Practical No : 5

Name :- Prasad Suresh Jadhav

Roll no :- 316

Division :- C.[1]

Prn: 202201090020

Code:

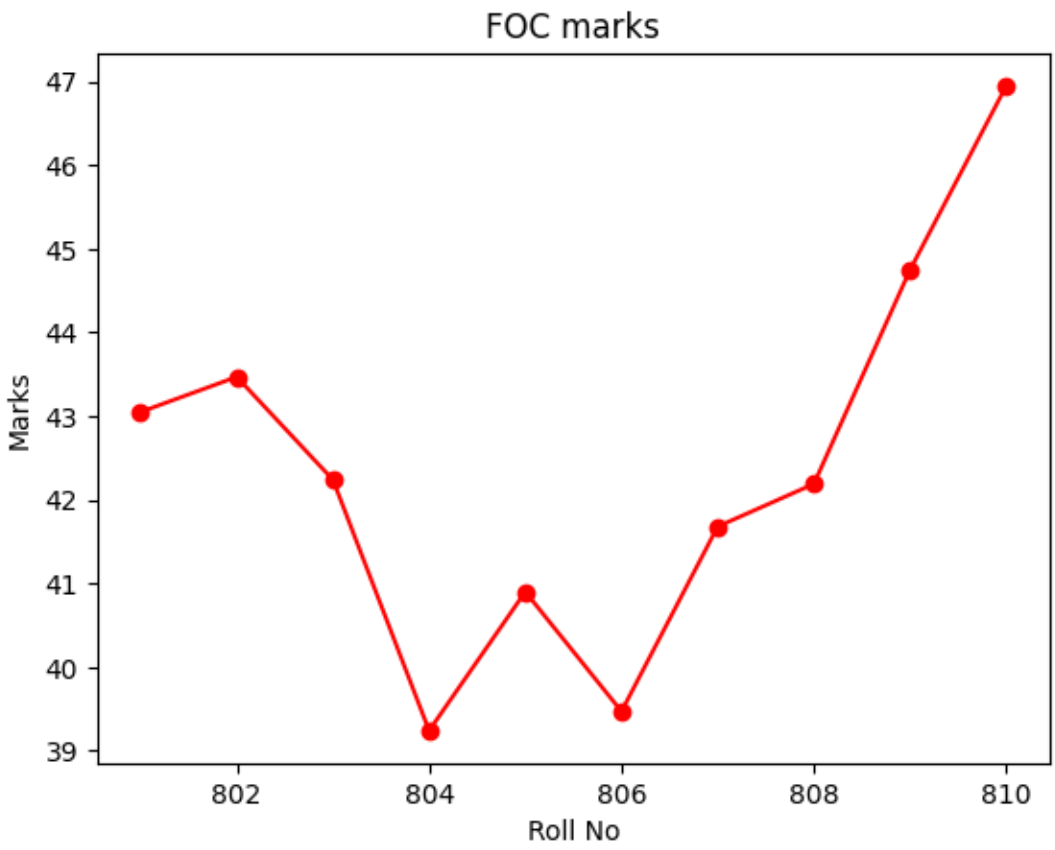
```
import matplotlib.pyplot as plt
import numpy as np import
pandas as pd
df=pd.read_csv('testmarks1.csv')
print(df) r_no=[]
foc_mrk=[]
eds_mrk=[]
son_mrk=[]
phy_mrk=[]
sub=['foc','eds','son','phy']
r_no=np.array(df['RollNO'])
foc_mrk=np.array(df['FOC'])
eds_mrk=np.array(df['EDS'])
son_mrk=np.array(df['SON'])
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))
```

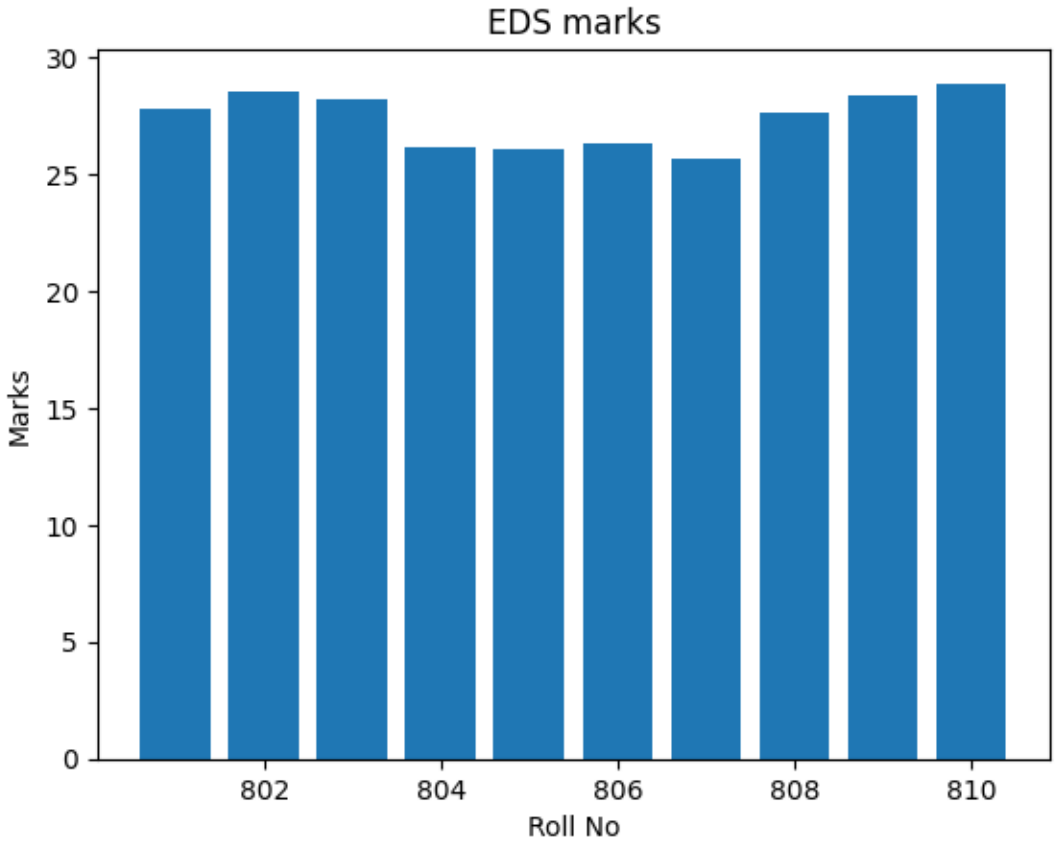
```
min_mrk.append(min(phy_mrk))
avg_mrk.append(sum(foc_mrk)/10)
avg_mrk.append(sum(eds_mrk)/10)
avg_mrk.append(sum(son_mrk)/10)
avg_mrk.append(sum(phy_mrk)/10)

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]
```

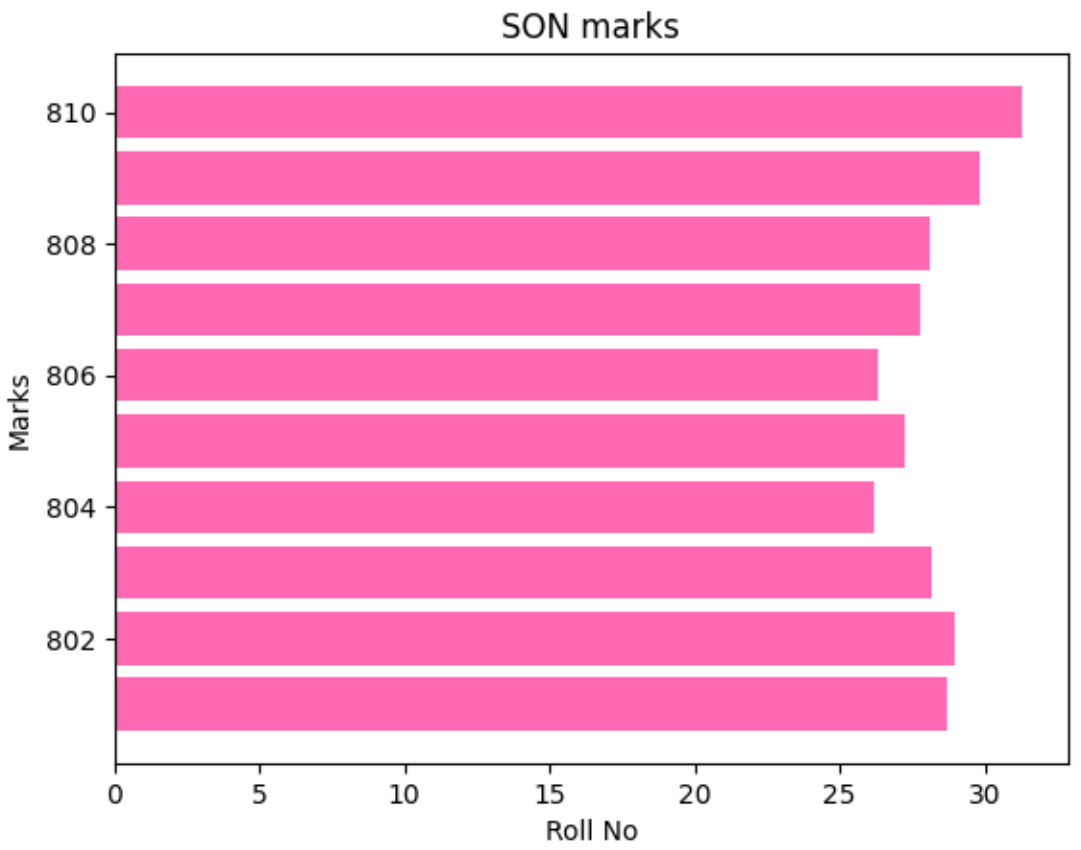
```
plt.pie(mo803,labels=sub,explode=expl2,shadow=True)

plt.show()
```

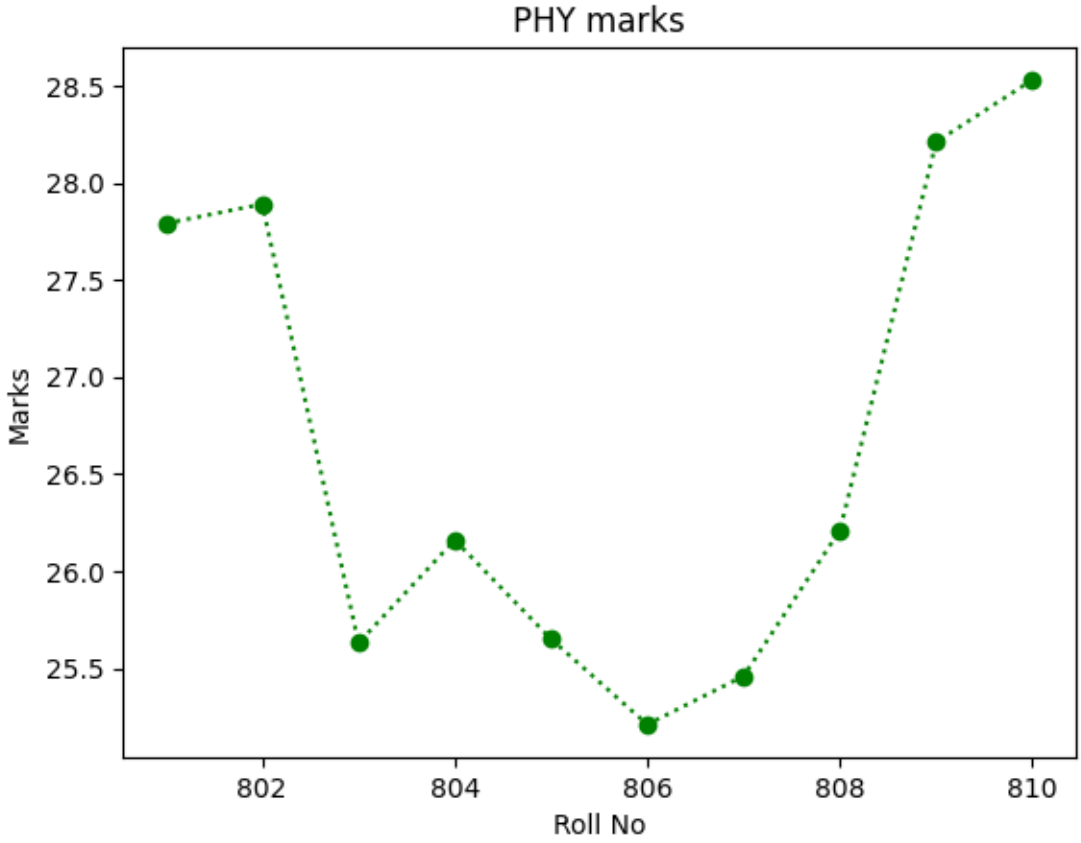
Output:

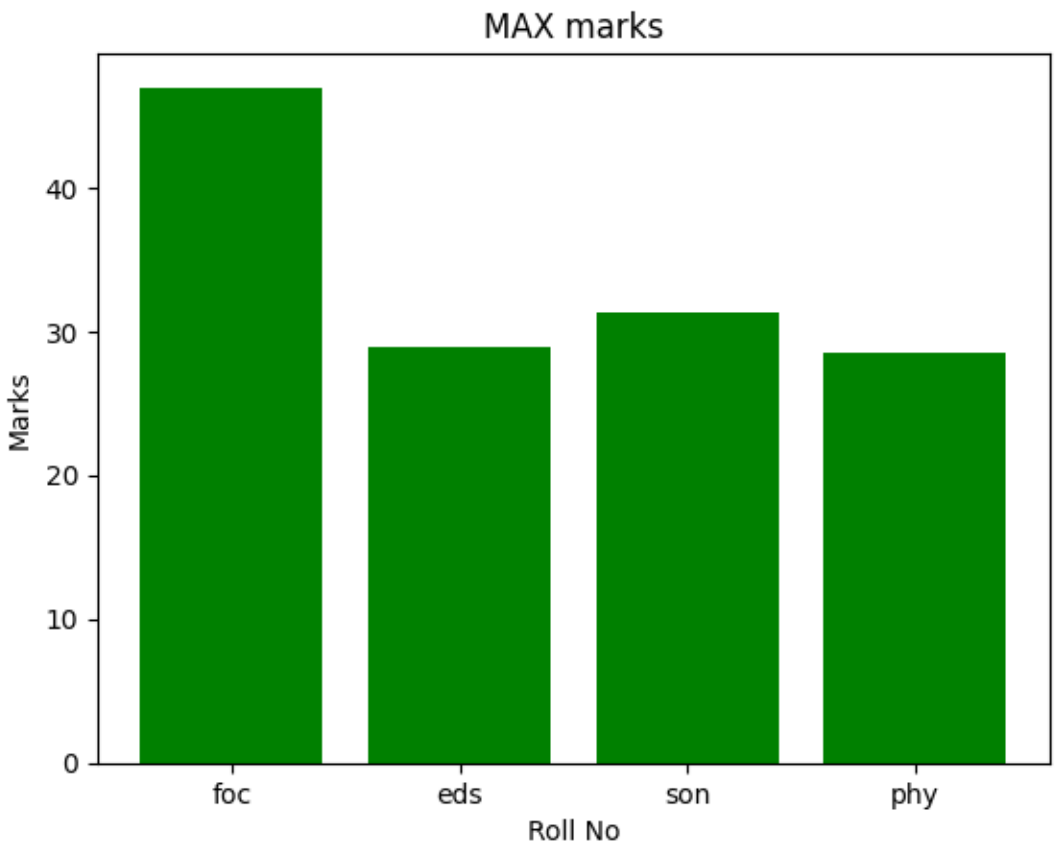
```
RollNO FOC EDS SON PHY
0 801 43.05 27.79 28.70 27.79 1 802
43.47  28.52  28.98  27.89  2  803  42.24
28.16 28.16 25.63 3 804 39.24 26.16
26.16  26.16  4  805  40.90  26.03  27.27
25.65 5 806 39.47 26.31 26.31 25.21 6
807 41.68 25.63 27.79 25.46 7 808
42.19 27.61 28.13 26.21
8 809 44.75 28.35 29.83 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, 27.34
4, 28.262999999999998, 26.674]
```

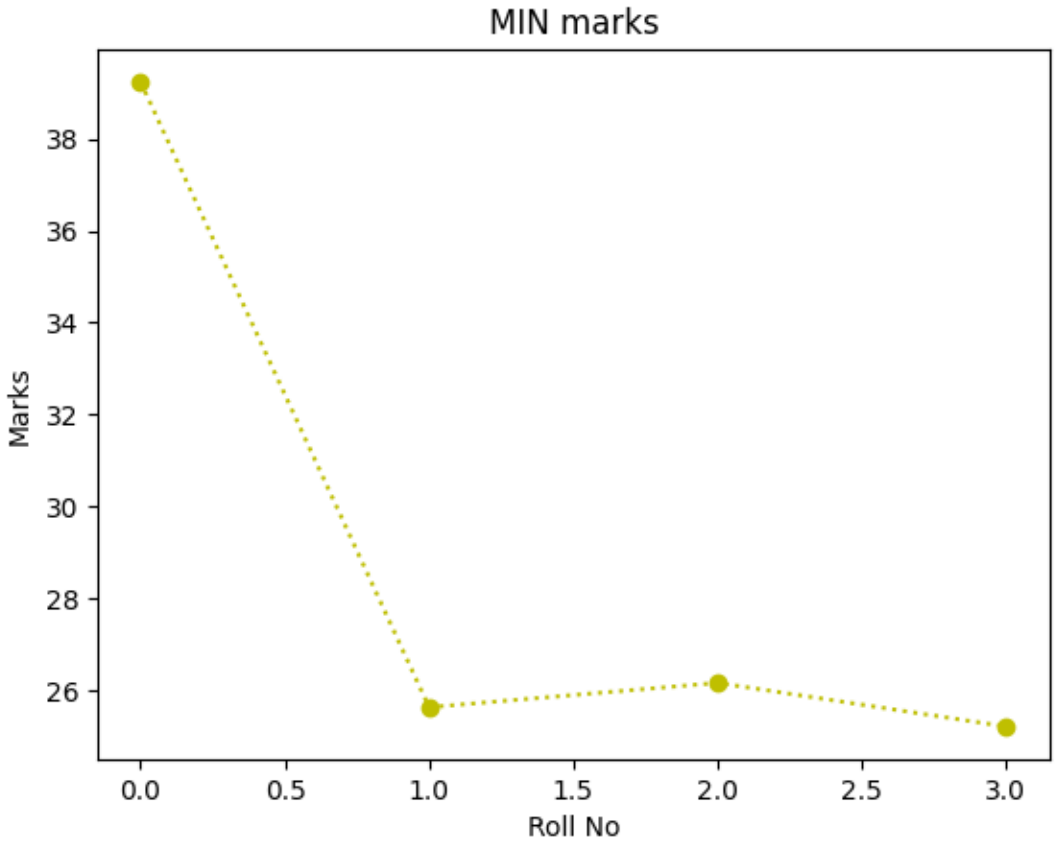

FOC marks
47
46
45
44
43
42
41
40
39
Marks
802
804
806
808
810
Roll No

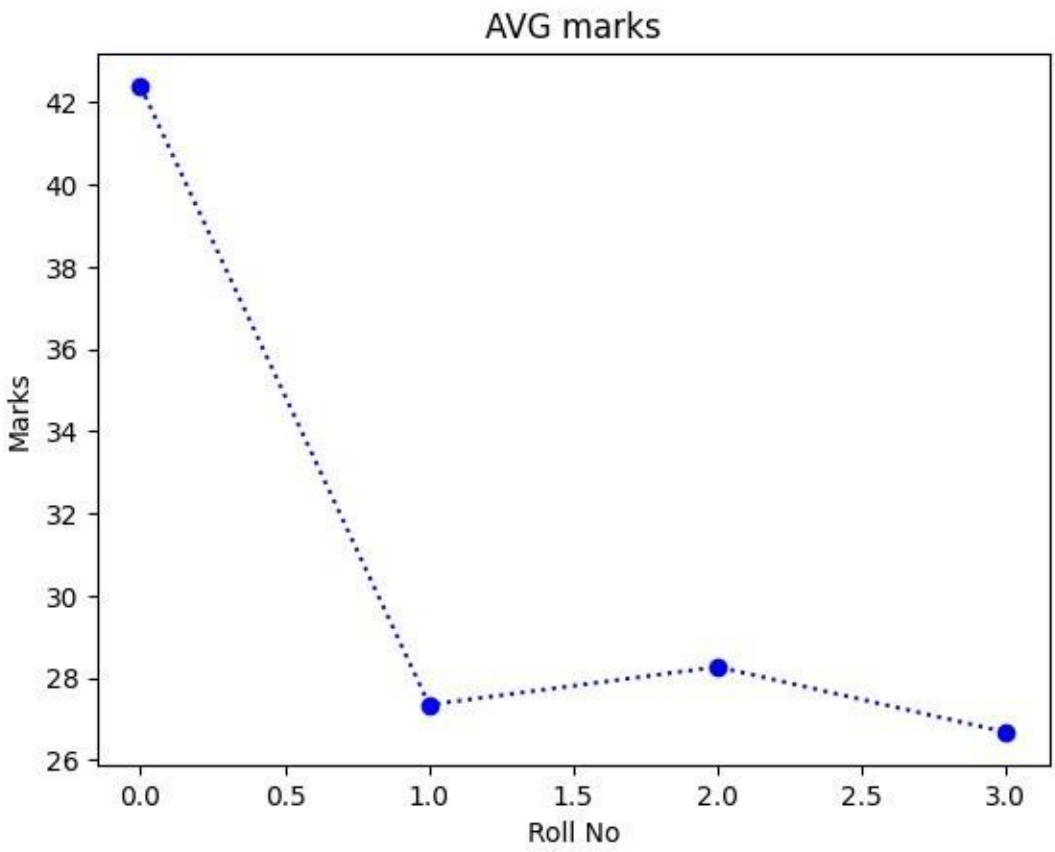

EDS marks
30
25
20
15
10
5
0
Marks
802
804
806
808
810
Roll No

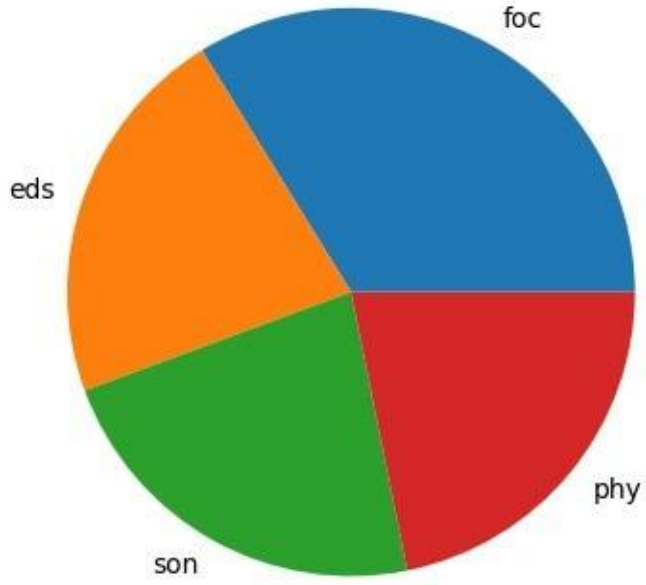

SON marks
Marks
810
808
806
804
802
0
5
10
15
20
25
30
Roll No


PHY marks
Marks
28.5
28.0
27.5
27.0
26.5
26.0
25.5
802
804
806
808
810
Roll No

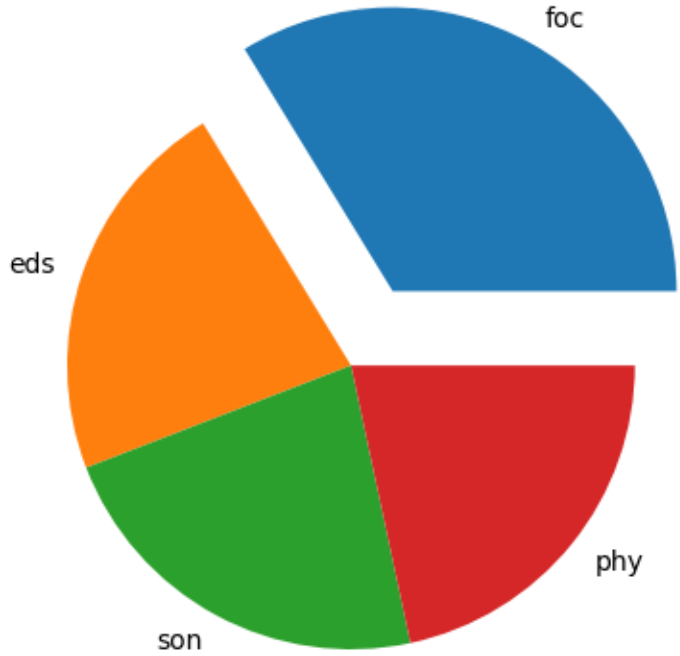

MAX marks
Marks
0
10
20
30
40
foc
eds
son
phy
Roll No


MIN marks
Marks
26
28
30
32
34
36
38
0.0
0.5
1.0
1.5
2.0
2.5
3.0
Roll No

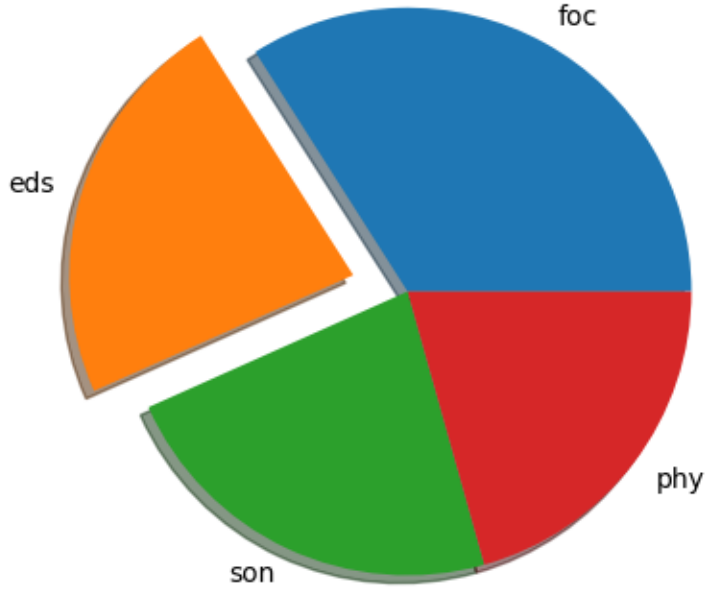




roll no 801 marks



roll no 802| marks



roll no 803 marks