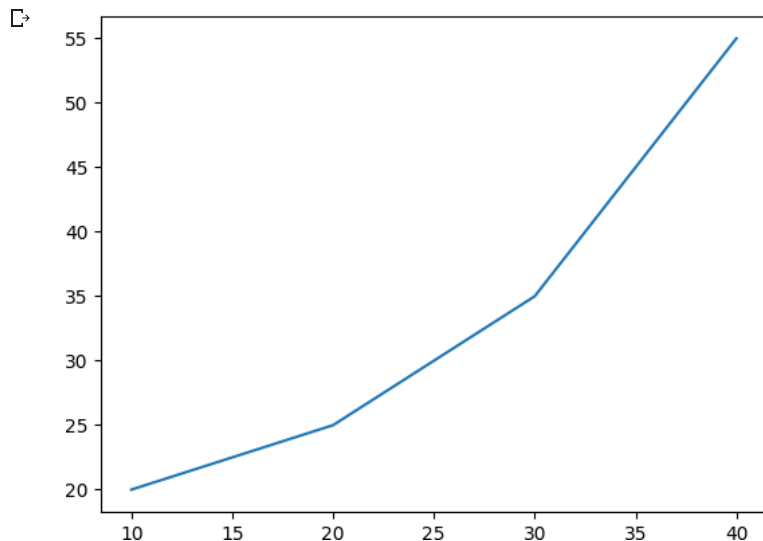
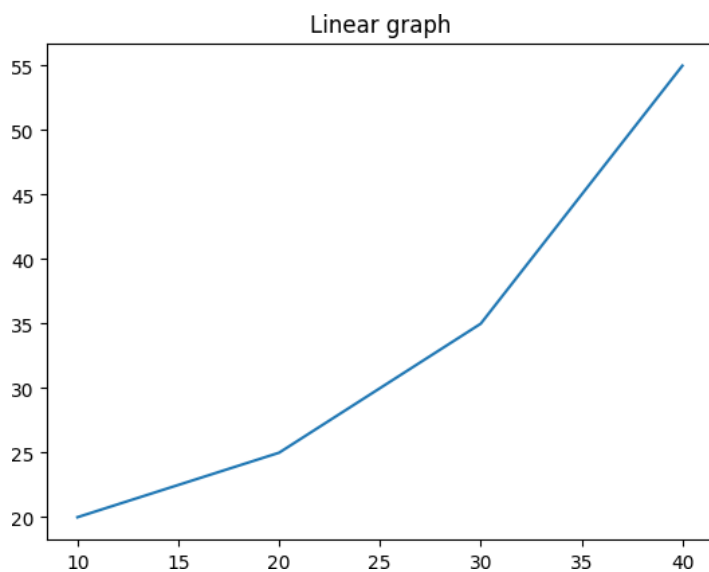


```
1 #Sani ka Baban Kundekar
2 #roll no-635
3 #PRN NO-202201040092
4 #DIV-F(F2)
5 import matplotlib.pyplot as plt
6
7 # initializing the data
8 x = [10, 20, 30, 40]
9 y = [20, 25, 35, 55]
10
11 # plotting the data
12 plt.plot(x, y)
13
14 plt.show()
```

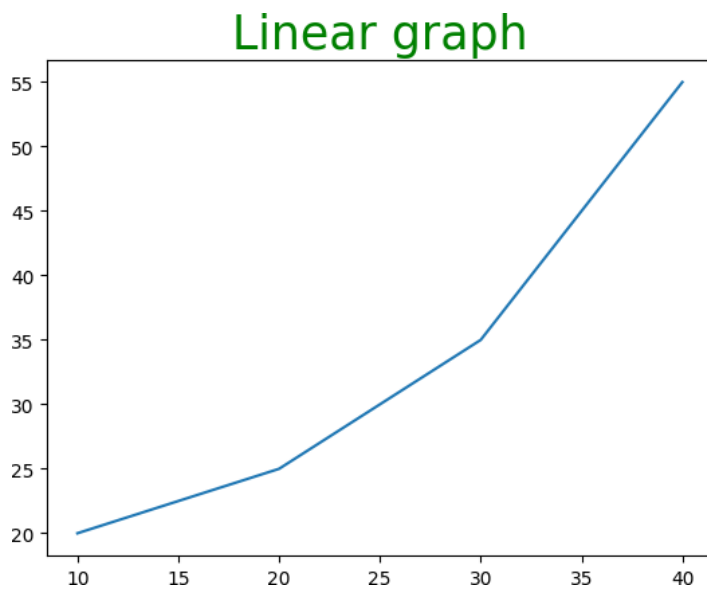


```
1 # Adding Title
2 # initializing the data
3 x = [10, 20, 30, 40]
4 y = [20, 25, 35, 55]
5
6 # plotting the data
7 plt.plot(x, y)
8
9 # Adding title to the plot
10 plt.title("Linear graph")
11
12 plt.show()
```



```
1 #change the appearance of the title
2 import matplotlib.pyplot as plt
3
4 # initializing the data
5 x = [10, 20, 30, 40]
```

```
6 y = [20, 25, 35, 55]
7
8 # plotting the data
9 plt.plot(x, y)
10
11 # Adding title to the plot
12 plt.title("Linear graph", fontsize=25, color="green")
13
14 plt.show()
15
```



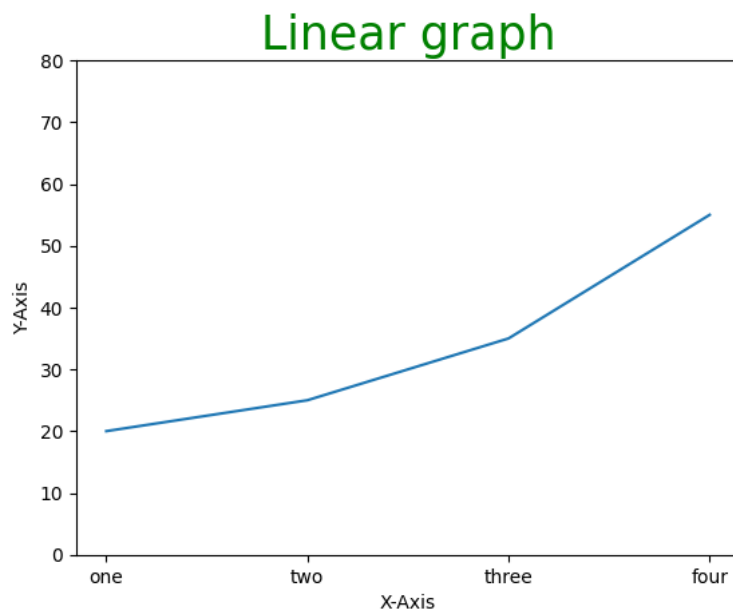
```
1 #Adding X Label and Y Label
2 import matplotlib.pyplot as plt
3
4
5 # initializing the data
6 x = [10, 20, 30, 40]
7 y = [20, 25, 35, 55]
8
9 # plotting the data
10 plt.plot(x, y)
11
12 # Adding title to the plot
13 plt.title("Linear graph", fontsize=25, color="green")
14
15 # Adding label on the y-axis
16 plt.ylabel('Y-Axis')
17
18 # Adding label on the x-axis
19 plt.xlabel('X-Axis')
20
21 plt.show()
```

Linear graph

```

1 #Setting Limits and Tick Labels
2 import matplotlib.pyplot as plt
3
4
5 # initializing the data
6 x = [10, 20, 30, 40]
7 y = [20, 25, 35, 55]
8
9 # plotting the data
10 plt.plot(x, y)
11
12 # Adding title to the plot
13 plt.title("Linear graph", fontsize=25, color="green")
14
15 # Adding label on the y-axis
16 plt.ylabel('Y-Axis')
17
18 # Adding label on the x-axis
19 plt.xlabel('X-Axis')
20
21 # Setting the limit of y-axis
22 plt.ylim(0, 80)
23
24 # setting the labels of x-axis
25 plt.xticks(x, labels=["one", "two", "three", "four"])
26
27 plt.show()

```



```

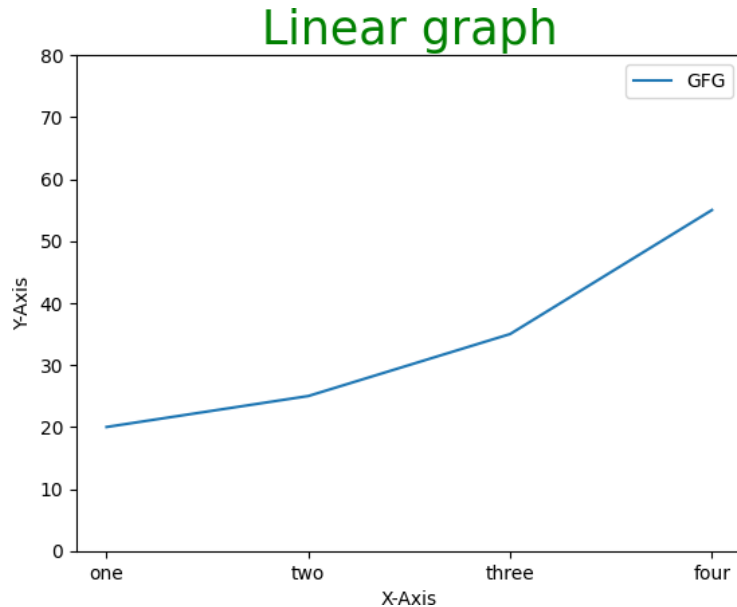
1 #Adding Legends
2 import matplotlib.pyplot as plt
3
4
5 # initializing the data
6 x = [10, 20, 30, 40]
7 y = [20, 25, 35, 55]
8
9 # plotting the data
10 plt.plot(x, y)
11
12 # Adding title to the plot
13 plt.title("Linear graph", fontsize=25, color="green")
14
15 # Adding label on the y-axis
16 plt.ylabel('Y-Axis')
17
18 # Adding label on the x-axis
19 plt.xlabel('X-Axis')
20
21 # Setting the limit of y-axis
22 plt.ylim(0, 80)
23
24 # setting the labels of x-axis
25 plt.xticks(x, labels=["one", "two", "three", "four"])
26

```

```

27 # Adding legends
28 plt.legend(["GFG"])
29
30 plt.show()

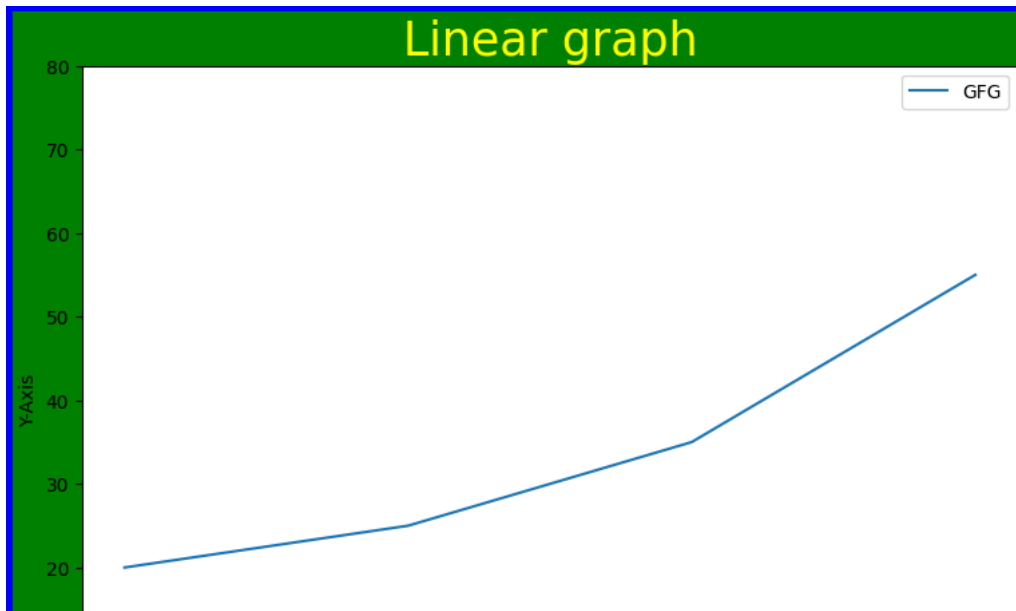
```



```

1 #Figure class
2 # Python program to show pyplot module
3 import matplotlib.pyplot as plt
4 from matplotlib.figure import Figure
5
6 # initializing the data
7 x = [10, 20, 30, 40]
8 y = [20, 25, 35, 55]
9
10 # Creating a new figure with width = 7 inches
11 # and height = 5 inches with face color as
12 # green, edgecolor as red and the line width
13 # of the edge as 7
14 fig = plt.figure(figsize=(7, 5), facecolor='g',
15                       edgecolor='b', linewidth=7)
16
17 # Creating a new axes for the figure
18 ax = fig.add_axes([1, 1, 1, 1])
19
20 # Adding the data to be plotted
21 ax.plot(x, y)
22
23 # Adding title to the plot
24 plt.title("Linear graph", fontsize=25, color="yellow")
25
26 # Adding label on the y-axis
27 plt.ylabel('Y-Axis')
28
29 # Adding label on the x-axis
30 plt.xlabel('X-Axis')
31
32 # Setting the limit of y-axis
33 plt.ylim(0, 80)
34
35 # setting the labels of x-axis
36 plt.xticks(x, labels=["one", "two", "three", "four"])
37
38 # Adding legends
39 plt.legend(["GFG"])
40
41 plt.show()
42

```



1

```

1 # Python program to show pyplot module
2 import matplotlib.pyplot as plt
3 from matplotlib.figure import Figure
4
5 # initializing the data
6 x = [10, 20, 30, 40]
7 y = [20, 25, 35, 55]
8
9 fig = plt.figure(figsize = (5, 4))
10
11 # Adding the axes to the figure
12 ax = fig.add_axes([1, 1, 1, 1])
13
14 # plotting 1st dataset to the figure
15 ax1 = ax.plot(x, y)
16
17 # plotting 2nd dataset to the figure
18 ax2 = ax.plot(y, x)
19
20 # Setting Title
21 ax.set_title("Linear Graph")
22
23 # Setting Label
24 ax.set_xlabel("X-Axis")
25 ax.set_ylabel("Y-Axis")
26
27 # Adding Legend
28 ax.legend(labels = ('line 1', 'line 2'))
29
30 plt.show()
31

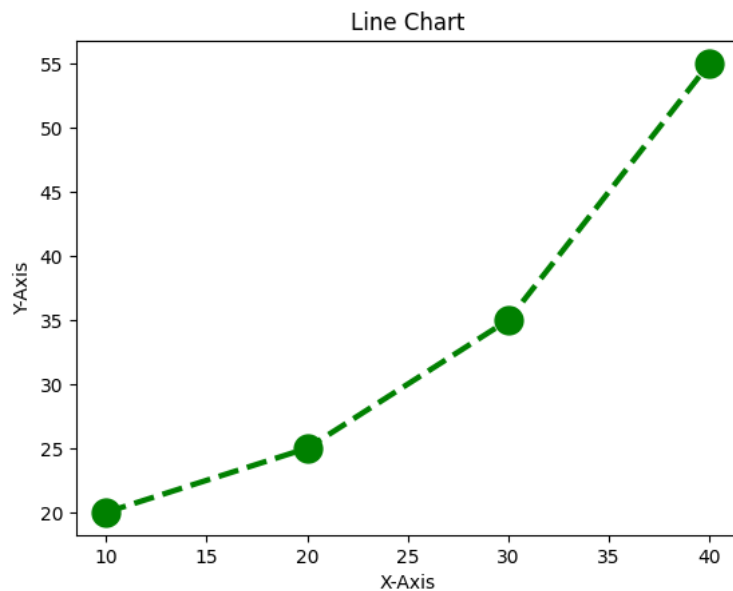
```

Linear Graph

```

1 #Different line styles
2 import matplotlib.pyplot as plt
3
4
5 # initializing the data
6 x = [10, 20, 30, 40]
7 y = [20, 25, 35, 55]
8
9 # plotting the data
10 plt.plot(x, y, color='green', linewidth=3, marker='o',
11          markersize=15, linestyle='--')
12
13 # Adding title to the plot
14 plt.title("Line Chart")
15
16 # Adding label on the y-axis
17 plt.ylabel('Y-Axis')
18
19 # Adding label on the x-axis
20 plt.xlabel('X-Axis')
21
22 plt.show()
23

```

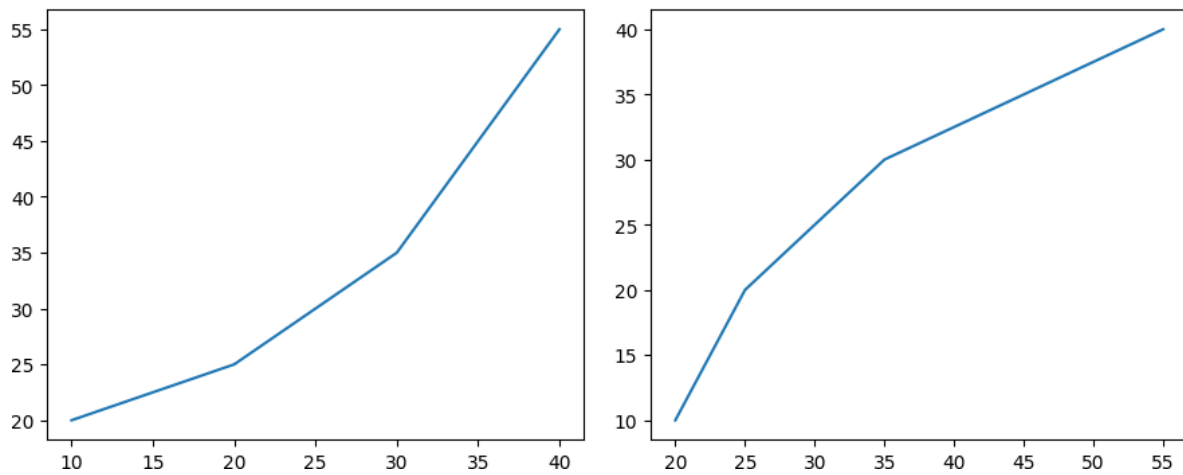


Double-click (or enter) to edit

```

1 #Multiple Plots
2 # Python program to show pyplot module
3 import matplotlib.pyplot as plt
4 from matplotlib.figure import Figure
5
6 # initializing the data
7 x = [10, 20, 30, 40]
8 y = [20, 25, 35, 55]
9
10 # Creating a new figure with width = 5 inches
11 # and height = 4 inches
12 fig = plt.figure(figsize=(5, 4))
13
14 # Creating first axes for the figure
15 ax1 = fig.add_axes([0.1, 0.1, 0.8, 0.8])
16
17 # Creating second axes for the figure
18 ax2 = fig.add_axes([1, 0.1, 0.8, 0.8])
19
20 # Adding the data to be plotted
21 ax1.plot(x, y)
22 ax2.plot(y, x)
23
24 plt.show()
25

```

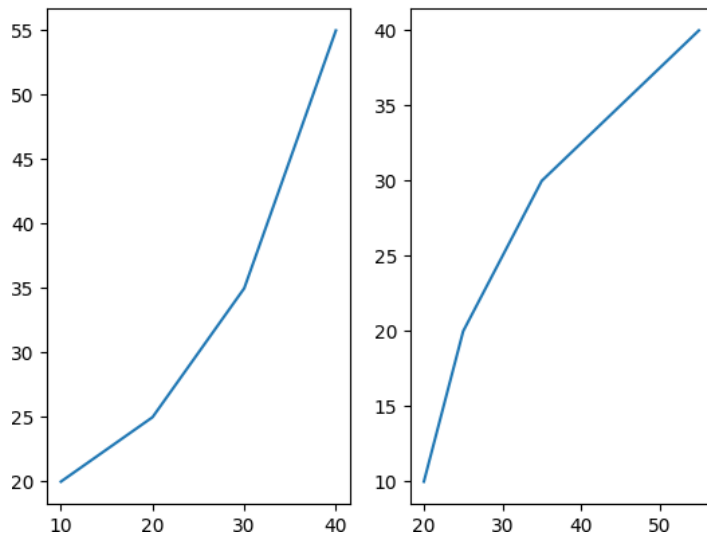


```

1 #Using subplot() method.
2 import matplotlib.pyplot as plt
3
4
5 # initializing the data
6 x = [10, 20, 30, 40]
7 y = [20, 25, 35, 55]
8
9
10 # Creating figure object
11 plt.figure()
12
13 # adding first subplot
14 plt.subplot(121)
15 plt.plot(x, y)
16
17 # adding second subplot
18 plt.subplot(122)
19 plt.plot(y, x)
20

```

[<matplotlib.lines.Line2D at 0x7f8f56a30a00>]

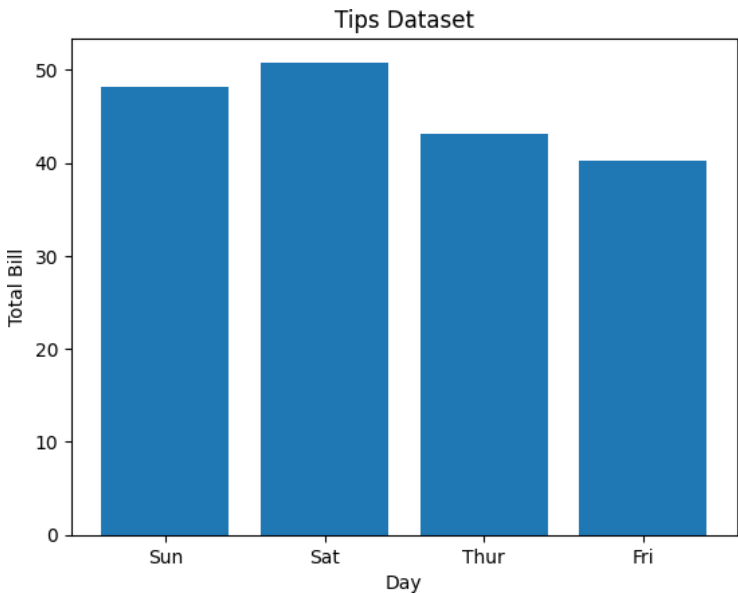


```

1 #bar chart
2 import matplotlib.pyplot as plt
3 import pandas as pd
4
5 # Reading the tips.csv file
6 data = pd.read_csv('/content/tips.csv')
7
8 # initializing the data
9 x = data['day']
10 y = data['total_bill']
11
12 # plotting the data
13 plt.bar(x, y)
14
15 # Adding title to the plot
16 plt.title("Tips Dataset")

```

```
17
18 # Adding label on the y-axis
19 plt.ylabel('Total Bill')
20
21 # Adding label on the x-axis
22 plt.xlabel('Day')
23
24 plt.show()
25
```





```

1 #Name-Sani ka Kundekar
2 #PRN NO-202201040092
3 #Roll no-635
4 #Batch-F(F2)
5
6 import pandas as pd
7 import numpy as np
8 import matplotlib.pyplot as plt
9 from pandas import Series, DataFrame
10
11
12 # Reading the tips.csv file
13 df1=pd.read_csv('/content/tips.csv')
14
15 df1.head()

```

	total_bill	tip	sex	smoker	day	time	size	
0	16.99	1.01	Female	No	Sun	Dinner	2	
1	10.34	1.66	Male	No	Sun	Dinner	3	
2	21.01	3.50	Male	No	Sun	Dinner	3	
3	23.68	3.31	Male	No	Sun	Dinner	2	
4	24.59	3.61	Female	No	Sun	Dinner	4	

```
1 df1.tail()
```

	total_bill	tip	sex	smoker	day	time	size	
239	29.03	5.92	Male	No	Sat	Dinner	3	

```
1 df1.columns
```

```
Index(['total_bill', 'tip', 'sex', 'smoker', 'day', 'time', 'size'], dtype='object')
```

```
1 df1.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 244 entries, 0 to 243
Data columns (total 7 columns):
#   Column      Non-Null Count  Dtype
---  -
0    total_bill  244 non-null    float64
1    tip         244 non-null    float64
2    sex         244 non-null    object
3    smoker      244 non-null    object
4    day         244 non-null    object
5    time        244 non-null    object
6    size        244 non-null    int64
dtypes: float64(2), int64(1), object(4)
memory usage: 13.5+ KB
```

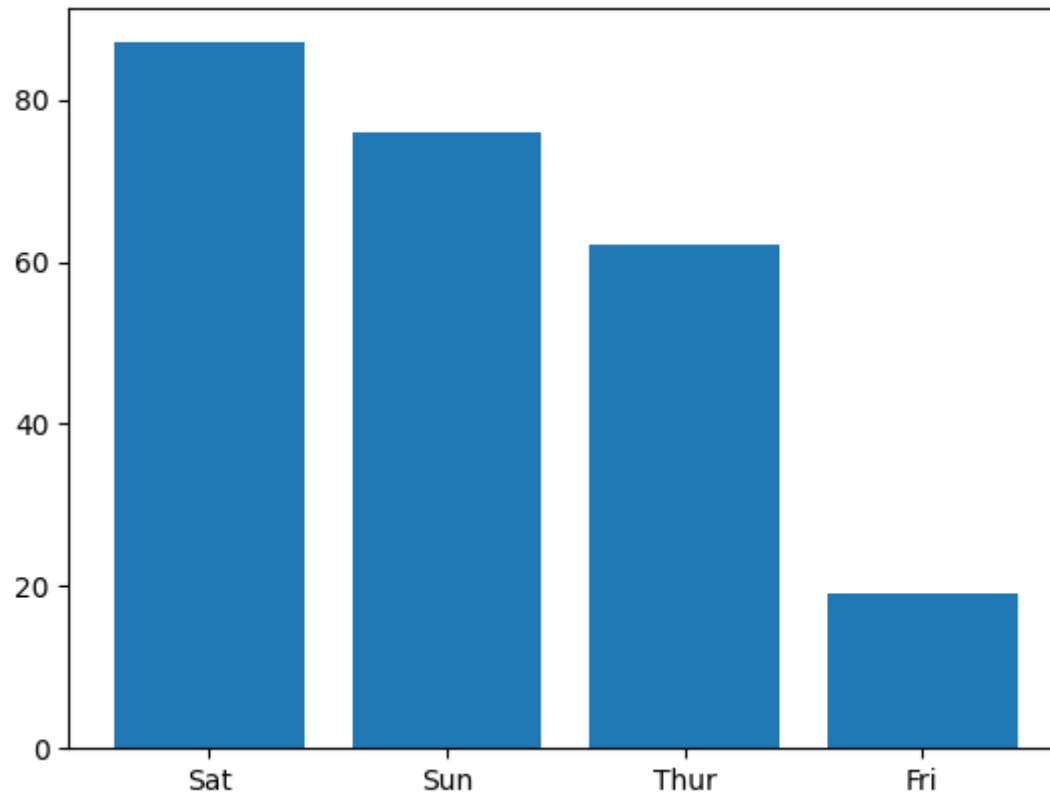
```
1 df1.describe()
```

	total_bill	tip	size
count	244.000000	244.000000	244.000000
mean	19.785943	2.998279	2.569672
std	8.838148	4.838838	0.851138

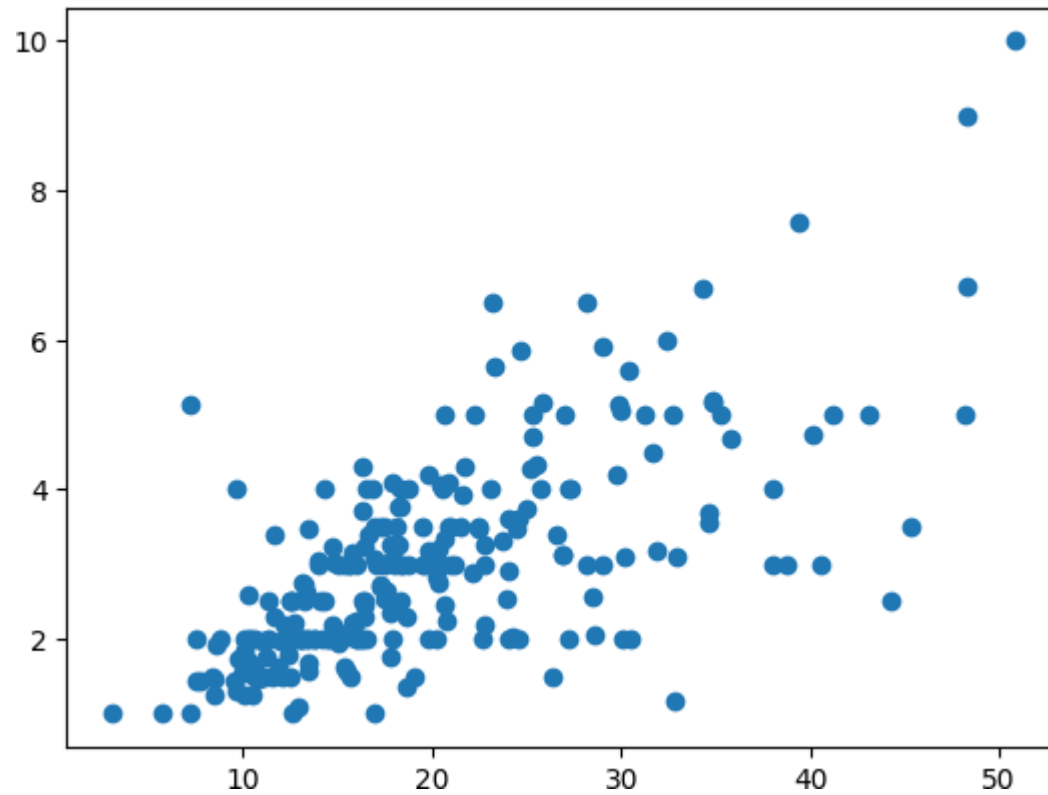


```
1 a=pd.DataFrame(df1[' day' ]. value_counts())
2 a. reset_i ndex(i nplace=True)
3 pl t. bar(a[' i ndex' ], a[' day' ])
```

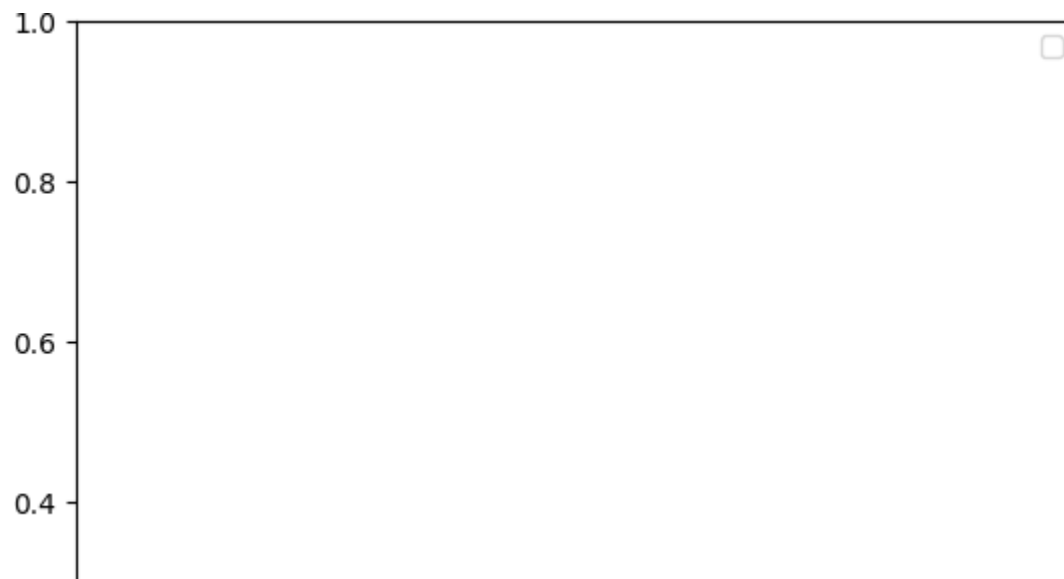
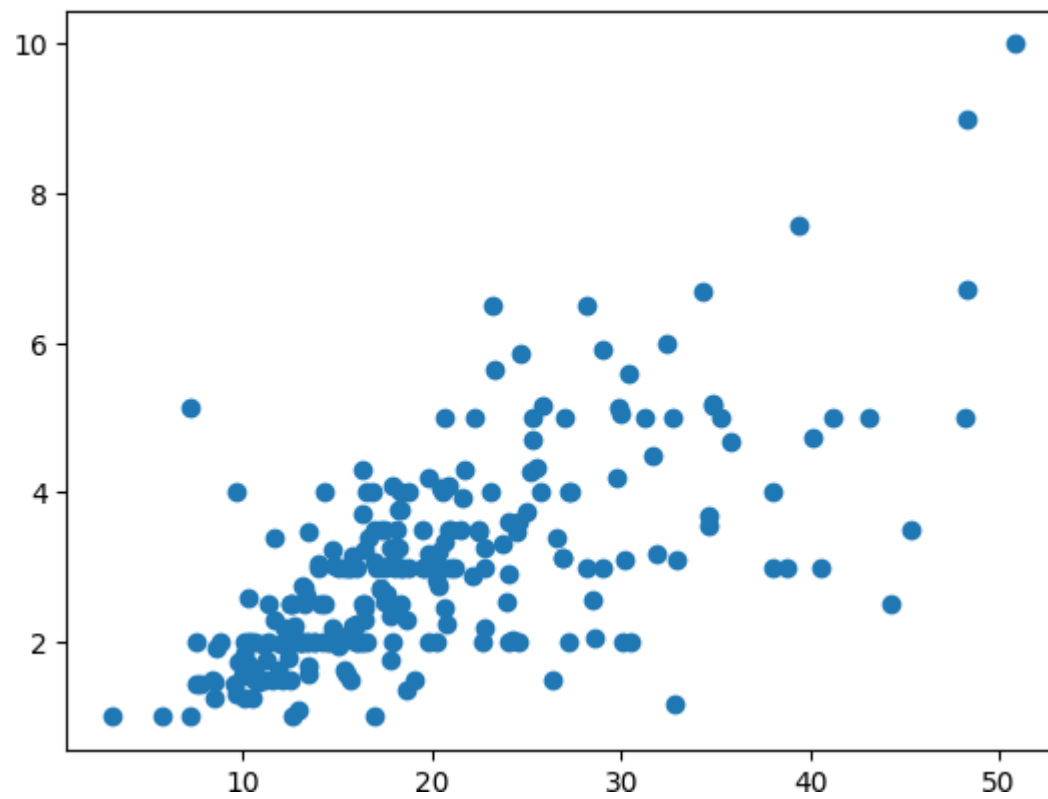
<BarContainer object of 4 artists>



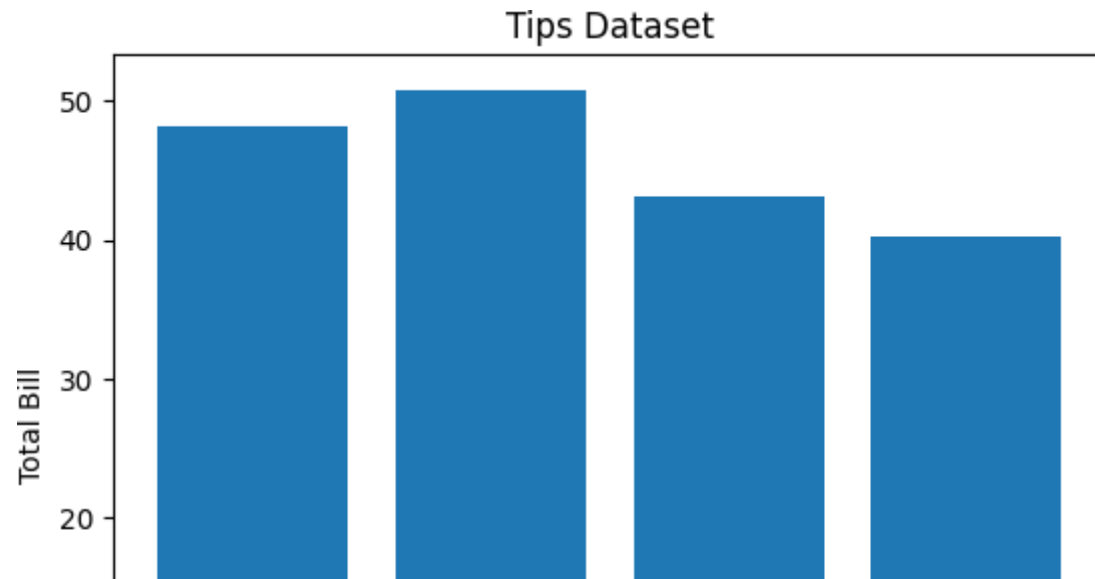
```
1 pl t. scatter(df1[' total_bill' ], df1[' tip' ])
2 pl t. show()
```



```
1 plt.scatter(x='total_bill', y='tip', data=df1)
2 fig=plt.figure(figsize=(5, 4))
3 ax=fig.add_axes([1, 1, 1, 1])
4 ax.legend(labels=('sun', 'mon', 'tue'))
5 plt.show()
```

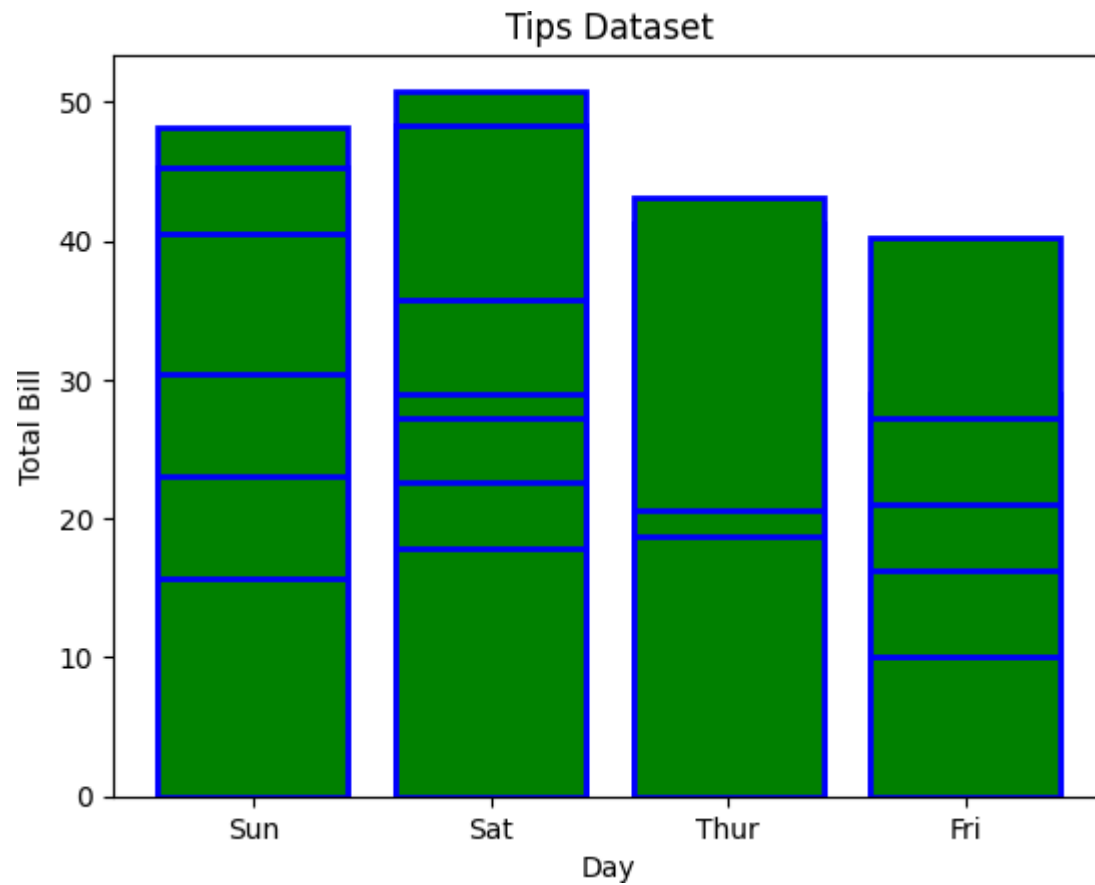


```
1 #Different types of Matplotlib Plots
2 #bar chart
3 import matplotlib.pyplot as plt
4 import pandas as pd
5
6 # Reading the tips.csv file
7 data = pd.read_csv('/content/tips.csv')
8
9 # initializing the data
10 x = data['day']
11 y = data['total_bill']
12
13 # plotting the data
14 plt.bar(x, y)
15
16 # Adding title to the plot
17 plt.title("Tips Dataset")
18
19 # Adding label on the y-axis
20 plt.ylabel('Total Bill')
21
22 # Adding label on the x-axis
23 plt.xlabel('Day')
24
25 plt.show()
26
```



```
1 import matplotlib.pyplot as plt
2 import pandas as pd
3
4
5
6 # initializing the data
7 x = data['day']
8 y = data['total_bill']
9
10 # plotting the data
11 plt.bar(x, y, color='green', edgecolor='blue',
12         linewidth=2)
13
14 # Adding title to the plot
15 plt.title("Tips Dataset")
16
17 # Adding label on the y-axis
18 plt.ylabel('Total Bill')
19
20 # Adding label on the x-axis
21 plt.xlabel('Day')
```

```
22  
23 plt.show()  
24
```



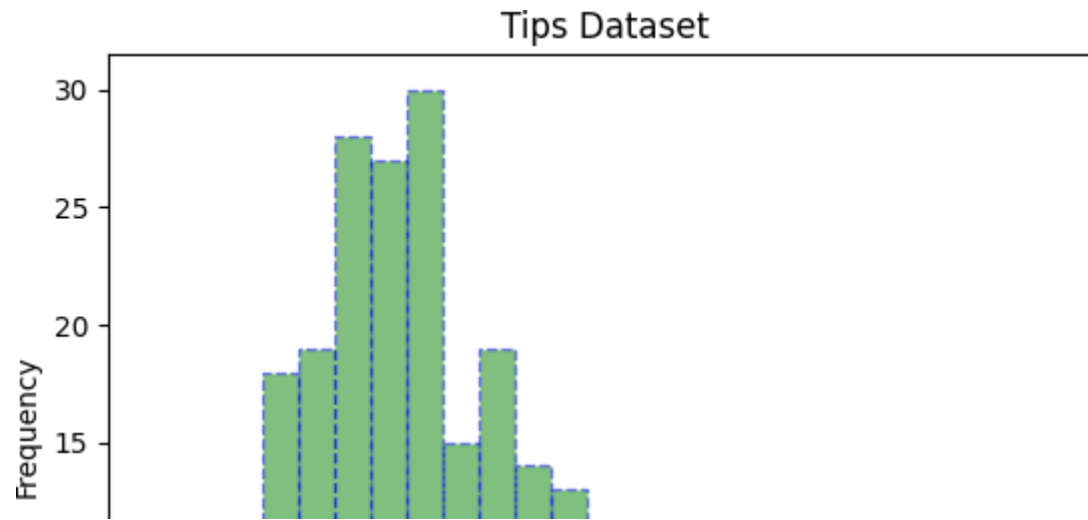
```
1 import matplotlib.pyplot as plt  
2 import pandas as pd  
3  
4  
5  
6 # initializing the data  
7 x = data['total_bill']  
8
```



```
9 # plotting the data
10 plt.hist(x)
11
12 # Adding title to the plot
13 plt.title("Tips Dataset")
14
15 # Adding label on the y-axis
16 plt.ylabel('Frequency')
17
18 # Adding label on the x-axis
19 plt.xlabel('Total Bill')
20
21 plt.show()
22
```

Tips Dataset

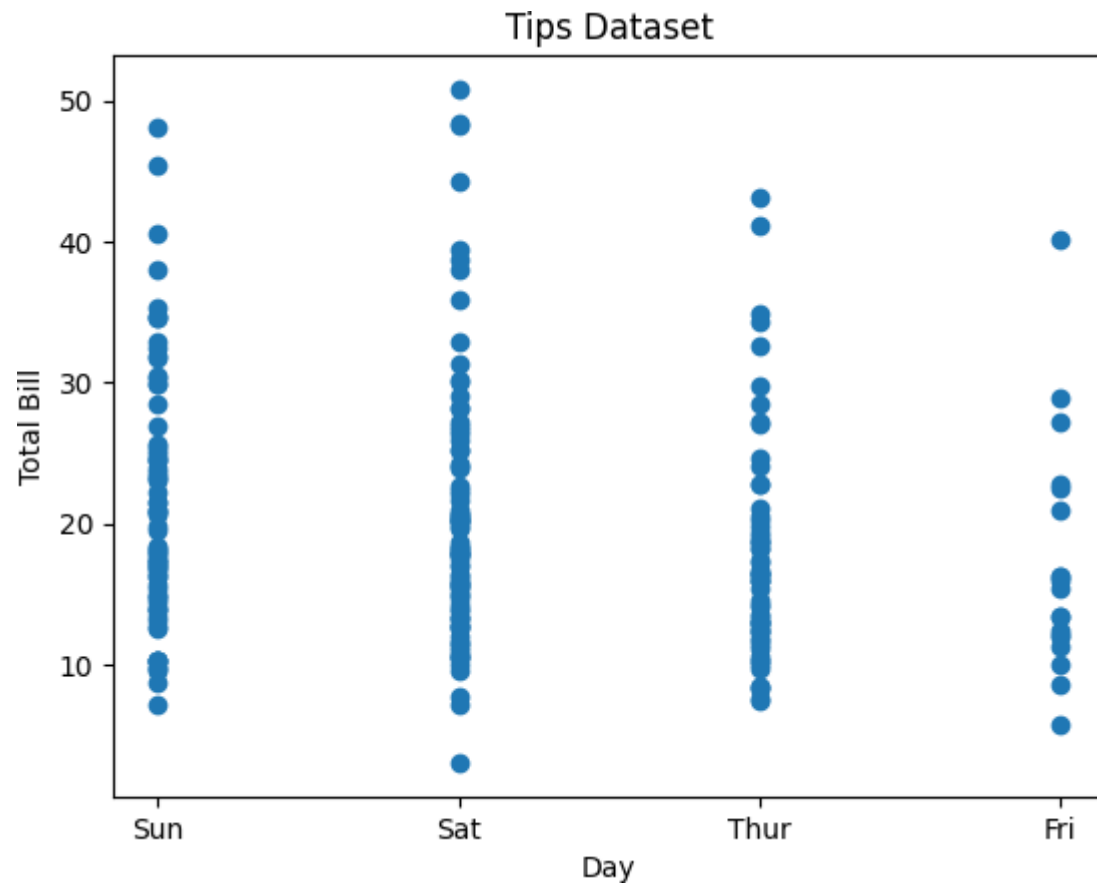
```
1 import matplotlib.pyplot as plt
2 import pandas as pd
3
4
5
6 # initializing the data
7 x = data['total_bill']
8
9 # plotting the data
10 plt.hist(x, bins=25, color='green', edgecolor='blue',
11          linestyle='--', alpha=0.5)
12
13 # Adding title to the plot
14 plt.title("Tips Dataset")
15
16 # Adding label on the y-axis
17 plt.ylabel('Frequency')
18
19 # Adding label on the x-axis
20 plt.xlabel('Total Bill')
21
22 plt.show()
23
```



```
1 import matplotlib.pyplot as plt
2 import pandas as pd
3
4
5
6 # initializing the data
7 x = data['day']
8 y = data['total_bill']
9
10 # plotting the data
11 plt.scatter(x, y)
12
13 # Adding title to the plot
14 plt.title("Tips Dataset")
15
16 # Adding label on the y-axis
17 plt.ylabel('Total Bill')
18
19 # Adding label on the x-axis
20 plt.xlabel('Day')
21
```

```
22 plt.show()
```

```
23
```



```
1 import matplotlib.pyplot as plt
```

```
2 import pandas as pd
```

```
3
```

```
4
```

```
5 # initializing the data
```

```
6 x = data['day']
```

```
7 y = data['total_bill']
```

```
8
```

```
9 # plotting the data
```

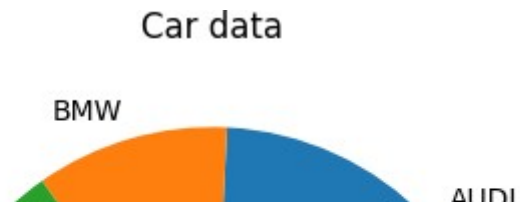
```
11         marker='D', alpha=0.5)
12
13 # Adding title to the plot
14 plt.title("Tips Dataset")
15
16 # Adding label on the y-axis
17 plt.ylabel('Total Bill')
18
19 # Adding label on the x-axis
20 plt.xlabel('Day')
21
22 plt.show()
23
```

```
10 plt.scatter(x, y, c=data['size'], s=data['total_bill'],
```

Tips Dataset

```
1 import matplotlib.pyplot as plt
2 import pandas as pd
3
4
5 # initializing the data
6 cars = ['AUDI', 'BMW', 'FORD',
7         'TESLA', 'JAGUAR',]
8 data = [23, 10, 35, 15, 12]
9
10 # plotting the data
11 plt.pie(data, labels=cars)
12
13 # Adding title to the plot
14 plt.title("Car data")
15
16 plt.show()
17
```

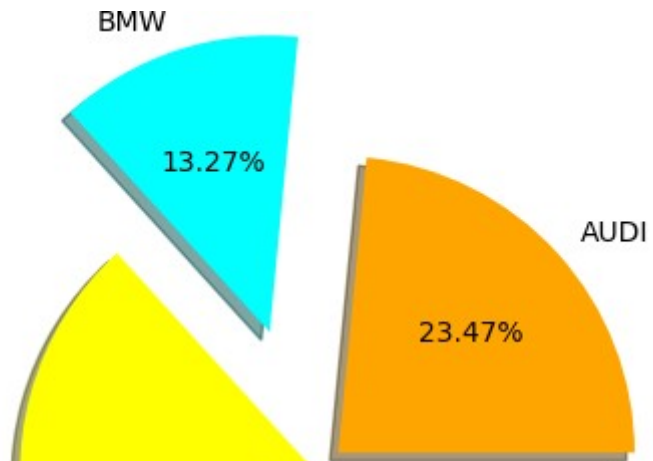




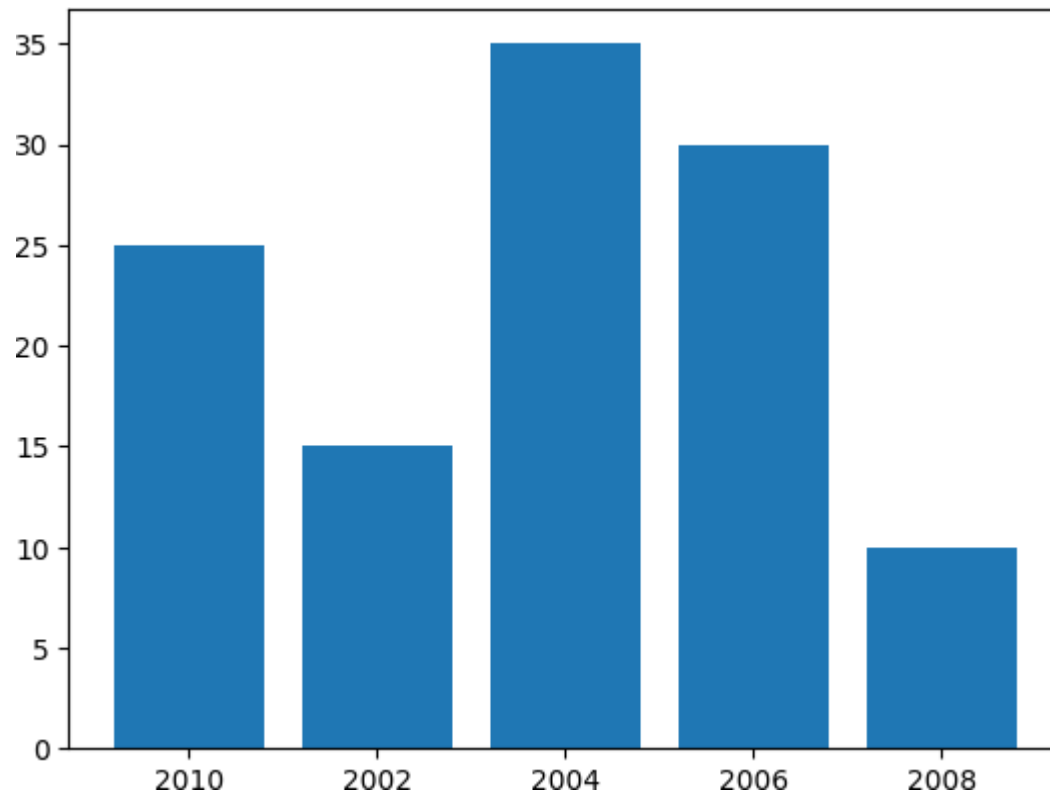
```

1 import matplotlib.pyplot as plt
2 import pandas as pd
3
4 # initializing the data
5 cars = ['AUDI', 'BMW', 'FORD',
6         'TESLA', 'JAGUAR',]
7 data = [23, 13, 35, 15, 12]
8
9 explode = [0.1, 0.5, 0, 0, 0]
10
11 colors = ( "orange", "cyan", "yellow",
12           "grey", "green",)
13
14 # plotting the data
15 plt.pie(data, labels=cars, explode=explode, autopct='%1.2f%%',
16         colors=colors, shadow=True)
17
18 plt.show()
19

```



```
1 import matplotlib.pyplot as plt
2
3 # Creating data
4 year = ['2010', '2002', '2004', '2006', '2008']
5 production = [25, 15, 35, 30, 10]
6
7 # Plotting barchart
8 plt.bar(year, production)
9
10 # Saving the figure.
11 plt.savefig("output.jpg")
12
13 # Saving figure by changing parameter values
14 plt.savefig("output1", facecolor='y', bbox_inches="tight",
15             pad_inches=0.3, transparent=True)
16
```

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