

Ex.No.1.

## **RANDOM CLASSIFICATION**

### **Aim:**

To write a python program to perform random classification.

### **Equipment's Required:**

1. Hardware – PCs
2. Anaconda – Python 3.7 Installation / Moodle-Code Runner / Google Colab

### **Concept:**

#### **NUMPY**

NumPy is a library for the Python programming language, adding support for large, multi-dimensional arrays and matrices, along with a large collection of high-level mathematical functions to operate on these arrays.

#### **SK LEARN**

Scikit-learn is a free software machine learning library for the Python programming language. It features various classification, regression and clustering algorithms including support-vector machines.

#### **MATPLOTLIB**

Matplotlib is a plotting library for the Python programming language and its numerical mathematics extension NumPy. It provides an object-oriented API for embedding plots into applications using generalpurpose GUI toolkits like Tkinter, wxPython, Qt, or GTK.

### **Algorithm**

- Start the program.
- Import libraries required as per requirement.
- Define dataset use the `make_blobs()` function to generate a synthetic multi -class classification dataset.
- summarize dataset shape
- summarize observations by class label
- summarize first few examples
- plot the dataset and color the by class label
- stop the program

### **Program Code:**

```
import matplotlib.pyplot as plt

from sklearn import datasets

X, y = datasets.make_blobs(n_samples=150, n_features=2, centers=2, cluster_std=1.05,
random_state=2)

#Plotting

fig = plt.figure(figsize=(10,8))

plt.plot(X[:, 0][y == 0], X[:, 1][y == 0], 'r^')

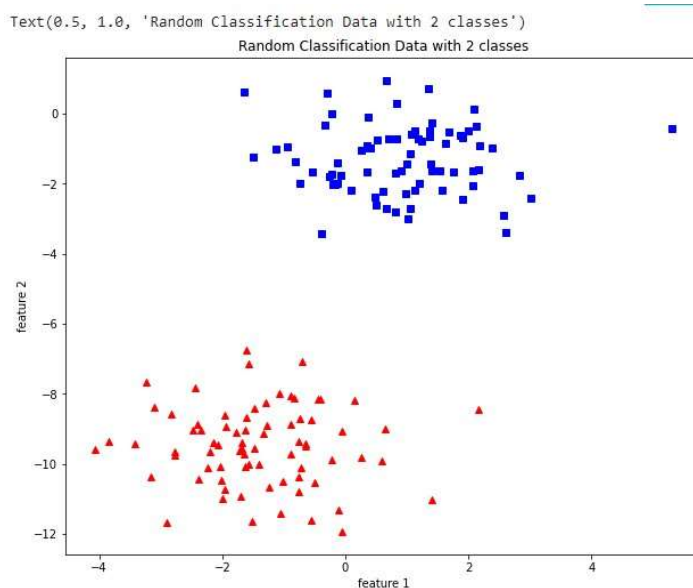
plt.plot(X[:, 0][y == 1], X[:, 1][y == 1], 'bs')

plt.xlabel("feature 1")

plt.ylabel("feature 2")

plt.title('Random Classification Data with 2 classes')
```

### **sample output:**



### **Result:**

Thus the random classifier was successfully implemented using python programming.