EDA–zomato dataset

February 6, 2023

[1]:
```
import numpy as np
import pandas as pd
import seaborn as sns
import matplotlib.pyplot as plt
import warnings
```

[2]:
```
df=pd.read_csv('zomato.csv',encoding='latin-1') #without encoding it shows error
```

[3]:
```
df.head()
```

[3]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose	Longitude	Latitude
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…	121.027535	14.565443
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…	121.014101	14.553708
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…	121.056831	14.581404
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…	121.056475	14.585318
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…	121.057508	14.584450

```
                          Cuisines  …          Currency Has Table booking  \
0       French, Japanese, Desserts  …  Botswana Pula(P)               Yes
1                         Japanese  …  Botswana Pula(P)               Yes
2  Seafood, Asian, Filipino, Indian  …  Botswana Pula(P)               Yes
3                  Japanese, Sushi  …  Botswana Pula(P)                No
4                 Japanese, Korean  …  Botswana Pula(P)               Yes

  Has Online delivery Is delivering now Switch to order menu Price range  \
0                  No                No                    No           3
1                  No                No                    No           3
2                  No                No                    No           4
3                  No                No                    No           4
4                  No                No                    No           4

   Aggregate rating  Rating color Rating text Votes
0               4.8    Dark Green   Excellent   314
1               4.5    Dark Green   Excellent   591
2               4.4         Green   Very Good   270
3               4.9    Dark Green   Excellent   365
4               4.8    Dark Green   Excellent   229

[5 rows x 21 columns]
```

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

[4]:
```
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', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes'],
      dtype='object')
```

[5]:
```
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
```

[6]:
```
df.describe()  #it describe for numeric value only
```

[6]:

	Restaurant ID	Country Code	Longitude	Latitude	\
count	9.551000e+03	9551.000000	9551.000000	9551.000000	
mean	9.051128e+06	18.365616	64.126574	25.854381	
std	8.791521e+06	56.750546	41.467058	11.007935	
min	5.300000e+01	1.000000	-157.948486	-41.330428	
25%	3.019625e+05	1.000000	77.081343	28.478713	
50%	6.004089e+06	1.000000	77.191964	28.570469	
75%	1.835229e+07	1.000000	77.282006	28.642758	
max	1.850065e+07	216.000000	174.832089	55.976980	

	Average Cost for two	Price range	Aggregate rating	Votes
count	9551.000000	9551.000000	9551.000000	9551.000000
mean	1199.210763	1.804837	2.666370	156.909748
std	16121.183073	0.905609	1.516378	430.169145
min	0.000000	1.000000	0.000000	0.000000
25%	250.000000	1.000000	2.500000	5.000000
50%	400.000000	2.000000	3.200000	31.000000
75%	700.000000	2.000000	3.700000	131.000000
max	800000.000000	4.000000	4.900000	10934.000000

1 for data analysis:

2 1.find missing values

[7]:
```
df.isna().sum() # for finding is there any missing  value
```

[7]:
```
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
```

[8]:
```
[features for features in df.columns if df[features].isna().sum()>0] #it will␣
↪return missing value column names
```

[8]:
```
['Cuisines']
```

[9]:
```
df_country=pd.read_excel('Country-Code.xlsx')
```

[10]:
```
df_country.head()
```

[10]:

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

[11]:
```
df_country
```

[11]:

	Country Code	Country
0	1	India
1	14	Australia
2	30	Brazil
3	37	Canada
4	94	Indonesia
5	148	New Zealand

```
6            162     Phillipines
7            166           Qatar
8            184       Singapore
9            189    South Africa
10           191       Sri Lanka
11           208          Turkey
12           214             UAE
13           215  United Kingdom
14           216   United States
```

[12]:
```
df.columns
```

[12]:
```
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', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes'],
      dtype='object')
```

[13]:
```
final_df=pd.merge(df,df_country,on='Country Code', how='left')
```

[14]:
```
final_df.head()
```

[14]:
```
   Restaurant ID         Restaurant Name  Country Code              City  \
0        6317637        Le Petit Souffle           162       Makati City
1        6304287        Izakaya Kikufuji           162       Makati City
2        6300002  Heat - Edsa Shangri-La           162  Mandaluyong City
3        6318506                    Ooma           162  Mandaluyong City
4        6314302             Sambo Kojin           162  Mandaluyong City

                                             Address  \
0  Third Floor, Century City Mall, Kalayaan Avenu…
1  Little Tokyo, 2277 Chino Roces Avenue, Legaspi…
2  Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal…
3  Third Floor, Mega Fashion Hall, SM Megamall, O…
4  Third Floor, Mega Atrium, SM Megamall, Ortigas…

                                    Locality  \
0   Century City Mall, Poblacion, Makati City
1  Little Tokyo, Legaspi Village, Makati City
2  Edsa Shangri-La, Ortigas, Mandaluyong City
3      SM Megamall, Ortigas, Mandaluyong City
4      SM Megamall, Ortigas, Mandaluyong City

                                  Locality Verbose   Longitude   Latitude  \
0  Century City Mall, Poblacion, Makati City, Mak…  121.027535  14.565443
```

```
1  Little Tokyo, Legaspi Village, Makati City, Ma…  121.014101  14.553708
2  Edsa Shangri-La, Ortigas, Mandaluyong City, Ma…  121.056831  14.581404
3  SM Megamall, Ortigas, Mandaluyong City, Mandal…  121.056475  14.585318
4  SM Megamall, Ortigas, Mandaluyong City, Mandal…  121.057508  14.584450

                          Cuisines  …  Has Table booking  \
0       French, Japanese, Desserts  …                Yes
1                         Japanese  …                Yes
2  Seafood, Asian, Filipino, Indian  …                Yes
3                  Japanese, Sushi  …                 No
4                 Japanese, Korean  …                Yes

  Has Online delivery Is delivering now Switch to order menu Price range  \
0                  No                 No                    No           3
1                  No                 No                    No           3
2                  No                 No                    No           4
3                  No                 No                    No           4
4                  No                 No                    No           4

  Aggregate rating  Rating color  Rating text Votes      Country
0              4.8    Dark Green    Excellent   314  Phillipines
1              4.5    Dark Green    Excellent   591  Phillipines
2              4.4         Green    Very Good   270  Phillipines
3              4.9    Dark Green    Excellent   365  Phillipines
4              4.8    Dark Green    Excellent   229  Phillipines

[5 rows x 22 columns]
```

[15]:
```
final_df['Country'].value_counts()
```

[15]:
```
India             8652
United States      434
United Kingdom      80
Brazil              60
UAE                 60
South Africa        60
New Zealand         40
Turkey              34
Australia           24
Phillipines         22
Indonesia           21
Singapore           20
Qatar               20
Sri Lanka           20
Canada               4
Name: Country, dtype: int64
```

[16]:
```
cname=final_df['Country'].value_counts().index
```

[17]:
```
cname
```

[17]:
```
Index(['India', 'United States', 'United Kingdom', 'Brazil', 'UAE',
       'South Africa', 'New Zealand', 'Turkey', 'Australia', 'Phillipines',
       'Indonesia', 'Singapore', 'Qatar', 'Sri Lanka', 'Canada'],
      dtype='object')
```

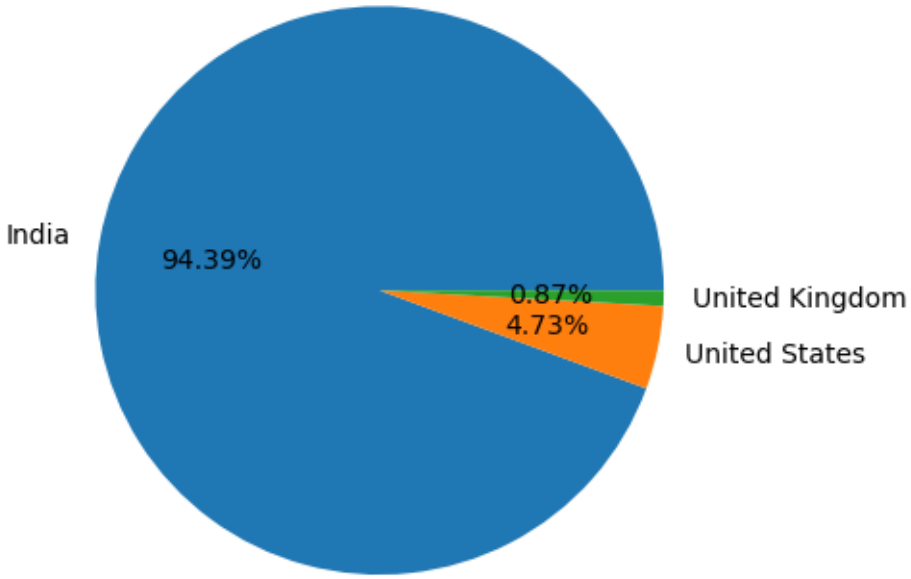
[18]:
```
cvalue=final_df['Country'].value_counts().values
```

[19]:
```
cvalue
```

[19]:
```
array([8652,  434,   80,   60,   60,   60,   40,   34,   24,   22,   21,
         20,   20,   20,    4], dtype=int64)
```

[20]:
```
plt.pie(cvalue[:3],labels=cname[:3],autopct='%1.2f%%')
```

[20]:
```
([<matplotlib.patches.Wedge at 0x2a24ad91520>,
  <matplotlib.patches.Wedge at 0x2a24ad6c160>,
  <matplotlib.patches.Wedge at 0x2a24b447280>],
 [Text(-1.0829742700952103, 0.19278674827836725, 'India'),
  Text(1.077281715838356, -0.22240527134123297, 'United States'),
  Text(1.0995865153823035, -0.03015783794312073, 'United Kingdom')],
 [Text(-0.590713238233751, 0.10515640815183668, '94.39%'),
  Text(0.5876082086391032, -0.12131196618612707, '4.73%'),
  Text(0.5997744629358018, -0.01644972978715676, '0.87%')])
```



3 observation: india has maximum zomato and then usa and then uk

[21]:
```
final_df.columns
```

[21]:
```
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', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes', 'Country'],
      dtype='object')
```

[22]:
```
final_df.groupby(['Aggregate rating','Rating color','Rating text']).size()
```

[22]:
```
Aggregate rating  Rating color  Rating text
0.0               White         Not rated      2148
1.8               Red           Poor              1
1.9               Red           Poor              2
2.0               Red           Poor              7
2.1               Red           Poor             15
2.2               Red           Poor             27
```

```
2.3                Red           Poor             47
2.4                Red           Poor             87
2.5                Orange        Average         110
2.6                Orange        Average         191
2.7                Orange        Average         250
2.8                Orange        Average         315
2.9                Orange        Average         381
3.0                Orange        Average         468
3.1                Orange        Average         519
3.2                Orange        Average         522
3.3                Orange        Average         483
3.4                Orange        Average         498
3.5                Yellow        Good            480
3.6                Yellow        Good            458
3.7                Yellow        Good            427
3.8                Yellow        Good            400
3.9                Yellow        Good            335
4.0                Green         Very Good       266
4.1                Green         Very Good       274
4.2                Green         Very Good       221
4.3                Green         Very Good       174
4.4                Green         Very Good       144
4.5                Dark Green    Excellent        95
4.6                Dark Green    Excellent        78
4.7                Dark Green    Excellent        42
4.8                Dark Green    Excellent        25
4.9                Dark Green    Excellent        61
dtype: int64
```

[23]:
```
final_df.groupby(['Aggregate rating','Rating color','Rating text']).size().
↪reset_index()
```

[23]:

	Aggregate rating	Rating color	Rating text	0
0	0.0	White	Not rated	2148
1	1.8	Red	Poor	1
2	1.9	Red	Poor	2
3	2.0	Red	Poor	7
4	2.1	Red	Poor	15
5	2.2	Red	Poor	27
6	2.3	Red	Poor	47
7	2.4	Red	Poor	87
8	2.5	Orange	Average	110
9	2.6	Orange	Average	191
10	2.7	Orange	Average	250
11	2.8	Orange	Average	315
12	2.9	Orange	Average	381
13	3.0	Orange	Average	468

14	3.1	Orange	Average	519
15	3.2	Orange	Average	522
16	3.3	Orange	Average	483
17	3.4	Orange	Average	498
18	3.5	Yellow	Good	480
19	3.6	Yellow	Good	458
20	3.7	Yellow	Good	427
21	3.8	Yellow	Good	400
22	3.9	Yellow	Good	335
23	4.0	Green	Very Good	266
24	4.1	Green	Very Good	274
25	4.2	Green	Very Good	221
26	4.3	Green	Very Good	174
27	4.4	Green	Very Good	144
28	4.5	Dark Green	Excellent	95
29	4.6	Dark Green	Excellent	78
30	4.7	Dark Green	Excellent	42
31	4.8	Dark Green	Excellent	25
32	4.9	Dark Green	Excellent	61

[24]:
```
ratings=final_df.groupby(['Aggregate rating','Rating color','Rating text']).
↪size().reset_index().rename(columns={0:'rating score'})
```

[25]:
```
ratings
```

[25]:

	Aggregate rating	Rating color	Rating text	rating score
0	0.0	White	Not rated	2148
1	1.8	Red	Poor	1
2	1.9	Red	Poor	2
3	2.0	Red	Poor	7
4	2.1	Red	Poor	15
5	2.2	Red	Poor	27
6	2.3	Red	Poor	47
7	2.4	Red	Poor	87
8	2.5	Orange	Average	110
9	2.6	Orange	Average	191
10	2.7	Orange	Average	250
11	2.8	Orange	Average	315
12	2.9	Orange	Average	381
13	3.0	Orange	Average	468
14	3.1	Orange	Average	519
15	3.2	Orange	Average	522
16	3.3	Orange	Average	483
17	3.4	Orange	Average	498
18	3.5	Yellow	Good	480
19	3.6	Yellow	Good	458
20	3.7	Yellow	Good	427

21	3.8	Yellow	Good	400
22	3.9	Yellow	Good	335
23	4.0	Green	Very Good	266
24	4.1	Green	Very Good	274
25	4.2	Green	Very Good	221
26	4.3	Green	Very Good	174
27	4.4	Green	Very Good	144
28	4.5	Dark Green	Excellent	95
29	4.6	Dark Green	Excellent	78
30	4.7	Dark Green	Excellent	42
31	4.8	Dark Green	Excellent	25
32	4.9	Dark Green	Excellent	61

4 observation

1. from aggregate rating 4.5 to 4.9 are excellant 2.from aggregate rating 4.0 to 4.4 are very good 3.from aggregate rating 3.5 to 3.9 are good 4.from aggregate rating 2.5 to 3.4 are average 5.from aggregate rating 1.8 to 2.4 are poor 6.from aggregate rating 0.0 is not rated

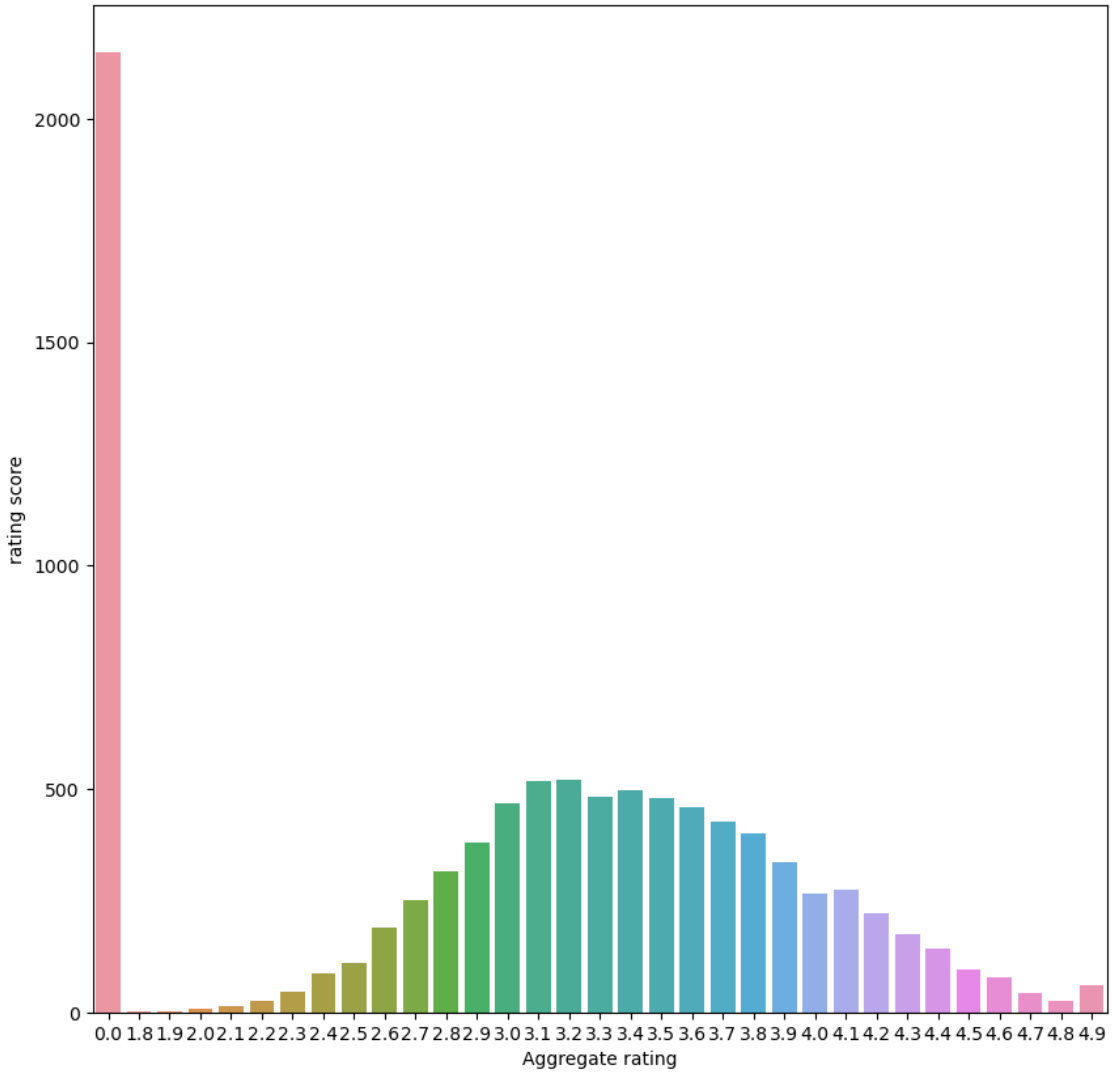
[26]:
```
ratings.head()
```

[26]:

	Aggregate rating	Rating color	Rating text	rating score
0	0.0	White	Not rated	2148
1	1.8	Red	Poor	1
2	1.9	Red	Poor	2
3	2.0	Red	Poor	7
4	2.1	Red	Poor	15

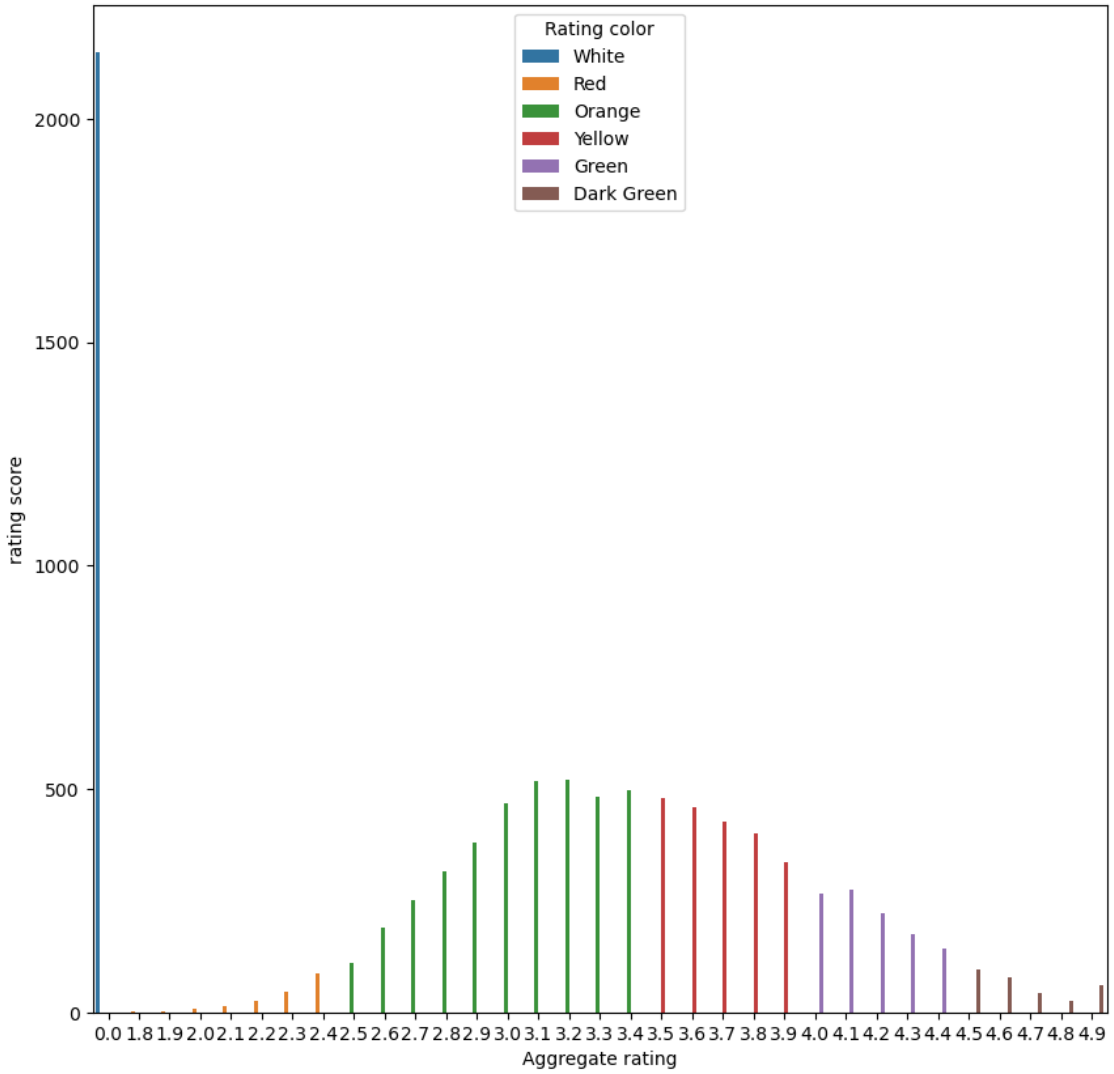
[27]:
```
import matplotlib.pyplot as plt
plt.figure(figsize=(10,10))
sns.barplot(x='Aggregate rating',y='rating score',data=ratings)
```

[27]:
```
<AxesSubplot:xlabel='Aggregate rating', ylabel='rating score'>
```



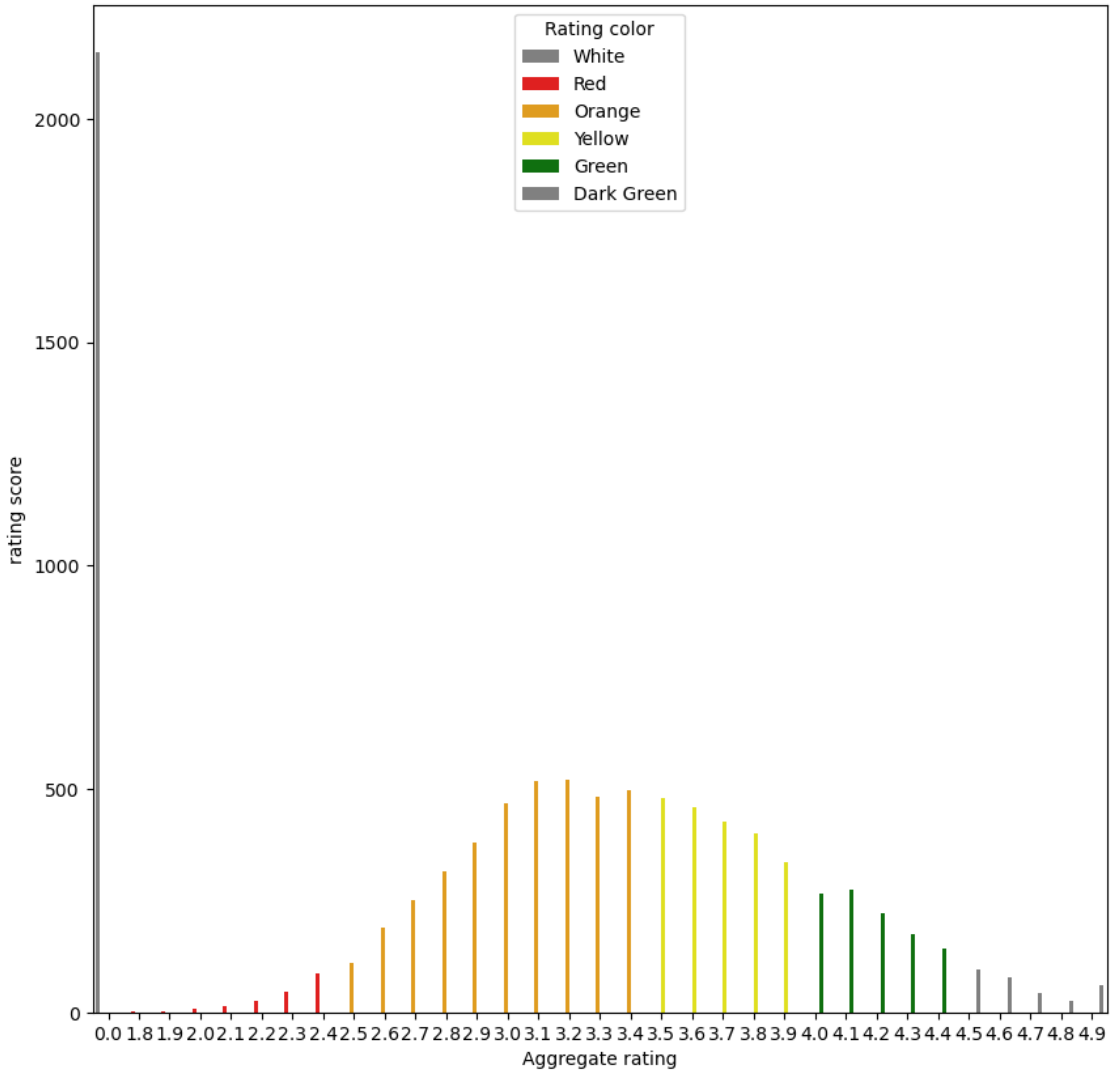
[28]:
```
plt.figure(figsize=(10,10))
sns.barplot(x='Aggregate rating',y='rating score',data=ratings,hue='Rating␣
↪color')
```

[28]: <AxesSubplot:xlabel='Aggregate rating', ylabel='rating score'>



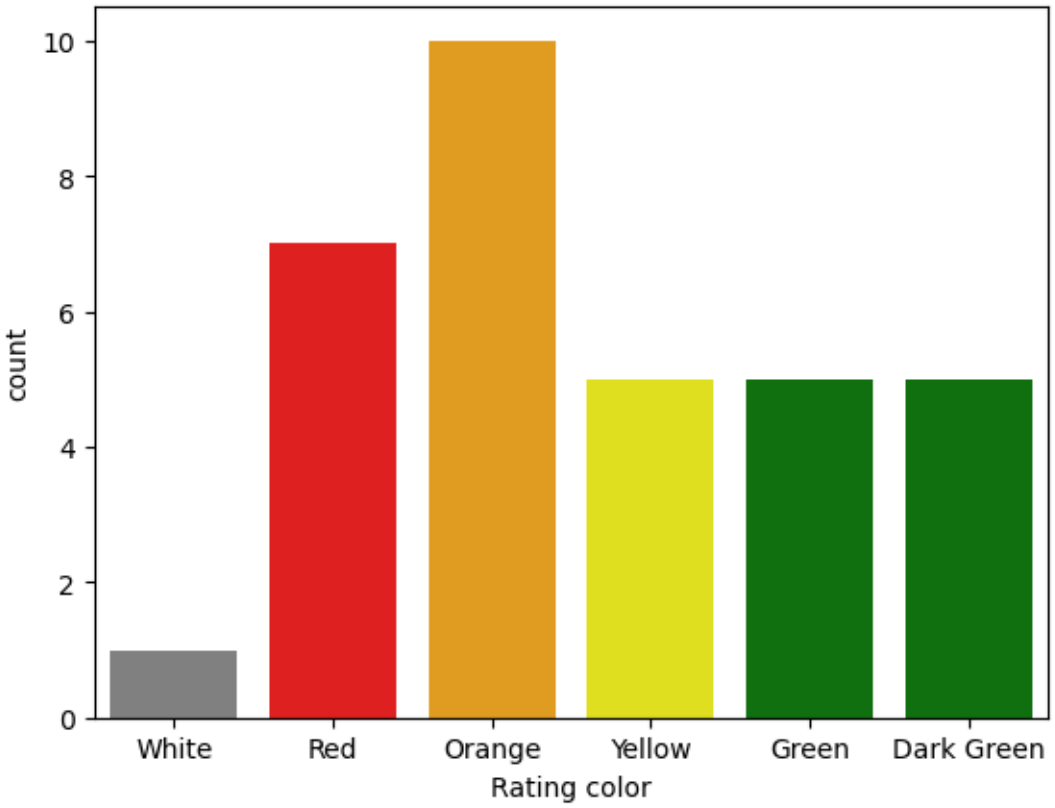
[29]:
```
plt.figure(figsize=(10,10))
sns.barplot(x='Aggregate rating',y='rating score',data=ratings,hue='Rating␣
↪color',palette=['grey','red','orange','yellow','green'])
```

[29]:
```
<AxesSubplot:xlabel='Aggregate rating', ylabel='rating score'>
```



[30]:
```
sns.countplot(x='Rating␣
↪color',data=ratings,palette=['grey','red','orange','yellow','green','green'])
```

[30]: <AxesSubplot:xlabel='Rating color', ylabel='count'>



[31]:
```
final_df.head()
```

[31]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality
0	6317637	Le Petit Souffle	162	Makati City	Third Floor, Century City Mall, Kalayaan Avenu…	Century City Mall, Poblacion, Makati City
1	6304287	Izakaya Kikufuji	162	Makati City	Little Tokyo, 2277 Chino Roces Avenue, Legaspi…	Little Tokyo, Legaspi Village, Makati City
2	6300002	Heat - Edsa Shangri-La	162	Mandaluyong City	Edsa Shangri-La, 1 Garden Way, Ortigas, Mandal…	Edsa Shangri-La, Ortigas, Mandaluyong City
3	6318506	Ooma	162	Mandaluyong City	Third Floor, Mega Fashion Hall, SM Megamall, O…	SM Megamall, Ortigas, Mandaluyong City
4	6314302	Sambo Kojin	162	Mandaluyong City	Third Floor, Mega Atrium, SM Megamall, Ortigas…	

```
4      SM Megamall, Ortigas, Mandaluyong City

                                    Locality Verbose   Longitude   Latitude  \
0  Century City Mall, Poblacion, Makati City, Mak…  121.027535  14.565443
1  Little Tokyo, Legaspi Village, Makati City, Ma…  121.014101  14.553708
2  Edsa Shangri-La, Ortigas, Mandaluyong City, Ma…  121.056831  14.581404
3  SM Megamall, Ortigas, Mandaluyong City, Mandal…  121.056475  14.585318
4  SM Megamall, Ortigas, Mandaluyong City, Mandal…  121.057508  14.584450

                          Cuisines  …  Has Table booking  \
0       French, Japanese, Desserts  …                Yes
1                         Japanese  …                Yes
2  Seafood, Asian, Filipino, Indian  …                Yes
3                  Japanese, Sushi  …                 No
4                 Japanese, Korean  …                Yes

  Has Online delivery Is delivering now Switch to order menu Price range  \
0                  No                No                    No           3
1                  No                No                    No           3
2                  No                No                    No           4
3                  No                No                    No           4
4                  No                No                    No           4

  Aggregate rating  Rating color  Rating text Votes      Country
0              4.8    Dark Green    Excellent   314  Phillipines
1              4.5    Dark Green    Excellent   591  Phillipines
2              4.4         Green    Very Good   270  Phillipines
3              4.9    Dark Green    Excellent   365  Phillipines
4              4.8    Dark Green    Excellent   229  Phillipines

[5 rows x 22 columns]
```

[43]:
```
final_df[final_df['Rating color']=='White'].groupby('Country').size().
↪reset_index().rename(columns={0:'no.of.counts'})
# display 0 rating country name
```

[43]:
```
          Country  no.of.counts
0          Brazil             5
1           India          2139
2  United Kingdom             1
3   United States             3
```

5 observation

maximium no.of 0 ratings are from indian customers

[45]:
```
final_df.columns
```

[45]:
```
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', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes', 'Country'],
      dtype='object')
```

[48]:
```
final_df.groupby(['Country','Currency']).size().reset_index().rename(columns={0:
 ↪'no.of.counts'}) # display which currency is used by which country
```

[48]:

	Country	Currency	no.of.counts
0	Australia	Dollar($)	24
1	Brazil	Brazilian Real(R$)	60
2	Canada	Dollar($)	4
3	India	Indian Rupees(Rs.)	8652
4	Indonesia	Indonesian Rupiah(IDR)	21
5	New Zealand	NewZealand($)	40
6	Phillipines	Botswana Pula(P)	22
7	Qatar	Qatari Rial(QR)	20
8	Singapore	Dollar($)	20
9	South Africa	Rand(R)	60
10	Sri Lanka	Sri Lankan Rupee(LKR)	20
11	Turkey	Turkish Lira(TL)	34
12	UAE	Emirati Diram(AED)	60
13	United Kingdom	Pounds(£)	80
14	United States	Dollar($)	434

[49]:
```
final_df.head()
```

[49]:

	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	Is delivering now	Switch to order menu	Price range	Aggregate rating	Rating color	Rating text	Votes	Country
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…	121.027535	14.565443	French, Japanese, Desserts	1100	Botswana Pula(P)	Yes	No	No	No	3	4.8	Dark Green	Excellent	314	Phillipines
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…	121.014101	14.553708	Japanese	1200	Botswana Pula(P)	Yes	No	No	No	3	4.5	Dark Green	Excellent	591	Phillipines
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…	121.056831	14.581404	Seafood, Asian, Filipino, Indian	4000	Botswana Pula(P)	Yes	No	No	No	4	4.4	Green	Very Good	270	Phillipines
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…	121.056475	14.585318	Japanese, Sushi	1500	Botswana Pula(P)	No	No	No	No	4	0.0	White	Not rated	365	Phillipines
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…	121.057508	14.584450	Japanese, Sushi	1500	Botswana Pula(P)	No	No	No	No	4	0.0	White	Not rated	365	Phillipines

```
2  Edsa Shangri-La, Ortigas, Mandaluyong City
3      SM Megamall, Ortigas, Mandaluyong City
4      SM Megamall, Ortigas, Mandaluyong City

                                  Locality Verbose   Longitude   Latitude  \
0  Century City Mall, Poblacion, Makati City, Mak…  121.027535  14.565443
1  Little Tokyo, Legaspi Village, Makati City, Ma…  121.014101  14.553708
2  Edsa Shangri-La, Ortigas, Mandaluyong City, Ma…  121.056831  14.581404
3  SM Megamall, Ortigas, Mandaluyong City, Mandal…  121.056475  14.585318
4  SM Megamall, Ortigas, Mandaluyong City, Mandal…  121.057508  14.584450

                          Cuisines  …  Has Table booking  \
0       French, Japanese, Desserts  …                Yes
1                         Japanese  …                Yes
2  Seafood, Asian, Filipino, Indian  …                Yes
3                  Japanese, Sushi  …                 No
4                 Japanese, Korean  …                Yes

  Has Online delivery Is delivering now Switch to order menu Price range  \
0                  No                 No                    No           3
1                  No                 No                    No           3
2                  No                 No                    No           4
3                  No                 No                    No           4
4                  No                 No                    No           4

  Aggregate rating  Rating color  Rating text Votes      Country
0              4.8    Dark Green    Excellent   314  Phillipines
1              4.5    Dark Green    Excellent   591  Phillipines
2              4.4         Green    Very Good   270  Phillipines
3              4.9    Dark Green    Excellent   365  Phillipines
4              4.8    Dark Green    Excellent   229  Phillipines

[5 rows x 22 columns]
```

[56]:
```
final_df[final_df['Has Online delivery']=='Yes'].Country.value_counts()␣
  ↪#display which country has online delivery option
```

[56]:
```
India    2423
UAE        28
Name: Country, dtype: int64
```

observation: 1.online delivery is available on india and UAE

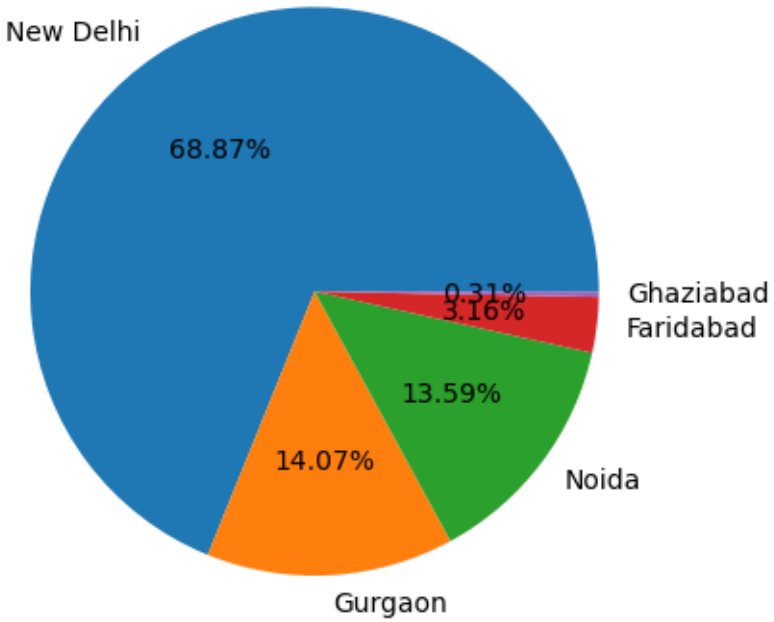
[ ]:
```
#create a pie chart for city distribution
```

[65]:
```
cindex=final_df['City'].value_counts().index
```

[66]:
```
cvalue=final_df['City'].value_counts().values
```

[75]:
```
plt.pie(cvalue[:5],labels=cindex[:5],autopct='%1.2f%%')
```

[75]:
```
([<matplotlib.patches.Wedge at 0x2a24e1d8190>,
  <matplotlib.patches.Wedge at 0x2a24e1d88b0>,
  <matplotlib.patches.Wedge at 0x2a24e1d8fd0>,
  <matplotlib.patches.Wedge at 0x2a24e1e3730>,
  <matplotlib.patches.Wedge at 0x2a24e1e3e50>],
 [Text(-0.6145352824185932, 0.9123301960708633, 'New Delhi'),
  Text(0.0623675251198054, -1.0982305276263407, 'Gurgaon'),
  Text(0.8789045225625368, -0.6614581167535246, 'Noida'),
  Text(1.0922218418223437, -0.13058119407559224, 'Faridabad'),
  Text(1.099946280005612, -0.010871113182029924, 'Ghaziabad')],
 [Text(-0.3352010631374145, 0.497634652402289, '68.87%'),
  Text(0.0340186500653484, -0.5990348332507311, '14.07%'),
  Text(0.47940246685229276, -0.36079533641101336, '13.59%'),
  Text(0.5957573682667329, -0.07122610585941394, '3.16%'),
  Text(0.5999706981848791, -0.005929698099289049, '0.31%')])
```



[ ]:
```
#find out top 10 cusine
```

[77]:
```
final_df.columns
```

[77]:
```
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', 'Is delivering now', 'Switch to order menu',
       'Price range', 'Aggregate rating', 'Rating color', 'Rating text',
       'Votes', 'Country'],
      dtype='object')
```

[102]:
```
final_df['Cuisines'].value_counts()
```

[102]:
```
North Indian                                          936
North Indian, Chinese                                 511
Chinese                                               354
Fast Food                                             354
North Indian, Mughlai                                 334
                                                     ...
Bengali, Fast Food                                      1
North Indian, Rajasthani, Asian                         1
Chinese, Thai, Malaysian, Indonesian                    1
Bakery, Desserts, North Indian, Bengali, South Indian   1
Italian, World Cuisine                                  1
Name: Cuisines, Length: 1825, dtype: int64
```

[ ]:

[ ]: