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Roll no. :- 740.

Subject :- EDS (Practical no.-5)

PRN No. :- 202201070136.

LAB Assignment.....

```
from google.colab import drive
drive.mount('/content/drive')
```

Mounted at /content/drive

```
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/drive/MyDrive/Colab Notebooks/tips.csv')
```

```
df1.head()
```

		total_bill	tip	sex	smoker	day	time	size
time	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



```
df1.columns
```

```
Index(['total_bill', 'tip', 'sex', 'smoker', 'day', 'time', 'size'], dtype='object')240  
27.18 2.00 Female Yes Sat  
Dinner 2
```

241	22.67	2.00	Male	Yes	Sat	Dinner	2
-----	-------	------	------	-----	-----	--------	---

```
df1.info
```

```
()
```

```
<243class 'pandas.core.frame.DataFrame' 18.78 3.00 Female No>  
Thur Dinner 2 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

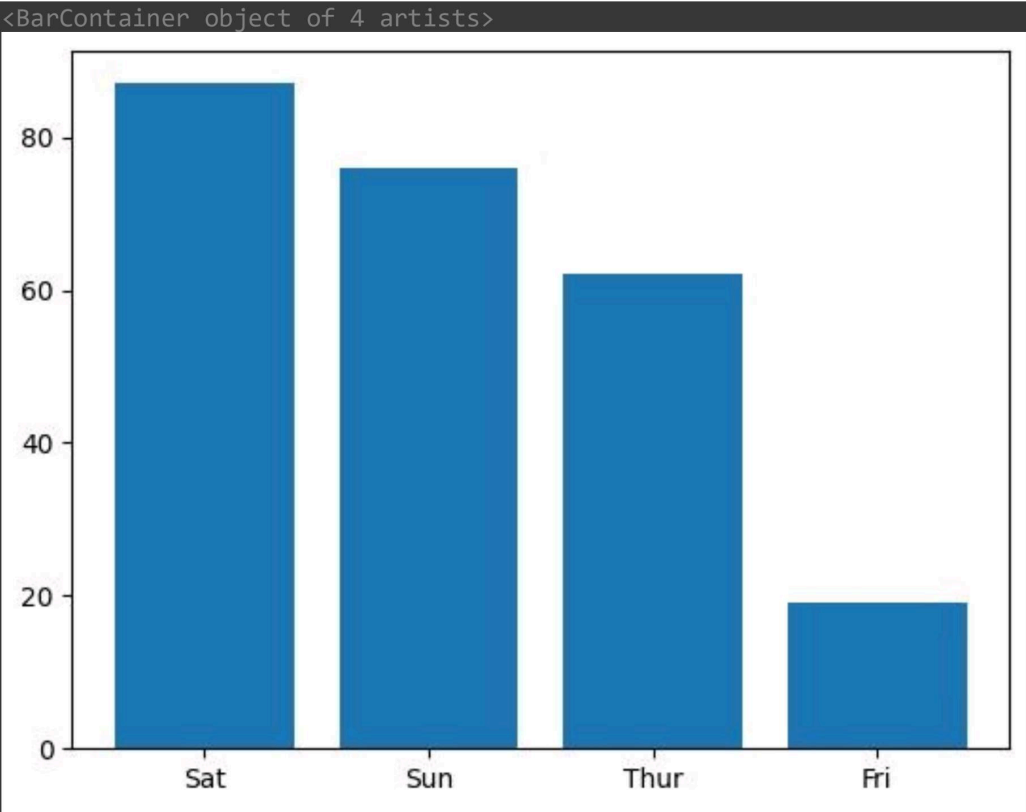
6	size	244 non-null	int64
---	------	--------------	-------

dtypes:
float64(2), int64(1), object(4) memory usage: 13.5+ KB

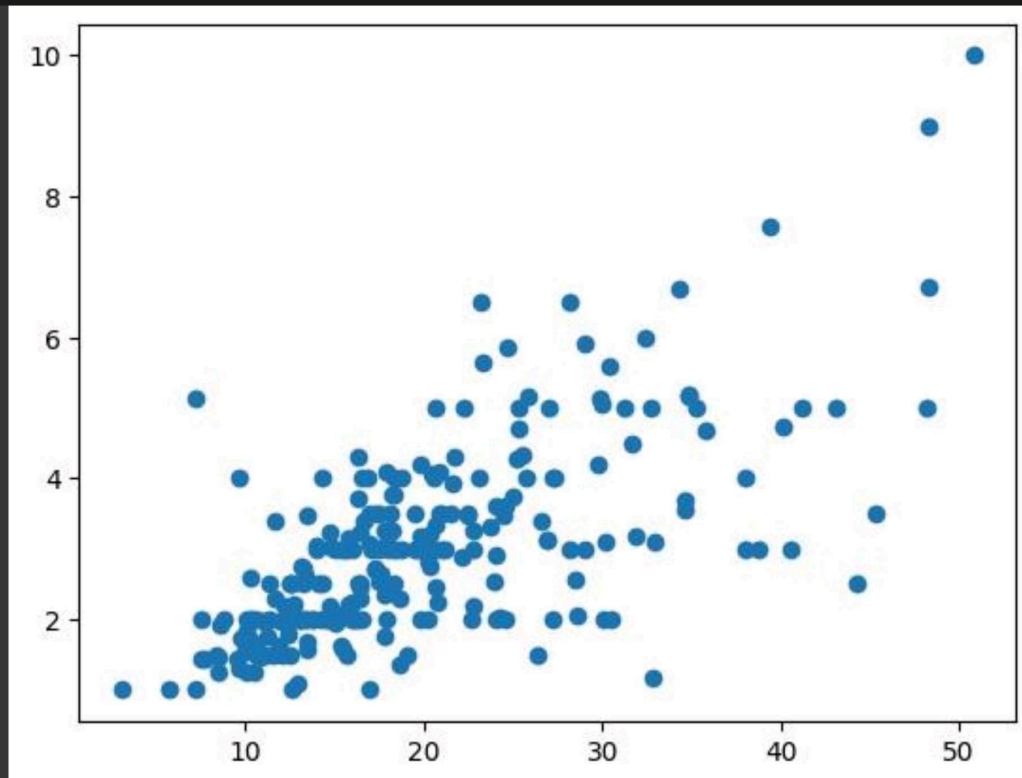
```
df1.describe()
```

	total_bill	tip	size
count	244.000000	244.000000	244.000000
mean	19.785943	2.998279	2.569672
std	8.902412	1.383638	0.951100
min	3.070000	1.000000	1.000000
25%	13.347500	2.000000	2.000000
50%	17.795000	2.900000	2.000000
75%	24.127500	3.562500	3.000000
max	50.810000	10.000000	6.000000

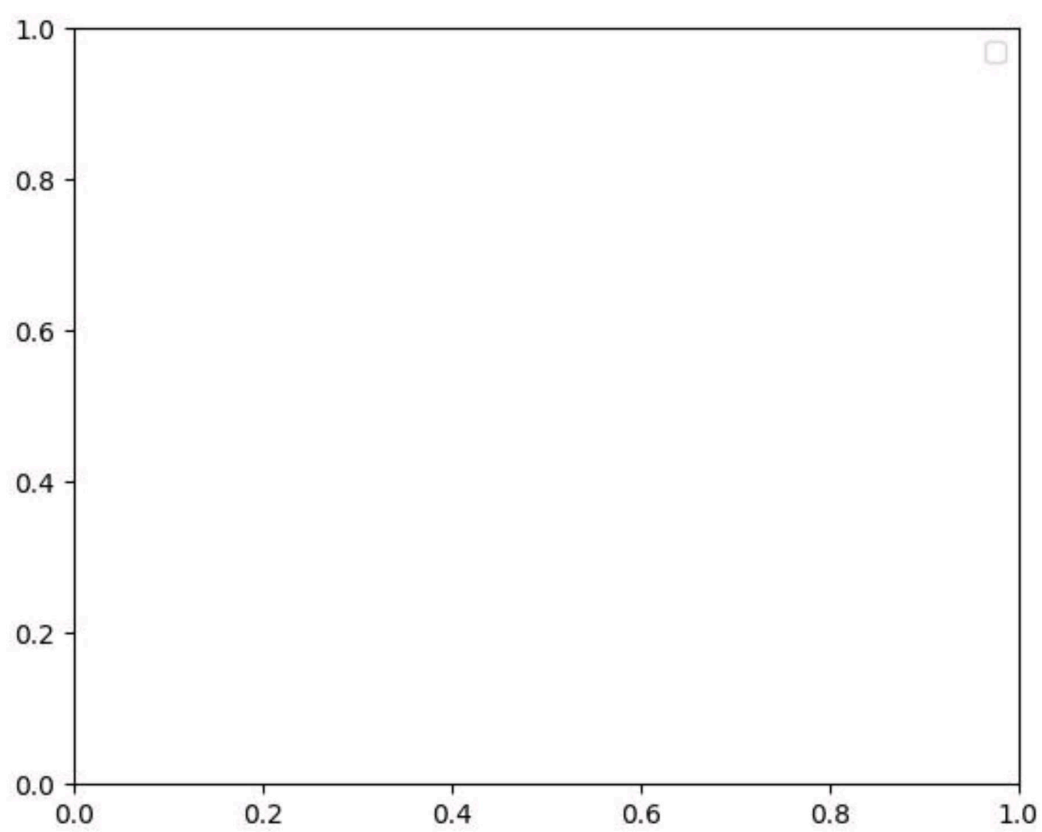
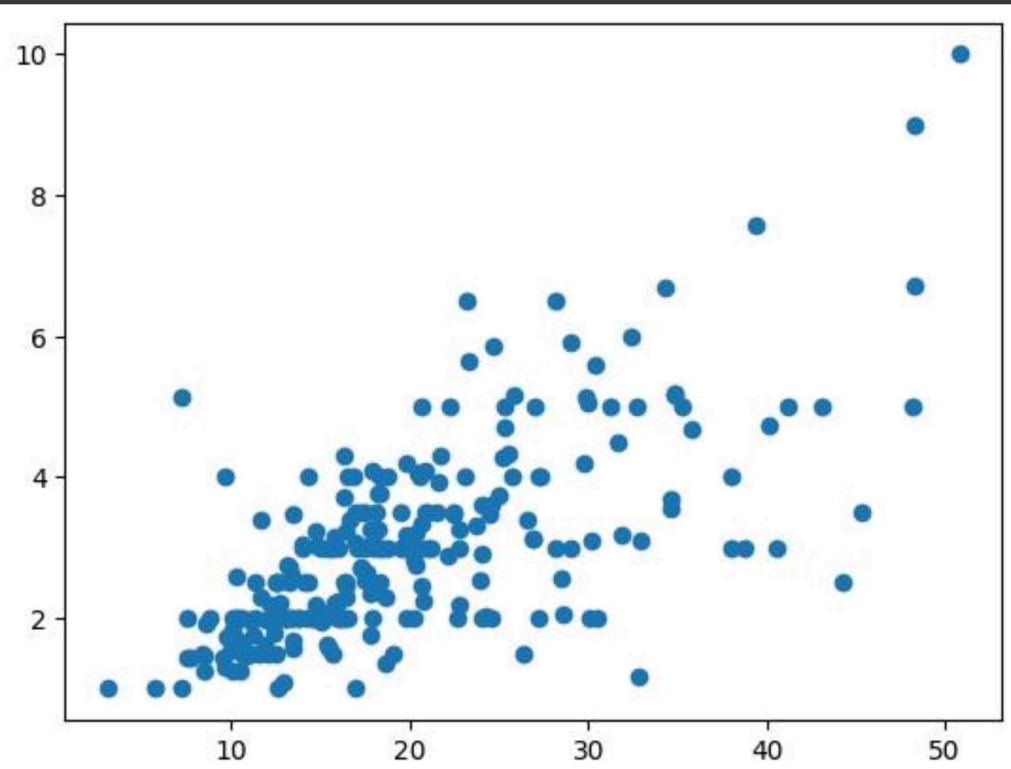
```
a=pd.DataFrame(df1['day'].value_counts())
a.reset_index(inplace=True) plt.bar(a['index'],a['day'])
```



```
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/drive/MyDrive/Colab Notebooks/tips.csv')

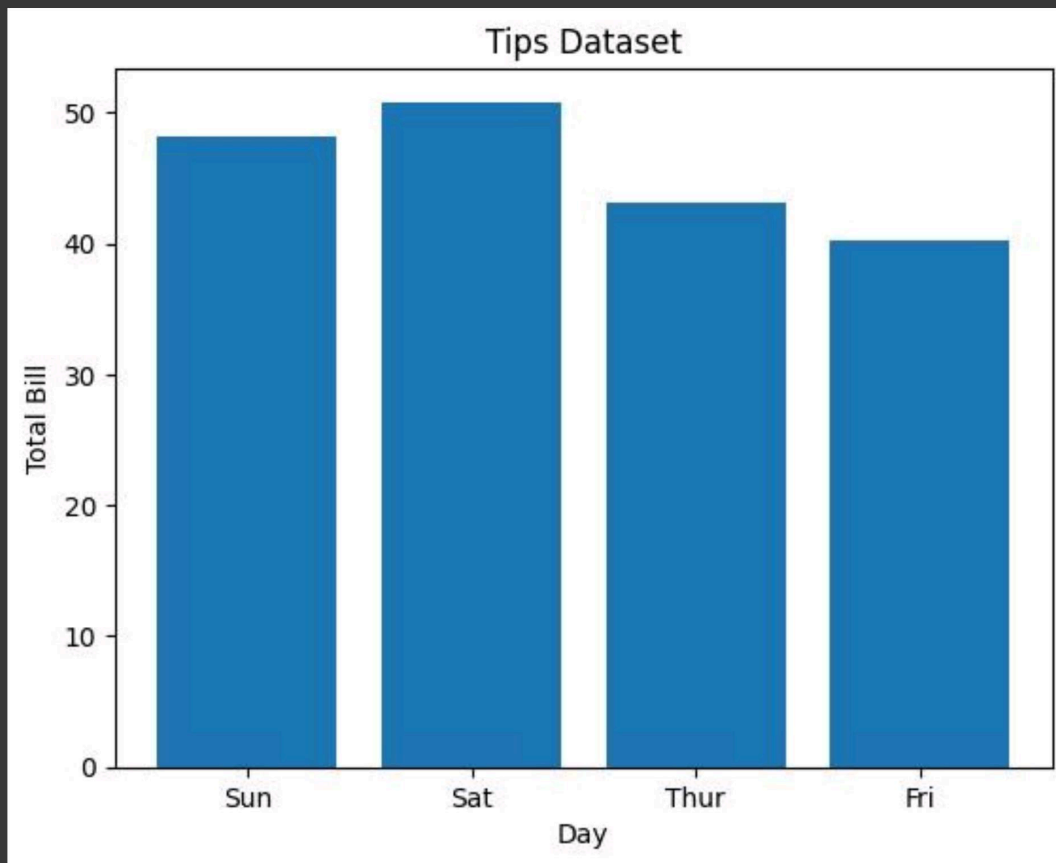
# initializing the
data x = data['day'] y
= data['total_bill']

# 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

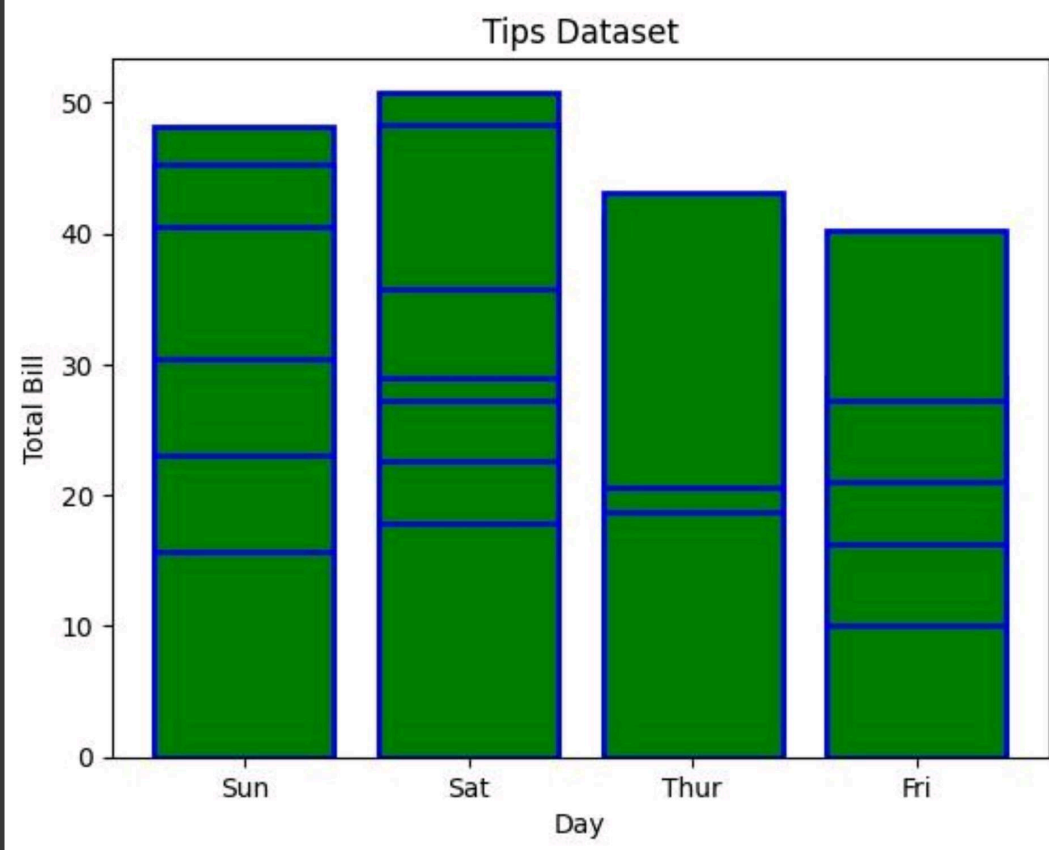
# initializing the data
x = data['day'] y =
data['total_bill']

# 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
```

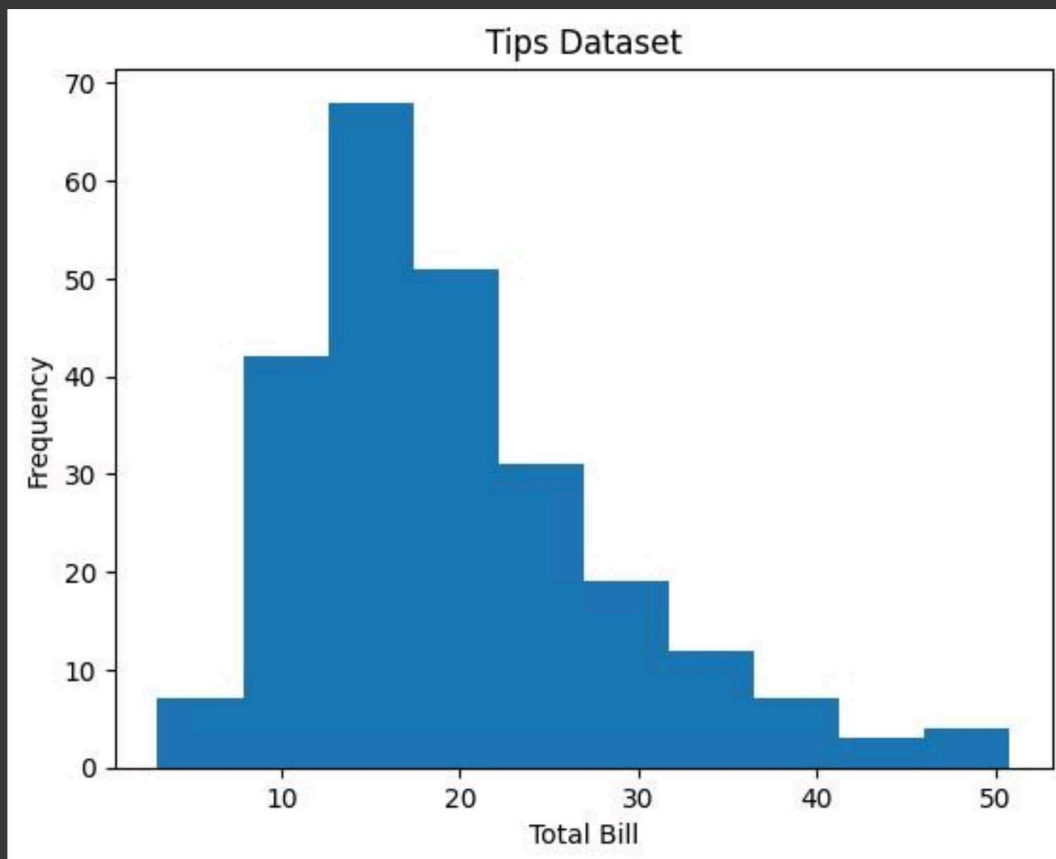
```
# initializing the data x =
data['total_bill']
```

```
# 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

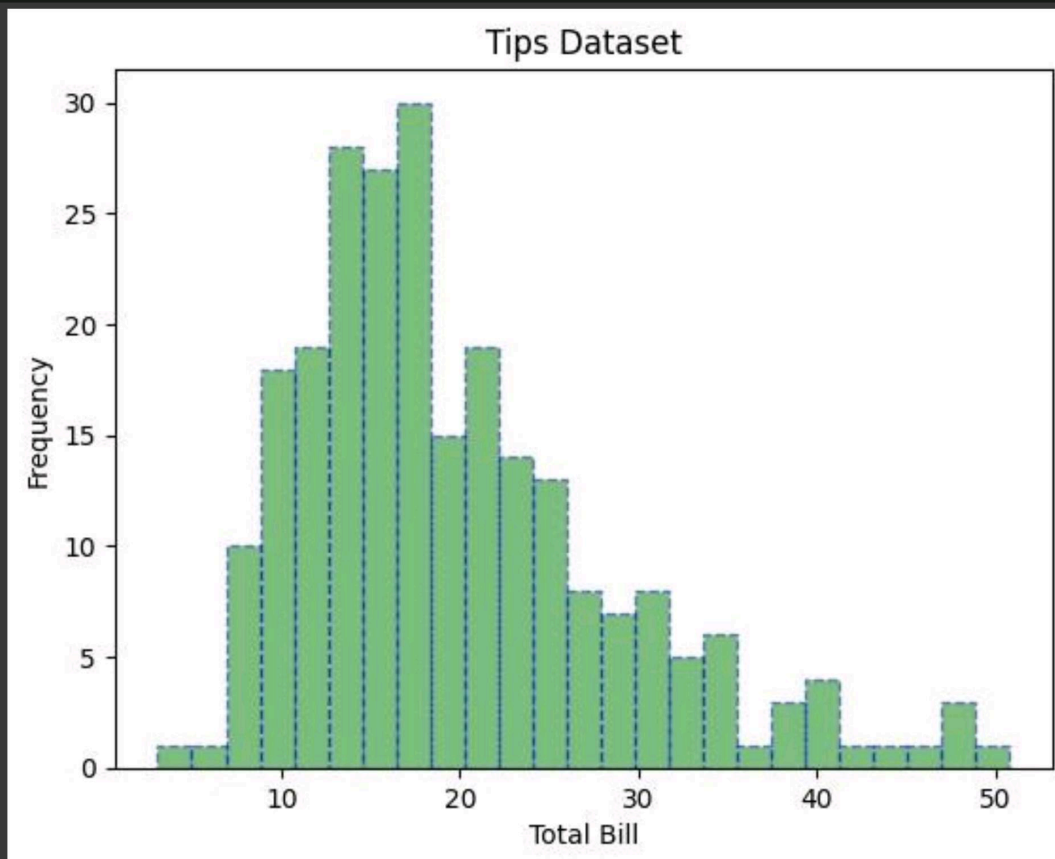
# initializing the data
x = data['total_bill']

# 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']
```

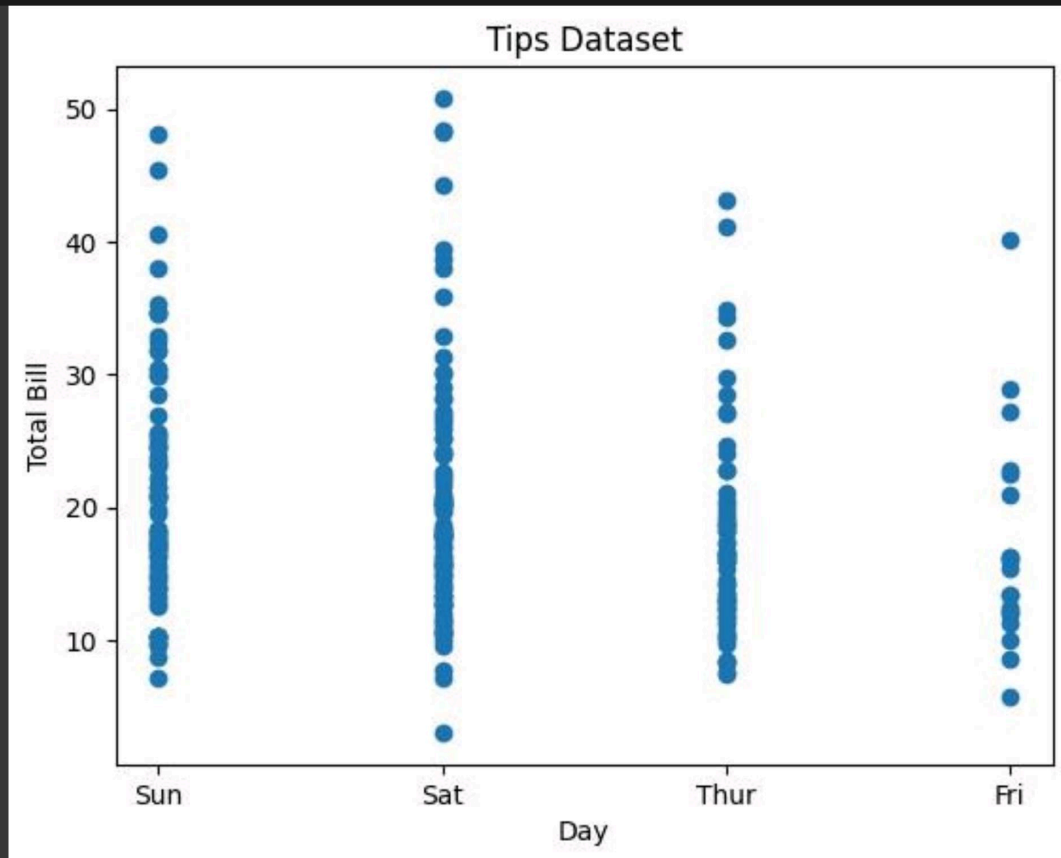
```
# plotting the data
plt.scatter(x, y)
```

```
# 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

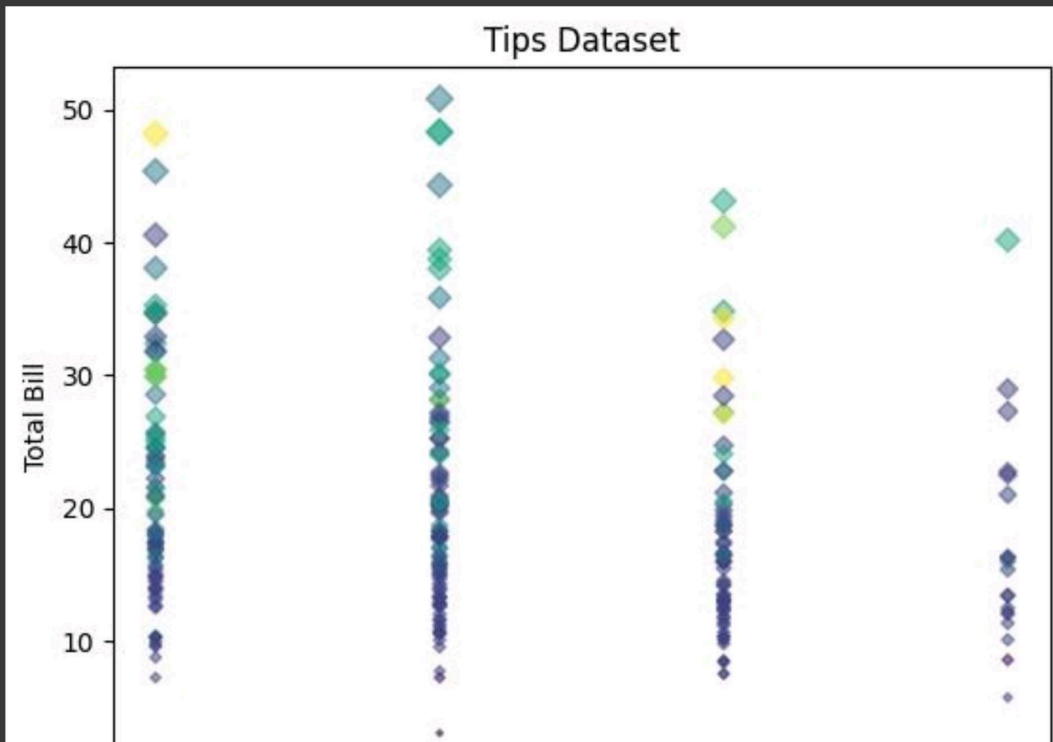
# initializing the data x =
data['day'] y =
data['total_bill']

# 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
day = ['mon', 'tue', 'wed',
       'thurs', 'fri', 'sat', 'sun']
data = [23, 10, 35, 15, 12, 40, 16]

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

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

plt.show()
```

days data

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

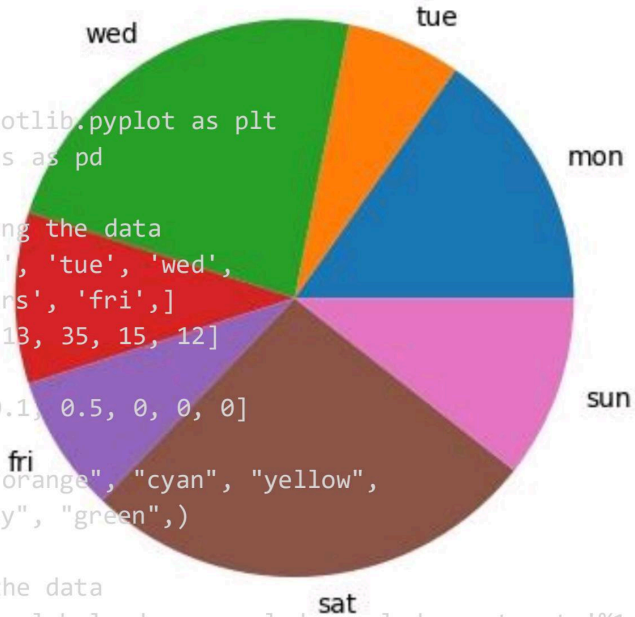
# initializing the data
days = ['mon', 'tue', 'wed', 'thurs', 'fri', 'sat', 'sun']
data = [23, 13, 35, 15, 12, 35, 12]

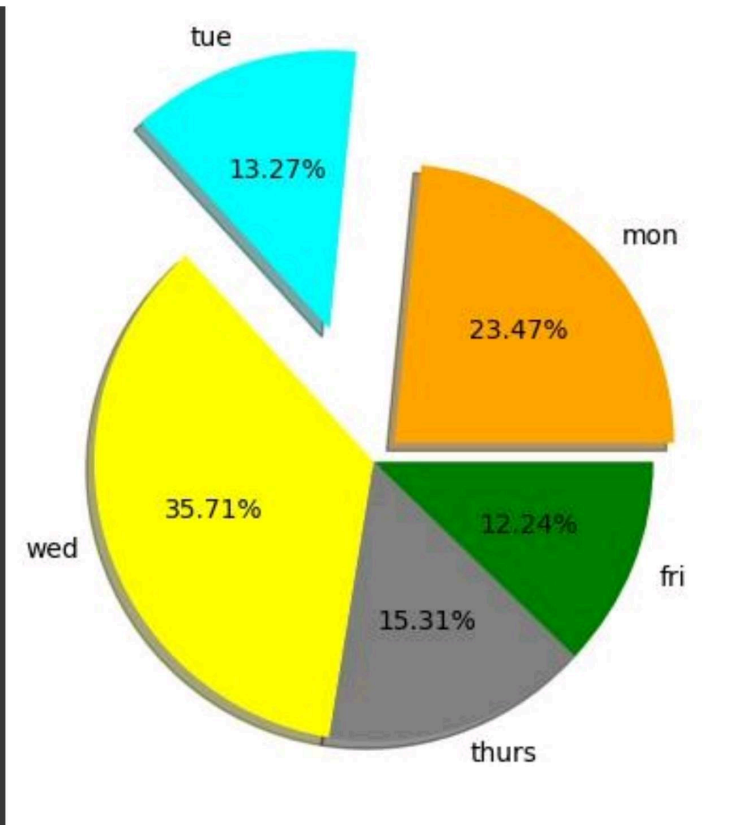
explode = [0.1, 0.5, 0, 0, 0, 0, 0]

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

# plotting the data
plt.pie(data, labels=days, explode=explode, autopct='%1.2F%%',
        colors=colors, shadow=True)

plt.show()
```





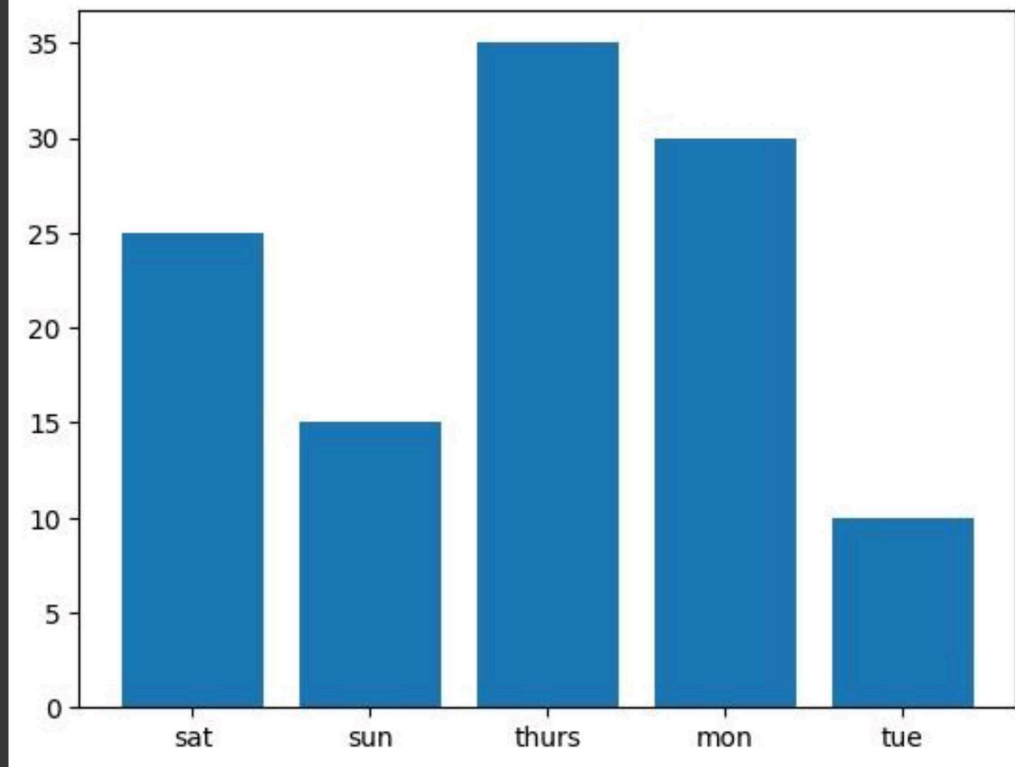
```
import matplotlib.pyplot as plt

# Creating data
year = ['sat', 'sun', 'thurs', 'mon', 'tue']
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)
```

```
x = np.linspace(0, 10, 100) fig =  
plt.figure() plt.plot(x, np.sin(x))  
plt.plot(x, np.cos(x))  
fig.savefig('graph1.png')
```

