```
Name: Khushi Gharate
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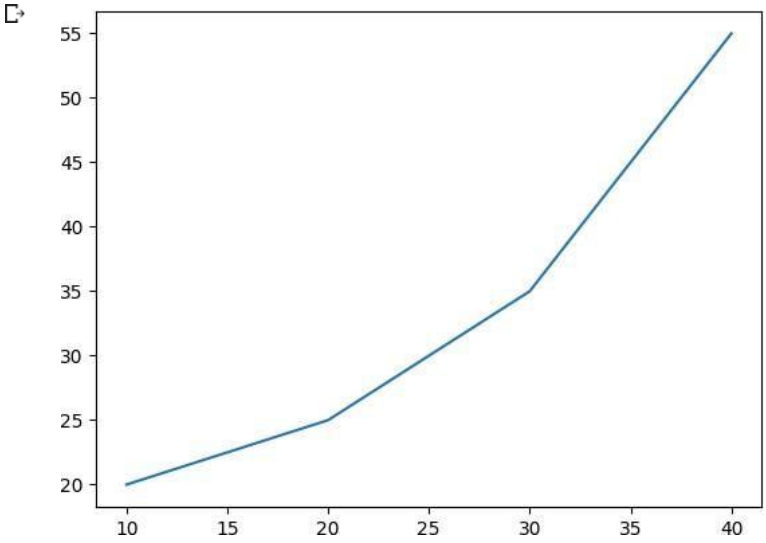
```

```
import matplotlib.pyplot as plt
initializing the data
      x = [10, 20, 30, 40]
      y = [20, 25, 35, 55] 10
# plotting the data
plt.plot(x, y)

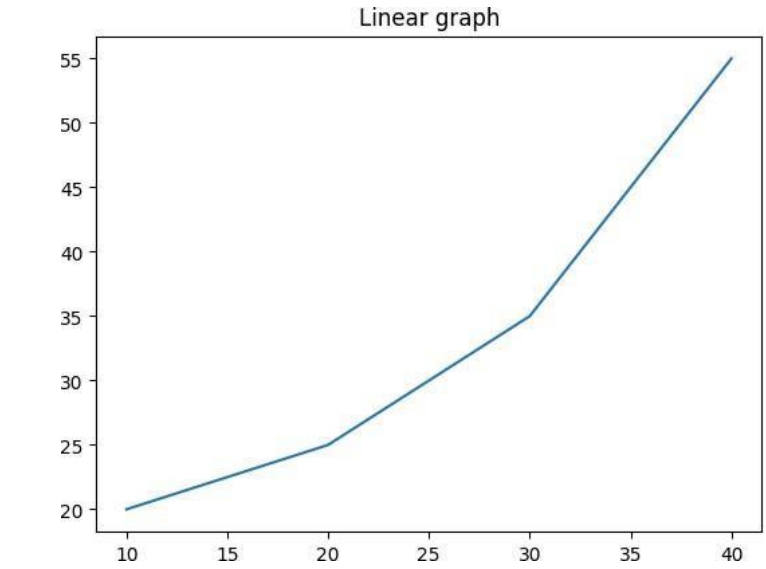
plt.show()
```




```
# Adding Title
# initializing the data
x = [10, 20, 30, 40]
y = [20, 25, 35, 55] 5
# plotting the data
plt.plot(x, y)

 # Adding title to the plot
plt.title("Linear graph")

plt.show()
```

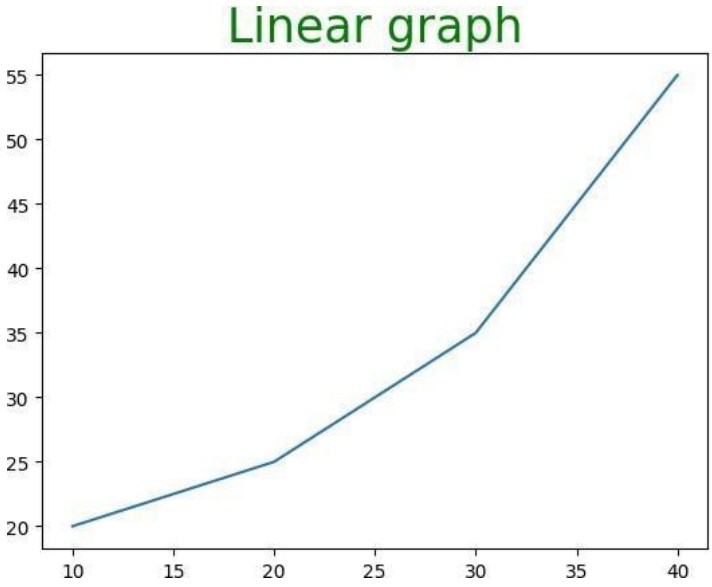



```
#change the appearance of the title
import matplotlib.pyplot as plt

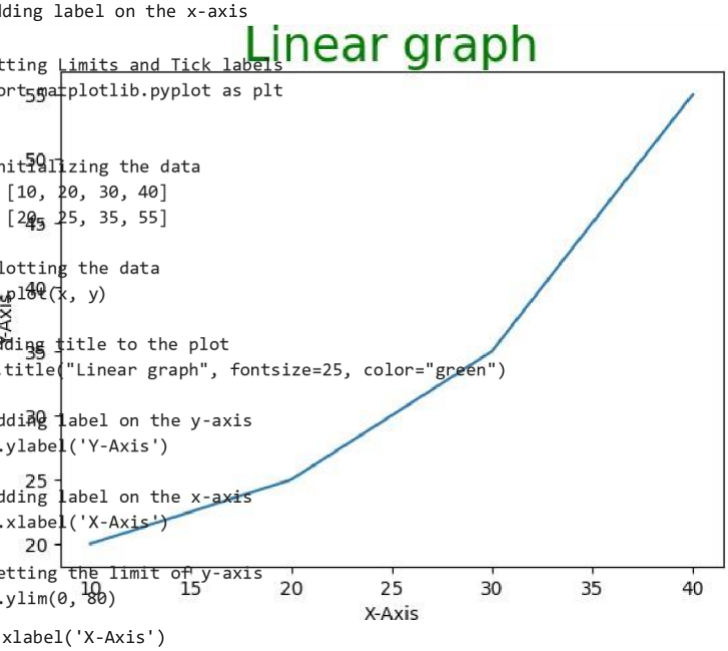
# initializing the data
x = [10, 20, 30, 40]
y = [20, 25, 35, 55]

# plotting the data
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
```

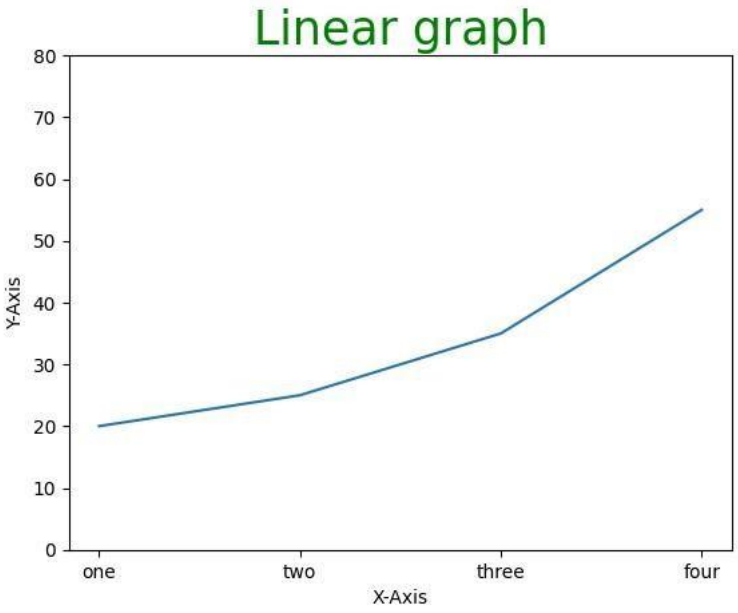



```
 1 #Adding X Label and Y Label
 2 import matplotlib.pyplot as plt
 3
 4
 5 # initializing the data
 6 x = [10, 20, 30, 40]
 7 y = [20, 25, 35, 55]
 8
 9  # plotting the data
10 plt.plot(x, y)
11
12 # Adding title to the plot
13 plt.title("Linear graph", fontsize=25, color="green")
14
15 # Adding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

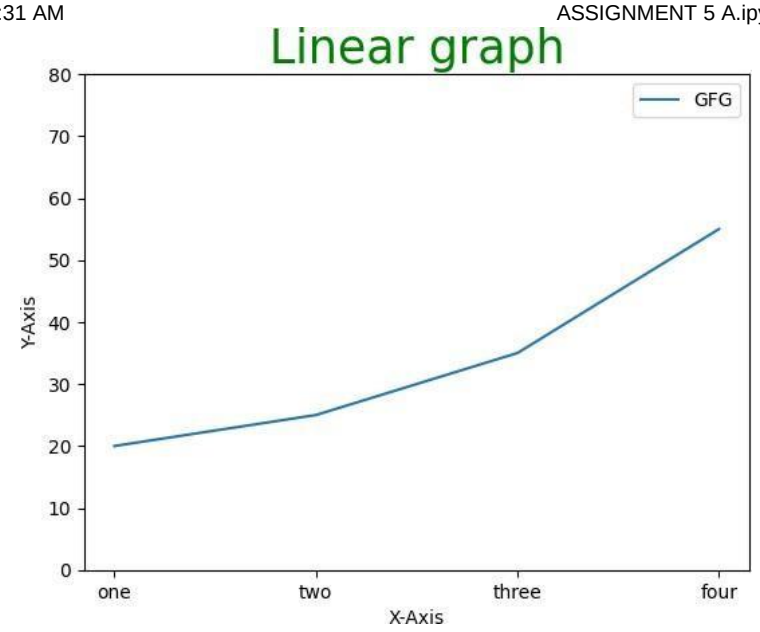



```
 1 #Setting Limits and Tick labels
 2 import matplotlib.pyplot as plt
 3
 4
 5 # initializing the data
 6 x = [10, 20, 30, 40]
 7 y = [20, 25, 35, 55]
 8
 9 # plotting the data
10 plt.plot(x, y)
11
12 # Adding title to the plot
13 plt.title("Linear graph", fontsize=25, color="green")
14
15 # Adding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

```
 8
11
14
17
20
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()
```




```
#Figure class
# Python program to show pyplot module
import matplotlib.pyplot as plt
from matplotlib.figure import Figure

# initializing the data
x = [10, 20, 30, 40]
y = [20, 25, 35, 55]

                # Creating a new figure with width = 7 inches
                # and height = 5 inches with face color as
                # green, edgecolor as red and the line width
                # of the edge as 7
                fig = plt.figure(figsize =(7, 5), facecolor='g',
                edgecolor='b', linewidth=7)

# Creating a new axes for the figure
ax = fig.add_axes([1, 1, 1, 1])

# Adding the data to be plotted
ax.plot(x, y)

# Adding title to the plot
plt.title("Linear graph", fontsize=25, color="yellow")

# Adding label on the y-axis
plt.ylabel('Y-Axis')

# Adding label on the x-axis
plt.xlabel('X-Axis')

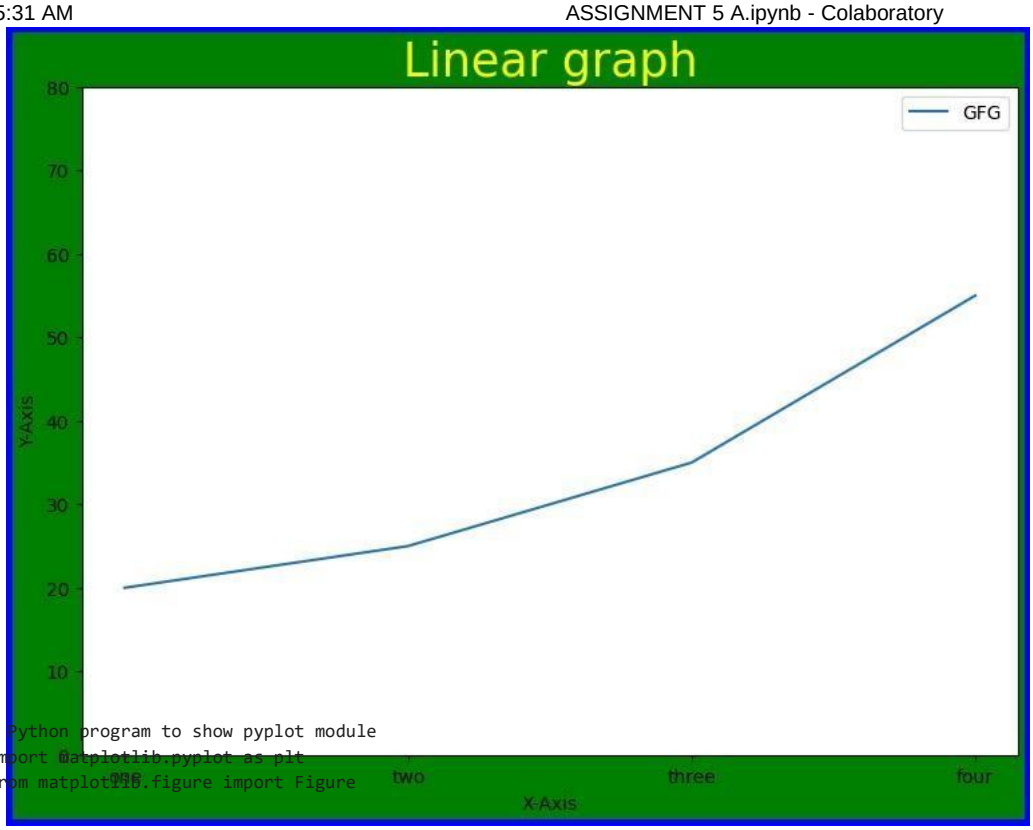
# Setting the limit of y-axis
plt.ylim(0, 80)

# setting the labels of x-axis
plt.xticks(x, labels=["one", "two", "three", "four"])

# Adding legends
plt.legend(["GFG"])

plt.show()

```




```
# Python program to show pyplot module
import matplotlib.pyplot as plt
from matplotlib.figure import Figure


```

```


# initializing the data
x = [10, 20, 30, 40]
y = [20, 25, 35, 55]

fig = plt.figure(figsize = (5, 4))

# Adding the axes to the figure
ax = fig.add_axes([1, 1, 1, 1])

# plotting 1st dataset to the figure
ax1 = ax.plot(x, y)

# plotting 2nd dataset to the figure
ax2 = ax.plot(y, x)

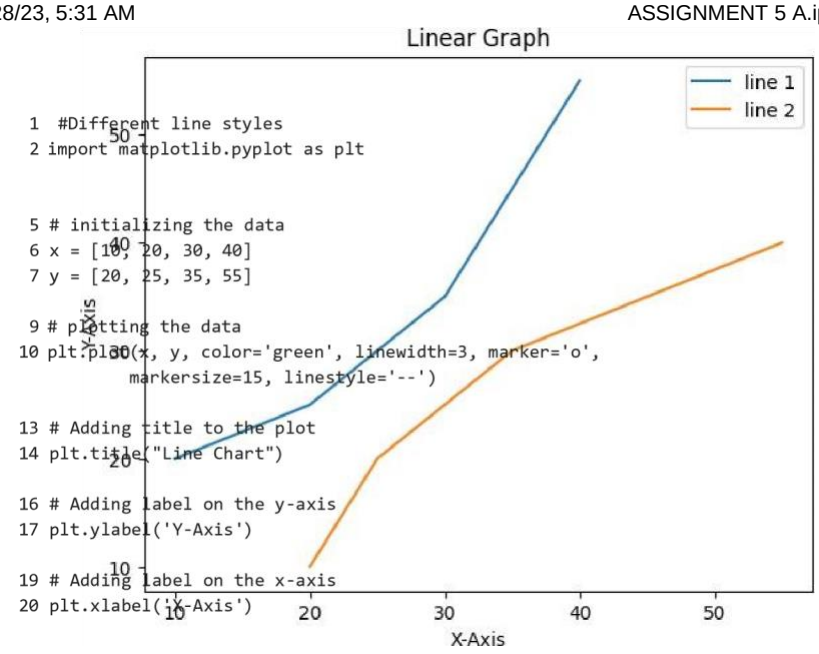
# Setting Title
ax.set_title("Linear Graph")

# Setting Label
ax.set_xlabel("X-Axis")
ax.set_ylabel("Y-Axis")

# Adding Legend
ax.legend(labels = ('line 1', 'line 2'))

plt.show()

```




```
#Different line styles
import matplotlib.pyplot as plt


# initializing the data
x = [10, 20, 30, 40]
y = [20, 25, 35, 55]

# plotting the data
plt.plot(x, y, color='green', linewidth=3, marker='o',
         markersize=15, linestyle='--')

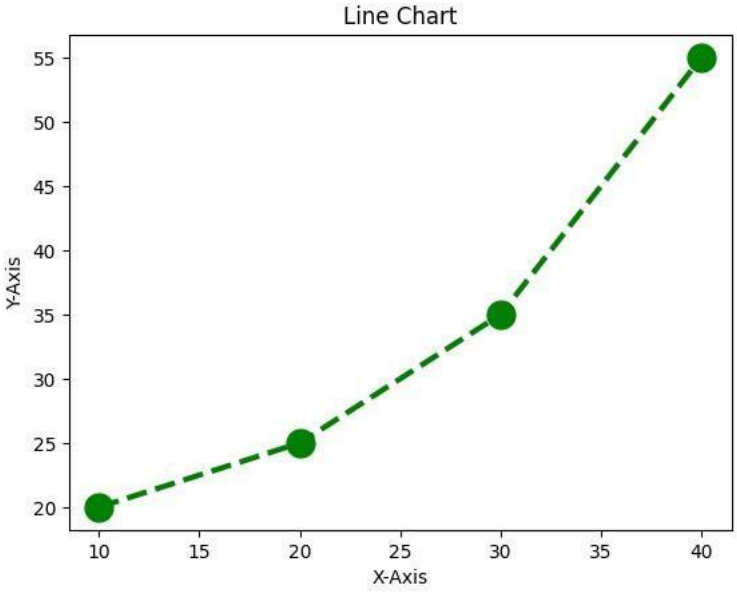
# Adding title to the plot
plt.title("Line Chart")

# Adding label on the y-axis
plt.ylabel('Y-Axis')

# Adding label on the x-axis
plt.xlabel('X-Axis')


plt.show()

```



Double-click (or enter) to edit

```
#Multiple Plots
# Python program to show pyplot module
import matplotlib.pyplot as plt
from matplotlib.figure import Figure

# initializing the data
x = [10, 20, 30, 40]
```

```
y = [20, 25, 35, 55]

# Creating a new figure with width = 5 inches
# and height = 4 inches
fig = plt.figure(figsize =(5, 4))

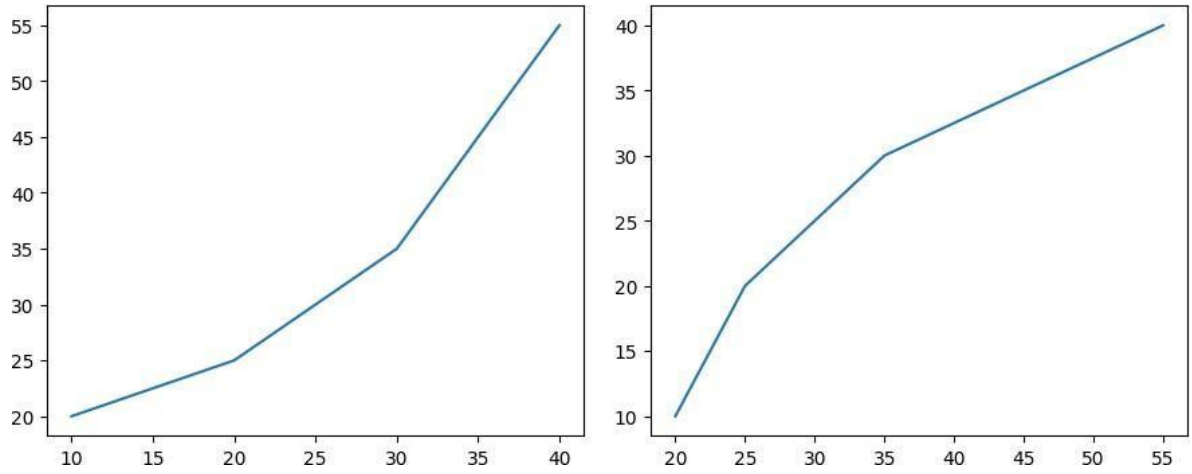
# Creating first axes for the figure
ax1 = fig.add_axes([0.1, 0.1, 0.8, 0.8])

# Creating second axes for the figure
ax2 = fig.add_axes([1, 0.1, 0.8, 0.8])

# Adding the data to be plotted
ax1.plot(x, y)
ax2.plot(y, x)

plt.show()

```




```
#Using subplot() method.
import matplotlib.pyplot as plt


# initializing the data
x = [10, 20, 30, 40]
y = [20, 25, 35, 55]

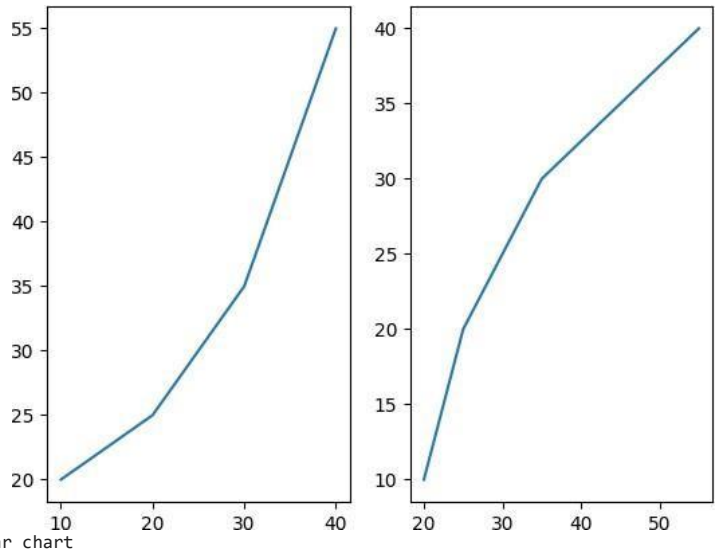

# Creating figure object
plt.figure()

# adding first subplot
plt.subplot(121)
plt.plot(x, y)

# adding second subplot
plt.subplot(122)
plt.plot(y, x)

```

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



```
#bar chart
import matplotlib.pyplot as plt
import pandas as pd

# Reading the tips.csv file
data = pd.read_csv('/content/tips.csv')

 # initializing the data
 x = data['day']
y = data['total_bill']

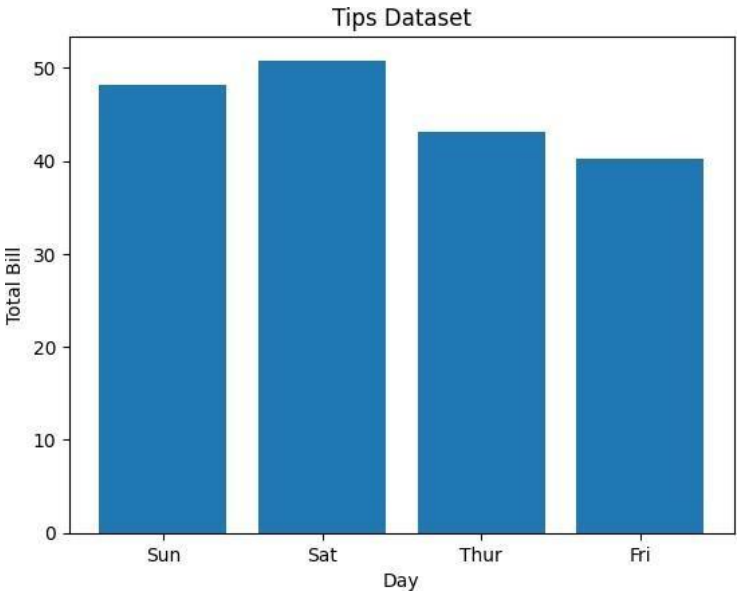
# plotting the data
plt.bar(x, y)

# Adding title to the plot
plt.title("Tips Dataset")

             # Adding label on the y-axis
             plt.ylabel('Total Bill')
        # Adding label on the x-axis
        plt.xlabel('Day')

plt.show()

```



✓ 0s

completed at 5:31 AM

```
#Name-Sanika Kundekar
#PRN NO-202201040092
#Roll no-635
#Batch-F(F2)

import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
from pandas import Series, DataFrame


# Reading the tips.csv file
df1=pd.read_csv('/content/tips.csv')

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

```
df1.tail()
```

	total_bill	tip	sex	smoker	day	time	size
239	29.03	5.92	Male	No	Sat	Dinner	3
240	27.18	2.00	Female	Yes	Sat	Dinner	2
241	22.67	2.00	Male	Yes	Sat	Dinner	2
242	17.82	1.75	Male	No	Sat	Dinner	2
243	18.78	3.00	Female	No	Thur	Dinner	2

df1.columns

241	22.67	2.00	

4

24.59 3.61 Female No Sun Dinner 4

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

242	17.82	1.75	Male	No	Sat	Dinner	2
243	18.78	3.00	Female	No	Thur	Dinner	2

```
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()
```

	tip	size
total_bill count	244.000000	244.000000

244.000000 **mean** 19.785943 2.998279

2.569672 **std** 8.902412

1.383638 0.951100

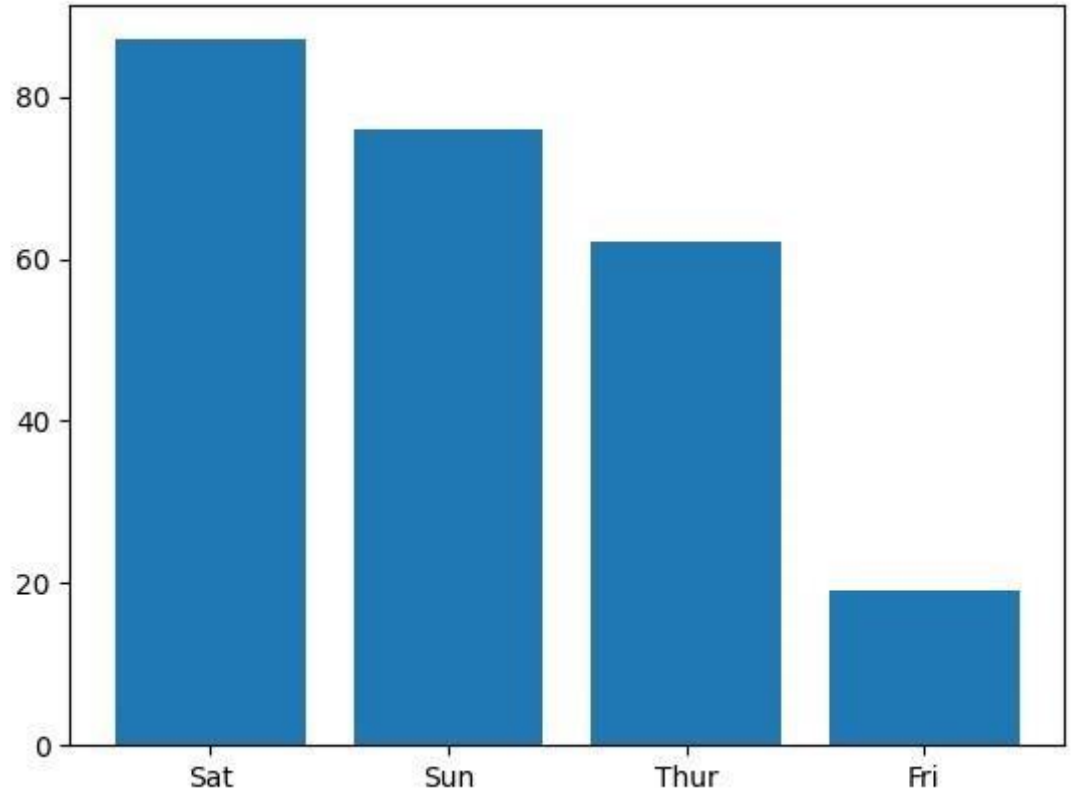
```
1 a=pd.DataFrame(df1['day'].value_counts())
2 a.reset_index(inplace=True)
3 plt.bar(a['index'],a['day']
```

min 3.070000 1.000000 1.000000

25% 13.347500 2.000000 2.000000

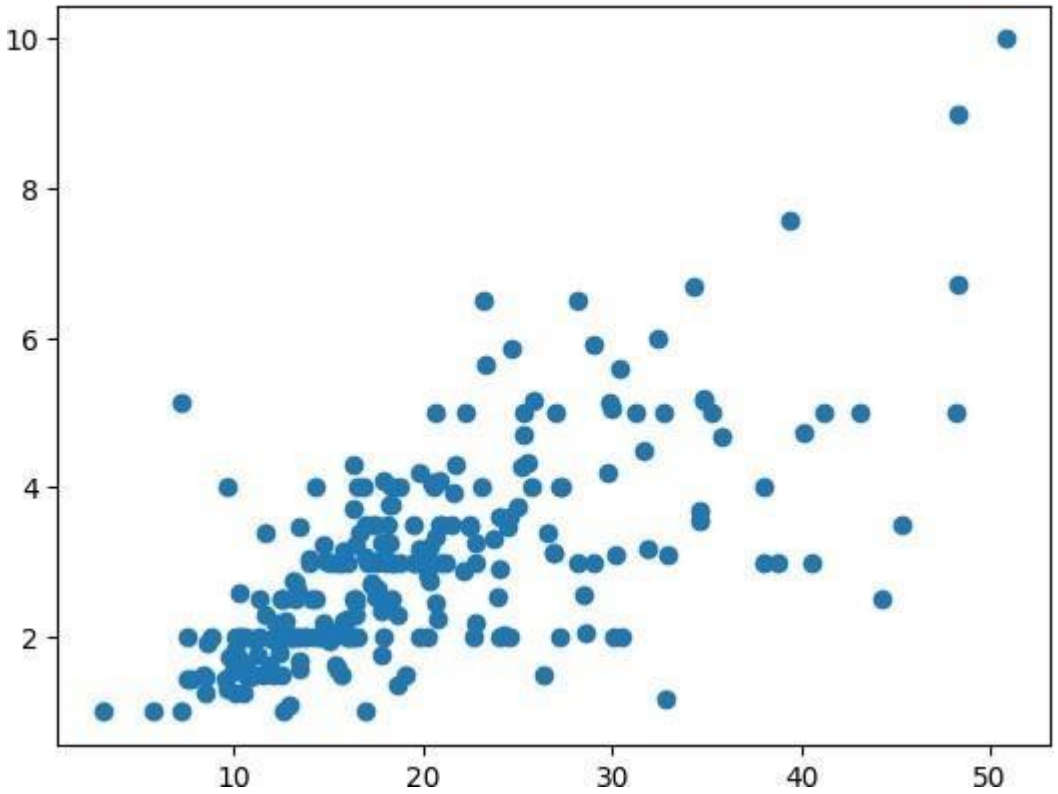
50% 17.795000 2.900000 2.000000

```
<BarContainer object of 4 artists>
```

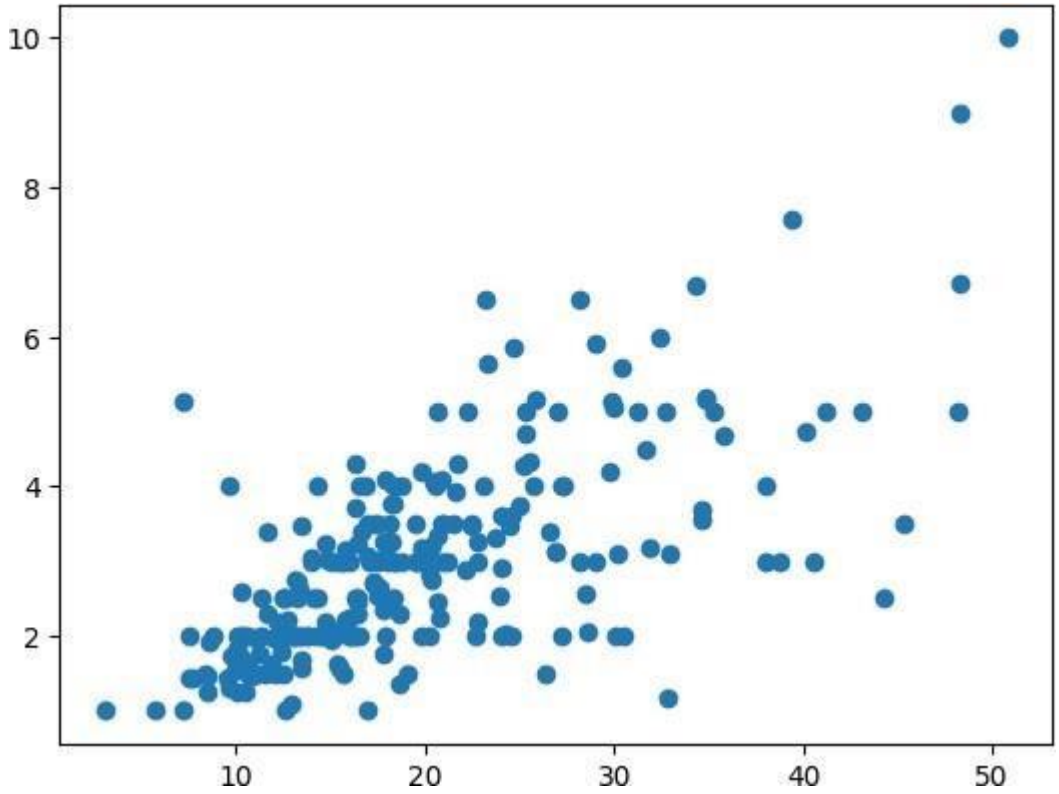



```
1 plt.scatter(df1['total_bill'],df1['tip'])
```

```
2 plt.show()
```

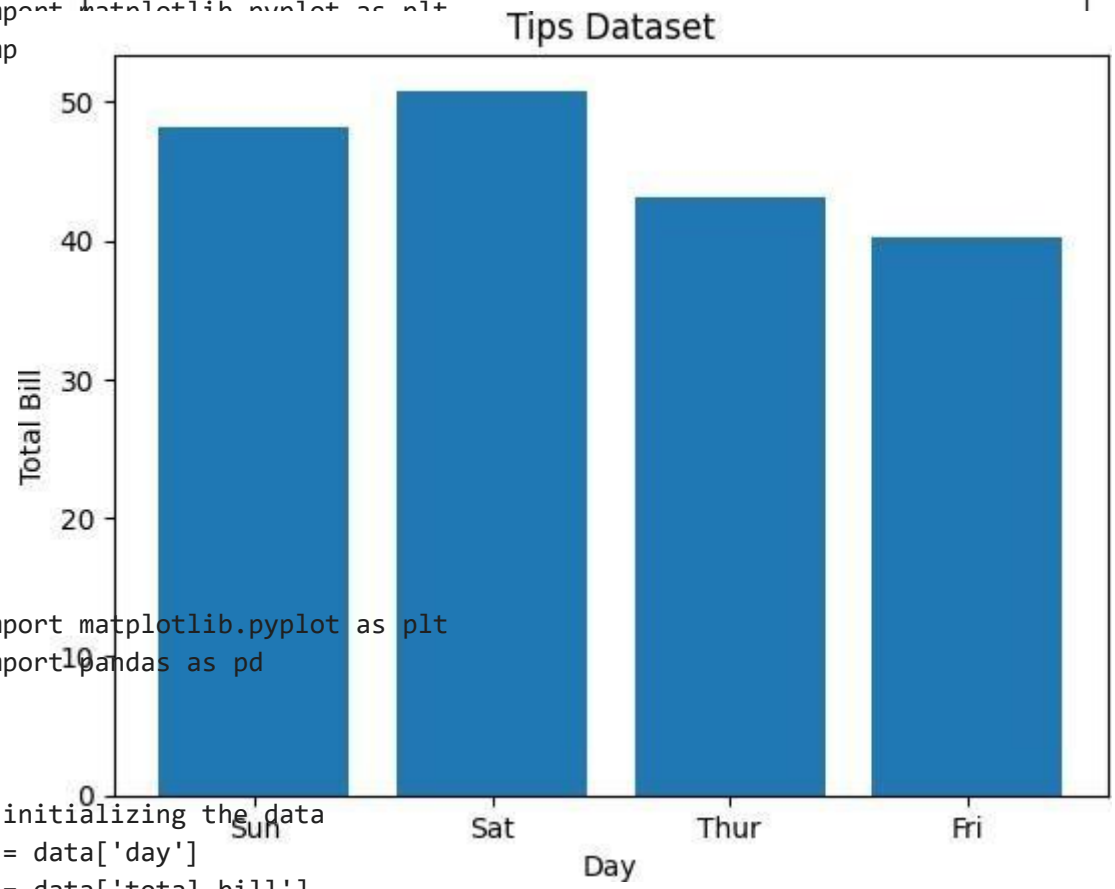



```
1  plt.scatter(x='total_bill',y='tip',data=df1)
2  fig=plt.figure(figsize=(5,4))
3  ax=fig.add_axes([1,1,1,1])
4  ax.legend(labels=('sun','mon','tue'))
5  plt.show()
```


10
8
6
4
2
10
20
30
40
50


1.0
0.8
0.6
0.4

```
#Different types of Matplotlib Plots
#bar chart
import matplotlib.pyplot as plt
imp
```




```
import matplotlib.pyplot as plt
import pandas as pd
```

```
# initializing the data
x = data['day']
y = data['total_bill']
```

```

        # plotting the data
        plt.bar(x, y, color='green', edgecolor='blue',
        linewidth=2)

# Adding title to the plot
```

```
# Reading the tips.csv file
data = pd.read_csv('/content/tips.csv')

# initializing the data
x = data['day']
y = data['total_bill']

# plotting the data
plt.bar(x, y)

# Adding title to the plot
plt.title("Tips Dataset")

# Adding label on the y-axis
plt.ylabel('Total Bill')

# Adding label on the x-axis
plt.xlabel('Day')

plt.show()
```

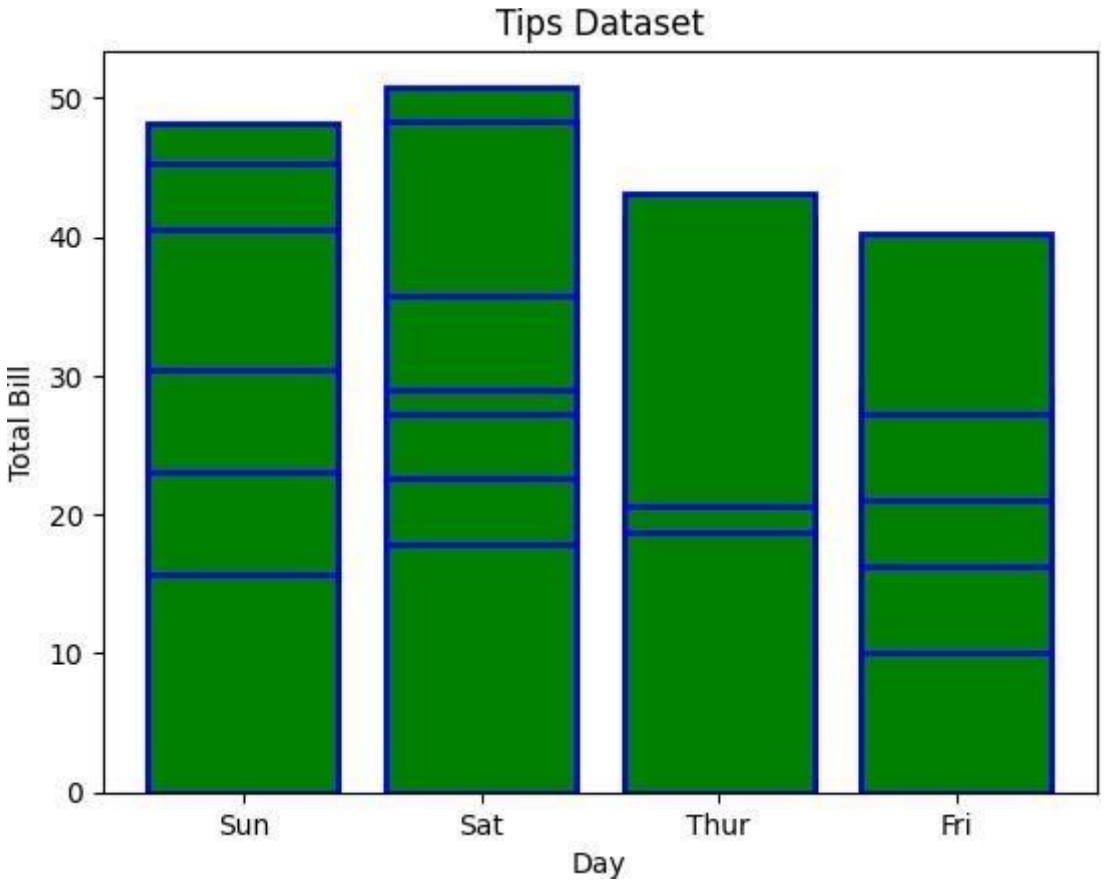
```
plt.title("Tips Dataset")

# Adding label on the y-axis
plt.ylabel('Total Bill')

# Adding label on the x-axis
plt.xlabel('Day')

plt.show()

```




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

```
import pandas as pd



# initializing the data
x = data['total_bill']

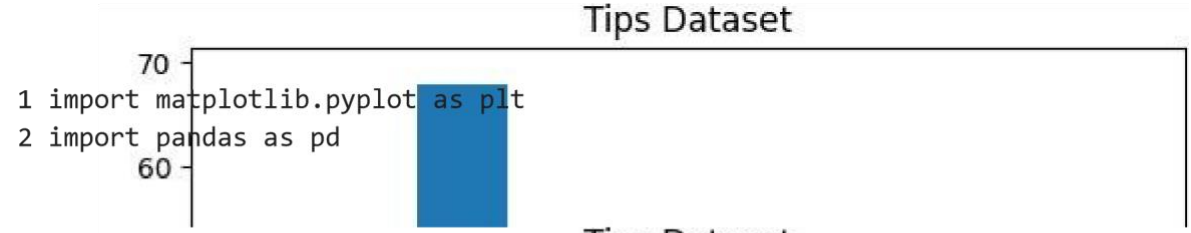
 # plotting the data
plt.hist(x)

# Adding title to the plot
plt.title("Tips Dataset")

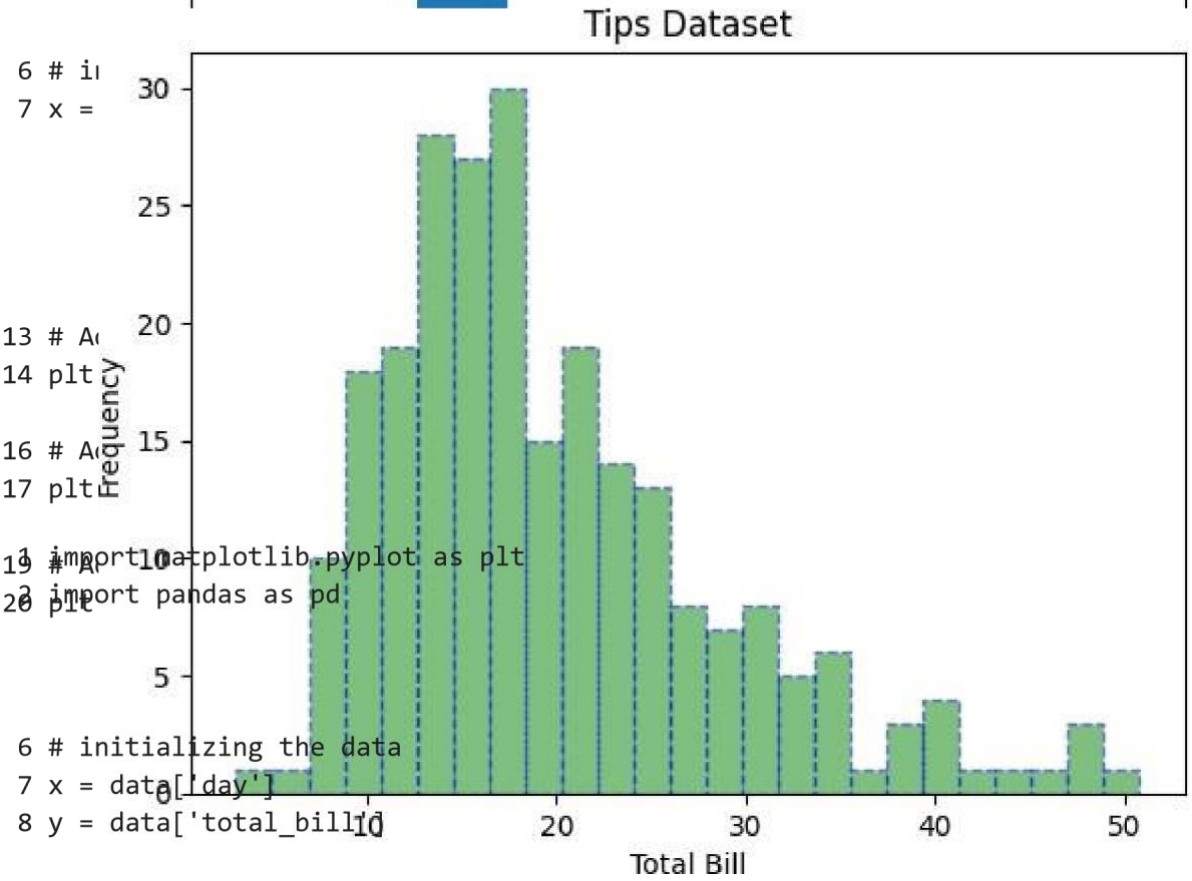
# Adding label on the y-axis
plt.ylabel('Frequency')

# Adding label on the x-axis
plt.xlabel('Total Bill')
21 plt.show()

```




```
1 import matplotlib.pyplot as plt
2 import pandas as pd
```




```
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
```

```
3
4
5
8
9  # plotting the data
10 plt.hist(x, bins=25, color='green',
                 edgecolor='blue',
11
15
18
21
22 plt.show()
23
```

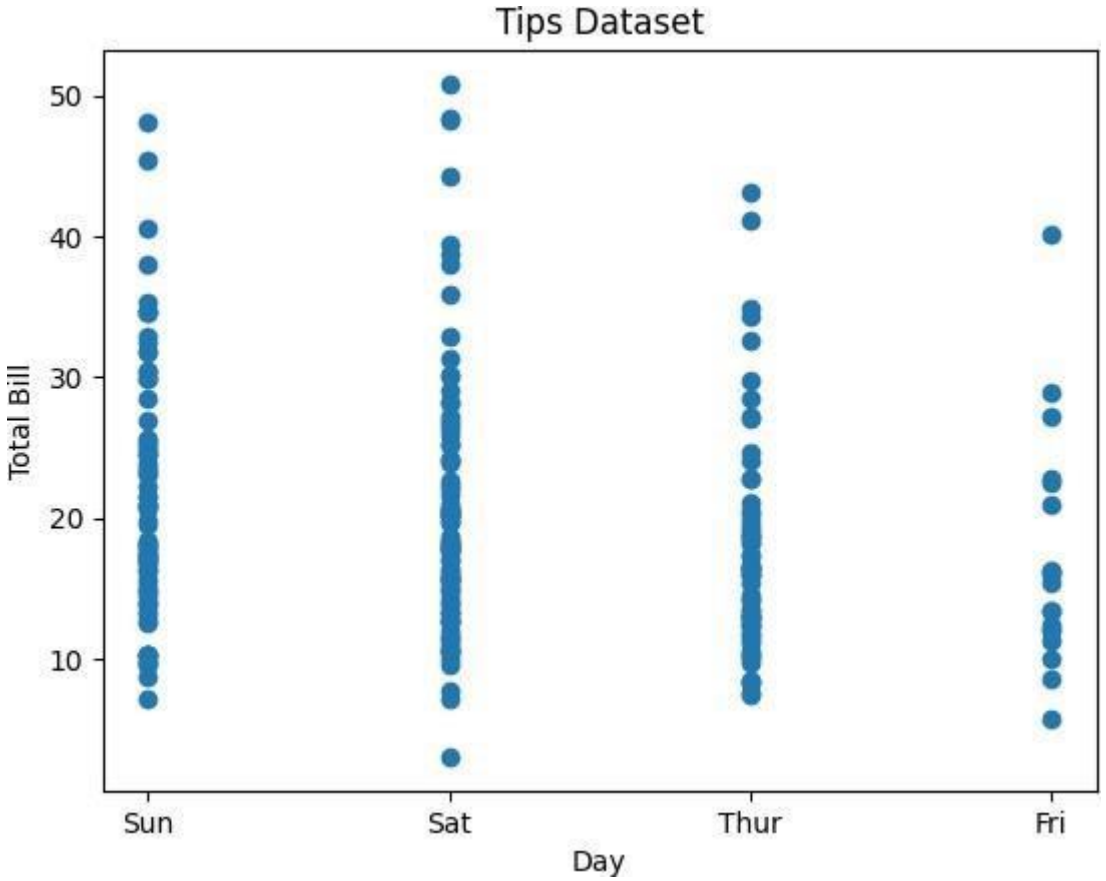
3
4
5

```
plt.ylabel('Total Bill')

# Adding label on the x-axis
plt.xlabel('Day')

plt.show()

```




```
import matplotlib.pyplot as plt
import pandas as pd


```

```
# initializing the data
x = data['day']
y = data['total_bill']

                                                    # plotting the data
          plt.scatter(x, y, c=data['size'], s=data['total_bill'],
                                                      marker='D', alpha=0.5)
                                    

# Adding title to the plot
plt.title("Tips Dataset")

# Adding label on the y-axis
plt.ylabel('Total Bill')

# Adding label on the x-axis
plt.xlabel('Day')

plt.show()

```

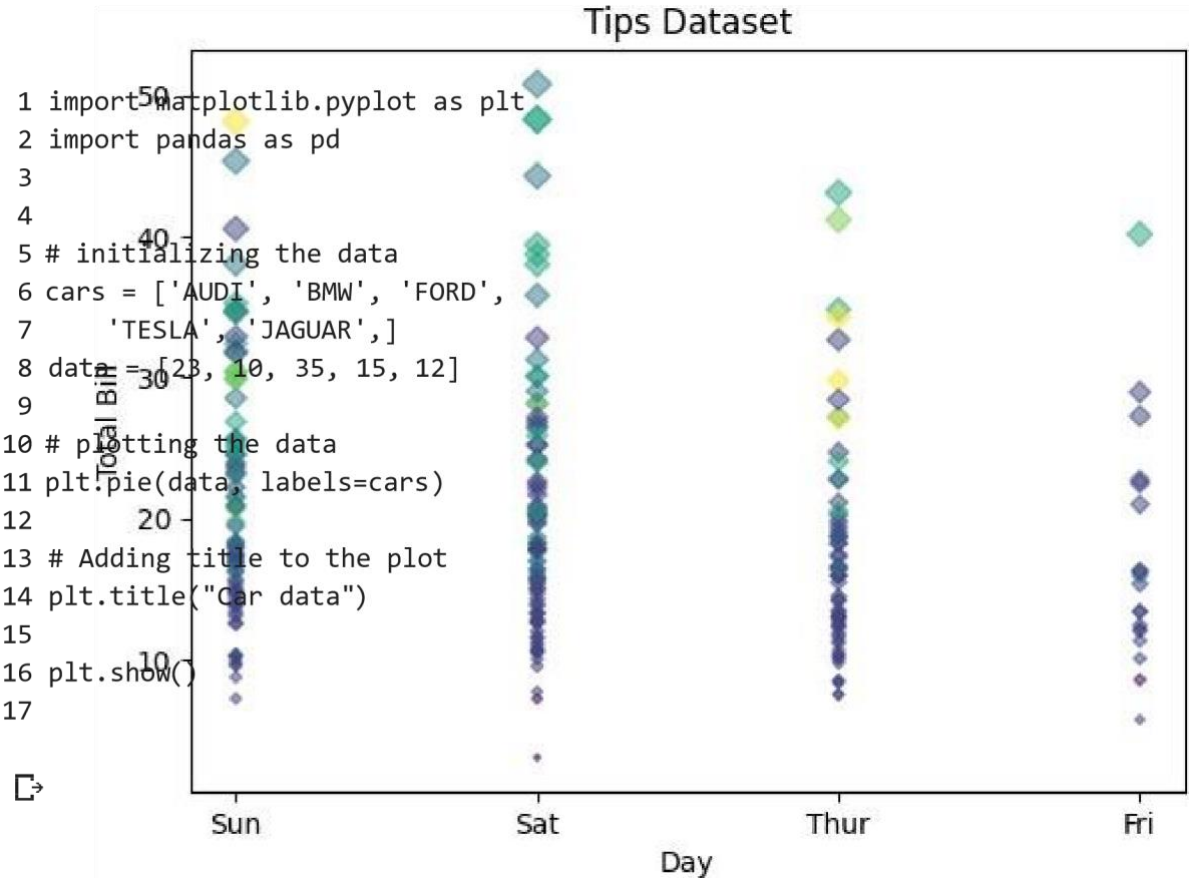
```
import matplotlib.pyplot as plt
import pandas as pd

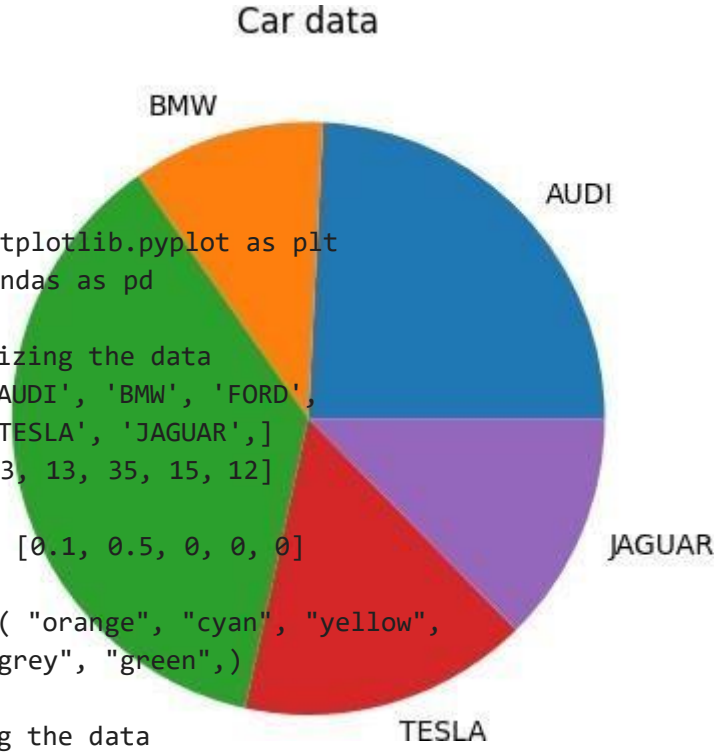

# initializing the data
cars = ['AUDI', 'BMW', 'FORD',
        'TESLA', 'JAGUAR',]
data = [23, 10, 35, 15, 12]

# plotting the data
plt.pie(data, labels=cars)

# Adding title to the plot
plt.title("Car data")

plt.show()
```






```
import matplotlib.pyplot as plt
import pandas as pd

# initializing the data
cars = ['AUDI', 'BMW', 'FORD',
        'TESLA', 'JAGUAR',]
data = [23, 13, 35, 15, 12]

explode = [0.1, 0.5, 0, 0, 0]

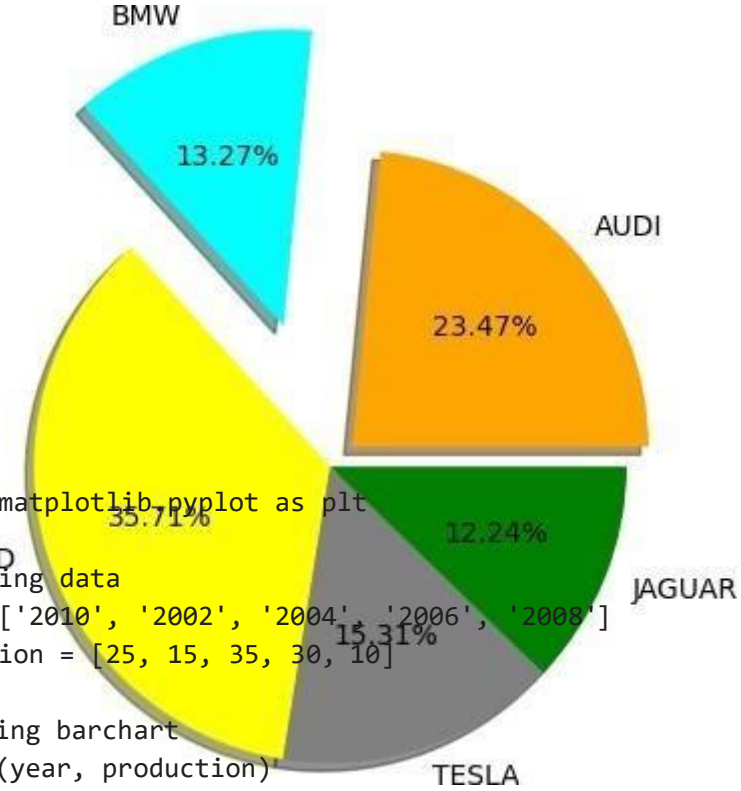
colors = ( "orange", "cyan", "yellow",
          "grey", "green",)

# plotting the data


        plt.pie(data, labels=cars, explode=explode, autopct='%1.2f%%',
        colors=colors, shadow=True)

plt.show()

```




```
1 import matplotlib.pyplot as plt

3 # Creating data
4 year = ['2010', '2002', '2004', '2006', '2008']
5 production = [25, 15, 35, 30, 10]

7 # Plotting barchart
8 plt.bar(year, production)
```

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2
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6
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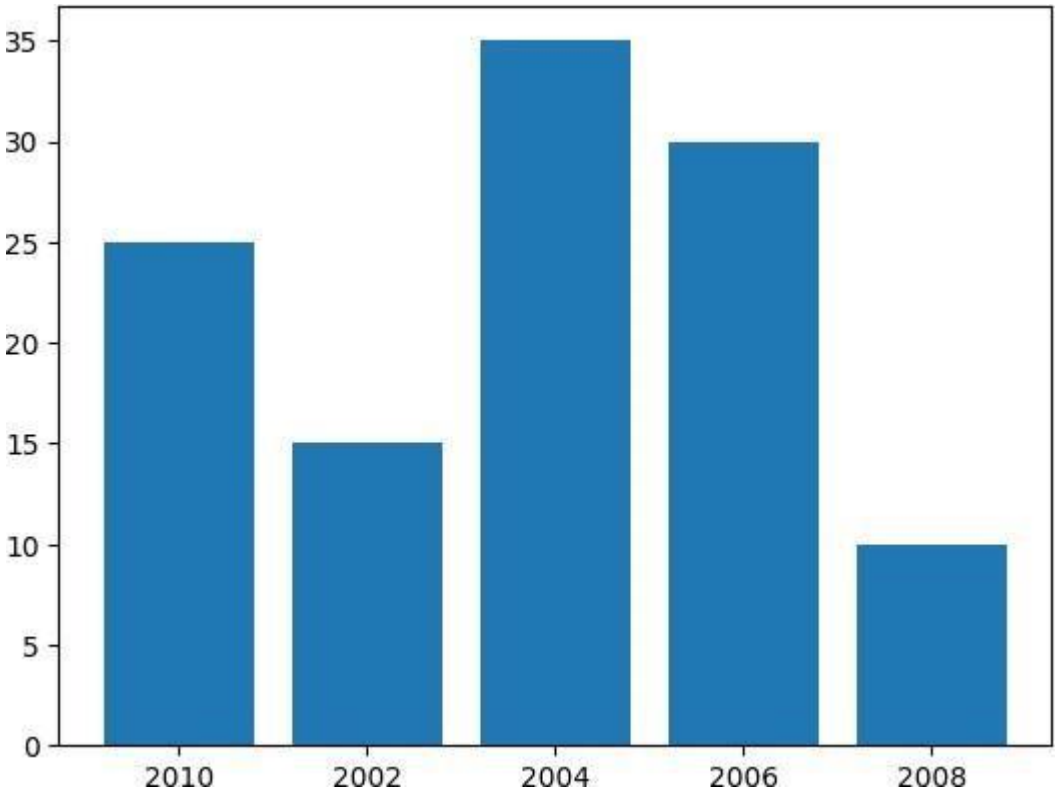
9
10 # Saving the figure.
11 plt.savefig("output.jpg")
12
13 # Saving figure by changing parameter values
14 plt.savefig("output1", facecolor='y', bbox_inches="tight",
15 pad_inches=0.3, transparent=True)
16
```



Colab paid products - Cancel contracts here 0s

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