

MACHINE LEARNING – 2CS501

PRACTICAL 10

Name: Bhanderi Mihir

Roll No.: 19BCE023

Batch No.: A-1

1) Iris Dataset

Code:

```
from sklearn import datasets, metrics
from sklearn.cluster import KMeans

iris = datasets.load_iris()
X, y = datasets.load_iris(return_X_y=True)
X_train = X[(range(0,150,2)),:]
y_train = y[(range(0,150,2))]
X_test = X[(range(1,150,2)),:]
y_test = y[(range(1,150,2))]

clf = KMeans(n_clusters=3)
clf.fit(X_train, y_train)
clf_pred = clf.predict(X_test)

print("\nPredictions:\n")
print(clf_pred)
print("\nAccuracy:", metrics.accuracy_score(y_test, clf_pred, normalize=True))
print("\nClassification report :\n", metrics.classification_report(y_test,
clf_pred))
print("\n Confusion matrix :\n", metrics.confusion_matrix(y_test, clf_pred))

"""
Predictions:

[0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 1 1 1 1 1 1 1 1 1 1 1 1
 1 2 1 1 1 1 1 1 1 1 1 1 1 1 2 2 2 2 2 1 2 2 1 1 1 2 1 2 2 1 2 2 2 2 2
 1]

Accuracy: 0.88

Classification report :
              precision    recall  f1-score   support

         0            1.00        1.00        1.00         25
         1            0.75        0.96        0.84         25
         2            0.94        0.68        0.79         25

 accuracy                   0.88         75
```

```
    macro avg      0.90      0.88      0.88      75
weighted avg      0.90      0.88      0.88      75
```

Confusion matrix :

```
[[25  0  0]
 [ 0 24  1]
 [ 0  8 17]]
```

```
"""
```