

## Task 2

Task: City Analysis

Identify the city with the highest number of restaurants in the dataset.

```
In [1]: # import library
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb
```

```
In [2]: df=pd.read_csv("C:\\Users\\abhis\\Downloads\\Dataset .csv")
df
```

Out[2]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion Makati City Mak..
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi...	Little Tokyo, Legaspi Village, Makati City	Little Tokyo Legaspi Village Makati City Ma..
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal...	Edsa Shangri-La, Ortigas, Mandaluyong City	Edsa Shangri-La Ortigas Mandaluyong City, Ma..
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall Ortigas Mandaluyong City, Mandal..
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall Ortigas Mandaluyong City, Mandal..
...	...	...	...	...	...	...	..
9546	5915730	Namlı Gurme	208	İstanbul	Kemankeş Karamustafa Paşa Mahallesi, Rıhtım ...	Karaköy	Karaköy İstanbul
9547	5908749	Ceviz Aca	208	İstanbul	Koşuyolu Mahallesi, Muhittin İstiklal Caddesi	Koşuyolu	Koşuyolu İstanbul
9548	5915807	Huqqa	208	İstanbul	Kuruçeşme Mahallesi, Muallim Naci Caddesi, N...	Kuruçeşme	Kuruçeşme İstanbul
9549	5916112	Ak Kahve	208	İstanbul	Kuruçeşme Mahallesi, Muallim Naci Caddesi, N...	Kuruçeşme	Kuruçeşme İstanbul
9550	5927402	Walter's Coffee Roastery	208	İstanbul	Cafea Mahallesi, Bademaltı Sokak, No 21/B, ...	Moda	Moda İstanbul

9551 rows × 21 columns

```
In [4]: print(df.shape)
```

```
(9551, 21)
```

```
In [5]: df.isnull().sum()
```

```
Out[5]: Restaurant ID      0
Restaurant Name      0
Country Code      0
City      0
Address      0
Locality      0
Locality Verbose      0
Longitude      0
Latitude      0
Cuisines      9
Average Cost for two      0
Currency      0
Has Table booking      0
Has Online delivery      0
Is delivering now      0
Switch to order menu      0
Price range      0
Aggregate rating      0
Rating color      0
Rating text      0
Votes      0
dtype: int64
```

```
In [9]: df.dropna(inplace=True)
```

```
In [10]: df
```

Out[10]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion Makati City Mak..
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...	...	...	...	...	...	...	..
9546	5915730	Namlı Gurme	208	İstanbul	Kemankeş Karamustafa Paşa Mahallesi, Rıhtım ...	Karaköy	Karaköy İstanbul
9547	5908749	Ceviz Aca	208	İstanbul	Koşuyolu Mahallesi, Muhittin İsmet Paşa Caddesi	Koşuyolu	Koşuyolu İstanbul
9548	5915807	Huqqa	208	İstanbul	Kuruçeşme Mahallesi, Muallim Naci Caddesi, N...	Kuruçeşme	Kuruçeşme İstanbul
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9550	5927402	Walter's Coffee Roastery	208	İstanbul	Cafea Mahallesi, Bademaltı Sokak, No 21/B, ...	Moda	Moda İstanbul

9542 rows × 21 columns

```
In [12]: df.groupby(by='City')[['Restaurant Name']].sum()
```

```
Out[12]:
```

	Restaurant Name
City	
Abu Dhabi	Denny'sFamous Dave's BarbecuePizza Di RoccoSof...
Agra	JahanpanahRangrezz RestaurantTime2Eat - Mama C...
Ahmedabad	650 - The Global KitchenPatang - The Revolving...
Albany	Austin's BBQ and Oyster BarBJ's Country Buffet...
Allahabad	Aryan Family's DelightBean HereBikanerwalaDews...
...	...
Weirton	Theo Yianni's Authentic Greek Restaurant
Wellington City	Maranui CafeFive BoroughsEkim BurgersOmbraThe ...
Winchester Bay	Fishpatrick's Crabby Cafe
Yorkton	Arigato Sushi
istanbul	J'adore ChocolatierStarbucksValoniaDraft Gastr...

140 rows × 1 columns

```
In [14]: city_rest=df.groupby(by='City')[['Restaurant Name']].value_counts()
```

```
In [16]: city_rest.sort_values(ascending=False)
```

```
Out[16]:
```

City	Restaurant Name	
New Delhi	Cafe Coffee Day	57
	Domino's Pizza	55
	Subway	38
	Green Chick Chop	37
	McDonald's	33
	..	
	Sugar Boutique	1
	Sugar Loft	1
	Sugar Rush	1
	Sugarama Patisserie	1
istanbul	Walter's Coffee Roastery	1

Length: 7965, dtype: int64

New Delhi have the highest number of restaurants.

Calculate the average rating for restaurants in each city.

```
In [18]: df
```

Out[18]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose
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3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall Ortigas Mandaluyong City, Mandal..
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...	...	...	...	...	...	...	..
9546	5915730	Namlı Gurme	208	İstanbul	Kemankeş Karamustafa Paşa Mahallesi, Rıhtım ...	Karaköy	Karaköy İstanbul
9547	5908749	Ceviz Acağı	208	İstanbul	Koşuyolu Mahallesi, Muhittin İsmet Paşa Caddesi	Koşuyolu	Koşuyolu İstanbul
9548	5915807	Huqqa	208	İstanbul	Kurucaşme Mahallesi, Muallim Naci Caddesi, N...	Kurucaşme	Kurucaşme İstanbul
9549	5916112	Ak Kahve	208	İstanbul	Kurucaşme Mahallesi, Muallim Naci Caddesi, N...	Kurucaşme	Kurucaşme İstanbul
9550	5927402	Walter's Coffee Roastery	208	İstanbul	Cafea Mahallesi, Bademaltı Sokak, No 21/B, ...	Moda	Moda İstanbul

9542 rows × 21 columns

```
In [19]: city_rest_rating=df.groupby(by='City')[['Restaurant Name','Aggregate rating']].value_c
```

```
In [20]: city_rest_rating
```

```
Out[20]:
```

City	Restaurant Name	Aggregate rating	
Abu Dhabi	Applebee's	4.0	1
	Via Delhi	4.0	1
	Tikka Tonight	4.0	1
	The Cheesecake Factory	4.6	1
	Tamba	4.7	1
			..
İstanbul	Leman K<_lt_r	3.7	1
	Namlı Gurme	4.1	1
	Starbucks	4.9	1
	Valonia	4.2	1
	Walter's Coffee Roastery	4.0	1

Length: 9002, dtype: int64

```
In [22]: city_rest_rating=df.groupby(by='City')[['Restaurant Name','Aggregate rating']].mean()  
city_rest_rating
```

C:\Users\abhis\AppData\Local\Temp\ipykernel\_12360\2222579058.py:1: FutureWarning: The default value of numeric\_only in DataFrameGroupBy.mean is deprecated. In a future version, numeric\_only will default to False. Either specify numeric\_only or select only columns which should be valid for the function.

```
city_rest_rating=df.groupby(by='City')[['Restaurant Name','Aggregate rating']].mean()  
( )
```

```
Out[22]:
```

Aggregate rating	
City	
Abu Dhabi	4.300000
Agra	3.965000
Ahmedabad	4.161905
Albany	3.552941
Allahabad	3.395000
...	...
Weirton	3.900000
Wellington City	4.250000
Winchester Bay	3.200000
Yorkton	3.300000
İstanbul	4.292857

140 rows × 1 columns

```
In [23]: city_rest_rating.head(1)
```

Out[23]:

Aggregate rating	
City	
Abu Dhabi	4.3

Abu Dhabi is the city which have highest average rating.

In [ ]: