Python – Experiment 6

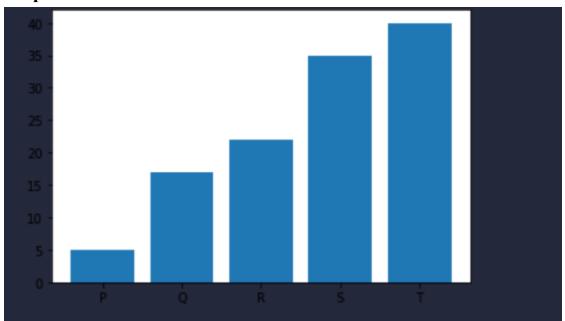**AIM :** Latest trends and technologies in Python

LO - 5 : Design and Develop cost-effective robust applications using the latest Python trends and technologies

a) Different types of plots using Numpy and Matplotlob

Code:

```
import matplotlib.pyplot as plt
import numpy as np
a = np.array(["P", "Q", "R", "S","T"])
b= np.array([5,17,22,35,40])
plt.bar(a,b)
plt.show()
```

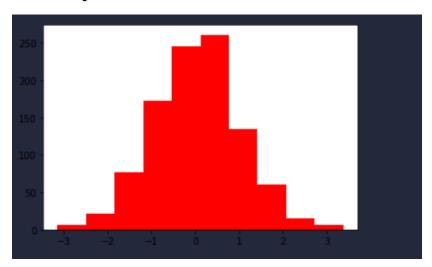## Output:

Code:
```
import matplotlib.pyplot as plt
import numpy as np
a = np.random.normal(0, 1, 1000)
plt.hist(a,color='red',bins=10)
plt.show()
```

Output:

Code:
```
import matplotlib.pyplot as plt
import numpy as np
b = np.array([12,32,45])
plt.pie(b,labels=['a','b','c'])
plt.show()
```
Output:

b) Basic operations using pandas like series, data frames, indexing, filtering, combining and merging data frames

Code:
```
import pandas as pd
food = {1:'pizza',2:'burger',3:'chicken'}
a = pd.Series(food)
print(a)
```

Output:
```
1        pizza
2       burger
3      chicken
dtype: object
```

Code:
```
import pandas as pd
data = {"Name": ["John", "Anna", "Peter", "Linda"],
     "Location": ["New York", "Paris", "Berlin", "London"]}
data_pandas = pd.DataFrame(data)
print(data_pandas)
```

Output:
```
    Name   Location
0   John   New York
1   Anna      Paris
2  Peter     Berlin
3  Linda     London
```
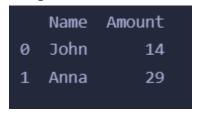
Code:

```
import pandas as pd
data = {"Name": ["John", "Anna", "Peter", "Linda"], "Amount": [14, 29, 5, 10]}
data_pandas = pd.DataFrame(data)
print(data_pandas[data_pandas['Amount']>10])
```

Output:

```
    Name  Amount
0   John      14
1   Anna      29
```

Code:

```
import pandas as pd
dfl= pd.DataFrame({'X': [10, 0], 'Y': [5, 5]})
df2= pd.DataFrame({'X': [2, 2], 'Y': [4, 4]})
take_smaller = lambda s1, s2: s1 if s1.sum() < s2.sum() else s2
dfl.combine(df2, take_smaller)
print(dfl)
```
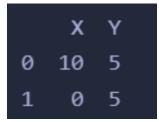
Output:

```
     X   Y
0   10   5
1    0   5
```

Conclusion:

From this experiment, it is concluded that we have understood the concept of different plots using numpy and matplotlib and basic operation of pandas