

## Importing Required Libraries

```
In [58]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

Importing file in dataframe

```
In [59]: df = pd.read_csv("data.csv")
```

```
In [79]: df.head(20)
```

```
Out[79]:
```

	name	online_order	book_table	rate	votes	approx_cost(for two people)	listed_in(type)
0	Jalsa	Yes	Yes	4.1	775	800	Buffet
1	Spice Elephant	Yes	No	4.1	787	800	Buffet
2	San Churro Cafe	Yes	No	3.8	918	800	Buffet
3	Addhuri Udupi Bhojana	No	No	3.7	88	300	Buffet
4	Grand Village	No	No	3.8	166	600	Buffet
5	Timepass Dinner	Yes	No	3.8	286	600	Buffet
6	Rosewood International Hotel - Bar & Restaurant	No	No	3.6	8	800	Buffet
7	Onesta	Yes	Yes	4.6	2556	600	Cafes
8	Penthouse Cafe	Yes	No	4.0	324	700	other
9	Smacznegu	Yes	No	4.2	504	550	Cafes
10	Village Café	Yes	No	4.1	402	500	Cafes
11	Cafe Shuffle	Yes	Yes	4.2	150	600	Cafes
12	The Coffee Shack	Yes	Yes	4.2	164	500	Cafes
13	Caf-Eleven	No	No	4.0	424	450	Cafes
14	San Churro Cafe	Yes	No	3.8	918	800	Cafes
15	Cafe Vivacity	Yes	No	3.8	90	650	Cafes
16	Catch-up-ino	Yes	No	3.9	133	800	Cafes
17	Kirthi's Biryani	Yes	No	3.8	144	700	Cafes
18	T3H Cafe	No	No	3.9	93	300	Cafes
19	360 Atoms Restaurant And Cafe	Yes	No	3.1	13	400	Cafes

Understanding datatypes of each column

```
In [61]: df.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    object
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: int64(2), object(5)
memory usage: 8.2+ KB
```

As rate column is in object format, converting it in a float type

```
In [62]: def handleRate(value):
    value=str(value).split('/')
    value=value[0];
    return float(value)

df['rate']=df['rate'].apply(handleRate)
df.head()
df.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

```

```
In [63]: df.head()
```

```

Out[63]:
   name online_order book_table rate votes approx_cost(for two people) listed_in(type)
0   Jalsa           Yes        Yes  4.1   775                      800          Buffet
1  Spice Elephant     Yes         No  4.1   787                      800          Buffet
2  San Churro Cafe     Yes         No  3.8   918                      800          Buffet
3  Addhuri Udupi Bhojana  No         No  3.7    88                      300          Buffet
4  Grand Village       No         No  3.8   166                      600          Buffet

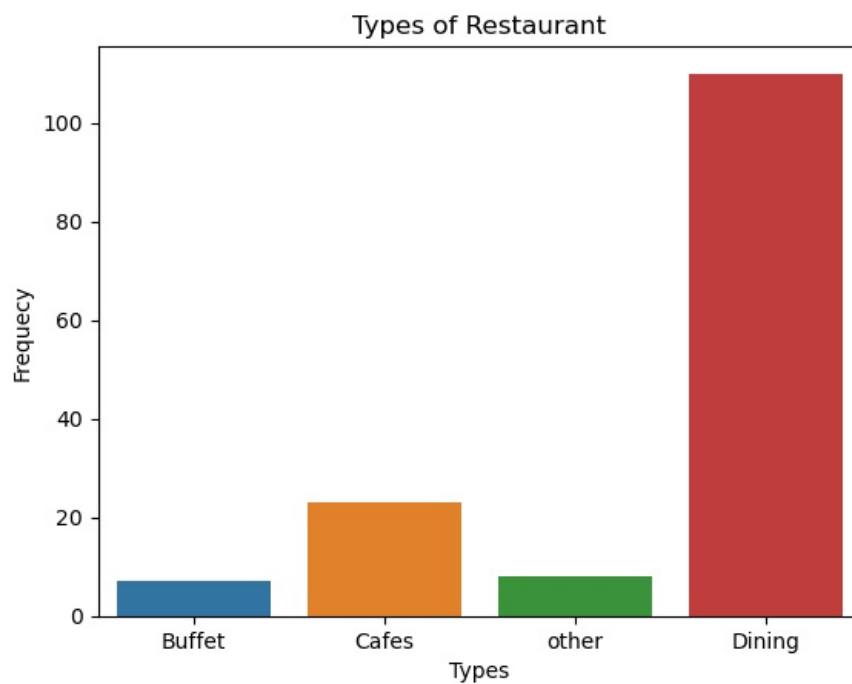
```

## Exploring Restaurant Types

```

In [64]: sns.countplot(x=df['listed_in(type)'])
plt.title("Types of Restaurant")
plt.xlabel("Types")
plt.ylabel("Frequency")
plt.show()

```



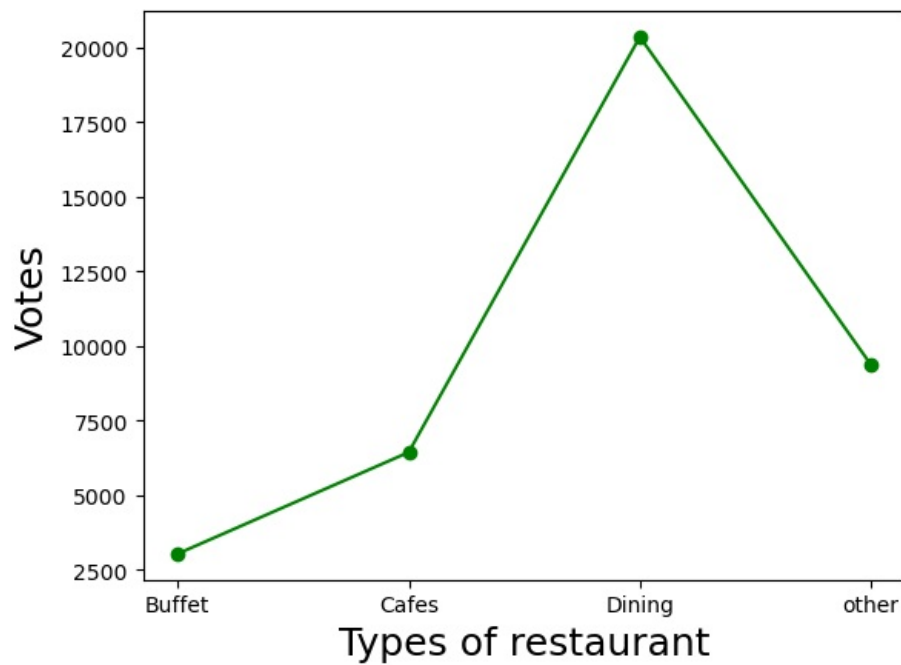
```
In [65]: # Conclusion: The majority of the restaurants fall into the dining category.
```

## Votes by Restaurant Type

```

In [66]: grouped_data = df.groupby('listed_in(type)')['votes'].sum()
results = pd.DataFrame({'Votes':grouped_data})
plt.plot(results, c='green',marker='o')
plt.xlabel("Types of restaurant", c='black', size = 18)
plt.ylabel("Votes",c='black',size=18)
plt.show()

```



In [67]: *# Conclusion: Dining restaurants are preferred by a larger number of individuals.*

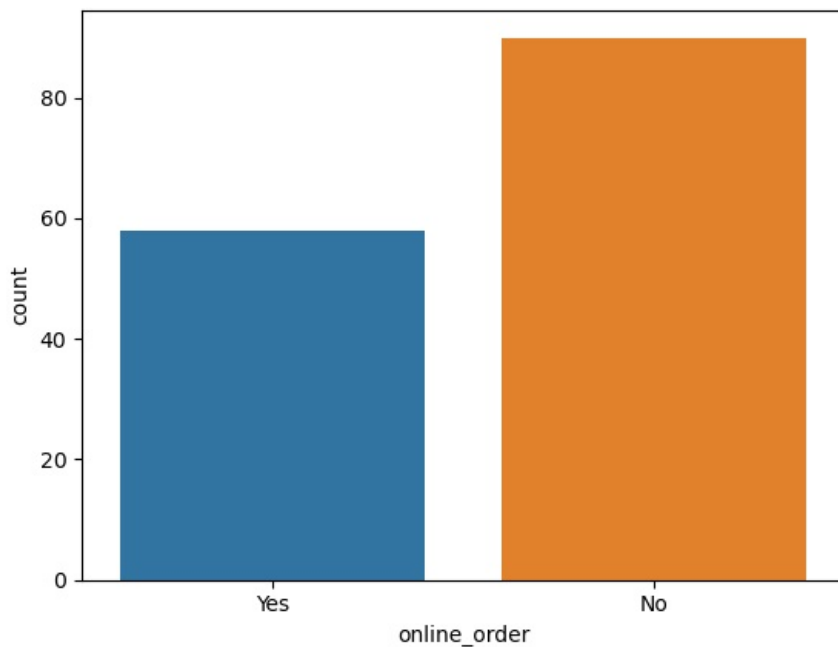
### Identify the Most Voted Restaurant

```
In [68]: max_votes = df['votes'].max()
res_max_votes = df.loc[df['votes']==max_votes, 'name']
print("Restaurant with most votes: ")
print(res_max_votes)
```

Restaurant with most votes:  
38 Empire Restaurant  
Name: name, dtype: object

### Online Order Availability

```
In [69]: sns.countplot(x=df['online_order'])
plt.show()
```

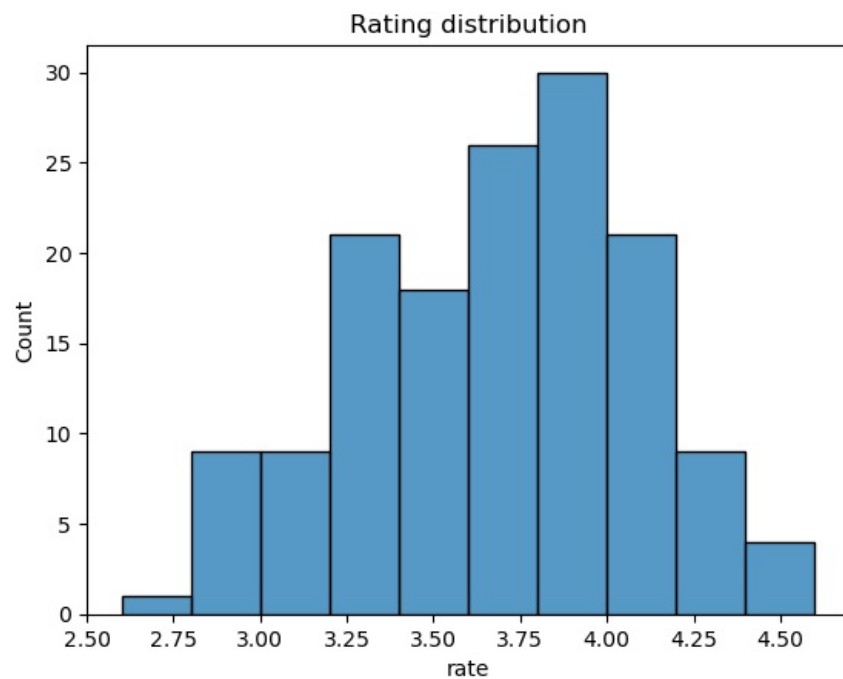


In [70]: *# Conclusion: This suggests that a majority of the restaurants do not accept online orders.*

### Analyze Ratings

```
In [71]: sns.histplot(df['rate'], bins=10)
plt.title('Rating distribution')
plt.show()
```

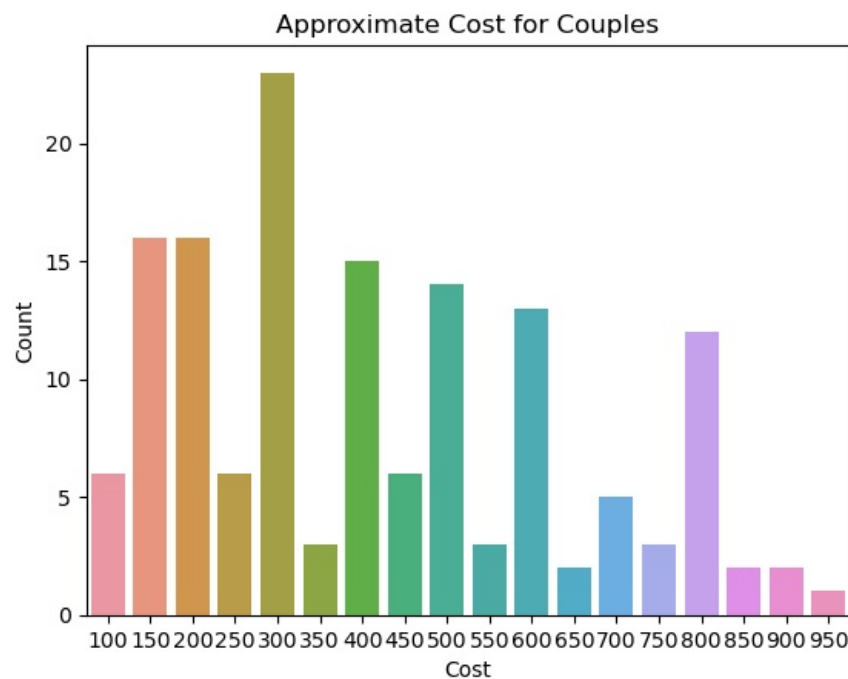
C:\Users\Ramsha\anaconda3\Lib\site-packages\seaborn\\_oldcore.py:1119: FutureWarning: use\_inf\_as\_na option is deprecated and will be removed in a future version. Convert inf values to NaN before operating instead.  
with pd.option\_context('mode.use\_inf\_as\_na', True):



In [72]: *# Conclusion: The majority of restaurants received ratings ranging from 3.5 to 4.*

### Approximate Cost for Couples

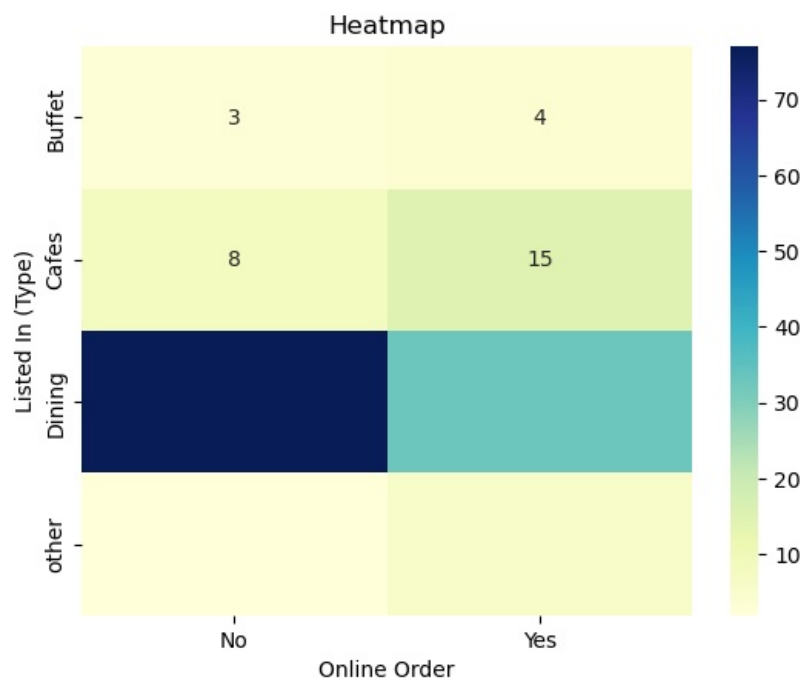
```
In [73]: sns.countplot(x=df['approx_cost(for two people)'])
plt.title("Approximate Cost for Couples")
plt.xlabel("Cost",c="black")
plt.ylabel("Count",c="black")
plt.show()
```



In [74]: *# Conclusion: The majority of couples prefer restaurants with an approximate cost of 300 rupees.*

### Order Mode Preferences by Restaurant Type

```
In [75]: pivot_table = df.pivot_table(index='listed_in(type)', columns='online_order', aggfunc='size', fill_value=0)
sns.heatmap(pivot_table,annot=True, cmap='YlGnBu', fmt='d')
plt.title('Heatmap')
plt.xlabel('Online Order')
plt.ylabel('Listed In (Type)')
plt.show()
```



```
In [76]: # 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 cafe
```