

IMPORTING LIBRARIES

```
In [1]: import pandas as pd
import numpy as np
import seaborn as sns
import matplotlib as mlp
```

GETTING DATASET

```
In [2]: df = pd.read_csv("Downloads/dataset.csv")
```

```
Out [3]: df
```

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines ...	Currency	Has Table booking	Has Online delivery	Is delivering now	Switch to order menu	Price range	Aggregate rating	Rating color
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalyang Avenue...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City	121.027535	14.565443	French, Japanese, Desserts	Botswana Pula(P)	Yes	No	No	No	3	4.8	Dark Green
1	6304287	Izakaya Kikujiki	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City	121.014101	14.553708	Japanese	Botswana Pula(P)	Yes	No	No	No	3	4.5	Dark Green
2	6300002	Heat - Edisa Shangi-La	162	Mandaluyong City	Edisa Shangi-La, 1 Garden Way, Ortigas, Mandal...	Edisa Shangi-La, Ortigas, Mandaluyong City	Edisa Shangi-La, Ortigas, Mandaluyong City	121.056831	14.581404	Seafood, Asian, Filipino, Indian	Botswana Pula(P)	Yes	No	No	No	4	4.4	Green
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hub, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City	121.056475	14.585318	Japanese, Sushi	Botswana Pula(P)	No	No	No	No	4	4.9	Dark Green
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Century City Mall, Kalyang Avenue...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City	121.057508	14.584450	Japanese, Korean	Botswana Pula(P)	Yes	No	No	No	4	4.8	Dark Green
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9546	5915730	Nam? Gurne?	208	??stanbul	Kemanke?? Karamustafa Mahallesi, R?ht?m ...	Karak?_y	Karak?_y	28.977392	41.022793	Turkish	Turkish Lira(TL)	No	No	No	No	3	4.1	Green
9547	5908749	Ceviz A??i? ac?	208	??stanbul	Ko??uyulu Mahallesi, Muhtin?? s?r? Caddesi, N...	Ko??uyulu	Ko??uyulu	29.041297	41.009847	World Cuisine, Patisserie, Cafe	Turkish Lira(TL)	No	No	No	No	3	4.2	Green
9548	5915807	Huqqa	208	??stanbul	Kuru?_e?? me Mahallesi, Muallim Hatt, SM Megamall, N...	Kuru?_e?? me	Kuru?_e?? me	29.034640	41.055817	Italian, World Cuisine	Turkish Lira(TL)	No	No	No	No	4	3.7	Yellow
9549	5916112	A???k Kahve	208	??stanbul	Kuru?_e?? me Mahallesi, Muallim Hatt, SM Megamall, N...	Kuru?_e?? me	Kuru?_e?? me	29.036019	41.057979	Restaurant Cafe	Turkish Lira(TL)	No	No	No	No	4	4.0	Green
9550	5927402	Walter's Roastery	208	??stanbul	Cafea??a Mahallesi, Badema?? Sokak, No 21/B...	Moda	Moda	29.026016	40.984776	Cafe	Turkish Lira(TL)	No	No	No	No	2	4.0	Green

9551 rows x 21 columns

```
In [4]: df.head()
```

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines ...	Currency	Has Table booking	Has Online delivery	Is delivering now	Switch to order menu	Price range	Aggregate rating	Rating color	Rating text
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalyang Avenue...	Century City Mall, Poblacion, Makati City	Century City Mall, Poblacion, Makati City	121.027535	14.565443	French, Japanese, Desserts	Botswana Pula(P)	Yes	No	No	No	3	4.8	Dark Green	Dark Green
1	6304287	Izakaya Kikujiki	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City	Little Tokyo, Legaspi Village, Makati City	121.014101	14.553708	Japanese	Botswana Pula(P)	Yes	No	No	No	3	4.5	Dark Green	Dark Green
2	6300002	Heat - Edisa Shangi-La	162	Mandaluyong City	Edisa Shangi-La, 1 Garden Way, Ortigas, Mandal...	Edisa Shangi-La, Ortigas, Mandaluyong City	Edisa Shangi-La, Ortigas, Mandaluyong City	121.056831	14.581404	Seafood, Asian, Filipino, Indian	Botswana Pula(P)	Yes	No	No	No	4	4.4	Green	Green
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hub, SM Megamall, Ortigas...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City	121.056475	14.585318	Japanese, Sushi	Botswana Pula(P)	No	No	No	No	4	4.9	Dark Green	Dark Green
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Century City Mall, Kalyang Avenue...	SM Megamall, Ortigas, Mandaluyong City	SM Megamall, Ortigas, Mandaluyong City	121.057508	14.584450	Japanese, Korean	Botswana Pula(P)	Yes	No	No	No	4	4.8	Dark Green	Dark Green

5 rows x 21 columns

```
In [5]: df.tail()
```

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude	Cuisines ...	Currency	Has Table booking	Has Online delivery	Is delivering now	Switch to order menu	Price range	Aggregate rating	Rating color	Rating text
9546	5915730	Nam? Gurne?	208	??stanbul	Kemanke?? Karamustafa Mahallesi, R?ht?m ...	Karak?_y	Karak?_y	28.977392	41.022793	Turkish	Turkish Lira(TL)	No	No	No	No	3	4.1	Green	Very Good
9547	5908749	Ceviz A??i? ac?	208	??stanbul	Ko??uyulu Mahallesi, Muhtin?? s?r? Caddesi, N...	Ko??uyulu	Ko??uyulu	29.041297	41.009847	World Cuisine, Patisserie, Cafe	Turkish Lira(TL)	No	No	No	No	3	4.2	Green	Very Good
9548	5915807	Huqqa	208	??stanbul	Kuru?_e?? me Mahallesi, Muallim Hatt, SM Megamall, N...	Kuru?_e?? me	Kuru?_e?? me	29.034640	41.055817	Italian, World Cuisine	Turkish Lira(TL)	No	No	No	No	4	3.7	Yellow	Good
9549	5916112	A???k Kahve	208	??stanbul	Kuru?_e?? me Mahallesi, Muallim Hatt, SM Megamall, N...	Kuru?_e?? me	Kuru?_e?? me	29.036019	41.057979	Restaurant Cafe	Turkish Lira(TL)	No	No	No	No	4	4.0	Green	Very Good
9550	5927402	Walter's Roastery	208	??stanbul	Cafea??a Mahallesi, Badema?? Sokak, No 21/B...	Moda	Moda	29.026016	40.984776	Cafe	Turkish Lira(TL)	No	No	No	No	2	4.0	Green	Very Good

5 rows x 21 columns

```
In [6]: df.shape
```

Out [6]: (9551, 21)

DATASET CLEANING

```
In [7]: df.isnull().sum()
```

Restaurant ID	0
Restaurant Name	0
Country Code	0
City	0
Address	0
Locality	0
Locality Verbose	0
Longitude	0
Latitude	0
Cuisines	0
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 [8]: df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 9551 entries, 0 to 9550
Data columns (total 21 columns):
 #   Column              Non-Null Count  Dtype
---  -
 0   Restaurant ID        9551 non-null   int64
 1   Restaurant Name      9551 non-null   object
 2   Country Code         9551 non-null   int64
 3   City                 9551 non-null   object
 4   Address              9551 non-null   object
 5   Locality             9551 non-null   object
 6   Locality Verbose     9551 non-null   object
 7   Longitude            9551 non-null   float64
 8   Latitude             9551 non-null   float64
 9   Cuisines              9542 non-null   object
10  Average Cost for two  9551 non-null   int64
11  Currency              9551 non-null   object
12  Has Table booking     9551 non-null   object
13  Has Online delivery   9551 non-null   object
14  Is delivering now     9551 non-null   object
15  Switch to order menu  9551 non-null   object
16  Price range           9551 non-null   int64
17  Aggregate rating      9551 non-null   float64
18  Rating color          9551 non-null   object
19  Rating text           9551 non-null   object
20  Votes                 9551 non-null   int64
dtypes: float64(3), int64(5), object(13)
memory usage: 1.5+ MB
```

NO OF RESTAURANT

```
In [9]: len(df['Restaurant Name'])
```

Out [9]: 9551

COUNTRIES WITH CODE

```
In [10]: c_code = df.groupby('City')['Country Code'].unique()
c_code
```

City	
??stanbul	[208]
Abu Dhabi	[214]
Agra	[1]
Ahmedabad	[1]
Albany	[216]
...	...
Waterloo	[216]
Weirton	[216]
Wellington City	[148]
Winchester Bay	[216]
Yorlton	[37]

Name: Country Code, Length: 141, dtype: object

CITY WISE COUNT OF RESTAURANT

```
In [11]: count_by_city = df['City'].value_counts()
count_by_city
```

City	
New Delhi	5473
Gurgaon	1118
Noida	1089
Faridabad	251
Ghaziabad	25
...	...
Panchkula	1
Mc Millan	1
Mayfield	1
Macedon	1
VineLand Station	1

Name: count, Length: 141, dtype: int64

CUISINES COMBINATION

```
In [12]: cuisines_combo = df['Cuisines'].str.split('.').explode()
cuisines_combo.count
cuisines_combo.value_counts()
cuisines_combo.count
```

Cuisines	
North Indian	2992
Chinese	1890
Fast Food	1314
North Indian	968
Chinese	855
...	...
Ramen	1
Indonesian	1
Bubble Tea	1
Kiwi	1
World Cuisine	1

Name: count, Length: 249, dtype: int64

AVERAGE OF CUISINES WITH AGGREGATE RATING

```
In [13]: avg_rating = df.groupby('Cuisines')['Aggregate rating'].mean()
avg_rating
```

Cuisines	
Afghani	8.725
Afghani, Mughlai, Chinese	8.000
Afghani, North Indian	8.000
Afghani, North Indian, Pakistani, Arabian	8.000
Afghani	4.700
...	...
Western, Asian, Cafe	4.200
Western, Fusion, Fast Food	3.200
World Cuisine	4.900
World Cuisine, Mexican, Italian	4.400
World Cuisine, Patisserie, Cafe	4.200

Name: Aggregate rating, Length: 1825, dtype: float64

HIGHEST AVERAGE COST FOR TWO

```
In [14]: high_cost = df.groupby('Cuisines')['Average Cost for two'].value_counts().sort_values(ascending=False)
high_cost
```

Cuisines		Average Cost for two
North Indian	299	173
	389	116
Cafe	408	184
North Indian	458	87
	508	86
...	...	...
Continental, North Indian, South Indian, Italian	2508	1
Continental, North Indian, Thai, Chinese	1100	1
Continental, Seafood, Burger, South African, Finger Food, Grill	258	1
Requirement already satisfied: MarkupSafe>=2.0 in c:\users\infont\anaconda3\lib\site-packages (from folium) (1.24.3)	500	1
Requirement already satisfied: certifi>=2017.4.17 in c:\users\infont\anaconda3\lib\site-packages (from requests>folium) (2023.7.22)	105	1

Name: count, Length: 3551, dtype: int64

TOTAL CURRENCY OF AVERAGE COST FOR TWO

```
In [15]: curr = df.groupby('Currency')['Average Cost for two'].sum().sort_values(ascending=False)
curr
```

Currency	
Indonesian Rupiah(IDR)	5905009
Indian Rupee(Rs.)	5393400
Sri Lankan Rupee(LKR)	47508
Botswana Pula(P)	33350
Rand(R)	25184
Dollar(\$)	15188
Israeli Diram(AED)	9985
Brazilian Real(R\$)	8080
Qatari Rial(QR)	4475
Pound(?)	3825
Turkish Lira(TL)	2885
NewZealand(\$)	2929

Name: Average cost for two, dtype: int64

TABLE BOOKING COUNT BY CITY

```
In [16]: tab_book = df.groupby('City')['Has Table booking'].value_counts().sort_values(ascending=False)
tab_book
```

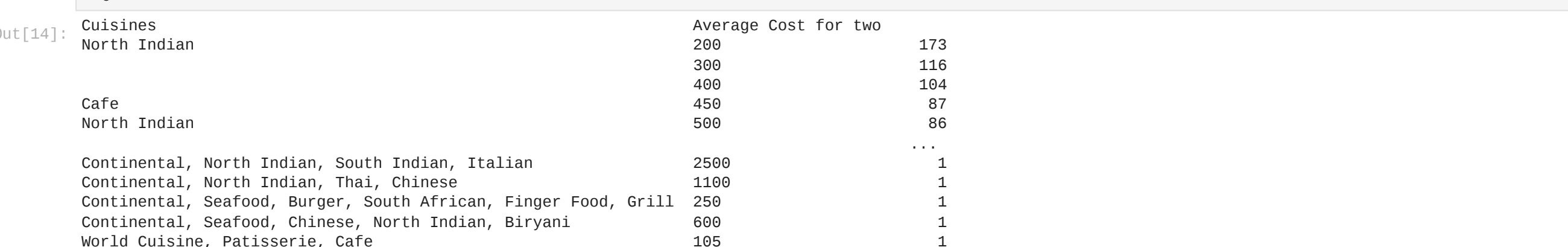
City	Has Table booking	
New Delhi	No	4758
Noita	No	968
Gurgaon	No	914
New Delhi	Yes	715
Faridabad	No	226
...	...	...
Doha	Yes	1
Princeton	No	1
Lorn	No	1
Quezon City	No	1
Yorkton	No	1

Name: count, Length: 165, dtype: int64

COUNT OF RATING COLOUR BY ID

```
In [17]: sns.barplot(x='Rating color',y='Restaurant ID',data=df).set(title='Count of Rating colour by id')
```

```
Out [17]: [Text(0.5, 1.0, 'Count of Rating colour by id')]
```



COUNT OF RATING TEXT BY ID

```
In [18]: sns.boxplot(x='Rating text',y='Restaurant ID',data=df).set(title='Count of Rating text by id')
```

```
Out [18]: [Text(0.5, 1.0, 'Count of Rating text by id')]
```

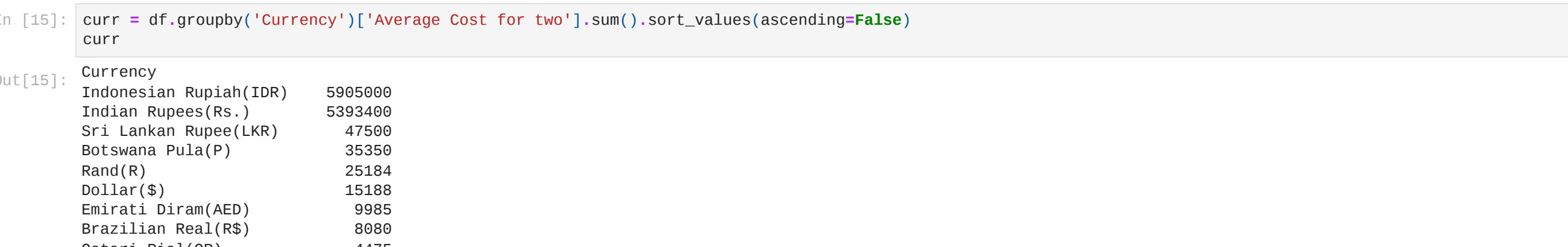


TABLE BOOKING

```
In [19]: cit=df.groupby('City')
tab_book=df['Has Table booking'].value_counts()
cit
tab_book
```

Has Table booking	
No	8399
Yes	1150
Name: count, dtype: int64	

ONLINE DELIVERY

```
In [20]: on_del=df['Has Online delivery'].value_counts()
on_del
```

Has Online delivery	
No	7180
Yes	2451
Name: count, dtype: int64	

```
In [21]: deli_or_not=df['Is delivering now'].value_counts()
deli_or_not
```

Is delivering now	
No	9517
Yes	54
Name: count, dtype: int64	

HIGHEST VOTING BY CUISINES

```
In [22]: high_vote = df.groupby('Cuisines')['Votes'].sum().sort_values(ascending=False)
high_vote
```

Cuisines	
North Indian, Mughlai	53747
North Indian	48241
North Indian, Chinese	42812
Cafe	39657
Chinese	21925
...	...
Mughlai, North Indian, South Indian, Chinese, Street Food, Bakery	0
Cafe, Tibetan	0
Chinese, Fast Food, Pizza	0
Chinese, Italian	0
Seafood, Mughlai, North Indian	0

Name: Votes, Length: 1825, dtype: int64

HIGHEST VOTING BY CITY

```
In [23]: high_vote_city = df.groupby('City')['Votes'].sum().sort_values(ascending=False)
high_vote_city
```

City	
New Delhi	628349
Gurgaon	132160
Noida	73488
Bangalore	56115
Kolkata	44593
...	...
Mayfield	11
Miller	11
Potrero	9
Consort	6
Cochrane	6

Name: Votes, Length: 141, dtype: int64

TABLE BOOKING BY CURRENCY

```
In [24]: curr_book=df.groupby('Currency')['Has Table booking'].value_counts().sort_values(ascending=False)
curr_book
```

Currency	Has Table booking	
Indian Rupee(Rs.)	No	7541
	Yes	1111
Dollar(\$)	No	482
Pound(?)	No	68
Brazilian Real(R\$)	No	60
Rand(R)	No	38
Israeli Diram(AED)	No	42
NewZealand(\$)	No	40
Turkish Lira(TL)	No	34
Indonesian Rupiah(IDR)	No	21
Sri Lankan Rupee(LKR)	No	28
Qatari Rial(QR)	No	19
Israeli Diram(AED)	Yes	18
Botswana Pula(P)	Yes	14
Pounds(?)	Yes	12
Botswana Pula(P)	No	9
Rand(R)	Yes	2
Qatari Rial(QR)	Yes	1

Name: count, dtype: int64

```
In [ ]: 
```

```
In [26]: !pip install folium
```

```
Collecting folium
  Obtaining dependency information for folium from https://files.pythonhosted.org/packages/18/09/8569904c8c5679cc02826d98de633c07abcc02443a23181e5f71f9dabc/
  folium-0.15.1-py2.py3-none-any.whl.metadata
  Downloading folium-0.15.1-py2.py3-none-any.whl.metadata (3.4 kB)
  Obtaining dependency information for branca>=0.6.0 (from folium)
  Obtaining dependency information for branca>=0.6.0 from https://files.pythonhosted.org/packages/2f/e7/6830136221de923055716023e39470a71f92e0dbba2c4517ce49a5/
  Downloading branca-0.7.0-py3-none-any.whl.metadata (1.5 kB)
Requirement already satisfied: Jinja2>=2.9 in c:\users\infont\anaconda3\lib\site-packages (from folium) (3.1.2)
Requirement already satisfied: MarkupSafe>=2.0 in c:\users\infont\anaconda3\lib\site-packages (from folium) (1.24.3)
Requirement already satisfied: requests in c:\users\infont\anaconda3\lib\site-packages (from folium) (2.31.0)
Requirement already satisfied: xyzservices in c:\users\infont\anaconda3\lib\site-packages (from folium) (2022.8.0)
Requirement already satisfied: urllib3>=1.21.1 in c:\users\infont\anaconda3\lib\site-packages (from requests>folium) (2.1.0)
Requirement already satisfied: certifi>=2017.4.1
```