

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

```
In [2]: df= pd.read_csv(r'C:\Users\Administrator\zomato.csv')
```

```
In [3]: df.shape
```

```
Out[3]: (51717, 17)
```

```
In [4]: 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              43942 non-null   object 
 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: int64(1), object(16)
memory usage: 6.7+ MB
```

```
In [5]: df.dtypes
```

```
Out[5]: url          object
address       object
name          object
online_order   object
book_table     object
rate           object
votes          int64
phone          object
location        object
rest_type      object
dish_liked     object
cuisines        object
approx_cost(for two people) object
reviews_list    object
menu_item      object
listed_in(type) object
listed_in(city) object
dtype: object
```

```
In [6]: df.drop(['url', 'address', 'phone', 'location', 'dish_liked', 'reviews_list', 'menu_it
```

```
In [7]: df=df.rename(columns={"name":'Name', 'rate':'Ratings', 'votes':'Votes', 'rest_type':
```

In [8]: `df.sample(10)`

Out[8]:

| | | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type |
|-------|-------------------------|------|----------------------|--------------------|---------|-------|---------------------|--|-------|--------------------|
| 46735 | Mysore Hanumanthu Palav | | Yes | No | 3.9 /5 | 74 | Casual Dining | South Indian, Fast Food | 500 | Dine-out |
| 4035 | Spicy Punjabi Pharatha | | Yes | No | 2.9/5 | 76 | Quick Bites | North Indian, Chinese, Biryani | 400 | Delivery |
| 5552 | Ebony | | Yes | Yes | 4.3/5 | 3126 | Casual Dining | North Indian, South Indian | 1,500 | Delivery |
| 39165 | Hotel Chandrika | | Yes | No | 3.8 /5 | 208 | Casual Dining | South Indian, North Indian, Chinese, Street Food | 400 | Dine-out |
| 22856 | Sultan's Biryani | | No | No | 3.0/5 | 12 | Delivery | Biryani, North Indian | 700 | Delivery |
| 50645 | Kitchen Online | | No | No | 3.3 /5 | 6 | Takeaway, Delivery | North Indian | 300 | Delivery |
| 18681 | Ciclo Cafe | | Yes | No | 4.3/5 | 1273 | Cafe, Casual Dining | Cafe, Italian, American | 1,000 | Dine-out |
| 43890 | Manhattan | | No | No | NaN | 0 | Bar | American, Finger Food | 1,000 | Drinks & nightlife |
| 48905 | Punjabi Dawat | | Yes | No | 2.9 /5 | 254 | Quick Bites | North Indian, Chinese | 400 | Delivery |
| 305 | Cafe Aira | | Yes | No | 4.1/5 | 216 | Cafe | Cafe, Continental, Beverages, Desserts | 500 | Delivery |



In [9]: `sum(df.duplicated())`

Out[9]: 124

In [10]: `df=df.drop_duplicates()`

```
In [11]: def name_clean(text):
    return re.sub(r"^[^a-zA-Z0-9 ]", "", text)
df['Name'] = df['Name'].apply(lambda x: name_clean(x))
```

```
In [12]: df["Ratings"] = df["Ratings"].replace("NEW", np.nan)
df['Ratings'] = df['Ratings'].replace('NaN', np.nan)
df['Ratings'] = df['Ratings'].replace('-', np.nan)
df['Ratings'] = df['Ratings'].replace('nan', np.nan)
def remove_5(value: str):
    if type(value) == str:
        value_new = value.split('/')[0]
        return value_new
    return value
df['Ratings'] = df['Ratings'].apply(remove_5)
df['Ratings'] = df['Ratings'].astype(float)
print(df['Ratings'].dtypes)
```

float64

```
In [13]: def cost(value):
    value = str(value)
    if "," in value:
        value = float(value.replace(",", ""))
        return value
    else:
        return float(value)
df['Cost'] = df['Cost'].apply(cost)
print(df['Cost'].head())
```

```
0    800.0
1    800.0
2    800.0
3    300.0
4    600.0
Name: Cost, dtype: float64
```

```
In [14]: print(df.isnull().sum())

print([features for features in df.columns if df[features].isnull().sum() > 0])
```

| | |
|----------------------|-------|
| Name | 0 |
| Takes online orders? | 0 |
| Has table booking? | 0 |
| Ratings | 10003 |
| Votes | 0 |
| Rest_Type | 227 |
| Cuisines | 45 |
| Cost | 344 |
| Type | 0 |
| City | 0 |

dtype: int64
['Ratings', 'Rest_Type', 'Cuisines', 'Cost']

In [15]: `df['Ratings'].unique()`

Out[15]: `array([4.1, 3.8, 3.7, 3.6, 4.6, 4. , 4.2, 3.9, 3.1, 3. , 3.2, 3.3, 2.8, 4.4, 4.3, nan, 2.9, 3.5, 2.6, 3.4, 4.5, 2.5, 2.7, 4.7, 2.4, 2.2, 2.3, 4.8, 4.9, 2.1, 2. , 1.8])`

In [16]: `def handelrate(value):
 if(value=="NEW" or value=="-"):
 return np.nan
 else:
 value=str(value).split("/")
 value=value[0]
 return float(value)
df['Ratings']=df['Ratings'].apply(handelrate)
df['Ratings'].head()`

Out[16]: `0 4.1
1 4.1
2 3.8
3 3.7
4 3.8
Name: Ratings, dtype: float64`

In [17]: `df["Ratings"].fillna(df["Ratings"].mean(), inplace=True)
df["Ratings"].isnull().sum()`

Out[17]: `0`

In [18]: `df.info()`

```
<class 'pandas.core.frame.DataFrame'>
Int64Index: 51593 entries, 0 to 51716
Data columns (total 10 columns):
 #   Column           Non-Null Count  Dtype  
--- 
 0   Name             51593 non-null   object 
 1   Takes online orders? 51593 non-null   object 
 2   Has table booking? 51593 non-null   object 
 3   Ratings          51593 non-null   float64
 4   Votes            51593 non-null   int64  
 5   Rest_Type        51366 non-null   object 
 6   Cuisines         51548 non-null   object 
 7   Cost             51249 non-null   float64
 8   Type             51593 non-null   object 
 9   City             51593 non-null   object 
dtypes: float64(2), int64(1), object(7)
memory usage: 4.3+ MB
```

In [19]: df.dropna(inplace=True)
df.head(15)

Out[19]:

| | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type |
|----|---|----------------------|--------------------|---------|-------|---------------------|---|-------|----------------|
| 0 | Jalsa | Yes | Yes | 4.1 | 775 | Casual Dining | North Indian, Mughlai, Chinese | 800.0 | Buffet Banquet |
| 1 | Spice Elephant | Yes | No | 4.1 | 787 | Casual Dining | Chinese, North Indian, Thai | 800.0 | Buffet Banquet |
| 2 | San Churro Cafe | Yes | No | 3.8 | 918 | Cafe, Casual Dining | Cafe, Mexican, Italian | 800.0 | Buffet Banquet |
| 3 | Addhuri Udupi Bhojana | No | No | 3.7 | 88 | Quick Bites | South Indian, North Indian | 300.0 | Buffet Banquet |
| 4 | Grand Village | No | No | 3.8 | 166 | Casual Dining | North Indian, Rajasthani | 600.0 | Buffet Banquet |
| 5 | Timepass Dinner | Yes | No | 3.8 | 286 | Casual Dining | North Indian | 600.0 | Buffet Banquet |
| 6 | Rosewood International Hotel Bar Restaurant | No | No | 3.6 | 8 | Casual Dining | North Indian, South Indian, Andhra, Chinese | 800.0 | Buffet Banquet |
| 7 | Onesta | Yes | Yes | 4.6 | 2556 | Casual Dining, Cafe | Pizza, Cafe, Italian | 600.0 | Cafes Banquet |
| 8 | Penthouse Cafe | Yes | No | 4.0 | 324 | Cafe | Cafe, Italian, Continental | 700.0 | Cafes Banquet |
| 9 | Smacznego | Yes | No | 4.2 | 504 | Cafe | Cafe, Mexican, Italian, Momos, Beverages | 550.0 | Cafes Banquet |
| 10 | Caf Down The Alley | Yes | No | 4.1 | 402 | Cafe | Cafe | 500.0 | Cafes Banquet |
| 11 | Cafe Shuffle | Yes | Yes | 4.2 | 150 | Cafe | Cafe, Italian, Continental | 600.0 | Cafes Banquet |
| 12 | The Coffee Shack | Yes | Yes | 4.2 | 164 | Cafe | Cafe, Chinese, Continental, Italian | 500.0 | Cafes Banquet |
| 13 | CafEleven | No | No | 4.0 | 424 | Cafe | Cafe, Continental | 450.0 | Cafes Banquet |

| | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type |
|----|-----------------|----------------------|--------------------|---------|-------|---------------------|------------------------|-------|-------|
| 14 | San Churro Cafe | Yes | No | 3.8 | 918 | Cafe, Casual Dining | Cafe, Mexican, Italian | 800.0 | Cafes |

In [20]: df.rename(columns={"approx_cost(for two people)": "Cost2Plates", "listed_in(type)": "Type"}, inplace=True)
df.head(15)

Out[20]:

| | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type |
|----|---|----------------------|--------------------|---------|-------|---------------------|---|-------|----------------|
| 0 | Jalsa | Yes | Yes | 4.1 | 775 | Casual Dining | North Indian, Mughlai, Chinese | 800.0 | Buffet Banquet |
| 1 | Spice Elephant | Yes | No | 4.1 | 787 | Casual Dining | Chinese, North Indian, Thai | 800.0 | Buffet Banquet |
| 2 | San Churro Cafe | Yes | No | 3.8 | 918 | Cafe, Casual Dining | Cafe, Mexican, Italian | 800.0 | Buffet Banquet |
| 3 | Addhuri Udupi Bhojana | No | No | 3.7 | 88 | Quick Bites | South Indian, North Indian | 300.0 | Buffet Banquet |
| 4 | Grand Village | No | No | 3.8 | 166 | Casual Dining | North Indian, Rajasthani | 600.0 | Buffet Banquet |
| 5 | Timepass Dinner | Yes | No | 3.8 | 286 | Casual Dining | North Indian | 600.0 | Buffet Banquet |
| 6 | Rosewood International Hotel Bar Restaurant | No | No | 3.6 | 8 | Casual Dining | North Indian, South Indian, Andhra, Chinese | 800.0 | Buffet Banquet |
| 7 | Onesta | Yes | Yes | 4.6 | 2556 | Casual Dining, Cafe | Pizza, Cafe, Italian | 600.0 | Cafes Banquet |
| 8 | Penthouse Cafe | Yes | No | 4.0 | 324 | Cafe | Cafe, Italian, Continental | 700.0 | Cafes Banquet |
| 9 | Smacznego | Yes | No | 4.2 | 504 | Cafe | Cafe, Mexican, Italian, Momos, Beverages | 550.0 | Cafes Banquet |
| 10 | Caf Down The Alley | Yes | No | 4.1 | 402 | Cafe | Cafe | 500.0 | Cafes Banquet |
| 11 | Cafe Shuffle | Yes | Yes | 4.2 | 150 | Cafe | Cafe, Italian, Continental | 600.0 | Cafes Banquet |
| 12 | The Coffee Shack | Yes | Yes | 4.2 | 164 | Cafe | Cafe, Chinese, Continental, Italian | 500.0 | Cafes Banquet |
| 13 | CafEleven | No | No | 4.0 | 424 | Cafe | Cafe, Continental | 450.0 | Cafes Banquet |

| | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type |
|----|-----------------|----------------------|--------------------|---------|-------|---------------------|------------------------|-------|-------|
| 14 | San Churro Cafe | Yes | No | 3.8 | 918 | Cafe, Casual Dining | Cafe, Mexican, Italian | 800.0 | Cafes |

In [21]: `df.describe()`

Out[21]:

| | Ratings | Votes | Cost |
|--------------|--------------|--------------|--------------|
| count | 51026.000000 | 51026.000000 | 51026.000000 |
| mean | 3.701425 | 284.596911 | 555.872986 |
| std | 0.395259 | 806.038077 | 439.332026 |
| min | 1.800000 | 0.000000 | 40.000000 |
| 25% | 3.500000 | 7.000000 | 300.000000 |
| 50% | 3.700142 | 41.000000 | 400.000000 |
| 75% | 3.900000 | 199.000000 | 700.000000 |
| max | 4.900000 | 16832.000000 | 6000.000000 |

In [22]: `df.columns.value_counts()`

Out[22]:

| | |
|----------------------|---|
| Name | 1 |
| Takes online orders? | 1 |
| Has table booking? | 1 |
| Ratings | 1 |
| Votes | 1 |
| Rest_Type | 1 |
| Cuisines | 1 |
| Cost | 1 |
| Type | 1 |
| City | 1 |
| dtype: int64 | |

In [23]: `df["Cost"].unique()`

Out[23]:

```
array([ 800.,  300.,  600.,  700.,  550.,  500.,  450.,  650.,  400.,
       900.,  200.,  750.,  150.,  850.,  100.,  1200.,  350.,  250.,
      950., 1000., 1500., 1300., 199.,   80., 1100., 160., 1600.,
     230., 130.,   50., 190., 1700., 1400., 180., 1350., 2200.,
    2000., 1800., 1900., 330., 2500., 2100., 3000., 2800., 3400.,
      40., 1250., 3500., 4000., 2400., 2600., 120., 1450., 469.,
      70., 3200.,   60.,  560., 240.,  360., 6000., 1050., 2300.,
    4100., 5000., 3700., 1650., 2700., 4500., 140.])
```

```
In [24]: df["City"].unique()
```

```
Out[24]: array(['Banashankari', 'Bannerghatta Road', 'Basavanagudi', 'Bellandur',  
   'Brigade Road', 'Brookefield', 'BTM', 'Church Street',  
   'Electronic City', 'Frazer Town', 'HSR', 'Indiranagar',  
   'Jayanagar', 'JP Nagar', 'Kalyan Nagar', 'Kammanahalli',  
   'Koramangala 4th Block', 'Koramangala 5th Block',  
   'Koramangala 6th Block', 'Koramangala 7th Block', 'Lavelle Road',  
   'Malleshwaram', 'Marathahalli', 'MG Road', 'New BEL Road',  
   'Old Airport Road', 'Rajajinagar', 'Residency Road',  
   'Sarjapur Road', 'Whitefield'], dtype=object)
```

```
In [25]: def handlecomma(value):  
    value=str(value)  
    if "," in value:  
        value=value.replace(",","",)  
        return float(value)  
    else:  
        return float(value)  
df["Cost2"]=df["Cost"].apply(handlecomma)  
df["Cost2"].unique()
```

```
Out[25]: array([ 800.,  300.,  600.,  700.,  550.,  500.,  450.,  650.,  400.,  
   900.,  200.,  750.,  150.,  850.,  100.,  1200.,  350.,  250.,  
   950., 1000., 1500., 1300., 199.,   80., 1100., 160., 1600.,  
   230., 130.,   50., 190., 1700., 1400., 180., 1350., 2200.,  
 2000., 1800., 1900., 330., 2500., 2100., 3000., 2800., 3400.,  
   40., 1250., 3500., 4000., 2400., 2600., 120., 1450., 469.,  
   70., 3200.,   60., 560., 240., 360., 6000., 1050., 2300.,  
 4100., 5000., 3700., 1650., 2700., 4500., 140.])
```

In [26]: df.head(15)

Out[26]:

| | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type |
|----|---|----------------------|--------------------|---------|-------|---------------------|---|-------|----------------|
| 0 | Jalsa | Yes | Yes | 4.1 | 775 | Casual Dining | North Indian, Mughlai, Chinese | 800.0 | Buffet Banasha |
| 1 | Spice Elephant | Yes | No | 4.1 | 787 | Casual Dining | Chinese, North Indian, Thai | 800.0 | Buffet Banasha |
| 2 | San Churro Cafe | Yes | No | 3.8 | 918 | Cafe, Casual Dining | Cafe, Mexican, Italian | 800.0 | Buffet Banasha |
| 3 | Addhuri Udupi Bhojana | No | No | 3.7 | 88 | Quick Bites | South Indian, North Indian | 300.0 | Buffet Banasha |
| 4 | Grand Village | No | No | 3.8 | 166 | Casual Dining | North Indian, Rajasthani | 600.0 | Buffet Banasha |
| 5 | Timepass Dinner | Yes | No | 3.8 | 286 | Casual Dining | North Indian | 600.0 | Buffet Banasha |
| 6 | Rosewood International Hotel Bar Restaurant | No | No | 3.6 | 8 | Casual Dining | North Indian, South Indian, Andhra, Chinese | 800.0 | Buffet Banasha |
| 7 | Onesta | Yes | Yes | 4.6 | 2556 | Casual Dining, Cafe | Pizza, Cafe, Italian | 600.0 | Cafes Banasha |
| 8 | Penthouse Cafe | Yes | No | 4.0 | 324 | Cafe | Cafe, Italian, Continental | 700.0 | Cafes Banasha |
| 9 | Smaczego | Yes | No | 4.2 | 504 | Cafe | Cafe, Mexican, Italian, Momos, Beverages | 550.0 | Cafes Banasha |
| 10 | Caf Down The Alley | Yes | No | 4.1 | 402 | Cafe | Cafe | 500.0 | Cafes Banasha |
| 11 | Cafe Shuffle | Yes | Yes | 4.2 | 150 | Cafe | Cafe, Italian, Continental | 600.0 | Cafes Banasha |
| 12 | The Coffee Shack | Yes | Yes | 4.2 | 164 | Cafe | Cafe, Chinese, Continental, Italian | 500.0 | Cafes Banasha |
| 13 | CafEleven | No | No | 4.0 | 424 | Cafe | Cafe, Continental | 450.0 | Cafes Banasha |
| 14 | San Churro Cafe | Yes | No | 3.8 | 918 | Cafe, Casual Dining | Cafe, Mexican, Italian | 800.0 | Cafes Banasha |

```
In [27]: df["Rest_Type"].value_counts()
```

```
Out[27]: Quick Bites          19008
Casual Dining           10253
Cafe                   3682
Delivery               2574
Dessert Parlor          2229
...
Dessert Parlor, Kiosk      2
Food Court, Beverage Shop    2
Dessert Parlor, Food Court    2
Quick Bites, Kiosk          1
Sweet Shop, Dessert Parlor     1
Name: Rest_Type, Length: 93, dtype: int64
```

```
In [28]: rest_type=df["Rest_Type"].value_counts(ascending=False)
rest_type.head(16)
```

```
Out[28]: Quick Bites          19008
Casual Dining           10253
Cafe                   3682
Delivery               2574
Dessert Parlor          2229
Takeaway, Delivery       2008
Bakery                 1140
Casual Dining, Bar        1130
Beverage Shop            863
Bar                     686
Food Court              616
Sweet Shop               468
Bar, Casual Dining        411
Lounge                  395
Pub                      355
Fine Dining              345
Name: Rest_Type, dtype: int64
```

```
In [29]: rest_types_lessthan1000=rest_type[rest_type<1000]  
rest_types_lessthan1000
```

```
Out[29]: Beverage Shop      863  
Bar          686  
Food Court    616  
Sweet Shop     468  
Bar, Casual Dining 411  
...  
Dessert Parlor, Kiosk      2  
Food Court, Beverage Shop  2  
Dessert Parlor, Food Court 2  
Quick Bites, Kiosk         1  
Sweet Shop, Dessert Parlor 1  
Name: Rest_Type, Length: 85, dtype: int64
```

```
In [30]: def handle_rest_type(value):  
    if(value in rest_types_lessthan1000):  
        return 'others'  
    else:  
        return value  
df['Rest_Type']=df['Rest_Type'].apply(handle_rest_type)  
df['Rest_Type'].value_counts()
```

```
Out[30]: Quick Bites      19008  
Casual Dining    10253  
others          9002  
Cafe            3682  
Delivery        2574  
Dessert Parlor   2229  
Takeaway, Delivery 2008  
Bakery          1140  
Casual Dining, Bar 1130  
Name: Rest_Type, dtype: int64
```

In [31]: df.head(16)

Out[31]:

| | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type |
|----|---|----------------------|--------------------|---------|-------|---------------|---|-------|----------------|
| 0 | Jalsa | Yes | Yes | 4.1 | 775 | Casual Dining | North Indian, Mughlai, Chinese | 800.0 | Buffet Banasha |
| 1 | Spice Elephant | Yes | No | 4.1 | 787 | Casual Dining | Chinese, North Indian, Thai | 800.0 | Buffet Banasha |
| 2 | San Churro Cafe | Yes | No | 3.8 | 918 | others | Cafe, Mexican, Italian | 800.0 | Buffet Banasha |
| 3 | Addhuri Udupi Bhojana | No | No | 3.7 | 88 | Quick Bites | South Indian, North Indian | 300.0 | Buffet Banasha |
| 4 | Grand Village | No | No | 3.8 | 166 | Casual Dining | North Indian, Rajasthani | 600.0 | Buffet Banasha |
| 5 | Timepass Dinner | Yes | No | 3.8 | 286 | Casual Dining | North Indian | 600.0 | Buffet Banasha |
| 6 | Rosewood International Hotel Bar Restaurant | No | No | 3.6 | 8 | Casual Dining | North Indian, South Indian, Andhra, Chinese | 800.0 | Buffet Banasha |
| 7 | Onesta | Yes | Yes | 4.6 | 2556 | others | Pizza, Cafe, Italian | 600.0 | Cafes Banasha |
| 8 | Penthouse Cafe | Yes | No | 4.0 | 324 | Cafe | Cafe, Italian, Continental | 700.0 | Cafes Banasha |
| 9 | Smaczego | Yes | No | 4.2 | 504 | Cafe | Cafe, Mexican, Italian, Momos, Beverages | 550.0 | Cafes Banasha |
| 10 | Caf Down The Alley | Yes | No | 4.1 | 402 | Cafe | Cafe | 500.0 | Cafes Banasha |
| 11 | Cafe Shuffle | Yes | Yes | 4.2 | 150 | Cafe | Cafe, Italian, Continental | 600.0 | Cafes Banasha |
| 12 | The Coffee Shack | Yes | Yes | 4.2 | 164 | Cafe | Cafe, Chinese, Continental, Italian | 500.0 | Cafes Banasha |
| 13 | CafEleven | No | No | 4.0 | 424 | Cafe | Cafe, Continental | 450.0 | Cafes Banasha |
| 14 | San Churro Cafe | Yes | No | 3.8 | 918 | others | Cafe, Mexican, Italian | 800.0 | Cafes Banasha |

| | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type | |
|----|---------------|----------------------|--------------------|---------|-------|-----------|----------|-------|-------|---------|
| 15 | Cafe Vivacity | Yes | No | 3.8 | 90 | Cafe | Cafe | 650.0 | Cafes | Banasha |



```
In [32]: cuisines=df["Cuisines"].value_counts(ascending=False)
cuisines_lessthan100=cuisines[cuisines<100]
def handle_cuisines(value):
    if(value in cuisines_lessthan100):
        return "others"
    else:
        return value
df["Cuisines"]=df["Cuisines"].apply(handle_cuisines)
df["Cuisines"].value_counts()
df.head(16)
```

Out[32]:

| | Name | Takes online orders? | Has table booking? | Ratings | Votes | Rest_Type | Cuisines | Cost | Type | |
|----|---|----------------------|--------------------|---------|-------|---------------|--------------------------------|-------|--------|----------|
| 0 | Jalsa | Yes | Yes | 4.1 | 775 | Casual Dining | North Indian, Mughlai, Chinese | 800.0 | Buffet | Banashan |
| 1 | Spice Elephant | Yes | No | 4.1 | 787 | Casual Dining | others | 800.0 | Buffet | Banashan |
| 2 | San Churro Cafe | Yes | No | 3.8 | 918 | others | others | 800.0 | Buffet | Banashan |
| 3 | Addhuri Udupi Bhojana | No | No | 3.7 | 88 | Quick Bites | South Indian, North Indian | 300.0 | Buffet | Banashan |
| 4 | Grand Village | No | No | 3.8 | 166 | Casual Dining | others | 600.0 | Buffet | Banashan |
| 5 | Timepass Dinner | Yes | No | 3.8 | 286 | Casual Dining | North Indian | 600.0 | Buffet | Banashan |
| 6 | Rosewood International Hotel Bar Restaurant | No | No | 3.6 | 8 | Casual Dining | others | 800.0 | Buffet | Banashan |
| 7 | Onesta | Yes | Yes | 4.6 | 2556 | others | others | 600.0 | Cafes | Banashan |
| 8 | Penthouse Cafe | Yes | No | 4.0 | 324 | Cafe | others | 700.0 | Cafes | Banashan |
| 9 | Smacznego | Yes | No | 4.2 | 504 | Cafe | others | 550.0 | Cafes | Banashan |
| 10 | Caf Down The Alley | Yes | No | 4.1 | 402 | Cafe | Cafe | 500.0 | Cafes | Banashan |
| 11 | Cafe Shuffle | Yes | Yes | 4.2 | 150 | Cafe | others | 600.0 | Cafes | Banashan |
| 12 | The Coffee Shack | Yes | Yes | 4.2 | 164 | Cafe | others | 500.0 | Cafes | Banashan |
| 13 | CafEleven | No | No | 4.0 | 424 | Cafe | Cafe, Continental | 450.0 | Cafes | Banashan |
| 14 | San Churro Cafe | Yes | No | 3.8 | 918 | others | others | 800.0 | Cafes | Banashan |
| 15 | Cafe Vivacity | Yes | No | 3.8 | 90 | Cafe | Cafe | 650.0 | Cafes | Banashan |

```
In [33]: df["Type"].value_counts()
```

```
Out[33]: Delivery           25569  
Dine-out            17560  
Desserts             3555  
Cafes                 1703  
Drinks & nightlife    1084  
Buffet                  869  
Pubs and bars          686  
Name: Type, dtype: int64
```

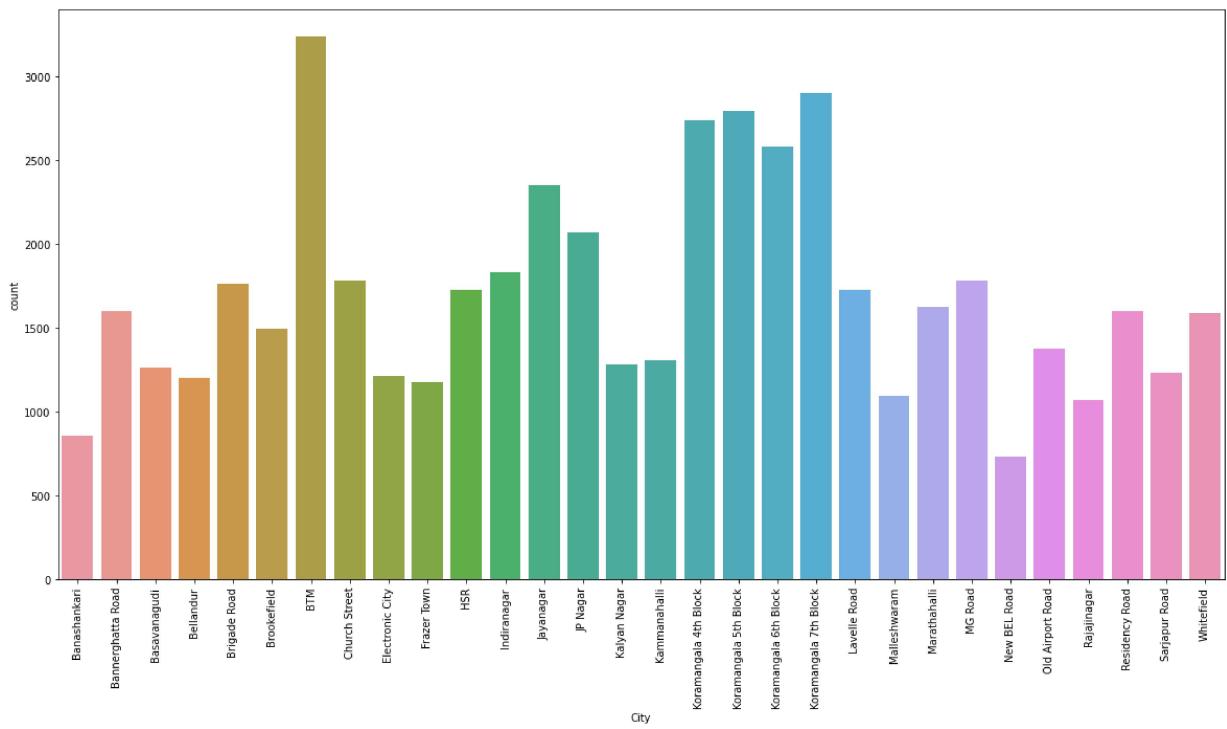
```
In [34]: df["City"].value_counts()
```

```
Out[34]: BTM                  3238  
Koramangala 7th Block      2900  
Koramangala 5th Block      2797  
Koramangala 4th Block      2740  
Koramangala 6th Block      2586  
Jayanagar                2350  
JP Nagar                  2070  
Indiranagar                1834  
Church Street                1785  
MG Road                     1780  
Brigade Road                1764  
HSR                         1727  
Lavelle Road                1726  
Marathahalli                1629  
Bannerghatta Road            1600  
Residency Road                1600  
Whitefield                  1589  
Brookefield                  1495  
Old Airport Road                1379  
Kammanahalli                1305  
Kalyan Nagar                  1285  
Basavanagudi                  1264  
Sarjapur Road                  1234  
Electronic City                  1214  
Bellandur                      1203  
Frazer Town                    1178  
Malleshwaram                  1092  
Rajajinagar                    1068  
Bananashankari                  859  
New BEL Road                    735  
Name: City, dtype: int64
```

```
In [38]: plt.figure(figsize=(20,10))
graph=sns.countplot(df["City"]);
plt.xticks(rotation=90);
```

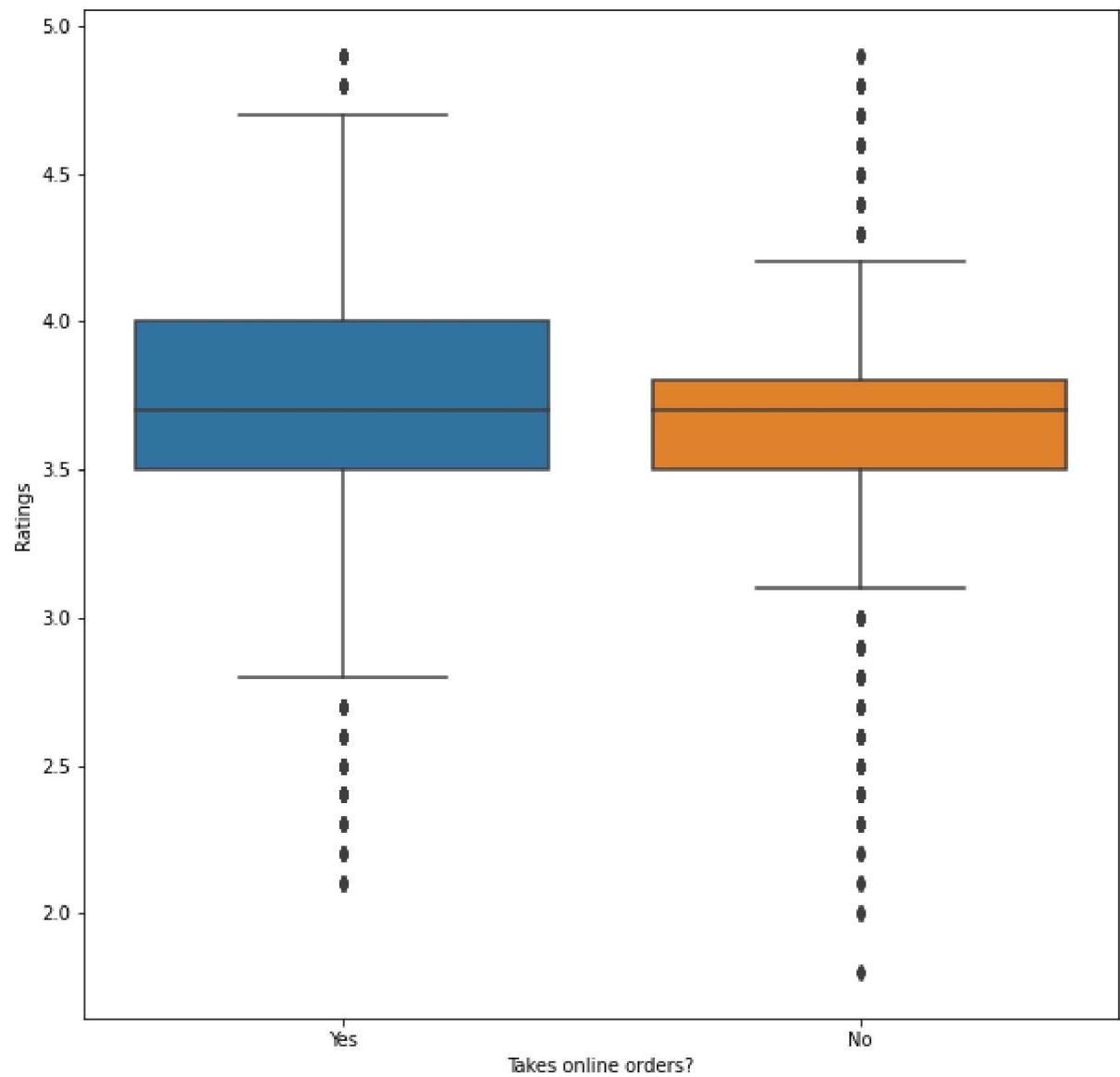
C:\ProgramData\Anaconda3\lib\site-packages\seaborn_decorators.py:36: FutureWarning: Pass the following variable as a keyword arg: x. From version 0.12, the only valid positional argument will be `data`, and passing other arguments without an explicit keyword will result in an error or misinterpretation.

```
warnings.warn(
```



```
In [39]: plt.figure(figsize=(10,10))
sns.boxplot(x="Takes online orders?",y="Ratings",data=df)
```

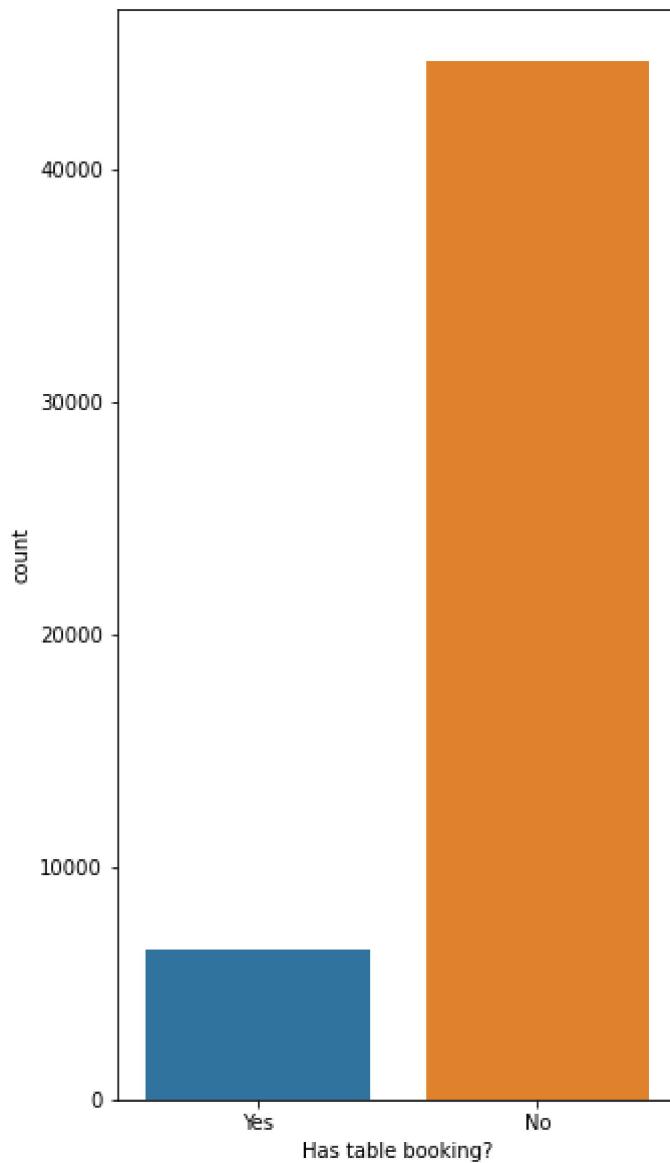
```
Out[39]: <AxesSubplot:xlabel='Takes online orders?', ylabel='Ratings'>
```



```
In [40]: plt.figure(figsize=(5,10))
sns.countplot(df["Has table booking?"])
```

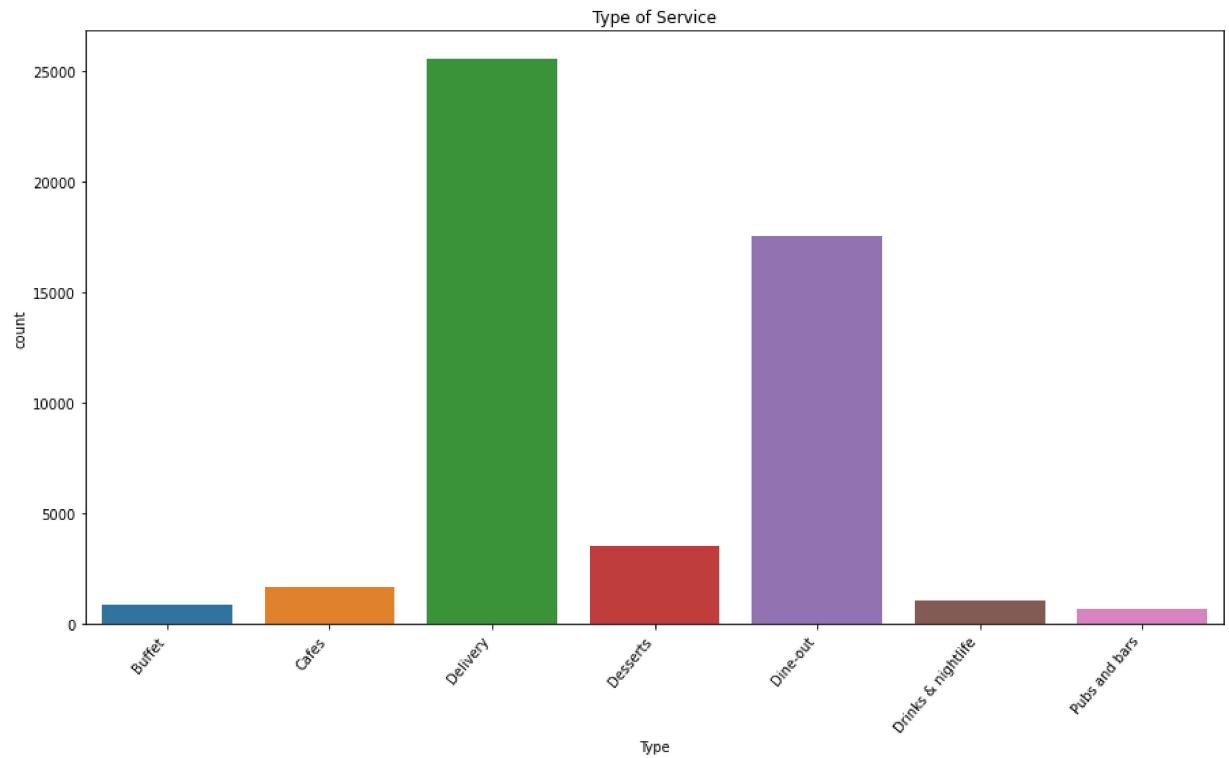
C:\ProgramData\Anaconda3\lib\site-packages\seaborn_decorators.py:36: FutureWarning: Pass the following variable as a keyword arg: x. From version 0.12, the only valid positional argument will be `data`, and passing other arguments without an explicit keyword will result in an error or misinterpretation.
warnings.warn(

```
Out[40]: <AxesSubplot:xlabel='Has table booking?', ylabel='count'>
```



```
In [52]: plt.figure(figsize=[15,8])
sns.countplot (x = df['Type'])
sns.countplot (x = df['Type']).set_xticklabels(sns.countplot(x = df['Type']).get_
plt.title('Type of Service')
```

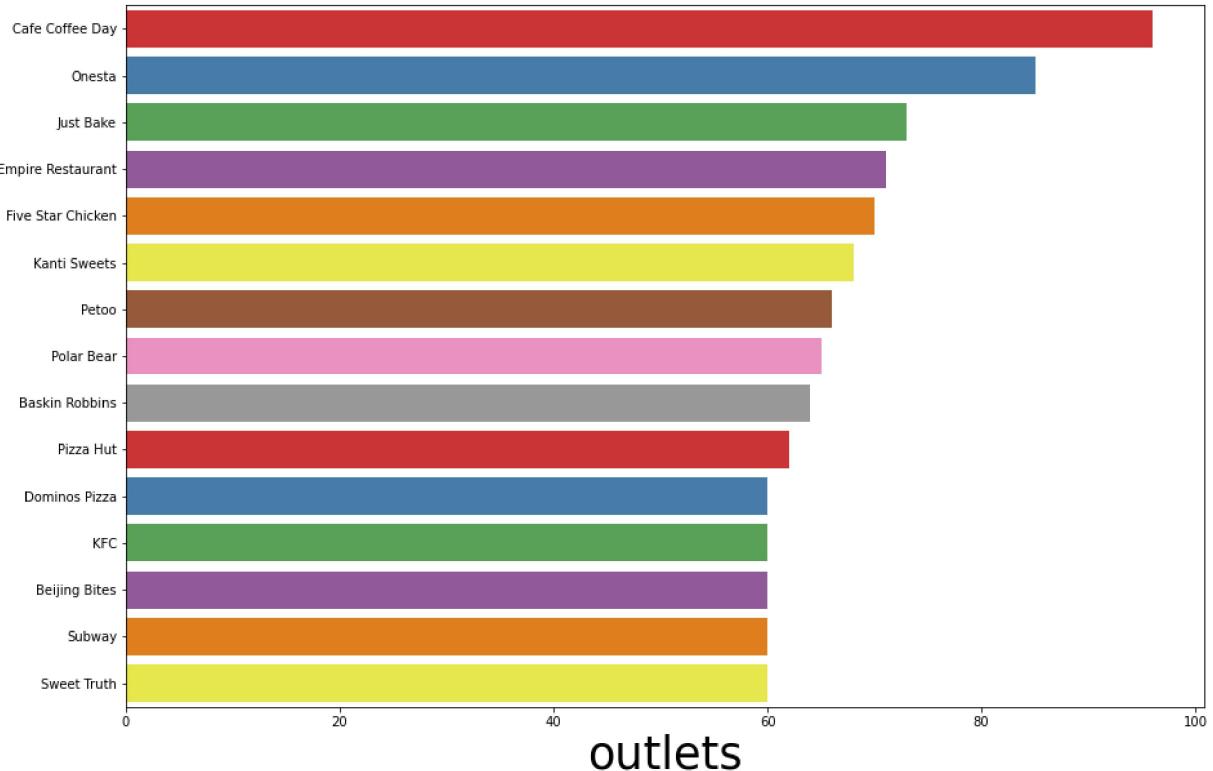
Out[52]: Text(0.5, 1.0, 'Type of Service')



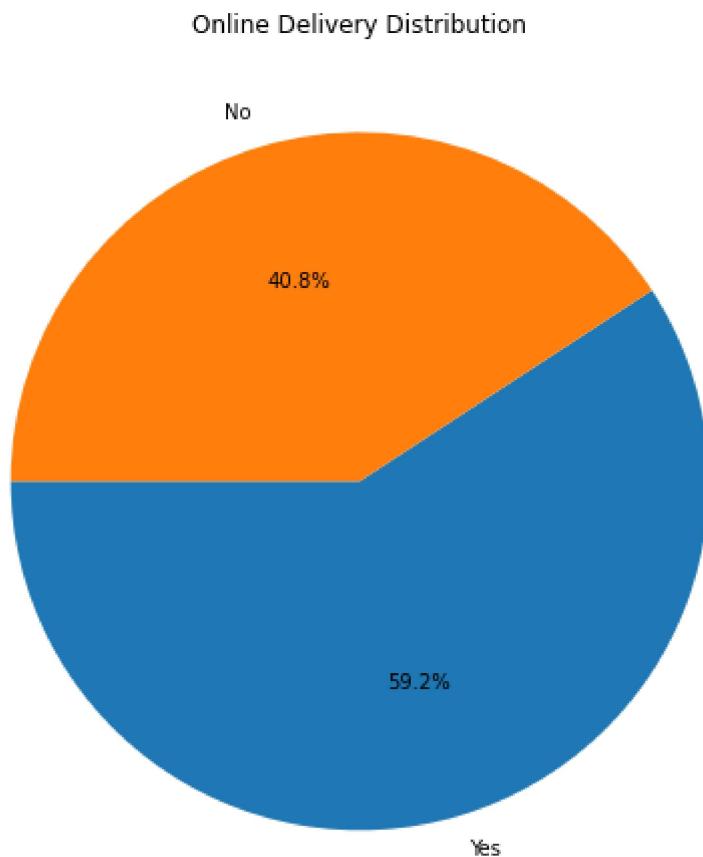
```
In [74]: plt.figure(figsize=[15,10])
chains=df['Name'].value_counts()[:15]
sns.barplot(x=chains,y=chains.index,palette='Set1')
plt.title('Famous Restaurant in Bangalore',size = 35 ,pad = 35)
plt.xlabel('outlets',size=35)
```

Out[74]: Text(0.5, 0, 'outlets')

Famous Restaurant in Bangalore

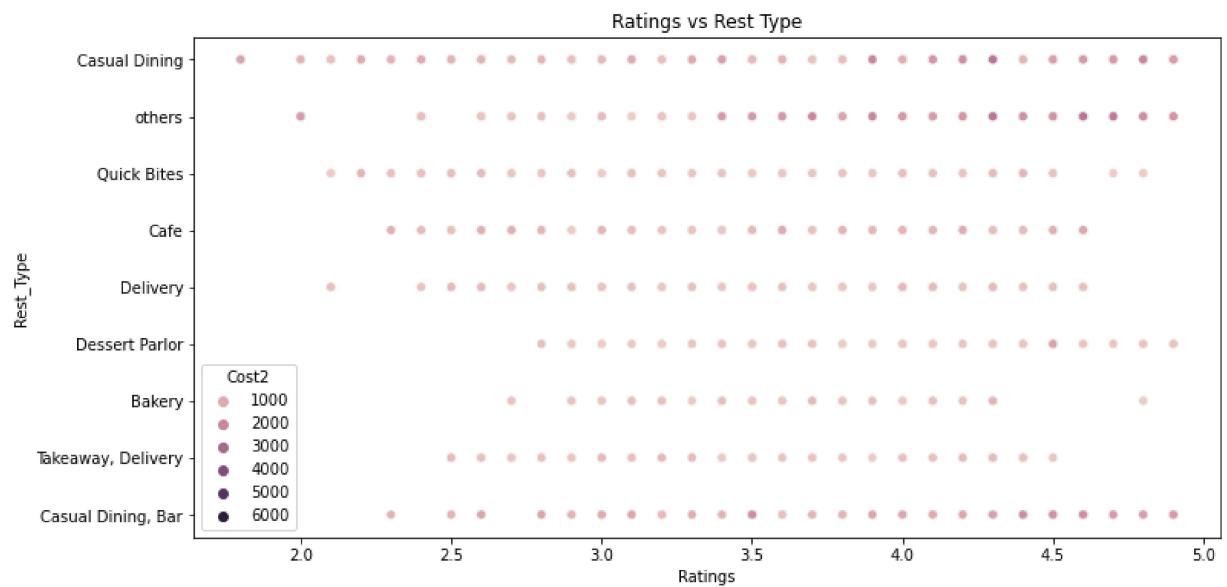


```
In [66]: plt.figure(figsize=(15,8))
plt.title('Online Delivery Distribution')
plt.pie(df['Takes online orders?'].value_counts()/9551*100, labels=df['Takes online orders?'])
```



```
In [80]: plt.figure(figsize=(12,6))
sns.scatterplot(x="Ratings", y="Rest_Type", hue='Cost2', data=df)

plt.xlabel("Ratings")
plt.ylabel("Rest_Type")
plt.title('Ratings vs Rest Type');
```



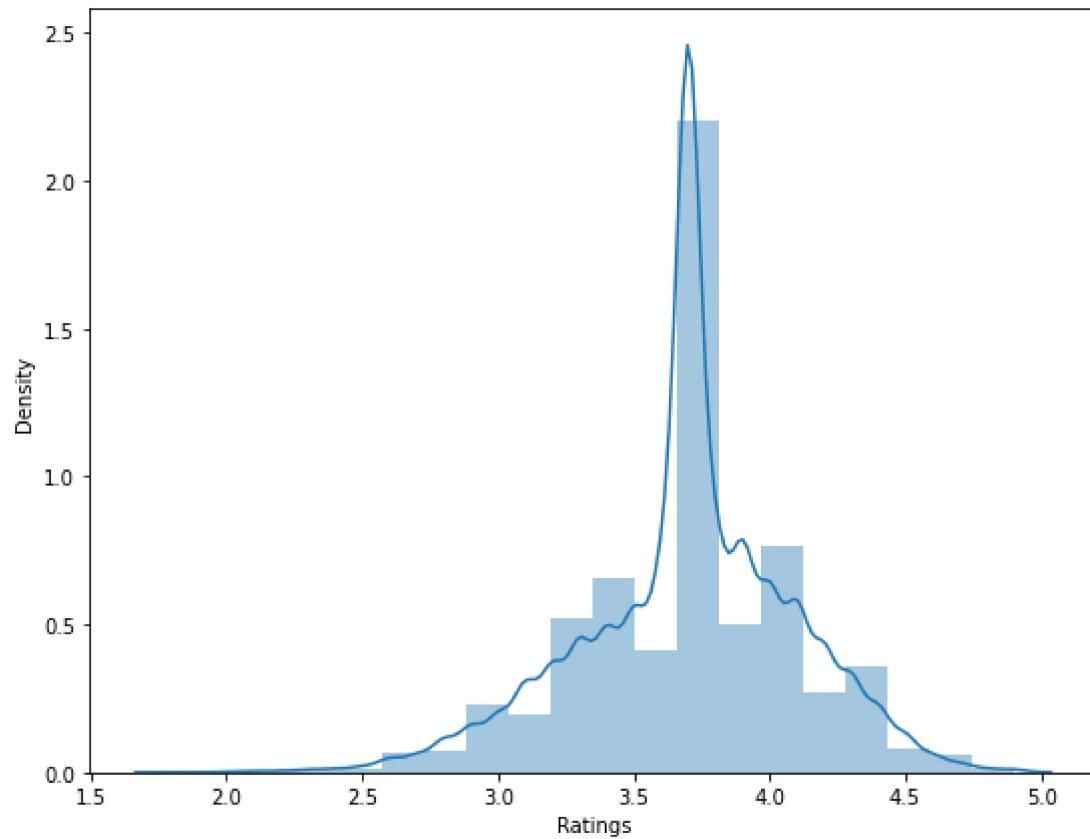
```
In [90]: plt.figure(figsize=(9,7))
```

```
sns.distplot(df['Ratings'],bins=20)
```

C:\ProgramData\Anaconda3\lib\site-packages\seaborn\distributions.py:2619: FutureWarning:

`distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).

```
Out[90]: <AxesSubplot:xlabel='Ratings', ylabel='Density'>
```

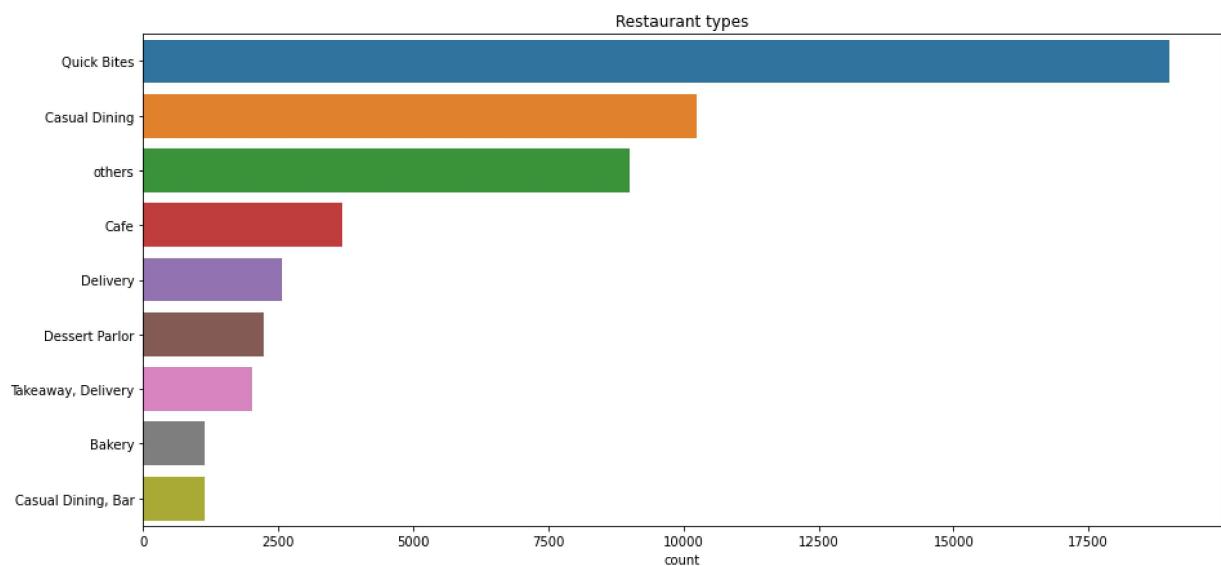


```
In [92]: plt.figure(figsize=(15,7))
rest=df['Rest_Type'].value_counts()[:20]
sns.barplot(rest,rest.index)
plt.title("Restaurant types")
plt.xlabel("count")
```

C:\ProgramData\Anaconda3\lib\site-packages\seaborn_decorators.py:36: FutureWarning:

Pass the following variables as keyword args: x, y. From version 0.12, the only valid positional argument will be `data`, and passing other arguments without a n explicit keyword will result in an error or misinterpretation.

Out[92]: Text(0.5, 0, 'count')



In []: