[105]
```
net = MLPClassifier(activation='logistic', solver='adam', batch_size='auto',
                    learning_rate_init=0.1, hidden_layer_sizes=(1750))

net.fit(X_train, y_train)
```

```
MLPClassifier(activation='logistic', alpha=0.0001, batch_size='auto',
              beta_1=0.9, beta_2=0.999, early_stopping=False, epsilon=1e-08,
              hidden_layer_sizes=1750, learning_rate='constant',
              learning_rate_init=0.1, max_fun=15000, max_iter=200, momentum=0.9,
              n_iter_no_change=10, nesterovs_momentum=True, power_t=0.5,
              random_state=None, shuffle=True, solver='adam', tol=0.0001,
              validation_fraction=0.1, verbose=False, warm_start=False)
```

[ ]
```
from sklearn.metrics import accuracy_score
from sklearn.metrics import confusion_matrix

y_predtrain = net.predict(X_train)
y_predtest = net.predict(X_test)

accuracy_train = accuracy_score(y_train, y_predtrain)
accuracy_test = accuracy_score(y_test, y_predtest)
```

```
[ ] print("Accuracy in the Train set= ", accuracy_train*100, '%')
    print("Accuracy in the Test set= ", accuracy_test*100, '%')

    print("Confusion matrix:")
    confusion_matrix(y_test, y_predtest)
```

```
Accuracy in the Train set=  79.38983050847457 %
Accuracy in the Test set=  67.75067750677508 %
Confusion matrix:
array([[22,  2,  1,  0,  1,  1,  0,  0,  7],
       [ 4, 17,  2,  0,  4,  8,  0,  0,  2],
       [ 2,  0, 32,  1,  3,  4,  0,  0,  1],
       [ 4,  1,  0, 19,  0,  6,  2,  1,  7],
       [ 2,  0,  8,  0, 22,  2,  4,  0,  2],
       [ 0,  0,  2,  0,  0, 23,  0,  0,  3],
       [ 0,  0,  2,  0,  0,  0, 52,  4,  3],
       [ 0,  0,  0,  0,  1,  0,  9, 24,  2],
       [ 3,  0,  0,  0,  2,  4,  1,  1, 39]])
```

```
import seaborn as sn
sn.heatmap(confusion_matrix(y_test, y_predtest), annot=True)
```

```
<matplotlib.axes._subplots.AxesSubplot at 0x7fa48cf210b8>
```