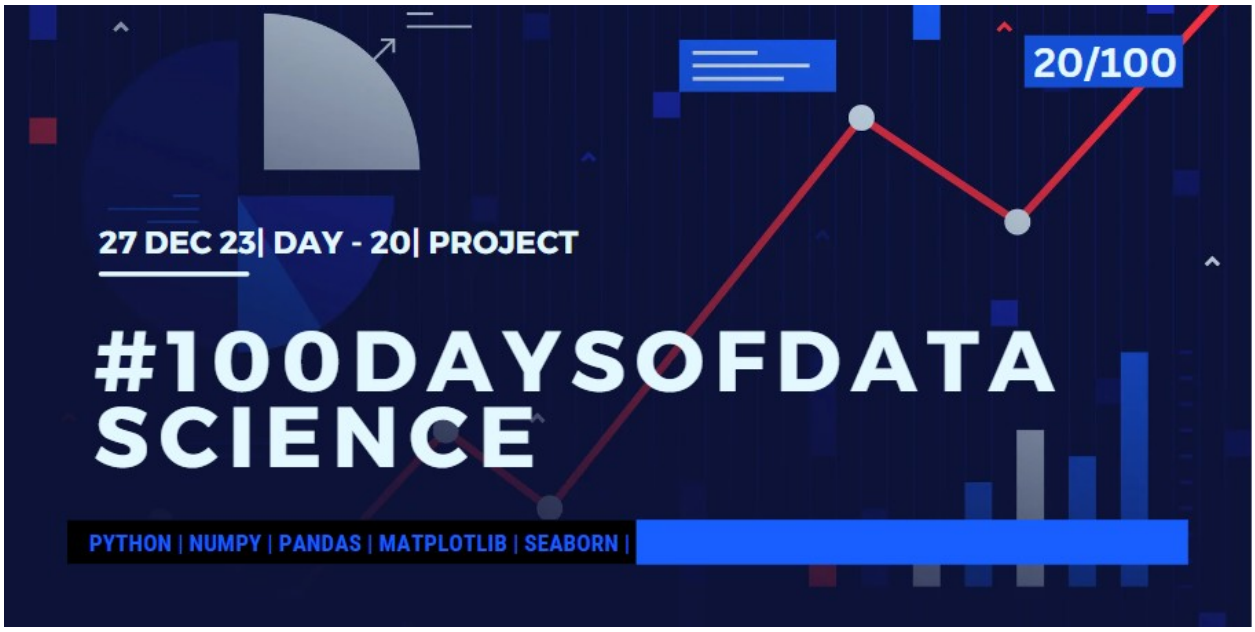



```
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
import plotly.express as px

df=pd.read_csv(r'C:\Users\hp\Desktop\100DaysOfDataScience\Day 20\
Updated_Zomato_Data.csv', header=0, index_col=0)
df.head()
```

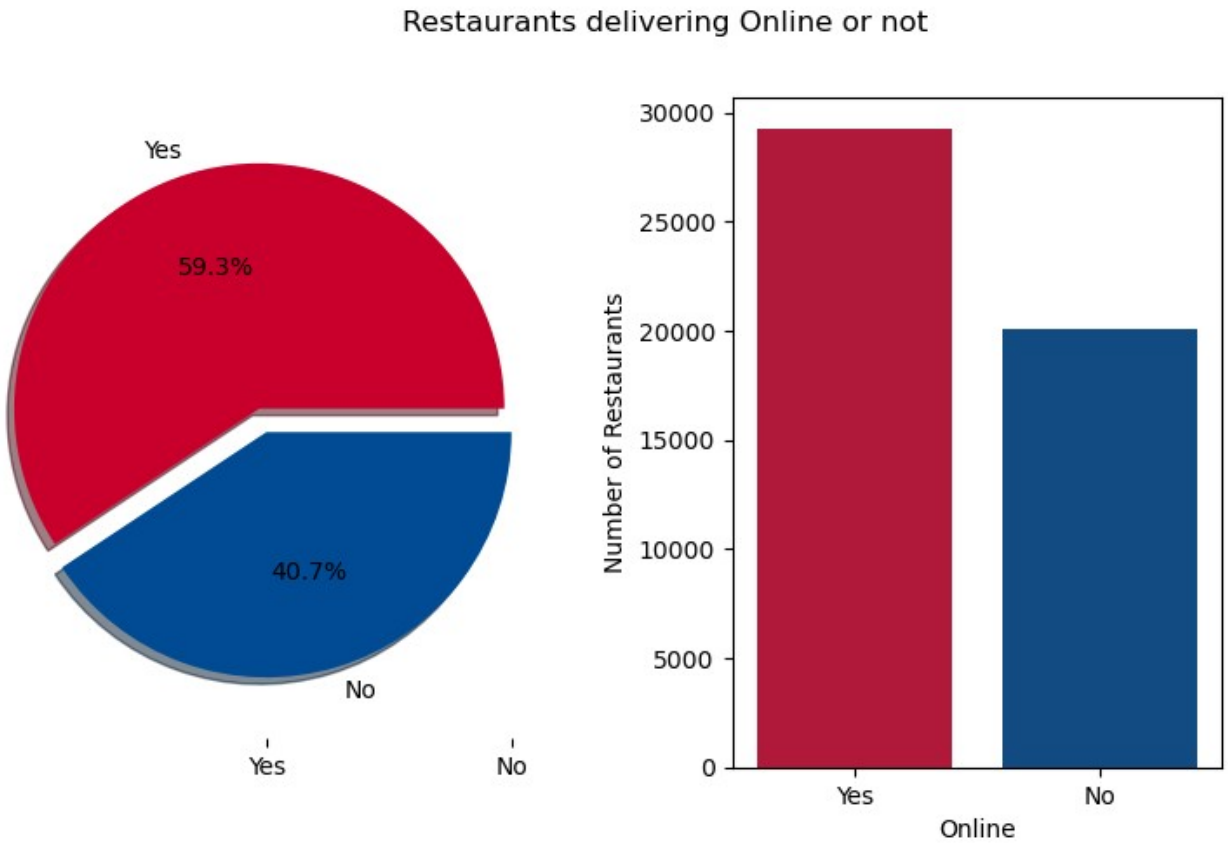
```
         restaurant_name online_reservations  rating  votes
rest_type  \
0                  Jalsa    Yes          Yes     4.1    775  Casual
Dining
1         Spice Elephant    Yes           No     4.1    787  Casual
Dining
2        San Churro Cafe    Yes           No     3.8    918
Other
3  Addhuri Udupi Bhojana     No           No     3.7     88    Quick
Bites
4          Grand Village     No           No     3.8    166  Casual
Dining

   cost_for_two    type      location rating_categories
0         800.0  Buffet  Banashankari       Outstanding
1         800.0  Buffet  Banashankari       Outstanding
2         800.0  Buffet  Banashankari      Satisfactory
3         300.0  Buffet  Banashankari      Satisfactory
4         600.0  Buffet  Banashankari      Satisfactory
```

```
print("-" * 100)
print("Shape: ",df.shape)
print("-" * 100)
print("Columns: ",df.columns)
print("-" * 100)
print("Info: ")
print(df.info())
print("-" * 100)
print("Describe: ")
print(df.describe())
print("-" * 100)
print("Checking Null values: ")
print(df.isna().sum())
print("-" * 100)
```

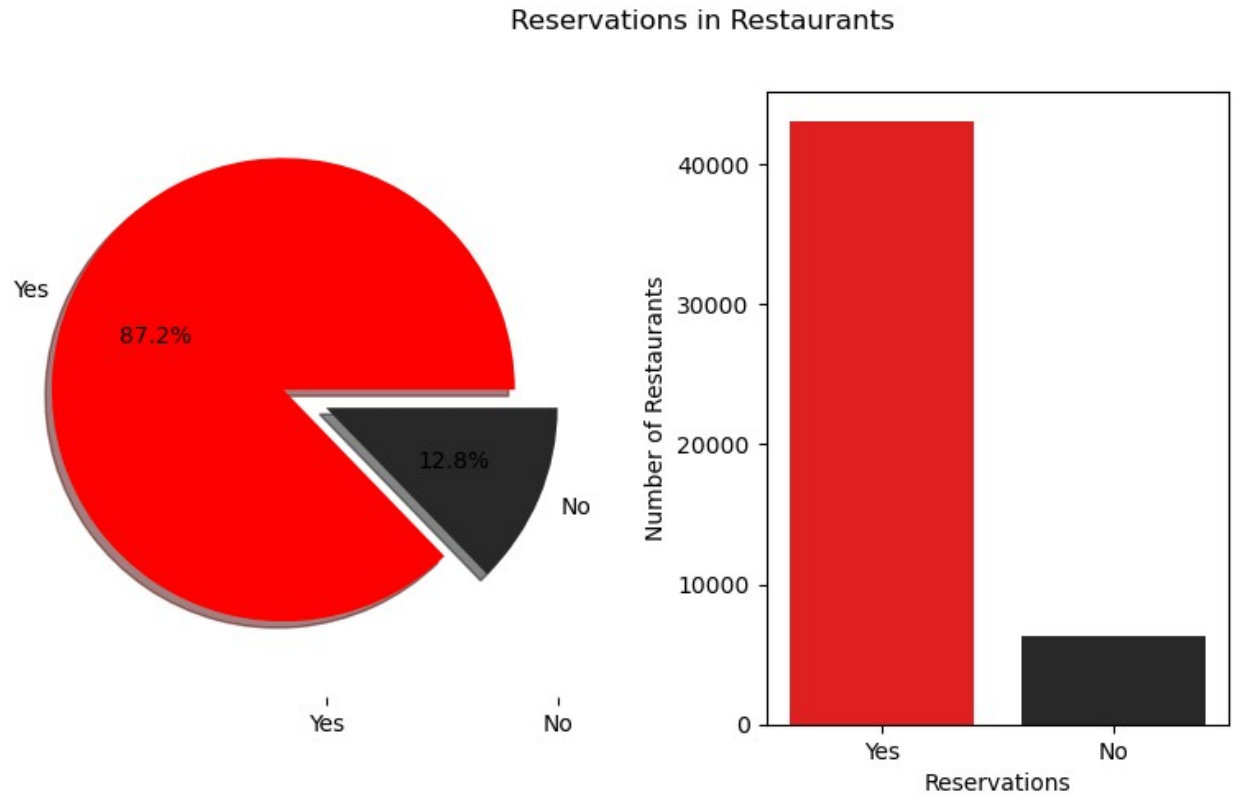
```
----------------------------------------------------------------------------------------------------
Shape:  (49327, 10)
----------------------------------------------------------------------------------------------------
Columns:  Index(['restaurant_name', 'online', 'reservations',
'rating', 'votes',
       'rest_type', 'cost_for_two', 'type', 'location',
'rating_categories'],
      dtype='object')
----------------------------------------------------------------------------------------------------
Info:
<class 'pandas.core.frame.DataFrame'>
Index: 49327 entries, 0 to 51716
Data columns (total 10 columns):
 #   Column             Non-Null Count  Dtype
---  ------             --------------  -----
 0   restaurant_name    49327 non-null  object
 1   online             49327 non-null  object
 2   reservations       49327 non-null  object
 3   rating             49327 non-null  float64
 4   votes              49327 non-null  int64
 5   rest_type          49327 non-null  object
 6   cost_for_two       49327 non-null  float64
 7   type               49327 non-null  object
 8   location           49327 non-null  object
 9   rating_categories  49327 non-null  object
dtypes: float64(2), int64(1), object(7)
memory usage: 4.1+ MB
None
----------------------------------------------------------------------------------------------------
Describe:
             rating         votes  cost_for_two
```

```
count  49327.000000  49327.000000  49327.000000
mean       3.700151    296.388712    559.940094
std        0.404431    819.286948    441.912136
min        1.800000      0.000000     40.000000
25%        3.500000      9.000000    300.000000
50%        3.700151     47.000000    400.000000
75%        4.000000    212.000000    700.000000
max        4.900000  16832.000000   6000.000000
------------------------------------------------------------------------
------------------------------
Checking Null values:
restaurant_name      0
online               0
reservations         0
rating               0
votes                0
rest_type            0
cost_for_two         0
type                 0
location             0
rating_categories    0
dtype: int64
------------------------------------------------------------------------
------------------------------
```

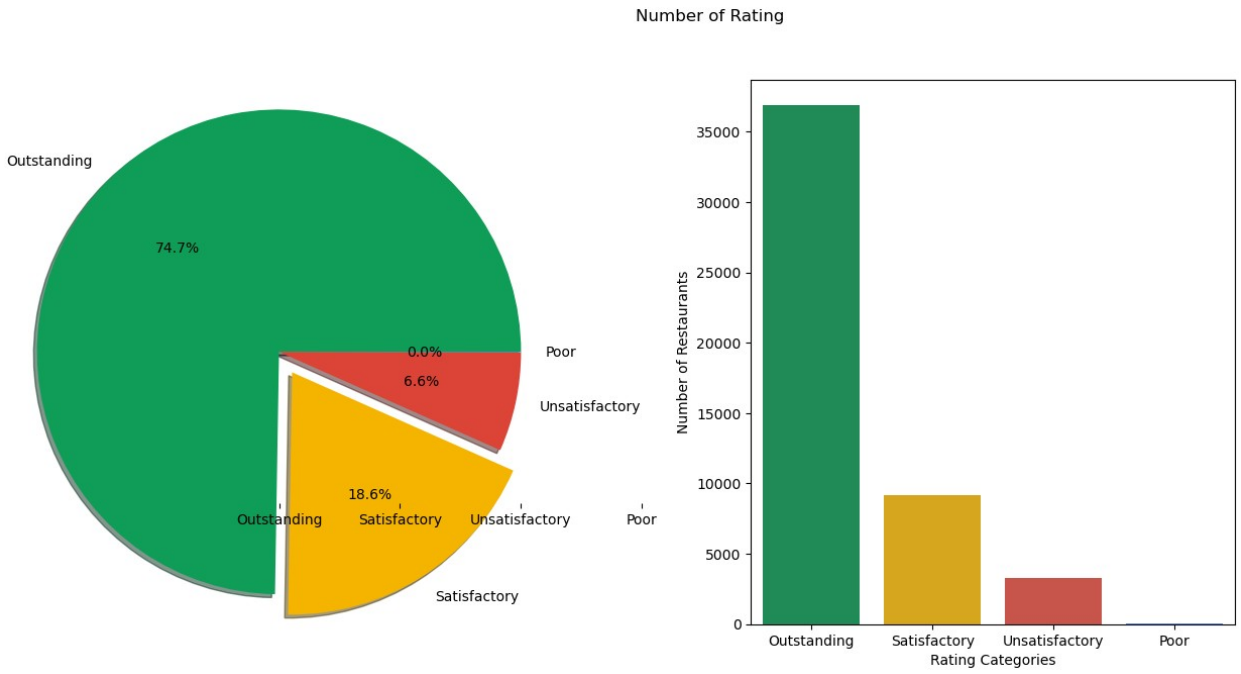
```
fig, axes = plt.subplots(1, 2, sharex=True, figsize=(8,5))
fig.suptitle('Restaurants delivering Online or not')
labels = df['online'].unique()
sizes = df['online'].value_counts()
myexplode = [0.1, 0]
cols = ['#C9002B', '#004B93']

axes[0].pie(sizes, labels=labels, explode=myexplode, shadow = True,
       autopct='%1.1f%%',colors=cols)

sns.barplot(ax=axes[1], y=sizes, x=labels,palette=cols)

axes[1].set_xlabel('Online')
axes[1].set_ylabel('Number of Restaurants')

Text(0, 0.5, 'Number of Restaurants')
```



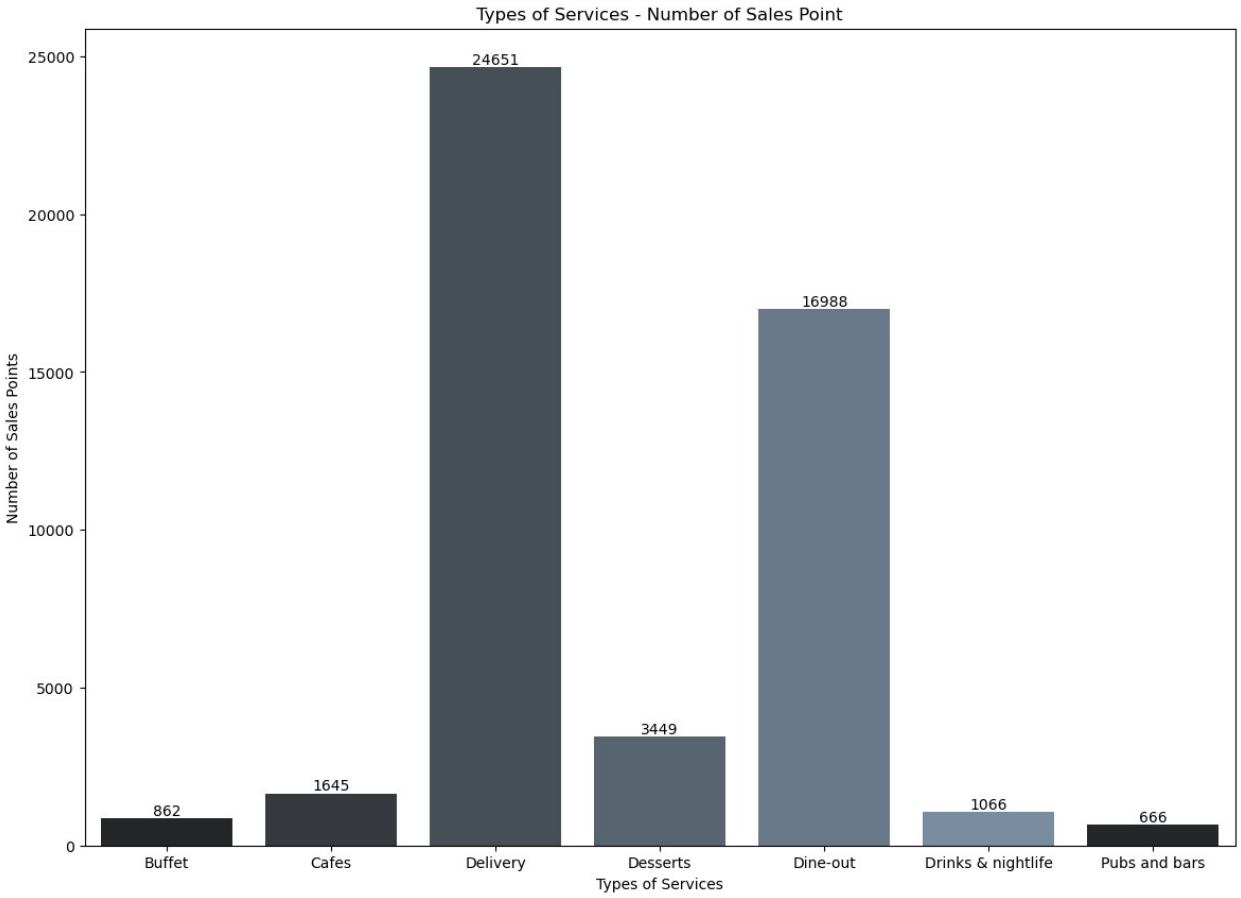

```
fig, axes = plt.subplots(1, 2, sharex=True, figsize=(8,5))
fig.suptitle('Reservations in Restaurants')
labels = df['reservations'].unique()
sizes = df['reservations'].value_counts()
myexplode = [0.2, 0]
cols = ['#FF0000', '#282828']

axes[0].pie(sizes, labels=labels, explode=myexplode, shadow = True,
       autopct='%1.1f%%',colors=cols)

sns.barplot(ax=axes[1], y=sizes, x=labels,palette=cols)

axes[1].set_xlabel('Reservations')
axes[1].set_ylabel('Number of Restaurants')

Text(0, 0.5, 'Number of Restaurants')
```




```
fig, axes = plt.subplots(1, 2, sharex=True, figsize=(13,7))
fig.suptitle('Number of Rating')
labels = df['rating_categories'].unique()
sizes = df['rating_categories'].value_counts()
myexplode = [0, 0.2, 0, 0]
cols = ['#0F9D58', '#F4B400', '#DB4437', '#4285F4']

plt.subplots_adjust(wspace=0.1)
axes[0].pie(sizes, labels=labels, explode=myexplode, shadow = True,
       autopct='%1.1f%%',colors=cols, radius=2)

sns.barplot(ax=axes[1], y=sizes, x=labels,palette=cols)

axes[1].set_xlabel('Rating Categories')
axes[1].set_ylabel('Number of Restaurants')

Text(0, 0.5, 'Number of Restaurants')
```

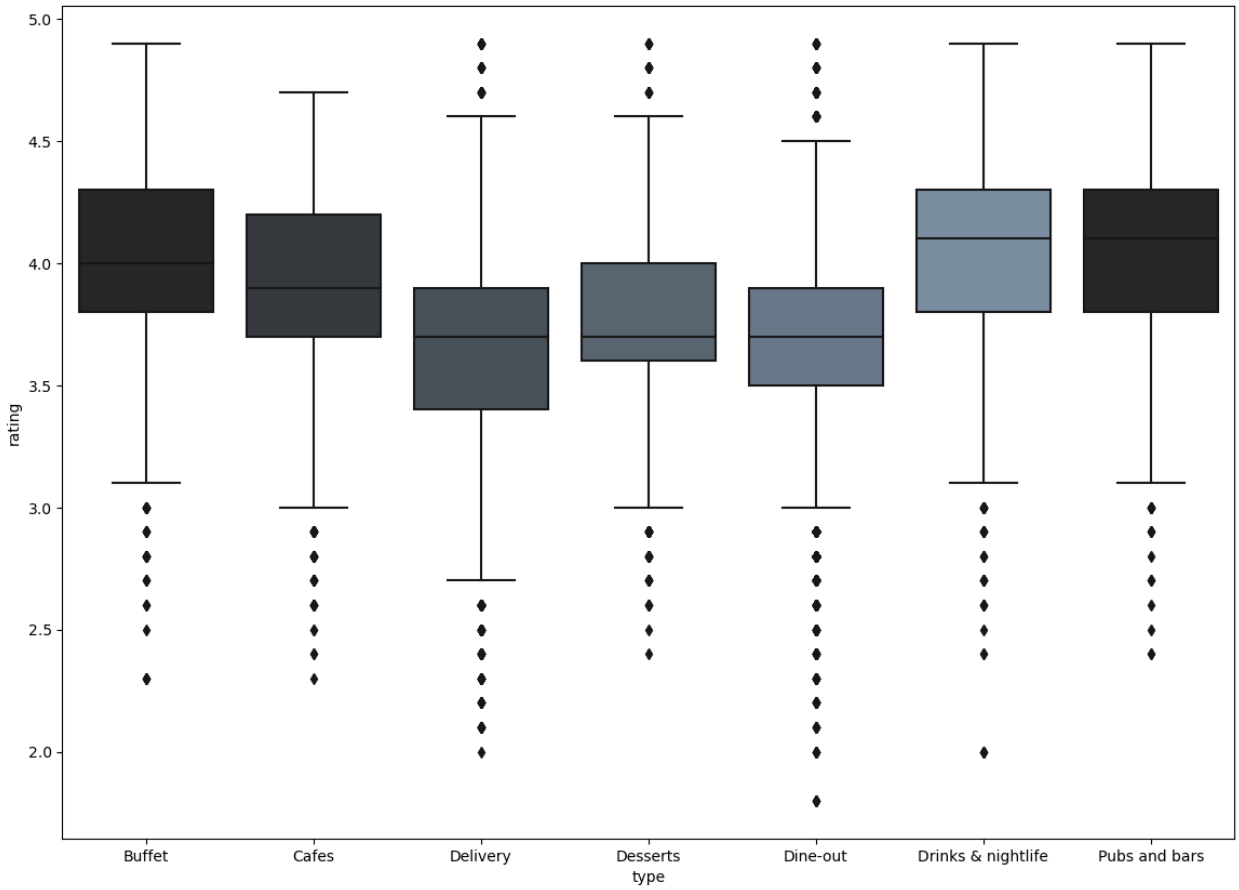



```
plt.figure(figsize=(14,10))
ax = sns.countplot(x="type",data=df,
palette=sns.dark_palette("#748DA6"))
ax.bar_label(ax.containers[0], fontsize=10)
plt.title("Types of Services - Number of Sales Point")
plt.xlabel("Types of Services")
plt.ylabel("Number of Sales Points")
plt.show()
```

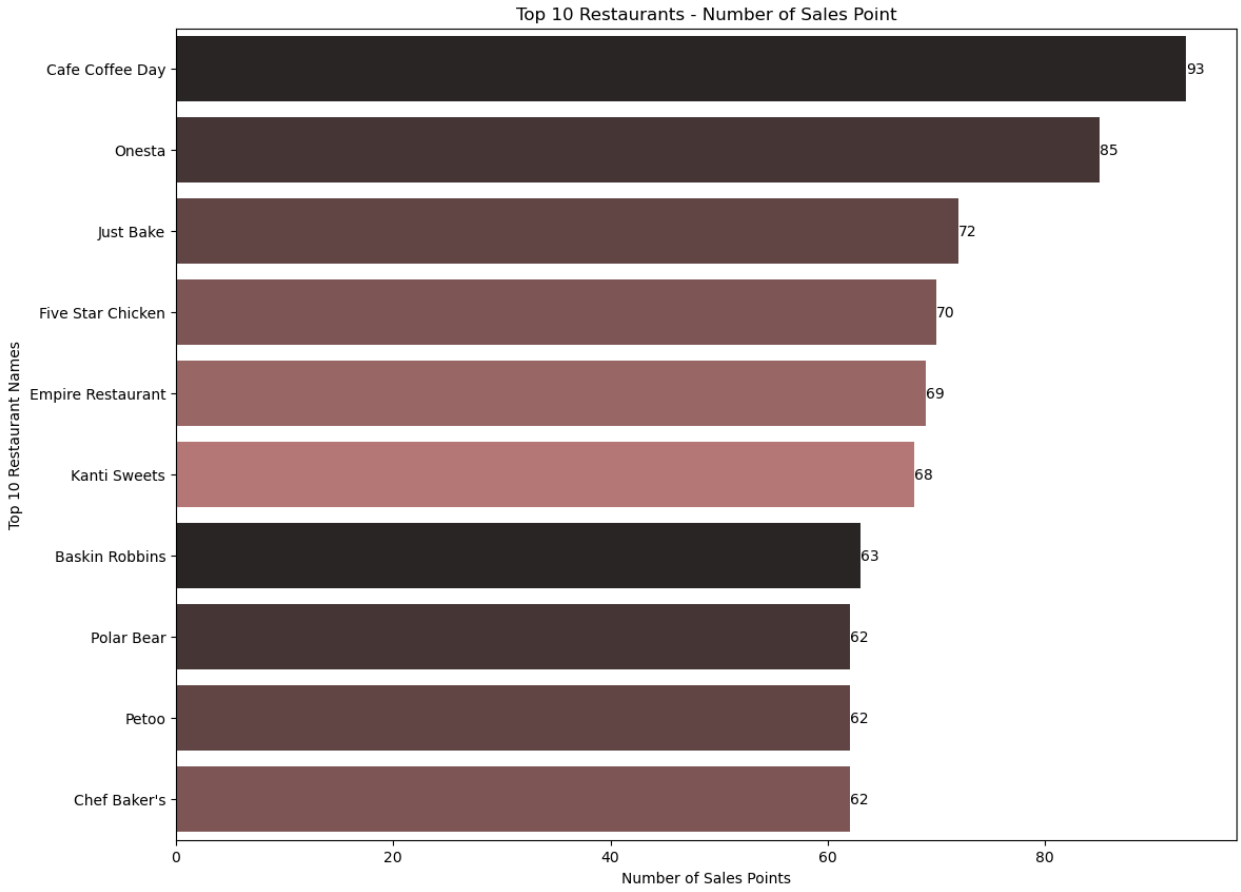



```
plt.figure(figsize=(14,10))
sns.boxplot(x='type',y='rating',data=df,
palette=sns.dark_palette("#748DA6"))
```

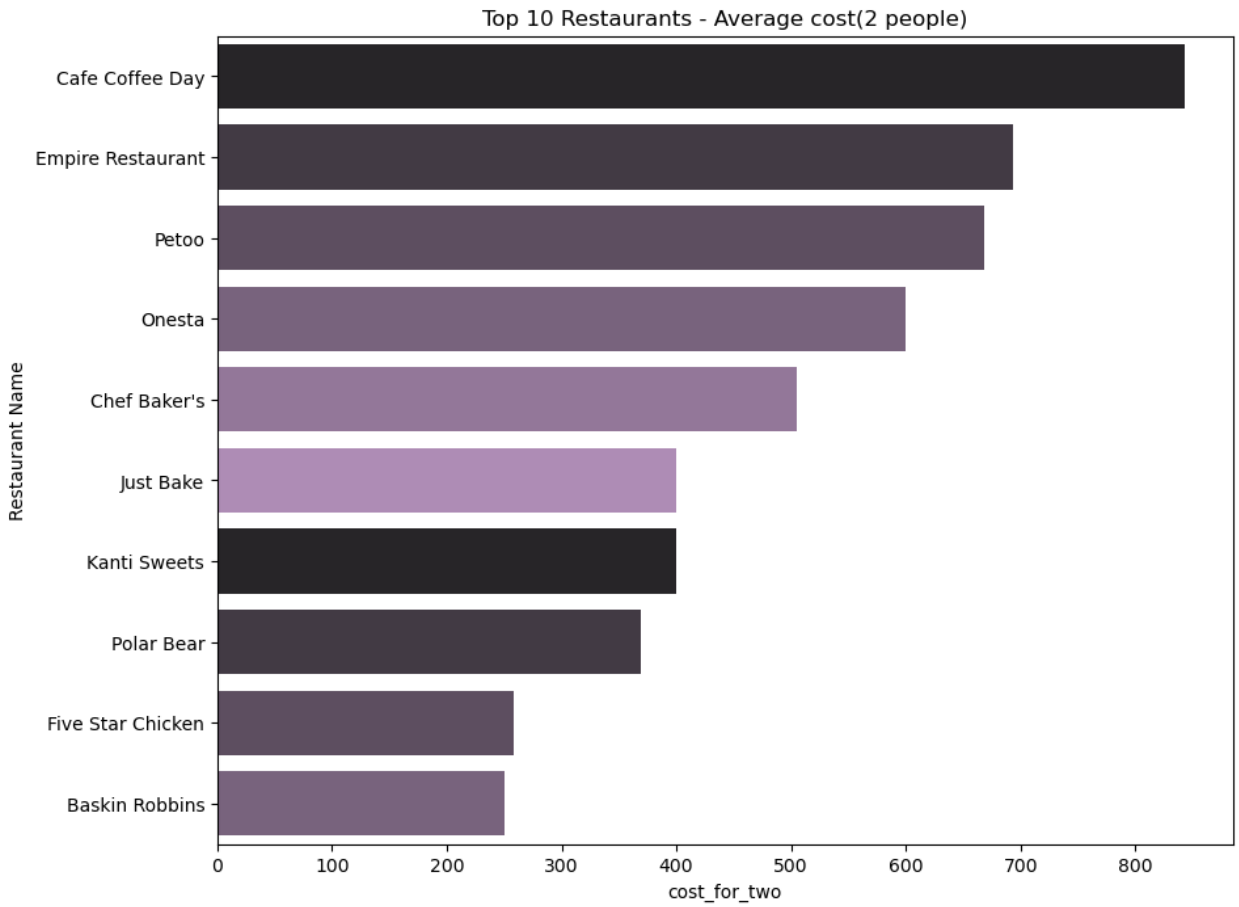
```
<Axes: xlabel='type', ylabel='rating'>
```



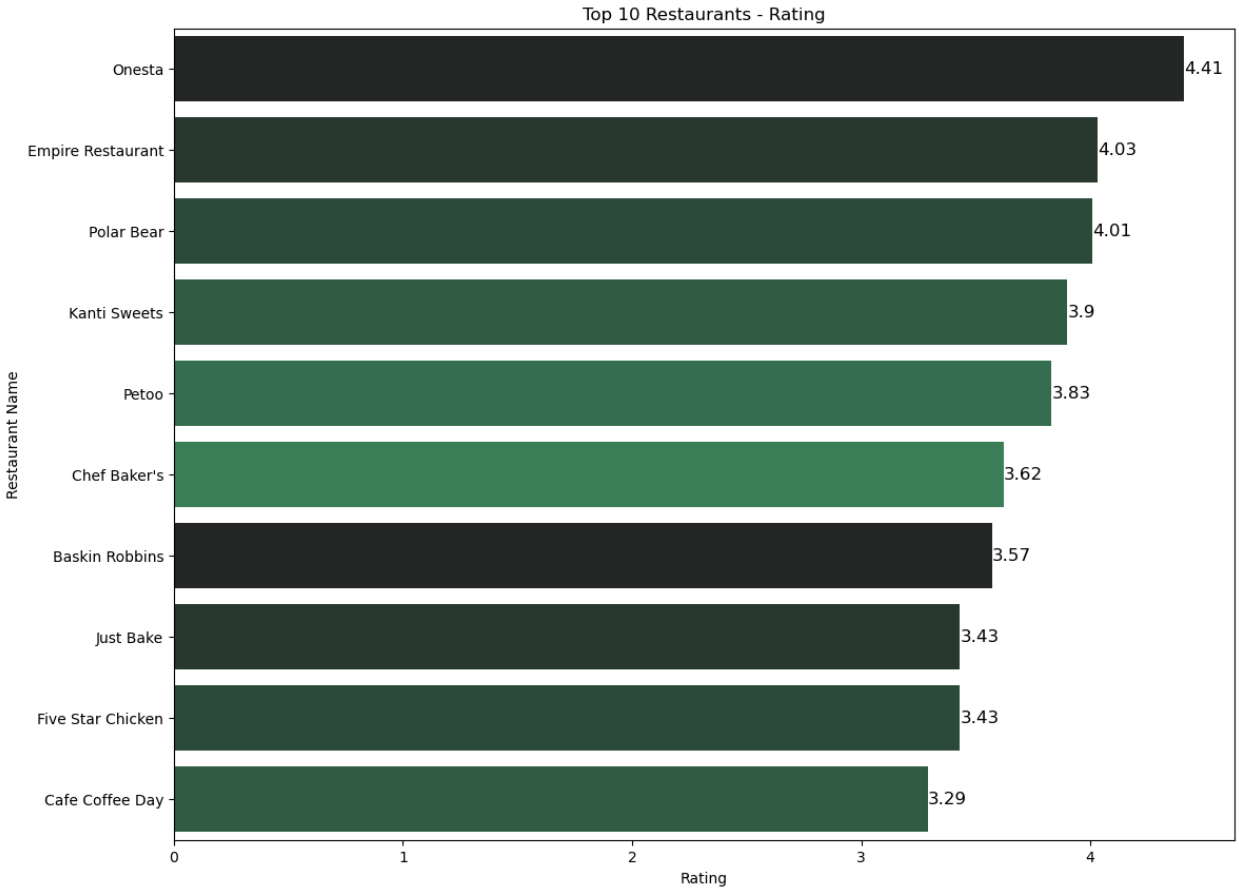

```
plt.figure(figsize=(13,10))
y = df["restaurant_name"].value_counts()[:10]
x = y.index
ax = sns.barplot(x=y,y=x,data=df,estimator="sum", errorbar=None,
palette=sns.dark_palette('#C06B6B'))
ax.bar_label(ax.containers[0], fontsize=10)
plt.title("Top 10 Restaurants - Number of Sales Point")
plt.ylabel("Top 10 Restaurant Names")
plt.xlabel("Number of Sales Points")
plt.show()
```



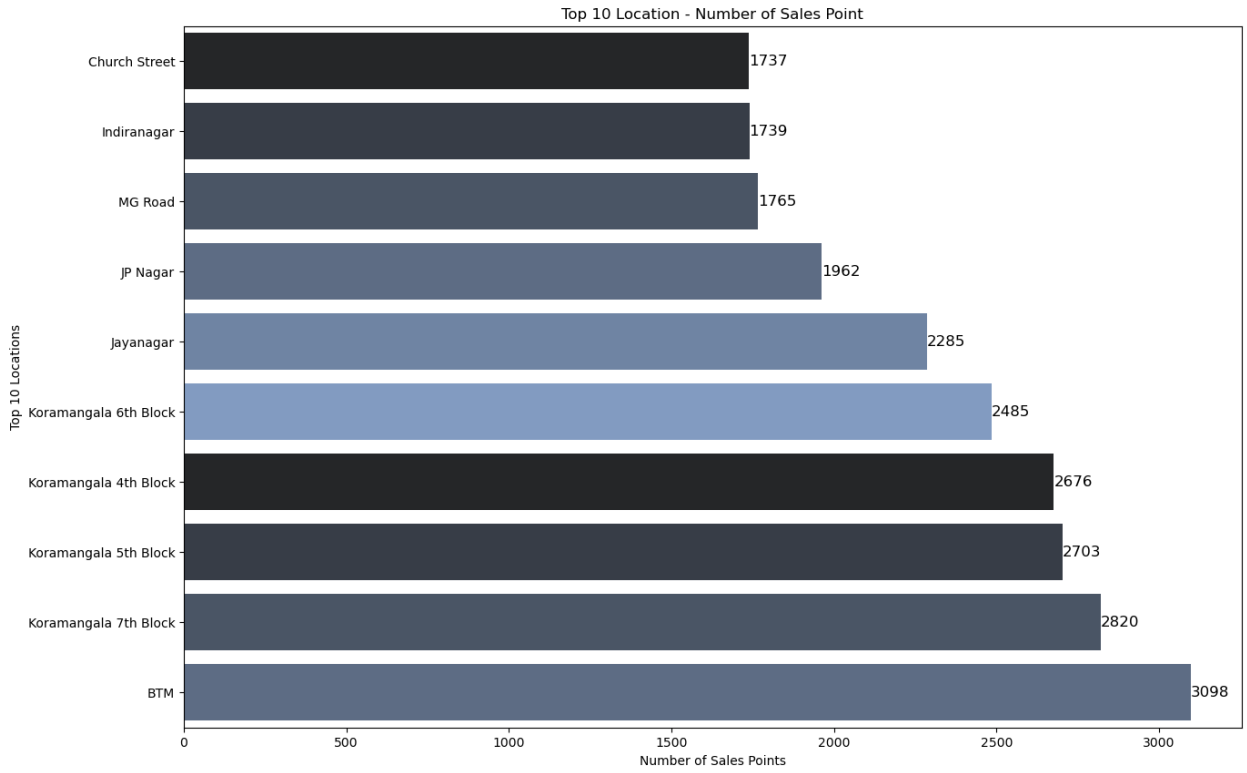

```
res_cost = df['cost_for_two'].groupby(df['restaurant_name'],sort=True)
dict_1={}
for i,j in df['restaurant_name'].value_counts()
[:10].to_dict().items():
    dict_1[i]=round(res_cost.get_group(i).mean(),2)
cost_df = pd.DataFrame(list(dict_1.items()),columns=['Restaurant
Name',"cost_for_two"])


fig , ax = plt.subplots(figsize=(10,8))
sns.barplot(data =
cost_df.sort_values(by=['cost_for_two'],ascending=False),
            x = 'cost_for_two',y = 'Restaurant
Name',palette=sns.dark_palette("#b285bc"))
plt.title('Top 10 Restaurants - Average cost(2 people)')

Text(0.5, 1.0, 'Top 10 Restaurants - Average cost(2 people)')
```



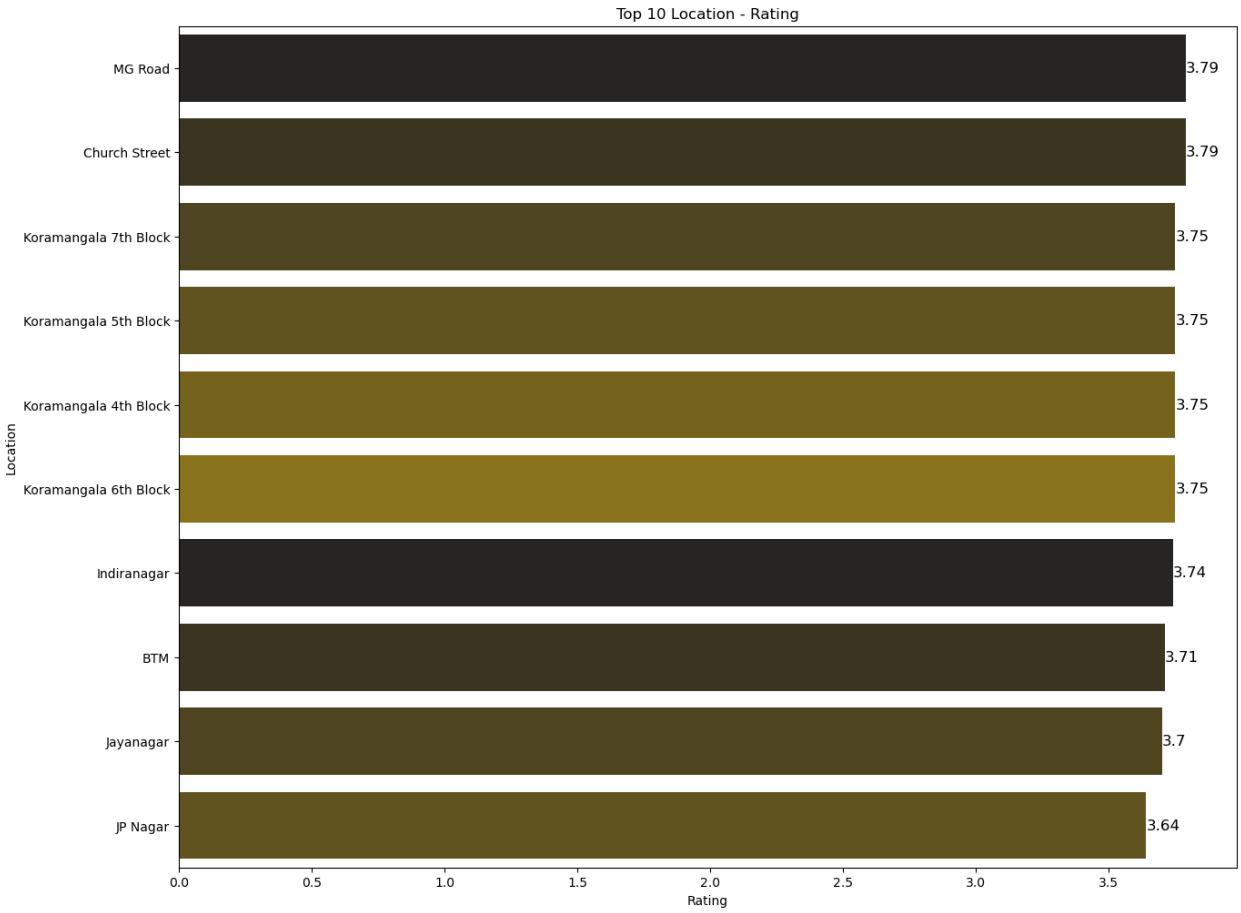

```
res_rating = df['rating'].groupby(df['restaurant_name'],sort=True)
dict_1={}
for i,j in df['restaurant_name'].value_counts()
[:10].to_dict().items():
    dict_1[i]=round(res_rating.get_group(i).mean(),2)
cost_df = pd.DataFrame(list(dict_1.items()),columns=['Restaurant
Name',"Rating"])


fig , ax = plt.subplots(figsize=(13,10))
ax1 = sns.barplot(data =
cost_df.sort_values(by=['Rating'],ascending=False),
            x = 'Rating',y = 'Restaurant
Name',palette=sns.dark_palette("seagreen"),
            estimator="mean", errorbar=None)
ax1.bar_label(ax.containers[0], fontsize=12)
plt.title('Top 10 Restaurants - Rating')

Text(0.5, 1.0, 'Top 10 Restaurants - Rating')
```



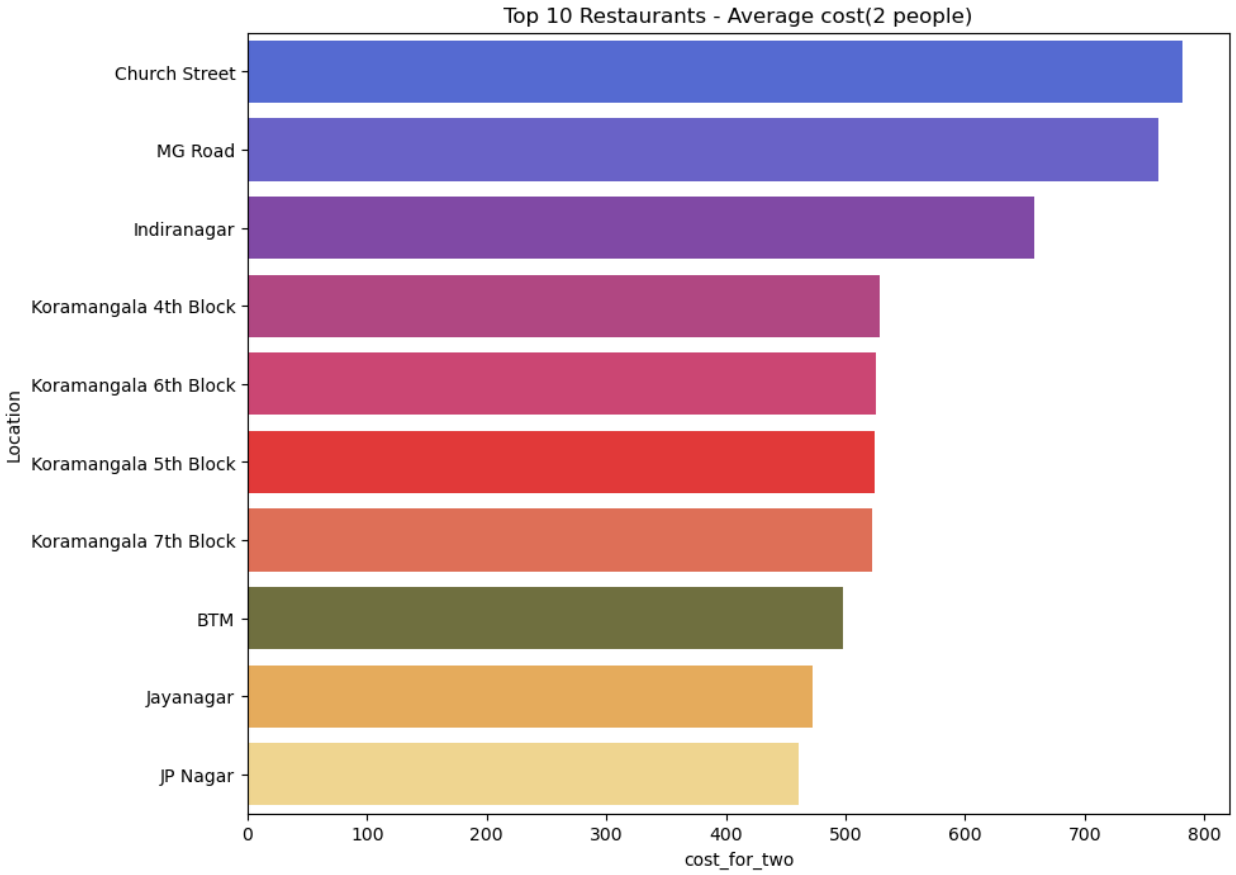

```
plt.figure(figsize=(15,10))
x = df['location'].value_counts()[:10].sort_values()
y = x.index
ax = sns.barplot(x=x,y=y,data=df,estimator="sum", errorbar=None,
palette=sns.dark_palette('#79C'))
ax.bar_label(ax.containers[0], fontsize=12)
plt.title("Top 10 Location - Number of Sales Point")
plt.xlabel("Number of Sales Points")
plt.ylabel("Top 10 Locations")
plt.show()
```



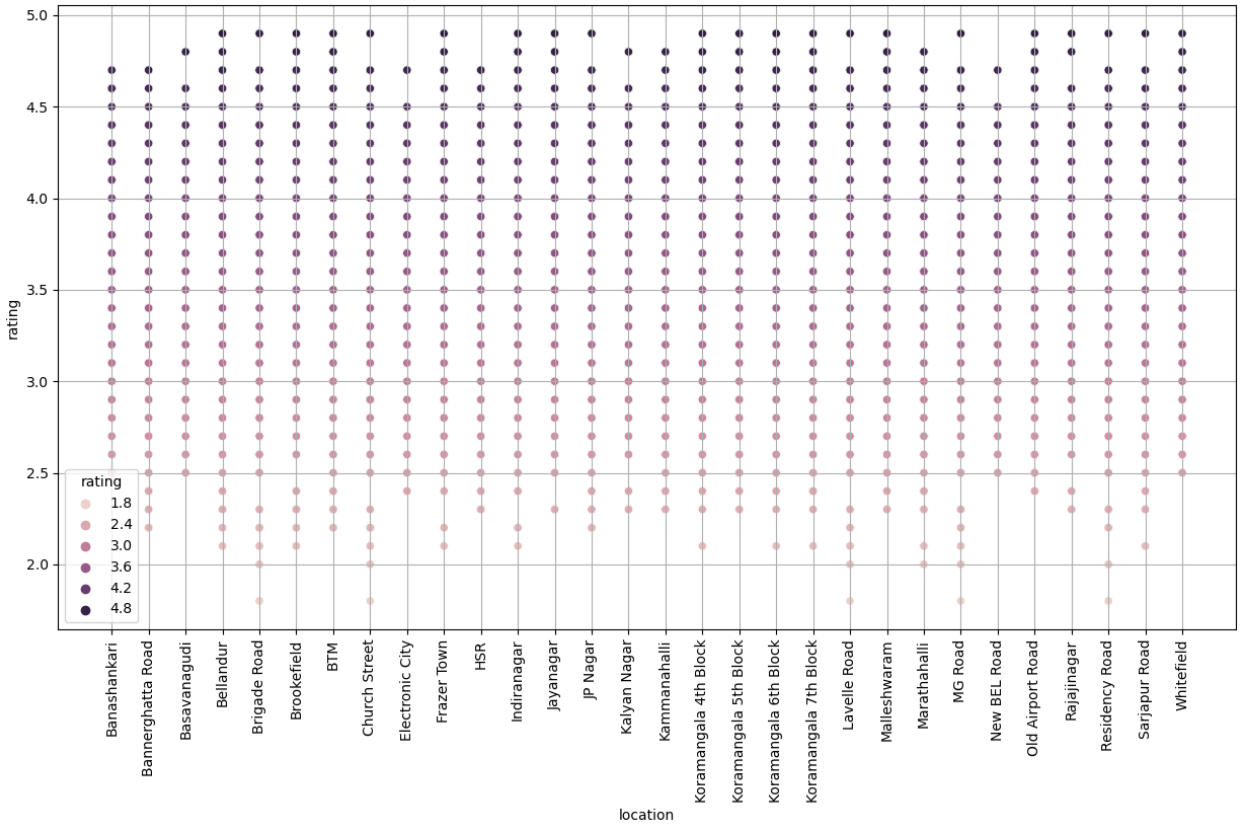

```
loc_rating = df['rating'].groupby(df['location'],sort=True)
dict_1={}
for i,j in df['location'].value_counts()[:10].to_dict().items():
    dict_1[i]=round(loc_rating.get_group(i).mean(),2)
cost_df =
pd.DataFrame(list(dict_1.items()),columns=['Location',"Rating"])


fig , ax = plt.subplots(figsize=(15,12))
ax1 = sns.barplot(data =
cost_df.sort_values(by=['Rating'],ascending=False),
            x = 'Rating',y =
'Location',palette=sns.dark_palette("#9A7D0A"),
            estimator="mean", errorbar=None)
ax1.bar_label(ax.containers[0], fontsize=12)
plt.title('Top 10 Location - Rating')

Text(0.5, 1.0, 'Top 10 Location - Rating')
```




```
loc_cost = df['cost_for_two'].groupby(df['location'],sort=True)
dict_1={}
for i,j in df['location'].value_counts()[:10].to_dict().items():
    dict_1[i]=round(loc_cost.get_group(i).mean(),2)
cost_df =
pd.DataFrame(list(dict_1.items()),columns=['Location',"cost_for_two"])
cols = ['#405DE6', '#5B51D8', '#833AB4', '#C13584', '#E1306C',
        '#FD1D1D', '#F56040', '#777737', '#FCAF45', '#FFDC80']


fig , ax = plt.subplots(figsize=(10,8))
sns.barplot(data =
cost_df.sort_values(by=['cost_for_two'],ascending=False),
            x = 'cost_for_two',y = 'Location',palette=cols)
plt.title('Top 10 Location - Average cost(2 people)')

Text(0.5, 1.0, 'Top 10 Restaurants - Average cost(2 people)')
```




```
plt.figure(figsize=(15,8))
sns.scatterplot(data=df, x='location', y='rating', hue = 'rating')
plt.xticks(rotation=90)
plt.grid()
```


rating
5.0
4.5
4.0
3.5
3.0
2.5
2.0
rating
1.8
2.4
3.0
3.6
4.2
4.8
Banashankari
Bannerghatta Road
Basavanagudi
Bellandur
Brigade Road
Brookefield
BTM
Church Street
Electronic City
Frazer Town
HSR
Indiranagar
Jayanagar
JP Nagar
Kalyan Nagar
Kammanahalli
Koramangala 4th Block
Koramangala 5th Block
Koramangala 6th Block
Koramangala 7th Block
Lavelle Road
Malleshwaram
Marathahalli
MG Road
New BEL Road
Old Airport Road
Rajajinagar
Residency Road
Sarjapur Road
Whitefield
location