

## **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, multidimensional 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:**

1. Start the program.
2. Import libraries required as per requirement.
3. Define dataset use the make\_blobs() function to generate a synthetic multi -class classification dataset.
4. summarize dataset shape
5. summarize observations by class label
6. summarize first few examples
7. plot the dataset and color the by class label
8. stop the program

### **Program:**

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Program to implement random classification.

Developed by : BHARATH RAJ V

Register Number : 212219040015

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```
from numpy import where
```

```
from collections import Counter
```

```
from sklearn.datasets import make_blobs
```

```
from matplotlib import pyplot
```

```
X,y=make_blobs(n_samples=10,centers=2,random_state=)
```

```
print(X.shape,y.shape)
```

```
counter=Counter(y)
```

```
print(counter)
```

```
for i in range(5):
```

```
    print(X[i],y[i])
```

```
for label,_ in counter.items():
```

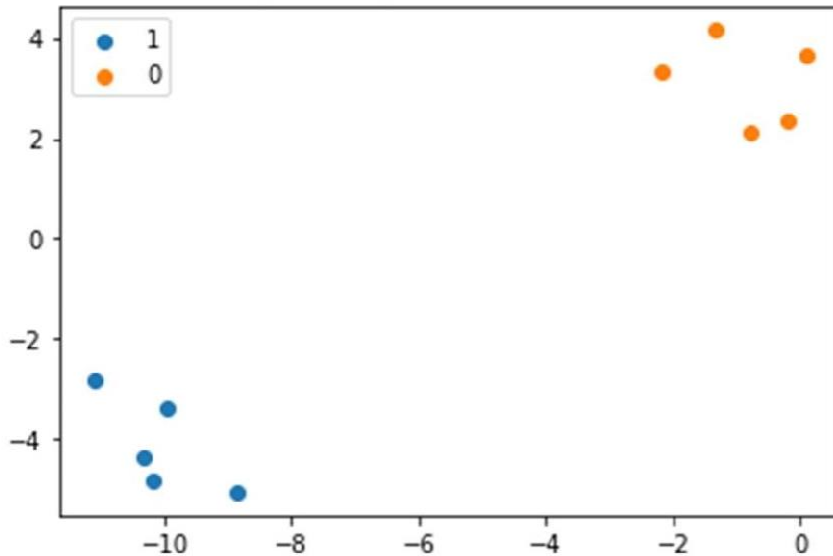
```
    row_ix=where(y==label)[0]
```

```
pyplot.scatter(X[row_ix,0],X[row_ix,1],label=str(label))
```

```
pyplot.legend()
```

### **Output:**

```
(10, 2) (10,)  
Counter({1: 5, 0: 5})  
[-10.17014071 -4.83120697] 1  
[-11.09833168 -2.80862484] 1  
[-9.95549876 -3.37053333] 1  
[-8.86394306 -5.05323981] 1  
[0.08525186 3.64528297] 0  
<matplotlib.legend.Legend at 0x7fad81198790>
```



### **Result:**

Thus, the python program performed random classification successfully.