**Practical No : 05**

Ritesh Mehetre

Roll no: 536 E div

Prn: 202201040083

**Code:**

import matplotlib.pyplot as plt

import numpy as np

import pandas as pd

df=pd.read\_csv('testmarks1.csv')

print(df)

r\_no=[]

foc\_mrk=[]

eds\_mrk=[]

son\_mrk=[]

phy\_mrk=[]

sub=['foc','eds','son','phy']

r\_no=np.array(df['RollNO'])

foc\_mrk=np.array(df['FOC'])

eds\_mrk=np.array(df['EDS'])

son\_mrk=np.array(df['SON'])

phy\_mrk=np.array(df['PHY'])

max\_mrk=[]

min\_mrk=[]

avg\_mrk=[]

max\_mrk.append(max(foc\_mrk))

max\_mrk.append(max(eds\_mrk))

max\_mrk.append(max(son\_mrk))

max\_mrk.append(max(phy\_mrk))

min\_mrk.append(min(foc\_mrk))

min\_mrk.append(min(eds\_mrk))

min\_mrk.append(min(son\_mrk))

min\_mrk.append(min(phy\_mrk))

avg\_mrk.append(sum(foc\_mrk)/10)

avg\_mrk.append(sum(eds\_mrk)/10)

avg\_mrk.append(sum(son\_mrk)/10)

avg\_mrk.append(sum(phy\_mrk)/10)

mo801=[foc\_mrk[0],eds\_mrk[0],son\_mrk[0],phy\_mrk[0]]

mo802=[foc\_mrk[1],eds\_mrk[1],son\_mrk[1],phy\_mrk[1]]

mo803=[foc\_mrk[2],eds\_mrk[2],son\_mrk[2],phy\_mrk[2]]

print(max\_mrk,min\_mrk,avg\_mrk)

plt.xlabel("Roll No")

plt.ylabel("Marks")

plt.title("FOC marks")

plt.plot(r\_no,foc\_mrk,'o-r')

plt.xlabel("Roll No")

plt.ylabel("Marks")

plt.title("EDS marks")

plt.bar(r\_no,eds\_mrk)

plt.xlabel("Roll No")

plt.ylabel("Marks")

plt.title("SON marks")

plt.barh(r\_no,son\_mrk,color='hotpink')

plt.xlabel("Roll No")

plt.ylabel("Marks")

plt.title("PHY marks")

plt.plot(r\_no,phy\_mrk,'o:g')

plt.xlabel("Roll No")

plt.ylabel("Marks")

plt.title("MAX marks")

plt.bar(sub,max\_mrk,color='green')

plt.xlabel("Roll No")

plt.ylabel("Marks")

plt.title("MIN marks")

plt.plot(min\_mrk,'o:y')

plt.xlabel("Roll No")

plt.ylabel("Marks")

plt.title("AVG marks")

plt.plot(avg\_mrk,'o:b')

plt.xlabel('roll no 801 marks')

plt.pie(mo801,labels=sub)

plt.xlabel('roll no 802| marks')

expl=[0.3,0,0,0]

plt.pie(mo802,labels=sub,explode=expl)

plt.xlabel('roll no 803 marks')

expl2=[0,0.2,0,0]

plt.pie(mo803,labels=sub,explode=expl2,shadow=True)

plt.show()

**Output:**

RollNO FOC EDS SON PHY

0 801 43.05 27.79 28.70 27.79

1 802 43.47 28.52 28.98 27.89

2 803 42.24 28.16 28.16 25.63

3 804 39.24 26.16 26.16 26.16

4 805 40.90 26.03 27.27 25.65

5 806 39.47 26.31 26.31 25.21

6 807 41.68 25.63 27.79 25.46

7 808 42.19 27.61 28.13 26.21

8 809 44.75 28.35 29.83 28.21

9 810 46.95 28.88 31.30 28.53

[46.95, 28.88, 31.3, 28.53] [39.24, 25.63, 26.16, 25.21] [42.394, 27.344, 28.262999999999998, 26.674]

