zomatosales

August 10, 2024

1 ZOMATO SALES ANAYLSIS

[1]:
```
import pandas as pd
import numpy as np
import matplotlib.pyplot as plt
import seaborn as sns
plt.style.use('dark_background')
```

2 Reading CSV

[2]:
```
df=pd.read_csv(r'C:\Users\Windows\Desktop\projects\zomato.csv')
df.head()
```

[2]:

	url	address	name	online_order	book_table	rate	votes	phone	location	rest_type
0	https://www.zomato.com/bangalore/jalsa-banasha…	942, 21st Main Road, 2nd Stage, Banashankari, …	Jalsa	Yes	Yes	4.1/5	775	080 42297555\r\n+91 9743772233	Banashankari	Casual Dining
1	https://www.zomato.com/bangalore/spice-elephan…	2nd Floor, 80 Feet Road, Near Big Bazaar, 6th …	Spice Elephant	Yes	No	4.1/5	787	080 41714161		
2	https://www.zomato.com/SanchurroBangalore?cont…	1112, Next to KIMS Medical College, 17th Cross…	San Churro Cafe	Yes	No	3.8/5	918	+91 9663487993		
3	https://www.zomato.com/bangalore/addhuri-udupi…	1st Floor, Annakuteera, 3rd Stage, Banashankar…	Addhuri Udupi Bhojana	No	No	3.7/5	88	+91 9620009302		
4	https://www.zomato.com/bangalore/grand-village…	10, 3rd Floor, Lakshmi Associates, Gandhi Baza…	Grand Village	No	No	3.8/5	166	+91 8026612447\r\n+91 9901210005		

```
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
```

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

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

[4]:
```
df.columns
```

[4]:
```
Index(['url', 'address', 'name', 'online_order', 'book_table', 'rate', 'votes',
       'phone', 'location', 'rest_type', 'dish_liked', 'cuisines',
       'approx_cost(for two people)', 'reviews_list', 'menu_item',
       'listed_in(type)', 'listed_in(city)'],
      dtype='object')
```

[5]:
```
df=df.
  ↪drop(['url','address','phone','menu_item','dish_liked','reviews_list'],axis=1)
```

```
df.head()
```

[5]:

	name	online_order	book_table	rate	votes	location	rest_type	cuisines	approx_cost(for two people)	listed_in(type)	listed_in(city)
0	Jalsa	Yes	Yes	4.1/5	775	Banashankari	Casual Dining	North Indian, Mughlai, Chinese	800	Buffet	Banashankari
1	Spice Elephant	Yes	No	4.1/5	787	Banashankari	Casual Dining	Chinese, North Indian, Thai	800	Buffet	Banashankari
2	San Churro Cafe	Yes	No	3.8/5	918	Banashankari	Cafe, Casual Dining	Cafe, Mexican, Italian	800	Buffet	Banashankari
3	Addhuri Udupi Bhojana	No	No	3.7/5	88	Banashankari	Quick Bites	South Indian, North Indian	300	Buffet	Banashankari
4	Grand Village	No	No	3.8/5	166	Basavanagudi	Casual Dining	North Indian, Rajasthani	600	Buffet	Banashankari

[6]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 51717 entries, 0 to 51716
Data columns (total 11 columns):
 #   Column                       Non-Null Count  Dtype
---  ------                       --------------  -----
 0   name                         51717 non-null  object
 1   online_order                 51717 non-null  object
 2   book_table                   51717 non-null  object
 3   rate                         43942 non-null  object
 4   votes                        51717 non-null  int64
 5   location                     51696 non-null  object
 6   rest_type                    51490 non-null  object
 7   cuisines                     51672 non-null  object
 8   approx_cost(for two people)  51371 non-null  object
 9   listed_in(type)              51717 non-null  object
 10  listed_in(city)              51717 non-null  object
dtypes: int64(1), object(10)
memory usage: 4.3+ MB
```

3 Dropping Duplicates

[7]:
```
df.drop_duplicates(inplace=True)
df.shape
```

[7]:
```
(51609, 11)
```

4 Cleaning Rate column

[8]:
```
df['rate'].unique()
```

[8]:
```
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)
```

5 Removing “NEW” , “-” and “/5” from Rate Column

[9]:
```
def handlerate(value):
    if(value=='NEW' or value=='-'):
        return np.nan
    else:
        value=str(value).split('/')
        value=value[0]
        return float(value)
df['rate']=df['rate'].apply(handlerate)
df['rate'].head()
```

[9]:
```
0    4.1
1    4.1
2    3.8
3    3.7
4    3.8
Name: rate, dtype: float64
```

6 Filling Null Values in Rate Column with Mean

[10]:
```
df['rate']= df['rate'].fillna(df['rate'].mean())
df['rate'].isnull().sum()
```

[10]:
```
np.int64(0)
```

[11]:
```
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
Index: 51609 entries, 0 to 51716
Data columns (total 11 columns):
 #   Column                       Non-Null Count  Dtype
---  ------                       --------------  -----
 0   name                         51609 non-null  object
 1   online_order                 51609 non-null  object
 2   book_table                   51609 non-null  object
 3   rate                         51609 non-null  float64
 4   votes                        51609 non-null  int64
 5   location                     51588 non-null  object
 6   rest_type                    51382 non-null  object
 7   cuisines                     51564 non-null  object
 8   approx_cost(for two people)  51265 non-null  object
 9   listed_in(type)              51609 non-null  object
 10  listed_in(city)              51609 non-null  object
dtypes: float64(1), int64(1), object(9)
memory usage: 4.7+ MB
```

7 Dropping Null Values

[12]:
```
df.dropna(inplace =True)
df.head()
```

[12]:

	name	online_order	book_table	rate	votes	location	rest_type	cuisines
0	Jalsa	Yes	Yes	4.1	775	Banashankari	Casual Dining	North Indian, Mughlai, Chinese
1	Spice Elephant	Yes	No	4.1	787	Banashankari	Casual Dining	Chinese, North Indian, Thai
2	San Churro Cafe	Yes	No	3.8	918	Banashankari	Cafe, Casual Dining	Cafe, Mexican, Italian
3	Addhuri Udupi Bhojana	No	No	3.7	88	Banashankari	Quick Bites	South Indian, North Indian
4	Grand Village	No	No	3.8	166	Basavanagudi	Casual Dining	North Indian, Rajasthani

```
  approx_cost(for two people) 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
```

[13]:
```
df.rename(columns = {'approx_cost(for two people)':'Cost2plates',␣
 ↪'listed_in(type)':'Type'}, inplace = True)
df.head()
```

[13]:
```
                    name online_order book_table  rate  votes      location  \
0                  Jalsa          Yes        Yes   4.1    775  Banashankari
1         Spice Elephant          Yes         No   4.1    787  Banashankari
2        San Churro Cafe          Yes         No   3.8    918  Banashankari
3  Addhuri Udupi Bhojana           No         No   3.7     88  Banashankari
4          Grand Village           No         No   3.8    166  Basavanagudi

              rest_type                        cuisines Cost2plates    Type  \
0        Casual Dining  North Indian, Mughlai, Chinese         800  Buffet
1        Casual Dining     Chinese, North Indian, Thai         800  Buffet
2  Cafe, Casual Dining          Cafe, Mexican, Italian         800  Buffet
3          Quick Bites      South Indian, North Indian         300  Buffet
4        Casual Dining        North Indian, Rajasthani         600  Buffet

  listed_in(city)
0    Banashankari
1    Banashankari
2    Banashankari
3    Banashankari
4    Banashankari
```

[14]:
```
df['location'].unique()
```

[14]:
```
array(['Banashankari', 'Basavanagudi', 'Mysore Road', 'Jayanagar',
       'Kumaraswamy Layout', 'Rajarajeshwari Nagar', 'Vijay Nagar',
       'Uttarahalli', 'JP Nagar', 'South Bangalore', 'City Market',
       'Nagarbhavi', 'Bannerghatta Road', 'BTM', 'Kanakapura Road',
       'Bommanahalli', 'CV Raman Nagar', 'Electronic City', 'HSR',
       'Marathahalli', 'Wilson Garden', 'Shanti Nagar',
       'Koramangala 5th Block', 'Koramangala 8th Block', 'Richmond Road',
       'Koramangala 7th Block', 'Jalahalli', 'Koramangala 4th Block',
       'Bellandur', 'Sarjapur Road', 'Whitefield', 'East Bangalore',
       'Old Airport Road', 'Indiranagar', 'Koramangala 1st Block',
       'Frazer Town', 'RT Nagar', 'MG Road', 'Brigade Road',
       'Lavelle Road', 'Church Street', 'Ulsoor', 'Residency Road',
```

```
       'Shivajinagar', 'Infantry Road', 'St. Marks Road',
       'Cunningham Road', 'Race Course Road', 'Commercial Street',
       'Vasanth Nagar', 'HBR Layout', 'Domlur', 'Ejipura',
       'Jeevan Bhima Nagar', 'Old Madras Road', 'Malleshwaram',
       'Seshadripuram', 'Kammanahalli', 'Koramangala 6th Block',
       'Majestic', 'Langford Town', 'Central Bangalore', 'Sanjay Nagar',
       'Brookefield', 'ITPL Main Road, Whitefield',
       'Varthur Main Road, Whitefield', 'KR Puram',
       'Koramangala 2nd Block', 'Koramangala 3rd Block', 'Koramangala',
       'Hosur Road', 'Rajajinagar', 'Banaswadi', 'North Bangalore',
       'Nagawara', 'Hennur', 'Kalyan Nagar', 'New BEL Road', 'Jakkur',
       'Rammurthy Nagar', 'Thippasandra', 'Kaggadasapura', 'Hebbal',
       'Kengeri', 'Sankey Road', 'Sadashiv Nagar', 'Basaveshwara Nagar',
       'Yeshwantpur', 'West Bangalore', 'Magadi Road', 'Yelahanka',
       'Sahakara Nagar', 'Peenya'], dtype=object)
```

[15]:
```
df['listed_in(city)'].unique()
```

[15]:
```
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)
```

8 Listed in(city) and location, both are there, lets keep only one

[16]:
```
df.drop(['listed_in(city)'],axis=1,inplace=True)
```

[17]:
```
df['Cost2plates'].unique()
```

[17]:
```
array(['800', '300', '600', '700', '550', '500', '450', '650', '400',
       '900', '200', '750', '150', '850', '100', '1,200', '350', '250',
       '950', '1,000', '1,500', '1,300', '199', '80', '1,100', '160',
       '1,600', '230', '130', '50', '190', '1,700', '1,400', '180',
       '1,350', '2,200', '2,000', '1,800', '1,900', '330', '2,500',
       '2,100', '3,000', '2,800', '3,400', '40', '1,250', '3,500',
       '4,000', '2,400', '2,600', '120', '1,450', '469', '70', '3,200',
       '60', '560', '240', '360', '6,000', '1,050', '2,300', '4,100',
       '5,000', '3,700', '1,650', '2,700', '4,500', '140'], dtype=object)
```

[18]:
```
def handlecost(value):
    value=str(value)
```

```
    if',' in value:
        value=value.replace(',','')
        return float(value)
    else:
        return float(value)
df['Cost2plates']=df['Cost2plates'].apply(handlecost)
df['Cost2plates'].unique()
```

[18]:
```
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.])
```

[19]:
```
df['Cost2plates'].dtype
```

[19]:
```
dtype('float64')
```

9 Cleaning Rest Type Column

[20]:
```
rest_types = df['rest_type'].value_counts(ascending =False)
rest_types
```

[20]:
```
rest_type
Quick Bites                   19010
Casual Dining                 10253
Cafe                           3682
Delivery                       2574
Dessert Parlor                 2242
                              ...
Dessert Parlor, Kiosk             2
Dessert Parlor, Food Court        2
Food Court, Beverage Shop         2
Sweet Shop, Dessert Parlor        1
Quick Bites, Kiosk                1
Name: count, Length: 93, dtype: int64
```

[21]:
```
rest_typelessthan1000=rest_types[rest_types<1000]
rest_typelessthan1000
```

[21]:
```
rest_type
Beverage Shop                 863
Bar                           686
```

```
Food Court                     616
Sweet Shop                     468
Bar, Casual Dining             411
                               …
Dessert Parlor, Kiosk            2
Dessert Parlor, Food Court       2
Food Court, Beverage Shop        2
Sweet Shop, Dessert Parlor       1
Quick Bites, Kiosk               1
Name: count, Length: 85, dtype: int64
```

10 Making Rest Types less than 1000 in frequency as others

[22]:
```
def handleresttype(value):
    if(value in rest_typelessthan1000):
        return 'others'
    else:
        return value
df['rest_type'] = df['rest_type'].apply(handleresttype)
df['rest_type'].value_counts()
```

[22]:
```
rest_type
Quick Bites           19010
Casual Dining         10253
others                 9003
Cafe                   3682
Delivery               2574
Dessert Parlor         2242
Takeaway, Delivery     2008
Bakery                 1140
Casual Dining, Bar     1130
Name: count, dtype: int64
```

11 Cleaning Location Column

[23]:
```
location= df['location'].value_counts(ascending=False)
locationlessthan300=location[location<300]

def handle_location(value):
    if(value in locationlessthan300):
        return "others"
    else:
        return value
df['location']=df['location'].apply(handle_location)
df['location'].value_counts()
```

[23]:
```
location
BTM                     5056
others                  4954
HSR                     2494
Koramangala 5th Block   2479
JP Nagar                2218
Whitefield              2105
Indiranagar             2026
Jayanagar               1916
Marathahalli            1805
Bannerghatta Road       1609
Bellandur               1268
Electronic City         1246
Koramangala 1st Block   1236
Brigade Road            1210
Koramangala 7th Block   1174
Koramangala 6th Block   1127
Sarjapur Road           1047
Koramangala 4th Block   1017
Ulsoor                  1011
Banashankari             902
MG Road                  893
Kalyan Nagar             841
Richmond Road            803
Malleshwaram             721
Frazer Town              714
Basavanagudi             684
Residency Road           671
Brookefield              656
New BEL Road             644
Banaswadi                640
Kammanahalli             639
Rajajinagar              591
Church Street            566
Lavelle Road             518
Shanti Nagar             508
Shivajinagar             498
Cunningham Road          490
Domlur                   482
Old Airport Road         437
Ejipura                  433
Commercial Street        370
St. Marks Road           343
Name: count, dtype: int64
```

12 Cleaning Cuisines Column

[24]:
```
cuisines=df['cuisines'].value_counts(ascending =False)
cuisineslessthan100=cuisines[cuisines<100]

def handle_cuisines(value):
    if(value in cuisineslessthan100):
        return 'others'
    else:
        return value
df['cuisines']=df['cuisines'].apply(handle_cuisines)
df['cuisines'].value_counts( ascending=False)
```

[24]:
```
cuisines
others                                  26159
North Indian                             2852
North Indian, Chinese                    2351
South Indian                             1820
Biryani                                   903
                                        ...
South Indian, Chinese, North Indian       105
North Indian, Mughlai, Chinese            104
South Indian, Fast Food                   104
Italian, Pizza                            102
North Indian, Chinese, Seafood            102
Name: count, Length: 70, dtype: int64
```

[25]:
```
df.head()
```

[25]:

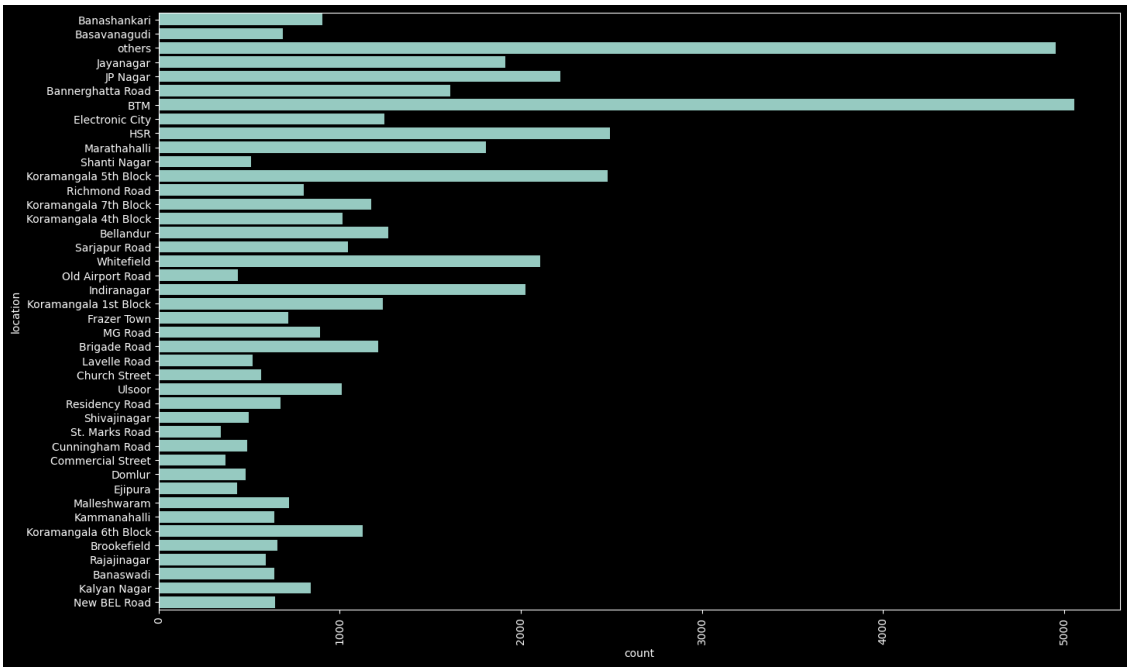
	name	online_order	book_table	rate	votes	location	rest_type	cuisines	Cost2plates	Type
0	Jalsa	Yes	Yes	4.1	775	Banashankari	Casual Dining	North Indian, Mughlai, Chinese	800.0	Buffet
1	Spice Elephant	Yes	No	4.1	787	Banashankari	Casual Dining	others	800.0	Buffet
2	San Churro Cafe	Yes	No	3.8	918	Banashankari	others	others	800.0	Buffet
3	Addhuri Udupi Bhojana	No	No	3.7	88	Banashankari	Quick Bites	South Indian, North Indian	300.0	Buffet
4	Grand Village	No	No	3.8	166	Basavanagudi	Casual Dining	others	600.0	Buffet

13 Data is Clean, Lets jump to Visualization

14 Count Plot of Various Locations

[26]:
```
plt.figure(figsize = (16,10))
ax = sns.countplot(df['location'])
plt.xticks(rotation=90)
```

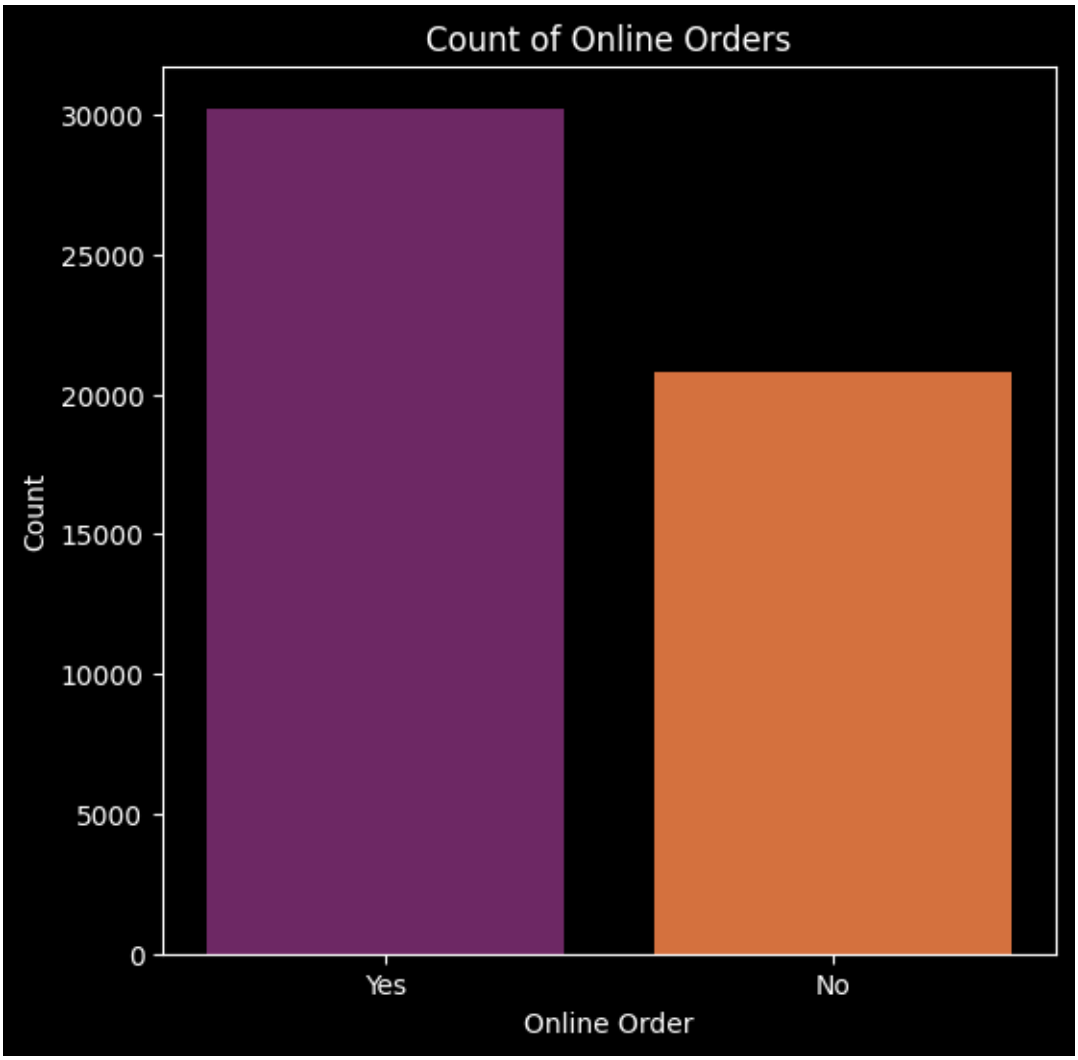
[26]:
```
(array([   0., 1000., 2000., 3000., 4000., 5000., 6000.]),
 [Text(0.0, 0, '0'),
  Text(1000.0, 0, '1000'),
  Text(2000.0, 0, '2000'),
  Text(3000.0, 0, '3000'),
  Text(4000.0, 0, '4000'),
  Text(5000.0, 0, '5000'),
  Text(6000.0, 0, '6000')])
```



15 Visualizing Online Order

[27]:
```
plt.figure(figsize=(6,6))
sns.countplot(x=df['online_order'], palette='inferno')
plt.xlabel('Online Order')
plt.ylabel('Count')
plt.title('Count of Online Orders')
plt.show()
```

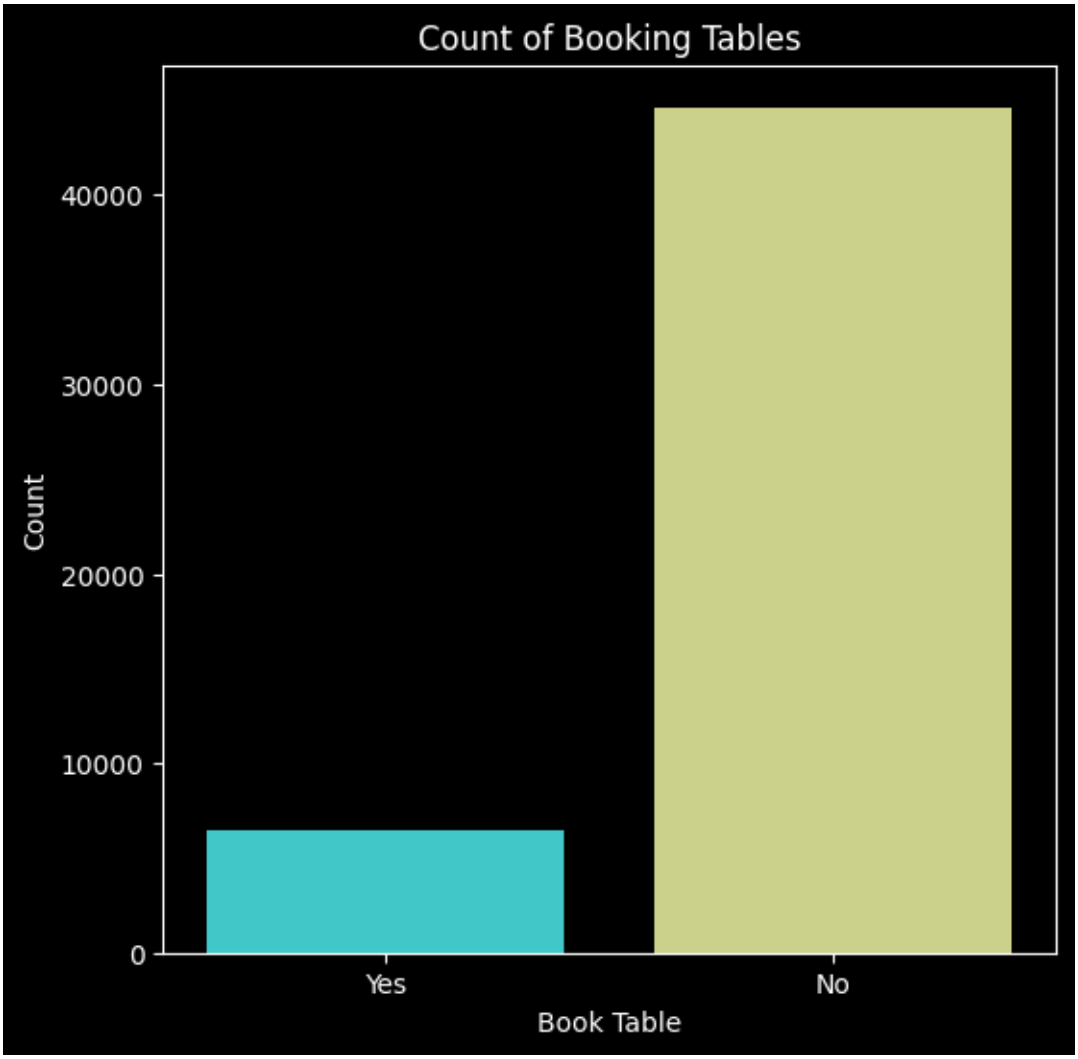
```
C:\Users\Windows\AppData\Local\Temp\ipykernel_10424\1264392201.py:2:
FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in
v0.14.0. Assign the `x` variable to `hue` and set `legend=False` for the same
effect.

  sns.countplot(x=df['online_order'], palette='inferno')
```



16 Visualizing Book Table

[28]:
```
plt.figure(figsize = (6,6))
sns.countplot(x=df['book_table'], palette = 'rainbow')
plt.xlabel('Book Table')
plt.ylabel('Count')
plt.title('Count of Booking Tables')
plt.show()
```

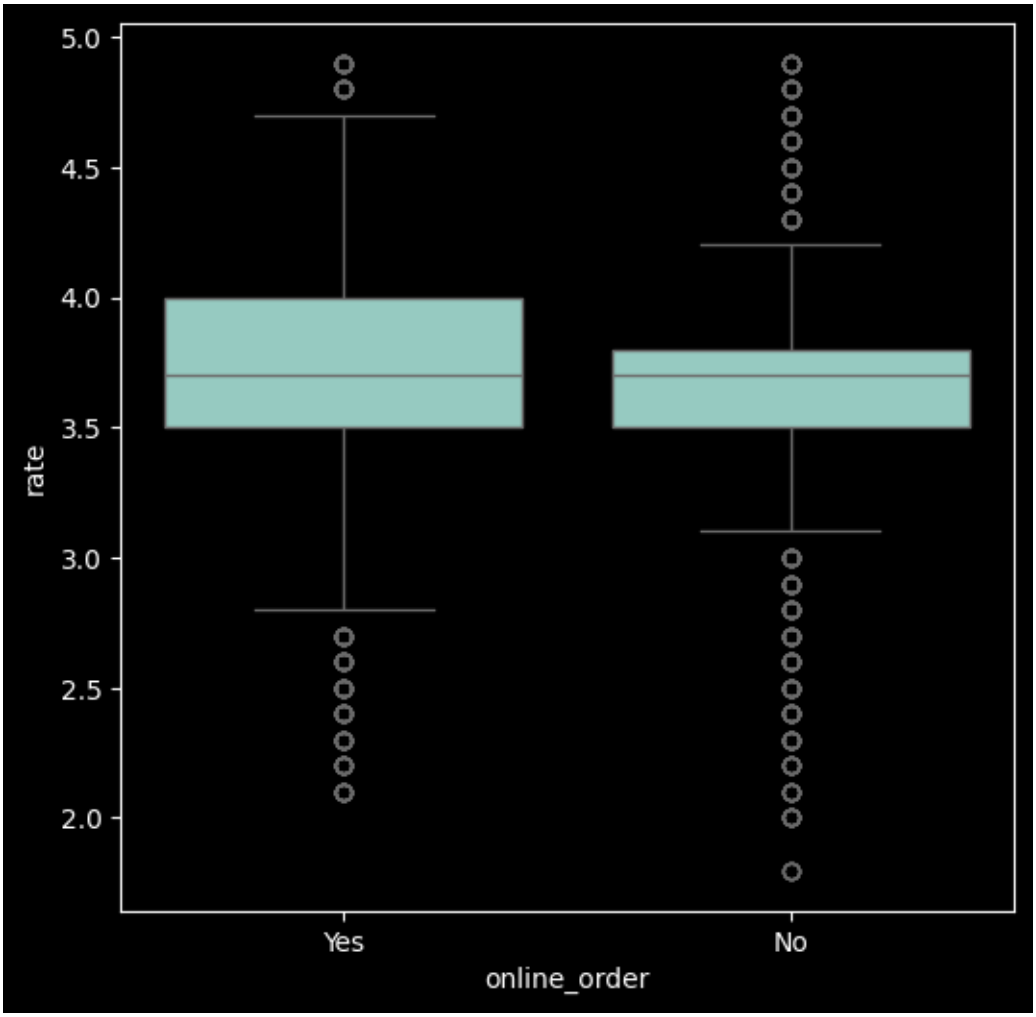
```
C:\Users\Windows\AppData\Local\Temp\ipykernel_10424\2907597021.py:2:
FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in
v0.14.0. Assign the `x` variable to `hue` and set `legend=False` for the same
effect.

  sns.countplot(x=df['book_table'], palette = 'rainbow')
```



17 Visualizing Online Order vs Rate

[29]:
```
plt.figure(figsize = (6,6))
sns.boxplot(x = 'online_order', y = 'rate', data = df)
```

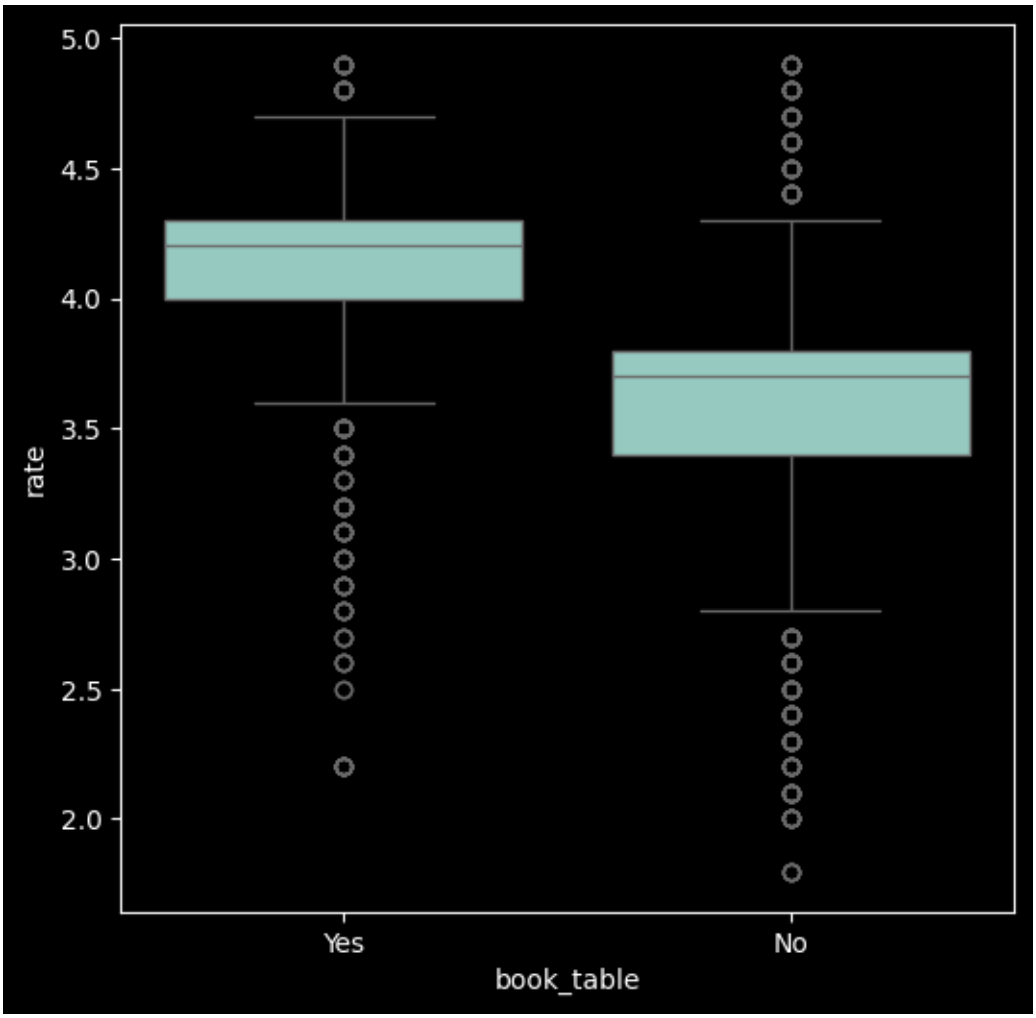
[29]:
```
<Axes: xlabel='online_order', ylabel='rate'>
```



18 Visualizing Book Table vs Rate

[30]:
```
plt.figure(figsize=(6,6))
sns.boxplot(x='book_table',y='rate',data =df)
```

[30]:
```
<Axes: xlabel='book_table', ylabel='rate'>
```



19 Visualizing Online Order Facility, Location Wise

[31]:
```
df1 = df.groupby(['location','online_order'])['name'].count()
df1.to_csv('location_online.csv')
df1 = pd.read_csv('location_online.csv')
df1 = pd.pivot_table(df1, values=None, index=['location'],␣
 ↪columns=['online_order'], fill_value=0, aggfunc=np.sum)
df1
```

```
C:\Users\Windows\AppData\Local\Temp\ipykernel_10424\2546502282.py:4:
FutureWarning: The provided callable <function sum at 0x0000023DC1C60EA0> is
currently using DataFrameGroupBy.sum. In a future version of pandas, the
provided callable will be used directly. To keep current behavior pass the
string "sum" instead.
  df1 = pd.pivot_table(df1, values=None, index=['location'],
columns=['online_order'], fill_value=0, aggfunc=np.sum)
```

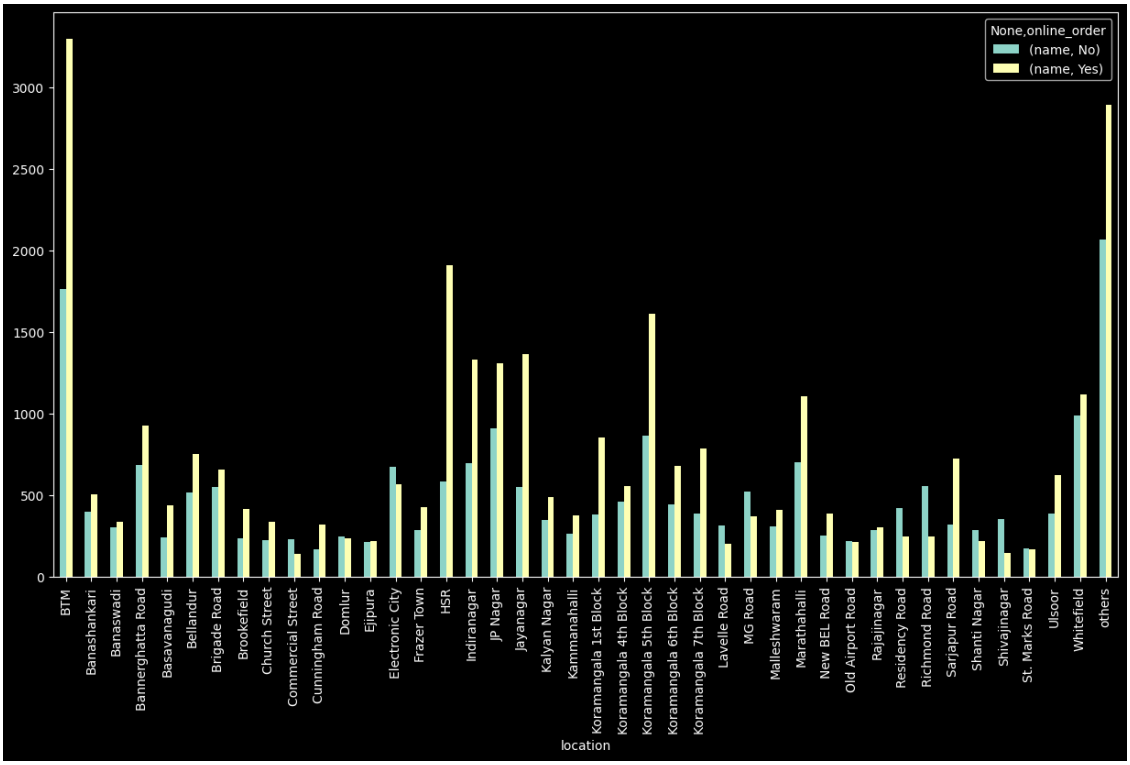
[31]:

	name	
online_order	No	Yes
location		
BTM	1763	3293
Banashankari	397	505
Banaswadi	302	338
Bannerghatta Road	685	924
Basavanagudi	243	441
Bellandur	517	751
Brigade Road	552	658
Brookefield	239	417
Church Street	226	340
Commercial Street	228	142
Cunningham Road	168	322
Domlur	247	235
Ejipura	214	219
Electronic City	676	570
Frazer Town	287	427
HSR	584	1910
Indiranagar	697	1329
JP Nagar	911	1307
Jayanagar	552	1364
Kalyan Nagar	350	491
Kammanahalli	264	375
Koramangala 1st Block	384	852
Koramangala 4th Block	459	558
Koramangala 5th Block	866	1613
Koramangala 6th Block	445	682
Koramangala 7th Block	389	785
Lavelle Road	315	203
MG Road	520	373
Malleshwaram	309	412
Marathahalli	701	1104
New BEL Road	255	389
Old Airport Road	221	216
Rajajinagar	286	305
Residency Road	424	247
Richmond Road	557	246
Sarjapur Road	323	724

```
Shanti Nagar            289   219
Shivajinagar            354   144
St. Marks Road          176   167
Ulsoor                  389   622
Whitefield              986  1119
others                 2064  2890
```

[32]:
```
df1.plot(kind = 'bar', figsize = (15,8))
```

[32]: <Axes: xlabel='location'>



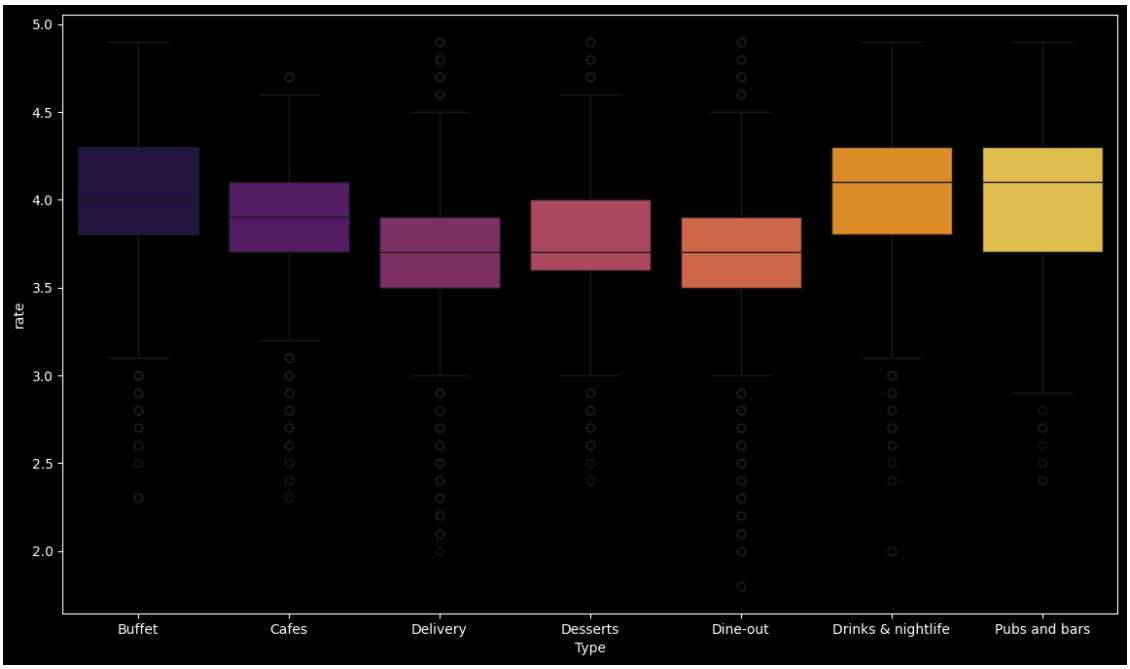
20 Visualizing Types of Restaurents vs Rate

[33]:
```
plt.figure(figsize = (14, 8))
sns.boxplot(x = 'Type', y = 'rate', data = df, palette = 'inferno')
```

```
C:\Users\Windows\AppData\Local\Temp\ipykernel_10424\2234948669.py:2:
FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in
v0.14.0. Assign the `x` variable to `hue` and set `legend=False` for the same
effect.
```

```
sns.boxplot(x = 'Type', y = 'rate', data = df, palette = 'inferno')
```

[33]: <Axes: xlabel='Type', ylabel='rate'>



21 Grouping Types of Restaurents, location wise

[34]:
```
df3 = df.groupby(['location','Type'])['name'].count()
df3.to_csv('location_Type.csv')
df3 = pd.read_csv('location_Type.csv')
df3 = pd.pivot_table(df3, values=None, index=['location'], columns=['Type'],␣
↪fill_value=0, aggfunc=np.sum)
df3
```

```
C:\Users\Windows\AppData\Local\Temp\ipykernel_10424\1140243432.py:4:
FutureWarning: The provided callable <function sum at 0x0000023DC1C60EA0> is
currently using DataFrameGroupBy.sum. In a future version of pandas, the
provided callable will be used directly. To keep current behavior pass the
string "sum" instead.
  df3 = pd.pivot_table(df3, values=None, index=['location'], columns=['Type'],
fill_value=0, aggfunc=np.sum)
```

[34]:

	name					
Type	Buffet	Cafes	Delivery	Desserts	Dine-out	
location						

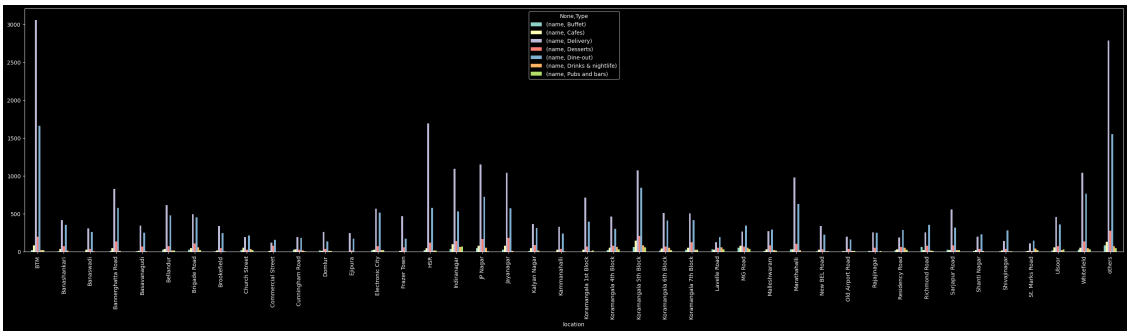
BTM	21	83	3053	198	1660
Banashankari	7	36	418	71	356
Banaswadi	0	24	310	37	262
Bannerghatta Road	9	46	828	137	578
Basavanagudi	7	11	344	66	251
Bellandur	28	36	617	75	479
Brigade Road	25	46	497	108	455
Brookefield	6	17	339	45	245
Church Street	19	51	193	29	215
Commercial Street	0	13	121	77	159
Cunningham Road	29	34	194	26	184
Domlur	15	13	261	35	135
Ejipura	0	0	245	16	172
Electronic City	23	24	570	71	516
Frazer Town	1	11	470	56	172
HSR	19	49	1694	120	580
Indiranagar	38	97	1091	140	529
JP Nagar	45	76	1151	166	722
Jayanagar	27	77	1043	182	575
Kalyan Nagar	9	45	366	88	315
Kammanahalli	2	27	329	35	240
Koramangala 1st Block	3	26	716	70	398
Koramangala 4th Block	21	53	464	81	302
Koramangala 5th Block	65	146	1075	209	842
Koramangala 6th Block	18	43	511	70	411
Koramangala 7th Block	25	52	503	127	417
Lavelle Road	30	27	127	50	191
MG Road	51	76	266	68	343
Malleshwaram	11	31	269	85	291
Marathahalli	34	32	980	105	630
New BEL Road	4	29	338	33	224
Old Airport Road	12	5	200	35	164
Rajajinagar	10	4	258	55	251
Residency Road	20	31	187	63	289
Richmond Road	63	21	257	78	356
Sarjapur Road	25	22	558	82	319
Shanti Nagar	9	22	198	39	229
Shivajinagar	6	17	143	37	280
St. Marks Road	5	10	111	10	145
Ulsoor	16	56	456	71	359
Whitefield	28	51	1041	137	768
others	83	133	2787	276	1553

Type	Drinks & nightlife	Pubs and bars
location		
BTM	22	19

Banashankari	14	0
Banaswadi	6	1
Bannerghatta Road	9	2
Basavanagudi	5	0
Bellandur	17	16
Brigade Road	57	22
Brookefield	4	0
Church Street	36	23
Commercial Street	0	0
Cunningham Road	16	7
Domlur	12	11
Ejipura	0	0
Electronic City	21	21
Frazer Town	2	2
HSR	14	18
Indiranagar	65	66
JP Nagar	51	7
Jayanagar	12	0
Kalyan Nagar	18	0
Kammanahalli	6	0
Koramangala 1st Block	7	16
Koramangala 4th Block	62	34
Koramangala 5th Block	84	58
Koramangala 6th Block	51	23
Koramangala 7th Block	25	25
Lavelle Road	59	34
MG Road	53	36
Malleshwaram	20	14
Marathahalli	22	2
New BEL Road	8	8
Old Airport Road	12	9
Rajajinagar	3	10
Residency Road	55	26
Richmond Road	16	12
Sarjapur Road	19	22
Shanti Nagar	9	2
Shivajinagar	7	8
St. Marks Road	40	22
Ulsoor	23	30
Whitefield	47	33
others	75	47

[35]:
```
df3.plot(kind = 'bar', figsize = (36,8))
```

[35]:
```
<Axes: xlabel='location'>
```



22 No. of Votes, Location Wise

[36]:
```
df4 = df[['location', 'votes']]
df4.drop_duplicates()
df5 = df4.groupby(['location'])['votes'].sum()
df5 = df5.to_frame()
df5 = df5.sort_values('votes', ascending=False)
df5.head()
```

[36]:
```
                          votes
location
Koramangala 5th Block   2214083
Indiranagar             1165909
Koramangala 4th Block    685156
Church Street            590306
JP Nagar                 586522
```

23 Visualizing Top Cuisines

[37]:
```
df6 = df[['cuisines', 'votes']]
df6.drop_duplicates()
df7 = df6.groupby(['cuisines'])['votes'].sum()
df7 = df7.to_frame()
df7 = df7.sort_values('votes', ascending=False)
df7.head()
```

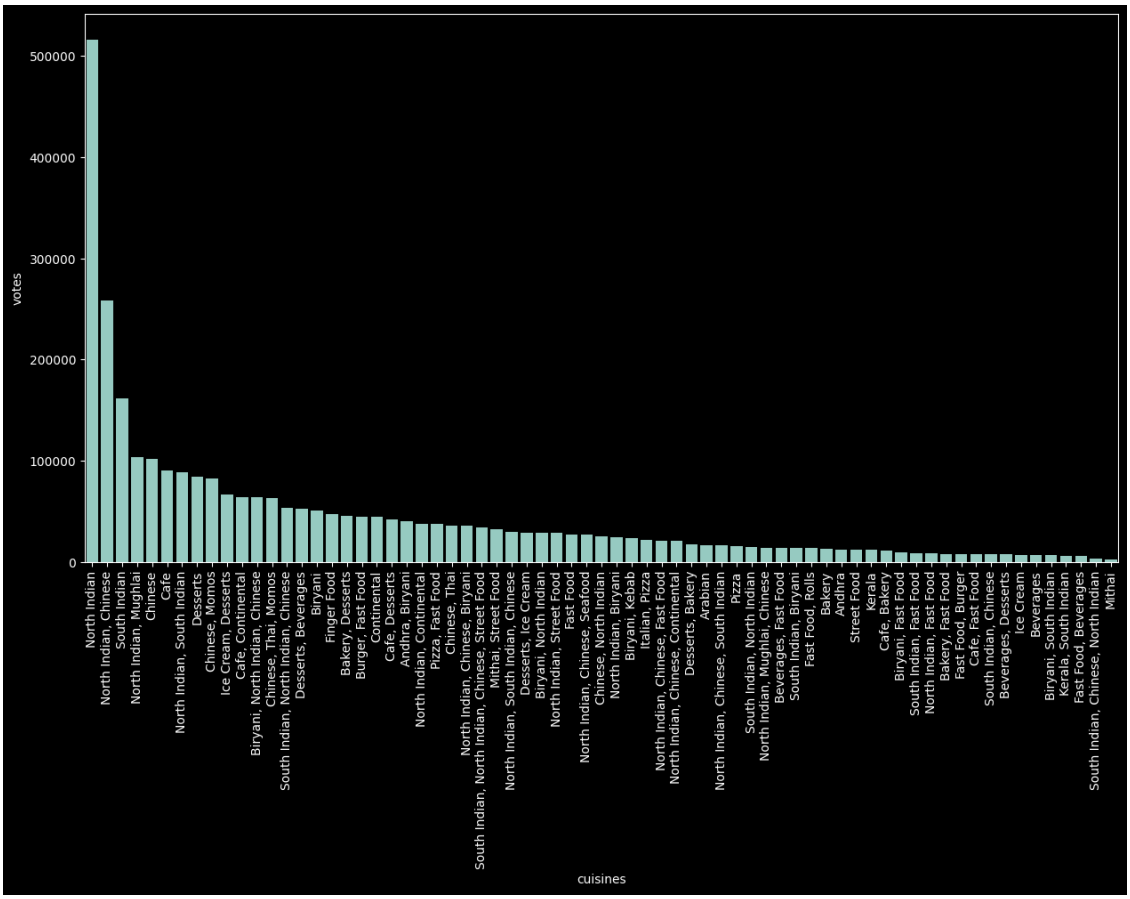
[37]:
```
                           votes
cuisines
others                  11542182
North Indian              516310
North Indian, Chinese     258225
South Indian              161975
North Indian, Mughlai     103706
```

[38]:
```
df7 = df7.iloc[1:, :]
df7.head()
```

[38]:

cuisines	votes
North Indian	516310
North Indian, Chinese	258225
South Indian	161975
North Indian, Mughlai	103706
Chinese	101728

[39]:
```
plt.figure(figsize=(15, 8))
sns.barplot(x=df7.index, y=df7['votes'])
plt.xticks(rotation=90)
plt.show()
```



24 THANK YOU !!!!

[ ]: