```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

```
data=pd.read_csv('Restaurants.csv')
```

```
data.head()
```

	Name	Location	Locality	City	Cuisine	Rating	Votes	Average_Bill
0	Local	Scindia House,Connaught Place, Central Delhi	Central Delhi	Delhi	North Indian, Finger Food, Continental	4.1	2415	2000
1	The G.T. ROAD	M-Block,Connaught Place, Central Delhi	Central Delhi	Delhi	North Indian	4.3	2363	1500
2	Tamasha	Connaught Place, Central Delhi	Central Delhi	Delhi	Finger Food, North Indian, Italian, Contine...	4.2	5016	2000
3	The Junkyard Cafe	Connaught Place, Central Delhi	Central Delhi	Delhi	North Indian, Mediterranean, Asian, Italian...	4.2	2821	1800
4	Chili's American Grill and Bar	M-Block,Connaught Place, Central Delhi	Central Delhi	Delhi	Mexican, American, Italian	4.4	1094	2000

```
data.shape
```

```
(6593, 8)
```

```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 6593 entries, 0 to 6592
Data columns (total 8 columns):
 #   Column        Non-Null Count  Dtype  
---  ------        --------------  -----  
 0   Name          6593 non-null   object 
 1   Location      6593 non-null   object 
 2   Locality      6593 non-null   object 
 3   City          6593 non-null   object 
 4   Cuisine       6593 non-null   object 
 5   Rating        6593 non-null   float64
 6   Votes         6593 non-null   int64  
 7   Average_Bill  6593 non-null   int64  
dtypes: float64(1), int64(2), object(5)
memory usage: 412.2+ KB
```

```
data.describe()
```

	Rating	Votes	Average_Bill
count	6593.000000	6593.000000	6593.000000
mean	4.088200	119.420143	1102.798271
std	0.670031	261.849704	716.935212
min	1.000000	1.000000	100.000000
25%	3.900000	6.000000	500.000000
50%	4.200000	31.000000	900.000000
75%	4.400000	115.000000	1500.000000
max	5.000000	5016.000000	8000.000000

How many restaurants are there in Delhi

```
data[data['City'].str.contains('Delhi')]['Location'].count()
```

734

Top ten cities with highest average restaurant ratings

```
data.groupby('City')['Rating'].mean().head(10).sort_values(ascending=False)
```

```
City
Gurgaon        4.308696
Agra           4.238667
Ahmedabad      4.202899
Delhi          4.176567
Goa            4.153333
Chandigarh     4.137500
Ghaziabad      4.086000
Hyderabad      4.040917
Bangalore      4.029931
Chennai        4.025258
Name: Rating, dtype: float64
```

Add a Rating_Description column to the dataset based on different range of ratings

```
def Rating_Type(Rating):
    if Rating<3.0:
        return "Poor Rating"
    if Rating<4.0:
        return "Fair Rating"
    if Rating<4.5:
        return "Good Rating"
    else:
        return "Excellent Rating"
```

```
data['Rating_Description']=data['Rating'].apply(Rating_Type)
```

```
data.head()
```

	Name	Location	Locality	City	Cuisine	Rating	Votes	Average_Bill	Rating_Description
0	Local	Scindia House,Connaught Place, Central Delhi	Central Delhi	Delhi	North Indian, Finger Food, Continental	4.1	2415	2000	Good Rating
1	The G.T. ROAD	M-Block,Connaught Place, Central Delhi	Central Delhi	Delhi	North Indian	4.3	2363	1500	Good Rating
2	Tamasha	Connaught Place, Central Delhi	Central Delhi	Delhi	Finger Food, North Indian, Italian, Contine...	4.2	5016	2000	Good Rating
3	The Junkyard Cafe	Connaught Place, Central Delhi	Central Delhi	Delhi	North Indian, Mediterranean, Asian, Italian...	4.2	2821	1800	Good Rating
4	Chili's American Grill and Bar	M-Block,Connaught Place, Central Delhi	Central Delhi	Delhi	Mexican, American, Italian	4.4	1094	2000	Good Rating

Determine the number of restaurants in each category in Bangalore

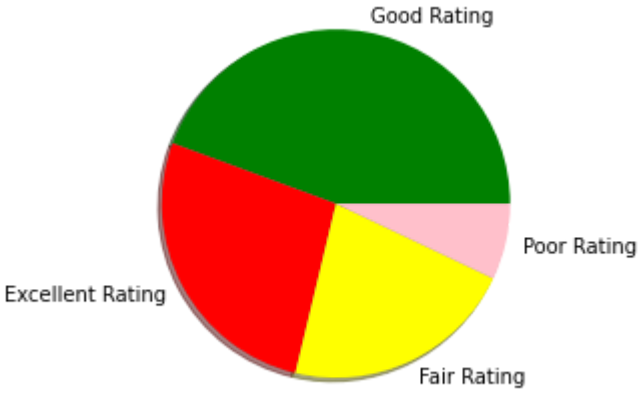
```
data1=data[data['City'].str.contains('Bangalore')]['Rating_Description'].value_counts()
```

```
data1
```

```
Good Rating         452
Excellent Rating    274
Fair Rating         221
Poor Rating          72
Name: Rating_Description, dtype: int64
```

```
my_labels=['Good Rating','Excellent Rating','Fair Rating','Poor Rating']
Values=[452,274,221,72]
plt.pie(Values,labels=my_labels,startangle=0,shadow=True,colors=["Green","Red","Yellow"
plt.show
```

```
<function matplotlib.pyplot.show(close=None, block=None)>
```



Find the number of restaurants available for each cuisine type

```
list1=[]
for value in data['Cuisine']:
    list1.append(value.split(','))
```

```
data['temp']=list1
```

```
cuisine=input("Enter Cuisine you want to count : ").title()
count=0
for value in data['temp']:
    if cuisine in value:
        count=count+1
print("Total Count is",count)
```

```
Enter Cuisine you want to count : Italian
Total Count is 457
```

Find the range of prices of different restaurants in each location in Hyderbad

```
data2=data[data['City']=='Hyderabad'][['Locality','Average_Bill']]
```

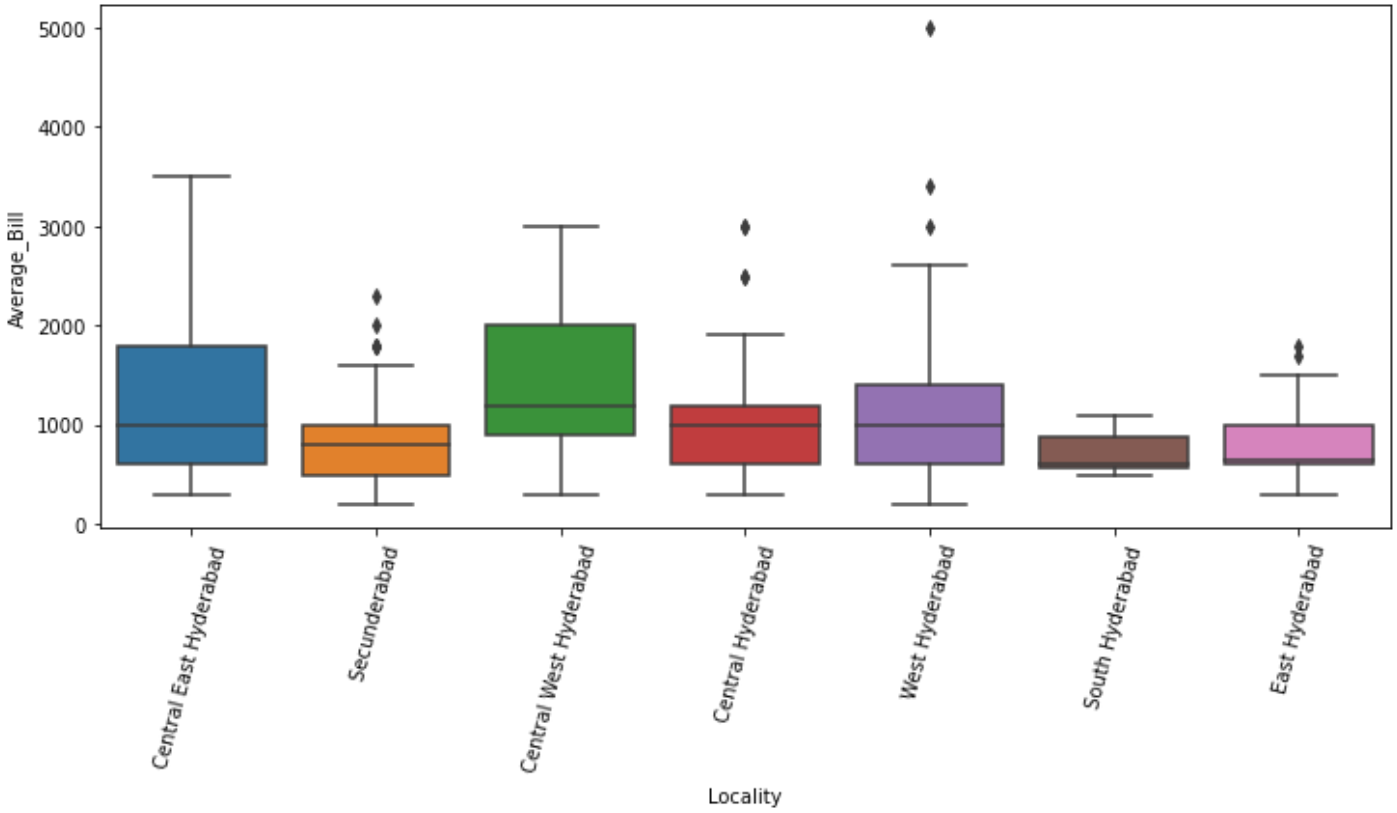
```
data2
```

	Locality	Average_Bill
3245	Central East Hyderabad	1200
3246	Secunderabad	1100
3247	Central West Hyderabad	1200
3248	Central West Hyderabad	1600
3249	Central East Hyderabad	1000

	Locality	Average_Bill
...	...	...
3829	South Hyderabad	1100
3830	West Hyderabad	1000
3831	Secunderabad	1000
3832	West Hyderabad	1000
3833	West Hyderabad	1200

589 rows × 2 columns

```
plt.figure(figsize=(12,5))
sns.boxplot(x='Locality',y='Average_Bill',data=data2)
plt.show
plt.xticks(rotation=75)
plt.show()
```



Find the restaurants with the highest average bill in India

```
data3=data.nlargest(10,'Average_Bill')[['Name','Location','Average_Bill']]
```

```
data3
```

	Name	Location	Average_Bill
1672	Masque	Laxmi Woolen Mills,Mahalaxmi, South Mumbai	8000

	Name	Location	Average_Bill
632	Kheer	Roseate House,Aerocity, South Delhi	6000
119	Sevilla	The Claridges,Aurangzeb Road, Central Delhi	5000
199	Le Cirque	The Leela Palace,Chanakyapuri, South Delhi	5000
202	The Qube	The Leela Palace,Chanakyapuri, South Delhi	5000
215	Megu	The Leela Palace,Chanakyapuri, South Delhi	5000
467	Del	Roseate House,Aerocity, South Delhi	5000
805	Chi Ni	The Roseate,Samalkha, South Delhi	5000
944	Seasonal Tastes	The Westin Hotel,Sector 29, Gurgaon	5000
1223	Masala Library by Jiggs Kalra	FIFC Building,Bandra Kurla Complex, Bandra	5000

```
data3['substring'] = data3['Location'].str.split(',').str[2]
```

```
data3
```

	Name	Location	Average_Bill	substring
1672	Masque	Laxmi Woolen Mills,Mahalaxmi, South Mumbai	8000	South Mumbai
632	Kheer	Roseate House,Aerocity, South Delhi	6000	South Delhi
119	Sevilla	The Claridges,Aurangzeb Road, Central Delhi	5000	Central Delhi
199	Le Cirque	The Leela Palace,Chanakyapuri, South Delhi	5000	South Delhi
202	The Qube	The Leela Palace,Chanakyapuri, South Delhi	5000	South Delhi
215	Megu	The Leela Palace,Chanakyapuri, South Delhi	5000	South Delhi
467	Del	Roseate House,Aerocity, South Delhi	5000	South Delhi
805	Chi Ni	The Roseate,Samalkha, South Delhi	5000	South Delhi
944	Seasonal Tastes	The Westin Hotel,Sector 29, Gurgaon	5000	Gurgaon
1223	Masala Library by Jiggs Kalra	FIFC Building,Bandra Kurla Complex, Bandra	5000	Bandra

```
data3['Full_Address']=data3['Name'] + ',' + data3['substring']
```

```
data3
```

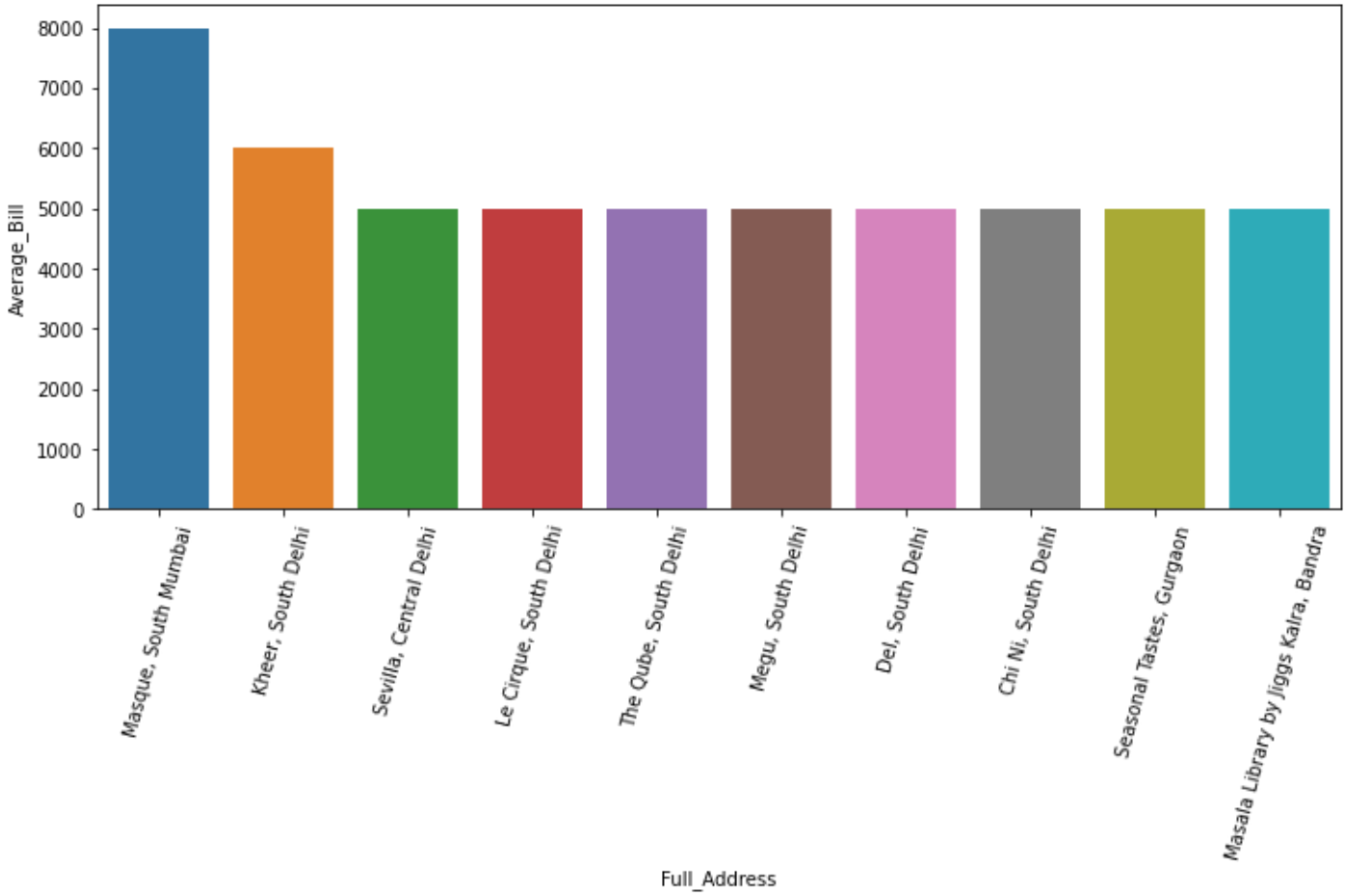
	Name	Location	Average_Bill	substring	Full_Address
1672	Masque	Laxmi Woolen Mills,Mahalaxmi, South Mumbai	8000	South Mumbai	Masque, South Mumbai
632	Kheer	Roseate House,Aerocity, South Delhi	6000	South Delhi	Kheer, South Delhi
119	Sevilla	The Claridges,Aurangzeb Road, Central Delhi	5000	Central Delhi	Sevilla, Central Delhi
199	Le Cirque	The Leela Palace,Chanakyapuri, South Delhi	5000	South Delhi	Le Cirque, South Delhi
202	The Qube	The Leela Palace,Chanakyapuri, South Delhi	5000	South Delhi	The Qube, South Delhi
215	Megu	The Leela Palace,Chanakyapuri, South Delhi	5000	South Delhi	Megu, South Delhi

	Name	Location	Average_Bill	substring	Full_Address
467	Del	Roseate House,Aerocity, South Delhi	5000	South Delhi	Del, South Delhi
805	Chi Ni	The Roseate,Samalkha, South Delhi	5000	South Delhi	Chi Ni, South Delhi
944	Seasonal Tastes	The Westin Hotel,Sector 29, Gurgaon	5000	Gurgaon	Seasonal Tastes, Gurgaon
1223	Masala Library by Jiggs Kalra	FIFC Building,Bandra Kurla Complex, Bandra	5000	Bandra	Masala Library by Jiggs Kalra, Bandra

```
data3.drop(['Name','substring','Location'],axis=1).set_index('Full_Address',inplace=Fal
```

Full_Address	Average_Bill
Masque, South Mumbai	8000
Kheer, South Delhi	6000
Sevilla, Central Delhi	5000
Le Cirque, South Delhi	5000
The Qube, South Delhi	5000
Megu, South Delhi	5000
Del, South Delhi	5000
Chi Ni, South Delhi	5000
Seasonal Tastes, Gurgaon	5000
Masala Library by Jiggs Kalra, Bandra	5000

```
plt.figure(figsize=(12,5))
sns.barplot(x='Full_Address',y='Average_Bill',data=data3)
plt.xticks(rotation=75)
plt.show()
```



Show that there is little to no relation between the ratings and the Prices of restaurants

```
data.corr()
```

	Rating	Votes	Average_Bill
Rating	1.000000	0.094213	0.149745
Votes	0.094213	1.000000	0.311000
Average_Bill	0.149745	0.311000	1.000000

Show the relationship between Average_Price and Ratings in Mumbai

```
data
data4=data[data['City']=='Mumbai'][['Locality','Rating','Average_Bill']]
```

```
data4.set_index('Locality')
```

	Rating	Average_Bill
Locality		
Central Suburbs	4.3	2000

Locality	Rating	Average_Bill
Andheri East	4.5	2000
Central Suburbs	4.7	1100
Powai	5.0	900
Powai	4.5	1400
...	...	...
North Western	4.0	1200
North Western	4.1	1500
24 Parganas South	3.1	400
24 Parganas South	4.8	900
24 Parganas South	3.0	400

727 rows × 2 columns

```
sns.jointplot(x='Average_Bill',y='Rating',data=data4,kind='reg')
plt.title('Relationship between Average_Price and Ratings in Mumbai',y=1.1,fontsize=14)
```

```
Text(0.5, 1.1, 'Relationship between Average_Price and Ratings in Mumbai')
```

Show the restaurants having location in Connaught Place and Votes greater than 1500

```
data5=data[(data['Location']=='Connaught Place, Central Delhi') & (data['Votes']>1500)]
```

```
plt.figure(figsize=(12,5))
sns.lineplot(x='Name',y='Votes',data=data5,label='Vote_Count')
sns.lineplot(x='Name',y='Average_Bill', data=data5, label='Average_Bill',color='red')
plt.xticks(rotation=75)
plt.show()
```