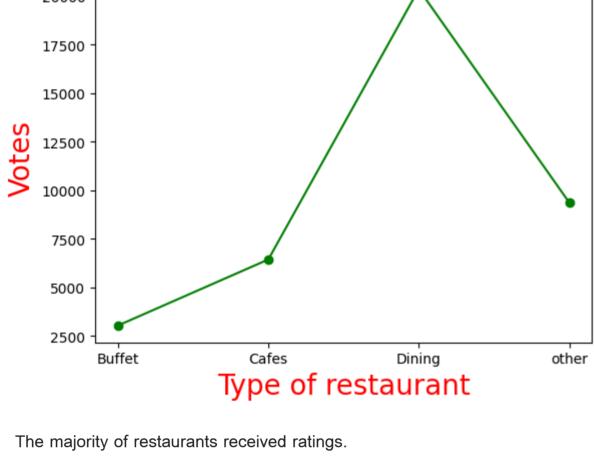
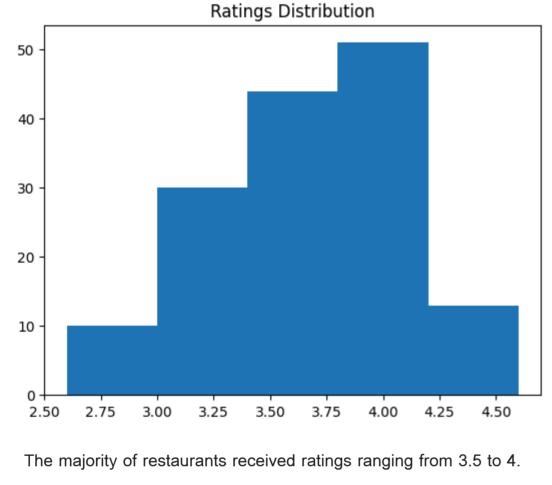
```
In [1]: import pandas as pd
               import numpy as np
               import matplotlib.pyplot as plt
               import seaborn as sns
 In [2]: dataframe = pd.read_csv("Zomato data .csv")
               print(dataframe.head())
                                             name online_order book_table rate votes \
                                          Jalsa Yes Yes 4.1/5
                             Spice Elephant
                                                               Yes No 4.1/5
                                                         Yes No 3.8/5 918
No No 3.7/5 88
No No 3.8/5 166
                            San Churro Cafe
             3 Addhuri Udupi Bhojana
                              Grand Village
                  approx_cost(for two people) listed_in(type)
                                                         800
                                                                              Buffet
                                                                              Buffet
                                                          800
                                                                              Buffet
                                                          300
                                                                              Buffet
                                                          600
                                                                              Buffet
 In [3]: dataframe
                                             name online_order book_table rate votes approx_cost(for two people) listed_in(type)
                                             Jalsa
                                                                                 Yes 4.1/5 775
                                                                                                                                        800
                                                                                                                                                          Buffet
                                                                 Yes
                                                                                                                                        800
                                                                                                                                                          Buffet
                                 Spice Elephant
                                                                                  No 4.1/5 787
                               San Churro Cafe
                                                                 Yes
                                                                                  No 3.8/5 918
                                                                                                                                        800
                                                                                                                                                          Buffet
                                                                                                                                        300
                  3 Addhuri Udupi Bhojana
                                                                                  No 3.7/5
                                                                                                                                                          Buffet
                  4
                                  Grand Village
                                                                  No
                                                                                  No 3.8/5 166
                                                                                                                                        600
                                                                                                                                                          Buffet
                143
                               Melting Melodies
                                                                                                                                         100
                                                                  No
                                                                                  No 3.3/5
                                                                                                     0
                                                                                                                                                         Dining
                               New Indraprasta
               144
                                                                                  No 3.3/5
                                                                                                                                         150
                                                                                                                                                         Dining
                145
                                  Anna Kuteera
                                                                                  No 4.0/5 771
                                                                                                                                        450
                                                                 Yes
                                                                                                                                                         Dining
               146
                                           Darbar
                                                                                  No 3.0/5
                                                                                                                                        800
                                                                                                                                                         Dining
               147
                                  Vijayalakshmi
                                                                                  No 3.9/5 47
                                                                                                                                        200
                                                                 Yes
                                                                                                                                                         Dining
              148 rows × 7 columns
 In [4]: 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 \
                                            Jalsa Yes Yes 4.1 775
                             Spice Elephant Yes No 4.1 787
                            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)
                                     800
                                                     800
                                                                             Buffet
                                                    800 Buffet
                                                    300
                                                                              Buffet
                                                                              Buffet
 In [5]: dataframe.info()
             <class 'pandas.core.frame.DataFrame'>
             RangeIndex: 148 entries, 0 to 147
             Data columns (total 7 columns):
             # Column | Non-Null Count Dtype | Data columns | Dtype | Dtype | Data columns | Dtype | Dt
              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 this data.
               Explorartory Data Analysis
               Q1. What type of restaurant do the majority of customers order from?
In [17]: sns.countplot(x=dataframe['listed_in(type)'])
               plt.xlabel("Type of Restaurant")
Out[17]: Text(0.5, 0, 'Type of Restaurant')
                  100
                   80
                    40
                   20
                                  Buffet
                                                            Cafes
                                                                                       other
                                                                                                                 Dining
                                                                Type of Restaurant
               The majority of the restaurants fall into the dining category. Dining restaurants are preferred by a larger number of individuals.
               Q2. How many votes has each type of restaurant received from customers?
             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)
                     20000
```

```
Out[12]: Text(0, 0.5, 'Votes')
            17500
            15000
```



Q3. What are the ratings that the majority of restaurants have received?

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



Q4.Zomato has observed that most couples order most of their food online. What is their average spending on each order?

In [14]: couple_data=dataframe['approx_cost(for two people)'] sns.countplot(x=couple_data)

```
Out[14]: <Axes: xlabel='approx_cost(for two people)', ylabel='count'>
           20
           15
           10
               100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950
                                   approx_cost(for two people)
         The majority of couples prefer restaurants with an approximate cost of 300 rupees.
```

Q5. Which mode (online or offline) has received the maximum rating? In [15]: plt.figure(figsize = (6,6)) sns.boxplot(x = 'online_order', y = 'rate', data = dataframe)

```
Out[15]: <Axes: xlabel='online_order', ylabel='rate'>
           4.50
           4.25
           4.00
           3.75
           3.50
           3.25
                              0
           3.00
                                                             0
           2.50
                              Yes
                                                            No
                                         online_order
```

sns.heatmap(pivot_table, annot=True, cmap="YlGnBu", fmt='d')

No

Online Order

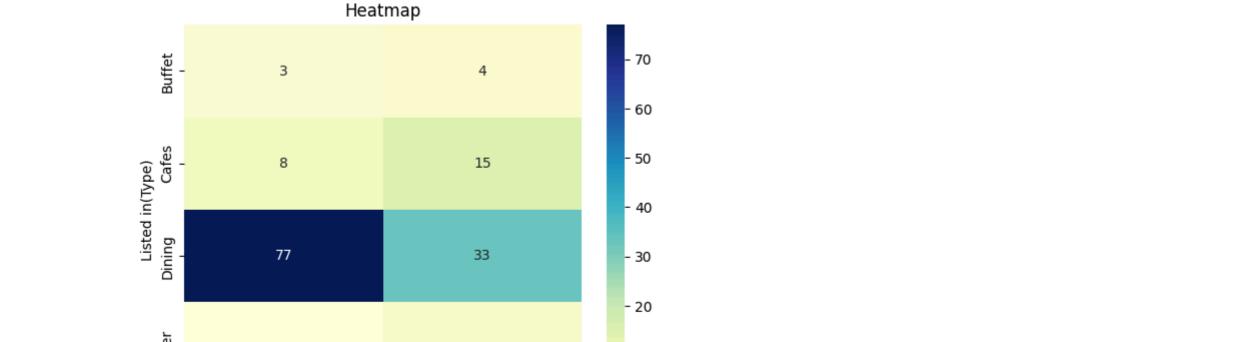
Offline orders received lower ratings in comaparison to online orders, which obtained excellent ratings.

Yes

In [16]: pivot_table = dataframe.pivot_table(index='listed_in(type)', columns='online_order', aggfunc='size', fill_value=0)

```
plt.title("Heatmap")
plt.xlabel("Online Order")
plt.ylabel("Listed in(Type)")
plt.show()
```

Q6.Which type of restaurant received more offline orders, so that Zomato can provide those customers with some good offers?



- 10

Conlusion: Dining restaurants primarily accept offline orders, whereas cafes primarily receive online orders. This suggests that client prefer to place orders in person at restaurants, but prefer online ordering at cafes.

