

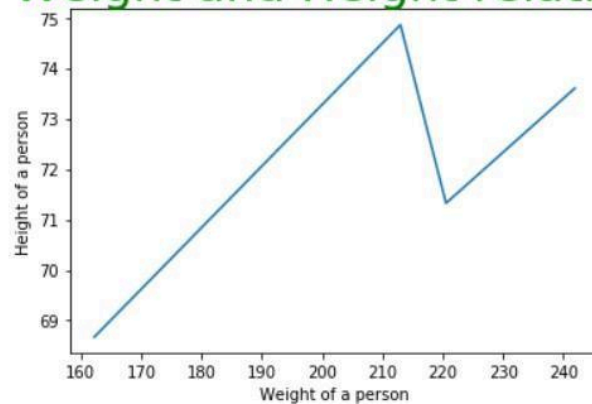
Practical

Demonstrate Matplotlib package function.

PLOTTING X AND Y POINTS:

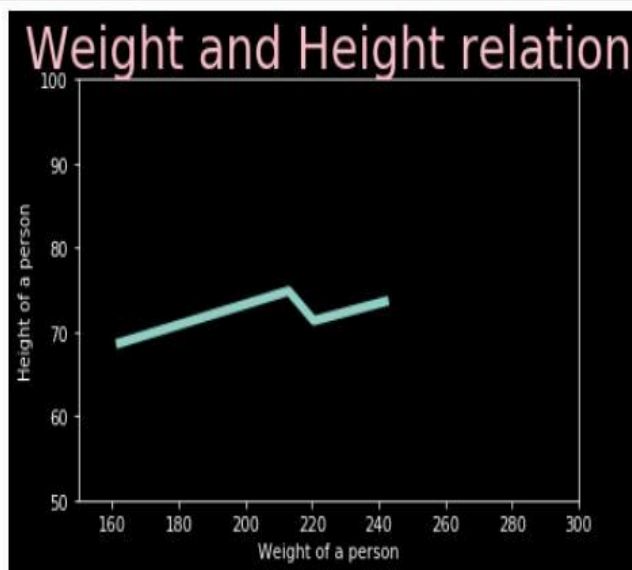
```
In [2]: 1 from matplotlib import pyplot as plt
2 weight=[162.23423,212.98746,220.546764,241.909675]
3 height=[68.673544,74.856735,71.3231185,73.600374]
4 plt.plot(weight,height)
5 plt.title("Weight and Height relation", fontsize=30, color="green")
6 plt.xlabel("Weight of a person")
7 plt.ylabel("Height of a person")
8 plt.show()
```

Weight and Height relation



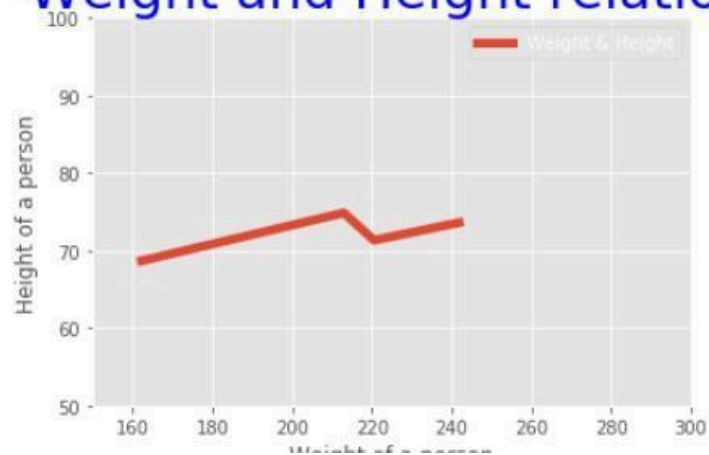
SET LIMIT FOR X AND Y AXIS:

```
In [5]: 1 from matplotlib import pyplot as plt
2 weight=[162.23423,212.98746,220.546764,241.909675]
3 height=[68.673544,74.856735,71.3231185,73.600374]
4 plt.plot(weight,height,linewidth=5)
5 plt.title("Weight and Height relation", fontsize=30, color="pink")
6 plt.xlabel("Weight of a person")
7 plt.ylabel("Height of a person")
8 plt.xlim(150,300)
9 plt.ylim(50,100)
10 plt.show()
```



```
In [10]: 1 from matplotlib import pyplot as plt
2 from matplotlib import style
3 style.use('ggplot')
4 weight=[162.23423,212.98746,220.546764,241.909675]
5 height=[68.673544,74.856735,71.3231185,73.600374]
6 plt.plot(weight,height,linewidth=5,label="Weight & Height")
7 plt.title("Weight and Height relation", fontsize=30, color="Blue")
8 plt.xlabel("Weight of a person")
9 plt.ylabel("Height of a person")
10 plt.xlim(150,300)
11 plt.ylim(50,100)
12 plt.legend()
13 plt.show()
```

Weight and Height relation



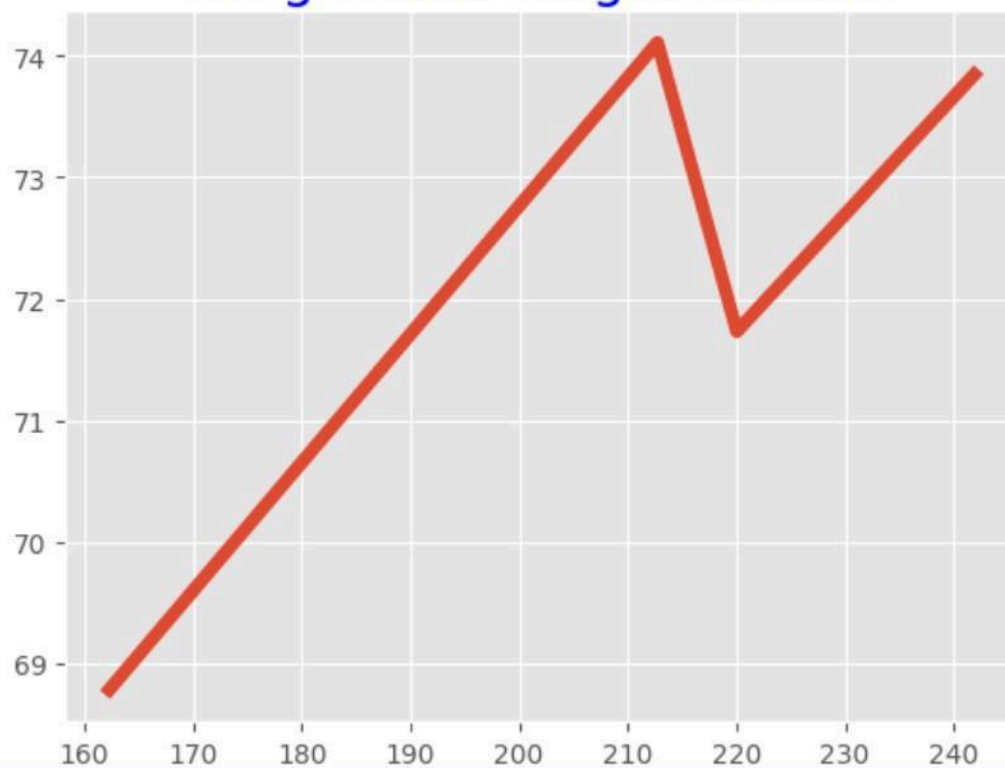
HEIGHT-WEIGHT-GENDER-CSV:

```
In [6]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_csv("Downloads\weight-height-Gender.csv")
print("Data are\n", data)
style.use('ggplot')
weight=data["Weight"]
height=data["Height"]
plt.plot(weight,height,linewidth=5,label="Weight & Height")
plt.title("Weight and Height relation", fontsize=20, color="blue")
plt.show()
```

Data are

	Gender	Height	Weight
0	Male	68.781904	162.310473
1	Male	74.110105	212.740856
2	Male	71.730978	220.042470
3	Male	73.847017	241.893563

Weight and Height relation



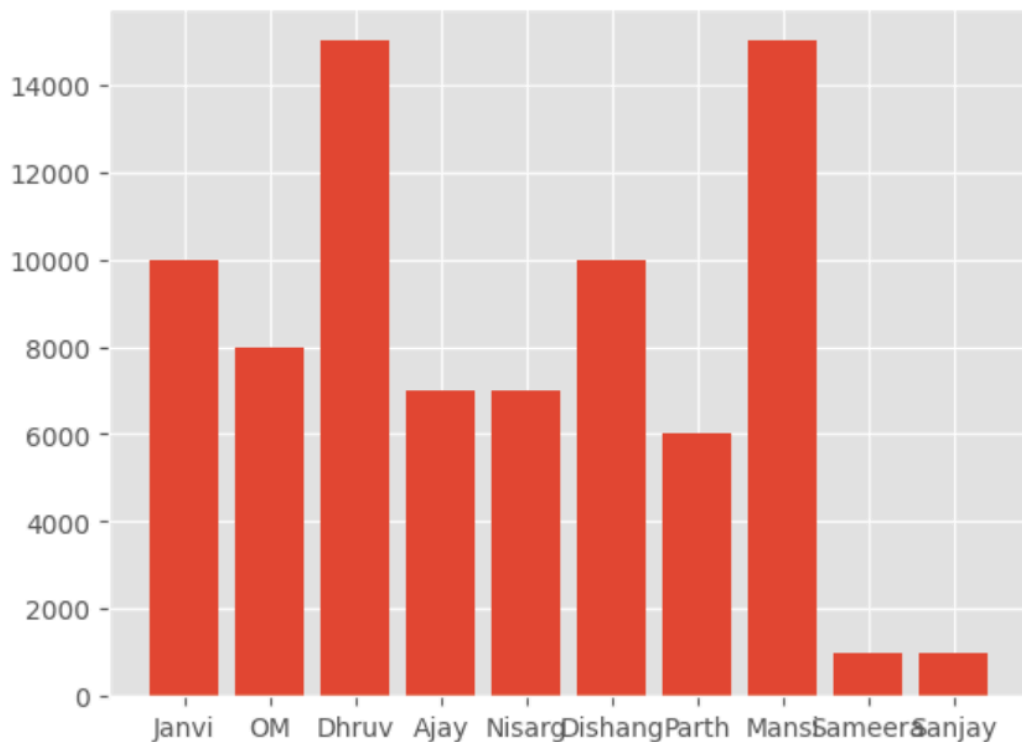
BAR CHART: STUDENTS_DATA.XLSX:

```
In [18]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_excel("Downloads\Student_Data.xlsx")
print("Data are\n", data)
style.use('ggplot')
plt.bar(data['Name'], data['Fees'])
plt.title("Students Fees details", fontsize=20, color="purple")
plt.show()
```

Data are

	Id	Name	Gender	Marks	Admission_Date	Department	Fees
0	1	Janvi	Female	90	2018-03-05 00:00:00	IT	10000
1	2	OM	Male	85	30/6/2019	IT	8000
2	3	Dhruv	Male	88	2018-03-05 00:00:00	IT	15000
3	4	Ajay	Male	92	15/6/2019	Chemical	7000
4	5	Nisarg	Male	91	30/7/2019	Chemical	7000
5	6	Dishang	Male	88	18/6/2019	Civil	10000
6	7	Parth	Male	85	17/5/2019	Civil	6000
7	8	Mansi	Male	83	21/6/2019	Computer	15000
8	9	Sameera	Female	70	21/6/2019	Electrical	1000
9	10	Sanjay	Male	90	21/6/2019	Computer	1000

Students Fees details

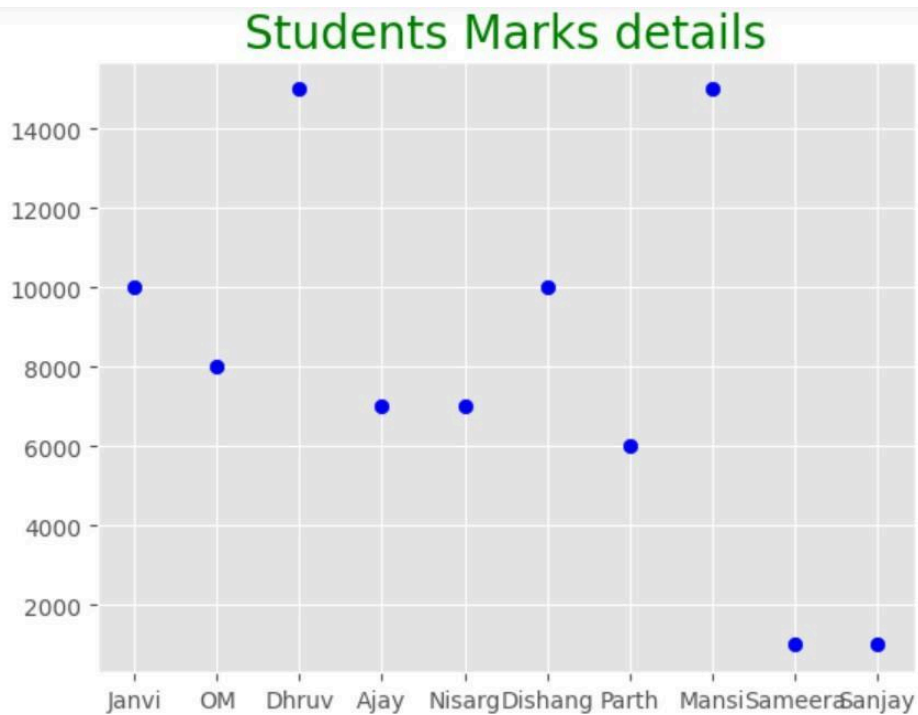


SCATTER PLOT:

```
In [19]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_excel("Downloads\\Student_Data.xlsx")
print("Data are\n", data)
style.use('ggplot')
plt.scatter(data['Name'], data['Fees'], color="blue", marker="o")
plt.title("Students Marks details", fontsize=20, color="green")
plt.show()
```

Data are

0	1	Janvi	Female	90	2018-03-05 00:00:00	IT	10000
1	2	OM	Male	85	30/6/2019	IT	8000
2	3	Dhruv	Male	88	2018-03-05 00:00:00	IT	15000
3	4	Ajay	Male	92	15/6/2019	Chemical	7000
4	5	Nisarg	Male	91	30/7/2019	Chemical	7000
5	6	Dishang	Male	88	18/6/2019	Civil	10000
6	7	Parth	Male	85	17/5/2019	Civil	6000
7	8	Mansi	Male	83	21/6/2019	Computer	15000
8	9	Sameera	Female	70	21/6/2019	Electrical	1000
9	10	Sanjay	Male	90	21/6/2019	Computer	1000



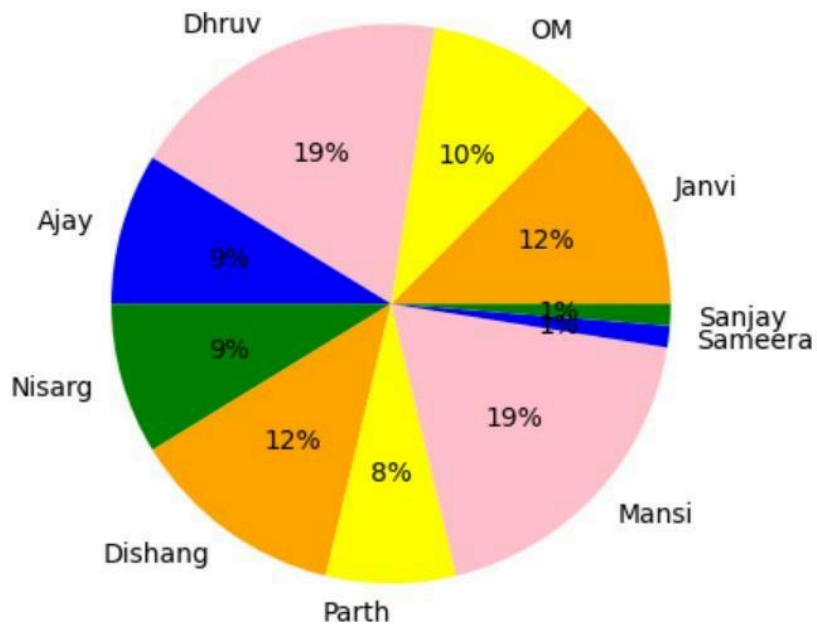
PIE CHART:

```
In [21]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_excel("Downloads\Student_Data.xlsx")
print("Data are\n", data)
style.use('ggplot')
Fees=data["Fees"]
Students=data["Name"]
cols=["orange","yellow","pink","blue","green"]
plt.pie(Fees, labels=Students, colors=cols, autopct="%0.0f%%")
plt.title("Fees collected details", fontsize=20, color="green")
plt.show()
```

Data are

	Id	Name	Gender	Marks	Admission_Date	Department	Fees
0	1	Janvi	Female	90	2018-03-05 00:00:00	IT	10000
1	2	OM	Male	85	30/6/2019	IT	8000
2	3	Dhruv	Male	88	2018-03-05 00:00:00	IT	15000
3	4	Ajay	Male	92	15/6/2019	Chemical	7000
4	5	Nisarg	Male	91	30/7/2019	Chemical	7000
5	6	Dishang	Male	88	18/6/2019	Civil	10000
6	7	Parth	Male	85	17/5/2019	Civil	6000
7	8	Mansi	Male	83	21/6/2019	Computer	15000
8	9	Sameera	Female	70	21/6/2019	Electrical	1000
9	10	Sanjay	Male	90	21/6/2019	Computer	1000

Fees collected details

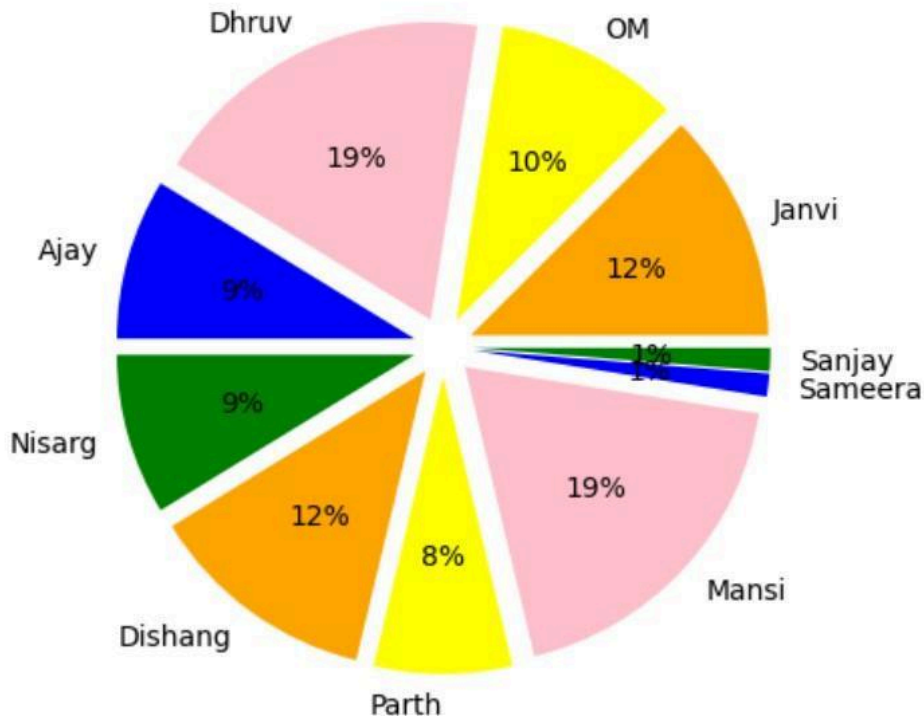



```
In [22]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_excel("Downloads\\Student_Data.xlsx")
print("Data are\\n", data)
style.use('ggplot')
Fees=data["Fees"]
explodeList=[0.1] * len(Fees)
Students=data["Name"]
cols=["orange","yellow","pink","blue","green"]
plt.pie(Fees, labels=Students, colors=cols, autopct="%0.0f%%", explode=explodeList)
plt.title("Fees collected details", fontsize=20, color="green")
plt.show()
```

Data are

	Id	Name	Gender	Marks	Admission_Date	Department	Fees
0	1	Janvi	Female	90	2018-03-05 00:00:00	IT	10000
1	2	OM	Male	85	30/6/2019	IT	8000
2	3	Dhruv	Male	88	2018-03-05 00:00:00	IT	15000
3	4	Ajay	Male	92	15/6/2019	Chemical	7000
4	5	Nisarg	Male	91	30/7/2019	Chemical	7000
5	6	Dishang	Male	88	18/6/2019	Civil	10000
6	7	Parth	Male	85	17/5/2019	Civil	6000
7	8	Mansi	Male	83	21/6/2019	Computer	15000
8	9	Sameera	Female	70	21/6/2019	Electrical	1000
9	10	Sanjay	Male	90	21/6/2019	Computer	1000

Fees collected details



HISTOGRAM:

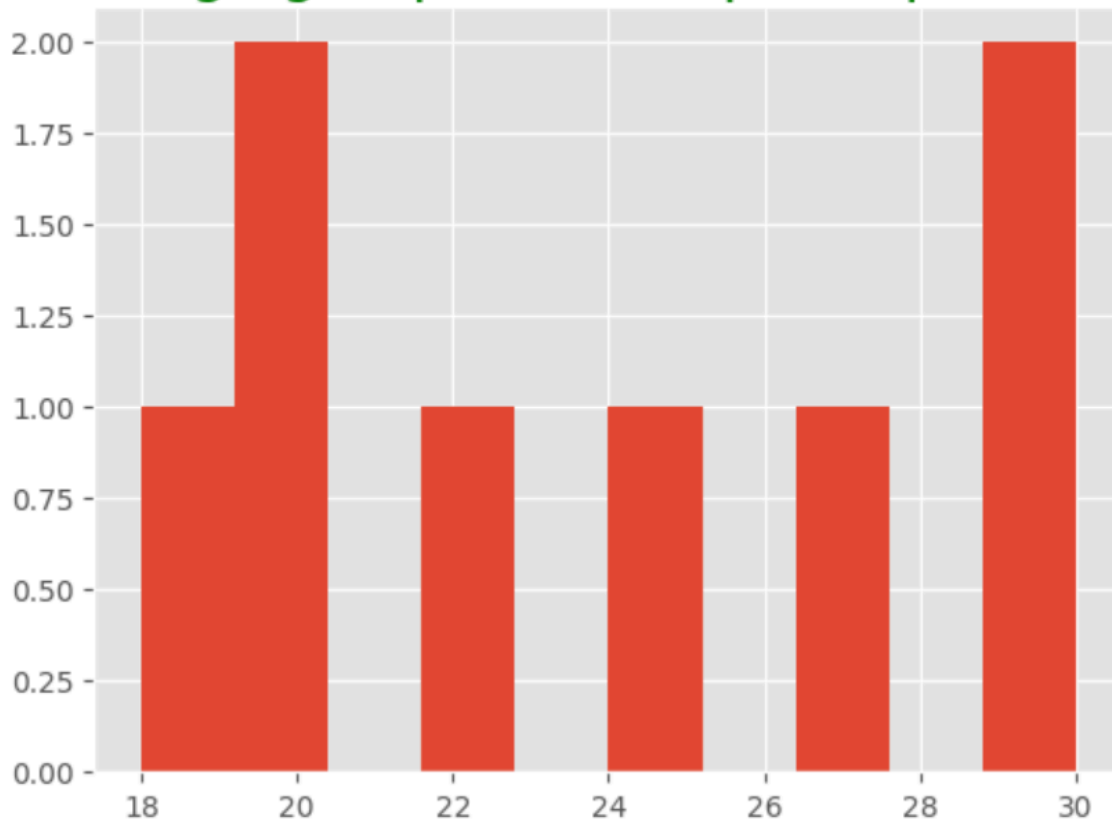
1)

```
In [26]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_csv("Downloads\Eventdetails.csv")
print("Data are\n", data)
style.use('ggplot')
plt.hist(data["Age"])
plt.title("Age group of event participants", fontsize=20, color="green")
plt.show()
```

Data are

	ParticipantName	Gender	Age
0	Yatharth	Male	20
1	Yatri	Female	18
2	Khushi	Female	30
3	Vihanee	Female	20
4	Akash	Male	22
5	Samar	Male	25
6	Sagar	Male	30
7	Komal	Female	27

Age group of event participants



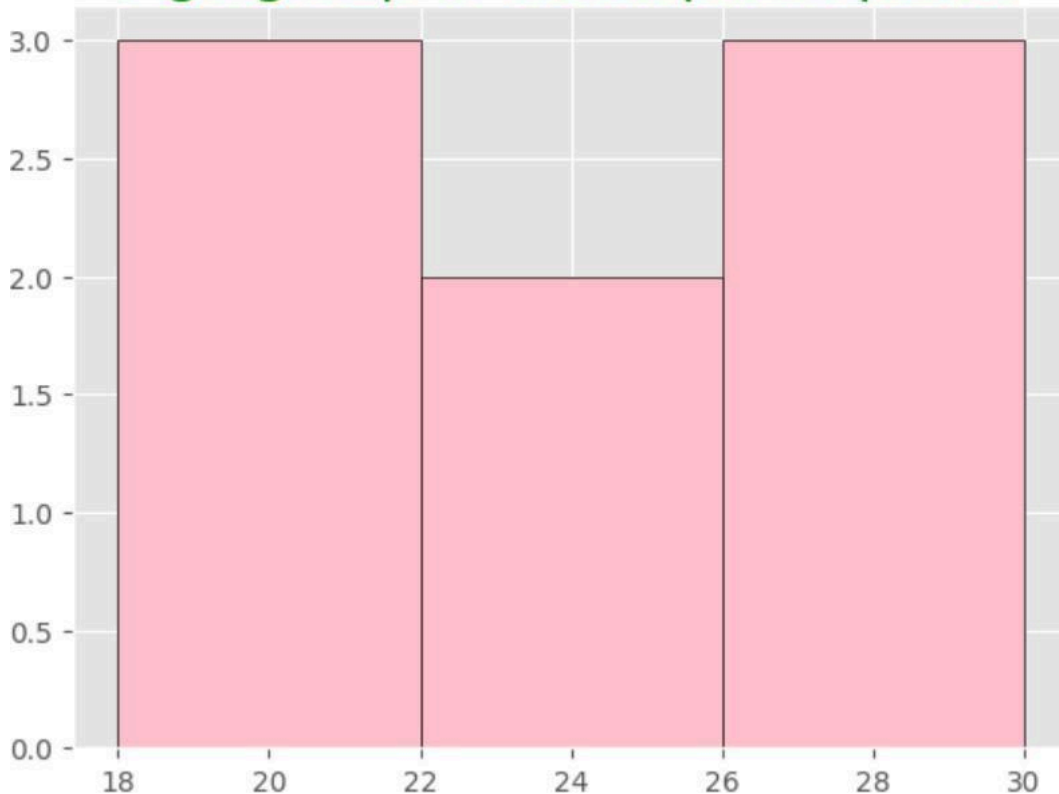
2)

```
In [27]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_csv("Downloads\Eventdetails.csv")
print("Data are\n", data)
style.use('ggplot')
plt.hist(data["Age"],bins=3,color="pink",edgecolor="black")
plt.title("Age group of event participants", fontsize=20, color="green")
plt.show()
```

Data are

	ParticipatorName	Gender	Age
0	Yatharth	Male	20
1	Yatri	Female	18
2	Khushi	Female	30
3	Vihanee	Female	20
4	Akash	Male	22
5	Samar	Male	25
6	Sagar	Male	30
7	Komal	Female	27

Age group of event participants

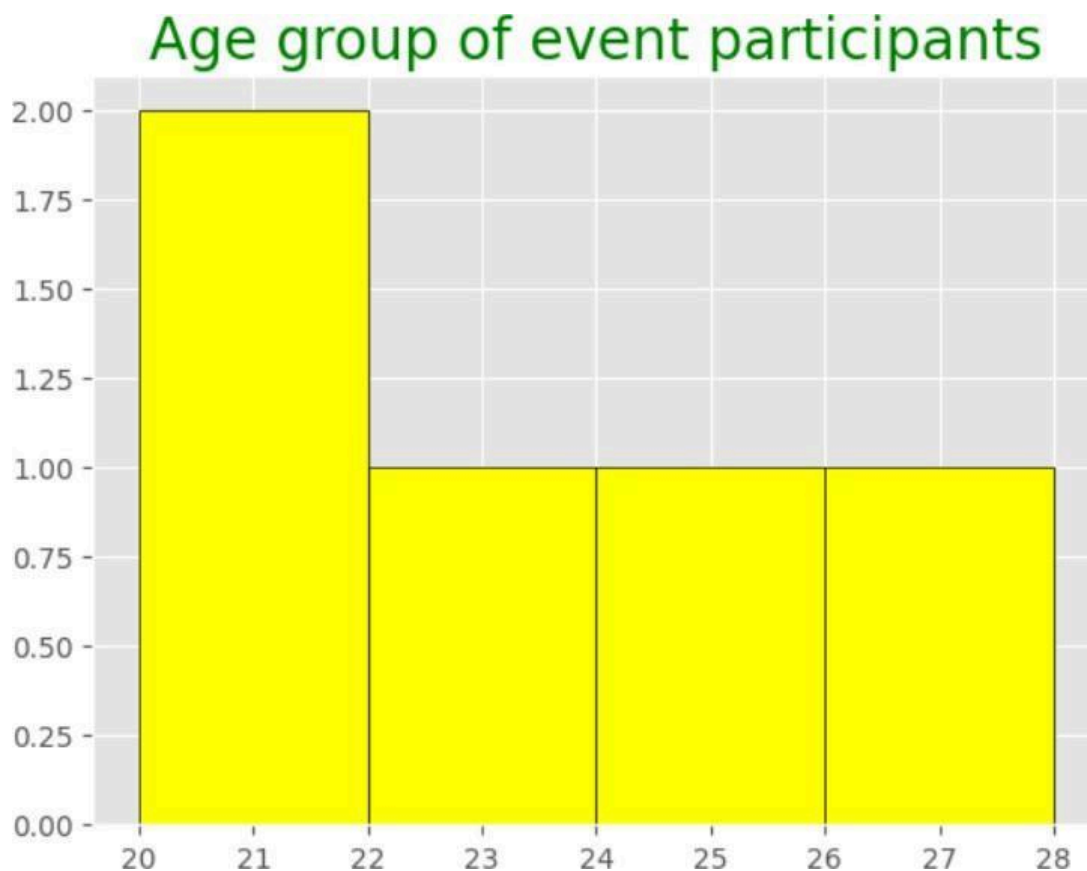


3)

```
In [31]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_csv("Downloads\Eventdetails.csv")
print("Data are\n", data)
style.use('ggplot')
plt.hist(data["Age"],bins=range(20,30,2),color="yellow",edgecolor="black")
plt.title("Age group of event participants", fontsize=20, color="green")
plt.show()
```

Data are

	ParticipatorName	Gender	Age
0	Yatharth	Male	20
1	Yatri	Female	18
2	Khushi	Female	30
3	Vihanee	Female	20
4	Akash	Male	22
5	Samar	Male	25
6	Sagar	Male	30
7	Komal	Female	27



MULTIPLE THINGS ON THE SAME POINTS:

```
In [24]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_excel("Downloads\FeesData.xlsx")
print("Data are\n", data)
style.use('ggplot')
plt.plot(data['Name'], data['Paid_Fees'], color="blue", marker="o", label="Paid Fees")
plt.plot(data['Name'], data['Pending_Fees'], color="red", marker="*", label="Paidind Fees")
plt.title("Students Marks details", fontsize=20, color="green")
plt.show()
```

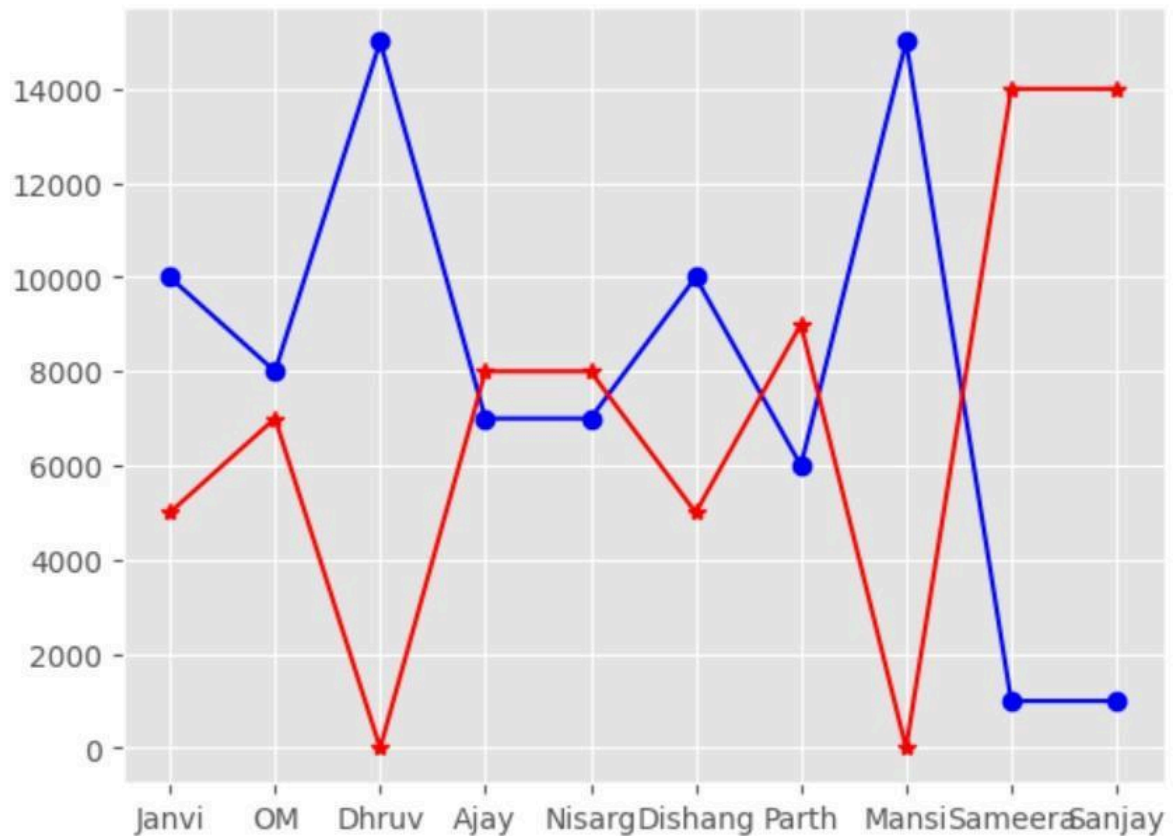
Data are

	Id	Name	Gender	Marks	Admission_Date	Department	Paid_Fees \
0	1	Janvi	Female	90	2018-03-05 00:00:00	IT	10000
1	2	OM	Male	85	30/6/2019	IT	8000
2	3	Dhruv	Male	88	2018-03-05 00:00:00	IT	15000
3	4	Ajay	Male	92	15/6/2019	Chemical	7000
4	5	Nisarg	Male	91	30/7/2019	Chemical	7000
5	6	Dishang	Male	88	18/6/2019	Civil	10000
6	7	Parth	Male	85	17/5/2019	Civil	6000
7	8	Mansi	Male	83	21/6/2019	Computer	15000
8	9	Sameera	Female	70	21/6/2019	Electrical	1000
9	10	Sanjay	Male	90	21/6/2019	Computer	1000

Pending_Fees

0	5000
1	7000
2	0
3	8000
4	8000
5	5000
6	9000
7	0
8	14000
9	14000

Students Marks details



PLOT SUB PLOTS:

```
In [32]: from matplotlib import pyplot as plt
from matplotlib import style
import pandas as pd
data=pd.read_excel("Downloads\FeesData.xlsx")
print("Data are\n", data)
style.use('ggplot')
plt.subplot(1,2,1)
plt.plot(data['Name'], data['Paid_Fees'], color="blue", marker="o")
plt.title("Paid Fees")
plt.subplot(1,2,2)
plt.plot(data['Name'], data['Pending_Fees'], color="red", marker="*")
plt.title("Students Marks details", fontsize=20, color="green")
plt.title("Pending Fees")
plt.show()
```

Data are

	Id	Name	Gender	Marks	Admission_Date	Department	Paid_Fees \
0	1	Janvi	Female	90	2018-03-05 00:00:00	IT	10000
1	2	OM	Male	85	30/6/2019	IT	8000
2	3	Dhruv	Male	88	2018-03-05 00:00:00	IT	15000
3	4	Ajay	Male	92	15/6/2019	Chemical	7000
4	5	Nisarg	Male	91	30/7/2019	Chemical	7000
5	6	Dishang	Male	88	18/6/2019	Civil	10000
6	7	Parth	Male	85	17/5/2019	Civil	6000
7	8	Mansi	Male	83	21/6/2019	Computer	15000
8	9	Sameera	Female	70	21/6/2019	Electrical	1000
9	10	Sanjay	Male	90	21/6/2019	Computer	1000

Pending_Fees

0	5000
1	7000
2	0
3	8000
4	8000
5	5000
6	9000
7	0
8	14000
9	14000

