```
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
```

```
data=pd.read_excel("data.xlsx")
```

```
cc=pd.read_excel('Country-Code.xlsx')
```

```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 9551 entries, 0 to 9550
Data columns (total 19 columns):
 #   Column                Non-Null Count  Dtype  
---  ------                --------------  -----  
 0   Restaurant ID         9551 non-null   int64  
 1   Restaurant Name       9550 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  Price range           9551 non-null   int64  
 15  Aggregate rating      9551 non-null   float64
 16  Rating color          9551 non-null   object 
 17  Rating text           9551 non-null   object 
 18  Votes                 9551 non-null   int64  
dtypes: float64(3), int64(5), object(11)
memory usage: 1.4+ MB
```

```
cc.head()
```

	Country Code	Country
0	1	India
1	14	Australia
2	30	Brazil
3	37	Canada
4	94	Indonesia

```
data.shape
```

```
(9551, 19)
```

```
data.head()
```

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longi
0	7402935	Skye	94	Jakarta	Menara BCA, Lantai 56, Jl. MH. Thamrin, Thamri...	Grand Indonesia Mall, Thamrin	Grand Indonesia Mall, Thamrin, Jakarta	106.82
1	7410290	Satoo - Hotel Shangri-La	94	Jakarta	Hotel Shangri-La, Jl. Jend. Sudirman	Hotel Shangri-La, Sudirman	Hotel Shangri-La, Sudirman, Jakarta	106.81
2	7420899	Sushi Masa	94	Jakarta	Jl. Tuna Raya No. 5, Penjaringan	Penjaringan	Penjaringan, Jakarta	106.80
3	7421967	3 Wise Monkeys	94	Jakarta	Jl. Suryo No. 26, Senopati, Jakarta	Senopati	Senopati, Jakarta	106.81
4	7422489	Avec Moi Restaurant and Bar	94	Jakarta	Gedung PIC, Jl. Teluk Betung 43, Thamrin, Jakarta	Thamrin	Thamrin, Jakarta	106.82

```
data.describe()
```

	Restaurant ID	Country Code	Longitude	Latitude	Average Cost for two	Price range
count	9.551000e+03	9551.000000	9551.000000	9551.000000	9551.000000	9551.000000
mean	9.051128e+06	18.365616	64.126574	25.854381	1199.210763	1.804837
std	8.791521e+06	56.750546	41.467058	11.007935	16121.183073	0.905609
min	5.300000e+01	1.000000	-157.948486	-41.330428	0.000000	1.000000
25%	3.019625e+05	1.000000	77.081343	28.478713	250.000000	1.000000
50%	6.004089e+06	1.000000	77.191964	28.570469	400.000000	2.000000
75%	1.835229e+07	1.000000	77.282006	28.642758	700.000000	2.000000

```
df = pd.merge(data,cc,on='Country Code', how='left')
```

```
df.head()
```

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longi
0	7402935	Skye	94	Jakarta	Menara BCA, Lantai 56, Jl. MH. Thamrin, Thamri...	Grand Indonesia Mall, Thamrin	Grand Indonesia Mall, Thamrin, Jakarta	106.82
1	7410290	Satoo - Hotel Shangri-La	94	Jakarta	Hotel Shangri-La, Jl. Jend. Sudirman	Hotel Shangri-La, Sudirman	Hotel Shangri-La, Sudirman, Jakarta	106.81
2	7420899	Sushi Masa	94	Jakarta	Jl. Tuna Raya No. 5, Penjaringan	Penjaringan	Penjaringan, Jakarta	106.80
3	7421967	3 Wise Monkeys	94	Jakarta	Jl. Suryo No. 26, Senopati, Jakarta	Senopati	Senopati, Jakarta	106.81
4	7422489	Avec Moi Restaurant and Bar	94	Jakarta	Gedung PIC, Jl. Teluk Betung 43, Thamrin, Jakarta	Thamrin	Thamrin, Jakarta	106.82

```
df.columns = df.columns.str.replace(' ','_')
```

```
df.columns
```

```
Index(['Restaurant_ID', 'Restaurant_Name', 'Country_Code', 'City', 'Address',
       'Locality', 'Locality_Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average_Cost_for_two', 'Currency', 'Has_Table_booking',
       'Has_Online_delivery', 'Price_range', 'Aggregate_rating',
       'Rating_color', 'Rating_text', 'Votes', 'Country'],
      dtype='object')
```

```
df.isnull().sum()
```

```
Restaurant_ID           0
Restaurant_Name         1
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
Price_range             0
Aggregate_rating        0
Rating_color            0
Rating_text             0
Votes                   0
Country                 0
dtype: int64
```

```
df.dropna(inplace=True)
```

```
df.reset_index()
```

	index	Restaurant_ID	Restaurant_Name	Country_Code	City	Address	
0	0	7402935	Skye	94	Jakarta	Menara BCA, Lantai 56, Jl. MH. Thamrin, Thamri...	M
1	1	7410290	Satoo - Hotel Shangri-La	94	Jakarta	Hotel Shangri-La, Jl. Jend. Sudirman	H L
2	2	7420899	Sushi Masa	94	Jakarta	Jl. Tuna Raya No. 5, Penjaringan	
3	3	7421967	3 Wise Monkeys	94	Jakarta	Jl. Suryo No. 26, Senopati, Jakarta	
4	4	7422489	Avec Moi Restaurant and Bar	94	Jakarta	Gedung PIC, Jl. Teluk Betung 43, Thamrin, Jakarta	
...	...	...	...	...	...	...	
9536	9546	18279289	BMG - All Day Dining	1	Dehradun	140 A, Rajpur Road, Jakhan, Dehradun	
9537	9547	2300497	Atmosphere Grill Cafe Sheesha	1	Kanpur	8th Floor, J.S. Tower, 16/106 - Mall Road, Kan...	
9538	9548	18312106	UrbanCrave	1	Kanpur	14/125, The Mall, Mall Road, Colonelganj, Para...	
9539	9549	3900245	Deena Chat Bhandar	1	Varanasi	D-47/184, Luxa Road, Dashaswmedh Road, Varanasi	Da
9540	9550	18246202	VNS Live Studio	1	Varanasi	Hotel Varuna Ground Floor, 22 Gulab Bagh, Sigr...	

9541 rows × 21 columns

```
df.shape
```

```
(9541, 20)
```

```
df.duplicated().sum()
```

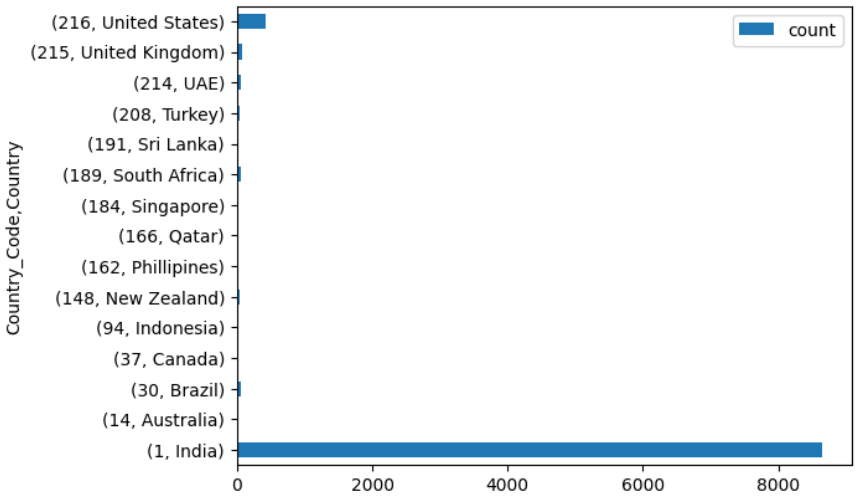
```
0
```

```
x = df.groupby(['Country_Code', 'Country']).agg( count = ('Restaurant_ID','count'))
x.sort_values(by = 'count',ascending= False)
```

		count
Country_Code	Country	
1	India	8651
216	United States	425
215	United Kingdom	80
30	Brazil	60
189	South Africa	60
214	UAE	60
148	New Zealand	40
208	Turkey	34
14	Australia	24
162	Phillipines	22
94	Indonesia	21
166	Qatar	20
184	Singapore	20
191	Sri Lanka	20
37	Canada	4

```
x.plot(kind='barh',fontsize=10)
```

```
<Axes: ylabel='Country_Code,Country'>
```




```
y = df.groupby(['Country','City']).agg(Count = ('Restaurant_ID','count'))
```

```
y.describe()
```

	Count
count	140.000000
mean	68.150000
std	478.407895
min	1.000000
25%	1.000000
50%	20.000000
75%	20.000000
max	5473.000000

```
y.sort_values(by='Count',ascending=False)
```

Country	City	Count
India	New Delhi	5473
	Gurgaon	1118
	Noida	1080
	Faridabad	251
	Ghaziabad	25
	...	...
	Panchkula	1
Australia	Balingup	1
Indonesia	Bandung	1
Phillipines	Quezon City	1
United States	Winchester Bay	1

140 rows × 1 columns

```
min_rest = y[y['Count']==1]
min_rest.info()
min_rest
```

```
<class 'pandas.core.frame.DataFrame'>
MultiIndex: 45 entries, ('Australia', 'Armidale') to ('United States', 'Winchester
Data columns (total 1 columns):
 #   Column  Non-Null Count  Dtype
---  ------  --------------  -----
 0   Count   45 non-null     int64
dtypes: int64(1)
memory usage: 1.8+ KB
```

Country	City	Count
Australia	Armidale	1
	Balingup	1
	Beechworth	1
	Dicky Beach	1
	East Ballina	1
	Flaxton	1
	Forrest	1
	Huskisson	1
	Inverloch	1
	Lakes Entrance	1
	Lorn	1
	Macedon	1
	Mayfield	1
	Middleton Beach	1
	Montville	1
	Palm Cove	1
	Paynesville	1
	Penola	1
	Phillip Island	1
	Tanunda	1
	Trentham East	1
	Victor Harbor	1
Canada	Chatham-Kent	1
	Consort	1
	Vineland Station	1

```
# we see that new Delhi has the maximum restaurant with 5473
# we observe that multiple cities have only one restaurant.

#There are 46 cities in 7 different countries with 1 restaurants



# Explore how ratings are distributed overall



max_rate = df.sort_values(by='Aggregate_rating',ascending=False).groupby(['Country','City'],as_index=False).first()


min_rate = df.sort_values(by='Aggregate_rating',ascending=False).groupby(['Country','City'],as_index=False).last()

max_rate
```

	Country	City	Restaurant_ID	Restaurant_Name	Country_Code	Address
0	Australia	Armidale	16611114	Whitebull Hotel	14	117 Marsh St, Armidale, NSW
1	Australia	Balingup	16608864	Taste of Balingup	14	63 South Western Hwy, Balingup, WA
2	Australia	Beechworth	16604911	Bridge Road Brewers	14	Old Coach House 50 Ford St, Beechworth, Beechw...
3	Australia	Dicky Beach	16615894	The Giggling Goat	14	14 Beerburrum St, Dicky Beach, QLD
4	Australia	East Ballina	16612028	The Belle General	14	12 Shelly Beach Rd, East Ballina, NSW
...	...	...	...	...	...	...
135	United States	Valdosta	17678218	Smok'n Pig B-B-Q	216	4228 N Valdosta Rd, Valdosta, GA 31602
136	United States	Vernonia	17558738	Blue House Cafe	216	919 Bridge St, Vernonia, OR 97064
137	United States	Waterloo	17697332	Tokyo Japanese Steak House	216	1931 Sears Street, Waterloo, IA 50702
138	United States	Weirton	17694056	Theo Yianni's Authentic Greek Restaurant	216	322 American Way, Weirton, WV 26062
139	United States	Winchester Bay	17559793	Fishpatrick's Crabby Cafe	216	196 Bayfront Loop, Winchester Bay, OR

```
min_rate
```

	Country	City	Restaurant_ID	Restaurant_Name	Country_Code	Address
0	Australia	Armidale	16611114	Whitebull Hotel	14	117 Marsh St, Armidale, NSW
1	Australia	Balingup	16608864	Taste of Balingup	14	63 South Western Hwy, Balingup, WA
2	Australia	Beechworth	16604911	Bridge Road Brewers	14	Old Coach House 50 Ford St, Beechworth, Beechw...
3	Australia	Dicky Beach	16615894	The Giggling Goat	14	14 Beerburrum St, Dicky Beach, QLD
4	Australia	East Ballina	16612028	The Belle General	14	12 Shelly Beach Rd, East Ballina, NSW
...	...	...	...	...	...	...
135	United States	Valdosta	17678043	El Toreo Mexican Restaurant	216	1713 Gornto Rd, Valdosta, GA 31601
136	United States	Vernonia	17558738	Blue House Cafe	216	919 Bridge St, Vernonia, OR 97064
137	United States	Waterloo	17697444	Masala Grill & Coffee House	216	911 W 23rd St, Cedar Falls, IA 50613
138	United States	Weirton	17694056	Theo Yianni's Authentic Greek Restaurant	216	322 American Way, Weirton, WV 26062
139	United States	Winchester Bay	17559793	Fishpatrick's Crabby Cafe	216	196 Bayfront Loop, Winchester Bay, OR 97467

```
df_max=max_rate[['Country','City','Restaurant_Name','Aggregate_rating']]
```

```
df_min=min_rate[['Country','City','Restaurant_Name','Aggregate_rating']]
```

```
df_max
```

	Country	City	Restaurant_Name	Aggregate_rating
0	Australia	Armidale	Whitebull Hotel	3.5
1	Australia	Balingup	Taste of Balingup	3.2
2	Australia	Beechworth	Bridge Road Brewers	4.6
3	Australia	Dicky Beach	The Giggling Goat	3.6
4	Australia	East Ballina	The Belle General	4.1
...	...	...	...	...
135	United States	Valdosta	Smok'n Pig B-B-Q	4.1
136	United States	Vernonia	Blue House Cafe	4.3
137	United States	Waterloo	Tokyo Japanese Steak House	3.9
138	United States	Weirton	Theo Yianni's Authentic Greek Restaurant	3.9

```
df_min
```

	Country	City	Restaurant_Name	Aggregate_rating
0	Australia	Armidale	Whitebull Hotel	3.5
1	Australia	Balingup	Taste of Balingup	3.2
2	Australia	Beechworth	Bridge Road Brewers	4.6
3	Australia	Dicky Beach	The Giggling Goat	3.6
4	Australia	East Ballina	The Belle General	4.1
...	...	...	...	...
135	United States	Valdosta	El Toreo Mexican Restaurant	3.1
136	United States	Vernonia	Blue House Cafe	4.3
137	United States	Waterloo	Masala Grill & Coffee House	3.2
138	United States	Weirton	Theo Yianni's Authentic Greek Restaurant	3.9

```
rating = df_max.merge(df_min,left_on='City',right_on='City',how='inner')
```

```
rating
```

	Country_x	City	Restaurant_Name_x	Aggregate_rating_x	Country_y	Restaur
0	Australia	Armidale	Whitebull Hotel	3.5	Australia	Wh
1	Australia	Balingup	Taste of Balingup	3.2	Australia	Taste
2	Australia	Beechworth	Bridge Road Brewers	4.6	Australia	I
3	Australia	Dicky Beach	The Giggling Goat	3.6	Australia	The G
4	Australia	East Ballina	The Belle General	4.1	Australia	The B
...	...	...	...	...	...	
135	United States	Valdosta	Smok'n Pig B-B-Q	4.1	United States	El To
136	United States	Vernonia	Blue House Cafe	4.3	United States	Blue
137	United States	Waterloo	Tokyo Japanese Steak House	3.9	United States	M C

```
rating.drop(columns='Country_y',axis=1,inplace=True)
```

```
rating.columns = ['Country','City','Highest Rated Restaurant','Rating Max','Lowest Rated Restaurant','Rating Min']
```

```
rating
```

	Country	City	Highest Rated Restaurant	Rating Max	Lowest Rated Restaurant	Rating Min
0	Australia	Armidale	Whitebull Hotel	3.5	Whitebull Hotel	3.5
1	Australia	Balingup	Taste of Balingup	3.2	Taste of Balingup	3.2
2	Australia	Beechworth	Bridge Road Brewers	4.6	Bridge Road Brewers	4.6
3	Australia	Dicky Beach	The Giggling Goat	3.6	The Giggling Goat	3.6
4	Australia	East Ballina	The Belle General	4.1	The Belle General	4.1
...	...	...	...	...	...	...
135	United States	Valdosta	Smok'n Pig B-B-Q	4.1	El Toreo Mexican Restaurant	3.1
136	United States	Vernonia	Blue House Cafe	4.3	Blue House Cafe	4.3
137	United States	Waterloo	Tokyo Japanese Steak House	3.9	Masala Grill & Coffee House	3.2
138	United	Weirton	Theo Yianni's	3.9	Theo Yianni's	3.9

```
#Ratio between restaurants that allow table booking vs that do not allow table booking.
#Percentage of restaurants providing online delivery.
#Difference in no. of votes for the restaurants that deliver and the restaurant that don’t.


df1 = df.copy()
df1.columns
```

```
Index(['Restaurant_ID', 'Restaurant_Name', 'Country_Code', 'City', 'Address',
       'Locality', 'Locality_Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average_Cost_for_two', 'Currency', 'Has_Table_booking',
       'Has_Online_delivery', 'Price_range', 'Aggregate_rating',
       'Rating_color', 'Rating_text', 'Votes', 'Country'],
      dtype='object')
```

```
dummy = ['Has_Table_booking','Has_Online_delivery']
df1 = pd.get_dummies(df1,columns=dummy,drop_first=True)


df1.head()
```

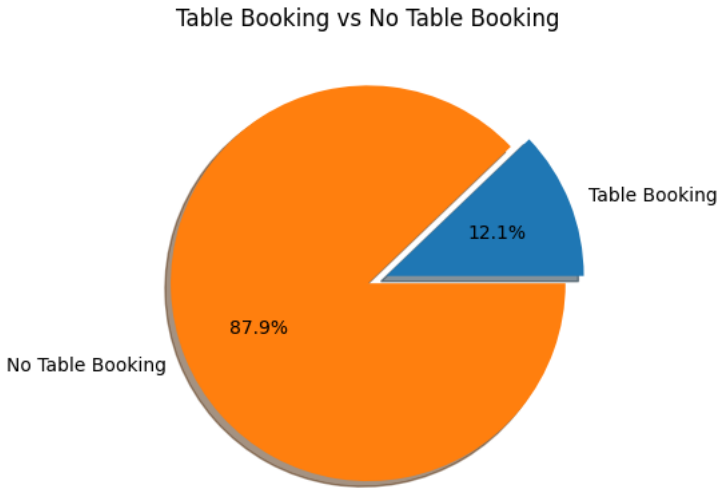
	Restaurant_ID	Restaurant_Name	Country_Code	City	Address	Locality	Local
0	7402935	Skye	94	Jakarta	Menara BCA, Lantai 56, Jl. MH. Thamrin, Thamri...	Grand Indonesia Mall, Thamrin	Gr
1	7410290	Satoo - Hotel Shangri-La	94	Jakarta	Hotel Shangri-La, Jl. Jend. Sudirman	Hotel Shangri-La, Sudirman	Hot Sudi
2	7420899	Sushi Masa	94	Jakarta	Jl. Tuna Raya No. 5, Penjaringan	Penjaringan	
3	7421967	3 Wise Monkeys	94	Jakarta	Jl. Suryo No. 26, Senopati, Jakarta	Senopati	Ser
4	7422489	Avec Moi Restaurant and Bar	94	Jakarta	Gedung PIC, Jl. Teluk Betung 43, Thamrin, Jakarta	Thamrin	Th

```
table_booking= df1[df1['Has_Table_booking_Yes']==1]['Restaurant_ID'].count()
table_nbooking=df1[df1['Has_Table_booking_Yes']==0]['Restaurant_ID'].count()


print('Ratio between restaurants that allow table booking vs. those that do not allow table booking: ',round ((table_booking/table_nbook
```

```
Ratio between restaurants that allow table booking vs. those that do not allow table booking:  0.14
```

```
labels = 'Table Booking', 'No Table Booking'
sizes = [table_booking,table_nbooking]
explode = (0.1, 0)
plt.pie(sizes, explode=explode, labels=labels, autopct='%1.1f%%',shadow=True)
plt.title("Table Booking vs No Table Booking")
plt.show()
```




```
print(table_booking,table_nbooking)
```

```
1158 8383
```

```
od = df1[df1['Has_Online_delivery_Yes']==1]['Restaurant_ID'].count()
no_od= df1[df1['Has_Online_delivery_Yes']==0]['Restaurant_ID'].count()
```

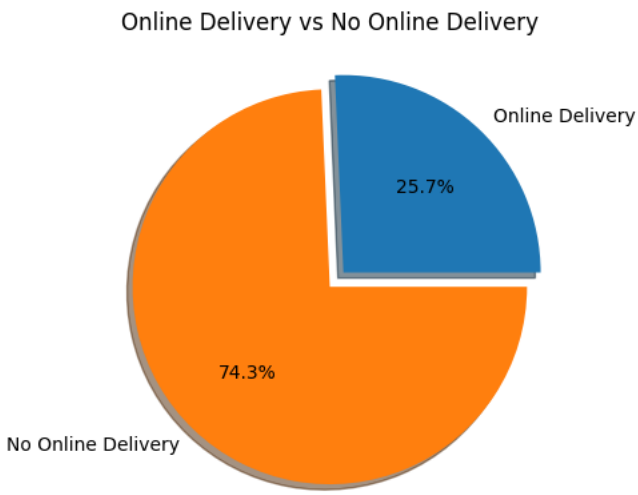
```
print('Percentage of Restaurants providing online delivery  {} %'.format((round(od/len(df1),3)*100) ))
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
<ipython-input-1-7b0f2d46b8d2> in <cell line: 1>()
----> 1 print('Percentage of Restaurants providing online delivery  {}
%'.format((round(od/len(df1),3)*100) ))

NameError: name 'od' is not defined

SEARCH STACK OVERFLOW
```

```
labels = 'Online Delivery','No Online Delivery'
size = [od,no_od]
explode = (0.1,0)
plt.pie(size,explode=explode,labels=labels,shadow=True,autopct='%1.1f%%')
plt.title("Online Delivery vs No Online Delivery")
plt.show()
```

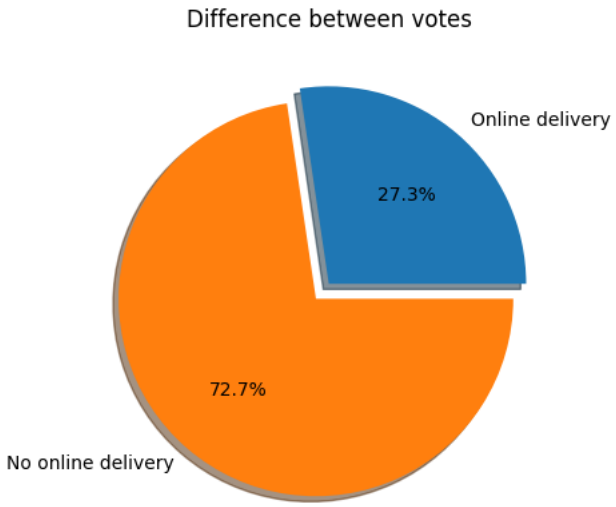



```
rest_deliver= df1[df1['Has_Table_booking_Yes']==1]['Votes'].sum()
rest_ndeliver=df1[df1['Has_Table_booking_Yes']==0]['Votes'].sum()
```

```
print('Difference in number of votes for restaurants that deliver and dont deliver: ',abs((rest_deliver - rest_ndeliver)))
```

```
Difference in number of votes for restaurants that deliver and dont deliver:  677356
```

```
labels = 'Online delivery','No online delivery'
size = [rest_deliver,rest_ndeliver]
explode = (0,0.1)
plt.pie(size,labels=labels,explode=explode,shadow=True,autopct='%1.1f%%')
plt.title('Difference between votes')
plt.show()
```




```
#What are the top 10 cuisines served across cities?
#What is the maximum and minimum no. of cuisines that a restaurant serves?
```

```
df.columns
```

```
Index(['Restaurant_ID', 'Restaurant_Name', 'Country_Code', 'City', 'Address',
       'Locality', 'Locality_Verbose', 'Longitude', 'Latitude', 'Cuisines',
       'Average_Cost_for_two', 'Currency', 'Has_Table_booking',
       'Has_Online_delivery', 'Price_range', 'Aggregate_rating',
       'Rating_color', 'Rating_text', 'Votes', 'Country'],
      dtype='object')
```

```
df['Cuisines']
```

```
0                                  Italian, Continental
1                              Asian, Indonesian, Western
2                                        Sushi, Japanese
3                                              Japanese
```

```
4                                     French, Western
                                 ...
9546                    Chinese, North Indian, Fast Food
9547                        Indian, Chinese, Continental
9548    Cafe, Continental, Desserts, Ice Cream, Italia...
9549                                          Street Food
9550                                Chinese, North Indian
Name: Cuisines, Length: 9541, dtype: object
```

```
df.head()
```

	Restaurant_ID	Restaurant_Name	Country_Code	City	Address	Locality	Local
0	7402935	Skye	94	Jakarta	Menara BCA, Lantai 56, Jl. MH. Thamrin, Thamri...	Grand Indonesia Mall, Thamrin	Gr
1	7410290	Satoo - Hotel Shangri-La	94	Jakarta	Hotel Shangri-La, Jl. Jend. Sudirman	Hotel Shangri-La, Sudirman	Hot Sudi
2	7420899	Sushi Masa	94	Jakarta	Jl. Tuna Raya No. 5, Penjaringan	Penjaringan	
3	7421967	3 Wise Monkeys	94	Jakarta	Jl. Suryo No. 26, Senopati, Jakarta	Senopati	Ser
4	7422489	Avec Moi Restaurant and Bar	94	Jakarta	Gedung PIC, Jl. Teluk Betung 43, Thamrin, Jakarta	Thamrin	Th

```
df.shape
```

```
(9541, 20)
```

```
df.columns
cuisines = df['Cuisines'].apply(lambda x: pd.Series(x.split(',')))
```

```
cuisines.columns = ['cuisines_1','cuisines_2','cuisines_3','cuisines_4','cuisines_5','cuisines_6','cuisines_7','cuisines_8']
cuisines.tail()
```

	cuisines_1	cuisines_2	cuisines_3	cuisines_4	cuisines_5	cuisines_6	cuisine
9546	Chinese	North Indian	Fast Food	NaN	NaN	NaN	N
9547	Indian	Chinese	Continental	NaN	NaN	NaN	N
9548	Cafe	Continental	Desserts	Ice Cream	Italian	Beverages	N
9549	Street Food	NaN	NaN	NaN	NaN	NaN	N
9550	Chinese	North Indian	NaN	NaN	NaN	NaN	N

```
df_cuisines = pd.concat([df,cuisines],axis=1)
```

```
df_cuisines.head()
```

	Restaurant_ID	Restaurant_Name	Country_Code	City	Address	Locality	Local
0	7402935	Skye	94	Jakarta	Menara BCA, Lantai 56, Jl. MH. Thamrin, Thamri...	Grand Indonesia Mall, Thamrin	Gr
1	7410290	Satoo - Hotel Shangri-La	94	Jakarta	Hotel Shangri-La, Jl. Jend. Sudirman	Hotel Shangri-La, Sudirman	Hot Sudi
2	7420899	Sushi Masa	94	Jakarta	Jl. Tuna Raya No. 5, Penjaringan	Penjaringan	
3	7421967	3 Wise Monkeys	94	Jakarta	Jl. Suryo No. 26, Senopati, Jakarta	Senopati	Ser
4	7422489	Avec Moi Restaurant and Bar	94	Jakarta	Gedung PIC, Jl. Teluk Betung 43, Thamrin, Jakarta	Thamrin	Th

5 rows × 28 columns

```
cuisine_loc = pd.DataFrame(df_cuisines[['Country','City','Locality_Verbose','cuisines_1','cuisines_2','cuisines_3','cuisines_4','cuisine
```

```
cuisine_loc.head()
```

	Country	City	Locality_Verbose	cuisines_1	cuisines_2	cuisines_3	cuisines_4
0	Indonesia	Jakarta	Grand Indonesia Mall, Thamrin, Jakarta	Italian	Continental	NaN	NaN
1	Indonesia	Jakarta	Hotel Shangri-La, Sudirman, Jakarta	Asian	Indonesian	Western	NaN
2	Indonesia	Jakarta	Penjaringan,	Sushi	Japanese	NaN	NaN

```
cuisine_loc_stack=pd.DataFrame(cuisine_loc.stack())
cuisine_loc_stack.head()
```

		0
0	**Country**	Indonesia
	City	Jakarta
	Locality_Verbose	Grand Indonesia Mall, Thamrin, Jakarta
	cuisines_1	Italian
	cuisines_2	Continental

```
keys = [c for c in cuisine_loc  if c.startswith('cuisine')]
a=pd.melt(cuisine_loc, id_vars= 'Locality_Verbose', value_vars=keys, value_name='Cuisines')
max_rate=pd.DataFrame(a.groupby(by=['Locality_Verbose','variable','Cuisines']).size().reset_index())
max_rate
del max_rate['variable']
max_rate.columns=['Locality_Verbose','Cuisines','Count']
max_rate.head()
```

	Locality_Verbose	Cuisines	Count
0	ILD Trade Centre Mall, Sohna Road, Gurgaon	Cafe	1
1	ILD Trade Centre Mall, Sohna Road, Gurgaon	North Indian	1
2	ILD Trade Centre Mall, Sohna Road, Gurgaon	Beverages	1
3	ILD Trade Centre Mall, Sohna Road, Gurgaon	Mughlai	1
4	12th Square Building, Banjara Hills, Hyderabad	Mughlai	1

```
loc = max_rate.sort_values('Count',ascending=False).groupby(by=['Locality_Verbose'],as_index=False).first()
```

```
loc.head()
```

	Locality_Verbose	Cuisines	Count
0	ILD Trade Centre Mall, Sohna Road, Gurgaon	Cafe	1
1	12th Square Building, Banjara Hills, Hyderabad	Mughlai	1
2	A Hotel, Gurdev Nagar, Ludhiana	Chinese	1
3	ARSS Mall, Paschim Vihar, New Delhi	North Indian	1
4	Aaya Nagar, New Delhi	Cuisine Varies	1

```
final_rating= loc.merge(df,left_on='Locality_Verbose',right_on='Locality_Verbose',how='inner')
```

```
final_rating
```

	Locality_Verbose	Cuisines_x	Count	Restaurant_ID	Restaurant_Name	Country
0	ILD Trade Centre Mall, Sohna Road, Gurgaon	Cafe	1	18237941	Pind Balluchi	
1	ILD Trade Centre Mall, Sohna Road, Gurgaon	Cafe	1	18396451	K Lab	
2	12th Square Building, Banjara Hills, Hyderabad	Mughlai	1	90744	Exotica	
3	A Hotel, Gurdev Nagar, Ludhiana	Chinese	1	15239	Basant Restaurant	
4	ARSS Mall, Paschim Vihar, New Delhi	North Indian	1	310281	Haldiram's	
...	...	...	...	...	...	
9536	ÌÂguas Claras, BrasÌ_lia	Bar Food	1	6601602	Taco Pep	
9537	ÌÂguas Claras, BrasÌ_lia	Bar Food	1	6601361	Buena Carne	
9538	ÌÏmitkÌ_y, Ankara	Kebab	1	6000921	DÌ_vero€Ùlu	
9539	Ìàayyolu, Ankara	Cafe	1	6004408	Turta Home Cafe	

```
data= pd.DataFrame(final_rating[['Country','City','Locality_Verbose','Cuisines_x','Count']])

country = final_rating.sort_values('Count',ascending=False).groupby(by=['Country'],as_index=False).first()

country
```

	Country	Locality_Verbose	Cuisines_x	Count	Restaurant_ID	Restaurant_Name
0	Australia	Victor Harbor, Victor Harbor	Australian	1	16608209	Anchorage Cafe Restaurant Wine Bar
1	Brazil	Ipanema, Rio de Janeiro	Brazilian	3	7300521	Balada Mix
2	Canada	Vineland Station, Vineland Station	Italian	1	16654702	Lake House Restaurant
3	India	Connaught Place, New Delhi	North Indian	48	301489	Barbeque Nation
4	Indonesia	Tanjung Duren, Jakarta	Seafood	1	18409146	Fish Streat
5	New Zealand	Te Aro, Wellington City	Cafe	5	7100535	Midnight Espresso
6	Phillipines	Kapitolyo, Pasig City	Filipino	2	6309455	Mad Mark's Creamery & Good Eats
7	Qatar	The St. Regis, Westbay, Doha	International	1	6201130	Vine - The St. Regis
8	Singapore	Marina Centre, Downtown Core, Singapore	Seafood	2	18484464	Colony
9	South Africa	Green Point, Cape Town	Grill	2	6400191	Beluga

```
c = pd.DataFrame(country[['Country','City','Locality','Cuisines_x','Count']])
```

```
c.columns=['Country','City','Locality','Cuisines','Number of restaurants in the country']
```

```
cc= c.sort_values('Number of restaurants in the country',ascending=False)
```

```
cc
```

	Country	City	Locality	Cuisines	Number of restaurants in the country
3	India	New Delhi	Connaught Place	North Indian	48
14	United States	Dubuque	Dubuque	American	9
5	New Zealand	Wellington City	Te Aro	Cafe	5
1	Brazil	Rio de Janeiro	Ipanema	Brazilian	3
6	Phillipines	Pasig City	Kapitolyo	Filipino	2
8	Singapore	Singapore	Marina Centre, Downtown Core	Seafood	2
9	South Africa	Cape Town	Green Point	Grill	2
10	Sri Lanka	Colombo	Cinnamon Gardens, Colombo 07	Cafe	2
11	Turkey	Ankara	Kl̀_l̀_l̀_k Esat	Kebab	2
12	UAE	Abu Dhabi	Najda	Indian	2
13	United Kingdom	Manchester	Northern Quarter	British	2
0	Australia	Victor Harbor	Victor Harbor	Australian	1

```
cc[:10]
```

	Country	City	Locality	Cuisines	Number of restaurants in the country
3	India	New Delhi	Connaught Place	North Indian	48
14	United States	Dubuque	Dubuque	American	9
5	New Zealand	Wellington City	Te Aro	Cafe	5
1	Brazil	Rio de Janeiro	Ipanema	Brazilian	3
6	Phillipines	Pasig City	Kapitolyo	Filipino	2
8	Singapore	Singapore	Marina Centre, Downtown Core	Seafood	2
9	South Africa	Cape Town	Green Point	Grill	2

```
final=cc.drop(cc.index[[7,10]])
```

```
final
```

	Country	City	Locality	Cuisines	Number of restaurants in the country
3	India	New Delhi	Connaught Place	North Indian	48
14	United States	Dubuque	Dubuque	American	9
5	New Zealand	Wellington City	Te Aro	Cafe	5
1	Brazil	Rio de Janeiro	Ipanema	Brazilian	3
6	Phillipines	Pasig City	Kapitolyo	Filipino	2
8	Singapore	Singapore	Marina Centre, Downtown Core	Seafood	2
9	South Africa	Cape Town	Green Point	Grill	2
11	Turkey	Ankara	Kİ_İ_İ_k Esat	Kebab	2
12	UAE	Abu Dhabi	Najda	Indian	2
0	Australia	Victor Harbor	Victor Harbor	Australian	1

```
c_list=final['City']
a_list=c_list.tolist()
```

```
a_list
```

```
['New Delhi',
 'Dubuque',
 'Wellington City',
 'Rio de Janeiro',
 'Pasig City',
 'Singapore',
 'Cape Town',
 'Ankara',
 'Abu Dhabi',
 'Victor Harbor',
 'Vineland Station',
 'Jakarta',
 'Doha']
```

```
cui_list=final['Cuisines']
b_list=cui_list.tolist()
```

```
b_list
```

```
['North Indian',
 'American',
 'Cafe',
 'Brazilian',
 'Filipino',
 ' Seafood',
 ' Grill',
 'Kebab',
 'Indian',
 ' Australian',
 'Italian',
 'Seafood',
 'International']
```

```
count_list=final['Number of restaurants in the country']
c_list=count_list.tolist()
```

```
c_list
```

```
[48, 9, 5, 3, 2, 2, 2, 2, 2, 1, 1, 1, 1]
```

```
import plotly; print(plotly.__version__)
```

```
5.13.1
```

```
import plotly.graph_objs as go
from plotly.offline import iplot

Bar_Chart = go.Bar(x=b_list,y=c_list,text=a_list, name='Popular Cuisine')
```

```
data = [Bar_Chart]
layout = go.Layout(title="<b>Most popular cuisines in the World<b><br><i>hover with cursor to see location in the country where they are

fig = go.Figure(data=data,layout=layout)
iplot(fig)
```


```
rest_cuisine = pd.DataFrame(df_cuisines[['Restaurant_Name','City','Locality_Verbose','cuisines_1','cuisines_2','cuisines_3','cuisines_4

rest_cuisine_stack = pd.DataFrame(rest_cuisine.stack())

rest_cuisine.head()
```

	Restaurant_Name	City	Locality_Verbose	cuisines_1	cuisines_2	cuisines_3	cui
0	Skye	Jakarta	Grand Indonesia Mall, Thamrin, Jakarta	Italian	Continental	NaN	
1	Satoo - Hotel Shangri-La	Jakarta	Hotel Shangri-La, Sudirman, Jakarta	Asian	Indonesian	Western	
2	Sushi Masa	Jakarta	Penjaringan,	Sushi	Japanese	NaN	

```
keys = [c for c in rest_cuisine if c.startswith('cuisine')]
b = pd.melt(rest_cuisine, id_vars='Restaurant_Name', value_vars=keys, value_name='Cuisines')
max_rate1 = pd.DataFrame(b.groupby(by=['Restaurant_Name','variable','Cuisines']).size().reset_index())



max_rate1
```

	Restaurant_Name	variable	Cuisines	0
0	12212	cuisines_1	Fast Food	1
1	Let's Burrrp	cuisines_1	Chinese	1
2	Let's Burrrp	cuisines_2	North Indian	1
3	#45	cuisines_1	Cafe	1
4	#Dilliwaala6	cuisines_1	North Indian	1
...	...	...	...	...
15950	{Niche} - Cafe & Bar	cuisines_2	Chinese	1
15951	{Niche} - Cafe & Bar	cuisines_3	Italian	1
15952	{Niche} - Cafe & Bar	cuisines_4	Continental	1
15953	Ìàukura€Ùa Sofras€±	cuisines_1	Kebab	1
15954	Ìàukura€Ùa Sofras€±	cuisines_2	Izgara	1

15955 rows × 4 columns

```
del max_rate1['variable']
```

```
max_rate1.columns = ['Restaurant_Name','Cuisines','Count']
```

```
max_rate1
```

	Restaurant_Name	Cuisines	Count
0	12212	Fast Food	1
1	Let's Burrrp	Chinese	1
2	Let's Burrrp	North Indian	1
3	#45	Cafe	1
4	#Dilliwaala6	North Indian	1
...	...	...	...
15950	{Niche} - Cafe & Bar	Chinese	1
15951	{Niche} - Cafe & Bar	Italian	1
15952	{Niche} - Cafe & Bar	Continental	1
15953	Ìàukura€Ùa Sofras€±	Kebab	1
15954	Ìàukura€Ùa Sofras€±	Izgara	1

15955 rows × 3 columns

```
max_rate1.sort_values('Count',ascending=False)
```

	Restaurant_Name	Cuisines	Count
2479	Cafe Coffee Day	Cafe	83
4594	Domino's Pizza	Pizza	79
4595	Domino's Pizza	Fast Food	78
12977	Subway	Healthy Food	63
12976	Subway	Salad	63
...	...	...	...