zomato

# Data Analysis Project Using Python - ZOMATO


| | 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

# Zomato Data Analysis Using Python

## Step 1: Import necessary Python libraries.

In [10]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

```
pandas is used for data manipulation and analysis.
numpy is used for numerical operations.
matplotlib.pyplot and seaborn are used for data visualization.
```

## Step 2: Create the data frame.

In [2]:
```
dataframe = pd.read_csv("Zomato data .csv")
print(dataframe.head())
```

```
                  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

   approx_cost(for two people) listed_in(type)
0                          800          Buffet
1                          800          Buffet
2                          800          Buffet
3                          300          Buffet
4                          600          Buffet
```

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

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

# let’s convert the data type of the “rate” column to float and remove the denominator.

In [6]:
```
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
```

## summary of the data frame

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

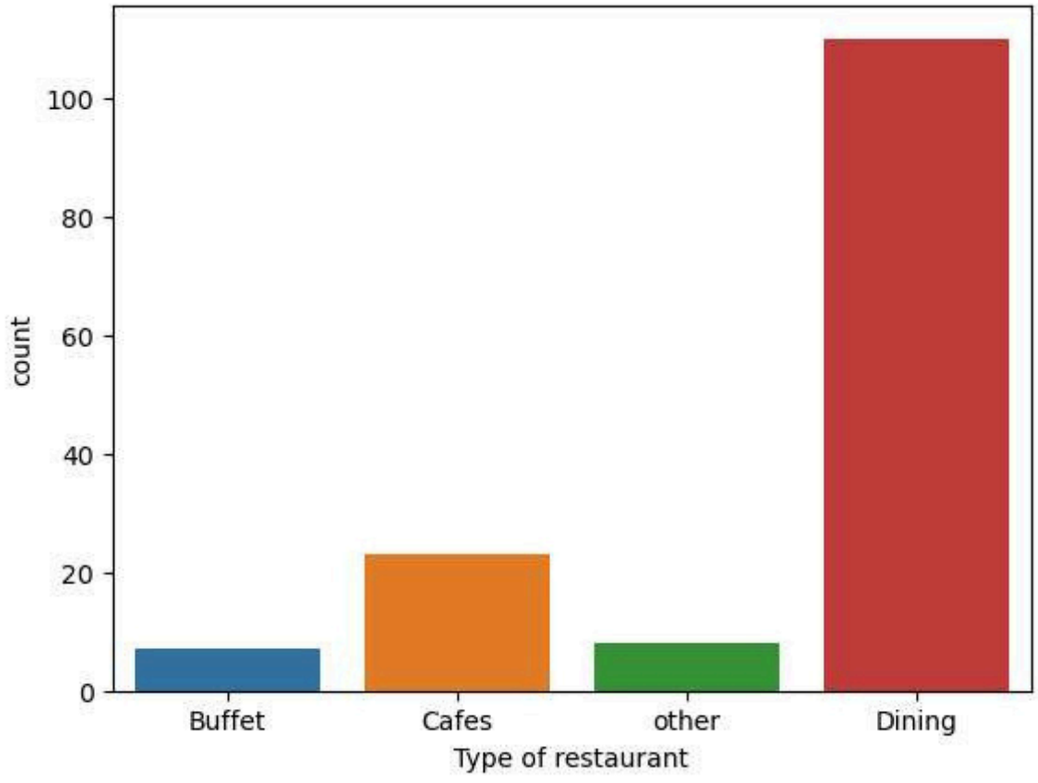
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 148 entries, 0 to 147
Data columns (total 7 columns):
 #   Column                       Non-Null Count  Dtype
---  ------                       --------------  -----
 0   name                         148 non-null    object
 1   online_order                 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 dataframe.

## Type of Resturant

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

Out[8]:
```
Text(0.5, 0, 'Type of restaurant')
```

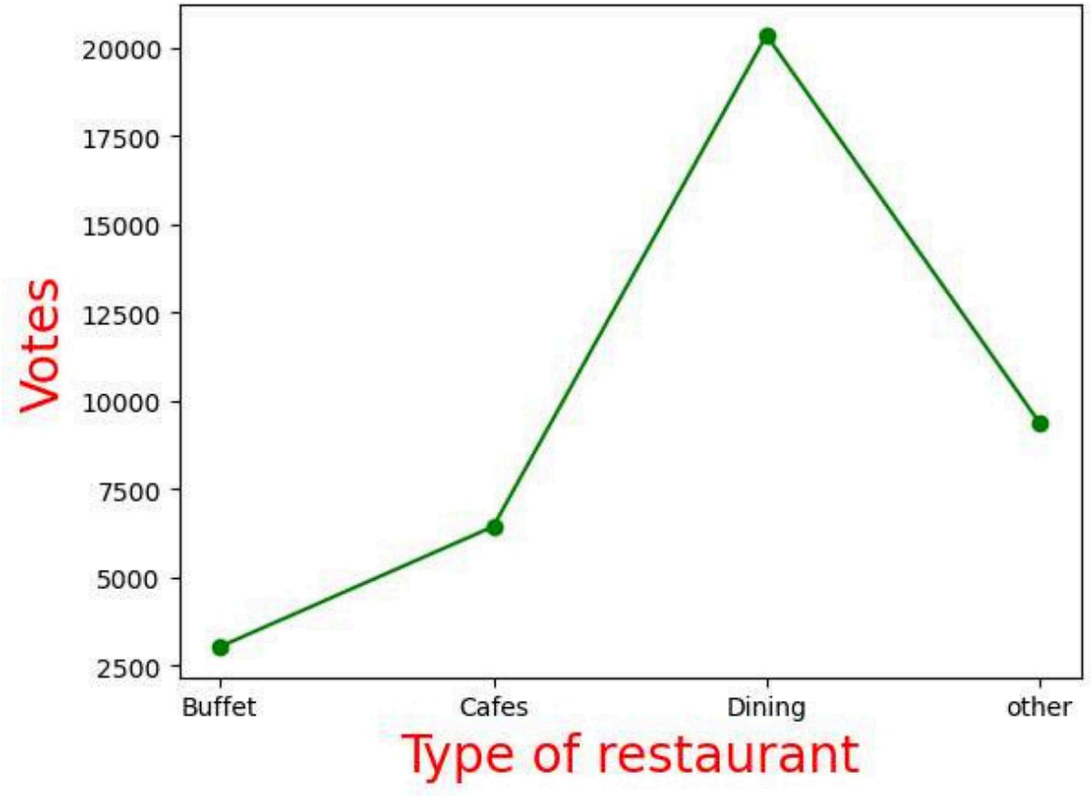



**Conclusion: The majority of the restaurants fall into the dining category.**

**Dining restaurants are preferred by a larger number of individuals.**

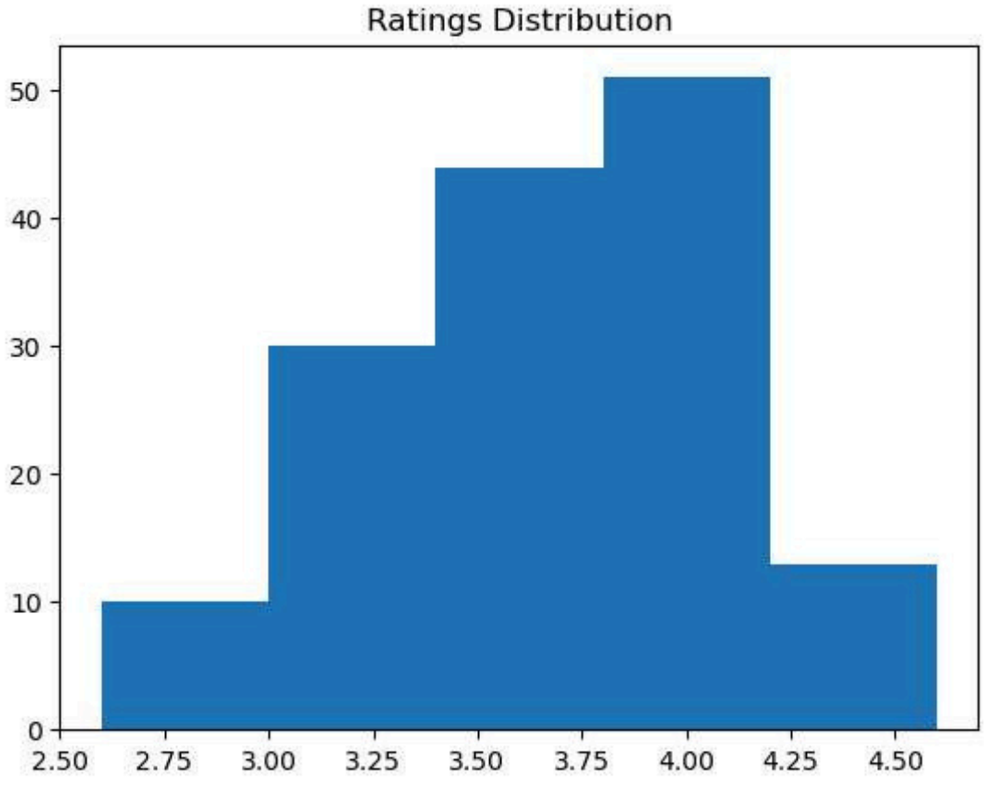
In [9]:
```
grouped_data = dataframe.groupby('listed_in(type)')['votes'].sum()
result = pd.DataFrame({'votes': grouped_data})
plt.plot(result, c="green", marker="o")
plt.xlabel("Type of restaurant", c="red", size=20)
plt.ylabel("Votes", c="red", size=20)
```

Out[9]: Text(0, 0.5, 'Votes')




**The majority of restaurants received ratings**

In [11]:
```
plt.hist(dataframe['rate'],bins=5)
plt.title("Ratings Distribution")
plt.show()
```

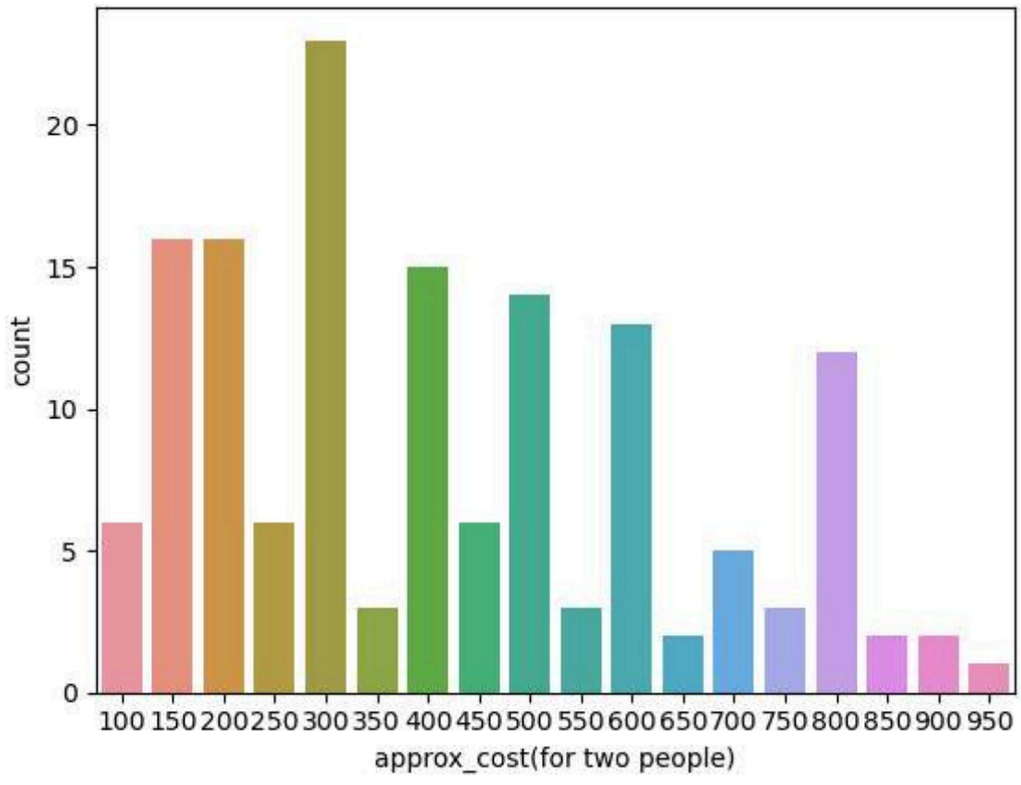



**Conclusion: The majority of restaurants received ratings ranging from 3.5 to 4.**

**The majority of couples prefer restaurants with an approximate cost of 300 rupees.**

In [15]:
```
couple_data=dataframe['approx_cost(for two people)']
sns.countplot(x=couple_data)
```

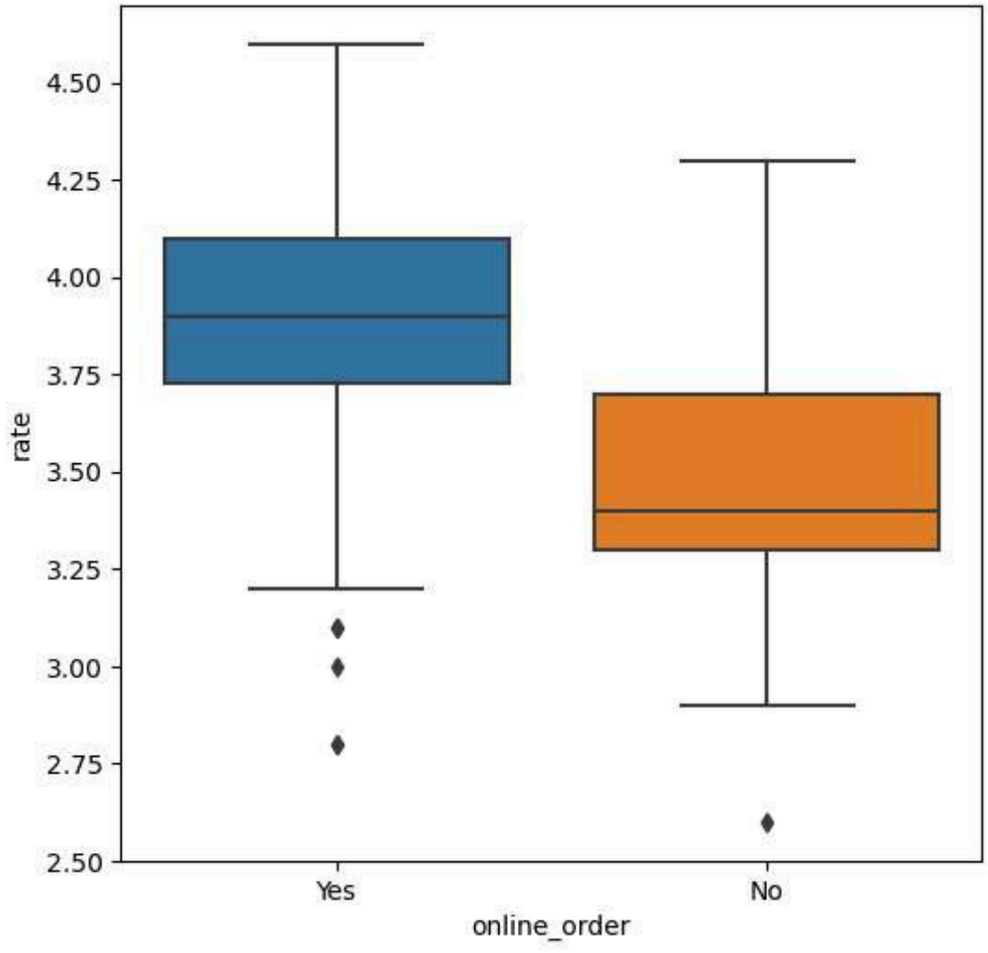
Out[15]: <Axes: xlabel='approx_cost(for two people)', ylabel='count'>




## whether online orders receive higher ratings than offline orders.

In [16]:
```
plt.figure(figsize = (6,6))
sns.boxplot(x = 'online_order', y = 'rate', data = dataframe)
```

Out[16]: <Axes: xlabel='online_order', ylabel='rate'>




**CONCLUSION: Offline orders received lower ratings in comparison to online orders, which obtained excellent ratings.**

In [17]:
```
pivot_table = dataframe.pivot_table(index='listed_in(type)', columns='online_c
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 restaurants primarily accept offline orders, whereas cafes primarily receive online orders. This suggests that clients prefer to place orders in person at restaurants, but prefer online ordering at cafes.**

In [ ]: