Ex.No-12

Unsupervised Learning - Clustering

Aim:

To implement unsupervised learning-clustering using any predefined dataset

Description:

- Unsupervised learning don't have any target/outcome variable to predict /estimate.
- it is used for clustering population in different groups, which is widely used for segmenting customers in different groups
 - Ex. Apriori algorithm , K-means

Program:

```
# Importing Modules
from sklearn import datasets
import matplotlib.pyplot as plt
# Loading dataset
iris_df = datasets.load_iris()
```

Available methods on dataset

print("Methods:\n",dir(iris_df))

Features

print("\nFeatures:\n",iris_df.feature_names)

Targets

print("\nTargets:\n",iris_df.target)

Target Names

print("\nTarget names:\n",iris_df.target_names)

label = {0: 'red', 1: 'blue', 2: 'green'}

```
# Dataset Slicing
x_axis = iris_df.data[:, 0] # Sepal Length
y_axis = iris_df.data[:, 2] # Sepal Width
# Plotting
plt.scatter(x_axis, y_axis, c=iris_df.target)
plt.show()
Output:
Methods:
['DESCR', 'data', 'data_module', 'feature_names', 'filename', 'frame', 'target', 'target_names']
Features:
['sepal length (cm)', 'sepal width (cm)', 'petal length (cm)', 'petal width (cm)']
Targets:
22]
Target names:
['setosa' 'versicolor' 'virginica']
```

Result:

The programs were run successfully