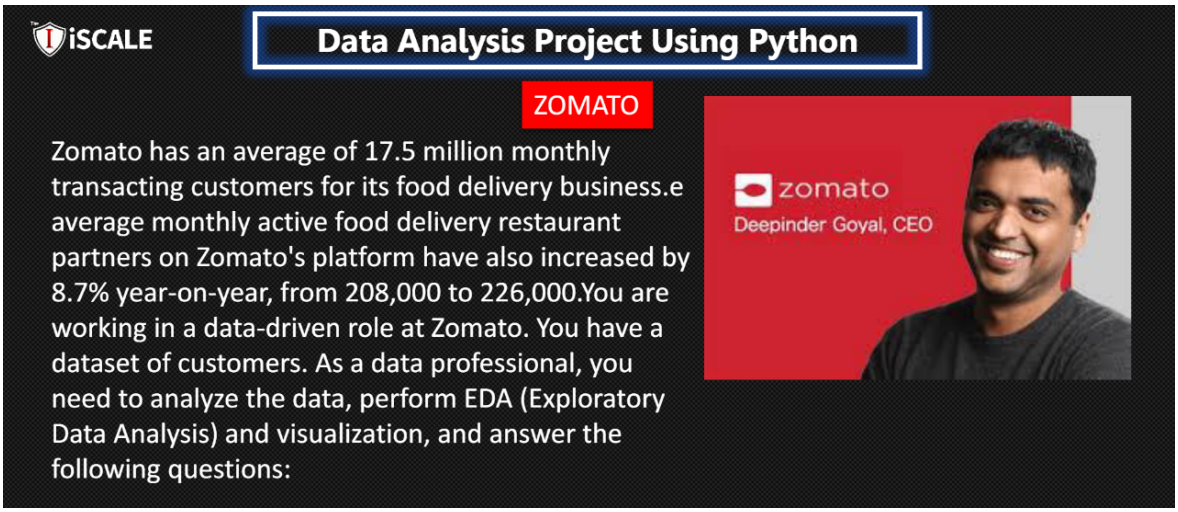


1 Zomato Data Analysis Project

Step - 1 Import Neccessary Libraries

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

step -2 Create Datafreame and load the Data

[5]:
```
data = pd.read_csv("Zomato data .csv")
```

[6]:
```
data
```

[6]:

	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]
```

Checking Null or Missing Values

[7]:
```
data.isnull().sum()
```

[7]:
```
name                           0
online_order                   0
book_table                     0
rate                           0
votes                          0
approx_cost(for two people)    0
listed_in(type)                0
dtype: int64
```

[15]:
```
data.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
```

Checking Data types

[8]:
```
data.dtypes
```

[8]:
```
name                           object
online_order                   object
book_table                     object
rate                           object
votes                           int64
approx_cost(for two people)     int64
listed_in(type)                object
dtype: object
```

Checking Duplicates in Data

[10]:
```
data.duplicated().sum()
```

[10]:
```
0
```

"Lets Convert the data types of the [rate], column to float and remove denominator"

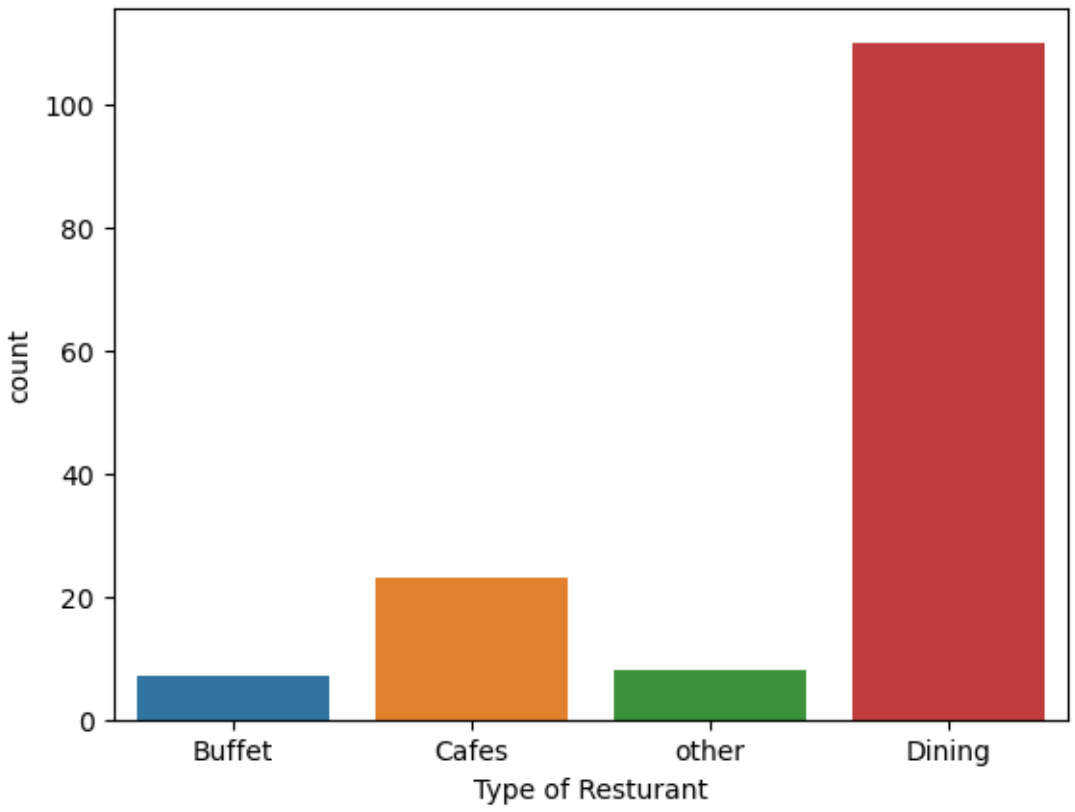
[13]:
```
def handleRate(value):
    value = str(value).split('/')
    value = value[0];
    return float(value)
data['rate']=data['rate'].apply(handleRate)
print(data.head())
```

```
                   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
```

[16]:
```
sns.countplot(x=data['listed_in(type)'])
plt.xlabel('Type of Resturant')
```

[16]:
```
Text(0.5, 0, 'Type of Resturant')
```



Conclusion -The Majority of the Restuarants fall into the dining category...!

[17]:
```
data.head()
```

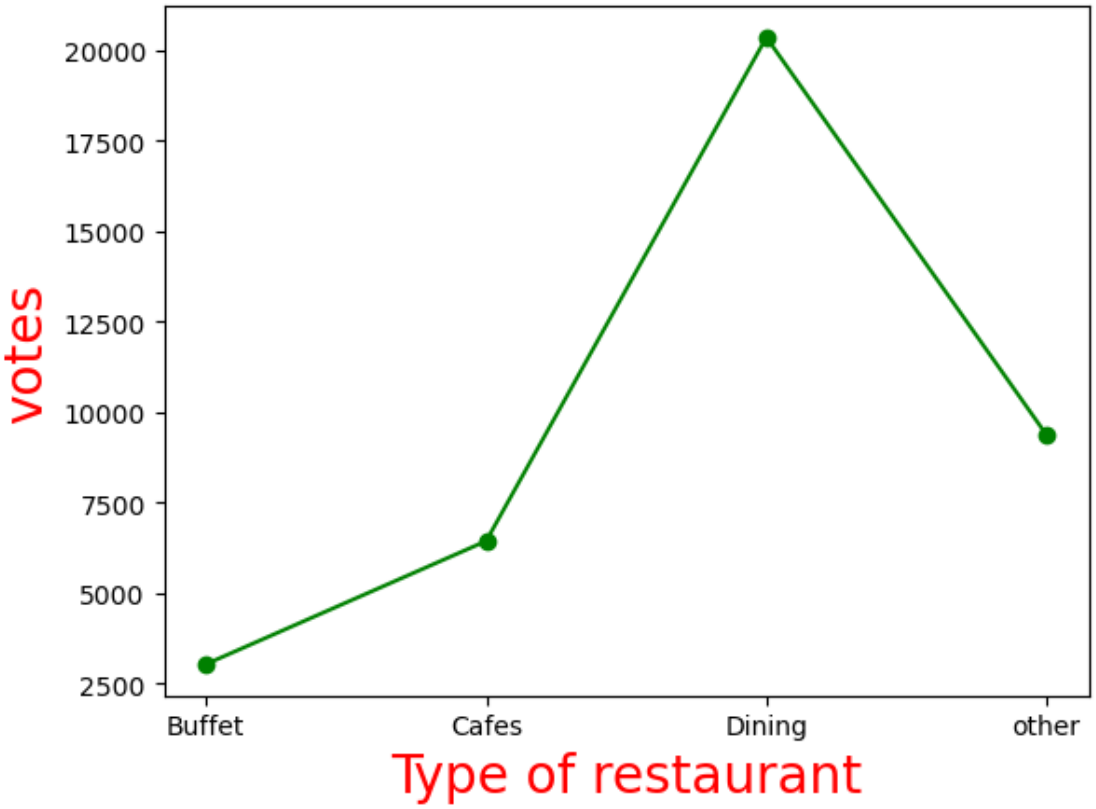
[17]:

	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

[35]:
```
grouped_data = data.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)
```

[35]:
```
Text(0, 0.5, 'votes')
```



Conclusion - The Majority of the Restuarants recevied Ratings

[27]:
```
grouped_data
```

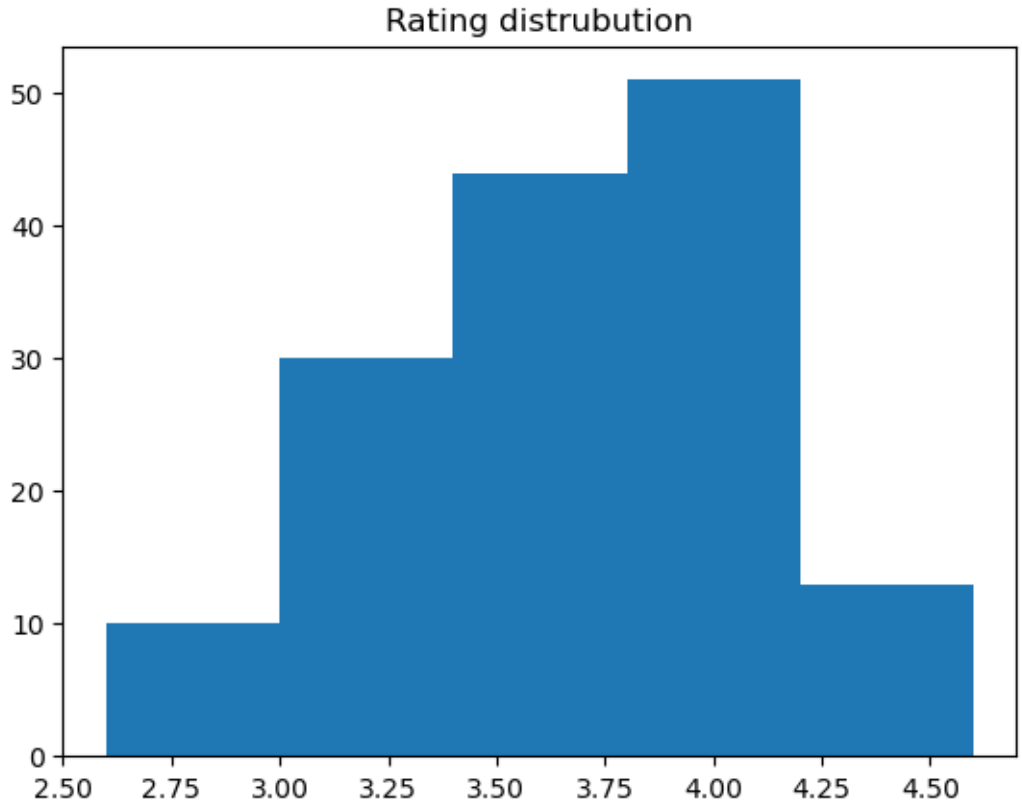
[27]:
```
listed_in(type)
Buffet     3028
Cafes      6434
Dining    20363
other      9367
Name: votes, dtype: int64
```

[ ]:
```
conclusion -
```

[ ]:
```

```

[37]:
```
plt.hist(data['rate'],bins=5)
plt.title('Rating distrubution')
plt.show()
```

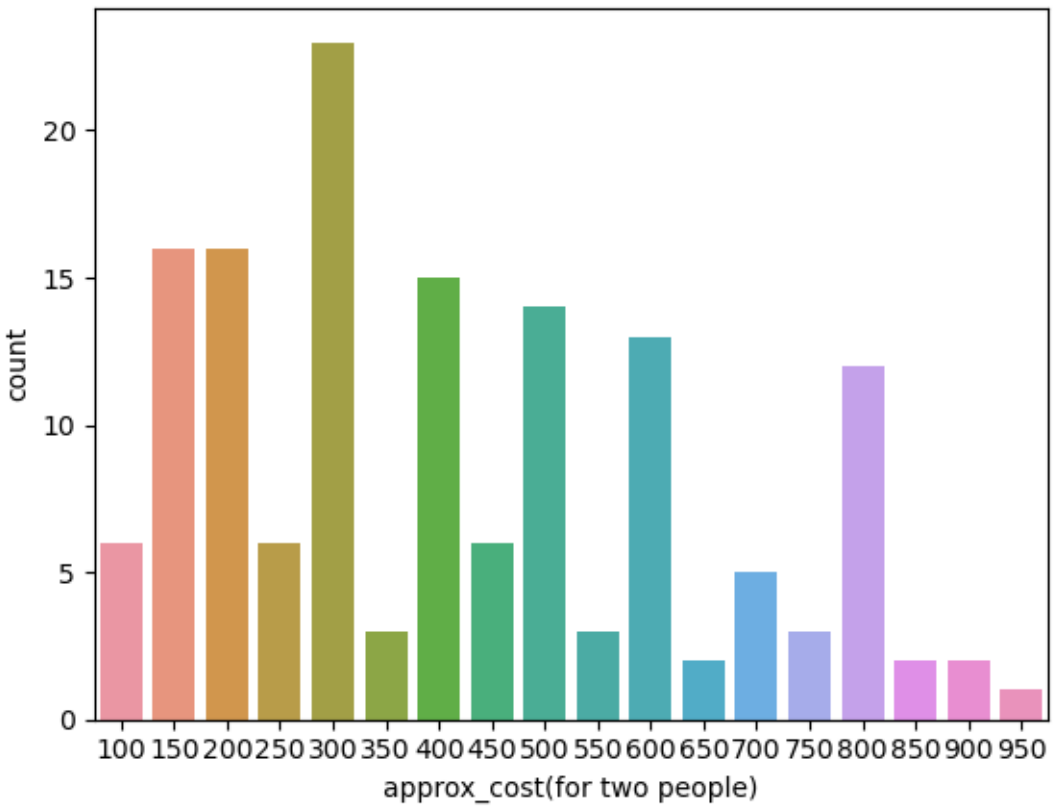


Conclusion - The Majority of the Restuarants recevied Ratings are ranging 3.5 t0 4....

Average Order Spending By Couples

[39]:
```
couple_Data = data['approx_cost(for two people)']
sns.countplot(x=couple_Data)
```

[39]:
```
<Axes: xlabel='approx_cost(for two people)', ylabel='count'>
```

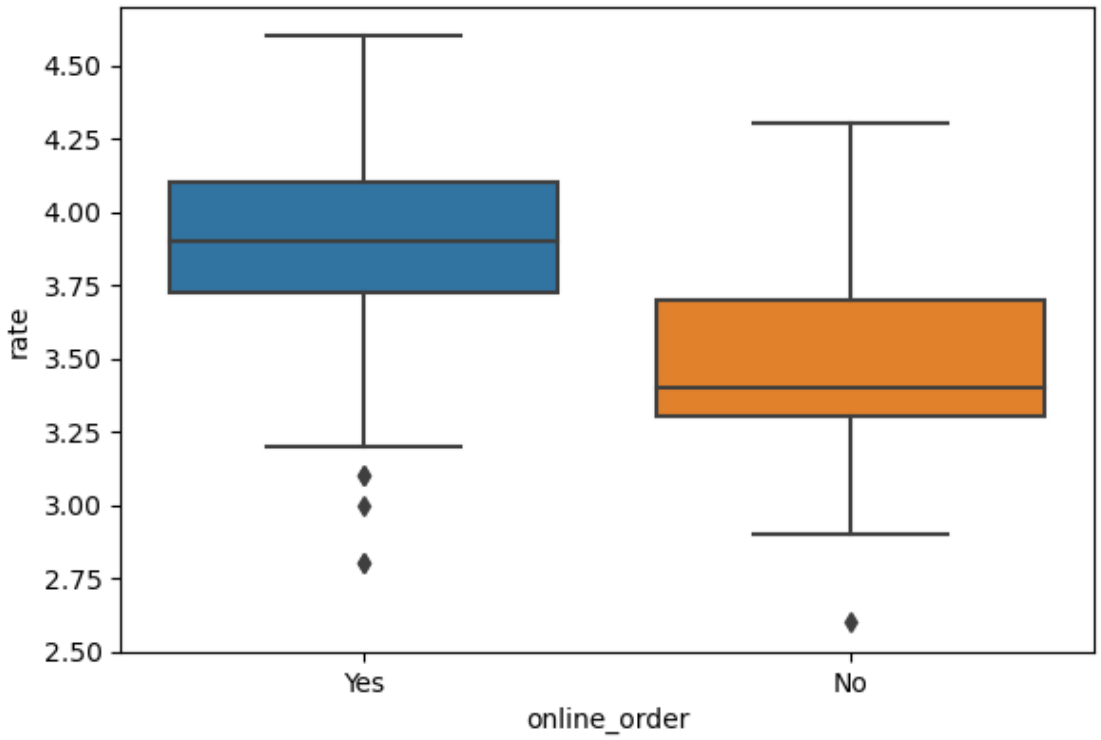


Conclusion - The majority of couples Prefer Restuarant with an approximate cost is 300$ Rupees

[ ]:
```
which Mode Recevie Maximum Rating
```

[43]:
```
plt.figure(figsize=(6.6,4.4))
sns.boxplot(x='online_order', y = 'rate', data=data)
```

[43]:
```
<Axes: xlabel='online_order', ylabel='rate'>
```



conclusion -Whether online order receive rating higher than Offline order

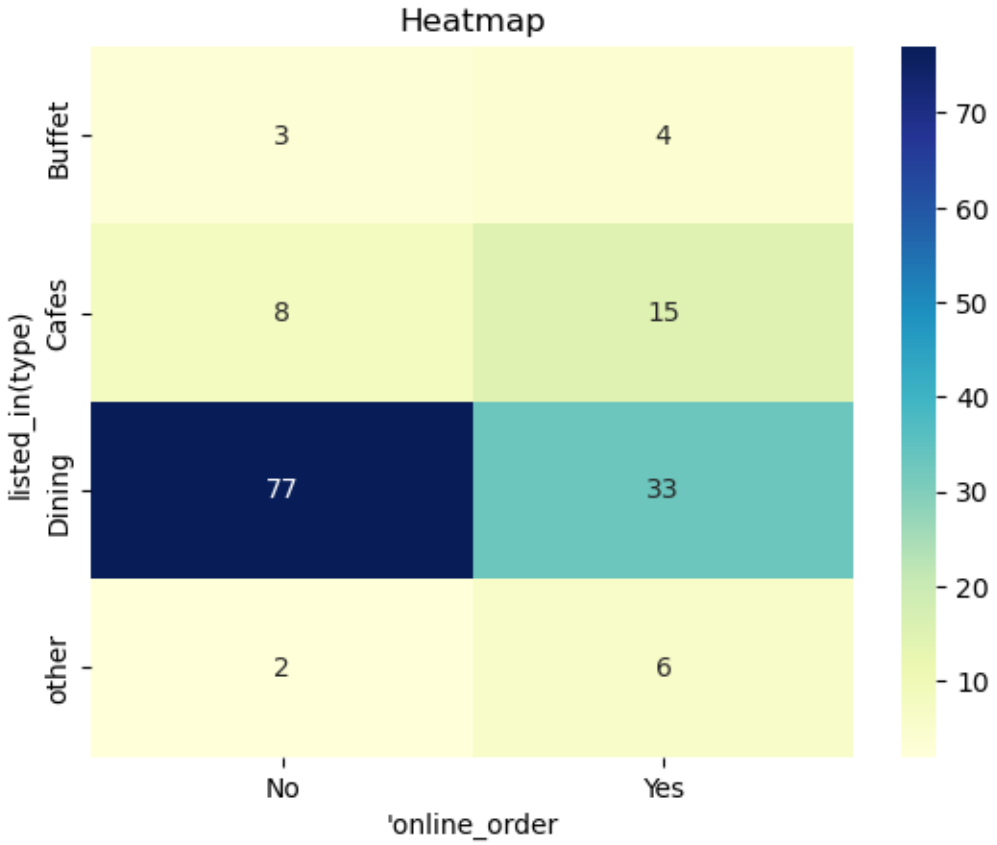
[44]:
```
data.head()
```

[44]:
```
                    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
```

[48]:
```
pivot_table = data.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()
```



Conclusion - Dining Restuarants Primarily accept offline orders where as Cafes primarily receive online orders This Suggests that clents to prefer to place orders in person at resturants but Prefre Online ordering at cafres...!

These are Questions I solved in this project...

1) What type of restaurant do the majority of customers order from?

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

3) What are the ratings that the majority of restaurants have received?

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

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

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

[ ]: