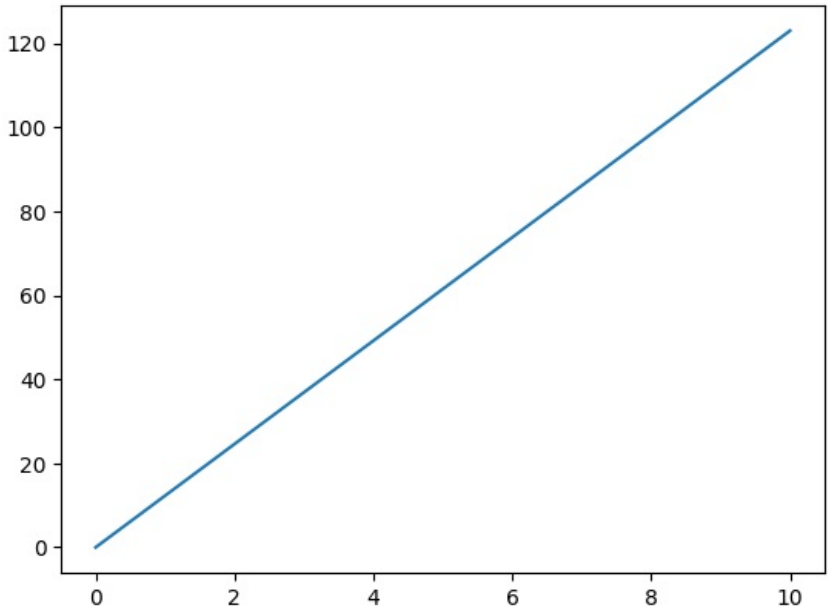
In [1]:
```
!pip install matplotlib
```

```
Requirement already satisfied: matplotlib in c:\users\mukhe\appdata\local\programs\python\python313\lib\site-pac
kages (3.10.0)
Requirement already satisfied: contourpy>=1.0.1 in c:\users\mukhe\appdata\local\programs\python\python313\lib\si
te-packages (from matplotlib) (1.3.1)
Requirement already satisfied: cycler>=0.10 in c:\users\mukhe\appdata\local\programs\python\python313\lib\site-p
ackages (from matplotlib) (0.12.1)
Requirement already satisfied: fonttools>=4.22.0 in c:\users\mukhe\appdata\local\programs\python\python313\lib\s
ite-packages (from matplotlib) (4.55.8)
Requirement already satisfied: kiwisolver>=1.3.1 in c:\users\mukhe\appdata\local\programs\python\python313\lib\s
ite-packages (from matplotlib) (1.4.8)
Requirement already satisfied: numpy>=1.23 in c:\users\mukhe\appdata\local\programs\python\python313\lib\site-pa
ckages (from matplotlib) (2.2.2)
Requirement already satisfied: packaging>=20.0 in c:\users\mukhe\appdata\local\programs\python\python313\lib\sit
e-packages (from matplotlib) (24.1)
Requirement already satisfied: pillow>=8 in c:\users\mukhe\appdata\local\programs\python\python313\lib\site-pack
ages (from matplotlib) (11.1.0)
Requirement already satisfied: pyparsing>=2.3.1 in c:\users\mukhe\appdata\local\programs\python\python313\lib\si
te-packages (from matplotlib) (3.2.1)
Requirement already satisfied: python-dateutil>=2.7 in c:\users\mukhe\appdata\local\programs\python\python313\li
b\site-packages (from matplotlib) (2.9.0.post0)
Requirement already satisfied: six>=1.5 in c:\users\mukhe\appdata\local\programs\python\python313\lib\site-packa
ges (from python-dateutil>=2.7->matplotlib) (1.16.0)
[notice] A new release of pip is available: 24.2 -> 25.0
[notice] To update, run: python.exe -m pip install --upgrade pip
```

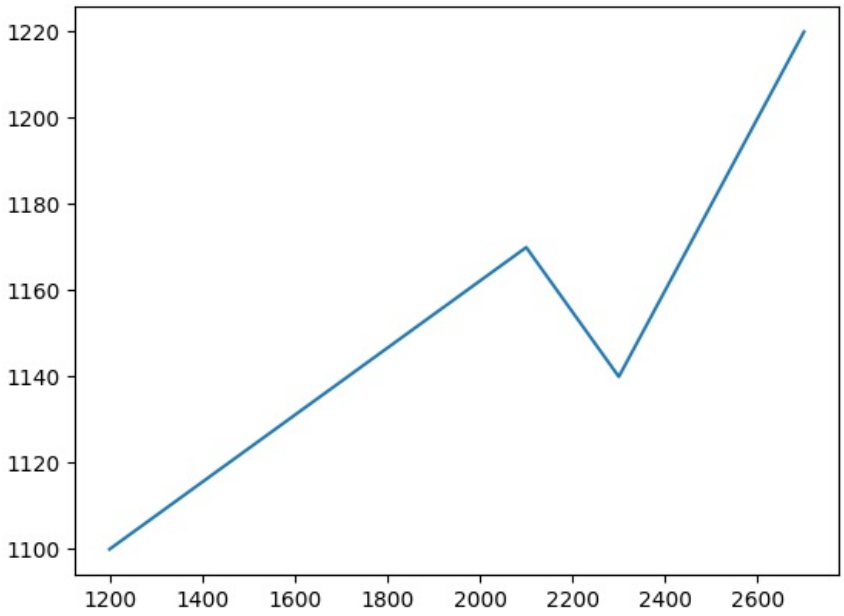
In [1]:
```
import matplotlib.pyplot as plt
import numpy as np
import pandas as pd
```

In [6]:
```
l1=[0,10]
l2=[0,123]
x=np.array(l1)
y=np.array(l2)
plt.plot(x,y)
plt.show()
```

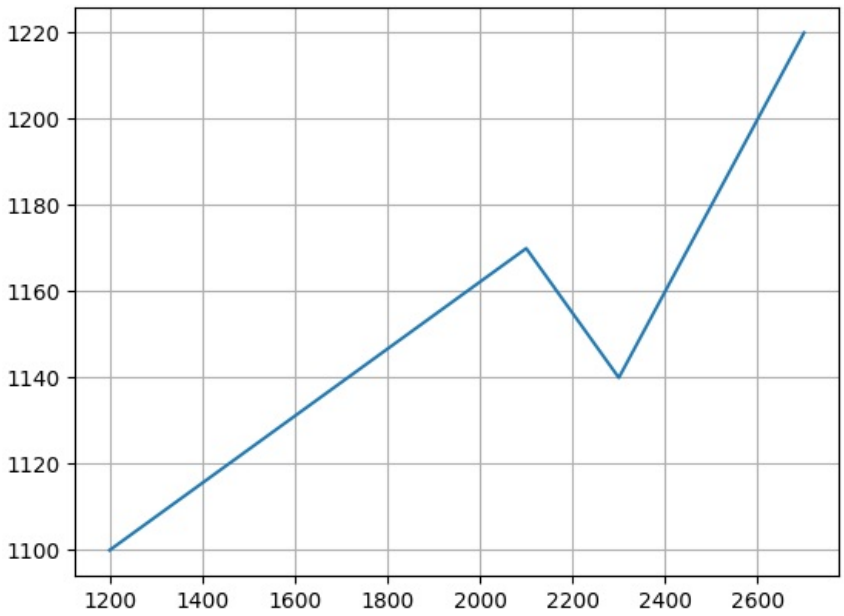


In [11]:
```
df=pd.DataFrame({'Cricket_Bat':["KB","REEBOK","ADIDAS","CEAT"],'MRP':[1200,2100,2300,2700],
                 'Weight':[1100,1170,1140,1220]})
plt.plot(df['MRP'],df['Weight'])
```

Out[11]:
```
[<matplotlib.lines.Line2D at 0x1726acce850>]
```

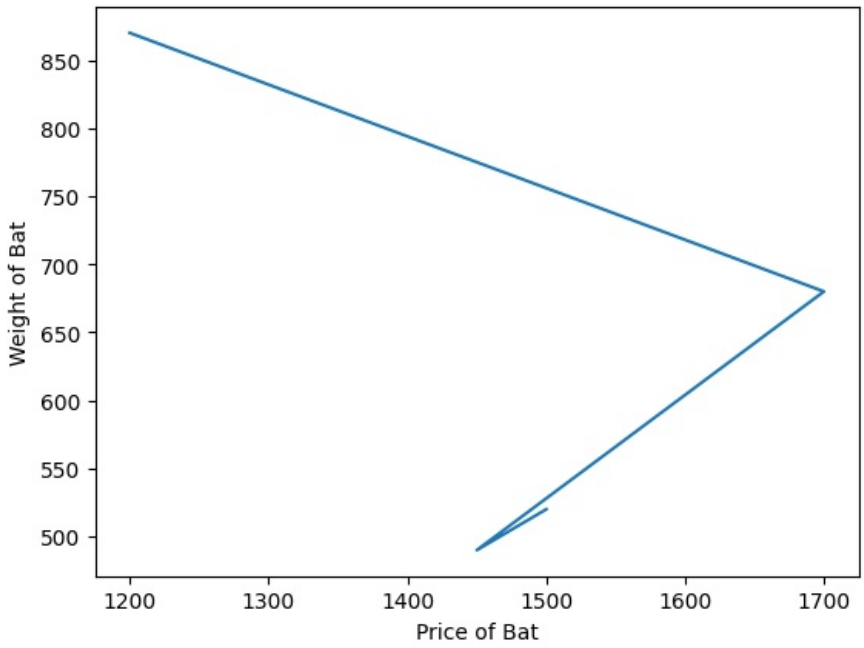


In [12]:
```
df=pd.DataFrame({'Cricket_Bat':["KB","REEBOK","ADIDAS","CEAT"],'MRP':[1200,2100,2300,2700],
                 'Weight':[1100,1170,1140,1220]})
plt.plot(df['MRP'],df['Weight'])
plt.grid()
```



Add labels to a plot:->

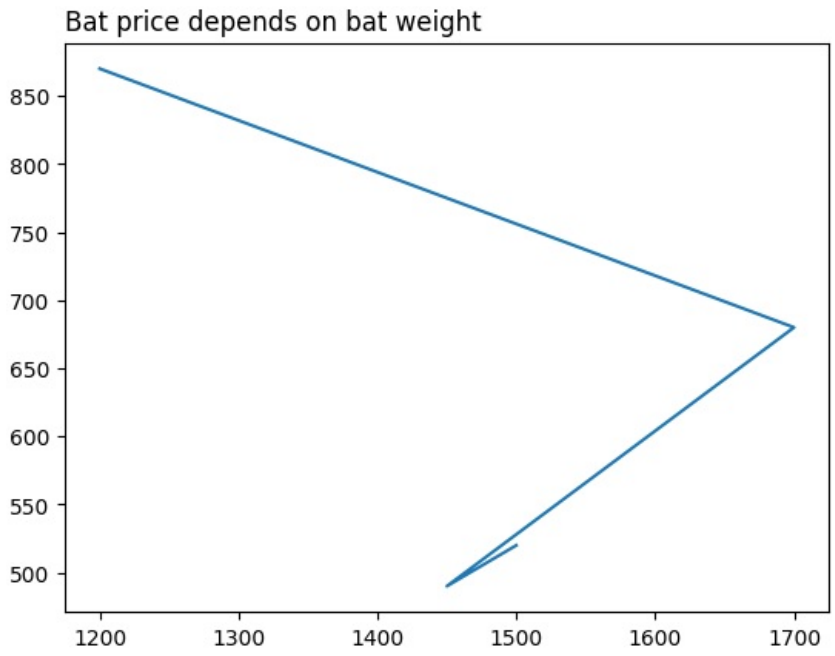
In [6]:
```
df=pd.DataFrame({"Bat_name":["KB","CEAT","MRF","REEBOK"],"Price":[1200,1700,1450,1500],"Weight":[870,680,490,52
plt.plot(df["Price"],df["Weight"])
plt.xlabel("Price of Bat")
plt.ylabel("Weight of Bat")
plt.show()
```



Add plot lines and positions

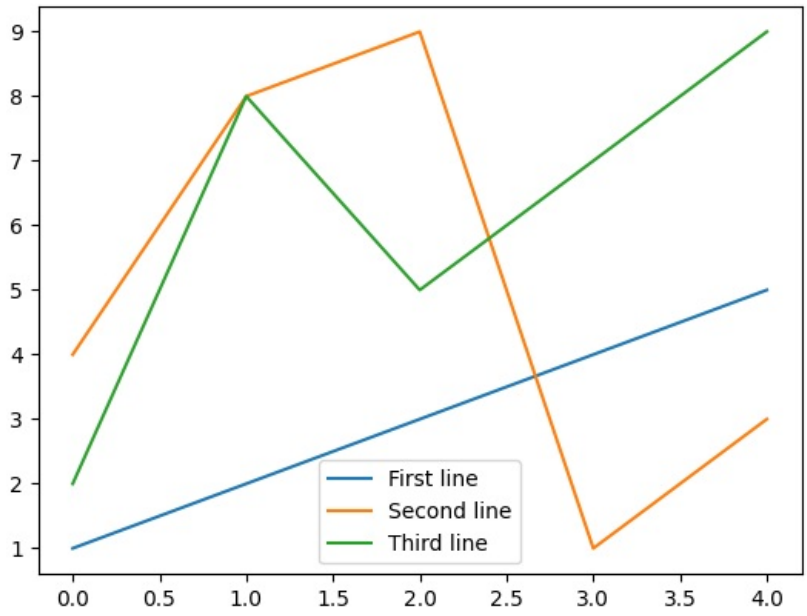
In [3]:
```
df=pd.DataFrame({"Bat_name":["KB","CEAT","MRF","REEBOK"],"Price":[1200,1700,1450,1500],"Weight":[870,680,490,52
plt.plot(df["Price"],df["Weight"])
plt.title("Bat price depends on bat weight",loc="left")
```

Out[3]:
```
Text(0.0, 1.0, 'Bat price depends on bat weight')
```



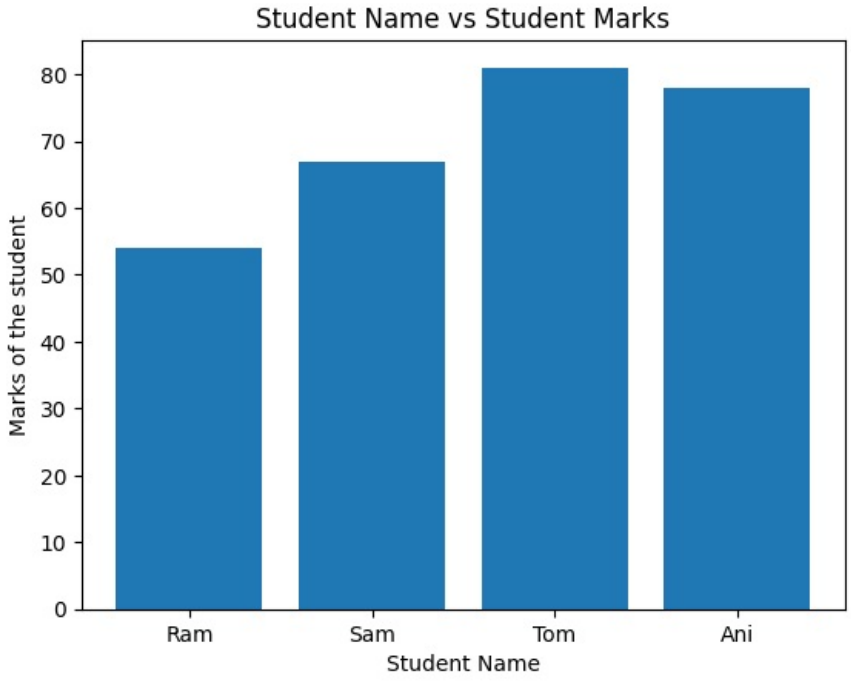
Matplotlib legend

In [4]:
```
a1=np.array([1,2,3,4,5])
a2=np.array([4,8,9,1,3])
a3=np.array([2,8,5,7,9])
plt.plot(a1,label='First line')
plt.plot(a2,label='Second line')
plt.plot(a3,label='Third line')
plt.legend(loc=0)
plt.show()
```



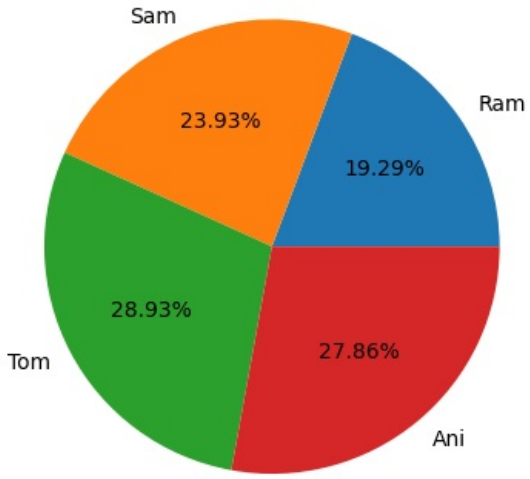
Bar Graph

In [3]:
```
student=np.array(["Ram","Sam","Tom","Ani"])
marks=([54,67,81,78])
plt.bar(student,marks)
plt.xlabel("Student Name")
plt.ylabel("Marks of the student")
plt.title("Student Name vs Student Marks")
plt.show()
```



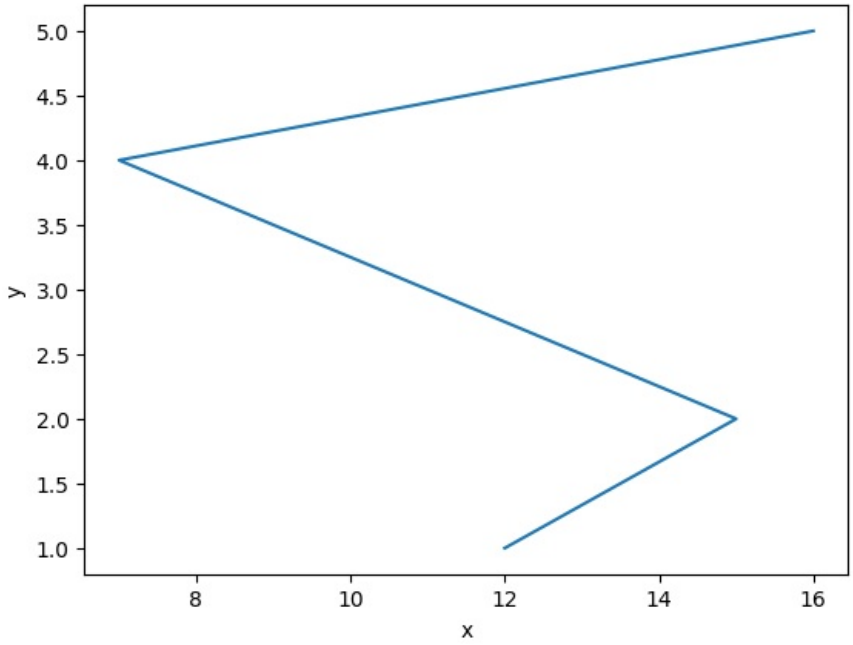
Py Chart:->

In [5]:
```
student=np.array(["Ram","Sam","Tom","Ani"])
marks=np.array([54,67,81,78])
plt.pie(marks,labels=student,autopct="%1.2f%%")
plt.show()
```



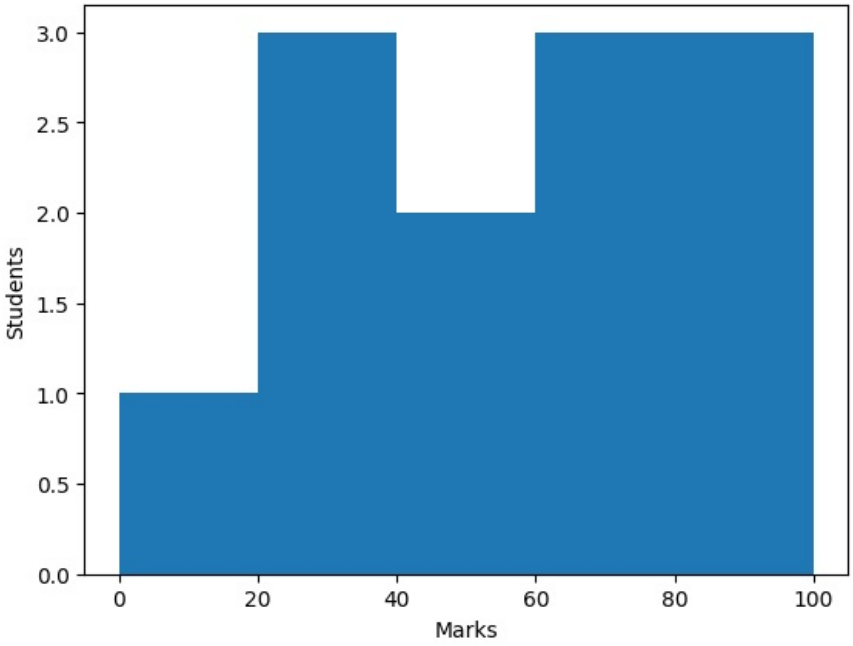
Line Graph:->

In [7]:
```
x=[12,15,11,7,16]
y=[1,2,3,4,5]
plt.plot(x,y)
plt.xlabel('x')
plt.ylabel('y')
plt.show()
```



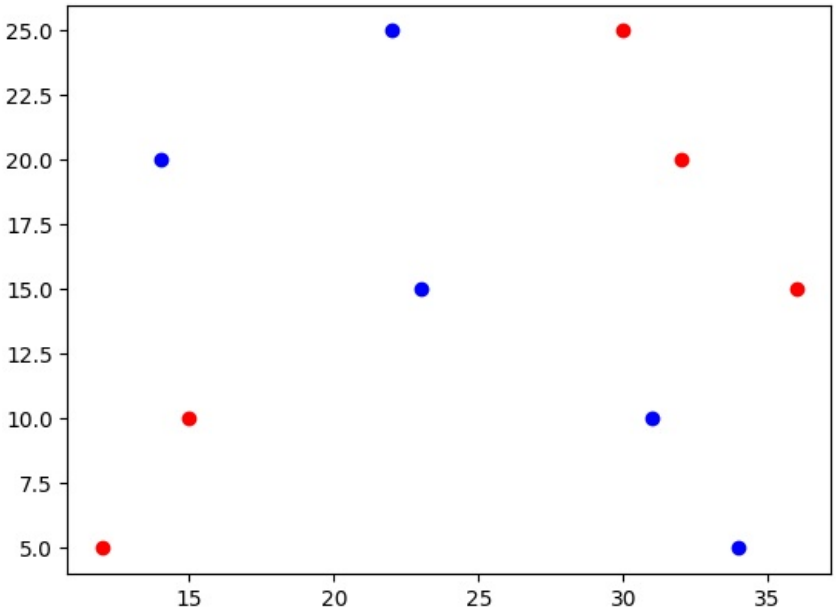
Histogram:->

In [9]:
```
marks=np.array([54,67,81,78,56,71,92,87,34,21,30,19])
plt.hist(marks,bins=[0,20,40,60,80,100])
plt.xlabel("Marks")
plt.ylabel("Students")
plt.show()
```



Scatter Plot():->

In [11]:
```
team1=([34,31,23,14,22])
team2=([12,15,36,32,30])
range1=([5,10,15,20,25])
plt.scatter(team1,range1,color='b')
plt.scatter(team2,range1,color='r')
plt.show()
```



In [ ]:
```

```

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