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Roll no: 245

Div:B

Batch: B3

```
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
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

```
df1.columns
```

```
Index(['total_bill', 'tip', 'sex', 'smoker', 'day', 'time', 'size'],
      dtype='object')
```
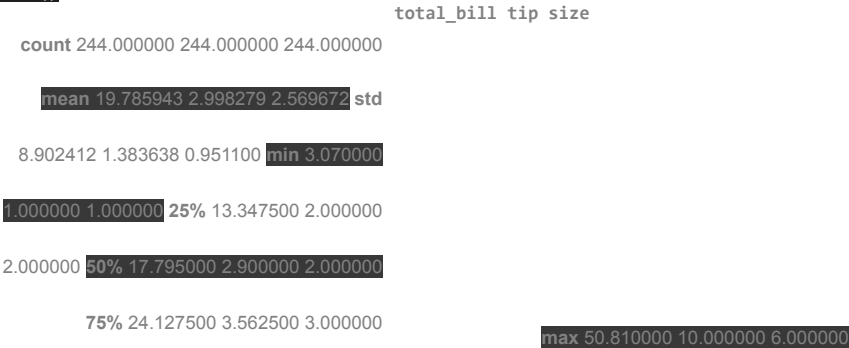
```
df1.info
```

```
                      ()
          242 17.82 1.75 Male No Sat Dinner 2
<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()
```

```python
#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()
```

```python
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()
```

```python
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()
```

```python
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
                                              labels=day)

                                   data")
```

```
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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