Zomato data Analysis

In [26]:

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

In [186…

```
#loading the data frame
df= pd.read_csv("Zomato data .csv")
df
```

Out[186…

	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

In [188…

```
df.head(5)
```

Out[188…

	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

Data Processing

In [191…

```
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
```

In [193…

```
# every column has non - null values which means it does not contain any duplicated
```

In [195…

```
df.describe()
```

Out[195...

	votes	approx_cost(for two people)
count	148.000000	148.000000
mean	264.810811	418.243243
std	653.676951	223.085098
min	0.000000	100.000000
25%	6.750000	200.000000
50%	43.500000	400.000000
75%	221.750000	600.000000
max	4884.000000	950.000000

Data Cleaning

In [198...

```
# for our convinence we will try to remove the /5 factor from the rate column
```

In [200...

```
def updatedrate(value):
    value = str(value).split('/')   #split helps to split the string by the delemet
    value = value[0];   #returnig the first index as we needed the first part ex4.1
    return float(value)
df['rate'] = df['rate'].apply(updatedrate)
print(df.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 [202...

```
#checking missing values or duplicate values
```

In [204...

```
df.duplicated()
```

Out[204…

```
0      False
1      False
2      False
3      False
4      False
       ...
143    False
144    False
145    False
146    False
147    False
Length: 148, dtype: bool
```

In [206…

```
df.duplicated().sum()
```

Out[206…

```
0
```

In [208…

```
# this means we dont have any duplicated values
```

Analysis

What type of resturant majority of customer order from

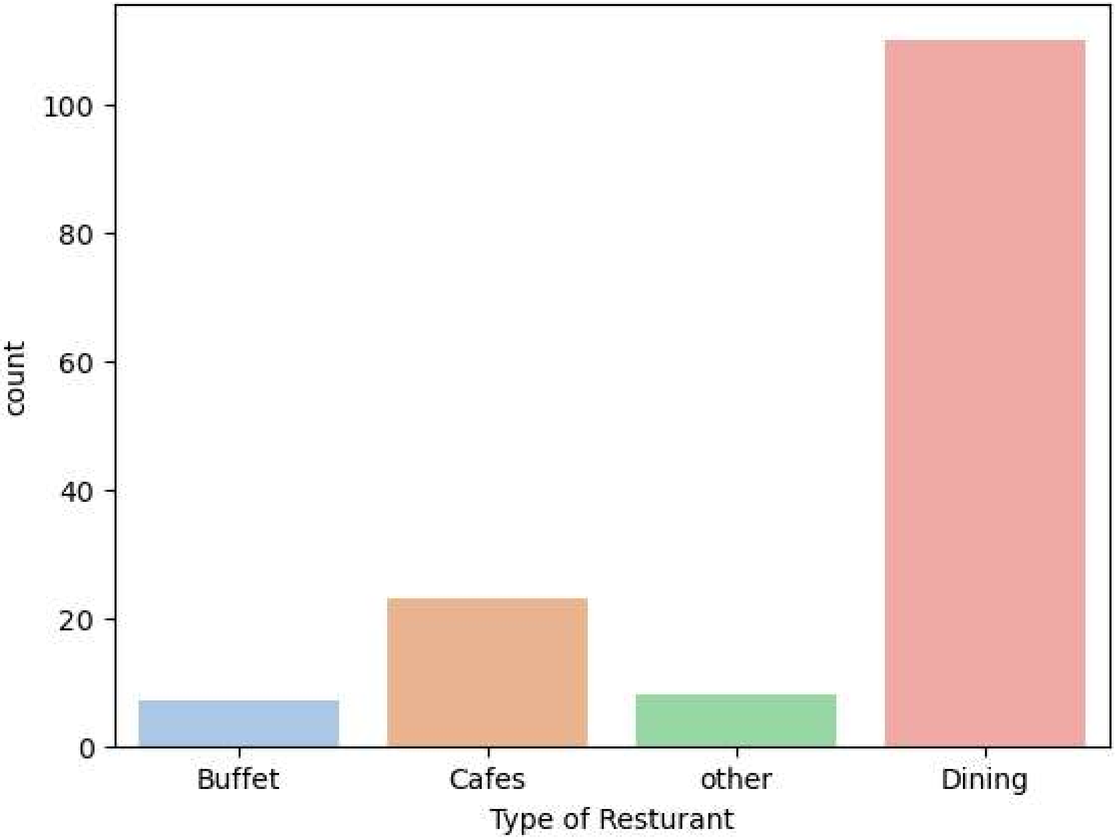
most order comes from dinning then second from cafes and third from Buffet

In [212…

```
sns.countplot(x=df['listed_in(type)'],hue=df['listed_in(type)'],palette='pastel')
plt.xlabel('Type of Resturant')
```

Out[212…

```
Text(0.5, 0, 'Type of Resturant')
```



In [241…

```
df.head()
```

Out[241…

	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 [243…

```
# for counting the total votes we need to apply sum in the votes columns and voting
#firstly group the restro type then calculate the total votes for each tyoe
```

In [245…

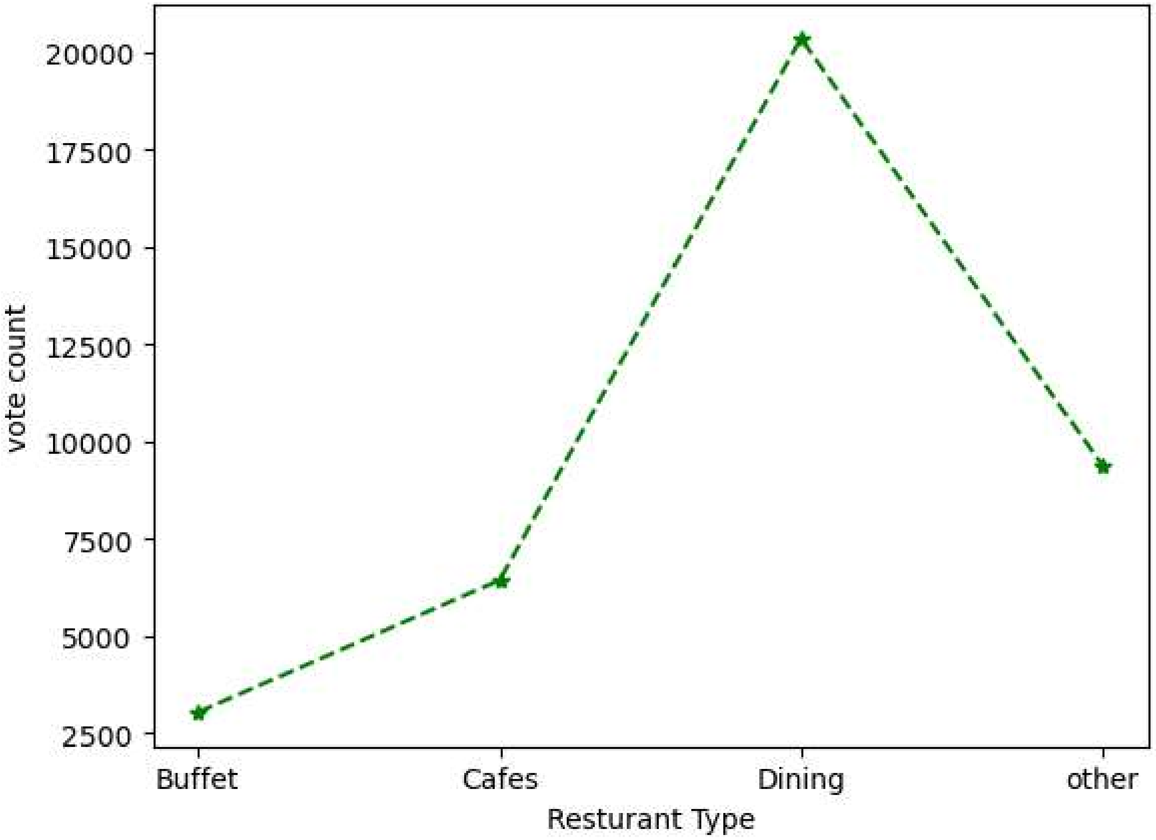
```
groupdata=df.groupby("listed_in(type)")['votes'].sum()
result = pd.DataFrame({'votes': groupdata}) # creating a new df named result having
print(result)
```

```
                  votes
listed_in(type)       
Buffet             3028
Cafes              6434
Dining            20363
other              9367
```

now we can show the how many votes for each restro type recieved from customer

In [248…

```
plt.plot(result,color='green',marker='*', linestyle='--')
plt.xlabel('Resturant Type')
plt.ylabel('vote count')
plt.show()
```

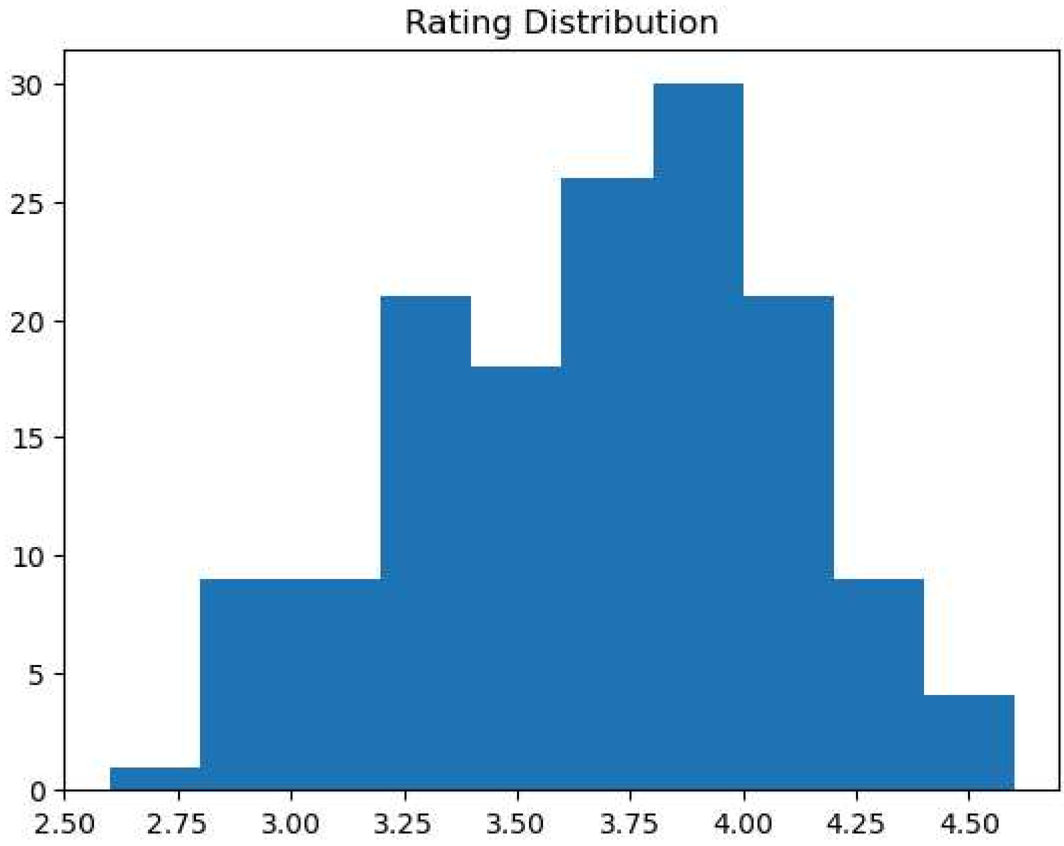


In [249…

```
#now we need to see the distributuin of rating for resturant
```

In [250…

```
plt.hist(x=df['rate'],bins=10)
plt.title('Rating Distribution')
plt.show()
```



In [251…

```
# majority ratings are between morethan 3.5 and less than 4.1
```

now lets analyse the average spending of order if ordered online

In [284…

```
online_orders = df[df["online_order"] == "Yes"]
average_spending_online = online_orders["approx_cost(for two people)"].mean()
print('Average money spend by couple if order online is',average_spending_online)
```

```
Average money spend by couple if order online is 510.3448275862069
```

In [286…

```
offline_orders = df[df["online_order"] == "No"]
average_spending_offline = online_orders["approx_cost(for two people)"].mean()
print('Average money spend by couple if order ofline is',average_spending_offline)
```

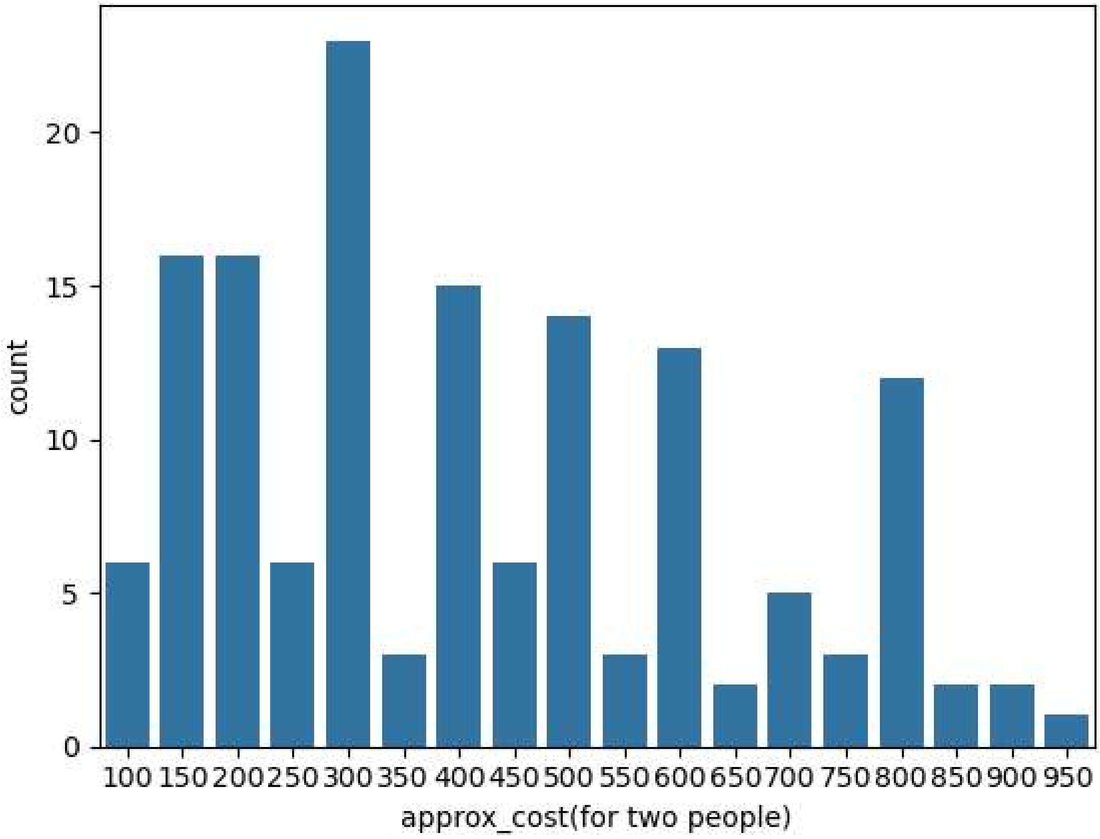
```
Average money spend by couple if order ofline is 510.3448275862069
```

In [296…

```
sns.countplot(x=df['approx_cost(for two people)'])
```

Out[296…

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



In [298…

```
#count of 300 rupees is most for orders both online and order order considerred
```

Rating as comparted to online vs offline

In [306…

```
df.head()
```

Out[306…

	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
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3	Addhuri Udupi Bhojana	No	No	3.7	88	300	Buffet
4	Grand Village	No	No	3.8	166	600	Buffet

In [318…

```
plt.figure(figsize=(6,6))
sns.boxplot(x=df['online_order'],y=df['rate'],palette='Set2')
```

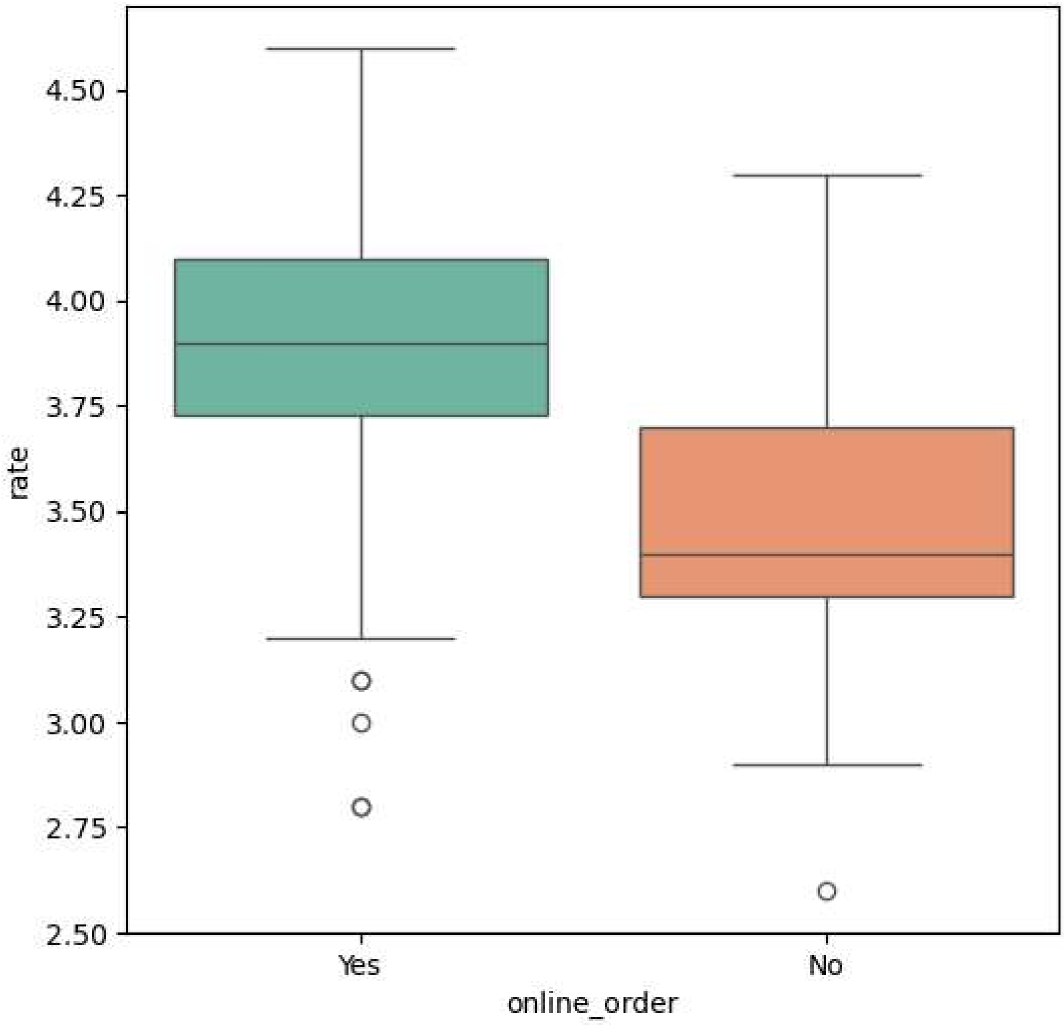
```
C:\Users\KIIT\AppData\Local\Temp\ipykernel_13236\4130098408.py:2: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in v0.1
4.0. Assign the `x` variable to `hue` and set `legend=False` for the same effect.

  sns.boxplot(x=df['online_order'],y=df['rate'],palette='Set2')
```

Out[318…

```
<Axes: xlabel='online_order', ylabel='rate'>
```



In [312…

```
#online order has more rating which lies betwen 3.75 to 4
```

In [320…

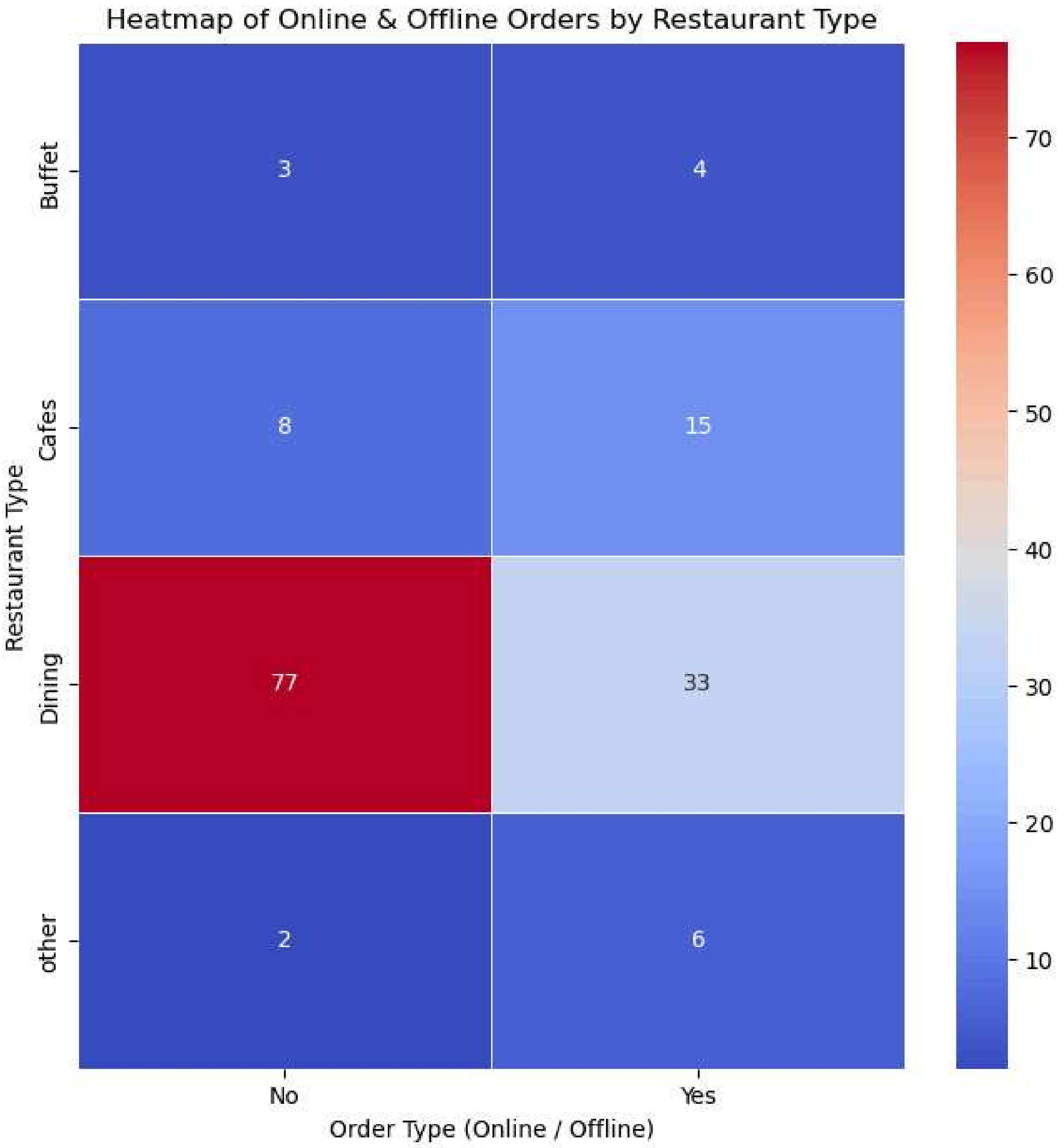
```
#offline order has less raring as compareto online ---- avg rating for offline beco
```

now wwe will analysie type of restaurant received more offline orders vs online order

In [333…

```
# Creating a pivot table for both Online and Offline orders
combined_pivot = df.pivot_table(
    index='listed_in(type)',
    columns='online_order',
    values='approx_cost(for two people)',
    aggfunc='count'
)

# Plotting the combined heatmap
plt.figure(figsize=(8, 8))
sns.heatmap(combined_pivot, annot=True, cmap="coolwarm", linewidths=.5)
plt.title('Heatmap of Online & Offline Orders by Restaurant Type')
plt.xlabel('Order Type (Online / Offline)')
plt.ylabel('Restaurant Type')
plt.show()
```



```
In [ ]:
```