```
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#ROLL NO:641
#DIV: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/sample_data/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
```

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

```
df1.info()
```

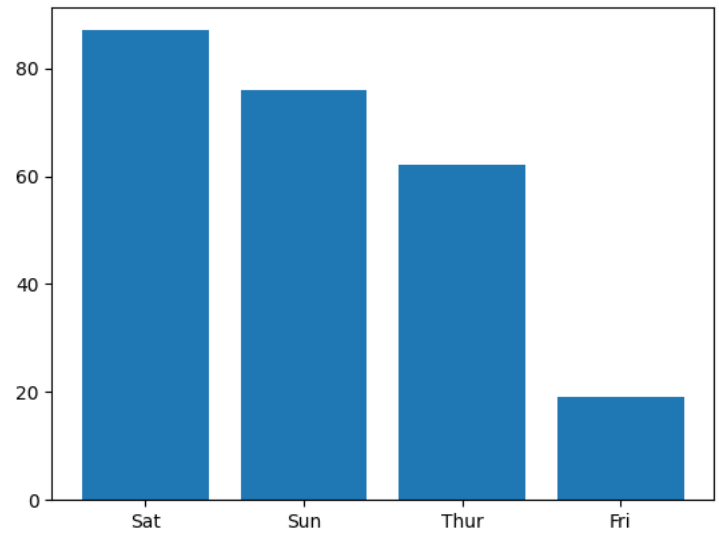
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 244 entries, 0 to 243
Data columns (total 7 columns):
 #   Column      Non-Null Count  Dtype  
---  ------      --------------  -----  
 0   total_bill  244 non-null    float64
 1   tip         244 non-null    float64
 2   sex         244 non-null    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
```

```
df1.describe()
```

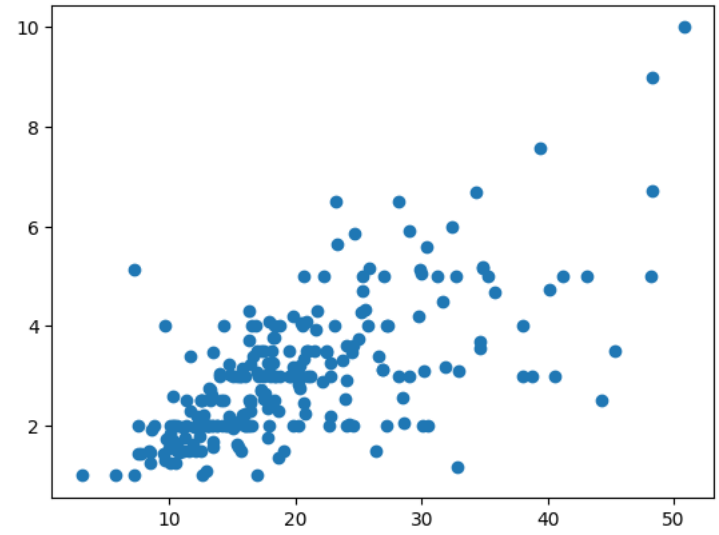
	total_bill	tip	size
count	244.000000	244.000000	244.000000

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

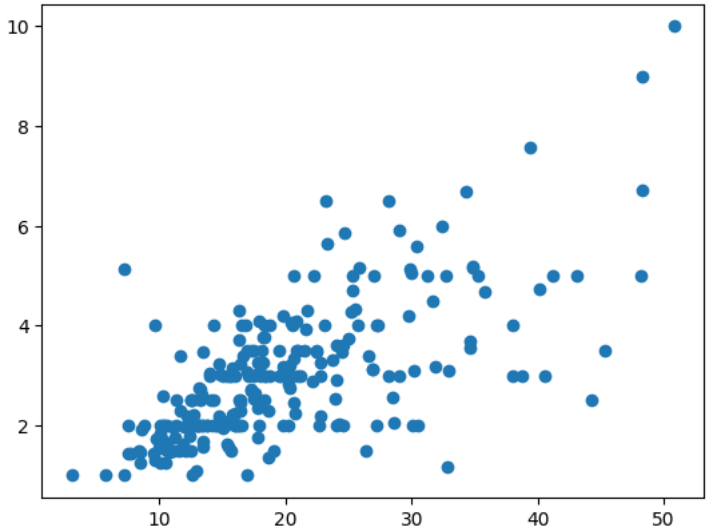
```
<BarContainer object of 4 artists>
```



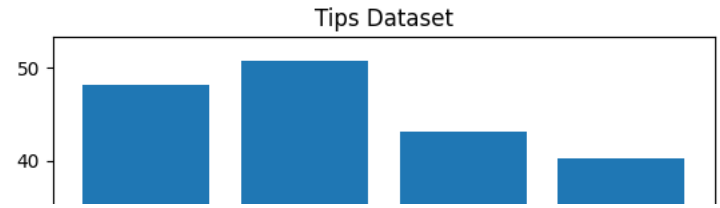

```
plt.scatter(df1['total_bill'],df1['tip'])
plt.show()
```



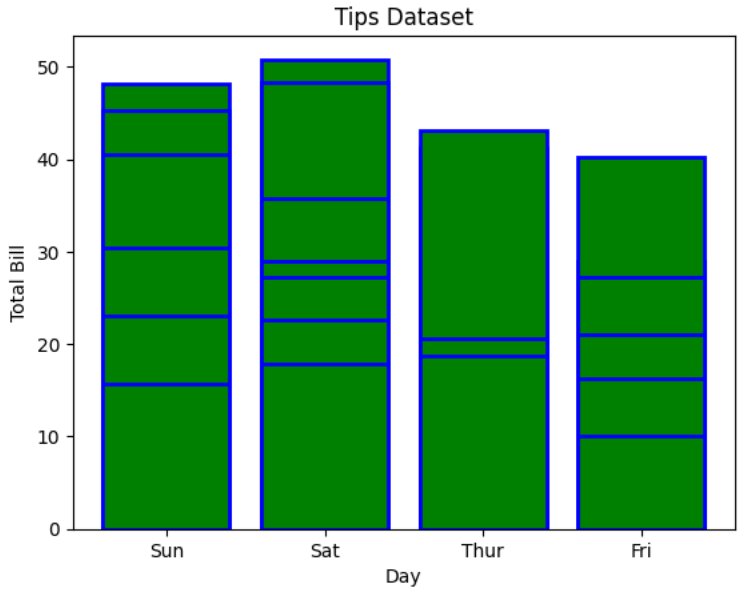

```
plt.scatter(x='total_bill',y='tip',data=df1)
fig=plt.figure(figsize=(5,4))
ax=fig.add_axes([1,1,1,1])
ax.legend(labels=('sun','mon','tue'))
plt.show()
```




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

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

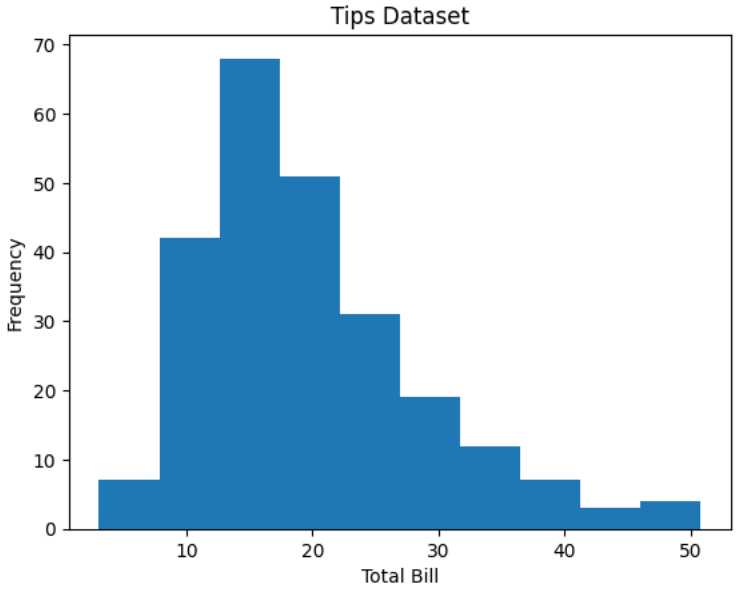



```
import matplotlib.pyplot as plt
import pandas as pd



# 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
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()
```

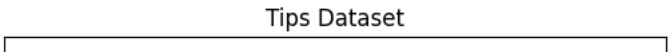



```
import matplotlib.pyplot as plt
import pandas as pd



# 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')
```

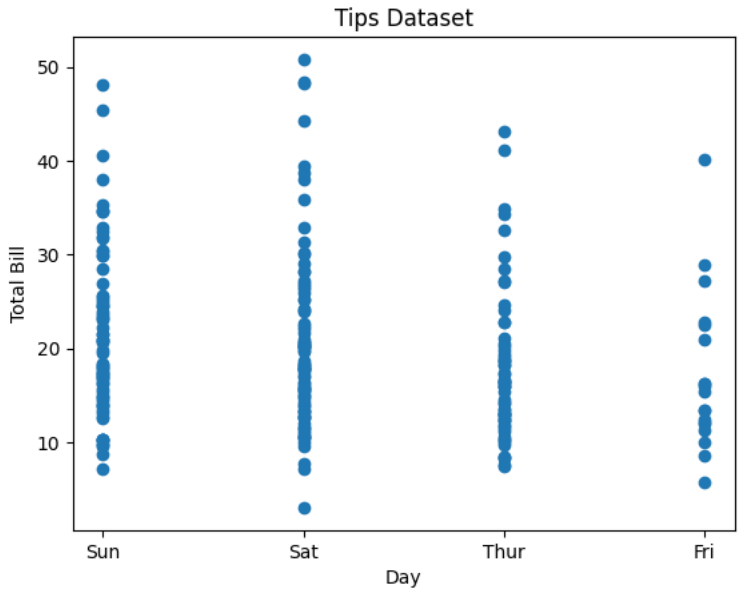
```
# Adding label on the x-axis
plt.xlabel('Total Bill')

plt.show()
```



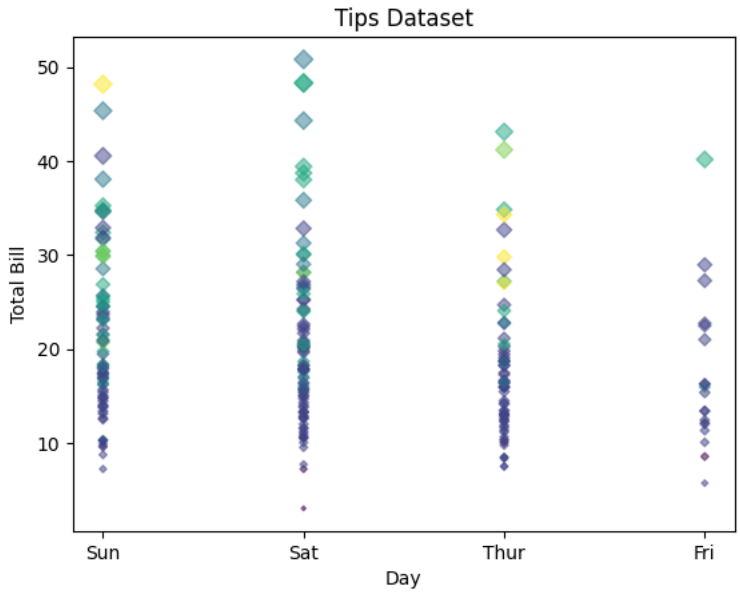

```
import matplotlib.pyplot as plt
import pandas as pd



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

# plotting the data
plt.hist(x, bins=25, color='green', edgecolor='blue',
        linestyle='--', alpha=0.5)

# 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')

plt.show()
```



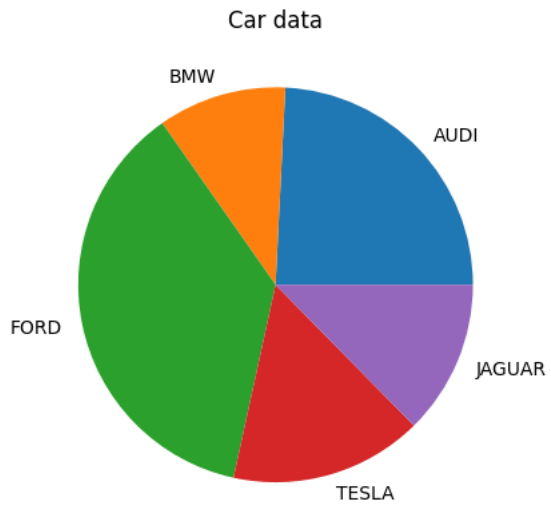

```
import matplotlib.pyplot as plt
import pandas as pd



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

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

# 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
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()
```

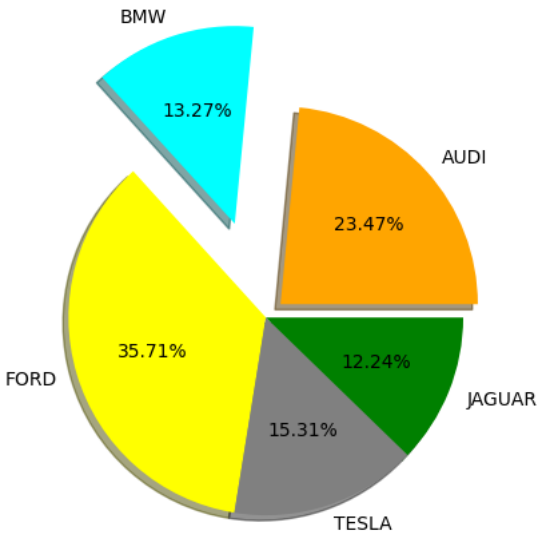



```
import matplotlib.pyplot as plt
import pandas as pd


# 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()
```




```
import matplotlib.pyplot as plt

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

# Plotting barchart
plt.bar(year, production)

# Saving the figure.
plt.savefig("output.jpg")

# Saving figure by changing parameter values
plt.savefig("output1", facecolor='y', bbox_inches="tight",
            pad_inches=0.3, transparent=True)
```