Out[2]:

	Zomato URL	Name of Restaurant	Address	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating
0	https://www.zomato.com/chennai/yaa- mohaideen-b	Yaa Mohaideen Briyani	336 & 338, Main Road, Pallavaram, Chennai	Pallavaram	['Biryani']	['Bread Halwa', ' Chicken 65', ' Mutton Biryan	500.0	4.3	1500	4.3
1	https://www.zomato.com/chennai/sukkubhai-biriy	Sukkubhai Biriyani	New 14, Old 11/3Q, Railway Station Road, MKN	Alandur	['Biryani', ' North Indian', ' Mughlai', ' Des	['Beef Biryani', ' Beef Fry', ' Paratha', ' Pa	1000.0	4.4	3059	4.1
2	https://www.zomato.com/chennai/ss- hyderabad-bi	SS Hyderabad Biryani	98/339, Arcot Road, Opposite Gokulam Chit Fun	Kodambakkam	['Biryani', ' North Indian', ' Chinese', ' Ara	['Brinjal Curry', ' Tandoori Chicken', ' Chick	500.0	4.3	1361	4.4
3	https://www.zomato.com/chennai/kfc- perambur	KFC	10, Periyar Nagar, 70 Feet Road, Near Sheeba	Perambur	['Burger', ' Fast Food', ' Finger Food', ' Bev	['Zinger Burger']	500.0	4.0	1101	4.0
4	https://www.zomato.com/chennai/tasty-kitchen-p	Tasty Kitchen	135B, SRP Colony, Peravallur, Near Perambur, 	Perambur	['Chinese', ' Biryani', ' North Indian', ' Che	['Mutton Biryani', ' Chicken Rice', ' Tomato R	450.0	4.2	617	4.1
						•••				
12027	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Porur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN
12028	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Kolathur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN
12029	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Anna Nagar East	['Sandwich']	Invalid	350.0	NaN	NaN	NaN
12030	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Ramapuram	['Sandwich']	Invalid	350.0	NaN	NaN	NaN
12031	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Sholinganallur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN

12032 rows × 12 columns

# **Getting Basic Information about the Dataset**

In [3]: 1 dataset.shape

Out[3]: (12032, 12)

In [4]: dataset.info() <class 'pandas.core.frame.DataFrame'> RangeIndex: 12032 entries, 0 to 12031 Data columns (total 12 columns): Column Non-Null Count Dtype # 0 Zomato URL 12032 non-null object Name of Restaurant 1 12032 non-null object 2 Address 12032 non-null object 3 Location 12032 non-null object 4 Cuisine 12032 non-null object 5 Top Dishes 12032 non-null object 12032 non-null float64 Price for 2 7 float64 Dining Rating 6681 non-null 11812 non-null object Dining Rating Count 9 6181 non-null Delivery Rating float64 10 Delivery Rating Count 11812 non-null object 12032 non-null object 11 Features dtypes: float64(3), object(9) memory usage: 1.1+ MB In [5]: dataset.describe()

#### Out [5]:

#### Price for 2 Dining Rating Delivery Rating count 12032.000000 6681.000000 6181.000000 mean 397.611370 3.387756 3.805290 332.045938 0.558181 0.374213 std min 40.000000 0.300000 0.300000 200.000000 25% 3.100000 3.600000 300.000000 3.900000 50% 3.500000 4.000000 **75%** 450.000000 3.800000 max 5000.000000 4.900000 4.700000

### **Dataset Cleaning**

- 1. Removing the redundunt rows of data
- 2. Removing the Null Records
- 3. Converting the DataTypes of numerical columns to numeric dataype
- 4. Removing the restaurant records whose Dining Rating 0
- 5. Working on 'LOCATION' Column
- 6. Removing Duplicate records

```
In [6]:
              # 1. Removing the redundunt rows of data
              # Checking redundunt rows of data
              wrong_data= dataset['Cuisine']=='Cuisine'
              dataset[wrong_data]
Out [6]:
                                                                                         Dining Rating
                                                                                                                 Delivery Rating
              Zomato
                            Name of
                                                                 Top
                                                                       Price
                                                                                Dining
                                                                                                        Delivery
                                    Address Location Cuisine
                                                                                                                               Features
                                                              Dishes
                 URL
                          Restaurant
                                                                        for 2
                                                                                Rating
                                                                                               Count
                                                                                                         Rating
                                                                                                                         Count
```

In [7]:

# Performing Negation of the wrong dataset and then storing the correct data back in the dataset DataFr # This permamnently remove the wrong data from the original dataframe

dataset= dataset[~wrong\_data]
dataset

Out[7]:

	Zomato URL	Zomato URL Name of Address Location Cuis		Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	
0	https://www.zomato.com/chennai/yaa- mohaideen-b	Yaa Mohaideen Briyani	336 & 338, Main Road, Pallavaram, Chennai	Pallavaram	['Biryani']	['Bread Halwa', ' Chicken 65', ' Mutton Biryan	500.0	4.3	1500	4.3
1	https://www.zomato.com/chennai/sukkubhai- biriy	Sukkubhai Biriyani	New 14, Old 11/3Q, Railway Station Road, MKN	Alandur	['Biryani', ' North Indian', ' Mughlai', ' Des	['Beef Biryani', ' Beef Fry', ' Paratha', ' Pa	1000.0	4.4	3059	4.1
2	https://www.zomato.com/chennai/ss- hyderabad-bi	SS Hyderabad Biryani	98/339, Arcot Road, Opposite Gokulam Chit Fun	Kodambakkam	['Biryani', ' North Indian', ' Chinese', ' Ara	['Brinjal Curry', ' Tandoori Chicken', ' Chick	500.0	4.3	1361	4.4
3	https://www.zomato.com/chennai/kfc- perambur	KFC	10, Periyar Nagar, 70 Feet Road, Near Sheeba	Perambur	['Burger', 'Fast Food', 'Finger Food', 'Bev	['Zinger Burger']	500.0	4.0	1101	4.0
4	https://www.zomato.com/chennai/tasty- kitchen-p	Tasty Kitchen	135B, SRP Colony, Peravallur, Near Perambur, 	Perambur	['Chinese', ' Biryani', ' North Indian', ' Che	['Mutton Biryani', ' Chicken Rice', ' Tomato R	450.0	4.2	617	4.1
12027	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Porur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN
12028	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Kolathur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN
12029	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Anna Nagar East	['Sandwich']	Invalid	350.0	NaN	NaN	NaN
12030	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Ramapuram	['Sandwich']	Invalid	350.0	NaN	NaN	NaN
12031	https://www.zomato.com/chennai/cks-sandwiches	CK's Sandwiches	Delivery Only	Sholinganallur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN

12032 rows × 12 columns

In [8]:

# Dropping columns which are not required for further analysis

dataset.drop(['Zomato URL', 'Address'], axis =1, inplace =True)
dataset

Out[8]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
0	Yaa Mohaideen Briyani	Pallavaram	['Biryani']	['Bread Halwa', ' Chicken 65', ' Mutton Biryan	500.0	4.3	1500	4.3	9306	['Home Delivery', 'Indoor Seating']
1	Sukkubhai Biriyani	Alandur	['Biryani', ' North Indian', ' Mughlai', ' Des	['Beef Biryani', ' Beef Fry', ' Paratha', ' Pa	1000.0	4.4	3059	4.1	39200	['Home Delivery', 'Free Parking', 'Table booki
2	SS Hyderabad Biryani	Kodambakkam	['Biryani', ' North Indian', ' Chinese', ' Ara	['Brinjal Curry', ' Tandoori Chicken', ' Chick	500.0	4.3	1361	4.4	10500	['Home Delivery', 'Indoor Seating']
3	KFC	Perambur	['Burger', ' Fast Food', ' Finger Food', ' Bev	['Zinger Burger']	500.0	4.0	1101	4.0	11200	['Home Delivery', 'Free Parking', 'Card Upon D
4	Tasty Kitchen	Perambur	['Chinese', ' Biryani', ' North Indian', ' Che	['Mutton Biryani', ' Chicken Rice', ' Tomato R	450.0	4.2	617	4.1	22400	['Home Delivery', 'Indoor Seating']
		•••	•••							•••
12027	CK's Sandwiches	Porur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12028	CK's Sandwiches	Kolathur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12029	CK's Sandwiches	Anna Nagar East	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12030	CK's Sandwiches	Ramapuram	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12031	CK's Sandwiches	Sholinganallur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']

12032 rows × 10 columns

In [9]:

# 2. Removing the Null Records

#Checking for Null records

4

5 dataset.isnull().sum()

Out[9]: Name of Restaurant 0 Location 0 Cuisine 0 Top Dishes 0 Price for 2 0 Dining Rating 5351 Dining Rating Count 220 Delivery Rating 5851 Delivery Rating Count 220 Features

dtype: int64

In [10]:

# Checking for a null row

dataset[dataset['Dining Rating'].isnull()]

#### Out[10]:

	Name of Restaurant	Location	Cuisine	Top Dishes		Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
6	Bai Veetu Kalyanam	Navallur	['Biryani']	['Bread Halwa', ' Mutton Biryani', ' Brinjal G	350.0	NaN	Does not offer Dining	4.3	1061	['Home Delivery']
77	Al Dhareeq Beef Biriyani	Kodambakkam	[ˈBiryaniˈ]	['Beef Biryani']	300.0	NaN	Does not offer Dining	3.9	19600	['Home Delivery']
106	Twilight Take Out	Nungambakkam	['North Indian', ' Chinese', ' Rolls', ' Conti	['Club Sandwich', ' Chicken Tikka Roll', ' Chi	350.0	NaN	Does not offer Dining	4.0	11200	['Home Delivery', 'Free Parking']
107	The Red Box	Anna Nagar West	['Chinese']	['Noodle', ' Chilli Chicken Gravy', ' Dragon C	200.0	NaN	Does not offer Dining	4.2	11500	['Home Delivery']
114	Charminar Biriyani Centre	Royapettah	['Biryani', ' North Indian']	['Chicken Biryani', ' Bread Halwa', ' Brinjal 	300.0	NaN	Does not offer Dining	3.9	652	['Home Delivery', 'Standing Tables']
12027	CK's Sandwiches	Porur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12028	CK's Sandwiches	Kolathur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12029	CK's Sandwiches	Anna Nagar East	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12030	CK's Sandwiches	Ramapuram	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12031	CK's Sandwiches	Sholinganallur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']

5351 rows × 10 columns

In [11]:

# 3. Converting the DataTypes of numerical columns to numeric dataype

4 5

# Checking for text values in the numerical column before converting it to numeric datatype

dataset[('Dining Rating Count')].value\_counts()

Out[11]: Dining Rating Count

Does not offer Dining 2603 Not enough Dining Reviews 2528 4 339 5 271 6 248 877 1 897 1 1 872 1197 1 224

Name: count, Length: 793, dtype: int64

In [12]:

# Replacing the text values with '0'

dataset['Dining Rating Count'].replace(to\_replace=['Does not offer Dining','Not enough Dining Reviews']
dataset

Out[12]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
0	Yaa Mohaideen Briyani	Pallavaram	[ˈBiryaniˈ]	['Bread Halwa', ' Chicken 65', ' Mutton Biryan	500.0	4.3	1500	4.3	9306	['Home Delivery', 'Indoor Seating']
1	Sukkubhai Biriyani	Alandur	['Biryani', ' North Indian', ' Mughlai', ' Des	['Beef Biryani', ' Beef Fry', ' Paratha', ' Pa	1000.0	4.4	3059	4.1	39200	['Home Delivery', 'Free Parking', 'Table booki
2	SS Hyderabad Biryani	Kodambakkam	['Biryani', ' North Indian', ' Chinese', ' Ara	['Brinjal Curry', ' Tandoori Chicken', ' Chick	500.0	4.3	1361	4.4	10500	['Home Delivery', 'Indoor Seating']
3	KFC	Perambur	['Burger', ' Fast Food', ' Finger Food', ' Bev	['Zinger Burger']	500.0	4.0	1101	4.0	11200	['Home Delivery', 'Free Parking', 'Card Upon D
4	Tasty Kitchen	Perambur	['Chinese', ' Biryani', ' North Indian', ' Che	['Mutton Biryani', ' Chicken Rice', ' Tomato R	450.0	4.2	617	4.1	22400	['Home Delivery', 'Indoor Seating']
***										
12027	CK's Sandwiches	Porur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12028	CK's Sandwiches	Kolathur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12029	CK's Sandwiches	Anna Nagar East	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12030	CK's Sandwiches	Ramapuram	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12031	CK's Sandwiches	Sholinganallur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']

12032 rows × 10 columns

In [13]:

1 # 3. Checking for text values in the numerical column before converting it to numeric datatype

dataset['Delivery Rating Count'].value\_counts()

Out[13]: Delivery Rating Count

Not enough Delivery Reviews 3379 Does not offer Delivery 2252 27 34 32 30 22 30 7705 1 6374 1 1773 1 3677 1 1617

Name: count, Length: 2281, dtype: int64

In [14]:

# Replacing the text values with '0'

dataset['Delivery Rating Count'].replace(to\_replace=['Not enough Delivery Reviews','Does not offer Deli
dataset

#### Out[14]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
0	Yaa Mohaideen Briyani	Pallavaram	[ˈBiryaniˈ]	['Bread Halwa', ' Chicken 65', ' Mutton Biryan	500.0	4.3	1500	4.3	9306	['Home Delivery', 'Indoor Seating']
1	Sukkubhai Biriyani	Alandur	['Biryani', ' North Indian', ' Mughlai', ' Des	['Beef Biryani', ' Beef Fry', ' Paratha', ' Pa	1000.0	4.4	3059	4.1	39200	['Home Delivery', 'Free Parking', 'Table booki
2	SS Hyderabad Biryani	Kodambakkam	['Biryani', ' North Indian', ' Chinese', ' Ara	['Brinjal Curry', ' Tandoori Chicken', ' Chick	500.0	4.3	1361	4.4	10500	['Home Delivery', 'Indoor Seating']
3	KFC	Perambur	['Burger', ' Fast Food', ' Finger Food', ' Bev	['Zinger Burger']	500.0	4.0	1101	4.0	11200	['Home Delivery', 'Free Parking', 'Card Upon D
4	Tasty Kitchen	Perambur	['Chinese', ' Biryani', ' North Indian', ' Che	['Mutton Biryani', ' Chicken Rice', ' Tomato R	450.0	4.2	617	4.1	22400	['Home Delivery', 'Indoor Seating']
			•••							
12027	CK's Sandwiches	Porur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12028	CK's Sandwiches	Kolathur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12029	CK's Sandwiches	Anna Nagar East	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12030	CK's Sandwiches	Ramapuram	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']
12031	CK's Sandwiches	Sholinganallur	['Sandwich']	Invalid	350.0	NaN	NaN	NaN	NaN	['Breakfast', 'Delivery Only']

12032 rows × 10 columns

In [15]:

dataset.fillna(0, inplace=True)
dataset

### Out[15]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
0	Yaa Mohaideen Briyani	Pallavaram	['Biryani']	['Bread Halwa', ' Chicken 65', ' Mutton Biryan	500.0	4.3	1500	4.3	9306	['Home Delivery', 'Indoor Seating']
1	Sukkubhai Biriyani	Alandur	['Biryani', ' North Indian', ' Mughlai', ' Des	['Beef Biryani', ' Beef Fry', ' Paratha', ' Pa	1000.0	4.4	3059	4.1	39200	['Home Delivery', 'Free Parking', 'Table booki
2	SS Hyderabad Biryani	Kodambakkam	['Biryani', ' North Indian', ' Chinese', ' Ara	['Brinjal Curry', ' Tandoori Chicken', ' Chick	500.0	4.3	1361	4.4	10500	['Home Delivery', 'Indoor Seating']
3	KFC	Perambur	['Burger', ' Fast Food', ' Finger Food', ' Bev	['Zinger Burger']	500.0	4.0	1101	4.0	11200	['Home Delivery', 'Free Parking', 'Card Upon D
4	Tasty Kitchen	Perambur	['Chinese', ' Biryani', ' North Indian', ' Che	['Mutton Biryani', ' Chicken Rice', ' Tomato R	450.0	4.2	617	4.1	22400	['Home Delivery', 'Indoor Seating']
12027	CK's Sandwiches	Porur	['Sandwich']	Invalid	350.0	0.0	0	0.0	0	['Breakfast', 'Delivery Only']
12028	CK's Sandwiches	Kolathur	['Sandwich']	Invalid	350.0	0.0	0	0.0	0	['Breakfast', 'Delivery Only']
12029	CK's Sandwiches	Anna Nagar East	['Sandwich']	Invalid	350.0	0.0	0	0.0	0	['Breakfast', 'Delivery Only']
12030	CK's Sandwiches	Ramapuram	['Sandwich']	Invalid	350.0	0.0	0	0.0	0	['Breakfast', 'Delivery Only']
12031	CK's Sandwiches	Sholinganallur	['Sandwich']	Invalid	350.0	0.0	0	0.0	0	['Breakfast', 'Delivery Only']

12032 rows × 10 columns

In [16]:

# Changing Data Type of the numerical columns

dataset['Dining Rating Count'] = dataset['Dining Rating Count'].astype('int64')
dataset['Delivery Rating Count'] = dataset['Delivery Rating Count'].astype('int64')

#### In [17]: dataset.info()

<class 'pandas.core.frame.DataFrame'> RangeIndex: 12032 entries, 0 to 12031 Data columns (total 10 columns):

Column Non-Null Count Dtype # Name of Restaurant 0 12032 non-null object 1 Location 12032 non-null object 2 12032 non-null object Cuisine 3 Top Dishes 12032 non-null object 4 Price for 2 12032 non-null float64 5 Dining Rating 12032 non-null float64 Dining Rating Count 12032 non-null int64 Delivery Rating 12032 non-null float64 7 Delivery Rating Count 12032 non-null int64 9 Features 12032 non-null object

dtypes: float64(3), int64(2), object(5)

memory usage: 940.1+ KB

```
In [18]:
             columns_to_clean = ['Cuisine', 'Top Dishes', 'Features']
             for column in columns_to_clean:
                 dataset[column] = dataset[column].str.replace(r"[\[\]']", '', regex=True)
             dataset.head()
```

#### Out[18]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
0	Yaa Mohaideen Briyani	Pallavaram	Biryani	Bread Halwa, Chicken 65, Mutton Biryani, Ch	500.0	4.3	1500	4.3	9306	Home Delivery, Indoor Seating
1	Sukkubhai Biriyani	Alandur	Biryani, North Indian, Mughlai, Desserts,	Beef Biryani, Beef Fry, Paratha, Paya, Bri	1000.0	4.4	3059	4.1	39200	Home Delivery, Free Parking, Table booking rec
2	SS Hyderabad Biryani	Kodambakkam	Biryani, North Indian, Chinese, Arabian	Brinjal Curry, Tandoori Chicken, Chicken Gri	500.0	4.3	1361	4.4	10500	Home Delivery, Indoor Seating
3	KFC	Perambur	Burger, Fast Food, Finger Food, Beverages	Zinger Burger	500.0	4.0	1101	4.0	11200	Home Delivery, Free Parking, Card Upon Deliver
4	Tasty Kitchen	Perambur	Chinese, Biryani, North Indian, Chettinad,	Mutton Biryani, Chicken Rice, Tomato Rice,	450.0	4.2	617	4.1	22400	Home Delivery, Indoor Seating

#### In [19]:

# Checking for Null records

dataset.isnull().sum()

#### Out[19]: Name of Restaurant

0 Location 0 Cuisine 0 Top Dishes 0 Price for 2 0 Dining Rating Dining Rating Count 0 Delivery Rating 0 Delivery Rating Count 0 Features dtype: int64

<class 'pandas.core.frame.DataFrame'>
RangeIndex: 12032 entries, 0 to 12031
Data columns (total 10 columns):

Ducu	cotamins (total 10 cotam	11113/1	
#	Column	Non-Null Count	Dtype
0	Name of Restaurant	12032 non-null	object
1	Location	12032 non-null	object
2	Cuisine	12032 non-null	object
3	Top Dishes	12032 non-null	object
4	Price for 2	12032 non-null	float64
5	Dining Rating	12032 non-null	float64
6	Dining Rating Count	12032 non-null	int64
7	Delivery Rating	12032 non-null	float64
8	Delivery Rating Count	12032 non-null	int64
9	Features	12032 non-null	object

dtypes: float64(3), int64(2), object(5)

memory usage: 940.1+ KB

#### In [21]:

# 4.Removing the restaurant records whose Dining Rating is 0
remove\_data= (dataset['Dining Rating']==0.0)| (dataset['Delivery Rating']==0.0)
dataset[remove\_data]

#### Out[21]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
6	Bai Veetu Kalyanam	Navallur	Biryani	Bread Halwa, Mutton Biryani, Brinjal Gravy,	350.0	0.0	0	4.3	1061	Home Delivery
15	Welcome Hotel	Purasavakkam	South Indian, Desserts, Beverages	Pongal, Podi Dosa, Idli Sambar, Vada Curry,	300.0	4.5	1094	0.0	0	Breakfast, Vegetarian Only, Indoor Seating
18	Wire Room Bar & Kitchen	Phoenix Market City, Velachery	Continental, Asian	Cocktails, Salad, Beer, Tikka, Pork Ribs,	2000.0	4.1	354	0.0	0	Full Bar Available, Mall Parking, Dance Floor,
23	BFF 2.0	RA Puram	North Indian, Continental, Italian	Crispy Chicken, Cocktails, Pizza, Nachos,	1500.0	4.2	464	0.0	0	Full Bar Available, Indoor Seating, Nightlife,
77	Al Dhareeq Beef Biriyani	Kodambakkam	Biryani	Beef Biryani	300.0	0.0	0	3.9	19600	Home Delivery
12027	CK's Sandwiches	Porur	Sandwich	Invalid	350.0	0.0	0	0.0	0	Breakfast, Delivery Only
12028	CK's Sandwiches	Kolathur	Sandwich	Invalid	350.0	0.0	0	0.0	0	Breakfast, Delivery Only
12029	CK's Sandwiches	Anna Nagar East	Sandwich	Invalid	350.0	0.0	0	0.0	0	Breakfast, Delivery Only
12030	CK's Sandwiches	Ramapuram	Sandwich	Invalid	350.0	0.0	0	0.0	0	Breakfast, Delivery Only
12031	CK's Sandwiches	Sholinganallur	Sandwich	Invalid	350.0	0.0	0	0.0	0	Breakfast, Delivery Only

7651 rows × 10 columns

In [22]: #Performing Negation of the useless dataset and then storing the correct data back in the raw\_df DataFr #This permamnently remove the wrong data from the original dataframe dataset=dataset[~remove\_data]

Out[22]:

dataset

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
0	Yaa Mohaideen Briyani	Pallavaram	Biryani	Bread Halwa, Chicken 65, Mutton Biryani, Ch	500.0	4.3	1500	4.3	9306	Home Delivery, Indoor Seating
1	Sukkubhai Biriyani	Alandur	Biryani, North Indian, Mughlai, Desserts,	Beef Biryani, Beef Fry, Paratha, Paya, Bri	1000.0	4.4	3059	4.1	39200	Home Delivery, Free Parking, Table booking rec
2	SS Hyderabad Biryani	Kodambakkam	Biryani, North Indian, Chinese, Arabian	Brinjal Curry, Tandoori Chicken, Chicken Gri	500.0	4.3	1361	4.4	10500	Home Delivery, Indoor Seating
3	KFC	Perambur	Burger, Fast Food, Finger Food, Beverages	Zinger Burger	500.0	4.0	1101	4.0	11200	Home Delivery, Free Parking, Card Upon Deliver
4	Tasty Kitchen	Perambur	Chinese, Biryani, North Indian, Chettinad,	Mutton Biryani, Chicken Rice, Tomato Rice,	450.0	4.2	617	4.1	22400	Home Delivery, Indoor Seating
11666	Juice World	Alandur	Beverages, Fast Food	Invalid	300.0	2.0	4	3.9	42	Home Delivery, Vegetarian Only, Indoor Seating
11667	Juice World	Palavakkam	Beverages, Fast Food	Invalid	300.0	2.0	4	3.9	48	Home Delivery, Vegetarian Only, Indoor Seating
11736	Adyar Vaishnavas Thattu Idly Kadai	Porur	South Indian, Sandwich, Chinese, Street Food	Invalid	200.0	3.2	6	3.9	48	Home Delivery, Indoor Seating
11785	Engineers Kitchen	Ambattur	North Indian, Chinese, Andhra	Invalid	400.0	2.5	6	3.5	214	Home Delivery, Indoor Seating
11794	That Juice Shop	Karapakkam	Juices, Beverages	Invalid	200.0	3.6	6	4.2	157	Home Delivery, Indoor Seating

4381 rows × 10 columns

Out[23]: Location

Porur	148
Anna Nagar East	146
Velachery	145
Ambattur	124
T. Nagar	119
Holiday Inn Chennai OMR IT Expressway	1
Chennai Food Town, Thuraipakkam	1
Foodies Kitchen	1
Hotel Bhimaas, Vadapalani	1
Spectrum The Grand Venus Mall, Perambur	1
Name: count, Length: 161, dtype: int64	

Replacing Strings with comma in location column by last string

```
In [24]:
             # Specify the column to process
             column_to_process = 'Location'
             # Replace strings containing commas with the last string
             dataset[column_to_process] = dataset[column_to_process].str.split(',').str[-1]
             dataset.head()
```

/var/folders/07/ykgp85052b11h5kz22ghn8l40000gn/T/ipykernel\_80837/3588506736.py:5: SettingWithCopyWarning:

A value is trying to be set on a copy of a slice from a DataFrame. Try using .loc[row\_indexer,col\_indexer] = value instead

See the caveats in the documentation: https://pandas.pydata.org/pandas-docs/stable/user\_guide/indexing.htm l#returning-a-view-versus-a-copy (https://pandas.pydata.org/pandas-docs/stable/user\_guide/indexing.html#re turning-a-view-versus-a-copy)

#### Out [24]:

Features	Delivery Rating Count	Delivery Rating	Dining Rating Count	Dining Rating	Price for 2	Top Dishes	Cuisine	Location	Name of Restaurant	
Home Delivery, Indoor Seating	9306	4.3	1500	4.3	500.0	Bread Halwa, Chicken 65, Mutton Biryani, Ch	Biryani	Pallavaram	Yaa Mohaideen Briyani	0
Home Delivery, Free						Beef Birvani. Beef Frv.	Birvani. North Indian.		Sukkubhai	

#### **Invalid count in Top dishes**

Name of

Restaurant

**Location Cuisine** 

```
In [25]:
             # Specify the string to count
             string_to_count = 'Invalid'
             # Using value_counts() method
             count_using_value_counts = (dataset['Top Dishes'] == string_to_count).sum()
             # Using boolean indexing
             count_using_boolean_indexing = (dataset['Top Dishes'] == string_to_count).sum()
             # Display the counts
             print(f"Count using value_counts: {count_using_value_counts}")
             print(f"Count using boolean indexing: {count_using_boolean_indexing}")
         Count using value_counts: 2703
         Count using boolean indexing: 2703
In [26]:
             # 6. Removing Duplicate records
             # Finding all the duplicate rows
             dataset[dataset.duplicated()]
Out [26]:
```

```
In [27]:
             # Dropping all the duplicate rows
             dataset=dataset.drop_duplicates()
```

**Dining** 

Rating

**Dining Rating** 

Count

**Delivery** 

Rating

**Delivery Rating** 

Count

**Features** 

Price for

### Copying the cleaned data into a new DataFrame

Top

**Dishes** 

In [28]: 1 PPCZ\_dataset=dataset.copy()
 PPCZ\_dataset

#### Out[28]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	•	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
0	Yaa Mohaideen Briyani	Pallavaram	Biryani	Bread Halwa, Chicken 65, Mutton Biryani, Ch	500.0	4.3	1500	4.3	9306	Home Delivery, Indoor Seating
1	Sukkubhai Biriyani	Alandur	Biryani, North Indian, Mughlai, Desserts,	Beef Biryani, Beef Fry, Paratha, Paya, Bri	1000.0	4.4	3059	4.1	39200	Home Delivery, Free Parking, Table booking rec
2	SS Hyderabad Biryani	Kodambakkam	Biryani, North Indian, Chinese, Arabian	Brinjal Curry, Tandoori Chicken, Chicken Gri	500.0	4.3	1361	4.4	10500	Home Delivery, Indoor Seating
3	KFC	Perambur	Burger, Fast Food, Finger Food, Beverages	Zinger Burger	500.0	4.0	1101	4.0	11200	Home Delivery, Free Parking, Card Upon Deliver
4	Tasty Kitchen	Perambur	Chinese, Biryani, North Indian, Chettinad	Mutton Biryani, Chicken Rice, Tomato Rice	450.0	4.2	617	4.1	22400	Home Delivery, Indoor Seating

# **Performing Exploratory Data Analysis**

### Q1)Give the count of top 10 cuisines in Chennai.

```
In [29]:  # Count the number of each cuisine
cuisine_counts = PPCZ_dataset['Cuisine'].value_counts()

# Select the top N most common cuisines
top_n = 10 # Adjust N as needed
top_cuisines = cuisine_counts.head(top_n)
top_cuisines
```

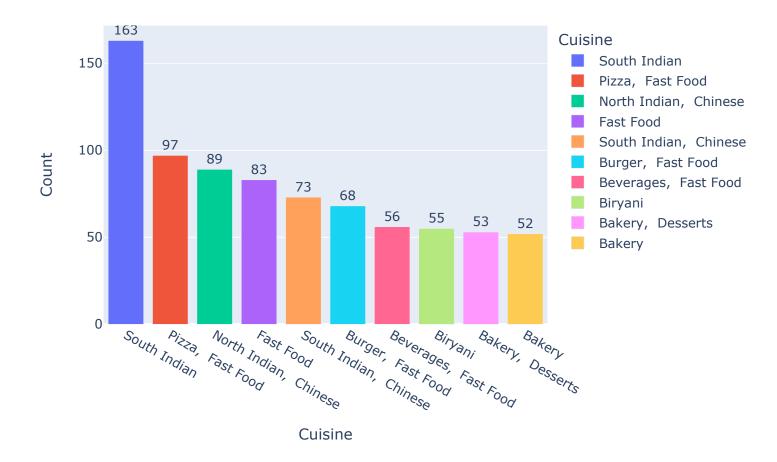
# Out[29]: Cuisine

South Indian	163
Pizza, Fast Food	97
North Indian, Chinese	89
Fast Food	83
South Indian, Chinese	73
Burger, Fast Food	68
Beverages, Fast Food	56
Biryani	55
Bakery, Desserts	53
Bakery	52
Name: count, dtype: int64	

```
In [30]: 1
2  # Create a bar chart
fig = px.bar(top_cuisines, x=top_cuisines.index, y=top_cuisines.values, labels={'x': 'Cuisine', 'y': 'C

# Customize the text display on the bars
fig.update_traces(texttemplate='%{text}', textposition='outside')
fig.show()
```

#### Top 10 Cuisines in Chennai

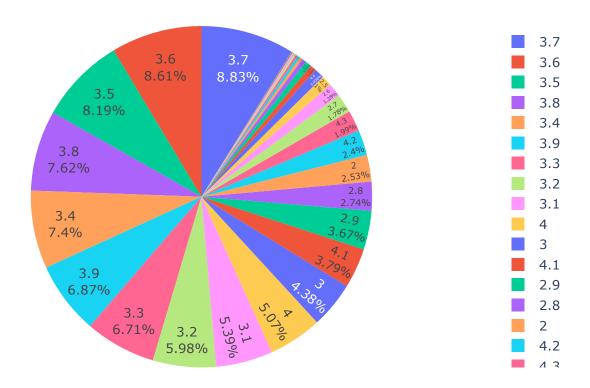


Q2) What is the percentage of restaurants by Dining Rating in Chennai?

#### Out[31]:

	Dining Rating	Count of Restaurants	PERCENTAGE
0	3.7	387	8.833600
1	3.6	377	8.605341
2	3.5	359	8.194476
3	3.8	334	7.623830
4	3.4	324	7.395572
5	3.9	301	6.870577
6	3.3	294	6.710797
7	3.2	262	5.980370
8	3.1	236	5.386898
9	4.0	222	5.067336
10	3.0	192	4.382561
11	4.1	166	3.789089
12	2.9	161	3.674960
13	2.8	120	2.739101
14	2.0	111	2.533668
15	4.2	105	2.396713
16	4.3	87	1.985848
17	2.7	78	1.780415
18	2.6	56	1.278247
19	2.5	44	1.004337
20	4.4	41	0.935859
21	2.4	26	0.593472
22	4.5	26	0.593472
23	2.3	18	0.410865
24	2.2	12	0.273910
25	4.6	11	0.251084
26	4.7	9	0.205433
27	4.9	7	0.159781
28	2.1	6	0.136955
29	4.8	3	0.068478
30	1.9	3	0.068478
31	1.7	2	0.045652
32	0.3	1	0.022826

### Percentage of Restaurants by Dining Rating



### Q3) Which are the Top 10 highest rated South Indian (SI) Restaurants in Chennai?

```
In [33]: | si_restaurant= PPCZ_dataset[ PPCZ_dataset['Cuisine'].str.contains('South Indian')]
    si_restaurant=si_restaurant.sort_values(by='Dining Rating',ascending=False).head(10)

# Creating table
    table = si_restaurant[['Name of Restaurant', 'Cuisine', 'Dining Rating']]
    table
```

#### Out[33]:

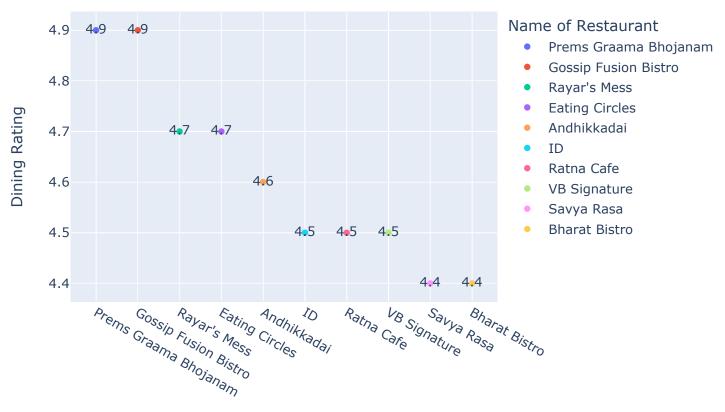
	Name of Restaurant	Cuisine	Dining Rating
219	Prems Graama Bhojanam	South Indian	4.9
184	Gossip Fusion Bistro	Italian, Continental, Burger, Sandwich, Wr	4.9
108	Rayar's Mess	South Indian	4.7
24	Eating Circles	South Indian	4.7
50	Andhikkadai	South Indian	4.6
270	ID	South Indian	4.5
9273	Ratna Cafe	South Indian, Chinese, Street Food, Beverages	4.5
110	VB Signature	North Indian, South Indian, Chinese, Asian,	4.5
394	Savya Rasa	Chettinad, Andhra, Kerala, Mangalorean, So	4.4
357	Bharat Bistro	North Indian South Indian Bengali Mahara	4.4

```
In [34]:  # Create a scatter plot using Plotly
fig = px.scatter(si_restaurant, x='Name of Restaurant', y='Dining Rating', title='Top 10 South Indian R

# Customize the appearance of the plot
fig.update_layout(xaxis_title='Name of Restaurant', yaxis_title='Dining Rating')

fig.show()
```

#### Top 10 South Indian Restaurants by Dining Rating



Name of Restaurant

#### Q4) Which are the best home delivery feature restaurant in Chennai?

```
In [35]: r restaurants offering home delivery and having multiple delivery types
ery_data = PPCZ_dataset[(PPCZ_dataset['Features'].str.contains('Home Delivery')) & (PPCZ_dataset['Features']

alivery rating in descending order
i_delivery_data = multi_delivery_data.sort_values(by='Delivery Rating', ascending=False).head(5)

top restaurant with the highest delivery rating among those offering multiple delivery types
taurant = sorted_multi_delivery_data.iloc[0]

staurant
i_delivery_data
```

#### Out[35]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
4371	Mumbai Kulfi	Pallavaram	Desserts	Invalid	150.0	3.7	11	4.7	141	Home Delivery, Free Parking, Outdoor Seating,
1985	Arabian Plate	Adambakkam	Arabian, Biryani	Invalid	300.0	3.7	58	4.7	491	Home Delivery, Indoor Seating
9977	ibaco	Mylapore	Ice Cream	Brownie	200.0	3.6	55	4.7	230	Home Delivery, Vegetarian Only, Desserts and B
9985	ibaco	Anna Nagar East	Ice Cream	Invalid	200.0	3.7	57	4.6	391	Home Delivery, Vegetarian Only, Indoor Seating
9545	Bombay Kulfi	Kottivakkam	Ice Cream	Invalid	200.0	3.3	6	4.6	114	Home Delivery, Outdoor Seating, Sugar Free Opt

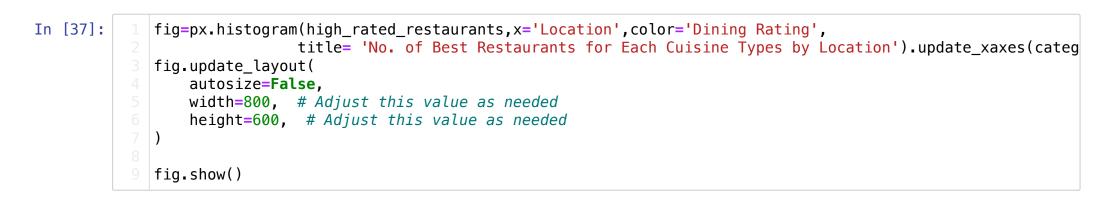
#### Q5) Which places have the highest rated restaurant for each Cuisine in Chennai?

Out[36]:

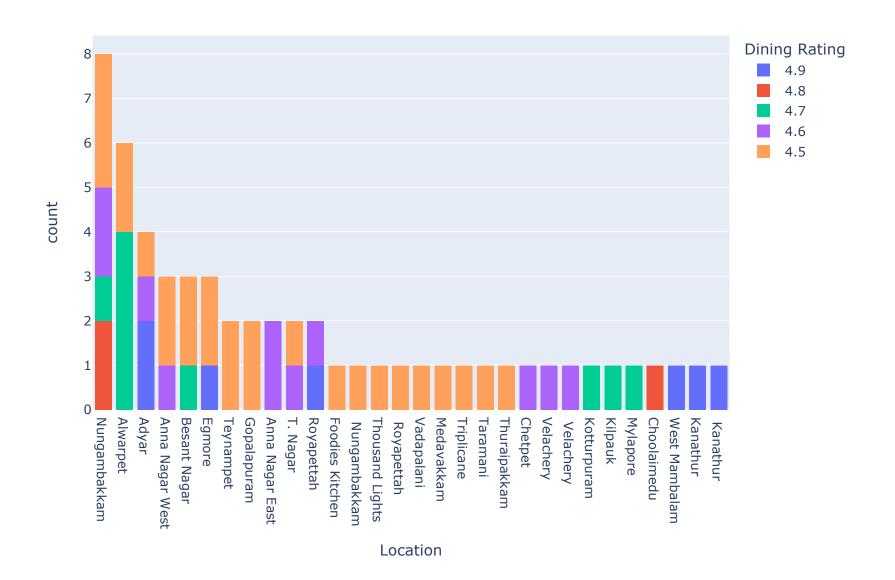
Name of Restaurant Location Cuisine Dining Rating

192	Kabab Corner	Egmore	Kebab, Rolls, Mughlai	4.9
105	Bhangra	Kanathur	North Indian	4.9
320	Bombay Kulfi	Adyar	Ice Cream	4.9
57	Brownie Heaven	Royapettah	Bakery, Desserts, Beverages	4.9
219	Prems Graama Bhojanam	Adyar	South Indian	4.9
184	Gossip Fusion Bistro	Kanathur	Italian, Continental, Burger, Sandwich, Wr	4.9
155	The Sandwich Shop	West Mambalam	Sandwich, Fast Food, Beverages	4.9
62	Amadora Gourmet Ice Cream & Sorbet	Nungambakkam	Desserts, Ice Cream	4.8
195	The Marina	Nungambakkam	Seafood, North Indian, Chinese	4.8
163	Momo Sa-Khang by Kailash Kitchen	Choolaimedu	Momos, Chinese	4.8
250	Benjarong	Alwarpet	Thai	4.7
178	Royal Sandwich Shop	Alwarpet	Fast Food, Desserts, Beverages	4.7
173	Bombay Brasserie	Nungambakkam	North Indian, Maharashtrian, Modern Indian,	4.7
108	Rayar's Mess	Mylapore	South Indian	4.7
24	Eating Circles	Alwarpet	South Indian	4.7
75	Fusilli Reasons	Kilpauk	Fast Food	4.7
59	Mezze	Alwarpet	Middle Eastern	4.7
88	Soy Soi	Kotturpuram	Burmese, Thai, Vietnamese, Indonesian, Sin	4.7
70	Little Italy	Besant Nagar	Italian, Mexican, Salad	4.7
102	Mainland China	Velachery	Chinese, Asian, Sushi, Japanese, Thai	4.6
382	Wok Monk	Anna Nagar West	Asian, Chinese, Middle Eastern	4.6
50	Andhikkadai	Velachery	South Indian	4.6
255	Krispy Kreme	Royapettah	Desserts, Beverages	4.6
227	Haagen Dazs	Nungambakkam	Ice Cream, Desserts, Beverages	4.6
37	Shree Mithai	Chetpet	Mithai, Street Food, Fast Food	4.6
234	Hamsa	Adyar	North Indian, Chettinad, Mughlai, Desserts,	4.6
177	Basil With A Twist	T. Nagar	Fast Food, Italian, Salad	4.6
156	SpiceKlub	Nungambakkam	North Indian, Desserts, Beverages	4.6
116	AlMaza	Anna Nagar East	Arabian, Mughlai, North Indian, Biryani	4.6
9541	Bombay Kulfi	Anna Nagar East	Ice Cream	4.6
207	Va Pho - Asian Canteen	Gopalapuram	Asian, Chinese, Beverages	4.5
209	Cream Stone	Alwarpet	Desserts, Ice Cream	4.5
9367	Cream Stone	Thuraipakkam	Desserts, Ice Cream	4.5
9363	Flower Drum	Adyar	Chinese, Thai	4.5
9358	Writer's Cafe	Taramani	Cafe, American	4.5
9279	Gastronomer By Double Roti	Teynampet	Cafe, American, Fast Food	4.5
9273	Ratna Cafe	Triplicane	South Indian, Chinese, Street Food, Beverages	4.5
9229	Blind Ch3mistry	Teynampet	Cafe, Continental, Italian, Desserts, Beve	4.5
9228	Blind Ch3mistry	Besant Nagar	Cafe, Continental, Italian, Desserts, Beve	4.5
9123	Little Italy	Anna Nagar West	Italian, Mexican, Salad	4.5
9037	Palmshore	Medavakkam	North Indian, Chinese, Arabian, BBQ, Birya	4.5
471	Shmoozie's Hand-Crafted Ice Creams	Egmore	Ice Cream, Desserts	4.5
111	Blind Ch3mistry	Nungambakkam	Cafe, Continental, Italian, Desserts, Beve	4.5
115	North East Kitchen	Egmore	Chinese, Konkan, Momos	4.5
289 78	Kuuraku Shri Rajasthani Dhaba	Vadapalani	Japanese Rajasthani, North Indian	4.5 4.5
270	ID	Royapettah	South Indian	4.5
158	BurgerMan	Besant Nagar	Burger, Fast Food, Beverages	4.5
92	Fruit Shop On Greams Road	Thousand Lights	Beverages, Fast Food, Healthy Food, Juices	4.5
243	Asia Kitchen by Mainland China	Nungambakkam	Momos, Asian, Chinese, Sushi	4.5
242	Shyam's Bombay Halwa House	T. Nagar	North Indian	4.5
110	VB Signature	Nungambakkam	North Indian, South Indian, Chinese, Asian,	4.5
68	Sandy's Chocolate Laboratory	Nungambakkam	Cafe, Continental, Italian, Desserts	4.5
67	Pumpkin Tales	Alwarpet	Singaporean, American, European, Continenta	4.5
214	Sera - The Tapas Bar & Restaurant	Gopalapuram	Finger Food, Seafood, Italian, Continental	4.5

284 Absolute Thai Foodies Kitchen Thai, Asian 4.5



#### No. of Best Restaurants for Each Cuisine Types by Location

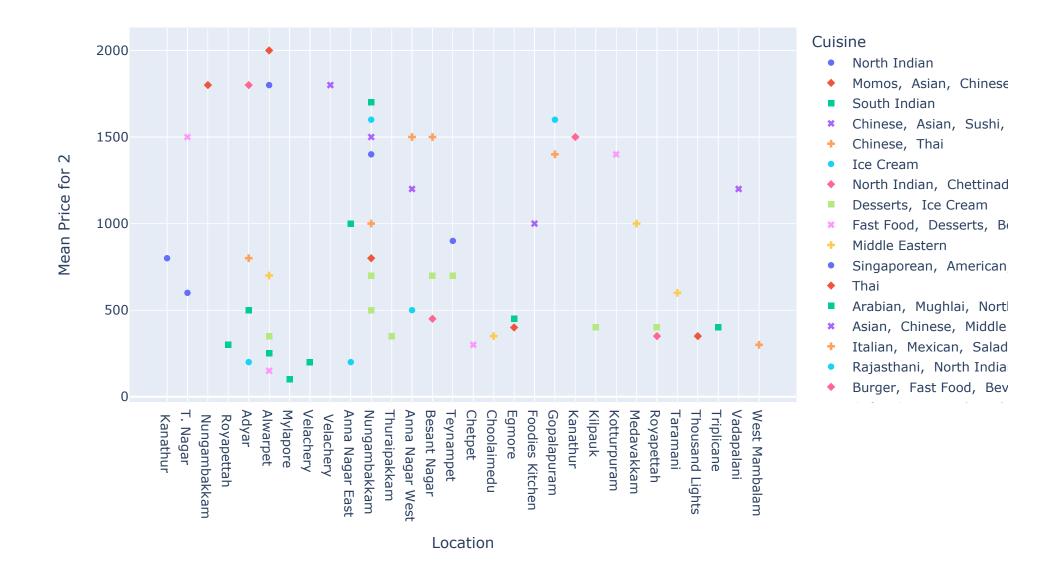


#### Q6) What is the Avg Price Distibution of highest rated restaurant for each Cuisine Type in Chennai?

#### Out[38]:

	Location	Cuisine	Mean Price for 2
0	Kanathur	North Indian	800.0
1	Nungambakkam	Momos, Asian, Chinese, Sushi	1800.0
2	Royapettah	South Indian	300.0
3	Velachery	Chinese, Asian, Sushi, Japanese, Thai	1800.0
4	Adyar	Chinese, Thai	800.0

#### Avg Price Distibution of High Rated Restaurants for Each Cuisine Type



Q7) Which areas have a large number of Chinese Restaurant Market?

In [40]:

1 c

cr=PPCZ\_dataset[PPCZ\_dataset['Cuisine'].str.contains('Chinese')]
cr

Out[40]:

	Name of Restaurant	Location	Cuisine	Top Dishes	Price for 2	Dining Rating	Dining Rating Count	Delivery Rating	Delivery Rating Count	Features
2	SS Hyderabad Biryani	Kodambakkam	Biryani, North Indian, Chinese, Arabian	Brinjal Curry, Tandoori Chicken, Chicken Gri	500.0	4.3	1361	4.4	10500	Home Delivery, Indoor Seating
4	Tasty Kitchen	Perambur	Chinese, Biryani, North Indian, Chettinad,	Mutton Biryani, Chicken Rice, Tomato Rice,	450.0	4.2	617	4.1	22400	Home Delivery, Indoor Seating
5	Dine N Fun	Medavakkam	South Indian, North Indian, Chinese	Chicken Grill, Shawarma, Naan, Chicken Butt	450.0	4.1	567	3.8	24700	Home Delivery, Indoor Seating
8	Savoury Sea Shell	Anna Nagar East	Arabian, Chinese, North Indian, Lebanese,	Shawarma, Chicken Grill, Brownie, Sea Food,	1400.0	4.2	2564	4.1	21700	Home Delivery, Indoor Seating, Card Upon Deliv
9	Sangeetha Veg Restaurant	T. Nagar	South Indian, North Indian, Chinese, Chetti	Filtered Coffee, Chaat, Faluda, Masala Dosa	800.0	4.4	1578	4.2	39600	Breakfast, Home Delivery, Vegetarian Only, Ind
							•••			
11382	Texas Treat	Selaiyur	Bakery, North Indian, Chinese, Italian, Me	Invalid	850.0	3.8	9	3.8	43	Home Delivery, Vegetarian Only, Free Parking,
11544	Anandhi Idly Kadai	Medavakkam	South Indian, Chinese	Invalid	200.0	3.4	24	4.1	778	Home Delivery, Indoor Seating
11545	Anandhi Idly Kadai	Selaiyur	South Indian, Chinese	Invalid	200.0	3.1	17	4.1	367	Breakfast, Home Delivery, Indoor Seating
11736	Adyar Vaishnavas Thattu Idly Kadai	Porur	South Indian, Sandwich, Chinese, Street Food	Invalid	200.0	3.2	6	3.9	48	Home Delivery, Indoor Seating
11785	Engineers Kitchen	Ambattur	North Indian, Chinese, Andhra	Invalid	400.0	2.5	6	3.5	214	Home Delivery, Indoor Seating

1688 rows × 10 columns

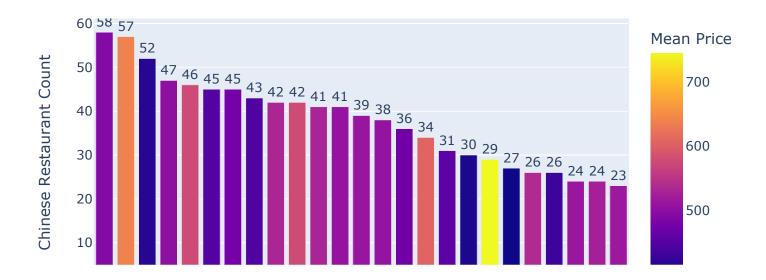
#### Out[41]:

Chinese Restaurant Count M	Mean Price
----------------------------	------------

Location		
Porur	58	490.517241
Anna Nagar East	57	638.596491
Ambattur	52	415.384615
T. Nagar	47	501.063830
Velachery	46	576.086957
Kolathur	45	448.888889
Perambur	45	476.666667
Ramapuram	43	445.348837
Medavakkam	42	530.952381
Thuraipakkam	42	576.190476
Mogappair	41	529.268293
Perungudi	41	507.317073
Tambaram	39	510.256410
Anna Nagar West	38	506.578947
GST Road	36	472.222222
Adyar	34	605.882353
Selaiyur	31	456.451613
Sholinganallur	30	408.333333
Nungambakkam	29	744.827586
Pallavaram	27	398.148148
Ashok Nagar	26	536.538462
Madipakkam	26	430.769231
Chromepet	24	512.500000
Kilpauk	24	522.916667
Potheri	23	515.217391

```
In [42]:  # Create a bar chart
  fig = px.bar(crc, x=crc.index, y='Chinese Restaurant Count', labels={'x': 'Location', 'y': 'Chinese Res
  # Customize the text display on the bars
  fig.update_traces(texttemplate='%{text}', textposition='outside')
  fig.show()
```

#### Chinese Restaurant Count by Location



Q8) Is there a relation between Price and Dining Rating by Top Dishes?

```
correlation = PPCZ_dataset.groupby('Top Dishes')[['Price for 2', 'Dining Rating']].corr().iloc[0::2, -1
In [43]:
             correlation
Out[43]: Top Dishes
         Aloo Paratha
                                                                                             Price for 2
                                                                                                           NaN
         Aloo Paratha, Rasgulla, Egg Bhurji, Roti
                                                                                             Price for 2
                                                                                                           NaN
         Aloo Paratha, Samosa, Palak Paneer
                                                                                             Price for 2
                                                                                                           NaN
         Aloo Patty, Sandwich, Salad, Chocolate Cookies
                                                                                             Price for 2
                                                                                                           NaN
         Aloo Tikki, Naan, Roti, Momos, Paneer Tikka, Tomato Soup, Panner Tikka
                                                                                             Price for 2
                                                                                                           NaN
         White Pasta, Iced Tea, Maggi, Cheese Chilli Toast, Garlic Bread
                                                                                             Price for 2
                                                                                                           NaN
         Wood Fire Pizza
                                                                                             Price for 2
                                                                                                           NaN
         Wood Fire Pizza, Fries, Iced Tea, Thin Crust Pizza, Garlic Bread, Tex Mex Nacho Price for 2
                                                                                                           NaN
         Yellow Rice, Fish, Butter Chicken, Lunch Buffet, Fried Rice, Roti
                                                                                             Price for 2
                                                                                                           NaN
         Zinger Burger
                                                                                             Price for 2
                                                                                                           NaN
         Name: Dining Rating, Length: 1542, dtype: float64
             pr=PPCZ_dataset.groupby(['Top Dishes', 'Dining Rating'])["Price for 2"].mean().reset_index()
In [44]:
```

#### Out [44]:

pr

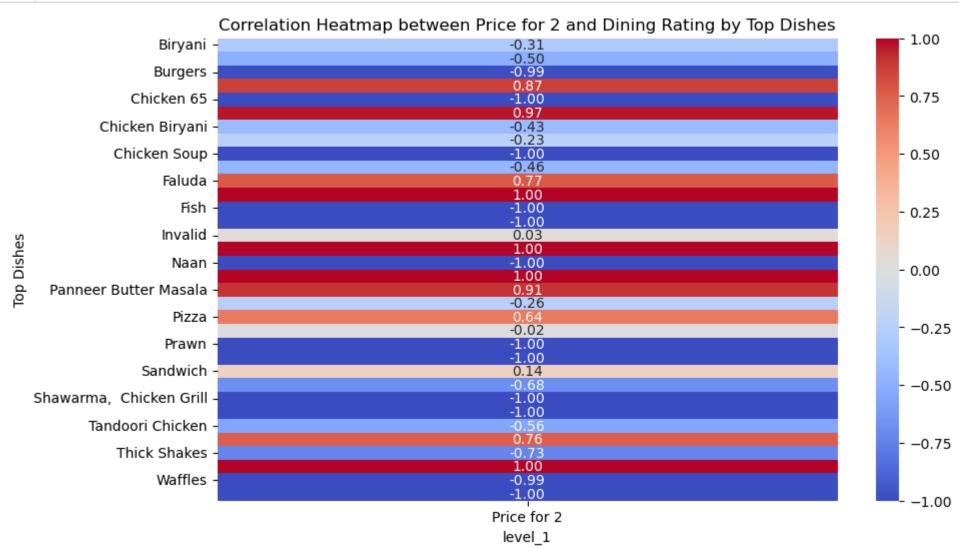
	Top Dishes	Dining Rating	Price for 2
0	Aloo Paratha	3.0	300.0
1	Aloo Paratha, Rasgulla, Egg Bhurji, Roti	3.1	300.0
2	Aloo Paratha, Samosa, Palak Paneer	3.6	300.0
3	Aloo Patty, Sandwich, Salad, Chocolate Cookies	3.5	500.0
4	Aloo Tikki, Naan, Roti, Momos, Paneer Tikk	3.8	800.0
1668	White Pasta, Iced Tea, Maggi, Cheese Chilli	3.3	700.0
1669	Wood Fire Pizza	4.0	650.0
1670	Wood Fire Pizza, Fries, Iced Tea, Thin Crus	3.3	600.0
1671	Yellow Rice, Fish, Butter Chicken, Lunch Bu	3.7	800.0
1672	Zinger Burger	4.0	500.0

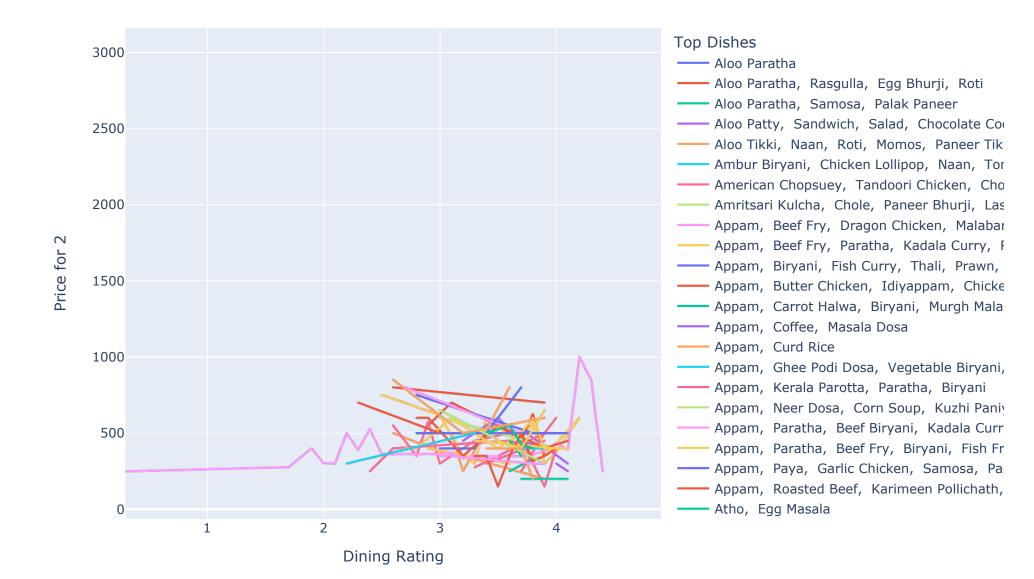
1673 rows × 3 columns

#### In [45]:

```
# Reset the index and create a pivot table
correlation = correlation.reset_index()
correlation_pivot = correlation.pivot_table(index='Top Dishes', columns='level_1', values='Dining Ratin

# Create the heatmap
plt.figure(figsize=(10, 6))
sns.heatmap(correlation_pivot, annot=True, cmap='coolwarm', fmt='.2f')
plt.title('Correlation Heatmap between Price for 2 and Dining Rating by Top Dishes')
plt.show()
```





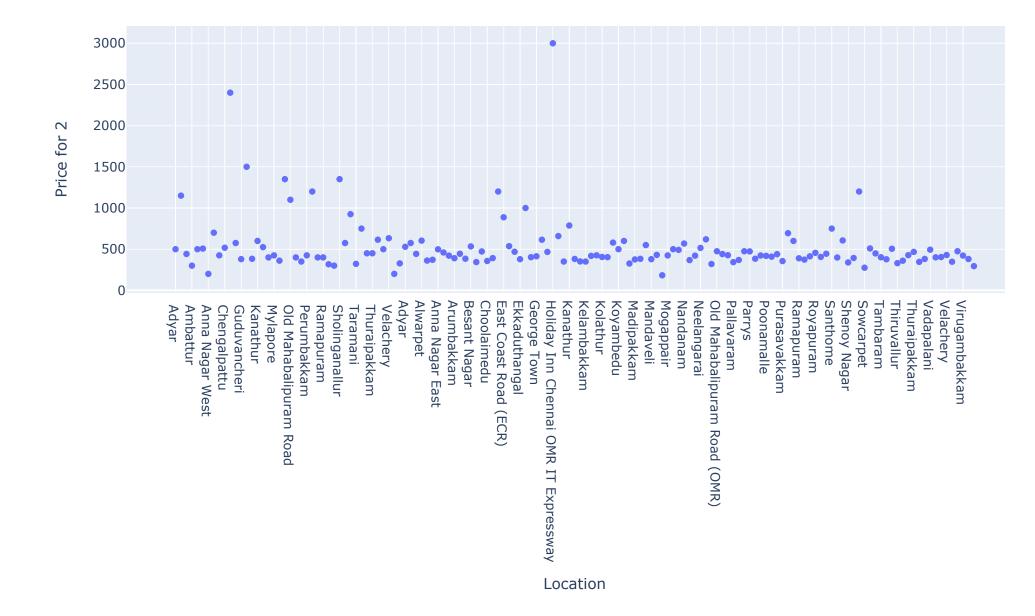
### Q9) Is there a relation between Location and Price?

In [47]: 1 regprice=PPCZ\_dataset.groupby(['Location'])["Price for 2"].mean().reset\_index()
 regprice

#### Out[47]:

	Location	Price for 2
0	Adyar	500.000000
1	Alwarpet	1150.000000
2	Ambattur	441.666667
3	Ambattur	300.000000
4	Aminijikarai	500.000000
•••		
142	Vepery	347.368421
143	Vettuvankeni	475.000000
144	Virugambakkam	422.000000
145	Washermenpet	380.555556
146	West Mambalam	294.230769

147 rows × 2 columns



#### Q10) Find the list of Affordable Restaurants?

The criteria for Affordable Restaurants would be:-

1) Low Price 2) High Rated

First step will be to find the restaurants with average cost 1/4th the average cost of most expensive restaurant in our dataframe.

Out[49]: 750.0

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#### In [50]:

# Finding list of restaurants that have price less than and equal to 1/4th of the max price i.e Finding aff\_res=PPCZ\_dataset[['Name of Restaurant','Price for 2','Cuisine','Location','Top Dishes']] aff\_res=aff\_res[aff\_res['Price for 2']<=750]</pre> aff\_res.sort\_values(by='Price for 2',inplace = True) aff\_res

#### Out [50]:

Name of Restaurant		Price for 2	Cuisine	Location	Top Dishes
5547	Mylapore Filter Coffee	100.0	Street Food, Beverages	Nungambakkam	Invalid
2151	Cane 4 U	100.0	Beverages	Besant Nagar	Sugarcane Juice, Fruit Juices
2511	Rose Milk Raja	100.0	Beverages	Maduravoyal	Invalid
1326	Madurai Famous Jigarthanda	100.0	Beverages, Ice Cream	T. Nagar	Invalid
108	Rayar's Mess	100.0	South Indian	Mylapore	Pongal, Vada, Filtered Coffee, Idli, Bonda
10071	Long Live Pizza	750.0	Pizza, Fast Food	Guduvancheri	Invalid
9568	Ponnusamy Hotels	750.0	Chettinad, South Indian, Chinese	Sholinganallur	Fish Finger, Mutton Biryani, Butter Naan, T
9571	Ponnusamy Hotels	750.0	Chettinad, South Indian, Chinese	Saidapet	Fish Finger, Chicken 65, Chilli Chicken, Raita
10074	Long Live Pizza	750.0	Pizza, Fast Food	Injambakkam	Invalid
9627	Kaaraikudi	750.0	Chettinad, Andhra, North Indian, Chinese	Besant Nagar	Chicken Lollipop, Mutton Sukha, Crab Soup,

4010 rows × 5 columns

#### In [51]:

# Finding the high rated list of restaurants

highrate\_res=PPCZ\_dataset[['Name of Restaurant','Price for 2','Cuisine','Location','Top Dishes','Dining highrate\_res=highrate\_res[highrate\_res['Dining Rating']>=4.5]

highrate\_res.sort\_values(by='Dining Rating',inplace = True)

highrate\_res

#### Out [51]:

	Name of Restaurant	Price for 2	Cuisine	Location	Top Dishes	Dining Rating
115	North East Kitchen	450.0	Chinese, Konkan, Momos	Egmore	Momos, Noodle, Pork Thali, Thukpa, Pork Cu	4.5
214	Sera - The Tapas Bar & Restaurant	1600.0	Finger Food, Seafood, Italian, Continental	Gopalapuram	Cocktails, Pasta, Nachos, Mashed Potato, S	4.5
209	Cream Stone	350.0	Desserts, Ice Cream	Alwarpet	Death By Chocolate, Ferrero Rocher, Waffles,	4.5
207	Va Pho - Asian Canteen	1400.0	Asian, Chinese, Beverages	Gopalapuram	Noodle, Mocktails, Beef Sate, Momos, Falud	4.5
270	ID	300.0	South Indian	Royapettah	Filtered Coffee, Appam, Buttermilk, Sweet P	4.5
9367	Cream Stone	350.0	Desserts, Ice Cream	Thuraipakkam	Death By Chocolate, Chocolava, Tiramisu, Ch	4.5
284	Absolute Thai	1000.0	Thai, Asian	Foodies Kitchen	Tom Yum Soup, Tempura Prawns, Pad Thai Noodl	4.5

In [52]:

# Merge aff\_res & highrate\_res to get Affordable Restaurants with low price and high rating

highrate\_aff\_res= pd.merge(aff\_res,highrate\_res,how='inner',on=['Name of Restaurant','Location'])
highrate\_aff\_res=highrate\_aff\_res[['Name of Restaurant','Price for 2\_x','Cuisine\_x','Location','Top Dis
highrate\_aff\_res.rename(columns={'Name of Restaurant':'Name of Restaurant','Price for 2\_x':'Price for 2
highrate\_aff\_res

Out[52]:

	Name of Restaurant	Price for 2	Cuisine	Location	Top Dishes
0	Rayar's Mess	100.0	South Indian	Mylapore	Pongal, Vada, Filtered Coffee, Idli, Bonda
1	Royal Sandwich Shop	150.0	Fast Food, Desserts, Beverages	Alwarpet	Brownie, Cheese Masala Toast, Chocolate Sand
2	Royal Sandwich Shop	150.0	Fast Food, Desserts, Beverages	Alwarpet	Invalid
3	Royal Sandwich Shop	150.0	Fast Food, Desserts, Beverages	Alwarpet	Invalid
4	Andhikkadai	200.0	South Indian	Velachery	Coffee, Sweet Kozhukattai, Idli, Pongal, K
5	Bombay Kulfi	200.0	Ice Cream	Anna Nagar East	Calcutta Paan, Tender Coconut Kulfi, Paan Ic
6	Bombay Kulfi	200.0	Ice Cream	Adyar	Kesar Pista Kulfi, Malai Kulfi, Chocolate Ku
7	Eating Circles	250.0	South Indian	Alwarpet	Rose Milk, Neer Dosa, Thatte Idli, Open Mas
8	Shree Mithai	300.0	Mithai, Street Food, Fast Food	Chetpet	Chaat, Badam Milk, Pav Bhaji, Panipuri, Ra
9	ID	300.0	South Indian	Royapettah	Filtered Coffee, Appam, Buttermilk, Sweet P
10	The Sandwich Shop	300.0	Sandwich, Fast Food, Beverages	West Mambalam	Mocktails, Fries, Pizza Sandwich, Tandoori
11	Cream Stone	350.0	Desserts, Ice Cream	Alwarpet	Death By Chocolate, Ferrero Rocher, Waffles,
12	Momo Sa-Khang by Kailash Kitchen	350.0	Momos, Chinese	Choolaimedu	Momos, Noodle, Chowmein, Fried Momo, Chop
13	Cream Stone	350.0	Desserts, Ice Cream	Thuraipakkam	Death By Chocolate, Chocolava, Tiramisu, Ch
14	Brownie Heaven	350.0	Bakery, Desserts, Beverages	Royapettah	Vanilla Ice Cream, Brownie Shake, Filtered C
15	Fruit Shop On Greams Road	350.0	Beverages, Fast Food, Healthy Food, Juices	Thousand Lights	Fruit Juices, Sandwich, Mint Lime Cooler, T
16	Krispy Kreme	400.0	Desserts, Beverages	Royapettah	Coffee, Hot Chocolate, Cappuccino, Chocolat
17	Shmoozie's Hand-Crafted Ice Creams	400.0	Ice Cream, Desserts	Egmore	Salted Caramel, Brownie, Bannoffee Pie, Cof
18	Ratna Cafe	400.0	South Indian, Chinese, Street Food, Beverages	Triplicane	Filtered Coffee, Idli Sambar, Pongal, Crisp
19	Fusilli Reasons	400.0	Fast Food	Kilpauk	Nachos, Iced Tea, Garlic Bread, Brownie, S
20	Kabab Corner	450.0	Kebab, Rolls, Mughlai	Egmore	Rolls, Beef Fry, Beef Steak, Chicken Kebab,
21	BurgerMan	450.0	Burger, Fast Food, Beverages	Besant Nagar	Burgers, Nachos, Chicken Burger, Thick Shak
22	North East Kitchen	450.0	Chinese, Konkan, Momos	Egmore	Momos, Noodle, Pork Thali, Thukpa, Pork Cu
23	Shri Rajasthani Dhaba	500.0	Rajasthani, North Indian	Anna Nagar West	Rajasthani Thali, Buttermilk, Roti, Paratha
24	Amadora Gourmet Ice Cream & Sorbet	500.0	Desserts, Ice Cream	Nungambakkam	Sandwich, Gelato, Chocolate Icecreams, Wate
25	Prems Graama Bhojanam	500.0	South Indian	Adyar	Benne Dosa, Buttermilk, Thatte Idli, Kulfi,
26	Writer's Cafe	600.0	Cafe, American	Taramani	Hot Chocolate, Pizza, Pasta, Waffles, Spag
27	Shyam's Bombay Halwa House	600.0	North Indian	T. Nagar	Paneer Tikka, Paan Ice Cream, Tawa Pulav, B
28	Mezze	700.0	Middle Eastern	Alwarpet	Baklava, Mezze, Shawarma, Pita Bread, Frie
29	Blind Ch3mistry	700.0	Cafe, Continental, Italian, Desserts, Beve	Nungambakkam	Pasta, Peri Peri Chicken, Sandwich, Waffles
30	Blind Ch3mistry	700.0	Cafe, Continental, Italian, Desserts, Beve	Besant Nagar	Pasta, Waffles, Sandwich, Chocolate Pani Pu
31	Blind Ch3mistry	700.0	Cafe, Continental, Italian, Desserts, Beve	Teynampet	Pasta, Cheese Corn Balls, Pizza, Chocolate

### Q11) Find the list of most Reliable Restaurants?

The criteria for Affordable Restaurants would be:-

1) Low Price 2) High Rated 3)Large No. of Dining Rating Count

First two steps has been already carried out. So next step will be to find the restaurants with Votes greater than Mean of Dining Rating Count.

#### Out [54]:

	Name of Restaurant	Price for 2	Cuisine	Location	Top Dishes	Dining Rating Count
1127	Kalpana Andhra Mess	350.0	Andhra, Chinese, Biryani	Thuraipakkam	Omelette, Mutton Curry, Andhra Meal, Mutton	170
1070	Grill & Barbeque	400.0	Arabian, Chinese, North Indian	Perambur	Invalid	170
949	Kebab It	500.0	Kebab, Chinese, North Indian	Besant Nagar	Rolls, Chicken Roll, Beef Fry, Shawarma, C	170
769	The London Shakes & Chaat Chatore	500.0	Cafe, Street Food, Italian, Beverages	Velachery	Vada Pav, Chaat, Panipuri Shots, Maggi, Bh	170
651	Nizam Palace	800.0	Biryani, North Indian, Andhra, Chinese, Be	Old Mahabalipuram Road (OMR)	Invalid	170
9040	Palmshore	1000.0	North Indian, Chinese, Arabian, BBQ, Birya	Ashok Nagar	Fish, Faluda, Prawn, Brownie, Elaneer Paya	4478
9038	Palmshore	1000.0	North Indian, Chinese, Arabian, BBQ, Birya	Ramapuram	Fish, Brownie, Faluda, Murgh Platter, Praw	4805
9026	Copper Kitchen	1000.0	North Indian, Chinese, Chettinad, Seafood	Porur	Faluda, Bbq Chicken, Brownie, Biryani, Sha	5073
9030	Paradise Biryani	800.0	Biryani, North Indian, Chinese	Perungudi	Hyderabadi Biryani, Mutton Biryani, Mutton S	5317
74	Onesta	600.0	Pizza, Italian, Fast Food, Beverages, Dess	Semmancheri	Chocolate Banana, Pasta, Pepperoni, Bacon P	5407

1085 rows × 6 columns

### Criteria for most reliable, highest rated and affordable restaurants:-

Cost is below or = 750, Rating is above 4.5 & Votes are above 169

This is obtained by merging highrate\_aff\_res & mean\_res

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In [55]:

reliable\_res= pd.merge(mean\_res,highrate\_aff\_res,how='inner',on=['Name of Restaurant','Location'])
reliable\_res=reliable\_res[['Name of Restaurant','Price for 2\_x','Cuisine\_x','Location','Top Dishes\_x']]
reliable\_res.rename(columns={'Name of Restaurant':'Name of Restaurant','Price for 2\_x':'Price for 2','C reliable\_res

Out [55]:

	Name of Restaurant	Price for 2	Cuisine	Location	Top Dishes
0	Shmoozie's Hand-Crafted Ice Creams	400.0	Ice Cream, Desserts	Egmore	Salted Caramel, Brownie, Bannoffee Pie, Cof
1	Bombay Kulfi	200.0	Ice Cream	Anna Nagar East	Calcutta Paan, Tender Coconut Kulfi, Paan Ic
2	Blind Ch3mistry	700.0	Cafe, Continental, Italian, Desserts, Beve	Teynampet	Pasta, Cheese Corn Balls, Pizza, Chocolate
3	Writer's Cafe	600.0	Cafe, American	Taramani	Hot Chocolate, Pizza, Pasta, Waffles, Spag
4	Bombay Kulfi	200.0	Ice Cream	Adyar	Kesar Pista Kulfi, Malai Kulfi, Chocolate Ku
5	The Sandwich Shop	300.0	Sandwich, Fast Food, Beverages	West Mambalam	Mocktails, Fries, Pizza Sandwich, Tandoori
6	Fruit Shop On Greams Road	350.0	Beverages, Fast Food, Healthy Food, Juices	Thousand Lights	Fruit Juices, Sandwich, Mint Lime Cooler, T
7	Cream Stone	350.0	Desserts, Ice Cream	Thuraipakkam	Death By Chocolate, Chocolava, Tiramisu, Ch
8	North East Kitchen	450.0	Chinese, Konkan, Momos	Egmore	Momos, Noodle, Pork Thali, Thukpa, Pork Cu
9	Krispy Kreme	400.0	Desserts, Beverages	Royapettah	Coffee, Hot Chocolate, Cappuccino, Chocolat
10	ID	300.0	South Indian	Royapettah	Filtered Coffee, Appam, Buttermilk, Sweet P
11	Eating Circles	250.0	South Indian	Alwarpet	Rose Milk, Neer Dosa, Thatte Idli, Open Mas
12	Shyam's Bombay Halwa House	600.0	North Indian	T. Nagar	Paneer Tikka, Paan Ice Cream, Tawa Pulav, B
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15	Andhikkadai	200.0	South Indian	Velachery	Coffee, Sweet Kozhukattai, Idli, Pongal, K
16	Shri Rajasthani Dhaba	500.0	Rajasthani, North Indian	Anna Nagar West	Rajasthani Thali, Buttermilk, Roti, Paratha
17	BurgerMan	450.0	Burger, Fast Food, Beverages	Besant Nagar	Burgers, Nachos, Chicken Burger, Thick Shak
18	Kabab Corner	450.0	Kebab, Rolls, Mughlai	Egmore	Rolls, Beef Fry, Beef Steak, Chicken Kebab,
19	Ratna Cafe	400.0	South Indian, Chinese, Street Food, Beverages	Triplicane	Filtered Coffee, Idli Sambar, Pongal, Crisp
20	Shree Mithai	300.0	Mithai, Street Food, Fast Food	Chetpet	Chaat, Badam Milk, Pav Bhaji, Panipuri, Ra
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22	Cream Stone	350.0	Desserts, Ice Cream	Alwarpet	Death By Chocolate, Ferrero Rocher, Waffles,
23	Blind Ch3mistry	700.0	Cafe, Continental, Italian, Desserts, Beve	Nungambakkam	Pasta, Peri Peri Chicken, Sandwich, Waffles
24	Royal Sandwich Shop	150.0	Fast Food, Desserts, Beverages	Alwarpet	Brownie, Cheese Masala Toast, Chocolate Sand
25	Royal Sandwich Shop	150.0	Fast Food, Desserts, Beverages	Alwarpet	Brownie, Cheese Masala Toast, Chocolate Sand
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28	Amadora Gourmet Ice Cream & Sorbet	500.0	Desserts, Ice Cream	Nungambakkam	Sandwich, Gelato, Chocolate Icecreams, Wate
29	Momo Sa-Khang by Kailash Kitchen	350.0	Momos, Chinese	Choolaimedu	Momos, Noodle, Chowmein, Fried Momo, Chop
30	Blind Ch3mistry	700.0	Cafe, Continental, Italian, Desserts, Beve	Besant Nagar	Pasta, Waffles, Sandwich, Chocolate Pani Pu
31	Fusilli Reasons	400.0	Fast Food	Kilpauk	Nachos, Iced Tea, Garlic Bread, Brownie, S

In [ ]: 1