Zomato Data Analysis Project

Step-1 : Importing libraries

pandas for data manipulation and analysis

numpy for numerical operations

matplotlib and seaborn for data visualization

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

Step-2 : Creating the data frame

```
data = pd.read_csv("ZomatoData.csv")

data.head(5)
```

```
                    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  
```

Step-3 : Data Cleaning and Preprocessing

(a) convert data type of column - rate

```
def handleRate(value):
    value = str(value).split('/')
    value = value[0];
    return float(value)
data['rate']= data['rate'].apply(handleRate)
data.head(5)
```

```
                    name online_order book_table  rate  votes  \
0                  Jalsa          Yes        Yes   4.1    775   
```

```
1         Spice Elephant          Yes         No   4.1    787
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   approx_cost(for two people) listed_in(type)
0                          800          Buffet
1                          800          Buffet
2                          800          Buffet
3                          300          Buffet
4                          600          Buffet
```

(b) Check for missing values

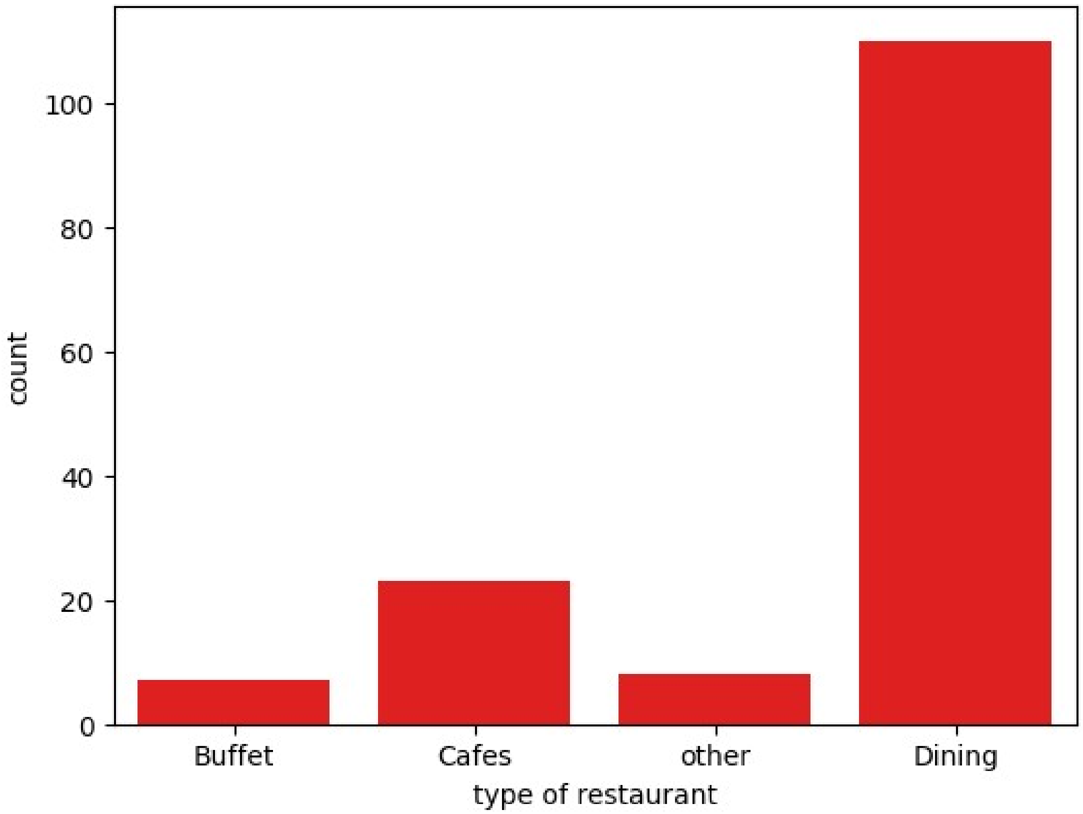
```
data.info()

<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
```

Step-4 : Exploratory Data Analysis, Visualisations and Insights

(1) Types of restaurant

```
sns.countplot(x=data['listed_in(type)'], color ="red")
plt.xlabel("type of restaurant")
plt.show()
```

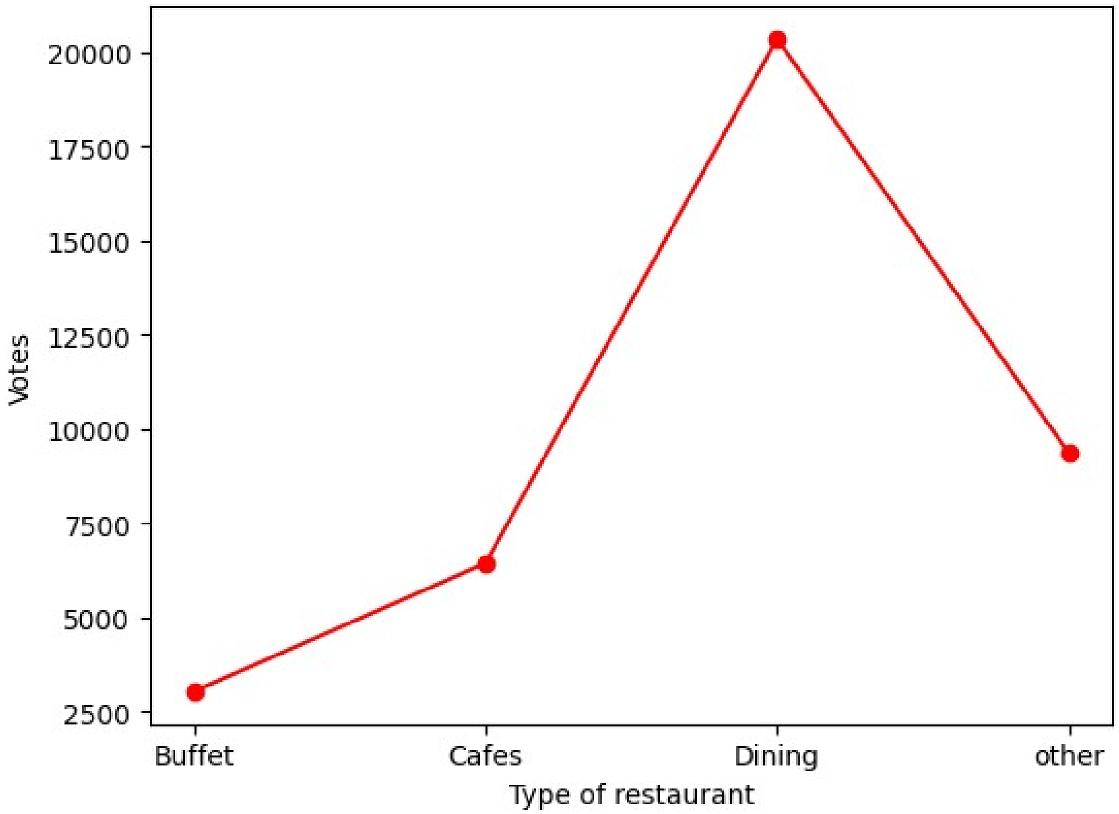


conclusion - majority of the restaurants falls in dining category.

(2) Votings according to restaurant type

```
grouped_data = data.groupby("listed_in(type)")["votes"].sum()
result = pd.DataFrame({"votes": grouped_data})
plt.plot(result, c= "red", marker ="o")
plt.xlabel("Type of restaurant", size = 10)
plt.ylabel("Votes", size = 10)
```

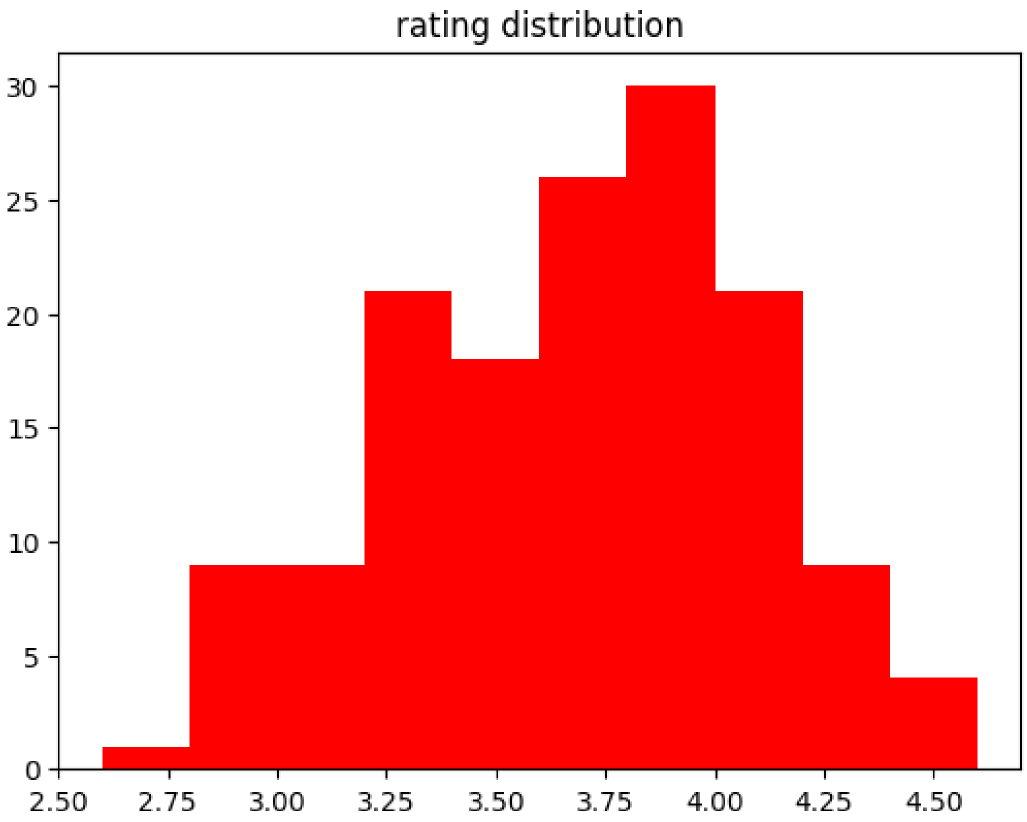
```
Text(0, 0.5, 'Votes')
```



conclusion- Dining restaurants has recieved maximum votes

(3) Ratings of Majority of restaurants

```
plt.hist(data["rate"],bins =10, color= 'red')
plt.title("rating distribution")
plt.show()
```

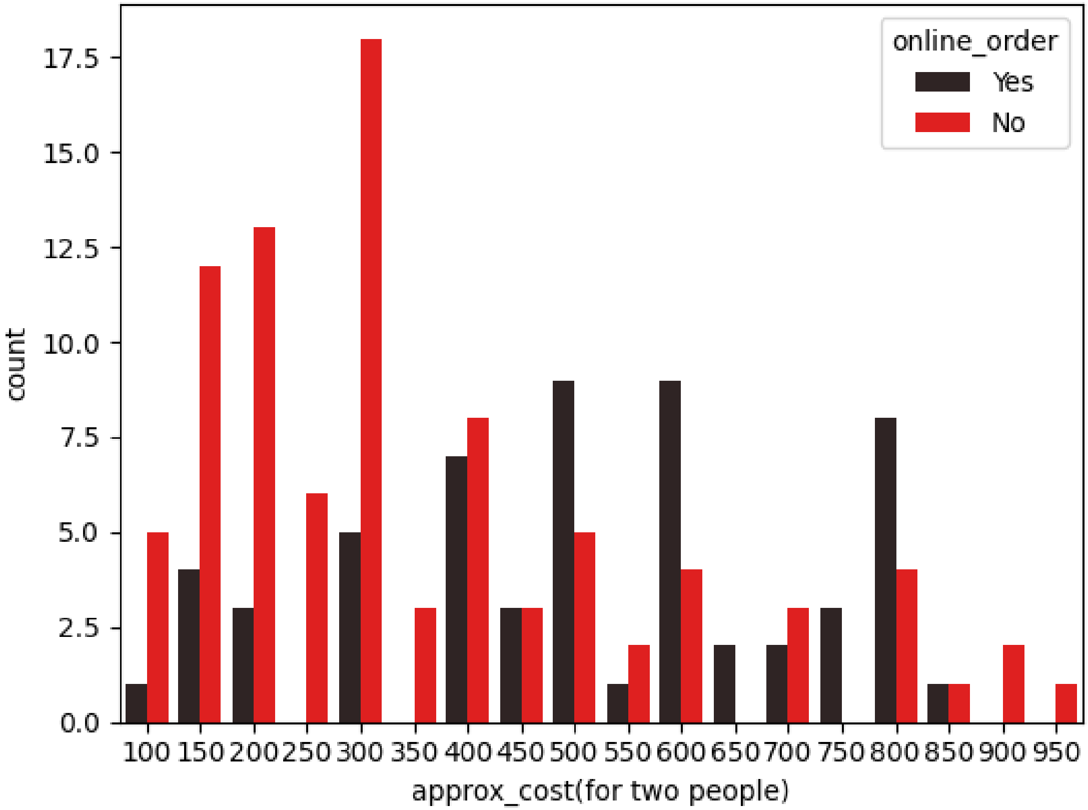


conclusion- the majority restaurant recieves rationg from 3.5 - 4.0

(4) Spendings on online and offline orders

```
couple_data = data['approx_cost(for two people)']
online= data['online_order']
sns.countplot(x= couple_data,hue = online, palette ='dark:red')
```

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



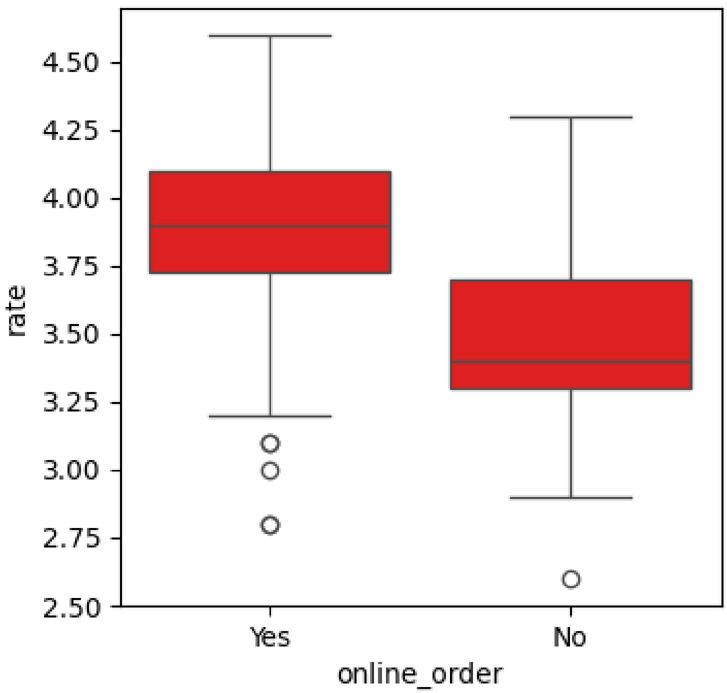
conclusion - most of the offline orders (for 2 people) amounts to Rs.300 approx.

and most of the online orders (for 2 people) amounts between Rs.500 - Rs.600.

(5) Which mode (Online or offline) has recieved maximum ratings

```
plt.figure(figsize = (4,4))
sns.boxplot(x='online_order', y='rate',data = data, color ='red')
```

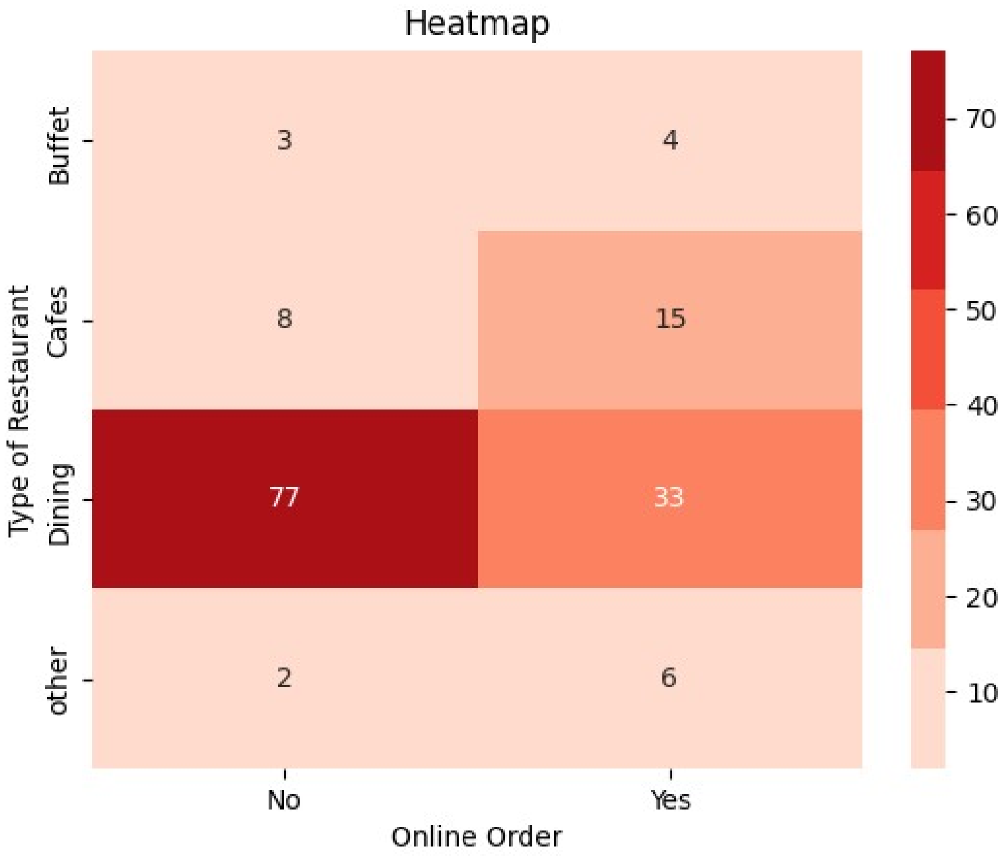
```
<Axes: xlabel='online_order', ylabel='rate'>
```



conclusion - Online order recieves higher ratings in comparison to Offline orders

(6) which type of restaurant receives more offline order?

```
pivot_table = data.pivot_table(index = 'listed_in(type)', columns =
'online_order', aggfunc='size',
                               fill_value=0)
colormap = sns.color_palette("Reds")
sns.heatmap(pivot_table, annot=True ,cmap =colormap,fmt='d')
plt.title("Heatmap")
plt.xlabel("Online Order")
plt.ylabel("Type of Restaurant")
plt.show()
```



conclusion- Dining restaurants receives more online and offline orders.