## 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