Zomato Data Analysis Project

Step-1 : Importing Libraries

In [17]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

Step-2 : Create the Data Frame and Inspect the data

In [18]:
```
DataFrame = pd.read_csv(r"Zomato data .csv")
```

In [19]:
```
DataFrame
```

Out[19]:

	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 datatype of column - rate

In [20]:
```
def handle_rate(value):
    value = str(value).split("/")
    value = value[0];
    return float(value)
```

```
DataFrame["rate"]=DataFrame["rate"].apply(handle_rate)
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 DataFrame

In [21]:
```
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 the DataFrame, Hence we can procced with Data Visualization.

In [ ]:
```

```

Step-3 : Data Visualization

In [ ]:
```

```

Question: What types of restaurants do the majority of customers order from?

In [22]:
```
DataFrame.head()
```

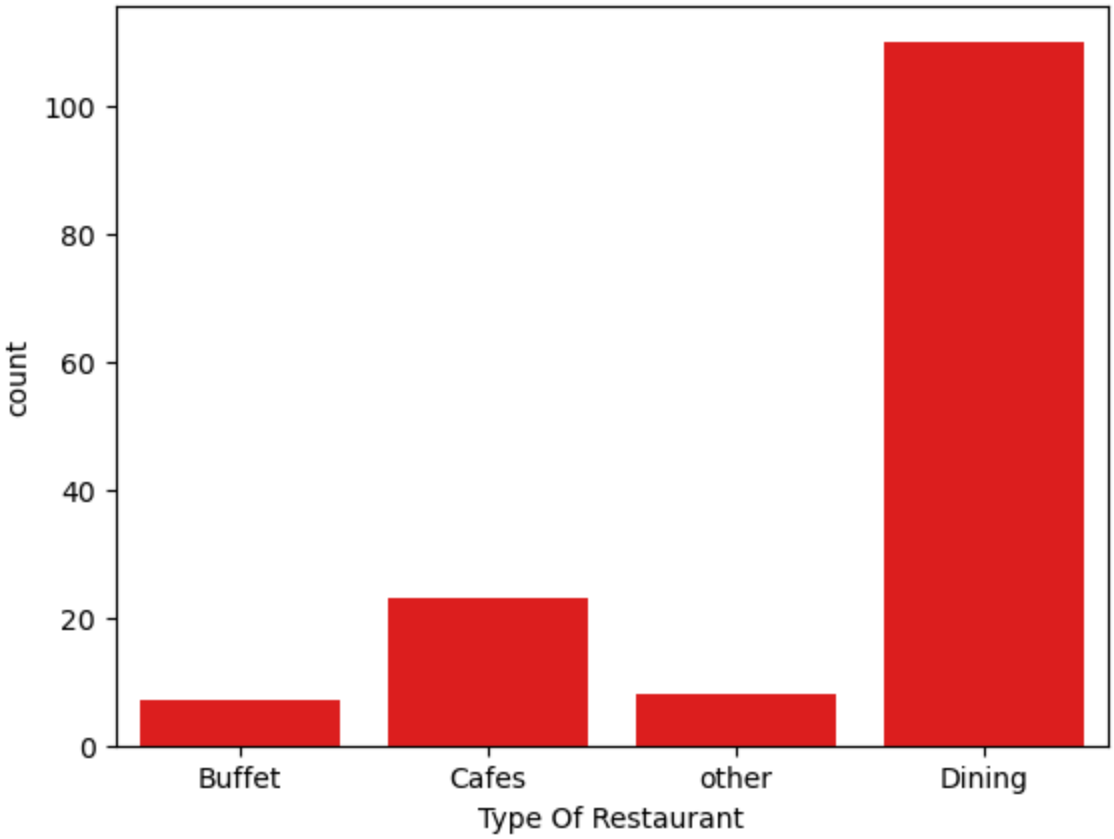
Out[22]:

	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 [23]:
```
sns.countplot(x=DataFrame["listed_in(type)"], color="red")

plt.xlabel("Type Of Restaurant")
```

Out[23]:
```
Text(0.5, 0, 'Type Of Restaurant')
```



Conclusion: The Majority of the restaurants falls in dinning category

In [ ]:
```

```

Question: How many votes has each type of restaurant received from customers?

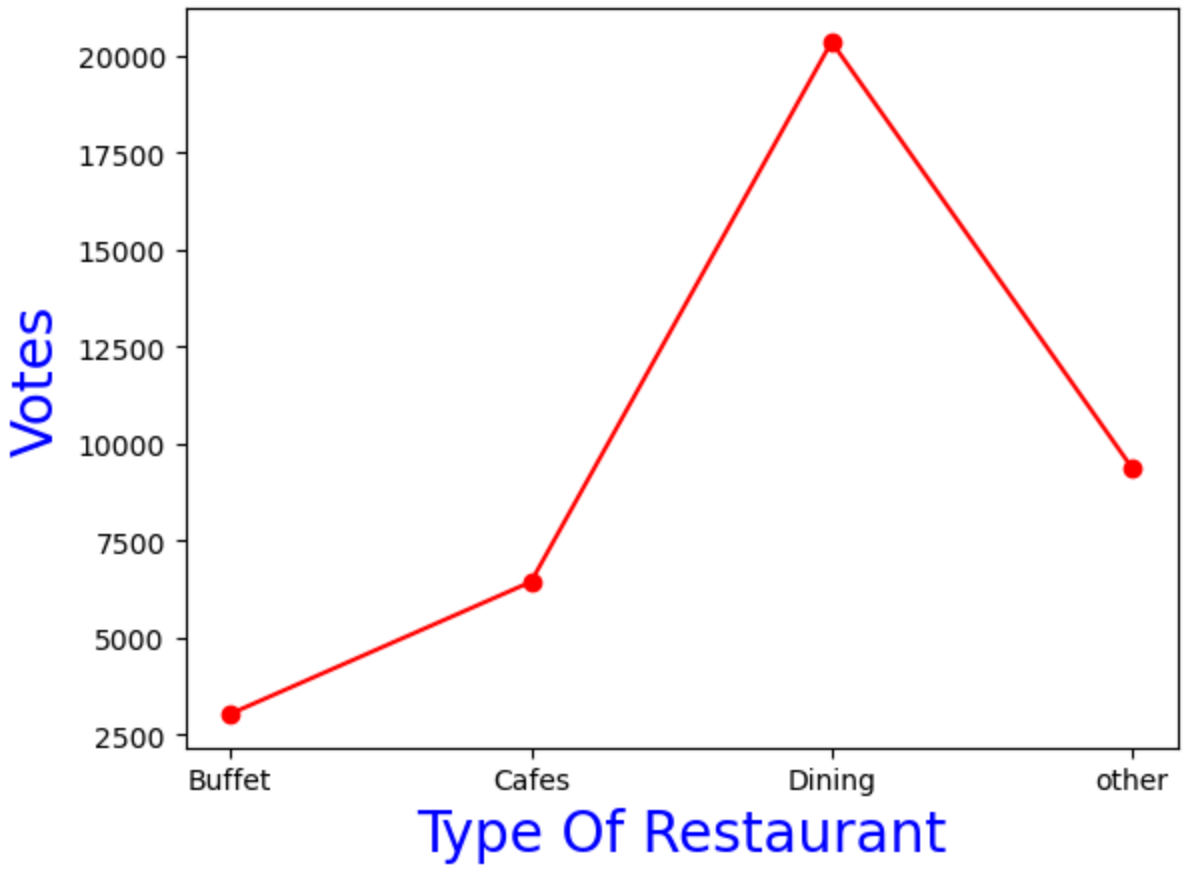
In [24]:
```
DataFrame.head()
```

Out[24]:

	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 [25]:
```
grouped_data = DataFrame.groupby("listed_in(type)")["votes"].sum()
result = pd.DataFrame({"votes": grouped_data})
plt.plot(result, c="Red", marker="o")
plt.xlabel("Type Of Restaurant", c="Blue", size=20)
plt.ylabel("Votes", c="Blue", size=20)
```

Out[25]:
```
Text(0, 0.5, 'Votes')
```



Conclusion: Dinning Restaurants are more Popular.

In [ ]:

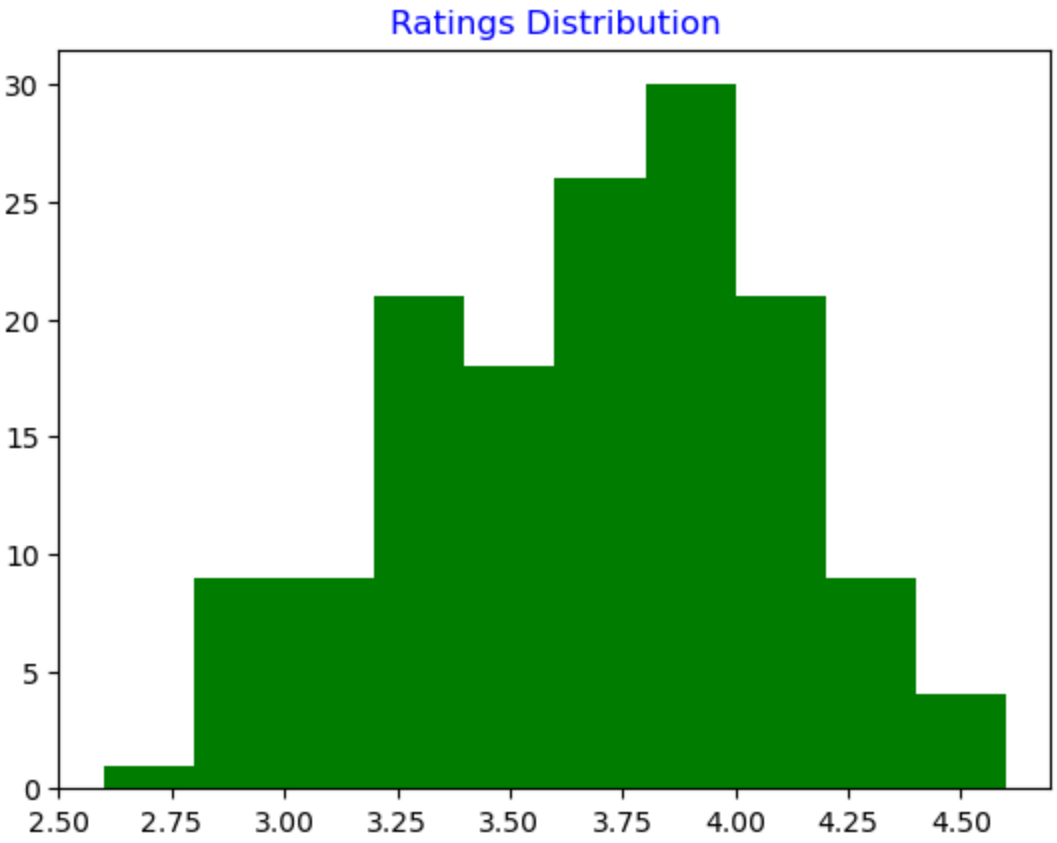
Question: What are the ratings that the majority of restaurants have received?

In [26]:
```
DataFrame.head()
```

Out[26]:

	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 [27]:
```
plt.hist(DataFrame["rate"], bins=10, color="Green")
plt.title("Ratings Distribution", color="Blue")
plt.show()
```



Conclusion: The Majority Restaurants received ratings from 3.5 to 4.

In [ ]:

Question: Zomato has observed that most couples order most of their food online. What is their average spending on each order?

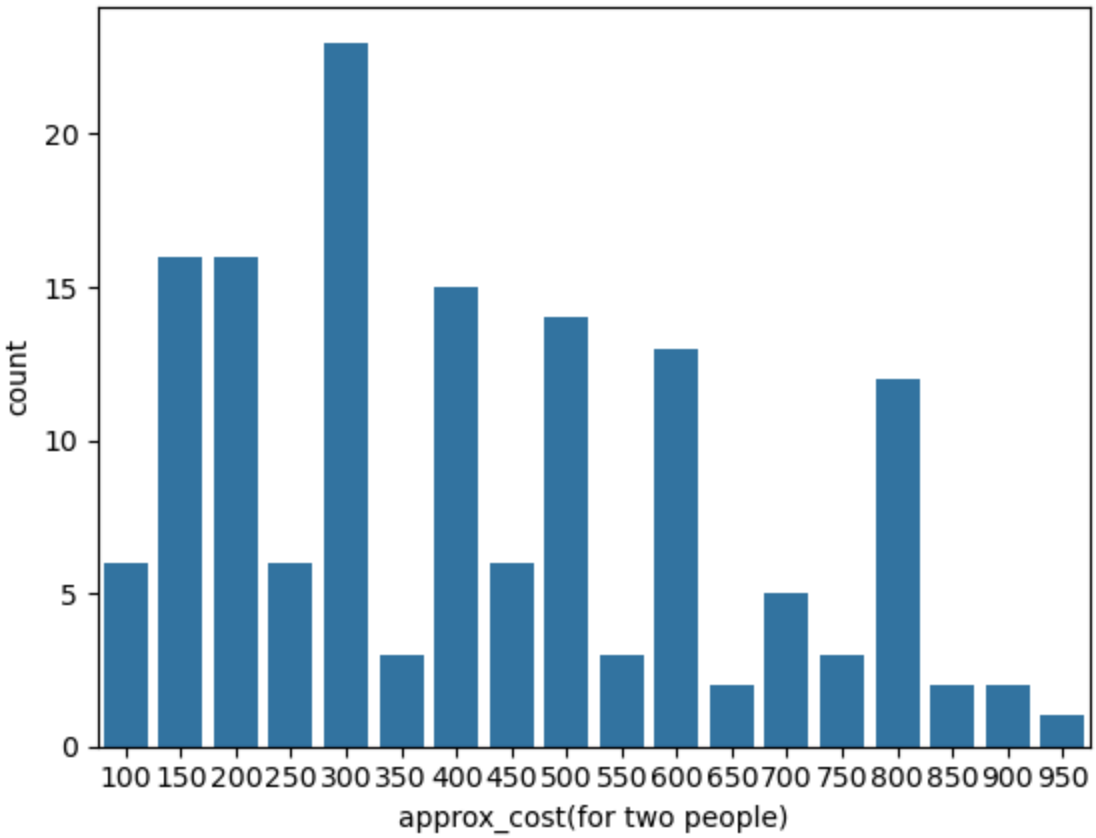
In [28]:
```
DataFrame.head()
```

Out[28]:

	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 [29]:
```
Couple_data = DataFrame["approx_cost(for two people)"]
sns.countplot(x=Couple_data)
```

Out[29]:
```
<Axes: xlabel='approx_cost(for two people)', ylabel='count'>
```



Conclusion: The Majority of Couples prefer restaurants with an approximate costs of Rs.300.

In [ ]:

Question: Which mode (online or offline) has received the maximum rating?

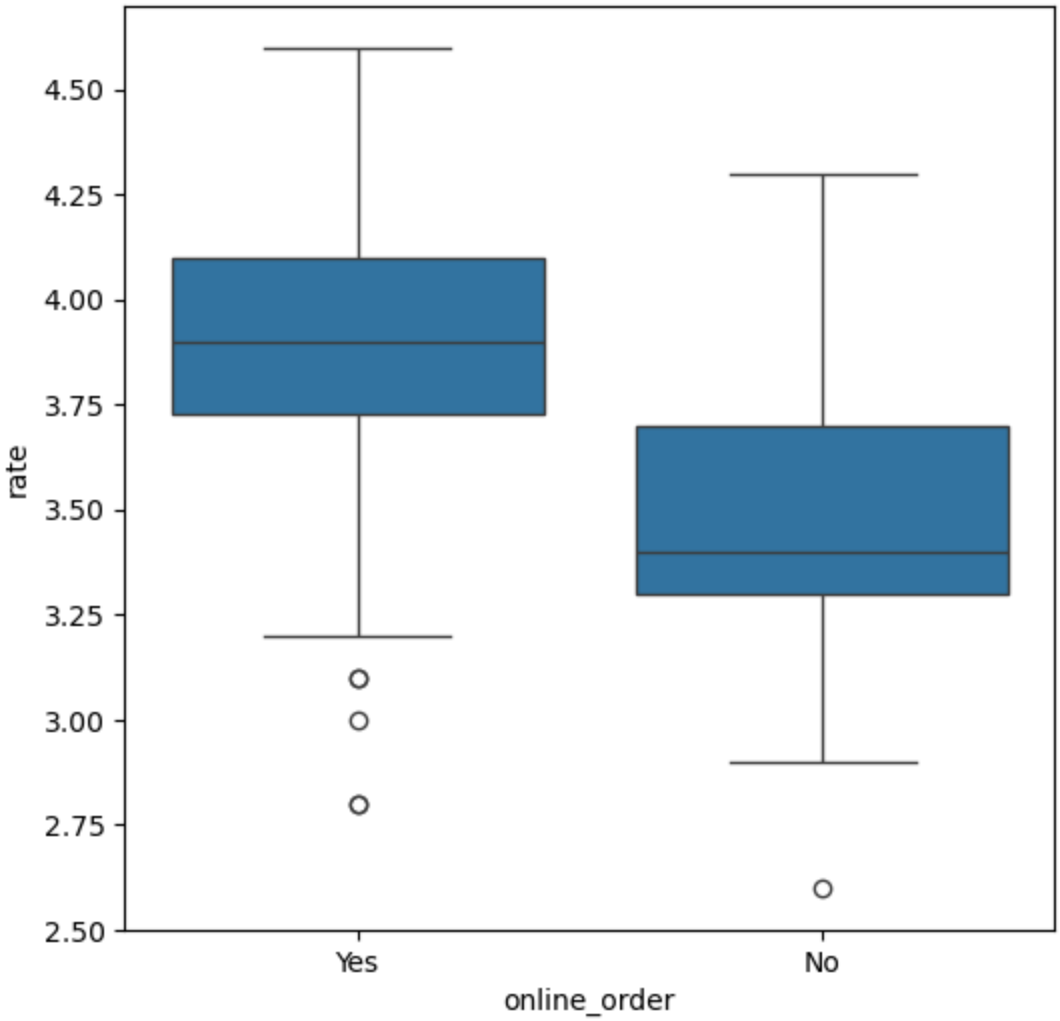
In [30]:
```
DataFrame.head()
```

Out[30]:

	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 [31]:
```
plt.figure(figsize = (6,6))
sns.boxplot(x = "online_order", y = "rate", data = DataFrame)
```

Out[31]:
```
<Axes: xlabel='online_order', ylabel='rate'>
```

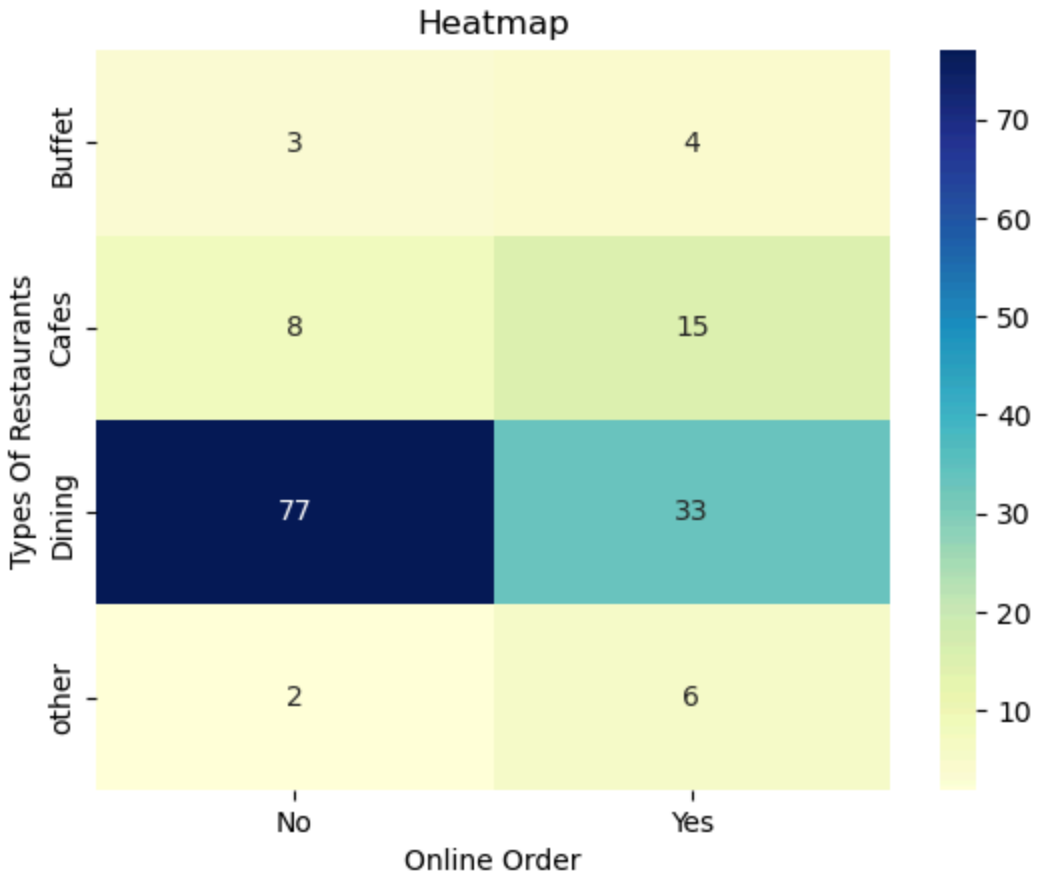


Conclusion: Offline order received lower rating in comparison to Online Order.

In [ ]:

Question: Which type of restaurant received more offline orders, so that Zomato can provide those customers with some good offers?

In [32]:
```
pivot_table = DataFrame.pivot_table(index = "listed_in(type)", columns = "online_order", aggfunc
sns.heatmap(pivot_table, annot = True, cmap="YlGnBu", fmt="d")
plt.title("Heatmap")
plt.xlabel("Online Order")
plt.ylabel("Types Of Restaurants")
plt.show()
```



Conclusion: Dinning restaurants primarily accepts offline orders, whereas cafes primarily receives online orders. This suggests that client prefers to place orders in person at restaurants, but prefer online ordering at cafes.

In [ ]: