

Step-1 Importing Libraries

```
In [2]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

Step-2 Created the data frame

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

	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	
..	
143	Melting Melodies	No	No	3.3/5	0	
144	New Indraprasta	No	No	3.3/5	0	
145	Anna Kuteera	Yes	No	4.0/5	771	
146	Darbar	No	No	3.0/5	98	
147	Vijayalakshmi	Yes	No	3.9/5	47	

	approx_cost(for two people)	listed_in(type)
0	800	Buffet
1	800	Buffet
2	800	Buffet
3	300	Buffet
4	600	Buffet
..
143	100	Dining
144	150	Dining
145	450	Dining
146	800	Dining
147	200	Dining

[148 rows x 7 columns]

```
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

Convert the data type of column - rate

In [5]:

```
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

In [6]:

```
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

```

Type of Resturant

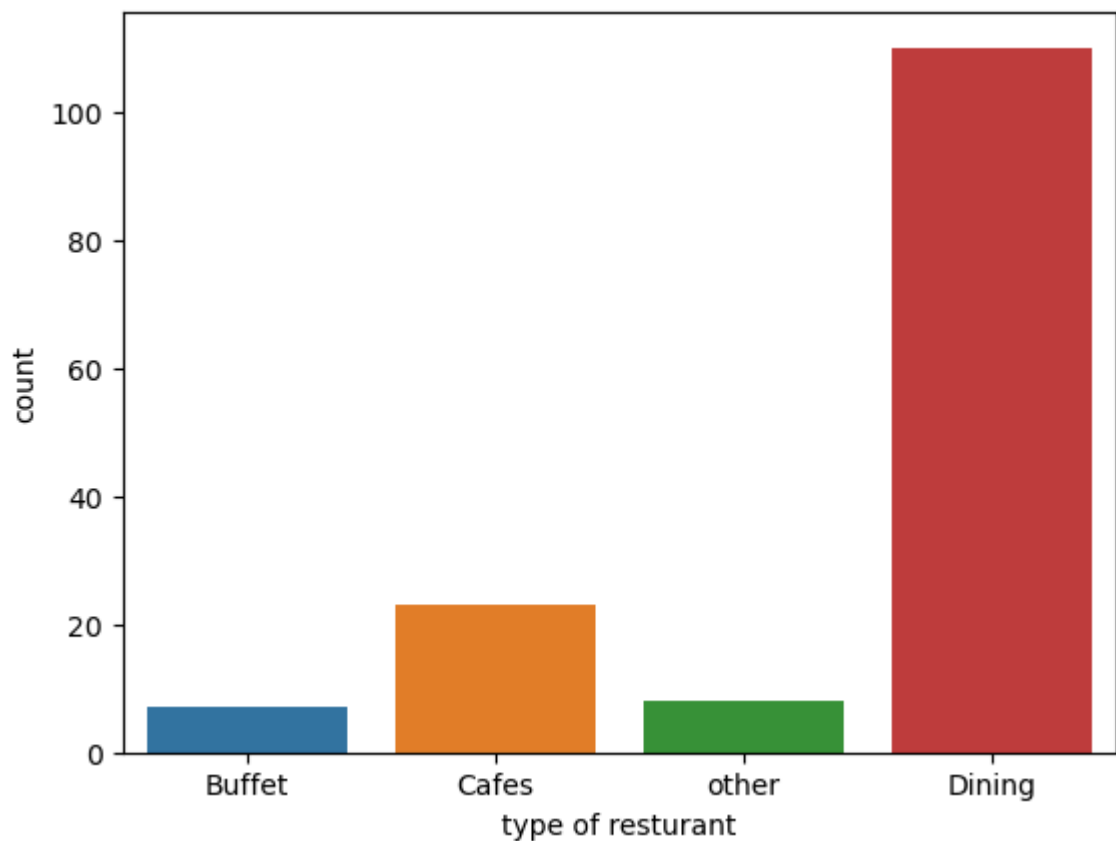
```
In [7]: dataframe.head()
```

```
Out[7]:
```

	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

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

```
Out[8]: Text(0.5, 0, 'type of resturant')
```



Conclusion- Majority of resturant falls in dinning category

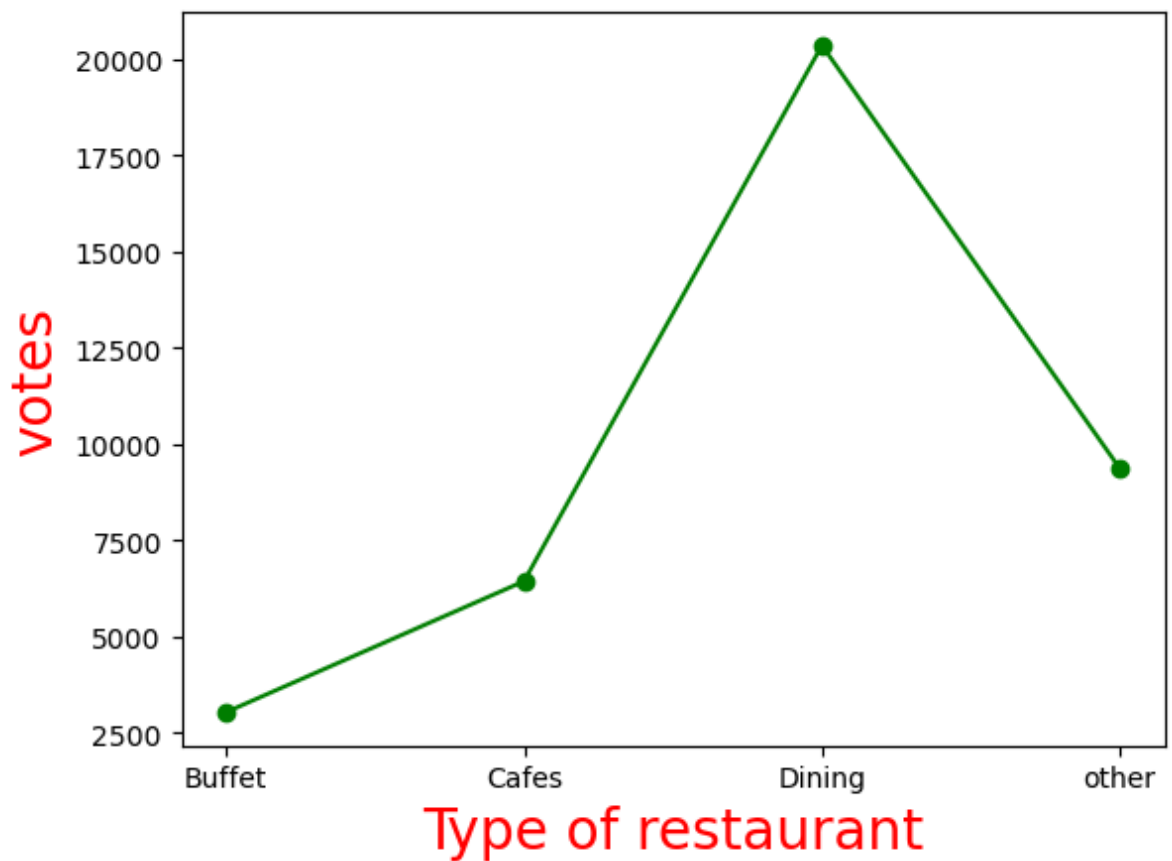
```
In [9]: dataframe.head()
```

```
Out[9]:
```

	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

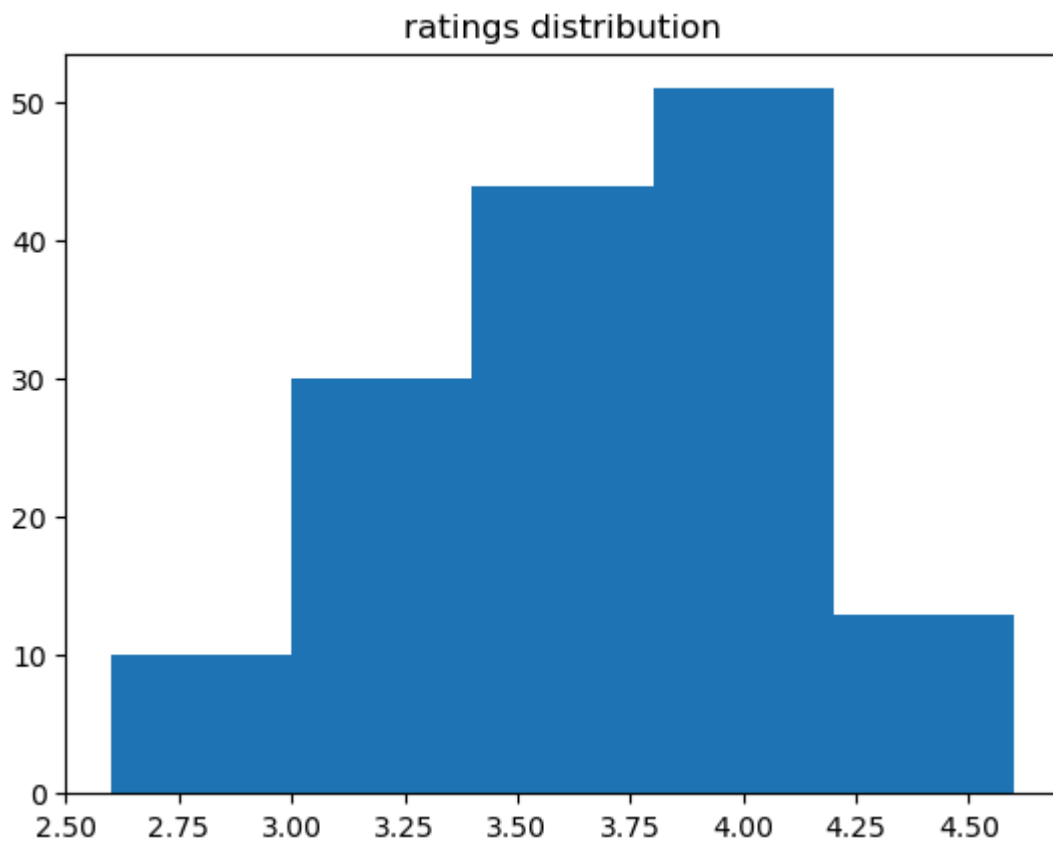
```
In [10]: grouped_data = dataframe.groupby('listed_in(type)')['votes'].sum()
result = pd.DataFrame({'votes': grouped_data})
plt.plot(result, c="green", marker="o")
plt.xlabel("Type of restaurant", c="red", size= 20)
plt.ylabel("votes", c="red", size=20)
```

```
Out[10]: Text(0, 0.5, 'votes')
```



Conclusion- Dinning resturants has received maximum votes

```
In [13]: plt.hist(dataframe['rate'], bins= 5)
plt.title("ratings distribution")
plt.show()
```



Conclusion- The majority resturants received ratings from 3.5 to 4

Average order spending by couples

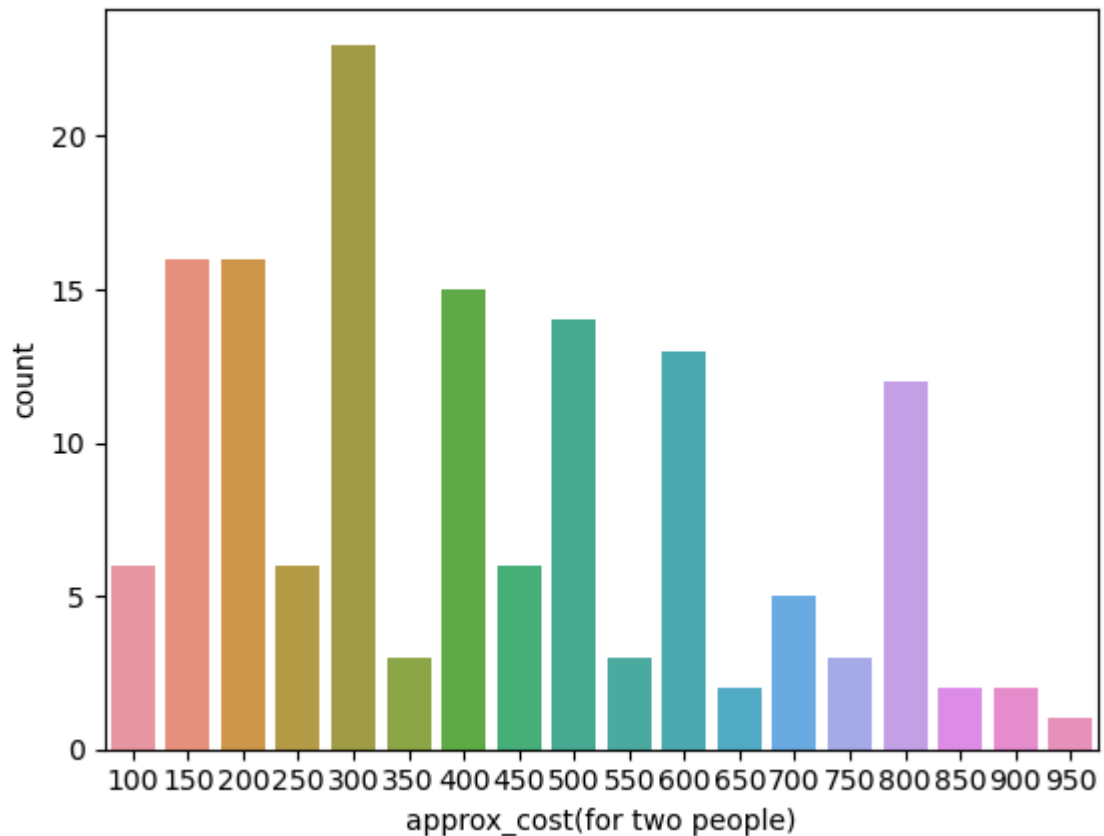
```
In [14]: dataframe.head()
```

```
Out[14]:
```

	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

```
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'>
```



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

Which mode receives maximum rating

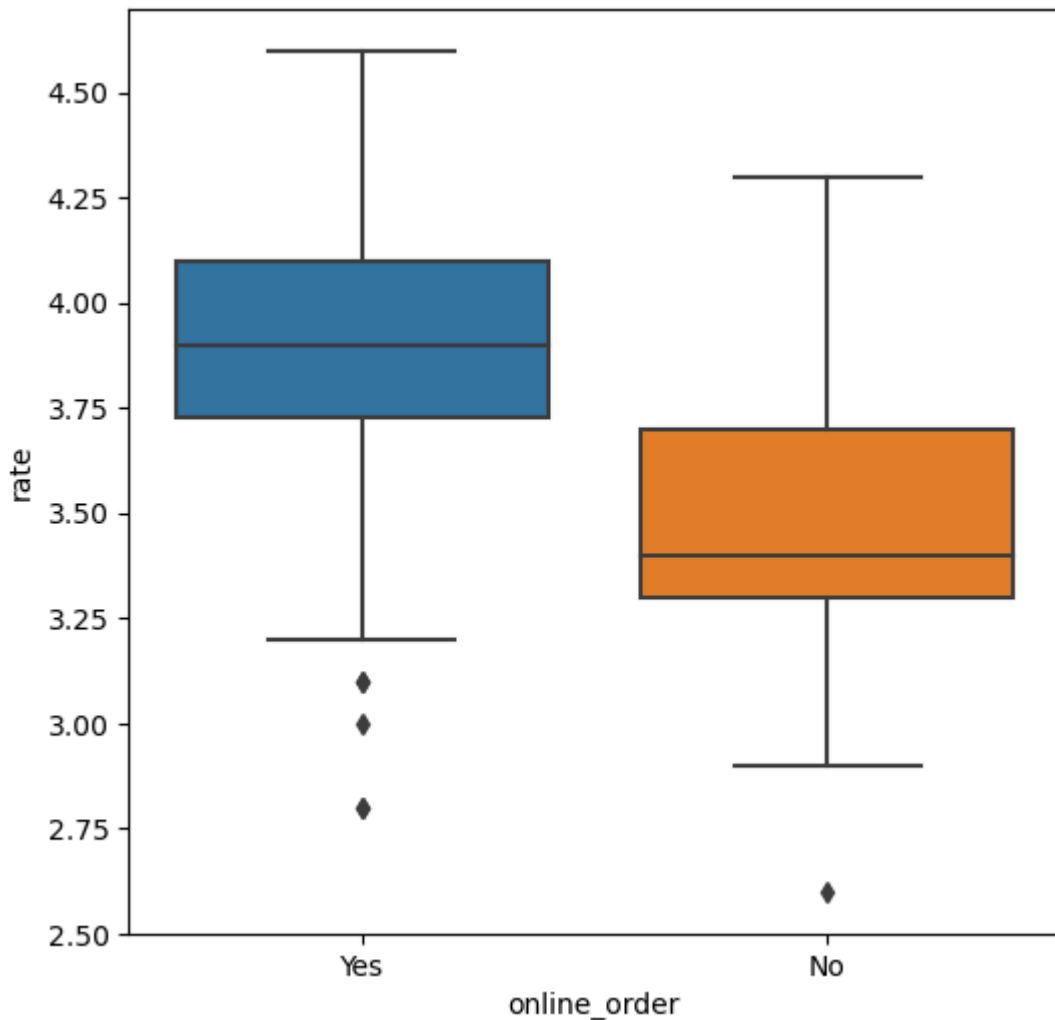
```
In [16]: dataframe.head()
```

```
Out[16]:
```

	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

```
In [17]: plt.figure(figsize = (6,6))
sns.boxplot(x = 'online_order', y = 'rate', data= dataframe)
```

```
Out[17]: <Axes: xlabel='online_order', ylabel='rate'>
```



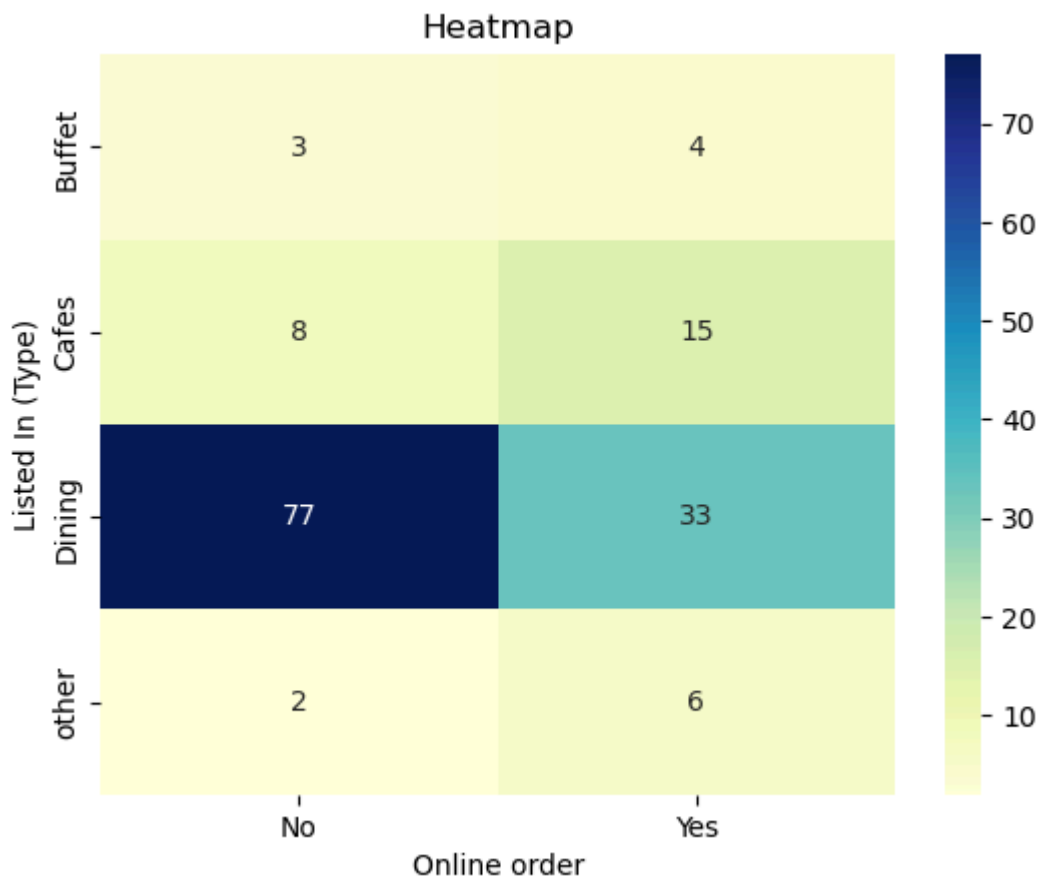
Conclusion- Offline order received lower rating in comparision to online order

In [19]: `dataframe.head()`

Out[19]:

	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

```
In [20]: pivot_table = dataframe.pivot_table(index='listed_in(type)', columns='online_order'
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- Dinning restaurants primarily accept offline orders, whereas cafes primarily receive online orders. This suggests that clients prefers to place orders in person at restaurants, but prefer online ordering at cafes.