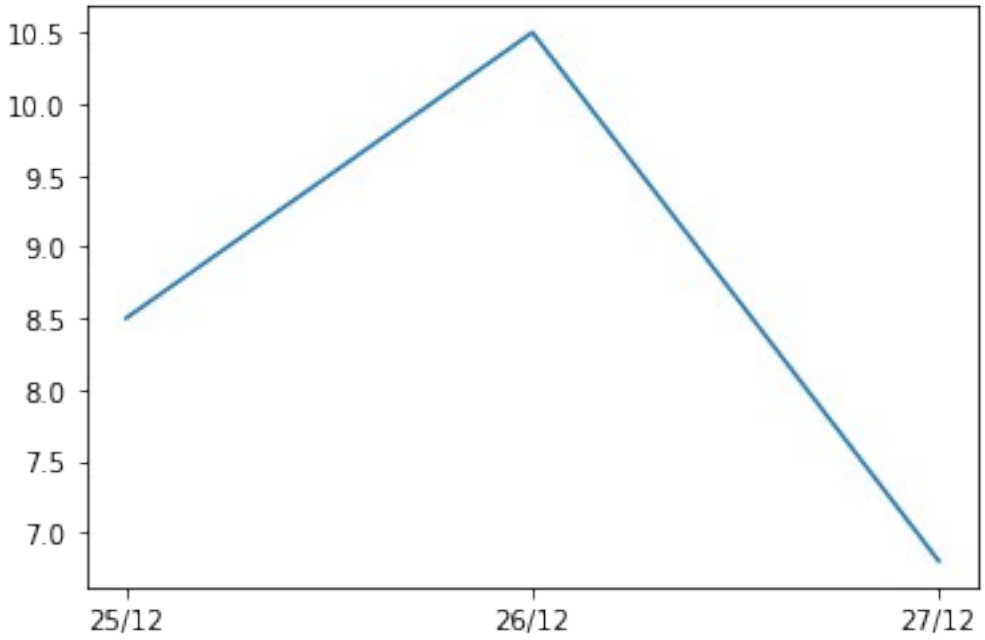
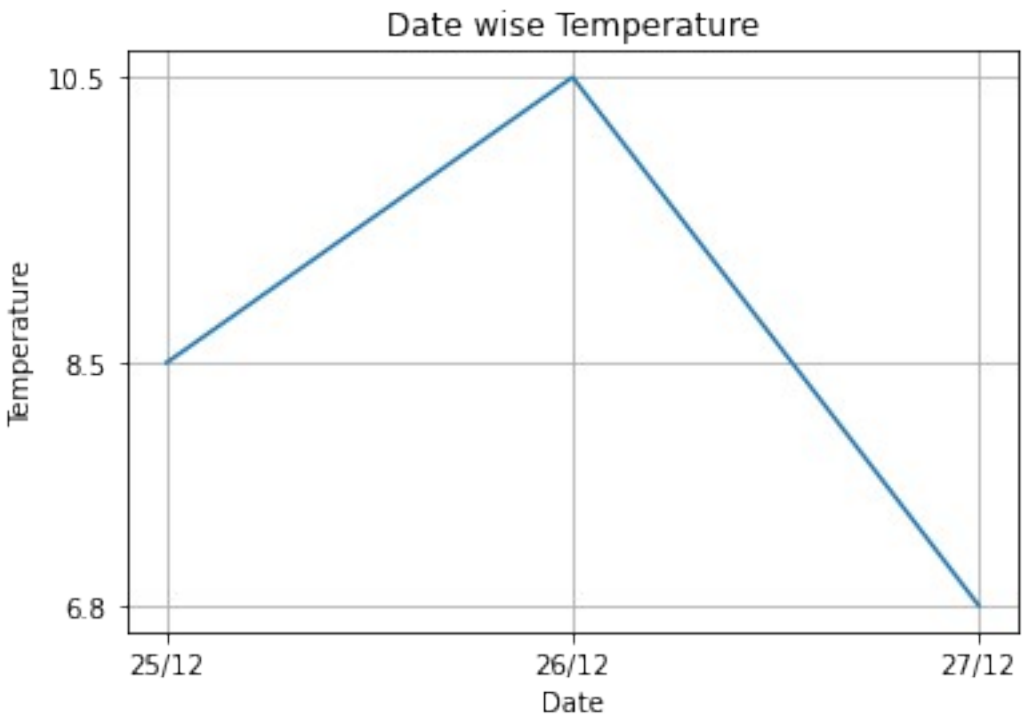
## Plotting a Line chart

```
import matplotlib.pyplot as plt
#list storing date in string format
date=["25/12","26/12","27/12"]
#list storing temperature values
temp=[8.5,10.5,6.8]
#create a figure plotting temp versus date
plt.plot(date, temp)
#show the figure
plt.show()
plt.savefig("date_vs_time")
```

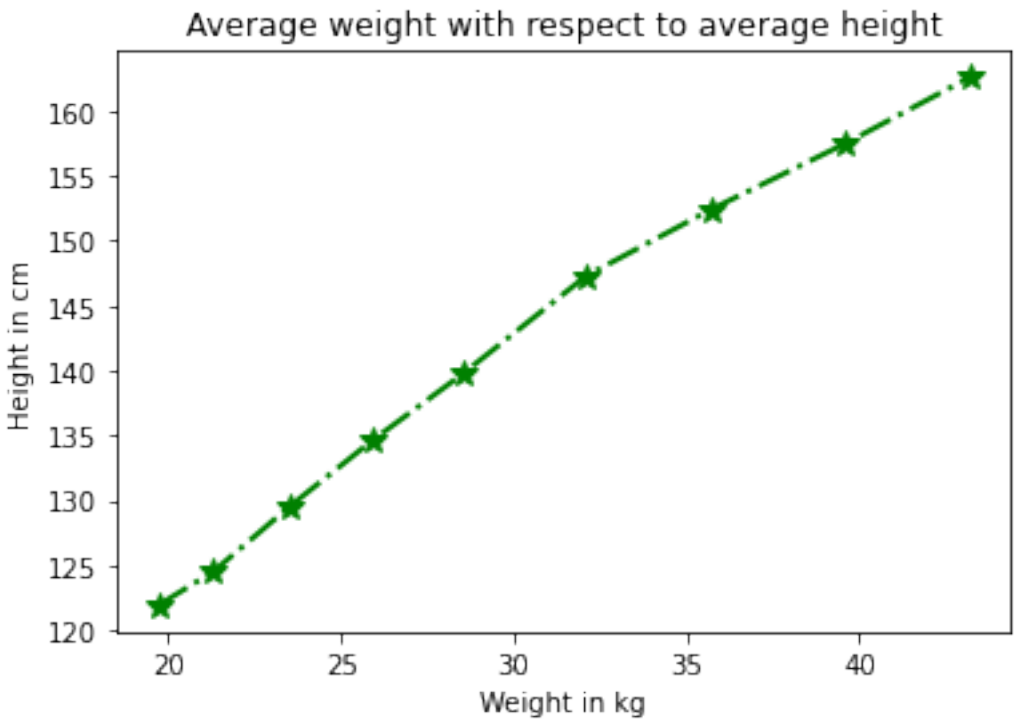



```
<Figure size 432x288 with 0 Axes>
```

```
import matplotlib.pyplot as plt
date=["25/12","26/12","27/12"]
temp=[8.5,10.5,6.8]
plt.plot(date, temp)
plt.xlabel("Date") #add the Label on x-axis
plt.ylabel("Temperature") #add the Label on y-axis
plt.title("Date wise Temperature") #add the title to the chart
plt.grid(True) #add gridlines to the background
plt.yticks(temp)
plt.show()
```




```
height = [121.9,124.5,129.5,134.6,139.7,147.3,
152.4, 157.5,162.6]
weight= [19.7,21.3,23.5,25.9,28.5,32.1,35.7,39.6,
43.2]
import matplotlib.pyplot as plt
import pandas as pd
height=[121.9,124.5,129.5,134.6,139.7,147.3,152.4,157.5,162.6]
weight=[19.7,21.3,23.5,25.9,28.5,32.1,35.7,39.6,43.2]
df=pd.DataFrame({"height":height,"weight":weight})
#Set xlabel for the plot
plt.xlabel('Weight in kg')
#Set ylabel for the plot
plt.ylabel('Height in cm')
#Set chart title:
plt.title('Average weight with respect to average height')
#plot using marker'-*' and line colour as green
plt.plot(df.weight,df.height,marker='*',markersize=10,color='green',li
newidth=2, linestyle='dashdot')
plt.show()
```

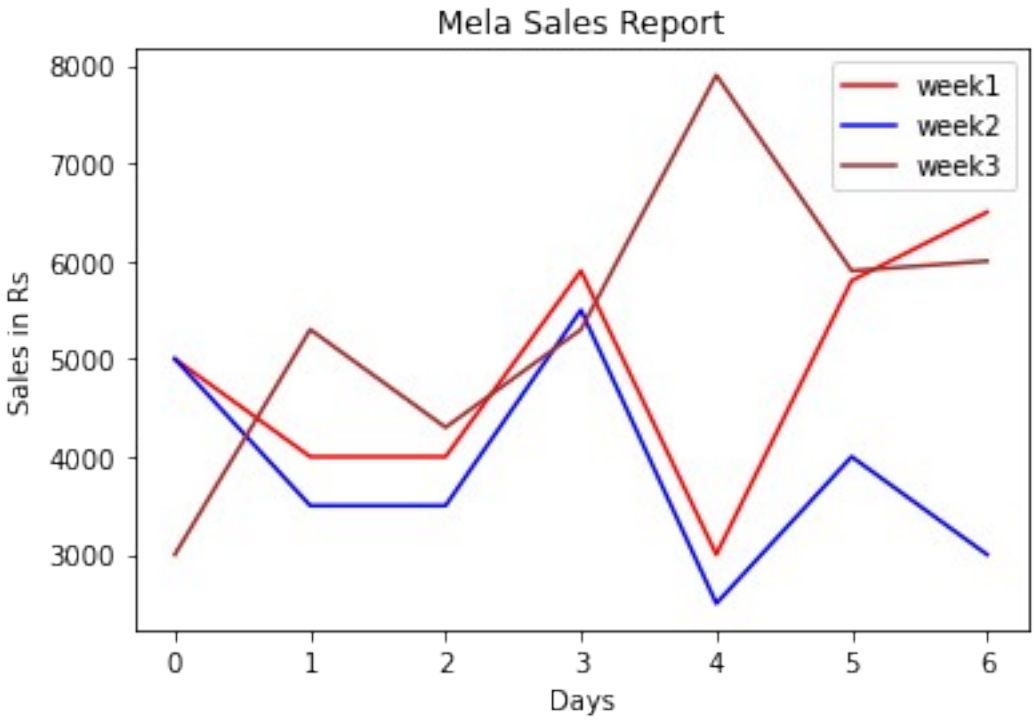



```
 week1=[5000, 4000, 4000 ,5900, 3000, 5800,6500]
week2 = [5000 ,3500, 3500 ,5500, 2500, 4000, 3000]
week3 =[3000 ,5300, 4300, 5300 ,7900, 5900, 6000]


df = pd.DataFrame({"week1":week1,"week2":week2,"week3":week3})

df
```

| | week1 | week2 | week3 |
|---|---|---|---|
| 0 | 5000 | 5000 | 3000 |
| 1 | 4000 | 3500 | 5300 |
| 2 | 4000 | 3500 | 4300 |
| 3 | 5900 | 5500 | 5300 |
| 4 | 3000 | 2500 | 7900 |
| 5 | 5800 | 4000 | 5900 |
| 6 | 6500 | 3000 | 6000 |

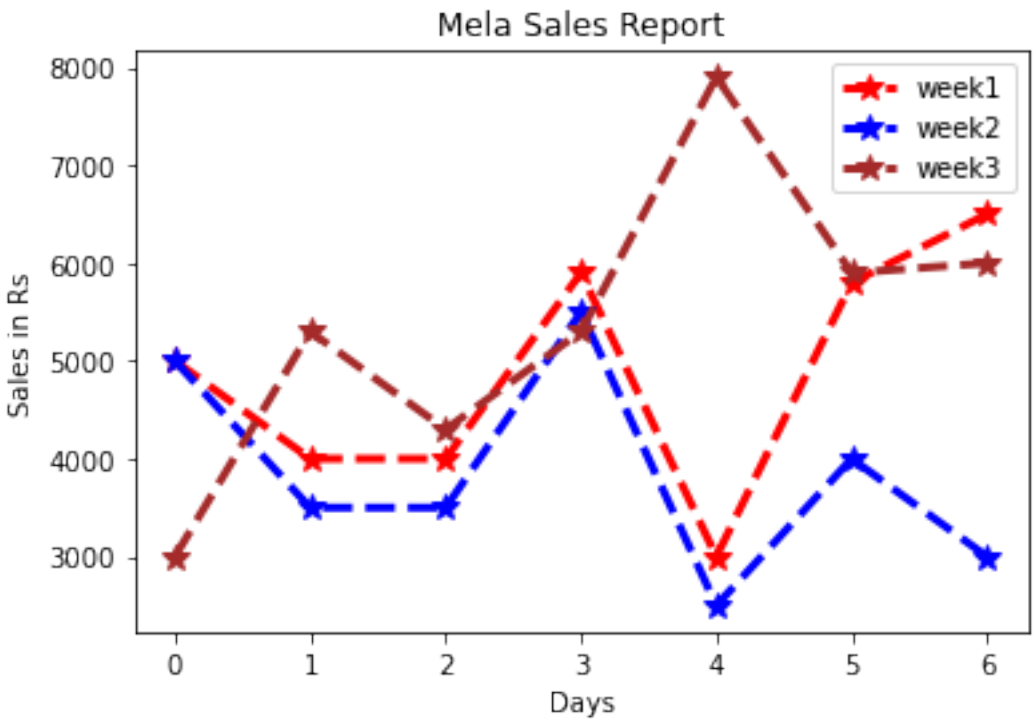
```
import pandas as pd
import matplotlib.pyplot as plt
df.plot(kind='line', color=['red','blue','brown'])
# Set title to "Mela Sales Report"
plt.title('Mela Sales Report')
# Label x axis as "Days"
plt.xlabel('Days')
# Label y axis as "Sales in Rs"
plt.ylabel('Sales in Rs')
#Display the figure
```

```
plt.show()
plt.savefig("mela_sales_report")
```




```
<Figure size 432x288 with 0 Axes>
```

```
# customize line graph
df.plot(kind='line',
color=['red','blue','brown'],marker="*",markersize=10,linewidth=3,line
style="--")
plt.title('Mela Sales Report')
plt.xlabel('Days')
plt.ylabel('Sales in Rs')
#store converted index of DataFrame to a list
# ticks = df.index.tolist()
#displays corresponding day on x axis
# plt.xticks(ticks,df.Day)
plt.show()
```

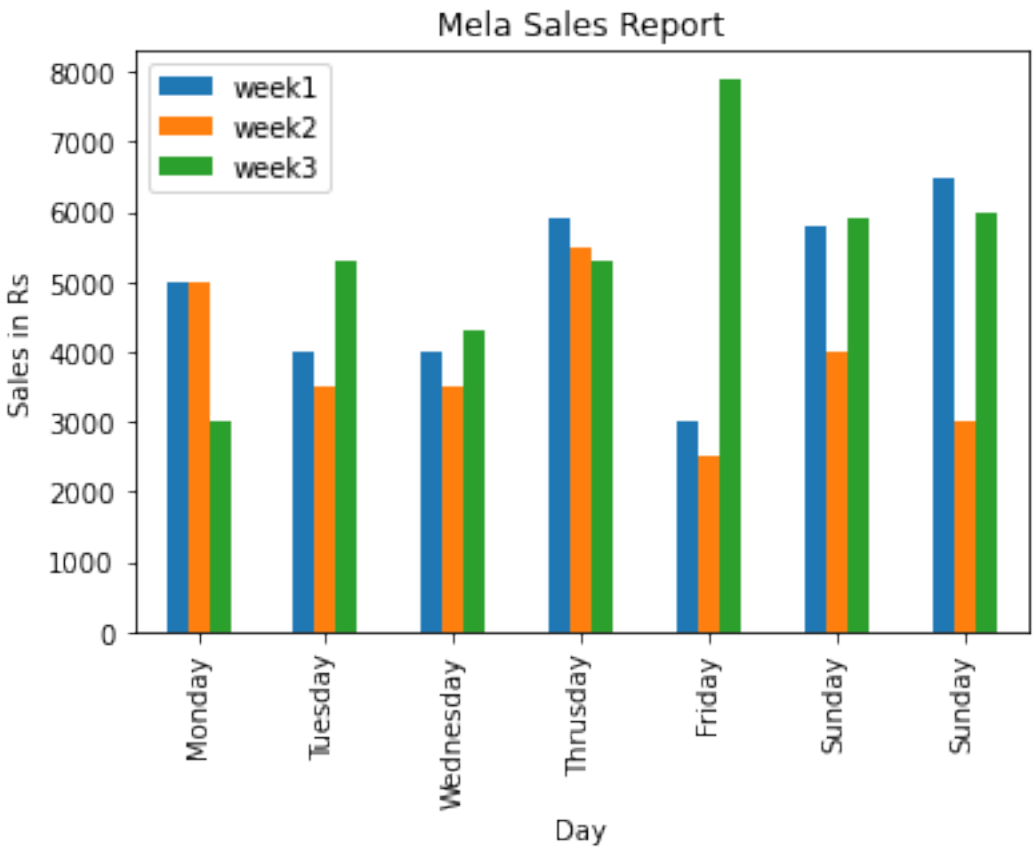



## Plotting Bar Chart

```
week1=[5000, 4000, 4000 ,5900, 3000, 5800,6500]
week2 = [5000 ,3500, 3500 ,5500, 2500, 4000, 3000]
week3 =[3000 ,5300, 4300, 5300 ,7900, 5900, 6000]
Day  =
["Monday","Tuesday","Wednesday","Thrusday","Friday","Sunday","Sunday"]

df =
pd.DataFrame({"week1":week1,"week2":week2,"week3":week3,"Day":Day})
df
```

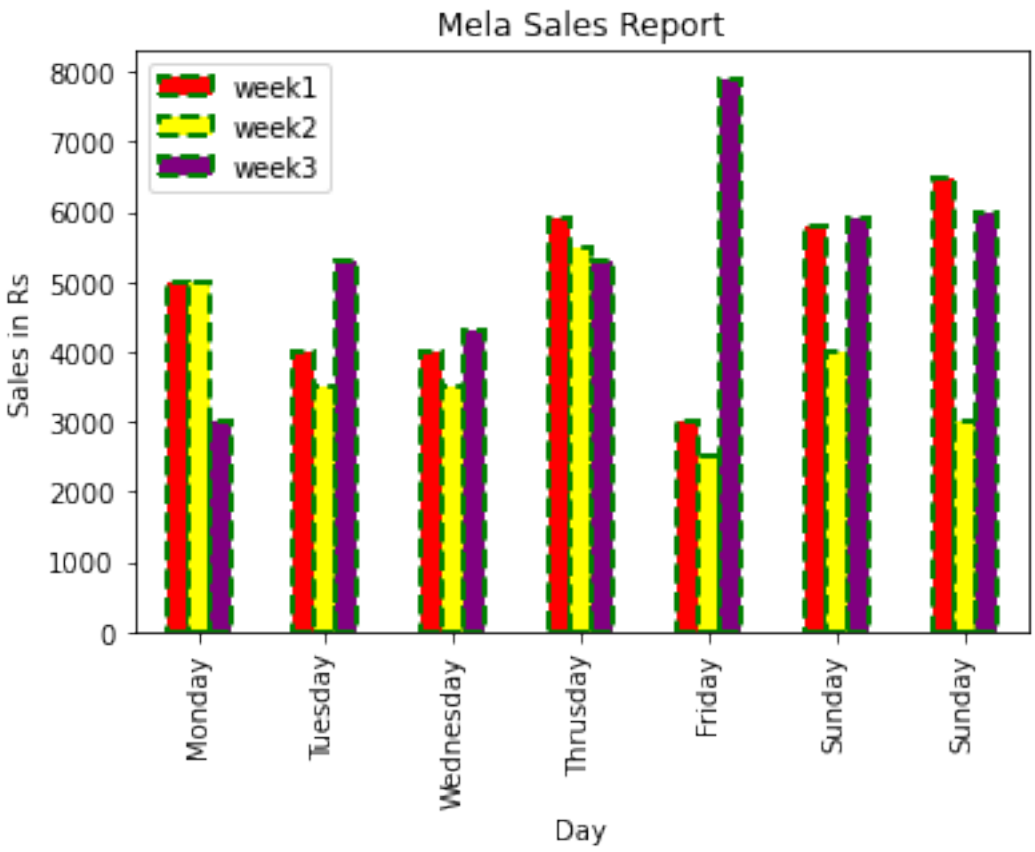
| | week1 | week2 | week3 | Day |
|---|---|---|---|---|
| 0 | 5000 | 5000 | 3000 | Monday |
| 1 | 4000 | 3500 | 5300 | Tuesday |
| 2 | 4000 | 3500 | 4300 | Wednesday |
| 3 | 5900 | 5500 | 5300 | Thrusday |
| 4 | 3000 | 2500 | 7900 | Friday |
| 5 | 5800 | 4000 | 5900 | Sunday |
| 6 | 6500 | 3000 | 6000 | Sunday |

```
# plots a bar chart with the column "Days" as x axis
df.plot(kind='bar',x='Day',title='Mela Sales Report')
#set title and set ylabel
plt.ylabel('Sales in Rs')
plt.show()
```



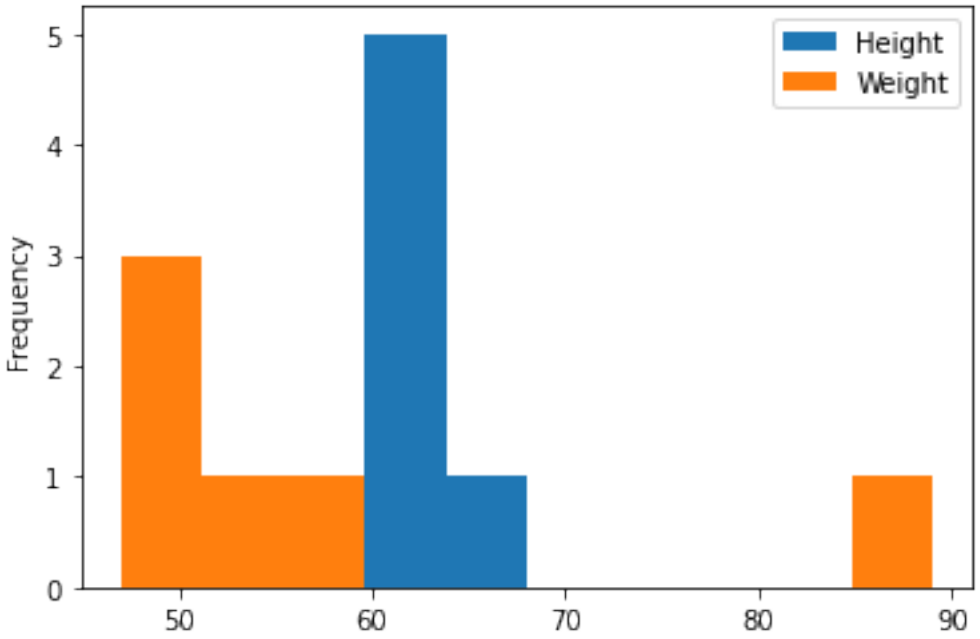

## Customising Bar Chart

```
df.plot(kind='bar',x='Day',title='Mela Sales Report',color=['red',
'yellow','purple'],edgecolor='Green',linewidth=2,linestyle='--')
#set title and set ylabel
plt.ylabel('Sales in Rs')
plt.show()
```



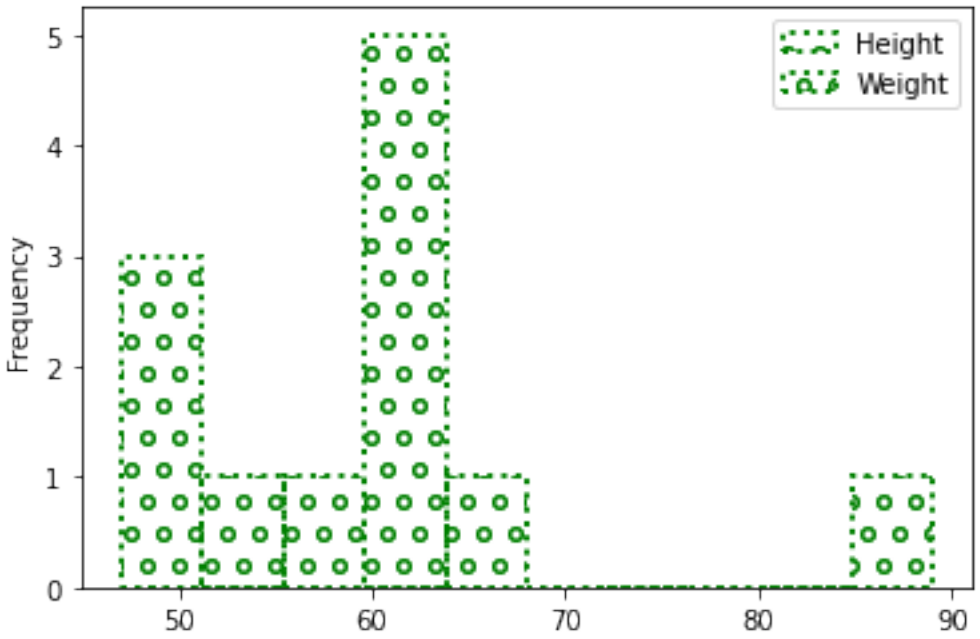

## plot histogram

```
import pandas as pd
import matplotlib.pyplot as plt
data = {'Name':['Arnav', 'Sheela', 'Azhar', 'Bincy', 'Yash', 'Nazar'],
'Height' : [60,61,63,65,61,60], 'Weight' : [47,89,52,58,50,47]}
df=pd.DataFrame(data)
df.plot(kind='hist')
plt.show()
```



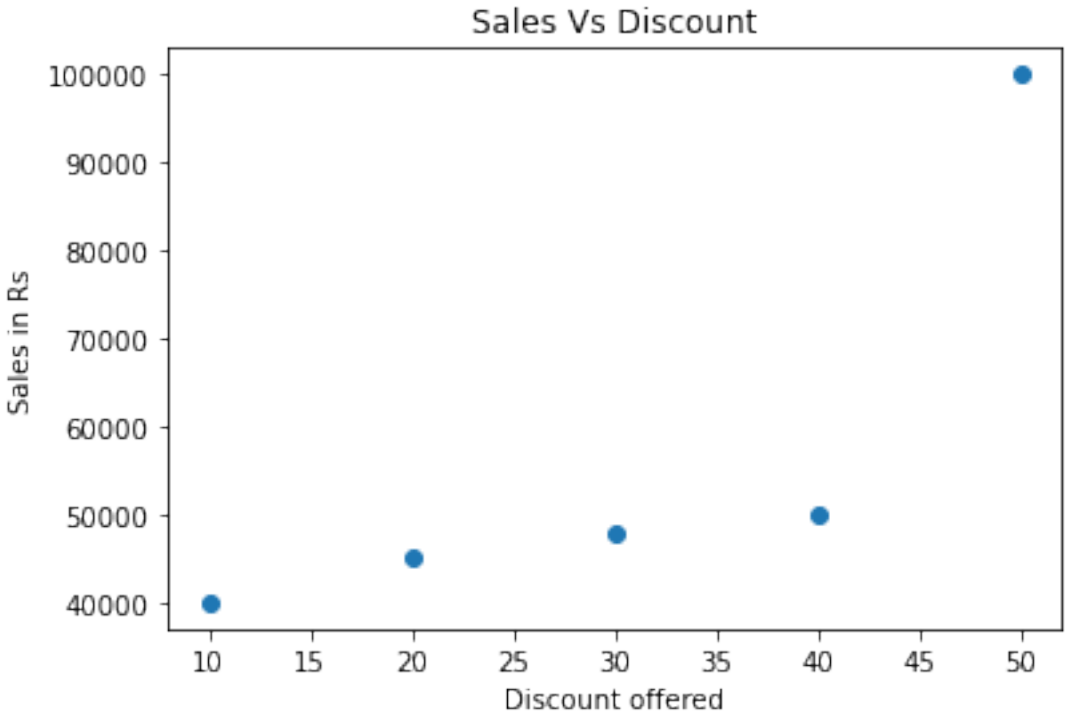

## Customising Histogram

```
df.plot(kind='hist',edgecolor='Green',linewidth=2,linestyle=':',fill=F
alse,hatch='o')
plt.show()
```



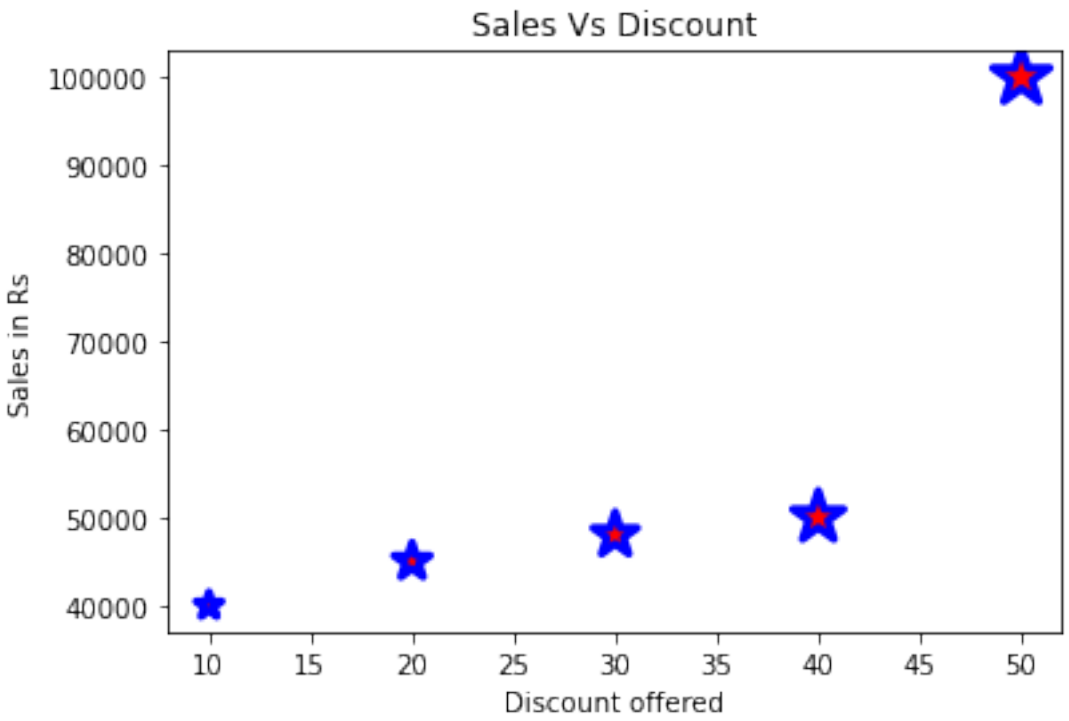
## Plotting Scatter Chart

```
import numpy as np
import matplotlib.pyplot as plt
discount= np.array([10,20,30,40,50])
saleInRs=np.array([40000,45000,48000,50000,100000])
plt.scatter(x=discount,y=saleInRs)
plt.title('Sales Vs Discount')
plt.xlabel('Discount offered')
plt.ylabel('Sales in Rs')
plt.show()
```



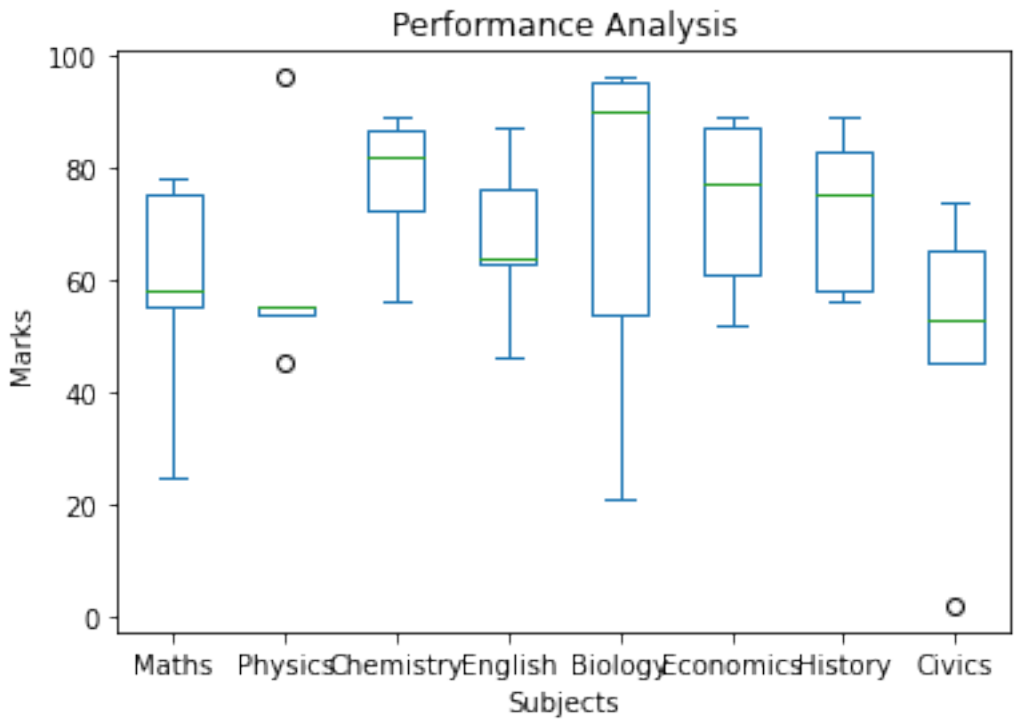

## Customising Scatter chart

```
 import numpy as np
import matplotlib.pyplot as plt
discount= np.array([10,20,30,40,50])
saleInRs=np.array([40000,45000,48000,50000,100000])
size=discount*10
plt.scatter(x=discount,y=saleInRs,s=size,color='red',linewidth=3,marke
r='*',edgecolor='blue')
plt.title('Sales Vs Discount')
plt.xlabel('Discount offered')
plt.ylabel('Sales in Rs')
plt.show()
```




## Plotting Quartiles and Box plot

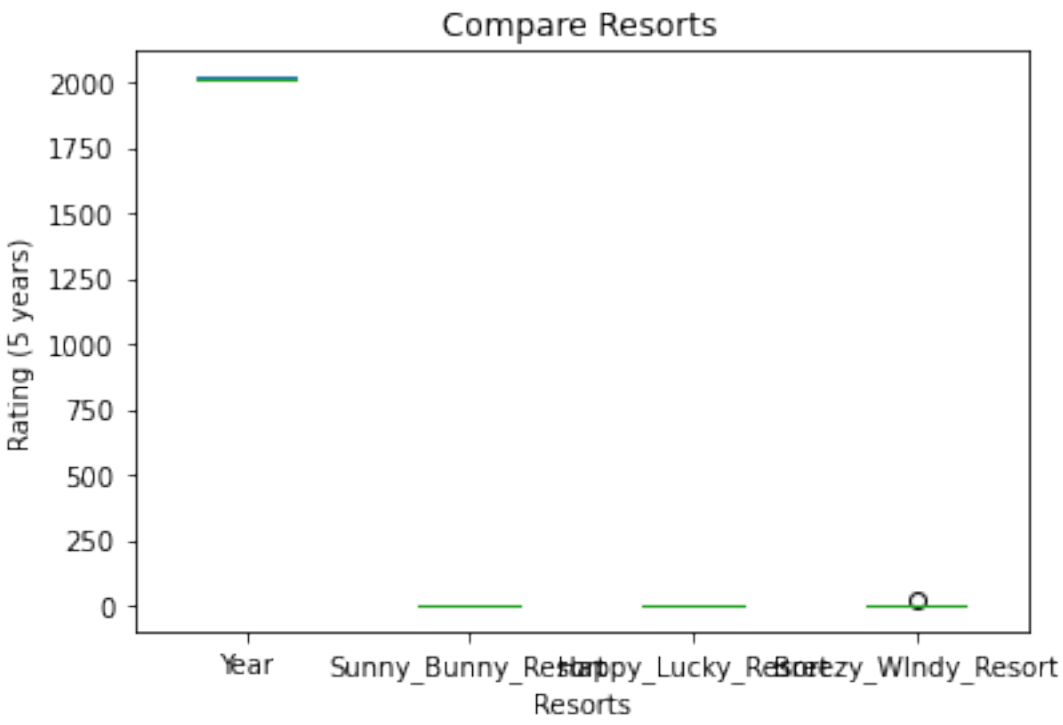
```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
data= pd.read_csv(r"D:\DS_Resources\student_marks.csv")
df= pd.DataFrame(data)
df.plot(kind='box')
#set title,xlabel,ylabel
plt.title('Performance Analysis')
plt.xlabel('Subjects')
plt.ylabel('Marks')
plt.show()
```



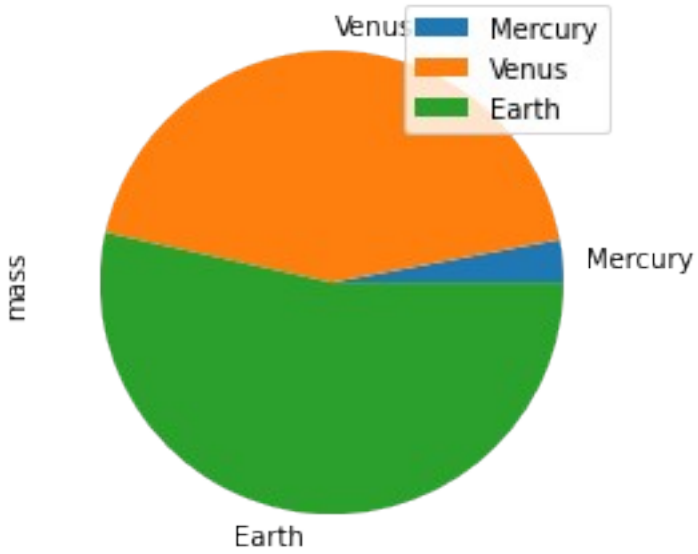

```
Year = [2014,2015,2016,2017,2018]
Sunny_Bunny_Resort =[1.5, 4.5, 1,2, 3.5]
Happy_Lucky_Resort =[3.5, 2.5, 3, 4 ,2 ]
Breezy_WIndy_Resort=[2.5, 4, 23.5, 2.5, 3]

df =
pd.DataFrame({"Year":Year,"Sunny_Bunny_Resort":Sunny_Bunny_Resort,"Hap
py_Lucky_Resort":Happy_Lucky_Resort,"Breezy_WIndy_Resort":Breezy_WIndy
_Resort})

df
```

| | Year | Sunny_Bunny_Resort | Happy_Lucky_Resort | Breezy_WIndy_Resort |
|---|---|---|---|---|
| 0 | 2014 | 1.5 | 3.5 | 2.5 |
| 1 | 2015 | 4.5 | 2.5 | 4.0 |
| 2 | 2016 | 1.0 | 3.0 | 23.5 |
| 3 | 2017 | 2.0 | 4.0 | 2.5 |
| 4 | 2018 | 3.5 | 2.0 | 3.0 |

```
#plot a box plot for the DataFrame 'df'

df.plot(kind='box',title='Compare Resorts')
#set xlabel,ylabel
plt.xlabel('Resorts')
plt.ylabel('Rating (5 years)')
#display the plot
plt.show()
```




```
import pandas as pd
import matplotlib.pyplot as plt
df = pd.DataFrame({'mass': [0.330, 4.87 , 5.97],
'radius': [2439.7, 6051.8, 6378.1]},
index=['Mercury', 'Venus', 'Earth'])
df.plot(kind='pie',y='mass')
plt.show()
```



```
import pandas as pd
import matplotlib.pyplot as plt
df=pd.DataFrame({'GeoArea':
[83743,78438,22327,22429,21081,16579,10486],'ForestCover':
[67353,27692,17280,17321,19240,13464,8073]},index=['Arunachal
Pradesh','Assam','Manipur','Meghalaya','Mizoram','Nagaland','Tripura']
)

df
```

| | GeoArea | ForestCover |
|---|---|---|
| Arunachal Pradesh | 83743 | 67353 |
| Assam | 78438 | 27692 |
| Manipur | 22327 | 17280 |
| Meghalaya | 22429 | 17321 |
| Mizoram | 21081 | 19240 |
| Nagaland | 16579 | 13464 |
| Tripura | 10486 | 8073 |

```
df.plot(kind='pie',y='ForestCover',
title='Forest cover of North Eastern states',legend=False)
plt.show()
```