

models_training

May 12, 2019

```
In [1]: from internal_scripts.modelling.training.KerasTrainer import *
        from internal_scripts.modelling.training.SklearnTrainer import *
        from internal_scripts.modelling.fabric_methods.keras_fabrics import *
        from internal_scripts.data_loaders.BlackFridayDataLoader import *
        from internal_scripts.data_loaders.LoanDataLoader import *

        from sklearn.svm import SVC
        from sklearn.linear_model import LogisticRegression
        from sklearn.tree import DecisionTreeClassifier
        from sklearn.ensemble import RandomForestClassifier
        from xgboost import XGBClassifier
```

Using TensorFlow backend.

```
In [2]: data_loaders = [LoanDataLoader(), BlackFridayDataLoader()]
```

```
In [3]: sklearn_models = {
        # "SVC": SVC(probability=True),
        "Logistic_Regression": LogisticRegression(C=1e5, solver='lbfgs', multi_class='mult'),
        "Decision_Tree": DecisionTreeClassifier(),
        "Random_Forest_Classifier": RandomForestClassifier(n_estimators=10),
        "XGboost": XGBClassifier(),
    }
```

```
In [4]: for loader in data_loaders:
        data = loader.get_train_test_split()
        print(f"Fitting models for {data['dataset_name']}")
        for name, model in sklearn_models.items():
            print(f"Process for {name} started")
            trainer = SklearnTrainer(name, model, data)
            trained_model = trainer.fit(fitting_params=None)
            metrics = trainer.score_model()
            print(metrics)
            trainer.save_model()
            print(f"Process for {name} has ended")
```

Fitting models for Loan_Data

Process for Logistic_Regression started

	precision	recall	f1-score	support
0	0.90	0.20	0.33	6795
1	0.81	0.99	0.89	23205
micro avg	0.81	0.81	0.81	30000
macro avg	0.86	0.60	0.61	30000
weighted avg	0.83	0.81	0.76	30000

Process for Logistic_Regression has ended

Process for Decision_Tree started

	precision	recall	f1-score	support
0	0.44	0.43	0.44	6795
1	0.83	0.84	0.84	23205
micro avg	0.75	0.75	0.75	30000
macro avg	0.64	0.64	0.64	30000
weighted avg	0.74	0.75	0.75	30000

Process for Decision_Tree has ended

Process for Random_Forest_Classifier started

	precision	recall	f1-score	support
0	0.61	0.32	0.42	6795
1	0.82	0.94	0.88	23205
micro avg	0.80	0.80	0.80	30000
macro avg	0.72	0.63	0.65	30000
weighted avg	0.78	0.80	0.77	30000

Process for Random_Forest_Classifier has ended

Process for XGboost started

	precision	recall	f1-score	support
0	1.00	0.20	0.33	6795
1	0.81	1.00	0.89	23205
micro avg	0.82	0.82	0.82	30000
macro avg	0.90	0.60	0.61	30000
weighted avg	0.85	0.82	0.77	30000

Process for XGboost has ended

Fitting models for Black_Friday

Process for Logistic_Regression started

	precision	recall	f1-score	support
0	0.45	0.43	0.44	608

1	0.36	0.26	0.31	582
2	0.49	0.64	0.55	578
micro avg	0.44	0.44	0.44	1768
macro avg	0.43	0.44	0.43	1768
weighted avg	0.43	0.44	0.43	1768

Process for Logistic_Regression has ended

Process for Decision_Tree started

	precision	recall	f1-score	support
0	0.38	0.46	0.42	608
1	0.34	0.33	0.34	582
2	0.41	0.33	0.37	578
micro avg	0.38	0.38	0.38	1768
macro avg	0.38	0.38	0.37	1768
weighted avg	0.38	0.38	0.37	1768

Process for Decision_Tree has ended

Process for Random_Forest_Classifier started

	precision	recall	f1-score	support
0	0.38	0.38	0.38	608
1	0.33	0.33	0.33	582
2	0.42	0.42	0.42	578
micro avg	0.38	0.38	0.38	1768
macro avg	0.38	0.38	0.38	1768
weighted avg	0.38	0.38	0.38	1768

Process for Random_Forest_Classifier has ended

Process for XGboost started

	precision	recall	f1-score	support
0	0.45	0.41	0.43	608
1	0.35	0.29	0.32	582
2	0.49	0.62	0.55	578
micro avg	0.44	0.44	0.44	1768
macro avg	0.43	0.44	0.43	1768
weighted avg	0.43	0.44	0.43	1768

Process for XGboost has ended

```
In [5]: keras_fitting_params = {
        'batch_size': 2048,
```

```

    'epochs': 300
}

```

```

In [6]: for loader in data_loaders:
        data = loader.get_train_test_split()
        keras_models = {
            "Keras_Simple_Classifier": get_keras_model(data)
        }
        print(f"Fitting models for {data['dataset_name']}")
        for name, model in keras_models.items():
            print(f"Process for {name} started")
            trainer = KerasTrainer(name, model, data)
            trained_model = trainer.fit(fitting_params=keras_fitting_params)
            metrics = trainer.score_model()
            print(metrics)
            trainer.save_model()
            print(f"Process for {name} has ended")

```

Fitting models for Loan_Data

Process for Keras_Simple_Classifier started

Train on 70000 samples, validate on 30000 samples

Epoch 1/300

70000/70000 [=====] - 3s 39us/step - loss: 4.2057 - acc: 0.7105 - val_

Epoch 2/300

70000/70000 [=====] - 0s 6us/step - loss: 2.9116 - acc: 0.7744 - val_

Epoch 3/300

70000/70000 [=====] - 0s 5us/step - loss: 1.5567 - acc: 0.7737 - val_

Epoch 4/300

70000/70000 [=====] - 0s 4us/step - loss: 0.8698 - acc: 0.7746 - val_

Epoch 5/300

70000/70000 [=====] - 0s 5us/step - loss: 0.8361 - acc: 0.7746 - val_

Epoch 6/300

70000/70000 [=====] - 0s 4us/step - loss: 0.8104 - acc: 0.7746 - val_

Epoch 7/300

70000/70000 [=====] - 0s 4us/step - loss: 0.7896 - acc: 0.7746 - val_

Epoch 8/300

70000/70000 [=====] - 0s 5us/step - loss: 0.7723 - acc: 0.7746 - val_

Epoch 9/300

70000/70000 [=====] - 0s 5us/step - loss: 0.7572 - acc: 0.7746 - val_

Epoch 10/300

70000/70000 [=====] - 0s 5us/step - loss: 0.7452 - acc: 0.7746 - val_

Epoch 11/300

70000/70000 [=====] - 0s 4us/step - loss: 0.7352 - acc: 0.7746 - val_

Epoch 12/300

70000/70000 [=====] - 0s 5us/step - loss: 0.7267 - acc: 0.7746 - val_

Epoch 13/300

70000/70000 [=====] - 0s 5us/step - loss: 0.7194 - acc: 0.7746 - val_

Epoch 14/300

```

70000/70000 [=====] - 0s 4us/step - loss: 0.7132 - acc: 0.7746 - val_
Epoch 15/300
70000/70000 [=====] - 0s 4us/step - loss: 0.7077 - acc: 0.7746 - val_
Epoch 16/300
70000/70000 [=====] - 0s 5us/step - loss: 0.7029 - acc: 0.7746 - val_
Epoch 17/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6984 - acc: 0.7746 - val_
Epoch 18/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6945 - acc: 0.7746 - val_
Epoch 19/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6911 - acc: 0.7746 - val_
Epoch 20/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6874 - acc: 0.7746 - val_
Epoch 21/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6837 - acc: 0.7746 - val_
Epoch 22/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6810 - acc: 0.7746 - val_
Epoch 23/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6786 - acc: 0.7746 - val_
Epoch 24/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6762 - acc: 0.7746 - val_
Epoch 25/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6740 - acc: 0.7746 - val_
Epoch 26/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6719 - acc: 0.7746 - val_
Epoch 27/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6700 - acc: 0.7746 - val_
Epoch 28/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6680 - acc: 0.7746 - val_
Epoch 29/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6662 - acc: 0.7746 - val_
Epoch 30/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6644 - acc: 0.7746 - val_
Epoch 31/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6627 - acc: 0.7746 - val_
Epoch 32/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6610 - acc: 0.7746 - val_
Epoch 33/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6593 - acc: 0.7746 - val_
Epoch 34/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6577 - acc: 0.7746 - val_
Epoch 35/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6561 - acc: 0.7746 - val_
Epoch 36/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6546 - acc: 0.7746 - val_
Epoch 37/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6531 - acc: 0.7746 - val_
Epoch 38/300

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70000/70000 [=====] - 0s 4us/step - loss: 0.6516 - acc: 0.7746 - val_
Epoch 39/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6501 - acc: 0.7746 - val_
Epoch 40/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6487 - acc: 0.7746 - val_
Epoch 41/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6472 - acc: 0.7746 - val_
Epoch 42/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6458 - acc: 0.7746 - val_
Epoch 43/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6444 - acc: 0.7746 - val_
Epoch 44/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6431 - acc: 0.7746 - val_
Epoch 45/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6417 - acc: 0.7746 - val_
Epoch 46/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6404 - acc: 0.7746 - val_
Epoch 47/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6391 - acc: 0.7746 - val_
Epoch 48/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6378 - acc: 0.7746 - val_
Epoch 49/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6366 - acc: 0.7746 - val_
Epoch 50/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6352 - acc: 0.7746 - val_
Epoch 51/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6340 - acc: 0.7746 - val_
Epoch 52/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6327 - acc: 0.7746 - val_
Epoch 53/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6315 - acc: 0.7746 - val_
Epoch 54/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6302 - acc: 0.7746 - val_
Epoch 55/300
70000/70000 [=====] - 0s 7us/step - loss: 0.6290 - acc: 0.7746 - val_
Epoch 56/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6278 - acc: 0.7746 - val_
Epoch 57/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6266 - acc: 0.7746 - val_
Epoch 58/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6254 - acc: 0.7746 - val_
Epoch 59/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6242 - acc: 0.7746 - val_
Epoch 60/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6230 - acc: 0.7746 - val_
Epoch 61/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6219 - acc: 0.7746 - val_
Epoch 62/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.6207 - acc: 0.7746 - val_
Epoch 63/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6196 - acc: 0.7746 - val_
Epoch 64/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6184 - acc: 0.7746 - val_
Epoch 65/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6173 - acc: 0.7746 - val_
Epoch 66/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6162 - acc: 0.7746 - val_
Epoch 67/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6150 - acc: 0.7746 - val_
Epoch 68/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6139 - acc: 0.7746 - val_
Epoch 69/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6128 - acc: 0.7746 - val_
Epoch 70/300
70000/70000 [=====] - 0s 4us/step - loss: 0.6117 - acc: 0.7746 - val_
Epoch 71/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6106 - acc: 0.7746 - val_
Epoch 72/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6096 - acc: 0.7746 - val_
Epoch 73/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6085 - acc: 0.7746 - val_
Epoch 74/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6074 - acc: 0.7746 - val_
Epoch 75/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6063 - acc: 0.7746 - val_
Epoch 76/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6053 - acc: 0.7746 - val_
Epoch 77/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6042 - acc: 0.7746 - val_
Epoch 78/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6032 - acc: 0.7746 - val_
Epoch 79/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6021 - acc: 0.7746 - val_
Epoch 80/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6011 - acc: 0.7746 - val_
Epoch 81/300
70000/70000 [=====] - 0s 5us/step - loss: 0.6001 - acc: 0.7746 - val_
Epoch 82/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5991 - acc: 0.7746 - val_
Epoch 83/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5980 - acc: 0.7746 - val_
Epoch 84/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5970 - acc: 0.7746 - val_
Epoch 85/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5960 - acc: 0.7746 - val_
Epoch 86/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.5950 - acc: 0.7746 - val_
Epoch 87/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5941 - acc: 0.7746 - val_
Epoch 88/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5931 - acc: 0.7746 - val_
Epoch 89/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5921 - acc: 0.7746 - val_
Epoch 90/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5911 - acc: 0.7746 - val_
Epoch 91/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5902 - acc: 0.7746 - val_
Epoch 92/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5892 - acc: 0.7746 - val_
Epoch 93/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5883 - acc: 0.7746 - val_
Epoch 94/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5874 - acc: 0.7746 - val_
Epoch 95/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5864 - acc: 0.7746 - val_
Epoch 96/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5855 - acc: 0.7746 - val_
Epoch 97/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5846 - acc: 0.7746 - val_
Epoch 98/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5837 - acc: 0.7746 - val_
Epoch 99/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5828 - acc: 0.7746 - val_
Epoch 100/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5819 - acc: 0.7746 - val_
Epoch 101/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5810 - acc: 0.7746 - val_
Epoch 102/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5802 - acc: 0.7746 - val_
Epoch 103/300
70000/70000 [=====] - 1s 7us/step - loss: 0.5793 - acc: 0.7746 - val_
Epoch 104/300
70000/70000 [=====] - 0s 7us/step - loss: 0.5784 - acc: 0.7746 - val_
Epoch 105/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5776 - acc: 0.7746 - val_
Epoch 106/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5767 - acc: 0.7746 - val_
Epoch 107/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5759 - acc: 0.7746 - val_
Epoch 108/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5751 - acc: 0.7746 - val_
Epoch 109/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5743 - acc: 0.7746 - val_
Epoch 110/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.5735 - acc: 0.7746 - val_
Epoch 111/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5727 - acc: 0.7746 - val_
Epoch 112/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5719 - acc: 0.7746 - val_
Epoch 113/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5711 - acc: 0.7746 - val_
Epoch 114/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5704 - acc: 0.7746 - val_
Epoch 115/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5696 - acc: 0.7746 - val_
Epoch 116/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5689 - acc: 0.7746 - val_
Epoch 117/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5681 - acc: 0.7746 - val_
Epoch 118/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5674 - acc: 0.7746 - val_
Epoch 119/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5667 - acc: 0.7746 - val_
Epoch 120/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5660 - acc: 0.7746 - val_
Epoch 121/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5653 - acc: 0.7746 - val_
Epoch 122/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5646 - acc: 0.7746 - val_
Epoch 123/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5639 - acc: 0.7746 - val_
Epoch 124/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5632 - acc: 0.7746 - val_
Epoch 125/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5625 - acc: 0.7746 - val_
Epoch 126/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5619 - acc: 0.7746 - val_
Epoch 127/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5612 - acc: 0.7746 - val_
Epoch 128/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5606 - acc: 0.7746 - val_
Epoch 129/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5600 - acc: 0.7746 - val_
Epoch 130/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5594 - acc: 0.7746 - val_
Epoch 131/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5588 - acc: 0.7746 - val_
Epoch 132/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5582 - acc: 0.7746 - val_
Epoch 133/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5576 - acc: 0.7746 - val_
Epoch 134/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.5570 - acc: 0.7746 - val_
Epoch 135/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5564 - acc: 0.7746 - val_
Epoch 136/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5559 - acc: 0.7746 - val_
Epoch 137/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5553 - acc: 0.7746 - val_
Epoch 138/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5548 - acc: 0.7746 - val_
Epoch 139/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5542 - acc: 0.7746 - val_
Epoch 140/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5537 - acc: 0.7746 - val_
Epoch 141/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5532 - acc: 0.7746 - val_
Epoch 142/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5527 - acc: 0.7746 - val_
Epoch 143/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5523 - acc: 0.7746 - val_
Epoch 144/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5517 - acc: 0.7746 - val_
Epoch 145/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5512 - acc: 0.7746 - val_
Epoch 146/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5508 - acc: 0.7746 - val_
Epoch 147/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5503 - acc: 0.7746 - val_
Epoch 148/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5499 - acc: 0.7746 - val_
Epoch 149/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5494 - acc: 0.7746 - val_
Epoch 150/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5490 - acc: 0.7746 - val_
Epoch 151/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5486 - acc: 0.7746 - val_
Epoch 152/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5482 - acc: 0.7746 - val_
Epoch 153/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5478 - acc: 0.7746 - val_
Epoch 154/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5474 - acc: 0.7746 - val_
Epoch 155/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5470 - acc: 0.7746 - val_
Epoch 156/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5466 - acc: 0.7746 - val_
Epoch 157/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5462 - acc: 0.7746 - val_
Epoch 158/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.5458 - acc: 0.7746 - val_
Epoch 159/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5455 - acc: 0.7746 - val_
Epoch 160/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5451 - acc: 0.7746 - val_
Epoch 161/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5448 - acc: 0.7746 - val_
Epoch 162/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5445 - acc: 0.7746 - val_
Epoch 163/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5441 - acc: 0.7746 - val_
Epoch 164/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5438 - acc: 0.7746 - val_
Epoch 165/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5435 - acc: 0.7746 - val_
Epoch 166/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5432 - acc: 0.7746 - val_
Epoch 167/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5429 - acc: 0.7746 - val_
Epoch 168/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5426 - acc: 0.7746 - val_
Epoch 169/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5423 - acc: 0.7746 - val_
Epoch 170/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5421 - acc: 0.7746 - val_
Epoch 171/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5418 - acc: 0.7746 - val_
Epoch 172/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5415 - acc: 0.7746 - val_
Epoch 173/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5413 - acc: 0.7746 - val_
Epoch 174/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5410 - acc: 0.7746 - val_
Epoch 175/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5408 - acc: 0.7746 - val_
Epoch 176/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5405 - acc: 0.7746 - val_
Epoch 177/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5403 - acc: 0.7746 - val_
Epoch 178/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5401 - acc: 0.7746 - val_
Epoch 179/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5399 - acc: 0.7746 - val_
Epoch 180/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5397 - acc: 0.7746 - val_
Epoch 181/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5394 - acc: 0.7746 - val_
Epoch 182/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.5392 - acc: 0.7746 - val_
Epoch 183/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5390 - acc: 0.7746 - val_
Epoch 184/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5388 - acc: 0.7746 - val_
Epoch 185/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5387 - acc: 0.7746 - val_
Epoch 186/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5385 - acc: 0.7746 - val_
Epoch 187/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5383 - acc: 0.7746 - val_
Epoch 188/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5381 - acc: 0.7746 - val_
Epoch 189/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5380 - acc: 0.7746 - val_
Epoch 190/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5378 - acc: 0.7746 - val_
Epoch 191/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5376 - acc: 0.7746 - val_
Epoch 192/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5375 - acc: 0.7746 - val_
Epoch 193/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5373 - acc: 0.7746 - val_
Epoch 194/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5372 - acc: 0.7746 - val_
Epoch 195/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5371 - acc: 0.7746 - val_
Epoch 196/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5369 - acc: 0.7746 - val_
Epoch 197/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5368 - acc: 0.7746 - val_
Epoch 198/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5367 - acc: 0.7746 - val_
Epoch 199/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5366 - acc: 0.7746 - val_
Epoch 200/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5364 - acc: 0.7746 - val_
Epoch 201/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5363 - acc: 0.7746 - val_
Epoch 202/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5361 - acc: 0.7746 - val_
Epoch 203/300
70000/70000 [=====] - 0s 5us/step - loss: 0.8640 - acc: 0.7534 - val_
Epoch 204/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5384 - acc: 0.7746 - val_
Epoch 205/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5384 - acc: 0.7746 - val_
Epoch 206/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.5383 - acc: 0.7746 - val_
Epoch 207/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5382 - acc: 0.7746 - val_
Epoch 208/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5381 - acc: 0.7746 - val_
Epoch 209/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5380 - acc: 0.7746 - val_
Epoch 210/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5380 - acc: 0.7746 - val_
Epoch 211/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5379 - acc: 0.7746 - val_
Epoch 212/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5378 - acc: 0.7746 - val_
Epoch 213/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5377 - acc: 0.7746 - val_
Epoch 214/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5377 - acc: 0.7746 - val_
Epoch 215/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5376 - acc: 0.7746 - val_
Epoch 216/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5375 - acc: 0.7746 - val_
Epoch 217/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5375 - acc: 0.7746 - val_
Epoch 218/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5374 - acc: 0.7746 - val_
Epoch 219/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5374 - acc: 0.7746 - val_
Epoch 220/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5373 - acc: 0.7746 - val_
Epoch 221/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5373 - acc: 0.7746 - val_
Epoch 222/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5372 - acc: 0.7746 - val_
Epoch 223/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5372 - acc: 0.7746 - val_
Epoch 224/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5371 - acc: 0.7746 - val_
Epoch 225/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5371 - acc: 0.7746 - val_
Epoch 226/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5370 - acc: 0.7746 - val_
Epoch 227/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5370 - acc: 0.7746 - val_
Epoch 228/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5369 - acc: 0.7746 - val_
Epoch 229/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5369 - acc: 0.7746 - val_
Epoch 230/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.5369 - acc: 0.7746 - val_
Epoch 231/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5368 - acc: 0.7746 - val_
Epoch 232/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5368 - acc: 0.7746 - val_
Epoch 233/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5368 - acc: 0.7746 - val_
Epoch 234/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5367 - acc: 0.7746 - val_
Epoch 235/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5367 - acc: 0.7746 - val_
Epoch 236/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5366 - acc: 0.7746 - val_
Epoch 237/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5366 - acc: 0.7746 - val_
Epoch 238/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5366 - acc: 0.7746 - val_
Epoch 239/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5365 - acc: 0.7746 - val_
Epoch 240/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5365 - acc: 0.7746 - val_
Epoch 241/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5365 - acc: 0.7746 - val_
Epoch 242/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5365 - acc: 0.7746 - val_
Epoch 243/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5364 - acc: 0.7746 - val_
Epoch 244/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5364 - acc: 0.7746 - val_
Epoch 245/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5364 - acc: 0.7746 - val_
Epoch 246/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5363 - acc: 0.7746 - val_
Epoch 247/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5363 - acc: 0.7746 - val_
Epoch 248/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5363 - acc: 0.7746 - val_
Epoch 249/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5363 - acc: 0.7746 - val_
Epoch 250/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5363 - acc: 0.7746 - val_
Epoch 251/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5362 - acc: 0.7746 - val_
Epoch 252/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5362 - acc: 0.7746 - val_
Epoch 253/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5362 - acc: 0.7746 - val_
Epoch 254/300

70000/70000 [=====] - 0s 5us/step - loss: 0.5362 - acc: 0.7746 - val_
Epoch 255/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5361 - acc: 0.7746 - val_
Epoch 256/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5361 - acc: 0.7746 - val_
Epoch 257/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5361 - acc: 0.7746 - val_
Epoch 258/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5361 - acc: 0.7746 - val_
Epoch 259/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5360 - acc: 0.7746 - val_
Epoch 260/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5360 - acc: 0.7746 - val_
Epoch 261/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5360 - acc: 0.7746 - val_
Epoch 262/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5360 - acc: 0.7746 - val_
Epoch 263/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5360 - acc: 0.7746 - val_
Epoch 264/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5359 - acc: 0.7746 - val_
Epoch 265/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5359 - acc: 0.7746 - val_
Epoch 266/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5359 - acc: 0.7746 - val_
Epoch 267/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5359 - acc: 0.7746 - val_
Epoch 268/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5359 - acc: 0.7746 - val_
Epoch 269/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5358 - acc: 0.7746 - val_
Epoch 270/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5358 - acc: 0.7746 - val_
Epoch 271/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5358 - acc: 0.7746 - val_
Epoch 272/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5358 - acc: 0.7746 - val_
Epoch 273/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5358 - acc: 0.7746 - val_
Epoch 274/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5358 - acc: 0.7746 - val_
Epoch 275/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5357 - acc: 0.7746 - val_
Epoch 276/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5357 - acc: 0.7746 - val_
Epoch 277/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5357 - acc: 0.7746 - val_
Epoch 278/300

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70000/70000 [=====] - 0s 5us/step - loss: 0.5357 - acc: 0.7746 - val_
Epoch 279/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5357 - acc: 0.7746 - val_
Epoch 280/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5357 - acc: 0.7746 - val_
Epoch 281/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5356 - acc: 0.7746 - val_
Epoch 282/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5356 - acc: 0.7746 - val_
Epoch 283/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5356 - acc: 0.7746 - val_
Epoch 284/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5356 - acc: 0.7746 - val_
Epoch 285/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5356 - acc: 0.7746 - val_
Epoch 286/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5356 - acc: 0.7746 - val_
Epoch 287/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5355 - acc: 0.7746 - val_
Epoch 288/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5355 - acc: 0.7746 - val_
Epoch 289/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5355 - acc: 0.7746 - val_
Epoch 290/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5355 - acc: 0.7746 - val_
Epoch 291/300
70000/70000 [=====] - 0s 6us/step - loss: 0.5355 - acc: 0.7746 - val_
Epoch 292/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5355 - acc: 0.7746 - val_
Epoch 293/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5354 - acc: 0.7746 - val_
Epoch 294/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5354 - acc: 0.7746 - val_
Epoch 295/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5354 - acc: 0.7746 - val_
Epoch 296/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5354 - acc: 0.7746 - val_
Epoch 297/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5354 - acc: 0.7746 - val_
Epoch 298/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5354 - acc: 0.7746 - val_
Epoch 299/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5354 - acc: 0.7746 - val_
Epoch 300/300
70000/70000 [=====] - 0s 5us/step - loss: 0.5353 - acc: 0.7746 - val_

```

c:\program files\python36\lib\site-packages\sklearn\metrics\classification.py:1143: UndefinedM

'precision', 'predicted', average, warn_for)

	precision	recall	f1-score	support
0	0.00	0.00	0.00	6863
1	0.77	1.00	0.87	23137
micro avg	0.77	0.77	0.77	30000
macro avg	0.39	0.50	0.44	30000
weighted avg	0.59	0.77	0.67	30000

Process for Keras_Simple_Classifier has ended

Fitting models for Black_Friday

Process for Keras_Simple_Classifier started

Train on 4123 samples, validate on 1768 samples

Epoch 1/300

4123/4123 [=====] - 1s 154us/step - loss: 1.5865 - acc: 0.3255 - val_loss: 1.4262

Epoch 2/300

4123/4123 [=====] - 0s 7us/step - loss: 1.5310 - acc: 0.3255 - val_loss: 1.4049

Epoch 3/300

4123/4123 [=====] - 0s 7us/step - loss: 1.4876 - acc: 0.3255 - val_loss: 1.3880

Epoch 4/300

4123/4123 [=====] - 0s 7us/step - loss: 1.4532 - acc: 0.3255 - val_loss: 1.3751

Epoch 5/300

4123/4123 [=====] - 0s 8us/step - loss: 1.4262 - acc: 0.3250 - val_loss: 1.3652

Epoch 6/300

4123/4123 [=====] - 0s 8us/step - loss: 1.4049 - acc: 0.3250 - val_loss: 1.3571

Epoch 7/300

4123/4123 [=====] - 0s 7us/step - loss: 1.3880 - acc: 0.3260 - val_loss: 1.3497

Epoch 8/300

4123/4123 [=====] - 0s 7us/step - loss: 1.3751 - acc: 0.3260 - val_loss: 1.3428

Epoch 9/300

4123/4123 [=====] - 0s 7us/step - loss: 1.3652 - acc: 0.3277 - val_loss: 1.3365

Epoch 10/300

4123/4123 [=====] - 0s 7us/step - loss: 1.3571 - acc: 0.3320 - val_loss: 1.3305

Epoch 11/300

4123/4123 [=====] - 0s 8us/step - loss: 1.3497 - acc: 0.3347 - val_loss: 1.3249

Epoch 12/300

4123/4123 [=====] - 0s 8us/step - loss: 1.3428 - acc: 0.3357 - val_loss: 1.3197

Epoch 13/300

4123/4123 [=====] - 0s 7us/step - loss: 1.3365 - acc: 0.3388 - val_loss: 1.3197

Epoch 14/300

4123/4123 [=====] - 0s 7us/step - loss: 1.3305 - acc: 0.3391 - val_loss: 1.3197

Epoch 15/300

4123/4123 [=====] - 0s 7us/step - loss: 1.3249 - acc: 0.3485 - val_loss: 1.3197

Epoch 16/300

4123/4123 [=====] - 0s 7us/step - loss: 1.3197 - acc: 0.3546 - val_loss: 1.3197

Epoch 17/300
4123/4123 [=====] - 0s 7us/step - loss: 1.3146 - acc: 0.3561 - val_loss: 1.3146
Epoch 18/300
4123/4123 [=====] - 0s 7us/step - loss: 1.3098 - acc: 0.3641 - val_loss: 1.3098
Epoch 19/300
4123/4123 [=====] - 0s 7us/step - loss: 1.3053 - acc: 0.3691 - val_loss: 1.3053
Epoch 20/300
4123/4123 [=====] - 0s 7us/step - loss: 1.3008 - acc: 0.3801 - val_loss: 1.3008
Epoch 21/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2964 - acc: 0.3871 - val_loss: 1.2964
Epoch 22/300
4123/4123 [=====] - 0s 8us/step - loss: 1.2921 - acc: 0.3902 - val_loss: 1.2921
Epoch 23/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2879 - acc: 0.3961 - val_loss: 1.2879
Epoch 24/300
4123/4123 [=====] - 0s 8us/step - loss: 1.2838 - acc: 0.3985 - val_loss: 1.2838
Epoch 25/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2797 - acc: 0.4007 - val_loss: 1.2797
Epoch 26/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2757 - acc: 0.4043 - val_loss: 1.2757
Epoch 27/300
4123/4123 [=====] - 0s 8us/step - loss: 1.2718 - acc: 0.4075 - val_loss: 1.2718
Epoch 28/300
4123/4123 [=====] - 0s 8us/step - loss: 1.2679 - acc: 0.4106 - val_loss: 1.2679
Epoch 29/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2639 - acc: 0.4128 - val_loss: 1.2639
Epoch 30/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2600 - acc: 0.4150 - val_loss: 1.2600
Epoch 31/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2561 - acc: 0.4143 - val_loss: 1.2561
Epoch 32/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2523 - acc: 0.4130 - val_loss: 1.2523
Epoch 33/300
4123/4123 [=====] - 0s 8us/step - loss: 1.2484 - acc: 0.4128 - val_loss: 1.2484
Epoch 34/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2446 - acc: 0.4135 - val_loss: 1.2446
Epoch 35/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2407 - acc: 0.4160 - val_loss: 1.2407
Epoch 36/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2369 - acc: 0.4167 - val_loss: 1.2369
Epoch 37/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2328 - acc: 0.4213 - val_loss: 1.2328
Epoch 38/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2288 - acc: 0.4235 - val_loss: 1.2288
Epoch 39/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2250 - acc: 0.4230 - val_loss: 1.2250
Epoch 40/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2212 - acc: 0.4223 - val_loss: 1.2212

Epoch 41/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2177 - acc: 0.4249 - val_loss: 1.2177
Epoch 42/300
4123/4123 [=====] - 0s 8us/step - loss: 1.2143 - acc: 0.4249 - val_loss: 1.2143
Epoch 43/300
4123/4123 [=====] - 0s 8us/step - loss: 1.2107 - acc: 0.4278 - val_loss: 1.2107
Epoch 44/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2072 - acc: 0.4295 - val_loss: 1.2072
Epoch 45/300
4123/4123 [=====] - 0s 7us/step - loss: 1.2036 - acc: 0.4300 - val_loss: 1.2036
Epoch 46/300
4123/4123 [=====] - 0s 8us/step - loss: 1.2000 - acc: 0.4308 - val_loss: 1.2000
Epoch 47/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1968 - acc: 0.4339 - val_loss: 1.1968
Epoch 48/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1937 - acc: 0.4356 - val_loss: 1.1937
Epoch 49/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1910 - acc: 0.4400 - val_loss: 1.1910
Epoch 50/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1883 - acc: 0.4356 - val_loss: 1.1883
Epoch 51/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1849 - acc: 0.4356 - val_loss: 1.1849
Epoch 52/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1814 - acc: 0.4422 - val_loss: 1.1814
Epoch 53/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1784 - acc: 0.4436 - val_loss: 1.1784
Epoch 54/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1758 - acc: 0.4460 - val_loss: 1.1758
Epoch 55/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1725 - acc: 0.4434 - val_loss: 1.1725
Epoch 56/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1696 - acc: 0.4414 - val_loss: 1.1696
Epoch 57/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1679 - acc: 0.4383 - val_loss: 1.1679
Epoch 58/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1661 - acc: 0.4363 - val_loss: 1.1661
Epoch 59/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1623 - acc: 0.4409 - val_loss: 1.1623
Epoch 60/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1590 - acc: 0.4436 - val_loss: 1.1590
Epoch 61/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1568 - acc: 0.4455 - val_loss: 1.1568
Epoch 62/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1546 - acc: 0.4463 - val_loss: 1.1546
Epoch 63/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1524 - acc: 0.4455 - val_loss: 1.1524
Epoch 64/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1503 - acc: 0.4431 - val_loss: 1.1503

Epoch 65/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1485 - acc: 0.4446 - val_loss: 1.1485
Epoch 66/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1470 - acc: 0.4414 - val_loss: 1.1470
Epoch 67/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1468 - acc: 0.4354 - val_loss: 1.1468
Epoch 68/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1454 - acc: 0.4354 - val_loss: 1.1454
Epoch 69/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1414 - acc: 0.4395 - val_loss: 1.1414
Epoch 70/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1388 - acc: 0.4451 - val_loss: 1.1388
Epoch 71/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1400 - acc: 0.4429 - val_loss: 1.1400
Epoch 72/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1400 - acc: 0.4407 - val_loss: 1.1400
Epoch 73/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1367 - acc: 0.4439 - val_loss: 1.1367
Epoch 74/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1325 - acc: 0.4429 - val_loss: 1.1325
Epoch 75/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1297 - acc: 0.4409 - val_loss: 1.1297
Epoch 76/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1296 - acc: 0.4407 - val_loss: 1.1296
Epoch 77/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1316 - acc: 0.4378 - val_loss: 1.1316
Epoch 78/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1322 - acc: 0.4344 - val_loss: 1.1322
Epoch 79/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1288 - acc: 0.4354 - val_loss: 1.1288
Epoch 80/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1247 - acc: 0.4392 - val_loss: 1.1247
Epoch 81/300
4123/4123 [=====] - 0s 6us/step - loss: 1.1219 - acc: 0.4395 - val_loss: 1.1219
Epoch 82/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1198 - acc: 0.4407 - val_loss: 1.1198
Epoch 83/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1185 - acc: 0.4383 - val_loss: 1.1185
Epoch 84/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1181 - acc: 0.4424 - val_loss: 1.1181
Epoch 85/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1187 - acc: 0.4453 - val_loss: 1.1187
Epoch 86/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1185 - acc: 0.4436 - val_loss: 1.1185
Epoch 87/300
4123/4123 [=====] - 0s 8us/step - loss: 1.1167 - acc: 0.4453 - val_loss: 1.1167
Epoch 88/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1133 - acc: 0.4451 - val_loss: 1.1133

Epoch 89/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1111 - acc: 0.4434 - val_loss: 1.1111
Epoch 90/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1110 - acc: 0.4397 - val_loss: 1.1110
Epoch 91/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1123 - acc: 0.4361 - val_loss: 1.1123
Epoch 92/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1128 - acc: 0.4361 - val_loss: 1.1128
Epoch 93/300
4123/4123 [=====] - ETA: 0s - loss: 1.1100 - acc: 0.432 - 0s 7us/step - loss: 1.1100 - acc: 0.432 - val_loss: 1.1100
Epoch 94/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1064 - acc: 0.4392 - val_loss: 1.1064
Epoch 95/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1047 - acc: 0.4414 - val_loss: 1.1047
Epoch 96/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1039 - acc: 0.4405 - val_loss: 1.1039
Epoch 97/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1035 - acc: 0.4446 - val_loss: 1.1035
Epoch 98/300
4123/4123 [=====] - ETA: 0s - loss: 1.1084 - acc: 0.439 - 0s 7us/step - loss: 1.1084 - acc: 0.439 - val_loss: 1.1084
Epoch 99/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1021 - acc: 0.4458 - val_loss: 1.1021
Epoch 100/300
4123/4123 [=====] - 0s 7us/step - loss: 1.1006 - acc: 0.4434 - val_loss: 1.1006
Epoch 101/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0993 - acc: 0.4431 - val_loss: 1.0993
Epoch 102/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0985 - acc: 0.4441 - val_loss: 1.0985
Epoch 103/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0978 - acc: 0.4436 - val_loss: 1.0978
Epoch 104/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0973 - acc: 0.4460 - val_loss: 1.0973
Epoch 105/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0976 - acc: 0.4470 - val_loss: 1.0976
Epoch 106/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0974 - acc: 0.4477 - val_loss: 1.0974
Epoch 107/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0969 - acc: 0.4458 - val_loss: 1.0969
Epoch 108/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0961 - acc: 0.4470 - val_loss: 1.0961
Epoch 109/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0944 - acc: 0.4407 - val_loss: 1.0944
Epoch 110/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0926 - acc: 0.4446 - val_loss: 1.0926
Epoch 111/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0919 - acc: 0.4455 - val_loss: 1.0919
Epoch 112/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0911 - acc: 0.4434 - val_loss: 1.0911

Epoch 113/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0903 - acc: 0.4429 - val_loss: 1.0903
Epoch 114/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0895 - acc: 0.4441 - val_loss: 1.0895
Epoch 115/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0888 - acc: 0.4443 - val_loss: 1.0888
Epoch 116/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0881 - acc: 0.4455 - val_loss: 1.0881
Epoch 117/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0874 - acc: 0.4448 - val_loss: 1.0874
Epoch 118/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0866 - acc: 0.4443 - val_loss: 1.0866
Epoch 119/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0863 - acc: 0.4448 - val_loss: 1.0863
Epoch 120/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0861 - acc: 0.4443 - val_loss: 1.0861
Epoch 121/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0857 - acc: 0.4453 - val_loss: 1.0857
Epoch 122/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0847 - acc: 0.4458 - val_loss: 1.0847
Epoch 123/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0841 - acc: 0.4455 - val_loss: 1.0841
Epoch 124/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0838 - acc: 0.4448 - val_loss: 1.0838
Epoch 125/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0833 - acc: 0.4439 - val_loss: 1.0833
Epoch 126/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0828 - acc: 0.4446 - val_loss: 1.0828
Epoch 127/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0824 - acc: 0.4448 - val_loss: 1.0824
Epoch 128/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0823 - acc: 0.4419 - val_loss: 1.0823
Epoch 129/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0838 - acc: 0.4414 - val_loss: 1.0838
Epoch 130/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0845 - acc: 0.4426 - val_loss: 1.0845
Epoch 131/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0823 - acc: 0.4405 - val_loss: 1.0823
Epoch 132/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0802 - acc: 0.4412 - val_loss: 1.0802
Epoch 133/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0795 - acc: 0.4448 - val_loss: 1.0795
Epoch 134/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0790 - acc: 0.4458 - val_loss: 1.0790
Epoch 135/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0787 - acc: 0.4451 - val_loss: 1.0787
Epoch 136/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0786 - acc: 0.4455 - val_loss: 1.0786

Epoch 137/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0779 - acc: 0.4443 - val_loss: 1.0779
Epoch 138/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0772 - acc: 0.4465 - val_loss: 1.0772
Epoch 139/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0769 - acc: 0.4502 - val_loss: 1.0769
Epoch 140/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0767 - acc: 0.4489 - val_loss: 1.0767
Epoch 141/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0766 - acc: 0.4548 - val_loss: 1.0766
Epoch 142/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0764 - acc: 0.4536 - val_loss: 1.0764
Epoch 143/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0760 - acc: 0.4509 - val_loss: 1.0760
Epoch 144/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0754 - acc: 0.4480 - val_loss: 1.0754
Epoch 145/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0750 - acc: 0.4465 - val_loss: 1.0750
Epoch 146/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0747 - acc: 0.4458 - val_loss: 1.0747
Epoch 147/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0744 - acc: 0.4460 - val_loss: 1.0744
Epoch 148/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0748 - acc: 0.4485 - val_loss: 1.0748
Epoch 149/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0759 - acc: 0.4485 - val_loss: 1.0759
Epoch 150/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0761 - acc: 0.4485 - val_loss: 1.0761
Epoch 151/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0734 - acc: 0.4475 - val_loss: 1.0734
Epoch 152/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0724 - acc: 0.4475 - val_loss: 1.0724
Epoch 153/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0740 - acc: 0.4482 - val_loss: 1.0740
Epoch 154/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0742 - acc: 0.4477 - val_loss: 1.0742
Epoch 155/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0717 - acc: 0.4485 - val_loss: 1.0717
Epoch 156/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0709 - acc: 0.4468 - val_loss: 1.0709
Epoch 157/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0712 - acc: 0.4470 - val_loss: 1.0712
Epoch 158/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0723 - acc: 0.4506 - val_loss: 1.0723
Epoch 159/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0722 - acc: 0.4482 - val_loss: 1.0722
Epoch 160/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0713 - acc: 0.4477 - val_loss: 1.0713

Epoch 161/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0702 - acc: 0.4422 - val_loss: 1.0702
Epoch 162/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0698 - acc: 0.4431 - val_loss: 1.0698
Epoch 163/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0696 - acc: 0.4460 - val_loss: 1.0696
Epoch 164/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0694 - acc: 0.4460 - val_loss: 1.0694
Epoch 165/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0693 - acc: 0.4519 - val_loss: 1.0693
Epoch 166/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0693 - acc: 0.4543 - val_loss: 1.0693
Epoch 167/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0690 - acc: 0.4523 - val_loss: 1.0690
Epoch 168/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0684 - acc: 0.4599 - val_loss: 1.0684
Epoch 169/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0691 - acc: 0.4569 - val_loss: 1.0691
Epoch 170/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0684 - acc: 0.4584 - val_loss: 1.0684
Epoch 171/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0674 - acc: 0.4586 - val_loss: 1.0674
Epoch 172/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0679 - acc: 0.4492 - val_loss: 1.0679
Epoch 173/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0705 - acc: 0.4463 - val_loss: 1.0705
Epoch 174/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0734 - acc: 0.4419 - val_loss: 1.0734
Epoch 175/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0730 - acc: 0.4448 - val_loss: 1.0730
Epoch 176/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0712 - acc: 0.4480 - val_loss: 1.0712
Epoch 177/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0708 - acc: 0.4487 - val_loss: 1.0708
Epoch 178/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0699 - acc: 0.4489 - val_loss: 1.0699
Epoch 179/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0666 - acc: 0.4480 - val_loss: 1.0666
Epoch 180/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0658 - acc: 0.4497 - val_loss: 1.0658
Epoch 181/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0680 - acc: 0.4502 - val_loss: 1.0680
Epoch 182/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0686 - acc: 0.4477 - val_loss: 1.0686
Epoch 183/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0669 - acc: 0.4504 - val_loss: 1.0669
Epoch 184/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0655 - acc: 0.4487 - val_loss: 1.0655

Epoch 185/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0651 - acc: 0.4494 - val_loss: 1.0651
Epoch 186/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0649 - acc: 0.4475 - val_loss: 1.0649
Epoch 187/300
4123/4123 [=====] - ETA: 0s - loss: 1.0645 - acc: 0.447 - 0s 7us/step
Epoch 188/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0655 - acc: 0.4475 - val_loss: 1.0655
Epoch 189/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0646 - acc: 0.4480 - val_loss: 1.0646
Epoch 190/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0640 - acc: 0.4485 - val_loss: 1.0640
Epoch 191/300
4123/4123 [=====] - ETA: 0s - loss: 1.0663 - acc: 0.454 - 0s 7us/step
Epoch 192/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0639 - acc: 0.4511 - val_loss: 1.0639
Epoch 193/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0633 - acc: 0.4499 - val_loss: 1.0633
Epoch 194/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0637 - acc: 0.4482 - val_loss: 1.0637
Epoch 195/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0645 - acc: 0.4497 - val_loss: 1.0645
Epoch 196/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0644 - acc: 0.4504 - val_loss: 1.0644
Epoch 197/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0636 - acc: 0.4499 - val_loss: 1.0636
Epoch 198/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0626 - acc: 0.4470 - val_loss: 1.0626
Epoch 199/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0625 - acc: 0.4475 - val_loss: 1.0625
Epoch 200/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0634 - acc: 0.4489 - val_loss: 1.0634
Epoch 201/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0632 - acc: 0.4543 - val_loss: 1.0632
Epoch 202/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0620 - acc: 0.4548 - val_loss: 1.0620
Epoch 203/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0614 - acc: 0.4550 - val_loss: 1.0614
Epoch 204/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0611 - acc: 0.4550 - val_loss: 1.0611
Epoch 205/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0609 - acc: 0.4550 - val_loss: 1.0609
Epoch 206/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0607 - acc: 0.4579 - val_loss: 1.0607
Epoch 207/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0606 - acc: 0.4572 - val_loss: 1.0606
Epoch 208/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0609 - acc: 0.4596 - val_loss: 1.0609

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Epoch 209/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0606 - acc: 0.4591 - val_loss: 1.0606
Epoch 210/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0603 - acc: 0.4589 - val_loss: 1.0603
Epoch 211/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0601 - acc: 0.4565 - val_loss: 1.0601
Epoch 212/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0599 - acc: 0.4565 - val_loss: 1.0599
Epoch 213/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0602 - acc: 0.4538 - val_loss: 1.0602
Epoch 214/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0608 - acc: 0.4502 - val_loss: 1.0608
Epoch 215/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0611 - acc: 0.4497 - val_loss: 1.0611
Epoch 216/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0601 - acc: 0.4499 - val_loss: 1.0601
Epoch 217/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0595 - acc: 0.4589 - val_loss: 1.0595
Epoch 218/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0613 - acc: 0.4540 - val_loss: 1.0613
Epoch 219/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0622 - acc: 0.4550 - val_loss: 1.0622
Epoch 220/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0603 - acc: 0.4584 - val_loss: 1.0603
Epoch 221/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0590 - acc: 0.4553 - val_loss: 1.0590
Epoch 222/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0597 - acc: 0.4511 - val_loss: 1.0597
Epoch 223/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0607 - acc: 0.4497 - val_loss: 1.0607
Epoch 224/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0615 - acc: 0.4480 - val_loss: 1.0615
Epoch 225/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0611 - acc: 0.4468 - val_loss: 1.0611
Epoch 226/300
4123/4123 [=====] - ETA: 0s - loss: 1.0573 - acc: 0.452 - 0s 8us/step - loss: 1.0573 - acc: 0.452 - val_loss: 1.0573
Epoch 227/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0584 - acc: 0.4538 - val_loss: 1.0584
Epoch 228/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0585 - acc: 0.4591 - val_loss: 1.0585
Epoch 229/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0587 - acc: 0.4582 - val_loss: 1.0587
Epoch 230/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0582 - acc: 0.4548 - val_loss: 1.0582
Epoch 231/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0577 - acc: 0.4584 - val_loss: 1.0577
Epoch 232/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0579 - acc: 0.4536 - val_loss: 1.0579

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Epoch 233/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0581 - acc: 0.4506 - val_loss: 1.0581
Epoch 234/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0576 - acc: 0.4545 - val_loss: 1.0576
Epoch 235/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0572 - acc: 0.4574 - val_loss: 1.0572
Epoch 236/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0573 - acc: 0.4536 - val_loss: 1.0573
Epoch 237/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0573 - acc: 0.4543 - val_loss: 1.0573
Epoch 238/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0579 - acc: 0.4545 - val_loss: 1.0579
Epoch 239/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0593 - acc: 0.4494 - val_loss: 1.0593
Epoch 240/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0600 - acc: 0.4477 - val_loss: 1.0600
Epoch 241/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0590 - acc: 0.4497 - val_loss: 1.0590
Epoch 242/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0574 - acc: 0.4572 - val_loss: 1.0574
Epoch 243/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0565 - acc: 0.4557 - val_loss: 1.0565
Epoch 244/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0565 - acc: 0.4553 - val_loss: 1.0565
Epoch 245/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0565 - acc: 0.4560 - val_loss: 1.0565
Epoch 246/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0565 - acc: 0.4589 - val_loss: 1.0565
Epoch 247/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0571 - acc: 0.4550 - val_loss: 1.0571
Epoch 248/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0588 - acc: 0.4465 - val_loss: 1.0588
Epoch 249/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0597 - acc: 0.4482 - val_loss: 1.0597
Epoch 250/300
4123/4123 [=====] - 0s 6us/step - loss: 1.0590 - acc: 0.4497 - val_loss: 1.0590
Epoch 251/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0577 - acc: 0.4485 - val_loss: 1.0577
Epoch 252/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0559 - acc: 0.4545 - val_loss: 1.0559
Epoch 253/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0555 - acc: 0.4594 - val_loss: 1.0555
Epoch 254/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0566 - acc: 0.4538 - val_loss: 1.0566
Epoch 255/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0575 - acc: 0.4567 - val_loss: 1.0575
Epoch 256/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0559 - acc: 0.4548 - val_loss: 1.0559

Epoch 257/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0552 - acc: 0.4531 - val_loss: 1.0552
Epoch 258/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0574 - acc: 0.4502 - val_loss: 1.0574
Epoch 259/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0587 - acc: 0.4511 - val_loss: 1.0587
Epoch 260/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0569 - acc: 0.4480 - val_loss: 1.0569
Epoch 261/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0557 - acc: 0.4504 - val_loss: 1.0557
Epoch 262/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0556 - acc: 0.4526 - val_loss: 1.0556
Epoch 263/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0555 - acc: 0.4511 - val_loss: 1.0555
Epoch 264/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0554 - acc: 0.4511 - val_loss: 1.0554
Epoch 265/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0557 - acc: 0.4485 - val_loss: 1.0557
Epoch 266/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0558 - acc: 0.4489 - val_loss: 1.0558
Epoch 267/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0559 - acc: 0.4494 - val_loss: 1.0559
Epoch 268/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0559 - acc: 0.4494 - val_loss: 1.0559
Epoch 269/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0552 - acc: 0.4502 - val_loss: 1.0552
Epoch 270/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0547 - acc: 0.4497 - val_loss: 1.0547
Epoch 271/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0545 - acc: 0.4536 - val_loss: 1.0545
Epoch 272/300
4123/4123 [=====] - 0s 8us/step - loss: 1.0544 - acc: 0.4509 - val_loss: 1.0544
Epoch 273/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0541 - acc: 0.4514 - val_loss: 1.0541
Epoch 274/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0539 - acc: 0.4499 - val_loss: 1.0539
Epoch 275/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0538 - acc: 0.4516 - val_loss: 1.0538
Epoch 276/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0537 - acc: 0.4560 - val_loss: 1.0537
Epoch 277/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0538 - acc: 0.4584 - val_loss: 1.0538
Epoch 278/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0538 - acc: 0.4599 - val_loss: 1.0538
Epoch 279/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0536 - acc: 0.4567 - val_loss: 1.0536
Epoch 280/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0532 - acc: 0.4543 - val_loss: 1.0532

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Epoch 281/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0537 - acc: 0.4536 - val_loss: 1.0537
Epoch 282/300
4123/4123 [=====] - 0s 6us/step - loss: 1.0561 - acc: 0.4519 - val_loss: 1.0561
Epoch 283/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0576 - acc: 0.4509 - val_loss: 1.0576
Epoch 284/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0570 - acc: 0.4516 - val_loss: 1.0570
Epoch 285/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0548 - acc: 0.4519 - val_loss: 1.0548
Epoch 286/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0530 - acc: 0.4531 - val_loss: 1.0530
Epoch 287/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0536 - acc: 0.4545 - val_loss: 1.0536
Epoch 288/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0542 - acc: 0.4582 - val_loss: 1.0542
Epoch 289/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0542 - acc: 0.4572 - val_loss: 1.0542
Epoch 290/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0545 - acc: 0.4555 - val_loss: 1.0545
Epoch 291/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0547 - acc: 0.4565 - val_loss: 1.0547
Epoch 292/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0545 - acc: 0.4577 - val_loss: 1.0545
Epoch 293/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0550 - acc: 0.4538 - val_loss: 1.0550
Epoch 294/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0563 - acc: 0.4482 - val_loss: 1.0563
Epoch 295/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0545 - acc: 0.4560 - val_loss: 1.0545
Epoch 296/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0524 - acc: 0.4572 - val_loss: 1.0524
Epoch 297/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0520 - acc: 0.4569 - val_loss: 1.0520
Epoch 298/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0519 - acc: 0.4579 - val_loss: 1.0519
Epoch 299/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0517 - acc: 0.4601 - val_loss: 1.0517
Epoch 300/300
4123/4123 [=====] - 0s 7us/step - loss: 1.0515 - acc: 0.4623 - val_loss: 1.0515

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	precision	recall	f1-score	support
0	0.46	0.56	0.51	622
1	0.38	0.15	0.22	582
2	0.50	0.70	0.58	564
micro avg	0.47	0.47	0.47	1768
macro avg	0.45	0.47	0.44	1768

weighted avg	0.45	0.47	0.44	1768
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Process for Keras_Simple_Classifier has ended