loss: 0.0410 - accuracy: 0.9583 - val_loss: 0.0287 -
val_accuracy: 1.0000
```

```
Epoch 79/100
4/4 - 0s - loss: 0.0407 - accuracy: 0.9583 - val_loss: 0.0285 -
val_accuracy: 1.0000
Epoch 80/100
4/4 - 0s - loss: 0.0404 - accuracy: 0.9583 - val_loss: 0.0282 -
val_accuracy: 1.0000
Epoch 81/100
4/4 - 0s - loss: 0.0401 - accuracy: 0.9583 - val_loss: 0.0281 -
val_accuracy: 1.0000
Epoch 82/100
4/4 - 0s - loss: 0.0399 - accuracy: 0.9583 - val_loss: 0.0281 -
val_accuracy: 1.0000
Epoch 83/100
4/4 - 0s - loss: 0.0394 - accuracy: 0.9583 - val_loss: 0.0278 -
val_accuracy: 1.0000
Epoch 84/100
4/4 - 0s - loss: 0.0392 - accuracy: 0.9583 - val_loss: 0.0276 -
val_accuracy: 1.0000
Epoch 85/100
4/4 - 0s - loss: 0.0389 - accuracy: 0.9583 - val_loss: 0.0275 -
val_accuracy: 1.0000
Epoch 86/100
4/4 - 0s - loss: 0.0386 - accuracy: 0.9583 - val_loss: 0.0274 -
val_accuracy: 1.0000
Epoch 87/100
4/4 - 0s - loss: 0.0383 - accuracy: 0.9583 - val_loss: 0.0271 -
val_accuracy: 1.0000
Epoch 88/100
4/4 - 0s - loss: 0.0382 - accuracy: 0.9583 - val_loss: 0.0271 -
val_accuracy: 1.0000
Epoch 89/100
4/4 - 0s - loss: 0.0378 - accuracy: 0.9583 - val_loss: 0.0268 -
val_accuracy: 1.0000
Epoch 90/100
4/4 - 0s - loss: 0.0377 - accuracy: 0.9583 - val_loss: 0.0268 -
val_accuracy: 1.0000
Epoch 91/100
4/4 - 0s - loss: 0.0374 - accuracy: 0.9583 - val_loss: 0.0267 -
val_accuracy: 1.0000
Epoch 92/100
4/4 - 0s - loss: 0.0371 - accuracy: 0.9500 - val_loss: 0.0265 -
val_accuracy: 1.0000
Epoch 93/100
4/4 - 0s - loss: 0.0368 - accuracy: 0.9583 - val_loss: 0.0264 -
val_accuracy: 1.0000
Epoch 94/100
4/4 - 0s - loss: 0.0366 - accuracy: 0.9583 - val_loss: 0.0263 -
val_accuracy: 1.0000
Epoch 95/100
4/4 - 0s - loss: 0.0364 - accuracy: 0.9583 - val_loss: 0.0263 -
```

val_accuracy: 0.9667
Epoch 96/100
4/4 - 0s - loss: 0.0363 - accuracy: 0.9500 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 97/100
4/4 - 0s - loss: 0.0360 - accuracy: 0.9500 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 98/100
4/4 - 0s - loss: 0.0356 - accuracy: 0.9583 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 99/100
4/4 - 0s - loss: 0.0355 - accuracy: 0.9583 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 100/100
4/4 - 0s - loss: 0.0352 - accuracy: 0.9583 - val_loss: 0.0258 -
val_accuracy: 0.9667
Activation: tanh LR: 0.1 Iterations: 100 || Test loss:
0.025795888155698776
Activation: tanh LR: 0.1 Iterations: 100 || Test Accuracy:
0.9666666388511658
==
=======
Model_tanh_LR_0.1_Iterations_200_HL_2
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.1194s). Check your callbacks.
4/4 - 0s - loss: 0.5426 - accuracy: 0.3583 - val_loss: 0.3901 -
val_accuracy: 0.5000
Epoch 2/200
4/4 - 0s - loss: 0.3270 - accuracy: 0.5250 - val_loss: 0.2319 -
val_accuracy: 0.6167
Epoch 3/200
4/4 - 0s - loss: 0.2056 - accuracy: 0.6417 - val_loss: 0.1698 -
val_accuracy: 0.6833
Epoch 4/200
4/4 - 0s - loss: 0.1608 - accuracy: 0.7083 - val_loss: 0.1430 -
val_accuracy: 0.7417
Epoch 5/200
4/4 - 0s - loss: 0.1376 - accuracy: 0.7417 - val_loss: 0.1274 -
val_accuracy: 0.7417
Epoch 6/200
4/4 - 0s - loss: 0.1240 - accuracy: 0.7583 - val_loss: 0.1174 -
val_accuracy: 0.7833
Epoch 7/200
4/4 - 0s - loss: 0.1153 - accuracy: 0.7833 - val_loss: 0.1108 -
val_accuracy: 0.8083
Epoch 8/200
4/4 - 0s - loss: 0.1092 - accuracy: 0.8167 - val_loss: 0.1061 -
val_accuracy: 0.8167

```
Epoch 9/200
4/4 - 0s - loss: 0.1050 - accuracy: 0.8167 - val_loss: 0.1025 -
val_accuracy: 0.8333
Epoch 10/200
4/4 - 0s - loss: 0.1017 - accuracy: 0.8250 - val_loss: 0.0996 -
val_accuracy: 0.8417
Epoch 11/200
4/4 - 0s - loss: 0.0995 - accuracy: 0.8333 - val_loss: 0.0973 -
val_accuracy: 0.8500
Epoch 12/200
4/4 - 0s - loss: 0.0968 - accuracy: 0.8583 - val_loss: 0.0952 -
val_accuracy: 0.8583
Epoch 13/200
4/4 - 0s - loss: 0.0952 - accuracy: 0.8667 - val_loss: 0.0935 -
val_accuracy: 0.8750
Epoch 14/200
4/4 - 0s - loss: 0.0930 - accuracy: 0.8750 - val_loss: 0.0917 -
val_accuracy: 0.8750
Epoch 15/200
4/4 - 0s - loss: 0.0914 - accuracy: 0.8833 - val_loss: 0.0901 -
val_accuracy: 0.8750
Epoch 16/200
4/4 - 0s - loss: 0.0904 - accuracy: 0.8750 - val_loss: 0.0886 -
val_accuracy: 0.8750
Epoch 17/200
4/4 - 0s - loss: 0.0882 - accuracy: 0.8833 - val_loss: 0.0871 -
val_accuracy: 0.8833
Epoch 18/200
4/4 - 0s - loss: 0.0868 - accuracy: 0.8833 - val_loss: 0.0856 -
val_accuracy: 0.8833
Epoch 19/200
4/4 - 0s - loss: 0.0855 - accuracy: 0.8833 - val_loss: 0.0843 -
val_accuracy: 0.9000
Epoch 20/200
4/4 - 0s - loss: 0.0840 - accuracy: 0.9000 - val_loss: 0.0830 -
val_accuracy: 0.9000
Epoch 21/200
4/4 - 0s - loss: 0.0834 - accuracy: 0.8833 - val_loss: 0.0818 -
val_accuracy: 0.9000
Epoch 22/200
4/4 - 0s - loss: 0.0817 - accuracy: 0.9000 - val_loss: 0.0805 -
val_accuracy: 0.9000
Epoch 23/200
4/4 - 0s - loss: 0.0804 - accuracy: 0.9000 - val_loss: 0.0794 -
val_accuracy: 0.9000
Epoch 24/200
4/4 - 0s - loss: 0.0793 - accuracy: 0.9000 - val_loss: 0.0782 -
val_accuracy: 0.9000
Epoch 25/200
4/4 - 0s - loss: 0.0781 - accuracy: 0.9000 - val_loss: 0.0771 -
```

```
val_accuracy: 0.9000
Epoch 26/200
4/4 - 0s - loss: 0.0775 - accuracy: 0.8833 - val_loss: 0.0760 -
val_accuracy: 0.9083
Epoch 27/200
4/4 - 0s - loss: 0.0759 - accuracy: 0.9083 - val_loss: 0.0748 -
val_accuracy: 0.9083
Epoch 28/200
4/4 - 0s - loss: 0.0747 - accuracy: 0.9083 - val_loss: 0.0738 -
val_accuracy: 0.9083
Epoch 29/200
4/4 - 0s - loss: 0.0736 - accuracy: 0.9083 - val_loss: 0.0726 -
val_accuracy: 0.9083
Epoch 30/200
4/4 - 0s - loss: 0.0725 - accuracy: 0.9083 - val_loss: 0.0716 -
val_accuracy: 0.9083

Epoch 31/200
4/4 - 0s - loss: 0.0714 - accuracy: 0.9083 - val_loss: 0.0706 -
val_accuracy: 0.9083
Epoch 32/200
4/4 - 0s - loss: 0.0705 - accuracy: 0.9083 - val_loss: 0.0696 -
val_accuracy: 0.9083
Epoch 33/200
4/4 - 0s - loss: 0.0696 - accuracy: 0.9083 - val_loss: 0.0686 -
val_accuracy: 0.9083
Epoch 34/200
4/4 - 0s - loss: 0.0688 - accuracy: 0.9167 - val_loss: 0.0676 -
val_accuracy: 0.9083
Epoch 35/200
4/4 - 0s - loss: 0.0677 - accuracy: 0.9167 - val_loss: 0.0667 -
val_accuracy: 0.9167
Epoch 36/200
4/4 - 0s - loss: 0.0668 - accuracy: 0.9250 - val_loss: 0.0657 -
val_accuracy: 0.9167
Epoch 37/200
4/4 - 0s - loss: 0.0656 - accuracy: 0.9333 - val_loss: 0.0649 -
val_accuracy: 0.9250
Epoch 38/200
4/4 - 0s - loss: 0.0651 - accuracy: 0.9167 - val_loss: 0.0639 -
val_accuracy: 0.9333
Epoch 39/200
4/4 - 0s - loss: 0.0637 - accuracy: 0.9333 - val_loss: 0.0630 -
val_accuracy: 0.9417
Epoch 40/200
4/4 - 0s - loss: 0.0630 - accuracy: 0.9333 - val_loss: 0.0622 -
val_accuracy: 0.9417
Epoch 41/200
4/4 - 0s - loss: 0.0619 - accuracy: 0.9500 - val_loss: 0.0613 -
val_accuracy: 0.9417
```

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Epoch 42/200
4/4 - 0s - loss: 0.0612 - accuracy: 0.9417 - val_loss: 0.0605 -
val_accuracy: 0.9417
Epoch 43/200
4/4 - 0s - loss: 0.0604 - accuracy: 0.9417 - val_loss: 0.0596 -
val_accuracy: 0.9417
Epoch 44/200
4/4 - 0s - loss: 0.0597 - accuracy: 0.9417 - val_loss: 0.0588 -
val_accuracy: 0.9417
Epoch 45/200
4/4 - 0s - loss: 0.0588 - accuracy: 0.9417 - val_loss: 0.0579 -
val_accuracy: 0.9417
Epoch 46/200
4/4 - 0s - loss: 0.0579 - accuracy: 0.9500 - val_loss: 0.0572 -
val_accuracy: 0.9417
Epoch 47/200
4/4 - 0s - loss: 0.0573 - accuracy: 0.9417 - val_loss: 0.0564 -
val_accuracy: 0.9417
Epoch 48/200
4/4 - 0s - loss: 0.0564 - accuracy: 0.9417 - val_loss: 0.0556 -
val_accuracy: 0.9417
Epoch 49/200
4/4 - 0s - loss: 0.0555 - accuracy: 0.9417 - val_loss: 0.0549 -
val_accuracy: 0.9417
Epoch 50/200
4/4 - 0s - loss: 0.0548 - accuracy: 0.9417 - val_loss: 0.0541 -
val_accuracy: 0.9417
Epoch 51/200
4/4 - 0s - loss: 0.0540 - accuracy: 0.9417 - val_loss: 0.0534 -
val_accuracy: 0.9417
Epoch 52/200
4/4 - 0s - loss: 0.0534 - accuracy: 0.9417 - val_loss: 0.0527 -
val_accuracy: 0.9417
Epoch 53/200
4/4 - 0s - loss: 0.0526 - accuracy: 0.9417 - val_loss: 0.0520 -
val_accuracy: 0.9417
Epoch 54/200
4/4 - 0s - loss: 0.0519 - accuracy: 0.9417 - val_loss: 0.0514 -
val_accuracy: 0.9417
Epoch 55/200
4/4 - 0s - loss: 0.0515 - accuracy: 0.9417 - val_loss: 0.0507 -
val_accuracy: 0.9417
Epoch 56/200
4/4 - 0s - loss: 0.0506 - accuracy: 0.9417 - val_loss: 0.0501 -
val_accuracy: 0.9417
Epoch 57/200
4/4 - 0s - loss: 0.0502 - accuracy: 0.9417 - val_loss: 0.0494 -
val_accuracy: 0.9417
Epoch 58/200
4/4 - 0s - loss: 0.0495 - accuracy: 0.9417 - val_loss: 0.0488 -
```

```
val_accuracy: 0.9417
Epoch 59/200
4/4 - 0s - loss: 0.0488 - accuracy: 0.9417 - val_loss: 0.0482 -
val_accuracy: 0.9417
Epoch 60/200
4/4 - 0s - loss: 0.0482 - accuracy: 0.9417 - val_loss: 0.0476 -
val_accuracy: 0.9417
Epoch 61/200
4/4 - 0s - loss: 0.0477 - accuracy: 0.9500 - val_loss: 0.0471 -
val_accuracy: 0.9500
Epoch 62/200
4/4 - 0s - loss: 0.0472 - accuracy: 0.9500 - val_loss: 0.0465 -
val_accuracy: 0.9500
Epoch 63/200
4/4 - 0s - loss: 0.0464 - accuracy: 0.9500 - val_loss: 0.0460 -
val_accuracy: 0.9500
Epoch 64/200
4/4 - 0s - loss: 0.0460 - accuracy: 0.9500 - val_loss: 0.0454 -
val_accuracy: 0.9500
Epoch 65/200
4/4 - 0s - loss: 0.0455 - accuracy: 0.9500 - val_loss: 0.0449 -
val_accuracy: 0.9500
Epoch 66/200
4/4 - 0s - loss: 0.0450 - accuracy: 0.9500 - val_loss: 0.0444 -
val_accuracy: 0.9500
Epoch 67/200
4/4 - 0s - loss: 0.0445 - accuracy: 0.9500 - val_loss: 0.0439 -
val_accuracy: 0.9500
Epoch 68/200
4/4 - 0s - loss: 0.0438 - accuracy: 0.9500 - val_loss: 0.0434 -
val_accuracy: 0.9583
Epoch 69/200
4/4 - 0s - loss: 0.0434 - accuracy: 0.9583 - val_loss: 0.0429 -
val_accuracy: 0.9667
Epoch 70/200
4/4 - 0s - loss: 0.0430 - accuracy: 0.9583 - val_loss: 0.0424 -
val_accuracy: 0.9583
Epoch 71/200
4/4 - 0s - loss: 0.0424 - accuracy: 0.9583 - val_loss: 0.0420 -
val_accuracy: 0.9583
Epoch 72/200
4/4 - 0s - loss: 0.0419 - accuracy: 0.9583 - val_loss: 0.0415 -
val_accuracy: 0.9583
Epoch 73/200
4/4 - 0s - loss: 0.0415 - accuracy: 0.9667 - val_loss: 0.0411 -
val_accuracy: 0.9583
Epoch 74/200
4/4 - 0s - loss: 0.0411 - accuracy: 0.9583 - val_loss: 0.0407 -
val_accuracy: 0.9583
Epoch 75/200
```

```
4/4 - 0s - loss: 0.0407 - accuracy: 0.9583 - val_loss: 0.0403 -
val_accuracy: 0.9583
Epoch 76/200
4/4 - 0s - loss: 0.0402 - accuracy: 0.9583 - val_loss: 0.0398 -
val_accuracy: 0.9583
Epoch 77/200
4/4 - 0s - loss: 0.0398 - accuracy: 0.9583 - val_loss: 0.0395 -
val_accuracy: 0.9583
Epoch 78/200
4/4 - 0s - loss: 0.0394 - accuracy: 0.9583 - val_loss: 0.0391 -
val_accuracy: 0.9667
Epoch 79/200
4/4 - 0s - loss: 0.0391 - accuracy: 0.9750 - val_loss: 0.0387 -
val_accuracy: 0.9750
Epoch 80/200
4/4 - 0s - loss: 0.0390 - accuracy: 0.9667 - val_loss: 0.0383 -
val_accuracy: 0.9750
Epoch 81/200
4/4 - 0s - loss: 0.0383 - accuracy: 0.9667 - val_loss: 0.0380 -
val_accuracy: 0.9750
Epoch 82/200
4/4 - 0s - loss: 0.0379 - accuracy: 0.9750 - val_loss: 0.0376 -
val_accuracy: 0.9667
Epoch 83/200
4/4 - 0s - loss: 0.0376 - accuracy: 0.9667 - val_loss: 0.0373 -
val_accuracy: 0.9667
Epoch 84/200
4/4 - 0s - loss: 0.0373 - accuracy: 0.9667 - val_loss: 0.0370 -
val_accuracy: 0.9667
Epoch 85/200
4/4 - 0s - loss: 0.0371 - accuracy: 0.9667 - val_loss: 0.0367 -
val_accuracy: 0.9750
Epoch 86/200
4/4 - 0s - loss: 0.0366 - accuracy: 0.9667 - val_loss: 0.0364 -
val_accuracy: 0.9750
Epoch 87/200
4/4 - 0s - loss: 0.0365 - accuracy: 0.9750 - val_loss: 0.0361 -
val_accuracy: 0.9750
Epoch 88/200
4/4 - 0s - loss: 0.0361 - accuracy: 0.9750 - val_loss: 0.0358 -
val_accuracy: 0.9750
Epoch 89/200
4/4 - 0s - loss: 0.0358 - accuracy: 0.9750 - val_loss: 0.0355 -
val_accuracy: 0.9833
Epoch 90/200
4/4 - 0s - loss: 0.0354 - accuracy: 0.9750 - val_loss: 0.0352 -
val_accuracy: 0.9833
Epoch 91/200
4/4 - 0s - loss: 0.0352 - accuracy: 0.9833 - val_loss: 0.0349 -
val_accuracy: 0.9833
```

```
Epoch 92/200
4/4 - 0s - loss: 0.0349 - accuracy: 0.9833 - val_loss: 0.0346 -
val_accuracy: 0.9750
Epoch 93/200
4/4 - 0s - loss: 0.0348 - accuracy: 0.9750 - val_loss: 0.0344 -
val_accuracy: 0.9750
Epoch 94/200
4/4 - 0s - loss: 0.0344 - accuracy: 0.9750 - val_loss: 0.0341 -
val_accuracy: 0.9750
Epoch 95/200
4/4 - 0s - loss: 0.0341 - accuracy: 0.9750 - val_loss: 0.0339 -
val_accuracy: 0.9750
Epoch 96/200
4/4 - 0s - loss: 0.0339 - accuracy: 0.9750 - val_loss: 0.0336 -
val_accuracy: 0.9750
Epoch 97/200
4/4 - 0s - loss: 0.0337 - accuracy: 0.9833 - val_loss: 0.0334 -
val_accuracy: 0.9750
Epoch 98/200
4/4 - 0s - loss: 0.0334 - accuracy: 0.9750 - val_loss: 0.0332 -
val_accuracy: 0.9750
Epoch 99/200
4/4 - 0s - loss: 0.0331 - accuracy: 0.9750 - val_loss: 0.0329 -
val_accuracy: 0.9833
Epoch 100/200
4/4 - 0s - loss: 0.0330 - accuracy: 0.9833 - val_loss: 0.0327 -
val_accuracy: 0.9833
Epoch 101/200
4/4 - 0s - loss: 0.0328 - accuracy: 0.9750 - val_loss: 0.0325 -
val_accuracy: 0.9833
Epoch 102/200
4/4 - 0s - loss: 0.0325 - accuracy: 0.9833 - val_loss: 0.0323 -
val_accuracy: 0.9833
Epoch 103/200
4/4 - 0s - loss: 0.0323 - accuracy: 0.9667 - val_loss: 0.0321 -
val_accuracy: 0.9833
Epoch 104/200
4/4 - 0s - loss: 0.0324 - accuracy: 0.9833 - val_loss: 0.0319 -
val_accuracy: 0.9833
Epoch 105/200
4/4 - 0s - loss: 0.0319 - accuracy: 0.9833 - val_loss: 0.0317 -
val_accuracy: 0.9750
Epoch 106/200
4/4 - 0s - loss: 0.0317 - accuracy: 0.9750 - val_loss: 0.0315 -
val_accuracy: 0.9750
Epoch 107/200
4/4 - 0s - loss: 0.0315 - accuracy: 0.9750 - val_loss: 0.0313 -
val_accuracy: 0.9750
Epoch 108/200
4/4 - 0s - loss: 0.0315 - accuracy: 0.9833 - val_loss: 0.0311 -
```

val_accuracy: 0.9750
Epoch 109/200
4/4 - 0s - loss: 0.0313 - accuracy: 0.9667 - val_loss: 0.0309 -
val_accuracy: 0.9750
Epoch 110/200
4/4 - 0s - loss: 0.0310 - accuracy: 0.9750 - val_loss: 0.0308 -
val_accuracy: 0.9750
Epoch 111/200
4/4 - 0s - loss: 0.0308 - accuracy: 0.9750 - val_loss: 0.0306 -
val_accuracy: 0.9750
Epoch 112/200
4/4 - 0s - loss: 0.0307 - accuracy: 0.9750 - val_loss: 0.0304 -
val_accuracy: 0.9750
Epoch 113/200
4/4 - 0s - loss: 0.0305 - accuracy: 0.9750 - val_loss: 0.0303 -
val_accuracy: 0.9750
Epoch 114/200
4/4 - 0s - loss: 0.0304 - accuracy: 0.9750 - val_loss: 0.0301 -
val_accuracy: 0.9750

Epoch 115/200
4/4 - 0s - loss: 0.0303 - accuracy: 0.9667 - val_loss: 0.0300 -
val_accuracy: 0.9750
Epoch 116/200
4/4 - 0s - loss: 0.0300 - accuracy: 0.9750 - val_loss: 0.0298 -
val_accuracy: 0.9750
Epoch 117/200
4/4 - 0s - loss: 0.0299 - accuracy: 0.9750 - val_loss: 0.0297 -
val_accuracy: 0.9750
Epoch 118/200
4/4 - 0s - loss: 0.0297 - accuracy: 0.9750 - val_loss: 0.0295 -
val_accuracy: 0.9750
Epoch 119/200
4/4 - 0s - loss: 0.0295 - accuracy: 0.9750 - val_loss: 0.0294 -
val_accuracy: 0.9750
Epoch 120/200
4/4 - 0s - loss: 0.0294 - accuracy: 0.9750 - val_loss: 0.0293 -
val_accuracy: 0.9750
Epoch 121/200
4/4 - 0s - loss: 0.0294 - accuracy: 0.9750 - val_loss: 0.0291 -
val_accuracy: 0.9750
Epoch 122/200
4/4 - 0s - loss: 0.0291 - accuracy: 0.9750 - val_loss: 0.0290 -
val_accuracy: 0.9750
Epoch 123/200
4/4 - 0s - loss: 0.0290 - accuracy: 0.9750 - val_loss: 0.0289 -
val_accuracy: 0.9750
Epoch 124/200
4/4 - 0s - loss: 0.0289 - accuracy: 0.9750 - val_loss: 0.0288 -
val_accuracy: 0.9750

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Epoch 125/200
4/4 - 0s - loss: 0.0289 - accuracy: 0.9750 - val_loss: 0.0286 -
val_accuracy: 0.9750
Epoch 126/200
4/4 - 0s - loss: 0.0287 - accuracy: 0.9750 - val_loss: 0.0285 -
val_accuracy: 0.9750
Epoch 127/200
4/4 - 0s - loss: 0.0290 - accuracy: 0.9750 - val_loss: 0.0284 -
val_accuracy: 0.9750
Epoch 128/200
4/4 - 0s - loss: 0.0284 - accuracy: 0.9750 - val_loss: 0.0283 -
val_accuracy: 0.9750
Epoch 129/200
4/4 - 0s - loss: 0.0284 - accuracy: 0.9750 - val_loss: 0.0282 -
val_accuracy: 0.9750
Epoch 130/200
4/4 - 0s - loss: 0.0283 - accuracy: 0.9750 - val_loss: 0.0281 -
val_accuracy: 0.9750
Epoch 131/200
4/4 - 0s - loss: 0.0282 - accuracy: 0.9750 - val_loss: 0.0280 -
val_accuracy: 0.9750
Epoch 132/200
4/4 - 0s - loss: 0.0281 - accuracy: 0.9750 - val_loss: 0.0279 -
val_accuracy: 0.9750
Epoch 133/200
4/4 - 0s - loss: 0.0281 - accuracy: 0.9750 - val_loss: 0.0278 -
val_accuracy: 0.9750
Epoch 134/200
4/4 - 0s - loss: 0.0279 - accuracy: 0.9750 - val_loss: 0.0277 -
val_accuracy: 0.9750
Epoch 135/200
4/4 - 0s - loss: 0.0278 - accuracy: 0.9750 - val_loss: 0.0276 -
val_accuracy: 0.9750
Epoch 136/200
4/4 - 0s - loss: 0.0277 - accuracy: 0.9750 - val_loss: 0.0275 -
val_accuracy: 0.9750
Epoch 137/200
4/4 - 0s - loss: 0.0275 - accuracy: 0.9750 - val_loss: 0.0274 -
val_accuracy: 0.9750
Epoch 138/200
4/4 - 0s - loss: 0.0275 - accuracy: 0.9750 - val_loss: 0.0273 -
val_accuracy: 0.9750
Epoch 139/200
4/4 - 0s - loss: 0.0274 - accuracy: 0.9750 - val_loss: 0.0272 -
val_accuracy: 0.9750
Epoch 140/200
4/4 - 0s - loss: 0.0273 - accuracy: 0.9750 - val_loss: 0.0272 -
val_accuracy: 0.9750
Epoch 141/200
4/4 - 0s - loss: 0.0272 - accuracy: 0.9750 - val_loss: 0.0271 -
```

```
val_accuracy: 0.9750
Epoch 142/200
4/4 - 0s - loss: 0.0274 - accuracy: 0.9750 - val_loss: 0.0270 -
val_accuracy: 0.9750
Epoch 143/200
4/4 - 0s - loss: 0.0271 - accuracy: 0.9750 - val_loss: 0.0269 -
val_accuracy: 0.9750
Epoch 144/200
4/4 - 0s - loss: 0.0270 - accuracy: 0.9750 - val_loss: 0.0268 -
val_accuracy: 0.9750
Epoch 145/200
4/4 - 0s - loss: 0.0269 - accuracy: 0.9750 - val_loss: 0.0268 -
val_accuracy: 0.9750
Epoch 146/200
4/4 - 0s - loss: 0.0268 - accuracy: 0.9750 - val_loss: 0.0267 -
val_accuracy: 0.9750
Epoch 147/200
4/4 - 0s - loss: 0.0269 - accuracy: 0.9750 - val_loss: 0.0266 -
val_accuracy: 0.9750
Epoch 148/200
4/4 - 0s - loss: 0.0266 - accuracy: 0.9750 - val_loss: 0.0265 -
val_accuracy: 0.9750
Epoch 149/200
4/4 - 0s - loss: 0.0268 - accuracy: 0.9750 - val_loss: 0.0265 -
val_accuracy: 0.9750
Epoch 150/200
4/4 - 0s - loss: 0.0266 - accuracy: 0.9750 - val_loss: 0.0264 -
val_accuracy: 0.9750
Epoch 151/200
4/4 - 0s - loss: 0.0265 - accuracy: 0.9750 - val_loss: 0.0264 -
val_accuracy: 0.9750
Epoch 152/200
4/4 - 0s - loss: 0.0266 - accuracy: 0.9750 - val_loss: 0.0263 -
val_accuracy: 0.9750
Epoch 153/200
4/4 - 0s - loss: 0.0264 - accuracy: 0.9750 - val_loss: 0.0262 -
val_accuracy: 0.9750
Epoch 154/200
4/4 - 0s - loss: 0.0264 - accuracy: 0.9750 - val_loss: 0.0262 -
val_accuracy: 0.9750
Epoch 155/200
4/4 - 0s - loss: 0.0263 - accuracy: 0.9750 - val_loss: 0.0261 -
val_accuracy: 0.9750
Epoch 156/200
4/4 - 0s - loss: 0.0261 - accuracy: 0.9750 - val_loss: 0.0260 -
val_accuracy: 0.9750
Epoch 157/200
4/4 - 0s - loss: 0.0261 - accuracy: 0.9750 - val_loss: 0.0260 -
val_accuracy: 0.9750
Epoch 158/200
```

```
4/4 - 0s - loss: 0.0260 - accuracy: 0.9750 - val_loss: 0.0259 -
val_accuracy: 0.9750
Epoch 159/200
4/4 - 0s - loss: 0.0260 - accuracy: 0.9750 - val_loss: 0.0259 -
val_accuracy: 0.9750
Epoch 160/200
4/4 - 0s - loss: 0.0259 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9750
Epoch 161/200
4/4 - 0s - loss: 0.0259 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9750
Epoch 162/200
4/4 - 0s - loss: 0.0258 - accuracy: 0.9750 - val_loss: 0.0257 -
val_accuracy: 0.9750
Epoch 163/200
4/4 - 0s - loss: 0.0259 - accuracy: 0.9750 - val_loss: 0.0257 -
val_accuracy: 0.9750
Epoch 164/200
4/4 - 0s - loss: 0.0257 - accuracy: 0.9750 - val_loss: 0.0256 -
val_accuracy: 0.9750
Epoch 165/200
4/4 - 0s - loss: 0.0257 - accuracy: 0.9750 - val_loss: 0.0256 -
val_accuracy: 0.9750
Epoch 166/200
4/4 - 0s - loss: 0.0256 - accuracy: 0.9750 - val_loss: 0.0255 -
val_accuracy: 0.9750
Epoch 167/200
4/4 - 0s - loss: 0.0256 - accuracy: 0.9750 - val_loss: 0.0255 -
val_accuracy: 0.9750
Epoch 168/200
4/4 - 0s - loss: 0.0255 - accuracy: 0.9750 - val_loss: 0.0254 -
val_accuracy: 0.9750
Epoch 169/200
4/4 - 0s - loss: 0.0255 - accuracy: 0.9750 - val_loss: 0.0254 -
val_accuracy: 0.9750
Epoch 170/200
4/4 - 0s - loss: 0.0255 - accuracy: 0.9750 - val_loss: 0.0253 -
val_accuracy: 0.9750
Epoch 171/200
4/4 - 0s - loss: 0.0254 - accuracy: 0.9750 - val_loss: 0.0253 -
val_accuracy: 0.9750
Epoch 172/200
4/4 - 0s - loss: 0.0253 - accuracy: 0.9750 - val_loss: 0.0253 -
val_accuracy: 0.9750
Epoch 173/200
4/4 - 0s - loss: 0.0253 - accuracy: 0.9750 - val_loss: 0.0252 -
val_accuracy: 0.9750
Epoch 174/200
4/4 - 0s - loss: 0.0253 - accuracy: 0.9750 - val_loss: 0.0252 -
val_accuracy: 0.9750
```

```
Epoch 175/200
4/4 - 0s - loss: 0.0253 - accuracy: 0.9750 - val_loss: 0.0251 -
val_accuracy: 0.9750
Epoch 176/200
4/4 - 0s - loss: 0.0253 - accuracy: 0.9750 - val_loss: 0.0251 -
val_accuracy: 0.9750
Epoch 177/200
4/4 - 0s - loss: 0.0252 - accuracy: 0.9750 - val_loss: 0.0251 -
val_accuracy: 0.9750
Epoch 178/200
4/4 - 0s - loss: 0.0252 - accuracy: 0.9750 - val_loss: 0.0250 -
val_accuracy: 0.9750
Epoch 179/200
4/4 - 0s - loss: 0.0252 - accuracy: 0.9750 - val_loss: 0.0250 -
val_accuracy: 0.9750
Epoch 180/200
4/4 - 0s - loss: 0.0251 - accuracy: 0.9750 - val_loss: 0.0249 -
val_accuracy: 0.9750
Epoch 181/200
4/4 - 0s - loss: 0.0252 - accuracy: 0.9750 - val_loss: 0.0249 -
val_accuracy: 0.9750
Epoch 182/200
4/4 - 0s - loss: 0.0250 - accuracy: 0.9750 - val_loss: 0.0249 -
val_accuracy: 0.9750
Epoch 183/200
4/4 - 0s - loss: 0.0251 - accuracy: 0.9750 - val_loss: 0.0248 -
val_accuracy: 0.9750
Epoch 184/200
4/4 - 0s - loss: 0.0249 - accuracy: 0.9750 - val_loss: 0.0248 -
val_accuracy: 0.9750
Epoch 185/200
4/4 - 0s - loss: 0.0252 - accuracy: 0.9750 - val_loss: 0.0248 -
val_accuracy: 0.9750
Epoch 186/200
4/4 - 0s - loss: 0.0248 - accuracy: 0.9750 - val_loss: 0.0247 -
val_accuracy: 0.9750
Epoch 187/200
4/4 - 0s - loss: 0.0248 - accuracy: 0.9750 - val_loss: 0.0247 -
val_accuracy: 0.9750
Epoch 188/200
4/4 - 0s - loss: 0.0248 - accuracy: 0.9750 - val_loss: 0.0247 -
val_accuracy: 0.9750
Epoch 189/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9750 - val_loss: 0.0246 -
val_accuracy: 0.9750
Epoch 190/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9750 - val_loss: 0.0246 -
val_accuracy: 0.9750
Epoch 191/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9750 - val_loss: 0.0246 -
```

val_accuracy: 0.9750
Epoch 192/200
4/4 - 0s - loss: 0.0248 - accuracy: 0.9750 - val_loss: 0.0246 -
val_accuracy: 0.9750
Epoch 193/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9750 - val_loss: 0.0245 -
val_accuracy: 0.9750
Epoch 194/200
4/4 - 0s - loss: 0.0246 - accuracy: 0.9750 - val_loss: 0.0245 -
val_accuracy: 0.9750
Epoch 195/200
4/4 - 0s - loss: 0.0245 - accuracy: 0.9750 - val_loss: 0.0245 -
val_accuracy: 0.9750
Epoch 196/200
4/4 - 0s - loss: 0.0245 - accuracy: 0.9750 - val_loss: 0.0244 -
val_accuracy: 0.9750
Epoch 197/200
4/4 - 0s - loss: 0.0245 - accuracy: 0.9750 - val_loss: 0.0244 -
val_accuracy: 0.9750

Epoch 198/200
4/4 - 0s - loss: 0.0246 - accuracy: 0.9750 - val_loss: 0.0244 -
val_accuracy: 0.9750
Epoch 199/200
4/4 - 0s - loss: 0.0245 - accuracy: 0.9750 - val_loss: 0.0244 -
val_accuracy: 0.9750
Epoch 200/200
4/4 - 0s - loss: 0.0244 - accuracy: 0.9750 - val_loss: 0.0243 -
val_accuracy: 0.9750
Activation: tanh LR: 0.1 Itertions: 200 || Train loss:
0.024347778409719467
Activation: tanh LR: 0.1 Itertions: 200 || Train Accuracy:
0.9750000238418579
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.0726s). Check your callbacks.
4/4 - 0s - loss: 0.0245 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 2/200
4/4 - 0s - loss: 0.0244 - accuracy: 0.9750 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 3/200
4/4 - 0s - loss: 0.0244 - accuracy: 0.9750 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 4/200
4/4 - 0s - loss: 0.0244 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 5/200
4/4 - 0s - loss: 0.0243 - accuracy: 0.9750 - val_loss: 0.0258 -

val_accuracy: 0.9667
Epoch 6/200
4/4 - 0s - loss: 0.0244 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 7/200
4/4 - 0s - loss: 0.0243 - accuracy: 0.9750 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 8/200
4/4 - 0s - loss: 0.0242 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 9/200
4/4 - 0s - loss: 0.0244 - accuracy: 0.9750 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 10/200
4/4 - 0s - loss: 0.0242 - accuracy: 0.9750 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 11/200
4/4 - 0s - loss: 0.0242 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 12/200
4/4 - 0s - loss: 0.0242 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 13/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 14/200
4/4 - 0s - loss: 0.0242 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 15/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 16/200
4/4 - 0s - loss: 0.0242 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 17/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 18/200
4/4 - 0s - loss: 0.0240 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 19/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 20/200
4/4 - 0s - loss: 0.0242 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 21/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 22/200

```
4/4 - 0s - loss: 0.0240 - accuracy: 0.9750 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 23/200
4/4 - 0s - loss: 0.0240 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 24/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 25/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 26/200
4/4 - 0s - loss: 0.0240 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 27/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9750 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 28/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9750 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 29/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 30/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 31/200
4/4 - 0s - loss: 0.0240 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 32/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 33/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 34/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 35/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 36/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 37/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 38/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
```

```
Epoch 39/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 40/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 41/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 42/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 43/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 44/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 45/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 46/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 47/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 48/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 49/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 50/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 51/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 52/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 53/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 54/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 55/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9833 - val_loss: 0.0260 -
```

```
val_accuracy: 0.9667
Epoch 56/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 57/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 58/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 59/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 60/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 61/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 62/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 63/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 64/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 65/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 66/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 67/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 68/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 69/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 70/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 71/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 72/200
```

```
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 73/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 74/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 75/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 76/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 77/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 78/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667

Epoch 79/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 80/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 81/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 82/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 83/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 84/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 85/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 86/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 87/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 88/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0263 -
```

```
val_accuracy: 0.9667
Epoch 89/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 90/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 91/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 92/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 93/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 94/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 95/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 96/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0263 -
val_accuracy: 0.9667
Epoch 97/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0263 -
val_accuracy: 0.9667
Epoch 98/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 99/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 100/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 101/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 102/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 103/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 104/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 105/200
```

```
4/4 - 0s - loss: 0.0233 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 106/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 107/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 108/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 109/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 110/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 111/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 112/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 113/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 114/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 115/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 116/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 117/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 118/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 119/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 120/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 121/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
```

```
Epoch 122/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 123/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 124/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 125/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 126/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 127/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 128/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 129/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 130/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 131/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 132/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 133/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 134/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 135/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 136/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 137/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 138/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0260 -
```

```
val_accuracy: 0.9667
Epoch 139/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 140/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 141/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 142/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 143/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 144/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 145/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 146/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 147/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 148/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 149/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 150/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 151/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 152/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 153/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 154/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 155/200
```

```
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 156/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 157/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 158/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 159/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 160/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 161/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667

Epoch 162/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 163/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 164/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 165/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 166/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 167/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 168/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 169/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 170/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9833 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 171/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0259 -
```

```
val_accuracy: 0.9667
Epoch 172/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 173/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 174/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 175/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 176/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 177/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 178/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 179/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 180/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 181/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 182/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 183/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 184/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 185/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 186/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 187/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 188/200
```

```
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 189/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 190/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 191/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 192/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 193/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 194/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9833 - val_loss: 0.0256 -
val_accuracy: 0.9667
Epoch 195/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0256 -
val_accuracy: 0.9667
Epoch 196/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 197/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 198/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0256 -
val_accuracy: 0.9667
Epoch 199/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9833 - val_loss: 0.0255 -
val_accuracy: 0.9667
Epoch 200/200
4/4 - 0s - loss: 0.0225 - accuracy: 0.9833 - val_loss: 0.0256 -
val_accuracy: 0.9667
Activation: tanh LR: 0.1 Iterations: 200 || Test loss:
0.025602709501981735
Activation: tanh LR: 0.1 Iterations: 200 || Test Accuracy:
0.9666666388511658
========================================================================
=======
Model_relu_LR_0.01_Iterations_100_HL_2
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.1148s). Check your callbacks.
WARNING:tensorflow:Callbacks method `on_test_batch_end` is slow
```

compared to the batch time (batch time: 0.0000s vs `on_test_batch_end` time: 0.0010s). Check your callbacks.
4/4 - 0s - loss: 0.2910 - accuracy: 0.4417 - val_loss: 0.2872 - val_accuracy: 0.5667
Epoch 2/100
4/4 - 0s - loss: 0.2856 - accuracy: 0.5417 - val_loss: 0.2822 - val_accuracy: 0.5667
Epoch 3/100
4/4 - 0s - loss: 0.2808 - accuracy: 0.5833 - val_loss: 0.2776 - val_accuracy: 0.5833
Epoch 4/100
4/4 - 0s - loss: 0.2761 - accuracy: 0.5917 - val_loss: 0.2732 - val_accuracy: 0.6000
Epoch 5/100
4/4 - 0s - loss: 0.2720 - accuracy: 0.6083 - val_loss: 0.2690 - val_accuracy: 0.6333
Epoch 6/100
4/4 - 0s - loss: 0.2677 - accuracy: 0.6333 - val_loss: 0.2650 - val_accuracy: 0.6333
Epoch 7/100
4/4 - 0s - loss: 0.2639 - accuracy: 0.6333 - val_loss: 0.2613 - val_accuracy: 0.6333
Epoch 8/100
4/4 - 0s - loss: 0.2603 - accuracy: 0.6333 - val_loss: 0.2580 - val_accuracy: 0.6333
Epoch 9/100
4/4 - 0s - loss: 0.2570 - accuracy: 0.6333 - val_loss: 0.2548 - val_accuracy: 0.6333
Epoch 10/100
4/4 - 0s - loss: 0.2540 - accuracy: 0.6333 - val_loss: 0.2519 - val_accuracy: 0.6417
Epoch 11/100
4/4 - 0s - loss: 0.2511 - accuracy: 0.6417 - val_loss: 0.2491 - val_accuracy: 0.6417
Epoch 12/100
4/4 - 0s - loss: 0.2483 - accuracy: 0.6417 - val_loss: 0.2464 - val_accuracy: 0.6417
Epoch 13/100
4/4 - 0s - loss: 0.2457 - accuracy: 0.6500 - val_loss: 0.2437 - val_accuracy: 0.6500
Epoch 14/100
4/4 - 0s - loss: 0.2428 - accuracy: 0.6500 - val_loss: 0.2409 - val_accuracy: 0.6583
Epoch 15/100
4/4 - 0s - loss: 0.2401 - accuracy: 0.6583 - val_loss: 0.2382 - val_accuracy: 0.6667
Epoch 16/100
4/4 - 0s - loss: 0.2373 - accuracy: 0.6750 - val_loss: 0.2355 - val_accuracy: 0.6750
Epoch 17/100

```
4/4 - 0s - loss: 0.2347 - accuracy: 0.6833 - val_loss: 0.2328 -
val_accuracy: 0.6917
Epoch 18/100
4/4 - 0s - loss: 0.2320 - accuracy: 0.6917 - val_loss: 0.2302 -
val_accuracy: 0.6917
Epoch 19/100
4/4 - 0s - loss: 0.2295 - accuracy: 0.6917 - val_loss: 0.2278 -
val_accuracy: 0.7000
Epoch 20/100
4/4 - 0s - loss: 0.2271 - accuracy: 0.7000 - val_loss: 0.2254 -
val_accuracy: 0.7000
Epoch 21/100
4/4 - 0s - loss: 0.2248 - accuracy: 0.7000 - val_loss: 0.2232 -
val_accuracy: 0.7083
Epoch 22/100
4/4 - 0s - loss: 0.2225 - accuracy: 0.7083 - val_loss: 0.2210 -
val_accuracy: 0.7083
Epoch 23/100
4/4 - 0s - loss: 0.2205 - accuracy: 0.7083 - val_loss: 0.2189 -
val_accuracy: 0.7083
Epoch 24/100
4/4 - 0s - loss: 0.2183 - accuracy: 0.7083 - val_loss: 0.2169 -
val_accuracy: 0.7083
Epoch 25/100
4/4 - 0s - loss: 0.2163 - accuracy: 0.5750 - val_loss: 0.2150 -
val_accuracy: 0.5667
Epoch 26/100
4/4 - 0s - loss: 0.2145 - accuracy: 0.5667 - val_loss: 0.2132 -
val_accuracy: 0.5667
Epoch 27/100
4/4 - 0s - loss: 0.2127 - accuracy: 0.5667 - val_loss: 0.2115 -
val_accuracy: 0.5667
Epoch 28/100
4/4 - 0s - loss: 0.2110 - accuracy: 0.5667 - val_loss: 0.2098 -
val_accuracy: 0.5667
Epoch 29/100
4/4 - 0s - loss: 0.2093 - accuracy: 0.5750 - val_loss: 0.2082 -
val_accuracy: 0.5750
Epoch 30/100
4/4 - 0s - loss: 0.2078 - accuracy: 0.5750 - val_loss: 0.2066 -
val_accuracy: 0.5750
Epoch 31/100
4/4 - 0s - loss: 0.2062 - accuracy: 0.5750 - val_loss: 0.2051 -
val_accuracy: 0.5750
Epoch 32/100
4/4 - 0s - loss: 0.2047 - accuracy: 0.5750 - val_loss: 0.2037 -
val_accuracy: 0.5750
Epoch 33/100
4/4 - 0s - loss: 0.2033 - accuracy: 0.5750 - val_loss: 0.2023 -
val_accuracy: 0.5750
```

```
Epoch 34/100
4/4 - 0s - loss: 0.2019 - accuracy: 0.6167 - val_loss: 0.2009 -
val_accuracy: 0.5750
Epoch 35/100
4/4 - 0s - loss: 0.2005 - accuracy: 0.6750 - val_loss: 0.1996 -
val_accuracy: 0.5750
Epoch 36/100
4/4 - 0s - loss: 0.1993 - accuracy: 0.5750 - val_loss: 0.1983 -
val_accuracy: 0.7250
Epoch 37/100
4/4 - 0s - loss: 0.1980 - accuracy: 0.6250 - val_loss: 0.1971 -
val_accuracy: 0.7250
Epoch 38/100
4/4 - 0s - loss: 0.1967 - accuracy: 0.7250 - val_loss: 0.1958 -
val_accuracy: 0.7250

Epoch 39/100
4/4 - 0s - loss: 0.1955 - accuracy: 0.7333 - val_loss: 0.1947 -
val_accuracy: 0.7333
Epoch 40/100
4/4 - 0s - loss: 0.1944 - accuracy: 0.7333 - val_loss: 0.1935 -
val_accuracy: 0.7333
Epoch 41/100
4/4 - 0s - loss: 0.1932 - accuracy: 0.6333 - val_loss: 0.1924 -
val_accuracy: 0.7500
Epoch 42/100
4/4 - 0s - loss: 0.1921 - accuracy: 0.6583 - val_loss: 0.1913 -
val_accuracy: 0.7500
Epoch 43/100
4/4 - 0s - loss: 0.1910 - accuracy: 0.7083 - val_loss: 0.1902 -
val_accuracy: 0.7500
Epoch 44/100
4/4 - 0s - loss: 0.1899 - accuracy: 0.7500 - val_loss: 0.1891 -
val_accuracy: 0.7500
Epoch 45/100
4/4 - 0s - loss: 0.1888 - accuracy: 0.7500 - val_loss: 0.1880 -
val_accuracy: 0.7500
Epoch 46/100
4/4 - 0s - loss: 0.1878 - accuracy: 0.7500 - val_loss: 0.1870 -
val_accuracy: 0.7500
Epoch 47/100
4/4 - 0s - loss: 0.1867 - accuracy: 0.7500 - val_loss: 0.1860 -
val_accuracy: 0.7500
Epoch 48/100
4/4 - 0s - loss: 0.1857 - accuracy: 0.7500 - val_loss: 0.1850 -
val_accuracy: 0.7500
Epoch 49/100
4/4 - 0s - loss: 0.1848 - accuracy: 0.7500 - val_loss: 0.1840 -
val_accuracy: 0.7500
Epoch 50/100
```

```
4/4 - 0s - loss: 0.1838 - accuracy: 0.7500 - val_loss: 0.1831 -
val_accuracy: 0.7500
Epoch 51/100
4/4 - 0s - loss: 0.1829 - accuracy: 0.7500 - val_loss: 0.1822 -
val_accuracy: 0.7500
Epoch 52/100
4/4 - 0s - loss: 0.1820 - accuracy: 0.7500 - val_loss: 0.1813 -
val_accuracy: 0.7500
Epoch 53/100
4/4 - 0s - loss: 0.1811 - accuracy: 0.7500 - val_loss: 0.1804 -
val_accuracy: 0.7500
Epoch 54/100
4/4 - 0s - loss: 0.1802 - accuracy: 0.7500 - val_loss: 0.1795 -
val_accuracy: 0.7500
Epoch 55/100
4/4 - 0s - loss: 0.1793 - accuracy: 0.7500 - val_loss: 0.1787 -
val_accuracy: 0.7500
Epoch 56/100
4/4 - 0s - loss: 0.1785 - accuracy: 0.7500 - val_loss: 0.1778 -
val_accuracy: 0.7500
Epoch 57/100
4/4 - 0s - loss: 0.1776 - accuracy: 0.7500 - val_loss: 0.1770 -
val_accuracy: 0.7500
Epoch 58/100
4/4 - 0s - loss: 0.1768 - accuracy: 0.7500 - val_loss: 0.1762 -
val_accuracy: 0.7500
Epoch 59/100
4/4 - 0s - loss: 0.1760 - accuracy: 0.7500 - val_loss: 0.1754 -
val_accuracy: 0.7500
Epoch 60/100
4/4 - 0s - loss: 0.1752 - accuracy: 0.7500 - val_loss: 0.1746 -
val_accuracy: 0.7500
Epoch 61/100
4/4 - 0s - loss: 0.1745 - accuracy: 0.7500 - val_loss: 0.1738 -
val_accuracy: 0.7500
Epoch 62/100
4/4 - 0s - loss: 0.1736 - accuracy: 0.7500 - val_loss: 0.1731 -
val_accuracy: 0.7500
Epoch 63/100
4/4 - 0s - loss: 0.1729 - accuracy: 0.7500 - val_loss: 0.1723 -
val_accuracy: 0.7500
Epoch 64/100
4/4 - 0s - loss: 0.1722 - accuracy: 0.7500 - val_loss: 0.1716 -
val_accuracy: 0.7500
Epoch 65/100
4/4 - 0s - loss: 0.1714 - accuracy: 0.7500 - val_loss: 0.1709 -
val_accuracy: 0.7500
Epoch 66/100
4/4 - 0s - loss: 0.1707 - accuracy: 0.7500 - val_loss: 0.1701 -
val_accuracy: 0.7500
```

```
Epoch 67/100
4/4 - 0s - loss: 0.1699 - accuracy: 0.7500 - val_loss: 0.1694 -
val_accuracy: 0.7500
Epoch 68/100
4/4 - 0s - loss: 0.1693 - accuracy: 0.7500 - val_loss: 0.1687 -
val_accuracy: 0.7500
Epoch 69/100
4/4 - 0s - loss: 0.1686 - accuracy: 0.7500 - val_loss: 0.1681 -
val_accuracy: 0.7500
Epoch 70/100
4/4 - 0s - loss: 0.1679 - accuracy: 0.7500 - val_loss: 0.1674 -
val_accuracy: 0.7500
Epoch 71/100
4/4 - 0s - loss: 0.1672 - accuracy: 0.7500 - val_loss: 0.1667 -
val_accuracy: 0.7500
Epoch 72/100
4/4 - 0s - loss: 0.1666 - accuracy: 0.7500 - val_loss: 0.1660 -
val_accuracy: 0.7500
Epoch 73/100
4/4 - 0s - loss: 0.1659 - accuracy: 0.7500 - val_loss: 0.1654 -
val_accuracy: 0.7500
Epoch 74/100
4/4 - 0s - loss: 0.1652 - accuracy: 0.7500 - val_loss: 0.1648 -
val_accuracy: 0.7500
Epoch 75/100
4/4 - 0s - loss: 0.1647 - accuracy: 0.7500 - val_loss: 0.1641 -
val_accuracy: 0.7500
Epoch 76/100
4/4 - 0s - loss: 0.1640 - accuracy: 0.7500 - val_loss: 0.1635 -
val_accuracy: 0.7500
Epoch 77/100
4/4 - 0s - loss: 0.1633 - accuracy: 0.7500 - val_loss: 0.1629 -
val_accuracy: 0.7500
Epoch 78/100
4/4 - 0s - loss: 0.1627 - accuracy: 0.7500 - val_loss: 0.1623 -
val_accuracy: 0.7583
Epoch 79/100
4/4 - 0s - loss: 0.1622 - accuracy: 0.7583 - val_loss: 0.1617 -
val_accuracy: 0.7583
Epoch 80/100
4/4 - 0s - loss: 0.1615 - accuracy: 0.7583 - val_loss: 0.1611 -
val_accuracy: 0.7583
Epoch 81/100
4/4 - 0s - loss: 0.1611 - accuracy: 0.7583 - val_loss: 0.1605 -
val_accuracy: 0.7583
Epoch 82/100
4/4 - 0s - loss: 0.1604 - accuracy: 0.7583 - val_loss: 0.1599 -
val_accuracy: 0.7583
Epoch 83/100
4/4 - 0s - loss: 0.1598 - accuracy: 0.7583 - val_loss: 0.1593 -
```

```
val_accuracy: 0.7583
Epoch 84/100
4/4 - 0s - loss: 0.1592 - accuracy: 0.7583 - val_loss: 0.1587 -
val_accuracy: 0.7583
Epoch 85/100
4/4 - 0s - loss: 0.1586 - accuracy: 0.7583 - val_loss: 0.1582 -
val_accuracy: 0.7583
Epoch 86/100
4/4 - 0s - loss: 0.1580 - accuracy: 0.7583 - val_loss: 0.1576 -
val_accuracy: 0.7583
Epoch 87/100
4/4 - 0s - loss: 0.1575 - accuracy: 0.7583 - val_loss: 0.1571 -
val_accuracy: 0.7583
Epoch 88/100
4/4 - 0s - loss: 0.1570 - accuracy: 0.7583 - val_loss: 0.1565 -
val_accuracy: 0.7583
Epoch 89/100
4/4 - 0s - loss: 0.1564 - accuracy: 0.7583 - val_loss: 0.1560 -
val_accuracy: 0.7583
Epoch 90/100
4/4 - 0s - loss: 0.1559 - accuracy: 0.7583 - val_loss: 0.1555 -
val_accuracy: 0.7583
Epoch 91/100
4/4 - 0s - loss: 0.1553 - accuracy: 0.7583 - val_loss: 0.1549 -
val_accuracy: 0.7583
Epoch 92/100
4/4 - 0s - loss: 0.1548 - accuracy: 0.7583 - val_loss: 0.1544 -
val_accuracy: 0.7667
Epoch 93/100
4/4 - 0s - loss: 0.1542 - accuracy: 0.7667 - val_loss: 0.1539 -
val_accuracy: 0.7667
Epoch 94/100
4/4 - 0s - loss: 0.1538 - accuracy: 0.7667 - val_loss: 0.1534 -
val_accuracy: 0.7667
Epoch 95/100
4/4 - 0s - loss: 0.1533 - accuracy: 0.7667 - val_loss: 0.1529 -
val_accuracy: 0.7667
Epoch 96/100
4/4 - 0s - loss: 0.1528 - accuracy: 0.7667 - val_loss: 0.1524 -
val_accuracy: 0.7667
Epoch 97/100
4/4 - 0s - loss: 0.1522 - accuracy: 0.7667 - val_loss: 0.1519 -
val_accuracy: 0.7667
Epoch 98/100
4/4 - 0s - loss: 0.1517 - accuracy: 0.7667 - val_loss: 0.1514 -
val_accuracy: 0.7667
Epoch 99/100
4/4 - 0s - loss: 0.1513 - accuracy: 0.7667 - val_loss: 0.1509 -
val_accuracy: 0.7667
Epoch 100/100
```

```
4/4 - 0s - loss: 0.1508 - accuracy: 0.7667 - val_loss: 0.1504 -
val_accuracy: 0.7667
Activation: relu LR: 0.01 Itertions: 100 || Train loss:
0.150361105799675
Activation: relu LR: 0.01 Itertions: 100 || Train Accuracy:
0.7666666507720947
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_begin` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_begin` time: 0.0010s). Check your callbacks.
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.0793s). Check your callbacks.
4/4 - 0s - loss: 0.1502 - accuracy: 0.7667 - val_loss: 0.1485 -
val_accuracy: 0.7667
Epoch 2/100
4/4 - 0s - loss: 0.1498 - accuracy: 0.7667 - val_loss: 0.1479 -
val_accuracy: 0.7667
Epoch 3/100
4/4 - 0s - loss: 0.1493 - accuracy: 0.7667 - val_loss: 0.1473 -
val_accuracy: 0.7667
Epoch 4/100
4/4 - 0s - loss: 0.1488 - accuracy: 0.7667 - val_loss: 0.1468 -
val_accuracy: 0.7667
Epoch 5/100
4/4 - 0s - loss: 0.1483 - accuracy: 0.7667 - val_loss: 0.1462 -
val_accuracy: 0.7667
Epoch 6/100
4/4 - 0s - loss: 0.1479 - accuracy: 0.7667 - val_loss: 0.1457 -
val_accuracy: 0.7667
Epoch 7/100
4/4 - 0s - loss: 0.1474 - accuracy: 0.7667 - val_loss: 0.1451 -
val_accuracy: 0.7667
Epoch 8/100
4/4 - 0s - loss: 0.1470 - accuracy: 0.7667 - val_loss: 0.1446 -
val_accuracy: 0.7667
Epoch 9/100
4/4 - 0s - loss: 0.1465 - accuracy: 0.7667 - val_loss: 0.1440 -
val_accuracy: 0.7667
Epoch 10/100
4/4 - 0s - loss: 0.1460 - accuracy: 0.7667 - val_loss: 0.1435 -
val_accuracy: 0.8000
Epoch 11/100
4/4 - 0s - loss: 0.1456 - accuracy: 0.7667 - val_loss: 0.1430 -
val_accuracy: 0.8000
Epoch 12/100
4/4 - 0s - loss: 0.1451 - accuracy: 0.7667 - val_loss: 0.1424 -
val_accuracy: 0.8000
Epoch 13/100
4/4 - 0s - loss: 0.1447 - accuracy: 0.7667 - val_loss: 0.1419 -
```

```
val_accuracy: 0.8000
Epoch 14/100
4/4 - 0s - loss: 0.1443 - accuracy: 0.7667 - val_loss: 0.1414 -
val_accuracy: 0.8000
Epoch 15/100
4/4 - 0s - loss: 0.1438 - accuracy: 0.7667 - val_loss: 0.1408 -
val_accuracy: 0.8000
Epoch 16/100
4/4 - 0s - loss: 0.1434 - accuracy: 0.7667 - val_loss: 0.1404 -
val_accuracy: 0.8000
Epoch 17/100
4/4 - 0s - loss: 0.1430 - accuracy: 0.7667 - val_loss: 0.1398 -
val_accuracy: 0.8000

Epoch 18/100
4/4 - 0s - loss: 0.1426 - accuracy: 0.7667 - val_loss: 0.1393 -
val_accuracy: 0.8000
Epoch 19/100
4/4 - 0s - loss: 0.1422 - accuracy: 0.7667 - val_loss: 0.1388 -
val_accuracy: 0.8000
Epoch 20/100
4/4 - 0s - loss: 0.1418 - accuracy: 0.7667 - val_loss: 0.1383 -
val_accuracy: 0.8000
Epoch 21/100
4/4 - 0s - loss: 0.1413 - accuracy: 0.7667 - val_loss: 0.1378 -
val_accuracy: 0.8000
Epoch 22/100
4/4 - 0s - loss: 0.1410 - accuracy: 0.7667 - val_loss: 0.1373 -
val_accuracy: 0.8000
Epoch 23/100
4/4 - 0s - loss: 0.1406 - accuracy: 0.7667 - val_loss: 0.1368 -
val_accuracy: 0.8000
Epoch 24/100
4/4 - 0s - loss: 0.1402 - accuracy: 0.7667 - val_loss: 0.1364 -
val_accuracy: 0.8000
Epoch 25/100
4/4 - 0s - loss: 0.1399 - accuracy: 0.7667 - val_loss: 0.1359 -
val_accuracy: 0.8000
Epoch 26/100
4/4 - 0s - loss: 0.1394 - accuracy: 0.7667 - val_loss: 0.1355 -
val_accuracy: 0.8000
Epoch 27/100
4/4 - 0s - loss: 0.1390 - accuracy: 0.7750 - val_loss: 0.1351 -
val_accuracy: 0.8000
Epoch 28/100
4/4 - 0s - loss: 0.1386 - accuracy: 0.7750 - val_loss: 0.1346 -
val_accuracy: 0.8000
Epoch 29/100
4/4 - 0s - loss: 0.1384 - accuracy: 0.7750 - val_loss: 0.1342 -
val_accuracy: 0.8000
```

```
Epoch 30/100
4/4 - 0s - loss: 0.1380 - accuracy: 0.7750 - val_loss: 0.1336 -
val_accuracy: 0.8000
Epoch 31/100
4/4 - 0s - loss: 0.1376 - accuracy: 0.7750 - val_loss: 0.1332 -
val_accuracy: 0.8000
Epoch 32/100
4/4 - 0s - loss: 0.1372 - accuracy: 0.7750 - val_loss: 0.1327 -
val_accuracy: 0.8000
Epoch 33/100
4/4 - 0s - loss: 0.1368 - accuracy: 0.7750 - val_loss: 0.1323 -
val_accuracy: 0.8000
Epoch 34/100
4/4 - 0s - loss: 0.1364 - accuracy: 0.7750 - val_loss: 0.1319 -
val_accuracy: 0.8000
Epoch 35/100
4/4 - 0s - loss: 0.1361 - accuracy: 0.7750 - val_loss: 0.1314 -
val_accuracy: 0.8000
Epoch 36/100
4/4 - 0s - loss: 0.1357 - accuracy: 0.7750 - val_loss: 0.1310 -
val_accuracy: 0.8000
Epoch 37/100
4/4 - 0s - loss: 0.1353 - accuracy: 0.7750 - val_loss: 0.1306 -
val_accuracy: 0.8000
Epoch 38/100
4/4 - 0s - loss: 0.1350 - accuracy: 0.7750 - val_loss: 0.1301 -
val_accuracy: 0.8000
Epoch 39/100
4/4 - 0s - loss: 0.1347 - accuracy: 0.7750 - val_loss: 0.1297 -
val_accuracy: 0.8000
Epoch 40/100
4/4 - 0s - loss: 0.1343 - accuracy: 0.7750 - val_loss: 0.1293 -
val_accuracy: 0.8000
Epoch 41/100
4/4 - 0s - loss: 0.1341 - accuracy: 0.7750 - val_loss: 0.1289 -
val_accuracy: 0.8000
Epoch 42/100
4/4 - 0s - loss: 0.1336 - accuracy: 0.7833 - val_loss: 0.1285 -
val_accuracy: 0.8000
Epoch 43/100
4/4 - 0s - loss: 0.1334 - accuracy: 0.7750 - val_loss: 0.1281 -
val_accuracy: 0.8000
Epoch 44/100
4/4 - 0s - loss: 0.1330 - accuracy: 0.7833 - val_loss: 0.1277 -
val_accuracy: 0.8000
Epoch 45/100
4/4 - 0s - loss: 0.1327 - accuracy: 0.7833 - val_loss: 0.1273 -
val_accuracy: 0.8000
Epoch 46/100
4/4 - 0s - loss: 0.1323 - accuracy: 0.7833 - val_loss: 0.1269 -
```

```
val_accuracy: 0.8000
Epoch 47/100
4/4 - 0s - loss: 0.1320 - accuracy: 0.7833 - val_loss: 0.1266 -
val_accuracy: 0.8000
Epoch 48/100
4/4 - 0s - loss: 0.1317 - accuracy: 0.7833 - val_loss: 0.1262 -
val_accuracy: 0.8000
Epoch 49/100
4/4 - 0s - loss: 0.1314 - accuracy: 0.7833 - val_loss: 0.1257 -
val_accuracy: 0.8000
Epoch 50/100
4/4 - 0s - loss: 0.1310 - accuracy: 0.7833 - val_loss: 0.1253 -
val_accuracy: 0.8000
Epoch 51/100
4/4 - 0s - loss: 0.1307 - accuracy: 0.7833 - val_loss: 0.1249 -
val_accuracy: 0.8000
Epoch 52/100
4/4 - 0s - loss: 0.1304 - accuracy: 0.7833 - val_loss: 0.1245 -
val_accuracy: 0.8000
Epoch 53/100
4/4 - 0s - loss: 0.1301 - accuracy: 0.7833 - val_loss: 0.1242 -
val_accuracy: 0.8000
Epoch 54/100
4/4 - 0s - loss: 0.1298 - accuracy: 0.7833 - val_loss: 0.1238 -
val_accuracy: 0.8000
Epoch 55/100
4/4 - 0s - loss: 0.1295 - accuracy: 0.7833 - val_loss: 0.1234 -
val_accuracy: 0.8000
Epoch 56/100
4/4 - 0s - loss: 0.1292 - accuracy: 0.7833 - val_loss: 0.1230 -
val_accuracy: 0.8000
Epoch 57/100
4/4 - 0s - loss: 0.1289 - accuracy: 0.7833 - val_loss: 0.1226 -
val_accuracy: 0.8000
Epoch 58/100
4/4 - 0s - loss: 0.1286 - accuracy: 0.7833 - val_loss: 0.1223 -
val_accuracy: 0.8000
Epoch 59/100
4/4 - 0s - loss: 0.1283 - accuracy: 0.7833 - val_loss: 0.1219 -
val_accuracy: 0.8000
Epoch 60/100
4/4 - 0s - loss: 0.1280 - accuracy: 0.7833 - val_loss: 0.1215 -
val_accuracy: 0.8000
Epoch 61/100
4/4 - 0s - loss: 0.1277 - accuracy: 0.7833 - val_loss: 0.1211 -
val_accuracy: 0.8000
Epoch 62/100
4/4 - 0s - loss: 0.1274 - accuracy: 0.7833 - val_loss: 0.1208 -
val_accuracy: 0.8000
Epoch 63/100
```

```
4/4 - 0s - loss: 0.1271 - accuracy: 0.7833 - val_loss: 0.1204 -
val_accuracy: 0.8000
Epoch 64/100
4/4 - 0s - loss: 0.1268 - accuracy: 0.7833 - val_loss: 0.1201 -
val_accuracy: 0.8000
Epoch 65/100
4/4 - 0s - loss: 0.1265 - accuracy: 0.7833 - val_loss: 0.1197 -
val_accuracy: 0.8000
Epoch 66/100
4/4 - 0s - loss: 0.1263 - accuracy: 0.7833 - val_loss: 0.1193 -
val_accuracy: 0.8000
Epoch 67/100
4/4 - 0s - loss: 0.1260 - accuracy: 0.7833 - val_loss: 0.1190 -
val_accuracy: 0.8000
Epoch 68/100
4/4 - 0s - loss: 0.1257 - accuracy: 0.7833 - val_loss: 0.1186 -
val_accuracy: 0.8000
Epoch 69/100
4/4 - 0s - loss: 0.1254 - accuracy: 0.7833 - val_loss: 0.1183 -
val_accuracy: 0.8000
Epoch 70/100
4/4 - 0s - loss: 0.1251 - accuracy: 0.7833 - val_loss: 0.1180 -
val_accuracy: 0.8000
Epoch 71/100
4/4 - 0s - loss: 0.1249 - accuracy: 0.7833 - val_loss: 0.1176 -
val_accuracy: 0.8000
Epoch 72/100
4/4 - 0s - loss: 0.1246 - accuracy: 0.7833 - val_loss: 0.1173 -
val_accuracy: 0.8000
Epoch 73/100
4/4 - 0s - loss: 0.1243 - accuracy: 0.7833 - val_loss: 0.1170 -
val_accuracy: 0.8000
Epoch 74/100
4/4 - 0s - loss: 0.1241 - accuracy: 0.7833 - val_loss: 0.1166 -
val_accuracy: 0.8000
Epoch 75/100
4/4 - 0s - loss: 0.1238 - accuracy: 0.7833 - val_loss: 0.1163 -
val_accuracy: 0.8000
Epoch 76/100
4/4 - 0s - loss: 0.1236 - accuracy: 0.7833 - val_loss: 0.1160 -
val_accuracy: 0.8000
Epoch 77/100
4/4 - 0s - loss: 0.1233 - accuracy: 0.7833 - val_loss: 0.1157 -
val_accuracy: 0.8000
Epoch 78/100
4/4 - 0s - loss: 0.1231 - accuracy: 0.7833 - val_loss: 0.1154 -
val_accuracy: 0.8000
Epoch 79/100
4/4 - 0s - loss: 0.1228 - accuracy: 0.7833 - val_loss: 0.1151 -
val_accuracy: 0.8000
```

```
Epoch 80/100
4/4 - 0s - loss: 0.1225 - accuracy: 0.7833 - val_loss: 0.1147 -
val_accuracy: 0.8000
Epoch 81/100
4/4 - 0s - loss: 0.1223 - accuracy: 0.7833 - val_loss: 0.1145 -
val_accuracy: 0.8000
Epoch 82/100
4/4 - 0s - loss: 0.1220 - accuracy: 0.7833 - val_loss: 0.1142 -
val_accuracy: 0.8000
Epoch 83/100
4/4 - 0s - loss: 0.1218 - accuracy: 0.7833 - val_loss: 0.1139 -
val_accuracy: 0.8000
Epoch 84/100
4/4 - 0s - loss: 0.1215 - accuracy: 0.7833 - val_loss: 0.1136 -
val_accuracy: 0.8000
Epoch 85/100
4/4 - 0s - loss: 0.1213 - accuracy: 0.7833 - val_loss: 0.1133 -
val_accuracy: 0.8000
Epoch 86/100
4/4 - 0s - loss: 0.1210 - accuracy: 0.7833 - val_loss: 0.1130 -
val_accuracy: 0.8000
Epoch 87/100
4/4 - 0s - loss: 0.1208 - accuracy: 0.7833 - val_loss: 0.1127 -
val_accuracy: 0.8000
Epoch 88/100
4/4 - 0s - loss: 0.1205 - accuracy: 0.7833 - val_loss: 0.1124 -
val_accuracy: 0.8000
Epoch 89/100
4/4 - 0s - loss: 0.1203 - accuracy: 0.7833 - val_loss: 0.1121 -
val_accuracy: 0.8000
Epoch 90/100
4/4 - 0s - loss: 0.1201 - accuracy: 0.7833 - val_loss: 0.1117 -
val_accuracy: 0.8000
Epoch 91/100
4/4 - 0s - loss: 0.1199 - accuracy: 0.7833 - val_loss: 0.1114 -
val_accuracy: 0.8000
Epoch 92/100
4/4 - 0s - loss: 0.1197 - accuracy: 0.7833 - val_loss: 0.1112 -
val_accuracy: 0.8000
Epoch 93/100
4/4 - 0s - loss: 0.1194 - accuracy: 0.7833 - val_loss: 0.1110 -
val_accuracy: 0.8000
Epoch 94/100
4/4 - 0s - loss: 0.1192 - accuracy: 0.7833 - val_loss: 0.1106 -
val_accuracy: 0.8000
Epoch 95/100
4/4 - 0s - loss: 0.1190 - accuracy: 0.7833 - val_loss: 0.1104 -
val_accuracy: 0.8000
Epoch 96/100
4/4 - 0s - loss: 0.1188 - accuracy: 0.7833 - val_loss: 0.1101 -
```

```
val_accuracy: 0.8000
Epoch 97/100
4/4 - 0s - loss: 0.1185 - accuracy: 0.7833 - val_loss: 0.1098 -
val_accuracy: 0.8000
Epoch 98/100
4/4 - 0s - loss: 0.1183 - accuracy: 0.7833 - val_loss: 0.1096 -
val_accuracy: 0.8000
Epoch 99/100
4/4 - 0s - loss: 0.1181 - accuracy: 0.7833 - val_loss: 0.1093 -
val_accuracy: 0.8000
Epoch 100/100
4/4 - 0s - loss: 0.1179 - accuracy: 0.7833 - val_loss: 0.1090 -
val_accuracy: 0.8000
Activation: relu LR: 0.01 Iterations: 100 || Test loss:
0.10904707759618759
Activation: relu LR: 0.01 Iterations: 100 || Test Accuracy:
0.800000011920929
========================================================================
=======
Model_relu_LR_0.01_Iterations_200_HL_2

Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_begin` is slow
compared to the batch time (batch time: 0.0005s vs
`on_train_batch_begin` time: 0.0010s). Check your callbacks.
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0005s vs
`on_train_batch_end` time: 0.1163s). Check your callbacks.
WARNING:tensorflow:Callbacks method `on_test_batch_begin` is slow
compared to the batch time (batch time: 0.0000s vs
`on_test_batch_begin` time: 0.0010s). Check your callbacks.
4/4 - 0s - loss: 0.4708 - accuracy: 0.2917 - val_loss: 0.4607 -
val_accuracy: 0.2917
Epoch 2/200
4/4 - 0s - loss: 0.4560 - accuracy: 0.2833 - val_loss: 0.4476 -
val_accuracy: 0.2833
Epoch 3/200
4/4 - 0s - loss: 0.4436 - accuracy: 0.2833 - val_loss: 0.4364 -
val_accuracy: 0.2667
Epoch 4/200
4/4 - 0s - loss: 0.4329 - accuracy: 0.2667 - val_loss: 0.4265 -
val_accuracy: 0.2500
Epoch 5/200
4/4 - 0s - loss: 0.4235 - accuracy: 0.2417 - val_loss: 0.4179 -
val_accuracy: 0.2333
Epoch 6/200
4/4 - 0s - loss: 0.4153 - accuracy: 0.2250 - val_loss: 0.4104 -
val_accuracy: 0.2167
Epoch 7/200
4/4 - 0s - loss: 0.4081 - accuracy: 0.2167 - val_loss: 0.4036 -
```

```
val_accuracy: 0.2167
Epoch 8/200
4/4 - 0s - loss: 0.4016 - accuracy: 0.2167 - val_loss: 0.3977 -
val_accuracy: 0.2167
Epoch 9/200
4/4 - 0s - loss: 0.3959 - accuracy: 0.2167 - val_loss: 0.3925 -
val_accuracy: 0.2167
Epoch 10/200
4/4 - 0s - loss: 0.3910 - accuracy: 0.2167 - val_loss: 0.3881 -
val_accuracy: 0.2167
Epoch 11/200
4/4 - 0s - loss: 0.3867 - accuracy: 0.2167 - val_loss: 0.3840 -
val_accuracy: 0.2167
Epoch 12/200
4/4 - 0s - loss: 0.3827 - accuracy: 0.2167 - val_loss: 0.3803 -
val_accuracy: 0.2167
Epoch 13/200
4/4 - 0s - loss: 0.3792 - accuracy: 0.2167 - val_loss: 0.3769 -
val_accuracy: 0.2167
Epoch 14/200
4/4 - 0s - loss: 0.3759 - accuracy: 0.2167 - val_loss: 0.3737 -
val_accuracy: 0.2167
Epoch 15/200
4/4 - 0s - loss: 0.3728 - accuracy: 0.2167 - val_loss: 0.3709 -
val_accuracy: 0.2167
Epoch 16/200
4/4 - 0s - loss: 0.3701 - accuracy: 0.2083 - val_loss: 0.3684 -
val_accuracy: 0.2083
Epoch 17/200
4/4 - 0s - loss: 0.3676 - accuracy: 0.2000 - val_loss: 0.3661 -
val_accuracy: 0.2000
Epoch 18/200
4/4 - 0s - loss: 0.3653 - accuracy: 0.2000 - val_loss: 0.3639 -
val_accuracy: 0.2000
Epoch 19/200
4/4 - 0s - loss: 0.3633 - accuracy: 0.2000 - val_loss: 0.3620 -
val_accuracy: 0.2000
Epoch 20/200
4/4 - 0s - loss: 0.3614 - accuracy: 0.2000 - val_loss: 0.3602 -
val_accuracy: 0.2000
Epoch 21/200
4/4 - 0s - loss: 0.3596 - accuracy: 0.2000 - val_loss: 0.3585 -
val_accuracy: 0.2000
Epoch 22/200
4/4 - 0s - loss: 0.3580 - accuracy: 0.1917 - val_loss: 0.3568 -
val_accuracy: 0.1833
Epoch 23/200
4/4 - 0s - loss: 0.3563 - accuracy: 0.1750 - val_loss: 0.3553 -
val_accuracy: 0.1833
Epoch 24/200
```

```
4/4 - 0s - loss: 0.3548 - accuracy: 0.1833 - val_loss: 0.3538 -
val_accuracy: 0.1833
Epoch 25/200
4/4 - 0s - loss: 0.3534 - accuracy: 0.1833 - val_loss: 0.3525 -
val_accuracy: 0.1833
Epoch 26/200
4/4 - 0s - loss: 0.3521 - accuracy: 0.1833 - val_loss: 0.3513 -
val_accuracy: 0.1833
Epoch 27/200
4/4 - 0s - loss: 0.3508 - accuracy: 0.2083 - val_loss: 0.3500 -
val_accuracy: 0.2083
Epoch 28/200
4/4 - 0s - loss: 0.3496 - accuracy: 0.2083 - val_loss: 0.3487 -
val_accuracy: 0.2083
Epoch 29/200
4/4 - 0s - loss: 0.3482 - accuracy: 0.2083 - val_loss: 0.3474 -
val_accuracy: 0.2083
Epoch 30/200
4/4 - 0s - loss: 0.3470 - accuracy: 0.2083 - val_loss: 0.3462 -
val_accuracy: 0.2083
Epoch 31/200
4/4 - 0s - loss: 0.3458 - accuracy: 0.2167 - val_loss: 0.3449 -
val_accuracy: 0.2167
Epoch 32/200
4/4 - 0s - loss: 0.3445 - accuracy: 0.2250 - val_loss: 0.3437 -
val_accuracy: 0.2250
Epoch 33/200
4/4 - 0s - loss: 0.3433 - accuracy: 0.2250 - val_loss: 0.3425 -
val_accuracy: 0.2167
Epoch 34/200
4/4 - 0s - loss: 0.3421 - accuracy: 0.2167 - val_loss: 0.3413 -
val_accuracy: 0.2167
Epoch 35/200
4/4 - 0s - loss: 0.3409 - accuracy: 0.2167 - val_loss: 0.3402 -
val_accuracy: 0.2250
Epoch 36/200
4/4 - 0s - loss: 0.3398 - accuracy: 0.2250 - val_loss: 0.3390 -
val_accuracy: 0.2250
Epoch 37/200
4/4 - 0s - loss: 0.3387 - accuracy: 0.2250 - val_loss: 0.3379 -
val_accuracy: 0.2333
Epoch 38/200
4/4 - 0s - loss: 0.3375 - accuracy: 0.2333 - val_loss: 0.3367 -
val_accuracy: 0.2333
Epoch 39/200
4/4 - 0s - loss: 0.3363 - accuracy: 0.2333 - val_loss: 0.3355 -
val_accuracy: 0.2333
Epoch 40/200
4/4 - 0s - loss: 0.3351 - accuracy: 0.2333 - val_loss: 0.3343 -
val_accuracy: 0.2333
```

```
Epoch 41/200
4/4 - 0s - loss: 0.3340 - accuracy: 0.2333 - val_loss: 0.3332 -
val_accuracy: 0.2333
Epoch 42/200
4/4 - 0s - loss: 0.3329 - accuracy: 0.2333 - val_loss: 0.3321 -
val_accuracy: 0.2333
Epoch 43/200
4/4 - 0s - loss: 0.3318 - accuracy: 0.2333 - val_loss: 0.3312 -
val_accuracy: 0.2333
Epoch 44/200
4/4 - 0s - loss: 0.3309 - accuracy: 0.2333 - val_loss: 0.3302 -
val_accuracy: 0.2250
Epoch 45/200
4/4 - 0s - loss: 0.3300 - accuracy: 0.2250 - val_loss: 0.3294 -
val_accuracy: 0.2250
Epoch 46/200
4/4 - 0s - loss: 0.3291 - accuracy: 0.2250 - val_loss: 0.3285 -
val_accuracy: 0.2250
Epoch 47/200
4/4 - 0s - loss: 0.3282 - accuracy: 0.2250 - val_loss: 0.3274 -
val_accuracy: 0.2250
Epoch 48/200
4/4 - 0s - loss: 0.3271 - accuracy: 0.2250 - val_loss: 0.3264 -
val_accuracy: 0.2250
Epoch 49/200
4/4 - 0s - loss: 0.3262 - accuracy: 0.2250 - val_loss: 0.3255 -
val_accuracy: 0.2333
Epoch 50/200
4/4 - 0s - loss: 0.3252 - accuracy: 0.2333 - val_loss: 0.3246 -
val_accuracy: 0.2333
Epoch 51/200
4/4 - 0s - loss: 0.3243 - accuracy: 0.2417 - val_loss: 0.3237 -
val_accuracy: 0.2417
Epoch 52/200
4/4 - 0s - loss: 0.3235 - accuracy: 0.2417 - val_loss: 0.3229 -
val_accuracy: 0.2417
Epoch 53/200
4/4 - 0s - loss: 0.3227 - accuracy: 0.2417 - val_loss: 0.3221 -
val_accuracy: 0.2417
Epoch 54/200
4/4 - 0s - loss: 0.3219 - accuracy: 0.2417 - val_loss: 0.3214 -
val_accuracy: 0.2417
Epoch 55/200
4/4 - 0s - loss: 0.3212 - accuracy: 0.2417 - val_loss: 0.3206 -
val_accuracy: 0.2500
Epoch 56/200
4/4 - 0s - loss: 0.3204 - accuracy: 0.2500 - val_loss: 0.3198 -
val_accuracy: 0.2500
Epoch 57/200
4/4 - 0s - loss: 0.3195 - accuracy: 0.2500 - val_loss: 0.3189 -
```

```
val_accuracy: 0.2417
Epoch 58/200
4/4 - 0s - loss: 0.3186 - accuracy: 0.2417 - val_loss: 0.3180 -
val_accuracy: 0.2417
Epoch 59/200
4/4 - 0s - loss: 0.3178 - accuracy: 0.2417 - val_loss: 0.3172 -
val_accuracy: 0.2500
Epoch 60/200
4/4 - 0s - loss: 0.3170 - accuracy: 0.2500 - val_loss: 0.3164 -
val_accuracy: 0.2417
Epoch 61/200
4/4 - 0s - loss: 0.3161 - accuracy: 0.2417 - val_loss: 0.3155 -
val_accuracy: 0.2417
Epoch 62/200
4/4 - 0s - loss: 0.3153 - accuracy: 0.2417 - val_loss: 0.3147 -
val_accuracy: 0.2500
Epoch 63/200
4/4 - 0s - loss: 0.3146 - accuracy: 0.2500 - val_loss: 0.3140 -
val_accuracy: 0.2500
Epoch 64/200
4/4 - 0s - loss: 0.3138 - accuracy: 0.2500 - val_loss: 0.3133 -
val_accuracy: 0.2583
Epoch 65/200
4/4 - 0s - loss: 0.3130 - accuracy: 0.2583 - val_loss: 0.3125 -
val_accuracy: 0.2583
Epoch 66/200
4/4 - 0s - loss: 0.3123 - accuracy: 0.2583 - val_loss: 0.3118 -
val_accuracy: 0.2583
Epoch 67/200
4/4 - 0s - loss: 0.3116 - accuracy: 0.2583 - val_loss: 0.3110 -
val_accuracy: 0.2667
Epoch 68/200
4/4 - 0s - loss: 0.3108 - accuracy: 0.2667 - val_loss: 0.3103 -
val_accuracy: 0.2667
Epoch 69/200
4/4 - 0s - loss: 0.3101 - accuracy: 0.2667 - val_loss: 0.3096 -
val_accuracy: 0.2667
Epoch 70/200
4/4 - 0s - loss: 0.3093 - accuracy: 0.2750 - val_loss: 0.3088 -
val_accuracy: 0.2833
Epoch 71/200
4/4 - 0s - loss: 0.3086 - accuracy: 0.2833 - val_loss: 0.3081 -
val_accuracy: 0.2833
Epoch 72/200
4/4 - 0s - loss: 0.3079 - accuracy: 0.2833 - val_loss: 0.3074 -
val_accuracy: 0.2833
Epoch 73/200
4/4 - 0s - loss: 0.3073 - accuracy: 0.2833 - val_loss: 0.3068 -
val_accuracy: 0.2833
Epoch 74/200
```

```
4/4 - 0s - loss: 0.3066 - accuracy: 0.2833 - val_loss: 0.3062 -
val_accuracy: 0.2917
Epoch 75/200
4/4 - 0s - loss: 0.3060 - accuracy: 0.2833 - val_loss: 0.3056 -
val_accuracy: 0.2833
Epoch 76/200
4/4 - 0s - loss: 0.3054 - accuracy: 0.2833 - val_loss: 0.3050 -
val_accuracy: 0.2833
Epoch 77/200
4/4 - 0s - loss: 0.3049 - accuracy: 0.2833 - val_loss: 0.3045 -
val_accuracy: 0.2833
Epoch 78/200
4/4 - 0s - loss: 0.3043 - accuracy: 0.2833 - val_loss: 0.3039 -
val_accuracy: 0.2833
Epoch 79/200
4/4 - 0s - loss: 0.3038 - accuracy: 0.2833 - val_loss: 0.3034 -
val_accuracy: 0.2750

Epoch 80/200
4/4 - 0s - loss: 0.3032 - accuracy: 0.2750 - val_loss: 0.3029 -
val_accuracy: 0.2750
Epoch 81/200
4/4 - 0s - loss: 0.3027 - accuracy: 0.2750 - val_loss: 0.3024 -
val_accuracy: 0.2750
Epoch 82/200
4/4 - 0s - loss: 0.3022 - accuracy: 0.2750 - val_loss: 0.3019 -
val_accuracy: 0.2750
Epoch 83/200
4/4 - 0s - loss: 0.3017 - accuracy: 0.2750 - val_loss: 0.3014 -
val_accuracy: 0.2750
Epoch 84/200
4/4 - 0s - loss: 0.3013 - accuracy: 0.2667 - val_loss: 0.3010 -
val_accuracy: 0.2667
Epoch 85/200
4/4 - 0s - loss: 0.3009 - accuracy: 0.2667 - val_loss: 0.3006 -
val_accuracy: 0.2667
Epoch 86/200
4/4 - 0s - loss: 0.3004 - accuracy: 0.2667 - val_loss: 0.3002 -
val_accuracy: 0.2667
Epoch 87/200
4/4 - 0s - loss: 0.3001 - accuracy: 0.2667 - val_loss: 0.2998 -
val_accuracy: 0.2667
Epoch 88/200
4/4 - 0s - loss: 0.2997 - accuracy: 0.2667 - val_loss: 0.2994 -
val_accuracy: 0.2667
Epoch 89/200
4/4 - 0s - loss: 0.2993 - accuracy: 0.2667 - val_loss: 0.2990 -
val_accuracy: 0.2750
Epoch 90/200
4/4 - 0s - loss: 0.2989 - accuracy: 0.2750 - val_loss: 0.2986 -
```

val_accuracy: 0.2750
Epoch 91/200
4/4 - 0s - loss: 0.2985 - accuracy: 0.2750 - val_loss: 0.2982 -
val_accuracy: 0.2750
Epoch 92/200
4/4 - 0s - loss: 0.2981 - accuracy: 0.2750 - val_loss: 0.2977 -
val_accuracy: 0.2833
Epoch 93/200
4/4 - 0s - loss: 0.2976 - accuracy: 0.2833 - val_loss: 0.2973 -
val_accuracy: 0.2833
Epoch 94/200
4/4 - 0s - loss: 0.2972 - accuracy: 0.2833 - val_loss: 0.2968 -
val_accuracy: 0.2833
Epoch 95/200
4/4 - 0s - loss: 0.2967 - accuracy: 0.2833 - val_loss: 0.2964 -
val_accuracy: 0.2833
Epoch 96/200
4/4 - 0s - loss: 0.2963 - accuracy: 0.2833 - val_loss: 0.2960 -
val_accuracy: 0.2833
Epoch 97/200
4/4 - 0s - loss: 0.2959 - accuracy: 0.2833 - val_loss: 0.2956 -
val_accuracy: 0.2833
Epoch 98/200
4/4 - 0s - loss: 0.2954 - accuracy: 0.2833 - val_loss: 0.2951 -
val_accuracy: 0.2833
Epoch 99/200
4/4 - 0s - loss: 0.2950 - accuracy: 0.2833 - val_loss: 0.2947 -
val_accuracy: 0.2750
Epoch 100/200
4/4 - 0s - loss: 0.2946 - accuracy: 0.2750 - val_loss: 0.2942 -
val_accuracy: 0.2750
Epoch 101/200
4/4 - 0s - loss: 0.2941 - accuracy: 0.2750 - val_loss: 0.2937 -
val_accuracy: 0.2667
Epoch 102/200
4/4 - 0s - loss: 0.2936 - accuracy: 0.2667 - val_loss: 0.2932 -
val_accuracy: 0.2750
Epoch 103/200
4/4 - 0s - loss: 0.2931 - accuracy: 0.2750 - val_loss: 0.2928 -
val_accuracy: 0.2750
Epoch 104/200
4/4 - 0s - loss: 0.2926 - accuracy: 0.2833 - val_loss: 0.2922 -
val_accuracy: 0.2833
Epoch 105/200
4/4 - 0s - loss: 0.2921 - accuracy: 0.2833 - val_loss: 0.2917 -
val_accuracy: 0.2833
Epoch 106/200
4/4 - 0s - loss: 0.2916 - accuracy: 0.2833 - val_loss: 0.2913 -
val_accuracy: 0.2833
Epoch 107/200

```
4/4 - 0s - loss: 0.2912 - accuracy: 0.2833 - val_loss: 0.2907 -
val_accuracy: 0.2833
Epoch 108/200
4/4 - 0s - loss: 0.2906 - accuracy: 0.2833 - val_loss: 0.2902 -
val_accuracy: 0.2833
Epoch 109/200
4/4 - 0s - loss: 0.2901 - accuracy: 0.2833 - val_loss: 0.2897 -
val_accuracy: 0.2833
Epoch 110/200
4/4 - 0s - loss: 0.2896 - accuracy: 0.2833 - val_loss: 0.2892 -
val_accuracy: 0.2750
Epoch 111/200
4/4 - 0s - loss: 0.2891 - accuracy: 0.2750 - val_loss: 0.2887 -
val_accuracy: 0.2750
Epoch 112/200
4/4 - 0s - loss: 0.2886 - accuracy: 0.2750 - val_loss: 0.2883 -
val_accuracy: 0.2750
Epoch 113/200
4/4 - 0s - loss: 0.2882 - accuracy: 0.2750 - val_loss: 0.2879 -
val_accuracy: 0.2750
Epoch 114/200
4/4 - 0s - loss: 0.2878 - accuracy: 0.2750 - val_loss: 0.2875 -
val_accuracy: 0.2750
Epoch 115/200
4/4 - 0s - loss: 0.2874 - accuracy: 0.2750 - val_loss: 0.2870 -
val_accuracy: 0.2750
Epoch 116/200
4/4 - 0s - loss: 0.2870 - accuracy: 0.2750 - val_loss: 0.2866 -
val_accuracy: 0.2750
Epoch 117/200
4/4 - 0s - loss: 0.2864 - accuracy: 0.2750 - val_loss: 0.2861 -
val_accuracy: 0.2750
Epoch 118/200
4/4 - 0s - loss: 0.2859 - accuracy: 0.2750 - val_loss: 0.2855 -
val_accuracy: 0.2750
Epoch 119/200
4/4 - 0s - loss: 0.2853 - accuracy: 0.2750 - val_loss: 0.2849 -
val_accuracy: 0.2750
Epoch 120/200
4/4 - 0s - loss: 0.2847 - accuracy: 0.2750 - val_loss: 0.2843 -
val_accuracy: 0.2750
Epoch 121/200
4/4 - 0s - loss: 0.2841 - accuracy: 0.2750 - val_loss: 0.2837 -
val_accuracy: 0.2750
Epoch 122/200
4/4 - 0s - loss: 0.2835 - accuracy: 0.2750 - val_loss: 0.2830 -
val_accuracy: 0.2750
Epoch 123/200
4/4 - 0s - loss: 0.2828 - accuracy: 0.2750 - val_loss: 0.2823 -
val_accuracy: 0.2750
```

```
Epoch 124/200
4/4 - 0s - loss: 0.2821 - accuracy: 0.2750 - val_loss: 0.2817 -
val_accuracy: 0.2750
Epoch 125/200
4/4 - 0s - loss: 0.2815 - accuracy: 0.2750 - val_loss: 0.2811 -
val_accuracy: 0.2750
Epoch 126/200
4/4 - 0s - loss: 0.2809 - accuracy: 0.2750 - val_loss: 0.2805 -
val_accuracy: 0.2833
Epoch 127/200
4/4 - 0s - loss: 0.2803 - accuracy: 0.2833 - val_loss: 0.2799 -
val_accuracy: 0.2833
Epoch 128/200
4/4 - 0s - loss: 0.2797 - accuracy: 0.2833 - val_loss: 0.2793 -
val_accuracy: 0.2833
Epoch 129/200
4/4 - 0s - loss: 0.2792 - accuracy: 0.2833 - val_loss: 0.2788 -
val_accuracy: 0.2833
Epoch 130/200
4/4 - 0s - loss: 0.2786 - accuracy: 0.2833 - val_loss: 0.2782 -
val_accuracy: 0.2833
Epoch 131/200
4/4 - 0s - loss: 0.2780 - accuracy: 0.2833 - val_loss: 0.2775 -
val_accuracy: 0.2833
Epoch 132/200
4/4 - 0s - loss: 0.2774 - accuracy: 0.2833 - val_loss: 0.2769 -
val_accuracy: 0.2833
Epoch 133/200
4/4 - 0s - loss: 0.2768 - accuracy: 0.2833 - val_loss: 0.2763 -
val_accuracy: 0.2833
Epoch 134/200
4/4 - 0s - loss: 0.2762 - accuracy: 0.2833 - val_loss: 0.2757 -
val_accuracy: 0.2833
Epoch 135/200
4/4 - 0s - loss: 0.2756 - accuracy: 0.2833 - val_loss: 0.2751 -
val_accuracy: 0.2833
Epoch 136/200
4/4 - 0s - loss: 0.2750 - accuracy: 0.2833 - val_loss: 0.2745 -
val_accuracy: 0.2833
Epoch 137/200
4/4 - 0s - loss: 0.2743 - accuracy: 0.2833 - val_loss: 0.2739 -
val_accuracy: 0.2833
Epoch 138/200
4/4 - 0s - loss: 0.2738 - accuracy: 0.2833 - val_loss: 0.2733 -
val_accuracy: 0.2833
Epoch 139/200
4/4 - 0s - loss: 0.2732 - accuracy: 0.2833 - val_loss: 0.2727 -
val_accuracy: 0.2833
Epoch 140/200
4/4 - 0s - loss: 0.2726 - accuracy: 0.2750 - val_loss: 0.2721 -
```

```
val_accuracy: 0.2667
Epoch 141/200
4/4 - 0s - loss: 0.2720 - accuracy: 0.2667 - val_loss: 0.2716 -
val_accuracy: 0.2667
Epoch 142/200
4/4 - 0s - loss: 0.2714 - accuracy: 0.2667 - val_loss: 0.2710 -
val_accuracy: 0.2583
Epoch 143/200
4/4 - 0s - loss: 0.2709 - accuracy: 0.2583 - val_loss: 0.2706 -
val_accuracy: 0.2583
Epoch 144/200
4/4 - 0s - loss: 0.2704 - accuracy: 0.2583 - val_loss: 0.2701 -
val_accuracy: 0.2583
Epoch 145/200
4/4 - 0s - loss: 0.2700 - accuracy: 0.2583 - val_loss: 0.2696 -
val_accuracy: 0.2583
Epoch 146/200
4/4 - 0s - loss: 0.2695 - accuracy: 0.2667 - val_loss: 0.2692 -
val_accuracy: 0.2667
Epoch 147/200
4/4 - 0s - loss: 0.2690 - accuracy: 0.2750 - val_loss: 0.2687 -
val_accuracy: 0.2750
Epoch 148/200
4/4 - 0s - loss: 0.2686 - accuracy: 0.2750 - val_loss: 0.2682 -
val_accuracy: 0.3000
Epoch 149/200
4/4 - 0s - loss: 0.2681 - accuracy: 0.3000 - val_loss: 0.2678 -
val_accuracy: 0.3000
Epoch 150/200
4/4 - 0s - loss: 0.2677 - accuracy: 0.3000 - val_loss: 0.2674 -
val_accuracy: 0.3000
Epoch 151/200
4/4 - 0s - loss: 0.2673 - accuracy: 0.3167 - val_loss: 0.2670 -
val_accuracy: 0.3250
Epoch 152/200
4/4 - 0s - loss: 0.2669 - accuracy: 0.3250 - val_loss: 0.2666 -
val_accuracy: 0.3250
Epoch 153/200
4/4 - 0s - loss: 0.2665 - accuracy: 0.3250 - val_loss: 0.2662 -
val_accuracy: 0.3250
Epoch 154/200
4/4 - 0s - loss: 0.2661 - accuracy: 0.3333 - val_loss: 0.2658 -
val_accuracy: 0.3250
Epoch 155/200
4/4 - 0s - loss: 0.2657 - accuracy: 0.3250 - val_loss: 0.2654 -
val_accuracy: 0.3250
Epoch 156/200
4/4 - 0s - loss: 0.2653 - accuracy: 0.3250 - val_loss: 0.2649 -
val_accuracy: 0.3250
Epoch 157/200
```

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4/4 - 0s - loss: 0.2648 - accuracy: 0.3250 - val_loss: 0.2644 -
val_accuracy: 0.3333
Epoch 158/200
4/4 - 0s - loss: 0.2643 - accuracy: 0.3333 - val_loss: 0.2639 -
val_accuracy: 0.3333
Epoch 159/200
4/4 - 0s - loss: 0.2638 - accuracy: 0.3333 - val_loss: 0.2634 -
val_accuracy: 0.3417
Epoch 160/200
4/4 - 0s - loss: 0.2633 - accuracy: 0.3417 - val_loss: 0.2629 -
val_accuracy: 0.3417
Epoch 161/200
4/4 - 0s - loss: 0.2628 - accuracy: 0.3417 - val_loss: 0.2625 -
val_accuracy: 0.3333
Epoch 162/200
4/4 - 0s - loss: 0.2624 - accuracy: 0.3417 - val_loss: 0.2620 -
val_accuracy: 0.3417

Epoch 163/200
4/4 - 0s - loss: 0.2619 - accuracy: 0.3417 - val_loss: 0.2615 -
val_accuracy: 0.3583
Epoch 164/200
4/4 - 0s - loss: 0.2613 - accuracy: 0.3583 - val_loss: 0.2609 -
val_accuracy: 0.3417
Epoch 165/200
4/4 - 0s - loss: 0.2608 - accuracy: 0.3417 - val_loss: 0.2604 -
val_accuracy: 0.3417
Epoch 166/200
4/4 - 0s - loss: 0.2603 - accuracy: 0.3333 - val_loss: 0.2599 -
val_accuracy: 0.3333
Epoch 167/200
4/4 - 0s - loss: 0.2598 - accuracy: 0.3333 - val_loss: 0.2594 -
val_accuracy: 0.3333
Epoch 168/200
4/4 - 0s - loss: 0.2592 - accuracy: 0.3333 - val_loss: 0.2589 -
val_accuracy: 0.3250
Epoch 169/200
4/4 - 0s - loss: 0.2587 - accuracy: 0.3333 - val_loss: 0.2584 -
val_accuracy: 0.3333
Epoch 170/200
4/4 - 0s - loss: 0.2583 - accuracy: 0.3333 - val_loss: 0.2579 -
val_accuracy: 0.3417
Epoch 171/200
4/4 - 0s - loss: 0.2578 - accuracy: 0.3417 - val_loss: 0.2574 -
val_accuracy: 0.3417
Epoch 172/200
4/4 - 0s - loss: 0.2573 - accuracy: 0.3417 - val_loss: 0.2570 -
val_accuracy: 0.3417
Epoch 173/200
4/4 - 0s - loss: 0.2568 - accuracy: 0.3500 - val_loss: 0.2564 -
```

```
val_accuracy: 0.3417
Epoch 174/200
4/4 - 0s - loss: 0.2563 - accuracy: 0.3417 - val_loss: 0.2558 -
val_accuracy: 0.3417
Epoch 175/200
4/4 - 0s - loss: 0.2557 - accuracy: 0.3500 - val_loss: 0.2553 -
val_accuracy: 0.3500
Epoch 176/200
4/4 - 0s - loss: 0.2551 - accuracy: 0.3500 - val_loss: 0.2548 -
val_accuracy: 0.3500
Epoch 177/200
4/4 - 0s - loss: 0.2546 - accuracy: 0.3500 - val_loss: 0.2542 -
val_accuracy: 0.3667
Epoch 178/200
4/4 - 0s - loss: 0.2541 - accuracy: 0.3750 - val_loss: 0.2538 -
val_accuracy: 0.3833
Epoch 179/200
4/4 - 0s - loss: 0.2536 - accuracy: 0.3917 - val_loss: 0.2533 -
val_accuracy: 0.3917
Epoch 180/200
4/4 - 0s - loss: 0.2531 - accuracy: 0.3917 - val_loss: 0.2528 -
val_accuracy: 0.3917
Epoch 181/200
4/4 - 0s - loss: 0.2527 - accuracy: 0.3917 - val_loss: 0.2523 -
val_accuracy: 0.4000
Epoch 182/200
4/4 - 0s - loss: 0.2522 - accuracy: 0.4000 - val_loss: 0.2519 -
val_accuracy: 0.4083
Epoch 183/200
4/4 - 0s - loss: 0.2518 - accuracy: 0.4083 - val_loss: 0.2514 -
val_accuracy: 0.4167
Epoch 184/200
4/4 - 0s - loss: 0.2513 - accuracy: 0.4167 - val_loss: 0.2510 -
val_accuracy: 0.4167
Epoch 185/200
4/4 - 0s - loss: 0.2508 - accuracy: 0.4167 - val_loss: 0.2505 -
val_accuracy: 0.4167
Epoch 186/200
4/4 - 0s - loss: 0.2503 - accuracy: 0.4167 - val_loss: 0.2499 -
val_accuracy: 0.4167
Epoch 187/200
4/4 - 0s - loss: 0.2498 - accuracy: 0.4167 - val_loss: 0.2494 -
val_accuracy: 0.4167
Epoch 188/200
4/4 - 0s - loss: 0.2493 - accuracy: 0.4167 - val_loss: 0.2489 -
val_accuracy: 0.4167
Epoch 189/200
4/4 - 0s - loss: 0.2488 - accuracy: 0.4167 - val_loss: 0.2485 -
val_accuracy: 0.4167
Epoch 190/200
```

```
4/4 - 0s - loss: 0.2483 - accuracy: 0.4167 - val_loss: 0.2480 -
val_accuracy: 0.4167
Epoch 191/200
4/4 - 0s - loss: 0.2479 - accuracy: 0.4167 - val_loss: 0.2475 -
val_accuracy: 0.4250
Epoch 192/200
4/4 - 0s - loss: 0.2474 - accuracy: 0.4250 - val_loss: 0.2471 -
val_accuracy: 0.4333
Epoch 193/200
4/4 - 0s - loss: 0.2470 - accuracy: 0.4333 - val_loss: 0.2466 -
val_accuracy: 0.4333
Epoch 194/200
4/4 - 0s - loss: 0.2465 - accuracy: 0.4333 - val_loss: 0.2460 -
val_accuracy: 0.4417
Epoch 195/200
4/4 - 0s - loss: 0.2458 - accuracy: 0.4417 - val_loss: 0.2453 -
val_accuracy: 0.4417
Epoch 196/200
4/4 - 0s - loss: 0.2451 - accuracy: 0.4417 - val_loss: 0.2446 -
val_accuracy: 0.4417
Epoch 197/200
4/4 - 0s - loss: 0.2444 - accuracy: 0.4417 - val_loss: 0.2439 -
val_accuracy: 0.4417
Epoch 198/200
4/4 - 0s - loss: 0.2437 - accuracy: 0.4417 - val_loss: 0.2432 -
val_accuracy: 0.4417
Epoch 199/200
4/4 - 0s - loss: 0.2430 - accuracy: 0.4417 - val_loss: 0.2425 -
val_accuracy: 0.4417
Epoch 200/200
4/4 - 0s - loss: 0.2423 - accuracy: 0.4417 - val_loss: 0.2418 -
val_accuracy: 0.4500
Activation: relu LR: 0.01 Itertions: 200 || Train loss:
0.24178466200828552
Activation: relu LR: 0.01 Itertions: 200 || Train Accuracy:
0.44999998807907104
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.0763s). Check your callbacks.
4/4 - 0s - loss: 0.2416 - accuracy: 0.4500 - val_loss: 0.2422 -
val_accuracy: 0.4667
Epoch 2/200
4/4 - 0s - loss: 0.2409 - accuracy: 0.4833 - val_loss: 0.2416 -
val_accuracy: 0.4667
Epoch 3/200
4/4 - 0s - loss: 0.2403 - accuracy: 0.4833 - val_loss: 0.2410 -
val_accuracy: 0.4667
Epoch 4/200
4/4 - 0s - loss: 0.2396 - accuracy: 0.4833 - val_loss: 0.2404 -
```

```
val_accuracy: 0.4667
Epoch 5/200
4/4 - 0s - loss: 0.2390 - accuracy: 0.4917 - val_loss: 0.2398 -
val_accuracy: 0.5000
Epoch 6/200
4/4 - 0s - loss: 0.2384 - accuracy: 0.4917 - val_loss: 0.2393 -
val_accuracy: 0.5000
Epoch 7/200
4/4 - 0s - loss: 0.2377 - accuracy: 0.4917 - val_loss: 0.2387 -
val_accuracy: 0.5000
Epoch 8/200
4/4 - 0s - loss: 0.2371 - accuracy: 0.4917 - val_loss: 0.2382 -
val_accuracy: 0.5000
Epoch 9/200
4/4 - 0s - loss: 0.2365 - accuracy: 0.5000 - val_loss: 0.2376 -
val_accuracy: 0.5000
Epoch 10/200
4/4 - 0s - loss: 0.2358 - accuracy: 0.5083 - val_loss: 0.2370 -
val_accuracy: 0.5000
Epoch 11/200
4/4 - 0s - loss: 0.2352 - accuracy: 0.5083 - val_loss: 0.2365 -
val_accuracy: 0.5000
Epoch 12/200
4/4 - 0s - loss: 0.2346 - accuracy: 0.5083 - val_loss: 0.2360 -
val_accuracy: 0.5000
Epoch 13/200
4/4 - 0s - loss: 0.2339 - accuracy: 0.5083 - val_loss: 0.2353 -
val_accuracy: 0.5000
Epoch 14/200
4/4 - 0s - loss: 0.2333 - accuracy: 0.5083 - val_loss: 0.2345 -
val_accuracy: 0.5000
Epoch 15/200
4/4 - 0s - loss: 0.2327 - accuracy: 0.5083 - val_loss: 0.2338 -
val_accuracy: 0.5000
Epoch 16/200
4/4 - 0s - loss: 0.2321 - accuracy: 0.5083 - val_loss: 0.2331 -
val_accuracy: 0.5000
Epoch 17/200
4/4 - 0s - loss: 0.2315 - accuracy: 0.5083 - val_loss: 0.2324 -
val_accuracy: 0.5000
Epoch 18/200
4/4 - 0s - loss: 0.2309 - accuracy: 0.5083 - val_loss: 0.2316 -
val_accuracy: 0.5000
Epoch 19/200
4/4 - 0s - loss: 0.2303 - accuracy: 0.5083 - val_loss: 0.2310 -
val_accuracy: 0.5000
Epoch 20/200
4/4 - 0s - loss: 0.2297 - accuracy: 0.5167 - val_loss: 0.2303 -
val_accuracy: 0.5000
Epoch 21/200
```

```
4/4 - 0s - loss: 0.2292 - accuracy: 0.5167 - val_loss: 0.2296 -
val_accuracy: 0.5000
Epoch 22/200
4/4 - 0s - loss: 0.2286 - accuracy: 0.5167 - val_loss: 0.2289 -
val_accuracy: 0.5000
Epoch 23/200
4/4 - 0s - loss: 0.2280 - accuracy: 0.5167 - val_loss: 0.2281 -
val_accuracy: 0.5000
Epoch 24/200
4/4 - 0s - loss: 0.2274 - accuracy: 0.5167 - val_loss: 0.2274 -
val_accuracy: 0.5000
Epoch 25/200
4/4 - 0s - loss: 0.2266 - accuracy: 0.5167 - val_loss: 0.2267 -
val_accuracy: 0.5000
Epoch 26/200
4/4 - 0s - loss: 0.2260 - accuracy: 0.5250 - val_loss: 0.2259 -
val_accuracy: 0.5000
Epoch 27/200
4/4 - 0s - loss: 0.2253 - accuracy: 0.5250 - val_loss: 0.2252 -
val_accuracy: 0.5000
Epoch 28/200
4/4 - 0s - loss: 0.2247 - accuracy: 0.5333 - val_loss: 0.2246 -
val_accuracy: 0.5000
Epoch 29/200
4/4 - 0s - loss: 0.2240 - accuracy: 0.5500 - val_loss: 0.2238 -
val_accuracy: 0.5000
Epoch 30/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.5500 - val_loss: 0.2231 -
val_accuracy: 0.5000
Epoch 31/200
4/4 - 0s - loss: 0.2224 - accuracy: 0.5500 - val_loss: 0.2223 -
val_accuracy: 0.5000
Epoch 32/200
4/4 - 0s - loss: 0.2217 - accuracy: 0.5500 - val_loss: 0.2216 -
val_accuracy: 0.5000
Epoch 33/200
4/4 - 0s - loss: 0.2209 - accuracy: 0.5500 - val_loss: 0.2208 -
val_accuracy: 0.5000
Epoch 34/200
4/4 - 0s - loss: 0.2202 - accuracy: 0.5500 - val_loss: 0.2201 -
val_accuracy: 0.5000
Epoch 35/200
4/4 - 0s - loss: 0.2194 - accuracy: 0.5500 - val_loss: 0.2194 -
val_accuracy: 0.5000
Epoch 36/200
4/4 - 0s - loss: 0.2188 - accuracy: 0.5583 - val_loss: 0.2187 -
val_accuracy: 0.5000
Epoch 37/200
4/4 - 0s - loss: 0.2180 - accuracy: 0.5583 - val_loss: 0.2180 -
val_accuracy: 0.5000
```

```
Epoch 38/200
4/4 - 0s - loss: 0.2173 - accuracy: 0.5583 - val_loss: 0.2173 -
val_accuracy: 0.5333
Epoch 39/200
4/4 - 0s - loss: 0.2166 - accuracy: 0.5583 - val_loss: 0.2165 -
val_accuracy: 0.5333
Epoch 40/200
4/4 - 0s - loss: 0.2159 - accuracy: 0.5583 - val_loss: 0.2158 -
val_accuracy: 0.5333
Epoch 41/200
4/4 - 0s - loss: 0.2152 - accuracy: 0.5667 - val_loss: 0.2150 -
val_accuracy: 0.5333
Epoch 42/200
4/4 - 0s - loss: 0.2145 - accuracy: 0.5667 - val_loss: 0.2143 -
val_accuracy: 0.5333

Epoch 43/200
4/4 - 0s - loss: 0.2137 - accuracy: 0.5667 - val_loss: 0.2135 -
val_accuracy: 0.5333
Epoch 44/200
4/4 - 0s - loss: 0.2130 - accuracy: 0.5667 - val_loss: 0.2128 -
val_accuracy: 0.5333
Epoch 45/200
4/4 - 0s - loss: 0.2123 - accuracy: 0.5667 - val_loss: 0.2121 -
val_accuracy: 0.5333
Epoch 46/200
4/4 - 0s - loss: 0.2117 - accuracy: 0.5667 - val_loss: 0.2114 -
val_accuracy: 0.5333
Epoch 47/200
4/4 - 0s - loss: 0.2110 - accuracy: 0.5667 - val_loss: 0.2107 -
val_accuracy: 0.5667
Epoch 48/200
4/4 - 0s - loss: 0.2103 - accuracy: 0.5667 - val_loss: 0.2100 -
val_accuracy: 0.5667
Epoch 49/200
4/4 - 0s - loss: 0.2096 - accuracy: 0.5667 - val_loss: 0.2093 -
val_accuracy: 0.5667
Epoch 50/200
4/4 - 0s - loss: 0.2090 - accuracy: 0.5667 - val_loss: 0.2086 -
val_accuracy: 0.5667
Epoch 51/200
4/4 - 0s - loss: 0.2083 - accuracy: 0.5833 - val_loss: 0.2079 -
val_accuracy: 0.5667
Epoch 52/200
4/4 - 0s - loss: 0.2076 - accuracy: 0.5833 - val_loss: 0.2072 -
val_accuracy: 0.5667
Epoch 53/200
4/4 - 0s - loss: 0.2069 - accuracy: 0.5917 - val_loss: 0.2064 -
val_accuracy: 0.5667
Epoch 54/200
```

```
4/4 - 0s - loss: 0.2061 - accuracy: 0.5917 - val_loss: 0.2057 -
val_accuracy: 0.5667
Epoch 55/200
4/4 - 0s - loss: 0.2053 - accuracy: 0.6000 - val_loss: 0.2050 -
val_accuracy: 0.5667
Epoch 56/200
4/4 - 0s - loss: 0.2046 - accuracy: 0.6000 - val_loss: 0.2043 -
val_accuracy: 0.5667
Epoch 57/200
4/4 - 0s - loss: 0.2039 - accuracy: 0.6000 - val_loss: 0.2036 -
val_accuracy: 0.5667
Epoch 58/200
4/4 - 0s - loss: 0.2031 - accuracy: 0.6000 - val_loss: 0.2030 -
val_accuracy: 0.5667
Epoch 59/200
4/4 - 0s - loss: 0.2024 - accuracy: 0.6000 - val_loss: 0.2023 -
val_accuracy: 0.5667
Epoch 60/200
4/4 - 0s - loss: 0.2017 - accuracy: 0.6000 - val_loss: 0.2016 -
val_accuracy: 0.5667
Epoch 61/200
4/4 - 0s - loss: 0.2011 - accuracy: 0.6000 - val_loss: 0.2010 -
val_accuracy: 0.5667
Epoch 62/200
4/4 - 0s - loss: 0.2003 - accuracy: 0.6000 - val_loss: 0.2003 -
val_accuracy: 0.5667
Epoch 63/200
4/4 - 0s - loss: 0.1996 - accuracy: 0.6000 - val_loss: 0.1997 -
val_accuracy: 0.5667
Epoch 64/200
4/4 - 0s - loss: 0.1989 - accuracy: 0.6000 - val_loss: 0.1990 -
val_accuracy: 0.5667
Epoch 65/200
4/4 - 0s - loss: 0.1983 - accuracy: 0.6000 - val_loss: 0.1984 -
val_accuracy: 0.5667
Epoch 66/200
4/4 - 0s - loss: 0.1976 - accuracy: 0.6000 - val_loss: 0.1978 -
val_accuracy: 0.5667
Epoch 67/200
4/4 - 0s - loss: 0.1970 - accuracy: 0.6000 - val_loss: 0.1972 -
val_accuracy: 0.6000
Epoch 68/200
4/4 - 0s - loss: 0.1964 - accuracy: 0.6000 - val_loss: 0.1967 -
val_accuracy: 0.6000
Epoch 69/200
4/4 - 0s - loss: 0.1958 - accuracy: 0.6000 - val_loss: 0.1961 -
val_accuracy: 0.6000
Epoch 70/200
4/4 - 0s - loss: 0.1951 - accuracy: 0.6000 - val_loss: 0.1955 -
val_accuracy: 0.6000
```

```
Epoch 71/200
4/4 - 0s - loss: 0.1945 - accuracy: 0.6000 - val_loss: 0.1950 -
val_accuracy: 0.6000
Epoch 72/200
4/4 - 0s - loss: 0.1939 - accuracy: 0.6000 - val_loss: 0.1944 -
val_accuracy: 0.6000
Epoch 73/200
4/4 - 0s - loss: 0.1933 - accuracy: 0.6000 - val_loss: 0.1939 -
val_accuracy: 0.6000
Epoch 74/200
4/4 - 0s - loss: 0.1927 - accuracy: 0.6000 - val_loss: 0.1933 -
val_accuracy: 0.6000
Epoch 75/200
4/4 - 0s - loss: 0.1921 - accuracy: 0.6000 - val_loss: 0.1928 -
val_accuracy: 0.6000
Epoch 76/200
4/4 - 0s - loss: 0.1916 - accuracy: 0.6000 - val_loss: 0.1922 -
val_accuracy: 0.6000
Epoch 77/200
4/4 - 0s - loss: 0.1910 - accuracy: 0.6000 - val_loss: 0.1917 -
val_accuracy: 0.6000
Epoch 78/200
4/4 - 0s - loss: 0.1904 - accuracy: 0.6000 - val_loss: 0.1912 -
val_accuracy: 0.6000
Epoch 79/200
4/4 - 0s - loss: 0.1899 - accuracy: 0.6083 - val_loss: 0.1907 -
val_accuracy: 0.6000
Epoch 80/200
4/4 - 0s - loss: 0.1893 - accuracy: 0.6083 - val_loss: 0.1902 -
val_accuracy: 0.6000
Epoch 81/200
4/4 - 0s - loss: 0.1888 - accuracy: 0.6083 - val_loss: 0.1897 -
val_accuracy: 0.6000
Epoch 82/200
4/4 - 0s - loss: 0.1882 - accuracy: 0.6083 - val_loss: 0.1892 -
val_accuracy: 0.6000
Epoch 83/200
4/4 - 0s - loss: 0.1877 - accuracy: 0.6083 - val_loss: 0.1887 -
val_accuracy: 0.6000
Epoch 84/200
4/4 - 0s - loss: 0.1871 - accuracy: 0.6083 - val_loss: 0.1882 -
val_accuracy: 0.6000
Epoch 85/200
4/4 - 0s - loss: 0.1866 - accuracy: 0.6083 - val_loss: 0.1878 -
val_accuracy: 0.6000
Epoch 86/200
4/4 - 0s - loss: 0.1861 - accuracy: 0.6167 - val_loss: 0.1873 -
val_accuracy: 0.6000
Epoch 87/200
4/4 - 0s - loss: 0.1856 - accuracy: 0.6167 - val_loss: 0.1868 -
```

val_accuracy: 0.6333
Epoch 88/200
4/4 - 0s - loss: 0.1851 - accuracy: 0.6167 - val_loss: 0.1864 -
val_accuracy: 0.6333
Epoch 89/200
4/4 - 0s - loss: 0.1847 - accuracy: 0.6167 - val_loss: 0.1859 -
val_accuracy: 0.6333
Epoch 90/200
4/4 - 0s - loss: 0.1841 - accuracy: 0.6167 - val_loss: 0.1855 -
val_accuracy: 0.6333
Epoch 91/200
4/4 - 0s - loss: 0.1836 - accuracy: 0.6167 - val_loss: 0.1850 -
val_accuracy: 0.6333
Epoch 92/200
4/4 - 0s - loss: 0.1831 - accuracy: 0.6167 - val_loss: 0.1846 -
val_accuracy: 0.6333
Epoch 93/200
4/4 - 0s - loss: 0.1827 - accuracy: 0.6167 - val_loss: 0.1841 -
val_accuracy: 0.6333
Epoch 94/200
4/4 - 0s - loss: 0.1822 - accuracy: 0.6167 - val_loss: 0.1837 -
val_accuracy: 0.6333
Epoch 95/200
4/4 - 0s - loss: 0.1817 - accuracy: 0.6167 - val_loss: 0.1832 -
val_accuracy: 0.6333
Epoch 96/200
4/4 - 0s - loss: 0.1812 - accuracy: 0.6167 - val_loss: 0.1828 -
val_accuracy: 0.6333
Epoch 97/200
4/4 - 0s - loss: 0.1808 - accuracy: 0.6167 - val_loss: 0.1824 -
val_accuracy: 0.6333
Epoch 98/200
4/4 - 0s - loss: 0.1803 - accuracy: 0.6167 - val_loss: 0.1820 -
val_accuracy: 0.6333
Epoch 99/200
4/4 - 0s - loss: 0.1799 - accuracy: 0.6167 - val_loss: 0.1816 -
val_accuracy: 0.6333
Epoch 100/200
4/4 - 0s - loss: 0.1794 - accuracy: 0.6167 - val_loss: 0.1811 -
val_accuracy: 0.6333
Epoch 101/200
4/4 - 0s - loss: 0.1790 - accuracy: 0.6167 - val_loss: 0.1807 -
val_accuracy: 0.6333
Epoch 102/200
4/4 - 0s - loss: 0.1785 - accuracy: 0.6167 - val_loss: 0.1803 -
val_accuracy: 0.6333
Epoch 103/200
4/4 - 0s - loss: 0.1781 - accuracy: 0.6167 - val_loss: 0.1800 -
val_accuracy: 0.6333
Epoch 104/200

```
4/4 - 0s - loss: 0.1777 - accuracy: 0.6167 - val_loss: 0.1796 -
val_accuracy: 0.6333
Epoch 105/200
4/4 - 0s - loss: 0.1772 - accuracy: 0.6167 - val_loss: 0.1792 -
val_accuracy: 0.6333
Epoch 106/200
4/4 - 0s - loss: 0.1768 - accuracy: 0.6167 - val_loss: 0.1788 -
val_accuracy: 0.6333
Epoch 107/200
4/4 - 0s - loss: 0.1764 - accuracy: 0.6167 - val_loss: 0.1784 -
val_accuracy: 0.6333
Epoch 108/200
4/4 - 0s - loss: 0.1760 - accuracy: 0.6250 - val_loss: 0.1781 -
val_accuracy: 0.6333
Epoch 109/200
4/4 - 0s - loss: 0.1756 - accuracy: 0.6250 - val_loss: 0.1777 -
val_accuracy: 0.6333
Epoch 110/200
4/4 - 0s - loss: 0.1752 - accuracy: 0.6250 - val_loss: 0.1773 -
val_accuracy: 0.6333
Epoch 111/200
4/4 - 0s - loss: 0.1748 - accuracy: 0.6250 - val_loss: 0.1770 -
val_accuracy: 0.6333
Epoch 112/200
4/4 - 0s - loss: 0.1744 - accuracy: 0.6333 - val_loss: 0.1766 -
val_accuracy: 0.6333
Epoch 113/200
4/4 - 0s - loss: 0.1741 - accuracy: 0.6333 - val_loss: 0.1763 -
val_accuracy: 0.6333
Epoch 114/200
4/4 - 0s - loss: 0.1737 - accuracy: 0.6333 - val_loss: 0.1759 -
val_accuracy: 0.6333
Epoch 115/200
4/4 - 0s - loss: 0.1733 - accuracy: 0.6333 - val_loss: 0.1756 -
val_accuracy: 0.6333
Epoch 116/200
4/4 - 0s - loss: 0.1729 - accuracy: 0.6333 - val_loss: 0.1752 -
val_accuracy: 0.6333
Epoch 117/200
4/4 - 0s - loss: 0.1725 - accuracy: 0.6417 - val_loss: 0.1749 -
val_accuracy: 0.6333
Epoch 118/200
4/4 - 0s - loss: 0.1722 - accuracy: 0.6417 - val_loss: 0.1745 -
val_accuracy: 0.6333
Epoch 119/200
4/4 - 0s - loss: 0.1718 - accuracy: 0.6417 - val_loss: 0.1742 -
val_accuracy: 0.6333
Epoch 120/200
4/4 - 0s - loss: 0.1714 - accuracy: 0.6417 - val_loss: 0.1739 -
val_accuracy: 0.6333
```

```
Epoch 121/200
4/4 - 0s - loss: 0.1711 - accuracy: 0.6417 - val_loss: 0.1736 -
val_accuracy: 0.6333
Epoch 122/200
4/4 - 0s - loss: 0.1708 - accuracy: 0.6417 - val_loss: 0.1733 -
val_accuracy: 0.6333
Epoch 123/200
4/4 - 0s - loss: 0.1704 - accuracy: 0.6417 - val_loss: 0.1730 -
val_accuracy: 0.6333
Epoch 124/200
4/4 - 0s - loss: 0.1701 - accuracy: 0.6500 - val_loss: 0.1727 -
val_accuracy: 0.6333
Epoch 125/200
4/4 - 0s - loss: 0.1697 - accuracy: 0.6500 - val_loss: 0.1724 -
val_accuracy: 0.6333
Epoch 126/200
4/4 - 0s - loss: 0.1694 - accuracy: 0.6500 - val_loss: 0.1721 -
val_accuracy: 0.6333

Epoch 127/200
4/4 - 0s - loss: 0.1691 - accuracy: 0.6500 - val_loss: 0.1718 -
val_accuracy: 0.6333
Epoch 128/200
4/4 - 0s - loss: 0.1688 - accuracy: 0.6500 - val_loss: 0.1715 -
val_accuracy: 0.6333
Epoch 129/200
4/4 - 0s - loss: 0.1684 - accuracy: 0.6583 - val_loss: 0.1712 -
val_accuracy: 0.6333
Epoch 130/200
4/4 - 0s - loss: 0.1681 - accuracy: 0.6583 - val_loss: 0.1710 -
val_accuracy: 0.6333
Epoch 131/200
4/4 - 0s - loss: 0.1678 - accuracy: 0.6667 - val_loss: 0.1707 -
val_accuracy: 0.6333
Epoch 132/200
4/4 - 0s - loss: 0.1675 - accuracy: 0.6667 - val_loss: 0.1704 -
val_accuracy: 0.6333
Epoch 133/200
4/4 - 0s - loss: 0.1672 - accuracy: 0.6667 - val_loss: 0.1701 -
val_accuracy: 0.6333
Epoch 134/200
4/4 - 0s - loss: 0.1669 - accuracy: 0.6667 - val_loss: 0.1699 -
val_accuracy: 0.6333
Epoch 135/200
4/4 - 0s - loss: 0.1666 - accuracy: 0.6750 - val_loss: 0.1696 -
val_accuracy: 0.6333
Epoch 136/200
4/4 - 0s - loss: 0.1663 - accuracy: 0.6750 - val_loss: 0.1693 -
val_accuracy: 0.6333
Epoch 137/200
```

```
4/4 - 0s - loss: 0.1660 - accuracy: 0.6750 - val_loss: 0.1691 -
val_accuracy: 0.6333
Epoch 138/200
4/4 - 0s - loss: 0.1657 - accuracy: 0.6750 - val_loss: 0.1688 -
val_accuracy: 0.6333
Epoch 139/200
4/4 - 0s - loss: 0.1654 - accuracy: 0.6750 - val_loss: 0.1686 -
val_accuracy: 0.6333
Epoch 140/200
4/4 - 0s - loss: 0.1651 - accuracy: 0.6750 - val_loss: 0.1683 -
val_accuracy: 0.6333
Epoch 141/200
4/4 - 0s - loss: 0.1649 - accuracy: 0.6750 - val_loss: 0.1681 -
val_accuracy: 0.6333
Epoch 142/200
4/4 - 0s - loss: 0.1646 - accuracy: 0.6750 - val_loss: 0.1678 -
val_accuracy: 0.6333
Epoch 143/200
4/4 - 0s - loss: 0.1643 - accuracy: 0.6750 - val_loss: 0.1676 -
val_accuracy: 0.6333
Epoch 144/200
4/4 - 0s - loss: 0.1641 - accuracy: 0.6750 - val_loss: 0.1674 -
val_accuracy: 0.6333
Epoch 145/200
4/4 - 0s - loss: 0.1638 - accuracy: 0.6750 - val_loss: 0.1671 -
val_accuracy: 0.6333
Epoch 146/200
4/4 - 0s - loss: 0.1635 - accuracy: 0.6750 - val_loss: 0.1669 -
val_accuracy: 0.6333
Epoch 147/200
4/4 - 0s - loss: 0.1633 - accuracy: 0.6750 - val_loss: 0.1667 -
val_accuracy: 0.6333
Epoch 148/200
4/4 - 0s - loss: 0.1630 - accuracy: 0.6750 - val_loss: 0.1664 -
val_accuracy: 0.6333
Epoch 149/200
4/4 - 0s - loss: 0.1628 - accuracy: 0.6750 - val_loss: 0.1662 -
val_accuracy: 0.6333
Epoch 150/200
4/4 - 0s - loss: 0.1625 - accuracy: 0.6750 - val_loss: 0.1660 -
val_accuracy: 0.6333
Epoch 151/200
4/4 - 0s - loss: 0.1623 - accuracy: 0.6750 - val_loss: 0.1658 -
val_accuracy: 0.6333
Epoch 152/200
4/4 - 0s - loss: 0.1620 - accuracy: 0.6750 - val_loss: 0.1656 -
val_accuracy: 0.6333
Epoch 153/200
4/4 - 0s - loss: 0.1618 - accuracy: 0.6750 - val_loss: 0.1653 -
val_accuracy: 0.6333
```

```
Epoch 154/200
4/4 - 0s - loss: 0.1616 - accuracy: 0.6750 - val_loss: 0.1651 -
val_accuracy: 0.6333
Epoch 155/200
4/4 - 0s - loss: 0.1614 - accuracy: 0.6750 - val_loss: 0.1649 -
val_accuracy: 0.6333
Epoch 156/200
4/4 - 0s - loss: 0.1611 - accuracy: 0.6750 - val_loss: 0.1647 -
val_accuracy: 0.6333
Epoch 157/200
4/4 - 0s - loss: 0.1609 - accuracy: 0.6750 - val_loss: 0.1645 -
val_accuracy: 0.6333
Epoch 158/200
4/4 - 0s - loss: 0.1607 - accuracy: 0.6750 - val_loss: 0.1643 -
val_accuracy: 0.6333
Epoch 159/200
4/4 - 0s - loss: 0.1605 - accuracy: 0.6750 - val_loss: 0.1641 -
val_accuracy: 0.6333
Epoch 160/200
4/4 - 0s - loss: 0.1603 - accuracy: 0.6750 - val_loss: 0.1639 -
val_accuracy: 0.6333
Epoch 161/200
4/4 - 0s - loss: 0.1601 - accuracy: 0.6750 - val_loss: 0.1637 -
val_accuracy: 0.6333
Epoch 162/200
4/4 - 0s - loss: 0.1599 - accuracy: 0.6750 - val_loss: 0.1635 -
val_accuracy: 0.6333
Epoch 163/200
4/4 - 0s - loss: 0.1597 - accuracy: 0.6750 - val_loss: 0.1633 -
val_accuracy: 0.6333
Epoch 164/200
4/4 - 0s - loss: 0.1594 - accuracy: 0.6750 - val_loss: 0.1632 -
val_accuracy: 0.6333
Epoch 165/200
4/4 - 0s - loss: 0.1593 - accuracy: 0.6750 - val_loss: 0.1630 -
val_accuracy: 0.6333
Epoch 166/200
4/4 - 0s - loss: 0.1591 - accuracy: 0.6750 - val_loss: 0.1628 -
val_accuracy: 0.6333
Epoch 167/200
4/4 - 0s - loss: 0.1588 - accuracy: 0.6750 - val_loss: 0.1626 -
val_accuracy: 0.6333
Epoch 168/200
4/4 - 0s - loss: 0.1587 - accuracy: 0.6750 - val_loss: 0.1624 -
val_accuracy: 0.6333
Epoch 169/200
4/4 - 0s - loss: 0.1585 - accuracy: 0.6750 - val_loss: 0.1622 -
val_accuracy: 0.6333
Epoch 170/200
4/4 - 0s - loss: 0.1583 - accuracy: 0.6750 - val_loss: 0.1621 -
```

```
val_accuracy: 0.6333
Epoch 171/200
4/4 - 0s - loss: 0.1581 - accuracy: 0.6750 - val_loss: 0.1619 -
val_accuracy: 0.6333
Epoch 172/200
4/4 - 0s - loss: 0.1579 - accuracy: 0.6750 - val_loss: 0.1617 -
val_accuracy: 0.6333
Epoch 173/200
4/4 - 0s - loss: 0.1577 - accuracy: 0.6750 - val_loss: 0.1615 -
val_accuracy: 0.6333
Epoch 174/200
4/4 - 0s - loss: 0.1575 - accuracy: 0.6750 - val_loss: 0.1614 -
val_accuracy: 0.6333
Epoch 175/200
4/4 - 0s - loss: 0.1574 - accuracy: 0.6750 - val_loss: 0.1612 -
val_accuracy: 0.6333
Epoch 176/200
4/4 - 0s - loss: 0.1572 - accuracy: 0.6750 - val_loss: 0.1610 -
val_accuracy: 0.6333
Epoch 177/200
4/4 - 0s - loss: 0.1570 - accuracy: 0.6750 - val_loss: 0.1609 -
val_accuracy: 0.6333
Epoch 178/200
4/4 - 0s - loss: 0.1569 - accuracy: 0.6750 - val_loss: 0.1607 -
val_accuracy: 0.6333
Epoch 179/200
4/4 - 0s - loss: 0.1567 - accuracy: 0.6750 - val_loss: 0.1606 -
val_accuracy: 0.6333
Epoch 180/200
4/4 - 0s - loss: 0.1566 - accuracy: 0.6750 - val_loss: 0.1604 -
val_accuracy: 0.6333
Epoch 181/200
4/4 - 0s - loss: 0.1564 - accuracy: 0.6750 - val_loss: 0.1602 -
val_accuracy: 0.6333
Epoch 182/200
4/4 - 0s - loss: 0.1562 - accuracy: 0.6750 - val_loss: 0.1601 -
val_accuracy: 0.6333
Epoch 183/200
4/4 - 0s - loss: 0.1560 - accuracy: 0.6750 - val_loss: 0.1599 -
val_accuracy: 0.6333
Epoch 184/200
4/4 - 0s - loss: 0.1559 - accuracy: 0.6750 - val_loss: 0.1598 -
val_accuracy: 0.6333
Epoch 185/200
4/4 - 0s - loss: 0.1557 - accuracy: 0.6750 - val_loss: 0.1596 -
val_accuracy: 0.6333
Epoch 186/200
4/4 - 0s - loss: 0.1556 - accuracy: 0.6750 - val_loss: 0.1595 -
val_accuracy: 0.6333
Epoch 187/200
```

4/4 - 0s - loss: 0.1554 - accuracy: 0.6750 - val_loss: 0.1593 - val_accuracy: 0.6333
Epoch 188/200
4/4 - 0s - loss: 0.1553 - accuracy: 0.6750 - val_loss: 0.1592 - val_accuracy: 0.6333
Epoch 189/200
4/4 - 0s - loss: 0.1551 - accuracy: 0.6750 - val_loss: 0.1590 - val_accuracy: 0.6333
Epoch 190/200
4/4 - 0s - loss: 0.1550 - accuracy: 0.6750 - val_loss: 0.1589 - val_accuracy: 0.6333
Epoch 191/200
4/4 - 0s - loss: 0.1549 - accuracy: 0.6750 - val_loss: 0.1588 - val_accuracy: 0.6333
Epoch 192/200
4/4 - 0s - loss: 0.1547 - accuracy: 0.6750 - val_loss: 0.1586 - val_accuracy: 0.6333
Epoch 193/200
4/4 - 0s - loss: 0.1546 - accuracy: 0.6750 - val_loss: 0.1585 - val_accuracy: 0.6333
Epoch 194/200
4/4 - 0s - loss: 0.1544 - accuracy: 0.6750 - val_loss: 0.1583 - val_accuracy: 0.6333
Epoch 195/200
4/4 - 0s - loss: 0.1543 - accuracy: 0.6750 - val_loss: 0.1582 - val_accuracy: 0.6333
Epoch 196/200
4/4 - 0s - loss: 0.1542 - accuracy: 0.6750 - val_loss: 0.1581 - val_accuracy: 0.6333
Epoch 197/200
4/4 - 0s - loss: 0.1540 - accuracy: 0.6750 - val_loss: 0.1579 - val_accuracy: 0.6333
Epoch 198/200
4/4 - 0s - loss: 0.1539 - accuracy: 0.6750 - val_loss: 0.1578 - val_accuracy: 0.6333
Epoch 199/200
4/4 - 0s - loss: 0.1538 - accuracy: 0.6750 - val_loss: 0.1577 - val_accuracy: 0.6333
Epoch 200/200
4/4 - 0s - loss: 0.1536 - accuracy: 0.6750 - val_loss: 0.1575 - val_accuracy: 0.6333
Activation: relu LR: 0.01 Iterations: 200 || Test loss: 0.15753594040870667
Activation: relu LR: 0.01 Iterations: 200 || Test Accuracy: 0.6333333253860474
===
======
Model_relu_LR_0.1_Iterations_100_HL_2
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow

```
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.1169s). Check your callbacks.
4/4 - 0s - loss: 0.3680 - accuracy: 0.0167 - val_loss: 0.3527 -
val_accuracy: 0.0333
Epoch 2/100
4/4 - 0s - loss: 0.3487 - accuracy: 0.0333 - val_loss: 0.3428 -
val_accuracy: 0.0333
Epoch 3/100
4/4 - 0s - loss: 0.3410 - accuracy: 0.0417 - val_loss: 0.3383 -
val_accuracy: 0.0500
Epoch 4/100
4/4 - 0s - loss: 0.3374 - accuracy: 0.0500 - val_loss: 0.3360 -
val_accuracy: 0.0583
Epoch 5/100
4/4 - 0s - loss: 0.3356 - accuracy: 0.0583 - val_loss: 0.3348 -
val_accuracy: 0.0667

Epoch 6/100
4/4 - 0s - loss: 0.3346 - accuracy: 0.0667 - val_loss: 0.3342 -
val_accuracy: 0.0667
Epoch 7/100
4/4 - 0s - loss: 0.3341 - accuracy: 0.0667 - val_loss: 0.3339 -
val_accuracy: 0.0833
Epoch 8/100
4/4 - 0s - loss: 0.3338 - accuracy: 0.0833 - val_loss: 0.3337 -
val_accuracy: 0.0833
Epoch 9/100
4/4 - 0s - loss: 0.3336 - accuracy: 0.0833 - val_loss: 0.3335 -
val_accuracy: 0.1000
Epoch 10/100
4/4 - 0s - loss: 0.3335 - accuracy: 0.1083 - val_loss: 0.3335 -
val_accuracy: 0.1083
Epoch 11/100
4/4 - 0s - loss: 0.3335 - accuracy: 0.1083 - val_loss: 0.3334 -
val_accuracy: 0.1083
Epoch 12/100
4/4 - 0s - loss: 0.3334 - accuracy: 0.1250 - val_loss: 0.3334 -
val_accuracy: 0.1250
Epoch 13/100
4/4 - 0s - loss: 0.3334 - accuracy: 0.1333 - val_loss: 0.3334 -
val_accuracy: 0.1667
Epoch 14/100
4/4 - 0s - loss: 0.3334 - accuracy: 0.1750 - val_loss: 0.3334 -
val_accuracy: 0.1750
Epoch 15/100
4/4 - 0s - loss: 0.3334 - accuracy: 0.1750 - val_loss: 0.3334 -
val_accuracy: 0.1750
Epoch 16/100
4/4 - 0s - loss: 0.3334 - accuracy: 0.1833 - val_loss: 0.3334 -
val_accuracy: 0.1917
```

```
Epoch 17/100
4/4 - 0s - loss: 0.3334 - accuracy: 0.1917 - val_loss: 0.3334 -
val_accuracy: 0.2000
Epoch 18/100
4/4 - 0s - loss: 0.3334 - accuracy: 0.2083 - val_loss: 0.3334 -
val_accuracy: 0.2083
Epoch 19/100
4/4 - 0s - loss: 0.3334 - accuracy: 0.2083 - val_loss: 0.3333 -
val_accuracy: 0.2167
Epoch 20/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2167 - val_loss: 0.3333 -
val_accuracy: 0.2167
Epoch 21/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2250 - val_loss: 0.3333 -
val_accuracy: 0.2333
Epoch 22/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2500 - val_loss: 0.3333 -
val_accuracy: 0.2500
Epoch 23/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2500 - val_loss: 0.3333 -
val_accuracy: 0.2500
Epoch 24/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2500 - val_loss: 0.3333 -
val_accuracy: 0.2500
Epoch 25/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2500 - val_loss: 0.3333 -
val_accuracy: 0.2500
Epoch 26/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2583 - val_loss: 0.3333 -
val_accuracy: 0.2667
Epoch 27/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2667 - val_loss: 0.3333 -
val_accuracy: 0.2750
Epoch 28/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2750 - val_loss: 0.3333 -
val_accuracy: 0.2750
Epoch 29/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2750 - val_loss: 0.3333 -
val_accuracy: 0.2833
Epoch 30/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2833 - val_loss: 0.3333 -
val_accuracy: 0.2833
Epoch 31/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2833 - val_loss: 0.3333 -
val_accuracy: 0.2833
Epoch 32/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2833 - val_loss: 0.3333 -
val_accuracy: 0.2833
Epoch 33/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2833 - val_loss: 0.3333 -
```

```
val_accuracy: 0.2833
Epoch 34/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2833 - val_loss: 0.3333 -
val_accuracy: 0.2833
Epoch 35/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2833 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 36/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 37/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 38/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 39/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 40/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 41/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 42/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 43/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 44/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 45/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 46/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.2917 - val_loss: 0.3333 -
val_accuracy: 0.2917
Epoch 47/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 48/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 49/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 50/100
```

```
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 51/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 52/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 53/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 54/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 55/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 56/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 57/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 58/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 59/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 60/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 61/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 62/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 63/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 64/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 65/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 66/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
```

```
Epoch 67/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 68/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 69/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 70/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 71/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 72/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3000 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 73/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 74/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 75/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 76/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 77/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 78/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 79/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 80/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 81/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 82/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 83/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
```

```
val_accuracy: 0.3083
Epoch 84/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 85/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 86/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 87/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 88/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 89/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083

Epoch 90/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 91/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 92/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 93/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 94/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 95/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 96/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 97/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 98/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Epoch 99/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
```

```
Epoch 100/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3083
Activation: relu LR: 0.1 Itertions: 100 || Train loss:
0.3333335816860199
Activation: relu LR: 0.1 Itertions: 100 || Train Accuracy:
0.3083333373069763
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.0760s). Check your callbacks.
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 2/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 3/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 4/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 5/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 6/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 7/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 8/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 9/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 10/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3083 - val_loss: 0.3333 -
val_accuracy: 0.3000
Epoch 11/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 12/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 13/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 14/100
```

```
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 15/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 16/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 17/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 18/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 19/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 20/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 21/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 22/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 23/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 24/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 25/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 26/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 27/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 28/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 29/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 30/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
```

```
Epoch 31/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 32/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 33/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 34/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 35/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 36/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 37/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 38/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 39/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 40/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 41/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 42/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 43/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 44/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 45/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 46/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 47/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
```

val_accuracy: 0.3333
Epoch 48/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 49/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 50/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 51/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 52/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 53/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 54/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 55/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 56/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 57/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 58/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 59/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 60/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 61/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 62/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 63/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 64/100

```
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 65/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 66/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 67/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 68/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 69/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 70/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333

Epoch 71/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 72/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 73/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 74/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 75/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 76/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 77/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 78/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 79/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 80/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
```

val_accuracy: 0.3333
Epoch 81/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 82/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 83/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 84/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 85/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 86/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 87/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 88/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 89/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 90/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 91/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 92/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 93/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 94/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 95/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 96/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 97/100

```
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 98/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 99/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Epoch 100/100
4/4 - 0s - loss: 0.3333 - accuracy: 0.3250 - val_loss: 0.3333 -
val_accuracy: 0.3333
Activation: relu LR: 0.1 Iterations: 100 || Test loss:
0.3333333730697632
Activation: relu LR: 0.1 Iterations: 100 || Test Accuracy:
0.3333333432674408
========================================================================
=======
Model_relu_LR_0.1_Iterations_200_HL_2
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0005s vs
`on_train_batch_end` time: 0.1267s). Check your callbacks.
4/4 - 0s - loss: 0.4678 - accuracy: 0.2500 - val_loss: 0.3504 -
val_accuracy: 0.1833
Epoch 2/200
4/4 - 0s - loss: 0.3291 - accuracy: 0.2167 - val_loss: 0.2990 -
val_accuracy: 0.2833
Epoch 3/200
4/4 - 0s - loss: 0.2911 - accuracy: 0.3000 - val_loss: 0.2784 -
val_accuracy: 0.3250
Epoch 4/200
4/4 - 0s - loss: 0.2739 - accuracy: 0.3333 - val_loss: 0.2654 -
val_accuracy: 0.3417
Epoch 5/200
4/4 - 0s - loss: 0.2622 - accuracy: 0.3667 - val_loss: 0.2542 -
val_accuracy: 0.3917
Epoch 6/200
4/4 - 0s - loss: 0.2491 - accuracy: 0.4333 - val_loss: 0.2384 -
val_accuracy: 0.4917
Epoch 7/200
4/4 - 0s - loss: 0.2335 - accuracy: 0.4917 - val_loss: 0.2242 -
val_accuracy: 0.5167
Epoch 8/200
4/4 - 0s - loss: 0.2197 - accuracy: 0.5167 - val_loss: 0.2105 -
val_accuracy: 0.5667
Epoch 9/200
4/4 - 0s - loss: 0.2063 - accuracy: 0.5750 - val_loss: 0.1977 -
val_accuracy: 0.5833
Epoch 10/200
4/4 - 0s - loss: 0.1935 - accuracy: 0.6000 - val_loss: 0.1860 -
```

val_accuracy: 0.6250
Epoch 11/200
4/4 - 0s - loss: 0.1840 - accuracy: 0.6333 - val_loss: 0.1787 -
val_accuracy: 0.6333
Epoch 12/200
4/4 - 0s - loss: 0.1775 - accuracy: 0.6417 - val_loss: 0.1741 -
val_accuracy: 0.6417
Epoch 13/200
4/4 - 0s - loss: 0.1731 - accuracy: 0.6417 - val_loss: 0.1706 -
val_accuracy: 0.6417
Epoch 14/200
4/4 - 0s - loss: 0.1698 - accuracy: 0.6417 - val_loss: 0.1677 -
val_accuracy: 0.6417
Epoch 15/200
4/4 - 0s - loss: 0.1672 - accuracy: 0.6417 - val_loss: 0.1651 -
val_accuracy: 0.6417
Epoch 16/200
4/4 - 0s - loss: 0.1645 - accuracy: 0.6417 - val_loss: 0.1629 -
val_accuracy: 0.6417
Epoch 17/200
4/4 - 0s - loss: 0.1625 - accuracy: 0.6417 - val_loss: 0.1609 -
val_accuracy: 0.6417
Epoch 18/200
4/4 - 0s - loss: 0.1606 - accuracy: 0.6417 - val_loss: 0.1590 -
val_accuracy: 0.6417
Epoch 19/200
4/4 - 0s - loss: 0.1586 - accuracy: 0.6417 - val_loss: 0.1574 -
val_accuracy: 0.6417
Epoch 20/200
4/4 - 0s - loss: 0.1571 - accuracy: 0.6417 - val_loss: 0.1559 -
val_accuracy: 0.6417
Epoch 21/200
4/4 - 0s - loss: 0.1557 - accuracy: 0.6417 - val_loss: 0.1545 -
val_accuracy: 0.6500
Epoch 22/200
4/4 - 0s - loss: 0.1542 - accuracy: 0.6500 - val_loss: 0.1531 -
val_accuracy: 0.6500
Epoch 23/200
4/4 - 0s - loss: 0.1529 - accuracy: 0.6500 - val_loss: 0.1519 -
val_accuracy: 0.6500
Epoch 24/200
4/4 - 0s - loss: 0.1517 - accuracy: 0.6500 - val_loss: 0.1508 -
val_accuracy: 0.6500
Epoch 25/200
4/4 - 0s - loss: 0.1507 - accuracy: 0.6500 - val_loss: 0.1494 -
val_accuracy: 0.6500
Epoch 26/200
4/4 - 0s - loss: 0.1492 - accuracy: 0.6583 - val_loss: 0.1481 -
val_accuracy: 0.6583
Epoch 27/200

```
4/4 - 0s - loss: 0.1478 - accuracy: 0.6583 - val_loss: 0.1469 -
val_accuracy: 0.6583
Epoch 28/200
4/4 - 0s - loss: 0.1467 - accuracy: 0.6583 - val_loss: 0.1457 -
val_accuracy: 0.6583
Epoch 29/200
4/4 - 0s - loss: 0.1455 - accuracy: 0.6583 - val_loss: 0.1446 -
val_accuracy: 0.6583
Epoch 30/200
4/4 - 0s - loss: 0.1445 - accuracy: 0.6583 - val_loss: 0.1436 -
val_accuracy: 0.6583
Epoch 31/200
4/4 - 0s - loss: 0.1434 - accuracy: 0.6583 - val_loss: 0.1427 -
val_accuracy: 0.6583
Epoch 32/200
4/4 - 0s - loss: 0.1425 - accuracy: 0.6583 - val_loss: 0.1418 -
val_accuracy: 0.6583
Epoch 33/200
4/4 - 0s - loss: 0.1417 - accuracy: 0.6583 - val_loss: 0.1410 -
val_accuracy: 0.6583
Epoch 34/200
4/4 - 0s - loss: 0.1409 - accuracy: 0.6583 - val_loss: 0.1402 -
val_accuracy: 0.6583
Epoch 35/200
4/4 - 0s - loss: 0.1402 - accuracy: 0.6583 - val_loss: 0.1394 -
val_accuracy: 0.6583
Epoch 36/200
4/4 - 0s - loss: 0.1395 - accuracy: 0.6583 - val_loss: 0.1387 -
val_accuracy: 0.6583
Epoch 37/200
4/4 - 0s - loss: 0.1386 - accuracy: 0.6583 - val_loss: 0.1380 -
val_accuracy: 0.6583
Epoch 38/200
4/4 - 0s - loss: 0.1380 - accuracy: 0.6583 - val_loss: 0.1374 -
val_accuracy: 0.6583
Epoch 39/200
4/4 - 0s - loss: 0.1373 - accuracy: 0.6583 - val_loss: 0.1368 -
val_accuracy: 0.6583
Epoch 40/200
4/4 - 0s - loss: 0.1370 - accuracy: 0.6583 - val_loss: 0.1362 -
val_accuracy: 0.6583
Epoch 41/200
4/4 - 0s - loss: 0.1361 - accuracy: 0.6583 - val_loss: 0.1356 -
val_accuracy: 0.6583
Epoch 42/200
4/4 - 0s - loss: 0.1355 - accuracy: 0.6583 - val_loss: 0.1351 -
val_accuracy: 0.6583
Epoch 43/200
4/4 - 0s - loss: 0.1351 - accuracy: 0.6583 - val_loss: 0.1346 -
val_accuracy: 0.6583
```

```
Epoch 44/200
4/4 - 0s - loss: 0.1346 - accuracy: 0.6583 - val_loss: 0.1341 -
val_accuracy: 0.6583
Epoch 45/200
4/4 - 0s - loss: 0.1341 - accuracy: 0.6583 - val_loss: 0.1337 -
val_accuracy: 0.6583
Epoch 46/200
4/4 - 0s - loss: 0.1338 - accuracy: 0.6583 - val_loss: 0.1333 -
val_accuracy: 0.6583
Epoch 47/200
4/4 - 0s - loss: 0.1333 - accuracy: 0.6583 - val_loss: 0.1329 -
val_accuracy: 0.6583
Epoch 48/200
4/4 - 0s - loss: 0.1329 - accuracy: 0.6583 - val_loss: 0.1325 -
val_accuracy: 0.6583
Epoch 49/200
4/4 - 0s - loss: 0.1327 - accuracy: 0.6583 - val_loss: 0.1322 -
val_accuracy: 0.6583
Epoch 50/200
4/4 - 0s - loss: 0.1322 - accuracy: 0.6583 - val_loss: 0.1318 -
val_accuracy: 0.6583

Epoch 51/200
4/4 - 0s - loss: 0.1318 - accuracy: 0.6583 - val_loss: 0.1315 -
val_accuracy: 0.6583
Epoch 52/200
4/4 - 0s - loss: 0.1315 - accuracy: 0.6583 - val_loss: 0.1312 -
val_accuracy: 0.6583
Epoch 53/200
4/4 - 0s - loss: 0.1312 - accuracy: 0.6583 - val_loss: 0.1309 -
val_accuracy: 0.6583
Epoch 54/200
4/4 - 0s - loss: 0.1309 - accuracy: 0.6583 - val_loss: 0.1307 -
val_accuracy: 0.6583
Epoch 55/200
4/4 - 0s - loss: 0.1308 - accuracy: 0.6583 - val_loss: 0.1304 -
val_accuracy: 0.6583
Epoch 56/200
4/4 - 0s - loss: 0.1304 - accuracy: 0.6583 - val_loss: 0.1302 -
val_accuracy: 0.6583
Epoch 57/200
4/4 - 0s - loss: 0.1301 - accuracy: 0.6583 - val_loss: 0.1299 -
val_accuracy: 0.6583
Epoch 58/200
4/4 - 0s - loss: 0.1301 - accuracy: 0.6583 - val_loss: 0.1297 -
val_accuracy: 0.6583
Epoch 59/200
4/4 - 0s - loss: 0.1298 - accuracy: 0.6583 - val_loss: 0.1295 -
val_accuracy: 0.6583
Epoch 60/200
```

```
4/4 - 0s - loss: 0.1296 - accuracy: 0.6583 - val_loss: 0.1293 -
val_accuracy: 0.6583
Epoch 61/200
4/4 - 0s - loss: 0.1295 - accuracy: 0.6583 - val_loss: 0.1291 -
val_accuracy: 0.6583
Epoch 62/200
4/4 - 0s - loss: 0.1292 - accuracy: 0.6583 - val_loss: 0.1290 -
val_accuracy: 0.6583
Epoch 63/200
4/4 - 0s - loss: 0.1291 - accuracy: 0.6583 - val_loss: 0.1288 -
val_accuracy: 0.6583
Epoch 64/200
4/4 - 0s - loss: 0.1289 - accuracy: 0.6583 - val_loss: 0.1286 -
val_accuracy: 0.6583
Epoch 65/200
4/4 - 0s - loss: 0.1289 - accuracy: 0.6583 - val_loss: 0.1285 -
val_accuracy: 0.6583
Epoch 66/200
4/4 - 0s - loss: 0.1285 - accuracy: 0.6583 - val_loss: 0.1283 -
val_accuracy: 0.6583
Epoch 67/200
4/4 - 0s - loss: 0.1283 - accuracy: 0.6583 - val_loss: 0.1282 -
val_accuracy: 0.6583
Epoch 68/200
4/4 - 0s - loss: 0.1283 - accuracy: 0.6583 - val_loss: 0.1281 -
val_accuracy: 0.6583
Epoch 69/200
4/4 - 0s - loss: 0.1281 - accuracy: 0.6583 - val_loss: 0.1280 -
val_accuracy: 0.6583
Epoch 70/200
4/4 - 0s - loss: 0.1281 - accuracy: 0.6583 - val_loss: 0.1279 -
val_accuracy: 0.6583
Epoch 71/200
4/4 - 0s - loss: 0.1280 - accuracy: 0.6583 - val_loss: 0.1277 -
val_accuracy: 0.6583
Epoch 72/200
4/4 - 0s - loss: 0.1278 - accuracy: 0.6583 - val_loss: 0.1276 -
val_accuracy: 0.6583
Epoch 73/200
4/4 - 0s - loss: 0.1278 - accuracy: 0.6583 - val_loss: 0.1275 -
val_accuracy: 0.6583
Epoch 74/200
4/4 - 0s - loss: 0.1276 - accuracy: 0.6583 - val_loss: 0.1275 -
val_accuracy: 0.6583
Epoch 75/200
4/4 - 0s - loss: 0.1275 - accuracy: 0.6583 - val_loss: 0.1274 -
val_accuracy: 0.6583
Epoch 76/200
4/4 - 0s - loss: 0.1277 - accuracy: 0.6583 - val_loss: 0.1273 -
val_accuracy: 0.6583
```

```
Epoch 77/200
4/4 - 0s - loss: 0.1274 - accuracy: 0.6583 - val_loss: 0.1272 -
val_accuracy: 0.6583
Epoch 78/200
4/4 - 0s - loss: 0.1272 - accuracy: 0.6583 - val_loss: 0.1271 -
val_accuracy: 0.6583
Epoch 79/200
4/4 - 0s - loss: 0.1272 - accuracy: 0.6583 - val_loss: 0.1271 -
val_accuracy: 0.6583
Epoch 80/200
4/4 - 0s - loss: 0.1271 - accuracy: 0.6583 - val_loss: 0.1270 -
val_accuracy: 0.6583
Epoch 81/200
4/4 - 0s - loss: 0.1270 - accuracy: 0.6583 - val_loss: 0.1269 -
val_accuracy: 0.6583
Epoch 82/200
4/4 - 0s - loss: 0.1270 - accuracy: 0.6583 - val_loss: 0.1269 -
val_accuracy: 0.6583
Epoch 83/200
4/4 - 0s - loss: 0.1269 - accuracy: 0.6583 - val_loss: 0.1268 -
val_accuracy: 0.6583
Epoch 84/200
4/4 - 0s - loss: 0.1271 - accuracy: 0.6583 - val_loss: 0.1268 -
val_accuracy: 0.6583
Epoch 85/200
4/4 - 0s - loss: 0.1268 - accuracy: 0.6583 - val_loss: 0.1267 -
val_accuracy: 0.6583
Epoch 86/200
4/4 - 0s - loss: 0.1268 - accuracy: 0.6583 - val_loss: 0.1267 -
val_accuracy: 0.6583
Epoch 87/200
4/4 - 0s - loss: 0.1267 - accuracy: 0.6583 - val_loss: 0.1266 -
val_accuracy: 0.6583
Epoch 88/200
4/4 - 0s - loss: 0.1266 - accuracy: 0.6583 - val_loss: 0.1266 -
val_accuracy: 0.6583
Epoch 89/200
4/4 - 0s - loss: 0.1268 - accuracy: 0.6583 - val_loss: 0.1265 -
val_accuracy: 0.6583
Epoch 90/200
4/4 - 0s - loss: 0.1265 - accuracy: 0.6583 - val_loss: 0.1265 -
val_accuracy: 0.6583
Epoch 91/200
4/4 - 0s - loss: 0.1267 - accuracy: 0.6583 - val_loss: 0.1265 -
val_accuracy: 0.6583
Epoch 92/200
4/4 - 0s - loss: 0.1265 - accuracy: 0.6583 - val_loss: 0.1264 -
val_accuracy: 0.6583
Epoch 93/200
4/4 - 0s - loss: 0.1266 - accuracy: 0.6583 - val_loss: 0.1264 -
```

```
val_accuracy: 0.6583
Epoch 94/200
4/4 - 0s - loss: 0.1265 - accuracy: 0.6583 - val_loss: 0.1264 -
val_accuracy: 0.6583
Epoch 95/200
4/4 - 0s - loss: 0.1266 - accuracy: 0.6583 - val_loss: 0.1263 -
val_accuracy: 0.6583
Epoch 96/200
4/4 - 0s - loss: 0.1264 - accuracy: 0.6583 - val_loss: 0.1263 -
val_accuracy: 0.6583
Epoch 97/200
4/4 - 0s - loss: 0.1263 - accuracy: 0.6583 - val_loss: 0.1263 -
val_accuracy: 0.6583
Epoch 98/200
4/4 - 0s - loss: 0.1264 - accuracy: 0.6583 - val_loss: 0.1262 -
val_accuracy: 0.6583
Epoch 99/200
4/4 - 0s - loss: 0.1263 - accuracy: 0.6583 - val_loss: 0.1262 -
val_accuracy: 0.6583
Epoch 100/200
4/4 - 0s - loss: 0.1263 - accuracy: 0.6583 - val_loss: 0.1262 -
val_accuracy: 0.6583
Epoch 101/200
4/4 - 0s - loss: 0.1263 - accuracy: 0.6583 - val_loss: 0.1262 -
val_accuracy: 0.6583
Epoch 102/200
4/4 - 0s - loss: 0.1264 - accuracy: 0.6583 - val_loss: 0.1262 -
val_accuracy: 0.6583
Epoch 103/200
4/4 - 0s - loss: 0.1263 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.6583
Epoch 104/200
4/4 - 0s - loss: 0.1262 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.6583
Epoch 105/200
4/4 - 0s - loss: 0.1262 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.6583
Epoch 106/200
4/4 - 0s - loss: 0.1262 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.6583
Epoch 107/200
4/4 - 0s - loss: 0.1262 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.6583
Epoch 108/200
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1260 -
val_accuracy: 0.6583
Epoch 109/200
4/4 - 0s - loss: 0.1265 - accuracy: 0.6583 - val_loss: 0.1260 -
val_accuracy: 0.6583
Epoch 110/200
```

```
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1260 -
val_accuracy: 0.6583
Epoch 111/200
4/4 - 0s - loss: 0.1263 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.6583
Epoch 112/200
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1260 -
val_accuracy: 0.6583
Epoch 113/200
4/4 - 0s - loss: 0.1262 - accuracy: 0.6583 - val_loss: 0.1260 -
val_accuracy: 0.6583
Epoch 114/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 115/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 116/200
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 117/200
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 118/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 119/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 120/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 121/200
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 122/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 123/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 124/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 125/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Epoch 126/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
```

```
Epoch 127/200
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Epoch 128/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Epoch 129/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Epoch 130/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Epoch 131/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Epoch 132/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Epoch 133/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Epoch 134/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583

Epoch 135/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 136/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 137/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 138/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 139/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 140/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 141/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 142/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 143/200
```

```
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 144/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 145/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 146/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 147/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 148/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 149/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 150/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 151/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 152/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 153/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 154/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 155/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 156/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 157/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 158/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 159/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
```

```
Epoch 160/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 161/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 162/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 163/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 164/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 165/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.6583
Epoch 166/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 167/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 168/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 169/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 170/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 171/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 172/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 173/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 174/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 175/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 176/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1256 -
```

```
val_accuracy: 0.6583
Epoch 177/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 178/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 179/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 180/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 181/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.6583
Epoch 182/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 183/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 184/200
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 185/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 186/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 187/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 188/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 189/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 190/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 191/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 192/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 193/200
```

```
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 194/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 195/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 196/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 197/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 198/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 199/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Epoch 200/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.6583
Activation: relu LR: 0.1 Itertions: 200 || Train loss:
0.12547336518764496
Activation: relu LR: 0.1 Itertions: 200 || Train Accuracy:
0.6583333611488342
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.0745s). Check your callbacks.
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1176 -
val_accuracy: 0.7000
Epoch 2/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 3/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 4/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 5/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 6/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 7/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1182 -
```

```
val_accuracy: 0.7000
Epoch 8/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1176 -
val_accuracy: 0.7000
Epoch 9/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 10/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 11/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 12/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 13/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 14/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000

Epoch 15/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 16/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 17/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1186 -
val_accuracy: 0.7000
Epoch 18/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 19/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 20/200
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 21/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 22/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 23/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
```

```
Epoch 24/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 25/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 26/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 27/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 28/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 29/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 30/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 31/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 32/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 33/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 34/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 35/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 36/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 37/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 38/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 39/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 40/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1180 -
```

val_accuracy: 0.7000
Epoch 41/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 42/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 43/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 44/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 45/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 46/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 47/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 48/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 49/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 50/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 51/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 52/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 53/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 54/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 55/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 56/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 57/200

```
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 58/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 59/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1176 -
val_accuracy: 0.7000
Epoch 60/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 61/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 62/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 63/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 64/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 65/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 66/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 67/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 68/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 69/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1176 -
val_accuracy: 0.7000
Epoch 70/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 71/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 72/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 73/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
```

```
Epoch 74/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 75/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 76/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 77/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 78/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 79/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 80/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 81/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 82/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 83/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 84/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 85/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 86/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 87/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 88/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 89/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 90/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1185 -
```

```
val_accuracy: 0.7000
Epoch 91/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 92/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 93/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 94/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 95/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 96/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 97/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 98/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1176 -
val_accuracy: 0.7000

Epoch 99/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1176 -
val_accuracy: 0.7000
Epoch 100/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 101/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 102/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 103/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1177 -
val_accuracy: 0.7000
Epoch 104/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 105/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 106/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
```

```
Epoch 107/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 108/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 109/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 110/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 111/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 112/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 113/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 114/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 115/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 116/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 117/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 118/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 119/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 120/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 121/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 122/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 123/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
```

```
val_accuracy: 0.7000
Epoch 124/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 125/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 126/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 127/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 128/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 129/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 130/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 131/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 132/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 133/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 134/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 135/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 136/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 137/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 138/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 139/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 140/200
```

```
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 141/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 142/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 143/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 144/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 145/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 146/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 147/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 148/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 149/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 150/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 151/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 152/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 153/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 154/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 155/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 156/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
```

```
Epoch 157/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 158/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 159/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1186 -
val_accuracy: 0.7000
Epoch 160/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 161/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 162/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 163/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 164/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 165/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1186 -
val_accuracy: 0.7000
Epoch 166/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 167/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1186 -
val_accuracy: 0.7000
Epoch 168/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 169/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1187 -
val_accuracy: 0.7000
Epoch 170/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 171/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 172/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1187 -
val_accuracy: 0.7000
Epoch 173/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1184 -
```

```
val_accuracy: 0.7000
Epoch 174/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 175/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1178 -
val_accuracy: 0.7000
Epoch 176/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 177/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 178/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 179/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1187 -
val_accuracy: 0.7000
Epoch 180/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 181/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000

Epoch 182/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 183/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 184/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
Epoch 185/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1186 -
val_accuracy: 0.7000
Epoch 186/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 187/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 188/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 189/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1185 -
val_accuracy: 0.7000
```

```
Epoch 190/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 191/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 192/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1179 -
val_accuracy: 0.7000
Epoch 193/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 194/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 195/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 196/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 197/200
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Epoch 198/200
4/4 - 0s - loss: 0.1250 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 199/200
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 200/200
4/4 - 0s - loss: 0.1250 - accuracy: 0.6583 - val_loss: 0.1180 -
val_accuracy: 0.7000
Activation: relu LR: 0.1 Iterations: 200 || Test loss:
0.11801023781299591
Activation: relu LR: 0.1 Iterations: 200 || Test Accuracy:
0.699999988079071
======================================================================
======
Model_sigmoid_LR_0.01_Iterations_100_HL_3
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.1257s). Check your callbacks.
4/4 - 0s - loss: 0.2427 - accuracy: 0.3417 - val_loss: 0.2426 -
val_accuracy: 0.3417
Epoch 2/100
4/4 - 0s - loss: 0.2425 - accuracy: 0.3417 - val_loss: 0.2424 -
val_accuracy: 0.3417
Epoch 3/100
```

```
4/4 - 0s - loss: 0.2424 - accuracy: 0.3417 - val_loss: 0.2423 -
val_accuracy: 0.3417
Epoch 4/100
4/4 - 0s - loss: 0.2422 - accuracy: 0.3417 - val_loss: 0.2421 -
val_accuracy: 0.3417
Epoch 5/100
4/4 - 0s - loss: 0.2421 - accuracy: 0.3417 - val_loss: 0.2420 -
val_accuracy: 0.3417
Epoch 6/100
4/4 - 0s - loss: 0.2419 - accuracy: 0.3417 - val_loss: 0.2418 -
val_accuracy: 0.3417
Epoch 7/100
4/4 - 0s - loss: 0.2418 - accuracy: 0.3417 - val_loss: 0.2417 -
val_accuracy: 0.3417
Epoch 8/100
4/4 - 0s - loss: 0.2416 - accuracy: 0.3417 - val_loss: 0.2415 -
val_accuracy: 0.3417
Epoch 9/100
4/4 - 0s - loss: 0.2415 - accuracy: 0.3417 - val_loss: 0.2414 -
val_accuracy: 0.3417
Epoch 10/100
4/4 - 0s - loss: 0.2414 - accuracy: 0.3417 - val_loss: 0.2413 -
val_accuracy: 0.3417
Epoch 11/100
4/4 - 0s - loss: 0.2412 - accuracy: 0.3417 - val_loss: 0.2411 -
val_accuracy: 0.3417
Epoch 12/100
4/4 - 0s - loss: 0.2411 - accuracy: 0.3417 - val_loss: 0.2410 -
val_accuracy: 0.3417
Epoch 13/100
4/4 - 0s - loss: 0.2409 - accuracy: 0.3417 - val_loss: 0.2408 -
val_accuracy: 0.3417
Epoch 14/100
4/4 - 0s - loss: 0.2408 - accuracy: 0.3417 - val_loss: 0.2407 -
val_accuracy: 0.3417
Epoch 15/100
4/4 - 0s - loss: 0.2407 - accuracy: 0.3417 - val_loss: 0.2406 -
val_accuracy: 0.3417
Epoch 16/100
4/4 - 0s - loss: 0.2405 - accuracy: 0.3417 - val_loss: 0.2404 -
val_accuracy: 0.3417
Epoch 17/100
4/4 - 0s - loss: 0.2404 - accuracy: 0.3417 - val_loss: 0.2403 -
val_accuracy: 0.3417
Epoch 18/100
4/4 - 0s - loss: 0.2403 - accuracy: 0.3417 - val_loss: 0.2402 -
val_accuracy: 0.3417
Epoch 19/100
4/4 - 0s - loss: 0.2401 - accuracy: 0.3417 - val_loss: 0.2401 -
val_accuracy: 0.3417
```

```
Epoch 20/100
4/4 - 0s - loss: 0.2400 - accuracy: 0.3417 - val_loss: 0.2399 -
val_accuracy: 0.3417
Epoch 21/100
4/4 - 0s - loss: 0.2399 - accuracy: 0.3417 - val_loss: 0.2398 -
val_accuracy: 0.3417
Epoch 22/100
4/4 - 0s - loss: 0.2397 - accuracy: 0.3417 - val_loss: 0.2397 -
val_accuracy: 0.3417
Epoch 23/100
4/4 - 0s - loss: 0.2396 - accuracy: 0.3417 - val_loss: 0.2395 -
val_accuracy: 0.3417
Epoch 24/100
4/4 - 0s - loss: 0.2395 - accuracy: 0.3417 - val_loss: 0.2394 -
val_accuracy: 0.3417
Epoch 25/100
4/4 - 0s - loss: 0.2394 - accuracy: 0.3417 - val_loss: 0.2393 -
val_accuracy: 0.3417
Epoch 26/100
4/4 - 0s - loss: 0.2392 - accuracy: 0.3417 - val_loss: 0.2392 -
val_accuracy: 0.3417
Epoch 27/100
4/4 - 0s - loss: 0.2391 - accuracy: 0.3417 - val_loss: 0.2390 -
val_accuracy: 0.3417
Epoch 28/100
4/4 - 0s - loss: 0.2390 - accuracy: 0.3417 - val_loss: 0.2389 -
val_accuracy: 0.3417
Epoch 29/100
4/4 - 0s - loss: 0.2389 - accuracy: 0.3417 - val_loss: 0.2388 -
val_accuracy: 0.3417
Epoch 30/100
4/4 - 0s - loss: 0.2387 - accuracy: 0.3417 - val_loss: 0.2386 -
val_accuracy: 0.3417
Epoch 31/100
4/4 - 0s - loss: 0.2386 - accuracy: 0.3417 - val_loss: 0.2385 -
val_accuracy: 0.3417
Epoch 32/100
4/4 - 0s - loss: 0.2385 - accuracy: 0.3417 - val_loss: 0.2384 -
val_accuracy: 0.3417
Epoch 33/100
4/4 - 0s - loss: 0.2384 - accuracy: 0.3417 - val_loss: 0.2383 -
val_accuracy: 0.3417
Epoch 34/100
4/4 - 0s - loss: 0.2382 - accuracy: 0.3417 - val_loss: 0.2382 -
val_accuracy: 0.3417
Epoch 35/100
4/4 - 0s - loss: 0.2381 - accuracy: 0.3417 - val_loss: 0.2380 -
val_accuracy: 0.3417
Epoch 36/100
4/4 - 0s - loss: 0.2380 - accuracy: 0.3417 - val_loss: 0.2379 -
```

```
val_accuracy: 0.3417
Epoch 37/100
4/4 - 0s - loss: 0.2379 - accuracy: 0.3417 - val_loss: 0.2378 -
val_accuracy: 0.3417
Epoch 38/100
4/4 - 0s - loss: 0.2378 - accuracy: 0.3417 - val_loss: 0.2377 -
val_accuracy: 0.3417
Epoch 39/100
4/4 - 0s - loss: 0.2377 - accuracy: 0.3417 - val_loss: 0.2376 -
val_accuracy: 0.3417
Epoch 40/100
4/4 - 0s - loss: 0.2375 - accuracy: 0.3417 - val_loss: 0.2375 -
val_accuracy: 0.3417
Epoch 41/100
4/4 - 0s - loss: 0.2374 - accuracy: 0.3417 - val_loss: 0.2374 -
val_accuracy: 0.3417
Epoch 42/100
4/4 - 0s - loss: 0.2373 - accuracy: 0.3417 - val_loss: 0.2372 -
val_accuracy: 0.3417
Epoch 43/100
4/4 - 0s - loss: 0.2372 - accuracy: 0.3417 - val_loss: 0.2371 -
val_accuracy: 0.3417
Epoch 44/100
4/4 - 0s - loss: 0.2371 - accuracy: 0.3417 - val_loss: 0.2370 -
val_accuracy: 0.3417
Epoch 45/100
4/4 - 0s - loss: 0.2370 - accuracy: 0.3417 - val_loss: 0.2369 -
val_accuracy: 0.3417
Epoch 46/100
4/4 - 0s - loss: 0.2369 - accuracy: 0.3417 - val_loss: 0.2368 -
val_accuracy: 0.3417
Epoch 47/100
4/4 - 0s - loss: 0.2368 - accuracy: 0.3417 - val_loss: 0.2367 -
val_accuracy: 0.3417
Epoch 48/100
4/4 - 0s - loss: 0.2366 - accuracy: 0.3417 - val_loss: 0.2366 -
val_accuracy: 0.3417
Epoch 49/100
4/4 - 0s - loss: 0.2365 - accuracy: 0.3417 - val_loss: 0.2365 -
val_accuracy: 0.3417
Epoch 50/100
4/4 - 0s - loss: 0.2364 - accuracy: 0.3417 - val_loss: 0.2364 -
val_accuracy: 0.3417
Epoch 51/100
4/4 - 0s - loss: 0.2363 - accuracy: 0.3417 - val_loss: 0.2363 -
val_accuracy: 0.3417
Epoch 52/100
4/4 - 0s - loss: 0.2362 - accuracy: 0.3417 - val_loss: 0.2361 -
val_accuracy: 0.3417
Epoch 53/100
```

```
4/4 - 0s - loss: 0.2361 - accuracy: 0.3417 - val_loss: 0.2360 -
val_accuracy: 0.3417
Epoch 54/100
4/4 - 0s - loss: 0.2360 - accuracy: 0.3417 - val_loss: 0.2359 -
val_accuracy: 0.3417
Epoch 55/100
4/4 - 0s - loss: 0.2359 - accuracy: 0.3417 - val_loss: 0.2358 -
val_accuracy: 0.3417
Epoch 56/100
4/4 - 0s - loss: 0.2358 - accuracy: 0.3417 - val_loss: 0.2357 -
val_accuracy: 0.3417
Epoch 57/100
4/4 - 0s - loss: 0.2357 - accuracy: 0.3417 - val_loss: 0.2356 -
val_accuracy: 0.3417
Epoch 58/100
4/4 - 0s - loss: 0.2356 - accuracy: 0.3417 - val_loss: 0.2355 -
val_accuracy: 0.3417
Epoch 59/100
4/4 - 0s - loss: 0.2355 - accuracy: 0.3417 - val_loss: 0.2354 -
val_accuracy: 0.3417
Epoch 60/100
4/4 - 0s - loss: 0.2354 - accuracy: 0.3417 - val_loss: 0.2353 -
val_accuracy: 0.3417

Epoch 61/100
4/4 - 0s - loss: 0.2353 - accuracy: 0.3417 - val_loss: 0.2352 -
val_accuracy: 0.3417
Epoch 62/100
4/4 - 0s - loss: 0.2352 - accuracy: 0.3417 - val_loss: 0.2351 -
val_accuracy: 0.3417
Epoch 63/100
4/4 - 0s - loss: 0.2351 - accuracy: 0.3417 - val_loss: 0.2350 -
val_accuracy: 0.3417
Epoch 64/100
4/4 - 0s - loss: 0.2350 - accuracy: 0.3417 - val_loss: 0.2349 -
val_accuracy: 0.3417
Epoch 65/100
4/4 - 0s - loss: 0.2349 - accuracy: 0.3417 - val_loss: 0.2348 -
val_accuracy: 0.3417
Epoch 66/100
4/4 - 0s - loss: 0.2348 - accuracy: 0.3417 - val_loss: 0.2347 -
val_accuracy: 0.3417
Epoch 67/100
4/4 - 0s - loss: 0.2347 - accuracy: 0.3417 - val_loss: 0.2346 -
val_accuracy: 0.3417
Epoch 68/100
4/4 - 0s - loss: 0.2346 - accuracy: 0.3417 - val_loss: 0.2345 -
val_accuracy: 0.3417
Epoch 69/100
4/4 - 0s - loss: 0.2345 - accuracy: 0.3417 - val_loss: 0.2344 -
```

val_accuracy: 0.3417
Epoch 70/100
4/4 - 0s - loss: 0.2344 - accuracy: 0.3417 - val_loss: 0.2343 -
val_accuracy: 0.3417
Epoch 71/100
4/4 - 0s - loss: 0.2343 - accuracy: 0.3417 - val_loss: 0.2343 -
val_accuracy: 0.3417
Epoch 72/100
4/4 - 0s - loss: 0.2342 - accuracy: 0.3417 - val_loss: 0.2342 -
val_accuracy: 0.3417
Epoch 73/100
4/4 - 0s - loss: 0.2341 - accuracy: 0.3417 - val_loss: 0.2341 -
val_accuracy: 0.3417
Epoch 74/100
4/4 - 0s - loss: 0.2340 - accuracy: 0.3417 - val_loss: 0.2340 -
val_accuracy: 0.3417
Epoch 75/100
4/4 - 0s - loss: 0.2339 - accuracy: 0.3417 - val_loss: 0.2339 -
val_accuracy: 0.3417
Epoch 76/100
4/4 - 0s - loss: 0.2339 - accuracy: 0.3417 - val_loss: 0.2338 -
val_accuracy: 0.3417
Epoch 77/100
4/4 - 0s - loss: 0.2338 - accuracy: 0.3417 - val_loss: 0.2337 -
val_accuracy: 0.3417
Epoch 78/100
4/4 - 0s - loss: 0.2337 - accuracy: 0.3417 - val_loss: 0.2336 -
val_accuracy: 0.3417
Epoch 79/100
4/4 - 0s - loss: 0.2336 - accuracy: 0.3417 - val_loss: 0.2335 -
val_accuracy: 0.3417
Epoch 80/100
4/4 - 0s - loss: 0.2335 - accuracy: 0.3417 - val_loss: 0.2334 -
val_accuracy: 0.3417
Epoch 81/100
4/4 - 0s - loss: 0.2334 - accuracy: 0.3417 - val_loss: 0.2334 -
val_accuracy: 0.3417
Epoch 82/100
4/4 - 0s - loss: 0.2333 - accuracy: 0.3417 - val_loss: 0.2333 -
val_accuracy: 0.3417
Epoch 83/100
4/4 - 0s - loss: 0.2332 - accuracy: 0.3417 - val_loss: 0.2332 -
val_accuracy: 0.3417
Epoch 84/100
4/4 - 0s - loss: 0.2332 - accuracy: 0.3417 - val_loss: 0.2331 -
val_accuracy: 0.3417
Epoch 85/100
4/4 - 0s - loss: 0.2331 - accuracy: 0.3417 - val_loss: 0.2330 -
val_accuracy: 0.3417
Epoch 86/100

```
4/4 - 0s - loss: 0.2330 - accuracy: 0.3417 - val_loss: 0.2329 -
val_accuracy: 0.3417
Epoch 87/100
4/4 - 0s - loss: 0.2329 - accuracy: 0.3417 - val_loss: 0.2328 -
val_accuracy: 0.3417
Epoch 88/100
4/4 - 0s - loss: 0.2328 - accuracy: 0.3417 - val_loss: 0.2328 -
val_accuracy: 0.3417
Epoch 89/100
4/4 - 0s - loss: 0.2327 - accuracy: 0.3417 - val_loss: 0.2327 -
val_accuracy: 0.3417
Epoch 90/100
4/4 - 0s - loss: 0.2327 - accuracy: 0.3417 - val_loss: 0.2326 -
val_accuracy: 0.3417
Epoch 91/100
4/4 - 0s - loss: 0.2326 - accuracy: 0.3417 - val_loss: 0.2325 -
val_accuracy: 0.3417
Epoch 92/100
4/4 - 0s - loss: 0.2325 - accuracy: 0.3417 - val_loss: 0.2324 -
val_accuracy: 0.3417
Epoch 93/100
4/4 - 0s - loss: 0.2324 - accuracy: 0.3417 - val_loss: 0.2323 -
val_accuracy: 0.3417
Epoch 94/100
4/4 - 0s - loss: 0.2323 - accuracy: 0.3417 - val_loss: 0.2323 -
val_accuracy: 0.3417
Epoch 95/100
4/4 - 0s - loss: 0.2323 - accuracy: 0.3417 - val_loss: 0.2322 -
val_accuracy: 0.3417
Epoch 96/100
4/4 - 0s - loss: 0.2322 - accuracy: 0.3417 - val_loss: 0.2321 -
val_accuracy: 0.3417
Epoch 97/100
4/4 - 0s - loss: 0.2321 - accuracy: 0.3417 - val_loss: 0.2320 -
val_accuracy: 0.3417
Epoch 98/100
4/4 - 0s - loss: 0.2320 - accuracy: 0.3417 - val_loss: 0.2320 -
val_accuracy: 0.3417
Epoch 99/100
4/4 - 0s - loss: 0.2319 - accuracy: 0.3417 - val_loss: 0.2319 -
val_accuracy: 0.3417
Epoch 100/100
4/4 - 0s - loss: 0.2319 - accuracy: 0.3417 - val_loss: 0.2318 -
val_accuracy: 0.3417
Activation: sigmoid LR: 0.01 Itertions: 100 || Train loss:
0.23181097209453583
Activation: sigmoid LR: 0.01 Itertions: 100 || Train Accuracy:
0.34166666865348816
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
```

compared to the batch time (batch time: 0.0013s vs `on_train_batch_end` time: 0.0768s). Check your callbacks.
4/4 - 0s - loss: 0.2318 - accuracy: 0.3417 - val_loss: 0.2356 - val_accuracy: 0.3000
Epoch 2/100
4/4 - 0s - loss: 0.2317 - accuracy: 0.3417 - val_loss: 0.2355 - val_accuracy: 0.3000
Epoch 3/100
4/4 - 0s - loss: 0.2316 - accuracy: 0.3417 - val_loss: 0.2354 - val_accuracy: 0.3000
Epoch 4/100
4/4 - 0s - loss: 0.2316 - accuracy: 0.3417 - val_loss: 0.2353 - val_accuracy: 0.3000
Epoch 5/100
4/4 - 0s - loss: 0.2315 - accuracy: 0.3417 - val_loss: 0.2352 - val_accuracy: 0.3000
Epoch 6/100
4/4 - 0s - loss: 0.2314 - accuracy: 0.3417 - val_loss: 0.2351 - val_accuracy: 0.3000
Epoch 7/100
4/4 - 0s - loss: 0.2313 - accuracy: 0.3417 - val_loss: 0.2351 - val_accuracy: 0.3000
Epoch 8/100
4/4 - 0s - loss: 0.2313 - accuracy: 0.3417 - val_loss: 0.2350 - val_accuracy: 0.3000
Epoch 9/100
4/4 - 0s - loss: 0.2312 - accuracy: 0.3417 - val_loss: 0.2349 - val_accuracy: 0.3000
Epoch 10/100
4/4 - 0s - loss: 0.2311 - accuracy: 0.3417 - val_loss: 0.2348 - val_accuracy: 0.3000
Epoch 11/100
4/4 - 0s - loss: 0.2311 - accuracy: 0.3417 - val_loss: 0.2347 - val_accuracy: 0.3000
Epoch 12/100
4/4 - 0s - loss: 0.2310 - accuracy: 0.3417 - val_loss: 0.2346 - val_accuracy: 0.3000
Epoch 13/100
4/4 - 0s - loss: 0.2309 - accuracy: 0.3417 - val_loss: 0.2345 - val_accuracy: 0.3000
Epoch 14/100
4/4 - 0s - loss: 0.2309 - accuracy: 0.3417 - val_loss: 0.2345 - val_accuracy: 0.3000
Epoch 15/100
4/4 - 0s - loss: 0.2308 - accuracy: 0.3417 - val_loss: 0.2344 - val_accuracy: 0.3000
Epoch 16/100
4/4 - 0s - loss: 0.2307 - accuracy: 0.3417 - val_loss: 0.2343 - val_accuracy: 0.3000
Epoch 17/100

```
4/4 - 0s - loss: 0.2306 - accuracy: 0.3417 - val_loss: 0.2342 -
val_accuracy: 0.3000
Epoch 18/100
4/4 - 0s - loss: 0.2306 - accuracy: 0.3417 - val_loss: 0.2341 -
val_accuracy: 0.3000
Epoch 19/100
4/4 - 0s - loss: 0.2305 - accuracy: 0.3417 - val_loss: 0.2341 -
val_accuracy: 0.3000
Epoch 20/100
4/4 - 0s - loss: 0.2305 - accuracy: 0.3417 - val_loss: 0.2340 -
val_accuracy: 0.3000
Epoch 21/100
4/4 - 0s - loss: 0.2304 - accuracy: 0.3417 - val_loss: 0.2339 -
val_accuracy: 0.3000
Epoch 22/100
4/4 - 0s - loss: 0.2303 - accuracy: 0.3417 - val_loss: 0.2338 -
val_accuracy: 0.3000
Epoch 23/100
4/4 - 0s - loss: 0.2303 - accuracy: 0.3417 - val_loss: 0.2337 -
val_accuracy: 0.3000
Epoch 24/100
4/4 - 0s - loss: 0.2302 - accuracy: 0.3417 - val_loss: 0.2337 -
val_accuracy: 0.3000
Epoch 25/100
4/4 - 0s - loss: 0.2301 - accuracy: 0.3417 - val_loss: 0.2336 -
val_accuracy: 0.3000
Epoch 26/100
4/4 - 0s - loss: 0.2301 - accuracy: 0.3417 - val_loss: 0.2335 -
val_accuracy: 0.3000
Epoch 27/100
4/4 - 0s - loss: 0.2300 - accuracy: 0.3417 - val_loss: 0.2334 -
val_accuracy: 0.3000
Epoch 28/100
4/4 - 0s - loss: 0.2299 - accuracy: 0.3417 - val_loss: 0.2334 -
val_accuracy: 0.3000
Epoch 29/100
4/4 - 0s - loss: 0.2299 - accuracy: 0.3417 - val_loss: 0.2333 -
val_accuracy: 0.3000
Epoch 30/100
4/4 - 0s - loss: 0.2298 - accuracy: 0.3417 - val_loss: 0.2332 -
val_accuracy: 0.3000
Epoch 31/100
4/4 - 0s - loss: 0.2298 - accuracy: 0.3417 - val_loss: 0.2331 -
val_accuracy: 0.3000
Epoch 32/100
4/4 - 0s - loss: 0.2297 - accuracy: 0.3417 - val_loss: 0.2331 -
val_accuracy: 0.3000
Epoch 33/100
4/4 - 0s - loss: 0.2296 - accuracy: 0.3417 - val_loss: 0.2330 -
val_accuracy: 0.3000
```

```
Epoch 34/100
4/4 - 0s - loss: 0.2296 - accuracy: 0.3417 - val_loss: 0.2329 -
val_accuracy: 0.3000
Epoch 35/100
4/4 - 0s - loss: 0.2295 - accuracy: 0.3417 - val_loss: 0.2328 -
val_accuracy: 0.3000
Epoch 36/100
4/4 - 0s - loss: 0.2295 - accuracy: 0.3417 - val_loss: 0.2328 -
val_accuracy: 0.3000
Epoch 37/100
4/4 - 0s - loss: 0.2294 - accuracy: 0.3417 - val_loss: 0.2327 -
val_accuracy: 0.3000
Epoch 38/100
4/4 - 0s - loss: 0.2294 - accuracy: 0.3417 - val_loss: 0.2326 -
val_accuracy: 0.3000
Epoch 39/100
4/4 - 0s - loss: 0.2293 - accuracy: 0.3417 - val_loss: 0.2326 -
val_accuracy: 0.3000
Epoch 40/100
4/4 - 0s - loss: 0.2292 - accuracy: 0.3417 - val_loss: 0.2325 -
val_accuracy: 0.3000
Epoch 41/100
4/4 - 0s - loss: 0.2292 - accuracy: 0.3417 - val_loss: 0.2324 -
val_accuracy: 0.3000

Epoch 42/100
4/4 - 0s - loss: 0.2291 - accuracy: 0.3417 - val_loss: 0.2323 -
val_accuracy: 0.3000
Epoch 43/100
4/4 - 0s - loss: 0.2291 - accuracy: 0.3417 - val_loss: 0.2323 -
val_accuracy: 0.3000
Epoch 44/100
4/4 - 0s - loss: 0.2290 - accuracy: 0.3417 - val_loss: 0.2322 -
val_accuracy: 0.3000
Epoch 45/100
4/4 - 0s - loss: 0.2289 - accuracy: 0.3417 - val_loss: 0.2321 -
val_accuracy: 0.3000
Epoch 46/100
4/4 - 0s - loss: 0.2289 - accuracy: 0.3417 - val_loss: 0.2321 -
val_accuracy: 0.3000
Epoch 47/100
4/4 - 0s - loss: 0.2288 - accuracy: 0.3417 - val_loss: 0.2320 -
val_accuracy: 0.3000
Epoch 48/100
4/4 - 0s - loss: 0.2288 - accuracy: 0.3417 - val_loss: 0.2319 -
val_accuracy: 0.3000
Epoch 49/100
4/4 - 0s - loss: 0.2287 - accuracy: 0.3417 - val_loss: 0.2319 -
val_accuracy: 0.3000
Epoch 50/100
```

```
4/4 - 0s - loss: 0.2287 - accuracy: 0.3417 - val_loss: 0.2318 -
val_accuracy: 0.3000
Epoch 51/100
4/4 - 0s - loss: 0.2286 - accuracy: 0.3417 - val_loss: 0.2317 -
val_accuracy: 0.3000
Epoch 52/100
4/4 - 0s - loss: 0.2286 - accuracy: 0.3417 - val_loss: 0.2317 -
val_accuracy: 0.3000
Epoch 53/100
4/4 - 0s - loss: 0.2285 - accuracy: 0.3417 - val_loss: 0.2316 -
val_accuracy: 0.3000
Epoch 54/100
4/4 - 0s - loss: 0.2285 - accuracy: 0.3417 - val_loss: 0.2315 -
val_accuracy: 0.3000
Epoch 55/100
4/4 - 0s - loss: 0.2284 - accuracy: 0.3417 - val_loss: 0.2315 -
val_accuracy: 0.3000
Epoch 56/100
4/4 - 0s - loss: 0.2284 - accuracy: 0.3417 - val_loss: 0.2314 -
val_accuracy: 0.3000
Epoch 57/100
4/4 - 0s - loss: 0.2283 - accuracy: 0.3417 - val_loss: 0.2314 -
val_accuracy: 0.3000
Epoch 58/100
4/4 - 0s - loss: 0.2283 - accuracy: 0.3417 - val_loss: 0.2313 -
val_accuracy: 0.3000
Epoch 59/100
4/4 - 0s - loss: 0.2282 - accuracy: 0.3417 - val_loss: 0.2312 -
val_accuracy: 0.3000
Epoch 60/100
4/4 - 0s - loss: 0.2282 - accuracy: 0.3417 - val_loss: 0.2312 -
val_accuracy: 0.3000
Epoch 61/100
4/4 - 0s - loss: 0.2281 - accuracy: 0.3417 - val_loss: 0.2311 -
val_accuracy: 0.3000
Epoch 62/100
4/4 - 0s - loss: 0.2281 - accuracy: 0.3417 - val_loss: 0.2311 -
val_accuracy: 0.3000
Epoch 63/100
4/4 - 0s - loss: 0.2280 - accuracy: 0.3417 - val_loss: 0.2310 -
val_accuracy: 0.3000
Epoch 64/100
4/4 - 0s - loss: 0.2280 - accuracy: 0.3417 - val_loss: 0.2309 -
val_accuracy: 0.3000
Epoch 65/100
4/4 - 0s - loss: 0.2279 - accuracy: 0.3417 - val_loss: 0.2309 -
val_accuracy: 0.3000
Epoch 66/100
4/4 - 0s - loss: 0.2279 - accuracy: 0.3417 - val_loss: 0.2308 -
val_accuracy: 0.3000
```

```
Epoch 67/100
4/4 - 0s - loss: 0.2278 - accuracy: 0.3417 - val_loss: 0.2307 -
val_accuracy: 0.3000
Epoch 68/100
4/4 - 0s - loss: 0.2278 - accuracy: 0.3417 - val_loss: 0.2307 -
val_accuracy: 0.3000
Epoch 69/100
4/4 - 0s - loss: 0.2277 - accuracy: 0.3417 - val_loss: 0.2306 -
val_accuracy: 0.3000
Epoch 70/100
4/4 - 0s - loss: 0.2277 - accuracy: 0.3417 - val_loss: 0.2306 -
val_accuracy: 0.3000
Epoch 71/100
4/4 - 0s - loss: 0.2276 - accuracy: 0.3417 - val_loss: 0.2305 -
val_accuracy: 0.3000
Epoch 72/100
4/4 - 0s - loss: 0.2276 - accuracy: 0.3417 - val_loss: 0.2305 -
val_accuracy: 0.3000
Epoch 73/100
4/4 - 0s - loss: 0.2276 - accuracy: 0.3417 - val_loss: 0.2304 -
val_accuracy: 0.3000
Epoch 74/100
4/4 - 0s - loss: 0.2275 - accuracy: 0.3417 - val_loss: 0.2303 -
val_accuracy: 0.3000
Epoch 75/100
4/4 - 0s - loss: 0.2275 - accuracy: 0.3417 - val_loss: 0.2303 -
val_accuracy: 0.3000
Epoch 76/100
4/4 - 0s - loss: 0.2274 - accuracy: 0.3417 - val_loss: 0.2302 -
val_accuracy: 0.3000
Epoch 77/100
4/4 - 0s - loss: 0.2274 - accuracy: 0.3417 - val_loss: 0.2302 -
val_accuracy: 0.3000
Epoch 78/100
4/4 - 0s - loss: 0.2273 - accuracy: 0.3417 - val_loss: 0.2301 -
val_accuracy: 0.3000
Epoch 79/100
4/4 - 0s - loss: 0.2273 - accuracy: 0.3417 - val_loss: 0.2301 -
val_accuracy: 0.3000
Epoch 80/100
4/4 - 0s - loss: 0.2273 - accuracy: 0.3417 - val_loss: 0.2300 -
val_accuracy: 0.3000
Epoch 81/100
4/4 - 0s - loss: 0.2272 - accuracy: 0.3417 - val_loss: 0.2300 -
val_accuracy: 0.3000
Epoch 82/100
4/4 - 0s - loss: 0.2272 - accuracy: 0.3417 - val_loss: 0.2299 -
val_accuracy: 0.3000
Epoch 83/100
4/4 - 0s - loss: 0.2271 - accuracy: 0.3417 - val_loss: 0.2299 -
```

```
val_accuracy: 0.3000
Epoch 84/100
4/4 - 0s - loss: 0.2271 - accuracy: 0.3417 - val_loss: 0.2298 -
val_accuracy: 0.3000
Epoch 85/100
4/4 - 0s - loss: 0.2270 - accuracy: 0.3417 - val_loss: 0.2298 -
val_accuracy: 0.3000
Epoch 86/100
4/4 - 0s - loss: 0.2270 - accuracy: 0.3417 - val_loss: 0.2297 -
val_accuracy: 0.3000
Epoch 87/100
4/4 - 0s - loss: 0.2270 - accuracy: 0.3417 - val_loss: 0.2296 -
val_accuracy: 0.3000
Epoch 88/100
4/4 - 0s - loss: 0.2269 - accuracy: 0.3417 - val_loss: 0.2296 -
val_accuracy: 0.3000
Epoch 89/100
4/4 - 0s - loss: 0.2269 - accuracy: 0.3417 - val_loss: 0.2295 -
val_accuracy: 0.3000
Epoch 90/100
4/4 - 0s - loss: 0.2268 - accuracy: 0.3417 - val_loss: 0.2295 -
val_accuracy: 0.3000
Epoch 91/100
4/4 - 0s - loss: 0.2268 - accuracy: 0.3417 - val_loss: 0.2294 -
val_accuracy: 0.3000
Epoch 92/100
4/4 - 0s - loss: 0.2268 - accuracy: 0.3417 - val_loss: 0.2294 -
val_accuracy: 0.3000
Epoch 93/100
4/4 - 0s - loss: 0.2267 - accuracy: 0.3417 - val_loss: 0.2293 -
val_accuracy: 0.3000
Epoch 94/100
4/4 - 0s - loss: 0.2267 - accuracy: 0.3417 - val_loss: 0.2293 -
val_accuracy: 0.3000
Epoch 95/100
4/4 - 0s - loss: 0.2266 - accuracy: 0.3417 - val_loss: 0.2292 -
val_accuracy: 0.3000
Epoch 96/100
4/4 - 0s - loss: 0.2266 - accuracy: 0.3417 - val_loss: 0.2292 -
val_accuracy: 0.3000
Epoch 97/100
4/4 - 0s - loss: 0.2266 - accuracy: 0.3417 - val_loss: 0.2291 -
val_accuracy: 0.3000
Epoch 98/100
4/4 - 0s - loss: 0.2265 - accuracy: 0.3417 - val_loss: 0.2291 -
val_accuracy: 0.3000
Epoch 99/100
4/4 - 0s - loss: 0.2265 - accuracy: 0.3417 - val_loss: 0.2290 -
val_accuracy: 0.3000
Epoch 100/100
```

4/4 - 0s - loss: 0.2264 - accuracy: 0.3417 - val_loss: 0.2290 -
val_accuracy: 0.3000
Activation: sigmoid LR: 0.01 Iterations: 100 || Test loss:
0.22899717092514038
Activation: sigmoid LR: 0.01 Iterations: 100 || Test Accuracy:
0.30000001192092896
==
=======
Model_sigmoid_LR_0.01_Iterations_200_HL_3
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0007s vs
`on_train_batch_end` time: 0.1253s). Check your callbacks.
4/4 - 0s - loss: 0.2597 - accuracy: 0.3417 - val_loss: 0.2596 -
val_accuracy: 0.3417
Epoch 2/200
4/4 - 0s - loss: 0.2595 - accuracy: 0.3417 - val_loss: 0.2594 -
val_accuracy: 0.3417
Epoch 3/200
4/4 - 0s - loss: 0.2593 - accuracy: 0.3417 - val_loss: 0.2592 -
val_accuracy: 0.3417
Epoch 4/200
4/4 - 0s - loss: 0.2591 - accuracy: 0.3417 - val_loss: 0.2590 -
val_accuracy: 0.3417
Epoch 5/200
4/4 - 0s - loss: 0.2589 - accuracy: 0.3417 - val_loss: 0.2588 -
val_accuracy: 0.3417
Epoch 6/200
4/4 - 0s - loss: 0.2587 - accuracy: 0.3417 - val_loss: 0.2586 -
val_accuracy: 0.3417
Epoch 7/200
4/4 - 0s - loss: 0.2585 - accuracy: 0.3417 - val_loss: 0.2584 -
val_accuracy: 0.3417
Epoch 8/200
4/4 - 0s - loss: 0.2583 - accuracy: 0.3417 - val_loss: 0.2582 -
val_accuracy: 0.3417
Epoch 9/200
4/4 - 0s - loss: 0.2581 - accuracy: 0.3417 - val_loss: 0.2580 -
val_accuracy: 0.3417
Epoch 10/200
4/4 - 0s - loss: 0.2579 - accuracy: 0.3417 - val_loss: 0.2578 -
val_accuracy: 0.3417
Epoch 11/200
4/4 - 0s - loss: 0.2577 - accuracy: 0.3417 - val_loss: 0.2576 -
val_accuracy: 0.3417
Epoch 12/200
4/4 - 0s - loss: 0.2575 - accuracy: 0.3417 - val_loss: 0.2574 -
val_accuracy: 0.3417
Epoch 13/200
4/4 - 0s - loss: 0.2574 - accuracy: 0.3417 - val_loss: 0.2572 -

```
val_accuracy: 0.3417
Epoch 14/200
4/4 - 0s - loss: 0.2572 - accuracy: 0.3417 - val_loss: 0.2570 -
val_accuracy: 0.3417
Epoch 15/200
4/4 - 0s - loss: 0.2570 - accuracy: 0.3417 - val_loss: 0.2568 -
val_accuracy: 0.3417
Epoch 16/200
4/4 - 0s - loss: 0.2568 - accuracy: 0.3417 - val_loss: 0.2566 -
val_accuracy: 0.3417
Epoch 17/200
4/4 - 0s - loss: 0.2566 - accuracy: 0.3417 - val_loss: 0.2565 -
val_accuracy: 0.3417
Epoch 18/200
4/4 - 0s - loss: 0.2564 - accuracy: 0.3417 - val_loss: 0.2563 -
val_accuracy: 0.3417
Epoch 19/200
4/4 - 0s - loss: 0.2562 - accuracy: 0.3417 - val_loss: 0.2561 -
val_accuracy: 0.3417
Epoch 20/200
4/4 - 0s - loss: 0.2560 - accuracy: 0.3417 - val_loss: 0.2559 -
val_accuracy: 0.3417
Epoch 21/200
4/4 - 0s - loss: 0.2558 - accuracy: 0.3417 - val_loss: 0.2557 -
val_accuracy: 0.3417

Epoch 22/200
4/4 - 0s - loss: 0.2556 - accuracy: 0.3417 - val_loss: 0.2555 -
val_accuracy: 0.3417
Epoch 23/200
4/4 - 0s - loss: 0.2555 - accuracy: 0.3417 - val_loss: 0.2553 -
val_accuracy: 0.3417
Epoch 24/200
4/4 - 0s - loss: 0.2553 - accuracy: 0.3417 - val_loss: 0.2552 -
val_accuracy: 0.3417
Epoch 25/200
4/4 - 0s - loss: 0.2551 - accuracy: 0.3417 - val_loss: 0.2550 -
val_accuracy: 0.3417
Epoch 26/200
4/4 - 0s - loss: 0.2549 - accuracy: 0.3417 - val_loss: 0.2548 -
val_accuracy: 0.3417
Epoch 27/200
4/4 - 0s - loss: 0.2547 - accuracy: 0.3417 - val_loss: 0.2546 -
val_accuracy: 0.3417
Epoch 28/200
4/4 - 0s - loss: 0.2546 - accuracy: 0.3417 - val_loss: 0.2544 -
val_accuracy: 0.3417
Epoch 29/200
4/4 - 0s - loss: 0.2544 - accuracy: 0.3417 - val_loss: 0.2543 -
val_accuracy: 0.3417
```

```
Epoch 30/200
4/4 - 0s - loss: 0.2542 - accuracy: 0.3417 - val_loss: 0.2541 -
val_accuracy: 0.3417
Epoch 31/200
4/4 - 0s - loss: 0.2540 - accuracy: 0.3417 - val_loss: 0.2539 -
val_accuracy: 0.3417
Epoch 32/200
4/4 - 0s - loss: 0.2538 - accuracy: 0.3417 - val_loss: 0.2537 -
val_accuracy: 0.3417
Epoch 33/200
4/4 - 0s - loss: 0.2537 - accuracy: 0.3417 - val_loss: 0.2536 -
val_accuracy: 0.3417
Epoch 34/200
4/4 - 0s - loss: 0.2535 - accuracy: 0.3417 - val_loss: 0.2534 -
val_accuracy: 0.3417
Epoch 35/200
4/4 - 0s - loss: 0.2533 - accuracy: 0.3417 - val_loss: 0.2532 -
val_accuracy: 0.3417
Epoch 36/200
4/4 - 0s - loss: 0.2532 - accuracy: 0.3417 - val_loss: 0.2530 -
val_accuracy: 0.3417
Epoch 37/200
4/4 - 0s - loss: 0.2530 - accuracy: 0.3417 - val_loss: 0.2529 -
val_accuracy: 0.3417
Epoch 38/200
4/4 - 0s - loss: 0.2528 - accuracy: 0.3417 - val_loss: 0.2527 -
val_accuracy: 0.3417
Epoch 39/200
4/4 - 0s - loss: 0.2526 - accuracy: 0.3417 - val_loss: 0.2525 -
val_accuracy: 0.3417
Epoch 40/200
4/4 - 0s - loss: 0.2525 - accuracy: 0.3417 - val_loss: 0.2523 -
val_accuracy: 0.3417
Epoch 41/200
4/4 - 0s - loss: 0.2523 - accuracy: 0.3417 - val_loss: 0.2522 -
val_accuracy: 0.3417
Epoch 42/200
4/4 - 0s - loss: 0.2521 - accuracy: 0.3417 - val_loss: 0.2520 -
val_accuracy: 0.3417
Epoch 43/200
4/4 - 0s - loss: 0.2520 - accuracy: 0.3417 - val_loss: 0.2519 -
val_accuracy: 0.3417
Epoch 44/200
4/4 - 0s - loss: 0.2518 - accuracy: 0.3417 - val_loss: 0.2517 -
val_accuracy: 0.3417
Epoch 45/200
4/4 - 0s - loss: 0.2516 - accuracy: 0.3417 - val_loss: 0.2515 -
val_accuracy: 0.3417
Epoch 46/200
4/4 - 0s - loss: 0.2515 - accuracy: 0.3417 - val_loss: 0.2514 -
```

```
val_accuracy: 0.3417
Epoch 47/200
4/4 - 0s - loss: 0.2513 - accuracy: 0.3417 - val_loss: 0.2512 -
val_accuracy: 0.3417
Epoch 48/200
4/4 - 0s - loss: 0.2511 - accuracy: 0.3417 - val_loss: 0.2510 -
val_accuracy: 0.3417
Epoch 49/200
4/4 - 0s - loss: 0.2510 - accuracy: 0.3417 - val_loss: 0.2509 -
val_accuracy: 0.3417
Epoch 50/200
4/4 - 0s - loss: 0.2508 - accuracy: 0.3417 - val_loss: 0.2507 -
val_accuracy: 0.3417
Epoch 51/200
4/4 - 0s - loss: 0.2507 - accuracy: 0.3417 - val_loss: 0.2506 -
val_accuracy: 0.3417
Epoch 52/200
4/4 - 0s - loss: 0.2505 - accuracy: 0.3417 - val_loss: 0.2504 -
val_accuracy: 0.3417
Epoch 53/200
4/4 - 0s - loss: 0.2503 - accuracy: 0.3417 - val_loss: 0.2502 -
val_accuracy: 0.3417
Epoch 54/200
4/4 - 0s - loss: 0.2502 - accuracy: 0.3417 - val_loss: 0.2501 -
val_accuracy: 0.3417
Epoch 55/200
4/4 - 0s - loss: 0.2500 - accuracy: 0.3417 - val_loss: 0.2499 -
val_accuracy: 0.3417
Epoch 56/200
4/4 - 0s - loss: 0.2499 - accuracy: 0.3417 - val_loss: 0.2498 -
val_accuracy: 0.3417
Epoch 57/200
4/4 - 0s - loss: 0.2497 - accuracy: 0.3417 - val_loss: 0.2496 -
val_accuracy: 0.3417
Epoch 58/200
4/4 - 0s - loss: 0.2496 - accuracy: 0.3417 - val_loss: 0.2495 -
val_accuracy: 0.3417
Epoch 59/200
4/4 - 0s - loss: 0.2494 - accuracy: 0.3417 - val_loss: 0.2493 -
val_accuracy: 0.3417
Epoch 60/200
4/4 - 0s - loss: 0.2493 - accuracy: 0.3417 - val_loss: 0.2492 -
val_accuracy: 0.3417
Epoch 61/200
4/4 - 0s - loss: 0.2491 - accuracy: 0.3417 - val_loss: 0.2490 -
val_accuracy: 0.3417
Epoch 62/200
4/4 - 0s - loss: 0.2490 - accuracy: 0.3417 - val_loss: 0.2489 -
val_accuracy: 0.3417
Epoch 63/200
```

```
4/4 - 0s - loss: 0.2488 - accuracy: 0.3417 - val_loss: 0.2487 -
val_accuracy: 0.3417
Epoch 64/200
4/4 - 0s - loss: 0.2487 - accuracy: 0.3417 - val_loss: 0.2486 -
val_accuracy: 0.3417
Epoch 65/200
4/4 - 0s - loss: 0.2485 - accuracy: 0.3417 - val_loss: 0.2484 -
val_accuracy: 0.3417
Epoch 66/200
4/4 - 0s - loss: 0.2484 - accuracy: 0.3417 - val_loss: 0.2483 -
val_accuracy: 0.3417
Epoch 67/200
4/4 - 0s - loss: 0.2482 - accuracy: 0.3417 - val_loss: 0.2481 -
val_accuracy: 0.3417
Epoch 68/200
4/4 - 0s - loss: 0.2481 - accuracy: 0.3417 - val_loss: 0.2480 -
val_accuracy: 0.3417
Epoch 69/200
4/4 - 0s - loss: 0.2479 - accuracy: 0.3417 - val_loss: 0.2478 -
val_accuracy: 0.3417
Epoch 70/200
4/4 - 0s - loss: 0.2478 - accuracy: 0.3417 - val_loss: 0.2477 -
val_accuracy: 0.3417
Epoch 71/200
4/4 - 0s - loss: 0.2476 - accuracy: 0.3417 - val_loss: 0.2475 -
val_accuracy: 0.3417
Epoch 72/200
4/4 - 0s - loss: 0.2475 - accuracy: 0.3417 - val_loss: 0.2474 -
val_accuracy: 0.3417
Epoch 73/200
4/4 - 0s - loss: 0.2474 - accuracy: 0.3417 - val_loss: 0.2473 -
val_accuracy: 0.3417
Epoch 74/200
4/4 - 0s - loss: 0.2472 - accuracy: 0.3417 - val_loss: 0.2471 -
val_accuracy: 0.3417
Epoch 75/200
4/4 - 0s - loss: 0.2471 - accuracy: 0.3417 - val_loss: 0.2470 -
val_accuracy: 0.3417
Epoch 76/200
4/4 - 0s - loss: 0.2469 - accuracy: 0.3417 - val_loss: 0.2468 -
val_accuracy: 0.3417
Epoch 77/200
4/4 - 0s - loss: 0.2468 - accuracy: 0.3417 - val_loss: 0.2467 -
val_accuracy: 0.3417
Epoch 78/200
4/4 - 0s - loss: 0.2467 - accuracy: 0.3417 - val_loss: 0.2466 -
val_accuracy: 0.3417
Epoch 79/200
4/4 - 0s - loss: 0.2465 - accuracy: 0.3417 - val_loss: 0.2464 -
val_accuracy: 0.3417
```

```
Epoch 80/200
4/4 - 0s - loss: 0.2464 - accuracy: 0.3417 - val_loss: 0.2463 -
val_accuracy: 0.3417
Epoch 81/200
4/4 - 0s - loss: 0.2463 - accuracy: 0.3417 - val_loss: 0.2462 -
val_accuracy: 0.3417
Epoch 82/200
4/4 - 0s - loss: 0.2461 - accuracy: 0.3417 - val_loss: 0.2460 -
val_accuracy: 0.3417
Epoch 83/200
4/4 - 0s - loss: 0.2460 - accuracy: 0.3417 - val_loss: 0.2459 -
val_accuracy: 0.3417
Epoch 84/200
4/4 - 0s - loss: 0.2458 - accuracy: 0.3417 - val_loss: 0.2458 -
val_accuracy: 0.3417
Epoch 85/200
4/4 - 0s - loss: 0.2457 - accuracy: 0.3417 - val_loss: 0.2456 -
val_accuracy: 0.3417
Epoch 86/200
4/4 - 0s - loss: 0.2456 - accuracy: 0.3417 - val_loss: 0.2455 -
val_accuracy: 0.3417
Epoch 87/200
4/4 - 0s - loss: 0.2455 - accuracy: 0.3417 - val_loss: 0.2454 -
val_accuracy: 0.3417
Epoch 88/200
4/4 - 0s - loss: 0.2453 - accuracy: 0.3417 - val_loss: 0.2452 -
val_accuracy: 0.3417
Epoch 89/200
4/4 - 0s - loss: 0.2452 - accuracy: 0.3417 - val_loss: 0.2451 -
val_accuracy: 0.3417
Epoch 90/200
4/4 - 0s - loss: 0.2451 - accuracy: 0.3417 - val_loss: 0.2450 -
val_accuracy: 0.3417
Epoch 91/200
4/4 - 0s - loss: 0.2449 - accuracy: 0.3417 - val_loss: 0.2449 -
val_accuracy: 0.3417
Epoch 92/200
4/4 - 0s - loss: 0.2448 - accuracy: 0.3417 - val_loss: 0.2447 -
val_accuracy: 0.3417
Epoch 93/200
4/4 - 0s - loss: 0.2447 - accuracy: 0.3417 - val_loss: 0.2446 -
val_accuracy: 0.3417
Epoch 94/200
4/4 - 0s - loss: 0.2446 - accuracy: 0.3417 - val_loss: 0.2445 -
val_accuracy: 0.3417
Epoch 95/200
4/4 - 0s - loss: 0.2444 - accuracy: 0.3417 - val_loss: 0.2444 -
val_accuracy: 0.3417
Epoch 96/200
4/4 - 0s - loss: 0.2443 - accuracy: 0.3417 - val_loss: 0.2442 -
```

```
val_accuracy: 0.3417
Epoch 97/200
4/4 - 0s - loss: 0.2442 - accuracy: 0.3417 - val_loss: 0.2441 -
val_accuracy: 0.3417
Epoch 98/200
4/4 - 0s - loss: 0.2441 - accuracy: 0.3417 - val_loss: 0.2440 -
val_accuracy: 0.3417
Epoch 99/200
4/4 - 0s - loss: 0.2439 - accuracy: 0.3417 - val_loss: 0.2439 -
val_accuracy: 0.3417
Epoch 100/200
4/4 - 0s - loss: 0.2438 - accuracy: 0.3417 - val_loss: 0.2437 -
val_accuracy: 0.3417
Epoch 101/200
4/4 - 0s - loss: 0.2437 - accuracy: 0.3417 - val_loss: 0.2436 -
val_accuracy: 0.3417
Epoch 102/200
4/4 - 0s - loss: 0.2436 - accuracy: 0.3417 - val_loss: 0.2435 -
val_accuracy: 0.3417
Epoch 103/200
4/4 - 0s - loss: 0.2435 - accuracy: 0.3417 - val_loss: 0.2434 -
val_accuracy: 0.3417
Epoch 104/200
4/4 - 0s - loss: 0.2433 - accuracy: 0.3417 - val_loss: 0.2433 -
val_accuracy: 0.3417
Epoch 105/200
4/4 - 0s - loss: 0.2432 - accuracy: 0.3417 - val_loss: 0.2431 -
val_accuracy: 0.3417

Epoch 106/200
4/4 - 0s - loss: 0.2431 - accuracy: 0.3417 - val_loss: 0.2430 -
val_accuracy: 0.3417
Epoch 107/200
4/4 - 0s - loss: 0.2430 - accuracy: 0.3417 - val_loss: 0.2429 -
val_accuracy: 0.3417
Epoch 108/200
4/4 - 0s - loss: 0.2429 - accuracy: 0.3417 - val_loss: 0.2428 -
val_accuracy: 0.3417
Epoch 109/200
4/4 - 0s - loss: 0.2428 - accuracy: 0.3417 - val_loss: 0.2427 -
val_accuracy: 0.3417
Epoch 110/200
4/4 - 0s - loss: 0.2426 - accuracy: 0.3417 - val_loss: 0.2426 -
val_accuracy: 0.3417
Epoch 111/200
4/4 - 0s - loss: 0.2425 - accuracy: 0.3417 - val_loss: 0.2425 -
val_accuracy: 0.3417
Epoch 112/200
4/4 - 0s - loss: 0.2424 - accuracy: 0.3417 - val_loss: 0.2423 -
val_accuracy: 0.3417
```

```
Epoch 113/200
4/4 - 0s - loss: 0.2423 - accuracy: 0.3417 - val_loss: 0.2422 -
val_accuracy: 0.3417
Epoch 114/200
4/4 - 0s - loss: 0.2422 - accuracy: 0.3417 - val_loss: 0.2421 -
val_accuracy: 0.3417
Epoch 115/200
4/4 - 0s - loss: 0.2421 - accuracy: 0.3417 - val_loss: 0.2420 -
val_accuracy: 0.3417
Epoch 116/200
4/4 - 0s - loss: 0.2420 - accuracy: 0.3417 - val_loss: 0.2419 -
val_accuracy: 0.3417
Epoch 117/200
4/4 - 0s - loss: 0.2419 - accuracy: 0.3417 - val_loss: 0.2418 -
val_accuracy: 0.3417
Epoch 118/200
4/4 - 0s - loss: 0.2417 - accuracy: 0.3417 - val_loss: 0.2417 -
val_accuracy: 0.3417
Epoch 119/200
4/4 - 0s - loss: 0.2416 - accuracy: 0.3417 - val_loss: 0.2416 -
val_accuracy: 0.3417
Epoch 120/200
4/4 - 0s - loss: 0.2415 - accuracy: 0.3417 - val_loss: 0.2414 -
val_accuracy: 0.3417
Epoch 121/200
4/4 - 0s - loss: 0.2414 - accuracy: 0.3417 - val_loss: 0.2413 -
val_accuracy: 0.3417
Epoch 122/200
4/4 - 0s - loss: 0.2413 - accuracy: 0.3417 - val_loss: 0.2412 -
val_accuracy: 0.3417
Epoch 123/200
4/4 - 0s - loss: 0.2412 - accuracy: 0.3417 - val_loss: 0.2411 -
val_accuracy: 0.3417
Epoch 124/200
4/4 - 0s - loss: 0.2411 - accuracy: 0.3417 - val_loss: 0.2410 -
val_accuracy: 0.3417
Epoch 125/200
4/4 - 0s - loss: 0.2410 - accuracy: 0.3417 - val_loss: 0.2409 -
val_accuracy: 0.3417
Epoch 126/200
4/4 - 0s - loss: 0.2409 - accuracy: 0.3417 - val_loss: 0.2408 -
val_accuracy: 0.3417
Epoch 127/200
4/4 - 0s - loss: 0.2408 - accuracy: 0.3417 - val_loss: 0.2407 -
val_accuracy: 0.3417
Epoch 128/200
4/4 - 0s - loss: 0.2407 - accuracy: 0.3417 - val_loss: 0.2406 -
val_accuracy: 0.3417
Epoch 129/200
4/4 - 0s - loss: 0.2406 - accuracy: 0.3417 - val_loss: 0.2405 -
```

```
val_accuracy: 0.3417
Epoch 130/200
4/4 - 0s - loss: 0.2405 - accuracy: 0.3417 - val_loss: 0.2404 -
val_accuracy: 0.3417
Epoch 131/200
4/4 - 0s - loss: 0.2404 - accuracy: 0.3417 - val_loss: 0.2403 -
val_accuracy: 0.3417
Epoch 132/200
4/4 - 0s - loss: 0.2403 - accuracy: 0.3417 - val_loss: 0.2402 -
val_accuracy: 0.3417
Epoch 133/200
4/4 - 0s - loss: 0.2402 - accuracy: 0.3417 - val_loss: 0.2401 -
val_accuracy: 0.3417
Epoch 134/200
4/4 - 0s - loss: 0.2401 - accuracy: 0.3417 - val_loss: 0.2400 -
val_accuracy: 0.3417
Epoch 135/200
4/4 - 0s - loss: 0.2400 - accuracy: 0.3417 - val_loss: 0.2399 -
val_accuracy: 0.3417
Epoch 136/200
4/4 - 0s - loss: 0.2399 - accuracy: 0.3417 - val_loss: 0.2398 -
val_accuracy: 0.3417
Epoch 137/200
4/4 - 0s - loss: 0.2398 - accuracy: 0.3417 - val_loss: 0.2397 -
val_accuracy: 0.3417
Epoch 138/200
4/4 - 0s - loss: 0.2397 - accuracy: 0.3417 - val_loss: 0.2396 -
val_accuracy: 0.3417
Epoch 139/200
4/4 - 0s - loss: 0.2396 - accuracy: 0.3417 - val_loss: 0.2395 -
val_accuracy: 0.3417
Epoch 140/200
4/4 - 0s - loss: 0.2395 - accuracy: 0.3417 - val_loss: 0.2394 -
val_accuracy: 0.3417
Epoch 141/200
4/4 - 0s - loss: 0.2394 - accuracy: 0.3417 - val_loss: 0.2393 -
val_accuracy: 0.3417
Epoch 142/200
4/4 - 0s - loss: 0.2393 - accuracy: 0.3417 - val_loss: 0.2392 -
val_accuracy: 0.3417
Epoch 143/200
4/4 - 0s - loss: 0.2392 - accuracy: 0.3417 - val_loss: 0.2391 -
val_accuracy: 0.3417
Epoch 144/200
4/4 - 0s - loss: 0.2391 - accuracy: 0.3417 - val_loss: 0.2390 -
val_accuracy: 0.3417
Epoch 145/200
4/4 - 0s - loss: 0.2390 - accuracy: 0.3417 - val_loss: 0.2389 -
val_accuracy: 0.3417
Epoch 146/200
```

```
4/4 - 0s - loss: 0.2389 - accuracy: 0.3417 - val_loss: 0.2388 -
val_accuracy: 0.3417
Epoch 147/200
4/4 - 0s - loss: 0.2388 - accuracy: 0.3417 - val_loss: 0.2387 -
val_accuracy: 0.3417
Epoch 148/200
4/4 - 0s - loss: 0.2387 - accuracy: 0.3417 - val_loss: 0.2387 -
val_accuracy: 0.3417
Epoch 149/200
4/4 - 0s - loss: 0.2386 - accuracy: 0.3417 - val_loss: 0.2386 -
val_accuracy: 0.3417
Epoch 150/200
4/4 - 0s - loss: 0.2385 - accuracy: 0.3417 - val_loss: 0.2385 -
val_accuracy: 0.3417
Epoch 151/200
4/4 - 0s - loss: 0.2384 - accuracy: 0.3417 - val_loss: 0.2384 -
val_accuracy: 0.3417
Epoch 152/200
4/4 - 0s - loss: 0.2384 - accuracy: 0.3417 - val_loss: 0.2383 -
val_accuracy: 0.3417
Epoch 153/200
4/4 - 0s - loss: 0.2383 - accuracy: 0.3417 - val_loss: 0.2382 -
val_accuracy: 0.3417
Epoch 154/200
4/4 - 0s - loss: 0.2382 - accuracy: 0.3417 - val_loss: 0.2381 -
val_accuracy: 0.3417
Epoch 155/200
4/4 - 0s - loss: 0.2381 - accuracy: 0.3417 - val_loss: 0.2380 -
val_accuracy: 0.3417
Epoch 156/200
4/4 - 0s - loss: 0.2380 - accuracy: 0.3417 - val_loss: 0.2379 -
val_accuracy: 0.3417
Epoch 157/200
4/4 - 0s - loss: 0.2379 - accuracy: 0.3417 - val_loss: 0.2378 -
val_accuracy: 0.3417
Epoch 158/200
4/4 - 0s - loss: 0.2378 - accuracy: 0.3417 - val_loss: 0.2378 -
val_accuracy: 0.3417
Epoch 159/200
4/4 - 0s - loss: 0.2377 - accuracy: 0.3417 - val_loss: 0.2377 -
val_accuracy: 0.3417
Epoch 160/200
4/4 - 0s - loss: 0.2376 - accuracy: 0.3417 - val_loss: 0.2376 -
val_accuracy: 0.3417
Epoch 161/200
4/4 - 0s - loss: 0.2376 - accuracy: 0.3417 - val_loss: 0.2375 -
val_accuracy: 0.3417
Epoch 162/200
4/4 - 0s - loss: 0.2375 - accuracy: 0.3417 - val_loss: 0.2374 -
val_accuracy: 0.3417
```

```
Epoch 163/200
4/4 - 0s - loss: 0.2374 - accuracy: 0.3417 - val_loss: 0.2373 -
val_accuracy: 0.3417
Epoch 164/200
4/4 - 0s - loss: 0.2373 - accuracy: 0.3417 - val_loss: 0.2372 -
val_accuracy: 0.3417
Epoch 165/200
4/4 - 0s - loss: 0.2372 - accuracy: 0.3417 - val_loss: 0.2372 -
val_accuracy: 0.3417
Epoch 166/200
4/4 - 0s - loss: 0.2371 - accuracy: 0.3417 - val_loss: 0.2371 -
val_accuracy: 0.3417
Epoch 167/200
4/4 - 0s - loss: 0.2371 - accuracy: 0.3417 - val_loss: 0.2370 -
val_accuracy: 0.3417
Epoch 168/200
4/4 - 0s - loss: 0.2370 - accuracy: 0.3417 - val_loss: 0.2369 -
val_accuracy: 0.3417
Epoch 169/200
4/4 - 0s - loss: 0.2369 - accuracy: 0.3417 - val_loss: 0.2368 -
val_accuracy: 0.3417
Epoch 170/200
4/4 - 0s - loss: 0.2368 - accuracy: 0.3417 - val_loss: 0.2368 -
val_accuracy: 0.3417
Epoch 171/200
4/4 - 0s - loss: 0.2367 - accuracy: 0.3417 - val_loss: 0.2367 -
val_accuracy: 0.3417
Epoch 172/200
4/4 - 0s - loss: 0.2367 - accuracy: 0.3417 - val_loss: 0.2366 -
val_accuracy: 0.3417
Epoch 173/200
4/4 - 0s - loss: 0.2366 - accuracy: 0.3417 - val_loss: 0.2365 -
val_accuracy: 0.3417
Epoch 174/200
4/4 - 0s - loss: 0.2365 - accuracy: 0.3417 - val_loss: 0.2364 -
val_accuracy: 0.3417
Epoch 175/200
4/4 - 0s - loss: 0.2364 - accuracy: 0.3417 - val_loss: 0.2364 -
val_accuracy: 0.3417
Epoch 176/200
4/4 - 0s - loss: 0.2363 - accuracy: 0.3417 - val_loss: 0.2363 -
val_accuracy: 0.3417
Epoch 177/200
4/4 - 0s - loss: 0.2363 - accuracy: 0.3417 - val_loss: 0.2362 -
val_accuracy: 0.3417
Epoch 178/200
4/4 - 0s - loss: 0.2362 - accuracy: 0.3417 - val_loss: 0.2361 -
val_accuracy: 0.3417
Epoch 179/200
4/4 - 0s - loss: 0.2361 - accuracy: 0.3417 - val_loss: 0.2360 -
```

```
val_accuracy: 0.3417
Epoch 180/200
4/4 - 0s - loss: 0.2360 - accuracy: 0.3417 - val_loss: 0.2360 -
val_accuracy: 0.3417
Epoch 181/200
4/4 - 0s - loss: 0.2360 - accuracy: 0.3417 - val_loss: 0.2359 -
val_accuracy: 0.3417
Epoch 182/200
4/4 - 0s - loss: 0.2359 - accuracy: 0.3417 - val_loss: 0.2358 -
val_accuracy: 0.3417
Epoch 183/200
4/4 - 0s - loss: 0.2358 - accuracy: 0.3417 - val_loss: 0.2357 -
val_accuracy: 0.3417
Epoch 184/200
4/4 - 0s - loss: 0.2357 - accuracy: 0.3417 - val_loss: 0.2357 -
val_accuracy: 0.3417
Epoch 185/200
4/4 - 0s - loss: 0.2356 - accuracy: 0.3417 - val_loss: 0.2356 -
val_accuracy: 0.3417
Epoch 186/200
4/4 - 0s - loss: 0.2356 - accuracy: 0.3417 - val_loss: 0.2355 -
val_accuracy: 0.3417
Epoch 187/200
4/4 - 0s - loss: 0.2355 - accuracy: 0.3417 - val_loss: 0.2354 -
val_accuracy: 0.3417
Epoch 188/200
4/4 - 0s - loss: 0.2354 - accuracy: 0.3417 - val_loss: 0.2354 -
val_accuracy: 0.3417

Epoch 189/200
4/4 - 0s - loss: 0.2353 - accuracy: 0.3417 - val_loss: 0.2353 -
val_accuracy: 0.3417
Epoch 190/200
4/4 - 0s - loss: 0.2353 - accuracy: 0.3417 - val_loss: 0.2352 -
val_accuracy: 0.3417
Epoch 191/200
4/4 - 0s - loss: 0.2352 - accuracy: 0.3417 - val_loss: 0.2352 -
val_accuracy: 0.3417
Epoch 192/200
4/4 - 0s - loss: 0.2351 - accuracy: 0.3417 - val_loss: 0.2351 -
val_accuracy: 0.3417
Epoch 193/200
4/4 - 0s - loss: 0.2351 - accuracy: 0.3417 - val_loss: 0.2350 -
val_accuracy: 0.3417
Epoch 194/200
4/4 - 0s - loss: 0.2350 - accuracy: 0.3417 - val_loss: 0.2349 -
val_accuracy: 0.3417
Epoch 195/200
4/4 - 0s - loss: 0.2349 - accuracy: 0.3417 - val_loss: 0.2349 -
val_accuracy: 0.3417
```

```
Epoch 196/200
4/4 - 0s - loss: 0.2348 - accuracy: 0.3417 - val_loss: 0.2348 -
val_accuracy: 0.3417
Epoch 197/200
4/4 - 0s - loss: 0.2348 - accuracy: 0.3417 - val_loss: 0.2347 -
val_accuracy: 0.3417
Epoch 198/200
4/4 - 0s - loss: 0.2347 - accuracy: 0.3417 - val_loss: 0.2347 -
val_accuracy: 0.3417
Epoch 199/200
4/4 - 0s - loss: 0.2346 - accuracy: 0.3417 - val_loss: 0.2346 -
val_accuracy: 0.3417
Epoch 200/200
4/4 - 0s - loss: 0.2346 - accuracy: 0.3417 - val_loss: 0.2345 -
val_accuracy: 0.3417
Activation: sigmoid LR: 0.01 Itertions: 200 || Train loss:
0.23451612889766693
Activation: sigmoid LR: 0.01 Itertions: 200 || Train Accuracy:
0.34166666865348816
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0007s vs
`on_train_batch_end` time: 0.0766s). Check your callbacks.
4/4 - 0s - loss: 0.2345 - accuracy: 0.3417 - val_loss: 0.2384 -
val_accuracy: 0.3000
Epoch 2/200
4/4 - 0s - loss: 0.2344 - accuracy: 0.3417 - val_loss: 0.2383 -
val_accuracy: 0.3000
Epoch 3/200
4/4 - 0s - loss: 0.2344 - accuracy: 0.3417 - val_loss: 0.2382 -
val_accuracy: 0.3000
Epoch 4/200
4/4 - 0s - loss: 0.2343 - accuracy: 0.3417 - val_loss: 0.2381 -
val_accuracy: 0.3000
Epoch 5/200
4/4 - 0s - loss: 0.2342 - accuracy: 0.3417 - val_loss: 0.2381 -
val_accuracy: 0.3000
Epoch 6/200
4/4 - 0s - loss: 0.2342 - accuracy: 0.3417 - val_loss: 0.2380 -
val_accuracy: 0.3000
Epoch 7/200
4/4 - 0s - loss: 0.2341 - accuracy: 0.3417 - val_loss: 0.2379 -
val_accuracy: 0.3000
Epoch 8/200
4/4 - 0s - loss: 0.2340 - accuracy: 0.3417 - val_loss: 0.2379 -
val_accuracy: 0.3000
Epoch 9/200
4/4 - 0s - loss: 0.2340 - accuracy: 0.3417 - val_loss: 0.2378 -
val_accuracy: 0.3000
Epoch 10/200
```

```
4/4 - 0s - loss: 0.2339 - accuracy: 0.3417 - val_loss: 0.2377 -
val_accuracy: 0.3000
Epoch 11/200
4/4 - 0s - loss: 0.2338 - accuracy: 0.3417 - val_loss: 0.2376 -
val_accuracy: 0.3000
Epoch 12/200
4/4 - 0s - loss: 0.2338 - accuracy: 0.3417 - val_loss: 0.2376 -
val_accuracy: 0.3000
Epoch 13/200
4/4 - 0s - loss: 0.2337 - accuracy: 0.3417 - val_loss: 0.2375 -
val_accuracy: 0.3000
Epoch 14/200
4/4 - 0s - loss: 0.2337 - accuracy: 0.3417 - val_loss: 0.2374 -
val_accuracy: 0.3000
Epoch 15/200
4/4 - 0s - loss: 0.2336 - accuracy: 0.3417 - val_loss: 0.2374 -
val_accuracy: 0.3000
Epoch 16/200
4/4 - 0s - loss: 0.2335 - accuracy: 0.3417 - val_loss: 0.2373 -
val_accuracy: 0.3000
Epoch 17/200
4/4 - 0s - loss: 0.2335 - accuracy: 0.3417 - val_loss: 0.2372 -
val_accuracy: 0.3000
Epoch 18/200
4/4 - 0s - loss: 0.2334 - accuracy: 0.3417 - val_loss: 0.2372 -
val_accuracy: 0.3000
Epoch 19/200
4/4 - 0s - loss: 0.2333 - accuracy: 0.3417 - val_loss: 0.2371 -
val_accuracy: 0.3000
Epoch 20/200
4/4 - 0s - loss: 0.2333 - accuracy: 0.3417 - val_loss: 0.2370 -
val_accuracy: 0.3000
Epoch 21/200
4/4 - 0s - loss: 0.2332 - accuracy: 0.3417 - val_loss: 0.2370 -
val_accuracy: 0.3000
Epoch 22/200
4/4 - 0s - loss: 0.2332 - accuracy: 0.3417 - val_loss: 0.2369 -
val_accuracy: 0.3000
Epoch 23/200
4/4 - 0s - loss: 0.2331 - accuracy: 0.3417 - val_loss: 0.2368 -
val_accuracy: 0.3000
Epoch 24/200
4/4 - 0s - loss: 0.2331 - accuracy: 0.3417 - val_loss: 0.2368 -
val_accuracy: 0.3000
Epoch 25/200
4/4 - 0s - loss: 0.2330 - accuracy: 0.3417 - val_loss: 0.2367 -
val_accuracy: 0.3000
Epoch 26/200
4/4 - 0s - loss: 0.2329 - accuracy: 0.3417 - val_loss: 0.2366 -
val_accuracy: 0.3000
```

```
Epoch 27/200
4/4 - 0s - loss: 0.2329 - accuracy: 0.3417 - val_loss: 0.2366 -
val_accuracy: 0.3000
Epoch 28/200
4/4 - 0s - loss: 0.2328 - accuracy: 0.3417 - val_loss: 0.2365 -
val_accuracy: 0.3000
Epoch 29/200
4/4 - 0s - loss: 0.2328 - accuracy: 0.3417 - val_loss: 0.2364 -
val_accuracy: 0.3000
Epoch 30/200
4/4 - 0s - loss: 0.2327 - accuracy: 0.3417 - val_loss: 0.2364 -
val_accuracy: 0.3000
Epoch 31/200
4/4 - 0s - loss: 0.2326 - accuracy: 0.3417 - val_loss: 0.2363 -
val_accuracy: 0.3000
Epoch 32/200
4/4 - 0s - loss: 0.2326 - accuracy: 0.3417 - val_loss: 0.2363 -
val_accuracy: 0.3000
Epoch 33/200
4/4 - 0s - loss: 0.2325 - accuracy: 0.3417 - val_loss: 0.2362 -
val_accuracy: 0.3000
Epoch 34/200
4/4 - 0s - loss: 0.2325 - accuracy: 0.3417 - val_loss: 0.2361 -
val_accuracy: 0.3000
Epoch 35/200
4/4 - 0s - loss: 0.2324 - accuracy: 0.3417 - val_loss: 0.2361 -
val_accuracy: 0.3000
Epoch 36/200
4/4 - 0s - loss: 0.2324 - accuracy: 0.3417 - val_loss: 0.2360 -
val_accuracy: 0.3000
Epoch 37/200
4/4 - 0s - loss: 0.2323 - accuracy: 0.3417 - val_loss: 0.2360 -
val_accuracy: 0.3000
Epoch 38/200
4/4 - 0s - loss: 0.2322 - accuracy: 0.3417 - val_loss: 0.2359 -
val_accuracy: 0.3000
Epoch 39/200
4/4 - 0s - loss: 0.2322 - accuracy: 0.3417 - val_loss: 0.2358 -
val_accuracy: 0.3000
Epoch 40/200
4/4 - 0s - loss: 0.2321 - accuracy: 0.3417 - val_loss: 0.2358 -
val_accuracy: 0.3000
Epoch 41/200
4/4 - 0s - loss: 0.2321 - accuracy: 0.3417 - val_loss: 0.2357 -
val_accuracy: 0.3000
Epoch 42/200
4/4 - 0s - loss: 0.2320 - accuracy: 0.3417 - val_loss: 0.2356 -
val_accuracy: 0.3000
Epoch 43/200
4/4 - 0s - loss: 0.2320 - accuracy: 0.3417 - val_loss: 0.2356 -
```

```
val_accuracy: 0.3000
Epoch 44/200
4/4 - 0s - loss: 0.2319 - accuracy: 0.3417 - val_loss: 0.2355 -
val_accuracy: 0.3000
Epoch 45/200
4/4 - 0s - loss: 0.2319 - accuracy: 0.3417 - val_loss: 0.2355 -
val_accuracy: 0.3000
Epoch 46/200
4/4 - 0s - loss: 0.2318 - accuracy: 0.3417 - val_loss: 0.2354 -
val_accuracy: 0.3000
Epoch 47/200
4/4 - 0s - loss: 0.2318 - accuracy: 0.3417 - val_loss: 0.2353 -
val_accuracy: 0.3000
Epoch 48/200
4/4 - 0s - loss: 0.2317 - accuracy: 0.3417 - val_loss: 0.2353 -
val_accuracy: 0.3000
Epoch 49/200
4/4 - 0s - loss: 0.2317 - accuracy: 0.3417 - val_loss: 0.2352 -
val_accuracy: 0.3000
Epoch 50/200
4/4 - 0s - loss: 0.2316 - accuracy: 0.3417 - val_loss: 0.2352 -
val_accuracy: 0.3000
Epoch 51/200
4/4 - 0s - loss: 0.2316 - accuracy: 0.3417 - val_loss: 0.2351 -
val_accuracy: 0.3000
Epoch 52/200
4/4 - 0s - loss: 0.2315 - accuracy: 0.3417 - val_loss: 0.2351 -
val_accuracy: 0.3000
Epoch 53/200
4/4 - 0s - loss: 0.2315 - accuracy: 0.3417 - val_loss: 0.2350 -
val_accuracy: 0.3000
Epoch 54/200
4/4 - 0s - loss: 0.2314 - accuracy: 0.3417 - val_loss: 0.2349 -
val_accuracy: 0.3000
Epoch 55/200
4/4 - 0s - loss: 0.2314 - accuracy: 0.3417 - val_loss: 0.2349 -
val_accuracy: 0.3000
Epoch 56/200
4/4 - 0s - loss: 0.2313 - accuracy: 0.3417 - val_loss: 0.2348 -
val_accuracy: 0.3000
Epoch 57/200
4/4 - 0s - loss: 0.2313 - accuracy: 0.3417 - val_loss: 0.2348 -
val_accuracy: 0.3000
Epoch 58/200
4/4 - 0s - loss: 0.2312 - accuracy: 0.3417 - val_loss: 0.2347 -
val_accuracy: 0.3000
Epoch 59/200
4/4 - 0s - loss: 0.2312 - accuracy: 0.3417 - val_loss: 0.2347 -
val_accuracy: 0.3000
Epoch 60/200
```

```
4/4 - 0s - loss: 0.2311 - accuracy: 0.3417 - val_loss: 0.2346 -
val_accuracy: 0.3000
Epoch 61/200
4/4 - 0s - loss: 0.2311 - accuracy: 0.3417 - val_loss: 0.2346 -
val_accuracy: 0.3000
Epoch 62/200
4/4 - 0s - loss: 0.2310 - accuracy: 0.3417 - val_loss: 0.2345 -
val_accuracy: 0.3000
Epoch 63/200
4/4 - 0s - loss: 0.2310 - accuracy: 0.3417 - val_loss: 0.2345 -
val_accuracy: 0.3000
Epoch 64/200
4/4 - 0s - loss: 0.2309 - accuracy: 0.3417 - val_loss: 0.2344 -
val_accuracy: 0.3000
Epoch 65/200
4/4 - 0s - loss: 0.2309 - accuracy: 0.3417 - val_loss: 0.2344 -
val_accuracy: 0.3000
Epoch 66/200
4/4 - 0s - loss: 0.2308 - accuracy: 0.3417 - val_loss: 0.2343 -
val_accuracy: 0.3000
Epoch 67/200
4/4 - 0s - loss: 0.2308 - accuracy: 0.3417 - val_loss: 0.2342 -
val_accuracy: 0.3000
Epoch 68/200
4/4 - 0s - loss: 0.2307 - accuracy: 0.3417 - val_loss: 0.2342 -
val_accuracy: 0.3000
Epoch 69/200
4/4 - 0s - loss: 0.2307 - accuracy: 0.3417 - val_loss: 0.2341 -
val_accuracy: 0.3000

Epoch 70/200
4/4 - 0s - loss: 0.2306 - accuracy: 0.3417 - val_loss: 0.2341 -
val_accuracy: 0.3000
Epoch 71/200
4/4 - 0s - loss: 0.2306 - accuracy: 0.3417 - val_loss: 0.2340 -
val_accuracy: 0.3000
Epoch 72/200
4/4 - 0s - loss: 0.2306 - accuracy: 0.3417 - val_loss: 0.2340 -
val_accuracy: 0.3000
Epoch 73/200
4/4 - 0s - loss: 0.2305 - accuracy: 0.3417 - val_loss: 0.2339 -
val_accuracy: 0.3000
Epoch 74/200
4/4 - 0s - loss: 0.2305 - accuracy: 0.3417 - val_loss: 0.2339 -
val_accuracy: 0.3000
Epoch 75/200
4/4 - 0s - loss: 0.2304 - accuracy: 0.3417 - val_loss: 0.2338 -
val_accuracy: 0.3000
Epoch 76/200
4/4 - 0s - loss: 0.2304 - accuracy: 0.3417 - val_loss: 0.2338 -
```

```
val_accuracy: 0.3000
Epoch 77/200
4/4 - 0s - loss: 0.2303 - accuracy: 0.3417 - val_loss: 0.2337 -
val_accuracy: 0.3000
Epoch 78/200
4/4 - 0s - loss: 0.2303 - accuracy: 0.3417 - val_loss: 0.2337 -
val_accuracy: 0.3000
Epoch 79/200
4/4 - 0s - loss: 0.2302 - accuracy: 0.3417 - val_loss: 0.2336 -
val_accuracy: 0.3000
Epoch 80/200
4/4 - 0s - loss: 0.2302 - accuracy: 0.3417 - val_loss: 0.2336 -
val_accuracy: 0.3000
Epoch 81/200
4/4 - 0s - loss: 0.2302 - accuracy: 0.3417 - val_loss: 0.2335 -
val_accuracy: 0.3000
Epoch 82/200
4/4 - 0s - loss: 0.2301 - accuracy: 0.3417 - val_loss: 0.2335 -
val_accuracy: 0.3000
Epoch 83/200
4/4 - 0s - loss: 0.2301 - accuracy: 0.3417 - val_loss: 0.2335 -
val_accuracy: 0.3000
Epoch 84/200
4/4 - 0s - loss: 0.2300 - accuracy: 0.3417 - val_loss: 0.2334 -
val_accuracy: 0.3000
Epoch 85/200
4/4 - 0s - loss: 0.2300 - accuracy: 0.3417 - val_loss: 0.2334 -
val_accuracy: 0.3000
Epoch 86/200
4/4 - 0s - loss: 0.2299 - accuracy: 0.3417 - val_loss: 0.2333 -
val_accuracy: 0.3000
Epoch 87/200
4/4 - 0s - loss: 0.2299 - accuracy: 0.3417 - val_loss: 0.2333 -
val_accuracy: 0.3000
Epoch 88/200
4/4 - 0s - loss: 0.2299 - accuracy: 0.3417 - val_loss: 0.2332 -
val_accuracy: 0.3000
Epoch 89/200
4/4 - 0s - loss: 0.2298 - accuracy: 0.3417 - val_loss: 0.2332 -
val_accuracy: 0.3000
Epoch 90/200
4/4 - 0s - loss: 0.2298 - accuracy: 0.3417 - val_loss: 0.2331 -
val_accuracy: 0.3000
Epoch 91/200
4/4 - 0s - loss: 0.2297 - accuracy: 0.3417 - val_loss: 0.2331 -
val_accuracy: 0.3000
Epoch 92/200
4/4 - 0s - loss: 0.2297 - accuracy: 0.3417 - val_loss: 0.2330 -
val_accuracy: 0.3000
Epoch 93/200
```

```
4/4 - 0s - loss: 0.2297 - accuracy: 0.3417 - val_loss: 0.2330 -
val_accuracy: 0.3000
Epoch 94/200
4/4 - 0s - loss: 0.2296 - accuracy: 0.3417 - val_loss: 0.2329 -
val_accuracy: 0.3000
Epoch 95/200
4/4 - 0s - loss: 0.2296 - accuracy: 0.3417 - val_loss: 0.2329 -
val_accuracy: 0.3000
Epoch 96/200
4/4 - 0s - loss: 0.2295 - accuracy: 0.3417 - val_loss: 0.2328 -
val_accuracy: 0.3000
Epoch 97/200
4/4 - 0s - loss: 0.2295 - accuracy: 0.3417 - val_loss: 0.2328 -
val_accuracy: 0.3000
Epoch 98/200
4/4 - 0s - loss: 0.2295 - accuracy: 0.3417 - val_loss: 0.2328 -
val_accuracy: 0.3000
Epoch 99/200
4/4 - 0s - loss: 0.2294 - accuracy: 0.3417 - val_loss: 0.2327 -
val_accuracy: 0.3000
Epoch 100/200
4/4 - 0s - loss: 0.2294 - accuracy: 0.3417 - val_loss: 0.2327 -
val_accuracy: 0.3000
Epoch 101/200
4/4 - 0s - loss: 0.2293 - accuracy: 0.3417 - val_loss: 0.2326 -
val_accuracy: 0.3000
Epoch 102/200
4/4 - 0s - loss: 0.2293 - accuracy: 0.3417 - val_loss: 0.2326 -
val_accuracy: 0.3000
Epoch 103/200
4/4 - 0s - loss: 0.2293 - accuracy: 0.3417 - val_loss: 0.2325 -
val_accuracy: 0.3000
Epoch 104/200
4/4 - 0s - loss: 0.2292 - accuracy: 0.3417 - val_loss: 0.2325 -
val_accuracy: 0.3000
Epoch 105/200
4/4 - 0s - loss: 0.2292 - accuracy: 0.3417 - val_loss: 0.2324 -
val_accuracy: 0.3000
Epoch 106/200
4/4 - 0s - loss: 0.2291 - accuracy: 0.3417 - val_loss: 0.2324 -
val_accuracy: 0.3000
Epoch 107/200
4/4 - 0s - loss: 0.2291 - accuracy: 0.3417 - val_loss: 0.2324 -
val_accuracy: 0.3000
Epoch 108/200
4/4 - 0s - loss: 0.2291 - accuracy: 0.3417 - val_loss: 0.2323 -
val_accuracy: 0.3000
Epoch 109/200
4/4 - 0s - loss: 0.2290 - accuracy: 0.3417 - val_loss: 0.2323 -
val_accuracy: 0.3000
```

```
Epoch 110/200
4/4 - 0s - loss: 0.2290 - accuracy: 0.3417 - val_loss: 0.2322 -
val_accuracy: 0.3000
Epoch 111/200
4/4 - 0s - loss: 0.2290 - accuracy: 0.3417 - val_loss: 0.2322 -
val_accuracy: 0.3000
Epoch 112/200
4/4 - 0s - loss: 0.2289 - accuracy: 0.3417 - val_loss: 0.2321 -
val_accuracy: 0.3000
Epoch 113/200
4/4 - 0s - loss: 0.2289 - accuracy: 0.3417 - val_loss: 0.2321 -
val_accuracy: 0.3000
Epoch 114/200
4/4 - 0s - loss: 0.2289 - accuracy: 0.3417 - val_loss: 0.2321 -
val_accuracy: 0.3000
Epoch 115/200
4/4 - 0s - loss: 0.2288 - accuracy: 0.3417 - val_loss: 0.2320 -
val_accuracy: 0.3000
Epoch 116/200
4/4 - 0s - loss: 0.2288 - accuracy: 0.3417 - val_loss: 0.2320 -
val_accuracy: 0.3000
Epoch 117/200
4/4 - 0s - loss: 0.2287 - accuracy: 0.3417 - val_loss: 0.2319 -
val_accuracy: 0.3000
Epoch 118/200
4/4 - 0s - loss: 0.2287 - accuracy: 0.3417 - val_loss: 0.2319 -
val_accuracy: 0.3000
Epoch 119/200
4/4 - 0s - loss: 0.2287 - accuracy: 0.3417 - val_loss: 0.2318 -
val_accuracy: 0.3000
Epoch 120/200
4/4 - 0s - loss: 0.2286 - accuracy: 0.3417 - val_loss: 0.2318 -
val_accuracy: 0.3000
Epoch 121/200
4/4 - 0s - loss: 0.2286 - accuracy: 0.3417 - val_loss: 0.2318 -
val_accuracy: 0.3000
Epoch 122/200
4/4 - 0s - loss: 0.2286 - accuracy: 0.3417 - val_loss: 0.2317 -
val_accuracy: 0.3000
Epoch 123/200
4/4 - 0s - loss: 0.2285 - accuracy: 0.3417 - val_loss: 0.2317 -
val_accuracy: 0.3000
Epoch 124/200
4/4 - 0s - loss: 0.2285 - accuracy: 0.3417 - val_loss: 0.2316 -
val_accuracy: 0.3000
Epoch 125/200
4/4 - 0s - loss: 0.2285 - accuracy: 0.3417 - val_loss: 0.2316 -
val_accuracy: 0.3000
Epoch 126/200
4/4 - 0s - loss: 0.2284 - accuracy: 0.3417 - val_loss: 0.2316 -
```

```
val_accuracy: 0.3000
Epoch 127/200
4/4 - 0s - loss: 0.2284 - accuracy: 0.3417 - val_loss: 0.2315 -
val_accuracy: 0.3000
Epoch 128/200
4/4 - 0s - loss: 0.2284 - accuracy: 0.3417 - val_loss: 0.2315 -
val_accuracy: 0.3000
Epoch 129/200
4/4 - 0s - loss: 0.2283 - accuracy: 0.3417 - val_loss: 0.2315 -
val_accuracy: 0.3000
Epoch 130/200
4/4 - 0s - loss: 0.2283 - accuracy: 0.3417 - val_loss: 0.2314 -
val_accuracy: 0.3000
Epoch 131/200
4/4 - 0s - loss: 0.2283 - accuracy: 0.3417 - val_loss: 0.2314 -
val_accuracy: 0.3000
Epoch 132/200
4/4 - 0s - loss: 0.2282 - accuracy: 0.3417 - val_loss: 0.2313 -
val_accuracy: 0.3000
Epoch 133/200
4/4 - 0s - loss: 0.2282 - accuracy: 0.3417 - val_loss: 0.2313 -
val_accuracy: 0.3000
Epoch 134/200
4/4 - 0s - loss: 0.2282 - accuracy: 0.3417 - val_loss: 0.2313 -
val_accuracy: 0.3000
Epoch 135/200
4/4 - 0s - loss: 0.2281 - accuracy: 0.3417 - val_loss: 0.2312 -
val_accuracy: 0.3000
Epoch 136/200
4/4 - 0s - loss: 0.2281 - accuracy: 0.3417 - val_loss: 0.2312 -
val_accuracy: 0.3000
Epoch 137/200
4/4 - 0s - loss: 0.2281 - accuracy: 0.3417 - val_loss: 0.2312 -
val_accuracy: 0.3000
Epoch 138/200
4/4 - 0s - loss: 0.2280 - accuracy: 0.3417 - val_loss: 0.2311 -
val_accuracy: 0.3000
Epoch 139/200
4/4 - 0s - loss: 0.2280 - accuracy: 0.3417 - val_loss: 0.2311 -
val_accuracy: 0.3000
Epoch 140/200
4/4 - 0s - loss: 0.2280 - accuracy: 0.3417 - val_loss: 0.2310 -
val_accuracy: 0.3000
Epoch 141/200
4/4 - 0s - loss: 0.2279 - accuracy: 0.3417 - val_loss: 0.2310 -
val_accuracy: 0.3000
Epoch 142/200
4/4 - 0s - loss: 0.2279 - accuracy: 0.3417 - val_loss: 0.2310 -
val_accuracy: 0.3000
Epoch 143/200
```

```
4/4 - 0s - loss: 0.2279 - accuracy: 0.3417 - val_loss: 0.2309 -
val_accuracy: 0.3000
Epoch 144/200
4/4 - 0s - loss: 0.2278 - accuracy: 0.3417 - val_loss: 0.2309 -
val_accuracy: 0.3000
Epoch 145/200
4/4 - 0s - loss: 0.2278 - accuracy: 0.3417 - val_loss: 0.2309 -
val_accuracy: 0.3000
Epoch 146/200
4/4 - 0s - loss: 0.2278 - accuracy: 0.3417 - val_loss: 0.2308 -
val_accuracy: 0.3000
Epoch 147/200
4/4 - 0s - loss: 0.2278 - accuracy: 0.3417 - val_loss: 0.2308 -
val_accuracy: 0.3000
Epoch 148/200
4/4 - 0s - loss: 0.2277 - accuracy: 0.3417 - val_loss: 0.2308 -
val_accuracy: 0.3000
Epoch 149/200
4/4 - 0s - loss: 0.2277 - accuracy: 0.3417 - val_loss: 0.2307 -
val_accuracy: 0.3000
Epoch 150/200
4/4 - 0s - loss: 0.2277 - accuracy: 0.3417 - val_loss: 0.2307 -
val_accuracy: 0.3000
Epoch 151/200
4/4 - 0s - loss: 0.2276 - accuracy: 0.3417 - val_loss: 0.2307 -
val_accuracy: 0.3000
Epoch 152/200
4/4 - 0s - loss: 0.2276 - accuracy: 0.3417 - val_loss: 0.2306 -
val_accuracy: 0.3000
Epoch 153/200
4/4 - 0s - loss: 0.2276 - accuracy: 0.3417 - val_loss: 0.2306 -
val_accuracy: 0.3000

Epoch 154/200
4/4 - 0s - loss: 0.2275 - accuracy: 0.3417 - val_loss: 0.2306 -
val_accuracy: 0.3000
Epoch 155/200
4/4 - 0s - loss: 0.2275 - accuracy: 0.3417 - val_loss: 0.2305 -
val_accuracy: 0.3000
Epoch 156/200
4/4 - 0s - loss: 0.2275 - accuracy: 0.3417 - val_loss: 0.2305 -
val_accuracy: 0.3000
Epoch 157/200
4/4 - 0s - loss: 0.2275 - accuracy: 0.3417 - val_loss: 0.2304 -
val_accuracy: 0.3000
Epoch 158/200
4/4 - 0s - loss: 0.2274 - accuracy: 0.3417 - val_loss: 0.2304 -
val_accuracy: 0.3000
Epoch 159/200
4/4 - 0s - loss: 0.2274 - accuracy: 0.3417 - val_loss: 0.2304 -
```

```
val_accuracy: 0.3000
Epoch 160/200
4/4 - 0s - loss: 0.2274 - accuracy: 0.3417 - val_loss: 0.2303 -
val_accuracy: 0.3000
Epoch 161/200
4/4 - 0s - loss: 0.2273 - accuracy: 0.3417 - val_loss: 0.2303 -
val_accuracy: 0.3000
Epoch 162/200
4/4 - 0s - loss: 0.2273 - accuracy: 0.3417 - val_loss: 0.2303 -
val_accuracy: 0.3000
Epoch 163/200
4/4 - 0s - loss: 0.2273 - accuracy: 0.3417 - val_loss: 0.2302 -
val_accuracy: 0.3000
Epoch 164/200
4/4 - 0s - loss: 0.2273 - accuracy: 0.3417 - val_loss: 0.2302 -
val_accuracy: 0.3000
Epoch 165/200
4/4 - 0s - loss: 0.2272 - accuracy: 0.3417 - val_loss: 0.2302 -
val_accuracy: 0.3000
Epoch 166/200
4/4 - 0s - loss: 0.2272 - accuracy: 0.3417 - val_loss: 0.2301 -
val_accuracy: 0.3000
Epoch 167/200
4/4 - 0s - loss: 0.2272 - accuracy: 0.3417 - val_loss: 0.2301 -
val_accuracy: 0.3000
Epoch 168/200
4/4 - 0s - loss: 0.2271 - accuracy: 0.3417 - val_loss: 0.2301 -
val_accuracy: 0.3000
Epoch 169/200
4/4 - 0s - loss: 0.2271 - accuracy: 0.3417 - val_loss: 0.2300 -
val_accuracy: 0.3000
Epoch 170/200
4/4 - 0s - loss: 0.2271 - accuracy: 0.3417 - val_loss: 0.2300 -
val_accuracy: 0.3000
Epoch 171/200
4/4 - 0s - loss: 0.2271 - accuracy: 0.3417 - val_loss: 0.2300 -
val_accuracy: 0.3000
Epoch 172/200
4/4 - 0s - loss: 0.2270 - accuracy: 0.3417 - val_loss: 0.2300 -
val_accuracy: 0.3000
Epoch 173/200
4/4 - 0s - loss: 0.2270 - accuracy: 0.3417 - val_loss: 0.2299 -
val_accuracy: 0.3000
Epoch 174/200
4/4 - 0s - loss: 0.2270 - accuracy: 0.3417 - val_loss: 0.2299 -
val_accuracy: 0.3000
Epoch 175/200
4/4 - 0s - loss: 0.2270 - accuracy: 0.3417 - val_loss: 0.2299 -
val_accuracy: 0.3000
Epoch 176/200
```

```
4/4 - 0s - loss: 0.2269 - accuracy: 0.3417 - val_loss: 0.2298 -
val_accuracy: 0.3000
Epoch 177/200
4/4 - 0s - loss: 0.2269 - accuracy: 0.3417 - val_loss: 0.2298 -
val_accuracy: 0.3000
Epoch 178/200
4/4 - 0s - loss: 0.2269 - accuracy: 0.3417 - val_loss: 0.2298 -
val_accuracy: 0.3000
Epoch 179/200
4/4 - 0s - loss: 0.2268 - accuracy: 0.3417 - val_loss: 0.2297 -
val_accuracy: 0.3000
Epoch 180/200
4/4 - 0s - loss: 0.2268 - accuracy: 0.3417 - val_loss: 0.2297 -
val_accuracy: 0.3000
Epoch 181/200
4/4 - 0s - loss: 0.2268 - accuracy: 0.3417 - val_loss: 0.2297 -
val_accuracy: 0.3000
Epoch 182/200
4/4 - 0s - loss: 0.2268 - accuracy: 0.3417 - val_loss: 0.2296 -
val_accuracy: 0.3000
Epoch 183/200
4/4 - 0s - loss: 0.2267 - accuracy: 0.3417 - val_loss: 0.2296 -
val_accuracy: 0.3000
Epoch 184/200
4/4 - 0s - loss: 0.2267 - accuracy: 0.3417 - val_loss: 0.2296 -
val_accuracy: 0.3000
Epoch 185/200
4/4 - 0s - loss: 0.2267 - accuracy: 0.3417 - val_loss: 0.2296 -
val_accuracy: 0.3000
Epoch 186/200
4/4 - 0s - loss: 0.2267 - accuracy: 0.3417 - val_loss: 0.2295 -
val_accuracy: 0.3000
Epoch 187/200
4/4 - 0s - loss: 0.2266 - accuracy: 0.3417 - val_loss: 0.2295 -
val_accuracy: 0.3000
Epoch 188/200
4/4 - 0s - loss: 0.2266 - accuracy: 0.3417 - val_loss: 0.2295 -
val_accuracy: 0.3000
Epoch 189/200
4/4 - 0s - loss: 0.2266 - accuracy: 0.3417 - val_loss: 0.2294 -
val_accuracy: 0.3000
Epoch 190/200
4/4 - 0s - loss: 0.2266 - accuracy: 0.3417 - val_loss: 0.2294 -
val_accuracy: 0.3000
Epoch 191/200
4/4 - 0s - loss: 0.2265 - accuracy: 0.3417 - val_loss: 0.2294 -
val_accuracy: 0.3000
Epoch 192/200
4/4 - 0s - loss: 0.2265 - accuracy: 0.3417 - val_loss: 0.2293 -
val_accuracy: 0.3000
```

```
Epoch 193/200
4/4 - 0s - loss: 0.2265 - accuracy: 0.3417 - val_loss: 0.2293 -
val_accuracy: 0.3000
Epoch 194/200
4/4 - 0s - loss: 0.2265 - accuracy: 0.3417 - val_loss: 0.2293 -
val_accuracy: 0.3000
Epoch 195/200
4/4 - 0s - loss: 0.2264 - accuracy: 0.3417 - val_loss: 0.2293 -
val_accuracy: 0.3000
Epoch 196/200
4/4 - 0s - loss: 0.2264 - accuracy: 0.3417 - val_loss: 0.2292 -
val_accuracy: 0.3000
Epoch 197/200
4/4 - 0s - loss: 0.2264 - accuracy: 0.3417 - val_loss: 0.2292 -
val_accuracy: 0.3000
Epoch 198/200
4/4 - 0s - loss: 0.2264 - accuracy: 0.3417 - val_loss: 0.2292 -
val_accuracy: 0.3000
Epoch 199/200
4/4 - 0s - loss: 0.2264 - accuracy: 0.3417 - val_loss: 0.2291 -
val_accuracy: 0.3000
Epoch 200/200
4/4 - 0s - loss: 0.2263 - accuracy: 0.3417 - val_loss: 0.2291 -
val_accuracy: 0.3000
Activation: sigmoid LR: 0.01 Iterations: 200 || Test loss:
0.22911016643047333
Activation: sigmoid LR: 0.01 Iterations: 200 || Test Accuracy:
0.30000001192092896
========================================================================
=======
Model_sigmoid_LR_0.1_Iterations_100_HL_3
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.2553s). Check your callbacks.
4/4 - 0s - loss: 0.2684 - accuracy: 0.3333 - val_loss: 0.2663 -
val_accuracy: 0.3333
Epoch 2/100
4/4 - 0s - loss: 0.2653 - accuracy: 0.3333 - val_loss: 0.2633 -
val_accuracy: 0.3333
Epoch 3/100
4/4 - 0s - loss: 0.2623 - accuracy: 0.3333 - val_loss: 0.2603 -
val_accuracy: 0.3333
Epoch 4/100
4/4 - 0s - loss: 0.2593 - accuracy: 0.3333 - val_loss: 0.2575 -
val_accuracy: 0.3333
Epoch 5/100
4/4 - 0s - loss: 0.2566 - accuracy: 0.3333 - val_loss: 0.2549 -
val_accuracy: 0.3333
Epoch 6/100
```

```
4/4 - 0s - loss: 0.2540 - accuracy: 0.3333 - val_loss: 0.2524 -
val_accuracy: 0.3333
Epoch 7/100
4/4 - 0s - loss: 0.2516 - accuracy: 0.3333 - val_loss: 0.2501 -
val_accuracy: 0.3333
Epoch 8/100
4/4 - 0s - loss: 0.2493 - accuracy: 0.3333 - val_loss: 0.2479 -
val_accuracy: 0.3333
Epoch 9/100
4/4 - 0s - loss: 0.2472 - accuracy: 0.3333 - val_loss: 0.2457 -
val_accuracy: 0.3333
Epoch 10/100
4/4 - 0s - loss: 0.2451 - accuracy: 0.3333 - val_loss: 0.2438 -
val_accuracy: 0.3333
Epoch 11/100
4/4 - 0s - loss: 0.2432 - accuracy: 0.3333 - val_loss: 0.2420 -
val_accuracy: 0.3333
Epoch 12/100
4/4 - 0s - loss: 0.2415 - accuracy: 0.3333 - val_loss: 0.2403 -
val_accuracy: 0.3333
Epoch 13/100
4/4 - 0s - loss: 0.2398 - accuracy: 0.3333 - val_loss: 0.2388 -
val_accuracy: 0.3333
Epoch 14/100
4/4 - 0s - loss: 0.2383 - accuracy: 0.3333 - val_loss: 0.2374 -
val_accuracy: 0.3333
Epoch 15/100
4/4 - 0s - loss: 0.2369 - accuracy: 0.3333 - val_loss: 0.2360 -
val_accuracy: 0.3333
Epoch 16/100
4/4 - 0s - loss: 0.2356 - accuracy: 0.3333 - val_loss: 0.2347 -
val_accuracy: 0.3333
Epoch 17/100
4/4 - 0s - loss: 0.2344 - accuracy: 0.3333 - val_loss: 0.2336 -
val_accuracy: 0.3333
Epoch 18/100
4/4 - 0s - loss: 0.2332 - accuracy: 0.3333 - val_loss: 0.2325 -
val_accuracy: 0.3333
Epoch 19/100
4/4 - 0s - loss: 0.2322 - accuracy: 0.3333 - val_loss: 0.2315 -
val_accuracy: 0.3333
Epoch 20/100
4/4 - 0s - loss: 0.2312 - accuracy: 0.3333 - val_loss: 0.2305 -
val_accuracy: 0.3333
Epoch 21/100
4/4 - 0s - loss: 0.2302 - accuracy: 0.3333 - val_loss: 0.2296 -
val_accuracy: 0.3333
Epoch 22/100
4/4 - 0s - loss: 0.2294 - accuracy: 0.3333 - val_loss: 0.2288 -
val_accuracy: 0.3333
```

```
Epoch 23/100
4/4 - 0s - loss: 0.2286 - accuracy: 0.3333 - val_loss: 0.2280 -
val_accuracy: 0.3333
Epoch 24/100
4/4 - 0s - loss: 0.2279 - accuracy: 0.3333 - val_loss: 0.2273 -
val_accuracy: 0.3333
Epoch 25/100
4/4 - 0s - loss: 0.2272 - accuracy: 0.3333 - val_loss: 0.2267 -
val_accuracy: 0.3333
Epoch 26/100
4/4 - 0s - loss: 0.2265 - accuracy: 0.3333 - val_loss: 0.2260 -
val_accuracy: 0.3333
Epoch 27/100
4/4 - 0s - loss: 0.2259 - accuracy: 0.3333 - val_loss: 0.2255 -
val_accuracy: 0.3333
Epoch 28/100
4/4 - 0s - loss: 0.2253 - accuracy: 0.3333 - val_loss: 0.2249 -
val_accuracy: 0.3333
Epoch 29/100
4/4 - 0s - loss: 0.2249 - accuracy: 0.3333 - val_loss: 0.2244 -
val_accuracy: 0.3333
Epoch 30/100
4/4 - 0s - loss: 0.2243 - accuracy: 0.3333 - val_loss: 0.2239 -
val_accuracy: 0.3333
Epoch 31/100
4/4 - 0s - loss: 0.2238 - accuracy: 0.3333 - val_loss: 0.2235 -
val_accuracy: 0.3333
Epoch 32/100
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3417

Epoch 33/100
4/4 - 0s - loss: 0.2230 - accuracy: 0.3417 - val_loss: 0.2227 -
val_accuracy: 0.3417
Epoch 34/100
4/4 - 0s - loss: 0.2226 - accuracy: 0.3417 - val_loss: 0.2223 -
val_accuracy: 0.3417
Epoch 35/100
4/4 - 0s - loss: 0.2222 - accuracy: 0.3500 - val_loss: 0.2220 -
val_accuracy: 0.3500
Epoch 36/100
4/4 - 0s - loss: 0.2219 - accuracy: 0.3500 - val_loss: 0.2217 -
val_accuracy: 0.3500
Epoch 37/100
4/4 - 0s - loss: 0.2216 - accuracy: 0.3500 - val_loss: 0.2213 -
val_accuracy: 0.3500
Epoch 38/100
4/4 - 0s - loss: 0.2213 - accuracy: 0.3500 - val_loss: 0.2210 -
val_accuracy: 0.3667
Epoch 39/100
```

```
4/4 - 0s - loss: 0.2210 - accuracy: 0.3667 - val_loss: 0.2208 -
val_accuracy: 0.3833
Epoch 40/100
4/4 - 0s - loss: 0.2207 - accuracy: 0.3833 - val_loss: 0.2205 -
val_accuracy: 0.3833
Epoch 41/100
4/4 - 0s - loss: 0.2204 - accuracy: 0.3833 - val_loss: 0.2203 -
val_accuracy: 0.3750
Epoch 42/100
4/4 - 0s - loss: 0.2202 - accuracy: 0.3750 - val_loss: 0.2200 -
val_accuracy: 0.4167
Epoch 43/100
4/4 - 0s - loss: 0.2200 - accuracy: 0.4000 - val_loss: 0.2198 -
val_accuracy: 0.4167
Epoch 44/100
4/4 - 0s - loss: 0.2198 - accuracy: 0.4167 - val_loss: 0.2196 -
val_accuracy: 0.4167
Epoch 45/100
4/4 - 0s - loss: 0.2195 - accuracy: 0.4333 - val_loss: 0.2194 -
val_accuracy: 0.4667
Epoch 46/100
4/4 - 0s - loss: 0.2193 - accuracy: 0.4583 - val_loss: 0.2192 -
val_accuracy: 0.5083
Epoch 47/100
4/4 - 0s - loss: 0.2191 - accuracy: 0.4833 - val_loss: 0.2190 -
val_accuracy: 0.4917
Epoch 48/100
4/4 - 0s - loss: 0.2189 - accuracy: 0.5167 - val_loss: 0.2188 -
val_accuracy: 0.4917
Epoch 49/100
4/4 - 0s - loss: 0.2188 - accuracy: 0.5250 - val_loss: 0.2186 -
val_accuracy: 0.5167
Epoch 50/100
4/4 - 0s - loss: 0.2186 - accuracy: 0.5333 - val_loss: 0.2184 -
val_accuracy: 0.5250
Epoch 51/100
4/4 - 0s - loss: 0.2184 - accuracy: 0.5667 - val_loss: 0.2183 -
val_accuracy: 0.5500
Epoch 52/100
4/4 - 0s - loss: 0.2182 - accuracy: 0.5500 - val_loss: 0.2181 -
val_accuracy: 0.5667
Epoch 53/100
4/4 - 0s - loss: 0.2181 - accuracy: 0.5500 - val_loss: 0.2180 -
val_accuracy: 0.5750
Epoch 54/100
4/4 - 0s - loss: 0.2180 - accuracy: 0.5833 - val_loss: 0.2178 -
val_accuracy: 0.5750
Epoch 55/100
4/4 - 0s - loss: 0.2178 - accuracy: 0.5833 - val_loss: 0.2177 -
val_accuracy: 0.5833
```

```
Epoch 56/100
4/4 - 0s - loss: 0.2177 - accuracy: 0.5833 - val_loss: 0.2175 -
val_accuracy: 0.5750
Epoch 57/100
4/4 - 0s - loss: 0.2175 - accuracy: 0.5500 - val_loss: 0.2174 -
val_accuracy: 0.5750
Epoch 58/100
4/4 - 0s - loss: 0.2174 - accuracy: 0.5833 - val_loss: 0.2172 -
val_accuracy: 0.5750
Epoch 59/100
4/4 - 0s - loss: 0.2172 - accuracy: 0.5750 - val_loss: 0.2171 -
val_accuracy: 0.5667
Epoch 60/100
4/4 - 0s - loss: 0.2171 - accuracy: 0.5750 - val_loss: 0.2170 -
val_accuracy: 0.5833
Epoch 61/100
4/4 - 0s - loss: 0.2170 - accuracy: 0.5833 - val_loss: 0.2168 -
val_accuracy: 0.5833
Epoch 62/100
4/4 - 0s - loss: 0.2169 - accuracy: 0.5583 - val_loss: 0.2167 -
val_accuracy: 0.5833
Epoch 63/100
4/4 - 0s - loss: 0.2167 - accuracy: 0.5917 - val_loss: 0.2166 -
val_accuracy: 0.5833
Epoch 64/100
4/4 - 0s - loss: 0.2166 - accuracy: 0.5667 - val_loss: 0.2165 -
val_accuracy: 0.5833
Epoch 65/100
4/4 - 0s - loss: 0.2164 - accuracy: 0.5917 - val_loss: 0.2163 -
val_accuracy: 0.5833
Epoch 66/100
4/4 - 0s - loss: 0.2163 - accuracy: 0.6000 - val_loss: 0.2162 -
val_accuracy: 0.5833
Epoch 67/100
4/4 - 0s - loss: 0.2162 - accuracy: 0.5833 - val_loss: 0.2161 -
val_accuracy: 0.5833
Epoch 68/100
4/4 - 0s - loss: 0.2161 - accuracy: 0.5833 - val_loss: 0.2160 -
val_accuracy: 0.5917
Epoch 69/100
4/4 - 0s - loss: 0.2161 - accuracy: 0.5917 - val_loss: 0.2159 -
val_accuracy: 0.5917
Epoch 70/100
4/4 - 0s - loss: 0.2159 - accuracy: 0.5917 - val_loss: 0.2158 -
val_accuracy: 0.6000
Epoch 71/100
4/4 - 0s - loss: 0.2158 - accuracy: 0.5833 - val_loss: 0.2157 -
val_accuracy: 0.5917
Epoch 72/100
4/4 - 0s - loss: 0.2156 - accuracy: 0.5750 - val_loss: 0.2155 -
```

```
val_accuracy: 0.5917
Epoch 73/100
4/4 - 0s - loss: 0.2156 - accuracy: 0.6083 - val_loss: 0.2154 -
val_accuracy: 0.6000
Epoch 74/100
4/4 - 0s - loss: 0.2154 - accuracy: 0.5917 - val_loss: 0.2153 -
val_accuracy: 0.6000
Epoch 75/100
4/4 - 0s - loss: 0.2153 - accuracy: 0.5833 - val_loss: 0.2152 -
val_accuracy: 0.5917
Epoch 76/100
4/4 - 0s - loss: 0.2152 - accuracy: 0.5833 - val_loss: 0.2151 -
val_accuracy: 0.6000
Epoch 77/100
4/4 - 0s - loss: 0.2151 - accuracy: 0.6000 - val_loss: 0.2150 -
val_accuracy: 0.6000
Epoch 78/100
4/4 - 0s - loss: 0.2150 - accuracy: 0.6000 - val_loss: 0.2149 -
val_accuracy: 0.6083
Epoch 79/100
4/4 - 0s - loss: 0.2149 - accuracy: 0.5917 - val_loss: 0.2148 -
val_accuracy: 0.6000
Epoch 80/100
4/4 - 0s - loss: 0.2148 - accuracy: 0.5750 - val_loss: 0.2147 -
val_accuracy: 0.6083
Epoch 81/100
4/4 - 0s - loss: 0.2147 - accuracy: 0.6000 - val_loss: 0.2146 -
val_accuracy: 0.6083
Epoch 82/100
4/4 - 0s - loss: 0.2146 - accuracy: 0.5917 - val_loss: 0.2145 -
val_accuracy: 0.6083
Epoch 83/100
4/4 - 0s - loss: 0.2145 - accuracy: 0.5917 - val_loss: 0.2144 -
val_accuracy: 0.6250
Epoch 84/100
4/4 - 0s - loss: 0.2144 - accuracy: 0.6250 - val_loss: 0.2143 -
val_accuracy: 0.6083
Epoch 85/100
4/4 - 0s - loss: 0.2143 - accuracy: 0.6250 - val_loss: 0.2142 -
val_accuracy: 0.6000
Epoch 86/100
4/4 - 0s - loss: 0.2141 - accuracy: 0.6000 - val_loss: 0.2140 -
val_accuracy: 0.6000
Epoch 87/100
4/4 - 0s - loss: 0.2141 - accuracy: 0.6083 - val_loss: 0.2139 -
val_accuracy: 0.6000
Epoch 88/100
4/4 - 0s - loss: 0.2140 - accuracy: 0.6000 - val_loss: 0.2138 -
val_accuracy: 0.6000
Epoch 89/100
```

```
4/4 - 0s - loss: 0.2139 - accuracy: 0.6000 - val_loss: 0.2137 -
val_accuracy: 0.6167
Epoch 90/100
4/4 - 0s - loss: 0.2138 - accuracy: 0.6167 - val_loss: 0.2136 -
val_accuracy: 0.6000
Epoch 91/100
4/4 - 0s - loss: 0.2136 - accuracy: 0.6000 - val_loss: 0.2135 -
val_accuracy: 0.6000
Epoch 92/100
4/4 - 0s - loss: 0.2135 - accuracy: 0.6083 - val_loss: 0.2134 -
val_accuracy: 0.6083
Epoch 93/100
4/4 - 0s - loss: 0.2134 - accuracy: 0.6083 - val_loss: 0.2133 -
val_accuracy: 0.6083
Epoch 94/100
4/4 - 0s - loss: 0.2133 - accuracy: 0.6083 - val_loss: 0.2132 -
val_accuracy: 0.6167
Epoch 95/100
4/4 - 0s - loss: 0.2132 - accuracy: 0.6167 - val_loss: 0.2131 -
val_accuracy: 0.6250
Epoch 96/100
4/4 - 0s - loss: 0.2131 - accuracy: 0.6250 - val_loss: 0.2130 -
val_accuracy: 0.6083
Epoch 97/100
4/4 - 0s - loss: 0.2130 - accuracy: 0.6250 - val_loss: 0.2129 -
val_accuracy: 0.6083
Epoch 98/100
4/4 - 0s - loss: 0.2129 - accuracy: 0.6417 - val_loss: 0.2128 -
val_accuracy: 0.6083
Epoch 99/100
4/4 - 0s - loss: 0.2128 - accuracy: 0.6083 - val_loss: 0.2127 -
val_accuracy: 0.6000
Epoch 100/100
4/4 - 0s - loss: 0.2127 - accuracy: 0.6167 - val_loss: 0.2126 -
val_accuracy: 0.6083
Activation: sigmoid LR: 0.1 Itertions: 100 || Train loss:
0.21259352564811707
Activation: sigmoid LR: 0.1 Itertions: 100 || Train Accuracy:
0.6083333492279053
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0011s vs
`on_train_batch_end` time: 0.0796s). Check your callbacks.
4/4 - 0s - loss: 0.2126 - accuracy: 0.6083 - val_loss: 0.2124 -
val_accuracy: 0.6333
Epoch 2/100
4/4 - 0s - loss: 0.2125 - accuracy: 0.6333 - val_loss: 0.2123 -
val_accuracy: 0.6333
Epoch 3/100
4/4 - 0s - loss: 0.2124 - accuracy: 0.6083 - val_loss: 0.2121 -
```

```
val_accuracy: 0.6333
Epoch 4/100
4/4 - 0s - loss: 0.2123 - accuracy: 0.6250 - val_loss: 0.2120 -
val_accuracy: 0.6333
Epoch 5/100
4/4 - 0s - loss: 0.2122 - accuracy: 0.6250 - val_loss: 0.2119 -
val_accuracy: 0.6667
Epoch 6/100
4/4 - 0s - loss: 0.2121 - accuracy: 0.6250 - val_loss: 0.2118 -
val_accuracy: 0.6667
Epoch 7/100
4/4 - 0s - loss: 0.2119 - accuracy: 0.6250 - val_loss: 0.2117 -
val_accuracy: 0.6667
Epoch 8/100
4/4 - 0s - loss: 0.2118 - accuracy: 0.6250 - val_loss: 0.2116 -
val_accuracy: 0.6667
Epoch 9/100
4/4 - 0s - loss: 0.2118 - accuracy: 0.6167 - val_loss: 0.2114 -
val_accuracy: 0.6000
Epoch 10/100
4/4 - 0s - loss: 0.2117 - accuracy: 0.6417 - val_loss: 0.2113 -
val_accuracy: 0.6667
Epoch 11/100
4/4 - 0s - loss: 0.2115 - accuracy: 0.6250 - val_loss: 0.2112 -
val_accuracy: 0.6000
Epoch 12/100
4/4 - 0s - loss: 0.2114 - accuracy: 0.6250 - val_loss: 0.2111 -
val_accuracy: 0.6000
Epoch 13/100
4/4 - 0s - loss: 0.2113 - accuracy: 0.6500 - val_loss: 0.2110 -
val_accuracy: 0.6333

Epoch 14/100
4/4 - 0s - loss: 0.2112 - accuracy: 0.6417 - val_loss: 0.2109 -
val_accuracy: 0.6000
Epoch 15/100
4/4 - 0s - loss: 0.2111 - accuracy: 0.6417 - val_loss: 0.2107 -
val_accuracy: 0.6667
Epoch 16/100
4/4 - 0s - loss: 0.2110 - accuracy: 0.6167 - val_loss: 0.2106 -
val_accuracy: 0.6667
Epoch 17/100
4/4 - 0s - loss: 0.2109 - accuracy: 0.6500 - val_loss: 0.2105 -
val_accuracy: 0.6667
Epoch 18/100
4/4 - 0s - loss: 0.2108 - accuracy: 0.6583 - val_loss: 0.2104 -
val_accuracy: 0.6667
Epoch 19/100
4/4 - 0s - loss: 0.2107 - accuracy: 0.6417 - val_loss: 0.2102 -
val_accuracy: 0.6667
```

```
Epoch 20/100
4/4 - 0s - loss: 0.2105 - accuracy: 0.6583 - val_loss: 0.2101 -
val_accuracy: 0.7000
Epoch 21/100
4/4 - 0s - loss: 0.2104 - accuracy: 0.6583 - val_loss: 0.2100 -
val_accuracy: 0.7000
Epoch 22/100
4/4 - 0s - loss: 0.2104 - accuracy: 0.6500 - val_loss: 0.2099 -
val_accuracy: 0.7000
Epoch 23/100
4/4 - 0s - loss: 0.2102 - accuracy: 0.6667 - val_loss: 0.2098 -
val_accuracy: 0.7000
Epoch 24/100
4/4 - 0s - loss: 0.2101 - accuracy: 0.6750 - val_loss: 0.2097 -
val_accuracy: 0.7000
Epoch 25/100
4/4 - 0s - loss: 0.2100 - accuracy: 0.6750 - val_loss: 0.2096 -
val_accuracy: 0.6667
Epoch 26/100
4/4 - 0s - loss: 0.2099 - accuracy: 0.6750 - val_loss: 0.2095 -
val_accuracy: 0.6667
Epoch 27/100
4/4 - 0s - loss: 0.2098 - accuracy: 0.6500 - val_loss: 0.2093 -
val_accuracy: 0.6667
Epoch 28/100
4/4 - 0s - loss: 0.2097 - accuracy: 0.6583 - val_loss: 0.2092 -
val_accuracy: 0.6667
Epoch 29/100
4/4 - 0s - loss: 0.2096 - accuracy: 0.6500 - val_loss: 0.2091 -
val_accuracy: 0.7000
Epoch 30/100
4/4 - 0s - loss: 0.2094 - accuracy: 0.6500 - val_loss: 0.2090 -
val_accuracy: 0.7000
Epoch 31/100
4/4 - 0s - loss: 0.2093 - accuracy: 0.6667 - val_loss: 0.2089 -
val_accuracy: 0.7000
Epoch 32/100
4/4 - 0s - loss: 0.2092 - accuracy: 0.6500 - val_loss: 0.2088 -
val_accuracy: 0.7000
Epoch 33/100
4/4 - 0s - loss: 0.2091 - accuracy: 0.6500 - val_loss: 0.2086 -
val_accuracy: 0.7000
Epoch 34/100
4/4 - 0s - loss: 0.2090 - accuracy: 0.6667 - val_loss: 0.2085 -
val_accuracy: 0.7000
Epoch 35/100
4/4 - 0s - loss: 0.2089 - accuracy: 0.6583 - val_loss: 0.2084 -
val_accuracy: 0.7000
Epoch 36/100
4/4 - 0s - loss: 0.2087 - accuracy: 0.6500 - val_loss: 0.2082 -
```

```
val_accuracy: 0.7000
Epoch 37/100
4/4 - 0s - loss: 0.2086 - accuracy: 0.6583 - val_loss: 0.2081 -
val_accuracy: 0.7000
Epoch 38/100
4/4 - 0s - loss: 0.2085 - accuracy: 0.6750 - val_loss: 0.2080 -
val_accuracy: 0.7000
Epoch 39/100
4/4 - 0s - loss: 0.2084 - accuracy: 0.6750 - val_loss: 0.2079 -
val_accuracy: 0.7000
Epoch 40/100
4/4 - 0s - loss: 0.2083 - accuracy: 0.6750 - val_loss: 0.2077 -
val_accuracy: 0.7000
Epoch 41/100
4/4 - 0s - loss: 0.2082 - accuracy: 0.6667 - val_loss: 0.2076 -
val_accuracy: 0.7000
Epoch 42/100
4/4 - 0s - loss: 0.2080 - accuracy: 0.6833 - val_loss: 0.2075 -
val_accuracy: 0.7000
Epoch 43/100
4/4 - 0s - loss: 0.2079 - accuracy: 0.6750 - val_loss: 0.2073 -
val_accuracy: 0.7000
Epoch 44/100
4/4 - 0s - loss: 0.2078 - accuracy: 0.6833 - val_loss: 0.2072 -
val_accuracy: 0.7000
Epoch 45/100
4/4 - 0s - loss: 0.2076 - accuracy: 0.6833 - val_loss: 0.2071 -
val_accuracy: 0.7000
Epoch 46/100
4/4 - 0s - loss: 0.2075 - accuracy: 0.6833 - val_loss: 0.2069 -
val_accuracy: 0.7000
Epoch 47/100
4/4 - 0s - loss: 0.2074 - accuracy: 0.6833 - val_loss: 0.2068 -
val_accuracy: 0.7000
Epoch 48/100
4/4 - 0s - loss: 0.2073 - accuracy: 0.6833 - val_loss: 0.2067 -
val_accuracy: 0.7000
Epoch 49/100
4/4 - 0s - loss: 0.2072 - accuracy: 0.6833 - val_loss: 0.2066 -
val_accuracy: 0.7000
Epoch 50/100
4/4 - 0s - loss: 0.2070 - accuracy: 0.6833 - val_loss: 0.2064 -
val_accuracy: 0.7000
Epoch 51/100
4/4 - 0s - loss: 0.2069 - accuracy: 0.6833 - val_loss: 0.2063 -
val_accuracy: 0.7000
Epoch 52/100
4/4 - 0s - loss: 0.2068 - accuracy: 0.6833 - val_loss: 0.2061 -
val_accuracy: 0.7333
Epoch 53/100
```

```
4/4 - 0s - loss: 0.2067 - accuracy: 0.6833 - val_loss: 0.2060 -
val_accuracy: 0.7333
Epoch 54/100
4/4 - 0s - loss: 0.2065 - accuracy: 0.6833 - val_loss: 0.2059 -
val_accuracy: 0.7333
Epoch 55/100
4/4 - 0s - loss: 0.2064 - accuracy: 0.6833 - val_loss: 0.2057 -
val_accuracy: 0.7333
Epoch 56/100
4/4 - 0s - loss: 0.2063 - accuracy: 0.6917 - val_loss: 0.2056 -
val_accuracy: 0.7333
Epoch 57/100
4/4 - 0s - loss: 0.2062 - accuracy: 0.7000 - val_loss: 0.2054 -
val_accuracy: 0.7333
Epoch 58/100
4/4 - 0s - loss: 0.2060 - accuracy: 0.7000 - val_loss: 0.2053 -
val_accuracy: 0.7333
Epoch 59/100
4/4 - 0s - loss: 0.2059 - accuracy: 0.7000 - val_loss: 0.2052 -
val_accuracy: 0.7333
Epoch 60/100
4/4 - 0s - loss: 0.2058 - accuracy: 0.7083 - val_loss: 0.2050 -
val_accuracy: 0.7333
Epoch 61/100
4/4 - 0s - loss: 0.2056 - accuracy: 0.7000 - val_loss: 0.2049 -
val_accuracy: 0.7333
Epoch 62/100
4/4 - 0s - loss: 0.2055 - accuracy: 0.7083 - val_loss: 0.2048 -
val_accuracy: 0.7333
Epoch 63/100
4/4 - 0s - loss: 0.2054 - accuracy: 0.7000 - val_loss: 0.2046 -
val_accuracy: 0.7333
Epoch 64/100
4/4 - 0s - loss: 0.2053 - accuracy: 0.7083 - val_loss: 0.2045 -
val_accuracy: 0.7333
Epoch 65/100
4/4 - 0s - loss: 0.2052 - accuracy: 0.7083 - val_loss: 0.2043 -
val_accuracy: 0.7333
Epoch 66/100
4/4 - 0s - loss: 0.2050 - accuracy: 0.7083 - val_loss: 0.2042 -
val_accuracy: 0.7333
Epoch 67/100
4/4 - 0s - loss: 0.2049 - accuracy: 0.7083 - val_loss: 0.2041 -
val_accuracy: 0.7333
Epoch 68/100
4/4 - 0s - loss: 0.2047 - accuracy: 0.7000 - val_loss: 0.2039 -
val_accuracy: 0.7333
Epoch 69/100
4/4 - 0s - loss: 0.2046 - accuracy: 0.7083 - val_loss: 0.2038 -
val_accuracy: 0.7333
```

```
Epoch 70/100
4/4 - 0s - loss: 0.2045 - accuracy: 0.7083 - val_loss: 0.2037 -
val_accuracy: 0.7333
Epoch 71/100
4/4 - 0s - loss: 0.2044 - accuracy: 0.7000 - val_loss: 0.2035 -
val_accuracy: 0.7000
Epoch 72/100
4/4 - 0s - loss: 0.2042 - accuracy: 0.7000 - val_loss: 0.2033 -
val_accuracy: 0.7000
Epoch 73/100
4/4 - 0s - loss: 0.2041 - accuracy: 0.7000 - val_loss: 0.2032 -
val_accuracy: 0.7000
Epoch 74/100
4/4 - 0s - loss: 0.2039 - accuracy: 0.6917 - val_loss: 0.2031 -
val_accuracy: 0.7000
Epoch 75/100
4/4 - 0s - loss: 0.2039 - accuracy: 0.6750 - val_loss: 0.2030 -
val_accuracy: 0.7333
Epoch 76/100
4/4 - 0s - loss: 0.2037 - accuracy: 0.7083 - val_loss: 0.2028 -
val_accuracy: 0.7333
Epoch 77/100
4/4 - 0s - loss: 0.2036 - accuracy: 0.7083 - val_loss: 0.2027 -
val_accuracy: 0.7333
Epoch 78/100
4/4 - 0s - loss: 0.2034 - accuracy: 0.7083 - val_loss: 0.2025 -
val_accuracy: 0.7333
Epoch 79/100
4/4 - 0s - loss: 0.2033 - accuracy: 0.7083 - val_loss: 0.2024 -
val_accuracy: 0.7333
Epoch 80/100
4/4 - 0s - loss: 0.2031 - accuracy: 0.7083 - val_loss: 0.2022 -
val_accuracy: 0.7333
Epoch 81/100
4/4 - 0s - loss: 0.2030 - accuracy: 0.7000 - val_loss: 0.2021 -
val_accuracy: 0.7333
Epoch 82/100
4/4 - 0s - loss: 0.2029 - accuracy: 0.7083 - val_loss: 0.2019 -
val_accuracy: 0.7000
Epoch 83/100
4/4 - 0s - loss: 0.2027 - accuracy: 0.7083 - val_loss: 0.2018 -
val_accuracy: 0.7000
Epoch 84/100
4/4 - 0s - loss: 0.2026 - accuracy: 0.7083 - val_loss: 0.2016 -
val_accuracy: 0.7000
Epoch 85/100
4/4 - 0s - loss: 0.2024 - accuracy: 0.6917 - val_loss: 0.2015 -
val_accuracy: 0.7000
Epoch 86/100
4/4 - 0s - loss: 0.2023 - accuracy: 0.7083 - val_loss: 0.2014 -
```

val_accuracy: 0.7000
Epoch 87/100
4/4 - 0s - loss: 0.2022 - accuracy: 0.7000 - val_loss: 0.2012 -
val_accuracy: 0.7000
Epoch 88/100
4/4 - 0s - loss: 0.2020 - accuracy: 0.7000 - val_loss: 0.2011 -
val_accuracy: 0.7000
Epoch 89/100
4/4 - 0s - loss: 0.2018 - accuracy: 0.7000 - val_loss: 0.2009 -
val_accuracy: 0.7000
Epoch 90/100
4/4 - 0s - loss: 0.2017 - accuracy: 0.7000 - val_loss: 0.2007 -
val_accuracy: 0.7000
Epoch 91/100
4/4 - 0s - loss: 0.2016 - accuracy: 0.7000 - val_loss: 0.2006 -
val_accuracy: 0.7000
Epoch 92/100
4/4 - 0s - loss: 0.2014 - accuracy: 0.7000 - val_loss: 0.2004 -
val_accuracy: 0.7000
Epoch 93/100
4/4 - 0s - loss: 0.2013 - accuracy: 0.7000 - val_loss: 0.2003 -
val_accuracy: 0.7000
Epoch 94/100
4/4 - 0s - loss: 0.2011 - accuracy: 0.6750 - val_loss: 0.2001 -
val_accuracy: 0.7000
Epoch 95/100
4/4 - 0s - loss: 0.2010 - accuracy: 0.7000 - val_loss: 0.2000 -
val_accuracy: 0.7000
Epoch 96/100
4/4 - 0s - loss: 0.2008 - accuracy: 0.6917 - val_loss: 0.1998 -
val_accuracy: 0.7000
Epoch 97/100
4/4 - 0s - loss: 0.2007 - accuracy: 0.6917 - val_loss: 0.1997 -
val_accuracy: 0.7000

Epoch 98/100
4/4 - 0s - loss: 0.2006 - accuracy: 0.6833 - val_loss: 0.1995 -
val_accuracy: 0.7000
Epoch 99/100
4/4 - 0s - loss: 0.2004 - accuracy: 0.7000 - val_loss: 0.1994 -
val_accuracy: 0.7000
Epoch 100/100
4/4 - 0s - loss: 0.2002 - accuracy: 0.6917 - val_loss: 0.1992 -
val_accuracy: 0.7000
Activation: sigmoid LR: 0.1 Iterations: 100 || Test loss:
0.19917941093444824
Activation: sigmoid LR: 0.1 Iterations: 100 || Test Accuracy:
0.699999988079071
==
=======

```
Model_sigmoid_LR_0.1_Iterations_200_HL_3
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0007s vs
`on_train_batch_end` time: 0.1264s). Check your callbacks.
4/4 - 0s - loss: 0.2577 - accuracy: 0.3333 - val_loss: 0.2563 -
val_accuracy: 0.3333
Epoch 2/200
4/4 - 0s - loss: 0.2557 - accuracy: 0.3333 - val_loss: 0.2543 -
val_accuracy: 0.3333
Epoch 3/200
4/4 - 0s - loss: 0.2536 - accuracy: 0.3333 - val_loss: 0.2524 -
val_accuracy: 0.3333
Epoch 4/200
4/4 - 0s - loss: 0.2518 - accuracy: 0.3333 - val_loss: 0.2506 -
val_accuracy: 0.3333
Epoch 5/200
4/4 - 0s - loss: 0.2500 - accuracy: 0.3333 - val_loss: 0.2489 -
val_accuracy: 0.3333
Epoch 6/200
4/4 - 0s - loss: 0.2484 - accuracy: 0.3333 - val_loss: 0.2473 -
val_accuracy: 0.3333
Epoch 7/200
4/4 - 0s - loss: 0.2468 - accuracy: 0.3333 - val_loss: 0.2458 -
val_accuracy: 0.3333
Epoch 8/200
4/4 - 0s - loss: 0.2454 - accuracy: 0.3333 - val_loss: 0.2443 -
val_accuracy: 0.3333
Epoch 9/200
4/4 - 0s - loss: 0.2439 - accuracy: 0.3333 - val_loss: 0.2430 -
val_accuracy: 0.3333
Epoch 10/200
4/4 - 0s - loss: 0.2425 - accuracy: 0.3333 - val_loss: 0.2417 -
val_accuracy: 0.3333
Epoch 11/200
4/4 - 0s - loss: 0.2413 - accuracy: 0.3333 - val_loss: 0.2405 -
val_accuracy: 0.3333
Epoch 12/200
4/4 - 0s - loss: 0.2401 - accuracy: 0.3333 - val_loss: 0.2394 -
val_accuracy: 0.3333
Epoch 13/200
4/4 - 0s - loss: 0.2390 - accuracy: 0.3333 - val_loss: 0.2383 -
val_accuracy: 0.3333
Epoch 14/200
4/4 - 0s - loss: 0.2380 - accuracy: 0.3333 - val_loss: 0.2373 -
val_accuracy: 0.3333
Epoch 15/200
4/4 - 0s - loss: 0.2370 - accuracy: 0.3333 - val_loss: 0.2364 -
val_accuracy: 0.3333
Epoch 16/200
```

```
4/4 - 0s - loss: 0.2361 - accuracy: 0.3333 - val_loss: 0.2355 -
val_accuracy: 0.3333
Epoch 17/200
4/4 - 0s - loss: 0.2352 - accuracy: 0.3333 - val_loss: 0.2347 -
val_accuracy: 0.3333
Epoch 18/200
4/4 - 0s - loss: 0.2344 - accuracy: 0.3333 - val_loss: 0.2339 -
val_accuracy: 0.3333
Epoch 19/200
4/4 - 0s - loss: 0.2336 - accuracy: 0.3333 - val_loss: 0.2331 -
val_accuracy: 0.3333
Epoch 20/200
4/4 - 0s - loss: 0.2329 - accuracy: 0.3333 - val_loss: 0.2325 -
val_accuracy: 0.3333
Epoch 21/200
4/4 - 0s - loss: 0.2323 - accuracy: 0.3333 - val_loss: 0.2318 -
val_accuracy: 0.3333
Epoch 22/200
4/4 - 0s - loss: 0.2316 - accuracy: 0.3333 - val_loss: 0.2312 -
val_accuracy: 0.3333
Epoch 23/200
4/4 - 0s - loss: 0.2310 - accuracy: 0.3333 - val_loss: 0.2306 -
val_accuracy: 0.3333
Epoch 24/200
4/4 - 0s - loss: 0.2305 - accuracy: 0.3333 - val_loss: 0.2300 -
val_accuracy: 0.3333
Epoch 25/200
4/4 - 0s - loss: 0.2299 - accuracy: 0.3333 - val_loss: 0.2295 -
val_accuracy: 0.3333
Epoch 26/200
4/4 - 0s - loss: 0.2294 - accuracy: 0.3333 - val_loss: 0.2290 -
val_accuracy: 0.3333
Epoch 27/200
4/4 - 0s - loss: 0.2289 - accuracy: 0.3333 - val_loss: 0.2286 -
val_accuracy: 0.3333
Epoch 28/200
4/4 - 0s - loss: 0.2285 - accuracy: 0.3333 - val_loss: 0.2282 -
val_accuracy: 0.3333
Epoch 29/200
4/4 - 0s - loss: 0.2281 - accuracy: 0.3333 - val_loss: 0.2278 -
val_accuracy: 0.3333
Epoch 30/200
4/4 - 0s - loss: 0.2277 - accuracy: 0.3333 - val_loss: 0.2274 -
val_accuracy: 0.3333
Epoch 31/200
4/4 - 0s - loss: 0.2273 - accuracy: 0.3333 - val_loss: 0.2271 -
val_accuracy: 0.3333
Epoch 32/200
4/4 - 0s - loss: 0.2269 - accuracy: 0.3333 - val_loss: 0.2267 -
val_accuracy: 0.3333
```

```
Epoch 33/200
4/4 - 0s - loss: 0.2266 - accuracy: 0.3333 - val_loss: 0.2264 -
val_accuracy: 0.3333
Epoch 34/200
4/4 - 0s - loss: 0.2263 - accuracy: 0.3333 - val_loss: 0.2261 -
val_accuracy: 0.3333
Epoch 35/200
4/4 - 0s - loss: 0.2260 - accuracy: 0.3333 - val_loss: 0.2258 -
val_accuracy: 0.3333
Epoch 36/200
4/4 - 0s - loss: 0.2257 - accuracy: 0.3333 - val_loss: 0.2255 -
val_accuracy: 0.3333
Epoch 37/200
4/4 - 0s - loss: 0.2255 - accuracy: 0.3333 - val_loss: 0.2253 -
val_accuracy: 0.3333
Epoch 38/200
4/4 - 0s - loss: 0.2253 - accuracy: 0.3333 - val_loss: 0.2250 -
val_accuracy: 0.3333
Epoch 39/200
4/4 - 0s - loss: 0.2250 - accuracy: 0.3333 - val_loss: 0.2248 -
val_accuracy: 0.3333
Epoch 40/200
4/4 - 0s - loss: 0.2248 - accuracy: 0.3333 - val_loss: 0.2246 -
val_accuracy: 0.3333
Epoch 41/200
4/4 - 0s - loss: 0.2246 - accuracy: 0.3333 - val_loss: 0.2244 -
val_accuracy: 0.3333
Epoch 42/200
4/4 - 0s - loss: 0.2244 - accuracy: 0.3333 - val_loss: 0.2242 -
val_accuracy: 0.3333
Epoch 43/200
4/4 - 0s - loss: 0.2242 - accuracy: 0.3333 - val_loss: 0.2240 -
val_accuracy: 0.3333
Epoch 44/200
4/4 - 0s - loss: 0.2240 - accuracy: 0.3333 - val_loss: 0.2239 -
val_accuracy: 0.3333
Epoch 45/200
4/4 - 0s - loss: 0.2238 - accuracy: 0.3333 - val_loss: 0.2237 -
val_accuracy: 0.3333
Epoch 46/200
4/4 - 0s - loss: 0.2237 - accuracy: 0.3333 - val_loss: 0.2236 -
val_accuracy: 0.3333
Epoch 47/200
4/4 - 0s - loss: 0.2235 - accuracy: 0.3333 - val_loss: 0.2234 -
val_accuracy: 0.3333
Epoch 48/200
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 49/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
```

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val_accuracy: 0.3333
Epoch 50/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 51/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2229 -
val_accuracy: 0.3333
Epoch 52/200
4/4 - 0s - loss: 0.2229 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 53/200
4/4 - 0s - loss: 0.2228 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 54/200
4/4 - 0s - loss: 0.2227 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 55/200
4/4 - 0s - loss: 0.2226 - accuracy: 0.3333 - val_loss: 0.2225 -
val_accuracy: 0.3333
Epoch 56/200
4/4 - 0s - loss: 0.2225 - accuracy: 0.3333 - val_loss: 0.2224 -
val_accuracy: 0.3333
Epoch 57/200
4/4 - 0s - loss: 0.2224 - accuracy: 0.3333 - val_loss: 0.2223 -
val_accuracy: 0.3333
Epoch 58/200
4/4 - 0s - loss: 0.2223 - accuracy: 0.3333 - val_loss: 0.2222 -
val_accuracy: 0.3333
Epoch 59/200
4/4 - 0s - loss: 0.2222 - accuracy: 0.3333 - val_loss: 0.2221 -
val_accuracy: 0.3333
Epoch 60/200
4/4 - 0s - loss: 0.2221 - accuracy: 0.3333 - val_loss: 0.2220 -
val_accuracy: 0.3333
Epoch 61/200
4/4 - 0s - loss: 0.2220 - accuracy: 0.3333 - val_loss: 0.2219 -
val_accuracy: 0.3333
Epoch 62/200
4/4 - 0s - loss: 0.2219 - accuracy: 0.3333 - val_loss: 0.2219 -
val_accuracy: 0.3333
Epoch 63/200
4/4 - 0s - loss: 0.2219 - accuracy: 0.3333 - val_loss: 0.2218 -
val_accuracy: 0.3333
Epoch 64/200
4/4 - 0s - loss: 0.2218 - accuracy: 0.3333 - val_loss: 0.2217 -
val_accuracy: 0.3333
Epoch 65/200
4/4 - 0s - loss: 0.2217 - accuracy: 0.3333 - val_loss: 0.2216 -
val_accuracy: 0.3333
Epoch 66/200
```

```
4/4 - 0s - loss: 0.2216 - accuracy: 0.3333 - val_loss: 0.2216 -
val_accuracy: 0.3333
Epoch 67/200
4/4 - 0s - loss: 0.2216 - accuracy: 0.3333 - val_loss: 0.2215 -
val_accuracy: 0.3333
Epoch 68/200
4/4 - 0s - loss: 0.2215 - accuracy: 0.3333 - val_loss: 0.2214 -
val_accuracy: 0.3333
Epoch 69/200
4/4 - 0s - loss: 0.2215 - accuracy: 0.3417 - val_loss: 0.2214 -
val_accuracy: 0.3333
Epoch 70/200
4/4 - 0s - loss: 0.2214 - accuracy: 0.3333 - val_loss: 0.2213 -
val_accuracy: 0.3417
Epoch 71/200
4/4 - 0s - loss: 0.2214 - accuracy: 0.3333 - val_loss: 0.2213 -
val_accuracy: 0.3417
Epoch 72/200
4/4 - 0s - loss: 0.2213 - accuracy: 0.3417 - val_loss: 0.2212 -
val_accuracy: 0.3417
Epoch 73/200
4/4 - 0s - loss: 0.2212 - accuracy: 0.3500 - val_loss: 0.2212 -
val_accuracy: 0.3417
Epoch 74/200
4/4 - 0s - loss: 0.2212 - accuracy: 0.3417 - val_loss: 0.2211 -
val_accuracy: 0.3417
Epoch 75/200
4/4 - 0s - loss: 0.2211 - accuracy: 0.3417 - val_loss: 0.2211 -
val_accuracy: 0.3417
Epoch 76/200
4/4 - 0s - loss: 0.2211 - accuracy: 0.3500 - val_loss: 0.2210 -
val_accuracy: 0.3500
Epoch 77/200
4/4 - 0s - loss: 0.2210 - accuracy: 0.3500 - val_loss: 0.2210 -
val_accuracy: 0.3500

Epoch 78/200
4/4 - 0s - loss: 0.2210 - accuracy: 0.3583 - val_loss: 0.2209 -
val_accuracy: 0.3583
Epoch 79/200
4/4 - 0s - loss: 0.2209 - accuracy: 0.3500 - val_loss: 0.2209 -
val_accuracy: 0.3583
Epoch 80/200
4/4 - 0s - loss: 0.2209 - accuracy: 0.3583 - val_loss: 0.2208 -
val_accuracy: 0.3583
Epoch 81/200
4/4 - 0s - loss: 0.2209 - accuracy: 0.3667 - val_loss: 0.2208 -
val_accuracy: 0.3500
Epoch 82/200
4/4 - 0s - loss: 0.2208 - accuracy: 0.3583 - val_loss: 0.2208 -
```

```
val_accuracy: 0.3667
Epoch 83/200
4/4 - 0s - loss: 0.2208 - accuracy: 0.3667 - val_loss: 0.2207 -
val_accuracy: 0.3667
Epoch 84/200
4/4 - 0s - loss: 0.2207 - accuracy: 0.3667 - val_loss: 0.2207 -
val_accuracy: 0.3667
Epoch 85/200
4/4 - 0s - loss: 0.2207 - accuracy: 0.3667 - val_loss: 0.2206 -
val_accuracy: 0.3667
Epoch 86/200
4/4 - 0s - loss: 0.2207 - accuracy: 0.3667 - val_loss: 0.2206 -
val_accuracy: 0.3667
Epoch 87/200
4/4 - 0s - loss: 0.2206 - accuracy: 0.3667 - val_loss: 0.2206 -
val_accuracy: 0.3667
Epoch 88/200
4/4 - 0s - loss: 0.2206 - accuracy: 0.3417 - val_loss: 0.2205 -
val_accuracy: 0.3667
Epoch 89/200
4/4 - 0s - loss: 0.2206 - accuracy: 0.3583 - val_loss: 0.2205 -
val_accuracy: 0.3667
Epoch 90/200
4/4 - 0s - loss: 0.2205 - accuracy: 0.3833 - val_loss: 0.2204 -
val_accuracy: 0.3750
Epoch 91/200
4/4 - 0s - loss: 0.2205 - accuracy: 0.3750 - val_loss: 0.2204 -
val_accuracy: 0.3750
Epoch 92/200
4/4 - 0s - loss: 0.2204 - accuracy: 0.3750 - val_loss: 0.2204 -
val_accuracy: 0.3750
Epoch 93/200
4/4 - 0s - loss: 0.2204 - accuracy: 0.3750 - val_loss: 0.2203 -
val_accuracy: 0.3750
Epoch 94/200
4/4 - 0s - loss: 0.2204 - accuracy: 0.3750 - val_loss: 0.2203 -
val_accuracy: 0.3750
Epoch 95/200
4/4 - 0s - loss: 0.2203 - accuracy: 0.3750 - val_loss: 0.2203 -
val_accuracy: 0.3750
Epoch 96/200
4/4 - 0s - loss: 0.2203 - accuracy: 0.3667 - val_loss: 0.2202 -
val_accuracy: 0.3750
Epoch 97/200
4/4 - 0s - loss: 0.2202 - accuracy: 0.3750 - val_loss: 0.2202 -
val_accuracy: 0.3833
Epoch 98/200
4/4 - 0s - loss: 0.2202 - accuracy: 0.3833 - val_loss: 0.2202 -
val_accuracy: 0.3833
Epoch 99/200
```

```
4/4 - 0s - loss: 0.2202 - accuracy: 0.3833 - val_loss: 0.2201 -
val_accuracy: 0.3833
Epoch 100/200
4/4 - 0s - loss: 0.2202 - accuracy: 0.3833 - val_loss: 0.2201 -
val_accuracy: 0.3917
Epoch 101/200
4/4 - 0s - loss: 0.2201 - accuracy: 0.4083 - val_loss: 0.2201 -
val_accuracy: 0.3917
Epoch 102/200
4/4 - 0s - loss: 0.2201 - accuracy: 0.3917 - val_loss: 0.2200 -
val_accuracy: 0.3917
Epoch 103/200
4/4 - 0s - loss: 0.2200 - accuracy: 0.4083 - val_loss: 0.2200 -
val_accuracy: 0.4000
Epoch 104/200
4/4 - 0s - loss: 0.2200 - accuracy: 0.3917 - val_loss: 0.2200 -
val_accuracy: 0.4083
Epoch 105/200
4/4 - 0s - loss: 0.2200 - accuracy: 0.4417 - val_loss: 0.2199 -
val_accuracy: 0.4000
Epoch 106/200
4/4 - 0s - loss: 0.2200 - accuracy: 0.4083 - val_loss: 0.2199 -
val_accuracy: 0.3917
Epoch 107/200
4/4 - 0s - loss: 0.2199 - accuracy: 0.3833 - val_loss: 0.2199 -
val_accuracy: 0.4083
Epoch 108/200
4/4 - 0s - loss: 0.2199 - accuracy: 0.4167 - val_loss: 0.2198 -
val_accuracy: 0.4083
Epoch 109/200
4/4 - 0s - loss: 0.2198 - accuracy: 0.4333 - val_loss: 0.2198 -
val_accuracy: 0.4083
Epoch 110/200
4/4 - 0s - loss: 0.2198 - accuracy: 0.4000 - val_loss: 0.2198 -
val_accuracy: 0.4083
Epoch 111/200
4/4 - 0s - loss: 0.2198 - accuracy: 0.4083 - val_loss: 0.2197 -
val_accuracy: 0.4250
Epoch 112/200
4/4 - 0s - loss: 0.2197 - accuracy: 0.4250 - val_loss: 0.2197 -
val_accuracy: 0.4333
Epoch 113/200
4/4 - 0s - loss: 0.2197 - accuracy: 0.3917 - val_loss: 0.2197 -
val_accuracy: 0.4583
Epoch 114/200
4/4 - 0s - loss: 0.2197 - accuracy: 0.4500 - val_loss: 0.2196 -
val_accuracy: 0.4417
Epoch 115/200
4/4 - 0s - loss: 0.2197 - accuracy: 0.4500 - val_loss: 0.2196 -
val_accuracy: 0.4417
```

Epoch 116/200
4/4 - 0s - loss: 0.2196 - accuracy: 0.4667 - val_loss: 0.2196 - val_accuracy: 0.4417
Epoch 117/200
4/4 - 0s - loss: 0.2196 - accuracy: 0.4167 - val_loss: 0.2195 - val_accuracy: 0.4500
Epoch 118/200
4/4 - 0s - loss: 0.2195 - accuracy: 0.4167 - val_loss: 0.2195 - val_accuracy: 0.4500
Epoch 119/200
4/4 - 0s - loss: 0.2195 - accuracy: 0.4583 - val_loss: 0.2195 - val_accuracy: 0.4417
Epoch 120/200
4/4 - 0s - loss: 0.2195 - accuracy: 0.4167 - val_loss: 0.2194 - val_accuracy: 0.4667
Epoch 121/200
4/4 - 0s - loss: 0.2195 - accuracy: 0.5083 - val_loss: 0.2194 - val_accuracy: 0.4417
Epoch 122/200
4/4 - 0s - loss: 0.2194 - accuracy: 0.4417 - val_loss: 0.2194 - val_accuracy: 0.4417
Epoch 123/200
4/4 - 0s - loss: 0.2194 - accuracy: 0.4417 - val_loss: 0.2193 - val_accuracy: 0.4417
Epoch 124/200
4/4 - 0s - loss: 0.2194 - accuracy: 0.4333 - val_loss: 0.2193 - val_accuracy: 0.4500
Epoch 125/200
4/4 - 0s - loss: 0.2193 - accuracy: 0.4167 - val_loss: 0.2193 - val_accuracy: 0.4917
Epoch 126/200
4/4 - 0s - loss: 0.2193 - accuracy: 0.5083 - val_loss: 0.2192 - val_accuracy: 0.4917
Epoch 127/200
4/4 - 0s - loss: 0.2193 - accuracy: 0.5250 - val_loss: 0.2192 - val_accuracy: 0.4583
Epoch 128/200
4/4 - 0s - loss: 0.2192 - accuracy: 0.4750 - val_loss: 0.2192 - val_accuracy: 0.4583
Epoch 129/200
4/4 - 0s - loss: 0.2192 - accuracy: 0.5167 - val_loss: 0.2191 - val_accuracy: 0.4500
Epoch 130/200
4/4 - 0s - loss: 0.2192 - accuracy: 0.4583 - val_loss: 0.2191 - val_accuracy: 0.4500
Epoch 131/200
4/4 - 0s - loss: 0.2191 - accuracy: 0.4500 - val_loss: 0.2191 - val_accuracy: 0.4500
Epoch 132/200
4/4 - 0s - loss: 0.2191 - accuracy: 0.4500 - val_loss: 0.2191 -

```
val_accuracy: 0.4250
Epoch 133/200
4/4 - 0s - loss: 0.2191 - accuracy: 0.4333 - val_loss: 0.2190 -
val_accuracy: 0.4250
Epoch 134/200
4/4 - 0s - loss: 0.2190 - accuracy: 0.4333 - val_loss: 0.2190 -
val_accuracy: 0.4250
Epoch 135/200
4/4 - 0s - loss: 0.2190 - accuracy: 0.4000 - val_loss: 0.2190 -
val_accuracy: 0.4250
Epoch 136/200
4/4 - 0s - loss: 0.2190 - accuracy: 0.4083 - val_loss: 0.2189 -
val_accuracy: 0.4250
Epoch 137/200
4/4 - 0s - loss: 0.2189 - accuracy: 0.4250 - val_loss: 0.2189 -
val_accuracy: 0.4333
Epoch 138/200
4/4 - 0s - loss: 0.2189 - accuracy: 0.4500 - val_loss: 0.2189 -
val_accuracy: 0.4417
Epoch 139/200
4/4 - 0s - loss: 0.2189 - accuracy: 0.4250 - val_loss: 0.2188 -
val_accuracy: 0.4417
Epoch 140/200
4/4 - 0s - loss: 0.2188 - accuracy: 0.4750 - val_loss: 0.2188 -
val_accuracy: 0.4417
Epoch 141/200
4/4 - 0s - loss: 0.2188 - accuracy: 0.4417 - val_loss: 0.2187 -
val_accuracy: 0.4417
Epoch 142/200
4/4 - 0s - loss: 0.2188 - accuracy: 0.4083 - val_loss: 0.2187 -
val_accuracy: 0.4667
Epoch 143/200
4/4 - 0s - loss: 0.2187 - accuracy: 0.4917 - val_loss: 0.2187 -
val_accuracy: 0.4917
Epoch 144/200
4/4 - 0s - loss: 0.2187 - accuracy: 0.5000 - val_loss: 0.2186 -
val_accuracy: 0.4750
Epoch 145/200
4/4 - 0s - loss: 0.2187 - accuracy: 0.4833 - val_loss: 0.2186 -
val_accuracy: 0.4667
Epoch 146/200
4/4 - 0s - loss: 0.2186 - accuracy: 0.5000 - val_loss: 0.2186 -
val_accuracy: 0.5000
Epoch 147/200
4/4 - 0s - loss: 0.2186 - accuracy: 0.4833 - val_loss: 0.2185 -
val_accuracy: 0.5083
Epoch 148/200
4/4 - 0s - loss: 0.2186 - accuracy: 0.4833 - val_loss: 0.2185 -
val_accuracy: 0.5083
Epoch 149/200
```

```
4/4 - 0s - loss: 0.2185 - accuracy: 0.5083 - val_loss: 0.2185 -
val_accuracy: 0.5083
Epoch 150/200
4/4 - 0s - loss: 0.2185 - accuracy: 0.5417 - val_loss: 0.2184 -
val_accuracy: 0.5083
Epoch 151/200
4/4 - 0s - loss: 0.2185 - accuracy: 0.4833 - val_loss: 0.2184 -
val_accuracy: 0.5083
Epoch 152/200
4/4 - 0s - loss: 0.2184 - accuracy: 0.4750 - val_loss: 0.2184 -
val_accuracy: 0.5083
Epoch 153/200
4/4 - 0s - loss: 0.2184 - accuracy: 0.5000 - val_loss: 0.2183 -
val_accuracy: 0.5250
Epoch 154/200
4/4 - 0s - loss: 0.2183 - accuracy: 0.5500 - val_loss: 0.2183 -
val_accuracy: 0.5250
Epoch 155/200
4/4 - 0s - loss: 0.2183 - accuracy: 0.5250 - val_loss: 0.2183 -
val_accuracy: 0.5250
Epoch 156/200
4/4 - 0s - loss: 0.2183 - accuracy: 0.5667 - val_loss: 0.2182 -
val_accuracy: 0.5000
Epoch 157/200
4/4 - 0s - loss: 0.2182 - accuracy: 0.4917 - val_loss: 0.2182 -
val_accuracy: 0.5000
Epoch 158/200
4/4 - 0s - loss: 0.2182 - accuracy: 0.4917 - val_loss: 0.2182 -
val_accuracy: 0.5000
Epoch 159/200
4/4 - 0s - loss: 0.2182 - accuracy: 0.4833 - val_loss: 0.2181 -
val_accuracy: 0.5000
Epoch 160/200
4/4 - 0s - loss: 0.2181 - accuracy: 0.5083 - val_loss: 0.2181 -
val_accuracy: 0.5083

Epoch 161/200
4/4 - 0s - loss: 0.2181 - accuracy: 0.5250 - val_loss: 0.2180 -
val_accuracy: 0.5000
Epoch 162/200
4/4 - 0s - loss: 0.2181 - accuracy: 0.4750 - val_loss: 0.2180 -
val_accuracy: 0.5000
Epoch 163/200
4/4 - 0s - loss: 0.2180 - accuracy: 0.4917 - val_loss: 0.2180 -
val_accuracy: 0.5000
Epoch 164/200
4/4 - 0s - loss: 0.2180 - accuracy: 0.5333 - val_loss: 0.2179 -
val_accuracy: 0.4833
Epoch 165/200
4/4 - 0s - loss: 0.2179 - accuracy: 0.4750 - val_loss: 0.2179 -
```

```
val_accuracy: 0.5000
Epoch 166/200
4/4 - 0s - loss: 0.2179 - accuracy: 0.5250 - val_loss: 0.2179 -
val_accuracy: 0.4833
Epoch 167/200
4/4 - 0s - loss: 0.2179 - accuracy: 0.4583 - val_loss: 0.2178 -
val_accuracy: 0.5083
Epoch 168/200
4/4 - 0s - loss: 0.2178 - accuracy: 0.5083 - val_loss: 0.2178 -
val_accuracy: 0.5083
Epoch 169/200
4/4 - 0s - loss: 0.2179 - accuracy: 0.4917 - val_loss: 0.2177 -
val_accuracy: 0.5083
Epoch 170/200
4/4 - 0s - loss: 0.2178 - accuracy: 0.4583 - val_loss: 0.2177 -
val_accuracy: 0.5250
Epoch 171/200
4/4 - 0s - loss: 0.2177 - accuracy: 0.5250 - val_loss: 0.2177 -
val_accuracy: 0.5250
Epoch 172/200
4/4 - 0s - loss: 0.2177 - accuracy: 0.5500 - val_loss: 0.2176 -
val_accuracy: 0.5083
Epoch 173/200
4/4 - 0s - loss: 0.2176 - accuracy: 0.5167 - val_loss: 0.2176 -
val_accuracy: 0.5000
Epoch 174/200
4/4 - 0s - loss: 0.2176 - accuracy: 0.5417 - val_loss: 0.2175 -
val_accuracy: 0.5000
Epoch 175/200
4/4 - 0s - loss: 0.2176 - accuracy: 0.5333 - val_loss: 0.2175 -
val_accuracy: 0.4833
Epoch 176/200
4/4 - 0s - loss: 0.2175 - accuracy: 0.4583 - val_loss: 0.2175 -
val_accuracy: 0.4917
Epoch 177/200
4/4 - 0s - loss: 0.2175 - accuracy: 0.5333 - val_loss: 0.2174 -
val_accuracy: 0.4833
Epoch 178/200
4/4 - 0s - loss: 0.2174 - accuracy: 0.4750 - val_loss: 0.2174 -
val_accuracy: 0.4833
Epoch 179/200
4/4 - 0s - loss: 0.2174 - accuracy: 0.4750 - val_loss: 0.2173 -
val_accuracy: 0.4917
Epoch 180/200
4/4 - 0s - loss: 0.2173 - accuracy: 0.4833 - val_loss: 0.2173 -
val_accuracy: 0.4917
Epoch 181/200
4/4 - 0s - loss: 0.2173 - accuracy: 0.4917 - val_loss: 0.2173 -
val_accuracy: 0.4917
Epoch 182/200
```

```
4/4 - 0s - loss: 0.2173 - accuracy: 0.4750 - val_loss: 0.2172 -
val_accuracy: 0.4917
Epoch 183/200
4/4 - 0s - loss: 0.2172 - accuracy: 0.4917 - val_loss: 0.2172 -
val_accuracy: 0.5083
Epoch 184/200
4/4 - 0s - loss: 0.2172 - accuracy: 0.5000 - val_loss: 0.2171 -
val_accuracy: 0.5167
Epoch 185/200
4/4 - 0s - loss: 0.2172 - accuracy: 0.5167 - val_loss: 0.2171 -
val_accuracy: 0.5333
Epoch 186/200
4/4 - 0s - loss: 0.2171 - accuracy: 0.5417 - val_loss: 0.2171 -
val_accuracy: 0.5417
Epoch 187/200
4/4 - 0s - loss: 0.2171 - accuracy: 0.5667 - val_loss: 0.2170 -
val_accuracy: 0.5417
Epoch 188/200
4/4 - 0s - loss: 0.2170 - accuracy: 0.5417 - val_loss: 0.2170 -
val_accuracy: 0.5333
Epoch 189/200
4/4 - 0s - loss: 0.2170 - accuracy: 0.5167 - val_loss: 0.2169 -
val_accuracy: 0.5500
Epoch 190/200
4/4 - 0s - loss: 0.2169 - accuracy: 0.5667 - val_loss: 0.2169 -
val_accuracy: 0.5417
Epoch 191/200
4/4 - 0s - loss: 0.2169 - accuracy: 0.5500 - val_loss: 0.2168 -
val_accuracy: 0.5333
Epoch 192/200
4/4 - 0s - loss: 0.2169 - accuracy: 0.5333 - val_loss: 0.2168 -
val_accuracy: 0.5333
Epoch 193/200
4/4 - 0s - loss: 0.2168 - accuracy: 0.5333 - val_loss: 0.2167 -
val_accuracy: 0.5333
Epoch 194/200
4/4 - 0s - loss: 0.2168 - accuracy: 0.5500 - val_loss: 0.2167 -
val_accuracy: 0.5333
Epoch 195/200
4/4 - 0s - loss: 0.2167 - accuracy: 0.5333 - val_loss: 0.2167 -
val_accuracy: 0.5167
Epoch 196/200
4/4 - 0s - loss: 0.2166 - accuracy: 0.5083 - val_loss: 0.2166 -
val_accuracy: 0.5167
Epoch 197/200
4/4 - 0s - loss: 0.2166 - accuracy: 0.5167 - val_loss: 0.2166 -
val_accuracy: 0.5333
Epoch 198/200
4/4 - 0s - loss: 0.2166 - accuracy: 0.5250 - val_loss: 0.2165 -
val_accuracy: 0.5167
```

```
Epoch 199/200
4/4 - 0s - loss: 0.2166 - accuracy: 0.5000 - val_loss: 0.2165 -
val_accuracy: 0.5250
Epoch 200/200
4/4 - 0s - loss: 0.2165 - accuracy: 0.5167 - val_loss: 0.2164 -
val_accuracy: 0.5167
Activation: sigmoid LR: 0.1 Itertions: 200 || Train loss:
0.21643303334712982
Activation: sigmoid LR: 0.1 Itertions: 200 || Train Accuracy:
0.5166666507720947
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.0833s). Check your callbacks.
4/4 - 0s - loss: 0.2164 - accuracy: 0.5250 - val_loss: 0.2163 -
val_accuracy: 0.5000
Epoch 2/200
4/4 - 0s - loss: 0.2164 - accuracy: 0.5083 - val_loss: 0.2163 -
val_accuracy: 0.5000
Epoch 3/200
4/4 - 0s - loss: 0.2163 - accuracy: 0.5167 - val_loss: 0.2162 -
val_accuracy: 0.5000
Epoch 4/200
4/4 - 0s - loss: 0.2163 - accuracy: 0.5167 - val_loss: 0.2162 -
val_accuracy: 0.5000
Epoch 5/200
4/4 - 0s - loss: 0.2163 - accuracy: 0.4917 - val_loss: 0.2161 -
val_accuracy: 0.5000
Epoch 6/200
4/4 - 0s - loss: 0.2162 - accuracy: 0.5417 - val_loss: 0.2161 -
val_accuracy: 0.5000
Epoch 7/200
4/4 - 0s - loss: 0.2162 - accuracy: 0.5000 - val_loss: 0.2160 -
val_accuracy: 0.5000
Epoch 8/200
4/4 - 0s - loss: 0.2161 - accuracy: 0.5667 - val_loss: 0.2160 -
val_accuracy: 0.5000
Epoch 9/200
4/4 - 0s - loss: 0.2161 - accuracy: 0.5083 - val_loss: 0.2159 -
val_accuracy: 0.5000
Epoch 10/200
4/4 - 0s - loss: 0.2160 - accuracy: 0.5167 - val_loss: 0.2159 -
val_accuracy: 0.5000
Epoch 11/200
4/4 - 0s - loss: 0.2160 - accuracy: 0.5500 - val_loss: 0.2158 -
val_accuracy: 0.5000
Epoch 12/200
4/4 - 0s - loss: 0.2159 - accuracy: 0.5083 - val_loss: 0.2158 -
val_accuracy: 0.5000
Epoch 13/200
```

```
4/4 - 0s - loss: 0.2159 - accuracy: 0.5000 - val_loss: 0.2157 -
val_accuracy: 0.5333
Epoch 14/200
4/4 - 0s - loss: 0.2158 - accuracy: 0.5500 - val_loss: 0.2157 -
val_accuracy: 0.5000
Epoch 15/200
4/4 - 0s - loss: 0.2158 - accuracy: 0.5250 - val_loss: 0.2156 -
val_accuracy: 0.5000
Epoch 16/200
4/4 - 0s - loss: 0.2157 - accuracy: 0.4917 - val_loss: 0.2156 -
val_accuracy: 0.5333
Epoch 17/200
4/4 - 0s - loss: 0.2157 - accuracy: 0.5250 - val_loss: 0.2155 -
val_accuracy: 0.5000
Epoch 18/200
4/4 - 0s - loss: 0.2156 - accuracy: 0.5250 - val_loss: 0.2155 -
val_accuracy: 0.5000
Epoch 19/200
4/4 - 0s - loss: 0.2156 - accuracy: 0.5250 - val_loss: 0.2154 -
val_accuracy: 0.5000
Epoch 20/200
4/4 - 0s - loss: 0.2155 - accuracy: 0.4917 - val_loss: 0.2154 -
val_accuracy: 0.5000
Epoch 21/200
4/4 - 0s - loss: 0.2155 - accuracy: 0.5083 - val_loss: 0.2153 -
val_accuracy: 0.5000
Epoch 22/200
4/4 - 0s - loss: 0.2155 - accuracy: 0.4833 - val_loss: 0.2153 -
val_accuracy: 0.5000
Epoch 23/200
4/4 - 0s - loss: 0.2154 - accuracy: 0.4917 - val_loss: 0.2152 -
val_accuracy: 0.5000
Epoch 24/200
4/4 - 0s - loss: 0.2153 - accuracy: 0.4833 - val_loss: 0.2152 -
val_accuracy: 0.5333
Epoch 25/200
4/4 - 0s - loss: 0.2152 - accuracy: 0.5083 - val_loss: 0.2151 -
val_accuracy: 0.5333
Epoch 26/200
4/4 - 0s - loss: 0.2152 - accuracy: 0.5167 - val_loss: 0.2151 -
val_accuracy: 0.5333
Epoch 27/200
4/4 - 0s - loss: 0.2151 - accuracy: 0.5083 - val_loss: 0.2150 -
val_accuracy: 0.5333
Epoch 28/200
4/4 - 0s - loss: 0.2151 - accuracy: 0.5083 - val_loss: 0.2149 -
val_accuracy: 0.5000
Epoch 29/200
4/4 - 0s - loss: 0.2151 - accuracy: 0.5083 - val_loss: 0.2149 -
val_accuracy: 0.5000
```

```
Epoch 30/200
4/4 - 0s - loss: 0.2150 - accuracy: 0.5000 - val_loss: 0.2148 -
val_accuracy: 0.5333
Epoch 31/200
4/4 - 0s - loss: 0.2150 - accuracy: 0.5250 - val_loss: 0.2148 -
val_accuracy: 0.5333
Epoch 32/200
4/4 - 0s - loss: 0.2149 - accuracy: 0.5167 - val_loss: 0.2147 -
val_accuracy: 0.5333
Epoch 33/200
4/4 - 0s - loss: 0.2148 - accuracy: 0.5000 - val_loss: 0.2147 -
val_accuracy: 0.5333
Epoch 34/200
4/4 - 0s - loss: 0.2148 - accuracy: 0.4833 - val_loss: 0.2146 -
val_accuracy: 0.5333
Epoch 35/200
4/4 - 0s - loss: 0.2147 - accuracy: 0.4917 - val_loss: 0.2146 -
val_accuracy: 0.5333
Epoch 36/200
4/4 - 0s - loss: 0.2147 - accuracy: 0.5000 - val_loss: 0.2145 -
val_accuracy: 0.5333
Epoch 37/200
4/4 - 0s - loss: 0.2146 - accuracy: 0.5000 - val_loss: 0.2144 -
val_accuracy: 0.5333
Epoch 38/200
4/4 - 0s - loss: 0.2145 - accuracy: 0.5083 - val_loss: 0.2144 -
val_accuracy: 0.5333
Epoch 39/200
4/4 - 0s - loss: 0.2145 - accuracy: 0.5000 - val_loss: 0.2143 -
val_accuracy: 0.5333
Epoch 40/200
4/4 - 0s - loss: 0.2144 - accuracy: 0.5083 - val_loss: 0.2142 -
val_accuracy: 0.5333

Epoch 41/200
4/4 - 0s - loss: 0.2144 - accuracy: 0.5167 - val_loss: 0.2142 -
val_accuracy: 0.5333
Epoch 42/200
4/4 - 0s - loss: 0.2143 - accuracy: 0.5000 - val_loss: 0.2141 -
val_accuracy: 0.5333
Epoch 43/200
4/4 - 0s - loss: 0.2142 - accuracy: 0.5333 - val_loss: 0.2141 -
val_accuracy: 0.5333
Epoch 44/200
4/4 - 0s - loss: 0.2142 - accuracy: 0.5250 - val_loss: 0.2140 -
val_accuracy: 0.5333
Epoch 45/200
4/4 - 0s - loss: 0.2141 - accuracy: 0.5333 - val_loss: 0.2140 -
val_accuracy: 0.5333
Epoch 46/200
```

```
4/4 - 0s - loss: 0.2141 - accuracy: 0.5250 - val_loss: 0.2139 -
val_accuracy: 0.5333
Epoch 47/200
4/4 - 0s - loss: 0.2140 - accuracy: 0.5083 - val_loss: 0.2138 -
val_accuracy: 0.5333
Epoch 48/200
4/4 - 0s - loss: 0.2139 - accuracy: 0.5000 - val_loss: 0.2138 -
val_accuracy: 0.5333
Epoch 49/200
4/4 - 0s - loss: 0.2138 - accuracy: 0.5083 - val_loss: 0.2137 -
val_accuracy: 0.5333
Epoch 50/200
4/4 - 0s - loss: 0.2138 - accuracy: 0.5000 - val_loss: 0.2136 -
val_accuracy: 0.5333
Epoch 51/200
4/4 - 0s - loss: 0.2137 - accuracy: 0.5000 - val_loss: 0.2136 -
val_accuracy: 0.5333
Epoch 52/200
4/4 - 0s - loss: 0.2137 - accuracy: 0.5083 - val_loss: 0.2135 -
val_accuracy: 0.5333
Epoch 53/200
4/4 - 0s - loss: 0.2137 - accuracy: 0.5167 - val_loss: 0.2134 -
val_accuracy: 0.5333
Epoch 54/200
4/4 - 0s - loss: 0.2135 - accuracy: 0.5167 - val_loss: 0.2134 -
val_accuracy: 0.5333
Epoch 55/200
4/4 - 0s - loss: 0.2135 - accuracy: 0.5000 - val_loss: 0.2133 -
val_accuracy: 0.5333
Epoch 56/200
4/4 - 0s - loss: 0.2134 - accuracy: 0.4917 - val_loss: 0.2132 -
val_accuracy: 0.5333
Epoch 57/200
4/4 - 0s - loss: 0.2134 - accuracy: 0.5083 - val_loss: 0.2131 -
val_accuracy: 0.5333
Epoch 58/200
4/4 - 0s - loss: 0.2133 - accuracy: 0.5000 - val_loss: 0.2131 -
val_accuracy: 0.5333
Epoch 59/200
4/4 - 0s - loss: 0.2132 - accuracy: 0.5167 - val_loss: 0.2130 -
val_accuracy: 0.5333
Epoch 60/200
4/4 - 0s - loss: 0.2132 - accuracy: 0.5000 - val_loss: 0.2129 -
val_accuracy: 0.5667
Epoch 61/200
4/4 - 0s - loss: 0.2131 - accuracy: 0.5083 - val_loss: 0.2129 -
val_accuracy: 0.5667
Epoch 62/200
4/4 - 0s - loss: 0.2130 - accuracy: 0.5000 - val_loss: 0.2128 -
val_accuracy: 0.5667
```

```
Epoch 63/200
4/4 - 0s - loss: 0.2130 - accuracy: 0.4917 - val_loss: 0.2127 -
val_accuracy: 0.5667
Epoch 64/200
4/4 - 0s - loss: 0.2129 - accuracy: 0.5167 - val_loss: 0.2126 -
val_accuracy: 0.5667
Epoch 65/200
4/4 - 0s - loss: 0.2128 - accuracy: 0.5000 - val_loss: 0.2126 -
val_accuracy: 0.5667
Epoch 66/200
4/4 - 0s - loss: 0.2128 - accuracy: 0.4917 - val_loss: 0.2125 -
val_accuracy: 0.5667
Epoch 67/200
4/4 - 0s - loss: 0.2127 - accuracy: 0.5000 - val_loss: 0.2124 -
val_accuracy: 0.5333
Epoch 68/200
4/4 - 0s - loss: 0.2126 - accuracy: 0.4917 - val_loss: 0.2124 -
val_accuracy: 0.5667
Epoch 69/200
4/4 - 0s - loss: 0.2125 - accuracy: 0.5083 - val_loss: 0.2123 -
val_accuracy: 0.5667
Epoch 70/200
4/4 - 0s - loss: 0.2125 - accuracy: 0.5167 - val_loss: 0.2122 -
val_accuracy: 0.5333
Epoch 71/200
4/4 - 0s - loss: 0.2124 - accuracy: 0.5250 - val_loss: 0.2121 -
val_accuracy: 0.5333
Epoch 72/200
4/4 - 0s - loss: 0.2124 - accuracy: 0.5083 - val_loss: 0.2120 -
val_accuracy: 0.5667
Epoch 73/200
4/4 - 0s - loss: 0.2123 - accuracy: 0.5333 - val_loss: 0.2120 -
val_accuracy: 0.5667
Epoch 74/200
4/4 - 0s - loss: 0.2122 - accuracy: 0.5083 - val_loss: 0.2119 -
val_accuracy: 0.5667
Epoch 75/200
4/4 - 0s - loss: 0.2121 - accuracy: 0.5333 - val_loss: 0.2118 -
val_accuracy: 0.5667
Epoch 76/200
4/4 - 0s - loss: 0.2120 - accuracy: 0.5250 - val_loss: 0.2117 -
val_accuracy: 0.5667
Epoch 77/200
4/4 - 0s - loss: 0.2120 - accuracy: 0.5250 - val_loss: 0.2116 -
val_accuracy: 0.5667
Epoch 78/200
4/4 - 0s - loss: 0.2119 - accuracy: 0.5167 - val_loss: 0.2116 -
val_accuracy: 0.5667
Epoch 79/200
4/4 - 0s - loss: 0.2118 - accuracy: 0.5083 - val_loss: 0.2115 -
```

```
val_accuracy: 0.5667
Epoch 80/200
4/4 - 0s - loss: 0.2117 - accuracy: 0.5000 - val_loss: 0.2114 -
val_accuracy: 0.5333
Epoch 81/200
4/4 - 0s - loss: 0.2116 - accuracy: 0.5083 - val_loss: 0.2113 -
val_accuracy: 0.5667
Epoch 82/200
4/4 - 0s - loss: 0.2116 - accuracy: 0.5167 - val_loss: 0.2113 -
val_accuracy: 0.5667
Epoch 83/200
4/4 - 0s - loss: 0.2115 - accuracy: 0.5083 - val_loss: 0.2112 -
val_accuracy: 0.5667
Epoch 84/200
4/4 - 0s - loss: 0.2114 - accuracy: 0.5167 - val_loss: 0.2111 -
val_accuracy: 0.5667
Epoch 85/200
4/4 - 0s - loss: 0.2114 - accuracy: 0.5000 - val_loss: 0.2110 -
val_accuracy: 0.5667
Epoch 86/200
4/4 - 0s - loss: 0.2113 - accuracy: 0.5333 - val_loss: 0.2109 -
val_accuracy: 0.5667
Epoch 87/200
4/4 - 0s - loss: 0.2112 - accuracy: 0.5250 - val_loss: 0.2109 -
val_accuracy: 0.5667
Epoch 88/200
4/4 - 0s - loss: 0.2111 - accuracy: 0.5250 - val_loss: 0.2108 -
val_accuracy: 0.5667
Epoch 89/200
4/4 - 0s - loss: 0.2110 - accuracy: 0.5333 - val_loss: 0.2107 -
val_accuracy: 0.5667
Epoch 90/200
4/4 - 0s - loss: 0.2110 - accuracy: 0.5250 - val_loss: 0.2106 -
val_accuracy: 0.5667
Epoch 91/200
4/4 - 0s - loss: 0.2109 - accuracy: 0.5250 - val_loss: 0.2105 -
val_accuracy: 0.5667
Epoch 92/200
4/4 - 0s - loss: 0.2108 - accuracy: 0.5167 - val_loss: 0.2104 -
val_accuracy: 0.5667
Epoch 93/200
4/4 - 0s - loss: 0.2108 - accuracy: 0.5083 - val_loss: 0.2104 -
val_accuracy: 0.5667
Epoch 94/200
4/4 - 0s - loss: 0.2107 - accuracy: 0.5500 - val_loss: 0.2103 -
val_accuracy: 0.5667
Epoch 95/200
4/4 - 0s - loss: 0.2106 - accuracy: 0.5250 - val_loss: 0.2102 -
val_accuracy: 0.5667
Epoch 96/200
```

```
4/4 - 0s - loss: 0.2105 - accuracy: 0.5333 - val_loss: 0.2101 -
val_accuracy: 0.5667
Epoch 97/200
4/4 - 0s - loss: 0.2104 - accuracy: 0.5417 - val_loss: 0.2100 -
val_accuracy: 0.5667
Epoch 98/200
4/4 - 0s - loss: 0.2103 - accuracy: 0.5333 - val_loss: 0.2099 -
val_accuracy: 0.5667
Epoch 99/200
4/4 - 0s - loss: 0.2102 - accuracy: 0.5250 - val_loss: 0.2098 -
val_accuracy: 0.5667
Epoch 100/200
4/4 - 0s - loss: 0.2101 - accuracy: 0.5583 - val_loss: 0.2097 -
val_accuracy: 0.5667
Epoch 101/200
4/4 - 0s - loss: 0.2101 - accuracy: 0.5250 - val_loss: 0.2097 -
val_accuracy: 0.5667
Epoch 102/200
4/4 - 0s - loss: 0.2099 - accuracy: 0.5583 - val_loss: 0.2096 -
val_accuracy: 0.5667
Epoch 103/200
4/4 - 0s - loss: 0.2099 - accuracy: 0.5333 - val_loss: 0.2095 -
val_accuracy: 0.5667
Epoch 104/200
4/4 - 0s - loss: 0.2098 - accuracy: 0.5417 - val_loss: 0.2094 -
val_accuracy: 0.5667
Epoch 105/200
4/4 - 0s - loss: 0.2097 - accuracy: 0.5500 - val_loss: 0.2093 -
val_accuracy: 0.6000
Epoch 106/200
4/4 - 0s - loss: 0.2096 - accuracy: 0.5333 - val_loss: 0.2092 -
val_accuracy: 0.6000
Epoch 107/200
4/4 - 0s - loss: 0.2095 - accuracy: 0.5583 - val_loss: 0.2091 -
val_accuracy: 0.6000
Epoch 108/200
4/4 - 0s - loss: 0.2094 - accuracy: 0.5250 - val_loss: 0.2090 -
val_accuracy: 0.6000
Epoch 109/200
4/4 - 0s - loss: 0.2093 - accuracy: 0.5250 - val_loss: 0.2089 -
val_accuracy: 0.6000
Epoch 110/200
4/4 - 0s - loss: 0.2092 - accuracy: 0.5417 - val_loss: 0.2088 -
val_accuracy: 0.6000
Epoch 111/200
4/4 - 0s - loss: 0.2092 - accuracy: 0.5250 - val_loss: 0.2087 -
val_accuracy: 0.6000
Epoch 112/200
4/4 - 0s - loss: 0.2091 - accuracy: 0.5417 - val_loss: 0.2086 -
val_accuracy: 0.6000
```

```
Epoch 113/200
4/4 - 0s - loss: 0.2090 - accuracy: 0.5667 - val_loss: 0.2085 -
val_accuracy: 0.6000
Epoch 114/200
4/4 - 0s - loss: 0.2089 - accuracy: 0.5417 - val_loss: 0.2084 -
val_accuracy: 0.6000
Epoch 115/200
4/4 - 0s - loss: 0.2087 - accuracy: 0.5500 - val_loss: 0.2083 -
val_accuracy: 0.6000
Epoch 116/200
4/4 - 0s - loss: 0.2087 - accuracy: 0.5417 - val_loss: 0.2082 -
val_accuracy: 0.6000
Epoch 117/200
4/4 - 0s - loss: 0.2086 - accuracy: 0.5500 - val_loss: 0.2081 -
val_accuracy: 0.6000
Epoch 118/200
4/4 - 0s - loss: 0.2085 - accuracy: 0.5750 - val_loss: 0.2080 -
val_accuracy: 0.6000
Epoch 119/200
4/4 - 0s - loss: 0.2084 - accuracy: 0.5583 - val_loss: 0.2079 -
val_accuracy: 0.6000
Epoch 120/200
4/4 - 0s - loss: 0.2083 - accuracy: 0.5417 - val_loss: 0.2078 -
val_accuracy: 0.6000
Epoch 121/200
4/4 - 0s - loss: 0.2082 - accuracy: 0.5500 - val_loss: 0.2077 -
val_accuracy: 0.6000
Epoch 122/200
4/4 - 0s - loss: 0.2081 - accuracy: 0.5583 - val_loss: 0.2076 -
val_accuracy: 0.6000
Epoch 123/200
4/4 - 0s - loss: 0.2080 - accuracy: 0.5500 - val_loss: 0.2075 -
val_accuracy: 0.6000
Epoch 124/200
4/4 - 0s - loss: 0.2079 - accuracy: 0.5583 - val_loss: 0.2074 -
val_accuracy: 0.6000

Epoch 125/200
4/4 - 0s - loss: 0.2078 - accuracy: 0.5583 - val_loss: 0.2073 -
val_accuracy: 0.6000
Epoch 126/200
4/4 - 0s - loss: 0.2077 - accuracy: 0.5500 - val_loss: 0.2072 -
val_accuracy: 0.6000
Epoch 127/200
4/4 - 0s - loss: 0.2076 - accuracy: 0.5667 - val_loss: 0.2071 -
val_accuracy: 0.6000
Epoch 128/200
4/4 - 0s - loss: 0.2075 - accuracy: 0.5667 - val_loss: 0.2070 -
val_accuracy: 0.6000
Epoch 129/200
```

```
4/4 - 0s - loss: 0.2074 - accuracy: 0.5417 - val_loss: 0.2069 -
val_accuracy: 0.6000
Epoch 130/200
4/4 - 0s - loss: 0.2073 - accuracy: 0.5667 - val_loss: 0.2068 -
val_accuracy: 0.6000
Epoch 131/200
4/4 - 0s - loss: 0.2072 - accuracy: 0.5667 - val_loss: 0.2067 -
val_accuracy: 0.6000
Epoch 132/200
4/4 - 0s - loss: 0.2071 - accuracy: 0.5500 - val_loss: 0.2065 -
val_accuracy: 0.6000
Epoch 133/200
4/4 - 0s - loss: 0.2070 - accuracy: 0.5583 - val_loss: 0.2064 -
val_accuracy: 0.6000
Epoch 134/200
4/4 - 0s - loss: 0.2069 - accuracy: 0.5583 - val_loss: 0.2063 -
val_accuracy: 0.6000
Epoch 135/200
4/4 - 0s - loss: 0.2067 - accuracy: 0.5750 - val_loss: 0.2062 -
val_accuracy: 0.6000
Epoch 136/200
4/4 - 0s - loss: 0.2066 - accuracy: 0.5667 - val_loss: 0.2061 -
val_accuracy: 0.6000
Epoch 137/200
4/4 - 0s - loss: 0.2065 - accuracy: 0.5833 - val_loss: 0.2060 -
val_accuracy: 0.6000
Epoch 138/200
4/4 - 0s - loss: 0.2064 - accuracy: 0.5583 - val_loss: 0.2059 -
val_accuracy: 0.6000
Epoch 139/200
4/4 - 0s - loss: 0.2063 - accuracy: 0.5583 - val_loss: 0.2058 -
val_accuracy: 0.6000
Epoch 140/200
4/4 - 0s - loss: 0.2062 - accuracy: 0.5500 - val_loss: 0.2057 -
val_accuracy: 0.6000
Epoch 141/200
4/4 - 0s - loss: 0.2061 - accuracy: 0.5750 - val_loss: 0.2055 -
val_accuracy: 0.6000
Epoch 142/200
4/4 - 0s - loss: 0.2060 - accuracy: 0.5833 - val_loss: 0.2054 -
val_accuracy: 0.6000
Epoch 143/200
4/4 - 0s - loss: 0.2059 - accuracy: 0.5667 - val_loss: 0.2053 -
val_accuracy: 0.6000
Epoch 144/200
4/4 - 0s - loss: 0.2058 - accuracy: 0.5667 - val_loss: 0.2052 -
val_accuracy: 0.6000
Epoch 145/200
4/4 - 0s - loss: 0.2056 - accuracy: 0.5750 - val_loss: 0.2051 -
val_accuracy: 0.6000
```

```
Epoch 146/200
4/4 - 0s - loss: 0.2055 - accuracy: 0.5833 - val_loss: 0.2050 -
val_accuracy: 0.6000
Epoch 147/200
4/4 - 0s - loss: 0.2054 - accuracy: 0.5667 - val_loss: 0.2049 -
val_accuracy: 0.6000
Epoch 148/200
4/4 - 0s - loss: 0.2053 - accuracy: 0.5833 - val_loss: 0.2047 -
val_accuracy: 0.6000
Epoch 149/200
4/4 - 0s - loss: 0.2052 - accuracy: 0.5583 - val_loss: 0.2046 -
val_accuracy: 0.6000
Epoch 150/200
4/4 - 0s - loss: 0.2051 - accuracy: 0.5667 - val_loss: 0.2045 -
val_accuracy: 0.6000
Epoch 151/200
4/4 - 0s - loss: 0.2049 - accuracy: 0.5917 - val_loss: 0.2044 -
val_accuracy: 0.6000
Epoch 152/200
4/4 - 0s - loss: 0.2048 - accuracy: 0.6083 - val_loss: 0.2043 -
val_accuracy: 0.6000
Epoch 153/200
4/4 - 0s - loss: 0.2047 - accuracy: 0.5833 - val_loss: 0.2041 -
val_accuracy: 0.6000
Epoch 154/200
4/4 - 0s - loss: 0.2046 - accuracy: 0.6083 - val_loss: 0.2040 -
val_accuracy: 0.6000
Epoch 155/200
4/4 - 0s - loss: 0.2045 - accuracy: 0.5750 - val_loss: 0.2039 -
val_accuracy: 0.6000
Epoch 156/200
4/4 - 0s - loss: 0.2044 - accuracy: 0.6000 - val_loss: 0.2038 -
val_accuracy: 0.6000
Epoch 157/200
4/4 - 0s - loss: 0.2042 - accuracy: 0.6000 - val_loss: 0.2037 -
val_accuracy: 0.6000
Epoch 158/200
4/4 - 0s - loss: 0.2041 - accuracy: 0.6167 - val_loss: 0.2035 -
val_accuracy: 0.6000
Epoch 159/200
4/4 - 0s - loss: 0.2040 - accuracy: 0.6250 - val_loss: 0.2034 -
val_accuracy: 0.6000
Epoch 160/200
4/4 - 0s - loss: 0.2039 - accuracy: 0.6000 - val_loss: 0.2033 -
val_accuracy: 0.6000
Epoch 161/200
4/4 - 0s - loss: 0.2037 - accuracy: 0.5833 - val_loss: 0.2031 -
val_accuracy: 0.6333
Epoch 162/200
4/4 - 0s - loss: 0.2036 - accuracy: 0.6083 - val_loss: 0.2030 -
```

```
val_accuracy: 0.6667
Epoch 163/200
4/4 - 0s - loss: 0.2035 - accuracy: 0.5833 - val_loss: 0.2029 -
val_accuracy: 0.6667
Epoch 164/200
4/4 - 0s - loss: 0.2033 - accuracy: 0.5917 - val_loss: 0.2027 -
val_accuracy: 0.6667
Epoch 165/200
4/4 - 0s - loss: 0.2032 - accuracy: 0.6000 - val_loss: 0.2026 -
val_accuracy: 0.6667
Epoch 166/200
4/4 - 0s - loss: 0.2031 - accuracy: 0.6083 - val_loss: 0.2024 -
val_accuracy: 0.6667
Epoch 167/200
4/4 - 0s - loss: 0.2029 - accuracy: 0.6000 - val_loss: 0.2023 -
val_accuracy: 0.6667
Epoch 168/200
4/4 - 0s - loss: 0.2028 - accuracy: 0.5833 - val_loss: 0.2022 -
val_accuracy: 0.6667
Epoch 169/200
4/4 - 0s - loss: 0.2027 - accuracy: 0.6000 - val_loss: 0.2020 -
val_accuracy: 0.6667
Epoch 170/200
4/4 - 0s - loss: 0.2026 - accuracy: 0.6083 - val_loss: 0.2019 -
val_accuracy: 0.6667
Epoch 171/200
4/4 - 0s - loss: 0.2025 - accuracy: 0.5833 - val_loss: 0.2017 -
val_accuracy: 0.6667
Epoch 172/200
4/4 - 0s - loss: 0.2023 - accuracy: 0.5750 - val_loss: 0.2016 -
val_accuracy: 0.6333
Epoch 173/200
4/4 - 0s - loss: 0.2021 - accuracy: 0.5917 - val_loss: 0.2014 -
val_accuracy: 0.6333
Epoch 174/200
4/4 - 0s - loss: 0.2020 - accuracy: 0.5833 - val_loss: 0.2013 -
val_accuracy: 0.6667
Epoch 175/200
4/4 - 0s - loss: 0.2019 - accuracy: 0.5750 - val_loss: 0.2012 -
val_accuracy: 0.6667
Epoch 176/200
4/4 - 0s - loss: 0.2017 - accuracy: 0.5833 - val_loss: 0.2010 -
val_accuracy: 0.6667
Epoch 177/200
4/4 - 0s - loss: 0.2016 - accuracy: 0.6000 - val_loss: 0.2009 -
val_accuracy: 0.6667
Epoch 178/200
4/4 - 0s - loss: 0.2015 - accuracy: 0.5917 - val_loss: 0.2007 -
val_accuracy: 0.6667
Epoch 179/200
```

```
4/4 - 0s - loss: 0.2013 - accuracy: 0.5833 - val_loss: 0.2006 -
val_accuracy: 0.6667
Epoch 180/200
4/4 - 0s - loss: 0.2012 - accuracy: 0.5833 - val_loss: 0.2004 -
val_accuracy: 0.6667
Epoch 181/200
4/4 - 0s - loss: 0.2010 - accuracy: 0.5917 - val_loss: 0.2003 -
val_accuracy: 0.6667
Epoch 182/200
4/4 - 0s - loss: 0.2009 - accuracy: 0.5917 - val_loss: 0.2001 -
val_accuracy: 0.6667
Epoch 183/200
4/4 - 0s - loss: 0.2007 - accuracy: 0.5917 - val_loss: 0.2000 -
val_accuracy: 0.6667
Epoch 184/200
4/4 - 0s - loss: 0.2006 - accuracy: 0.5917 - val_loss: 0.1998 -
val_accuracy: 0.6667
Epoch 185/200
4/4 - 0s - loss: 0.2004 - accuracy: 0.6000 - val_loss: 0.1997 -
val_accuracy: 0.6667
Epoch 186/200
4/4 - 0s - loss: 0.2003 - accuracy: 0.5917 - val_loss: 0.1996 -
val_accuracy: 0.6667
Epoch 187/200
4/4 - 0s - loss: 0.2002 - accuracy: 0.5917 - val_loss: 0.1994 -
val_accuracy: 0.6667
Epoch 188/200
4/4 - 0s - loss: 0.2000 - accuracy: 0.5917 - val_loss: 0.1993 -
val_accuracy: 0.6667
Epoch 189/200
4/4 - 0s - loss: 0.1999 - accuracy: 0.6083 - val_loss: 0.1991 -
val_accuracy: 0.6667
Epoch 190/200
4/4 - 0s - loss: 0.1997 - accuracy: 0.6000 - val_loss: 0.1990 -
val_accuracy: 0.6667
Epoch 191/200
4/4 - 0s - loss: 0.1996 - accuracy: 0.6083 - val_loss: 0.1988 -
val_accuracy: 0.7000
Epoch 192/200
4/4 - 0s - loss: 0.1995 - accuracy: 0.6167 - val_loss: 0.1986 -
val_accuracy: 0.7000
Epoch 193/200
4/4 - 0s - loss: 0.1993 - accuracy: 0.6083 - val_loss: 0.1985 -
val_accuracy: 0.7000
Epoch 194/200
4/4 - 0s - loss: 0.1991 - accuracy: 0.6000 - val_loss: 0.1983 -
val_accuracy: 0.6667
Epoch 195/200
4/4 - 0s - loss: 0.1990 - accuracy: 0.6250 - val_loss: 0.1982 -
val_accuracy: 0.6667
```

```
Epoch 196/200
4/4 - 0s - loss: 0.1988 - accuracy: 0.6083 - val_loss: 0.1980 -
val_accuracy: 0.6667
Epoch 197/200
4/4 - 0s - loss: 0.1987 - accuracy: 0.6167 - val_loss: 0.1978 -
val_accuracy: 0.7000
Epoch 198/200
4/4 - 0s - loss: 0.1985 - accuracy: 0.6250 - val_loss: 0.1977 -
val_accuracy: 0.7000
Epoch 199/200
4/4 - 0s - loss: 0.1983 - accuracy: 0.6250 - val_loss: 0.1975 -
val_accuracy: 0.7000
Epoch 200/200
4/4 - 0s - loss: 0.1982 - accuracy: 0.6083 - val_loss: 0.1974 -
val_accuracy: 0.7333
Activation: sigmoid LR: 0.1 Iterations: 200 || Test loss:
0.19735859334468842
Activation: sigmoid LR: 0.1 Iterations: 200 || Test Accuracy:
0.7333333492279053
========================================================================
=======
Model_tanh_LR_0.01_Iterations_100_HL_3
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.1290s). Check your callbacks.
4/4 - 0s - loss: 0.6244 - accuracy: 0.0417 - val_loss: 0.5974 -
val_accuracy: 0.0500
Epoch 2/100
4/4 - 0s - loss: 0.5826 - accuracy: 0.0833 - val_loss: 0.5546 -
val_accuracy: 0.1333
Epoch 3/100
4/4 - 0s - loss: 0.5398 - accuracy: 0.1583 - val_loss: 0.5120 -
val_accuracy: 0.1833

Epoch 4/100
4/4 - 0s - loss: 0.4976 - accuracy: 0.1833 - val_loss: 0.4710 -
val_accuracy: 0.2000
Epoch 5/100
4/4 - 0s - loss: 0.4570 - accuracy: 0.2000 - val_loss: 0.4311 -
val_accuracy: 0.2000
Epoch 6/100
4/4 - 0s - loss: 0.4180 - accuracy: 0.2000 - val_loss: 0.3941 -
val_accuracy: 0.2083
Epoch 7/100
4/4 - 0s - loss: 0.3822 - accuracy: 0.2167 - val_loss: 0.3605 -
val_accuracy: 0.2500
Epoch 8/100
4/4 - 0s - loss: 0.3499 - accuracy: 0.3167 - val_loss: 0.3307 -
val_accuracy: 0.4000
```

```
Epoch 9/100
4/4 - 0s - loss: 0.3215 - accuracy: 0.4333 - val_loss: 0.3047 -
val_accuracy: 0.4500
Epoch 10/100
4/4 - 0s - loss: 0.2967 - accuracy: 0.4667 - val_loss: 0.2823 -
val_accuracy: 0.4917
Epoch 11/100
4/4 - 0s - loss: 0.2754 - accuracy: 0.5000 - val_loss: 0.2625 -
val_accuracy: 0.4917
Epoch 12/100
4/4 - 0s - loss: 0.2567 - accuracy: 0.4917 - val_loss: 0.2461 -
val_accuracy: 0.5167
Epoch 13/100
4/4 - 0s - loss: 0.2411 - accuracy: 0.5250 - val_loss: 0.2320 -
val_accuracy: 0.5250
Epoch 14/100
4/4 - 0s - loss: 0.2278 - accuracy: 0.5417 - val_loss: 0.2201 -
val_accuracy: 0.5333
Epoch 15/100
4/4 - 0s - loss: 0.2164 - accuracy: 0.5333 - val_loss: 0.2099 -
val_accuracy: 0.5417
Epoch 16/100
4/4 - 0s - loss: 0.2069 - accuracy: 0.5417 - val_loss: 0.2014 -
val_accuracy: 0.5417
Epoch 17/100
4/4 - 0s - loss: 0.1987 - accuracy: 0.5417 - val_loss: 0.1940 -
val_accuracy: 0.5417
Epoch 18/100
4/4 - 0s - loss: 0.1917 - accuracy: 0.5417 - val_loss: 0.1876 -
val_accuracy: 0.5417
Epoch 19/100
4/4 - 0s - loss: 0.1857 - accuracy: 0.5417 - val_loss: 0.1822 -
val_accuracy: 0.5500
Epoch 20/100
4/4 - 0s - loss: 0.1806 - accuracy: 0.5500 - val_loss: 0.1774 -
val_accuracy: 0.5500
Epoch 21/100
4/4 - 0s - loss: 0.1760 - accuracy: 0.5500 - val_loss: 0.1733 -
val_accuracy: 0.5500
Epoch 22/100
4/4 - 0s - loss: 0.1721 - accuracy: 0.5500 - val_loss: 0.1697 -
val_accuracy: 0.5583
Epoch 23/100
4/4 - 0s - loss: 0.1686 - accuracy: 0.5583 - val_loss: 0.1665 -
val_accuracy: 0.5667
Epoch 24/100
4/4 - 0s - loss: 0.1656 - accuracy: 0.5750 - val_loss: 0.1637 -
val_accuracy: 0.5750
Epoch 25/100
4/4 - 0s - loss: 0.1629 - accuracy: 0.5667 - val_loss: 0.1612 -
```

```
val_accuracy: 0.5917
Epoch 26/100
4/4 - 0s - loss: 0.1604 - accuracy: 0.6000 - val_loss: 0.1590 -
val_accuracy: 0.6000
Epoch 27/100
4/4 - 0s - loss: 0.1583 - accuracy: 0.6083 - val_loss: 0.1569 -
val_accuracy: 0.6083
Epoch 28/100
4/4 - 0s - loss: 0.1563 - accuracy: 0.6250 - val_loss: 0.1551 -
val_accuracy: 0.6417
Epoch 29/100
4/4 - 0s - loss: 0.1545 - accuracy: 0.6417 - val_loss: 0.1534 -
val_accuracy: 0.6500
Epoch 30/100
4/4 - 0s - loss: 0.1529 - accuracy: 0.6583 - val_loss: 0.1519 -
val_accuracy: 0.6667
Epoch 31/100
4/4 - 0s - loss: 0.1514 - accuracy: 0.6667 - val_loss: 0.1505 -
val_accuracy: 0.6750
Epoch 32/100
4/4 - 0s - loss: 0.1501 - accuracy: 0.6833 - val_loss: 0.1493 -
val_accuracy: 0.6833
Epoch 33/100
4/4 - 0s - loss: 0.1489 - accuracy: 0.6833 - val_loss: 0.1481 -
val_accuracy: 0.6833
Epoch 34/100
4/4 - 0s - loss: 0.1477 - accuracy: 0.6833 - val_loss: 0.1470 -
val_accuracy: 0.6750
Epoch 35/100
4/4 - 0s - loss: 0.1466 - accuracy: 0.6750 - val_loss: 0.1459 -
val_accuracy: 0.6833
Epoch 36/100
4/4 - 0s - loss: 0.1456 - accuracy: 0.6833 - val_loss: 0.1450 -
val_accuracy: 0.7000
Epoch 37/100
4/4 - 0s - loss: 0.1447 - accuracy: 0.7000 - val_loss: 0.1441 -
val_accuracy: 0.7000
Epoch 38/100
4/4 - 0s - loss: 0.1438 - accuracy: 0.7083 - val_loss: 0.1432 -
val_accuracy: 0.7083
Epoch 39/100
4/4 - 0s - loss: 0.1430 - accuracy: 0.7167 - val_loss: 0.1424 -
val_accuracy: 0.7167
Epoch 40/100
4/4 - 0s - loss: 0.1422 - accuracy: 0.7167 - val_loss: 0.1417 -
val_accuracy: 0.7250
Epoch 41/100
4/4 - 0s - loss: 0.1415 - accuracy: 0.7250 - val_loss: 0.1409 -
val_accuracy: 0.7333
Epoch 42/100
```

```
4/4 - 0s - loss: 0.1407 - accuracy: 0.7333 - val_loss: 0.1402 -
val_accuracy: 0.7417
Epoch 43/100
4/4 - 0s - loss: 0.1400 - accuracy: 0.7583 - val_loss: 0.1396 -
val_accuracy: 0.7583
Epoch 44/100
4/4 - 0s - loss: 0.1394 - accuracy: 0.7583 - val_loss: 0.1390 -
val_accuracy: 0.7667
Epoch 45/100
4/4 - 0s - loss: 0.1388 - accuracy: 0.7667 - val_loss: 0.1383 -
val_accuracy: 0.7667
Epoch 46/100
4/4 - 0s - loss: 0.1382 - accuracy: 0.7667 - val_loss: 0.1378 -
val_accuracy: 0.7667
Epoch 47/100
4/4 - 0s - loss: 0.1376 - accuracy: 0.7667 - val_loss: 0.1372 -
val_accuracy: 0.7750
Epoch 48/100
4/4 - 0s - loss: 0.1370 - accuracy: 0.7750 - val_loss: 0.1367 -
val_accuracy: 0.7750
Epoch 49/100
4/4 - 0s - loss: 0.1365 - accuracy: 0.7750 - val_loss: 0.1362 -
val_accuracy: 0.7750
Epoch 50/100
4/4 - 0s - loss: 0.1360 - accuracy: 0.7750 - val_loss: 0.1357 -
val_accuracy: 0.7750
Epoch 51/100
4/4 - 0s - loss: 0.1355 - accuracy: 0.7750 - val_loss: 0.1352 -
val_accuracy: 0.7750
Epoch 52/100
4/4 - 0s - loss: 0.1350 - accuracy: 0.7750 - val_loss: 0.1347 -
val_accuracy: 0.7750
Epoch 53/100
4/4 - 0s - loss: 0.1346 - accuracy: 0.7750 - val_loss: 0.1342 -
val_accuracy: 0.7833
Epoch 54/100
4/4 - 0s - loss: 0.1342 - accuracy: 0.7833 - val_loss: 0.1338 -
val_accuracy: 0.7833
Epoch 55/100
4/4 - 0s - loss: 0.1337 - accuracy: 0.7833 - val_loss: 0.1334 -
val_accuracy: 0.7833
Epoch 56/100
4/4 - 0s - loss: 0.1332 - accuracy: 0.7833 - val_loss: 0.1330 -
val_accuracy: 0.7917
Epoch 57/100
4/4 - 0s - loss: 0.1329 - accuracy: 0.7917 - val_loss: 0.1326 -
val_accuracy: 0.8083
Epoch 58/100
4/4 - 0s - loss: 0.1324 - accuracy: 0.8083 - val_loss: 0.1321 -
val_accuracy: 0.8083
```

```
Epoch 59/100
4/4 - 0s - loss: 0.1321 - accuracy: 0.8083 - val_loss: 0.1318 -
val_accuracy: 0.8083
Epoch 60/100
4/4 - 0s - loss: 0.1316 - accuracy: 0.8083 - val_loss: 0.1314 -
val_accuracy: 0.8083
Epoch 61/100
4/4 - 0s - loss: 0.1313 - accuracy: 0.8083 - val_loss: 0.1310 -
val_accuracy: 0.8083
Epoch 62/100
4/4 - 0s - loss: 0.1309 - accuracy: 0.8083 - val_loss: 0.1306 -
val_accuracy: 0.8167
Epoch 63/100
4/4 - 0s - loss: 0.1305 - accuracy: 0.8167 - val_loss: 0.1303 -
val_accuracy: 0.8167
Epoch 64/100
4/4 - 0s - loss: 0.1302 - accuracy: 0.8167 - val_loss: 0.1299 -
val_accuracy: 0.8167
Epoch 65/100
4/4 - 0s - loss: 0.1298 - accuracy: 0.8167 - val_loss: 0.1296 -
val_accuracy: 0.8167
Epoch 66/100
4/4 - 0s - loss: 0.1295 - accuracy: 0.8167 - val_loss: 0.1292 -
val_accuracy: 0.8167
Epoch 67/100
4/4 - 0s - loss: 0.1291 - accuracy: 0.8167 - val_loss: 0.1289 -
val_accuracy: 0.8167
Epoch 68/100
4/4 - 0s - loss: 0.1288 - accuracy: 0.8167 - val_loss: 0.1286 -
val_accuracy: 0.8167
Epoch 69/100
4/4 - 0s - loss: 0.1285 - accuracy: 0.8250 - val_loss: 0.1283 -
val_accuracy: 0.8250
Epoch 70/100
4/4 - 0s - loss: 0.1282 - accuracy: 0.8250 - val_loss: 0.1279 -
val_accuracy: 0.8250
Epoch 71/100
4/4 - 0s - loss: 0.1279 - accuracy: 0.8250 - val_loss: 0.1276 -
val_accuracy: 0.8250
Epoch 72/100
4/4 - 0s - loss: 0.1275 - accuracy: 0.8250 - val_loss: 0.1273 -
val_accuracy: 0.8250
Epoch 73/100
4/4 - 0s - loss: 0.1273 - accuracy: 0.8250 - val_loss: 0.1270 -
val_accuracy: 0.8250
Epoch 74/100
4/4 - 0s - loss: 0.1269 - accuracy: 0.8250 - val_loss: 0.1267 -
val_accuracy: 0.8250
Epoch 75/100
4/4 - 0s - loss: 0.1266 - accuracy: 0.8250 - val_loss: 0.1264 -
```

val_accuracy: 0.8167
Epoch 76/100
4/4 - 0s - loss: 0.1263 - accuracy: 0.8250 - val_loss: 0.1262 -
val_accuracy: 0.8167
Epoch 77/100
4/4 - 0s - loss: 0.1261 - accuracy: 0.8250 - val_loss: 0.1259 -
val_accuracy: 0.8250
Epoch 78/100
4/4 - 0s - loss: 0.1258 - accuracy: 0.8250 - val_loss: 0.1256 -
val_accuracy: 0.8250
Epoch 79/100
4/4 - 0s - loss: 0.1255 - accuracy: 0.8250 - val_loss: 0.1253 -
val_accuracy: 0.8250
Epoch 80/100
4/4 - 0s - loss: 0.1253 - accuracy: 0.8333 - val_loss: 0.1250 -
val_accuracy: 0.8250
Epoch 81/100
4/4 - 0s - loss: 0.1250 - accuracy: 0.8250 - val_loss: 0.1248 -
val_accuracy: 0.8250
Epoch 82/100
4/4 - 0s - loss: 0.1247 - accuracy: 0.8250 - val_loss: 0.1245 -
val_accuracy: 0.8250
Epoch 83/100
4/4 - 0s - loss: 0.1244 - accuracy: 0.8250 - val_loss: 0.1242 -
val_accuracy: 0.8250
Epoch 84/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.8250 - val_loss: 0.1240 -
val_accuracy: 0.8250
Epoch 85/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.8250 - val_loss: 0.1237 -
val_accuracy: 0.8250
Epoch 86/100
4/4 - 0s - loss: 0.1236 - accuracy: 0.8250 - val_loss: 0.1235 -
val_accuracy: 0.8250
Epoch 87/100
4/4 - 0s - loss: 0.1234 - accuracy: 0.8250 - val_loss: 0.1232 -
val_accuracy: 0.8250

Epoch 88/100
4/4 - 0s - loss: 0.1231 - accuracy: 0.8250 - val_loss: 0.1229 -
val_accuracy: 0.8250
Epoch 89/100
4/4 - 0s - loss: 0.1229 - accuracy: 0.8250 - val_loss: 0.1227 -
val_accuracy: 0.8250
Epoch 90/100
4/4 - 0s - loss: 0.1226 - accuracy: 0.8250 - val_loss: 0.1224 -
val_accuracy: 0.8250
Epoch 91/100
4/4 - 0s - loss: 0.1224 - accuracy: 0.8250 - val_loss: 0.1222 -
val_accuracy: 0.8250

```
Epoch 92/100
4/4 - 0s - loss: 0.1222 - accuracy: 0.8250 - val_loss: 0.1220 -
val_accuracy: 0.8250
Epoch 93/100
4/4 - 0s - loss: 0.1219 - accuracy: 0.8250 - val_loss: 0.1217 -
val_accuracy: 0.8250
Epoch 94/100
4/4 - 0s - loss: 0.1217 - accuracy: 0.8250 - val_loss: 0.1215 -
val_accuracy: 0.8250
Epoch 95/100
4/4 - 0s - loss: 0.1214 - accuracy: 0.8333 - val_loss: 0.1213 -
val_accuracy: 0.8250
Epoch 96/100
4/4 - 0s - loss: 0.1212 - accuracy: 0.8250 - val_loss: 0.1210 -
val_accuracy: 0.8250
Epoch 97/100
4/4 - 0s - loss: 0.1210 - accuracy: 0.8250 - val_loss: 0.1208 -
val_accuracy: 0.8333
Epoch 98/100
4/4 - 0s - loss: 0.1207 - accuracy: 0.8333 - val_loss: 0.1206 -
val_accuracy: 0.8333
Epoch 99/100
4/4 - 0s - loss: 0.1205 - accuracy: 0.8333 - val_loss: 0.1203 -
val_accuracy: 0.8333
Epoch 100/100
4/4 - 0s - loss: 0.1203 - accuracy: 0.8167 - val_loss: 0.1201 -
val_accuracy: 0.8333
Activation: tanh LR: 0.01 Itertions: 100 || Train loss:
0.12012273818254471
Activation: tanh LR: 0.01 Itertions: 100 || Train Accuracy:
0.8333333134651184
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0008s vs
`on_train_batch_end` time: 0.0801s). Check your callbacks.
4/4 - 0s - loss: 0.1201 - accuracy: 0.8333 - val_loss: 0.1097 -
val_accuracy: 0.9667
Epoch 2/100
4/4 - 0s - loss: 0.1198 - accuracy: 0.8417 - val_loss: 0.1094 -
val_accuracy: 0.9667
Epoch 3/100
4/4 - 0s - loss: 0.1196 - accuracy: 0.8250 - val_loss: 0.1092 -
val_accuracy: 0.9667
Epoch 4/100
4/4 - 0s - loss: 0.1194 - accuracy: 0.8333 - val_loss: 0.1090 -
val_accuracy: 0.9667
Epoch 5/100
4/4 - 0s - loss: 0.1192 - accuracy: 0.8333 - val_loss: 0.1087 -
val_accuracy: 0.9667
Epoch 6/100
```

```
4/4 - 0s - loss: 0.1189 - accuracy: 0.8250 - val_loss: 0.1085 -
val_accuracy: 0.9667
Epoch 7/100
4/4 - 0s - loss: 0.1187 - accuracy: 0.8167 - val_loss: 0.1083 -
val_accuracy: 0.9667
Epoch 8/100
4/4 - 0s - loss: 0.1185 - accuracy: 0.8167 - val_loss: 0.1080 -
val_accuracy: 0.9667
Epoch 9/100
4/4 - 0s - loss: 0.1183 - accuracy: 0.8333 - val_loss: 0.1078 -
val_accuracy: 0.9667
Epoch 10/100
4/4 - 0s - loss: 0.1181 - accuracy: 0.8250 - val_loss: 0.1076 -
val_accuracy: 0.9667
Epoch 11/100
4/4 - 0s - loss: 0.1178 - accuracy: 0.8333 - val_loss: 0.1074 -
val_accuracy: 0.9667
Epoch 12/100
4/4 - 0s - loss: 0.1176 - accuracy: 0.8333 - val_loss: 0.1072 -
val_accuracy: 0.9667
Epoch 13/100
4/4 - 0s - loss: 0.1174 - accuracy: 0.8333 - val_loss: 0.1069 -
val_accuracy: 0.9667
Epoch 14/100
4/4 - 0s - loss: 0.1172 - accuracy: 0.8333 - val_loss: 0.1067 -
val_accuracy: 0.9667
Epoch 15/100
4/4 - 0s - loss: 0.1170 - accuracy: 0.8333 - val_loss: 0.1065 -
val_accuracy: 0.9667
Epoch 16/100
4/4 - 0s - loss: 0.1168 - accuracy: 0.8333 - val_loss: 0.1063 -
val_accuracy: 0.9667
Epoch 17/100
4/4 - 0s - loss: 0.1166 - accuracy: 0.8333 - val_loss: 0.1060 -
val_accuracy: 0.9667
Epoch 18/100
4/4 - 0s - loss: 0.1164 - accuracy: 0.8333 - val_loss: 0.1058 -
val_accuracy: 0.9667
Epoch 19/100
4/4 - 0s - loss: 0.1162 - accuracy: 0.8333 - val_loss: 0.1056 -
val_accuracy: 0.9667
Epoch 20/100
4/4 - 0s - loss: 0.1159 - accuracy: 0.8333 - val_loss: 0.1054 -
val_accuracy: 0.9667
Epoch 21/100
4/4 - 0s - loss: 0.1157 - accuracy: 0.8333 - val_loss: 0.1052 -
val_accuracy: 0.9667
Epoch 22/100
4/4 - 0s - loss: 0.1156 - accuracy: 0.8333 - val_loss: 0.1049 -
val_accuracy: 0.9667
```

```
Epoch 23/100
4/4 - 0s - loss: 0.1153 - accuracy: 0.8333 - val_loss: 0.1047 -
val_accuracy: 0.9667
Epoch 24/100
4/4 - 0s - loss: 0.1151 - accuracy: 0.8333 - val_loss: 0.1045 -
val_accuracy: 0.9667
Epoch 25/100
4/4 - 0s - loss: 0.1149 - accuracy: 0.8333 - val_loss: 0.1043 -
val_accuracy: 0.9667
Epoch 26/100
4/4 - 0s - loss: 0.1147 - accuracy: 0.8333 - val_loss: 0.1041 -
val_accuracy: 0.9667
Epoch 27/100
4/4 - 0s - loss: 0.1145 - accuracy: 0.8333 - val_loss: 0.1039 -
val_accuracy: 0.9667
Epoch 28/100
4/4 - 0s - loss: 0.1143 - accuracy: 0.8333 - val_loss: 0.1036 -
val_accuracy: 0.9667
Epoch 29/100
4/4 - 0s - loss: 0.1141 - accuracy: 0.8333 - val_loss: 0.1034 -
val_accuracy: 0.9667
Epoch 30/100
4/4 - 0s - loss: 0.1139 - accuracy: 0.8333 - val_loss: 0.1032 -
val_accuracy: 0.9667
Epoch 31/100
4/4 - 0s - loss: 0.1137 - accuracy: 0.8333 - val_loss: 0.1030 -
val_accuracy: 0.9667
Epoch 32/100
4/4 - 0s - loss: 0.1135 - accuracy: 0.8333 - val_loss: 0.1028 -
val_accuracy: 0.9667
Epoch 33/100
4/4 - 0s - loss: 0.1133 - accuracy: 0.8417 - val_loss: 0.1026 -
val_accuracy: 0.9667
Epoch 34/100
4/4 - 0s - loss: 0.1131 - accuracy: 0.8500 - val_loss: 0.1024 -
val_accuracy: 0.9667
Epoch 35/100
4/4 - 0s - loss: 0.1130 - accuracy: 0.8500 - val_loss: 0.1022 -
val_accuracy: 0.9667
Epoch 36/100
4/4 - 0s - loss: 0.1127 - accuracy: 0.8500 - val_loss: 0.1019 -
val_accuracy: 0.9667
Epoch 37/100
4/4 - 0s - loss: 0.1125 - accuracy: 0.8583 - val_loss: 0.1017 -
val_accuracy: 0.9667
Epoch 38/100
4/4 - 0s - loss: 0.1123 - accuracy: 0.8500 - val_loss: 0.1015 -
val_accuracy: 0.9667
Epoch 39/100
4/4 - 0s - loss: 0.1121 - accuracy: 0.8583 - val_loss: 0.1013 -
```

val_accuracy: 0.9667
Epoch 40/100
4/4 - 0s - loss: 0.1119 - accuracy: 0.8583 - val_loss: 0.1011 -
val_accuracy: 0.9667
Epoch 41/100
4/4 - 0s - loss: 0.1118 - accuracy: 0.8583 - val_loss: 0.1009 -
val_accuracy: 0.9667
Epoch 42/100
4/4 - 0s - loss: 0.1115 - accuracy: 0.8583 - val_loss: 0.1007 -
val_accuracy: 0.9667
Epoch 43/100
4/4 - 0s - loss: 0.1113 - accuracy: 0.8583 - val_loss: 0.1004 -
val_accuracy: 0.9667
Epoch 44/100
4/4 - 0s - loss: 0.1112 - accuracy: 0.8500 - val_loss: 0.1003 -
val_accuracy: 0.9667
Epoch 45/100
4/4 - 0s - loss: 0.1109 - accuracy: 0.8500 - val_loss: 0.1000 -
val_accuracy: 0.9667
Epoch 46/100
4/4 - 0s - loss: 0.1107 - accuracy: 0.8500 - val_loss: 0.0998 -
val_accuracy: 0.9667
Epoch 47/100
4/4 - 0s - loss: 0.1105 - accuracy: 0.8583 - val_loss: 0.0996 -
val_accuracy: 0.9667
Epoch 48/100
4/4 - 0s - loss: 0.1104 - accuracy: 0.8583 - val_loss: 0.0994 -
val_accuracy: 0.9667
Epoch 49/100
4/4 - 0s - loss: 0.1102 - accuracy: 0.8583 - val_loss: 0.0992 -
val_accuracy: 0.9667
Epoch 50/100
4/4 - 0s - loss: 0.1100 - accuracy: 0.8583 - val_loss: 0.0990 -
val_accuracy: 0.9667
Epoch 51/100
4/4 - 0s - loss: 0.1098 - accuracy: 0.8583 - val_loss: 0.0988 -
val_accuracy: 0.9667
Epoch 52/100
4/4 - 0s - loss: 0.1096 - accuracy: 0.8583 - val_loss: 0.0986 -
val_accuracy: 0.9667
Epoch 53/100
4/4 - 0s - loss: 0.1094 - accuracy: 0.8583 - val_loss: 0.0984 -
val_accuracy: 0.9667
Epoch 54/100
4/4 - 0s - loss: 0.1092 - accuracy: 0.8583 - val_loss: 0.0982 -
val_accuracy: 0.9667
Epoch 55/100
4/4 - 0s - loss: 0.1090 - accuracy: 0.8583 - val_loss: 0.0980 -
val_accuracy: 0.9667
Epoch 56/100

```
4/4 - 0s - loss: 0.1088 - accuracy: 0.8583 - val_loss: 0.0978 -
val_accuracy: 0.9667
Epoch 57/100
4/4 - 0s - loss: 0.1086 - accuracy: 0.8583 - val_loss: 0.0976 -
val_accuracy: 0.9667
Epoch 58/100
4/4 - 0s - loss: 0.1084 - accuracy: 0.8583 - val_loss: 0.0974 -
val_accuracy: 0.9667
Epoch 59/100
4/4 - 0s - loss: 0.1082 - accuracy: 0.8583 - val_loss: 0.0972 -
val_accuracy: 0.9667
Epoch 60/100
4/4 - 0s - loss: 0.1081 - accuracy: 0.8500 - val_loss: 0.0970 -
val_accuracy: 0.9667
Epoch 61/100
4/4 - 0s - loss: 0.1079 - accuracy: 0.8583 - val_loss: 0.0968 -
val_accuracy: 0.9667
Epoch 62/100
4/4 - 0s - loss: 0.1077 - accuracy: 0.8583 - val_loss: 0.0966 -
val_accuracy: 0.9667
Epoch 63/100
4/4 - 0s - loss: 0.1075 - accuracy: 0.8500 - val_loss: 0.0963 -
val_accuracy: 0.9667
Epoch 64/100
4/4 - 0s - loss: 0.1073 - accuracy: 0.8583 - val_loss: 0.0961 -
val_accuracy: 0.9667
Epoch 65/100
4/4 - 0s - loss: 0.1071 - accuracy: 0.8583 - val_loss: 0.0959 -
val_accuracy: 0.9667
Epoch 66/100
4/4 - 0s - loss: 0.1069 - accuracy: 0.8583 - val_loss: 0.0957 -
val_accuracy: 0.9667
Epoch 67/100
4/4 - 0s - loss: 0.1067 - accuracy: 0.8583 - val_loss: 0.0955 -
val_accuracy: 0.9667
Epoch 68/100
4/4 - 0s - loss: 0.1065 - accuracy: 0.8583 - val_loss: 0.0953 -
val_accuracy: 0.9667

Epoch 69/100
4/4 - 0s - loss: 0.1064 - accuracy: 0.8583 - val_loss: 0.0951 -
val_accuracy: 0.9667
Epoch 70/100
4/4 - 0s - loss: 0.1062 - accuracy: 0.8583 - val_loss: 0.0949 -
val_accuracy: 0.9667
Epoch 71/100
4/4 - 0s - loss: 0.1060 - accuracy: 0.8583 - val_loss: 0.0947 -
val_accuracy: 0.9667
Epoch 72/100
4/4 - 0s - loss: 0.1058 - accuracy: 0.8583 - val_loss: 0.0945 -
```

```
val_accuracy: 0.9667
Epoch 73/100
4/4 - 0s - loss: 0.1056 - accuracy: 0.8583 - val_loss: 0.0943 -
val_accuracy: 0.9667
Epoch 74/100
4/4 - 0s - loss: 0.1054 - accuracy: 0.8583 - val_loss: 0.0941 -
val_accuracy: 0.9667
Epoch 75/100
4/4 - 0s - loss: 0.1052 - accuracy: 0.8583 - val_loss: 0.0939 -
val_accuracy: 0.9667
Epoch 76/100
4/4 - 0s - loss: 0.1050 - accuracy: 0.8583 - val_loss: 0.0937 -
val_accuracy: 0.9667
Epoch 77/100
4/4 - 0s - loss: 0.1048 - accuracy: 0.8583 - val_loss: 0.0935 -
val_accuracy: 0.9667
Epoch 78/100
4/4 - 0s - loss: 0.1046 - accuracy: 0.8583 - val_loss: 0.0932 -
val_accuracy: 0.9667
Epoch 79/100
4/4 - 0s - loss: 0.1044 - accuracy: 0.8583 - val_loss: 0.0930 -
val_accuracy: 0.9667
Epoch 80/100
4/4 - 0s - loss: 0.1042 - accuracy: 0.8583 - val_loss: 0.0928 -
val_accuracy: 0.9667
Epoch 81/100
4/4 - 0s - loss: 0.1041 - accuracy: 0.8583 - val_loss: 0.0926 -
val_accuracy: 0.9667
Epoch 82/100
4/4 - 0s - loss: 0.1039 - accuracy: 0.8583 - val_loss: 0.0924 -
val_accuracy: 0.9667
Epoch 83/100
4/4 - 0s - loss: 0.1037 - accuracy: 0.8583 - val_loss: 0.0922 -
val_accuracy: 0.9667
Epoch 84/100
4/4 - 0s - loss: 0.1035 - accuracy: 0.8583 - val_loss: 0.0920 -
val_accuracy: 0.9667
Epoch 85/100
4/4 - 0s - loss: 0.1033 - accuracy: 0.8583 - val_loss: 0.0918 -
val_accuracy: 0.9667
Epoch 86/100
4/4 - 0s - loss: 0.1031 - accuracy: 0.8583 - val_loss: 0.0916 -
val_accuracy: 0.9667
Epoch 87/100
4/4 - 0s - loss: 0.1029 - accuracy: 0.8583 - val_loss: 0.0914 -
val_accuracy: 0.9667
Epoch 88/100
4/4 - 0s - loss: 0.1027 - accuracy: 0.8667 - val_loss: 0.0912 -
val_accuracy: 0.9667
Epoch 89/100
```

4/4 - 0s - loss: 0.1025 - accuracy: 0.8667 - val_loss: 0.0910 - val_accuracy: 0.9667
Epoch 90/100
4/4 - 0s - loss: 0.1023 - accuracy: 0.8667 - val_loss: 0.0907 - val_accuracy: 0.9667
Epoch 91/100
4/4 - 0s - loss: 0.1022 - accuracy: 0.8667 - val_loss: 0.0905 - val_accuracy: 0.9667
Epoch 92/100
4/4 - 0s - loss: 0.1020 - accuracy: 0.8667 - val_loss: 0.0903 - val_accuracy: 0.9667
Epoch 93/100
4/4 - 0s - loss: 0.1018 - accuracy: 0.8667 - val_loss: 0.0901 - val_accuracy: 0.9667
Epoch 94/100
4/4 - 0s - loss: 0.1016 - accuracy: 0.8667 - val_loss: 0.0899 - val_accuracy: 0.9667
Epoch 95/100
4/4 - 0s - loss: 0.1014 - accuracy: 0.8667 - val_loss: 0.0897 - val_accuracy: 0.9667
Epoch 96/100
4/4 - 0s - loss: 0.1012 - accuracy: 0.8667 - val_loss: 0.0895 - val_accuracy: 0.9667
Epoch 97/100
4/4 - 0s - loss: 0.1010 - accuracy: 0.8667 - val_loss: 0.0893 - val_accuracy: 0.9667
Epoch 98/100
4/4 - 0s - loss: 0.1008 - accuracy: 0.8583 - val_loss: 0.0891 - val_accuracy: 0.9667
Epoch 99/100
4/4 - 0s - loss: 0.1006 - accuracy: 0.8667 - val_loss: 0.0889 - val_accuracy: 0.9667
Epoch 100/100
4/4 - 0s - loss: 0.1005 - accuracy: 0.8667 - val_loss: 0.0887 - val_accuracy: 0.9667
Activation: tanh LR: 0.01 Iterations: 100 || Test loss: 0.08872000873088837
Activation: tanh LR: 0.01 Iterations: 100 || Test Accuracy: 0.9666666388511658
===
Model_tanh_LR_0.01_Iterations_200_HL_3
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow compared to the batch time (batch time: 0.0000s vs `on_train_batch_end` time: 0.1302s). Check your callbacks.
4/4 - 0s - loss: 0.4404 - accuracy: 0.3000 - val_loss: 0.4284 - val_accuracy: 0.3000
Epoch 2/200
4/4 - 0s - loss: 0.4224 - accuracy: 0.2917 - val_loss: 0.4109 -

```
val_accuracy: 0.2833
Epoch 3/200
4/4 - 0s - loss: 0.4051 - accuracy: 0.2833 - val_loss: 0.3941 -
val_accuracy: 0.2833
Epoch 4/200
4/4 - 0s - loss: 0.3886 - accuracy: 0.2833 - val_loss: 0.3783 -
val_accuracy: 0.2833
Epoch 5/200
4/4 - 0s - loss: 0.3731 - accuracy: 0.2833 - val_loss: 0.3633 -
val_accuracy: 0.2833
Epoch 6/200
4/4 - 0s - loss: 0.3584 - accuracy: 0.2833 - val_loss: 0.3488 -
val_accuracy: 0.2833
Epoch 7/200
4/4 - 0s - loss: 0.3442 - accuracy: 0.2833 - val_loss: 0.3358 -
val_accuracy: 0.2833
Epoch 8/200
4/4 - 0s - loss: 0.3319 - accuracy: 0.2917 - val_loss: 0.3240 -
val_accuracy: 0.2917
Epoch 9/200
4/4 - 0s - loss: 0.3200 - accuracy: 0.2917 - val_loss: 0.3127 -
val_accuracy: 0.2917
Epoch 10/200
4/4 - 0s - loss: 0.3092 - accuracy: 0.2917 - val_loss: 0.3025 -
val_accuracy: 0.2917
Epoch 11/200
4/4 - 0s - loss: 0.2993 - accuracy: 0.2917 - val_loss: 0.2932 -
val_accuracy: 0.2833
Epoch 12/200
4/4 - 0s - loss: 0.2903 - accuracy: 0.2833 - val_loss: 0.2846 -
val_accuracy: 0.2833
Epoch 13/200
4/4 - 0s - loss: 0.2819 - accuracy: 0.2750 - val_loss: 0.2768 -
val_accuracy: 0.2750
Epoch 14/200
4/4 - 0s - loss: 0.2744 - accuracy: 0.2750 - val_loss: 0.2699 -
val_accuracy: 0.2750
Epoch 15/200
4/4 - 0s - loss: 0.2677 - accuracy: 0.2750 - val_loss: 0.2634 -
val_accuracy: 0.2833
Epoch 16/200
4/4 - 0s - loss: 0.2616 - accuracy: 0.2917 - val_loss: 0.2578 -
val_accuracy: 0.2917
Epoch 17/200
4/4 - 0s - loss: 0.2560 - accuracy: 0.2917 - val_loss: 0.2524 -
val_accuracy: 0.3000
Epoch 18/200
4/4 - 0s - loss: 0.2508 - accuracy: 0.3000 - val_loss: 0.2477 -
val_accuracy: 0.3083
Epoch 19/200
```

```
4/4 - 0s - loss: 0.2464 - accuracy: 0.3083 - val_loss: 0.2434 -
val_accuracy: 0.3250
Epoch 20/200
4/4 - 0s - loss: 0.2421 - accuracy: 0.3167 - val_loss: 0.2394 -
val_accuracy: 0.3250
Epoch 21/200
4/4 - 0s - loss: 0.2383 - accuracy: 0.3167 - val_loss: 0.2359 -
val_accuracy: 0.3250
Epoch 22/200
4/4 - 0s - loss: 0.2348 - accuracy: 0.3333 - val_loss: 0.2326 -
val_accuracy: 0.3250
Epoch 23/200
4/4 - 0s - loss: 0.2316 - accuracy: 0.3250 - val_loss: 0.2296 -
val_accuracy: 0.3333
Epoch 24/200
4/4 - 0s - loss: 0.2287 - accuracy: 0.3250 - val_loss: 0.2267 -
val_accuracy: 0.3500
Epoch 25/200
4/4 - 0s - loss: 0.2260 - accuracy: 0.3500 - val_loss: 0.2241 -
val_accuracy: 0.3417
Epoch 26/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3417 - val_loss: 0.2216 -
val_accuracy: 0.3417
Epoch 27/200
4/4 - 0s - loss: 0.2210 - accuracy: 0.3500 - val_loss: 0.2194 -
val_accuracy: 0.3583
Epoch 28/200
4/4 - 0s - loss: 0.2188 - accuracy: 0.3750 - val_loss: 0.2174 -
val_accuracy: 0.3750
Epoch 29/200
4/4 - 0s - loss: 0.2168 - accuracy: 0.3750 - val_loss: 0.2154 -
val_accuracy: 0.3833
Epoch 30/200
4/4 - 0s - loss: 0.2149 - accuracy: 0.3833 - val_loss: 0.2136 -
val_accuracy: 0.4000
Epoch 31/200
4/4 - 0s - loss: 0.2130 - accuracy: 0.4000 - val_loss: 0.2119 -
val_accuracy: 0.4083
Epoch 32/200
4/4 - 0s - loss: 0.2114 - accuracy: 0.4083 - val_loss: 0.2102 -
val_accuracy: 0.4083
Epoch 33/200
4/4 - 0s - loss: 0.2097 - accuracy: 0.4083 - val_loss: 0.2087 -
val_accuracy: 0.4167
Epoch 34/200
4/4 - 0s - loss: 0.2082 - accuracy: 0.4167 - val_loss: 0.2073 -
val_accuracy: 0.4167
Epoch 35/200
4/4 - 0s - loss: 0.2069 - accuracy: 0.4167 - val_loss: 0.2059 -
val_accuracy: 0.4167
```

```
Epoch 36/200
4/4 - 0s - loss: 0.2054 - accuracy: 0.4167 - val_loss: 0.2045 -
val_accuracy: 0.4167
Epoch 37/200
4/4 - 0s - loss: 0.2041 - accuracy: 0.4167 - val_loss: 0.2032 -
val_accuracy: 0.4333
Epoch 38/200
4/4 - 0s - loss: 0.2028 - accuracy: 0.4417 - val_loss: 0.2020 -
val_accuracy: 0.4417
Epoch 39/200
4/4 - 0s - loss: 0.2016 - accuracy: 0.4417 - val_loss: 0.2008 -
val_accuracy: 0.4500
Epoch 40/200
4/4 - 0s - loss: 0.2005 - accuracy: 0.4583 - val_loss: 0.1997 -
val_accuracy: 0.4583
Epoch 41/200
4/4 - 0s - loss: 0.1993 - accuracy: 0.4667 - val_loss: 0.1986 -
val_accuracy: 0.4667
Epoch 42/200
4/4 - 0s - loss: 0.1983 - accuracy: 0.4750 - val_loss: 0.1975 -
val_accuracy: 0.4833
Epoch 43/200
4/4 - 0s - loss: 0.1972 - accuracy: 0.4833 - val_loss: 0.1965 -
val_accuracy: 0.4833
Epoch 44/200
4/4 - 0s - loss: 0.1962 - accuracy: 0.4833 - val_loss: 0.1955 -
val_accuracy: 0.4917
Epoch 45/200
4/4 - 0s - loss: 0.1952 - accuracy: 0.4917 - val_loss: 0.1945 -
val_accuracy: 0.5083
Epoch 46/200
4/4 - 0s - loss: 0.1942 - accuracy: 0.5167 - val_loss: 0.1936 -
val_accuracy: 0.5250
Epoch 47/200
4/4 - 0s - loss: 0.1933 - accuracy: 0.5417 - val_loss: 0.1927 -
val_accuracy: 0.5333
Epoch 48/200
4/4 - 0s - loss: 0.1925 - accuracy: 0.5333 - val_loss: 0.1917 -
val_accuracy: 0.5667

Epoch 49/200
4/4 - 0s - loss: 0.1915 - accuracy: 0.5667 - val_loss: 0.1909 -
val_accuracy: 0.5667
Epoch 50/200
4/4 - 0s - loss: 0.1906 - accuracy: 0.5667 - val_loss: 0.1900 -
val_accuracy: 0.5750
Epoch 51/200
4/4 - 0s - loss: 0.1898 - accuracy: 0.5833 - val_loss: 0.1891 -
val_accuracy: 0.5833
Epoch 52/200
```

```
4/4 - 0s - loss: 0.1890 - accuracy: 0.5833 - val_loss: 0.1883 -
val_accuracy: 0.5917
Epoch 53/200
4/4 - 0s - loss: 0.1881 - accuracy: 0.5917 - val_loss: 0.1875 -
val_accuracy: 0.5917
Epoch 54/200
4/4 - 0s - loss: 0.1873 - accuracy: 0.5917 - val_loss: 0.1867 -
val_accuracy: 0.5917
Epoch 55/200
4/4 - 0s - loss: 0.1864 - accuracy: 0.6000 - val_loss: 0.1859 -
val_accuracy: 0.6167
Epoch 56/200
4/4 - 0s - loss: 0.1856 - accuracy: 0.6250 - val_loss: 0.1851 -
val_accuracy: 0.6333
Epoch 57/200
4/4 - 0s - loss: 0.1849 - accuracy: 0.6417 - val_loss: 0.1843 -
val_accuracy: 0.6500
Epoch 58/200
4/4 - 0s - loss: 0.1841 - accuracy: 0.6583 - val_loss: 0.1835 -
val_accuracy: 0.6500
Epoch 59/200
4/4 - 0s - loss: 0.1834 - accuracy: 0.6417 - val_loss: 0.1828 -
val_accuracy: 0.6500
Epoch 60/200
4/4 - 0s - loss: 0.1826 - accuracy: 0.6500 - val_loss: 0.1821 -
val_accuracy: 0.6500
Epoch 61/200
4/4 - 0s - loss: 0.1819 - accuracy: 0.6500 - val_loss: 0.1813 -
val_accuracy: 0.6750
Epoch 62/200
4/4 - 0s - loss: 0.1811 - accuracy: 0.6750 - val_loss: 0.1806 -
val_accuracy: 0.6750
Epoch 63/200
4/4 - 0s - loss: 0.1805 - accuracy: 0.6750 - val_loss: 0.1799 -
val_accuracy: 0.6750
Epoch 64/200
4/4 - 0s - loss: 0.1797 - accuracy: 0.6750 - val_loss: 0.1792 -
val_accuracy: 0.6750
Epoch 65/200
4/4 - 0s - loss: 0.1790 - accuracy: 0.6750 - val_loss: 0.1785 -
val_accuracy: 0.6750
Epoch 66/200
4/4 - 0s - loss: 0.1784 - accuracy: 0.6750 - val_loss: 0.1778 -
val_accuracy: 0.6833
Epoch 67/200
4/4 - 0s - loss: 0.1777 - accuracy: 0.6833 - val_loss: 0.1771 -
val_accuracy: 0.6833
Epoch 68/200
4/4 - 0s - loss: 0.1771 - accuracy: 0.6833 - val_loss: 0.1765 -
val_accuracy: 0.6833
```

```
Epoch 69/200
4/4 - 0s - loss: 0.1763 - accuracy: 0.6833 - val_loss: 0.1758 -
val_accuracy: 0.6833
Epoch 70/200
4/4 - 0s - loss: 0.1756 - accuracy: 0.6917 - val_loss: 0.1752 -
val_accuracy: 0.6917
Epoch 71/200
4/4 - 0s - loss: 0.1750 - accuracy: 0.6917 - val_loss: 0.1745 -
val_accuracy: 0.6917
Epoch 72/200
4/4 - 0s - loss: 0.1743 - accuracy: 0.6917 - val_loss: 0.1739 -
val_accuracy: 0.7000
Epoch 73/200
4/4 - 0s - loss: 0.1737 - accuracy: 0.7000 - val_loss: 0.1732 -
val_accuracy: 0.7000
Epoch 74/200
4/4 - 0s - loss: 0.1731 - accuracy: 0.7000 - val_loss: 0.1726 -
val_accuracy: 0.7000
Epoch 75/200
4/4 - 0s - loss: 0.1724 - accuracy: 0.7000 - val_loss: 0.1720 -
val_accuracy: 0.7000
Epoch 76/200
4/4 - 0s - loss: 0.1718 - accuracy: 0.7000 - val_loss: 0.1714 -
val_accuracy: 0.7167
Epoch 77/200
4/4 - 0s - loss: 0.1712 - accuracy: 0.7167 - val_loss: 0.1708 -
val_accuracy: 0.7167
Epoch 78/200
4/4 - 0s - loss: 0.1706 - accuracy: 0.7167 - val_loss: 0.1701 -
val_accuracy: 0.7167
Epoch 79/200
4/4 - 0s - loss: 0.1700 - accuracy: 0.7250 - val_loss: 0.1695 -
val_accuracy: 0.7250
Epoch 80/200
4/4 - 0s - loss: 0.1694 - accuracy: 0.7250 - val_loss: 0.1690 -
val_accuracy: 0.7250
Epoch 81/200
4/4 - 0s - loss: 0.1689 - accuracy: 0.7250 - val_loss: 0.1684 -
val_accuracy: 0.7250
Epoch 82/200
4/4 - 0s - loss: 0.1683 - accuracy: 0.7250 - val_loss: 0.1678 -
val_accuracy: 0.7250
Epoch 83/200
4/4 - 0s - loss: 0.1677 - accuracy: 0.7333 - val_loss: 0.1672 -
val_accuracy: 0.7250
Epoch 84/200
4/4 - 0s - loss: 0.1670 - accuracy: 0.7250 - val_loss: 0.1666 -
val_accuracy: 0.7333
Epoch 85/200
4/4 - 0s - loss: 0.1665 - accuracy: 0.7250 - val_loss: 0.1661 -
```

```
val_accuracy: 0.7500
Epoch 86/200
4/4 - 0s - loss: 0.1660 - accuracy: 0.7417 - val_loss: 0.1655 -
val_accuracy: 0.7500
Epoch 87/200
4/4 - 0s - loss: 0.1653 - accuracy: 0.7417 - val_loss: 0.1649 -
val_accuracy: 0.7417
Epoch 88/200
4/4 - 0s - loss: 0.1648 - accuracy: 0.7333 - val_loss: 0.1644 -
val_accuracy: 0.7417
Epoch 89/200
4/4 - 0s - loss: 0.1642 - accuracy: 0.7417 - val_loss: 0.1638 -
val_accuracy: 0.7417
Epoch 90/200
4/4 - 0s - loss: 0.1637 - accuracy: 0.7417 - val_loss: 0.1633 -
val_accuracy: 0.7417
Epoch 91/200
4/4 - 0s - loss: 0.1631 - accuracy: 0.7417 - val_loss: 0.1627 -
val_accuracy: 0.7417
Epoch 92/200
4/4 - 0s - loss: 0.1626 - accuracy: 0.7500 - val_loss: 0.1622 -
val_accuracy: 0.7500
Epoch 93/200
4/4 - 0s - loss: 0.1621 - accuracy: 0.7500 - val_loss: 0.1617 -
val_accuracy: 0.7500
Epoch 94/200
4/4 - 0s - loss: 0.1615 - accuracy: 0.7500 - val_loss: 0.1611 -
val_accuracy: 0.7500
Epoch 95/200
4/4 - 0s - loss: 0.1610 - accuracy: 0.7500 - val_loss: 0.1606 -
val_accuracy: 0.7500
Epoch 96/200
4/4 - 0s - loss: 0.1605 - accuracy: 0.7500 - val_loss: 0.1601 -
val_accuracy: 0.7500
Epoch 97/200
4/4 - 0s - loss: 0.1599 - accuracy: 0.7500 - val_loss: 0.1596 -
val_accuracy: 0.7583
Epoch 98/200
4/4 - 0s - loss: 0.1594 - accuracy: 0.7583 - val_loss: 0.1590 -
val_accuracy: 0.7583
Epoch 99/200
4/4 - 0s - loss: 0.1589 - accuracy: 0.7583 - val_loss: 0.1585 -
val_accuracy: 0.7583
Epoch 100/200
4/4 - 0s - loss: 0.1584 - accuracy: 0.7583 - val_loss: 0.1580 -
val_accuracy: 0.7667
Epoch 101/200
4/4 - 0s - loss: 0.1579 - accuracy: 0.7583 - val_loss: 0.1575 -
val_accuracy: 0.7667
Epoch 102/200
```

```
4/4 - 0s - loss: 0.1574 - accuracy: 0.7667 - val_loss: 0.1570 -
val_accuracy: 0.7667
Epoch 103/200
4/4 - 0s - loss: 0.1569 - accuracy: 0.7583 - val_loss: 0.1565 -
val_accuracy: 0.7583
Epoch 104/200
4/4 - 0s - loss: 0.1564 - accuracy: 0.7583 - val_loss: 0.1560 -
val_accuracy: 0.7583
Epoch 105/200
4/4 - 0s - loss: 0.1559 - accuracy: 0.7583 - val_loss: 0.1556 -
val_accuracy: 0.7583
Epoch 106/200
4/4 - 0s - loss: 0.1555 - accuracy: 0.7583 - val_loss: 0.1551 -
val_accuracy: 0.7583
Epoch 107/200
4/4 - 0s - loss: 0.1549 - accuracy: 0.7583 - val_loss: 0.1546 -
val_accuracy: 0.7583
Epoch 108/200
4/4 - 0s - loss: 0.1545 - accuracy: 0.7583 - val_loss: 0.1541 -
val_accuracy: 0.7583
Epoch 109/200
4/4 - 0s - loss: 0.1540 - accuracy: 0.7583 - val_loss: 0.1536 -
val_accuracy: 0.7583
Epoch 110/200
4/4 - 0s - loss: 0.1535 - accuracy: 0.7583 - val_loss: 0.1532 -
val_accuracy: 0.7583
Epoch 111/200
4/4 - 0s - loss: 0.1531 - accuracy: 0.7583 - val_loss: 0.1527 -
val_accuracy: 0.7583
Epoch 112/200
4/4 - 0s - loss: 0.1526 - accuracy: 0.7583 - val_loss: 0.1522 -
val_accuracy: 0.7583
Epoch 113/200
4/4 - 0s - loss: 0.1521 - accuracy: 0.7583 - val_loss: 0.1518 -
val_accuracy: 0.7583
Epoch 114/200
4/4 - 0s - loss: 0.1517 - accuracy: 0.7583 - val_loss: 0.1513 -
val_accuracy: 0.7583
Epoch 115/200
4/4 - 0s - loss: 0.1512 - accuracy: 0.7583 - val_loss: 0.1509 -
val_accuracy: 0.7583
Epoch 116/200
4/4 - 0s - loss: 0.1508 - accuracy: 0.7583 - val_loss: 0.1504 -
val_accuracy: 0.7583
Epoch 117/200
4/4 - 0s - loss: 0.1503 - accuracy: 0.7583 - val_loss: 0.1500 -
val_accuracy: 0.7583
Epoch 118/200
4/4 - 0s - loss: 0.1499 - accuracy: 0.7583 - val_loss: 0.1495 -
val_accuracy: 0.7583
```

```
Epoch 119/200
4/4 - 0s - loss: 0.1495 - accuracy: 0.7583 - val_loss: 0.1491 -
val_accuracy: 0.7583
Epoch 120/200
4/4 - 0s - loss: 0.1490 - accuracy: 0.7583 - val_loss: 0.1487 -
val_accuracy: 0.7583
Epoch 121/200
4/4 - 0s - loss: 0.1485 - accuracy: 0.7583 - val_loss: 0.1482 -
val_accuracy: 0.7583
Epoch 122/200
4/4 - 0s - loss: 0.1481 - accuracy: 0.7583 - val_loss: 0.1478 -
val_accuracy: 0.7583
Epoch 123/200
4/4 - 0s - loss: 0.1478 - accuracy: 0.7583 - val_loss: 0.1474 -
val_accuracy: 0.7667
Epoch 124/200
4/4 - 0s - loss: 0.1473 - accuracy: 0.7667 - val_loss: 0.1469 -
val_accuracy: 0.7667
Epoch 125/200
4/4 - 0s - loss: 0.1468 - accuracy: 0.7667 - val_loss: 0.1465 -
val_accuracy: 0.7667
Epoch 126/200
4/4 - 0s - loss: 0.1464 - accuracy: 0.7667 - val_loss: 0.1461 -
val_accuracy: 0.7667
Epoch 127/200
4/4 - 0s - loss: 0.1460 - accuracy: 0.7667 - val_loss: 0.1457 -
val_accuracy: 0.7667
Epoch 128/200
4/4 - 0s - loss: 0.1456 - accuracy: 0.7667 - val_loss: 0.1453 -
val_accuracy: 0.7750
Epoch 129/200
4/4 - 0s - loss: 0.1452 - accuracy: 0.7750 - val_loss: 0.1449 -
val_accuracy: 0.7750
Epoch 130/200
4/4 - 0s - loss: 0.1448 - accuracy: 0.7750 - val_loss: 0.1445 -
val_accuracy: 0.7750
Epoch 131/200
4/4 - 0s - loss: 0.1444 - accuracy: 0.7750 - val_loss: 0.1441 -
val_accuracy: 0.7750
Epoch 132/200
4/4 - 0s - loss: 0.1440 - accuracy: 0.7750 - val_loss: 0.1437 -
val_accuracy: 0.7750

Epoch 133/200
4/4 - 0s - loss: 0.1436 - accuracy: 0.7833 - val_loss: 0.1433 -
val_accuracy: 0.7833
Epoch 134/200
4/4 - 0s - loss: 0.1432 - accuracy: 0.7750 - val_loss: 0.1429 -
val_accuracy: 0.7833
Epoch 135/200
```

```
4/4 - 0s - loss: 0.1428 - accuracy: 0.7833 - val_loss: 0.1425 -
val_accuracy: 0.7833
Epoch 136/200
4/4 - 0s - loss: 0.1425 - accuracy: 0.7833 - val_loss: 0.1421 -
val_accuracy: 0.7833
Epoch 137/200
4/4 - 0s - loss: 0.1421 - accuracy: 0.7833 - val_loss: 0.1418 -
val_accuracy: 0.7833
Epoch 138/200
4/4 - 0s - loss: 0.1417 - accuracy: 0.7833 - val_loss: 0.1414 -
val_accuracy: 0.7833
Epoch 139/200
4/4 - 0s - loss: 0.1413 - accuracy: 0.7833 - val_loss: 0.1410 -
val_accuracy: 0.7917
Epoch 140/200
4/4 - 0s - loss: 0.1409 - accuracy: 0.7833 - val_loss: 0.1407 -
val_accuracy: 0.7917
Epoch 141/200
4/4 - 0s - loss: 0.1406 - accuracy: 0.7917 - val_loss: 0.1403 -
val_accuracy: 0.7917
Epoch 142/200
4/4 - 0s - loss: 0.1402 - accuracy: 0.7917 - val_loss: 0.1399 -
val_accuracy: 0.7917
Epoch 143/200
4/4 - 0s - loss: 0.1398 - accuracy: 0.7917 - val_loss: 0.1396 -
val_accuracy: 0.7917
Epoch 144/200
4/4 - 0s - loss: 0.1395 - accuracy: 0.7917 - val_loss: 0.1392 -
val_accuracy: 0.7917
Epoch 145/200
4/4 - 0s - loss: 0.1391 - accuracy: 0.7917 - val_loss: 0.1389 -
val_accuracy: 0.7917
Epoch 146/200
4/4 - 0s - loss: 0.1388 - accuracy: 0.7917 - val_loss: 0.1385 -
val_accuracy: 0.7917
Epoch 147/200
4/4 - 0s - loss: 0.1385 - accuracy: 0.7917 - val_loss: 0.1382 -
val_accuracy: 0.8000
Epoch 148/200
4/4 - 0s - loss: 0.1381 - accuracy: 0.8000 - val_loss: 0.1378 -
val_accuracy: 0.8083
Epoch 149/200
4/4 - 0s - loss: 0.1377 - accuracy: 0.8083 - val_loss: 0.1375 -
val_accuracy: 0.8083
Epoch 150/200
4/4 - 0s - loss: 0.1374 - accuracy: 0.8083 - val_loss: 0.1371 -
val_accuracy: 0.8083
Epoch 151/200
4/4 - 0s - loss: 0.1371 - accuracy: 0.8083 - val_loss: 0.1368 -
val_accuracy: 0.8083
```

```
Epoch 152/200
4/4 - 0s - loss: 0.1367 - accuracy: 0.8083 - val_loss: 0.1365 -
val_accuracy: 0.8083
Epoch 153/200
4/4 - 0s - loss: 0.1364 - accuracy: 0.8083 - val_loss: 0.1361 -
val_accuracy: 0.8083
Epoch 154/200
4/4 - 0s - loss: 0.1361 - accuracy: 0.8083 - val_loss: 0.1358 -
val_accuracy: 0.8083
Epoch 155/200
4/4 - 0s - loss: 0.1358 - accuracy: 0.8083 - val_loss: 0.1355 -
val_accuracy: 0.8083
Epoch 156/200
4/4 - 0s - loss: 0.1354 - accuracy: 0.8083 - val_loss: 0.1352 -
val_accuracy: 0.8083
Epoch 157/200
4/4 - 0s - loss: 0.1351 - accuracy: 0.8083 - val_loss: 0.1348 -
val_accuracy: 0.8083
Epoch 158/200
4/4 - 0s - loss: 0.1348 - accuracy: 0.8083 - val_loss: 0.1345 -
val_accuracy: 0.8083
Epoch 159/200
4/4 - 0s - loss: 0.1344 - accuracy: 0.8083 - val_loss: 0.1342 -
val_accuracy: 0.8083
Epoch 160/200
4/4 - 0s - loss: 0.1341 - accuracy: 0.8083 - val_loss: 0.1339 -
val_accuracy: 0.8083
Epoch 161/200
4/4 - 0s - loss: 0.1338 - accuracy: 0.8083 - val_loss: 0.1336 -
val_accuracy: 0.8083
Epoch 162/200
4/4 - 0s - loss: 0.1335 - accuracy: 0.8083 - val_loss: 0.1333 -
val_accuracy: 0.8083
Epoch 163/200
4/4 - 0s - loss: 0.1332 - accuracy: 0.8083 - val_loss: 0.1330 -
val_accuracy: 0.8083
Epoch 164/200
4/4 - 0s - loss: 0.1329 - accuracy: 0.8083 - val_loss: 0.1327 -
val_accuracy: 0.8083
Epoch 165/200
4/4 - 0s - loss: 0.1327 - accuracy: 0.8083 - val_loss: 0.1324 -
val_accuracy: 0.8083
Epoch 166/200
4/4 - 0s - loss: 0.1324 - accuracy: 0.8083 - val_loss: 0.1321 -
val_accuracy: 0.8083
Epoch 167/200
4/4 - 0s - loss: 0.1320 - accuracy: 0.8083 - val_loss: 0.1318 -
val_accuracy: 0.8083
Epoch 168/200
4/4 - 0s - loss: 0.1317 - accuracy: 0.8083 - val_loss: 0.1315 -
```

```
val_accuracy: 0.8083
Epoch 169/200
4/4 - 0s - loss: 0.1314 - accuracy: 0.8083 - val_loss: 0.1312 -
val_accuracy: 0.8083
Epoch 170/200
4/4 - 0s - loss: 0.1312 - accuracy: 0.8083 - val_loss: 0.1309 -
val_accuracy: 0.8083
Epoch 171/200
4/4 - 0s - loss: 0.1309 - accuracy: 0.8083 - val_loss: 0.1307 -
val_accuracy: 0.8083
Epoch 172/200
4/4 - 0s - loss: 0.1306 - accuracy: 0.8083 - val_loss: 0.1304 -
val_accuracy: 0.8083
Epoch 173/200
4/4 - 0s - loss: 0.1304 - accuracy: 0.8083 - val_loss: 0.1301 -
val_accuracy: 0.8083
Epoch 174/200
4/4 - 0s - loss: 0.1301 - accuracy: 0.8083 - val_loss: 0.1299 -
val_accuracy: 0.8083
Epoch 175/200
4/4 - 0s - loss: 0.1299 - accuracy: 0.8083 - val_loss: 0.1296 -
val_accuracy: 0.8167
Epoch 176/200
4/4 - 0s - loss: 0.1296 - accuracy: 0.8167 - val_loss: 0.1293 -
val_accuracy: 0.8167
Epoch 177/200
4/4 - 0s - loss: 0.1293 - accuracy: 0.8167 - val_loss: 0.1291 -
val_accuracy: 0.8167
Epoch 178/200
4/4 - 0s - loss: 0.1290 - accuracy: 0.8167 - val_loss: 0.1288 -
val_accuracy: 0.8167
Epoch 179/200
4/4 - 0s - loss: 0.1288 - accuracy: 0.8167 - val_loss: 0.1286 -
val_accuracy: 0.8167
Epoch 180/200
4/4 - 0s - loss: 0.1285 - accuracy: 0.8167 - val_loss: 0.1283 -
val_accuracy: 0.8167
Epoch 181/200
4/4 - 0s - loss: 0.1282 - accuracy: 0.8167 - val_loss: 0.1281 -
val_accuracy: 0.8167
Epoch 182/200
4/4 - 0s - loss: 0.1280 - accuracy: 0.8167 - val_loss: 0.1278 -
val_accuracy: 0.8167
Epoch 183/200
4/4 - 0s - loss: 0.1277 - accuracy: 0.8167 - val_loss: 0.1276 -
val_accuracy: 0.8167
Epoch 184/200
4/4 - 0s - loss: 0.1275 - accuracy: 0.8167 - val_loss: 0.1273 -
val_accuracy: 0.8167
Epoch 185/200
```

```
4/4 - 0s - loss: 0.1273 - accuracy: 0.8167 - val_loss: 0.1271 -
val_accuracy: 0.8167
Epoch 186/200
4/4 - 0s - loss: 0.1270 - accuracy: 0.8167 - val_loss: 0.1268 -
val_accuracy: 0.8167
Epoch 187/200
4/4 - 0s - loss: 0.1268 - accuracy: 0.8167 - val_loss: 0.1266 -
val_accuracy: 0.8167
Epoch 188/200
4/4 - 0s - loss: 0.1266 - accuracy: 0.8167 - val_loss: 0.1264 -
val_accuracy: 0.8167
Epoch 189/200
4/4 - 0s - loss: 0.1264 - accuracy: 0.8167 - val_loss: 0.1261 -
val_accuracy: 0.8167
Epoch 190/200
4/4 - 0s - loss: 0.1261 - accuracy: 0.8167 - val_loss: 0.1259 -
val_accuracy: 0.8167
Epoch 191/200
4/4 - 0s - loss: 0.1259 - accuracy: 0.8167 - val_loss: 0.1257 -
val_accuracy: 0.8167
Epoch 192/200
4/4 - 0s - loss: 0.1256 - accuracy: 0.8167 - val_loss: 0.1255 -
val_accuracy: 0.8167
Epoch 193/200
4/4 - 0s - loss: 0.1255 - accuracy: 0.8167 - val_loss: 0.1252 -
val_accuracy: 0.8167
Epoch 194/200
4/4 - 0s - loss: 0.1252 - accuracy: 0.8167 - val_loss: 0.1250 -
val_accuracy: 0.8167
Epoch 195/200
4/4 - 0s - loss: 0.1250 - accuracy: 0.8167 - val_loss: 0.1248 -
val_accuracy: 0.8167
Epoch 196/200
4/4 - 0s - loss: 0.1248 - accuracy: 0.8167 - val_loss: 0.1246 -
val_accuracy: 0.8167
Epoch 197/200
4/4 - 0s - loss: 0.1245 - accuracy: 0.8167 - val_loss: 0.1244 -
val_accuracy: 0.8167
Epoch 198/200
4/4 - 0s - loss: 0.1244 - accuracy: 0.8167 - val_loss: 0.1242 -
val_accuracy: 0.8167
Epoch 199/200
4/4 - 0s - loss: 0.1242 - accuracy: 0.8167 - val_loss: 0.1240 -
val_accuracy: 0.8167
Epoch 200/200
4/4 - 0s - loss: 0.1239 - accuracy: 0.8167 - val_loss: 0.1238 -
val_accuracy: 0.8167
Activation: tanh LR: 0.01 Itertions: 200 || Train loss:
0.12376353144645691
Activation: tanh LR: 0.01 Itertions: 200 || Train Accuracy:
```

```
0.8166666626930237
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0012s vs
`on_train_batch_end` time: 0.0784s). Check your callbacks.
4/4 - 0s - loss: 0.1238 - accuracy: 0.8167 - val_loss: 0.1098 -
val_accuracy: 0.9000
Epoch 2/200
4/4 - 0s - loss: 0.1235 - accuracy: 0.8167 - val_loss: 0.1096 -
val_accuracy: 0.9000
Epoch 3/200
4/4 - 0s - loss: 0.1234 - accuracy: 0.8167 - val_loss: 0.1094 -
val_accuracy: 0.9000
Epoch 4/200
4/4 - 0s - loss: 0.1231 - accuracy: 0.8167 - val_loss: 0.1093 -
val_accuracy: 0.9000
Epoch 5/200
4/4 - 0s - loss: 0.1229 - accuracy: 0.8167 - val_loss: 0.1091 -
val_accuracy: 0.9000
Epoch 6/200
4/4 - 0s - loss: 0.1228 - accuracy: 0.8167 - val_loss: 0.1089 -
val_accuracy: 0.9000
Epoch 7/200
4/4 - 0s - loss: 0.1225 - accuracy: 0.8167 - val_loss: 0.1088 -
val_accuracy: 0.9000
Epoch 8/200
4/4 - 0s - loss: 0.1224 - accuracy: 0.8167 - val_loss: 0.1086 -
val_accuracy: 0.9000
Epoch 9/200
4/4 - 0s - loss: 0.1222 - accuracy: 0.8167 - val_loss: 0.1085 -
val_accuracy: 0.9000
Epoch 10/200
4/4 - 0s - loss: 0.1220 - accuracy: 0.8167 - val_loss: 0.1083 -
val_accuracy: 0.9000
Epoch 11/200
4/4 - 0s - loss: 0.1218 - accuracy: 0.8167 - val_loss: 0.1081 -
val_accuracy: 0.9000
Epoch 12/200
4/4 - 0s - loss: 0.1216 - accuracy: 0.8167 - val_loss: 0.1080 -
val_accuracy: 0.9000

Epoch 13/200
4/4 - 0s - loss: 0.1215 - accuracy: 0.8167 - val_loss: 0.1078 -
val_accuracy: 0.9000
Epoch 14/200
4/4 - 0s - loss: 0.1213 - accuracy: 0.8167 - val_loss: 0.1077 -
val_accuracy: 0.9000
Epoch 15/200
4/4 - 0s - loss: 0.1211 - accuracy: 0.8167 - val_loss: 0.1075 -
val_accuracy: 0.9000
```

```
Epoch 16/200
4/4 - 0s - loss: 0.1209 - accuracy: 0.8167 - val_loss: 0.1074 -
val_accuracy: 0.9000
Epoch 17/200
4/4 - 0s - loss: 0.1208 - accuracy: 0.8167 - val_loss: 0.1073 -
val_accuracy: 0.9000
Epoch 18/200
4/4 - 0s - loss: 0.1206 - accuracy: 0.8167 - val_loss: 0.1071 -
val_accuracy: 0.9000
Epoch 19/200
4/4 - 0s - loss: 0.1204 - accuracy: 0.8167 - val_loss: 0.1070 -
val_accuracy: 0.9000
Epoch 20/200
4/4 - 0s - loss: 0.1203 - accuracy: 0.8167 - val_loss: 0.1068 -
val_accuracy: 0.9000
Epoch 21/200
4/4 - 0s - loss: 0.1201 - accuracy: 0.8167 - val_loss: 0.1067 -
val_accuracy: 0.9000
Epoch 22/200
4/4 - 0s - loss: 0.1199 - accuracy: 0.8167 - val_loss: 0.1066 -
val_accuracy: 0.9000
Epoch 23/200
4/4 - 0s - loss: 0.1198 - accuracy: 0.8167 - val_loss: 0.1064 -
val_accuracy: 0.9000
Epoch 24/200
4/4 - 0s - loss: 0.1196 - accuracy: 0.8167 - val_loss: 0.1063 -
val_accuracy: 0.9000
Epoch 25/200
4/4 - 0s - loss: 0.1195 - accuracy: 0.8167 - val_loss: 0.1062 -
val_accuracy: 0.9000
Epoch 26/200
4/4 - 0s - loss: 0.1193 - accuracy: 0.8167 - val_loss: 0.1060 -
val_accuracy: 0.9000
Epoch 27/200
4/4 - 0s - loss: 0.1191 - accuracy: 0.8167 - val_loss: 0.1059 -
val_accuracy: 0.9000
Epoch 28/200
4/4 - 0s - loss: 0.1190 - accuracy: 0.8167 - val_loss: 0.1058 -
val_accuracy: 0.9000
Epoch 29/200
4/4 - 0s - loss: 0.1188 - accuracy: 0.8167 - val_loss: 0.1056 -
val_accuracy: 0.9000
Epoch 30/200
4/4 - 0s - loss: 0.1187 - accuracy: 0.8167 - val_loss: 0.1055 -
val_accuracy: 0.9000
Epoch 31/200
4/4 - 0s - loss: 0.1185 - accuracy: 0.8167 - val_loss: 0.1054 -
val_accuracy: 0.9000
Epoch 32/200
4/4 - 0s - loss: 0.1184 - accuracy: 0.8167 - val_loss: 0.1053 -
```

```
val_accuracy: 0.9000
Epoch 33/200
4/4 - 0s - loss: 0.1182 - accuracy: 0.8167 - val_loss: 0.1052 -
val_accuracy: 0.9000
Epoch 34/200
4/4 - 0s - loss: 0.1181 - accuracy: 0.8167 - val_loss: 0.1050 -
val_accuracy: 0.9000
Epoch 35/200
4/4 - 0s - loss: 0.1180 - accuracy: 0.8167 - val_loss: 0.1049 -
val_accuracy: 0.9000
Epoch 36/200
4/4 - 0s - loss: 0.1178 - accuracy: 0.8167 - val_loss: 0.1048 -
val_accuracy: 0.9000
Epoch 37/200
4/4 - 0s - loss: 0.1177 - accuracy: 0.8167 - val_loss: 0.1047 -
val_accuracy: 0.9000
Epoch 38/200
4/4 - 0s - loss: 0.1175 - accuracy: 0.8167 - val_loss: 0.1046 -
val_accuracy: 0.9000
Epoch 39/200
4/4 - 0s - loss: 0.1174 - accuracy: 0.8167 - val_loss: 0.1045 -
val_accuracy: 0.9000
Epoch 40/200
4/4 - 0s - loss: 0.1173 - accuracy: 0.8167 - val_loss: 0.1044 -
val_accuracy: 0.9000
Epoch 41/200
4/4 - 0s - loss: 0.1171 - accuracy: 0.8167 - val_loss: 0.1043 -
val_accuracy: 0.9000
Epoch 42/200
4/4 - 0s - loss: 0.1170 - accuracy: 0.8167 - val_loss: 0.1041 -
val_accuracy: 0.9000
Epoch 43/200
4/4 - 0s - loss: 0.1168 - accuracy: 0.8167 - val_loss: 0.1041 -
val_accuracy: 0.9000
Epoch 44/200
4/4 - 0s - loss: 0.1167 - accuracy: 0.8167 - val_loss: 0.1040 -
val_accuracy: 0.9000
Epoch 45/200
4/4 - 0s - loss: 0.1166 - accuracy: 0.8167 - val_loss: 0.1039 -
val_accuracy: 0.9000
Epoch 46/200
4/4 - 0s - loss: 0.1165 - accuracy: 0.8167 - val_loss: 0.1037 -
val_accuracy: 0.9000
Epoch 47/200
4/4 - 0s - loss: 0.1164 - accuracy: 0.8167 - val_loss: 0.1036 -
val_accuracy: 0.9000
Epoch 48/200
4/4 - 0s - loss: 0.1162 - accuracy: 0.8167 - val_loss: 0.1035 -
val_accuracy: 0.9000
Epoch 49/200
```

```
4/4 - 0s - loss: 0.1161 - accuracy: 0.8167 - val_loss: 0.1034 -
val_accuracy: 0.9000
Epoch 50/200
4/4 - 0s - loss: 0.1160 - accuracy: 0.8167 - val_loss: 0.1033 -
val_accuracy: 0.9000
Epoch 51/200
4/4 - 0s - loss: 0.1158 - accuracy: 0.8167 - val_loss: 0.1032 -
val_accuracy: 0.9000
Epoch 52/200
4/4 - 0s - loss: 0.1158 - accuracy: 0.8167 - val_loss: 0.1031 -
val_accuracy: 0.9000
Epoch 53/200
4/4 - 0s - loss: 0.1156 - accuracy: 0.8167 - val_loss: 0.1030 -
val_accuracy: 0.9000
Epoch 54/200
4/4 - 0s - loss: 0.1155 - accuracy: 0.8167 - val_loss: 0.1029 -
val_accuracy: 0.9000
Epoch 55/200
4/4 - 0s - loss: 0.1154 - accuracy: 0.8167 - val_loss: 0.1028 -
val_accuracy: 0.9000
Epoch 56/200
4/4 - 0s - loss: 0.1152 - accuracy: 0.8167 - val_loss: 0.1027 -
val_accuracy: 0.9000
Epoch 57/200
4/4 - 0s - loss: 0.1151 - accuracy: 0.8167 - val_loss: 0.1026 -
val_accuracy: 0.9000
Epoch 58/200
4/4 - 0s - loss: 0.1150 - accuracy: 0.8167 - val_loss: 0.1025 -
val_accuracy: 0.9000
Epoch 59/200
4/4 - 0s - loss: 0.1149 - accuracy: 0.8167 - val_loss: 0.1024 -
val_accuracy: 0.9000
Epoch 60/200
4/4 - 0s - loss: 0.1148 - accuracy: 0.8167 - val_loss: 0.1024 -
val_accuracy: 0.9000
Epoch 61/200
4/4 - 0s - loss: 0.1147 - accuracy: 0.8167 - val_loss: 0.1023 -
val_accuracy: 0.9000
Epoch 62/200
4/4 - 0s - loss: 0.1145 - accuracy: 0.8250 - val_loss: 0.1022 -
val_accuracy: 0.9000
Epoch 63/200
4/4 - 0s - loss: 0.1144 - accuracy: 0.8250 - val_loss: 0.1021 -
val_accuracy: 0.9000
Epoch 64/200
4/4 - 0s - loss: 0.1144 - accuracy: 0.8167 - val_loss: 0.1020 -
val_accuracy: 0.9000
Epoch 65/200
4/4 - 0s - loss: 0.1142 - accuracy: 0.8167 - val_loss: 0.1019 -
val_accuracy: 0.9000
```

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Epoch 66/200
4/4 - 0s - loss: 0.1141 - accuracy: 0.8250 - val_loss: 0.1018 -
val_accuracy: 0.9000
Epoch 67/200
4/4 - 0s - loss: 0.1140 - accuracy: 0.8250 - val_loss: 0.1017 -
val_accuracy: 0.9000
Epoch 68/200
4/4 - 0s - loss: 0.1139 - accuracy: 0.8250 - val_loss: 0.1016 -
val_accuracy: 0.9000
Epoch 69/200
4/4 - 0s - loss: 0.1138 - accuracy: 0.8250 - val_loss: 0.1015 -
val_accuracy: 0.9000
Epoch 70/200
4/4 - 0s - loss: 0.1137 - accuracy: 0.8333 - val_loss: 0.1015 -
val_accuracy: 0.9000
Epoch 71/200
4/4 - 0s - loss: 0.1136 - accuracy: 0.8333 - val_loss: 0.1014 -
val_accuracy: 0.9000
Epoch 72/200
4/4 - 0s - loss: 0.1135 - accuracy: 0.8250 - val_loss: 0.1013 -
val_accuracy: 0.9000
Epoch 73/200
4/4 - 0s - loss: 0.1134 - accuracy: 0.8333 - val_loss: 0.1012 -
val_accuracy: 0.9000
Epoch 74/200
4/4 - 0s - loss: 0.1133 - accuracy: 0.8333 - val_loss: 0.1012 -
val_accuracy: 0.9000
Epoch 75/200
4/4 - 0s - loss: 0.1132 - accuracy: 0.8333 - val_loss: 0.1011 -
val_accuracy: 0.9000
Epoch 76/200
4/4 - 0s - loss: 0.1131 - accuracy: 0.8333 - val_loss: 0.1010 -
val_accuracy: 0.9000
Epoch 77/200
4/4 - 0s - loss: 0.1130 - accuracy: 0.8333 - val_loss: 0.1009 -
val_accuracy: 0.9000
Epoch 78/200
4/4 - 0s - loss: 0.1129 - accuracy: 0.8333 - val_loss: 0.1008 -
val_accuracy: 0.9000
Epoch 79/200
4/4 - 0s - loss: 0.1127 - accuracy: 0.8333 - val_loss: 0.1007 -
val_accuracy: 0.9000
Epoch 80/200
4/4 - 0s - loss: 0.1127 - accuracy: 0.8333 - val_loss: 0.1007 -
val_accuracy: 0.9000
Epoch 81/200
4/4 - 0s - loss: 0.1126 - accuracy: 0.8333 - val_loss: 0.1006 -
val_accuracy: 0.9000
Epoch 82/200
4/4 - 0s - loss: 0.1125 - accuracy: 0.8333 - val_loss: 0.1005 -
```

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val_accuracy: 0.9000
Epoch 83/200
4/4 - 0s - loss: 0.1124 - accuracy: 0.8333 - val_loss: 0.1004 -
val_accuracy: 0.9000
Epoch 84/200
4/4 - 0s - loss: 0.1123 - accuracy: 0.8333 - val_loss: 0.1004 -
val_accuracy: 0.9000
Epoch 85/200
4/4 - 0s - loss: 0.1122 - accuracy: 0.8333 - val_loss: 0.1003 -
val_accuracy: 0.9000
Epoch 86/200
4/4 - 0s - loss: 0.1121 - accuracy: 0.8333 - val_loss: 0.1002 -
val_accuracy: 0.9000
Epoch 87/200
4/4 - 0s - loss: 0.1120 - accuracy: 0.8333 - val_loss: 0.1001 -
val_accuracy: 0.9000
Epoch 88/200
4/4 - 0s - loss: 0.1119 - accuracy: 0.8333 - val_loss: 0.1001 -
val_accuracy: 0.9000
Epoch 89/200
4/4 - 0s - loss: 0.1118 - accuracy: 0.8333 - val_loss: 0.1000 -
val_accuracy: 0.9000
Epoch 90/200
4/4 - 0s - loss: 0.1117 - accuracy: 0.8333 - val_loss: 0.0999 -
val_accuracy: 0.9000
Epoch 91/200
4/4 - 0s - loss: 0.1116 - accuracy: 0.8333 - val_loss: 0.0998 -
val_accuracy: 0.9000
Epoch 92/200
4/4 - 0s - loss: 0.1115 - accuracy: 0.8333 - val_loss: 0.0998 -
val_accuracy: 0.9000
Epoch 93/200
4/4 - 0s - loss: 0.1115 - accuracy: 0.8333 - val_loss: 0.0997 -
val_accuracy: 0.9000
Epoch 94/200
4/4 - 0s - loss: 0.1114 - accuracy: 0.8333 - val_loss: 0.0996 -
val_accuracy: 0.9000
Epoch 95/200
4/4 - 0s - loss: 0.1113 - accuracy: 0.8333 - val_loss: 0.0995 -
val_accuracy: 0.9000
Epoch 96/200
4/4 - 0s - loss: 0.1112 - accuracy: 0.8333 - val_loss: 0.0995 -
val_accuracy: 0.9000

Epoch 97/200
4/4 - 0s - loss: 0.1111 - accuracy: 0.8333 - val_loss: 0.0994 -
val_accuracy: 0.9000
Epoch 98/200
4/4 - 0s - loss: 0.1110 - accuracy: 0.8333 - val_loss: 0.0993 -
val_accuracy: 0.9000
```

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Epoch 99/200
4/4 - 0s - loss: 0.1109 - accuracy: 0.8333 - val_loss: 0.0993 -
val_accuracy: 0.9000
Epoch 100/200
4/4 - 0s - loss: 0.1108 - accuracy: 0.8333 - val_loss: 0.0992 -
val_accuracy: 0.9000
Epoch 101/200
4/4 - 0s - loss: 0.1107 - accuracy: 0.8333 - val_loss: 0.0991 -
val_accuracy: 0.9000
Epoch 102/200
4/4 - 0s - loss: 0.1107 - accuracy: 0.8333 - val_loss: 0.0990 -
val_accuracy: 0.9000
Epoch 103/200
4/4 - 0s - loss: 0.1106 - accuracy: 0.8333 - val_loss: 0.0990 -
val_accuracy: 0.9000
Epoch 104/200
4/4 - 0s - loss: 0.1105 - accuracy: 0.8333 - val_loss: 0.0989 -
val_accuracy: 0.9000
Epoch 105/200
4/4 - 0s - loss: 0.1104 - accuracy: 0.8333 - val_loss: 0.0988 -
val_accuracy: 0.9000
Epoch 106/200
4/4 - 0s - loss: 0.1103 - accuracy: 0.8333 - val_loss: 0.0987 -
val_accuracy: 0.9000
Epoch 107/200
4/4 - 0s - loss: 0.1102 - accuracy: 0.8333 - val_loss: 0.0987 -
val_accuracy: 0.9000
Epoch 108/200
4/4 - 0s - loss: 0.1102 - accuracy: 0.8333 - val_loss: 0.0986 -
val_accuracy: 0.9000
Epoch 109/200
4/4 - 0s - loss: 0.1101 - accuracy: 0.8333 - val_loss: 0.0985 -
val_accuracy: 0.9000
Epoch 110/200
4/4 - 0s - loss: 0.1100 - accuracy: 0.8333 - val_loss: 0.0985 -
val_accuracy: 0.9000
Epoch 111/200
4/4 - 0s - loss: 0.1099 - accuracy: 0.8333 - val_loss: 0.0984 -
val_accuracy: 0.9000
Epoch 112/200
4/4 - 0s - loss: 0.1098 - accuracy: 0.8333 - val_loss: 0.0983 -
val_accuracy: 0.9000
Epoch 113/200
4/4 - 0s - loss: 0.1098 - accuracy: 0.8333 - val_loss: 0.0982 -
val_accuracy: 0.9000
Epoch 114/200
4/4 - 0s - loss: 0.1096 - accuracy: 0.8333 - val_loss: 0.0982 -
val_accuracy: 0.9000
Epoch 115/200
4/4 - 0s - loss: 0.1096 - accuracy: 0.8333 - val_loss: 0.0981 -
```

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val_accuracy: 0.9000
Epoch 116/200
4/4 - 0s - loss: 0.1095 - accuracy: 0.8333 - val_loss: 0.0980 -
val_accuracy: 0.9000
Epoch 117/200
4/4 - 0s - loss: 0.1094 - accuracy: 0.8333 - val_loss: 0.0980 -
val_accuracy: 0.9000
Epoch 118/200
4/4 - 0s - loss: 0.1093 - accuracy: 0.8333 - val_loss: 0.0979 -
val_accuracy: 0.9000
Epoch 119/200
4/4 - 0s - loss: 0.1092 - accuracy: 0.8333 - val_loss: 0.0979 -
val_accuracy: 0.9000
Epoch 120/200
4/4 - 0s - loss: 0.1092 - accuracy: 0.8333 - val_loss: 0.0978 -
val_accuracy: 0.9000
Epoch 121/200
4/4 - 0s - loss: 0.1091 - accuracy: 0.8333 - val_loss: 0.0977 -
val_accuracy: 0.9000
Epoch 122/200
4/4 - 0s - loss: 0.1091 - accuracy: 0.8333 - val_loss: 0.0977 -
val_accuracy: 0.9000
Epoch 123/200
4/4 - 0s - loss: 0.1090 - accuracy: 0.8333 - val_loss: 0.0976 -
val_accuracy: 0.9000
Epoch 124/200
4/4 - 0s - loss: 0.1089 - accuracy: 0.8333 - val_loss: 0.0975 -
val_accuracy: 0.9000
Epoch 125/200
4/4 - 0s - loss: 0.1088 - accuracy: 0.8333 - val_loss: 0.0975 -
val_accuracy: 0.9000
Epoch 126/200
4/4 - 0s - loss: 0.1087 - accuracy: 0.8333 - val_loss: 0.0974 -
val_accuracy: 0.9000
Epoch 127/200
4/4 - 0s - loss: 0.1087 - accuracy: 0.8333 - val_loss: 0.0974 -
val_accuracy: 0.9000
Epoch 128/200
4/4 - 0s - loss: 0.1086 - accuracy: 0.8333 - val_loss: 0.0973 -
val_accuracy: 0.9000
Epoch 129/200
4/4 - 0s - loss: 0.1085 - accuracy: 0.8333 - val_loss: 0.0972 -
val_accuracy: 0.9000
Epoch 130/200
4/4 - 0s - loss: 0.1084 - accuracy: 0.8333 - val_loss: 0.0972 -
val_accuracy: 0.9000
Epoch 131/200
4/4 - 0s - loss: 0.1083 - accuracy: 0.8333 - val_loss: 0.0971 -
val_accuracy: 0.9000
Epoch 132/200
```

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4/4 - 0s - loss: 0.1083 - accuracy: 0.8333 - val_loss: 0.0970 -
val_accuracy: 0.9000
Epoch 133/200
4/4 - 0s - loss: 0.1082 - accuracy: 0.8333 - val_loss: 0.0970 -
val_accuracy: 0.9000
Epoch 134/200
4/4 - 0s - loss: 0.1081 - accuracy: 0.8333 - val_loss: 0.0969 -
val_accuracy: 0.9000
Epoch 135/200
4/4 - 0s - loss: 0.1081 - accuracy: 0.8333 - val_loss: 0.0969 -
val_accuracy: 0.9000
Epoch 136/200
4/4 - 0s - loss: 0.1080 - accuracy: 0.8333 - val_loss: 0.0968 -
val_accuracy: 0.9000
Epoch 137/200
4/4 - 0s - loss: 0.1080 - accuracy: 0.8333 - val_loss: 0.0968 -
val_accuracy: 0.9000
Epoch 138/200
4/4 - 0s - loss: 0.1078 - accuracy: 0.8333 - val_loss: 0.0967 -
val_accuracy: 0.9000
Epoch 139/200
4/4 - 0s - loss: 0.1077 - accuracy: 0.8333 - val_loss: 0.0967 -
val_accuracy: 0.9000
Epoch 140/200
4/4 - 0s - loss: 0.1077 - accuracy: 0.8333 - val_loss: 0.0966 -
val_accuracy: 0.9000
Epoch 141/200
4/4 - 0s - loss: 0.1076 - accuracy: 0.8333 - val_loss: 0.0966 -
val_accuracy: 0.9000
Epoch 142/200
4/4 - 0s - loss: 0.1075 - accuracy: 0.8417 - val_loss: 0.0965 -
val_accuracy: 0.9000
Epoch 143/200
4/4 - 0s - loss: 0.1075 - accuracy: 0.8417 - val_loss: 0.0965 -
val_accuracy: 0.9000
Epoch 144/200
4/4 - 0s - loss: 0.1074 - accuracy: 0.8417 - val_loss: 0.0964 -
val_accuracy: 0.9000
Epoch 145/200
4/4 - 0s - loss: 0.1073 - accuracy: 0.8417 - val_loss: 0.0963 -
val_accuracy: 0.9000
Epoch 146/200
4/4 - 0s - loss: 0.1073 - accuracy: 0.8417 - val_loss: 0.0963 -
val_accuracy: 0.9000
Epoch 147/200
4/4 - 0s - loss: 0.1072 - accuracy: 0.8500 - val_loss: 0.0963 -
val_accuracy: 0.9000
Epoch 148/200
4/4 - 0s - loss: 0.1072 - accuracy: 0.8500 - val_loss: 0.0962 -
val_accuracy: 0.9000
```

```
Epoch 149/200
4/4 - 0s - loss: 0.1071 - accuracy: 0.8583 - val_loss: 0.0962 -
val_accuracy: 0.9000
Epoch 150/200
4/4 - 0s - loss: 0.1070 - accuracy: 0.8583 - val_loss: 0.0961 -
val_accuracy: 0.9000
Epoch 151/200
4/4 - 0s - loss: 0.1069 - accuracy: 0.8500 - val_loss: 0.0960 -
val_accuracy: 0.9000
Epoch 152/200
4/4 - 0s - loss: 0.1069 - accuracy: 0.8583 - val_loss: 0.0960 -
val_accuracy: 0.9000
Epoch 153/200
4/4 - 0s - loss: 0.1067 - accuracy: 0.8583 - val_loss: 0.0959 -
val_accuracy: 0.9000
Epoch 154/200
4/4 - 0s - loss: 0.1067 - accuracy: 0.8667 - val_loss: 0.0959 -
val_accuracy: 0.9000
Epoch 155/200
4/4 - 0s - loss: 0.1066 - accuracy: 0.8667 - val_loss: 0.0958 -
val_accuracy: 0.9000
Epoch 156/200
4/4 - 0s - loss: 0.1066 - accuracy: 0.8667 - val_loss: 0.0958 -
val_accuracy: 0.9000
Epoch 157/200
4/4 - 0s - loss: 0.1065 - accuracy: 0.8667 - val_loss: 0.0957 -
val_accuracy: 0.9000
Epoch 158/200
4/4 - 0s - loss: 0.1064 - accuracy: 0.8667 - val_loss: 0.0957 -
val_accuracy: 0.9000
Epoch 159/200
4/4 - 0s - loss: 0.1064 - accuracy: 0.8667 - val_loss: 0.0956 -
val_accuracy: 0.9000
Epoch 160/200
4/4 - 0s - loss: 0.1063 - accuracy: 0.8667 - val_loss: 0.0956 -
val_accuracy: 0.9000
Epoch 161/200
4/4 - 0s - loss: 0.1062 - accuracy: 0.8667 - val_loss: 0.0955 -
val_accuracy: 0.9000
Epoch 162/200
4/4 - 0s - loss: 0.1062 - accuracy: 0.8667 - val_loss: 0.0955 -
val_accuracy: 0.9000
Epoch 163/200
4/4 - 0s - loss: 0.1061 - accuracy: 0.8667 - val_loss: 0.0954 -
val_accuracy: 0.9000
Epoch 164/200
4/4 - 0s - loss: 0.1060 - accuracy: 0.8667 - val_loss: 0.0954 -
val_accuracy: 0.9000
Epoch 165/200
4/4 - 0s - loss: 0.1059 - accuracy: 0.8667 - val_loss: 0.0953 -
```

```
val_accuracy: 0.9000
Epoch 166/200
4/4 - 0s - loss: 0.1059 - accuracy: 0.8667 - val_loss: 0.0952 -
val_accuracy: 0.9000
Epoch 167/200
4/4 - 0s - loss: 0.1059 - accuracy: 0.8667 - val_loss: 0.0952 -
val_accuracy: 0.9000
Epoch 168/200
4/4 - 0s - loss: 0.1058 - accuracy: 0.8667 - val_loss: 0.0951 -
val_accuracy: 0.9000
Epoch 169/200
4/4 - 0s - loss: 0.1057 - accuracy: 0.8667 - val_loss: 0.0951 -
val_accuracy: 0.9000
Epoch 170/200
4/4 - 0s - loss: 0.1057 - accuracy: 0.8667 - val_loss: 0.0950 -
val_accuracy: 0.9000
Epoch 171/200
4/4 - 0s - loss: 0.1056 - accuracy: 0.8667 - val_loss: 0.0950 -
val_accuracy: 0.9000
Epoch 172/200
4/4 - 0s - loss: 0.1055 - accuracy: 0.8667 - val_loss: 0.0949 -
val_accuracy: 0.9000
Epoch 173/200
4/4 - 0s - loss: 0.1055 - accuracy: 0.8667 - val_loss: 0.0949 -
val_accuracy: 0.9000
Epoch 174/200
4/4 - 0s - loss: 0.1054 - accuracy: 0.8667 - val_loss: 0.0948 -
val_accuracy: 0.9000
Epoch 175/200
4/4 - 0s - loss: 0.1053 - accuracy: 0.8667 - val_loss: 0.0948 -
val_accuracy: 0.9000
Epoch 176/200
4/4 - 0s - loss: 0.1053 - accuracy: 0.8667 - val_loss: 0.0947 -
val_accuracy: 0.9000
Epoch 177/200
4/4 - 0s - loss: 0.1052 - accuracy: 0.8667 - val_loss: 0.0947 -
val_accuracy: 0.9000
Epoch 178/200
4/4 - 0s - loss: 0.1051 - accuracy: 0.8667 - val_loss: 0.0946 -
val_accuracy: 0.9000
Epoch 179/200
4/4 - 0s - loss: 0.1051 - accuracy: 0.8667 - val_loss: 0.0945 -
val_accuracy: 0.9000

Epoch 180/200
4/4 - 0s - loss: 0.1050 - accuracy: 0.8667 - val_loss: 0.0945 -
val_accuracy: 0.9000
Epoch 181/200
4/4 - 0s - loss: 0.1050 - accuracy: 0.8667 - val_loss: 0.0945 -
val_accuracy: 0.9000
```

```
Epoch 182/200
4/4 - 0s - loss: 0.1049 - accuracy: 0.8667 - val_loss: 0.0944 -
val_accuracy: 0.9000
Epoch 183/200
4/4 - 0s - loss: 0.1048 - accuracy: 0.8667 - val_loss: 0.0944 -
val_accuracy: 0.9000
Epoch 184/200
4/4 - 0s - loss: 0.1048 - accuracy: 0.8667 - val_loss: 0.0943 -
val_accuracy: 0.9000
Epoch 185/200
4/4 - 0s - loss: 0.1047 - accuracy: 0.8667 - val_loss: 0.0942 -
val_accuracy: 0.9000
Epoch 186/200
4/4 - 0s - loss: 0.1047 - accuracy: 0.8667 - val_loss: 0.0942 -
val_accuracy: 0.9000
Epoch 187/200
4/4 - 0s - loss: 0.1046 - accuracy: 0.8667 - val_loss: 0.0941 -
val_accuracy: 0.9000
Epoch 188/200
4/4 - 0s - loss: 0.1045 - accuracy: 0.8667 - val_loss: 0.0941 -
val_accuracy: 0.9333
Epoch 189/200
4/4 - 0s - loss: 0.1044 - accuracy: 0.8667 - val_loss: 0.0940 -
val_accuracy: 0.9333
Epoch 190/200
4/4 - 0s - loss: 0.1044 - accuracy: 0.8667 - val_loss: 0.0940 -
val_accuracy: 0.9333
Epoch 191/200
4/4 - 0s - loss: 0.1043 - accuracy: 0.8667 - val_loss: 0.0939 -
val_accuracy: 0.9333
Epoch 192/200
4/4 - 0s - loss: 0.1043 - accuracy: 0.8667 - val_loss: 0.0939 -
val_accuracy: 0.9333
Epoch 193/200
4/4 - 0s - loss: 0.1042 - accuracy: 0.8667 - val_loss: 0.0938 -
val_accuracy: 0.9333
Epoch 194/200
4/4 - 0s - loss: 0.1042 - accuracy: 0.8667 - val_loss: 0.0938 -
val_accuracy: 0.9333
Epoch 195/200
4/4 - 0s - loss: 0.1041 - accuracy: 0.8667 - val_loss: 0.0937 -
val_accuracy: 0.9333
Epoch 196/200
4/4 - 0s - loss: 0.1040 - accuracy: 0.8667 - val_loss: 0.0937 -
val_accuracy: 0.9333
Epoch 197/200
4/4 - 0s - loss: 0.1040 - accuracy: 0.8667 - val_loss: 0.0936 -
val_accuracy: 0.9333
Epoch 198/200
4/4 - 0s - loss: 0.1039 - accuracy: 0.8667 - val_loss: 0.0936 -
```

val_accuracy: 0.9333
Epoch 199/200
4/4 - 0s - loss: 0.1039 - accuracy: 0.8667 - val_loss: 0.0935 -
val_accuracy: 0.9333
Epoch 200/200
4/4 - 0s - loss: 0.1038 - accuracy: 0.8667 - val_loss: 0.0935 -
val_accuracy: 0.9333
Activation: tanh LR: 0.01 Iterations: 200 || Test loss:
0.09345727413892746
Activation: tanh LR: 0.01 Iterations: 200 || Test Accuracy:
0.9333333373069763
==
=======
Model_tanh_LR_0.1_Iterations_100_HL_3
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0009s vs
`on_train_batch_end` time: 0.1321s). Check your callbacks.
4/4 - 0s - loss: 0.4416 - accuracy: 0.1500 - val_loss: 0.3080 -
val_accuracy: 0.3333
Epoch 2/100
4/4 - 0s - loss: 0.2673 - accuracy: 0.4667 - val_loss: 0.2055 -
val_accuracy: 0.6083
Epoch 3/100
4/4 - 0s - loss: 0.1882 - accuracy: 0.6417 - val_loss: 0.1616 -
val_accuracy: 0.7417
Epoch 4/100
4/4 - 0s - loss: 0.1537 - accuracy: 0.7500 - val_loss: 0.1401 -
val_accuracy: 0.8167
Epoch 5/100
4/4 - 0s - loss: 0.1357 - accuracy: 0.8167 - val_loss: 0.1282 -
val_accuracy: 0.8250
Epoch 6/100
4/4 - 0s - loss: 0.1254 - accuracy: 0.8167 - val_loss: 0.1205 -
val_accuracy: 0.8667
Epoch 7/100
4/4 - 0s - loss: 0.1190 - accuracy: 0.8583 - val_loss: 0.1153 -
val_accuracy: 0.8583
Epoch 8/100
4/4 - 0s - loss: 0.1143 - accuracy: 0.8667 - val_loss: 0.1115 -
val_accuracy: 0.8583
Epoch 9/100
4/4 - 0s - loss: 0.1108 - accuracy: 0.8583 - val_loss: 0.1085 -
val_accuracy: 0.8583
Epoch 10/100
4/4 - 0s - loss: 0.1081 - accuracy: 0.8583 - val_loss: 0.1061 -
val_accuracy: 0.8583
Epoch 11/100
4/4 - 0s - loss: 0.1055 - accuracy: 0.8583 - val_loss: 0.1040 -
val_accuracy: 0.8667

```
Epoch 12/100
4/4 - 0s - loss: 0.1035 - accuracy: 0.8667 - val_loss: 0.1021 -
val_accuracy: 0.8667
Epoch 13/100
4/4 - 0s - loss: 0.1019 - accuracy: 0.8667 - val_loss: 0.1005 -
val_accuracy: 0.8667
Epoch 14/100
4/4 - 0s - loss: 0.1004 - accuracy: 0.8583 - val_loss: 0.0990 -
val_accuracy: 0.8667
Epoch 15/100
4/4 - 0s - loss: 0.0990 - accuracy: 0.8583 - val_loss: 0.0976 -
val_accuracy: 0.8667
Epoch 16/100
4/4 - 0s - loss: 0.0975 - accuracy: 0.8750 - val_loss: 0.0963 -
val_accuracy: 0.8667
Epoch 17/100
4/4 - 0s - loss: 0.0967 - accuracy: 0.8667 - val_loss: 0.0951 -
val_accuracy: 0.8667
Epoch 18/100
4/4 - 0s - loss: 0.0949 - accuracy: 0.8667 - val_loss: 0.0938 -
val_accuracy: 0.8667
Epoch 19/100
4/4 - 0s - loss: 0.0936 - accuracy: 0.8667 - val_loss: 0.0926 -
val_accuracy: 0.8750
Epoch 20/100
4/4 - 0s - loss: 0.0926 - accuracy: 0.8667 - val_loss: 0.0914 -
val_accuracy: 0.8750
Epoch 21/100
4/4 - 0s - loss: 0.0914 - accuracy: 0.8750 - val_loss: 0.0903 -
val_accuracy: 0.8833
Epoch 22/100
4/4 - 0s - loss: 0.0903 - accuracy: 0.8750 - val_loss: 0.0891 -
val_accuracy: 0.8833
Epoch 23/100
4/4 - 0s - loss: 0.0893 - accuracy: 0.8750 - val_loss: 0.0880 -
val_accuracy: 0.8833
Epoch 24/100
4/4 - 0s - loss: 0.0881 - accuracy: 0.8833 - val_loss: 0.0868 -
val_accuracy: 0.8833
Epoch 25/100
4/4 - 0s - loss: 0.0866 - accuracy: 0.8833 - val_loss: 0.0857 -
val_accuracy: 0.8833
Epoch 26/100
4/4 - 0s - loss: 0.0857 - accuracy: 0.8833 - val_loss: 0.0845 -
val_accuracy: 0.8833
Epoch 27/100
4/4 - 0s - loss: 0.0848 - accuracy: 0.8833 - val_loss: 0.0833 -
val_accuracy: 0.8833
Epoch 28/100
4/4 - 0s - loss: 0.0837 - accuracy: 0.8833 - val_loss: 0.0822 -
```

```
val_accuracy: 0.8833
Epoch 29/100
4/4 - 0s - loss: 0.0820 - accuracy: 0.8833 - val_loss: 0.0810 -
val_accuracy: 0.8833
Epoch 30/100
4/4 - 0s - loss: 0.0808 - accuracy: 0.8833 - val_loss: 0.0798 -
val_accuracy: 0.8833
Epoch 31/100
4/4 - 0s - loss: 0.0796 - accuracy: 0.8833 - val_loss: 0.0786 -
val_accuracy: 0.8833
Epoch 32/100
4/4 - 0s - loss: 0.0785 - accuracy: 0.8833 - val_loss: 0.0773 -
val_accuracy: 0.8833
Epoch 33/100
4/4 - 0s - loss: 0.0773 - accuracy: 0.8833 - val_loss: 0.0761 -
val_accuracy: 0.8833
Epoch 34/100
4/4 - 0s - loss: 0.0762 - accuracy: 0.8833 - val_loss: 0.0748 -
val_accuracy: 0.8917
Epoch 35/100
4/4 - 0s - loss: 0.0746 - accuracy: 0.8833 - val_loss: 0.0736 -
val_accuracy: 0.8917
Epoch 36/100
4/4 - 0s - loss: 0.0733 - accuracy: 0.8917 - val_loss: 0.0723 -
val_accuracy: 0.8917
Epoch 37/100
4/4 - 0s - loss: 0.0722 - accuracy: 0.8917 - val_loss: 0.0710 -
val_accuracy: 0.8917
Epoch 38/100
4/4 - 0s - loss: 0.0709 - accuracy: 0.8917 - val_loss: 0.0697 -
val_accuracy: 0.8917
Epoch 39/100
4/4 - 0s - loss: 0.0695 - accuracy: 0.9000 - val_loss: 0.0683 -
val_accuracy: 0.8917
Epoch 40/100
4/4 - 0s - loss: 0.0683 - accuracy: 0.9000 - val_loss: 0.0671 -
val_accuracy: 0.8917
Epoch 41/100
4/4 - 0s - loss: 0.0668 - accuracy: 0.8917 - val_loss: 0.0657 -
val_accuracy: 0.9083
Epoch 42/100
4/4 - 0s - loss: 0.0657 - accuracy: 0.9083 - val_loss: 0.0644 -
val_accuracy: 0.9083
Epoch 43/100
4/4 - 0s - loss: 0.0647 - accuracy: 0.9000 - val_loss: 0.0631 -
val_accuracy: 0.9083
Epoch 44/100
4/4 - 0s - loss: 0.0628 - accuracy: 0.9083 - val_loss: 0.0618 -
val_accuracy: 0.9083
Epoch 45/100
```

```
4/4 - 0s - loss: 0.0622 - accuracy: 0.9083 - val_loss: 0.0605 -
val_accuracy: 0.9167
Epoch 46/100
4/4 - 0s - loss: 0.0605 - accuracy: 0.9167 - val_loss: 0.0592 -
val_accuracy: 0.9167
Epoch 47/100
4/4 - 0s - loss: 0.0590 - accuracy: 0.9167 - val_loss: 0.0579 -
val_accuracy: 0.9333
Epoch 48/100
4/4 - 0s - loss: 0.0577 - accuracy: 0.9417 - val_loss: 0.0567 -
val_accuracy: 0.9417
Epoch 49/100
4/4 - 0s - loss: 0.0565 - accuracy: 0.9417 - val_loss: 0.0555 -
val_accuracy: 0.9417
Epoch 50/100
4/4 - 0s - loss: 0.0554 - accuracy: 0.9333 - val_loss: 0.0543 -
val_accuracy: 0.9417
Epoch 51/100
4/4 - 0s - loss: 0.0539 - accuracy: 0.9417 - val_loss: 0.0531 -
val_accuracy: 0.9417
Epoch 52/100
4/4 - 0s - loss: 0.0529 - accuracy: 0.9417 - val_loss: 0.0519 -
val_accuracy: 0.9500
Epoch 53/100
4/4 - 0s - loss: 0.0517 - accuracy: 0.9500 - val_loss: 0.0508 -
val_accuracy: 0.9500
Epoch 54/100
4/4 - 0s - loss: 0.0512 - accuracy: 0.9500 - val_loss: 0.0497 -
val_accuracy: 0.9500
Epoch 55/100
4/4 - 0s - loss: 0.0496 - accuracy: 0.9500 - val_loss: 0.0486 -
val_accuracy: 0.9500
Epoch 56/100
4/4 - 0s - loss: 0.0485 - accuracy: 0.9500 - val_loss: 0.0476 -
val_accuracy: 0.9500
Epoch 57/100
4/4 - 0s - loss: 0.0476 - accuracy: 0.9500 - val_loss: 0.0466 -
val_accuracy: 0.9500
Epoch 58/100
4/4 - 0s - loss: 0.0464 - accuracy: 0.9500 - val_loss: 0.0457 -
val_accuracy: 0.9500

Epoch 59/100
4/4 - 0s - loss: 0.0456 - accuracy: 0.9500 - val_loss: 0.0448 -
val_accuracy: 0.9500
Epoch 60/100
4/4 - 0s - loss: 0.0447 - accuracy: 0.9500 - val_loss: 0.0439 -
val_accuracy: 0.9500
Epoch 61/100
4/4 - 0s - loss: 0.0442 - accuracy: 0.9500 - val_loss: 0.0430 -
```

```
val_accuracy: 0.9500
Epoch 62/100
4/4 - 0s - loss: 0.0429 - accuracy: 0.9500 - val_loss: 0.0422 -
val_accuracy: 0.9500
Epoch 63/100
4/4 - 0s - loss: 0.0423 - accuracy: 0.9417 - val_loss: 0.0414 -
val_accuracy: 0.9500
Epoch 64/100
4/4 - 0s - loss: 0.0413 - accuracy: 0.9500 - val_loss: 0.0406 -
val_accuracy: 0.9500
Epoch 65/100
4/4 - 0s - loss: 0.0406 - accuracy: 0.9500 - val_loss: 0.0399 -
val_accuracy: 0.9500
Epoch 66/100
4/4 - 0s - loss: 0.0398 - accuracy: 0.9500 - val_loss: 0.0392 -
val_accuracy: 0.9500
Epoch 67/100
4/4 - 0s - loss: 0.0393 - accuracy: 0.9500 - val_loss: 0.0385 -
val_accuracy: 0.9500
Epoch 68/100
4/4 - 0s - loss: 0.0385 - accuracy: 0.9500 - val_loss: 0.0378 -
val_accuracy: 0.9500
Epoch 69/100
4/4 - 0s - loss: 0.0378 - accuracy: 0.9500 - val_loss: 0.0372 -
val_accuracy: 0.9500
Epoch 70/100
4/4 - 0s - loss: 0.0372 - accuracy: 0.9500 - val_loss: 0.0366 -
val_accuracy: 0.9500
Epoch 71/100
4/4 - 0s - loss: 0.0366 - accuracy: 0.9500 - val_loss: 0.0360 -
val_accuracy: 0.9500
Epoch 72/100
4/4 - 0s - loss: 0.0360 - accuracy: 0.9500 - val_loss: 0.0355 -
val_accuracy: 0.9583
Epoch 73/100
4/4 - 0s - loss: 0.0355 - accuracy: 0.9583 - val_loss: 0.0349 -
val_accuracy: 0.9583
Epoch 74/100
4/4 - 0s - loss: 0.0352 - accuracy: 0.9583 - val_loss: 0.0344 -
val_accuracy: 0.9583
Epoch 75/100
4/4 - 0s - loss: 0.0345 - accuracy: 0.9583 - val_loss: 0.0339 -
val_accuracy: 0.9583
Epoch 76/100
4/4 - 0s - loss: 0.0340 - accuracy: 0.9583 - val_loss: 0.0335 -
val_accuracy: 0.9583
Epoch 77/100
4/4 - 0s - loss: 0.0337 - accuracy: 0.9583 - val_loss: 0.0330 -
val_accuracy: 0.9583
Epoch 78/100
```

```
4/4 - 0s - loss: 0.0333 - accuracy: 0.9583 - val_loss: 0.0327 -
val_accuracy: 0.9583
Epoch 79/100
4/4 - 0s - loss: 0.0327 - accuracy: 0.9583 - val_loss: 0.0322 -
val_accuracy: 0.9583
Epoch 80/100
4/4 - 0s - loss: 0.0323 - accuracy: 0.9583 - val_loss: 0.0318 -
val_accuracy: 0.9583
Epoch 81/100
4/4 - 0s - loss: 0.0323 - accuracy: 0.9583 - val_loss: 0.0314 -
val_accuracy: 0.9583
Epoch 82/100
4/4 - 0s - loss: 0.0315 - accuracy: 0.9583 - val_loss: 0.0311 -
val_accuracy: 0.9583
Epoch 83/100
4/4 - 0s - loss: 0.0311 - accuracy: 0.9583 - val_loss: 0.0308 -
val_accuracy: 0.9583
Epoch 84/100
4/4 - 0s - loss: 0.0307 - accuracy: 0.9583 - val_loss: 0.0304 -
val_accuracy: 0.9583
Epoch 85/100
4/4 - 0s - loss: 0.0304 - accuracy: 0.9583 - val_loss: 0.0301 -
val_accuracy: 0.9583
Epoch 86/100
4/4 - 0s - loss: 0.0304 - accuracy: 0.9583 - val_loss: 0.0298 -
val_accuracy: 0.9583
Epoch 87/100
4/4 - 0s - loss: 0.0298 - accuracy: 0.9583 - val_loss: 0.0295 -
val_accuracy: 0.9583
Epoch 88/100
4/4 - 0s - loss: 0.0296 - accuracy: 0.9583 - val_loss: 0.0292 -
val_accuracy: 0.9583
Epoch 89/100
4/4 - 0s - loss: 0.0295 - accuracy: 0.9583 - val_loss: 0.0290 -
val_accuracy: 0.9583
Epoch 90/100
4/4 - 0s - loss: 0.0293 - accuracy: 0.9583 - val_loss: 0.0288 -
val_accuracy: 0.9583
Epoch 91/100
4/4 - 0s - loss: 0.0287 - accuracy: 0.9583 - val_loss: 0.0285 -
val_accuracy: 0.9583
Epoch 92/100
4/4 - 0s - loss: 0.0288 - accuracy: 0.9583 - val_loss: 0.0283 -
val_accuracy: 0.9583
Epoch 93/100
4/4 - 0s - loss: 0.0284 - accuracy: 0.9583 - val_loss: 0.0280 -
val_accuracy: 0.9583
Epoch 94/100
4/4 - 0s - loss: 0.0283 - accuracy: 0.9583 - val_loss: 0.0278 -
val_accuracy: 0.9583
```

```
Epoch 95/100
4/4 - 0s - loss: 0.0280 - accuracy: 0.9583 - val_loss: 0.0276 -
val_accuracy: 0.9583
Epoch 96/100
4/4 - 0s - loss: 0.0279 - accuracy: 0.9583 - val_loss: 0.0274 -
val_accuracy: 0.9583
Epoch 97/100
4/4 - 0s - loss: 0.0274 - accuracy: 0.9583 - val_loss: 0.0272 -
val_accuracy: 0.9583
Epoch 98/100
4/4 - 0s - loss: 0.0274 - accuracy: 0.9583 - val_loss: 0.0270 -
val_accuracy: 0.9583
Epoch 99/100
4/4 - 0s - loss: 0.0272 - accuracy: 0.9583 - val_loss: 0.0268 -
val_accuracy: 0.9583
Epoch 100/100
4/4 - 0s - loss: 0.0272 - accuracy: 0.9583 - val_loss: 0.0267 -
val_accuracy: 0.9583
Activation: tanh LR: 0.1 Itertions: 100 || Train loss:
0.02665594033896923
Activation: tanh LR: 0.1 Itertions: 100 || Train Accuracy:
0.9583333134651184
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_begin` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_begin` time: 0.0010s). Check your callbacks.
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.0812s). Check your callbacks.
4/4 - 0s - loss: 0.0268 - accuracy: 0.9583 - val_loss: 0.0254 -
val_accuracy: 0.9667
Epoch 2/100
4/4 - 0s - loss: 0.0266 - accuracy: 0.9583 - val_loss: 0.0255 -
val_accuracy: 0.9667
Epoch 3/100
4/4 - 0s - loss: 0.0265 - accuracy: 0.9583 - val_loss: 0.0255 -
val_accuracy: 0.9667
Epoch 4/100
4/4 - 0s - loss: 0.0263 - accuracy: 0.9583 - val_loss: 0.0256 -
val_accuracy: 0.9667
Epoch 5/100
4/4 - 0s - loss: 0.0262 - accuracy: 0.9583 - val_loss: 0.0254 -
val_accuracy: 0.9667
Epoch 6/100
4/4 - 0s - loss: 0.0262 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 7/100
4/4 - 0s - loss: 0.0259 - accuracy: 0.9583 - val_loss: 0.0251 -
val_accuracy: 0.9667
Epoch 8/100
```

```
4/4 - 0s - loss: 0.0258 - accuracy: 0.9667 - val_loss: 0.0255 -
val_accuracy: 0.9667
Epoch 9/100
4/4 - 0s - loss: 0.0257 - accuracy: 0.9583 - val_loss: 0.0247 -
val_accuracy: 0.9667
Epoch 10/100
4/4 - 0s - loss: 0.0255 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 11/100
4/4 - 0s - loss: 0.0254 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 12/100
4/4 - 0s - loss: 0.0255 - accuracy: 0.9583 - val_loss: 0.0247 -
val_accuracy: 0.9667
Epoch 13/100
4/4 - 0s - loss: 0.0251 - accuracy: 0.9583 - val_loss: 0.0250 -
val_accuracy: 0.9667
Epoch 14/100
4/4 - 0s - loss: 0.0251 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 15/100
4/4 - 0s - loss: 0.0248 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 16/100
4/4 - 0s - loss: 0.0249 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 17/100
4/4 - 0s - loss: 0.0247 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 18/100
4/4 - 0s - loss: 0.0248 - accuracy: 0.9667 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 19/100
4/4 - 0s - loss: 0.0244 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 20/100
4/4 - 0s - loss: 0.0245 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 21/100
4/4 - 0s - loss: 0.0244 - accuracy: 0.9667 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 22/100
4/4 - 0s - loss: 0.0242 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 23/100
4/4 - 0s - loss: 0.0242 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 24/100
4/4 - 0s - loss: 0.0241 - accuracy: 0.9583 - val_loss: 0.0250 -
val_accuracy: 0.9667
```

```
Epoch 25/100
4/4 - 0s - loss: 0.0241 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 26/100
4/4 - 0s - loss: 0.0240 - accuracy: 0.9667 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 27/100
4/4 - 0s - loss: 0.0238 - accuracy: 0.9583 - val_loss: 0.0242 -
val_accuracy: 0.9667
Epoch 28/100
4/4 - 0s - loss: 0.0239 - accuracy: 0.9667 - val_loss: 0.0242 -
val_accuracy: 0.9667
Epoch 29/100
4/4 - 0s - loss: 0.0239 - accuracy: 0.9667 - val_loss: 0.0245 -
val_accuracy: 0.9667
Epoch 30/100
4/4 - 0s - loss: 0.0236 - accuracy: 0.9667 - val_loss: 0.0247 -
val_accuracy: 0.9667
Epoch 31/100
4/4 - 0s - loss: 0.0237 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 32/100
4/4 - 0s - loss: 0.0236 - accuracy: 0.9583 - val_loss: 0.0250 -
val_accuracy: 0.9667
Epoch 33/100
4/4 - 0s - loss: 0.0236 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 34/100
4/4 - 0s - loss: 0.0235 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 35/100
4/4 - 0s - loss: 0.0233 - accuracy: 0.9583 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 36/100
4/4 - 0s - loss: 0.0234 - accuracy: 0.9667 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 37/100
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667

Epoch 38/100
4/4 - 0s - loss: 0.0233 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 39/100
4/4 - 0s - loss: 0.0232 - accuracy: 0.9667 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 40/100
4/4 - 0s - loss: 0.0232 - accuracy: 0.9667 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 41/100
```

```
4/4 - 0s - loss: 0.0230 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 42/100
4/4 - 0s - loss: 0.0230 - accuracy: 0.9583 - val_loss: 0.0240 -
val_accuracy: 0.9667
Epoch 43/100
4/4 - 0s - loss: 0.0229 - accuracy: 0.9667 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 44/100
4/4 - 0s - loss: 0.0229 - accuracy: 0.9667 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 45/100
4/4 - 0s - loss: 0.0227 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 46/100
4/4 - 0s - loss: 0.0229 - accuracy: 0.9667 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 47/100
4/4 - 0s - loss: 0.0226 - accuracy: 0.9667 - val_loss: 0.0240 -
val_accuracy: 0.9667
Epoch 48/100
4/4 - 0s - loss: 0.0229 - accuracy: 0.9667 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 49/100
4/4 - 0s - loss: 0.0225 - accuracy: 0.9667 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 50/100
4/4 - 0s - loss: 0.0226 - accuracy: 0.9667 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 51/100
4/4 - 0s - loss: 0.0226 - accuracy: 0.9583 - val_loss: 0.0238 -
val_accuracy: 0.9667
Epoch 52/100
4/4 - 0s - loss: 0.0226 - accuracy: 0.9667 - val_loss: 0.0236 -
val_accuracy: 0.9667
Epoch 53/100
4/4 - 0s - loss: 0.0224 - accuracy: 0.9667 - val_loss: 0.0238 -
val_accuracy: 0.9667
Epoch 54/100
4/4 - 0s - loss: 0.0223 - accuracy: 0.9667 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 55/100
4/4 - 0s - loss: 0.0223 - accuracy: 0.9667 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 56/100
4/4 - 0s - loss: 0.0223 - accuracy: 0.9667 - val_loss: 0.0238 -
val_accuracy: 0.9667
Epoch 57/100
4/4 - 0s - loss: 0.0223 - accuracy: 0.9667 - val_loss: 0.0239 -
val_accuracy: 0.9667
```

```
Epoch 58/100
4/4 - 0s - loss: 0.0222 - accuracy: 0.9583 - val_loss: 0.0236 -
val_accuracy: 0.9667
Epoch 59/100
4/4 - 0s - loss: 0.0222 - accuracy: 0.9667 - val_loss: 0.0234 -
val_accuracy: 0.9667
Epoch 60/100
4/4 - 0s - loss: 0.0221 - accuracy: 0.9667 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 61/100
4/4 - 0s - loss: 0.0221 - accuracy: 0.9667 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 62/100
4/4 - 0s - loss: 0.0222 - accuracy: 0.9583 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 63/100
4/4 - 0s - loss: 0.0220 - accuracy: 0.9667 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 64/100
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 65/100
4/4 - 0s - loss: 0.0222 - accuracy: 0.9750 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 66/100
4/4 - 0s - loss: 0.0221 - accuracy: 0.9750 - val_loss: 0.0240 -
val_accuracy: 0.9667
Epoch 67/100
4/4 - 0s - loss: 0.0219 - accuracy: 0.9583 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 68/100
4/4 - 0s - loss: 0.0219 - accuracy: 0.9583 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 69/100
4/4 - 0s - loss: 0.0219 - accuracy: 0.9667 - val_loss: 0.0236 -
val_accuracy: 0.9667
Epoch 70/100
4/4 - 0s - loss: 0.0217 - accuracy: 0.9667 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 71/100
4/4 - 0s - loss: 0.0218 - accuracy: 0.9667 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 72/100
4/4 - 0s - loss: 0.0218 - accuracy: 0.9667 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 73/100
4/4 - 0s - loss: 0.0218 - accuracy: 0.9667 - val_loss: 0.0233 -
val_accuracy: 0.9667
Epoch 74/100
4/4 - 0s - loss: 0.0216 - accuracy: 0.9667 - val_loss: 0.0234 -
```

```
val_accuracy: 0.9667
Epoch 75/100
4/4 - 0s - loss: 0.0219 - accuracy: 0.9583 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 76/100
4/4 - 0s - loss: 0.0216 - accuracy: 0.9667 - val_loss: 0.0231 -
val_accuracy: 0.9667
Epoch 77/100
4/4 - 0s - loss: 0.0216 - accuracy: 0.9667 - val_loss: 0.0229 -
val_accuracy: 0.9667
Epoch 78/100
4/4 - 0s - loss: 0.0215 - accuracy: 0.9667 - val_loss: 0.0229 -
val_accuracy: 0.9667
Epoch 79/100
4/4 - 0s - loss: 0.0216 - accuracy: 0.9667 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 80/100
4/4 - 0s - loss: 0.0216 - accuracy: 0.9667 - val_loss: 0.0230 -
val_accuracy: 0.9667
Epoch 81/100
4/4 - 0s - loss: 0.0217 - accuracy: 0.9667 - val_loss: 0.0234 -
val_accuracy: 0.9667
Epoch 82/100
4/4 - 0s - loss: 0.0218 - accuracy: 0.9667 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 83/100
4/4 - 0s - loss: 0.0214 - accuracy: 0.9667 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 84/100
4/4 - 0s - loss: 0.0213 - accuracy: 0.9667 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 85/100
4/4 - 0s - loss: 0.0214 - accuracy: 0.9583 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 86/100
4/4 - 0s - loss: 0.0213 - accuracy: 0.9667 - val_loss: 0.0230 -
val_accuracy: 0.9667
Epoch 87/100
4/4 - 0s - loss: 0.0214 - accuracy: 0.9583 - val_loss: 0.0229 -
val_accuracy: 0.9667
Epoch 88/100
4/4 - 0s - loss: 0.0212 - accuracy: 0.9667 - val_loss: 0.0227 -
val_accuracy: 0.9667
Epoch 89/100
4/4 - 0s - loss: 0.0215 - accuracy: 0.9667 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 90/100
4/4 - 0s - loss: 0.0212 - accuracy: 0.9667 - val_loss: 0.0230 -
val_accuracy: 0.9667
Epoch 91/100
```

4/4 - 0s - loss: 0.0214 - accuracy: 0.9583 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 92/100
4/4 - 0s - loss: 0.0211 - accuracy: 0.9667 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 93/100
4/4 - 0s - loss: 0.0211 - accuracy: 0.9667 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 94/100
4/4 - 0s - loss: 0.0213 - accuracy: 0.9583 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 95/100
4/4 - 0s - loss: 0.0213 - accuracy: 0.9750 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 96/100
4/4 - 0s - loss: 0.0210 - accuracy: 0.9750 - val_loss: 0.0226 -
val_accuracy: 0.9667
Epoch 97/100
4/4 - 0s - loss: 0.0210 - accuracy: 0.9667 - val_loss: 0.0226 -
val_accuracy: 0.9667
Epoch 98/100
4/4 - 0s - loss: 0.0213 - accuracy: 0.9667 - val_loss: 0.0226 -
val_accuracy: 0.9667
Epoch 99/100
4/4 - 0s - loss: 0.0210 - accuracy: 0.9750 - val_loss: 0.0226 -
val_accuracy: 0.9667
Epoch 100/100
4/4 - 0s - loss: 0.0213 - accuracy: 0.9667 - val_loss: 0.0224 -
val_accuracy: 0.9667
Activation: tanh LR: 0.1 Iterations: 100 || Test loss:
0.02238008752465248
Activation: tanh LR: 0.1 Iterations: 100 || Test Accuracy:
0.9666666388511658
==
=======
Model_tanh_LR_0.1_Iterations_200_HL_3
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0000s vs
`on_train_batch_end` time: 0.1308s). Check your callbacks.
4/4 - 0s - loss: 0.2966 - accuracy: 0.5833 - val_loss: 0.2401 -
val_accuracy: 0.5750
Epoch 2/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.5917 - val_loss: 0.1974 -
val_accuracy: 0.5917
Epoch 3/200
4/4 - 0s - loss: 0.1888 - accuracy: 0.6083 - val_loss: 0.1747 -
val_accuracy: 0.5917
Epoch 4/200
4/4 - 0s - loss: 0.1702 - accuracy: 0.6083 - val_loss: 0.1606 -

```
val_accuracy: 0.5833
Epoch 5/200
4/4 - 0s - loss: 0.1580 - accuracy: 0.5750 - val_loss: 0.1511 -
val_accuracy: 0.6667
Epoch 6/200
4/4 - 0s - loss: 0.1489 - accuracy: 0.6583 - val_loss: 0.1442 -
val_accuracy: 0.6833
Epoch 7/200
4/4 - 0s - loss: 0.1425 - accuracy: 0.6833 - val_loss: 0.1388 -
val_accuracy: 0.7000
Epoch 8/200
4/4 - 0s - loss: 0.1380 - accuracy: 0.6917 - val_loss: 0.1346 -
val_accuracy: 0.7000
Epoch 9/200
4/4 - 0s - loss: 0.1340 - accuracy: 0.6750 - val_loss: 0.1310 -
val_accuracy: 0.7167
Epoch 10/200
4/4 - 0s - loss: 0.1303 - accuracy: 0.6833 - val_loss: 0.1283 -
val_accuracy: 0.7333
Epoch 11/200
4/4 - 0s - loss: 0.1279 - accuracy: 0.7167 - val_loss: 0.1259 -
val_accuracy: 0.7417
Epoch 12/200
4/4 - 0s - loss: 0.1254 - accuracy: 0.7417 - val_loss: 0.1239 -
val_accuracy: 0.7667
Epoch 13/200
4/4 - 0s - loss: 0.1234 - accuracy: 0.7667 - val_loss: 0.1221 -
val_accuracy: 0.8000
Epoch 14/200
4/4 - 0s - loss: 0.1219 - accuracy: 0.8250 - val_loss: 0.1206 -
val_accuracy: 0.7750
Epoch 15/200
4/4 - 0s - loss: 0.1204 - accuracy: 0.8250 - val_loss: 0.1192 -
val_accuracy: 0.7750
Epoch 16/200
4/4 - 0s - loss: 0.1190 - accuracy: 0.7917 - val_loss: 0.1180 -
val_accuracy: 0.7750
Epoch 17/200
4/4 - 0s - loss: 0.1180 - accuracy: 0.7833 - val_loss: 0.1169 -
val_accuracy: 0.8333

Epoch 18/200
4/4 - 0s - loss: 0.1176 - accuracy: 0.7750 - val_loss: 0.1159 -
val_accuracy: 0.8750
Epoch 19/200
4/4 - 0s - loss: 0.1160 - accuracy: 0.8583 - val_loss: 0.1150 -
val_accuracy: 0.8500
Epoch 20/200
4/4 - 0s - loss: 0.1154 - accuracy: 0.8333 - val_loss: 0.1141 -
val_accuracy: 0.8833
```

```
Epoch 21/200
4/4 - 0s - loss: 0.1145 - accuracy: 0.8667 - val_loss: 0.1133 -
val_accuracy: 0.8750
Epoch 22/200
4/4 - 0s - loss: 0.1132 - accuracy: 0.8583 - val_loss: 0.1125 -
val_accuracy: 0.8750
Epoch 23/200
4/4 - 0s - loss: 0.1124 - accuracy: 0.8750 - val_loss: 0.1118 -
val_accuracy: 0.8500
Epoch 24/200
4/4 - 0s - loss: 0.1118 - accuracy: 0.8250 - val_loss: 0.1112 -
val_accuracy: 0.8500
Epoch 25/200
4/4 - 0s - loss: 0.1113 - accuracy: 0.8417 - val_loss: 0.1106 -
val_accuracy: 0.8417
Epoch 26/200
4/4 - 0s - loss: 0.1106 - accuracy: 0.8250 - val_loss: 0.1099 -
val_accuracy: 0.8333
Epoch 27/200
4/4 - 0s - loss: 0.1100 - accuracy: 0.8250 - val_loss: 0.1094 -
val_accuracy: 0.8250
Epoch 28/200
4/4 - 0s - loss: 0.1093 - accuracy: 0.8250 - val_loss: 0.1088 -
val_accuracy: 0.8333
Epoch 29/200
4/4 - 0s - loss: 0.1087 - accuracy: 0.8250 - val_loss: 0.1082 -
val_accuracy: 0.8333
Epoch 30/200
4/4 - 0s - loss: 0.1083 - accuracy: 0.8417 - val_loss: 0.1077 -
val_accuracy: 0.8167
Epoch 31/200
4/4 - 0s - loss: 0.1079 - accuracy: 0.8417 - val_loss: 0.1072 -
val_accuracy: 0.8333
Epoch 32/200
4/4 - 0s - loss: 0.1071 - accuracy: 0.8250 - val_loss: 0.1066 -
val_accuracy: 0.8333
Epoch 33/200
4/4 - 0s - loss: 0.1066 - accuracy: 0.8500 - val_loss: 0.1061 -
val_accuracy: 0.8333
Epoch 34/200
4/4 - 0s - loss: 0.1063 - accuracy: 0.8167 - val_loss: 0.1056 -
val_accuracy: 0.8333
Epoch 35/200
4/4 - 0s - loss: 0.1062 - accuracy: 0.8333 - val_loss: 0.1052 -
val_accuracy: 0.8417
Epoch 36/200
4/4 - 0s - loss: 0.1052 - accuracy: 0.8417 - val_loss: 0.1046 -
val_accuracy: 0.8333
Epoch 37/200
4/4 - 0s - loss: 0.1048 - accuracy: 0.8167 - val_loss: 0.1042 -
```

```
val_accuracy: 0.8500
Epoch 38/200
4/4 - 0s - loss: 0.1047 - accuracy: 0.8250 - val_loss: 0.1037 -
val_accuracy: 0.8083
Epoch 39/200
4/4 - 0s - loss: 0.1038 - accuracy: 0.8333 - val_loss: 0.1031 -
val_accuracy: 0.8167
Epoch 40/200
4/4 - 0s - loss: 0.1032 - accuracy: 0.8250 - val_loss: 0.1026 -
val_accuracy: 0.8333
Epoch 41/200
4/4 - 0s - loss: 0.1030 - accuracy: 0.8333 - val_loss: 0.1021 -
val_accuracy: 0.8333
Epoch 42/200
4/4 - 0s - loss: 0.1027 - accuracy: 0.8333 - val_loss: 0.1018 -
val_accuracy: 0.8167
Epoch 43/200
4/4 - 0s - loss: 0.1018 - accuracy: 0.8000 - val_loss: 0.1011 -
val_accuracy: 0.8333
Epoch 44/200
4/4 - 0s - loss: 0.1015 - accuracy: 0.8333 - val_loss: 0.1006 -
val_accuracy: 0.8500
Epoch 45/200
4/4 - 0s - loss: 0.1007 - accuracy: 0.8333 - val_loss: 0.1001 -
val_accuracy: 0.8667
Epoch 46/200
4/4 - 0s - loss: 0.1001 - accuracy: 0.8417 - val_loss: 0.0996 -
val_accuracy: 0.8500
Epoch 47/200
4/4 - 0s - loss: 0.0998 - accuracy: 0.8500 - val_loss: 0.0990 -
val_accuracy: 0.8333
Epoch 48/200
4/4 - 0s - loss: 0.0997 - accuracy: 0.8167 - val_loss: 0.0985 -
val_accuracy: 0.8583
Epoch 49/200
4/4 - 0s - loss: 0.0988 - accuracy: 0.8500 - val_loss: 0.0980 -
val_accuracy: 0.8333
Epoch 50/200
4/4 - 0s - loss: 0.0979 - accuracy: 0.8417 - val_loss: 0.0974 -
val_accuracy: 0.8333
Epoch 51/200
4/4 - 0s - loss: 0.0975 - accuracy: 0.8417 - val_loss: 0.0969 -
val_accuracy: 0.8667
Epoch 52/200
4/4 - 0s - loss: 0.0969 - accuracy: 0.8667 - val_loss: 0.0963 -
val_accuracy: 0.8417
Epoch 53/200
4/4 - 0s - loss: 0.0969 - accuracy: 0.8417 - val_loss: 0.0958 -
val_accuracy: 0.8417
Epoch 54/200
```

```
4/4 - 0s - loss: 0.0958 - accuracy: 0.8583 - val_loss: 0.0952 -
val_accuracy: 0.8417
Epoch 55/200
4/4 - 0s - loss: 0.0951 - accuracy: 0.8417 - val_loss: 0.0945 -
val_accuracy: 0.8417
Epoch 56/200
4/4 - 0s - loss: 0.0945 - accuracy: 0.8500 - val_loss: 0.0939 -
val_accuracy: 0.8417
Epoch 57/200
4/4 - 0s - loss: 0.0943 - accuracy: 0.8583 - val_loss: 0.0933 -
val_accuracy: 0.8750
Epoch 58/200
4/4 - 0s - loss: 0.0941 - accuracy: 0.8500 - val_loss: 0.0926 -
val_accuracy: 0.8750
Epoch 59/200
4/4 - 0s - loss: 0.0926 - accuracy: 0.8750 - val_loss: 0.0920 -
val_accuracy: 0.8750
Epoch 60/200
4/4 - 0s - loss: 0.0926 - accuracy: 0.8667 - val_loss: 0.0913 -
val_accuracy: 0.8750
Epoch 61/200
4/4 - 0s - loss: 0.0913 - accuracy: 0.8667 - val_loss: 0.0907 -
val_accuracy: 0.8833
Epoch 62/200
4/4 - 0s - loss: 0.0906 - accuracy: 0.8750 - val_loss: 0.0899 -
val_accuracy: 0.8833
Epoch 63/200
4/4 - 0s - loss: 0.0898 - accuracy: 0.8667 - val_loss: 0.0892 -
val_accuracy: 0.8833
Epoch 64/200
4/4 - 0s - loss: 0.0896 - accuracy: 0.8667 - val_loss: 0.0886 -
val_accuracy: 0.8833
Epoch 65/200
4/4 - 0s - loss: 0.0885 - accuracy: 0.8833 - val_loss: 0.0878 -
val_accuracy: 0.8833
Epoch 66/200
4/4 - 0s - loss: 0.0877 - accuracy: 0.8833 - val_loss: 0.0871 -
val_accuracy: 0.8917
Epoch 67/200
4/4 - 0s - loss: 0.0869 - accuracy: 0.8917 - val_loss: 0.0863 -
val_accuracy: 0.8917
Epoch 68/200
4/4 - 0s - loss: 0.0863 - accuracy: 0.8917 - val_loss: 0.0855 -
val_accuracy: 0.8917
Epoch 69/200
4/4 - 0s - loss: 0.0856 - accuracy: 0.8833 - val_loss: 0.0847 -
val_accuracy: 0.8917
Epoch 70/200
4/4 - 0s - loss: 0.0846 - accuracy: 0.8917 - val_loss: 0.0839 -
val_accuracy: 0.8917
```

```
Epoch 71/200
4/4 - 0s - loss: 0.0838 - accuracy: 0.8917 - val_loss: 0.0830 -
val_accuracy: 0.8833
Epoch 72/200
4/4 - 0s - loss: 0.0830 - accuracy: 0.8833 - val_loss: 0.0822 -
val_accuracy: 0.9000
Epoch 73/200
4/4 - 0s - loss: 0.0820 - accuracy: 0.9000 - val_loss: 0.0813 -
val_accuracy: 0.8833
Epoch 74/200
4/4 - 0s - loss: 0.0813 - accuracy: 0.8833 - val_loss: 0.0804 -
val_accuracy: 0.9000
Epoch 75/200
4/4 - 0s - loss: 0.0804 - accuracy: 0.8833 - val_loss: 0.0795 -
val_accuracy: 0.8917
Epoch 76/200
4/4 - 0s - loss: 0.0803 - accuracy: 0.8833 - val_loss: 0.0786 -
val_accuracy: 0.9000
Epoch 77/200
4/4 - 0s - loss: 0.0785 - accuracy: 0.9083 - val_loss: 0.0777 -
val_accuracy: 0.8917
Epoch 78/200
4/4 - 0s - loss: 0.0776 - accuracy: 0.9000 - val_loss: 0.0767 -
val_accuracy: 0.8917
Epoch 79/200
4/4 - 0s - loss: 0.0766 - accuracy: 0.9000 - val_loss: 0.0757 -
val_accuracy: 0.9083
Epoch 80/200
4/4 - 0s - loss: 0.0758 - accuracy: 0.9083 - val_loss: 0.0748 -
val_accuracy: 0.9083
Epoch 81/200
4/4 - 0s - loss: 0.0747 - accuracy: 0.9083 - val_loss: 0.0738 -
val_accuracy: 0.9083
Epoch 82/200
4/4 - 0s - loss: 0.0739 - accuracy: 0.9083 - val_loss: 0.0728 -
val_accuracy: 0.9167
Epoch 83/200
4/4 - 0s - loss: 0.0727 - accuracy: 0.9083 - val_loss: 0.0718 -
val_accuracy: 0.9083
Epoch 84/200
4/4 - 0s - loss: 0.0720 - accuracy: 0.9167 - val_loss: 0.0709 -
val_accuracy: 0.9083
Epoch 85/200
4/4 - 0s - loss: 0.0708 - accuracy: 0.9083 - val_loss: 0.0698 -
val_accuracy: 0.9083
Epoch 86/200
4/4 - 0s - loss: 0.0701 - accuracy: 0.9083 - val_loss: 0.0688 -
val_accuracy: 0.9000
Epoch 87/200
4/4 - 0s - loss: 0.0689 - accuracy: 0.9000 - val_loss: 0.0677 -
```

```
val_accuracy: 0.9167
Epoch 88/200
4/4 - 0s - loss: 0.0679 - accuracy: 0.9333 - val_loss: 0.0668 -
val_accuracy: 0.9083
Epoch 89/200
4/4 - 0s - loss: 0.0672 - accuracy: 0.9000 - val_loss: 0.0656 -
val_accuracy: 0.9000
Epoch 90/200
4/4 - 0s - loss: 0.0654 - accuracy: 0.9083 - val_loss: 0.0646 -
val_accuracy: 0.9000
Epoch 91/200
4/4 - 0s - loss: 0.0644 - accuracy: 0.9083 - val_loss: 0.0636 -
val_accuracy: 0.9083
Epoch 92/200
4/4 - 0s - loss: 0.0637 - accuracy: 0.9167 - val_loss: 0.0625 -
val_accuracy: 0.9167
Epoch 93/200
4/4 - 0s - loss: 0.0633 - accuracy: 0.9083 - val_loss: 0.0616 -
val_accuracy: 0.9333
Epoch 94/200
4/4 - 0s - loss: 0.0617 - accuracy: 0.9333 - val_loss: 0.0605 -
val_accuracy: 0.9167
Epoch 95/200
4/4 - 0s - loss: 0.0607 - accuracy: 0.9083 - val_loss: 0.0595 -
val_accuracy: 0.9333
Epoch 96/200
4/4 - 0s - loss: 0.0595 - accuracy: 0.9333 - val_loss: 0.0585 -
val_accuracy: 0.9250
Epoch 97/200
4/4 - 0s - loss: 0.0585 - accuracy: 0.9167 - val_loss: 0.0575 -
val_accuracy: 0.9250
Epoch 98/200
4/4 - 0s - loss: 0.0576 - accuracy: 0.9250 - val_loss: 0.0565 -
val_accuracy: 0.9333
Epoch 99/200
4/4 - 0s - loss: 0.0566 - accuracy: 0.9250 - val_loss: 0.0557 -
val_accuracy: 0.9417
Epoch 100/200
4/4 - 0s - loss: 0.0561 - accuracy: 0.9417 - val_loss: 0.0547 -
val_accuracy: 0.9417
Epoch 101/200
4/4 - 0s - loss: 0.0544 - accuracy: 0.9417 - val_loss: 0.0537 -
val_accuracy: 0.9333

Epoch 102/200
4/4 - 0s - loss: 0.0540 - accuracy: 0.9250 - val_loss: 0.0527 -
val_accuracy: 0.9333
Epoch 103/200
4/4 - 0s - loss: 0.0528 - accuracy: 0.9333 - val_loss: 0.0519 -
val_accuracy: 0.9333
```

```
Epoch 104/200
4/4 - 0s - loss: 0.0520 - accuracy: 0.9333 - val_loss: 0.0510 -
val_accuracy: 0.9417
Epoch 105/200
4/4 - 0s - loss: 0.0511 - accuracy: 0.9333 - val_loss: 0.0501 -
val_accuracy: 0.9417
Epoch 106/200
4/4 - 0s - loss: 0.0501 - accuracy: 0.9500 - val_loss: 0.0493 -
val_accuracy: 0.9417
Epoch 107/200
4/4 - 0s - loss: 0.0496 - accuracy: 0.9417 - val_loss: 0.0485 -
val_accuracy: 0.9500
Epoch 108/200
4/4 - 0s - loss: 0.0488 - accuracy: 0.9500 - val_loss: 0.0477 -
val_accuracy: 0.9417
Epoch 109/200
4/4 - 0s - loss: 0.0477 - accuracy: 0.9417 - val_loss: 0.0469 -
val_accuracy: 0.9417
Epoch 110/200
4/4 - 0s - loss: 0.0470 - accuracy: 0.9417 - val_loss: 0.0462 -
val_accuracy: 0.9500
Epoch 111/200
4/4 - 0s - loss: 0.0462 - accuracy: 0.9500 - val_loss: 0.0454 -
val_accuracy: 0.9500
Epoch 112/200
4/4 - 0s - loss: 0.0457 - accuracy: 0.9500 - val_loss: 0.0448 -
val_accuracy: 0.9417
Epoch 113/200
4/4 - 0s - loss: 0.0450 - accuracy: 0.9417 - val_loss: 0.0440 -
val_accuracy: 0.9500
Epoch 114/200
4/4 - 0s - loss: 0.0439 - accuracy: 0.9500 - val_loss: 0.0434 -
val_accuracy: 0.9500
Epoch 115/200
4/4 - 0s - loss: 0.0434 - accuracy: 0.9500 - val_loss: 0.0427 -
val_accuracy: 0.9500
Epoch 116/200
4/4 - 0s - loss: 0.0430 - accuracy: 0.9583 - val_loss: 0.0422 -
val_accuracy: 0.9500
Epoch 117/200
4/4 - 0s - loss: 0.0423 - accuracy: 0.9500 - val_loss: 0.0416 -
val_accuracy: 0.9500
Epoch 118/200
4/4 - 0s - loss: 0.0417 - accuracy: 0.9500 - val_loss: 0.0410 -
val_accuracy: 0.9500
Epoch 119/200
4/4 - 0s - loss: 0.0413 - accuracy: 0.9583 - val_loss: 0.0404 -
val_accuracy: 0.9500
Epoch 120/200
4/4 - 0s - loss: 0.0405 - accuracy: 0.9500 - val_loss: 0.0398 -
```

```
val_accuracy: 0.9500
Epoch 121/200
4/4 - 0s - loss: 0.0403 - accuracy: 0.9500 - val_loss: 0.0394 -
val_accuracy: 0.9500
Epoch 122/200
4/4 - 0s - loss: 0.0396 - accuracy: 0.9500 - val_loss: 0.0388 -
val_accuracy: 0.9500
Epoch 123/200
4/4 - 0s - loss: 0.0389 - accuracy: 0.9500 - val_loss: 0.0383 -
val_accuracy: 0.9500
Epoch 124/200
4/4 - 0s - loss: 0.0383 - accuracy: 0.9500 - val_loss: 0.0379 -
val_accuracy: 0.9500
Epoch 125/200
4/4 - 0s - loss: 0.0378 - accuracy: 0.9500 - val_loss: 0.0374 -
val_accuracy: 0.9500
Epoch 126/200
4/4 - 0s - loss: 0.0379 - accuracy: 0.9500 - val_loss: 0.0370 -
val_accuracy: 0.9500
Epoch 127/200
4/4 - 0s - loss: 0.0373 - accuracy: 0.9500 - val_loss: 0.0366 -
val_accuracy: 0.9500
Epoch 128/200
4/4 - 0s - loss: 0.0366 - accuracy: 0.9500 - val_loss: 0.0362 -
val_accuracy: 0.9500
Epoch 129/200
4/4 - 0s - loss: 0.0363 - accuracy: 0.9500 - val_loss: 0.0358 -
val_accuracy: 0.9500
Epoch 130/200
4/4 - 0s - loss: 0.0361 - accuracy: 0.9500 - val_loss: 0.0355 -
val_accuracy: 0.9500
Epoch 131/200
4/4 - 0s - loss: 0.0357 - accuracy: 0.9500 - val_loss: 0.0351 -
val_accuracy: 0.9500
Epoch 132/200
4/4 - 0s - loss: 0.0354 - accuracy: 0.9500 - val_loss: 0.0347 -
val_accuracy: 0.9500
Epoch 133/200
4/4 - 0s - loss: 0.0350 - accuracy: 0.9500 - val_loss: 0.0344 -
val_accuracy: 0.9500
Epoch 134/200
4/4 - 0s - loss: 0.0345 - accuracy: 0.9500 - val_loss: 0.0341 -
val_accuracy: 0.9500
Epoch 135/200
4/4 - 0s - loss: 0.0342 - accuracy: 0.9500 - val_loss: 0.0338 -
val_accuracy: 0.9500
Epoch 136/200
4/4 - 0s - loss: 0.0340 - accuracy: 0.9500 - val_loss: 0.0335 -
val_accuracy: 0.9500
Epoch 137/200
```

```
4/4 - 0s - loss: 0.0338 - accuracy: 0.9500 - val_loss: 0.0333 -
val_accuracy: 0.9500
Epoch 138/200
4/4 - 0s - loss: 0.0336 - accuracy: 0.9500 - val_loss: 0.0330 -
val_accuracy: 0.9500
Epoch 139/200
4/4 - 0s - loss: 0.0334 - accuracy: 0.9500 - val_loss: 0.0327 -
val_accuracy: 0.9500
Epoch 140/200
4/4 - 0s - loss: 0.0328 - accuracy: 0.9500 - val_loss: 0.0325 -
val_accuracy: 0.9500
Epoch 141/200
4/4 - 0s - loss: 0.0324 - accuracy: 0.9500 - val_loss: 0.0322 -
val_accuracy: 0.9500
Epoch 142/200
4/4 - 0s - loss: 0.0323 - accuracy: 0.9500 - val_loss: 0.0320 -
val_accuracy: 0.9500
Epoch 143/200
4/4 - 0s - loss: 0.0321 - accuracy: 0.9500 - val_loss: 0.0318 -
val_accuracy: 0.9500
Epoch 144/200
4/4 - 0s - loss: 0.0318 - accuracy: 0.9500 - val_loss: 0.0315 -
val_accuracy: 0.9500
Epoch 145/200
4/4 - 0s - loss: 0.0315 - accuracy: 0.9500 - val_loss: 0.0313 -
val_accuracy: 0.9500
Epoch 146/200
4/4 - 0s - loss: 0.0315 - accuracy: 0.9500 - val_loss: 0.0312 -
val_accuracy: 0.9500
Epoch 147/200
4/4 - 0s - loss: 0.0314 - accuracy: 0.9500 - val_loss: 0.0310 -
val_accuracy: 0.9500
Epoch 148/200
4/4 - 0s - loss: 0.0311 - accuracy: 0.9500 - val_loss: 0.0308 -
val_accuracy: 0.9500
Epoch 149/200
4/4 - 0s - loss: 0.0308 - accuracy: 0.9500 - val_loss: 0.0306 -
val_accuracy: 0.9500
Epoch 150/200
4/4 - 0s - loss: 0.0311 - accuracy: 0.9500 - val_loss: 0.0304 -
val_accuracy: 0.9500
Epoch 151/200
4/4 - 0s - loss: 0.0312 - accuracy: 0.9500 - val_loss: 0.0303 -
val_accuracy: 0.9500
Epoch 152/200
4/4 - 0s - loss: 0.0307 - accuracy: 0.9500 - val_loss: 0.0301 -
val_accuracy: 0.9500
Epoch 153/200
4/4 - 0s - loss: 0.0307 - accuracy: 0.9500 - val_loss: 0.0299 -
val_accuracy: 0.9500
```

```
Epoch 154/200
4/4 - 0s - loss: 0.0302 - accuracy: 0.9500 - val_loss: 0.0299 -
val_accuracy: 0.9500
Epoch 155/200
4/4 - 0s - loss: 0.0300 - accuracy: 0.9500 - val_loss: 0.0296 -
val_accuracy: 0.9500
Epoch 156/200
4/4 - 0s - loss: 0.0299 - accuracy: 0.9500 - val_loss: 0.0295 -
val_accuracy: 0.9500
Epoch 157/200
4/4 - 0s - loss: 0.0298 - accuracy: 0.9500 - val_loss: 0.0294 -
val_accuracy: 0.9500
Epoch 158/200
4/4 - 0s - loss: 0.0295 - accuracy: 0.9500 - val_loss: 0.0292 -
val_accuracy: 0.9500
Epoch 159/200
4/4 - 0s - loss: 0.0293 - accuracy: 0.9500 - val_loss: 0.0291 -
val_accuracy: 0.9500
Epoch 160/200
4/4 - 0s - loss: 0.0293 - accuracy: 0.9500 - val_loss: 0.0290 -
val_accuracy: 0.9500
Epoch 161/200
4/4 - 0s - loss: 0.0291 - accuracy: 0.9500 - val_loss: 0.0289 -
val_accuracy: 0.9500
Epoch 162/200
4/4 - 0s - loss: 0.0293 - accuracy: 0.9500 - val_loss: 0.0289 -
val_accuracy: 0.9500
Epoch 163/200
4/4 - 0s - loss: 0.0291 - accuracy: 0.9500 - val_loss: 0.0287 -
val_accuracy: 0.9500
Epoch 164/200
4/4 - 0s - loss: 0.0287 - accuracy: 0.9500 - val_loss: 0.0285 -
val_accuracy: 0.9500
Epoch 165/200
4/4 - 0s - loss: 0.0287 - accuracy: 0.9500 - val_loss: 0.0284 -
val_accuracy: 0.9500
Epoch 166/200
4/4 - 0s - loss: 0.0289 - accuracy: 0.9500 - val_loss: 0.0283 -
val_accuracy: 0.9500
Epoch 167/200
4/4 - 0s - loss: 0.0284 - accuracy: 0.9500 - val_loss: 0.0282 -
val_accuracy: 0.9500
Epoch 168/200
4/4 - 0s - loss: 0.0285 - accuracy: 0.9500 - val_loss: 0.0281 -
val_accuracy: 0.9500
Epoch 169/200
4/4 - 0s - loss: 0.0283 - accuracy: 0.9500 - val_loss: 0.0280 -
val_accuracy: 0.9500
Epoch 170/200
4/4 - 0s - loss: 0.0282 - accuracy: 0.9500 - val_loss: 0.0279 -
```

```
val_accuracy: 0.9500
Epoch 171/200
4/4 - 0s - loss: 0.0283 - accuracy: 0.9500 - val_loss: 0.0279 -
val_accuracy: 0.9500
Epoch 172/200
4/4 - 0s - loss: 0.0283 - accuracy: 0.9500 - val_loss: 0.0278 -
val_accuracy: 0.9500
Epoch 173/200
4/4 - 0s - loss: 0.0278 - accuracy: 0.9500 - val_loss: 0.0277 -
val_accuracy: 0.9500
Epoch 174/200
4/4 - 0s - loss: 0.0278 - accuracy: 0.9500 - val_loss: 0.0276 -
val_accuracy: 0.9500
Epoch 175/200
4/4 - 0s - loss: 0.0278 - accuracy: 0.9500 - val_loss: 0.0275 -
val_accuracy: 0.9500
Epoch 176/200
4/4 - 0s - loss: 0.0276 - accuracy: 0.9500 - val_loss: 0.0274 -
val_accuracy: 0.9500
Epoch 177/200
4/4 - 0s - loss: 0.0279 - accuracy: 0.9500 - val_loss: 0.0274 -
val_accuracy: 0.9500
Epoch 178/200
4/4 - 0s - loss: 0.0279 - accuracy: 0.9500 - val_loss: 0.0273 -
val_accuracy: 0.9500
Epoch 179/200
4/4 - 0s - loss: 0.0278 - accuracy: 0.9500 - val_loss: 0.0273 -
val_accuracy: 0.9500
Epoch 180/200
4/4 - 0s - loss: 0.0276 - accuracy: 0.9500 - val_loss: 0.0273 -
val_accuracy: 0.9500
Epoch 181/200
4/4 - 0s - loss: 0.0273 - accuracy: 0.9500 - val_loss: 0.0271 -
val_accuracy: 0.9500
Epoch 182/200
4/4 - 0s - loss: 0.0275 - accuracy: 0.9500 - val_loss: 0.0271 -
val_accuracy: 0.9500
Epoch 183/200
4/4 - 0s - loss: 0.0272 - accuracy: 0.9500 - val_loss: 0.0270 -
val_accuracy: 0.9500
Epoch 184/200
4/4 - 0s - loss: 0.0272 - accuracy: 0.9500 - val_loss: 0.0269 -
val_accuracy: 0.9500

Epoch 185/200
4/4 - 0s - loss: 0.0275 - accuracy: 0.9500 - val_loss: 0.0269 -
val_accuracy: 0.9500
Epoch 186/200
4/4 - 0s - loss: 0.0277 - accuracy: 0.9500 - val_loss: 0.0269 -
val_accuracy: 0.9583
```

```
Epoch 187/200
4/4 - 0s - loss: 0.0270 - accuracy: 0.9500 - val_loss: 0.0267 -
val_accuracy: 0.9500
Epoch 188/200
4/4 - 0s - loss: 0.0267 - accuracy: 0.9500 - val_loss: 0.0266 -
val_accuracy: 0.9500
Epoch 189/200
4/4 - 0s - loss: 0.0274 - accuracy: 0.9500 - val_loss: 0.0266 -
val_accuracy: 0.9500
Epoch 190/200
4/4 - 0s - loss: 0.0268 - accuracy: 0.9500 - val_loss: 0.0266 -
val_accuracy: 0.9500
Epoch 191/200
4/4 - 0s - loss: 0.0268 - accuracy: 0.9583 - val_loss: 0.0265 -
val_accuracy: 0.9500
Epoch 192/200
4/4 - 0s - loss: 0.0271 - accuracy: 0.9500 - val_loss: 0.0264 -
val_accuracy: 0.9500
Epoch 193/200
4/4 - 0s - loss: 0.0266 - accuracy: 0.9500 - val_loss: 0.0264 -
val_accuracy: 0.9500
Epoch 194/200
4/4 - 0s - loss: 0.0264 - accuracy: 0.9500 - val_loss: 0.0263 -
val_accuracy: 0.9583
Epoch 195/200
4/4 - 0s - loss: 0.0266 - accuracy: 0.9583 - val_loss: 0.0263 -
val_accuracy: 0.9500
Epoch 196/200
4/4 - 0s - loss: 0.0266 - accuracy: 0.9500 - val_loss: 0.0262 -
val_accuracy: 0.9583
Epoch 197/200
4/4 - 0s - loss: 0.0265 - accuracy: 0.9500 - val_loss: 0.0261 -
val_accuracy: 0.9500
Epoch 198/200
4/4 - 0s - loss: 0.0264 - accuracy: 0.9500 - val_loss: 0.0261 -
val_accuracy: 0.9583
Epoch 199/200
4/4 - 0s - loss: 0.0264 - accuracy: 0.9583 - val_loss: 0.0260 -
val_accuracy: 0.9583
Epoch 200/200
4/4 - 0s - loss: 0.0267 - accuracy: 0.9500 - val_loss: 0.0261 -
val_accuracy: 0.9500
Activation: tanh LR: 0.1 Itertions: 200 || Train loss:
0.026099879294633865
Activation: tanh LR: 0.1 Itertions: 200 || Train Accuracy:
0.949999988079071
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.0822s). Check your callbacks.
```

```
4/4 - 0s - loss: 0.0263 - accuracy: 0.9500 - val_loss: 0.0267 -
val_accuracy: 0.9667
Epoch 2/200
4/4 - 0s - loss: 0.0262 - accuracy: 0.9500 - val_loss: 0.0265 -
val_accuracy: 0.9667
Epoch 3/200
4/4 - 0s - loss: 0.0260 - accuracy: 0.9583 - val_loss: 0.0264 -
val_accuracy: 0.9667
Epoch 4/200
4/4 - 0s - loss: 0.0261 - accuracy: 0.9583 - val_loss: 0.0264 -
val_accuracy: 0.9667
Epoch 5/200
4/4 - 0s - loss: 0.0261 - accuracy: 0.9583 - val_loss: 0.0256 -
val_accuracy: 0.9667
Epoch 6/200
4/4 - 0s - loss: 0.0261 - accuracy: 0.9583 - val_loss: 0.0253 -
val_accuracy: 0.9667
Epoch 7/200
4/4 - 0s - loss: 0.0260 - accuracy: 0.9583 - val_loss: 0.0266 -
val_accuracy: 0.9667
Epoch 8/200
4/4 - 0s - loss: 0.0258 - accuracy: 0.9583 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 9/200
4/4 - 0s - loss: 0.0257 - accuracy: 0.9583 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 10/200
4/4 - 0s - loss: 0.0258 - accuracy: 0.9583 - val_loss: 0.0258 -
val_accuracy: 0.9667
Epoch 11/200
4/4 - 0s - loss: 0.0261 - accuracy: 0.9583 - val_loss: 0.0252 -
val_accuracy: 0.9667
Epoch 12/200
4/4 - 0s - loss: 0.0257 - accuracy: 0.9583 - val_loss: 0.0252 -
val_accuracy: 0.9667
Epoch 13/200
4/4 - 0s - loss: 0.0260 - accuracy: 0.9500 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 14/200
4/4 - 0s - loss: 0.0259 - accuracy: 0.9500 - val_loss: 0.0255 -
val_accuracy: 0.9667
Epoch 15/200
4/4 - 0s - loss: 0.0256 - accuracy: 0.9583 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 16/200
4/4 - 0s - loss: 0.0259 - accuracy: 0.9583 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 17/200
4/4 - 0s - loss: 0.0256 - accuracy: 0.9583 - val_loss: 0.0256 -
val_accuracy: 0.9667
```

```
Epoch 18/200
4/4 - 0s - loss: 0.0256 - accuracy: 0.9583 - val_loss: 0.0250 -
val_accuracy: 0.9667
Epoch 19/200
4/4 - 0s - loss: 0.0256 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 20/200
4/4 - 0s - loss: 0.0256 - accuracy: 0.9500 - val_loss: 0.0253 -
val_accuracy: 0.9667
Epoch 21/200
4/4 - 0s - loss: 0.0260 - accuracy: 0.9500 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 22/200
4/4 - 0s - loss: 0.0256 - accuracy: 0.9583 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 23/200
4/4 - 0s - loss: 0.0254 - accuracy: 0.9583 - val_loss: 0.0262 -
val_accuracy: 0.9667
Epoch 24/200
4/4 - 0s - loss: 0.0254 - accuracy: 0.9583 - val_loss: 0.0264 -
val_accuracy: 0.9667
Epoch 25/200
4/4 - 0s - loss: 0.0253 - accuracy: 0.9583 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 26/200
4/4 - 0s - loss: 0.0252 - accuracy: 0.9583 - val_loss: 0.0252 -
val_accuracy: 0.9667
Epoch 27/200
4/4 - 0s - loss: 0.0251 - accuracy: 0.9583 - val_loss: 0.0256 -
val_accuracy: 0.9667
Epoch 28/200
4/4 - 0s - loss: 0.0251 - accuracy: 0.9583 - val_loss: 0.0254 -
val_accuracy: 0.9667
Epoch 29/200
4/4 - 0s - loss: 0.0251 - accuracy: 0.9583 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 30/200
4/4 - 0s - loss: 0.0250 - accuracy: 0.9583 - val_loss: 0.0257 -
val_accuracy: 0.9667
Epoch 31/200
4/4 - 0s - loss: 0.0251 - accuracy: 0.9583 - val_loss: 0.0261 -
val_accuracy: 0.9667
Epoch 32/200
4/4 - 0s - loss: 0.0250 - accuracy: 0.9583 - val_loss: 0.0256 -
val_accuracy: 0.9667
Epoch 33/200
4/4 - 0s - loss: 0.0254 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 34/200
4/4 - 0s - loss: 0.0250 - accuracy: 0.9583 - val_loss: 0.0255 -
```

```
val_accuracy: 0.9667
Epoch 35/200
4/4 - 0s - loss: 0.0249 - accuracy: 0.9583 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 36/200
4/4 - 0s - loss: 0.0250 - accuracy: 0.9583 - val_loss: 0.0259 -
val_accuracy: 0.9667
Epoch 37/200
4/4 - 0s - loss: 0.0248 - accuracy: 0.9583 - val_loss: 0.0251 -
val_accuracy: 0.9667
Epoch 38/200
4/4 - 0s - loss: 0.0250 - accuracy: 0.9583 - val_loss: 0.0254 -
val_accuracy: 0.9667
Epoch 39/200
4/4 - 0s - loss: 0.0249 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 40/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9583 - val_loss: 0.0256 -
val_accuracy: 0.9667
Epoch 41/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9583 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 42/200
4/4 - 0s - loss: 0.0250 - accuracy: 0.9583 - val_loss: 0.0245 -
val_accuracy: 0.9667
Epoch 43/200
4/4 - 0s - loss: 0.0252 - accuracy: 0.9583 - val_loss: 0.0245 -
val_accuracy: 0.9667
Epoch 44/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 45/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9583 - val_loss: 0.0253 -
val_accuracy: 0.9667
Epoch 46/200
4/4 - 0s - loss: 0.0246 - accuracy: 0.9583 - val_loss: 0.0260 -
val_accuracy: 0.9667
Epoch 47/200
4/4 - 0s - loss: 0.0245 - accuracy: 0.9583 - val_loss: 0.0253 -
val_accuracy: 0.9667
Epoch 48/200
4/4 - 0s - loss: 0.0246 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 49/200
4/4 - 0s - loss: 0.0246 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 50/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9583 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 51/200
```

```
4/4 - 0s - loss: 0.0246 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 52/200
4/4 - 0s - loss: 0.0245 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 53/200
4/4 - 0s - loss: 0.0248 - accuracy: 0.9583 - val_loss: 0.0247 -
val_accuracy: 0.9667
Epoch 54/200
4/4 - 0s - loss: 0.0244 - accuracy: 0.9583 - val_loss: 0.0247 -
val_accuracy: 0.9667
Epoch 55/200
4/4 - 0s - loss: 0.0245 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 56/200
4/4 - 0s - loss: 0.0243 - accuracy: 0.9583 - val_loss: 0.0247 -
val_accuracy: 0.9667
Epoch 57/200
4/4 - 0s - loss: 0.0243 - accuracy: 0.9583 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 58/200
4/4 - 0s - loss: 0.0243 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 59/200
4/4 - 0s - loss: 0.0243 - accuracy: 0.9583 - val_loss: 0.0245 -
val_accuracy: 0.9667
Epoch 60/200
4/4 - 0s - loss: 0.0244 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 61/200
4/4 - 0s - loss: 0.0247 - accuracy: 0.9583 - val_loss: 0.0251 -
val_accuracy: 0.9667
Epoch 62/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 63/200
4/4 - 0s - loss: 0.0242 - accuracy: 0.9583 - val_loss: 0.0251 -
val_accuracy: 0.9667
Epoch 64/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 65/200
4/4 - 0s - loss: 0.0246 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667

Epoch 66/200
4/4 - 0s - loss: 0.0240 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 67/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9583 - val_loss: 0.0248 -
```

```
val_accuracy: 0.9667
Epoch 68/200
4/4 - 0s - loss: 0.0241 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 69/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9583 - val_loss: 0.0246 -
val_accuracy: 0.9667
Epoch 70/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 71/200
4/4 - 0s - loss: 0.0243 - accuracy: 0.9583 - val_loss: 0.0251 -
val_accuracy: 0.9667
Epoch 72/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9583 - val_loss: 0.0247 -
val_accuracy: 0.9667
Epoch 73/200
4/4 - 0s - loss: 0.0240 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 74/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9583 - val_loss: 0.0242 -
val_accuracy: 0.9667
Epoch 75/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9583 - val_loss: 0.0242 -
val_accuracy: 0.9667
Epoch 76/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9583 - val_loss: 0.0238 -
val_accuracy: 0.9667
Epoch 77/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9583 - val_loss: 0.0243 -
val_accuracy: 0.9667
Epoch 78/200
4/4 - 0s - loss: 0.0239 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 79/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 80/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9583 - val_loss: 0.0245 -
val_accuracy: 0.9667
Epoch 81/200
4/4 - 0s - loss: 0.0240 - accuracy: 0.9583 - val_loss: 0.0245 -
val_accuracy: 0.9667
Epoch 82/200
4/4 - 0s - loss: 0.0238 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 83/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9583 - val_loss: 0.0249 -
val_accuracy: 0.9667
Epoch 84/200
```

```
4/4 - 0s - loss: 0.0239 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 85/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 86/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 87/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 88/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9583 - val_loss: 0.0242 -
val_accuracy: 0.9667
Epoch 89/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9583 - val_loss: 0.0238 -
val_accuracy: 0.9667
Epoch 90/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 91/200
4/4 - 0s - loss: 0.0236 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 92/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9583 - val_loss: 0.0248 -
val_accuracy: 0.9667
Epoch 93/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 94/200
4/4 - 0s - loss: 0.0235 - accuracy: 0.9583 - val_loss: 0.0238 -
val_accuracy: 0.9667
Epoch 95/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 96/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 97/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9583 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 98/200
4/4 - 0s - loss: 0.0237 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 99/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 100/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9583 - val_loss: 0.0243 -
val_accuracy: 0.9667
```

```
Epoch 101/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9583 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 102/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 103/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 104/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 105/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 106/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9583 - val_loss: 0.0238 -
val_accuracy: 0.9667
Epoch 107/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9583 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 108/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9583 - val_loss: 0.0240 -
val_accuracy: 0.9667
Epoch 109/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9583 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 110/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9583 - val_loss: 0.0241 -
val_accuracy: 0.9667
Epoch 111/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0247 -
val_accuracy: 0.9667
Epoch 112/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 113/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 114/200
4/4 - 0s - loss: 0.0233 - accuracy: 0.9583 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 115/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9583 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 116/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 117/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9583 - val_loss: 0.0238 -
```

```
val_accuracy: 0.9667
Epoch 118/200
4/4 - 0s - loss: 0.0231 - accuracy: 0.9583 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 119/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9583 - val_loss: 0.0234 -
val_accuracy: 0.9667
Epoch 120/200
4/4 - 0s - loss: 0.0234 - accuracy: 0.9583 - val_loss: 0.0242 -
val_accuracy: 0.9667
Epoch 121/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9583 - val_loss: 0.0236 -
val_accuracy: 0.9667
Epoch 122/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0237 -
val_accuracy: 0.9667
Epoch 123/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9583 - val_loss: 0.0244 -
val_accuracy: 0.9667
Epoch 124/200
4/4 - 0s - loss: 0.0230 - accuracy: 0.9583 - val_loss: 0.0236 -
val_accuracy: 0.9667
Epoch 125/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 126/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9583 - val_loss: 0.0233 -
val_accuracy: 0.9667
Epoch 127/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 128/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9583 - val_loss: 0.0239 -
val_accuracy: 0.9667
Epoch 129/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9583 - val_loss: 0.0234 -
val_accuracy: 0.9667
Epoch 130/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9583 - val_loss: 0.0233 -
val_accuracy: 0.9667
Epoch 131/200
4/4 - 0s - loss: 0.0229 - accuracy: 0.9583 - val_loss: 0.0242 -
val_accuracy: 0.9667
Epoch 132/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9583 - val_loss: 0.0238 -
val_accuracy: 0.9667
Epoch 133/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9583 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 134/200
```

```
4/4 - 0s - loss: 0.0226 - accuracy: 0.9583 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 135/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9583 - val_loss: 0.0234 -
val_accuracy: 0.9667
Epoch 136/200
4/4 - 0s - loss: 0.0225 - accuracy: 0.9583 - val_loss: 0.0234 -
val_accuracy: 0.9667
Epoch 137/200
4/4 - 0s - loss: 0.0225 - accuracy: 0.9583 - val_loss: 0.0232 -
val_accuracy: 0.9667
Epoch 138/200
4/4 - 0s - loss: 0.0225 - accuracy: 0.9583 - val_loss: 0.0231 -
val_accuracy: 0.9667
Epoch 139/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9583 - val_loss: 0.0227 -
val_accuracy: 0.9667
Epoch 140/200
4/4 - 0s - loss: 0.0232 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 141/200
4/4 - 0s - loss: 0.0228 - accuracy: 0.9667 - val_loss: 0.0230 -
val_accuracy: 0.9667
Epoch 142/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9583 - val_loss: 0.0226 -
val_accuracy: 0.9667
Epoch 143/200
4/4 - 0s - loss: 0.0224 - accuracy: 0.9583 - val_loss: 0.0233 -
val_accuracy: 0.9667
Epoch 144/200
4/4 - 0s - loss: 0.0225 - accuracy: 0.9583 - val_loss: 0.0235 -
val_accuracy: 0.9667
Epoch 145/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9583 - val_loss: 0.0234 -
val_accuracy: 0.9667
Epoch 146/200
4/4 - 0s - loss: 0.0225 - accuracy: 0.9583 - val_loss: 0.0229 -
val_accuracy: 0.9667
Epoch 147/200
4/4 - 0s - loss: 0.0225 - accuracy: 0.9583 - val_loss: 0.0230 -
val_accuracy: 0.9667
Epoch 148/200
4/4 - 0s - loss: 0.0224 - accuracy: 0.9583 - val_loss: 0.0233 -
val_accuracy: 0.9667
Epoch 149/200
4/4 - 0s - loss: 0.0224 - accuracy: 0.9583 - val_loss: 0.0233 -
val_accuracy: 0.9667

Epoch 150/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9583 - val_loss: 0.0227 -
```

val_accuracy: 0.9667
Epoch 151/200
4/4 - 0s - loss: 0.0224 - accuracy: 0.9583 - val_loss: 0.0227 -
val_accuracy: 0.9667
Epoch 152/200
4/4 - 0s - loss: 0.0224 - accuracy: 0.9583 - val_loss: 0.0229 -
val_accuracy: 0.9667
Epoch 153/200
4/4 - 0s - loss: 0.0222 - accuracy: 0.9583 - val_loss: 0.0231 -
val_accuracy: 0.9667
Epoch 154/200
4/4 - 0s - loss: 0.0222 - accuracy: 0.9583 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 155/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9583 - val_loss: 0.0223 -
val_accuracy: 0.9667
Epoch 156/200
4/4 - 0s - loss: 0.0223 - accuracy: 0.9667 - val_loss: 0.0229 -
val_accuracy: 0.9667
Epoch 157/200
4/4 - 0s - loss: 0.0225 - accuracy: 0.9583 - val_loss: 0.0229 -
val_accuracy: 0.9667
Epoch 158/200
4/4 - 0s - loss: 0.0227 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 159/200
4/4 - 0s - loss: 0.0226 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 160/200
4/4 - 0s - loss: 0.0223 - accuracy: 0.9583 - val_loss: 0.0226 -
val_accuracy: 0.9667
Epoch 161/200
4/4 - 0s - loss: 0.0221 - accuracy: 0.9583 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 162/200
4/4 - 0s - loss: 0.0222 - accuracy: 0.9583 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 163/200
4/4 - 0s - loss: 0.0222 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 164/200
4/4 - 0s - loss: 0.0223 - accuracy: 0.9583 - val_loss: 0.0223 -
val_accuracy: 0.9667
Epoch 165/200
4/4 - 0s - loss: 0.0221 - accuracy: 0.9583 - val_loss: 0.0227 -
val_accuracy: 0.9667
Epoch 166/200
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 167/200

```
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0227 -
val_accuracy: 0.9667
Epoch 168/200
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 169/200
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 170/200
4/4 - 0s - loss: 0.0221 - accuracy: 0.9583 - val_loss: 0.0227 -
val_accuracy: 0.9667
Epoch 171/200
4/4 - 0s - loss: 0.0219 - accuracy: 0.9583 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 172/200
4/4 - 0s - loss: 0.0224 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 173/200
4/4 - 0s - loss: 0.0221 - accuracy: 0.9583 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 174/200
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0227 -
val_accuracy: 0.9667
Epoch 175/200
4/4 - 0s - loss: 0.0219 - accuracy: 0.9583 - val_loss: 0.0227 -
val_accuracy: 0.9667
Epoch 176/200
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0230 -
val_accuracy: 0.9667
Epoch 177/200
4/4 - 0s - loss: 0.0219 - accuracy: 0.9583 - val_loss: 0.0231 -
val_accuracy: 0.9667
Epoch 178/200
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 179/200
4/4 - 0s - loss: 0.0219 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 180/200
4/4 - 0s - loss: 0.0218 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 181/200
4/4 - 0s - loss: 0.0218 - accuracy: 0.9583 - val_loss: 0.0226 -
val_accuracy: 0.9667
Epoch 182/200
4/4 - 0s - loss: 0.0219 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 183/200
4/4 - 0s - loss: 0.0221 - accuracy: 0.9583 - val_loss: 0.0222 -
val_accuracy: 0.9667
```

```
Epoch 184/200
4/4 - 0s - loss: 0.0218 - accuracy: 0.9667 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 185/200
4/4 - 0s - loss: 0.0218 - accuracy: 0.9583 - val_loss: 0.0226 -
val_accuracy: 0.9667
Epoch 186/200
4/4 - 0s - loss: 0.0217 - accuracy: 0.9583 - val_loss: 0.0228 -
val_accuracy: 0.9667
Epoch 187/200
4/4 - 0s - loss: 0.0218 - accuracy: 0.9583 - val_loss: 0.0221 -
val_accuracy: 0.9667
Epoch 188/200
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0221 -
val_accuracy: 0.9667
Epoch 189/200
4/4 - 0s - loss: 0.0217 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 190/200
4/4 - 0s - loss: 0.0216 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 191/200
4/4 - 0s - loss: 0.0217 - accuracy: 0.9583 - val_loss: 0.0225 -
val_accuracy: 0.9667
Epoch 192/200
4/4 - 0s - loss: 0.0217 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 193/200
4/4 - 0s - loss: 0.0218 - accuracy: 0.9583 - val_loss: 0.0229 -
val_accuracy: 0.9667
Epoch 194/200
4/4 - 0s - loss: 0.0216 - accuracy: 0.9583 - val_loss: 0.0224 -
val_accuracy: 0.9667
Epoch 195/200
4/4 - 0s - loss: 0.0220 - accuracy: 0.9583 - val_loss: 0.0217 -
val_accuracy: 0.9667
Epoch 196/200
4/4 - 0s - loss: 0.0218 - accuracy: 0.9583 - val_loss: 0.0218 -
val_accuracy: 0.9667
Epoch 197/200
4/4 - 0s - loss: 0.0217 - accuracy: 0.9667 - val_loss: 0.0219 -
val_accuracy: 0.9667
Epoch 198/200
4/4 - 0s - loss: 0.0216 - accuracy: 0.9583 - val_loss: 0.0219 -
val_accuracy: 0.9667
Epoch 199/200
4/4 - 0s - loss: 0.0217 - accuracy: 0.9583 - val_loss: 0.0219 -
val_accuracy: 0.9667
Epoch 200/200
4/4 - 0s - loss: 0.0217 - accuracy: 0.9583 - val_loss: 0.0224 -
```

val_accuracy: 0.9667
Activation: tanh LR: 0.1 Iterations: 200 || Test loss:
0.022448062896728516
Activation: tanh LR: 0.1 Iterations: 200 || Test Accuracy:
0.9666666388511658
==
=======
Model_relu_LR_0.01_Iterations_100_HL_3
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0006s vs
`on_train_batch_end` time: 0.1336s). Check your callbacks.
4/4 - 0s - loss: 0.3201 - accuracy: 0.3250 - val_loss: 0.3039 -
val_accuracy: 0.3250
Epoch 2/100
4/4 - 0s - loss: 0.2970 - accuracy: 0.3250 - val_loss: 0.2849 -
val_accuracy: 0.3333
Epoch 3/100
4/4 - 0s - loss: 0.2795 - accuracy: 0.3333 - val_loss: 0.2696 -
val_accuracy: 0.3333
Epoch 4/100
4/4 - 0s - loss: 0.2652 - accuracy: 0.3500 - val_loss: 0.2572 -
val_accuracy: 0.3667
Epoch 5/100
4/4 - 0s - loss: 0.2538 - accuracy: 0.3833 - val_loss: 0.2471 -
val_accuracy: 0.4083
Epoch 6/100
4/4 - 0s - loss: 0.2441 - accuracy: 0.4417 - val_loss: 0.2385 -
val_accuracy: 0.5167
Epoch 7/100
4/4 - 0s - loss: 0.2360 - accuracy: 0.5583 - val_loss: 0.2313 -
val_accuracy: 0.6167
Epoch 8/100
4/4 - 0s - loss: 0.2291 - accuracy: 0.6333 - val_loss: 0.2249 -
val_accuracy: 0.6417
Epoch 9/100
4/4 - 0s - loss: 0.2231 - accuracy: 0.6417 - val_loss: 0.2194 -
val_accuracy: 0.6417
Epoch 10/100
4/4 - 0s - loss: 0.2178 - accuracy: 0.6417 - val_loss: 0.2145 -
val_accuracy: 0.6417
Epoch 11/100
4/4 - 0s - loss: 0.2130 - accuracy: 0.6417 - val_loss: 0.2101 -
val_accuracy: 0.6417
Epoch 12/100
4/4 - 0s - loss: 0.2088 - accuracy: 0.6417 - val_loss: 0.2062 -
val_accuracy: 0.6417
Epoch 13/100
4/4 - 0s - loss: 0.2050 - accuracy: 0.6417 - val_loss: 0.2026 -
val_accuracy: 0.6417

```
Epoch 14/100
4/4 - 0s - loss: 0.2015 - accuracy: 0.6417 - val_loss: 0.1993 -
val_accuracy: 0.6417
Epoch 15/100
4/4 - 0s - loss: 0.1984 - accuracy: 0.6417 - val_loss: 0.1964 -
val_accuracy: 0.6417
Epoch 16/100
4/4 - 0s - loss: 0.1955 - accuracy: 0.6417 - val_loss: 0.1937 -
val_accuracy: 0.6417
Epoch 17/100
4/4 - 0s - loss: 0.1928 - accuracy: 0.6417 - val_loss: 0.1911 -
val_accuracy: 0.6417
Epoch 18/100
4/4 - 0s - loss: 0.1903 - accuracy: 0.6417 - val_loss: 0.1887 -
val_accuracy: 0.6417
Epoch 19/100
4/4 - 0s - loss: 0.1880 - accuracy: 0.6417 - val_loss: 0.1866 -
val_accuracy: 0.6500
Epoch 20/100
4/4 - 0s - loss: 0.1859 - accuracy: 0.6500 - val_loss: 0.1844 -
val_accuracy: 0.6500
Epoch 21/100
4/4 - 0s - loss: 0.1838 - accuracy: 0.6500 - val_loss: 0.1825 -
val_accuracy: 0.6500
Epoch 22/100
4/4 - 0s - loss: 0.1819 - accuracy: 0.6500 - val_loss: 0.1805 -
val_accuracy: 0.6500
Epoch 23/100
4/4 - 0s - loss: 0.1798 - accuracy: 0.6500 - val_loss: 0.1786 -
val_accuracy: 0.6500
Epoch 24/100
4/4 - 0s - loss: 0.1780 - accuracy: 0.6500 - val_loss: 0.1768 -
val_accuracy: 0.6500
Epoch 25/100
4/4 - 0s - loss: 0.1762 - accuracy: 0.6500 - val_loss: 0.1750 -
val_accuracy: 0.6500
Epoch 26/100
4/4 - 0s - loss: 0.1745 - accuracy: 0.6500 - val_loss: 0.1733 -
val_accuracy: 0.6500
Epoch 27/100
4/4 - 0s - loss: 0.1728 - accuracy: 0.6500 - val_loss: 0.1717 -
val_accuracy: 0.6500
Epoch 28/100
4/4 - 0s - loss: 0.1712 - accuracy: 0.6500 - val_loss: 0.1701 -
val_accuracy: 0.6500

Epoch 29/100
4/4 - 0s - loss: 0.1696 - accuracy: 0.6500 - val_loss: 0.1685 -
val_accuracy: 0.6583
Epoch 30/100
```

```
4/4 - 0s - loss: 0.1681 - accuracy: 0.6583 - val_loss: 0.1670 -
val_accuracy: 0.6583
Epoch 31/100
4/4 - 0s - loss: 0.1665 - accuracy: 0.6583 - val_loss: 0.1655 -
val_accuracy: 0.6583
Epoch 32/100
4/4 - 0s - loss: 0.1651 - accuracy: 0.6583 - val_loss: 0.1641 -
val_accuracy: 0.6583
Epoch 33/100
4/4 - 0s - loss: 0.1636 - accuracy: 0.6583 - val_loss: 0.1624 -
val_accuracy: 0.6667
Epoch 34/100
4/4 - 0s - loss: 0.1619 - accuracy: 0.6667 - val_loss: 0.1608 -
val_accuracy: 0.6750
Epoch 35/100
4/4 - 0s - loss: 0.1603 - accuracy: 0.6750 - val_loss: 0.1593 -
val_accuracy: 0.6917
Epoch 36/100
4/4 - 0s - loss: 0.1589 - accuracy: 0.6917 - val_loss: 0.1577 -
val_accuracy: 0.7000
Epoch 37/100
4/4 - 0s - loss: 0.1573 - accuracy: 0.7000 - val_loss: 0.1562 -
val_accuracy: 0.7083
Epoch 38/100
4/4 - 0s - loss: 0.1557 - accuracy: 0.7083 - val_loss: 0.1547 -
val_accuracy: 0.7083
Epoch 39/100
4/4 - 0s - loss: 0.1543 - accuracy: 0.7083 - val_loss: 0.1532 -
val_accuracy: 0.7167
Epoch 40/100
4/4 - 0s - loss: 0.1527 - accuracy: 0.7167 - val_loss: 0.1517 -
val_accuracy: 0.7250
Epoch 41/100
4/4 - 0s - loss: 0.1512 - accuracy: 0.7250 - val_loss: 0.1503 -
val_accuracy: 0.7250
Epoch 42/100
4/4 - 0s - loss: 0.1499 - accuracy: 0.7333 - val_loss: 0.1489 -
val_accuracy: 0.7333
Epoch 43/100
4/4 - 0s - loss: 0.1485 - accuracy: 0.7333 - val_loss: 0.1476 -
val_accuracy: 0.7333
Epoch 44/100
4/4 - 0s - loss: 0.1472 - accuracy: 0.7333 - val_loss: 0.1463 -
val_accuracy: 0.7333
Epoch 45/100
4/4 - 0s - loss: 0.1460 - accuracy: 0.7417 - val_loss: 0.1450 -
val_accuracy: 0.7417
Epoch 46/100
4/4 - 0s - loss: 0.1446 - accuracy: 0.7417 - val_loss: 0.1438 -
val_accuracy: 0.7417
```

```
Epoch 47/100
4/4 - 0s - loss: 0.1435 - accuracy: 0.7417 - val_loss: 0.1427 -
val_accuracy: 0.7500
Epoch 48/100
4/4 - 0s - loss: 0.1424 - accuracy: 0.7583 - val_loss: 0.1416 -
val_accuracy: 0.7583
Epoch 49/100
4/4 - 0s - loss: 0.1413 - accuracy: 0.7583 - val_loss: 0.1406 -
val_accuracy: 0.7583
Epoch 50/100
4/4 - 0s - loss: 0.1403 - accuracy: 0.7583 - val_loss: 0.1396 -
val_accuracy: 0.7583
Epoch 51/100
4/4 - 0s - loss: 0.1393 - accuracy: 0.7583 - val_loss: 0.1387 -
val_accuracy: 0.7583
Epoch 52/100
4/4 - 0s - loss: 0.1384 - accuracy: 0.7583 - val_loss: 0.1377 -
val_accuracy: 0.7667
Epoch 53/100
4/4 - 0s - loss: 0.1375 - accuracy: 0.7667 - val_loss: 0.1369 -
val_accuracy: 0.7667
Epoch 54/100
4/4 - 0s - loss: 0.1367 - accuracy: 0.7750 - val_loss: 0.1360 -
val_accuracy: 0.7833
Epoch 55/100
4/4 - 0s - loss: 0.1358 - accuracy: 0.7833 - val_loss: 0.1352 -
val_accuracy: 0.7833
Epoch 56/100
4/4 - 0s - loss: 0.1350 - accuracy: 0.7833 - val_loss: 0.1344 -
val_accuracy: 0.7833
Epoch 57/100
4/4 - 0s - loss: 0.1343 - accuracy: 0.7833 - val_loss: 0.1336 -
val_accuracy: 0.7833
Epoch 58/100
4/4 - 0s - loss: 0.1335 - accuracy: 0.7833 - val_loss: 0.1329 -
val_accuracy: 0.7833
Epoch 59/100
4/4 - 0s - loss: 0.1327 - accuracy: 0.7833 - val_loss: 0.1321 -
val_accuracy: 0.7833
Epoch 60/100
4/4 - 0s - loss: 0.1320 - accuracy: 0.7833 - val_loss: 0.1315 -
val_accuracy: 0.7833
Epoch 61/100
4/4 - 0s - loss: 0.1313 - accuracy: 0.7917 - val_loss: 0.1308 -
val_accuracy: 0.7917
Epoch 62/100
4/4 - 0s - loss: 0.1306 - accuracy: 0.7917 - val_loss: 0.1301 -
val_accuracy: 0.8000
Epoch 63/100
4/4 - 0s - loss: 0.1300 - accuracy: 0.8083 - val_loss: 0.1295 -
```

```
val_accuracy: 0.8083
Epoch 64/100
4/4 - 0s - loss: 0.1293 - accuracy: 0.8083 - val_loss: 0.1289 -
val_accuracy: 0.8083
Epoch 65/100
4/4 - 0s - loss: 0.1288 - accuracy: 0.8083 - val_loss: 0.1283 -
val_accuracy: 0.8167
Epoch 66/100
4/4 - 0s - loss: 0.1282 - accuracy: 0.8167 - val_loss: 0.1277 -
val_accuracy: 0.8167
Epoch 67/100
4/4 - 0s - loss: 0.1276 - accuracy: 0.8167 - val_loss: 0.1271 -
val_accuracy: 0.8167
Epoch 68/100
4/4 - 0s - loss: 0.1271 - accuracy: 0.8167 - val_loss: 0.1266 -
val_accuracy: 0.8250
Epoch 69/100
4/4 - 0s - loss: 0.1264 - accuracy: 0.8250 - val_loss: 0.1260 -
val_accuracy: 0.8333
Epoch 70/100
4/4 - 0s - loss: 0.1259 - accuracy: 0.8250 - val_loss: 0.1255 -
val_accuracy: 0.8333
Epoch 71/100
4/4 - 0s - loss: 0.1253 - accuracy: 0.8333 - val_loss: 0.1249 -
val_accuracy: 0.8417
Epoch 72/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.8417 - val_loss: 0.1244 -
val_accuracy: 0.8417
Epoch 73/100
4/4 - 0s - loss: 0.1243 - accuracy: 0.8417 - val_loss: 0.1239 -
val_accuracy: 0.8417
Epoch 74/100
4/4 - 0s - loss: 0.1238 - accuracy: 0.8417 - val_loss: 0.1234 -
val_accuracy: 0.8583
Epoch 75/100
4/4 - 0s - loss: 0.1233 - accuracy: 0.8583 - val_loss: 0.1229 -
val_accuracy: 0.8583
Epoch 76/100
4/4 - 0s - loss: 0.1228 - accuracy: 0.8583 - val_loss: 0.1224 -
val_accuracy: 0.8583
Epoch 77/100
4/4 - 0s - loss: 0.1223 - accuracy: 0.8583 - val_loss: 0.1219 -
val_accuracy: 0.8583
Epoch 78/100
4/4 - 0s - loss: 0.1219 - accuracy: 0.8583 - val_loss: 0.1214 -
val_accuracy: 0.8667
Epoch 79/100
4/4 - 0s - loss: 0.1213 - accuracy: 0.8667 - val_loss: 0.1210 -
val_accuracy: 0.8667
Epoch 80/100
```

```
4/4 - 0s - loss: 0.1209 - accuracy: 0.8667 - val_loss: 0.1205 -
val_accuracy: 0.8667
Epoch 81/100
4/4 - 0s - loss: 0.1205 - accuracy: 0.8667 - val_loss: 0.1201 -
val_accuracy: 0.8667
Epoch 82/100
4/4 - 0s - loss: 0.1200 - accuracy: 0.8667 - val_loss: 0.1196 -
val_accuracy: 0.8667
Epoch 83/100
4/4 - 0s - loss: 0.1195 - accuracy: 0.8667 - val_loss: 0.1192 -
val_accuracy: 0.8667
Epoch 84/100
4/4 - 0s - loss: 0.1191 - accuracy: 0.8667 - val_loss: 0.1187 -
val_accuracy: 0.8750
Epoch 85/100
4/4 - 0s - loss: 0.1186 - accuracy: 0.8750 - val_loss: 0.1183 -
val_accuracy: 0.8750
Epoch 86/100
4/4 - 0s - loss: 0.1182 - accuracy: 0.8750 - val_loss: 0.1179 -
val_accuracy: 0.8750
Epoch 87/100
4/4 - 0s - loss: 0.1178 - accuracy: 0.8750 - val_loss: 0.1174 -
val_accuracy: 0.8833
Epoch 88/100
4/4 - 0s - loss: 0.1173 - accuracy: 0.8833 - val_loss: 0.1170 -
val_accuracy: 0.8917
Epoch 89/100
4/4 - 0s - loss: 0.1169 - accuracy: 0.8917 - val_loss: 0.1166 -
val_accuracy: 0.8917
Epoch 90/100
4/4 - 0s - loss: 0.1165 - accuracy: 0.8917 - val_loss: 0.1162 -
val_accuracy: 0.8917
Epoch 91/100
4/4 - 0s - loss: 0.1161 - accuracy: 0.8917 - val_loss: 0.1158 -
val_accuracy: 0.8917
Epoch 92/100
4/4 - 0s - loss: 0.1157 - accuracy: 0.8917 - val_loss: 0.1154 -
val_accuracy: 0.8917
Epoch 93/100
4/4 - 0s - loss: 0.1153 - accuracy: 0.8917 - val_loss: 0.1150 -
val_accuracy: 0.8917
Epoch 94/100
4/4 - 0s - loss: 0.1149 - accuracy: 0.8917 - val_loss: 0.1146 -
val_accuracy: 0.8917
Epoch 95/100
4/4 - 0s - loss: 0.1145 - accuracy: 0.8917 - val_loss: 0.1142 -
val_accuracy: 0.8917
Epoch 96/100
4/4 - 0s - loss: 0.1141 - accuracy: 0.8917 - val_loss: 0.1138 -
val_accuracy: 0.8917
```

```
Epoch 97/100
4/4 - 0s - loss: 0.1137 - accuracy: 0.8917 - val_loss: 0.1134 -
val_accuracy: 0.8917
Epoch 98/100
4/4 - 0s - loss: 0.1133 - accuracy: 0.8917 - val_loss: 0.1130 -
val_accuracy: 0.8917
Epoch 99/100
4/4 - 0s - loss: 0.1129 - accuracy: 0.8917 - val_loss: 0.1126 -
val_accuracy: 0.8917
Epoch 100/100
4/4 - 0s - loss: 0.1126 - accuracy: 0.9000 - val_loss: 0.1123 -
val_accuracy: 0.8917
Activation: relu LR: 0.01 Itertions: 100 || Train loss:
0.11225850135087967
Activation: relu LR: 0.01 Itertions: 100 || Train Accuracy:
0.8916666507720947
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.0755s). Check your callbacks.
4/4 - 0s - loss: 0.1122 - accuracy: 0.8917 - val_loss: 0.1120 -
val_accuracy: 0.9000
Epoch 2/100
4/4 - 0s - loss: 0.1119 - accuracy: 0.8917 - val_loss: 0.1116 -
val_accuracy: 0.9000
Epoch 3/100
4/4 - 0s - loss: 0.1114 - accuracy: 0.8917 - val_loss: 0.1112 -
val_accuracy: 0.9000
Epoch 4/100
4/4 - 0s - loss: 0.1111 - accuracy: 0.9000 - val_loss: 0.1109 -
val_accuracy: 0.9000
Epoch 5/100
4/4 - 0s - loss: 0.1107 - accuracy: 0.9000 - val_loss: 0.1105 -
val_accuracy: 0.9000
Epoch 6/100
4/4 - 0s - loss: 0.1104 - accuracy: 0.9000 - val_loss: 0.1102 -
val_accuracy: 0.9000
Epoch 7/100
4/4 - 0s - loss: 0.1101 - accuracy: 0.9000 - val_loss: 0.1099 -
val_accuracy: 0.9000
Epoch 8/100
4/4 - 0s - loss: 0.1097 - accuracy: 0.9000 - val_loss: 0.1095 -
val_accuracy: 0.9000
Epoch 9/100
4/4 - 0s - loss: 0.1094 - accuracy: 0.9000 - val_loss: 0.1092 -
val_accuracy: 0.9000

Epoch 10/100
4/4 - 0s - loss: 0.1090 - accuracy: 0.9000 - val_loss: 0.1089 -
val_accuracy: 0.9000
```

```
Epoch 11/100
4/4 - 0s - loss: 0.1087 - accuracy: 0.9000 - val_loss: 0.1085 -
val_accuracy: 0.9000
Epoch 12/100
4/4 - 0s - loss: 0.1083 - accuracy: 0.9000 - val_loss: 0.1082 -
val_accuracy: 0.9000
Epoch 13/100
4/4 - 0s - loss: 0.1079 - accuracy: 0.9000 - val_loss: 0.1078 -
val_accuracy: 0.9333
Epoch 14/100
4/4 - 0s - loss: 0.1076 - accuracy: 0.9000 - val_loss: 0.1075 -
val_accuracy: 0.9333
Epoch 15/100
4/4 - 0s - loss: 0.1073 - accuracy: 0.9000 - val_loss: 0.1072 -
val_accuracy: 0.9333
Epoch 16/100
4/4 - 0s - loss: 0.1070 - accuracy: 0.9000 - val_loss: 0.1069 -
val_accuracy: 0.9333
Epoch 17/100
4/4 - 0s - loss: 0.1066 - accuracy: 0.9083 - val_loss: 0.1065 -
val_accuracy: 0.9333
Epoch 18/100
4/4 - 0s - loss: 0.1062 - accuracy: 0.9000 - val_loss: 0.1061 -
val_accuracy: 0.9333
Epoch 19/100
4/4 - 0s - loss: 0.1059 - accuracy: 0.9083 - val_loss: 0.1058 -
val_accuracy: 0.9333
Epoch 20/100
4/4 - 0s - loss: 0.1055 - accuracy: 0.9083 - val_loss: 0.1054 -
val_accuracy: 0.9333
Epoch 21/100
4/4 - 0s - loss: 0.1052 - accuracy: 0.9083 - val_loss: 0.1051 -
val_accuracy: 0.9333
Epoch 22/100
4/4 - 0s - loss: 0.1049 - accuracy: 0.9083 - val_loss: 0.1048 -
val_accuracy: 0.9333
Epoch 23/100
4/4 - 0s - loss: 0.1046 - accuracy: 0.9083 - val_loss: 0.1044 -
val_accuracy: 0.9333
Epoch 24/100
4/4 - 0s - loss: 0.1042 - accuracy: 0.9167 - val_loss: 0.1041 -
val_accuracy: 0.9333
Epoch 25/100
4/4 - 0s - loss: 0.1039 - accuracy: 0.9167 - val_loss: 0.1037 -
val_accuracy: 0.9333
Epoch 26/100
4/4 - 0s - loss: 0.1036 - accuracy: 0.9167 - val_loss: 0.1034 -
val_accuracy: 0.9333
Epoch 27/100
4/4 - 0s - loss: 0.1032 - accuracy: 0.9167 - val_loss: 0.1030 -
```

```
val_accuracy: 0.9333
Epoch 28/100
4/4 - 0s - loss: 0.1029 - accuracy: 0.9167 - val_loss: 0.1027 -
val_accuracy: 0.9333
Epoch 29/100
4/4 - 0s - loss: 0.1026 - accuracy: 0.9167 - val_loss: 0.1024 -
val_accuracy: 0.9333
Epoch 30/100
4/4 - 0s - loss: 0.1023 - accuracy: 0.9167 - val_loss: 0.1021 -
val_accuracy: 0.9333
Epoch 31/100
4/4 - 0s - loss: 0.1020 - accuracy: 0.9250 - val_loss: 0.1017 -
val_accuracy: 0.9333
Epoch 32/100
4/4 - 0s - loss: 0.1016 - accuracy: 0.9250 - val_loss: 0.1014 -
val_accuracy: 0.9333
Epoch 33/100
4/4 - 0s - loss: 0.1013 - accuracy: 0.9250 - val_loss: 0.1011 -
val_accuracy: 0.9333
Epoch 34/100
4/4 - 0s - loss: 0.1010 - accuracy: 0.9333 - val_loss: 0.1008 -
val_accuracy: 0.9333
Epoch 35/100
4/4 - 0s - loss: 0.1007 - accuracy: 0.9333 - val_loss: 0.1004 -
val_accuracy: 0.9333
Epoch 36/100
4/4 - 0s - loss: 0.1004 - accuracy: 0.9333 - val_loss: 0.1001 -
val_accuracy: 0.9333
Epoch 37/100
4/4 - 0s - loss: 0.1000 - accuracy: 0.9333 - val_loss: 0.0998 -
val_accuracy: 0.9333
Epoch 38/100
4/4 - 0s - loss: 0.0997 - accuracy: 0.9333 - val_loss: 0.0995 -
val_accuracy: 0.9333
Epoch 39/100
4/4 - 0s - loss: 0.0994 - accuracy: 0.9333 - val_loss: 0.0991 -
val_accuracy: 0.9333
Epoch 40/100
4/4 - 0s - loss: 0.0991 - accuracy: 0.9333 - val_loss: 0.0988 -
val_accuracy: 0.9333
Epoch 41/100
4/4 - 0s - loss: 0.0987 - accuracy: 0.9333 - val_loss: 0.0985 -
val_accuracy: 0.9333
Epoch 42/100
4/4 - 0s - loss: 0.0984 - accuracy: 0.9333 - val_loss: 0.0982 -
val_accuracy: 0.9333
Epoch 43/100
4/4 - 0s - loss: 0.0980 - accuracy: 0.9333 - val_loss: 0.0979 -
val_accuracy: 0.9333
Epoch 44/100
```

```
4/4 - 0s - loss: 0.0977 - accuracy: 0.9333 - val_loss: 0.0975 -
val_accuracy: 0.9333
Epoch 45/100
4/4 - 0s - loss: 0.0974 - accuracy: 0.9333 - val_loss: 0.0971 -
val_accuracy: 0.9333
Epoch 46/100
4/4 - 0s - loss: 0.0971 - accuracy: 0.9333 - val_loss: 0.0968 -
val_accuracy: 0.9333
Epoch 47/100
4/4 - 0s - loss: 0.0967 - accuracy: 0.9333 - val_loss: 0.0965 -
val_accuracy: 0.9333
Epoch 48/100
4/4 - 0s - loss: 0.0964 - accuracy: 0.9333 - val_loss: 0.0962 -
val_accuracy: 0.9333
Epoch 49/100
4/4 - 0s - loss: 0.0960 - accuracy: 0.9417 - val_loss: 0.0959 -
val_accuracy: 0.9333
Epoch 50/100
4/4 - 0s - loss: 0.0957 - accuracy: 0.9500 - val_loss: 0.0956 -
val_accuracy: 0.9333
Epoch 51/100
4/4 - 0s - loss: 0.0953 - accuracy: 0.9417 - val_loss: 0.0952 -
val_accuracy: 0.9333
Epoch 52/100
4/4 - 0s - loss: 0.0950 - accuracy: 0.9500 - val_loss: 0.0949 -
val_accuracy: 0.9333
Epoch 53/100
4/4 - 0s - loss: 0.0946 - accuracy: 0.9417 - val_loss: 0.0946 -
val_accuracy: 0.9333
Epoch 54/100
4/4 - 0s - loss: 0.0944 - accuracy: 0.9500 - val_loss: 0.0942 -
val_accuracy: 0.9333
Epoch 55/100
4/4 - 0s - loss: 0.0940 - accuracy: 0.9500 - val_loss: 0.0940 -
val_accuracy: 0.9333
Epoch 56/100
4/4 - 0s - loss: 0.0936 - accuracy: 0.9500 - val_loss: 0.0937 -
val_accuracy: 0.9333
Epoch 57/100
4/4 - 0s - loss: 0.0933 - accuracy: 0.9500 - val_loss: 0.0934 -
val_accuracy: 0.9333
Epoch 58/100
4/4 - 0s - loss: 0.0929 - accuracy: 0.9500 - val_loss: 0.0931 -
val_accuracy: 0.9333
Epoch 59/100
4/4 - 0s - loss: 0.0926 - accuracy: 0.9500 - val_loss: 0.0928 -
val_accuracy: 0.9333
Epoch 60/100
4/4 - 0s - loss: 0.0923 - accuracy: 0.9500 - val_loss: 0.0925 -
val_accuracy: 0.9333
```

```
Epoch 61/100
4/4 - 0s - loss: 0.0920 - accuracy: 0.9500 - val_loss: 0.0921 -
val_accuracy: 0.9333
Epoch 62/100
4/4 - 0s - loss: 0.0916 - accuracy: 0.9500 - val_loss: 0.0918 -
val_accuracy: 0.9333
Epoch 63/100
4/4 - 0s - loss: 0.0913 - accuracy: 0.9500 - val_loss: 0.0915 -
val_accuracy: 0.9333
Epoch 64/100
4/4 - 0s - loss: 0.0910 - accuracy: 0.9500 - val_loss: 0.0912 -
val_accuracy: 0.9333
Epoch 65/100
4/4 - 0s - loss: 0.0906 - accuracy: 0.9500 - val_loss: 0.0909 -
val_accuracy: 0.9333
Epoch 66/100
4/4 - 0s - loss: 0.0903 - accuracy: 0.9500 - val_loss: 0.0906 -
val_accuracy: 0.9333
Epoch 67/100
4/4 - 0s - loss: 0.0900 - accuracy: 0.9500 - val_loss: 0.0903 -
val_accuracy: 0.9333
Epoch 68/100
4/4 - 0s - loss: 0.0897 - accuracy: 0.9500 - val_loss: 0.0900 -
val_accuracy: 0.9333
Epoch 69/100
4/4 - 0s - loss: 0.0895 - accuracy: 0.9500 - val_loss: 0.0897 -
val_accuracy: 0.9333
Epoch 70/100
4/4 - 0s - loss: 0.0891 - accuracy: 0.9500 - val_loss: 0.0894 -
val_accuracy: 0.9333
Epoch 71/100
4/4 - 0s - loss: 0.0888 - accuracy: 0.9500 - val_loss: 0.0891 -
val_accuracy: 0.9333
Epoch 72/100
4/4 - 0s - loss: 0.0885 - accuracy: 0.9583 - val_loss: 0.0888 -
val_accuracy: 0.9333
Epoch 73/100
4/4 - 0s - loss: 0.0882 - accuracy: 0.9583 - val_loss: 0.0884 -
val_accuracy: 0.9667
Epoch 74/100
4/4 - 0s - loss: 0.0879 - accuracy: 0.9583 - val_loss: 0.0881 -
val_accuracy: 0.9667
Epoch 75/100
4/4 - 0s - loss: 0.0876 - accuracy: 0.9583 - val_loss: 0.0878 -
val_accuracy: 0.9667
Epoch 76/100
4/4 - 0s - loss: 0.0873 - accuracy: 0.9750 - val_loss: 0.0876 -
val_accuracy: 0.9667
Epoch 77/100
4/4 - 0s - loss: 0.0870 - accuracy: 0.9750 - val_loss: 0.0873 -
```

```
val_accuracy: 0.9667
Epoch 78/100
4/4 - 0s - loss: 0.0867 - accuracy: 0.9667 - val_loss: 0.0869 -
val_accuracy: 0.9667
Epoch 79/100
4/4 - 0s - loss: 0.0864 - accuracy: 0.9750 - val_loss: 0.0866 -
val_accuracy: 0.9667
Epoch 80/100
4/4 - 0s - loss: 0.0861 - accuracy: 0.9750 - val_loss: 0.0863 -
val_accuracy: 0.9667
Epoch 81/100
4/4 - 0s - loss: 0.0859 - accuracy: 0.9750 - val_loss: 0.0860 -
val_accuracy: 0.9667
Epoch 82/100
4/4 - 0s - loss: 0.0855 - accuracy: 0.9750 - val_loss: 0.0857 -
val_accuracy: 0.9667
Epoch 83/100
4/4 - 0s - loss: 0.0853 - accuracy: 0.9750 - val_loss: 0.0854 -
val_accuracy: 0.9667
Epoch 84/100
4/4 - 0s - loss: 0.0850 - accuracy: 0.9750 - val_loss: 0.0851 -
val_accuracy: 0.9667
Epoch 85/100
4/4 - 0s - loss: 0.0847 - accuracy: 0.9750 - val_loss: 0.0849 -
val_accuracy: 0.9667
Epoch 86/100
4/4 - 0s - loss: 0.0844 - accuracy: 0.9750 - val_loss: 0.0846 -
val_accuracy: 0.9667
Epoch 87/100
4/4 - 0s - loss: 0.0842 - accuracy: 0.9750 - val_loss: 0.0843 -
val_accuracy: 0.9667
Epoch 88/100
4/4 - 0s - loss: 0.0839 - accuracy: 0.9750 - val_loss: 0.0840 -
val_accuracy: 0.9667
Epoch 89/100
4/4 - 0s - loss: 0.0836 - accuracy: 0.9750 - val_loss: 0.0837 -
val_accuracy: 0.9667
Epoch 90/100
4/4 - 0s - loss: 0.0834 - accuracy: 0.9750 - val_loss: 0.0834 -
val_accuracy: 0.9667
Epoch 91/100
4/4 - 0s - loss: 0.0831 - accuracy: 0.9750 - val_loss: 0.0831 -
val_accuracy: 0.9667
Epoch 92/100
4/4 - 0s - loss: 0.0829 - accuracy: 0.9750 - val_loss: 0.0829 -
val_accuracy: 0.9667
Epoch 93/100
4/4 - 0s - loss: 0.0826 - accuracy: 0.9750 - val_loss: 0.0825 -
val_accuracy: 0.9667
```

Epoch 94/100
4/4 - 0s - loss: 0.0823 - accuracy: 0.9750 - val_loss: 0.0823 -
val_accuracy: 0.9667
Epoch 95/100
4/4 - 0s - loss: 0.0821 - accuracy: 0.9750 - val_loss: 0.0821 -
val_accuracy: 0.9667
Epoch 96/100
4/4 - 0s - loss: 0.0818 - accuracy: 0.9750 - val_loss: 0.0818 -
val_accuracy: 0.9667
Epoch 97/100
4/4 - 0s - loss: 0.0815 - accuracy: 0.9750 - val_loss: 0.0815 -
val_accuracy: 0.9667
Epoch 98/100
4/4 - 0s - loss: 0.0812 - accuracy: 0.9750 - val_loss: 0.0812 -
val_accuracy: 0.9667
Epoch 99/100
4/4 - 0s - loss: 0.0810 - accuracy: 0.9750 - val_loss: 0.0809 -
val_accuracy: 0.9667
Epoch 100/100
4/4 - 0s - loss: 0.0807 - accuracy: 0.9750 - val_loss: 0.0807 -
val_accuracy: 0.9667
Activation: relu LR: 0.01 Iterations: 100 || Test loss:
0.0806729644536972
Activation: relu LR: 0.01 Iterations: 100 || Test Accuracy:
0.9666666388511658
==
=======
Model_relu_LR_0.01_Iterations_200_HL_3
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.1292s). Check your callbacks.
4/4 - 0s - loss: 0.2483 - accuracy: 0.3250 - val_loss: 0.2469 -
val_accuracy: 0.3250
Epoch 2/200
4/4 - 0s - loss: 0.2463 - accuracy: 0.3250 - val_loss: 0.2450 -
val_accuracy: 0.3250
Epoch 3/200
4/4 - 0s - loss: 0.2444 - accuracy: 0.3250 - val_loss: 0.2432 -
val_accuracy: 0.3250
Epoch 4/200
4/4 - 0s - loss: 0.2426 - accuracy: 0.3250 - val_loss: 0.2415 -
val_accuracy: 0.3250
Epoch 5/200
4/4 - 0s - loss: 0.2409 - accuracy: 0.3250 - val_loss: 0.2398 -
val_accuracy: 0.3250
Epoch 6/200
4/4 - 0s - loss: 0.2393 - accuracy: 0.3250 - val_loss: 0.2383 -
val_accuracy: 0.3250
Epoch 7/200

```
4/4 - 0s - loss: 0.2378 - accuracy: 0.3250 - val_loss: 0.2369 -
val_accuracy: 0.3250
Epoch 8/200
4/4 - 0s - loss: 0.2364 - accuracy: 0.3250 - val_loss: 0.2355 -
val_accuracy: 0.3250
Epoch 9/200
4/4 - 0s - loss: 0.2350 - accuracy: 0.3250 - val_loss: 0.2342 -
val_accuracy: 0.3250
Epoch 10/200
4/4 - 0s - loss: 0.2338 - accuracy: 0.3250 - val_loss: 0.2330 -
val_accuracy: 0.3250
Epoch 11/200
4/4 - 0s - loss: 0.2326 - accuracy: 0.3250 - val_loss: 0.2318 -
val_accuracy: 0.3250
Epoch 12/200
4/4 - 0s - loss: 0.2314 - accuracy: 0.3250 - val_loss: 0.2307 -
val_accuracy: 0.3250
Epoch 13/200
4/4 - 0s - loss: 0.2303 - accuracy: 0.3250 - val_loss: 0.2296 -
val_accuracy: 0.3250
Epoch 14/200
4/4 - 0s - loss: 0.2293 - accuracy: 0.3250 - val_loss: 0.2286 -
val_accuracy: 0.3250
Epoch 15/200
4/4 - 0s - loss: 0.2283 - accuracy: 0.3250 - val_loss: 0.2276 -
val_accuracy: 0.3250
Epoch 16/200
4/4 - 0s - loss: 0.2273 - accuracy: 0.3333 - val_loss: 0.2267 -
val_accuracy: 0.3500
Epoch 17/200
4/4 - 0s - loss: 0.2264 - accuracy: 0.3500 - val_loss: 0.2258 -
val_accuracy: 0.3667
Epoch 18/200
4/4 - 0s - loss: 0.2256 - accuracy: 0.3750 - val_loss: 0.2250 -
val_accuracy: 0.3917
Epoch 19/200
4/4 - 0s - loss: 0.2248 - accuracy: 0.4000 - val_loss: 0.2242 -
val_accuracy: 0.4333
Epoch 20/200
4/4 - 0s - loss: 0.2239 - accuracy: 0.4417 - val_loss: 0.2234 -
val_accuracy: 0.4667
Epoch 21/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.4833 - val_loss: 0.2227 -
val_accuracy: 0.5083
Epoch 22/200
4/4 - 0s - loss: 0.2225 - accuracy: 0.5167 - val_loss: 0.2220 -
val_accuracy: 0.5500
Epoch 23/200
4/4 - 0s - loss: 0.2218 - accuracy: 0.5583 - val_loss: 0.2213 -
val_accuracy: 0.5750
```

```
Epoch 24/200
4/4 - 0s - loss: 0.2211 - accuracy: 0.5750 - val_loss: 0.2207 -
val_accuracy: 0.5750
Epoch 25/200
4/4 - 0s - loss: 0.2205 - accuracy: 0.5750 - val_loss: 0.2200 -
val_accuracy: 0.5750
Epoch 26/200
4/4 - 0s - loss: 0.2199 - accuracy: 0.5750 - val_loss: 0.2194 -
val_accuracy: 0.6083
Epoch 27/200
4/4 - 0s - loss: 0.2193 - accuracy: 0.6083 - val_loss: 0.2189 -
val_accuracy: 0.6083
Epoch 28/200
4/4 - 0s - loss: 0.2188 - accuracy: 0.6083 - val_loss: 0.2183 -
val_accuracy: 0.6083
Epoch 29/200
4/4 - 0s - loss: 0.2182 - accuracy: 0.6083 - val_loss: 0.2178 -
val_accuracy: 0.6333
Epoch 30/200
4/4 - 0s - loss: 0.2177 - accuracy: 0.6333 - val_loss: 0.2173 -
val_accuracy: 0.6500
Epoch 31/200
4/4 - 0s - loss: 0.2172 - accuracy: 0.6500 - val_loss: 0.2168 -
val_accuracy: 0.6500
Epoch 32/200
4/4 - 0s - loss: 0.2166 - accuracy: 0.6500 - val_loss: 0.2163 -
val_accuracy: 0.6500
Epoch 33/200
4/4 - 0s - loss: 0.2162 - accuracy: 0.6500 - val_loss: 0.2158 -
val_accuracy: 0.6583
Epoch 34/200
4/4 - 0s - loss: 0.2157 - accuracy: 0.6583 - val_loss: 0.2154 -
val_accuracy: 0.6583
Epoch 35/200
4/4 - 0s - loss: 0.2152 - accuracy: 0.6583 - val_loss: 0.2149 -
val_accuracy: 0.6583
Epoch 36/200
4/4 - 0s - loss: 0.2148 - accuracy: 0.6583 - val_loss: 0.2145 -
val_accuracy: 0.6583
Epoch 37/200
4/4 - 0s - loss: 0.2144 - accuracy: 0.6583 - val_loss: 0.2140 -
val_accuracy: 0.6583
Epoch 38/200
4/4 - 0s - loss: 0.2139 - accuracy: 0.6583 - val_loss: 0.2136 -
val_accuracy: 0.6583
Epoch 39/200
4/4 - 0s - loss: 0.2135 - accuracy: 0.6583 - val_loss: 0.2132 -
val_accuracy: 0.6583
Epoch 40/200
4/4 - 0s - loss: 0.2131 - accuracy: 0.6583 - val_loss: 0.2128 -
```

val_accuracy: 0.6583
Epoch 41/200
4/4 - 0s - loss: 0.2127 - accuracy: 0.6583 - val_loss: 0.2124 -
val_accuracy: 0.6583
Epoch 42/200
4/4 - 0s - loss: 0.2124 - accuracy: 0.6583 - val_loss: 0.2120 -
val_accuracy: 0.6583
Epoch 43/200
4/4 - 0s - loss: 0.2119 - accuracy: 0.6583 - val_loss: 0.2117 -
val_accuracy: 0.6583
Epoch 44/200
4/4 - 0s - loss: 0.2116 - accuracy: 0.6583 - val_loss: 0.2113 -
val_accuracy: 0.6583
Epoch 45/200
4/4 - 0s - loss: 0.2112 - accuracy: 0.6583 - val_loss: 0.2109 -
val_accuracy: 0.6583
Epoch 46/200
4/4 - 0s - loss: 0.2108 - accuracy: 0.6583 - val_loss: 0.2105 -
val_accuracy: 0.6583
Epoch 47/200
4/4 - 0s - loss: 0.2104 - accuracy: 0.6583 - val_loss: 0.2102 -
val_accuracy: 0.6583
Epoch 48/200
4/4 - 0s - loss: 0.2101 - accuracy: 0.6583 - val_loss: 0.2098 -
val_accuracy: 0.6583
Epoch 49/200
4/4 - 0s - loss: 0.2097 - accuracy: 0.6583 - val_loss: 0.2094 -
val_accuracy: 0.6583
Epoch 50/200
4/4 - 0s - loss: 0.2093 - accuracy: 0.6583 - val_loss: 0.2091 -
val_accuracy: 0.6583
Epoch 51/200
4/4 - 0s - loss: 0.2090 - accuracy: 0.6583 - val_loss: 0.2087 -
val_accuracy: 0.6583
Epoch 52/200
4/4 - 0s - loss: 0.2086 - accuracy: 0.6583 - val_loss: 0.2084 -
val_accuracy: 0.6583
Epoch 53/200
4/4 - 0s - loss: 0.2083 - accuracy: 0.6583 - val_loss: 0.2080 -
val_accuracy: 0.6583
Epoch 54/200
4/4 - 0s - loss: 0.2079 - accuracy: 0.6583 - val_loss: 0.2077 -
val_accuracy: 0.6583
Epoch 55/200
4/4 - 0s - loss: 0.2076 - accuracy: 0.6583 - val_loss: 0.2073 -
val_accuracy: 0.6583
Epoch 56/200
4/4 - 0s - loss: 0.2072 - accuracy: 0.6583 - val_loss: 0.2070 -
val_accuracy: 0.6583
Epoch 57/200

```
4/4 - 0s - loss: 0.2069 - accuracy: 0.6583 - val_loss: 0.2067 -
val_accuracy: 0.6583
Epoch 58/200
4/4 - 0s - loss: 0.2066 - accuracy: 0.6583 - val_loss: 0.2063 -
val_accuracy: 0.6583
Epoch 59/200
4/4 - 0s - loss: 0.2063 - accuracy: 0.6583 - val_loss: 0.2060 -
val_accuracy: 0.6583
Epoch 60/200
4/4 - 0s - loss: 0.2059 - accuracy: 0.6583 - val_loss: 0.2057 -
val_accuracy: 0.6583
Epoch 61/200
4/4 - 0s - loss: 0.2056 - accuracy: 0.6583 - val_loss: 0.2054 -
val_accuracy: 0.6583
Epoch 62/200
4/4 - 0s - loss: 0.2053 - accuracy: 0.6583 - val_loss: 0.2050 -
val_accuracy: 0.6583
Epoch 63/200
4/4 - 0s - loss: 0.2049 - accuracy: 0.6583 - val_loss: 0.2047 -
val_accuracy: 0.6583
Epoch 64/200
4/4 - 0s - loss: 0.2046 - accuracy: 0.6583 - val_loss: 0.2044 -
val_accuracy: 0.6583
Epoch 65/200
4/4 - 0s - loss: 0.2043 - accuracy: 0.6583 - val_loss: 0.2040 -
val_accuracy: 0.6583
Epoch 66/200
4/4 - 0s - loss: 0.2039 - accuracy: 0.6583 - val_loss: 0.2037 -
val_accuracy: 0.6583
Epoch 67/200
4/4 - 0s - loss: 0.2036 - accuracy: 0.6583 - val_loss: 0.2034 -
val_accuracy: 0.6583
Epoch 68/200
4/4 - 0s - loss: 0.2033 - accuracy: 0.6583 - val_loss: 0.2030 -
val_accuracy: 0.6583
Epoch 69/200
4/4 - 0s - loss: 0.2030 - accuracy: 0.6583 - val_loss: 0.2027 -
val_accuracy: 0.6583
Epoch 70/200
4/4 - 0s - loss: 0.2026 - accuracy: 0.6583 - val_loss: 0.2024 -
val_accuracy: 0.6583
Epoch 71/200
4/4 - 0s - loss: 0.2023 - accuracy: 0.6583 - val_loss: 0.2020 -
val_accuracy: 0.6583
Epoch 72/200
4/4 - 0s - loss: 0.2020 - accuracy: 0.6583 - val_loss: 0.2017 -
val_accuracy: 0.6583
Epoch 73/200
4/4 - 0s - loss: 0.2016 - accuracy: 0.6583 - val_loss: 0.2014 -
val_accuracy: 0.6583
```

```
Epoch 74/200
4/4 - 0s - loss: 0.2013 - accuracy: 0.6583 - val_loss: 0.2010 -
val_accuracy: 0.6583
Epoch 75/200
4/4 - 0s - loss: 0.2010 - accuracy: 0.6583 - val_loss: 0.2007 -
val_accuracy: 0.6583
Epoch 76/200
4/4 - 0s - loss: 0.2006 - accuracy: 0.6583 - val_loss: 0.2004 -
val_accuracy: 0.6583
Epoch 77/200
4/4 - 0s - loss: 0.2003 - accuracy: 0.6583 - val_loss: 0.2000 -
val_accuracy: 0.6583
Epoch 78/200
4/4 - 0s - loss: 0.1999 - accuracy: 0.6583 - val_loss: 0.1997 -
val_accuracy: 0.6583
Epoch 79/200
4/4 - 0s - loss: 0.1996 - accuracy: 0.6583 - val_loss: 0.1993 -
val_accuracy: 0.6583
Epoch 80/200
4/4 - 0s - loss: 0.1992 - accuracy: 0.6583 - val_loss: 0.1990 -
val_accuracy: 0.6583
Epoch 81/200
4/4 - 0s - loss: 0.1989 - accuracy: 0.6583 - val_loss: 0.1987 -
val_accuracy: 0.6583
Epoch 82/200
4/4 - 0s - loss: 0.1985 - accuracy: 0.6583 - val_loss: 0.1983 -
val_accuracy: 0.6583
Epoch 83/200
4/4 - 0s - loss: 0.1982 - accuracy: 0.6583 - val_loss: 0.1980 -
val_accuracy: 0.6583
Epoch 84/200
4/4 - 0s - loss: 0.1979 - accuracy: 0.6583 - val_loss: 0.1976 -
val_accuracy: 0.6583
Epoch 85/200
4/4 - 0s - loss: 0.1976 - accuracy: 0.6583 - val_loss: 0.1973 -
val_accuracy: 0.6583
Epoch 86/200
4/4 - 0s - loss: 0.1972 - accuracy: 0.6583 - val_loss: 0.1969 -
val_accuracy: 0.6583
Epoch 87/200
4/4 - 0s - loss: 0.1969 - accuracy: 0.6583 - val_loss: 0.1966 -
val_accuracy: 0.6583
Epoch 88/200
4/4 - 0s - loss: 0.1965 - accuracy: 0.6583 - val_loss: 0.1962 -
val_accuracy: 0.6583
Epoch 89/200
4/4 - 0s - loss: 0.1962 - accuracy: 0.6583 - val_loss: 0.1959 -
val_accuracy: 0.6583
Epoch 90/200
4/4 - 0s - loss: 0.1958 - accuracy: 0.6583 - val_loss: 0.1955 -
```

```
val_accuracy: 0.6583
Epoch 91/200
4/4 - 0s - loss: 0.1954 - accuracy: 0.6583 - val_loss: 0.1952 -
val_accuracy: 0.6583
Epoch 92/200
4/4 - 0s - loss: 0.1951 - accuracy: 0.6583 - val_loss: 0.1948 -
val_accuracy: 0.6583
Epoch 93/200
4/4 - 0s - loss: 0.1948 - accuracy: 0.6583 - val_loss: 0.1945 -
val_accuracy: 0.6583
Epoch 94/200
4/4 - 0s - loss: 0.1944 - accuracy: 0.6583 - val_loss: 0.1941 -
val_accuracy: 0.6583
Epoch 95/200
4/4 - 0s - loss: 0.1940 - accuracy: 0.6583 - val_loss: 0.1938 -
val_accuracy: 0.6583
Epoch 96/200
4/4 - 0s - loss: 0.1937 - accuracy: 0.6583 - val_loss: 0.1934 -
val_accuracy: 0.6583
Epoch 97/200
4/4 - 0s - loss: 0.1934 - accuracy: 0.6583 - val_loss: 0.1931 -
val_accuracy: 0.6583
Epoch 98/200
4/4 - 0s - loss: 0.1930 - accuracy: 0.6583 - val_loss: 0.1927 -
val_accuracy: 0.6583
Epoch 99/200
4/4 - 0s - loss: 0.1926 - accuracy: 0.6583 - val_loss: 0.1924 -
val_accuracy: 0.6583
Epoch 100/200
4/4 - 0s - loss: 0.1923 - accuracy: 0.6583 - val_loss: 0.1920 -
val_accuracy: 0.6583
Epoch 101/200
4/4 - 0s - loss: 0.1920 - accuracy: 0.6583 - val_loss: 0.1917 -
val_accuracy: 0.6583
Epoch 102/200
4/4 - 0s - loss: 0.1916 - accuracy: 0.6583 - val_loss: 0.1913 -
val_accuracy: 0.6583
Epoch 103/200
4/4 - 0s - loss: 0.1912 - accuracy: 0.6583 - val_loss: 0.1910 -
val_accuracy: 0.6583
Epoch 104/200
4/4 - 0s - loss: 0.1909 - accuracy: 0.6583 - val_loss: 0.1906 -
val_accuracy: 0.6583
Epoch 105/200
4/4 - 0s - loss: 0.1905 - accuracy: 0.6583 - val_loss: 0.1903 -
val_accuracy: 0.6583
Epoch 106/200
4/4 - 0s - loss: 0.1901 - accuracy: 0.6583 - val_loss: 0.1899 -
val_accuracy: 0.6583
Epoch 107/200
```

```
4/4 - 0s - loss: 0.1898 - accuracy: 0.6583 - val_loss: 0.1895 -
val_accuracy: 0.6583
Epoch 108/200
4/4 - 0s - loss: 0.1894 - accuracy: 0.6583 - val_loss: 0.1892 -
val_accuracy: 0.6583
Epoch 109/200
4/4 - 0s - loss: 0.1891 - accuracy: 0.6583 - val_loss: 0.1888 -
val_accuracy: 0.6583
Epoch 110/200
4/4 - 0s - loss: 0.1888 - accuracy: 0.6583 - val_loss: 0.1885 -
val_accuracy: 0.6583
Epoch 111/200
4/4 - 0s - loss: 0.1884 - accuracy: 0.6583 - val_loss: 0.1881 -
val_accuracy: 0.6583
Epoch 112/200
4/4 - 0s - loss: 0.1880 - accuracy: 0.6583 - val_loss: 0.1878 -
val_accuracy: 0.6583
Epoch 113/200
4/4 - 0s - loss: 0.1877 - accuracy: 0.6583 - val_loss: 0.1874 -
val_accuracy: 0.6583
Epoch 114/200
4/4 - 0s - loss: 0.1873 - accuracy: 0.6583 - val_loss: 0.1870 -
val_accuracy: 0.6583
Epoch 115/200
4/4 - 0s - loss: 0.1870 - accuracy: 0.6583 - val_loss: 0.1867 -
val_accuracy: 0.6583
Epoch 116/200
4/4 - 0s - loss: 0.1866 - accuracy: 0.6583 - val_loss: 0.1863 -
val_accuracy: 0.6583
Epoch 117/200
4/4 - 0s - loss: 0.1862 - accuracy: 0.6583 - val_loss: 0.1860 -
val_accuracy: 0.6583
Epoch 118/200
4/4 - 0s - loss: 0.1859 - accuracy: 0.6583 - val_loss: 0.1856 -
val_accuracy: 0.6583
Epoch 119/200
4/4 - 0s - loss: 0.1855 - accuracy: 0.6583 - val_loss: 0.1853 -
val_accuracy: 0.6583
Epoch 120/200
4/4 - 0s - loss: 0.1852 - accuracy: 0.6583 - val_loss: 0.1849 -
val_accuracy: 0.6583
Epoch 121/200
4/4 - 0s - loss: 0.1848 - accuracy: 0.6583 - val_loss: 0.1845 -
val_accuracy: 0.6583
Epoch 122/200
4/4 - 0s - loss: 0.1844 - accuracy: 0.6583 - val_loss: 0.1842 -
val_accuracy: 0.6583
Epoch 123/200
4/4 - 0s - loss: 0.1841 - accuracy: 0.6583 - val_loss: 0.1838 -
val_accuracy: 0.6583
```

```
Epoch 124/200
4/4 - 0s - loss: 0.1837 - accuracy: 0.6583 - val_loss: 0.1835 -
val_accuracy: 0.6583
Epoch 125/200
4/4 - 0s - loss: 0.1834 - accuracy: 0.6583 - val_loss: 0.1831 -
val_accuracy: 0.6583
Epoch 126/200
4/4 - 0s - loss: 0.1830 - accuracy: 0.6583 - val_loss: 0.1827 -
val_accuracy: 0.6583
Epoch 127/200
4/4 - 0s - loss: 0.1826 - accuracy: 0.6583 - val_loss: 0.1824 -
val_accuracy: 0.6583
Epoch 128/200
4/4 - 0s - loss: 0.1823 - accuracy: 0.6583 - val_loss: 0.1820 -
val_accuracy: 0.6583
Epoch 129/200
4/4 - 0s - loss: 0.1819 - accuracy: 0.6583 - val_loss: 0.1817 -
val_accuracy: 0.6583
Epoch 130/200
4/4 - 0s - loss: 0.1815 - accuracy: 0.6583 - val_loss: 0.1813 -
val_accuracy: 0.6583
Epoch 131/200
4/4 - 0s - loss: 0.1812 - accuracy: 0.6583 - val_loss: 0.1810 -
val_accuracy: 0.6583
Epoch 132/200
4/4 - 0s - loss: 0.1809 - accuracy: 0.6583 - val_loss: 0.1806 -
val_accuracy: 0.6583
Epoch 133/200
4/4 - 0s - loss: 0.1805 - accuracy: 0.6583 - val_loss: 0.1802 -
val_accuracy: 0.6583
Epoch 134/200
4/4 - 0s - loss: 0.1802 - accuracy: 0.6583 - val_loss: 0.1799 -
val_accuracy: 0.6583
Epoch 135/200
4/4 - 0s - loss: 0.1798 - accuracy: 0.6583 - val_loss: 0.1795 -
val_accuracy: 0.6583
Epoch 136/200
4/4 - 0s - loss: 0.1794 - accuracy: 0.6583 - val_loss: 0.1792 -
val_accuracy: 0.6583
Epoch 137/200
4/4 - 0s - loss: 0.1791 - accuracy: 0.6583 - val_loss: 0.1788 -
val_accuracy: 0.6583
Epoch 138/200
4/4 - 0s - loss: 0.1787 - accuracy: 0.6583 - val_loss: 0.1785 -
val_accuracy: 0.6583
Epoch 139/200
4/4 - 0s - loss: 0.1784 - accuracy: 0.6583 - val_loss: 0.1781 -
val_accuracy: 0.6583
Epoch 140/200
4/4 - 0s - loss: 0.1780 - accuracy: 0.6583 - val_loss: 0.1778 -
```

```
val_accuracy: 0.6583
Epoch 141/200
4/4 - 0s - loss: 0.1777 - accuracy: 0.6583 - val_loss: 0.1774 -
val_accuracy: 0.6583
Epoch 142/200
4/4 - 0s - loss: 0.1773 - accuracy: 0.6583 - val_loss: 0.1771 -
val_accuracy: 0.6583
Epoch 143/200
4/4 - 0s - loss: 0.1770 - accuracy: 0.6583 - val_loss: 0.1767 -
val_accuracy: 0.6583
Epoch 144/200
4/4 - 0s - loss: 0.1766 - accuracy: 0.6583 - val_loss: 0.1764 -
val_accuracy: 0.6583
Epoch 145/200
4/4 - 0s - loss: 0.1763 - accuracy: 0.6583 - val_loss: 0.1761 -
val_accuracy: 0.6583
Epoch 146/200
4/4 - 0s - loss: 0.1760 - accuracy: 0.6583 - val_loss: 0.1757 -
val_accuracy: 0.6583
Epoch 147/200
4/4 - 0s - loss: 0.1756 - accuracy: 0.6583 - val_loss: 0.1754 -
val_accuracy: 0.6583
Epoch 148/200
4/4 - 0s - loss: 0.1753 - accuracy: 0.6583 - val_loss: 0.1751 -
val_accuracy: 0.6583
Epoch 149/200
4/4 - 0s - loss: 0.1750 - accuracy: 0.6583 - val_loss: 0.1747 -
val_accuracy: 0.6583
Epoch 150/200
4/4 - 0s - loss: 0.1746 - accuracy: 0.6583 - val_loss: 0.1744 -
val_accuracy: 0.6583
Epoch 151/200
4/4 - 0s - loss: 0.1743 - accuracy: 0.6583 - val_loss: 0.1740 -
val_accuracy: 0.6583
Epoch 152/200
4/4 - 0s - loss: 0.1740 - accuracy: 0.6583 - val_loss: 0.1737 -
val_accuracy: 0.6583
Epoch 153/200
4/4 - 0s - loss: 0.1737 - accuracy: 0.6583 - val_loss: 0.1734 -
val_accuracy: 0.6583
Epoch 154/200
4/4 - 0s - loss: 0.1733 - accuracy: 0.6583 - val_loss: 0.1730 -
val_accuracy: 0.6583
Epoch 155/200
4/4 - 0s - loss: 0.1730 - accuracy: 0.6583 - val_loss: 0.1727 -
val_accuracy: 0.6583
Epoch 156/200
4/4 - 0s - loss: 0.1726 - accuracy: 0.6583 - val_loss: 0.1724 -
val_accuracy: 0.6583
Epoch 157/200
```

```
4/4 - 0s - loss: 0.1723 - accuracy: 0.6583 - val_loss: 0.1721 -
val_accuracy: 0.6583
Epoch 158/200
4/4 - 0s - loss: 0.1720 - accuracy: 0.6583 - val_loss: 0.1717 -
val_accuracy: 0.6583
Epoch 159/200
4/4 - 0s - loss: 0.1716 - accuracy: 0.6583 - val_loss: 0.1714 -
val_accuracy: 0.6583
Epoch 160/200
4/4 - 0s - loss: 0.1713 - accuracy: 0.6583 - val_loss: 0.1711 -
val_accuracy: 0.6583
Epoch 161/200
4/4 - 0s - loss: 0.1710 - accuracy: 0.6583 - val_loss: 0.1707 -
val_accuracy: 0.6583
Epoch 162/200
4/4 - 0s - loss: 0.1706 - accuracy: 0.6583 - val_loss: 0.1704 -
val_accuracy: 0.6583
Epoch 163/200
4/4 - 0s - loss: 0.1703 - accuracy: 0.6583 - val_loss: 0.1701 -
val_accuracy: 0.6583
Epoch 164/200
4/4 - 0s - loss: 0.1700 - accuracy: 0.6583 - val_loss: 0.1698 -
val_accuracy: 0.6583
Epoch 165/200
4/4 - 0s - loss: 0.1697 - accuracy: 0.6583 - val_loss: 0.1694 -
val_accuracy: 0.6583
Epoch 166/200
4/4 - 0s - loss: 0.1694 - accuracy: 0.6583 - val_loss: 0.1691 -
val_accuracy: 0.6583
Epoch 167/200
4/4 - 0s - loss: 0.1690 - accuracy: 0.6583 - val_loss: 0.1688 -
val_accuracy: 0.6583
Epoch 168/200
4/4 - 0s - loss: 0.1687 - accuracy: 0.6583 - val_loss: 0.1685 -
val_accuracy: 0.6583
Epoch 169/200
4/4 - 0s - loss: 0.1684 - accuracy: 0.6583 - val_loss: 0.1682 -
val_accuracy: 0.6583
Epoch 170/200
4/4 - 0s - loss: 0.1681 - accuracy: 0.6583 - val_loss: 0.1679 -
val_accuracy: 0.6583
Epoch 171/200
4/4 - 0s - loss: 0.1678 - accuracy: 0.6583 - val_loss: 0.1675 -
val_accuracy: 0.6583
Epoch 172/200
4/4 - 0s - loss: 0.1674 - accuracy: 0.6583 - val_loss: 0.1672 -
val_accuracy: 0.6583
Epoch 173/200
4/4 - 0s - loss: 0.1672 - accuracy: 0.6583 - val_loss: 0.1669 -
val_accuracy: 0.6583
```

```
Epoch 174/200
4/4 - 0s - loss: 0.1668 - accuracy: 0.6583 - val_loss: 0.1666 -
val_accuracy: 0.6583
Epoch 175/200
4/4 - 0s - loss: 0.1666 - accuracy: 0.6583 - val_loss: 0.1663 -
val_accuracy: 0.6583
Epoch 176/200
4/4 - 0s - loss: 0.1662 - accuracy: 0.6583 - val_loss: 0.1660 -
val_accuracy: 0.6583
Epoch 177/200
4/4 - 0s - loss: 0.1659 - accuracy: 0.6583 - val_loss: 0.1657 -
val_accuracy: 0.6583
Epoch 178/200
4/4 - 0s - loss: 0.1656 - accuracy: 0.6583 - val_loss: 0.1654 -
val_accuracy: 0.6583
Epoch 179/200
4/4 - 0s - loss: 0.1653 - accuracy: 0.6583 - val_loss: 0.1651 -
val_accuracy: 0.6583
Epoch 180/200
4/4 - 0s - loss: 0.1650 - accuracy: 0.6583 - val_loss: 0.1648 -
val_accuracy: 0.6583
Epoch 181/200
4/4 - 0s - loss: 0.1647 - accuracy: 0.6583 - val_loss: 0.1645 -
val_accuracy: 0.6583
Epoch 182/200
4/4 - 0s - loss: 0.1644 - accuracy: 0.6583 - val_loss: 0.1642 -
val_accuracy: 0.6583
Epoch 183/200
4/4 - 0s - loss: 0.1642 - accuracy: 0.6583 - val_loss: 0.1639 -
val_accuracy: 0.6583
Epoch 184/200
4/4 - 0s - loss: 0.1639 - accuracy: 0.6583 - val_loss: 0.1636 -
val_accuracy: 0.6583
Epoch 185/200
4/4 - 0s - loss: 0.1636 - accuracy: 0.6583 - val_loss: 0.1634 -
val_accuracy: 0.6583
Epoch 186/200
4/4 - 0s - loss: 0.1633 - accuracy: 0.6583 - val_loss: 0.1631 -
val_accuracy: 0.6583
Epoch 187/200
4/4 - 0s - loss: 0.1630 - accuracy: 0.6583 - val_loss: 0.1628 -
val_accuracy: 0.6583
Epoch 188/200
4/4 - 0s - loss: 0.1627 - accuracy: 0.6583 - val_loss: 0.1625 -
val_accuracy: 0.6583
Epoch 189/200
4/4 - 0s - loss: 0.1624 - accuracy: 0.6583 - val_loss: 0.1622 -
val_accuracy: 0.6583
Epoch 190/200
4/4 - 0s - loss: 0.1621 - accuracy: 0.6583 - val_loss: 0.1619 -
```

val_accuracy: 0.6583
Epoch 191/200
4/4 - 0s - loss: 0.1619 - accuracy: 0.6583 - val_loss: 0.1617 -
val_accuracy: 0.6583
Epoch 192/200
4/4 - 0s - loss: 0.1616 - accuracy: 0.6583 - val_loss: 0.1614 -
val_accuracy: 0.6583
Epoch 193/200
4/4 - 0s - loss: 0.1614 - accuracy: 0.6583 - val_loss: 0.1611 -
val_accuracy: 0.6583
Epoch 194/200
4/4 - 0s - loss: 0.1610 - accuracy: 0.6583 - val_loss: 0.1608 -
val_accuracy: 0.6583
Epoch 195/200
4/4 - 0s - loss: 0.1608 - accuracy: 0.6583 - val_loss: 0.1606 -
val_accuracy: 0.6583
Epoch 196/200
4/4 - 0s - loss: 0.1605 - accuracy: 0.6583 - val_loss: 0.1603 -
val_accuracy: 0.6583
Epoch 197/200
4/4 - 0s - loss: 0.1602 - accuracy: 0.6583 - val_loss: 0.1600 -
val_accuracy: 0.6583
Epoch 198/200
4/4 - 0s - loss: 0.1600 - accuracy: 0.6583 - val_loss: 0.1598 -
val_accuracy: 0.6583
Epoch 199/200
4/4 - 0s - loss: 0.1597 - accuracy: 0.6583 - val_loss: 0.1595 -
val_accuracy: 0.6583
Epoch 200/200
4/4 - 0s - loss: 0.1594 - accuracy: 0.6583 - val_loss: 0.1592 -
val_accuracy: 0.6583
Activation: relu LR: 0.01 Itertions: 200 || Train loss:
0.15923132002353668
Activation: relu LR: 0.01 Itertions: 200 || Train Accuracy:
0.6583333611488342
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0005s vs
`on_train_batch_end` time: 0.0779s). Check your callbacks.
4/4 - 0s - loss: 0.1592 - accuracy: 0.6583 - val_loss: 0.1450 -
val_accuracy: 0.7000
Epoch 2/200
4/4 - 0s - loss: 0.1589 - accuracy: 0.6583 - val_loss: 0.1448 -
val_accuracy: 0.7000
Epoch 3/200
4/4 - 0s - loss: 0.1587 - accuracy: 0.6583 - val_loss: 0.1445 -
val_accuracy: 0.7000
Epoch 4/200
4/4 - 0s - loss: 0.1584 - accuracy: 0.6583 - val_loss: 0.1443 -
val_accuracy: 0.7000

```
Epoch 5/200
4/4 - 0s - loss: 0.1581 - accuracy: 0.6583 - val_loss: 0.1441 -
val_accuracy: 0.7000
Epoch 6/200
4/4 - 0s - loss: 0.1579 - accuracy: 0.6583 - val_loss: 0.1438 -
val_accuracy: 0.7000
Epoch 7/200
4/4 - 0s - loss: 0.1576 - accuracy: 0.6583 - val_loss: 0.1436 -
val_accuracy: 0.7000
Epoch 8/200
4/4 - 0s - loss: 0.1574 - accuracy: 0.6583 - val_loss: 0.1434 -
val_accuracy: 0.7000
Epoch 9/200
4/4 - 0s - loss: 0.1571 - accuracy: 0.6583 - val_loss: 0.1432 -
val_accuracy: 0.7000
Epoch 10/200
4/4 - 0s - loss: 0.1569 - accuracy: 0.6583 - val_loss: 0.1429 -
val_accuracy: 0.7000
Epoch 11/200
4/4 - 0s - loss: 0.1566 - accuracy: 0.6583 - val_loss: 0.1427 -
val_accuracy: 0.7000
Epoch 12/200
4/4 - 0s - loss: 0.1564 - accuracy: 0.6583 - val_loss: 0.1425 -
val_accuracy: 0.7000
Epoch 13/200
4/4 - 0s - loss: 0.1561 - accuracy: 0.6583 - val_loss: 0.1423 -
val_accuracy: 0.7000
Epoch 14/200
4/4 - 0s - loss: 0.1559 - accuracy: 0.6583 - val_loss: 0.1420 -
val_accuracy: 0.7000
Epoch 15/200
4/4 - 0s - loss: 0.1557 - accuracy: 0.6583 - val_loss: 0.1418 -
val_accuracy: 0.7000
Epoch 16/200
4/4 - 0s - loss: 0.1554 - accuracy: 0.6583 - val_loss: 0.1416 -
val_accuracy: 0.7000
Epoch 17/200
4/4 - 0s - loss: 0.1552 - accuracy: 0.6583 - val_loss: 0.1414 -
val_accuracy: 0.7000
Epoch 18/200
4/4 - 0s - loss: 0.1550 - accuracy: 0.6583 - val_loss: 0.1411 -
val_accuracy: 0.7000
Epoch 19/200
4/4 - 0s - loss: 0.1547 - accuracy: 0.6583 - val_loss: 0.1409 -
val_accuracy: 0.7000
Epoch 20/200
4/4 - 0s - loss: 0.1545 - accuracy: 0.6583 - val_loss: 0.1407 -
val_accuracy: 0.7000
Epoch 21/200
4/4 - 0s - loss: 0.1542 - accuracy: 0.6583 - val_loss: 0.1404 -
```

```
val_accuracy: 0.7000
Epoch 22/200
4/4 - 0s - loss: 0.1540 - accuracy: 0.6583 - val_loss: 0.1402 -
val_accuracy: 0.7000
Epoch 23/200
4/4 - 0s - loss: 0.1538 - accuracy: 0.6583 - val_loss: 0.1400 -
val_accuracy: 0.7000
Epoch 24/200
4/4 - 0s - loss: 0.1535 - accuracy: 0.6583 - val_loss: 0.1398 -
val_accuracy: 0.7000
Epoch 25/200
4/4 - 0s - loss: 0.1533 - accuracy: 0.6583 - val_loss: 0.1396 -
val_accuracy: 0.7000
Epoch 26/200
4/4 - 0s - loss: 0.1531 - accuracy: 0.6583 - val_loss: 0.1394 -
val_accuracy: 0.7000
Epoch 27/200
4/4 - 0s - loss: 0.1529 - accuracy: 0.6583 - val_loss: 0.1392 -
val_accuracy: 0.7000
Epoch 28/200
4/4 - 0s - loss: 0.1527 - accuracy: 0.6583 - val_loss: 0.1390 -
val_accuracy: 0.7000
Epoch 29/200
4/4 - 0s - loss: 0.1524 - accuracy: 0.6583 - val_loss: 0.1388 -
val_accuracy: 0.7000
Epoch 30/200
4/4 - 0s - loss: 0.1522 - accuracy: 0.6583 - val_loss: 0.1386 -
val_accuracy: 0.7000
Epoch 31/200
4/4 - 0s - loss: 0.1520 - accuracy: 0.6583 - val_loss: 0.1384 -
val_accuracy: 0.7000
Epoch 32/200
4/4 - 0s - loss: 0.1518 - accuracy: 0.6583 - val_loss: 0.1382 -
val_accuracy: 0.7000
Epoch 33/200
4/4 - 0s - loss: 0.1516 - accuracy: 0.6583 - val_loss: 0.1380 -
val_accuracy: 0.7000
Epoch 34/200
4/4 - 0s - loss: 0.1514 - accuracy: 0.6583 - val_loss: 0.1378 -
val_accuracy: 0.7000
Epoch 35/200
4/4 - 0s - loss: 0.1512 - accuracy: 0.6583 - val_loss: 0.1376 -
val_accuracy: 0.7000
Epoch 36/200
4/4 - 0s - loss: 0.1510 - accuracy: 0.6583 - val_loss: 0.1374 -
val_accuracy: 0.7000
Epoch 37/200
4/4 - 0s - loss: 0.1508 - accuracy: 0.6583 - val_loss: 0.1372 -
val_accuracy: 0.7000
```

```
Epoch 38/200
4/4 - 0s - loss: 0.1506 - accuracy: 0.6583 - val_loss: 0.1371 -
val_accuracy: 0.7000
Epoch 39/200
4/4 - 0s - loss: 0.1504 - accuracy: 0.6583 - val_loss: 0.1369 -
val_accuracy: 0.7000
Epoch 40/200
4/4 - 0s - loss: 0.1502 - accuracy: 0.6583 - val_loss: 0.1367 -
val_accuracy: 0.7000
Epoch 41/200
4/4 - 0s - loss: 0.1500 - accuracy: 0.6583 - val_loss: 0.1366 -
val_accuracy: 0.7000
Epoch 42/200
4/4 - 0s - loss: 0.1497 - accuracy: 0.6583 - val_loss: 0.1364 -
val_accuracy: 0.7000
Epoch 43/200
4/4 - 0s - loss: 0.1495 - accuracy: 0.6583 - val_loss: 0.1362 -
val_accuracy: 0.7000
Epoch 44/200
4/4 - 0s - loss: 0.1493 - accuracy: 0.6583 - val_loss: 0.1360 -
val_accuracy: 0.7000
Epoch 45/200
4/4 - 0s - loss: 0.1492 - accuracy: 0.6583 - val_loss: 0.1358 -
val_accuracy: 0.7000
Epoch 46/200
4/4 - 0s - loss: 0.1490 - accuracy: 0.6583 - val_loss: 0.1356 -
val_accuracy: 0.7000
Epoch 47/200
4/4 - 0s - loss: 0.1488 - accuracy: 0.6583 - val_loss: 0.1354 -
val_accuracy: 0.7000
Epoch 48/200
4/4 - 0s - loss: 0.1486 - accuracy: 0.6583 - val_loss: 0.1352 -
val_accuracy: 0.7000
Epoch 49/200
4/4 - 0s - loss: 0.1484 - accuracy: 0.6583 - val_loss: 0.1351 -
val_accuracy: 0.7000
Epoch 50/200
4/4 - 0s - loss: 0.1482 - accuracy: 0.6583 - val_loss: 0.1349 -
val_accuracy: 0.7000
Epoch 51/200
4/4 - 0s - loss: 0.1480 - accuracy: 0.6583 - val_loss: 0.1347 -
val_accuracy: 0.7000
Epoch 52/200
4/4 - 0s - loss: 0.1479 - accuracy: 0.6583 - val_loss: 0.1346 -
val_accuracy: 0.7000
Epoch 53/200
4/4 - 0s - loss: 0.1476 - accuracy: 0.6583 - val_loss: 0.1344 -
val_accuracy: 0.7000
Epoch 54/200
4/4 - 0s - loss: 0.1475 - accuracy: 0.6583 - val_loss: 0.1342 -
```

```
val_accuracy: 0.7000
Epoch 55/200
4/4 - 0s - loss: 0.1473 - accuracy: 0.6583 - val_loss: 0.1341 -
val_accuracy: 0.7000
Epoch 56/200
4/4 - 0s - loss: 0.1471 - accuracy: 0.6583 - val_loss: 0.1339 -
val_accuracy: 0.7000
Epoch 57/200
4/4 - 0s - loss: 0.1470 - accuracy: 0.6583 - val_loss: 0.1338 -
val_accuracy: 0.7000
Epoch 58/200
4/4 - 0s - loss: 0.1468 - accuracy: 0.6583 - val_loss: 0.1336 -
val_accuracy: 0.7000
Epoch 59/200
4/4 - 0s - loss: 0.1466 - accuracy: 0.6583 - val_loss: 0.1334 -
val_accuracy: 0.7000
Epoch 60/200
4/4 - 0s - loss: 0.1464 - accuracy: 0.6583 - val_loss: 0.1333 -
val_accuracy: 0.7000
Epoch 61/200
4/4 - 0s - loss: 0.1462 - accuracy: 0.6583 - val_loss: 0.1331 -
val_accuracy: 0.7000
Epoch 62/200
4/4 - 0s - loss: 0.1461 - accuracy: 0.6583 - val_loss: 0.1330 -
val_accuracy: 0.7000
Epoch 63/200
4/4 - 0s - loss: 0.1459 - accuracy: 0.6583 - val_loss: 0.1328 -
val_accuracy: 0.7000
Epoch 64/200
4/4 - 0s - loss: 0.1457 - accuracy: 0.6583 - val_loss: 0.1327 -
val_accuracy: 0.7000
Epoch 65/200
4/4 - 0s - loss: 0.1456 - accuracy: 0.6583 - val_loss: 0.1325 -
val_accuracy: 0.7000
Epoch 66/200
4/4 - 0s - loss: 0.1454 - accuracy: 0.6583 - val_loss: 0.1323 -
val_accuracy: 0.7000
Epoch 67/200
4/4 - 0s - loss: 0.1453 - accuracy: 0.6583 - val_loss: 0.1322 -
val_accuracy: 0.7000
Epoch 68/200
4/4 - 0s - loss: 0.1451 - accuracy: 0.6583 - val_loss: 0.1320 -
val_accuracy: 0.7000
Epoch 69/200
4/4 - 0s - loss: 0.1449 - accuracy: 0.6583 - val_loss: 0.1319 -
val_accuracy: 0.7000
Epoch 70/200
4/4 - 0s - loss: 0.1448 - accuracy: 0.6583 - val_loss: 0.1318 -
val_accuracy: 0.7000
Epoch 71/200
```

```
4/4 - 0s - loss: 0.1446 - accuracy: 0.6583 - val_loss: 0.1316 -
val_accuracy: 0.7000
Epoch 72/200
4/4 - 0s - loss: 0.1445 - accuracy: 0.6583 - val_loss: 0.1315 -
val_accuracy: 0.7000
Epoch 73/200
4/4 - 0s - loss: 0.1443 - accuracy: 0.6583 - val_loss: 0.1314 -
val_accuracy: 0.7000
Epoch 74/200
4/4 - 0s - loss: 0.1442 - accuracy: 0.6583 - val_loss: 0.1313 -
val_accuracy: 0.7000
Epoch 75/200
4/4 - 0s - loss: 0.1440 - accuracy: 0.6583 - val_loss: 0.1311 -
val_accuracy: 0.7000
Epoch 76/200
4/4 - 0s - loss: 0.1438 - accuracy: 0.6583 - val_loss: 0.1310 -
val_accuracy: 0.7000
Epoch 77/200
4/4 - 0s - loss: 0.1437 - accuracy: 0.6583 - val_loss: 0.1309 -
val_accuracy: 0.7000
Epoch 78/200
4/4 - 0s - loss: 0.1436 - accuracy: 0.6583 - val_loss: 0.1307 -
val_accuracy: 0.7000
Epoch 79/200
4/4 - 0s - loss: 0.1434 - accuracy: 0.6583 - val_loss: 0.1306 -
val_accuracy: 0.7000
Epoch 80/200
4/4 - 0s - loss: 0.1433 - accuracy: 0.6583 - val_loss: 0.1305 -
val_accuracy: 0.7000
Epoch 81/200
4/4 - 0s - loss: 0.1431 - accuracy: 0.6583 - val_loss: 0.1303 -
val_accuracy: 0.7000
Epoch 82/200
4/4 - 0s - loss: 0.1430 - accuracy: 0.6583 - val_loss: 0.1302 -
val_accuracy: 0.7000
Epoch 83/200
4/4 - 0s - loss: 0.1429 - accuracy: 0.6583 - val_loss: 0.1301 -
val_accuracy: 0.7000
Epoch 84/200
4/4 - 0s - loss: 0.1427 - accuracy: 0.6583 - val_loss: 0.1299 -
val_accuracy: 0.7000
Epoch 85/200
4/4 - 0s - loss: 0.1426 - accuracy: 0.6583 - val_loss: 0.1298 -
val_accuracy: 0.7000
Epoch 86/200
4/4 - 0s - loss: 0.1424 - accuracy: 0.6583 - val_loss: 0.1297 -
val_accuracy: 0.7000
Epoch 87/200
4/4 - 0s - loss: 0.1423 - accuracy: 0.6583 - val_loss: 0.1296 -
val_accuracy: 0.7000
```

```
Epoch 88/200
4/4 - 0s - loss: 0.1422 - accuracy: 0.6583 - val_loss: 0.1295 -
val_accuracy: 0.7000
Epoch 89/200
4/4 - 0s - loss: 0.1420 - accuracy: 0.6583 - val_loss: 0.1293 -
val_accuracy: 0.7000
Epoch 90/200
4/4 - 0s - loss: 0.1419 - accuracy: 0.6583 - val_loss: 0.1292 -
val_accuracy: 0.7000
Epoch 91/200
4/4 - 0s - loss: 0.1418 - accuracy: 0.6583 - val_loss: 0.1291 -
val_accuracy: 0.7000
Epoch 92/200
4/4 - 0s - loss: 0.1417 - accuracy: 0.6583 - val_loss: 0.1290 -
val_accuracy: 0.7000
Epoch 93/200
4/4 - 0s - loss: 0.1416 - accuracy: 0.6583 - val_loss: 0.1289 -
val_accuracy: 0.7000
Epoch 94/200
4/4 - 0s - loss: 0.1414 - accuracy: 0.6583 - val_loss: 0.1288 -
val_accuracy: 0.7000
Epoch 95/200
4/4 - 0s - loss: 0.1413 - accuracy: 0.6583 - val_loss: 0.1286 -
val_accuracy: 0.7000
Epoch 96/200
4/4 - 0s - loss: 0.1411 - accuracy: 0.6583 - val_loss: 0.1285 -
val_accuracy: 0.7000
Epoch 97/200
4/4 - 0s - loss: 0.1410 - accuracy: 0.6583 - val_loss: 0.1284 -
val_accuracy: 0.7000
Epoch 98/200
4/4 - 0s - loss: 0.1409 - accuracy: 0.6583 - val_loss: 0.1283 -
val_accuracy: 0.7000
Epoch 99/200
4/4 - 0s - loss: 0.1408 - accuracy: 0.6583 - val_loss: 0.1282 -
val_accuracy: 0.7000
Epoch 100/200
4/4 - 0s - loss: 0.1406 - accuracy: 0.6583 - val_loss: 0.1281 -
val_accuracy: 0.7000
Epoch 101/200
4/4 - 0s - loss: 0.1405 - accuracy: 0.6583 - val_loss: 0.1280 -
val_accuracy: 0.7000
Epoch 102/200
4/4 - 0s - loss: 0.1404 - accuracy: 0.6583 - val_loss: 0.1279 -
val_accuracy: 0.7000
Epoch 103/200
4/4 - 0s - loss: 0.1403 - accuracy: 0.6583 - val_loss: 0.1278 -
val_accuracy: 0.7000
Epoch 104/200
4/4 - 0s - loss: 0.1401 - accuracy: 0.6583 - val_loss: 0.1276 -
```

```
val_accuracy: 0.7000
Epoch 105/200
4/4 - 0s - loss: 0.1400 - accuracy: 0.6583 - val_loss: 0.1275 -
val_accuracy: 0.7000
Epoch 106/200
4/4 - 0s - loss: 0.1400 - accuracy: 0.6583 - val_loss: 0.1274 -
val_accuracy: 0.7000
Epoch 107/200
4/4 - 0s - loss: 0.1398 - accuracy: 0.6583 - val_loss: 0.1273 -
val_accuracy: 0.7000
Epoch 108/200
4/4 - 0s - loss: 0.1397 - accuracy: 0.6583 - val_loss: 0.1272 -
val_accuracy: 0.7000
Epoch 109/200
4/4 - 0s - loss: 0.1396 - accuracy: 0.6583 - val_loss: 0.1271 -
val_accuracy: 0.7000
Epoch 110/200
4/4 - 0s - loss: 0.1395 - accuracy: 0.6583 - val_loss: 0.1270 -
val_accuracy: 0.7000
Epoch 111/200
4/4 - 0s - loss: 0.1394 - accuracy: 0.6583 - val_loss: 0.1269 -
val_accuracy: 0.7000
Epoch 112/200
4/4 - 0s - loss: 0.1392 - accuracy: 0.6583 - val_loss: 0.1269 -
val_accuracy: 0.7000
Epoch 113/200
4/4 - 0s - loss: 0.1392 - accuracy: 0.6583 - val_loss: 0.1268 -
val_accuracy: 0.7000
Epoch 114/200
4/4 - 0s - loss: 0.1390 - accuracy: 0.6583 - val_loss: 0.1267 -
val_accuracy: 0.7000
Epoch 115/200
4/4 - 0s - loss: 0.1389 - accuracy: 0.6583 - val_loss: 0.1266 -
val_accuracy: 0.7000
Epoch 116/200
4/4 - 0s - loss: 0.1388 - accuracy: 0.6583 - val_loss: 0.1265 -
val_accuracy: 0.7000
Epoch 117/200
4/4 - 0s - loss: 0.1387 - accuracy: 0.6583 - val_loss: 0.1264 -
val_accuracy: 0.7000
Epoch 118/200
4/4 - 0s - loss: 0.1386 - accuracy: 0.6583 - val_loss: 0.1263 -
val_accuracy: 0.7000
Epoch 119/200
4/4 - 0s - loss: 0.1385 - accuracy: 0.6583 - val_loss: 0.1262 -
val_accuracy: 0.7000
Epoch 120/200
4/4 - 0s - loss: 0.1384 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.7000
Epoch 121/200
```

```
4/4 - 0s - loss: 0.1383 - accuracy: 0.6583 - val_loss: 0.1260 -
val_accuracy: 0.7000

Epoch 122/200
4/4 - 0s - loss: 0.1382 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.7000
Epoch 123/200
4/4 - 0s - loss: 0.1381 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.7000
Epoch 124/200
4/4 - 0s - loss: 0.1380 - accuracy: 0.6583 - val_loss: 0.1257 -
val_accuracy: 0.7000
Epoch 125/200
4/4 - 0s - loss: 0.1379 - accuracy: 0.6583 - val_loss: 0.1256 -
val_accuracy: 0.7000
Epoch 126/200
4/4 - 0s - loss: 0.1378 - accuracy: 0.6583 - val_loss: 0.1255 -
val_accuracy: 0.7000
Epoch 127/200
4/4 - 0s - loss: 0.1377 - accuracy: 0.6583 - val_loss: 0.1254 -
val_accuracy: 0.7000
Epoch 128/200
4/4 - 0s - loss: 0.1376 - accuracy: 0.6583 - val_loss: 0.1254 -
val_accuracy: 0.7000
Epoch 129/200
4/4 - 0s - loss: 0.1375 - accuracy: 0.6583 - val_loss: 0.1253 -
val_accuracy: 0.7000
Epoch 130/200
4/4 - 0s - loss: 0.1374 - accuracy: 0.6583 - val_loss: 0.1252 -
val_accuracy: 0.7000
Epoch 131/200
4/4 - 0s - loss: 0.1373 - accuracy: 0.6583 - val_loss: 0.1251 -
val_accuracy: 0.7000
Epoch 132/200
4/4 - 0s - loss: 0.1373 - accuracy: 0.6583 - val_loss: 0.1251 -
val_accuracy: 0.7000
Epoch 133/200
4/4 - 0s - loss: 0.1372 - accuracy: 0.6583 - val_loss: 0.1250 -
val_accuracy: 0.7000
Epoch 134/200
4/4 - 0s - loss: 0.1371 - accuracy: 0.6583 - val_loss: 0.1249 -
val_accuracy: 0.7000
Epoch 135/200
4/4 - 0s - loss: 0.1370 - accuracy: 0.6583 - val_loss: 0.1248 -
val_accuracy: 0.7000
Epoch 136/200
4/4 - 0s - loss: 0.1369 - accuracy: 0.6583 - val_loss: 0.1247 -
val_accuracy: 0.7000
Epoch 137/200
4/4 - 0s - loss: 0.1368 - accuracy: 0.6583 - val_loss: 0.1246 -
```

val_accuracy: 0.7000
Epoch 138/200
4/4 - 0s - loss: 0.1368 - accuracy: 0.6583 - val_loss: 0.1245 -
val_accuracy: 0.7000
Epoch 139/200
4/4 - 0s - loss: 0.1366 - accuracy: 0.6583 - val_loss: 0.1245 -
val_accuracy: 0.7000
Epoch 140/200
4/4 - 0s - loss: 0.1366 - accuracy: 0.6583 - val_loss: 0.1244 -
val_accuracy: 0.7000
Epoch 141/200
4/4 - 0s - loss: 0.1365 - accuracy: 0.6583 - val_loss: 0.1243 -
val_accuracy: 0.7000
Epoch 142/200
4/4 - 0s - loss: 0.1364 - accuracy: 0.6583 - val_loss: 0.1242 -
val_accuracy: 0.7000
Epoch 143/200
4/4 - 0s - loss: 0.1363 - accuracy: 0.6583 - val_loss: 0.1242 -
val_accuracy: 0.7000
Epoch 144/200
4/4 - 0s - loss: 0.1362 - accuracy: 0.6583 - val_loss: 0.1241 -
val_accuracy: 0.7000
Epoch 145/200
4/4 - 0s - loss: 0.1361 - accuracy: 0.6583 - val_loss: 0.1241 -
val_accuracy: 0.7000
Epoch 146/200
4/4 - 0s - loss: 0.1361 - accuracy: 0.6583 - val_loss: 0.1240 -
val_accuracy: 0.7000
Epoch 147/200
4/4 - 0s - loss: 0.1360 - accuracy: 0.6583 - val_loss: 0.1239 -
val_accuracy: 0.7000
Epoch 148/200
4/4 - 0s - loss: 0.1359 - accuracy: 0.6583 - val_loss: 0.1238 -
val_accuracy: 0.7000
Epoch 149/200
4/4 - 0s - loss: 0.1358 - accuracy: 0.6583 - val_loss: 0.1237 -
val_accuracy: 0.7000
Epoch 150/200
4/4 - 0s - loss: 0.1358 - accuracy: 0.6583 - val_loss: 0.1237 -
val_accuracy: 0.7000
Epoch 151/200
4/4 - 0s - loss: 0.1357 - accuracy: 0.6583 - val_loss: 0.1236 -
val_accuracy: 0.7000
Epoch 152/200
4/4 - 0s - loss: 0.1356 - accuracy: 0.6583 - val_loss: 0.1235 -
val_accuracy: 0.7000
Epoch 153/200
4/4 - 0s - loss: 0.1355 - accuracy: 0.6583 - val_loss: 0.1235 -
val_accuracy: 0.7000
Epoch 154/200

```
4/4 - 0s - loss: 0.1355 - accuracy: 0.6583 - val_loss: 0.1234 -
val_accuracy: 0.7000
Epoch 155/200
4/4 - 0s - loss: 0.1354 - accuracy: 0.6583 - val_loss: 0.1233 -
val_accuracy: 0.7000
Epoch 156/200
4/4 - 0s - loss: 0.1353 - accuracy: 0.6583 - val_loss: 0.1232 -
val_accuracy: 0.7000
Epoch 157/200
4/4 - 0s - loss: 0.1352 - accuracy: 0.6583 - val_loss: 0.1232 -
val_accuracy: 0.7000
Epoch 158/200
4/4 - 0s - loss: 0.1352 - accuracy: 0.6583 - val_loss: 0.1231 -
val_accuracy: 0.7000
Epoch 159/200
4/4 - 0s - loss: 0.1351 - accuracy: 0.6583 - val_loss: 0.1231 -
val_accuracy: 0.7000
Epoch 160/200
4/4 - 0s - loss: 0.1350 - accuracy: 0.6583 - val_loss: 0.1230 -
val_accuracy: 0.7000
Epoch 161/200
4/4 - 0s - loss: 0.1350 - accuracy: 0.6583 - val_loss: 0.1229 -
val_accuracy: 0.7000
Epoch 162/200
4/4 - 0s - loss: 0.1349 - accuracy: 0.6583 - val_loss: 0.1229 -
val_accuracy: 0.7000
Epoch 163/200
4/4 - 0s - loss: 0.1348 - accuracy: 0.6583 - val_loss: 0.1228 -
val_accuracy: 0.7000
Epoch 164/200
4/4 - 0s - loss: 0.1348 - accuracy: 0.6583 - val_loss: 0.1228 -
val_accuracy: 0.7000
Epoch 165/200
4/4 - 0s - loss: 0.1347 - accuracy: 0.6583 - val_loss: 0.1227 -
val_accuracy: 0.7000
Epoch 166/200
4/4 - 0s - loss: 0.1346 - accuracy: 0.6583 - val_loss: 0.1226 -
val_accuracy: 0.7000
Epoch 167/200
4/4 - 0s - loss: 0.1346 - accuracy: 0.6583 - val_loss: 0.1226 -
val_accuracy: 0.7000
Epoch 168/200
4/4 - 0s - loss: 0.1345 - accuracy: 0.6583 - val_loss: 0.1225 -
val_accuracy: 0.7000
Epoch 169/200
4/4 - 0s - loss: 0.1344 - accuracy: 0.6583 - val_loss: 0.1224 -
val_accuracy: 0.7000
Epoch 170/200
4/4 - 0s - loss: 0.1344 - accuracy: 0.6583 - val_loss: 0.1224 -
val_accuracy: 0.7000
```

```
Epoch 171/200
4/4 - 0s - loss: 0.1343 - accuracy: 0.6583 - val_loss: 0.1223 -
val_accuracy: 0.7000
Epoch 172/200
4/4 - 0s - loss: 0.1342 - accuracy: 0.6583 - val_loss: 0.1223 -
val_accuracy: 0.7000
Epoch 173/200
4/4 - 0s - loss: 0.1342 - accuracy: 0.6583 - val_loss: 0.1222 -
val_accuracy: 0.7000
Epoch 174/200
4/4 - 0s - loss: 0.1341 - accuracy: 0.6583 - val_loss: 0.1222 -
val_accuracy: 0.7000
Epoch 175/200
4/4 - 0s - loss: 0.1340 - accuracy: 0.6583 - val_loss: 0.1221 -
val_accuracy: 0.7000
Epoch 176/200
4/4 - 0s - loss: 0.1340 - accuracy: 0.6583 - val_loss: 0.1221 -
val_accuracy: 0.7000
Epoch 177/200
4/4 - 0s - loss: 0.1339 - accuracy: 0.6583 - val_loss: 0.1220 -
val_accuracy: 0.7000
Epoch 178/200
4/4 - 0s - loss: 0.1339 - accuracy: 0.6583 - val_loss: 0.1219 -
val_accuracy: 0.7000
Epoch 179/200
4/4 - 0s - loss: 0.1338 - accuracy: 0.6583 - val_loss: 0.1219 -
val_accuracy: 0.7000
Epoch 180/200
4/4 - 0s - loss: 0.1337 - accuracy: 0.6583 - val_loss: 0.1218 -
val_accuracy: 0.7000
Epoch 181/200
4/4 - 0s - loss: 0.1337 - accuracy: 0.6583 - val_loss: 0.1218 -
val_accuracy: 0.7000
Epoch 182/200
4/4 - 0s - loss: 0.1336 - accuracy: 0.6583 - val_loss: 0.1217 -
val_accuracy: 0.7000
Epoch 183/200
4/4 - 0s - loss: 0.1336 - accuracy: 0.6583 - val_loss: 0.1217 -
val_accuracy: 0.7000
Epoch 184/200
4/4 - 0s - loss: 0.1335 - accuracy: 0.6583 - val_loss: 0.1216 -
val_accuracy: 0.7000
Epoch 185/200
4/4 - 0s - loss: 0.1335 - accuracy: 0.6583 - val_loss: 0.1215 -
val_accuracy: 0.7000
Epoch 186/200
4/4 - 0s - loss: 0.1334 - accuracy: 0.6583 - val_loss: 0.1215 -
val_accuracy: 0.7000
Epoch 187/200
4/4 - 0s - loss: 0.1333 - accuracy: 0.6583 - val_loss: 0.1214 -
```

val_accuracy: 0.7000
Epoch 188/200
4/4 - 0s - loss: 0.1333 - accuracy: 0.6583 - val_loss: 0.1213 -
val_accuracy: 0.7000
Epoch 189/200
4/4 - 0s - loss: 0.1333 - accuracy: 0.6583 - val_loss: 0.1213 -
val_accuracy: 0.7000
Epoch 190/200
4/4 - 0s - loss: 0.1332 - accuracy: 0.6583 - val_loss: 0.1212 -
val_accuracy: 0.7000
Epoch 191/200
4/4 - 0s - loss: 0.1331 - accuracy: 0.6583 - val_loss: 0.1212 -
val_accuracy: 0.7000
Epoch 192/200
4/4 - 0s - loss: 0.1331 - accuracy: 0.6583 - val_loss: 0.1211 -
val_accuracy: 0.7000
Epoch 193/200
4/4 - 0s - loss: 0.1330 - accuracy: 0.6583 - val_loss: 0.1211 -
val_accuracy: 0.7000
Epoch 194/200
4/4 - 0s - loss: 0.1330 - accuracy: 0.6583 - val_loss: 0.1211 -
val_accuracy: 0.7000
Epoch 195/200
4/4 - 0s - loss: 0.1329 - accuracy: 0.6583 - val_loss: 0.1210 -
val_accuracy: 0.7000
Epoch 196/200
4/4 - 0s - loss: 0.1329 - accuracy: 0.6583 - val_loss: 0.1209 -
val_accuracy: 0.7000
Epoch 197/200
4/4 - 0s - loss: 0.1328 - accuracy: 0.6583 - val_loss: 0.1209 -
val_accuracy: 0.7000
Epoch 198/200
4/4 - 0s - loss: 0.1328 - accuracy: 0.6583 - val_loss: 0.1208 -
val_accuracy: 0.7000
Epoch 199/200
4/4 - 0s - loss: 0.1327 - accuracy: 0.6583 - val_loss: 0.1208 -
val_accuracy: 0.7000
Epoch 200/200
4/4 - 0s - loss: 0.1327 - accuracy: 0.6583 - val_loss: 0.1208 -
val_accuracy: 0.7000
Activation: relu LR: 0.01 Iterations: 200 || Test loss:
0.12076665461063385
Activation: relu LR: 0.01 Iterations: 200 || Test Accuracy:
0.699999988079071
==
=======
Model_relu_LR_0.1_Iterations_100_HL_3
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow

compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.1299s). Check your callbacks.

4/4 - 0s - loss: 0.2661 - accuracy: 0.5250 - val_loss: 0.2420 -
val_accuracy: 0.5250
Epoch 2/100
4/4 - 0s - loss: 0.2329 - accuracy: 0.5250 - val_loss: 0.2172 -
val_accuracy: 0.5333
Epoch 3/100
4/4 - 0s - loss: 0.2102 - accuracy: 0.5583 - val_loss: 0.1960 -
val_accuracy: 0.5833
Epoch 4/100
4/4 - 0s - loss: 0.1903 - accuracy: 0.6000 - val_loss: 0.1798 -
val_accuracy: 0.6250
Epoch 5/100
4/4 - 0s - loss: 0.1765 - accuracy: 0.6333 - val_loss: 0.1713 -
val_accuracy: 0.6333
Epoch 6/100
4/4 - 0s - loss: 0.1698 - accuracy: 0.6333 - val_loss: 0.1666 -
val_accuracy: 0.6417
Epoch 7/100
4/4 - 0s - loss: 0.1663 - accuracy: 0.6417 - val_loss: 0.1638 -
val_accuracy: 0.6417
Epoch 8/100
4/4 - 0s - loss: 0.1631 - accuracy: 0.6417 - val_loss: 0.1616 -
val_accuracy: 0.6500
Epoch 9/100
4/4 - 0s - loss: 0.1612 - accuracy: 0.6500 - val_loss: 0.1600 -
val_accuracy: 0.6500
Epoch 10/100
4/4 - 0s - loss: 0.1598 - accuracy: 0.6500 - val_loss: 0.1585 -
val_accuracy: 0.6500
Epoch 11/100
4/4 - 0s - loss: 0.1584 - accuracy: 0.6500 - val_loss: 0.1574 -
val_accuracy: 0.6500
Epoch 12/100
4/4 - 0s - loss: 0.1572 - accuracy: 0.6500 - val_loss: 0.1562 -
val_accuracy: 0.6500
Epoch 13/100
4/4 - 0s - loss: 0.1560 - accuracy: 0.6500 - val_loss: 0.1550 -
val_accuracy: 0.6500
Epoch 14/100
4/4 - 0s - loss: 0.1552 - accuracy: 0.6500 - val_loss: 0.1538 -
val_accuracy: 0.6500
Epoch 15/100
4/4 - 0s - loss: 0.1538 - accuracy: 0.6500 - val_loss: 0.1527 -
val_accuracy: 0.6500
Epoch 16/100
4/4 - 0s - loss: 0.1525 - accuracy: 0.6500 - val_loss: 0.1516 -
val_accuracy: 0.6500

```
Epoch 17/100
4/4 - 0s - loss: 0.1517 - accuracy: 0.6500 - val_loss: 0.1506 -
val_accuracy: 0.6500
Epoch 18/100
4/4 - 0s - loss: 0.1506 - accuracy: 0.6500 - val_loss: 0.1498 -
val_accuracy: 0.6500
Epoch 19/100
4/4 - 0s - loss: 0.1501 - accuracy: 0.6500 - val_loss: 0.1491 -
val_accuracy: 0.6500
Epoch 20/100
4/4 - 0s - loss: 0.1490 - accuracy: 0.6500 - val_loss: 0.1483 -
val_accuracy: 0.6500
Epoch 21/100
4/4 - 0s - loss: 0.1481 - accuracy: 0.6500 - val_loss: 0.1475 -
val_accuracy: 0.6500
Epoch 22/100
4/4 - 0s - loss: 0.1476 - accuracy: 0.6500 - val_loss: 0.1468 -
val_accuracy: 0.6500
Epoch 23/100
4/4 - 0s - loss: 0.1467 - accuracy: 0.6500 - val_loss: 0.1461 -
val_accuracy: 0.6500
Epoch 24/100
4/4 - 0s - loss: 0.1461 - accuracy: 0.6500 - val_loss: 0.1454 -
val_accuracy: 0.6500
Epoch 25/100
4/4 - 0s - loss: 0.1455 - accuracy: 0.6500 - val_loss: 0.1447 -
val_accuracy: 0.6500
Epoch 26/100
4/4 - 0s - loss: 0.1446 - accuracy: 0.6500 - val_loss: 0.1440 -
val_accuracy: 0.6500
Epoch 27/100
4/4 - 0s - loss: 0.1442 - accuracy: 0.6500 - val_loss: 0.1433 -
val_accuracy: 0.6500
Epoch 28/100
4/4 - 0s - loss: 0.1434 - accuracy: 0.6500 - val_loss: 0.1427 -
val_accuracy: 0.6500
Epoch 29/100
4/4 - 0s - loss: 0.1428 - accuracy: 0.6500 - val_loss: 0.1421 -
val_accuracy: 0.6500
Epoch 30/100
4/4 - 0s - loss: 0.1421 - accuracy: 0.6500 - val_loss: 0.1414 -
val_accuracy: 0.6500
Epoch 31/100
4/4 - 0s - loss: 0.1414 - accuracy: 0.6500 - val_loss: 0.1409 -
val_accuracy: 0.6500
Epoch 32/100
4/4 - 0s - loss: 0.1410 - accuracy: 0.6500 - val_loss: 0.1404 -
val_accuracy: 0.6500
Epoch 33/100
4/4 - 0s - loss: 0.1404 - accuracy: 0.6500 - val_loss: 0.1398 -
```

```
val_accuracy: 0.6500
Epoch 34/100
4/4 - 0s - loss: 0.1397 - accuracy: 0.6500 - val_loss: 0.1392 -
val_accuracy: 0.6500
Epoch 35/100
4/4 - 0s - loss: 0.1394 - accuracy: 0.6500 - val_loss: 0.1387 -
val_accuracy: 0.6500
Epoch 36/100
4/4 - 0s - loss: 0.1386 - accuracy: 0.6500 - val_loss: 0.1382 -
val_accuracy: 0.6500
Epoch 37/100
4/4 - 0s - loss: 0.1383 - accuracy: 0.6500 - val_loss: 0.1377 -
val_accuracy: 0.6500
Epoch 38/100
4/4 - 0s - loss: 0.1379 - accuracy: 0.6500 - val_loss: 0.1372 -
val_accuracy: 0.6500
Epoch 39/100
4/4 - 0s - loss: 0.1373 - accuracy: 0.6500 - val_loss: 0.1366 -
val_accuracy: 0.6583
Epoch 40/100
4/4 - 0s - loss: 0.1365 - accuracy: 0.6500 - val_loss: 0.1360 -
val_accuracy: 0.6583
Epoch 41/100
4/4 - 0s - loss: 0.1363 - accuracy: 0.6583 - val_loss: 0.1356 -
val_accuracy: 0.6583
Epoch 42/100
4/4 - 0s - loss: 0.1355 - accuracy: 0.6583 - val_loss: 0.1351 -
val_accuracy: 0.6583
Epoch 43/100
4/4 - 0s - loss: 0.1351 - accuracy: 0.6583 - val_loss: 0.1346 -
val_accuracy: 0.6583
Epoch 44/100
4/4 - 0s - loss: 0.1346 - accuracy: 0.6583 - val_loss: 0.1342 -
val_accuracy: 0.6583
Epoch 45/100
4/4 - 0s - loss: 0.1342 - accuracy: 0.6583 - val_loss: 0.1338 -
val_accuracy: 0.6583
Epoch 46/100
4/4 - 0s - loss: 0.1339 - accuracy: 0.6583 - val_loss: 0.1334 -
val_accuracy: 0.6583
Epoch 47/100
4/4 - 0s - loss: 0.1333 - accuracy: 0.6583 - val_loss: 0.1330 -
val_accuracy: 0.6583
Epoch 48/100
4/4 - 0s - loss: 0.1331 - accuracy: 0.6583 - val_loss: 0.1327 -
val_accuracy: 0.6583
Epoch 49/100
4/4 - 0s - loss: 0.1330 - accuracy: 0.6583 - val_loss: 0.1323 -
val_accuracy: 0.6583
Epoch 50/100
```

```
4/4 - 0s - loss: 0.1323 - accuracy: 0.6583 - val_loss: 0.1320 -
val_accuracy: 0.6583
Epoch 51/100
4/4 - 0s - loss: 0.1321 - accuracy: 0.6583 - val_loss: 0.1317 -
val_accuracy: 0.6583
Epoch 52/100
4/4 - 0s - loss: 0.1318 - accuracy: 0.6583 - val_loss: 0.1314 -
val_accuracy: 0.6583
Epoch 53/100
4/4 - 0s - loss: 0.1316 - accuracy: 0.6583 - val_loss: 0.1312 -
val_accuracy: 0.6583
Epoch 54/100
4/4 - 0s - loss: 0.1312 - accuracy: 0.6583 - val_loss: 0.1309 -
val_accuracy: 0.6583
Epoch 55/100
4/4 - 0s - loss: 0.1309 - accuracy: 0.6583 - val_loss: 0.1307 -
val_accuracy: 0.6583
Epoch 56/100
4/4 - 0s - loss: 0.1308 - accuracy: 0.6583 - val_loss: 0.1305 -
val_accuracy: 0.6583
Epoch 57/100
4/4 - 0s - loss: 0.1306 - accuracy: 0.6583 - val_loss: 0.1302 -
val_accuracy: 0.6583
Epoch 58/100
4/4 - 0s - loss: 0.1303 - accuracy: 0.6583 - val_loss: 0.1300 -
val_accuracy: 0.6583
Epoch 59/100
4/4 - 0s - loss: 0.1303 - accuracy: 0.6583 - val_loss: 0.1298 -
val_accuracy: 0.6583
Epoch 60/100
4/4 - 0s - loss: 0.1299 - accuracy: 0.6583 - val_loss: 0.1297 -
val_accuracy: 0.6583
Epoch 61/100
4/4 - 0s - loss: 0.1297 - accuracy: 0.6583 - val_loss: 0.1295 -
val_accuracy: 0.6583
Epoch 62/100
4/4 - 0s - loss: 0.1296 - accuracy: 0.6583 - val_loss: 0.1293 -
val_accuracy: 0.6583
Epoch 63/100
4/4 - 0s - loss: 0.1294 - accuracy: 0.6583 - val_loss: 0.1291 -
val_accuracy: 0.6583
Epoch 64/100
4/4 - 0s - loss: 0.1292 - accuracy: 0.6583 - val_loss: 0.1290 -
val_accuracy: 0.6583
Epoch 65/100
4/4 - 0s - loss: 0.1291 - accuracy: 0.6583 - val_loss: 0.1288 -
val_accuracy: 0.6583
Epoch 66/100
4/4 - 0s - loss: 0.1289 - accuracy: 0.6583 - val_loss: 0.1287 -
val_accuracy: 0.6583
```

```
Epoch 67/100
4/4 - 0s - loss: 0.1287 - accuracy: 0.6583 - val_loss: 0.1285 -
val_accuracy: 0.6583
Epoch 68/100
4/4 - 0s - loss: 0.1286 - accuracy: 0.6583 - val_loss: 0.1284 -
val_accuracy: 0.6583
Epoch 69/100
4/4 - 0s - loss: 0.1285 - accuracy: 0.6583 - val_loss: 0.1283 -
val_accuracy: 0.6583
Epoch 70/100
4/4 - 0s - loss: 0.1286 - accuracy: 0.6583 - val_loss: 0.1281 -
val_accuracy: 0.6583
Epoch 71/100
4/4 - 0s - loss: 0.1282 - accuracy: 0.6583 - val_loss: 0.1280 -
val_accuracy: 0.6583
Epoch 72/100
4/4 - 0s - loss: 0.1282 - accuracy: 0.6583 - val_loss: 0.1279 -
val_accuracy: 0.6583
Epoch 73/100
4/4 - 0s - loss: 0.1280 - accuracy: 0.6583 - val_loss: 0.1278 -
val_accuracy: 0.6583
Epoch 74/100
4/4 - 0s - loss: 0.1279 - accuracy: 0.6583 - val_loss: 0.1277 -
val_accuracy: 0.6583
Epoch 75/100
4/4 - 0s - loss: 0.1278 - accuracy: 0.6583 - val_loss: 0.1276 -
val_accuracy: 0.6583
Epoch 76/100
4/4 - 0s - loss: 0.1281 - accuracy: 0.6583 - val_loss: 0.1275 -
val_accuracy: 0.6583
Epoch 77/100
4/4 - 0s - loss: 0.1276 - accuracy: 0.6583 - val_loss: 0.1274 -
val_accuracy: 0.6583
Epoch 78/100
4/4 - 0s - loss: 0.1276 - accuracy: 0.6583 - val_loss: 0.1273 -
val_accuracy: 0.6583
Epoch 79/100
4/4 - 0s - loss: 0.1277 - accuracy: 0.6583 - val_loss: 0.1272 -
val_accuracy: 0.6583
Epoch 80/100
4/4 - 0s - loss: 0.1274 - accuracy: 0.6583 - val_loss: 0.1271 -
val_accuracy: 0.6583
Epoch 81/100
4/4 - 0s - loss: 0.1273 - accuracy: 0.6583 - val_loss: 0.1270 -
val_accuracy: 0.6583
Epoch 82/100
4/4 - 0s - loss: 0.1271 - accuracy: 0.6583 - val_loss: 0.1269 -
val_accuracy: 0.6583
Epoch 83/100
4/4 - 0s - loss: 0.1273 - accuracy: 0.6583 - val_loss: 0.1269 -
```

```
val_accuracy: 0.6583
Epoch 84/100
4/4 - 0s - loss: 0.1271 - accuracy: 0.6583 - val_loss: 0.1268 -
val_accuracy: 0.6583

Epoch 85/100
4/4 - 0s - loss: 0.1272 - accuracy: 0.6583 - val_loss: 0.1267 -
val_accuracy: 0.6583
Epoch 86/100
4/4 - 0s - loss: 0.1270 - accuracy: 0.6583 - val_loss: 0.1267 -
val_accuracy: 0.6583
Epoch 87/100
4/4 - 0s - loss: 0.1271 - accuracy: 0.6583 - val_loss: 0.1266 -
val_accuracy: 0.6583
Epoch 88/100
4/4 - 0s - loss: 0.1267 - accuracy: 0.6583 - val_loss: 0.1265 -
val_accuracy: 0.6583
Epoch 89/100
4/4 - 0s - loss: 0.1266 - accuracy: 0.6583 - val_loss: 0.1264 -
val_accuracy: 0.6583
Epoch 90/100
4/4 - 0s - loss: 0.1267 - accuracy: 0.6583 - val_loss: 0.1264 -
val_accuracy: 0.6583
Epoch 91/100
4/4 - 0s - loss: 0.1264 - accuracy: 0.6583 - val_loss: 0.1263 -
val_accuracy: 0.6583
Epoch 92/100
4/4 - 0s - loss: 0.1264 - accuracy: 0.6583 - val_loss: 0.1262 -
val_accuracy: 0.6583
Epoch 93/100
4/4 - 0s - loss: 0.1264 - accuracy: 0.6583 - val_loss: 0.1262 -
val_accuracy: 0.6583
Epoch 94/100
4/4 - 0s - loss: 0.1263 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.6583
Epoch 95/100
4/4 - 0s - loss: 0.1264 - accuracy: 0.6583 - val_loss: 0.1261 -
val_accuracy: 0.6583
Epoch 96/100
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1260 -
val_accuracy: 0.6583
Epoch 97/100
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1260 -
val_accuracy: 0.6583
Epoch 98/100
4/4 - 0s - loss: 0.1262 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
Epoch 99/100
4/4 - 0s - loss: 0.1260 - accuracy: 0.6583 - val_loss: 0.1259 -
val_accuracy: 0.6583
```

```
Epoch 100/100
4/4 - 0s - loss: 0.1261 - accuracy: 0.6583 - val_loss: 0.1258 -
val_accuracy: 0.6583
Activation: relu LR: 0.1 Itertions: 100 || Train loss:
0.125802680850029
Activation: relu LR: 0.1 Itertions: 100 || Train Accuracy:
0.6583333611488342
Epoch 1/100
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0010s vs
`on_train_batch_end` time: 0.0920s). Check your callbacks.
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1217 -
val_accuracy: 0.7000
Epoch 2/100
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1216 -
val_accuracy: 0.7000
Epoch 3/100
4/4 - 0s - loss: 0.1259 - accuracy: 0.6583 - val_loss: 0.1217 -
val_accuracy: 0.7000
Epoch 4/100
4/4 - 0s - loss: 0.1258 - accuracy: 0.6583 - val_loss: 0.1217 -
val_accuracy: 0.7000
Epoch 5/100
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1218 -
val_accuracy: 0.7000
Epoch 6/100
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1212 -
val_accuracy: 0.7000
Epoch 7/100
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1212 -
val_accuracy: 0.7000
Epoch 8/100
4/4 - 0s - loss: 0.1255 - accuracy: 0.6583 - val_loss: 0.1211 -
val_accuracy: 0.7000
Epoch 9/100
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1214 -
val_accuracy: 0.7000
Epoch 10/100
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1211 -
val_accuracy: 0.7000
Epoch 11/100
4/4 - 0s - loss: 0.1256 - accuracy: 0.6583 - val_loss: 0.1214 -
val_accuracy: 0.7000
Epoch 12/100
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1211 -
val_accuracy: 0.7000
Epoch 13/100
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1210 -
val_accuracy: 0.7000
Epoch 14/100
```

```
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1207 -
val_accuracy: 0.7000
Epoch 15/100
4/4 - 0s - loss: 0.1257 - accuracy: 0.6583 - val_loss: 0.1208 -
val_accuracy: 0.7000
Epoch 16/100
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1205 -
val_accuracy: 0.7000
Epoch 17/100
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1206 -
val_accuracy: 0.7000
Epoch 18/100
4/4 - 0s - loss: 0.1254 - accuracy: 0.6583 - val_loss: 0.1208 -
val_accuracy: 0.7000
Epoch 19/100
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1207 -
val_accuracy: 0.7000
Epoch 20/100
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1207 -
val_accuracy: 0.7000
Epoch 21/100
4/4 - 0s - loss: 0.1253 - accuracy: 0.6583 - val_loss: 0.1205 -
val_accuracy: 0.7000
Epoch 22/100
4/4 - 0s - loss: 0.1250 - accuracy: 0.6583 - val_loss: 0.1204 -
val_accuracy: 0.7000
Epoch 23/100
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1204 -
val_accuracy: 0.7000
Epoch 24/100
4/4 - 0s - loss: 0.1251 - accuracy: 0.6583 - val_loss: 0.1201 -
val_accuracy: 0.7000
Epoch 25/100
4/4 - 0s - loss: 0.1252 - accuracy: 0.6583 - val_loss: 0.1200 -
val_accuracy: 0.7000
Epoch 26/100
4/4 - 0s - loss: 0.1250 - accuracy: 0.6583 - val_loss: 0.1202 -
val_accuracy: 0.7000
Epoch 27/100
4/4 - 0s - loss: 0.1249 - accuracy: 0.6583 - val_loss: 0.1204 -
val_accuracy: 0.7000
Epoch 28/100
4/4 - 0s - loss: 0.1249 - accuracy: 0.6583 - val_loss: 0.1204 -
val_accuracy: 0.7000
Epoch 29/100
4/4 - 0s - loss: 0.1250 - accuracy: 0.6583 - val_loss: 0.1201 -
val_accuracy: 0.7000
Epoch 30/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.6583 - val_loss: 0.1201 -
val_accuracy: 0.7000
```

```
Epoch 31/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.6583 - val_loss: 0.1202 -
val_accuracy: 0.7000
Epoch 32/100
4/4 - 0s - loss: 0.1249 - accuracy: 0.6583 - val_loss: 0.1200 -
val_accuracy: 0.7000
Epoch 33/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.6583 - val_loss: 0.1198 -
val_accuracy: 0.7000
Epoch 34/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.6583 - val_loss: 0.1200 -
val_accuracy: 0.7000
Epoch 35/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.6583 - val_loss: 0.1200 -
val_accuracy: 0.7000
Epoch 36/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.6583 - val_loss: 0.1201 -
val_accuracy: 0.7000
Epoch 37/100
4/4 - 0s - loss: 0.1247 - accuracy: 0.6583 - val_loss: 0.1202 -
val_accuracy: 0.7000
Epoch 38/100
4/4 - 0s - loss: 0.1246 - accuracy: 0.6583 - val_loss: 0.1200 -
val_accuracy: 0.7000
Epoch 39/100
4/4 - 0s - loss: 0.1246 - accuracy: 0.6583 - val_loss: 0.1198 -
val_accuracy: 0.7000
Epoch 40/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.6583 - val_loss: 0.1203 -
val_accuracy: 0.7000
Epoch 41/100
4/4 - 0s - loss: 0.1247 - accuracy: 0.6583 - val_loss: 0.1203 -
val_accuracy: 0.7000
Epoch 42/100
4/4 - 0s - loss: 0.1247 - accuracy: 0.6583 - val_loss: 0.1198 -
val_accuracy: 0.7000
Epoch 43/100
4/4 - 0s - loss: 0.1248 - accuracy: 0.6583 - val_loss: 0.1197 -
val_accuracy: 0.7000
Epoch 44/100
4/4 - 0s - loss: 0.1245 - accuracy: 0.6583 - val_loss: 0.1198 -
val_accuracy: 0.7000
Epoch 45/100
4/4 - 0s - loss: 0.1245 - accuracy: 0.6583 - val_loss: 0.1198 -
val_accuracy: 0.7000
Epoch 46/100
4/4 - 0s - loss: 0.1246 - accuracy: 0.6583 - val_loss: 0.1199 -
val_accuracy: 0.7000
Epoch 47/100
4/4 - 0s - loss: 0.1245 - accuracy: 0.6583 - val_loss: 0.1197 -
```

```
val_accuracy: 0.7000
Epoch 48/100
4/4 - 0s - loss: 0.1244 - accuracy: 0.6583 - val_loss: 0.1195 -
val_accuracy: 0.7000
Epoch 49/100
4/4 - 0s - loss: 0.1247 - accuracy: 0.6583 - val_loss: 0.1194 -
val_accuracy: 0.7000
Epoch 50/100
4/4 - 0s - loss: 0.1246 - accuracy: 0.6583 - val_loss: 0.1193 -
val_accuracy: 0.7000
Epoch 51/100
4/4 - 0s - loss: 0.1246 - accuracy: 0.6583 - val_loss: 0.1196 -
val_accuracy: 0.7000
Epoch 52/100
4/4 - 0s - loss: 0.1243 - accuracy: 0.6583 - val_loss: 0.1196 -
val_accuracy: 0.7000
Epoch 53/100
4/4 - 0s - loss: 0.1243 - accuracy: 0.6583 - val_loss: 0.1195 -
val_accuracy: 0.7000
Epoch 54/100
4/4 - 0s - loss: 0.1244 - accuracy: 0.6583 - val_loss: 0.1196 -
val_accuracy: 0.7000
Epoch 55/100
4/4 - 0s - loss: 0.1244 - accuracy: 0.6583 - val_loss: 0.1195 -
val_accuracy: 0.7000
Epoch 56/100
4/4 - 0s - loss: 0.1243 - accuracy: 0.6583 - val_loss: 0.1195 -
val_accuracy: 0.7000
Epoch 57/100
4/4 - 0s - loss: 0.1243 - accuracy: 0.6583 - val_loss: 0.1193 -
val_accuracy: 0.7000
Epoch 58/100
4/4 - 0s - loss: 0.1244 - accuracy: 0.6583 - val_loss: 0.1196 -
val_accuracy: 0.7000
Epoch 59/100
4/4 - 0s - loss: 0.1244 - accuracy: 0.6583 - val_loss: 0.1193 -
val_accuracy: 0.7000
Epoch 60/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.6583 - val_loss: 0.1192 -
val_accuracy: 0.7000
Epoch 61/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.6583 - val_loss: 0.1193 -
val_accuracy: 0.7000
Epoch 62/100
4/4 - 0s - loss: 0.1243 - accuracy: 0.6583 - val_loss: 0.1193 -
val_accuracy: 0.7000
Epoch 63/100
4/4 - 0s - loss: 0.1244 - accuracy: 0.6583 - val_loss: 0.1194 -
val_accuracy: 0.7000
Epoch 64/100
```

4/4 - 0s - loss: 0.1243 - accuracy: 0.6583 - val_loss: 0.1196 - val_accuracy: 0.7000
Epoch 65/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.6583 - val_loss: 0.1193 - val_accuracy: 0.7000

Epoch 66/100
4/4 - 0s - loss: 0.1241 - accuracy: 0.6583 - val_loss: 0.1190 - val_accuracy: 0.7000
Epoch 67/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.6583 - val_loss: 0.1193 - val_accuracy: 0.7000
Epoch 68/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.6583 - val_loss: 0.1190 - val_accuracy: 0.7000
Epoch 69/100
4/4 - 0s - loss: 0.1241 - accuracy: 0.6583 - val_loss: 0.1190 - val_accuracy: 0.7000
Epoch 70/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.6583 - val_loss: 0.1188 - val_accuracy: 0.7000
Epoch 71/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.6583 - val_loss: 0.1186 - val_accuracy: 0.7000
Epoch 72/100
4/4 - 0s - loss: 0.1242 - accuracy: 0.6583 - val_loss: 0.1186 - val_accuracy: 0.7000
Epoch 73/100
4/4 - 0s - loss: 0.1241 - accuracy: 0.6583 - val_loss: 0.1187 - val_accuracy: 0.7000
Epoch 74/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.6583 - val_loss: 0.1188 - val_accuracy: 0.7000
Epoch 75/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.6583 - val_loss: 0.1188 - val_accuracy: 0.7000
Epoch 76/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.6583 - val_loss: 0.1189 - val_accuracy: 0.7000
Epoch 77/100
4/4 - 0s - loss: 0.1241 - accuracy: 0.6583 - val_loss: 0.1186 - val_accuracy: 0.7000
Epoch 78/100
4/4 - 0s - loss: 0.1241 - accuracy: 0.6583 - val_loss: 0.1189 - val_accuracy: 0.7000
Epoch 79/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.6583 - val_loss: 0.1188 - val_accuracy: 0.7000
Epoch 80/100
4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1187 -

val_accuracy: 0.7000
Epoch 81/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 82/100
4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1187 -
val_accuracy: 0.7000
Epoch 83/100
4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1187 -
val_accuracy: 0.7000
Epoch 84/100
4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1187 -
val_accuracy: 0.7000
Epoch 85/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.6583 - val_loss: 0.1187 -
val_accuracy: 0.7000
Epoch 86/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.6583 - val_loss: 0.1186 -
val_accuracy: 0.7000
Epoch 87/100
4/4 - 0s - loss: 0.1240 - accuracy: 0.6583 - val_loss: 0.1184 -
val_accuracy: 0.7000
Epoch 88/100
4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1187 -
val_accuracy: 0.7000
Epoch 89/100
4/4 - 0s - loss: 0.1238 - accuracy: 0.6583 - val_loss: 0.1188 -
val_accuracy: 0.7000
Epoch 90/100
4/4 - 0s - loss: 0.1238 - accuracy: 0.6583 - val_loss: 0.1186 -
val_accuracy: 0.7000
Epoch 91/100
4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 92/100
4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 93/100
4/4 - 0s - loss: 0.1238 - accuracy: 0.6583 - val_loss: 0.1181 -
val_accuracy: 0.7000
Epoch 94/100
4/4 - 0s - loss: 0.1238 - accuracy: 0.6583 - val_loss: 0.1182 -
val_accuracy: 0.7000
Epoch 95/100
4/4 - 0s - loss: 0.1237 - accuracy: 0.6583 - val_loss: 0.1183 -
val_accuracy: 0.7000
Epoch 96/100
4/4 - 0s - loss: 0.1238 - accuracy: 0.6583 - val_loss: 0.1186 -
val_accuracy: 0.7000
Epoch 97/100

4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1183 - val_accuracy: 0.7000
Epoch 98/100
4/4 - 0s - loss: 0.1237 - accuracy: 0.6583 - val_loss: 0.1184 - val_accuracy: 0.7000
Epoch 99/100
4/4 - 0s - loss: 0.1239 - accuracy: 0.6583 - val_loss: 0.1185 - val_accuracy: 0.7000
Epoch 100/100
4/4 - 0s - loss: 0.1238 - accuracy: 0.6583 - val_loss: 0.1184 - val_accuracy: 0.7000
Activation: relu LR: 0.1 Iterations: 100 || Test loss: 0.11843498051166534
Activation: relu LR: 0.1 Iterations: 100 || Test Accuracy: 0.699999988079071
==
=======
Model_relu_LR_0.1_Iterations_200_HL_3
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow compared to the batch time (batch time: 0.0010s vs `on_train_batch_end` time: 0.1202s). Check your callbacks.
WARNING:tensorflow:Callbacks method `on_test_batch_begin` is slow compared to the batch time (batch time: 0.0000s vs `on_test_batch_begin` time: 0.0010s). Check your callbacks.
4/4 - 0s - loss: 0.3114 - accuracy: 0.3333 - val_loss: 0.2652 - val_accuracy: 0.3333
Epoch 2/200
4/4 - 0s - loss: 0.2604 - accuracy: 0.3333 - val_loss: 0.2523 - val_accuracy: 0.3333
Epoch 3/200
4/4 - 0s - loss: 0.2506 - accuracy: 0.3333 - val_loss: 0.2463 - val_accuracy: 0.3333
Epoch 4/200
4/4 - 0s - loss: 0.2449 - accuracy: 0.3333 - val_loss: 0.2417 - val_accuracy: 0.3333
Epoch 5/200
4/4 - 0s - loss: 0.2404 - accuracy: 0.3333 - val_loss: 0.2378 - val_accuracy: 0.3333
Epoch 6/200
4/4 - 0s - loss: 0.2369 - accuracy: 0.3333 - val_loss: 0.2349 - val_accuracy: 0.3333
Epoch 7/200
4/4 - 0s - loss: 0.2342 - accuracy: 0.3333 - val_loss: 0.2327 - val_accuracy: 0.3333
Epoch 8/200
4/4 - 0s - loss: 0.2322 - accuracy: 0.3333 - val_loss: 0.2310 - val_accuracy: 0.3333
Epoch 9/200
4/4 - 0s - loss: 0.2306 - accuracy: 0.3333 - val_loss: 0.2297 -

```
val_accuracy: 0.3333
Epoch 10/200
4/4 - 0s - loss: 0.2294 - accuracy: 0.3333 - val_loss: 0.2285 -
val_accuracy: 0.3333
Epoch 11/200
4/4 - 0s - loss: 0.2283 - accuracy: 0.3333 - val_loss: 0.2276 -
val_accuracy: 0.3333
Epoch 12/200
4/4 - 0s - loss: 0.2274 - accuracy: 0.3333 - val_loss: 0.2268 -
val_accuracy: 0.3333
Epoch 13/200
4/4 - 0s - loss: 0.2267 - accuracy: 0.3333 - val_loss: 0.2263 -
val_accuracy: 0.3333
Epoch 14/200
4/4 - 0s - loss: 0.2261 - accuracy: 0.3333 - val_loss: 0.2258 -
val_accuracy: 0.3333
Epoch 15/200
4/4 - 0s - loss: 0.2257 - accuracy: 0.3333 - val_loss: 0.2254 -
val_accuracy: 0.3333
Epoch 16/200
4/4 - 0s - loss: 0.2253 - accuracy: 0.3333 - val_loss: 0.2250 -
val_accuracy: 0.3333
Epoch 17/200
4/4 - 0s - loss: 0.2250 - accuracy: 0.3333 - val_loss: 0.2248 -
val_accuracy: 0.3333
Epoch 18/200
4/4 - 0s - loss: 0.2247 - accuracy: 0.3333 - val_loss: 0.2246 -
val_accuracy: 0.3333
Epoch 19/200
4/4 - 0s - loss: 0.2245 - accuracy: 0.3333 - val_loss: 0.2244 -
val_accuracy: 0.3333
Epoch 20/200
4/4 - 0s - loss: 0.2243 - accuracy: 0.3333 - val_loss: 0.2242 -
val_accuracy: 0.3333
Epoch 21/200
4/4 - 0s - loss: 0.2242 - accuracy: 0.3333 - val_loss: 0.2241 -
val_accuracy: 0.3333
Epoch 22/200
4/4 - 0s - loss: 0.2241 - accuracy: 0.3333 - val_loss: 0.2240 -
val_accuracy: 0.3333
Epoch 23/200
4/4 - 0s - loss: 0.2240 - accuracy: 0.3333 - val_loss: 0.2239 -
val_accuracy: 0.3333
Epoch 24/200
4/4 - 0s - loss: 0.2239 - accuracy: 0.3333 - val_loss: 0.2238 -
val_accuracy: 0.3333
Epoch 25/200
4/4 - 0s - loss: 0.2238 - accuracy: 0.3333 - val_loss: 0.2238 -
val_accuracy: 0.3333
Epoch 26/200
```

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4/4 - 0s - loss: 0.2238 - accuracy: 0.3333 - val_loss: 0.2237 -
val_accuracy: 0.3333
Epoch 27/200
4/4 - 0s - loss: 0.2237 - accuracy: 0.3333 - val_loss: 0.2237 -
val_accuracy: 0.3333
Epoch 28/200
4/4 - 0s - loss: 0.2237 - accuracy: 0.3333 - val_loss: 0.2236 -
val_accuracy: 0.3333
Epoch 29/200
4/4 - 0s - loss: 0.2236 - accuracy: 0.3333 - val_loss: 0.2236 -
val_accuracy: 0.3333
Epoch 30/200
4/4 - 0s - loss: 0.2236 - accuracy: 0.3333 - val_loss: 0.2235 -
val_accuracy: 0.3333
Epoch 31/200
4/4 - 0s - loss: 0.2235 - accuracy: 0.3333 - val_loss: 0.2235 -
val_accuracy: 0.3333
Epoch 32/200
4/4 - 0s - loss: 0.2235 - accuracy: 0.3333 - val_loss: 0.2235 -
val_accuracy: 0.3333
Epoch 33/200
4/4 - 0s - loss: 0.2235 - accuracy: 0.3333 - val_loss: 0.2235 -
val_accuracy: 0.3333
Epoch 34/200
4/4 - 0s - loss: 0.2235 - accuracy: 0.3333 - val_loss: 0.2234 -
val_accuracy: 0.3333
Epoch 35/200
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2234 -
val_accuracy: 0.3333
Epoch 36/200
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2234 -
val_accuracy: 0.3333
Epoch 37/200
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2234 -
val_accuracy: 0.3333
Epoch 38/200
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2234 -
val_accuracy: 0.3333
Epoch 39/200
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2234 -
val_accuracy: 0.3333
Epoch 40/200
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 41/200
4/4 - 0s - loss: 0.2234 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 42/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
```

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Epoch 43/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333

Epoch 44/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 45/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 46/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 47/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 48/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 49/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 50/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 51/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 52/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 53/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2233 -
val_accuracy: 0.3333
Epoch 54/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 55/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 56/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 57/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 58/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 59/200
```

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4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 60/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 61/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 62/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 63/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 64/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 65/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 66/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 67/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 68/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 69/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 70/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 71/200
4/4 - 0s - loss: 0.2233 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 72/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 73/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 74/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 75/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
```

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Epoch 76/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 77/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 78/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 79/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 80/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 81/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 82/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 83/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 84/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 85/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 86/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 87/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 88/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 89/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2232 -
val_accuracy: 0.3333
Epoch 90/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 91/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 92/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
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val_accuracy: 0.3333
Epoch 93/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 94/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 95/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 96/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 97/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 98/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 99/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 100/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 101/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 102/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 103/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 104/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 105/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 106/200
4/4 - 0s - loss: 0.2232 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 107/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 108/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 109/200
```

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4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 110/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 111/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 112/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 113/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 114/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 115/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 116/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 117/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 118/200
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val_accuracy: 0.3333
Epoch 119/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 120/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 121/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 122/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 123/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 124/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 125/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
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Epoch 126/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 127/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333

Epoch 128/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 129/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 130/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 131/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 132/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 133/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 134/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 135/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 136/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 137/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 138/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 139/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 140/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 141/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 142/200
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4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 143/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 144/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 145/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 146/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 147/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 148/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 149/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 150/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 151/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 152/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 153/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 154/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 155/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 156/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 157/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 158/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
```

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Epoch 159/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 160/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 161/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 162/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 163/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 164/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 165/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 166/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 167/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 168/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 169/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 170/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 171/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 172/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 173/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 174/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 175/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
```

val_accuracy: 0.3333
Epoch 176/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 177/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 178/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 179/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 180/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 181/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 182/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 183/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 184/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 185/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 186/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 187/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 188/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 189/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 190/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 191/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 192/200

```
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 193/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 194/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2231 -
val_accuracy: 0.3333
Epoch 195/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 196/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 197/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 198/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 199/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Epoch 200/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2230 -
val_accuracy: 0.3333
Activation: relu LR: 0.1 Itertions: 200 || Train loss:
0.2230290025472641
Activation: relu LR: 0.1 Itertions: 200 || Train Accuracy:
0.3333333432674408
Epoch 1/200
WARNING:tensorflow:Callbacks method `on_train_batch_end` is slow
compared to the batch time (batch time: 0.0009s vs
`on_train_batch_end` time: 0.0781s). Check your callbacks.
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 2/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 3/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 4/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 5/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 6/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
```

val_accuracy: 0.3333
Epoch 7/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333

Epoch 8/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 9/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 10/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 11/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 12/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 13/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 14/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 15/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 16/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 17/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 18/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 19/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 20/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 21/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 22/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333

```
Epoch 23/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 24/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 25/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 26/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 27/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 28/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 29/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 30/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 31/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 32/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 33/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 34/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 35/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 36/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 37/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 38/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 39/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
```

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val_accuracy: 0.3333
Epoch 40/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 41/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 42/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 43/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 44/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 45/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 46/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 47/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 48/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 49/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 50/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 51/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 52/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 53/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 54/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 55/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 56/200
```

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4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 57/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 58/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 59/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 60/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 61/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 62/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 63/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 64/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 65/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 66/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 67/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 68/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 69/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 70/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 71/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 72/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
```

```
Epoch 73/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 74/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 75/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 76/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 77/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 78/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 79/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 80/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 81/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 82/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 83/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 84/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 85/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 86/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 87/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 88/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 89/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
```

```
val_accuracy: 0.3333
Epoch 90/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 91/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333

Epoch 92/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 93/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 94/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 95/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 96/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 97/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 98/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 99/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 100/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 101/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 102/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 103/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 104/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 105/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
```

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Epoch 106/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 107/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 108/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 109/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 110/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 111/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 112/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 113/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 114/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 115/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 116/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 117/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 118/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 119/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 120/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 121/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 122/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
```

```
val_accuracy: 0.3333
Epoch 123/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 124/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 125/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 126/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 127/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 128/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 129/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 130/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 131/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 132/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 133/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 134/200
4/4 - 0s - loss: 0.2231 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 135/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 136/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 137/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 138/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 139/200
```

```
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 140/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 141/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 142/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 143/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 144/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 145/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 146/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 147/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 148/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 149/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 150/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 151/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 152/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 153/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 154/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 155/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
```

```
Epoch 156/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 157/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 158/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 159/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 160/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 161/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 162/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 163/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 164/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 165/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 166/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 167/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 168/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 169/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 170/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 171/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 172/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
```

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val_accuracy: 0.3333
Epoch 173/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 174/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333

Epoch 175/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 176/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 177/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 178/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 179/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 180/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 181/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 182/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 183/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 184/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 185/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 186/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 187/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 188/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
```

```
Epoch 189/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 190/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 191/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2228 -
val_accuracy: 0.3333
Epoch 192/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 193/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2226 -
val_accuracy: 0.3333
Epoch 194/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 195/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 196/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 197/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 198/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 199/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Epoch 200/200
4/4 - 0s - loss: 0.2230 - accuracy: 0.3333 - val_loss: 0.2227 -
val_accuracy: 0.3333
Activation: relu LR: 0.1 Iterations: 200 || Test loss:
0.22265252470970154
Activation: relu LR: 0.1 Iterations: 200 || Test Accuracy:
0.3333333432674408
=====================================================================
======
```

Figure showing two plots. Top plot: Accuracy vs Epochs. Bottom plot: Loss vs Epochs.

Top plot legend (Accuracy):
- Model_sigmoid_LR_0.01_Iterations_100_HL_2
- Model_sigmoid_LR_0.01_Iterations_200_HL_2
- Model_sigmoid_LR_0.1_Iterations_100_HL_2
- Model_sigmoid_LR_0.1_Iterations_200_HL_2
- Model_tanh_LR_0.01_Iterations_100_HL_2
- Model_tanh_LR_0.01_Iterations_200_HL_2
- Model_tanh_LR_0.1_Iterations_100_HL_2
- Model_tanh_LR_0.1_Iterations_200_HL_2
- Model_relu_LR_0.01_Iterations_100_HL_2
- Model_relu_LR_0.01_Iterations_200_HL_2
- Model_relu_LR_0.1_Iterations_100_HL_2
- Model_relu_LR_0.1_Iterations_200_HL_2
- Model_sigmoid_LR_0.01_Iterations_100_HL_3
- Model_sigmoid_LR_0.01_Iterations_200_HL_3
- Model_sigmoid_LR_0.1_Iterations_100_HL_3
- Model_sigmoid_LR_0.1_Iterations_200_HL_3
- Model_tanh_LR_0.01_Iterations_100_HL_3
- Model_tanh_LR_0.01_Iterations_200_HL_3
- Model_tanh_LR_0.1_Iterations_100_HL_3
- Model_tanh_LR_0.1_Iterations_200_HL_3
- Model_relu_LR_0.01_Iterations_100_HL_3
- Model_relu_LR_0.01_Iterations_200_HL_3
- Model_relu_LR_0.1_Iterations_100_HL_3
- Model_relu_LR_0.1_Iterations_200_HL_3

Bottom plot legend (Loss):
- Model_sigmoid_LR_0.01_Iterations_100_HL_2
- Model_sigmoid_LR_0.01_Iterations_200_HL_2
- Model_sigmoid_LR_0.1_Iterations_100_HL_2
- Model_sigmoid_LR_0.1_Iterations_200_HL_2
- Model_tanh_LR_0.01_Iterations_100_HL_2
- Model_tanh_LR_0.01_Iterations_200_HL_2
- Model_tanh_LR_0.1_Iterations_100_HL_2
- Model_tanh_LR_0.1_Iterations_200_HL_2
- Model_relu_LR_0.01_Iterations_100_HL_2
- Model_relu_LR_0.1_Iterations_100_HL_2
- Model_relu_LR_0.1_Iterations_200_HL_2
- Model_sigmoid_LR_0.01_Iterations_100_HL_3
- Model_sigmoid_LR_0.01_Iterations_200_HL_3
- Model_sigmoid_LR_0.1_Iterations_100_HL_3
- Model_sigmoid_LR_0.1_Iterations_200_HL_3
- Model_tanh_LR_0.01_Iterations_100_HL_3
- Model_tanh_LR_0.01_Iterations_200_HL_3
- Model_tanh_LR_0.1_Iterations_100_HL_3
- Model_tanh_LR_0.1_Iterations_200_HL_3
- Model_relu_LR_0.01_Iterations_100_HL_3
- Model_relu_LR_0.01_Iterations_200_HL_3
- Model_relu_LR_0.1_Iterations_100_HL_3
- Model_relu_LR_0.1_Iterations_200_HL_3