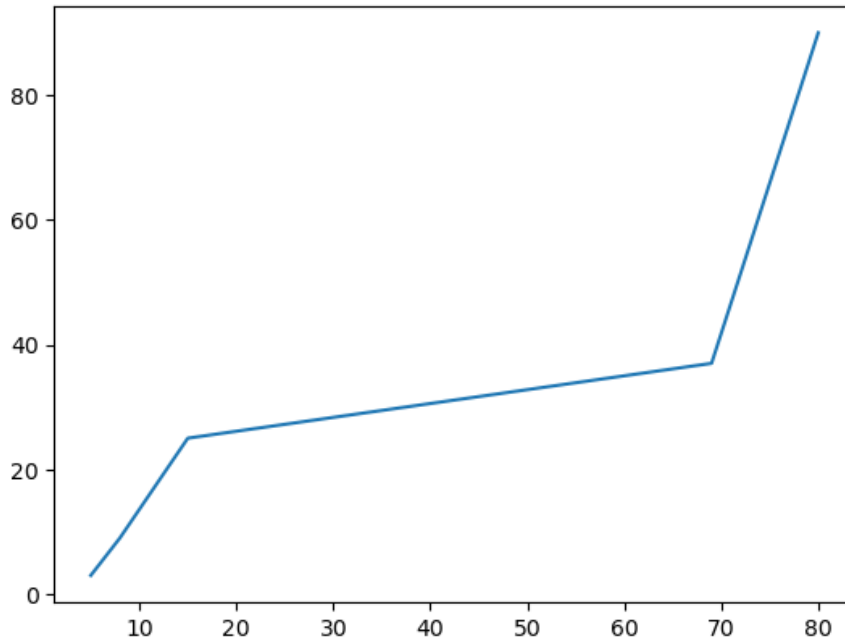```
In [2]: import pandas as pd
        import numpy as np
        #the import file of matplot
        import matplotlib.pyplot as plt
```

```
In [4]: x=np.array([5,8,15,69,80])
        y=np.array([3,9,25,37,90])
        #plot the graph with single cordinate

        plt.plot(x,y)
```
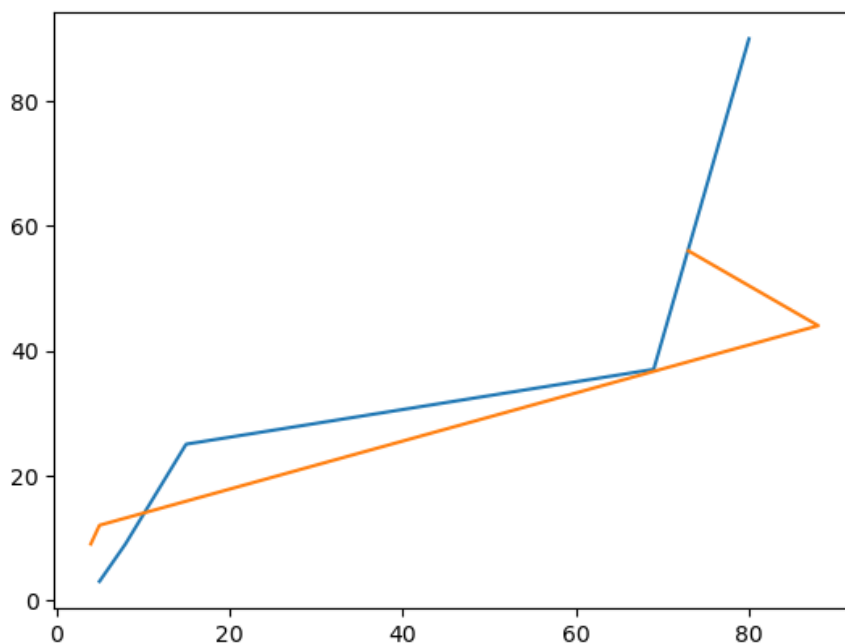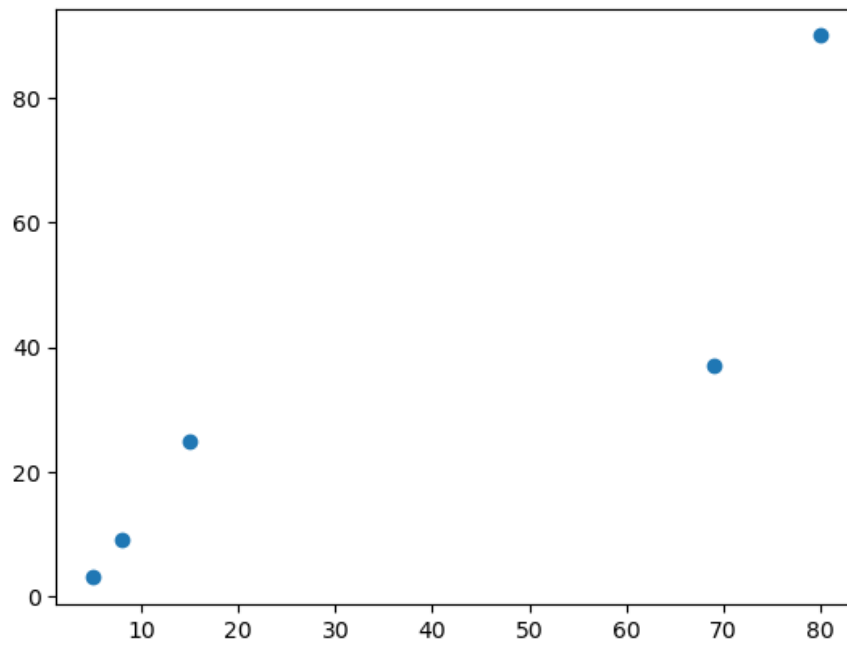
Out[4]: [<matplotlib.lines.Line2D at 0x1e0e50e0c50>]



```
In [8]: x1=np.array([4,5,88,73])
        y1=np.array([9,12,44,56])
        # plt.plot(x1,y1)
        # plt.plot(x,y)
        #plot the 2 graph cordinate in one graph ....
        plt.plot(x,y,x1,y1)
```
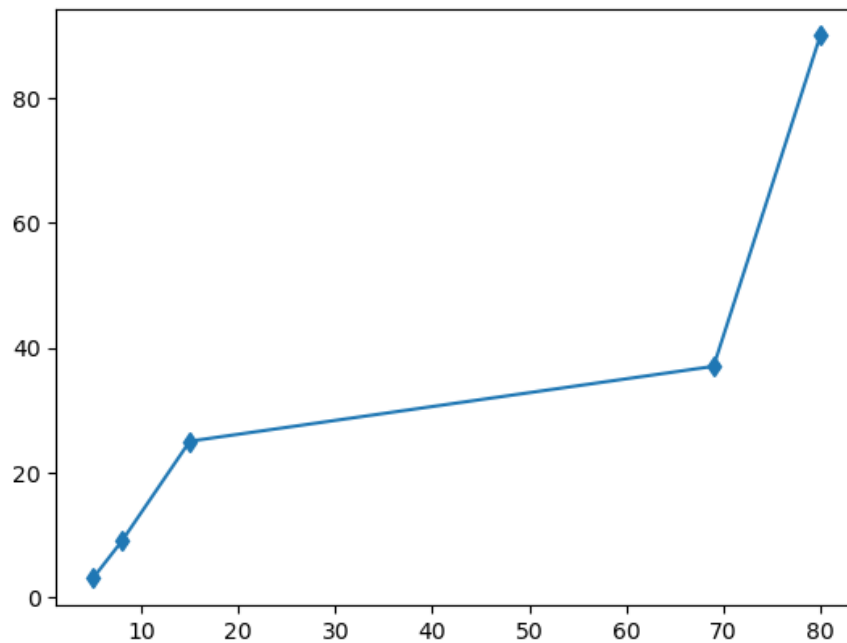
Out[8]: [<matplotlib.lines.Line2D at 0x1e0e5a86b10>,
         <matplotlib.lines.Line2D at 0x1e0e5a870d0>]

In [11]: `#print the dots with the using the o ......`
`plt.plot(x,y,'o')`

Out[11]: [<matplotlib.lines.Line2D at 0x1e0e51e86d0>]
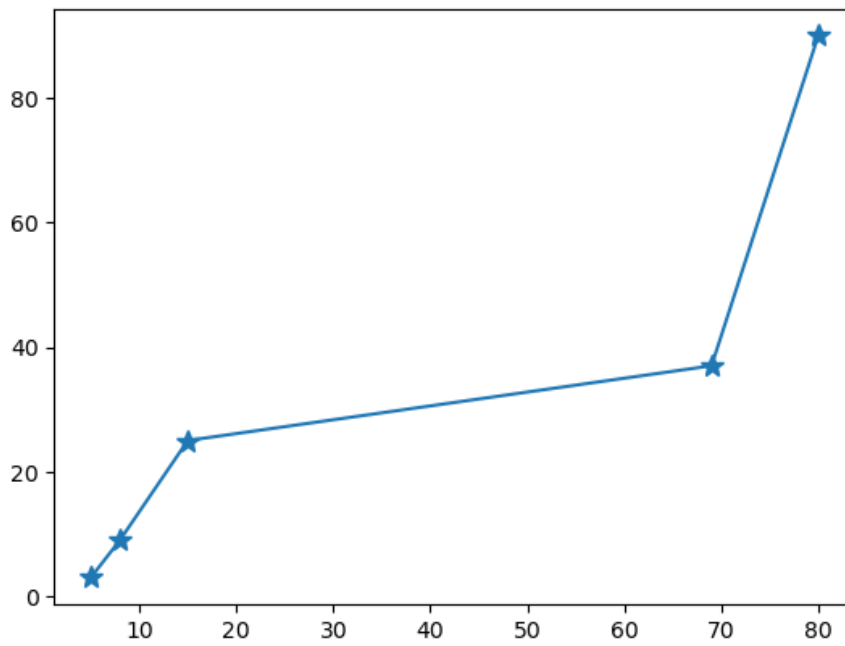


In [16]: `#when cordinate is matched tht time the dot is printed`
`plt.plot(x,y,marker='d')`

Out[16]: [<matplotlib.lines.Line2D at 0x1e0e5afd910>]

`#the markers(star size ) is increased`
`plt.plot(x,y,marker='*',ms=10)`

`[<matplotlib.lines.Line2D at 0x1e0e5b6bb90>]`



`#add color in marker`
`plt.plot(x,y,marker='d',mec='r')`

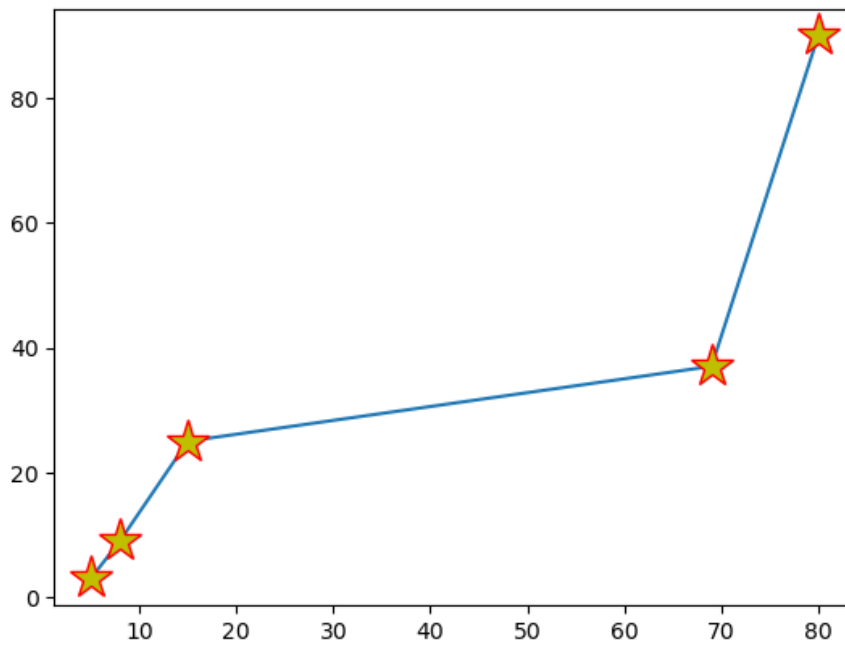`[<matplotlib.lines.Line2D at 0x1e0e6df1ad0>]`
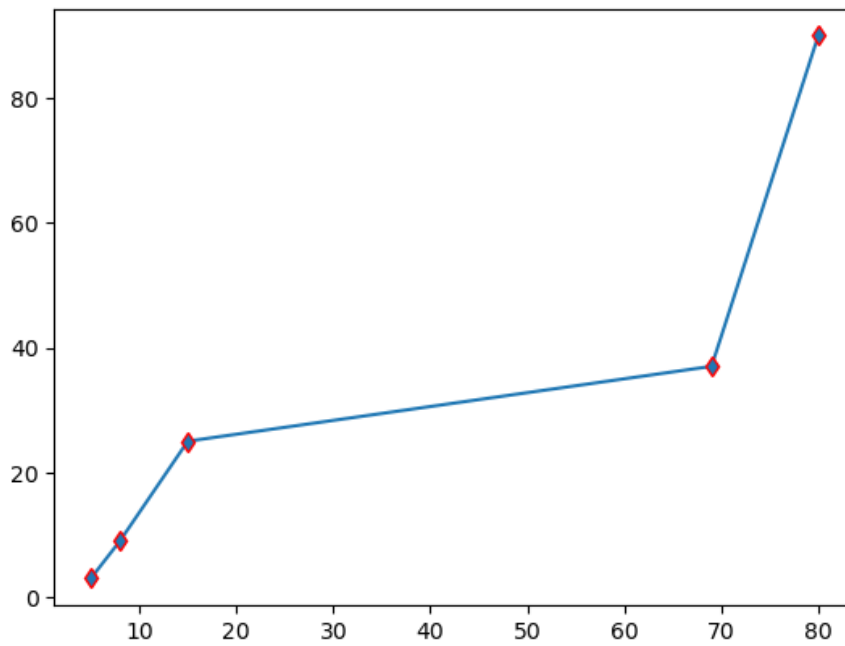
`#fill the color inside marker`
`plt.plot(x,y,marker='d',mfc='y')`

Out[21]: `[<matplotlib.lines.Line2D at 0x1e0ecf59090>]`
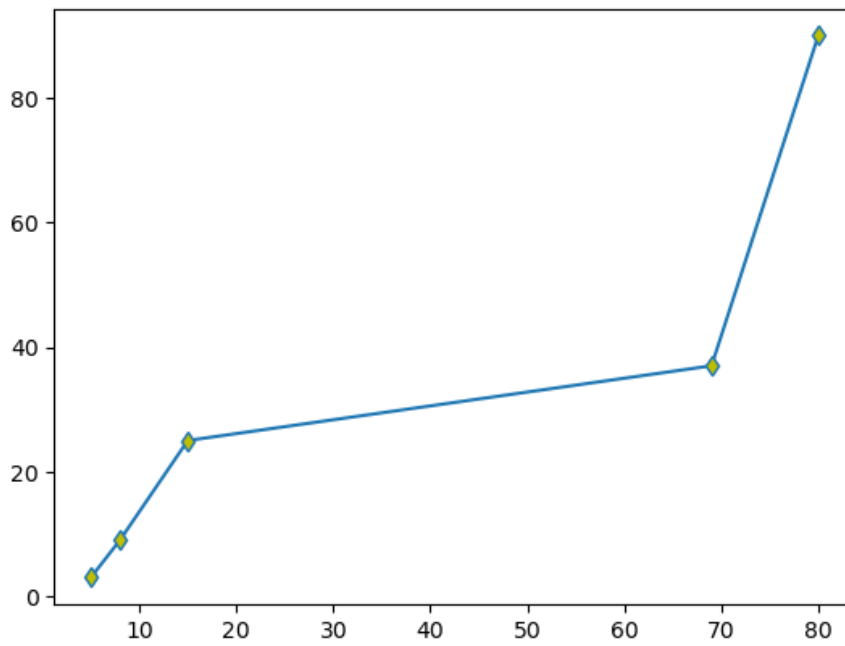


In [25]: `#fill the color ,border and size of the marker`
`plt.plot(x,y,marker='*',mfc='y',mec='r',ms=20)`

Out[25]: `[<matplotlib.lines.Line2D at 0x1e0ed006a10>]`

```
#the graph with the linewidth
plt.plot(x,y,linestyle='dashdot',color='g')
plt.plot(x1,y1,linestyle='dashdot',color='m',linewidth=3)
```

`[<matplotlib.lines.Line2D at 0x1e0ed556a50>]`
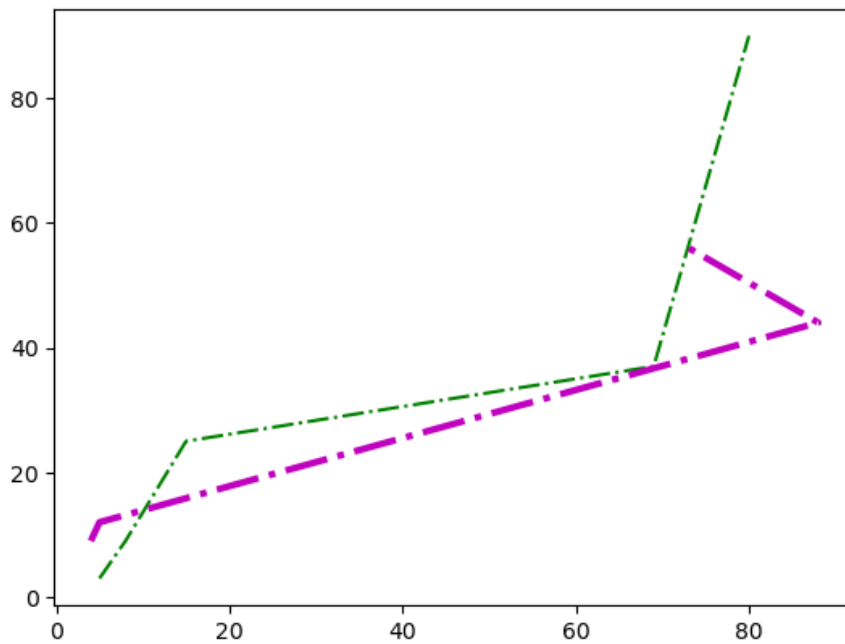
```
#the chart with graph title and label...
plt.title("Demo chart")
plt.xlabel("x-axis")
plt.ylabel("y-axis")
plt.plot(x,y,linestyle='dashdot',color='g')
plt.plot(x1,y1,linestyle='dashdot',color='m',linewidth=1)
```

`[<matplotlib.lines.Line2D at 0x1e0ec972f10>]`

```
In [41]: #change the font size of the title and the location of the title
         font={'size':15,'color':'b'}
         plt.title("Demo chart",fontdict=font,loc='right')
         plt.xlabel("x-axis")
         plt.ylabel("y-axis")
         plt.plot(x,y,linestyle='dashdot',color='g')
         plt.plot(x1,y1,linestyle='dashdot',color='m',linewidth=1)
```
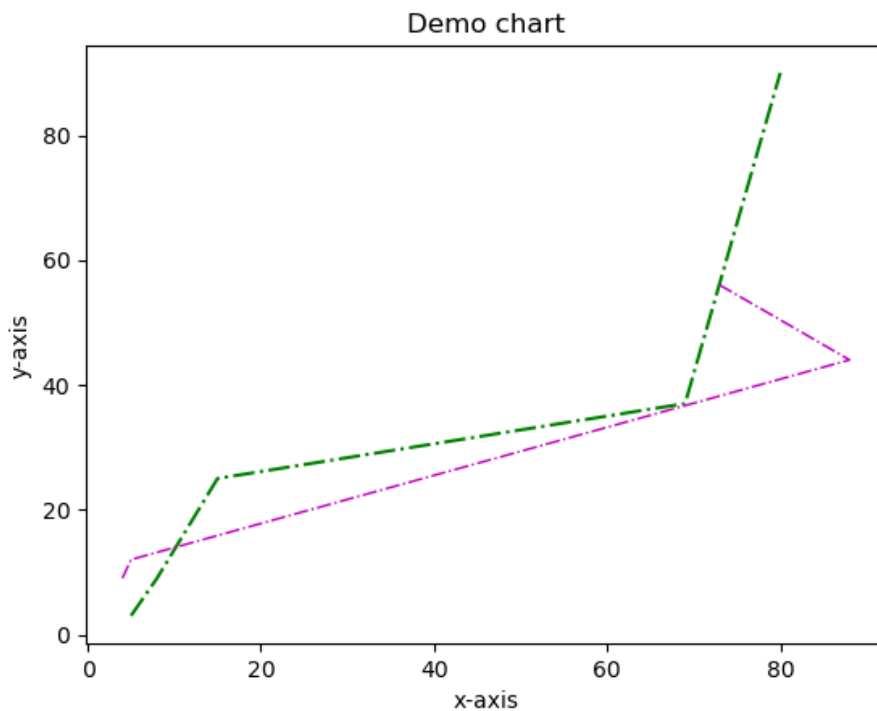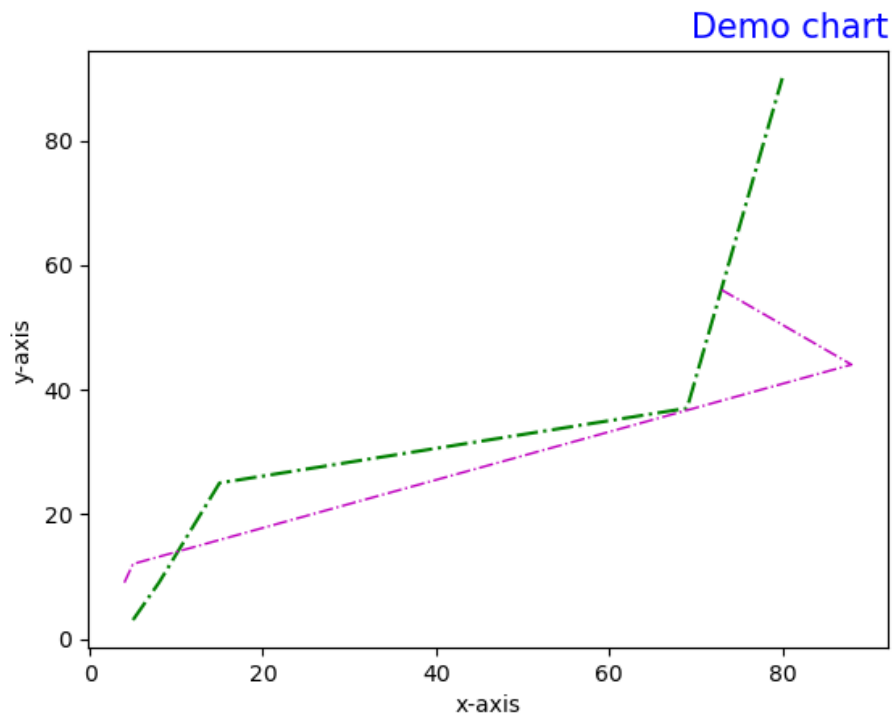
Out[41]: [<matplotlib.lines.Line2D at 0x1e0eea41c90>]

```python
#change the font size of the title and the location of the title
font={'size':15,'color':'b'}
plt.title("Demo chart",fontdict=font,loc='right')
plt.xlabel("x-axis")
plt.ylabel("y-axis")
plt.plot(x,y,linestyle='dashdot',color='g')
plt.plot(x1,y1,linestyle='dashdot',color='m',linewidth=1)

#grid line in your graph with respect to x and y
plt.grid()

#grid line in your graph with respect to x
plt.grid(axis='y')

#grid line in your graph with respect to  y  and also the add the linestyle in dotted line . and add

plt.grid(axis='x',linestyle=':',color="b")
```
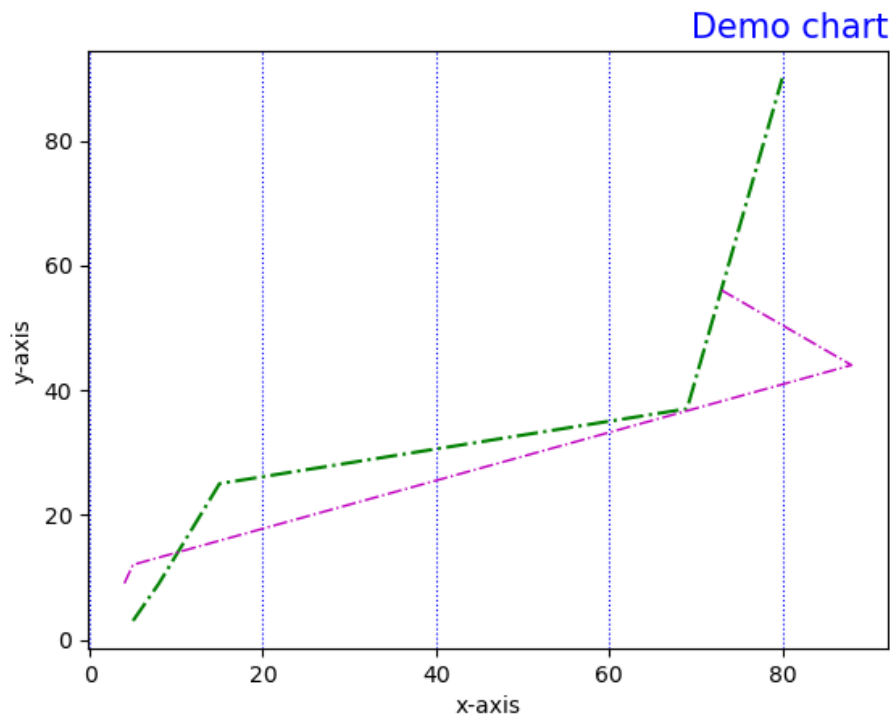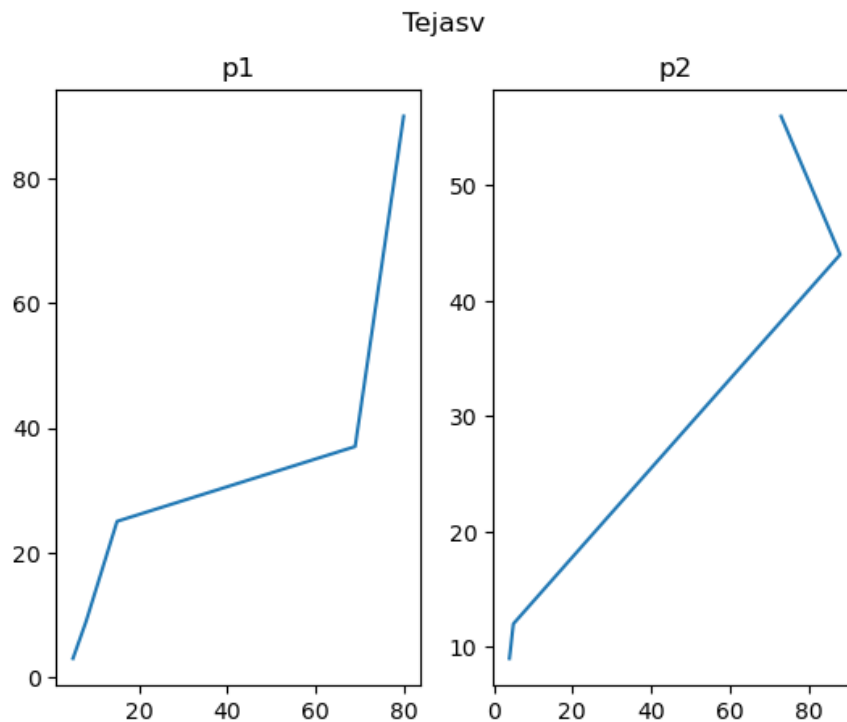
```
In [62]: #plt.subpplot(row,column,columnindex)
         plt.subplot(1,2,1)
         plt.title("p1")
         plt.plot(x,y)
         plt.subplot(1,2,2)
         plt.title("p2")
         plt.plot(x1,y1)
         plt.suptitle("Tejasv")
```

Out[62]: Text(0.5, 0.98, 'Tejasv')


```
In [63]: #read a data from the csv file
         pokemon=pd.read_csv('studentmark.csv')
         print(pokemon)
```

```
   Sr.No StudentName  CCN  WS  CS  MLP  FLUTTER  LARAVEL
0      1    Bhavdip   95  94  85   74       52       65
1      2   Digvijay   96  85  87   75       96       45
2      3       Smit   74  85  96   74       85       75
3      4     Tejasv   89  98  59   96       75       93
4      5     Uzzama   82  83  84   94       97       97
```

```
In [64]: #fetch the record from the csv file
         print(pokemon.loc[3])
```

```
Sr.No              4
StudentName   Tejasv
CCN               89
WS                98
CS                59
MLP               96
FLUTTER           75
LARAVEL           93
Name: 3, dtype: object
```

```
In [65]: #sum the all column
         pokemon['Total']=pokemon['WS']+pokemon['CS']+pokemon['MLP']+pokemon['FLUTTER']+pokemon['CCN']+pokemo
         print(pokemon)
```

```
   Sr.No StudentName  CCN  WS  CS  MLP  FLUTTER  LARAVEL  Total
0      1    Bhavdip   95  94  85   74       52       65    465
1      2   Digvijay   96  85  87   75       96       45    484
2      3       Smit   74  85  96   74       85       75    489
3      4     Tejasv   89  98  59   96       75       93    510
4      5     Uzzama   82  83  84   94       97       97    537
```

```
In [66]: #create a new column name avg in csv file
         pokemon['Avg']=pokemon['Total']/6
         print(pokemon)

            Sr.No StudentName  CCN  WS  CS  MLP  FLUTTER  LARAVEL  Total        Avg
         0      1     Bhavdip   95  94  85   74       52       65    465  77.500000
         1      2    Digvijay   96  85  87   75       96       45    484  80.666667
         2      3       Smit   74  85  96   74       85       75    489  81.500000
         3      4      Tejasv   89  98  59   96       75       93    510  85.000000
         4      5      Uzzama   82  83  84   94       97       97    537  89.500000
```

```
In [67]: #create a new csv file
         pokemon.to_csv('studentdatabasem.csv')
```

```
In [68]: #fetch data from new csv file
         studentdata=pd.read_csv('studentdatabasem.csv')
         studentdata
```

Out[68]:

	Unnamed: 0	Sr.No	StudentName	CCN	WS	CS	MLP	FLUTTER	LARAVEL	Total	Avg
0	0	1	Bhavdip	95	94	85	74	52	65	465	77.500000
1	1	2	Digvijay	96	85	87	75	96	45	484	80.666667
2	2	3	Smit	74	85	96	74	85	75	489	81.500000
3	3	4	Tejasv	89	98	59	96	75	93	510	85.000000
4	4	5	Uzzama	82	83	84	94	97	97	537	89.500000

```
In [69]: plt.plot(studentdata['Total'],studentdata['Avg'])
```
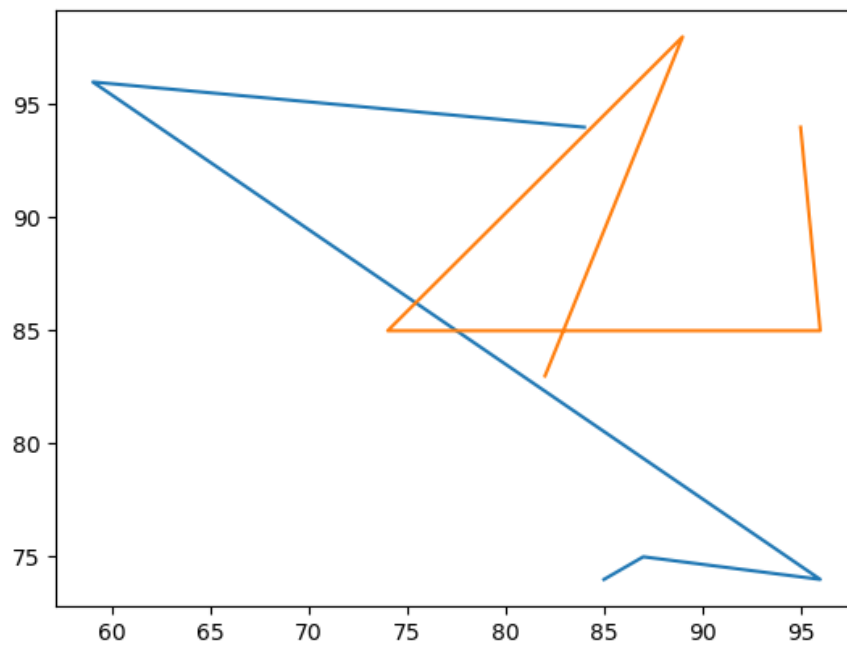
Out[69]: [<matplotlib.lines.Line2D at 0x1e0ee5dd2d0>]
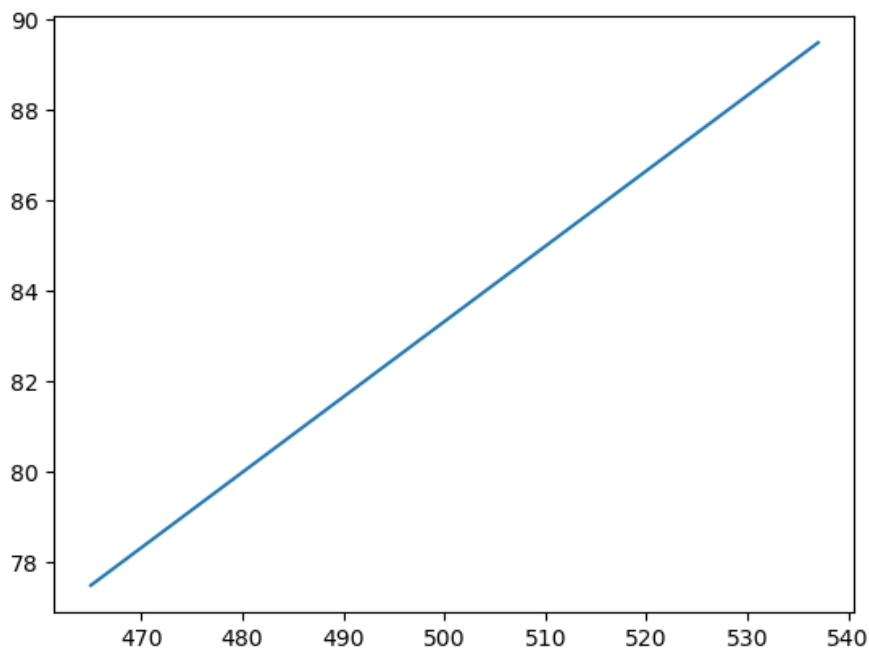
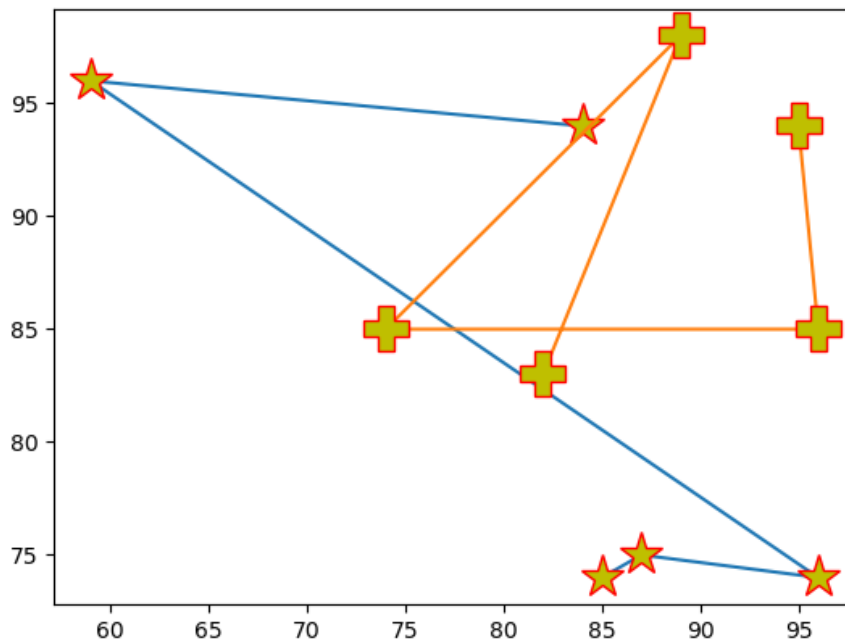`plt.plot(studentdata['Total'],studentdata['Avg'],'o')`

`[<matplotlib.lines.Line2D at 0x1e0f1d40c50>]`
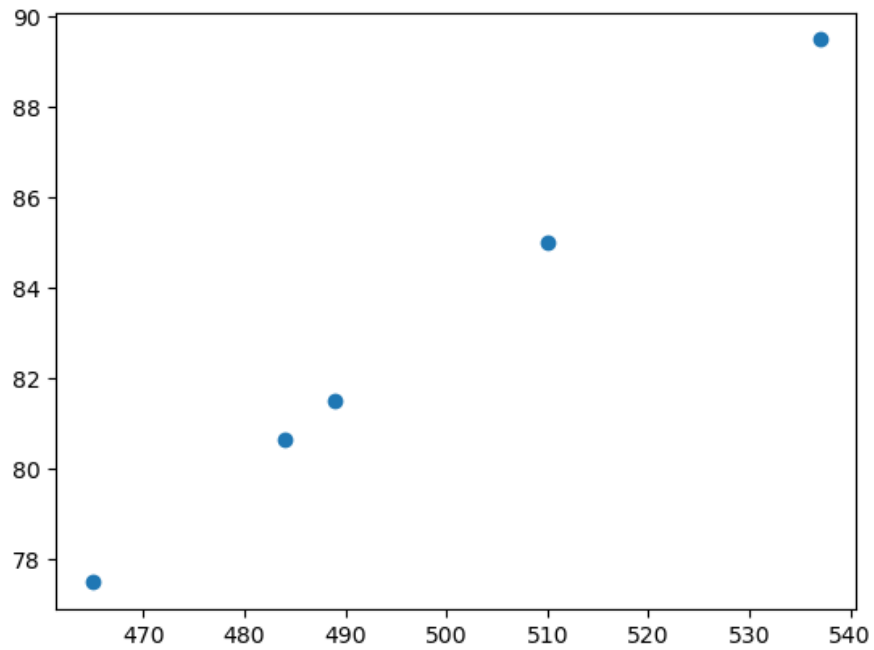
```
plt.plot(studentdata['CS'],studentdata['MLP'])
plt.plot(studentdata['CCN'],studentdata['WS'])
```

`[<matplotlib.lines.Line2D at 0x1e0f1bb5ad0>]`

```
plt.plot(studentdata['CS'],studentdata['MLP'],marker='*',mfc='y',mec='r',ms=20)
plt.plot(studentdata['CCN'],studentdata['WS'],marker='P',mfc='y',mec='r',ms=20)
```

Out[73]: [<matplotlib.lines.Line2D at 0x1e0f1c24fd0>]

In [90]:
```
plt.title("the student data mark of CS vs MLP and CCN vs WS ")
plt.xlabel("CS And CCN")
plt.ylabel("MLP and WS")
plt.plot(studentdata['CS'],studentdata['MLP'],linestyle='dashdot',color='g',marker='*',ms=15)
plt.plot(studentdata['CCN'],studentdata['WS'],linestyle='dashdot',color='m',linewidth=1,marker='P',m
# plt.grid()
# plt.grid(axis='y')
# plt.grid(axis='x')
```
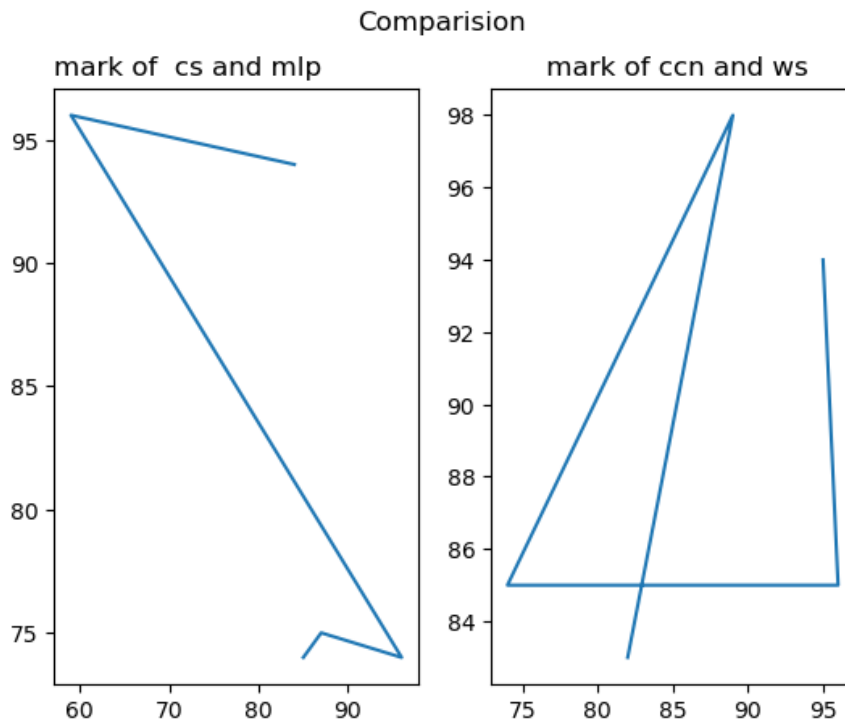
Out[90]: [<matplotlib.lines.Line2D at 0x1e0f50e4310>]
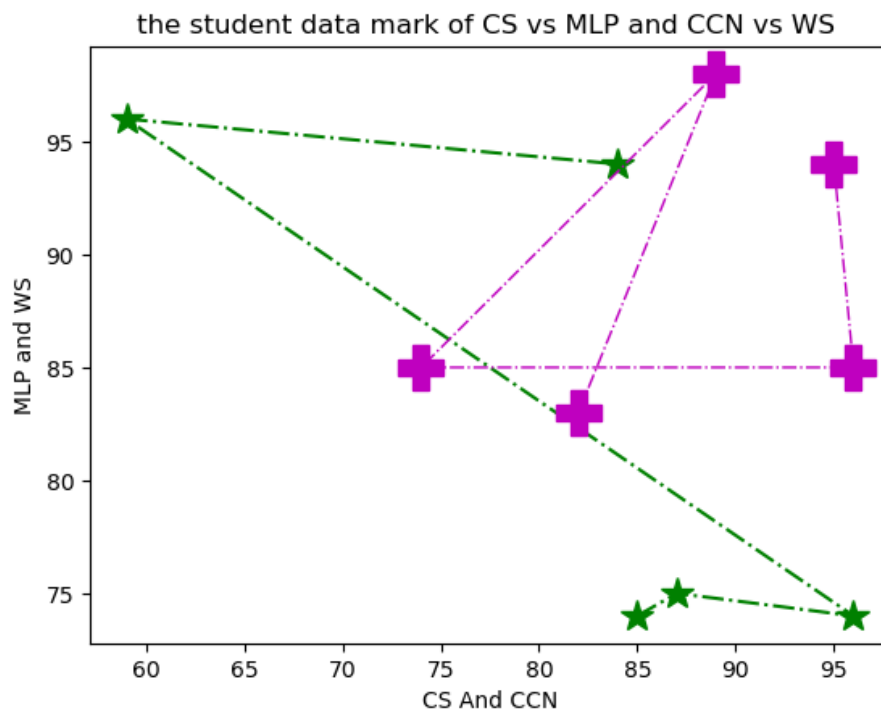
`#plt.subpplot(row,column,columnindex)`
```
plt.subplot(1,2,1)
plt.title("mark of  cs and mlp")
plt.plot(studentdata['CS'],studentdata['MLP'])
plt.subplot(1,2,2)
plt.title(" mark of ccn and ws")
plt.plot(studentdata['CCN'],studentdata['WS'],)
plt.suptitle("Comparision")
```
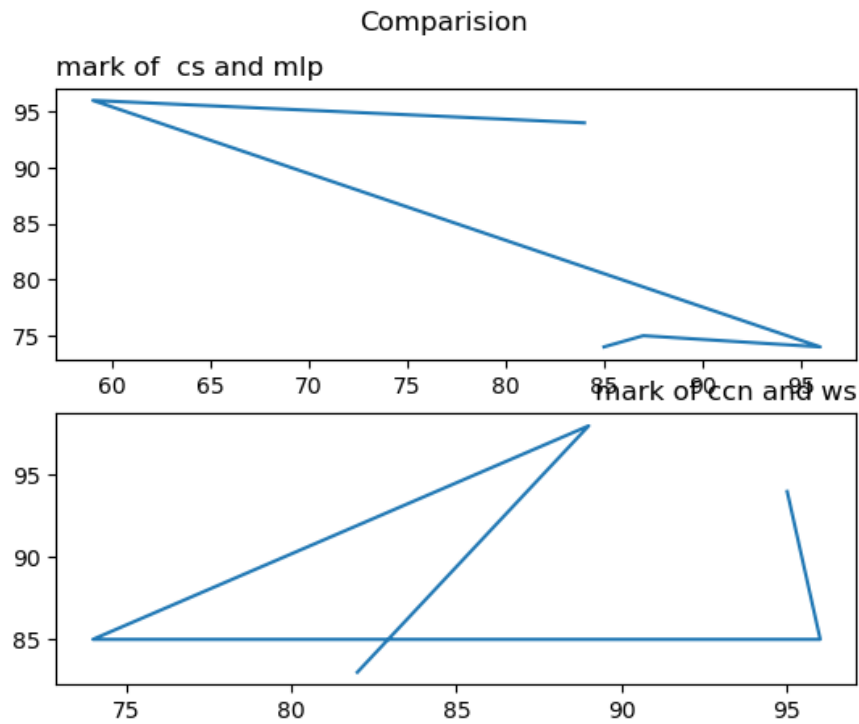
Out[92]: Text(0.5, 0.98, 'Comparision')

```
In [101]:  #plt.subpplot(row,column,columnindex)
           plt.subplot(2,1,1)
           plt.title("mark of  cs and mlp",loc='left')
           plt.plot(studentdata['CS'],studentdata['MLP'])
           plt.subplot(2,1,2)
           plt.title(" mark of ccn and ws",loc='right')
           plt.plot(studentdata['CCN'],studentdata['WS'],)
           plt.suptitle("Comparision")
```

Out[101]: Text(0.5, 0.98, 'Comparision')

In [ ]: