```python
import os
os.chdir("C:\\Users\\Nishita\\OneDrive\\Documents\\Dataset")

import pandas as pd

df=pd.read_csv("zomato.csv")

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
```

```python
df.drop(labels=["address","phone","reviews_list","url"],axis=1)
```

```
                                 name online_order
\
0                                     Jalsa          Yes

1                             Spice Elephant          Yes

2                            San Churro Cafe          Yes

3                      Addhuri Udupi Bhojana           No

4                              Grand Village           No

...                                     ...          ...

51712  Best Brews - Four Points by Sheraton Bengaluru...           No

51713                      Vinod Bar And Restaurant           No

51714  Plunge - Sheraton Grand Bengaluru Whitefield H...           No

51715  Chime - Sheraton Grand Bengaluru Whitefield Ho...           No
```

```
51716                          The Nest - The Den Bengaluru           No

      book_table    rate  votes                  location  \
0            Yes   4.1/5    775              Banashankari
1             No   4.1/5    787              Banashankari
2             No   3.8/5    918              Banashankari
3             No   3.7/5     88              Banashankari
4             No   3.8/5    166              Basavanagudi
...          ...     ...    ...                       ...
51712         No   3.6 /5    27                Whitefield
51713         No     NaN     0                Whitefield
51714         No     NaN     0                Whitefield
51715        Yes   4.3 /5   236   ITPL Main Road, Whitefield
51716         No   3.4 /5    13   ITPL Main Road, Whitefield

                    rest_type
dish_liked  \
0          Casual Dining  Pasta, Lunch Buffet, Masala Papad, Paneer
Laja...
1          Casual Dining  Momos, Lunch Buffet, Chocolate Nirvana,
Thai G...
2      Cafe, Casual Dining  Churros, Cannelloni, Minestrone Soup, Hot
Choc...
3            Quick Bites
Masala Dosa
4          Casual Dining                              Panipuri,
Gol Gappe
...                    ...
...
51712              Bar
NaN
51713              Bar
NaN
51714              Bar
NaN
51715              Bar                      Cocktails, Pizza,
Buttermilk
51716   Bar, Casual Dining
NaN

                                  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
...                                          ...
...
51712                              Continental
1,500
51713                              Finger Food
600
51714                              Finger Food
2,000
51715                              Finger Food
2,500
51716   Finger Food, North Indian, Continental
1,500

       menu_item listed_in(type) listed_in(city)
0             []          Buffet    Banashankari
1             []          Buffet    Banashankari
2             []          Buffet    Banashankari
3             []          Buffet    Banashankari
4             []          Buffet    Banashankari
...          ...             ...             ...
51712         []   Pubs and bars      Whitefield
51713         []   Pubs and bars      Whitefield
51714         []   Pubs and bars      Whitefield
51715         []   Pubs and bars      Whitefield
51716         []   Pubs and bars      Whitefield

[51717 rows x 13 columns]

import numpy as np
import seaborn as sns

df.describe()

            votes
count  51717.000000
mean     283.697527
std      803.838853
min        0.000000
25%        7.000000
50%       41.000000
75%      198.000000
max    16832.000000

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

df.isna().sum()

url                            0
address                        0
name                           0
online_order                   0
book_table                     0
rate                        7775
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
```

```python
print("\nUnique values: \n",df.nunique())
```

```
Unique values:
 url                        51717
address                    11495
name                        8792
```

```
online_order                    2
book_table                      2
rate                           64
votes                        2328
phone                       14926
location                       93
rest_type                      93
dish_liked                   5271
cuisines                     2723
approx_cost(for two people)    70
reviews_list                22513
menu_item                    9098
listed_in(type)                 7
listed_in(city)                30
dtype: int64

from mpl_toolkits.mplot3d import Axes3D
from sklearn.preprocessing import StandardScaler
import matplotlib.pyplot as plt

df
```

	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...
...	...
51712	https://www.zomato.com/bangalore/best-brews-fo...
51713	https://www.zomato.com/bangalore/vinod-bar-and...
51714	https://www.zomato.com/bangalore/plunge-sherat...
51715	https://www.zomato.com/bangalore/chime-sherato...
51716	https://www.zomato.com/bangalore/the-nest-the-...

	address \
0	942, 21st Main Road, 2nd Stage, Banashankari, ...
1	2nd Floor, 80 Feet Road, Near Big Bazaar, 6th ...
2	1112, Next to KIMS Medical College, 17th Cross...
3	1st Floor, Annakuteera, 3rd Stage, Banashankar...
4	10, 3rd Floor, Lakshmi Associates, Gandhi Baza...
...	...
51712	Four Points by Sheraton Bengaluru, 43/3, White...
51713	Number 10, Garudachar Palya, Mahadevapura, Whi...
51714	Sheraton Grand Bengaluru Whitefield Hotel & Co...
51715	Sheraton Grand Bengaluru Whitefield Hotel & Co...
51716	ITPL Main Road, KIADB Export Promotion Industr...

	name	online_order \
0	Jalsa	Yes
```
```

```
1                                  Spice Elephant       Yes

2                                  San Churro Cafe      Yes

3                             Addhuri Udupi Bhojana      No

4                                   Grand Village        No

...                                            ...      ...

51712  Best Brews - Four Points by Sheraton Bengaluru...   No

51713                         Vinod Bar And Restaurant      No

51714  Plunge - Sheraton Grand Bengaluru Whitefield H...   No

51715  Chime - Sheraton Grand Bengaluru Whitefield Ho...   No

51716                     The Nest - The Den Bengaluru      No


      book_table    rate  votes                          phone  \
0            Yes   4.1/5    775     080 42297555\r\n+91 9743772233
1             No   4.1/5    787                      080 41714161
2             No   3.8/5    918                    +91 9663487993
3             No   3.7/5     88                    +91 9620009302
4             No   3.8/5    166  +91 8026612447\r\n+91 9901210005
...          ...     ...    ...                               ...
51712         No  3.6 /5     27                      080 40301477
51713         No     NaN      0                    +91 8197675843
51714         No     NaN      0                               NaN
51715        Yes  4.3 /5    236                      080 49652769
51716         No  3.4 /5     13                    +91 8071117272

                       location           rest_type  \
0                  Banashankari       Casual Dining
1                  Banashankari       Casual Dining
2                  Banashankari  Cafe, Casual Dining
3                  Banashankari         Quick Bites
4                  Basavanagudi       Casual Dining
...                         ...                 ...
51712                 Whitefield                 Bar
51713                 Whitefield                 Bar
51714                 Whitefield                 Bar
51715  ITPL Main Road, Whitefield                 Bar
51716  ITPL Main Road, Whitefield  Bar, 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
...                                                   ...
51712                                                 NaN
51713                                                 NaN
51714                                                 NaN
51715                          Cocktails, Pizza, Buttermilk
51716                                                 NaN

                                 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
...                                    ...
...
51712                          Continental
1,500
51713                          Finger Food
600
51714                          Finger Food
2,000
51715                          Finger Food
2,500
51716  Finger Food, North Indian, Continental
1,500

                                 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 ...       []
...                                             ...     ...
51712  [('Rated 5.0', "RATED\n  Food and service are ...       []
51713                                              []       []
51714                                              []       []
51715  [('Rated 4.0', 'RATED\n  Nice and friendly pla...       []
51716  [('Rated 5.0', 'RATED\n  Great ambience , look...       []
```

```
       listed_in(type) listed_in(city)
0               Buffet     Banashankari
1               Buffet     Banashankari
2               Buffet     Banashankari
3               Buffet     Banashankari
4               Buffet     Banashankari
...                ...              ...
51712   Pubs and bars       Whitefield
51713   Pubs and bars       Whitefield
51714   Pubs and bars       Whitefield
51715   Pubs and bars       Whitefield
51716   Pubs and bars       Whitefield

[51717 rows x 17 columns]
```

```python
df.drop(labels=["address","phone","reviews_list","url","menu_item"],axis=1)
```

```
                                             name online_order
\
0                                           Jalsa          Yes

1                                   Spice Elephant          Yes

2                                   San Churro Cafe         Yes

3                            Addhuri Udupi Bhojana          No

4                                    Grand Village          No

...                                            ...          ...

51712  Best Brews - Four Points by Sheraton Bengaluru...          No

51713                        Vinod Bar And Restaurant          No

51714  Plunge - Sheraton Grand Bengaluru Whitefield H...          No

51715  Chime - Sheraton Grand Bengaluru Whitefield Ho...          No

51716                    The Nest - The Den Bengaluru          No


       book_table    rate  votes                    location  \
0             Yes   4.1/5    775             Banashankari
1              No   4.1/5    787             Banashankari
2              No   3.8/5    918             Banashankari
3              No   3.7/5     88             Banashankari
4              No   3.8/5    166             Basavanagudi
```

```
...              ...   ...   ...                              ...
51712            No  3.6 /5    27                     Whitefield
51713            No    NaN     0                     Whitefield
51714            No    NaN     0                     Whitefield
51715           Yes  4.3 /5   236  ITPL Main Road, Whitefield
51716            No  3.4 /5    13  ITPL Main Road, Whitefield

                    rest_type
dish_liked  \
0            Casual Dining  Pasta, Lunch Buffet, Masala Papad, Paneer
Laja...
1            Casual Dining  Momos, Lunch Buffet, Chocolate Nirvana,
Thai G...
2      Cafe, Casual Dining  Churros, Cannelloni, Minestrone Soup, Hot
Choc...
3              Quick Bites
Masala Dosa
4            Casual Dining                                  Panipuri,
Gol Gappe
...                    ...
...
51712                  Bar
NaN
51713                  Bar
NaN
51714                  Bar
NaN
51715                  Bar                        Cocktails, Pizza,
Buttermilk
51716   Bar, Casual Dining
NaN

                                 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
...                                   ...
...
51712                        Continental
1,500
51713                        Finger Food
600
```

```
51714                                Finger Food
2,000
51715                                Finger Food
2,500
51716   Finger Food, North Indian, Continental
1,500


      listed_in(type) listed_in(city)
0             Buffet     Banashankari
1             Buffet     Banashankari
2             Buffet     Banashankari
3             Buffet     Banashankari
4             Buffet     Banashankari
...               ...             ...
51712   Pubs and bars      Whitefield
51713   Pubs and bars      Whitefield
51714   Pubs and bars      Whitefield
51715   Pubs and bars      Whitefield
51716   Pubs and bars      Whitefield

[51717 rows x 12 columns]

df['rate'].unique()

array(['4.1/5', '3.8/5', '3.7/5', '3.6/5', '4.6/5', '4.0/5', '4.2/5',
       '3.9/5', '3.1/5', '3.0/5', '3.2/5', '3.3/5', '2.8/5', '4.4/5',
       '4.3/5', 'NEW', '2.9/5', '3.5/5', nan, '2.6/5', '3.8 /5',
'3.4/5',
       '4.5/5', '2.5/5', '2.7/5', '4.7/5', '2.4/5', '2.2/5', '2.3/5',
       '3.4 /5', '-', '3.6 /5', '4.8/5', '3.9 /5', '4.2 /5', '4.0 /5',
       '4.1 /5', '3.7 /5', '3.1 /5', '2.9 /5', '3.3 /5', '2.8 /5',
       '3.5 /5', '2.7 /5', '2.5 /5', '3.2 /5', '2.6 /5', '4.5 /5',
       '4.3 /5', '4.4 /5', '4.9/5', '2.1/5', '2.0/5', '1.8/5', '4.6
/5',
       '4.9 /5', '3.0 /5', '4.8 /5', '2.3 /5', '4.7 /5', '2.4 /5',
       '2.1 /5', '2.2 /5', '2.0 /5', '1.8 /5'], dtype=object)

df.rate = df.rate.replace("NEW", np.nan)
df.dropna(how ='any', inplace = True)
df['rate'].unique()

array(['4.1/5', '3.8/5', '3.7/5', '4.6/5', '4.0/5', '4.2/5', '3.9/5',
       '3.0/5', '3.6/5', '2.8/5', '4.4/5', '3.1/5', '4.3/5', '2.6/5',
       '3.3/5', '3.5/5', '3.8 /5', '3.2/5', '4.5/5', '2.5/5', '2.9/5',
       '3.4/5', '2.7/5', '4.7/5', '2.4/5', '2.2/5', '2.3/5', '4.8/5',
       '3.9 /5', '4.2 /5', '4.0 /5', '4.1 /5', '2.9 /5', '2.7 /5',
       '2.5 /5', '2.6 /5', '4.5 /5', '4.3 /5', '3.7 /5', '4.4 /5',
       '4.9/5', '2.1/5', '2.0/5', '1.8/5', '3.4 /5', '3.6 /5', '3.3
/5',
       '4.6 /5', '4.9 /5', '3.2 /5', '3.0 /5', '2.8 /5', '3.5 /5',
```

```
        '3.1 /5', '4.8 /5', '2.3 /5', '4.7 /5', '2.4 /5', '2.1 /5',
        '2.2 /5', '2.0 /5', '1.8 /5'], dtype=object)

flt = df
flt['rate'] = flt['rate'].astype(str)
flt['rate'] = flt['rate'].apply(lambda x: x.replace('/5',''))
flt['rate'] = flt['rate'].apply(lambda x: float(x))

flt['rate'].unique()

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

flt['rate'].fillna(flt['rate'].mean(),inplace=True)

flt.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    775      080 42297555\r\n+91
9743772233
1          Yes         No   4.1    787                      080
41714161
2          Yes         No   3.8    918                      +91
9663487993
3           No         No   3.7     88                      +91
9620009302
4           No         No   3.8    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
```

flt.describe()

```
              rate          votes
count  23046.000000  23046.000000
mean       3.904383    604.908444
std        0.426365   1117.367014
min        1.800000      0.000000
25%        3.800000    103.000000
50%        4.000000    224.000000
75%        4.200000    591.000000
max        4.900000  16832.000000
```

df.drop(labels=["address","phone","reviews_list","url",],axis=1)

```
                                                   name online_order  \
0                                                 Jalsa          Yes
1                                         Spice Elephant          Yes
2                                         San Churro Cafe          Yes
3                                     Addhuri Udupi Bhojana           No
4                                           Grand Village           No
...                                                   ...          ...
51705                                    Izakaya Gastro Pub          Yes
51707       M Bar - Bengaluru Marriott Hotel Whitefield           No
51708                              Keys Cafe - Keys Hotel           No
51711                                           Bhagini           No
51715  Chime - Sheraton Grand Bengaluru Whitefield Ho...           No


      book_table  rate  votes                  location  \
0            Yes   4.1    775             Banashankari
1             No   4.1    787             Banashankari
2             No   3.8    918             Banashankari
3             No   3.7     88             Banashankari
4             No   3.8    166             Basavanagudi
...          ...   ...    ...                       ...
51705        Yes   3.8    128                Whitefield
51707         No   3.9     77                Whitefield
51708         No   2.8    161                Whitefield
51711         No   2.5     81                Whitefield
51715        Yes   4.3    236  ITPL Main Road, Whitefield

                 rest_type                                         dish_liked  \
0            Casual Dining   Pasta, Lunch Buffet, Masala Papad, Paneer Laja...
1            Casual Dining   Momos, Lunch Buffet, Chocolate Nirvana, Thai G...
2      Cafe, Casual Dining   Churros, Cannelloni, Minestrone Soup, Hot Choc...
3              Quick Bites                                         Masala Dosa
4            Casual Dining                                           Panipuri,
```

```
                       Gol Gappe
...                          ...
...
51705    Bar, Casual Dining  Beer, Chicken Guntur, Paneer Tikka, Fish, Nood...
51707        Fine Dining, Bar                                      Rooftop Ambience
51708    Casual Dining, Bar  Salads, Coffee, Breakfast Buffet, Halwa, Chick...
51711    Casual Dining, Bar                               Biryani, Andhra Meal
51715                   Bar                          Cocktails, Pizza, Buttermilk

                                           cuisines  \
0                    North Indian, Mughlai, Chinese
1                      Chinese, North Indian, Thai
2                           Cafe, Mexican, Italian
3                      South Indian, North Indian
4                        North Indian, Rajasthani
...                                            ...
51705     North Indian, Continental, Mediterranean
51707                                  Finger Food
51708          Chinese, Continental, North Indian
51711  Andhra, South Indian, Chinese, North Indian
51715                                  Finger Food

       approx_cost(for two people) menu_item listed_in(type) listed_in(city)
0                              800        []          Buffet   Banashankari
1                              800        []          Buffet   Banashankari
2                              800        []          Buffet   Banashankari
3                              300        []          Buffet   Banashankari
4                              600        []          Buffet   Banashankari
...                            ...       ...             ...            ...
...
51705                        1,200        []   Pubs and bars     Whitefield
51707                        2,000        []   Pubs and bars     Whitefield
51708                        1,200        []   Pubs and bars     Whitefield
51711                          800        []   Pubs and bars     Whitefield
51715                        2,500        []   Pubs and bars
```

Whitefield

[23046 rows x 13 columns]

df.isna().sum()

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

df['menu_item'].unique()

```
array(['[]',
       "['Chole Kulcha Meal', 'Upvas Aloo Paratha With Dahi',
'Singhada Aloo Paratha with Hare Tamatar Ki Sabji', 'Smoked Butter
Chicken Combo', 'Paneer Methi Chaman Combo', 'Mutton Bhuna Combo',
'Rajma Masala Meal', 'Dal Makhani Veg Starter Combo', 'Dal Makhani
Non-Veg Starter Combo', 'Malai Kofta Combo', 'Jumbo Chicken Wrap',
'Jumbo Veg Wrap', 'Jumbo Falafel Salsa Wrap', 'Chicken Overload Jumbo
Wrap', 'Veg Pizza Wrap', 'Chicken Pizza Wrap', 'Mexican Potato Salsa
Wrap', 'American Smokey Sausage Wrap', 'Makhani Falafel Wrap', 'Mutton
Overload Wrap', 'Mac & Cheese Chicken Wrap', 'Mac & Cheese Veg Wrap',
'Barbeque Chicken Wrap', 'Mutton Boti Wrap', 'Masala Paneer Tikka
Wrap', 'Fiery Paneer Tikka Wrap', 'Masala Chicken Tikka Wrap', 'Cheesy
Corn Salsa Wrap', 'Chicken Mayo Wrap', 'Cheese Melt Chicken Wrap',
'Cheese Melt Paneer Wrap', 'Double Cheese Meatball Wrap', 'Reshmi
Chicken Kebab Wrap', 'Egg Cheese Sausage Wrap', 'Double Egg Chatpata
Wrap', 'Cheesy Potato Wrap', 'Veg Falafel Wrap', 'Chicken Bhuna Wrap',
'Chatpate Chole Wrap', 'Fiery Paneer Wrap', 'Fiery Chicken Wrap', 'Mac
& Cheese Wrap', 'Hare Tamatar & Sabudana Wada Royal Thali', 'Singhada
Aloo Paratha & Hare Tamatar Royal Satvik Meal', 'Smoked Butter Chicken
With Omelette', 'Rajma Masala Royal Combo', 'Paneer Methi Chaman Royal
Combo', 'Mutton Bhuna Royal Combo', 'Smoked Butter Chicken Royal
Combo', 'Malai Kofta Royal Combo', 'Fusion Breakfast', 'Pan Cake',
'Aloo Paratha Combo', 'Chai for 4', 'Cheesy Chicken Meatballs', 'Peach
Tea (Serves 4)', 'Falafel Nuggets with Mayo Dip', 'Potato Chilli Shots
```

with Mayo Dip', 'Pan Cake', 'Kashmiri Kahwa (Serves 4)', 'Masala Chai (Serves 4)', 'Chai for 4 + Nature valley bar', 'Kulcha', 'Flavorful Rice Tub', 'Dal Makhani Bowl (Half KG)', 'Smoked Butter Chicken Bowl (Half KG)', 'Mutton Bhuna Bowl (Half KG)', 'Singhada Aloo Paratha Tub', 'Curd Bowl (Half KG)', 'Hare Tamatar Ki Subji (Half KG)', 'Rajma Masala Bowl (Half KG)', 'Triangle Paratha Tub', 'Malai Kofta Bowl (Half Kg)', 'Chocolate Fantasy', 'SWIG Jeera Masala', 'SWIG Green apple', 'Kesar Muesli', 'Gulab Jamun (Pack Of 2)', 'Plum Cake', 'Gulab Jamun (Pack of 1)', 'Moments', 'Hazelnut Brownie (Pack Of 1)', 'CheeseCake (Pack of 1)', 'Chocolate Decadence (Pack of 1)', 'Red Velvet Slice Cake (Pack of 1)', 'Mint Chaas']",
        "['3 Poori with Subji', 'Chole Bhature [2 Pieces]', '2 Plain Paratha with Subji', '2 Aloo Paratha with Curd', '2 Paneer Paratha with Curd', '2 Onion Paratha with Curd', '2 Gobi Paratha with Curd', '2 Lachha Paratha with Curd', '4 Ghee Roti with Subji', 'Paneer Roll', 'Veg Roll', 'Aloo Roll', 'Paneer Aloo Roll', 'Veg Paneer Roll', 'Mushroom Paneer Roll', 'Bread Omelette [4 Pieces]', '2 Egg Paratha with Curd', 'Boiled Egg', 'Masala Omelette', 'Egg Roll', 'Double Egg Roll', 'Egg Aloo Roll', 'Egg Paneer Roll', 'Chicken Roll', 'Egg Chicken Roll', 'Tawa Roti', 'Ghee Roti', 'Plain Paratha', 'Laccha Paratha', 'Plain Rice', 'Sweet Lassi', 'Salt Lassi']",
        ...,
        '[\'Veg Thai Green Curry\', \'BBQ Sloppy Chicken Burger\', "Harry\'s Farm House Pizza", \'Egg Schezwan Fried Rice\', \'Chicken Schezwan Noodles\', \'Veg Platter\', \'Non Veg Platter\', \'Tom Yum Goong\', \'Tandoori Kalonji Aloo\', \'Tandoori Pesto Flowerets\', \'Paneer and Pineapple Tikka\', \'Adraki Soy Chilli Chicken Kebab\', \'Tandoori Chicken Lollipop\', \'Parpika Choosa\', \'Lamb Seekh Kebab\', \'Achari Fish Tikka\', \'Rumali Roti\', \'Naan\', \'Butter Naan\', \'Garlic Naan\', \'Butter Garlic Naan\', \'Cheese Naan\', \'Butter Garlic Cheese Naan\', \'Garlic Cheese Naan\', \'Veg Fried Rice\', \'Veg Schezwan Fried Rice\', \'Veg Hakka Noodles\', \'Veg Schezwan Noodles\', \'Veg Singapore Noodles\', \'Egg Fried Rice\', \'Egg Schezwan Fried Rice\', \'Egg Hakka Noodles\', \'Egg Schezwan Noodles\', \'Egg Singapore Noodles\', \'Chicken Hakka Noodles\', \'Chicken Schezwan Noodles\', \'Chicken Singapore Noodles\', \'Prawns Fried Rice\', \'Prawns Schezwan Fried Rice\', \'Prawns Hakka Noodles\', \'Prawns Schezwan Noodles\', \'Prawns Singapore Noodles\', \'Margherita Pizza\', "Harry\'s Farm House Pizza", \'Classique Paneer Tikka Pizza\', \'Veg Exotica Pizza\', \'Thai Basil Chicken Pizza\', \'Classic Chicken Tikka Pizza\', \'Spicy Pepperoni Pizza\', \'Penne Rustica\', \'Spaghetti Aglio e Olio Pasta\', \'HarryÃ\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x83Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82Â¢Ã\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x80Ã\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x99s Mac and Cheese Pasta\', \'Penne Vodkatini\', \'Baked Butter Chicken Lasaqna\', \'Spaghetti Carbonara\', \'Straight Up Veg Burger\', \'BBQ Sloppy Chicken Burger\', \'HarryÃ\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\

x83Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82Â¢Ã\x83\\x83Ã\x82\\x83Ã\x83\\
x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x80Ã\x83\\x83Ã\x82\\
x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x99s Lamb
Burger\', \'Jazz Burger\', \'Paneer Bhurji Pav\', \'Egg
Kejriwal\', \'Anda Bhurji Pav\', \'Omelette Pav\', \'Egg
Chilly\', \'Goan Rassa Omelette with Pav\', \'Veg Wok Tossed Ginger
Sprout Noodles with Crackling Spinach\', \'Veg Kung Pao Curry\', \'Veg
Thai Green Curry\', \'Veg Laksa\', \'Chicken Wok Tossed Ginger Sprout
Noodles with Crackling Spinach\', \'Grilled Chilly
Chicken\', \'Chicken Kung Pao Curry\', \'Chicken Thai Green
Curry\', \'Chicken Laksa\', \'Sri Lankan Black Pepper
Chicken\', \'Nasi Stir Fry Rice\', \'Fish Wok Tossed Ginger Sprout
Noodles with Crackling Spinach\', \'Seafood Kung Pao
Curry\', \'Seafood Thai Green Curry\', \'Seafood Laksa\', \'Bangkok
Seafood Bowl\', \'Crispy Garlic Bread\', \'Classic Masala
Peanut\', \'Salt and Pepper Corn\', \'Bombay Spiced Wedges\', \'Harrys
Onion Rings\', \'French Fries\', \'Crispy Chilli Potatoes\', \'Baked
Sweet Potato Wedges\', \'Peri Peri Salsa Fries\', \'Parmigiana Truffle
Fries\', \'Chicken Tikka Poutine\', \'Lamb Lovers Fries\', \'Paneer
Bhurji Pav\', \'Cheese Chilli Toast\', \'Pita Chips with Classic
Hummus\', \'Paneer Chilli Dry\', \'Veg Smoked Quesadillas\', \'Fondue
Stuffed Mushrooms\', \'Wonton Kachories\', \'Cottage Cheese Malaysian
Satay\', \'Muchos Nachos Veggie\', "Harry\'s Cheese Fondue Veg Dunks",
\'Non Veg Smoked Quesadillas\', \'Chilli Chicken\', \'Chicken
Malaysian Satay\', \'Drunken Chicken\', \'Crispy Chicken\', \'Andhra
Chicken Pepper Fry\', \'Singapore Chicken Lollipop\', \'Fiery Schezwan
Pepper Chicken\', \'Chilli Chicken Roll\', \'BBQ Rum Flambeed Wings\',
\'Grilled Tenderloin Chilli Fry\', \'Keema Pav\', \'Pigs in a
Blanket\', \'Kerala Buff Chilly\', \'Buffalo Chicken
Winglets\', \'Pattaya Beach Fish Goujons\', \'Fishermans Basket\',
"Harry\'s Cheese Fondue Non Veg Dunks", \'Paneer Urban Tikka Masala\',
"Veg Harry\'s Stroganoff", \'Chicken Urban Tikka Masala\', \'Jamaican
Jerk Chicken\', "Chicken Harry\'s Stroganoff", \'Harrys Pepper
Chicken\', \'Peppered Tenderloin Steak\', "Harry\'s Beer Batter Fish",
\'Smoked Paprika Fish\', \'Darsaan\', \'Sizzling Brownie\']',
        '[\'Chicken Wings\', \'Pepper Chicken\', "Beef Grilled One\'s
Burger", \'Spicy Louisiana Pizza\', \'Chilly Chicken
Pizza\', \'Chicken Mexicana Pizza\', \'Veg Italian Tomato and Fresh
Basil Soup\', \'Chicken Lemon Coriander Soup\', \'Southern Fried
Chicken\', \'Chicken Wings\', \'Gambas\', \'Bbq Jerk
Chicken\', \'Chicken Nachos Carnitos\', \'Spicy Chicken Carrebbean
Sausages\', \'Spicy Pork Carrebbean Sausages\', \'Pork Nachos
Carnitos\', \'Beef Spicy New Orleans Braised Meat\', \'Cajun Spiced
Fish Fingers\', \'Pepper Chicken\', \'Chicken Apollo Style\', \'Prawns
Apollo Style\', \'Chicken Streetside Chilly Style\', \'Beef Streetside
Chilly Style\', \'Pork Streetside Chilly Style\', \'Chicken Manchurian
Style\', "Chicken Spicy Chef\'s Special Style", "Beef Spicy Chef\'s
Special Style", "Chicken Kim\'s Style", \'Beef Nachos Carnitos\',
"Beef Kim\'s Style", "Pork Kim\'s Style", \'Chettinad Chicken Roast\',
\'Chettinad Pudhina Chicken Roast\', \'Chicken Kabab\', "Prawns Spicy

Chef\'s Special Style", \'Prawns Manchurian Style\', \'Fried Beef\', \'Pork Spicy New Orleans Braised Meat\', \'Fried Pork\', "Prawns Kim\'s Style", \'Fish Manchurian Style\', "Fish Spicy Chef\'s Special Style", \'Fish Streetside Chilly Style\', \'Fish Apollo Style\', "Fish Kim\'s Style", \'Pork Streetside Chilly Style\', "Pork Spicy Chef\'s Special Style", \'Pork Manchurian Style\', \'Beef Manchurian Style\', "Paneer Korean Kim\'s Style", \'Paneer Tangy Spinach Sauce\', \'Paneer Apollo Style Sauce\', \'Paneer Singaporean Style Sauce\', \'Paneer Ginger Chilly Garlic Sauce\', \'Paneer Ginger Chilly Garlic Sauce\', \'Paneer Ginger Chilly Garlic Sauce\', \'Paneer Hot Garlic Sauce\', \'Paneer Lemon Coriander Sauce\', "Veg Korean Kim\'s Style", \'Veg Tangy Spinach Sauce\', \'Veg Apollo Style Sauce\', "Veg Korean Kim\'s Style", \'Veg Singaporean Style Sauce\', \'Veg Ginger Chilly Garlic Sauce Burger\', \'Veg Chefs Super Spicy Style\', \'Veg Hot Garlic Sauce\', \'Lemon Coriander Sauce\', "Chicken Korean Kim\'s Style", \'Chicken Tangy Spinach Sauce\', \'Apollo Style Sauce\', \'Chicken Singaporean Style Sauce\', \'Chicken Singaporean Style Sauce\', \'Chicken Chefs Super Spicy Style\', \'Chicken Hot Garlic Sauce\', \'Chicken Hot Garlic Sauce\', "Beef Korean Kim\'s Style", \'Beef Tangy Spinach Sauce\', \'Beef Apollo Style Sauce\', \'Beef Singaporean Style Sauce\', \'Beef Ginger Chilly Garlic Sauce\', \'Beef Chefs Super Spicy Style\', \'Beef Chefs Super Spicy Style\', \'Beef Hot Garlic Sauce\', \'Beef Lemon Coriander Sauce\', "Pork Korean Kim\'s Style", \'Pork Tangy Spinach Sauce\', \'Pork Apollo Style Sauce\', \'Pork Singaporean Style Sauce\', \'Pork Ginger Chilly Garlic Sauce\', \'Pork Chefs Super Spicy Style\', \'Pork Hot Garlic Sauce\', \'Pork Lemon Coriander Sauce\', "Fish Korean Kim\'s Style", \'Fish Tangy Spinach Sauce\', \'Fish Apollo Style Sauce\', \'Fish Singaporean Style Sauce\', \'Fish Ginger Chilly Garlic Sauce\', \'Fish Chefs Super Spicy Style\', \'Fish Hot Garlic Sauce\', \'Fish Lemon Coriander Sauce\', "Korean Kim\'s Style", \'Prawns Tangy Spinach Sauce\', \'Prawns Apollo Style Sauce\', \'Prawns Apollo Style Sauce\', \'Prawns Ginger Chilly Garlic Sauce\', \'Prawns Chefs Super Spicy Style\', \'Prawns Hot Garlic Sauce\', \'Prawns Lemon Coriander Sauce\', \'Veg Stir Fried Rice\', \'Veg Mongolian Rice\', \'Veg Olivers Spicy Rice\', \'Veg Singaporean Rice\', \'Egg Stir Fried Rice\', \'Egg Mongolian Rice\', \'Egg Olivers Spicy Rice\', \'Egg Singaporean Rice\', \'Chicken Stir Fried Rice\', \'Chicken Mongolian Rice\', \'Chicken Olivers Spicy Rice\', \'Chicken Singaporean Rice\', \'Beef Stir Fried Rice\', \'Beef Mongolian Rice\', \'Beef Olivers Spicy Rice\', \'Beef Singaporean Rice\', \'Pork Stir Fried Rice\', \'Pork Mongolian Rice\', \'Pork Olivers Spicy Rice\', \'Pork Singaporean Rice\', \'Fish Stir Fried Rice\', \'Fish Mongolian Rice\', \'Fish Olivers Spicy Rice\', \'Fish Singaporean Rice\', \'Prawns Stir Fried Rice\', \'Prawns Mongolian Rice\', \'Prawns Olivers Spicy Rice\', \'Prawns Singaporean Rice\', \'Veg Stir Fried Noodles\', \'Veg Mongolian Noodles\', \'Veg Olivers Spicy Noodles\', \'Veg Singaporean Noodles\', \'Egg Stir Fried Noodles\', \'Egg Mongolian

Noodles\', \'Egg Olivers Spicy Noodles\', \'Egg Singaporean Noodles\', \'Chicken Stir Fried Noodles\', \'Chicken Mongolian Noodles\', \'Chicken Olivers Spicy Noodles\', \'Chicken Singaporean Noodles\', \'Beef Stir Fried Noodles\', \'Beef Mongolian Noodles\', \'Beef Olivers Spicy Noodles\', \'Beef Singaporean Noodles\', \'Pork Stir Fried Noodles\', \'Pork Mongolian Noodles\', \'Pork Olivers Spicy Noodles\', \'Pork Singaporean Noodles\', \'Fish Stir Fried Noodles\', \'Fish Mongolian Noodles\', \'Fish Olivers Spicy Noodles\', \'Fish Singaporean Noodles\', \'Prawns Stir Fried Noodles\', \'Prawns Mongolian Noodles\', \'Prawns Olivers Spicy Noodles\', \'Prawns Singaporean Noodles\', \'Mexican Bean Burger\', \'Bean Bbq\', \'Ginger Chilly Garlic Sauce Burger\', \'Cottage Cheese Jerky Burgers\', \'Spinach Ricotta Smashers\', \'Grilled Pepper Smashers\', \'Grilled Veg Sandwich\', \'Falafel\', \'Eggplant Parm\', "Chicken Grilled One\'s Burger", "Beef Grilled One\'s Burger", \'Almost Famous Moo Burger\', \'Miami Chicken Burger\', \'Miami Beef Burger\', \'Philly Cheesesteak Burger\', \'Santa Fe Beef Burger\', \'Cleveland Sandwich\', \'Philly Cheese Steak Sandwich\', \'Cuban Sandwich\', \'Pulled Chicken Sandwich\', \'Beef Saigon Bahn Mi Sandwich\', \'Pork Saigon Bahn Mi Sandwich\', \'Cheese Garlic Bread\', \'Jalapeno Poppers\', \'Cajun Spiced Potato Wedges\', \'Bruschetta\', \'Spring Rolls\', \'Crispy Potato Fingers\', \'Manchurian Style\', \'Streeside Chilly Style\', \'Crispy Fried Babycorn\', \'American Corn Bombs\', \'Cripsy Fried Paneer\', \'Pepper Salt\', \'OliverÃ\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x83Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82Â¢Ã\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x80Ã\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x99s Pepper Masala Paneer Roast\', \'OliverÃ\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x83Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82Â¢Ã\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x80Ã\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x99s Chettinad Aloo Roast\', \'OliverÃ\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x83Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82Â¢Ã\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x80Ã\x83\\x83Ã\x82\\x83Ã\x83\\x82Ã\x82\\x82Ã\x83\\x83Ã\x82\\x82Ã\x83\\x82Ã\x82\\x99s Pudhina Aloo Roast\', \'Onion Pakoda\', \'Paneer Pakoda\', \'Egg Bhurji\', \'Masala Egg Pakoda\', \'Masala Omlette\', \'Egg Bhurji With Bacon & Sausage\', \'Chilly Egg\', \'Egg Bhurji With Bacon And Sausage\', \'Pizza Margharita\', \'Spicy Louisiana Pizza\', \'Wilted Spinach Pizza\', \'Eggplant Pizza\', \'Patata Salsa Pizza\', \'Stirfried Babycorn Pizza\', \'Arugula Pizza\', \'Pesto Shrooms Pizza\', \'Chilly Paneer Pizza\', \'Spicy Peri Peri Paneer & Spinach Pizza\', \'Mexican Nachos Special Pizza\', \'Chicken BBQ Pizza\', \'Chicken Sausage Pizza\', \'Chilly Chicken Pizza\', \'Chicken 65 Pizza\', \'Chicken Mexicana Pizza\', \'Chicken Bolognese Pizza\', \'Mexican Chicken Nachos Pizza\', \'Mexican Beef Nachos Pizza\', \'Arugula Bacon Pizza\', \'Pepperoni Pizza\', \'Chorizo Pizza\', \'Chocolate Brownie\']',

```
       "['Dal Tadka', 'Dal Makhani', 'Paneer Tikka Masala', 'Kadai
Paneer', 'Paneer Makhani', 'Malai Kofta', 'Mutton Rogan Josh', 'Jeera
Rice', 'Veg Biryani', 'Murgh Dum Biryani', 'Murgh Dum Biryani [Family
Pack]', 'Hara Bara Kabab', 'Paneer Tikka', 'Tandoori Murgh', 'Murgh
Lahori Kalmi', 'Jalebi with Rabdi', 'Roomali Roti', 'Afghani Naan',
'Stuffed Paratha', 'Paneer Tikka Masala Meal', 'Paneer Makhani Meal',
'Veg Biryani Meal', 'Executive Veg Box Meal', 'Executive Non Veg Box
Meal', 'Rajma Meal', 'Peshawari Channa Meal', 'Paneer Tikka Masala
Meal', 'Paneer Makhani Meal', 'Egg Curry Meal', 'Butter Chicken Meal',
'Rara Murgh Meal', 'Mutton Rogan Josh Meal', 'Rara Mutton Meal', 'Veg
Biryani Meal', 'Egg Biryani Meal', 'Murgh Dum Biryani Meal', 'Murgh
Tikka Biryani Meal', 'Mutton Biryani Meal', 'Prawns Biryani Meal',
'Executive Veg Box Meal', 'Executive Non Veg Box Meal', 'Tomato
Shorba', 'Murgh Shorba', 'Bagicha ka Salad', 'Karela Salad', 'Kaju Fry
Salad', 'Murgh Tikka Salad', 'French Fries', 'Aloo Tak-a-Tak', 'Baby
Corn Harimirch Wala', 'Bhatti ka Gobi', 'Hara Bara Kabab', 'Tandoori
Mushroom', 'Mushroom Harimirch Wala', 'Paneer Resunga', 'Paneer
Tikka', 'Peshawari Seekh Kabab', 'Tandoori Murgh', 'Murgh Lahori
Kalmi', 'Mutton Pepper Dry', 'Macchi Amritsari', 'Macchi Tak-a-Tak',
'Tawa Macchi', 'Prawns Balaika', 'Prawns Tak-a-Tak', 'Tandoori
Prawns', 'Prawns Harimirch Wala', 'Dal Tadka', 'Dal Makhani', 'Paneer
Tikka Masala', 'Paneer Saagwala', 'Kadai Paneer', 'Paneer Makhani',
'Mushroom Matar', 'Veg Patiala', 'Diwani Handi', 'Kadai Veg', 'Rajma',
'Sarson ka Saag', 'Aloo Gobi Masala', 'Bhindi Do Pyaza', 'Peshawari
Channa', 'Malai Kofta', 'Kaju Masala', 'Egg Bhurji', 'Egg Masala',
'Rarra Mutton', 'Mutton Rogan Josh', 'Methi Macchi Masala', 'Macchi
Jalfrezi', 'Prawns Masala', 'Plain Rice', 'Curd Rice', 'Jeera Rice',
'Veg Pulao', 'Peas Pulao', 'Veg Biryani', 'Egg Biryani', 'Murgh Dum
Biryani', 'Murgh Tikka Biryani', 'Mutton Biryani', 'Prawns Biryani',
'Egg Biryani [Family Pack]', 'Murgh Dum Biryani [Family Pack]', 'Murgh
Tikka Biryani [Family Pack]', 'Mutton Biryani [Family Pack]', 'Prawns
Biryani [Family Pack]', 'Phulka', 'Roti', 'Butter Roti', 'Harimirch
Paratha', 'Lalmirch Paratha', 'Garlic Naan', 'Naan', 'Butter Naan',
'Lachha Paratha', 'Kulcha', 'Butter Kulcha', 'Makkai Ki Roti',
'Roomali Roti', 'Afghani Naan', 'Peshawari Paratha', 'Stuffed
Paratha', '8 Roti ka Chota Khazana', '12 Roti ka Bada Khazana', 'Egg
Paratha', 'Mutton Keema Paratha', 'Roasted Papad', 'Masala Papad',
'Plain Curd', 'Mixed Veg Raita', 'Boondi Raita', 'Cucumber Raita',
'Pineapple Raita', 'Onion Raita', 'Mint Raita', 'Rabdi', 'Jalebi',
'Jalebi with Rabdi', 'Gulab Jamun', 'Rasgulla', 'Bhune Jeere ki
Chaach', 'Jal Jeera', 'Meetha Punjabi Lassi', 'Namkeen Punjabi Lassi',
'Masala Punjabi Lassi', 'Patiala Punjabi Lassi', 'Meetha Nimboo
Paani', 'Namkeen Nimboo Paani', 'Roohafza Sherbat', 'Mineral Water [1
litre]']"],
      dtype=object)

# Plot of the Restaurant that provides Table Booking or Not
sns.countplot(df['book_table'])
fig = plt.gcf()
```

```
fig.set_size_inches(10,10)
plt.title('Restaurants provides Table Booking or Not')
```

C:\Users\Nishita\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(

Text(0.5, 1.0, 'Restaurants provides Table Booking or Not')

Restaurants provides Table Booking or Not
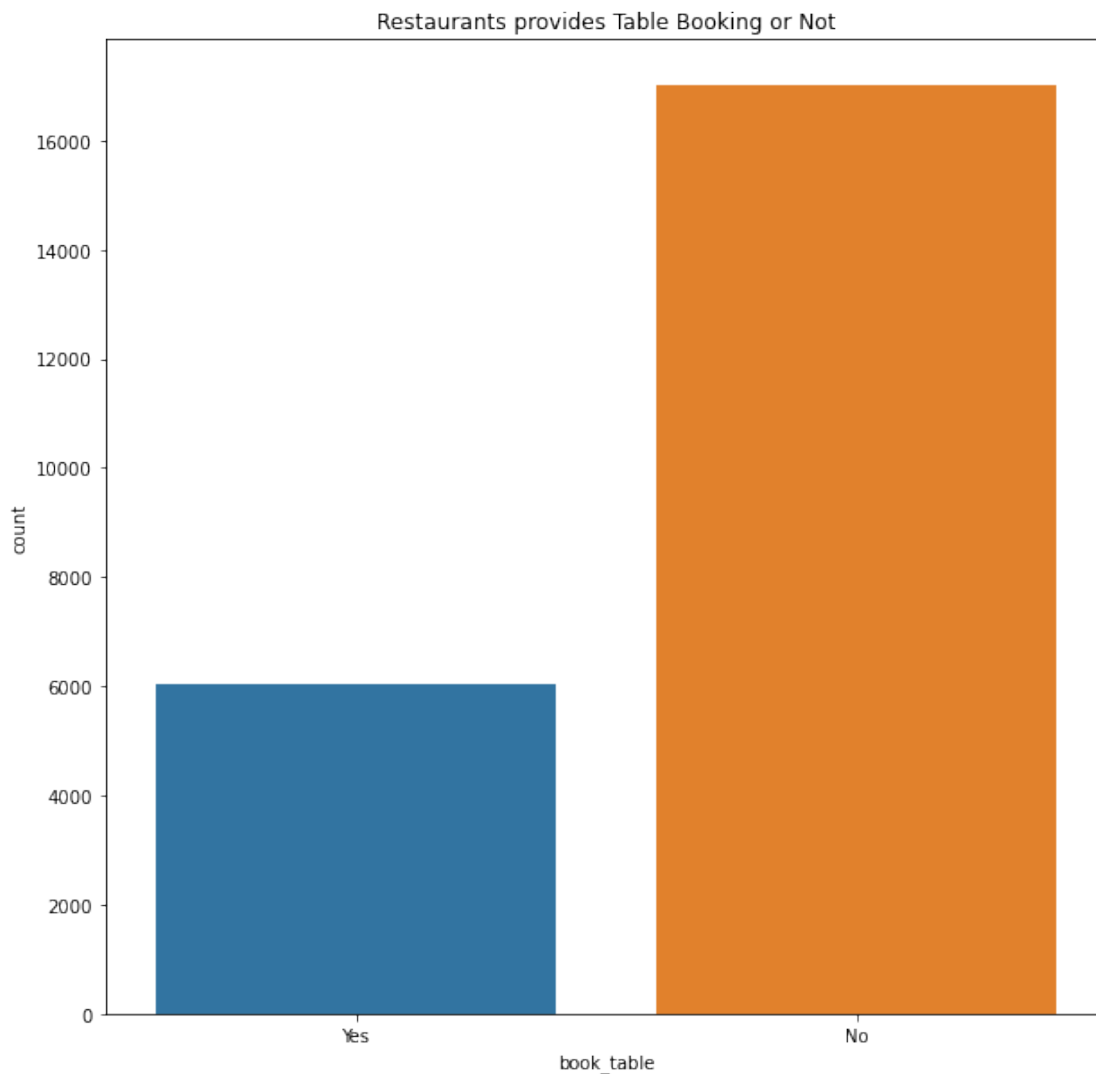
```
# Plot of the Restaurant, whether they are accepting the online_order
or not
sns.countplot(df['online_order'])
fig = plt.gcf()
fig.set_size_inches(10,10)
plt.title('Restaurants delivering online or Not')
```

```
C:\Users\Nishita\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(

Text(0.5, 1.0, 'Restaurants delivering online or Not')
```


Restaurants delivering online or Not
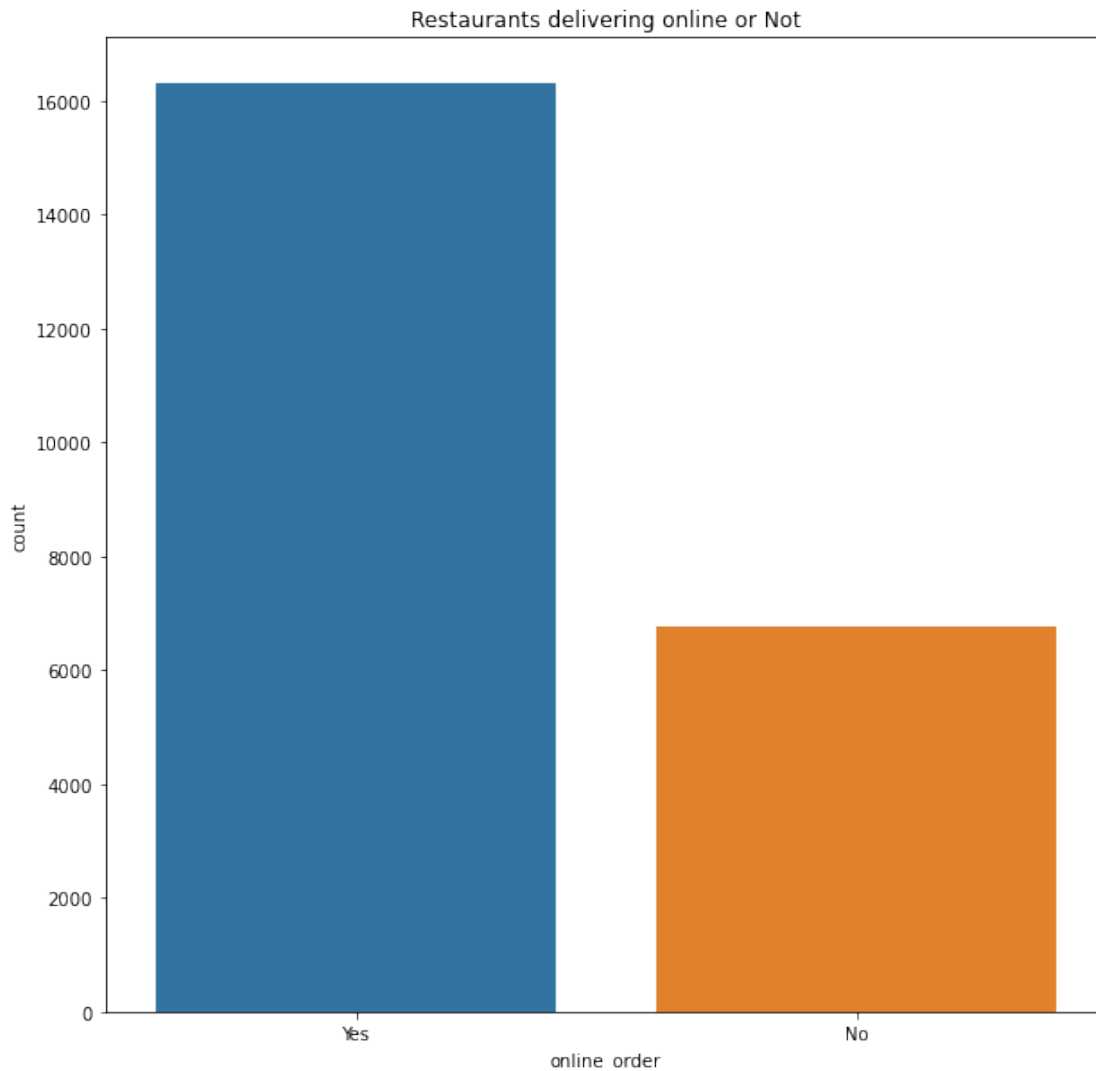
```
df['listed_in(type)'].unique()

array(['Buffet', 'Cafes', 'Delivery', 'Desserts', 'Dine-out',
       'Drinks & nightlife', 'Pubs and bars'], dtype=object)

%matplotlib inline
import matplotlib.pyplot as plt
plt.rcParams['figure.figsize'] = (12, 5);
sns.set_style('whitegrid')
import matplotlib.colors as mcolors
```

```python
import plotly.express as px
import plotly.graph_objs as go
from plotly.offline import iplot
from plotly.offline import init_notebook_mode
init_notebook_mode(connected=False)
from tqdm import tqdm

! pip install dexplot
import dexplot as dxp

import re
import string
import nltk
nltk.download('stopwords')
```

```
Requirement already satisfied: dexplot in c:\users\nishita\anaconda3\
lib\site-packages (0.1.4)
Requirement already satisfied: pandas>=0.24 in c:\users\nishita\
anaconda3\lib\site-packages (from dexplot) (1.4.2)
Requirement already satisfied: scipy>=1.0matplotlib>=3.1 in c:\users\
nishita\anaconda3\lib\site-packages (from dexplot) (1.7.3)
Requirement already satisfied: numpy>=1.15 in c:\users\nishita\
anaconda3\lib\site-packages (from dexplot) (1.21.5)
Requirement already satisfied: pytz>=2020.1 in c:\users\nishita\
anaconda3\lib\site-packages (from pandas>=0.24->dexplot) (2021.3)
Requirement already satisfied: python-dateutil>=2.8.1 in c:\users\
nishita\anaconda3\lib\site-packages (from pandas>=0.24->dexplot)
(2.8.2)
Requirement already satisfied: six>=1.5 in c:\users\nishita\anaconda3\
lib\site-packages (from python-dateutil>=2.8.1->pandas>=0.24->dexplot)
(1.16.0)

[nltk_data] Downloading package stopwords to
[nltk_data]     C:\Users\Nishita\AppData\Roaming\nltk_data...
[nltk_data]   Package stopwords is already up-to-date!

True
```

```python
dxp.count(val='listed_in(type)', data=df, figsize=(20,12),
split='listed_in(city)', normalize=True)
```

```
C:\Users\Nishita\anaconda3\lib\site-packages\dexplot\
_common_plot.py:156: FutureWarning:

The `inplace` parameter in pandas.Categorical.remove_unused_categories
is deprecated and will be removed in a future version.

findfont: Font family ['Helvetica'] not found. Falling back to DejaVu
Sans.
```
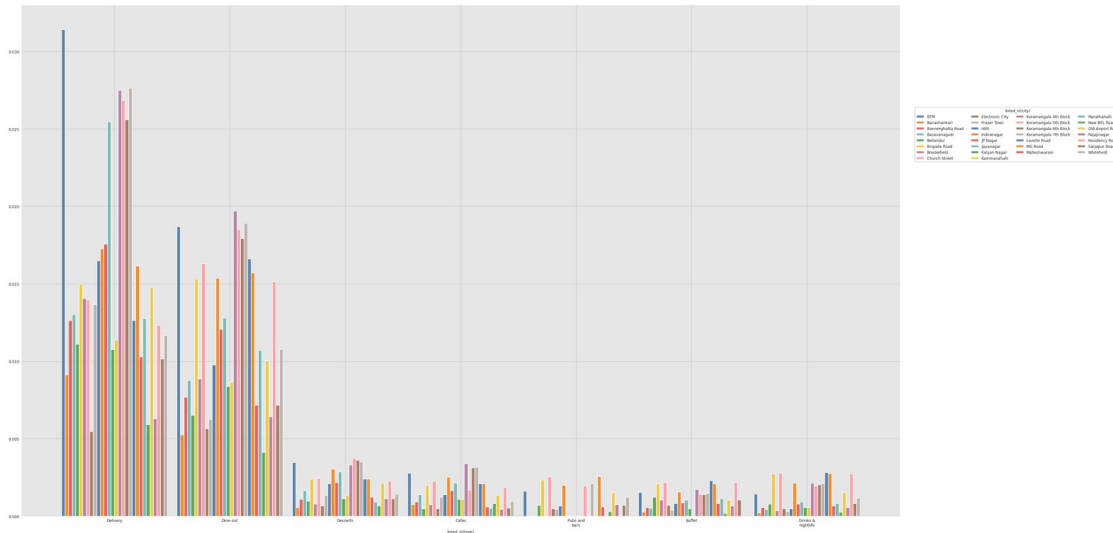
```
print(df['rest_type'].nunique())
df['rest_type'].unique()
```

73

```
array(['Casual Dining', 'Cafe, Casual Dining', 'Quick Bites',
       'Casual Dining, Cafe', 'Cafe', 'Quick Bites, Cafe', 'Delivery',
       'Dessert Parlor', 'Pub', 'Beverage Shop', 'Bar',
       'Takeaway, Delivery', 'Food Truck', 'Quick Bites, Dessert
Parlor',
       'Pub, Casual Dining', 'Casual Dining, Bar', 'Bakery', 'Sweet
Shop',
       'Dessert Parlor, Beverage Shop', 'Beverage Shop, Quick Bites',
       'Microbrewery, Casual Dining', 'Sweet Shop, Quick Bites',
'Lounge',
       'Food Court', 'Cafe, Bakery', 'Microbrewery', 'Kiosk', 'Pub,
Bar',
       'Casual Dining, Pub', 'Cafe, Quick Bites', 'Lounge, Bar',
       'Bakery, Quick Bites', 'Dessert Parlor, Quick Bites',
       'Bar, Casual Dining', 'Beverage Shop, Dessert Parlor',
       'Casual Dining, Microbrewery', 'Mess', 'Lounge, Casual Dining',
       'Cafe, Dessert Parlor', 'Dessert Parlor, Cafe',
       'Bakery, Dessert Parlor', 'Quick Bites, Sweet Shop',
'Takeaway',
       'Microbrewery, Pub', 'Club', 'Fine Dining', 'Bakery, Cafe',
       'Beverage Shop, Cafe', 'Pub, Cafe', 'Casual Dining, Irani
Cafee',
       'Food Court, Quick Bites', 'Quick Bites, Beverage Shop',
       'Fine Dining, Lounge', 'Quick Bites, Bakery', 'Bar, Quick
Bites',
       'Pub, Microbrewery', 'Microbrewery, Lounge',
       'Fine Dining, Microbrewery', 'Fine Dining, Bar',
       'Dessert Parlor, Kiosk', 'Cafe, Bar', 'Quick Bites, Food
Court',
```

```
        'Casual Dining, Lounge', 'Microbrewery, Bar', 'Cafe, Lounge',
        'Bar, Pub', 'Lounge, Cafe', 'Dessert Parlor, Bakery',
        'Club, Casual Dining', 'Lounge, Microbrewery', 'Dhaba',
        'Bar, Lounge', 'Food Court, Casual Dining'], dtype=object)
```

```python
# Plotting for the Top Restuarant in the Bengaluru

plt.figure(figsize=(12,8))
val = df['name'].value_counts()[:25]  # Considering for the top 25
restaurants
sns.barplot(x=val, y=val.index, palette = "Set1")
plt.title("Famous Restaurants in the City of Bengaluru")
plt.xlabel("Number of Outlets")
```

Text(0.5, 0, 'Number of Outlets')

findfont: Font family ['Helvetica'] not found. Falling back to DejaVu
Sans.
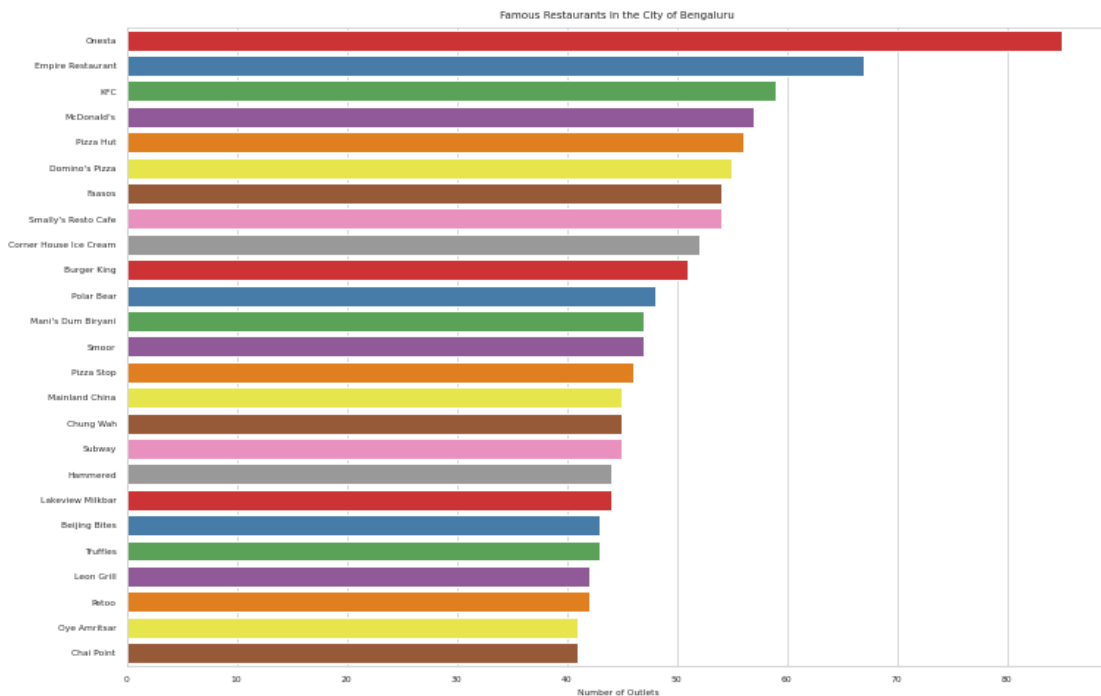

```python
# Lets plot to see that whether there is any relation between the
rating of the restaurant
# and the area in which they are located

rel_type = pd.crosstab(df['rate'], df['listed_in(city)'])
rel_type.plot(kind='bar', stacked=True, figsize=(20,16))
plt.title('City - Rating',fontsize=18)
plt.ylabel('City',fontsize=12)
plt.xlabel('Rating',fontsize=12)
```

```
plt.xticks(fontsize=12)
plt.yticks(fontsize=12)

(array([   0.,  500., 1000., 1500., 2000., 2500., 3000., 3500.]),
 [Text(0, 0, ''),
  Text(0, 0, ''),
  Text(0, 0, ''),
  Text(0, 0, ''),
  Text(0, 0, ''),
  Text(0, 0, ''),
  Text(0, 0, ''),
  Text(0, 0, '')])
```

findfont: Font family ['Helvetica'] not found. Falling back to DejaVu
Sans.
findfont: Font family ['Helvetica'] not found. Falling back to DejaVu
Sans.

Rating Distribution

```
plt.figure(figsize=(12,8))
sns.distplot(df['rate'], bins = 25)
```

C:\Users\Nishita\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).

<AxesSubplot:xlabel='rate', ylabel='Density'>
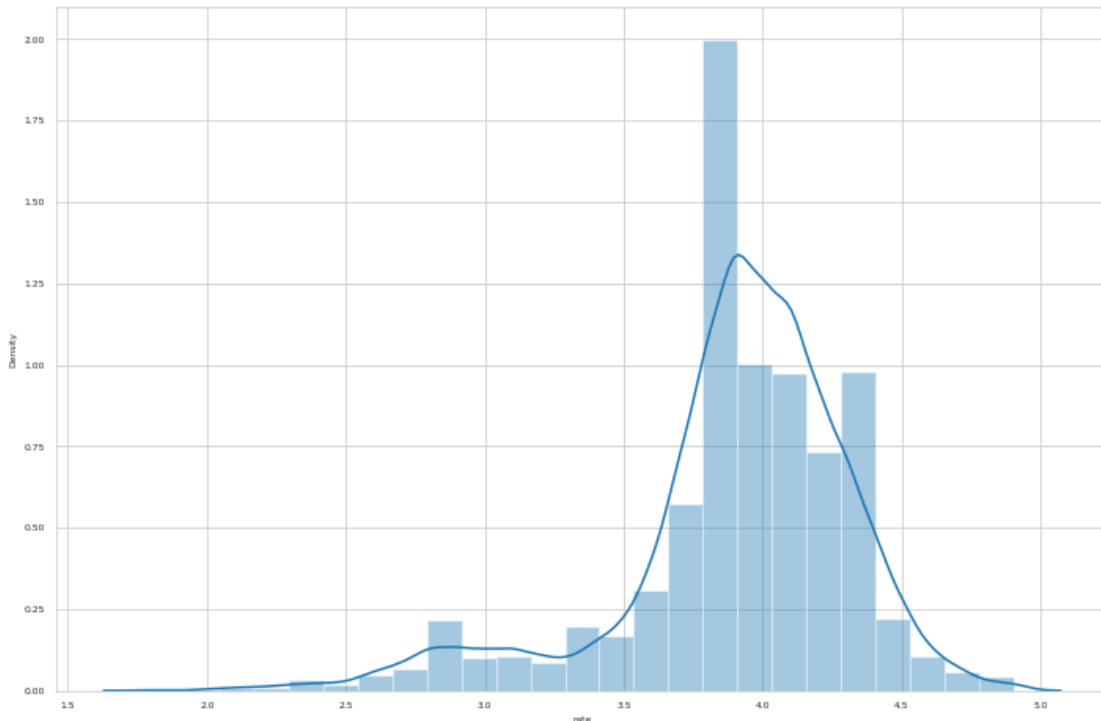

```
 #meal-type
sns.countplot(df['listed_in(type)'])
fig = plt.gcf()
fig.set_size_inches(10,10)
plt.title('Restaurants delivering online or Not')
```

C:\Users\Nishita\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.

Text(0.5, 1.0, 'Restaurants delivering online or Not')

Restaurants delivering online or Not
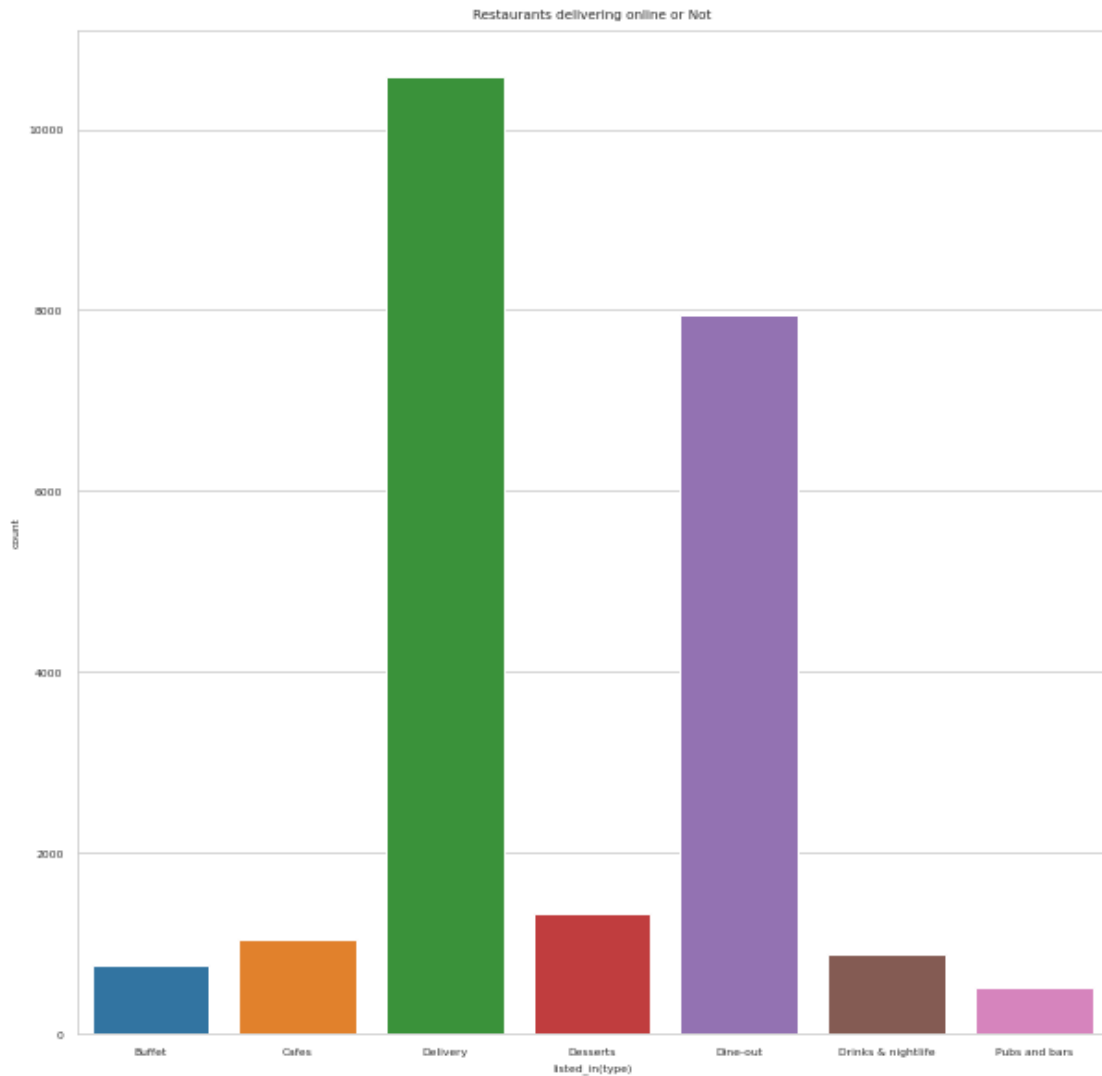
```python
df.groupby(by=["listed_in(type)"])
['name'].count().plot(kind='pie',figsize=(15,10),autopct='%1.2f%
%',fontsize=15)
plt.title("Type of restaurants",fontsize=15)
plt.show()
```

findfont: Font family ['Helvetica'] not found. Falling back to DejaVu
Sans.

Type of restaurants
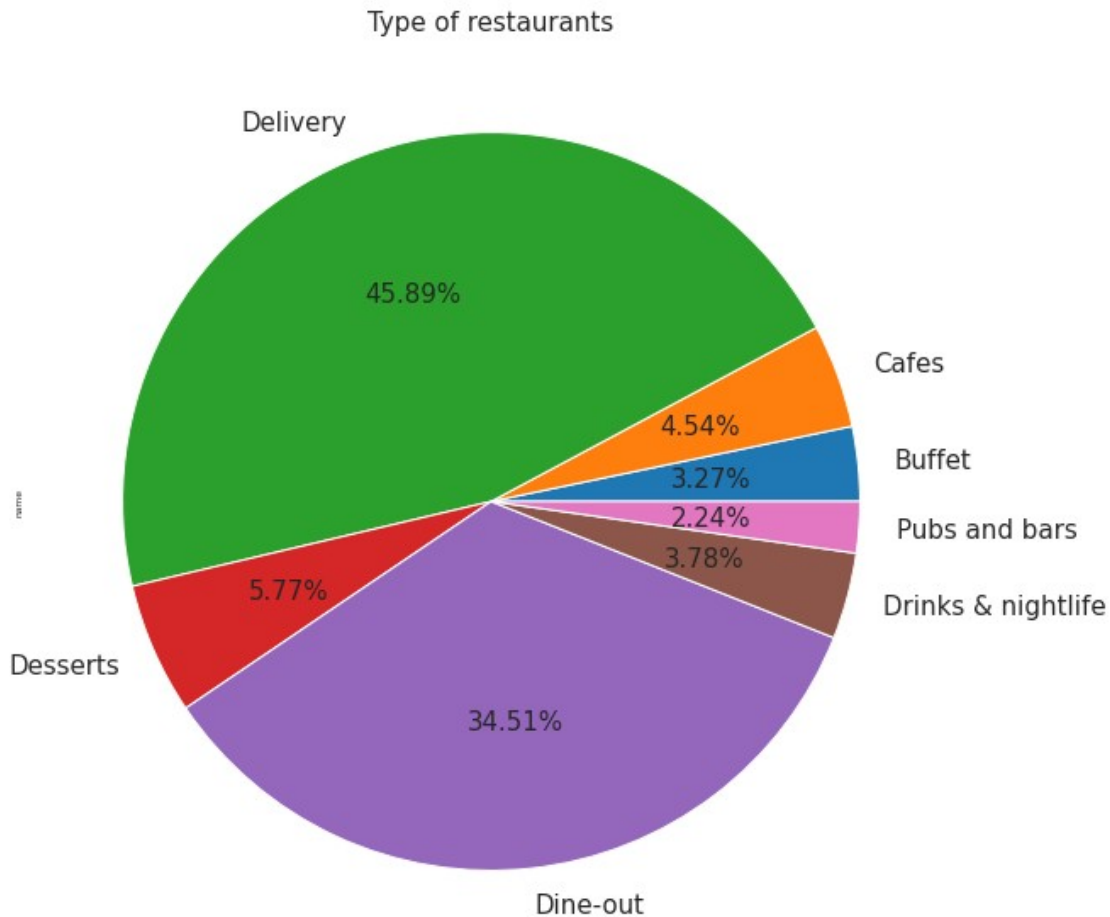

```python
min_rating = min(df.rate)
max_rating = max(df.rate)
print(" The maximum rating of a restaurent on Zomato
is",max_rating,"and the minimum rating is ",min_rating)
```

 The maximum rating of a restaurent on Zomato is 4.9 and the minimum
rating is 1.8

```python
top10_df= df.sort_values(by=['rate'],ascending=False)
```

```python
top10_df
```

```
                                                    url  \
28403  https://www.zomato.com/bangalore/asia-kitchen-...
32044  https://www.zomato.com/bangalore/asia-kitchen-...
43055  https://www.zomato.com/bangalore/belgian-waffl...
7118   https://www.zomato.com/bangalore/punjab-grill-...
32436  https://www.zomato.com/bangalore/asia-kitchen-...
...                                                  ...
38870  https://www.zomato.com/bangalore/alibi-maya-in...
6300   https://www.zomato.com/bangalore/alibi-maya-in...
43489  https://www.zomato.com/bangalore/alibi-maya-in...
```

```
12540  https://www.zomato.com/bangalore/alibi-maya-in...
48390  https://www.zomato.com/bangalore/alibi-maya-in...

                                               address  \
28403  136, Ground Floor, 1st Cross, 5th Block, Jyoti...
32044  136, Ground Floor, 1st Cross, 5th Block, Jyoti...
43055  65, Markham Road, Ashok Nagar, Brigade Road, B...
7118   Ground Floor, Forum Shantiniketan, Whitefield ...
32436  136, Ground Floor, 1st Cross, 5th Block, Jyoti...
...                                                 ...
38870  Maya International Hotel, 52/1, Church Street,...
6300   Maya International Hotel, 52/1, Church Street,...
43489  Maya International Hotel, 52/1, Church Street,...
12540  Maya International Hotel, 52/1, Church Street,...
48390  Maya International Hotel, 52/1, Church Street,...

                                    name online_order book_table  rate
votes  \
28403    Asia Kitchen By Mainland China          Yes        Yes   4.9
2227
32044    Asia Kitchen By Mainland China          Yes        Yes   4.9
2244
43055          Belgian Waffle Factory            Yes         No   4.9
1750
7118                      Punjab Grill           Yes         No   4.9
518
32436    Asia Kitchen By Mainland China          Yes        Yes   4.9
2244
...                                 ...          ...        ...   ...
...
38870  Alibi - Maya International Hotel           No         No   1.8
225
6300   Alibi - Maya International Hotel           No         No   1.8
224
43489  Alibi - Maya International Hotel           No         No   1.8
225
12540  Alibi - Maya International Hotel           No         No   1.8
224
48390  Alibi - Maya International Hotel           No         No   1.8
225

                                  phone              location  \
28403                      080 49652573  Koramangala 5th Block
32044                      080 49652573  Koramangala 5th Block
43055                     +91 9481511911            Brigade Road
7118    +91 8448581880\r\n+91 8448581881            Whitefield
32436                      080 49652573  Koramangala 5th Block
...                                 ...                    ...
38870       080 25594366\n080 25596349          Church Street
6300        080 25594366\r\n080 25596349          Church Street
```

```
43489        080 25594366\n080 25596349          Church Street
12540        080 25594366\r\n080 25596349        Church Street
48390        080 25594366\n080 25596349          Church Street

                   rest_type
dish_liked  \
28403  Casual Dining, Bar  Chicken Dim Sum, Pad Thai Noodle, Jumbo
Prawns...
32044  Casual Dining, Bar  Noodles, Chicken Dim Sum, Pad Thai Noodle,
Jum...
43055       Dessert Parlor  Coffee, Berryblast, Nachos, Chocolate
Waffles,...
7118        Casual Dining  Kadai Paneer, Kulfi, Kadhai Paneer, Dahi
Kebab...
32436  Casual Dining, Bar  Noodles, Chicken Dim Sum, Pad Thai Noodle,
Jum...
...                 ...
...
38870       Casual Dining
Dj
6300        Casual Dining
Dj
43489       Casual Dining
Dj
12540       Casual Dining
Dj
48390       Casual Dining
Dj


                                  cuisines approx_cost(for two people)
\
28403        Asian, Chinese, Thai, Momos                        1,500

32044        Asian, Chinese, Thai, Momos                        1,500

43055                           Desserts                          400

7118                         North Indian                      2,000

32436        Asian, Chinese, Thai, Momos                        1,500

...                                   ...                          ...

38870  North Indian, Continental, Chinese                      1,200

6300   North Indian, Continental, Chinese                      1,200

43489  North Indian, Continental, Chinese                      1,200
```

```
12540  North Indian, Continental, Chinese                              1,200

48390  North Indian, Continental, Chinese                              1,200


                                               reviews_list  \
28403  [('Rated 5.0', 'RATED\n  Tempura shrimp sushi ...
32044  [('Rated 3.0', 'RATED\n  Hmm not great not bad...
43055  [('Rated 4.0', "RATED\n  Looks like there's a ...
7118   [('Rated 5.0', 'RATED\n  The food is great...t...
32436  [('Rated 3.0', 'RATED\n  Hmm not great not bad...
...                                                      ...
38870  [('Rated 1.0', 'RATED\n  DO NOT GO HERE! Cheap...
6300   [('Rated 1.0', 'RATED\n  DO NOT GO HERE! Cheap...
43489  [('Rated 1.0', 'RATED\n  DO NOT GO HERE! Cheap...
12540  [('Rated 1.0', 'RATED\n  DO NOT GO HERE! Cheap...
48390  [('Rated 1.0', 'RATED\n  DO NOT GO HERE! Cheap...

                                               menu_item
listed_in(type)  \
28403  ['Vegetable Eight Treasure Soup', 'Chicken Hot...      Dine-
out
32044                                                 []    Pubs and
bars
43055  ['The Red Wonder Waffle [Bubble]', 'Bubble Kit...
Desserts
7118   ['Multani Paneer Tikka', 'Dal Punjab Grill', '...
Delivery
32436  ['Vegetable Eight Treasure Soup', 'Chicken Hot...
Delivery
...                                                 ...          .
..
38870                                                 []      Dine-
out
6300                                                  []      Dine-
out
43489                                                 []      Dine-
out
12540                                                 []      Dine-
out
48390                                                 []      Dine-
out


            listed_in(city)
28403  Koramangala 4th Block
32044  Koramangala 5th Block
43055                MG Road
7118             Brookefield
32436  Koramangala 6th Block
...                      ...
```

```
38870            Lavelle Road
6300             Brigade Road
43489                 MG Road
12540           Church Street
48390          Residency Road

[23046 rows x 17 columns]
```

```python
top10_df=top10_df[top10_df.rest_type=='Casual Dining'].head(10)
```

```python
top10_df=pd.DataFrame(top10_df,columns=['name','rate','location','approx_cost(for two people)'])
```

```python
top10_df
```

```
                                                name  rate
location  \
7118                               Punjab Grill   4.9
Whitefield
46253                              Punjab Grill   4.9
Malleshwaram
51042                                  Flechazo   4.9
Whitefield
6746                                   Flechazo   4.9
Whitefield
39559                              Punjab Grill   4.9
Malleshwaram
8260                   AB's - Absolute Barbecues   4.9
BTM
23587                  AB's - Absolute Barbecues   4.9
BTM
40095                              Punjab Grill   4.9
Malleshwaram
45812   SantÃ)Â)Ã(Â)Ã)Â(Ã(Â)Ã)Â)Ã(Â(Ã)Â(Ã(Â)Ã)Â)Ã(Â)Ã)...   4.9   Indiranagar
21279                  AB's - Absolute Barbecues   4.9
BTM

       approx_cost(for two people)
7118                         2,000
46253                        2,000
51042                        1,400
6746                         1,400
39559                        2,000
8260                         1,600
23587                        1,600
40095                        2,000
45812                        1,000
21279                        1,600
```

```python
plt_1 = plt.figure(figsize=(10, 10))
sns.boxplot(x='online_order',y='rate',palette="Set2",data=df)
```

```python
plt.xlabel('Online order facilty',fontsize=15)
plt.ylabel('Rating',fontsize=15)
plt.title('Effect of online delivery option on restaurants
rating',fontsize=20)
plt.show()
```

findfont: Font family ['Helvetica'] not found. Falling back to DejaVu
Sans.

Effect of online delivery option on restaurants rating
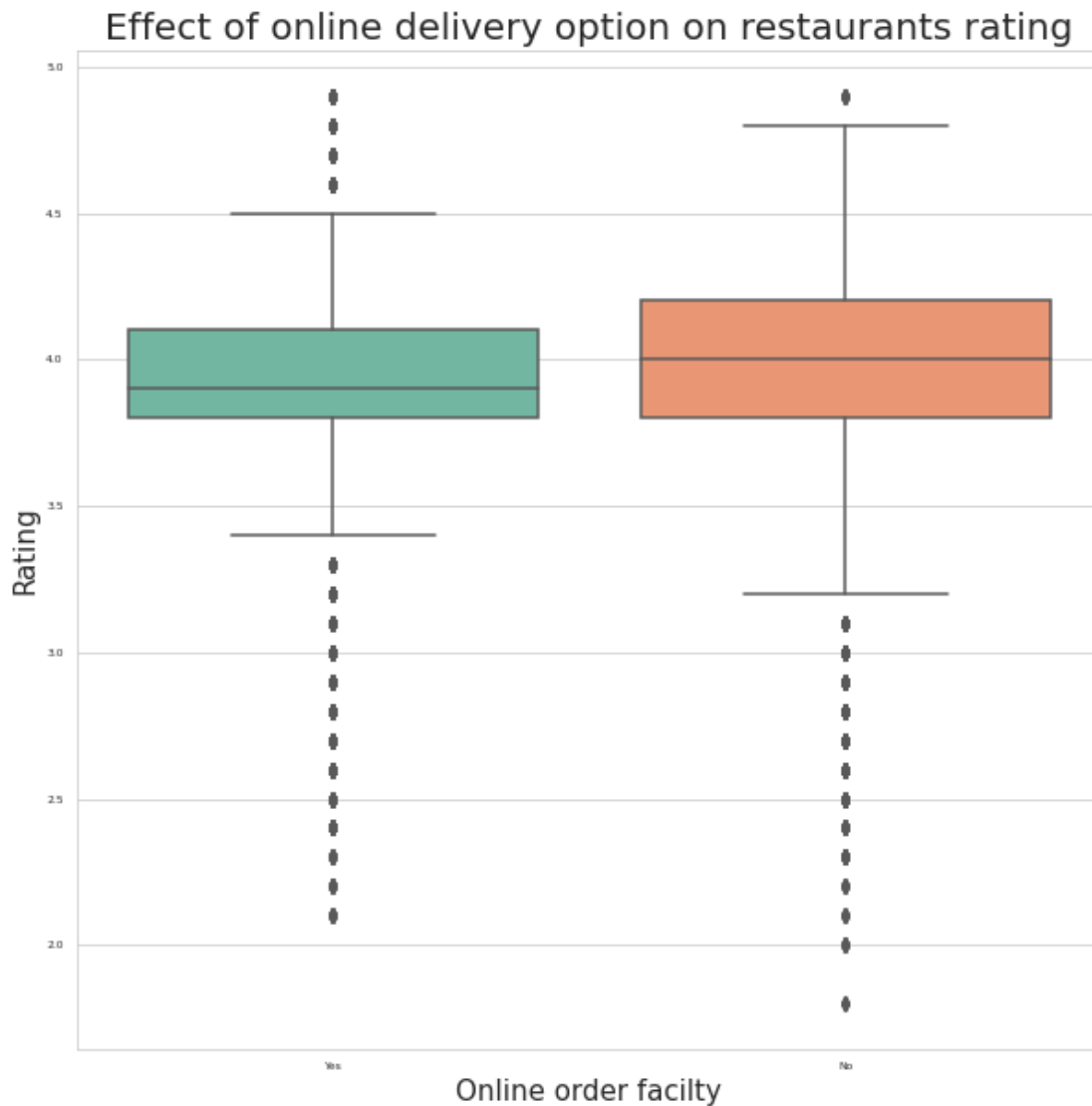
```python
def convertcost(x):
    '''
    Extract the numeric value from the passed string and return it as
float
    '''
    if x!='NaN':
        return float(str(x).replace(",",""))
    return 0.0
```

```python
df['approx_cost(for two people)']=df['approx_cost(for two
people)'].apply(convertcost)
#converting the cost per person to float

df.head(5)
#Checking the applied changes
```

```
                                                 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    775    080 42297555\r\n+91
9743772233
1          Yes         No   4.1    787                    080
41714161
2          Yes         No   3.8    918                    +91
9663487993
3           No         No   3.7     88                    +91
9620009302
4           No         No   3.8    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                        800.0
1     Chinese, North Indian, Thai                        800.0
2          Cafe, Mexican, Italian                        800.0
3       South Indian, North Indian                       300.0
4         North Indian, Rajasthani                       600.0


                                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
```

```python
min_cost=min(df['approx_cost(for two people)'])
max_cost=max(df['approx_cost(for two people)'])
print("The maximum cost for two to eat in a restaurant in bangalore is
Rs.",max_cost,"and the minimum cost for eating in bangalore is
Rs.",min_cost)
```

The maximum cost for two to eat in a restaurant in bangalore is Rs.
6000.0 and the minimum cost for eating in bangalore is Rs. 40.0

```python
plt.figure(figsize=(20,10))
sns.set(style="darkgrid")
fig = sns.kdeplot(df['approx_cost(for two
people)'],shade=True,color="r");
fig.set_xlabel("Cost for two people",fontsize=25)
fig.set_ylabel("Density",fontsize=25)
fig.set_title("Distribution of approx cost for two",fontsize=30)
plt.show()
```

Distribution of approx cost for two
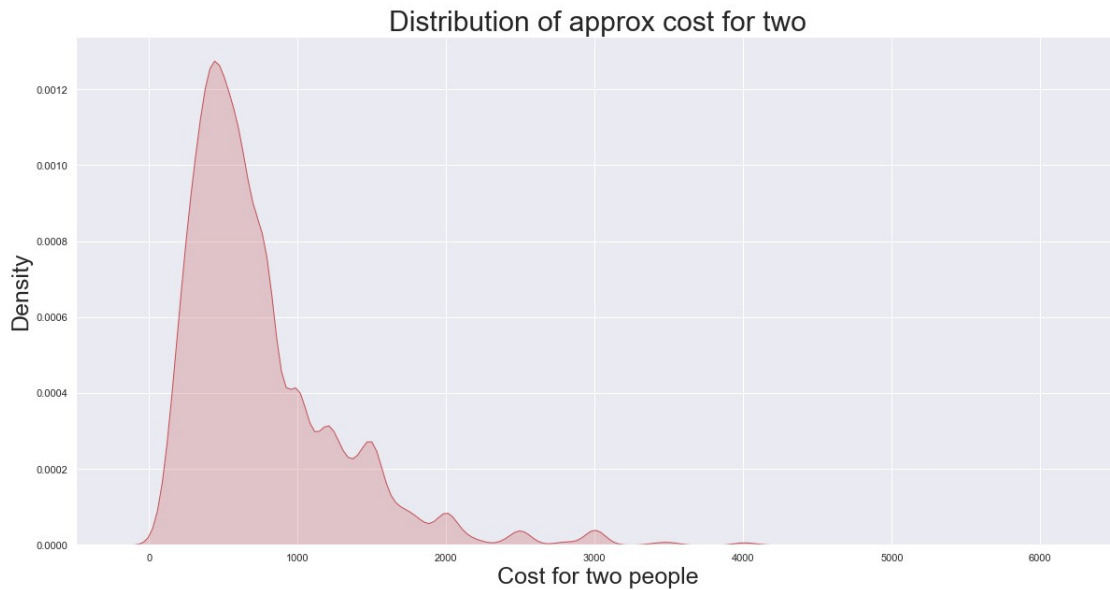

```
plt_1 = plt.figure(figsize=(20, 10))
sns.scatterplot(y='rate',
                x='approx_cost(for two people)',color='teal',
                s=200,
                data=df);
plt.xlabel("Approx cost for two",fontsize=20)
plt.ylabel("Rating",fontsize=20)
plt.title("Effect of approx cost for 2 on the rating of the
restaurant",fontsize=25)
plt.show()
```



```
#Considering cheap price is cost for 2<Rs.800
cheap_price_df=df[df['approx_cost(for two people)']<800]
```

```python
#Assuming high rating is >4.0
cheap_price_highrate_df=cheap_price_df[cheap_price_df['rate']>=4.0]

cheap_price_highrate_df
```

```
                                                      url  \
7      https://www.zomato.com/bangalore/onesta-banash...
8      https://www.zomato.com/bangalore/penthouse-caf...
9      https://www.zomato.com/bangalore/smacznego-ban...
10     https://www.zomato.com/bangalore/caf%C3%A9-dow...
11     https://www.zomato.com/bangalore/cafe-shuffle-...
...                                                  ...
51315  https://www.zomato.com/bangalore/smoor-1-white...
51317  https://www.zomato.com/bangalore/burger-king-w...
51334  https://www.zomato.com/bangalore/faasos-3-whit...
51345  https://www.zomato.com/bangalore/the-wok-shop-...
51376  https://www.zomato.com/bangalore/nu-tree-1-whi...

                                                  address  \
7      2469, 3rd Floor, 24th Cross, Opposite BDA Comp...
8      1, 30th Main Road, 3rd Stage, Banashankari, Ba...
9      2470, 21 Main Road, 25th Cross, Banashankari, ...
10     12,29 Near PES University Back Gate, D'Souza N...
11     941, 3rd FLOOR, 21st Main, 22nd Cross, Banasha...
...                                                  ...
51315  Second Floor, Phoenix Market City, Whitefield,...
51317  Level 2, Phoenix Market City Mall, Whitefield,...
51334  First Floor, Apple City, Kadugodi Hoskote, Whi...
51345  S 26, 2nd Floor, Phoenix Market City, Whitefie...
51376  12th Floor, Gamma Building, Sigma Soft Tech Pa...

                                      name online_order  \
7                                   Onesta          Yes

8                           Penthouse Cafe          Yes

9                                Smacznego          Yes

10     CafÃ)Â)Ã(Â)Ã)Â(Ã(Â)Ã)Â)Ã(Â(Ã)Â(Ã(Â© Down The A...          Yes
11                            Cafe Shuffle          Yes

...                                    ...          ...

51315                                Smoor          Yes

51317                           Burger King          Yes

51334                               Faasos          Yes
```

```
51345                                            The Wok Shop          Yes

51376                                                  nu.tree          Yes


       book_table  rate  votes                              phone
location  \
7             Yes  4.6   2556       080 48653961\r\n080 48655715
Banashankari
8              No  4.0    324  +91 8884135549\r\n+91 9449449316
Banashankari
9              No  4.2    504  +91 9945230807\r\n+91 9743804471
Banashankari
10             No  4.1    402   080 26724489\r\n+91 7406048982
Banashankari
11            Yes  4.2    150                   +91 9742166777
Banashankari
...           ...  ...    ...                              ...
...
51315          No  4.3    390       080 67266138\n080 49626138
Whitefield
51317          No  4.0   1972                   +91 7977043789
Whitefield
51334          No  4.0    184                   +91 7700020020
Whitefield
51345          No  4.2    221                   +91 8067266088
Whitefield
51376          No  4.2     52                   +91 8310393035
Whitefield

                    rest_type  \
7          Casual Dining, Cafe
8                         Cafe
9                         Cafe
10                        Cafe
11                        Cafe
...                        ...
51315   Dessert Parlor, Cafe
51317            Quick Bites
51334            Quick Bites
51345            Quick Bites
51376            Quick Bites

                                          dish_liked  \
7        Farmhouse Pizza, Chocolate Banana, Virgin Moji...
8        Pizza, Mocktails, Coffee, Nachos, Salad, Pasta...
9        Waffles, Pasta, Coleslaw Sandwich, Choco Waffl...
10       Waffles, Pasta, Crispy Chicken, Honey Chilli C...
11       Mocktails, Peri Fries, Lasagne, Pizza, Chicken...
...                                              ...
```

```
51315  Cheesecake, Chocolate Sundae, Gooey Chocolate ...
51317  Burgers, Tandoor Chicken Burger, Mutton Whoppe...
51334  Rolls, Cheesy Chicken, Chocolava Cake, Paneer ...
51345  Momos, Chocolate Bar, Fish, Sweet Potato Fries...
51376  Palak Paneer, Idli, Aloo Paratha, Rajma Chawal...

                                          cuisines  \
7                              Pizza, Cafe, Italian
8                         Cafe, Italian, Continental
9              Cafe, Mexican, Italian, Momos, Beverages
10                                             Cafe
11                        Cafe, Italian, Continental
...                                             ...
51315                   Desserts, Cafe, Continental
51317                     Burger, Fast Food, Beverages
51334                  North Indian, Biryani, Fast Food
51345    Asian, Chinese, Momos, Fast Food, Indonesian, ...
51376             North Indian, Healthy Food, Beverages

       approx_cost(for two people)  \
7                            600.0
8                            700.0
9                            550.0
10                           500.0
11                           600.0
...                            ...
51315                        700.0
51317                        600.0
51334                        500.0
51345                        500.0
51376                        400.0

                                       reviews_list  \
7      [('Rated 5.0', 'RATED\n  I personally really l...
8      [('Rated 3.0', "RATED\n  I had been to this pl...
9      [('Rated 4.0', "RATED\n  Easy to locate\nVFM 3...
10     [('Rated 4.0', 'RATED\n  We ended up here on a...
11     [('Rated 1.0', "RATED\n \n\nHorrible. Not even...
...                                             ...
51315  [('Rated 3.0', "RATED\n  Smoor is an enticing ...
51317  [('Rated 4.0', "RATED\n  I mostly get burgers ...
51334  [('Rated 3.0', 'RATED\n  Ordered only cheesy m...
51345  [('Rated 3.0', 'RATED\n  We ordered a veg Bao ...
51376  [('Rated 5.0', 'RATED\n  Palak is my favourite...

                                          menu_item
listed_in(type)  \
7                                                []
Cafes
8                                                []
```

```
Cafes
9                                                    []
Cafes
10                                                   []
Cafes
11                                                   []
Cafes
...                                                 ...        .
..
51315  ['Chocolates Box', 'Belgium Chocolate Truffle ...     Dine-
out
51317  ['Veg WhopperÃ)\x83Ã(\x83Ã)\x82Ã(\x83Ã)\x83Ã(\...       Dine-out

51334  ['Chicken Biryani', 'Paneer Biryani', 'Fusion ...     Dine-
out
51345  ['Customize Your Bowl Veg', 'Customize Your Bo...      Dine-
out
51376                                                []       Dine-
out


       listed_in(city)
7           Banashankari
8           Banashankari
9           Banashankari
10          Banashankari
11          Banashankari
...              ...
51315       Whitefield
51317       Whitefield
51334       Whitefield
51345       Whitefield
51376       Whitefield

[5793 rows x 17 columns]

d=cheap_price_highrate_df.groupby(by=['location'])['name'].count()

d=dict(d)

d

{'BTM': 329,
 'Banashankari': 94,
 'Banaswadi': 8,
 'Bannerghatta Road': 83,
 'Basavanagudi': 107,
 'Basaveshwara Nagar': 19,
 'Bellandur': 80,
 'Brigade Road': 133,
 'Brookefield': 98,
 'CV Raman Nagar': 1,
```

```
'Church Street': 146,
'City Market': 8,
'Commercial Street': 32,
'Cunningham Road': 95,
'Domlur': 30,
'Ejipura': 8,
'Electronic City': 47,
'Frazer Town': 80,
'HBR Layout': 12,
'HSR': 256,
'Hennur': 21,
'Hosur Road': 16,
'ITPL Main Road, Whitefield': 8,
'Indiranagar': 356,
'Infantry Road': 5,
'JP Nagar': 245,
'Jayanagar': 346,
'Jeevan Bhima Nagar': 43,
'Kaggadasapura': 3,
'Kalyan Nagar': 113,
'Kammanahalli': 74,
'Koramangala': 5,
'Koramangala 1st Block': 168,
'Koramangala 2nd Block': 24,
'Koramangala 3rd Block': 21,
'Koramangala 4th Block': 188,
'Koramangala 5th Block': 630,
'Koramangala 6th Block': 303,
'Koramangala 7th Block': 216,
'Koramangala 8th Block': 69,
'Kumaraswamy Layout': 7,
'Lavelle Road': 59,
'MG Road': 53,
'Majestic': 8,
'Malleshwaram': 121,
'Marathahalli': 110,
'Nagawara': 11,
'New BEL Road': 89,
'Old Airport Road': 22,
'RT Nagar': 3,
'Race Course Road': 17,
'Rajajinagar': 38,
'Rajarajeshwari Nagar': 1,
'Residency Road': 116,
'Richmond Road': 95,
'Sadashiv Nagar': 4,
'Sahakara Nagar': 5,
'Sanjay Nagar': 5,
'Sankey Road': 2,
'Sarjapur Road': 81,
```

```
 'Seshadripuram': 30,
 'Shanti Nagar': 1,
 'Shivajinagar': 18,
 'St. Marks Road': 68,
 'Thippasandra': 10,
 'Ulsoor': 125,
 'Varthur Main Road, Whitefield': 6,
 'Vasanth Nagar': 35,
 'Vijay Nagar': 3,
 'Whitefield': 122,
 'Yeshwantpur': 8}

import operator
sorted_d = dict( sorted(d.items(),
key=operator.itemgetter(1),reverse=True))
print(sorted_d)

{'Koramangala 5th Block': 630, 'Indiranagar': 356, 'Jayanagar': 346,
'BTM': 329, 'Koramangala 6th Block': 303, 'HSR': 256, 'JP Nagar': 245,
'Koramangala 7th Block': 216, 'Koramangala 4th Block': 188,
'Koramangala 1st Block': 168, 'Church Street': 146, 'Brigade Road':
133, 'Ulsoor': 125, 'Whitefield': 122, 'Malleshwaram': 121, 'Residency
Road': 116, 'Kalyan Nagar': 113, 'Marathahalli': 110, 'Basavanagudi':
107, 'Brookefield': 98, 'Cunningham Road': 95, 'Richmond Road': 95,
'Banashankari': 94, 'New BEL Road': 89, 'Bannerghatta Road': 83,
'Sarjapur Road': 81, 'Bellandur': 80, 'Frazer Town': 80,
'Kammanahalli': 74, 'Koramangala 8th Block': 69, 'St. Marks Road': 68,
'Lavelle Road': 59, 'MG Road': 53, 'Electronic City': 47, 'Jeevan
Bhima Nagar': 43, 'Rajajinagar': 38, 'Vasanth Nagar': 35, 'Commercial
Street': 32, 'Domlur': 30, 'Seshadripuram': 30, 'Koramangala 2nd
Block': 24, 'Old Airport Road': 22, 'Hennur': 21, 'Koramangala 3rd
Block': 21, 'Basaveshwara Nagar': 19, 'Shivajinagar': 18, 'Race Course
Road': 17, 'Hosur Road': 16, 'HBR Layout': 12, 'Nagawara': 11,
'Thippasandra': 10, 'Banaswadi': 8, 'City Market': 8, 'Ejipura': 8,
'ITPL Main Road, Whitefield': 8, 'Majestic': 8, 'Yeshwantpur': 8,
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Road': 5, 'Koramangala': 5, 'Sahakara Nagar': 5, 'Sanjay Nagar': 5,
'Sadashiv Nagar': 4, 'Kaggadasapura': 3, 'RT Nagar': 3, 'Vijay Nagar':
3, 'Sankey Road': 2, 'CV Raman Nagar': 1, 'Rajarajeshwari Nagar': 1,
'Shanti Nagar': 1}

lsloaction=list(sorted_d.keys())
lsnoofshops=list(sorted_d.values())

import plotly.express as px
fig = px.funnel_area(names=lsloaction[:10], #to extract the first 10
values from both the list as it is already sorted
                     values=lsnoofshops[:10],
                     title='<span style="font-size: 14px;">Top 10
locations in Bangalore to have food based on the number of high rated
and cheap restaurants present in that location</span>')
```

```
fig.show()
```

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```python
restros_online_order=df[df['online_order']=='Yes'] #filtering out the
restros providing online service

best_location=restros_online_order.groupby(by=['location'])
['name'].count()

best_location
```

```
location
BTM                 1189
Banashankari         285
```

```
Banaswadi              156
Bannerghatta Road      384
Basavanagudi           202
                       ...
West Bangalore           2
Whitefield             557
Wilson Garden           33
Yelahanka                2
Yeshwantpur             23
Name: name, Length: 86, dtype: int64

best_location_dict=dict(best_location)

best_location_dict

{'BTM': 1189,
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 'Banaswadi': 156,
 'Bannerghatta Road': 384,
 'Basavanagudi': 202,
 'Basaveshwara Nagar': 50,
 'Bellandur': 349,
 'Bommanahalli': 21,
 'Brigade Road': 345,
 'Brookefield': 246,
 'CV Raman Nagar': 12,
 'Central Bangalore': 3,
 'Church Street': 317,
 'City Market': 2,
 'Commercial Street': 76,
 'Cunningham Road': 271,
 'Domlur': 114,
 'East Bangalore': 8,
 'Ejipura': 59,
 'Electronic City': 227,
 'Frazer Town': 211,
 'HBR Layout': 32,
 'HSR': 1010,
 'Hennur': 32,
 'Hosur Road': 24,
 'ITPL Main Road, Whitefield': 35,
 'Indiranagar': 945,
 'Infantry Road': 52,
 'JP Nagar': 697,
 'Jalahalli': 1,
 'Jayanagar': 830,
 'Jeevan Bhima Nagar': 145,
 'KR Puram': 1,
 'Kaggadasapura': 45,
 'Kalyan Nagar': 339,
 'Kammanahalli': 205,
```

```
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'Koramangala 8th Block': 98,
'Kumaraswamy Layout': 53,
'Lavelle Road': 191,
'MG Road': 269,
'Magadi Road': 2,
'Majestic': 9,
'Malleshwaram': 240,
'Marathahalli': 520,
'Mysore Road': 4,
'Nagawara': 59,
'New BEL Road': 239,
'North Bangalore': 3,
'Old Airport Road': 126,
'Old Madras Road': 16,
'RT Nagar': 22,
'Race Course Road': 31,
'Rajajinagar': 111,
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'Rammurthy Nagar': 6,
'Residency Road': 175,
'Richmond Road': 149,
'Sadashiv Nagar': 17,
'Sahakara Nagar': 19,
'Sanjay Nagar': 13,
'Sarjapur Road': 343,
'Seshadripuram': 45,
'Shanti Nagar': 122,
'Shivajinagar': 44,
'South Bangalore': 13,
'St. Marks Road': 167,
'Thippasandra': 31,
'Ulsoor': 303,
'Uttarahalli': 4,
'Varthur Main Road, Whitefield': 23,
'Vasanth Nagar': 71,
'Vijay Nagar': 12,
'West Bangalore': 2,
'Whitefield': 557,
'Wilson Garden': 33,
'Yelahanka': 2,
'Yeshwantpur': 23}
```

```
sorted_d1 = dict( sorted(best_location_dict.items(),
key=operator.itemgetter(1)))
print(sorted_d1)
```

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Nagar': 13, 'South Bangalore': 13, 'Old Madras Road': 16,
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'Banaswadi': 156, 'St. Marks Road': 167, 'Residency Road': 175,
'Lavelle Road': 191, 'Basavanagudi': 202, 'Kammanahalli': 205, 'Frazer
Town': 211, 'Electronic City': 227, 'New BEL Road': 239,
'Malleshwaram': 240, 'Brookefield': 246, 'MG Road': 269, 'Cunningham
Road': 271, 'Banashankari': 285, 'Ulsoor': 303, 'Church Street': 317,
'Kalyan Nagar': 339, 'Sarjapur Road': 343, 'Brigade Road': 345,
'Bellandur': 349, 'Bannerghatta Road': 384, 'Koramangala 4th Block':
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'Marathahalli': 520, 'Koramangala 7th Block': 527, 'Whitefield': 557,
'JP Nagar': 697, 'Jayanagar': 830, 'Indiranagar': 945, 'HSR': 1010,
'BTM': 1189, 'Koramangala 5th Block': 1224}

```
x=list(sorted_d1.keys())

y=list(sorted_d1.values())

data_restro={'Location':x,'No of hotels':y}

best_restro_loaction=pd.DataFrame(data_restro)

best_restro_loaction
```

```
             Location  No of hotels
0            Jalahalli             1
1             KR Puram             1
2          City Market             2
3      Kanakapura Road             2
4          Magadi Road             2
..                 ...           ...
81           Jayanagar           830
82          Indiranagar           945
```

```
83                      HSR         1010
84                      BTM         1189
85  Koramangala 5th Block           1224

[86 rows x 2 columns]

fig = px.bar(best_restro_loaction, x='Location', y='No of hotels',
color='No of hotels',title='No of hotels in all locations providing
online services')
fig.update_layout(
    yaxis = dict(
        tickmode = 'linear',
        tick0 = 0.0,
        dtick = 20.0
    )
)
fig.show()
```

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Nagar","East Bangalore","Majestic","CV Raman Nagar","Vijay
Nagar","Sanjay Nagar","South Bangalore","Old Madras
Road","Koramangala","Sadashiv Nagar","Sahakara
Nagar","Bommanahalli","RT Nagar","Varthur Main Road,
Whitefield","Yeshwantpur","Hosur Road","Race Course
Road","Thippasandra","HBR Layout","Hennur","Wilson Garden","ITPL Main
Road, Whitefield","Koramangala 2nd
Block","Shivajinagar","Kaggadasapura","Seshadripuram","Basaveshwara
Nagar","Infantry Road","Kumaraswamy
Layout","Ejipura","Nagawara","Vasanth Nagar","Commercial
Street","Koramangala 8th Block","Rajajinagar","Domlur","Koramangala
3rd Block","Shanti Nagar","Old Airport Road","Jeevan Bhima
Nagar","Richmond Road","Banaswadi","St. Marks Road","Residency
Road","Lavelle Road","Basavanagudi","Kammanahalli","Frazer
Town","Electronic City","New BEL
Road","Malleshwaram","Brookefield","MG Road","Cunningham
Road","Banashankari","Ulsoor","Church Street","Kalyan Nagar","Sarjapur
Road","Brigade Road","Bellandur","Bannerghatta Road","Koramangala 4th
Block","Koramangala 1st Block","Koramangala 6th
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```python
#plot the count of rating.
plt.rcParams['figure.figsize'] = 14,7
sns.countplot(df["rate"], palette="Set1")
plt.title("Count plot of rate variable")
plt.show()
```
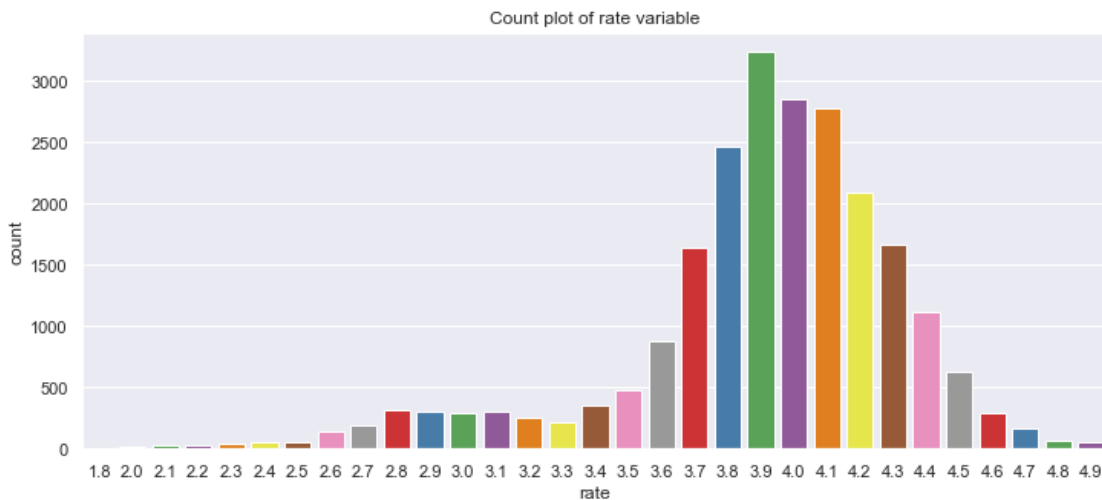
```
C:\Users\Nishita\anaconda3\lib\site-packages\seaborn\
_decorators.py:36: FutureWarning:

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.
```


Count plot of rate variable

```
#joint plot for 'rate' and 'votes'
sns.jointplot(x = "rate", y = "votes", data = df, height=8, ratio=4,
color="g")
plt.show()
```
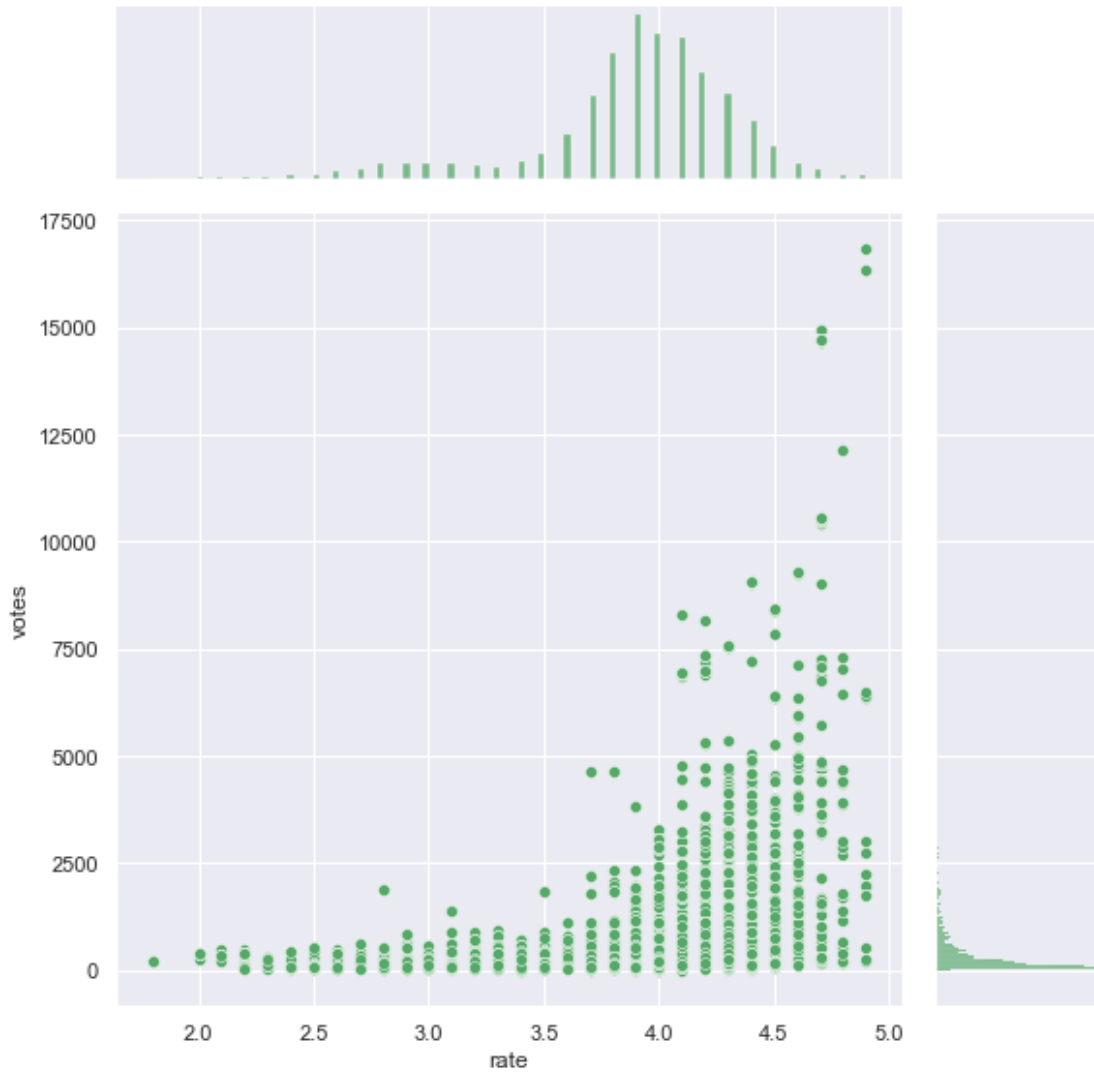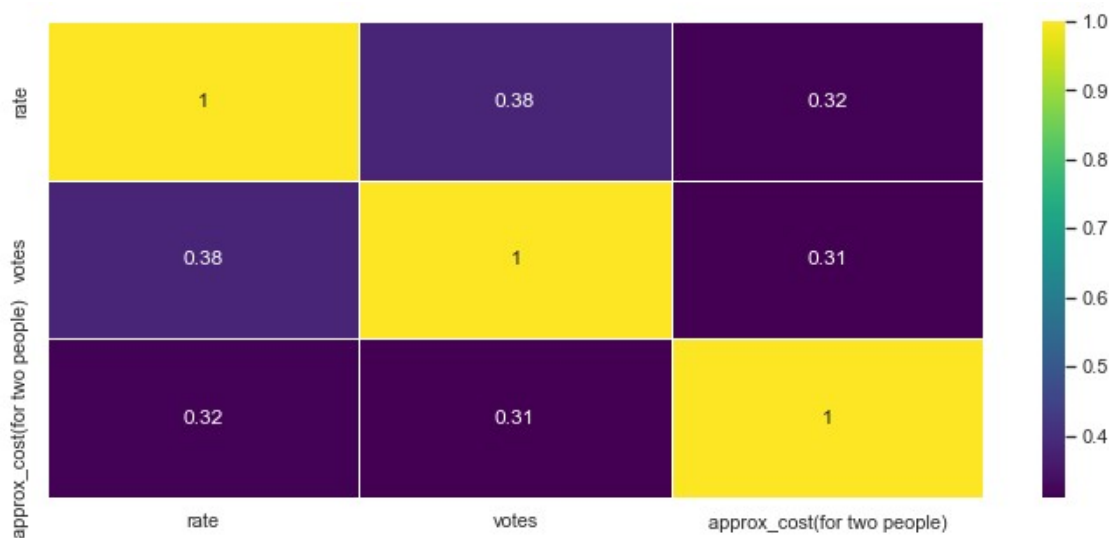
```
#analyze the number of restaurants in a location
df.location.value_counts().nlargest(10).plot(kind = "barh")
plt.title("Number of restaurants by location")
plt.xlabel("Count")
plt.show()
```

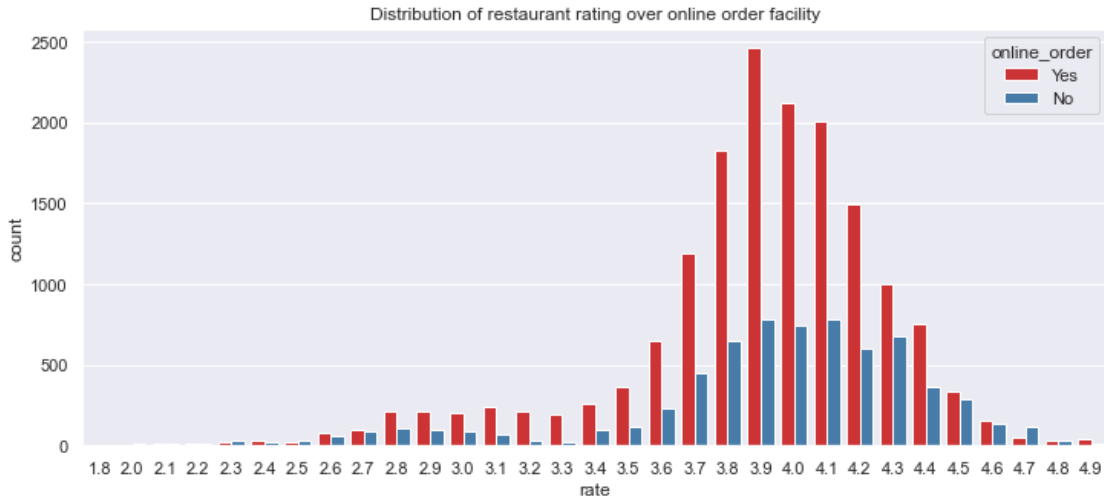Number of restaurants by location

```
#seaborn heatmap function to plot the correlation grid
sns.heatmap(df.corr(), annot = True, cmap =
"viridis",linecolor='white',linewidths=1)
plt.show()
```



```
sns.countplot(hue = df["online_order"], palette = "Set1", x =
df["rate"])
plt.title("Distribution of restaurant rating over online order
facility")
plt.show()
```

Distribution of restaurant rating over online order facility

```
plt.rcParams['figure.figsize'] = 14,7
plt.subplot(1,2,1)
df.name.value_counts().head().plot(kind = "barh", color =
sns.color_palette("hls", 5))
plt.xlabel("Number of restaurants")
plt.title("Biggest Restaurant Chain (Top 5)")

plt.subplot(1,2,2)
df[df['rate']>=4.5]['name'].value_counts().nlargest(5).plot(kind =
"barh", color = sns.color_palette("Paired"))
plt.xlabel("Number of restaurants")
plt.title("Best Restaurant Chain (Top 5) - Rating More than 4.5")
plt.tight_layout()
```