

```
In [1]: import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
```

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

```

                                url \
0 https://www.zomato.com/bangalore/jalsa-banasha...
1 https://www.zomato.com/bangalore/spice-elephan...
2 https://www.zomato.com/SanchurroBangalore?cont...
3 https://www.zomato.com/bangalore/addhuri-udupi...
4 https://www.zomato.com/bangalore/grand-village...

                                address                                name \
0 942, 21st Main Road, 2nd Stage, Banashankari, ... Jalsa
1 2nd Floor, 80 Feet Road, Near Big Bazaar, 6th ... Spice Elephant
2 1112, Next to KIMS Medical College, 17th Cross... San Churro Cafe
3 1st Floor, Annakuteera, 3rd Stage, Banashankar... Addhuri Udupi Bhojana
4 10, 3rd Floor, Lakshmi Associates, Gandhi Baza... Grand Village

online_order book_table rate votes phone \
0 Yes Yes 4.1/5 775 080 42297555\r\n+91 9743772233
1 Yes No 4.1/5 787 080 41714161
2 Yes No 3.8/5 918 +91 9663487993
3 No No 3.7/5 88 +91 9620009302
4 No No 3.8/5 166 +91 8026612447\r\n+91 9901210005

location rest_type \
0 Banashankari Casual Dining
1 Banashankari Casual Dining
2 Banashankari Cafe, Casual Dining
3 Banashankari Quick Bites
4 Basavanagudi Casual Dining

                                dish_liked \
0 Pasta, Lunch Buffet, Masala Papad, Paneer Laja...
1 Momos, Lunch Buffet, Chocolate Nirvana, Thai G...
2 Churros, Cannelloni, Minestrone Soup, Hot Choc...
3 Masala Dosa
4 Panipuri, Gol Gappe

cuisines approx_cost(for two people) \
0 North Indian, Mughlai, Chinese 800
1 Chinese, North Indian, Thai 800
2 Cafe, Mexican, Italian 800
3 South Indian, North Indian 300
4 North Indian, Rajasthani 600

reviews_list menu_item \
0 [('Rated 4.0', 'RATED\n A beautiful place to ... []
1 [('Rated 4.0', 'RATED\n Had been here for din... []
2 [('Rated 3.0', 'RATED\n Ambience is not that ... []
3 [('Rated 4.0', 'RATED\n Great food and proper... []
4 [('Rated 4.0', 'RATED\n Very good restaurant ... []

listed_in(type) listed_in(city)
0 Buffet Banashankari
1 Buffet Banashankari
2 Buffet Banashankari
3 Buffet Banashankari
4 Buffet Banashankari

```

```
In [5]: def handleRate(value):  
        if pd.isna(value): # handle NaN values safely  
            return None  
        try:  
            value = str(value).split('/')  
            return float(value[0])  
        except (ValueError, IndexError):  
            return None  
  
        # Apply the function to the 'rate' column  
df['rate'] = df['rate'].apply(handleRate)  
  
print(df.head())
```

```

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```

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

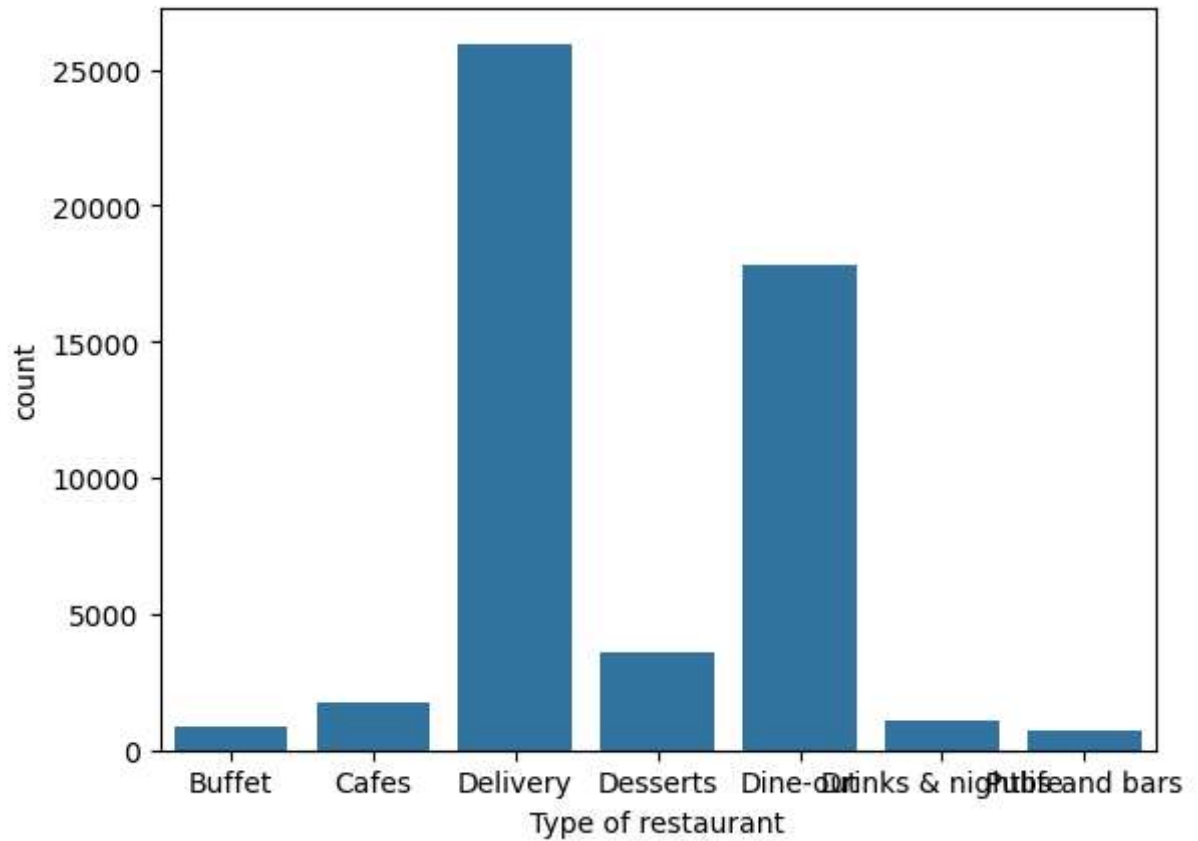
```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 51717 entries, 0 to 51716
Data columns (total 17 columns):
#   Column                                Non-Null Count  Dtype
---  -
0   url                                   51717 non-null  object
1   address                              51717 non-null  object
2   name                                 51717 non-null  object
3   online_order                         51717 non-null  object
4   book_table                           51717 non-null  object
5   rate                                 41665 non-null  float64
6   votes                                51717 non-null  int64
7   phone                                50509 non-null  object
8   location                             51696 non-null  object
9   rest_type                            51490 non-null  object
10  dish_liked                           23639 non-null  object
11  cuisines                              51672 non-null  object
12  approx_cost(for two people)          51371 non-null  object
13  reviews_list                         51717 non-null  object
14  menu_item                            51717 non-null  object
15  listed_in(type)                      51717 non-null  object
16  listed_in(city)                      51717 non-null  object
dtypes: float64(1), int64(1), object(15)
memory usage: 6.7+ MB
```

```
In [9]: print(df.isnull().sum())
```

```
url                0
address            0
name               0
online_order       0
book_table         0
rate              10052
votes              0
phone              1208
location           21
rest_type          227
dish_liked         28078
cuisines            45
approx_cost(for two people)  346
reviews_list       0
menu_item           0
listed_in(type)     0
listed_in(city)     0
dtype: int64
```

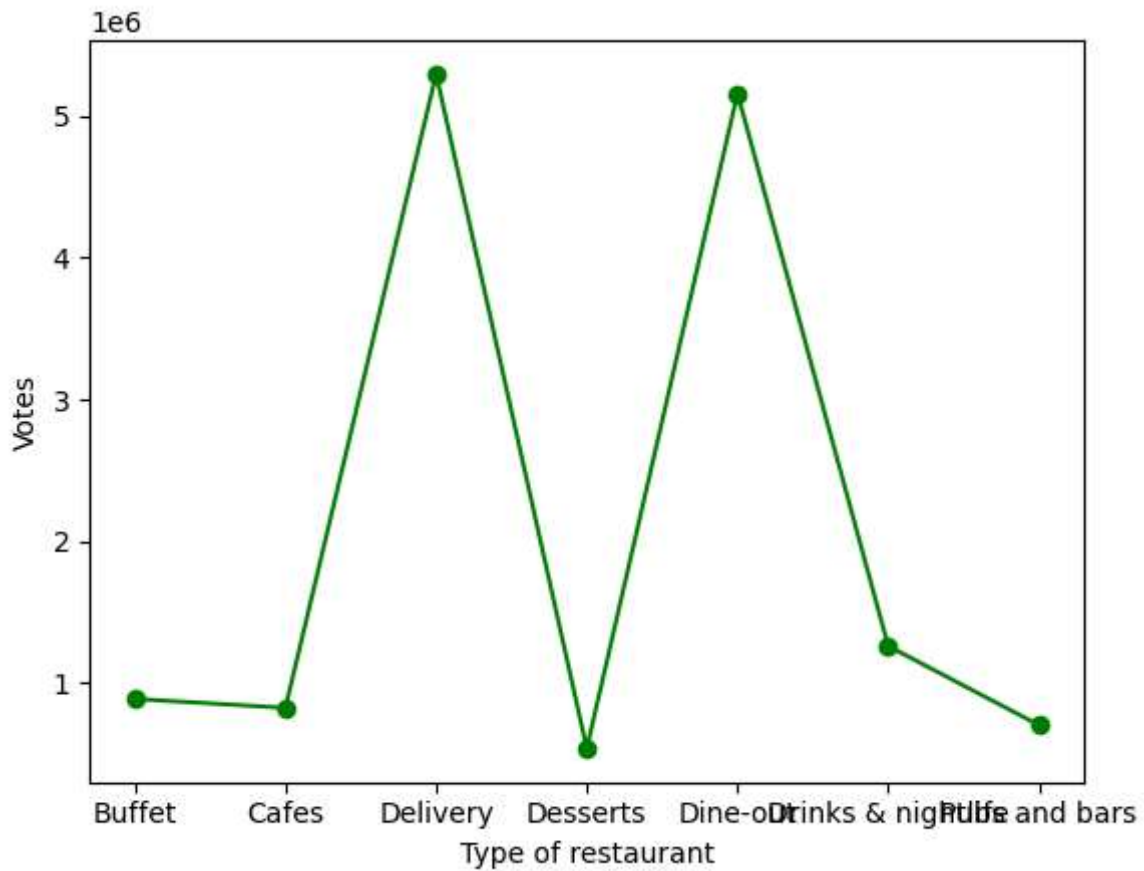
```
In [10]: sns.countplot(x=df['listed_in(type)'])
plt.xlabel("Type of restaurant")
```

```
Out[10]: Text(0.5, 0, 'Type of restaurant')
```



```
In [12]: grouped_data = df.groupby('listed_in(type)')['votes'].sum()
result = pd.DataFrame({'votes': grouped_data})
plt.plot(result, c='green', marker='o')
plt.xlabel('Type of restaurant')
plt.ylabel('Votes')
```

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



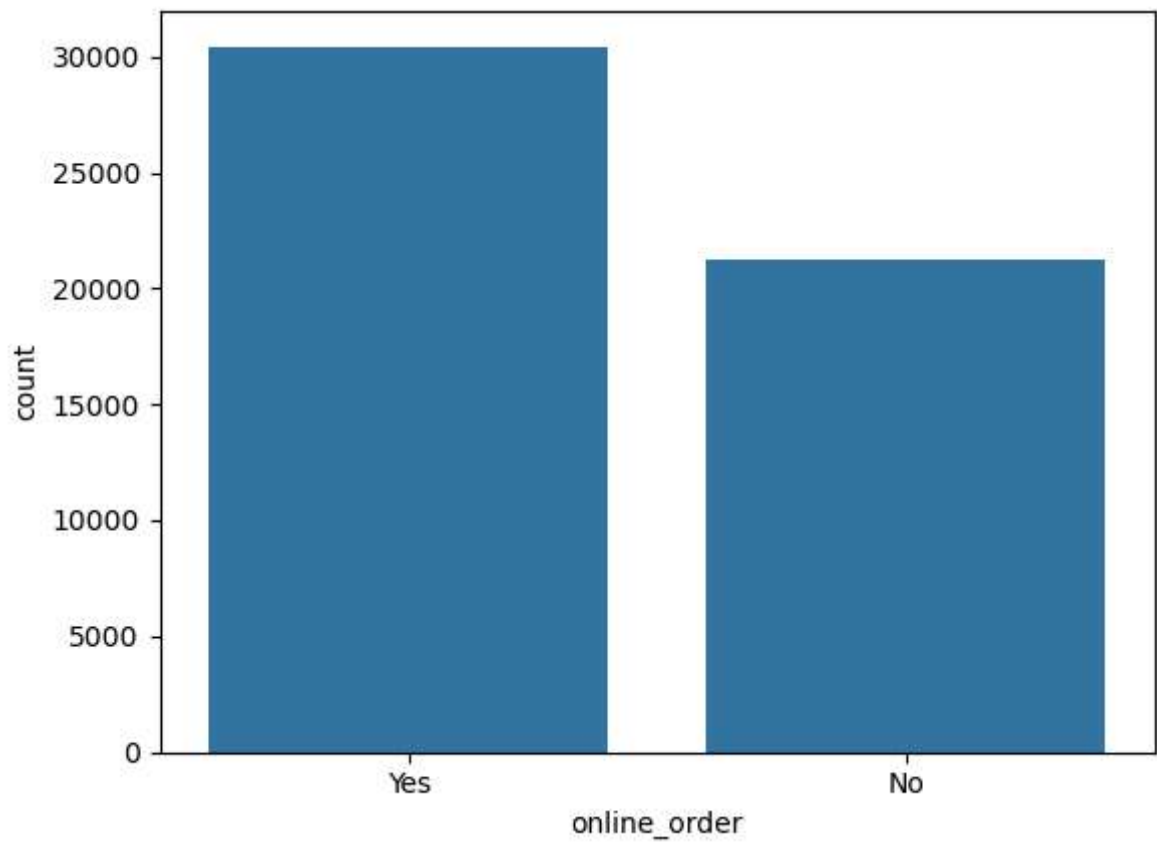
```
In [13]: max_votes = df['votes'].max()
restaurant_with_max_votes = df.loc[df['votes'] == max_votes, 'name']

print('Restaurant(s) with the maximum votes:')
print(restaurant_with_max_votes)
```

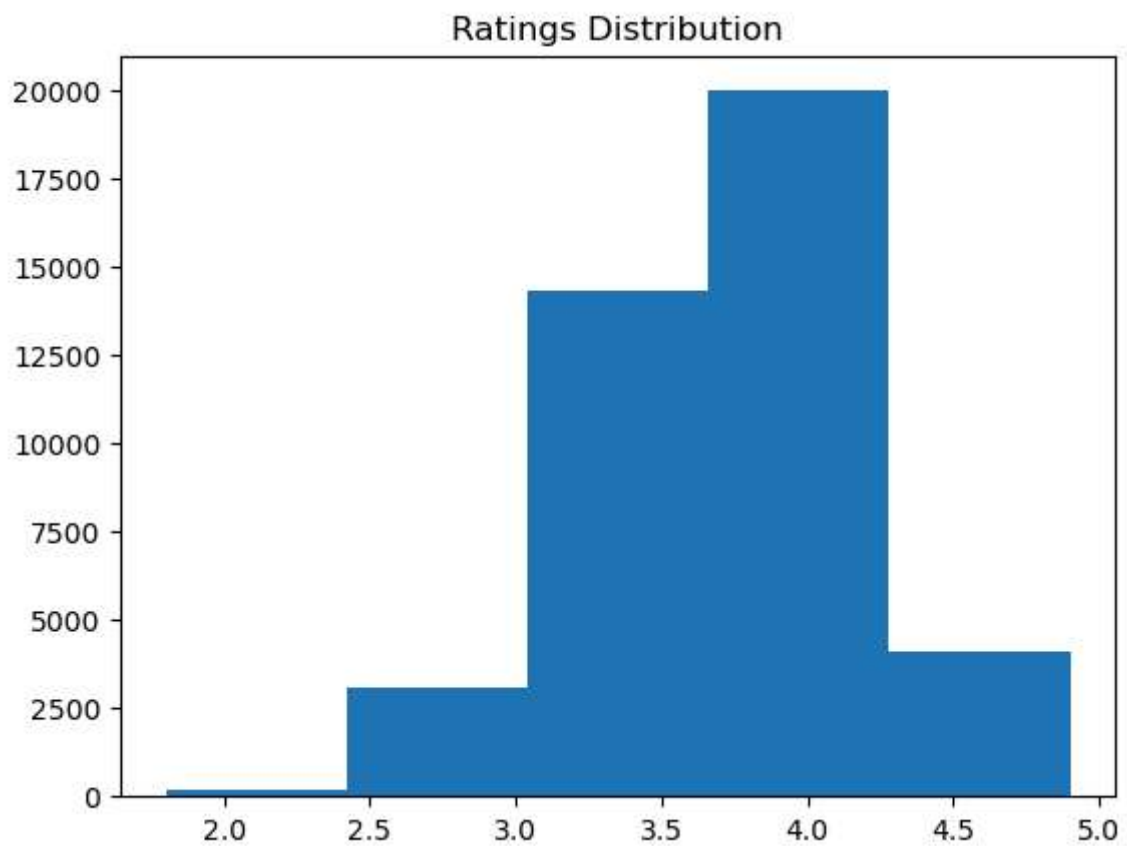
```
Restaurant(s) with the maximum votes:
49170    Byg Brewski Brewing Company
49627    Byg Brewski Brewing Company
50059    Byg Brewski Brewing Company
Name: name, dtype: object
```

```
In [14]: sns.countplot(x=df['online_order'])
```

```
Out[14]: <Axes: xlabel='online_order', ylabel='count'>
```

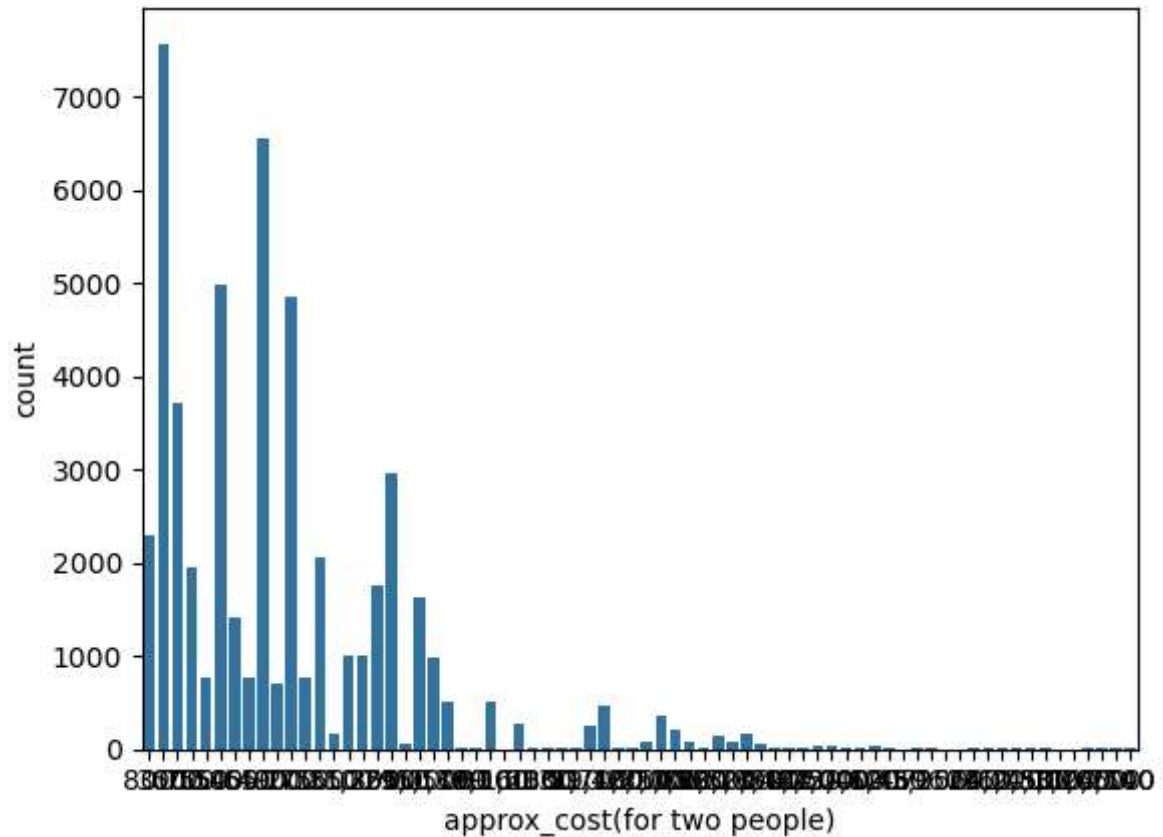


```
In [15]: plt.hist(df['rate'],bins=5)
plt.title('Ratings Distribution')
plt.show()
```



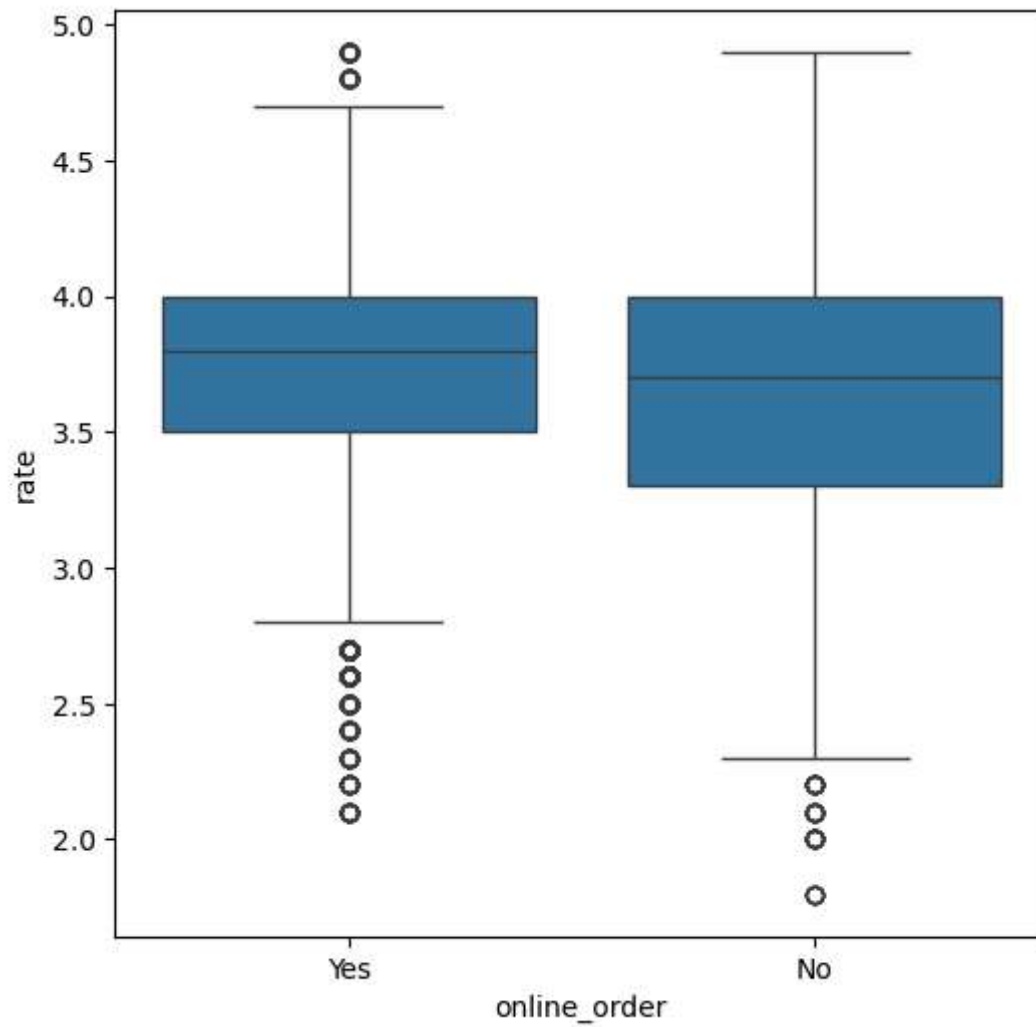

```
In [16]: couple_data=df['approx_cost(for two people)']  
sns.countplot(x=couple_data)
```

Out[16]: <Axes: xlabel='approx_cost(for two people)', ylabel='count'>

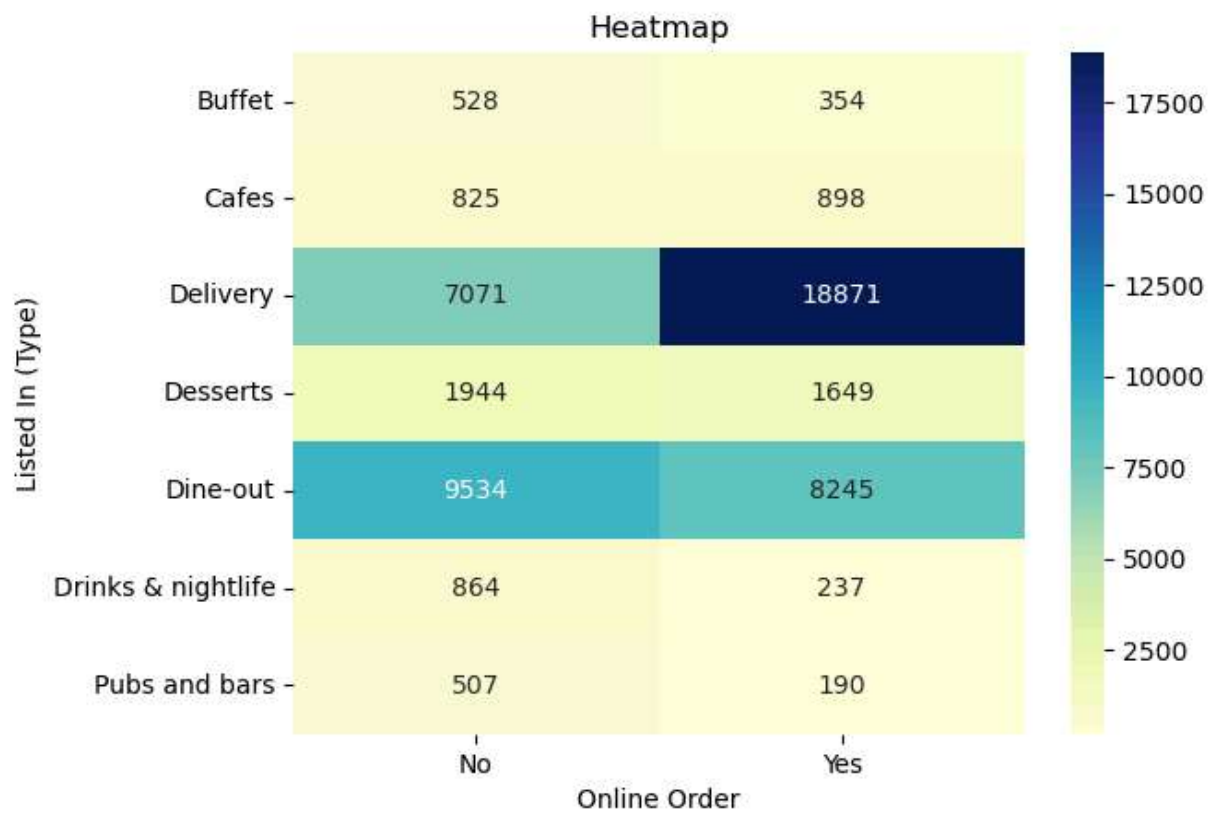


```
In [17]: plt.figure(figsize = (6,6))  
sns.boxplot(x = 'online_order', y = 'rate', data = df)
```

Out[17]: <Axes: xlabel='online_order', ylabel='rate'>



```
In [18]: pivot_table = df.pivot_table(index='listed_in(type)', columns='online_order', aggfu
sns.heatmap(pivot_table, annot=True, cmap='YlGnBu', fmt='d')
plt.title('Heatmap')
plt.xlabel('Online Order')
plt.ylabel('Listed In (Type)')
plt.show()
```



In []: