```
C:\Users\George\anaconda3\envs\pythonProject\python.exe C:/Users/George/pythonProject/NeuralNetwork.py
SCALES= [ 0.1  1.1  2.1  3.1  4.1  5.1  6.1  7.1  8.1  9.1 10.1 11.1 12.1 13.1
 14.1 15.1 16.1 17.1 18.1 19.1]
length of Scales = 20
2020-11-28 16:28:30.431918: I tensorflow/core/platform/cpu_feature_guard.cc:142] Your CPU supports instructions that this TensorFlow binary was not compiled to use: AVX AVX2
Train on 30000 samples, validate on 5000 samples
Epoch 1/20

Epoch 00001: val_loss improved from inf to 0.69424, saving model to best_model.p
2020-11-28 16:28:40.138129: W tensorflow/python/util/util.cc:319] Sets are not currently considered sequences, but this may change in the future, so consider avoiding using them.
WARNING:tensorflow:From C:\Users\George\anaconda3\envs\pythonProject\lib\site-packages\tensorflow_core\python\ops\resource_variable_ops.py:1786: calling BaseResourceVariable.__init__ (from tensorflow.python.ops.resource_variable_ops) with constraint is deprecated and will be removed in a future version.
Instructions for updating:
If using Keras pass *_constraint arguments to layers.
30000/30000 - 11s - loss: 0.6933 - accuracy: 0.4976 - val_loss: 0.6942 - val_accuracy: 0.5000
Epoch 2/20

Epoch 00002: val_loss improved from 0.69424 to 0.69315, saving model to best_model.p
30000/30000 - 5s - loss: 0.6932 - accuracy: 0.4962 - val_loss: 0.6931 - val_accuracy: 0.5000
Epoch 3/20

Epoch 00003: val_loss did not improve from 0.69315
30000/30000 - 1s - loss: 0.6932 - accuracy: 0.4928 - val_loss: 0.6932 - val_accuracy: 0.5000
Epoch 4/20

Epoch 00004: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6932 - accuracy: 0.5013 -
```

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26 val_loss: 0.6932 - val_accuracy: 0.5000
27 Epoch 5/20
28
29 Epoch 00005: val_loss did not improve from 0.69315
30 30000/30000 - 1s - loss: 0.6932 - accuracy: 0.4981 -
   val_loss: 0.6933 - val_accuracy: 0.5000
31 Epoch 6/20
32
33 Epoch 00006: val_loss did not improve from 0.69315
34 30000/30000 - 2s - loss: 0.6933 - accuracy: 0.4972 -
   val_loss: 0.6933 - val_accuracy: 0.5000
35 Epoch 7/20
36
37 Epoch 00007: val_loss did not improve from 0.69315
38 30000/30000 - 2s - loss: 0.6932 - accuracy: 0.5019 -
   val_loss: 0.6931 - val_accuracy: 0.5000
39 Epoch 8/20
40
41 Epoch 00008: val_loss did not improve from 0.69315
42 30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4997 -
   val_loss: 0.6936 - val_accuracy: 0.5000
43 Epoch 9/20
44
45 Epoch 00009: val_loss did not improve from 0.69315
46 30000/30000 - 3s - loss: 0.6932 - accuracy: 0.4969 -
   val_loss: 0.6932 - val_accuracy: 0.5000
47 Epoch 10/20
48
49 Epoch 00010: val_loss did not improve from 0.69315
50 30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4974 -
   val_loss: 0.6932 - val_accuracy: 0.5000
51 Epoch 11/20
52
53 Epoch 00011: val_loss did not improve from 0.69315
54 30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4978 -
   val_loss: 0.6936 - val_accuracy: 0.5000
55 Epoch 12/20
56
57 Epoch 00012: val_loss improved from 0.69315 to 0.
   69315, saving model to best_model.p
58 30000/30000 - 6s - loss: 0.6932 - accuracy: 0.4973 -
   val_loss: 0.6931 - val_accuracy: 0.5000
59 Epoch 13/20
60
```

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Epoch 00013: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6931 - accuracy: 0.4999 - val_loss: 0.6932 - val_accuracy: 0.5000
Epoch 14/20

Epoch 00014: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4984 - val_loss: 0.6934 - val_accuracy: 0.5000
Epoch 15/20

Epoch 00015: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4922 - val_loss: 0.6932 - val_accuracy: 0.5000
Epoch 16/20

Epoch 00016: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6933 - accuracy: 0.4988 - val_loss: 0.6931 - val_accuracy: 0.5000
Epoch 17/20

Epoch 00017: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4961 - val_loss: 0.6932 - val_accuracy: 0.5000
Epoch 18/20

Epoch 00018: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4973 - val_loss: 0.6932 - val_accuracy: 0.5000
Epoch 19/20

Epoch 00019: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4983 - val_loss: 0.6932 - val_accuracy: 0.5000
Epoch 20/20

Epoch 00020: val_loss did not improve from 0.69315
30000/30000 - 2s - loss: 0.6932 - accuracy: 0.4964 - val_loss: 0.6932 - val_accuracy: 0.5000

  64/5000 [..............................] - ETA: 0s - loss: 0.6987 - accuracy: 0.0000e+00
1536/5000 [========>.....................] - ETA: 0s - loss: 0.6987 - accuracy: 0.0000e+00
3136/5000 [=================>............] - ETA: 0s
```

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 94  - loss: 0.6964 - accuracy: 0.2028
 95 4352/5000 [=========================>....] - ETA: 0s
     - loss: 0.6940 - accuracy: 0.4256
 96 5000/5000 [==============================] - 0s 36us
    /sample - loss: 0.6932 - accuracy: 0.5000
 97 [0.6931623516082763, 0.5]
 98
 99 Process finished with exit code 0
100
```