Name omkar Dhere

PRN: 202201060030

Roll no: 616

Div: F

Batch: F1

```
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
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
```

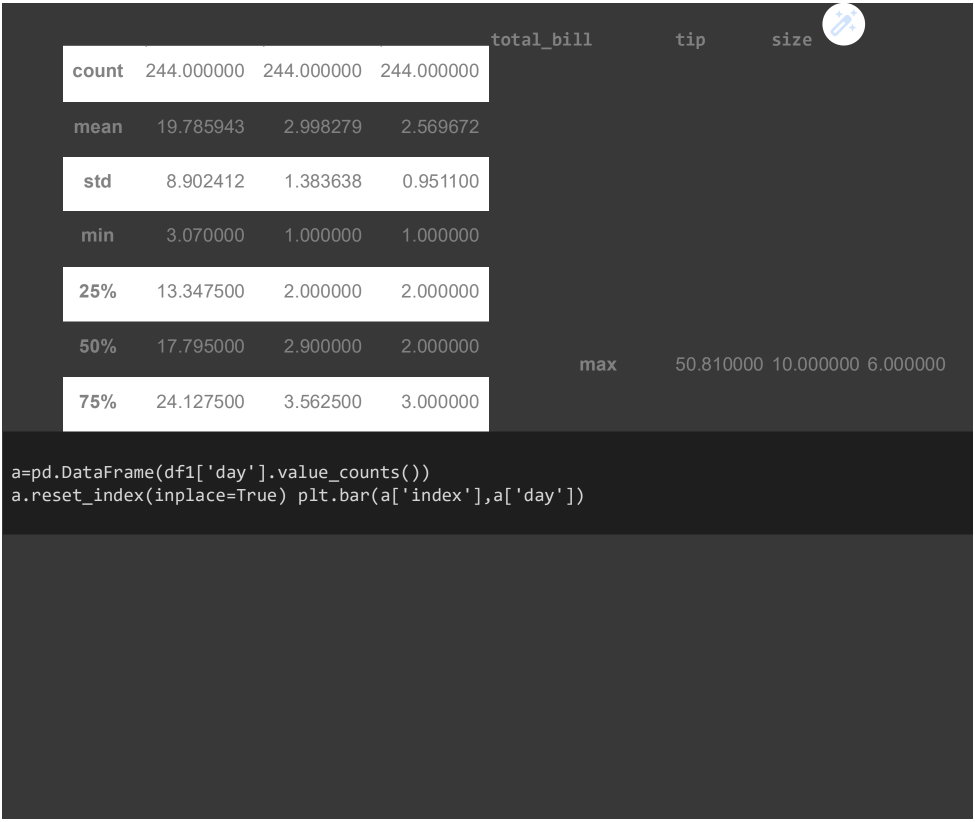
```
Index(['total_bill', 'tip', 'sex', 'smoker', 'day', 'time', 'size'], dtype='object')240
                                                27.18  2.00     Female           Yes         Sat
                                                Dinner   2
```

```
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
```

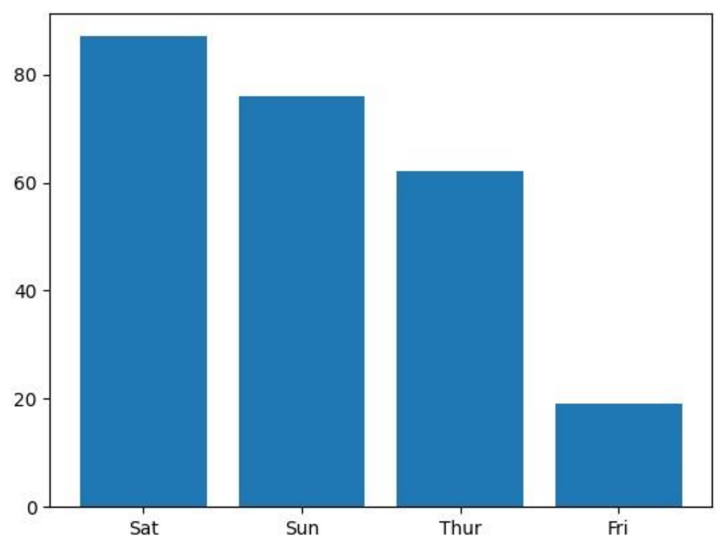
```
df1.describe()
```

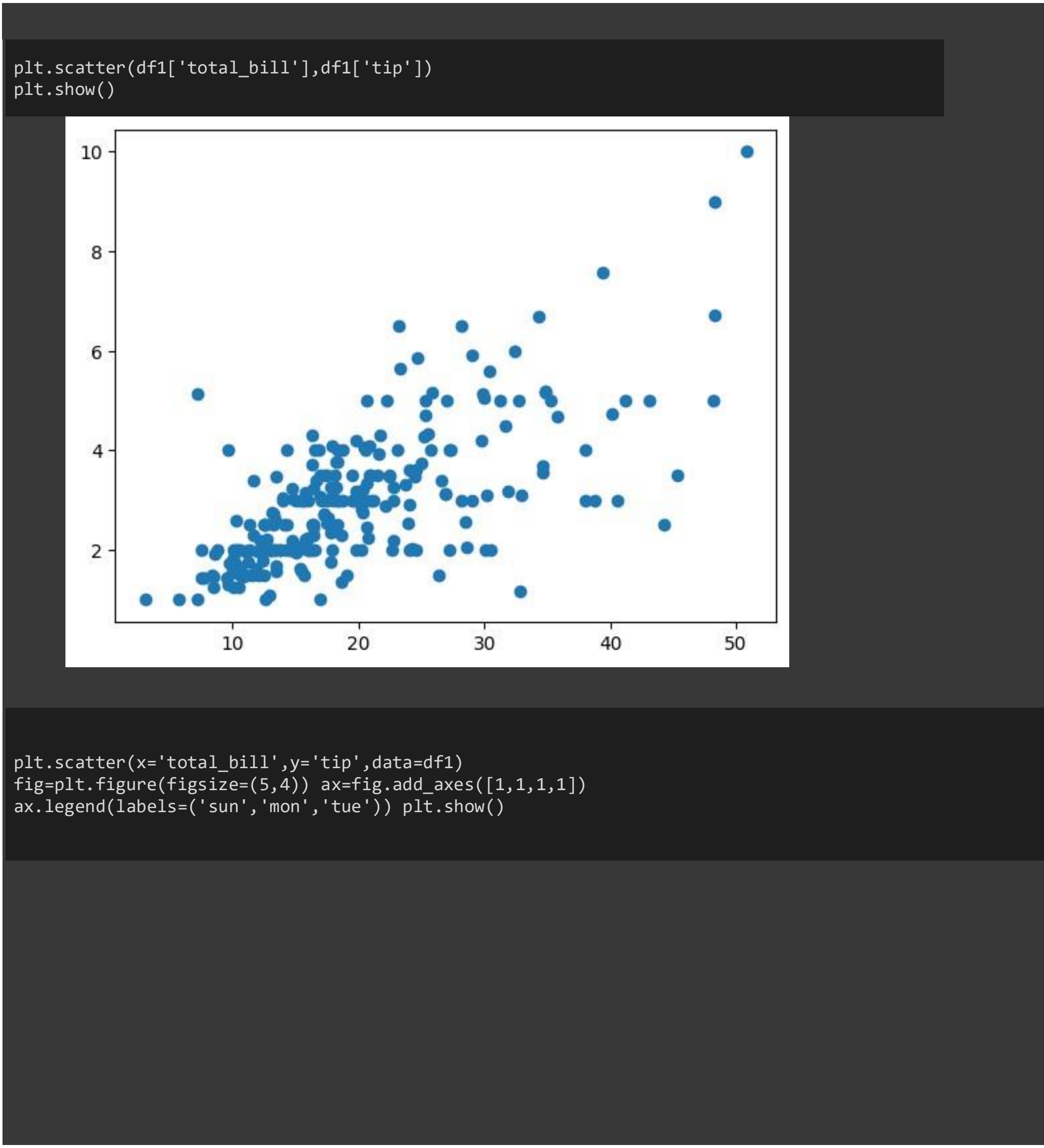


	total_bill	tip	size
count	244.000000	244.000000	244.000000
mean	19.785943	2.998279	2.569672
std	8.902412	1.383638	0.951100
min	3.070000	1.000000	1.000000
25%	13.347500	2.000000	2.000000
50%	17.795000	2.900000	2.000000
75%	24.127500	3.562500	3.000000
max	50.810000	10.000000	6.000000

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

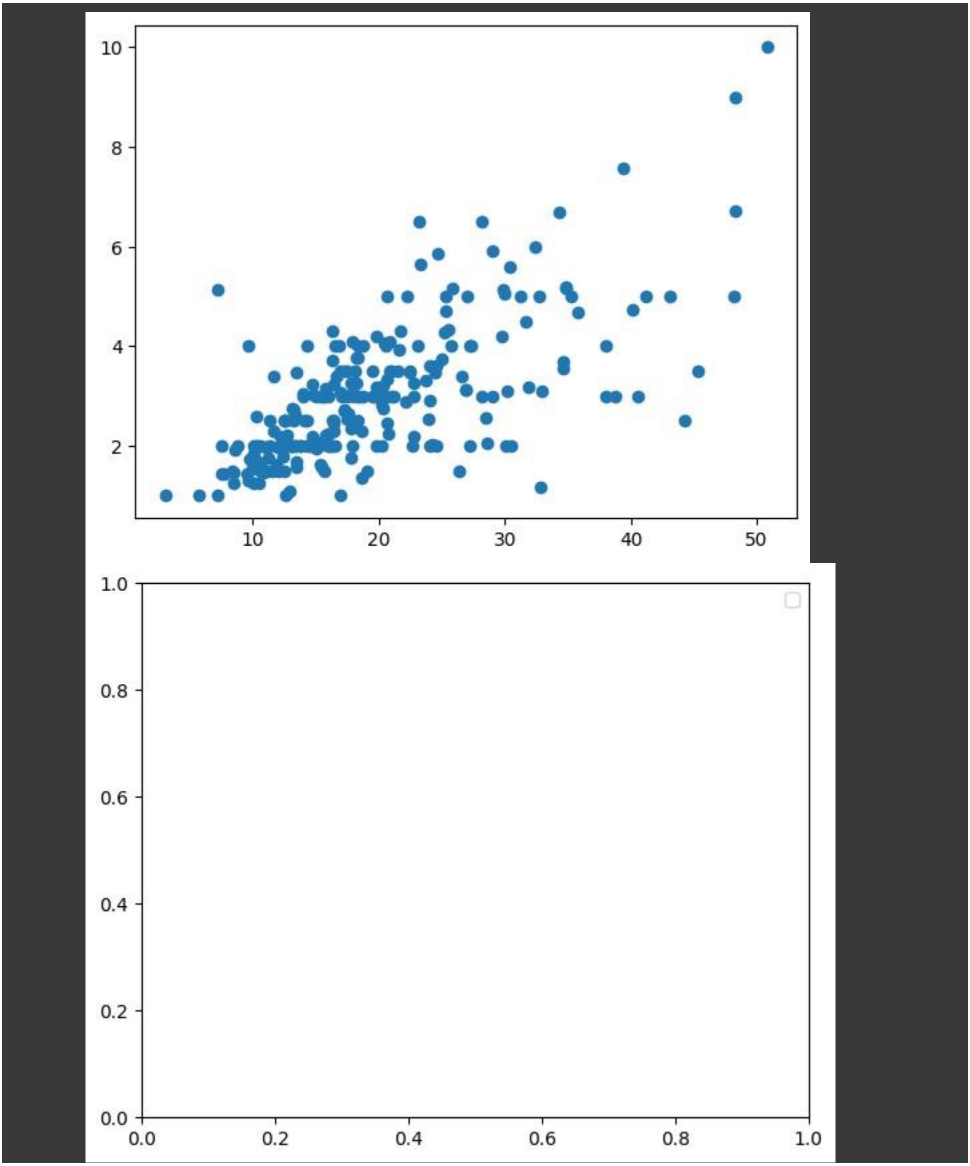
```
<BarContainer object of 4 artists>
```





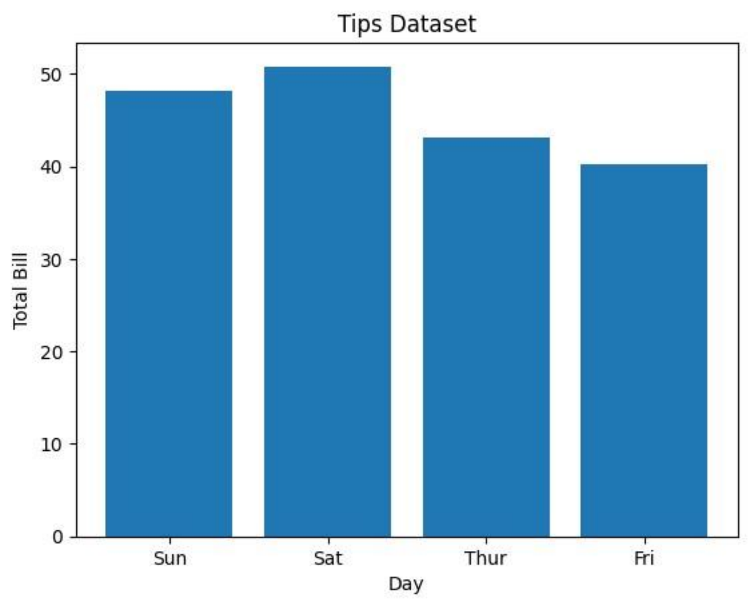
```
plt.scatter(df1['total_bill'],df1['tip'])
plt.show()
```

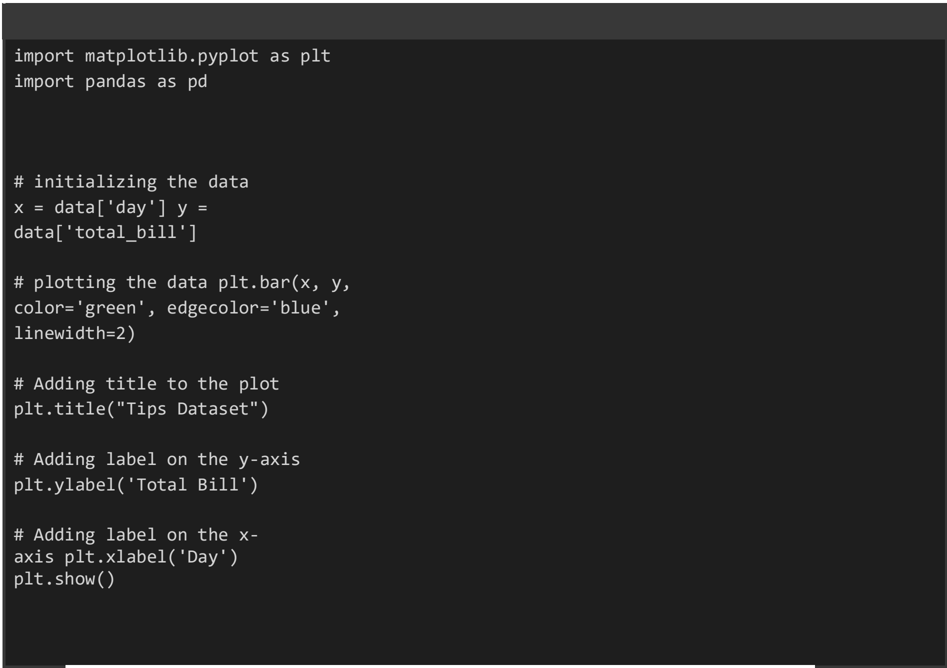
```
plt.scatter(x='total_bill',y='tip',data=df1)
fig=plt.figure(figsize=(5,4)) ax=fig.add_axes([1,1,1,1])
ax.legend(labels=('sun','mon','tue')) plt.show()
```


10
8
6
4
2
10
20
30
40
50
1.0
0.8
0.6
0.4
0.2
0.0
0.0
0.2
0.4
0.6
0.8
1.0

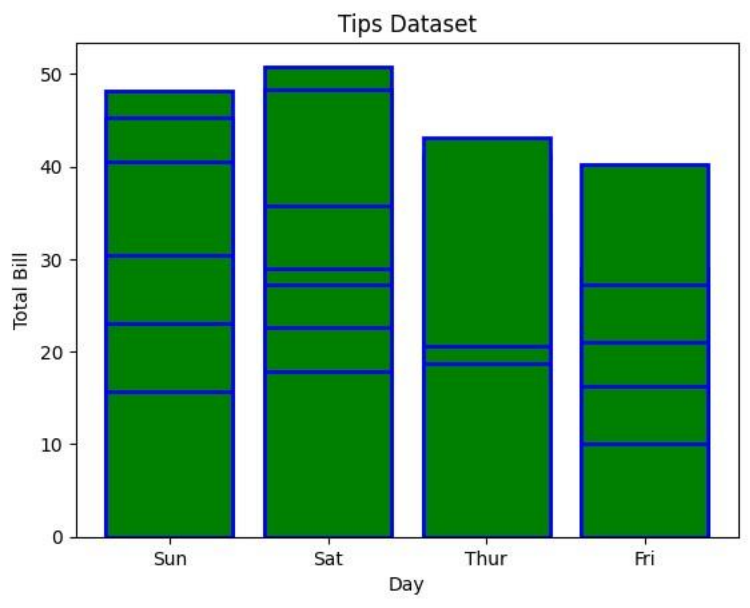
```
#Different types of Matplotlib
Plots #bar chart import
matplotlib.pyplot as plt import
pandas as pd

# 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()
```


Tips Dataset
Total Bill
0
10
20
30
40
50
Sun
Sat
Thur
Fri
Day

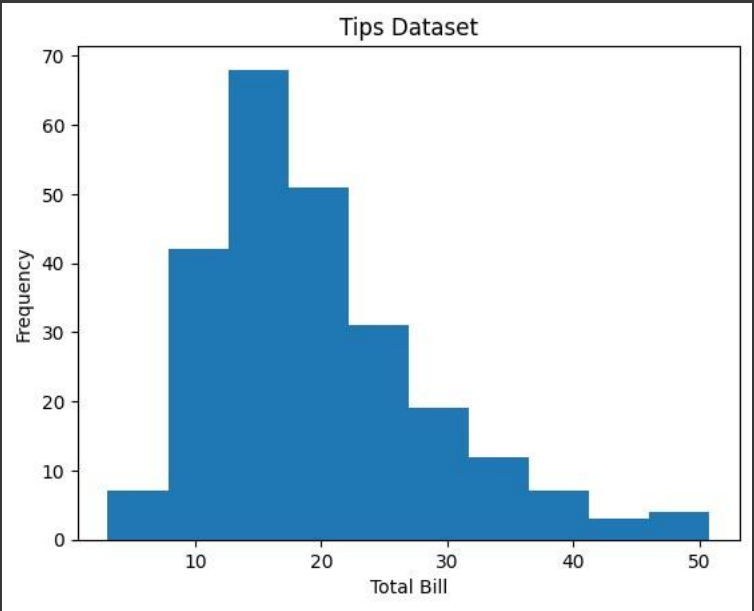


```
import matplotlib.pyplot as plt
import pandas as pd



# 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()
```



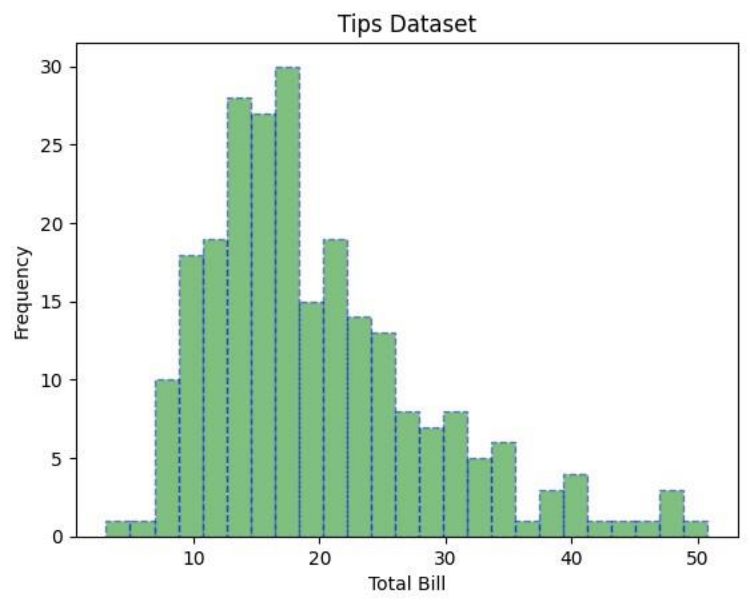
```
import matplotlib.pyplot as plt import pandas
as pd


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

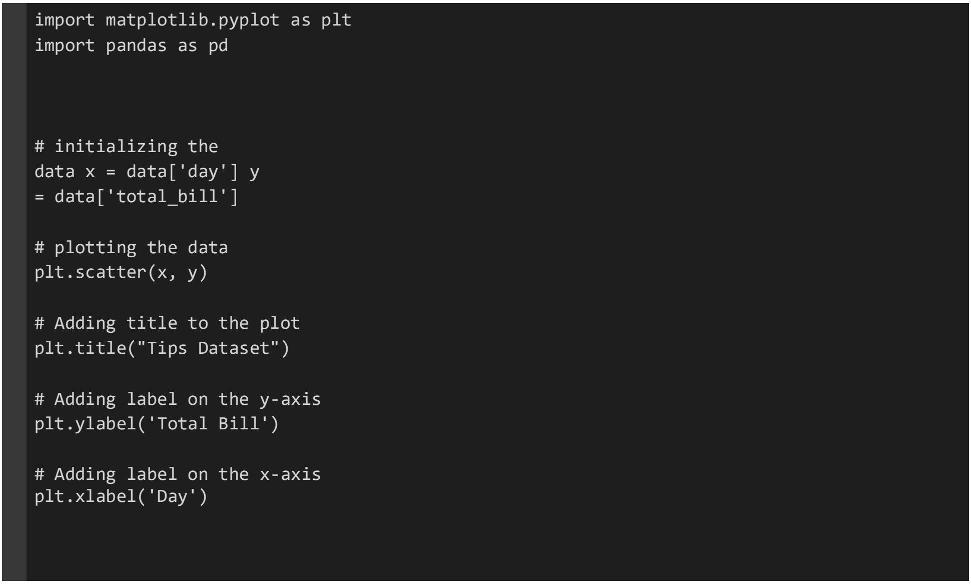
```
# plotting the data
plt.hist(x)

# 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()
```



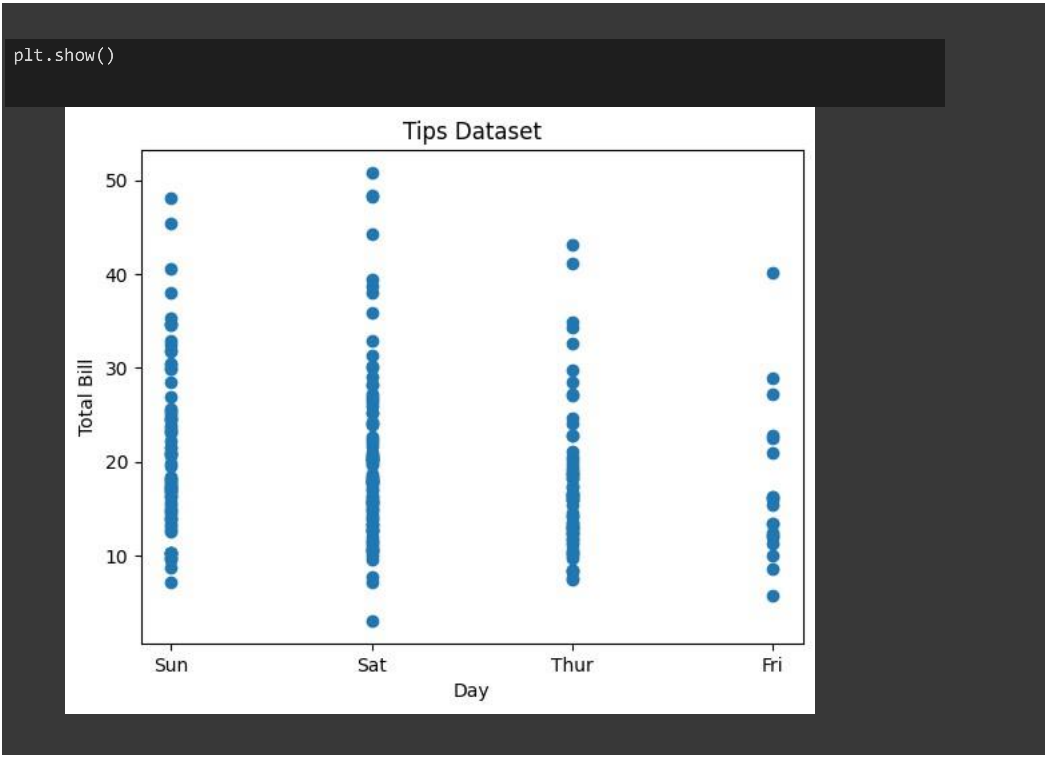
```
import matplotlib.pyplot as plt
import pandas as pd



# 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()
```



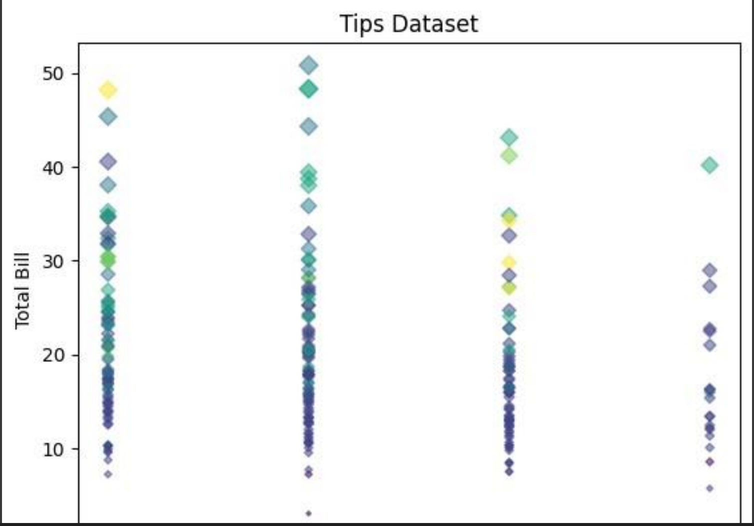


```
import matplotlib.pyplot as plt
import pandas as pd



# 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')
```

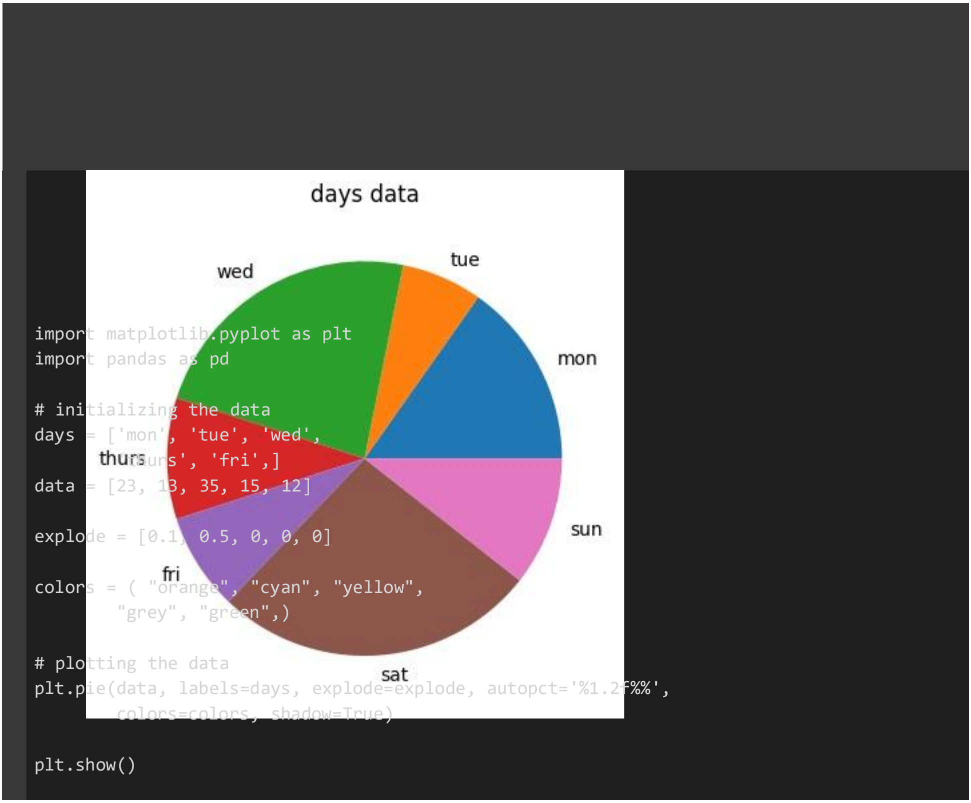


```
plt.show()
```

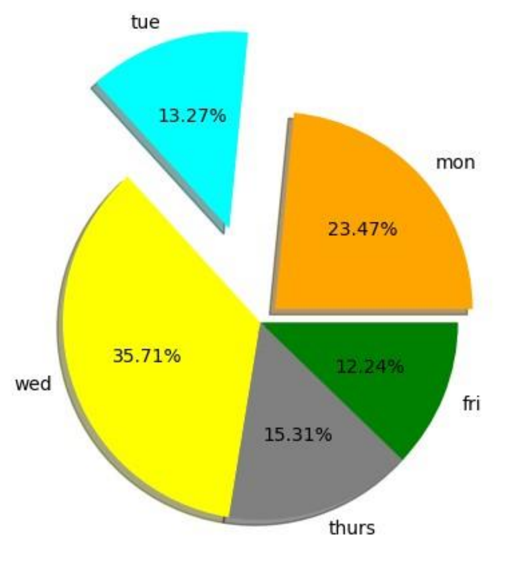
```
import matplotlib.pyplot as plt import pandas
as pd


# 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()
```

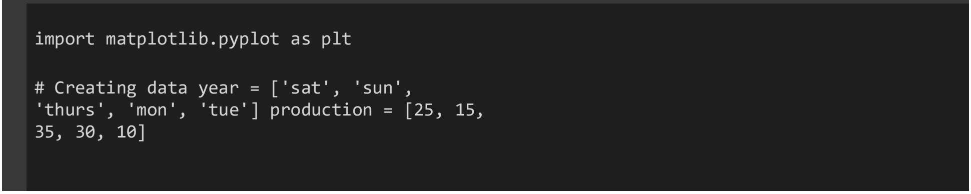


```
import matplotlib.pyplot as plt
import pandas as pd


# 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()
```

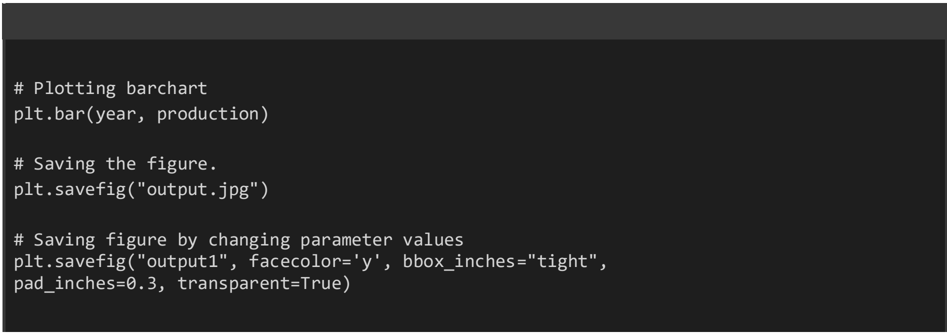


```
import matplotlib.pyplot as plt
import pandas as pd

# initializing the data
days = ['mon', 'tue', 'wed',
        'thurs', 'fri',]

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=days, explode=explode, autopct='%1.2f%%',
        colors=colors, shadow=True)

plt.show()
```

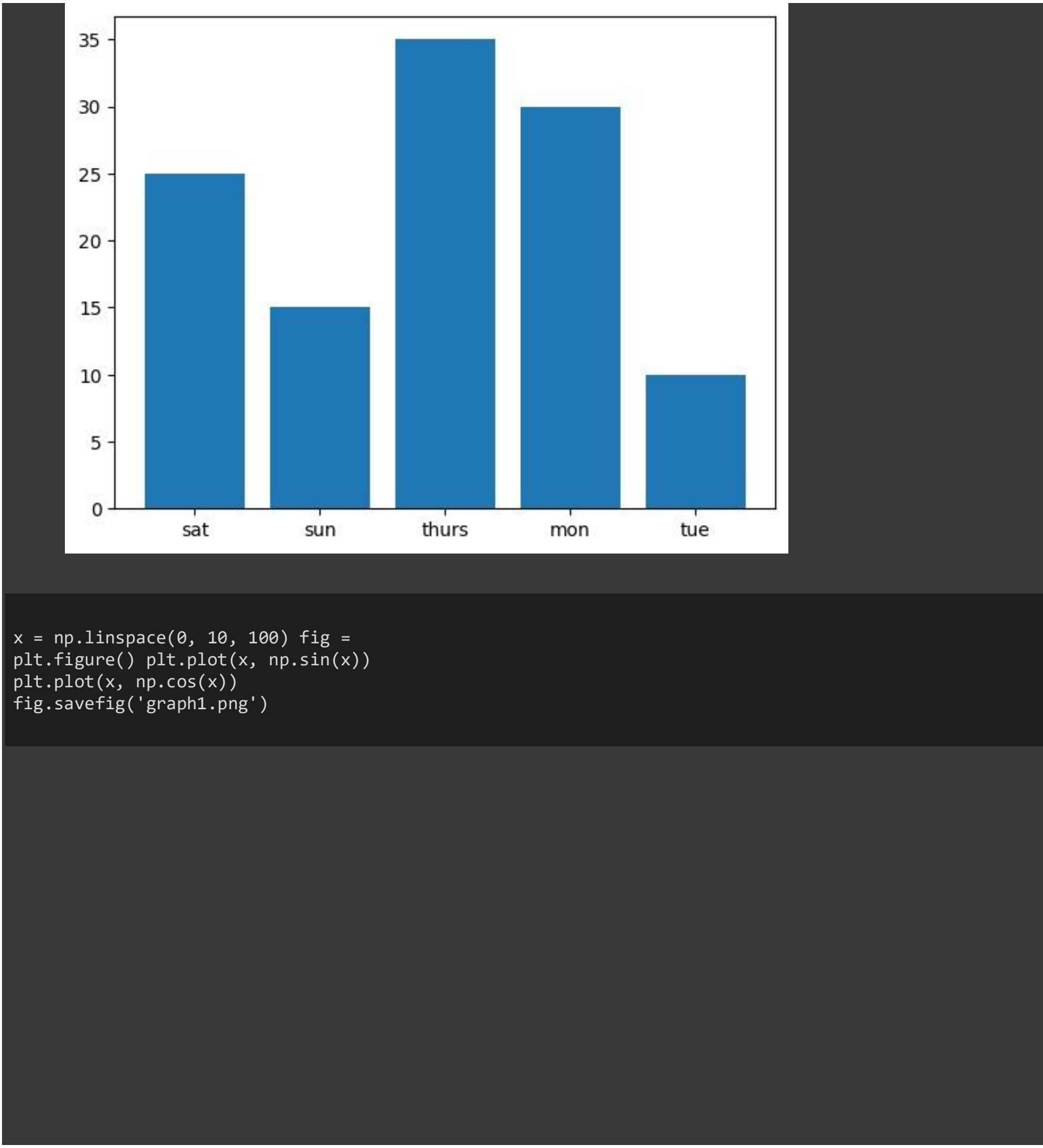




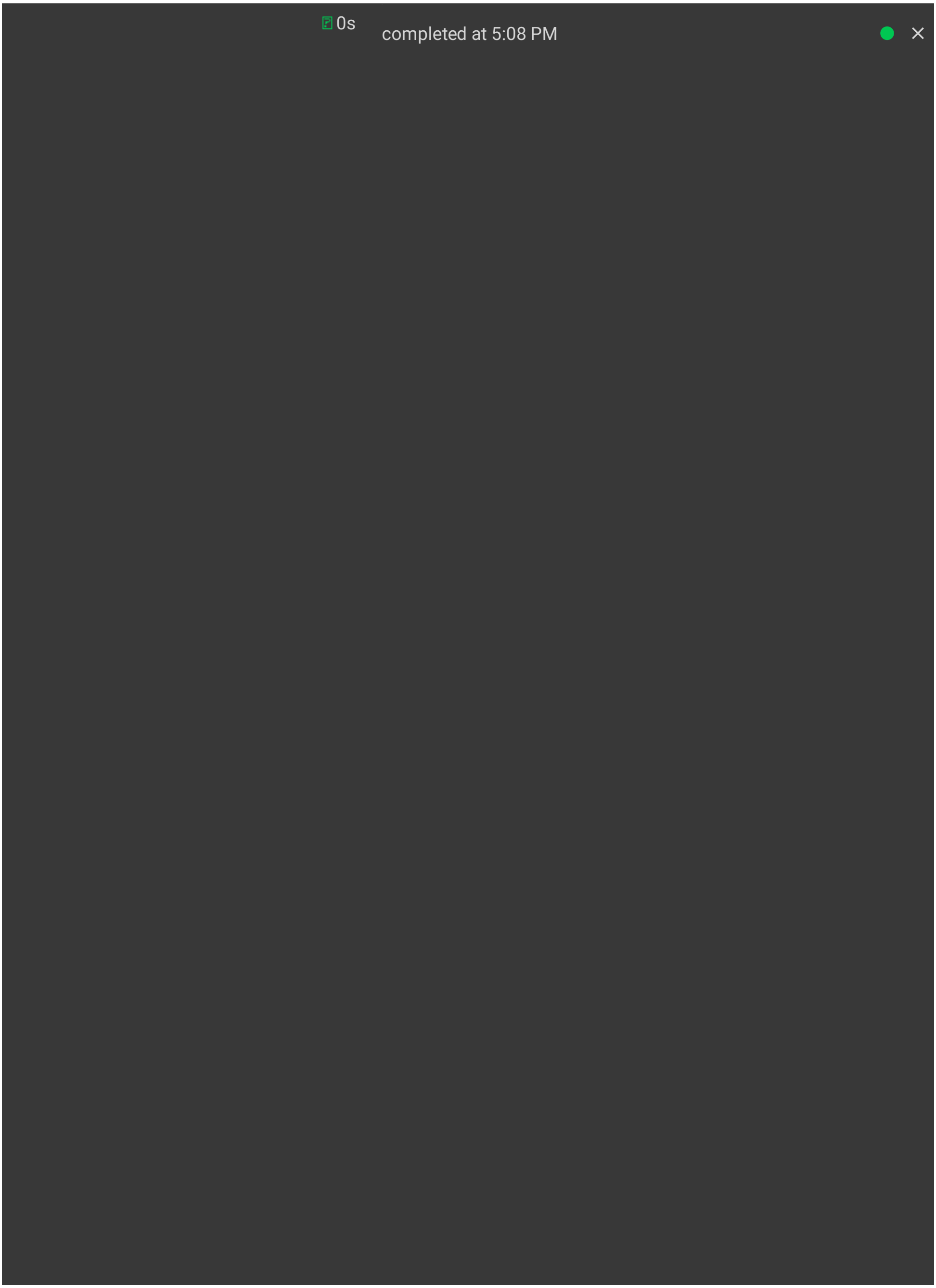
```
import matplotlib.pyplot as plt

# 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')
```



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