

Zomato Data Analysis Using Python

Step 1: Import necessary Python libraries.

```
In [10]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

pandas is used for data manipulation and analysis.
 numpy is used for numerical operations.
 matplotlib.pyplot and seaborn are used for data visualization.

Step 2: Create the data frame.

```
In [2]: dataframe = pd.read_csv("Zomato data .csv")
print(dataframe.head())
```

	name	online_order	book_table	rate	votes	\
0	Jalsa	Yes	Yes	4.1/5	775	
1	Spice Elephant	Yes	No	4.1/5	787	
2	San Churro Cafe	Yes	No	3.8/5	918	
3	Addhuri Udupi Bhojana	No	No	3.7/5	88	
4	Grand Village	No	No	3.8/5	166	

	approx_cost(for two people)	listed_in(type)
0	800	Buffet
1	800	Buffet
2	800	Buffet
3	300	Buffet
4	600	Buffet

```
In [3]: dataframe = pd.read_csv("Zomato data .csv")
```

```
In [4]: dataframe
```

Out[4]:

	name	online_order	book_table	rate	votes	approx_cost(for two people)	listed_in(type)
0	Jalsa	Yes	Yes	4.1/5	775	800	Buffet
1	Spice Elephant	Yes	No	4.1/5	787	800	Buffet
2	San Churro Cafe	Yes	No	3.8/5	918	800	Buffet
3	Addhuri Udupi Bhojana	No	No	3.7/5	88	300	Buffet
4	Grand Village	No	No	3.8/5	166	600	Buffet
...
143	Melting Melodies	No	No	3.3/5	0	100	Dining
144	New Indraprasta	No	No	3.3/5	0	150	Dining
145	Anna Kuteera	Yes	No	4.0/5	771	450	Dining
146	Darbar	No	No	3.0/5	98	800	Dining
147	Vijayalakshmi	Yes	No	3.9/5	47	200	Dining

148 rows × 7 columns

let’s convert the data type of the “rate” column to float and remove the denominator.

```
In [6]: def handleRate(value):
        value=str(value).split('/')
        value=value[0];
        return float(value)

dataframe['rate']=dataframe['rate'].apply(handleRate)
print(dataframe.head())
```

	name	online_order	book_table	rate	votes	\
0	Jalsa	Yes	Yes	4.1	775	
1	Spice Elephant	Yes	No	4.1	787	
2	San Churro Cafe	Yes	No	3.8	918	
3	Addhuri Udupi Bhojana	No	No	3.7	88	
4	Grand Village	No	No	3.8	166	

	approx_cost(for two people)	listed_in(type)
0	800	Buffet
1	800	Buffet
2	800	Buffet
3	300	Buffet
4	600	Buffet

summary of the data frame

In [7]: `dataframe.info()`

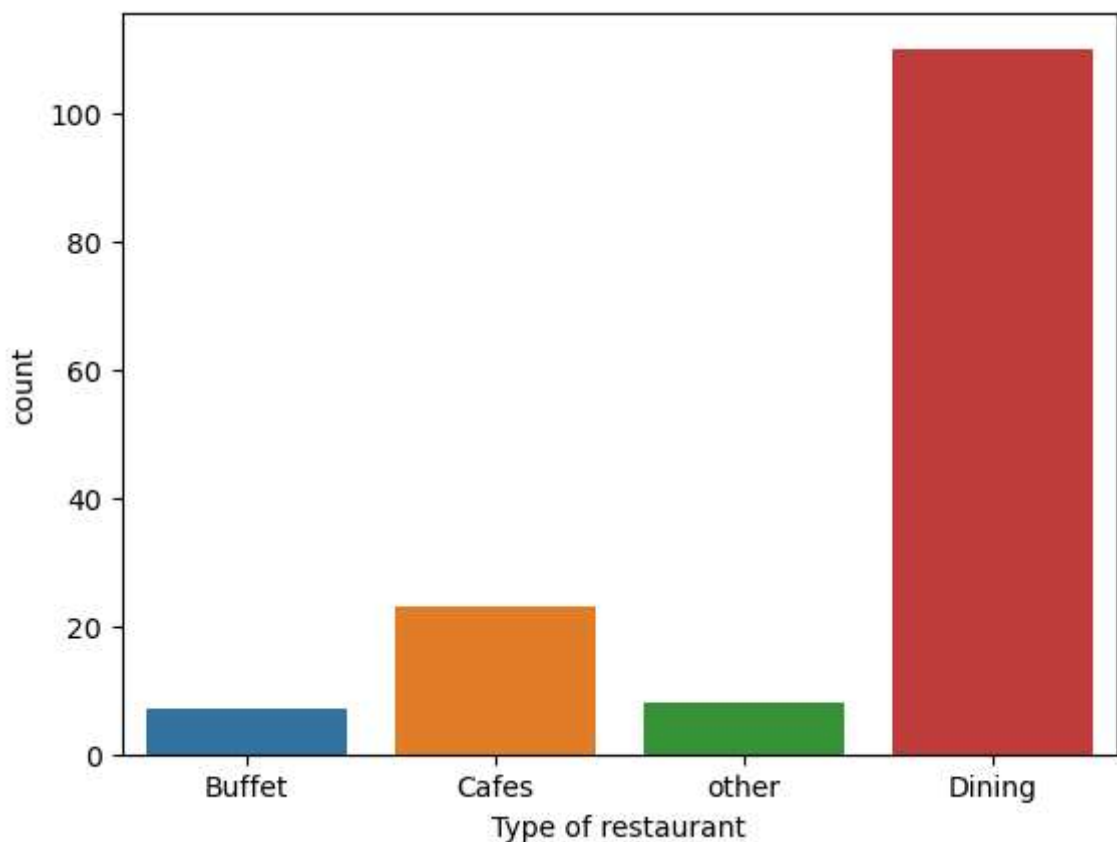
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 148 entries, 0 to 147
Data columns (total 7 columns):
 #   Column                                  Non-Null Count  Dtype  
---  -
 0   name                                   148 non-null    object  
 1   online_order                           148 non-null    object  
 2   book_table                             148 non-null    object  
 3   rate                                   148 non-null    float64  
 4   votes                                  148 non-null    int64  
 5   approx_cost(for two people)            148 non-null    int64  
 6   listed_in(type)                         148 non-null    object  
dtypes: float64(1), int64(2), object(4)
memory usage: 8.2+ KB
```

Conclusion - There is no NULL value in dataframe.

Type of Resturant

```
In [8]: sns.countplot(x=dataframe['listed_in(type)'])  
plt.xlabel("Type of restaurant")
```

```
Out[8]: Text(0.5, 0, 'Type of restaurant')
```

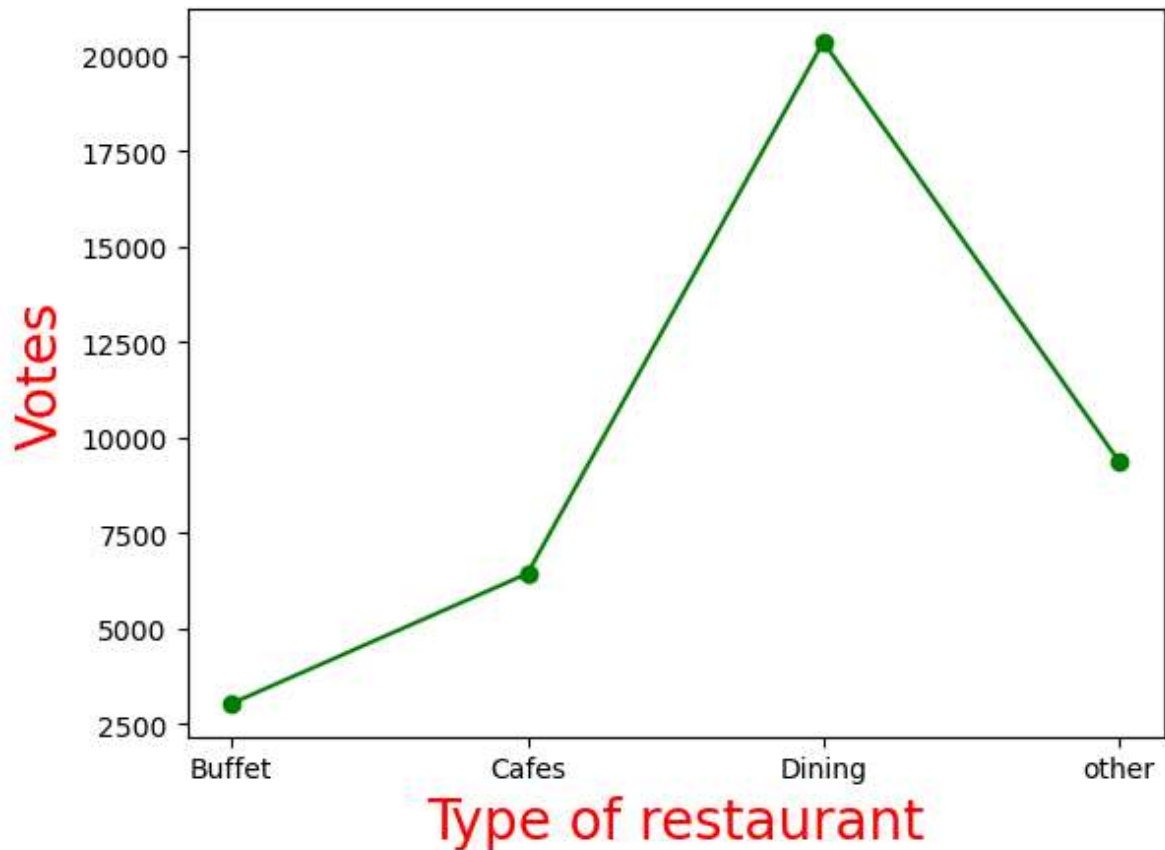


Conclusion: The majority of the restaurants fall into the dining category.

Dining restaurants are preferred by a larger number of individuals.

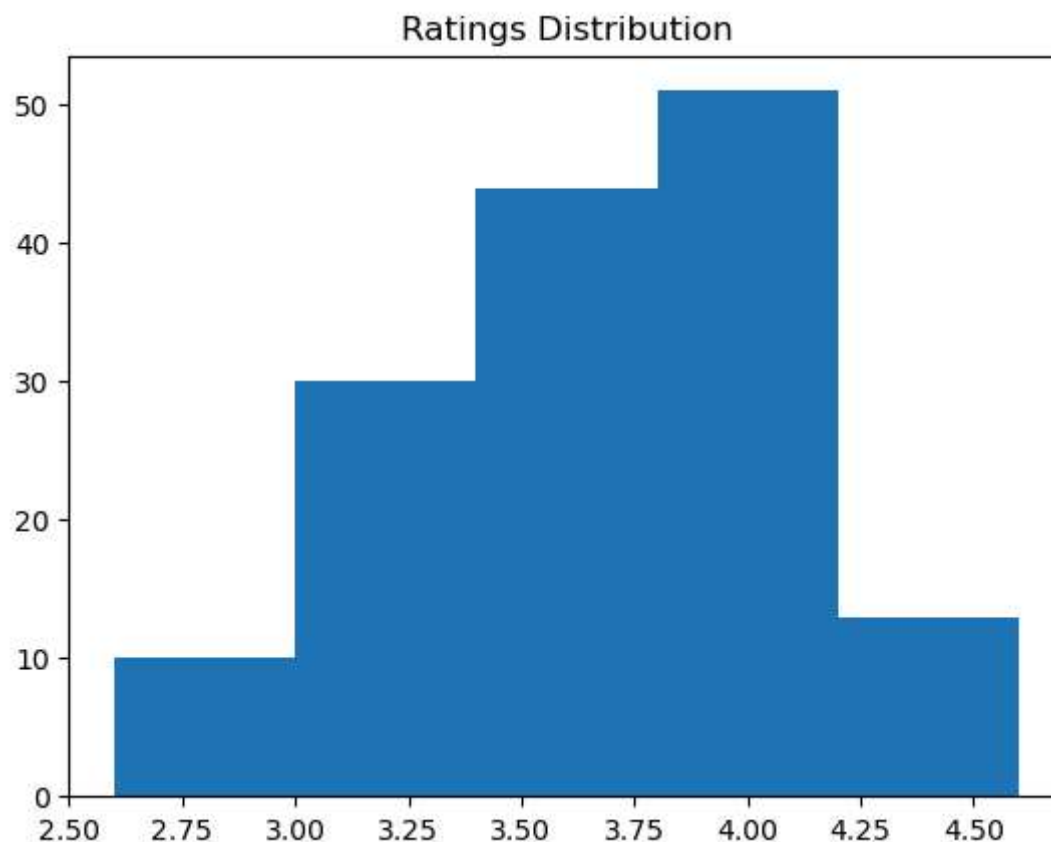
```
In [9]: grouped_data = dataframe.groupby('listed_in(type)')['votes'].sum()  
result = pd.DataFrame({'votes': grouped_data})  
plt.plot(result, c="green", marker="o")  
plt.xlabel("Type of restaurant", c="red", size=20)  
plt.ylabel("Votes", c="red", size=20)
```

Out[9]: Text(0, 0.5, 'Votes')



The majority of restaurants received ratings

```
In [11]: plt.hist(dataframe['rate'],bins=5)
plt.title("Ratings Distribution")
plt.show()
```

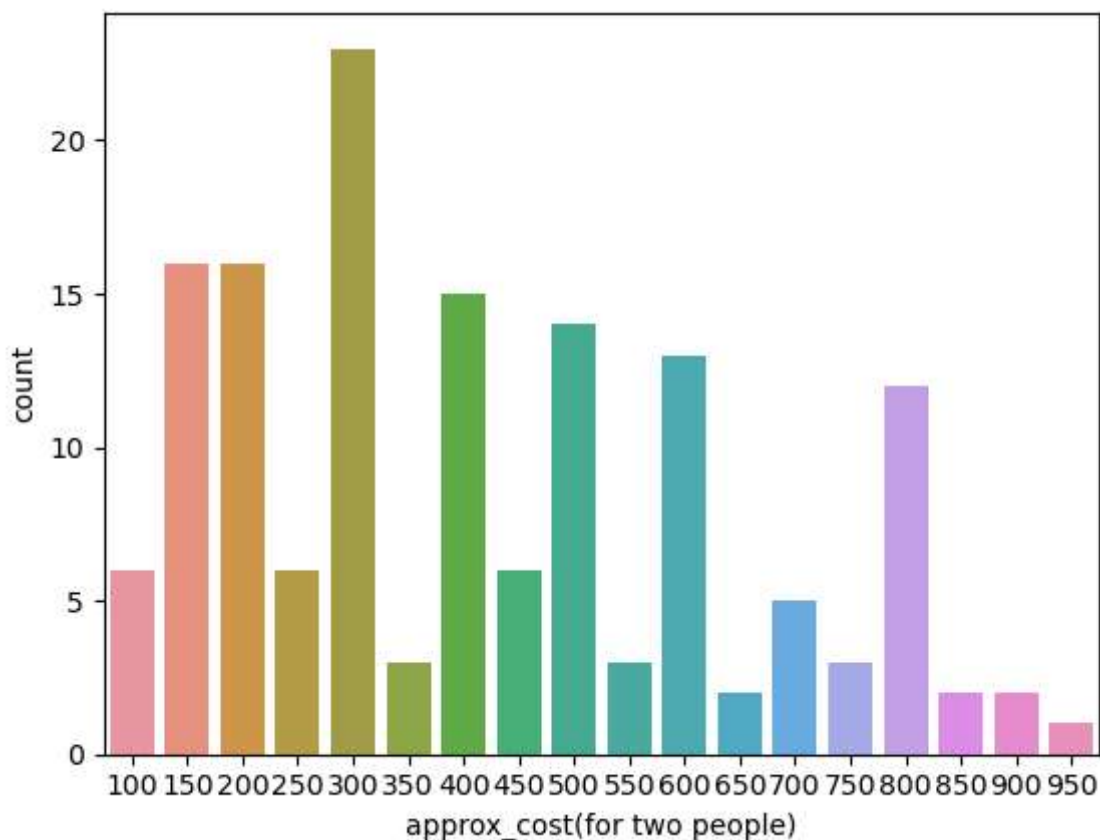


Conclusion: The majority of restaurants received ratings ranging from 3.5 to 4.

The majority of couples prefer restaurants with an approximate cost of 300 rupees.

```
In [15]: couple_data=dataframe['approx_cost(for two people)']  
sns.countplot(x=couple_data)
```

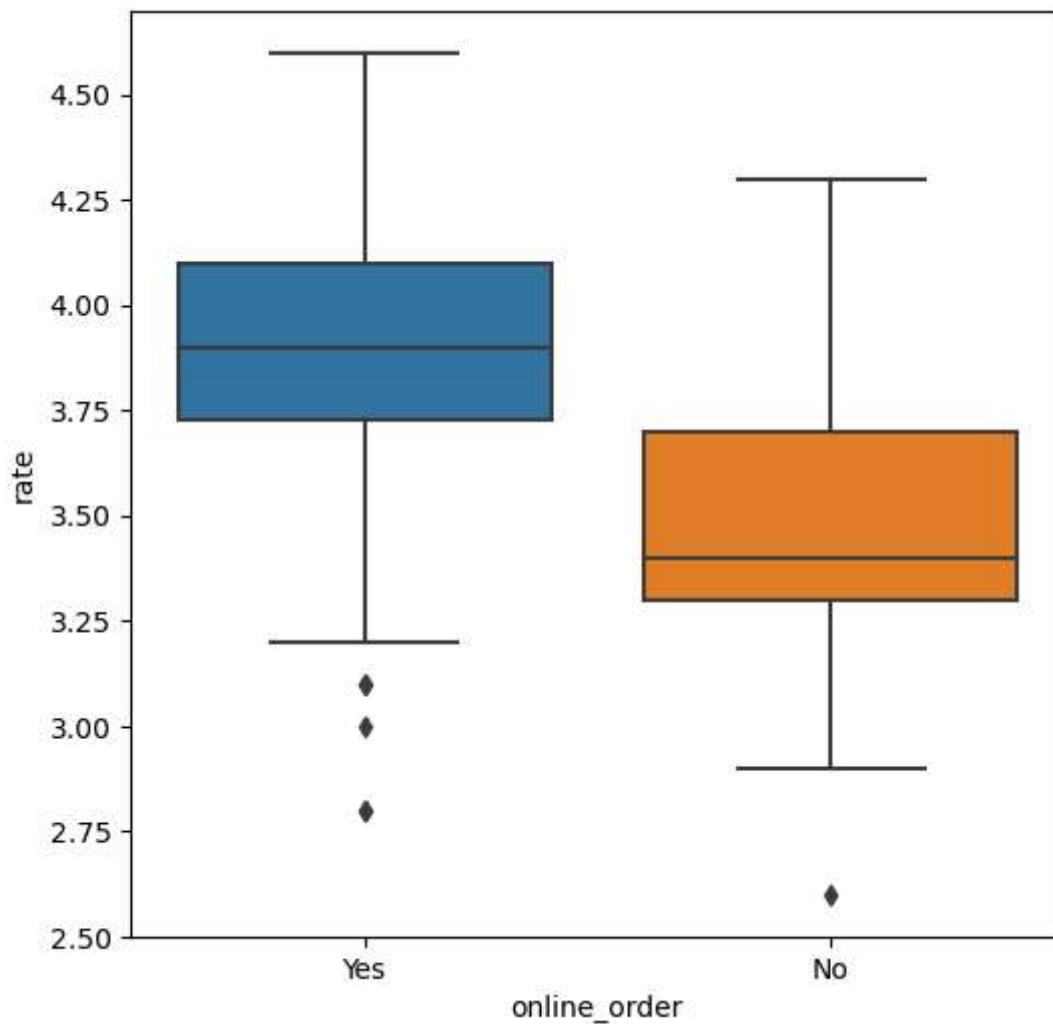
```
Out[15]: <Axes: xlabel='approx_cost(for two people)', ylabel='count'>
```



whether online orders receive higher ratings than offline orders.

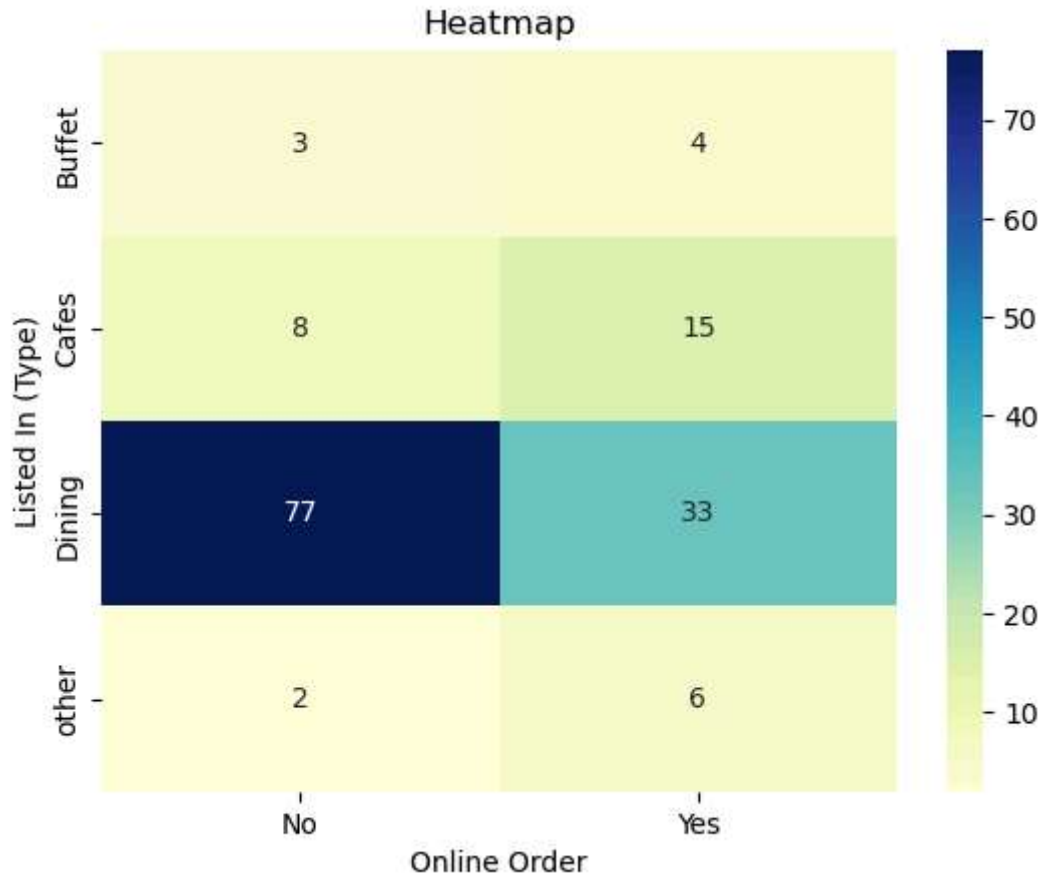
```
In [16]: plt.figure(figsize = (6,6))  
sns.boxplot(x = 'online_order', y = 'rate', data = dataframe)
```

```
Out[16]: <Axes: xlabel='online_order', ylabel='rate'>
```



CONCLUSION: Offline orders received lower ratings in comparison to online orders, which obtained excellent ratings.


```
In [17]: pivot_table = dataframe.pivot_table(index='listed_in(type)', columns='online_c
sns.heatmap(pivot_table, annot=True, cmap="YlGnBu", fmt='d')
plt.title("Heatmap")
plt.xlabel("Online Order")
plt.ylabel("Listed In (Type)")
plt.show()
```



CONCLUSION: Dining restaurants primarily accept offline orders, whereas cafes primarily receive online orders. This suggests that clients prefer to place orders in person at restaurants, but prefer online ordering at cafes.

In []: