data-visualization

February 10, 2024

Import Libraries:

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

[2]:
```
# Load the dataset
data = pd.read_csv("/content/Dataset .csv")
data.head()
```

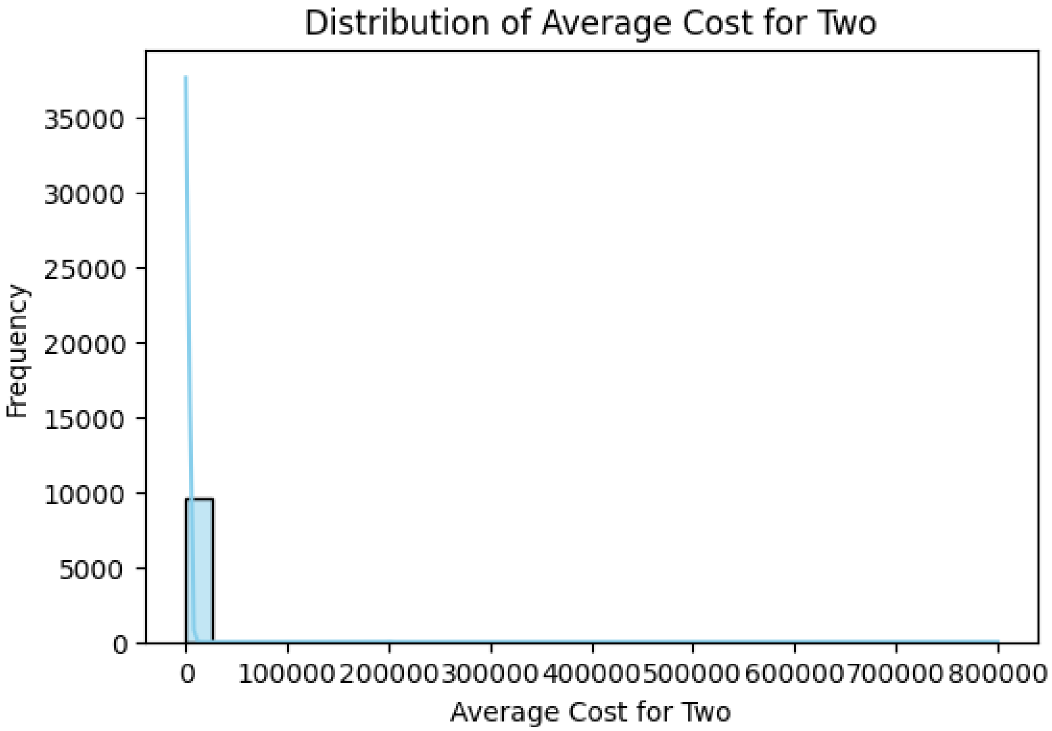
[2]:
```
   Restaurant ID         Restaurant Name  Country Code              City  \
0        6317637        Le Petit Souffle           162       Makati City
1        6304287        Izakaya Kikufuji           162       Makati City
2        6300002  Heat - Edsa Shangri-La           162  Mandaluyong City
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  …         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]
```

Histplots:

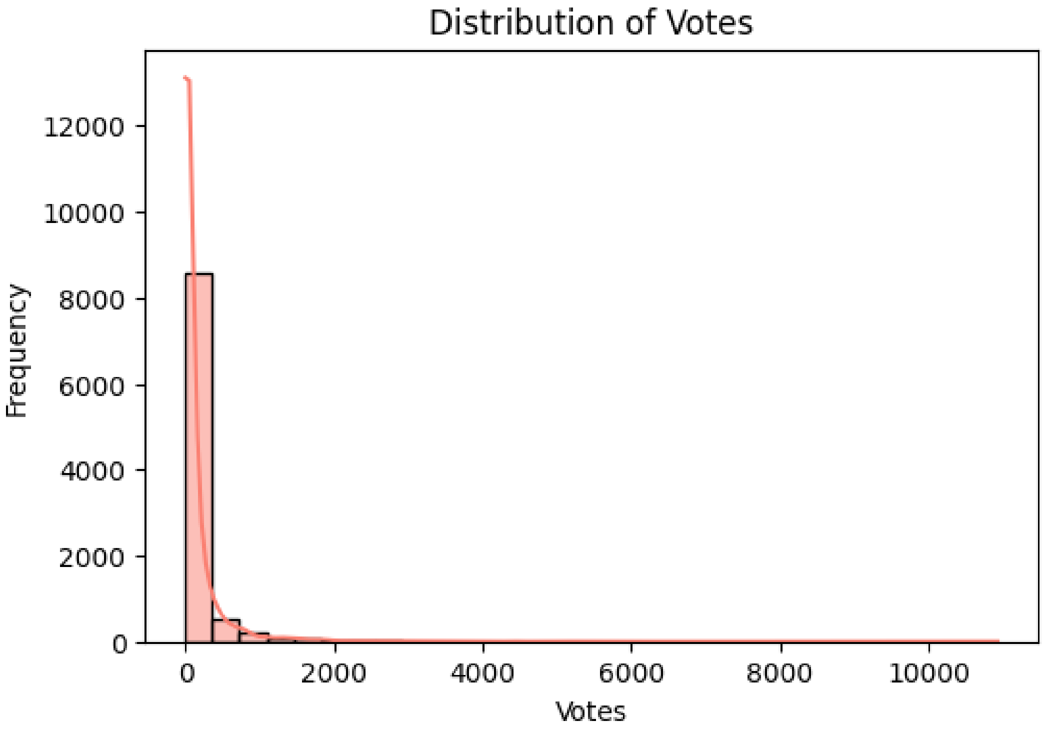
[3]:

```python
# Histplot 1: Distribution of Average Cost for two
plt.figure(figsize=(6, 4))
sns.histplot(data['Average Cost for two'], bins=30, kde=True, color='skyblue')
plt.title('Distribution of Average Cost for Two')
plt.xlabel('Average Cost for Two')
plt.ylabel('Frequency')
plt.show()
```



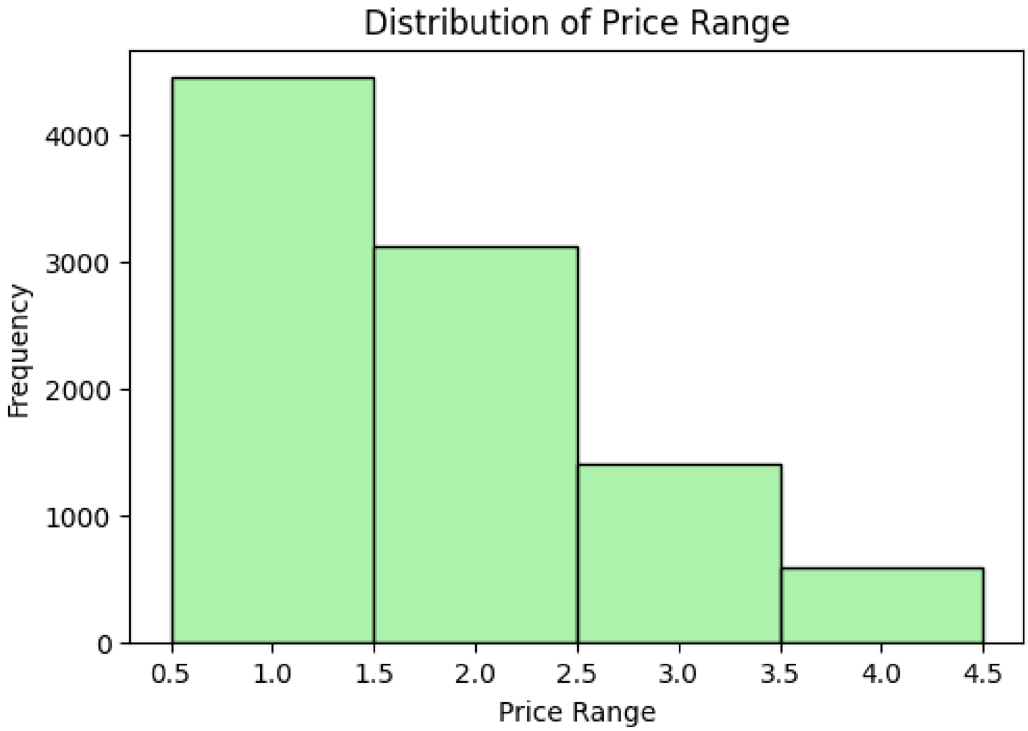
[4]:

```
# Histplot 2: Distribution of Votes
plt.figure(figsize=(6, 4))
sns.histplot(data['Votes'], bins=30, kde=True, color='salmon')
plt.title('Distribution of Votes')
plt.xlabel('Votes')
plt.ylabel('Frequency')
plt.show()
```

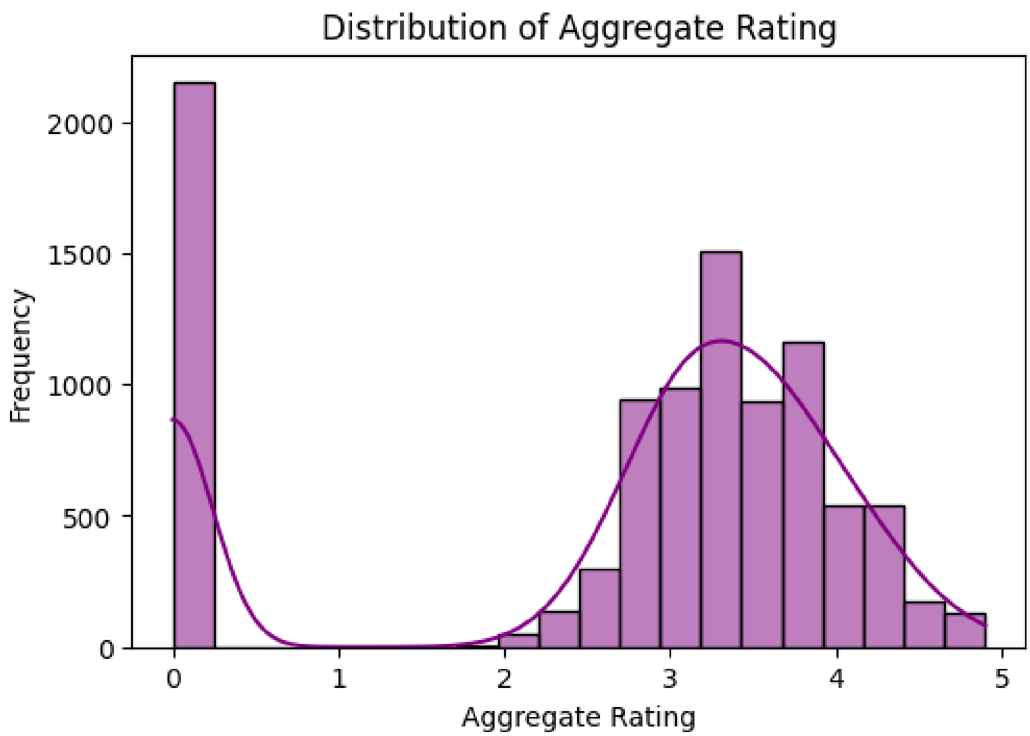


[5]:

```
# Histplot 3: Distribution of Price range
plt.figure(figsize=(6, 4))
sns.histplot(data['Price range'], bins=5, discrete=True, color='lightgreen')
plt.title('Distribution of Price Range')
plt.xlabel('Price Range')
plt.ylabel('Frequency')
plt.show()
```



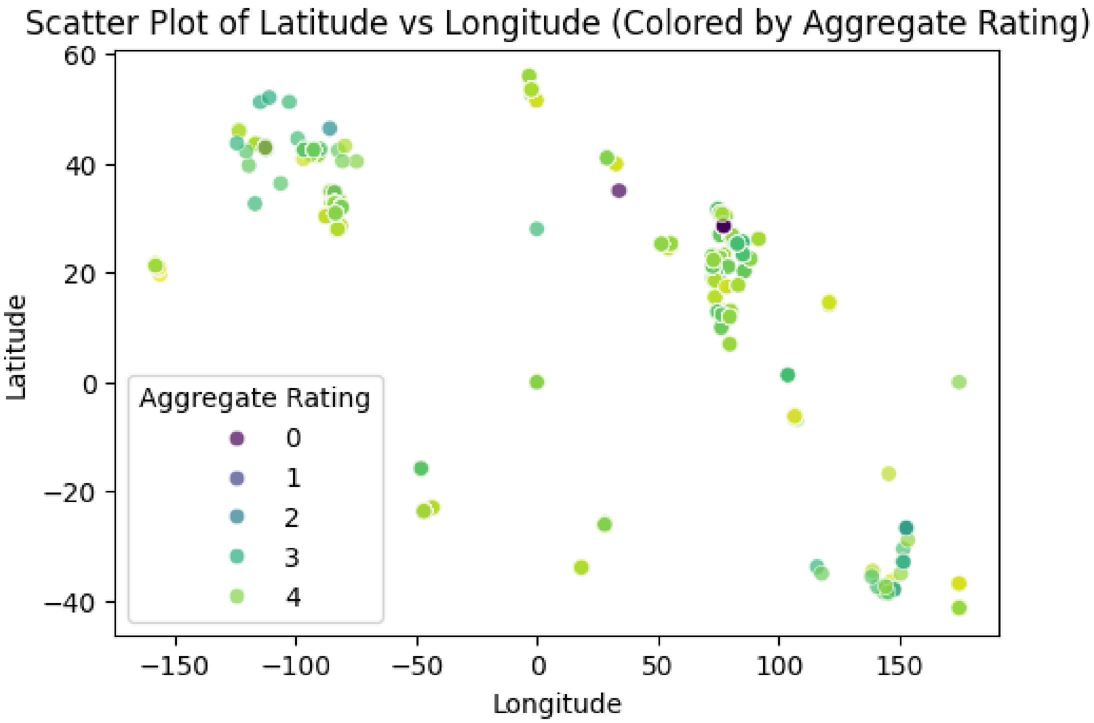
[6]:
```
# Histplot 4: Distribution of Aggregate rating
plt.figure(figsize=(6, 4))
sns.histplot(data['Aggregate rating'], bins=20, kde=True, color='purple')
plt.title('Distribution of Aggregate Rating')
plt.xlabel('Aggregate Rating')
plt.ylabel('Frequency')
plt.show()
```



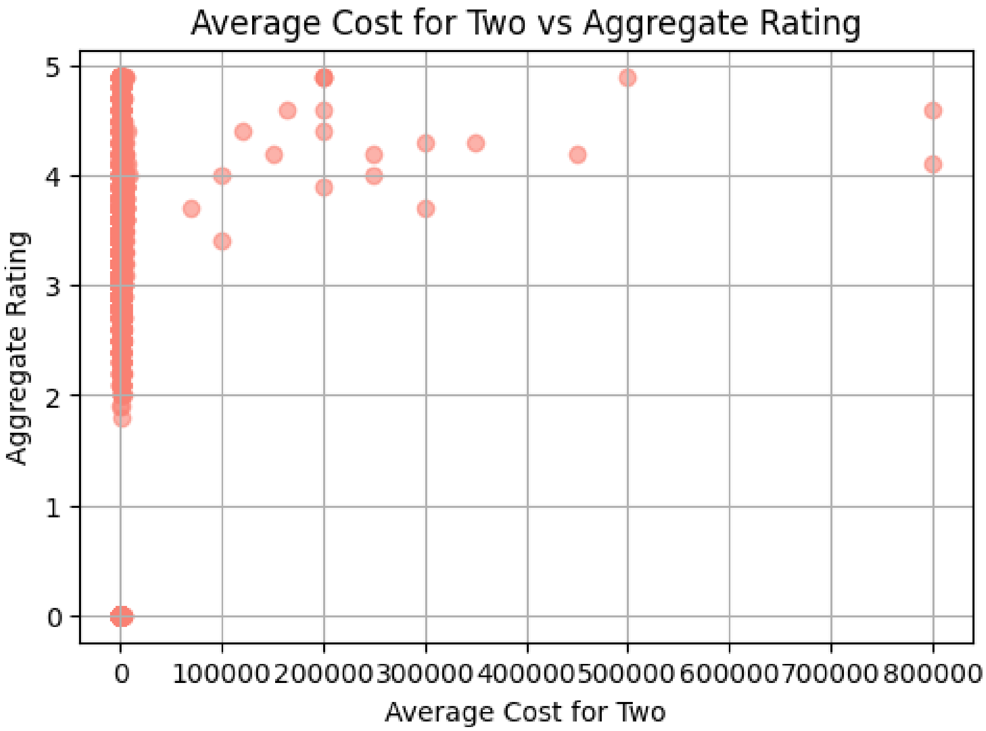
scatter Plots:

[7]:

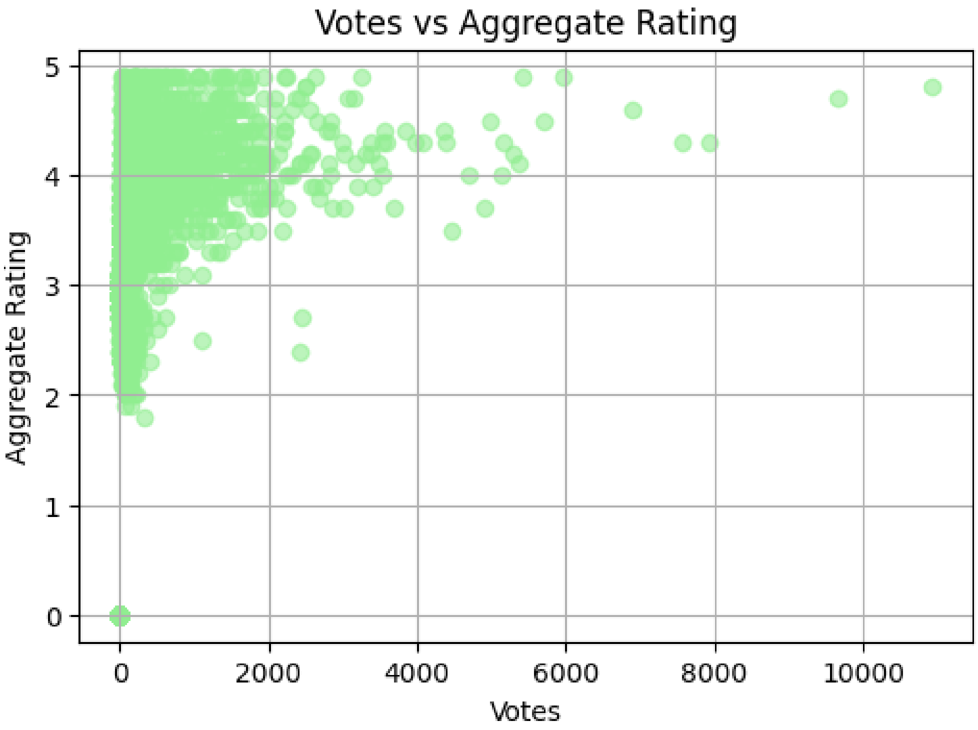
```
# Scatter Plot 1: Latitude vs Longitude colored by Aggregate rating
plt.figure(figsize=(6, 4))
sns.scatterplot(x='Longitude', y='Latitude', hue='Aggregate rating', data=data,␣
 ↪palette='viridis', alpha=0.7)
plt.title('Scatter Plot of Latitude vs Longitude (Colored by Aggregate Rating)')
plt.xlabel('Longitude')
plt.ylabel('Latitude')
plt.legend(title='Aggregate Rating')
plt.show()
```



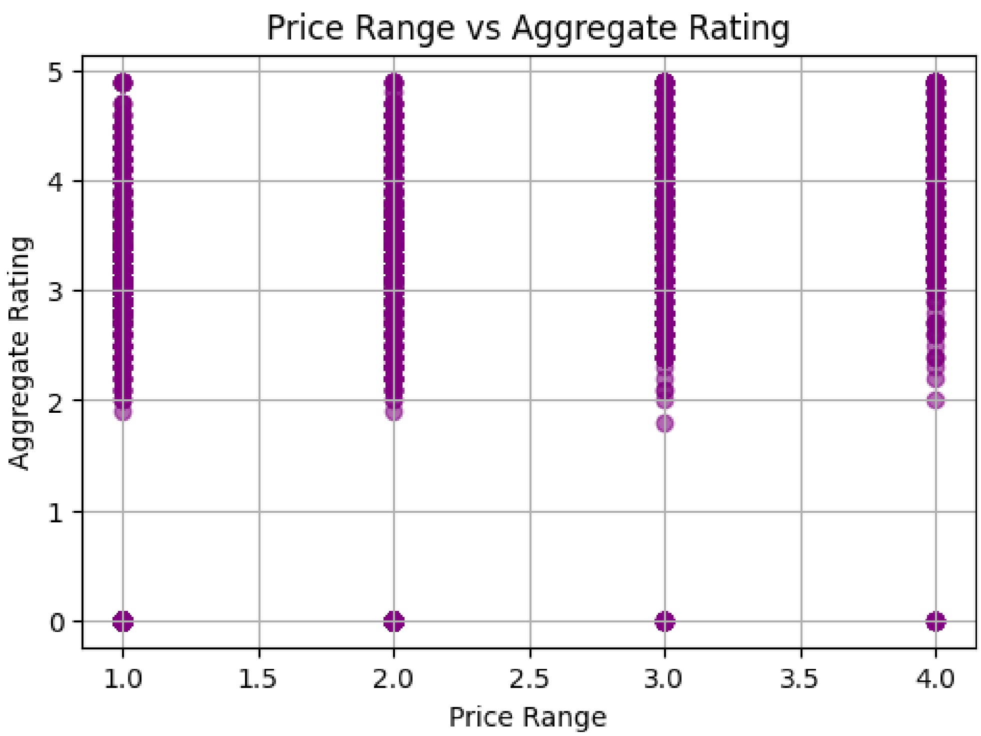
[8]:
```
# Scatter Plot 2: Average Cost for Two vs Aggregate Rating
plt.figure(figsize=(6, 4))
plt.scatter(data['Average Cost for two'], data['Aggregate rating'],␣
  ↪color='salmon', alpha=0.6)
plt.title('Average Cost for Two vs Aggregate Rating')
plt.xlabel('Average Cost for Two')
plt.ylabel('Aggregate Rating')
plt.grid(True)
plt.show()
```



[9]:
```
# Scatter Plot 3: Votes vs Aggregate Rating
plt.figure(figsize=(6, 4))
plt.scatter(data['Votes'], data['Aggregate rating'], color='lightgreen',␣
  ↪alpha=0.6)
plt.title('Votes vs Aggregate Rating')
plt.xlabel('Votes')
plt.ylabel('Aggregate Rating')
plt.grid(True)
plt.show()
```

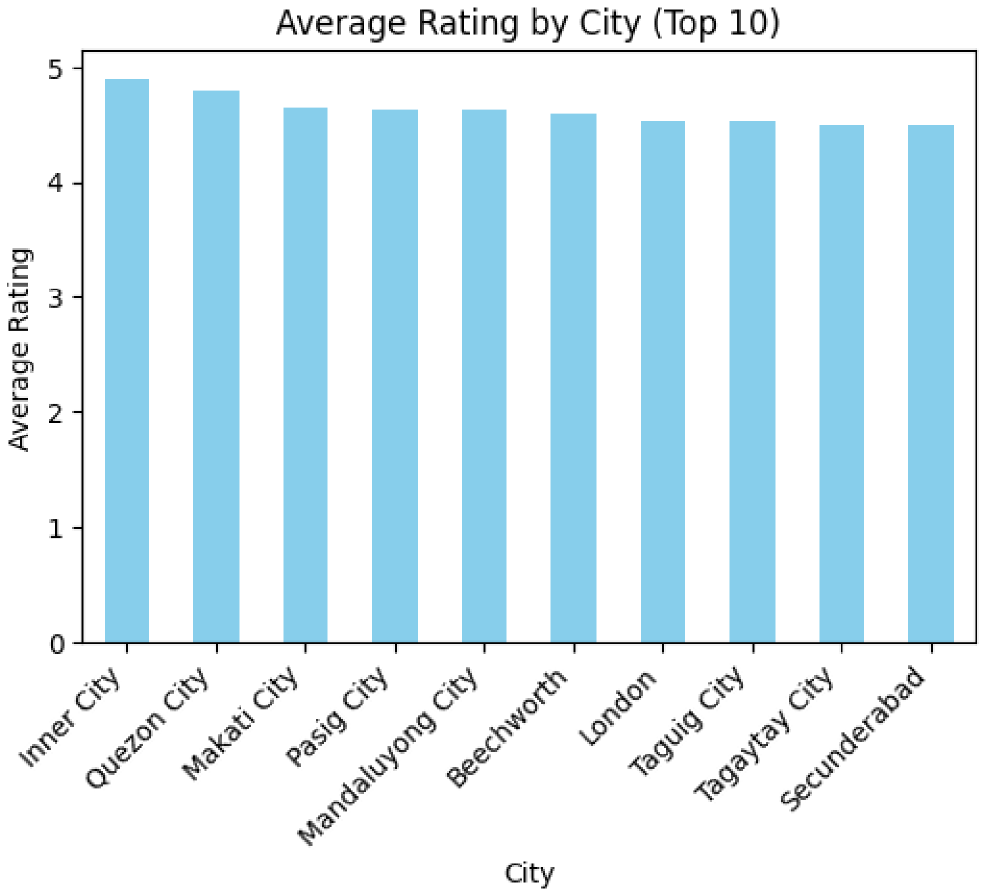


[10]:
```
# Scatter Plot 4: Price range vs Aggregate Rating
plt.figure(figsize=(6, 4))
plt.scatter(data['Price range'], data['Aggregate rating'], color='purple',␣
 ↪alpha=0.6)
plt.title('Price Range vs Aggregate Rating')
plt.xlabel('Price Range')
plt.ylabel('Aggregate Rating')
plt.grid(True)
plt.show()
```

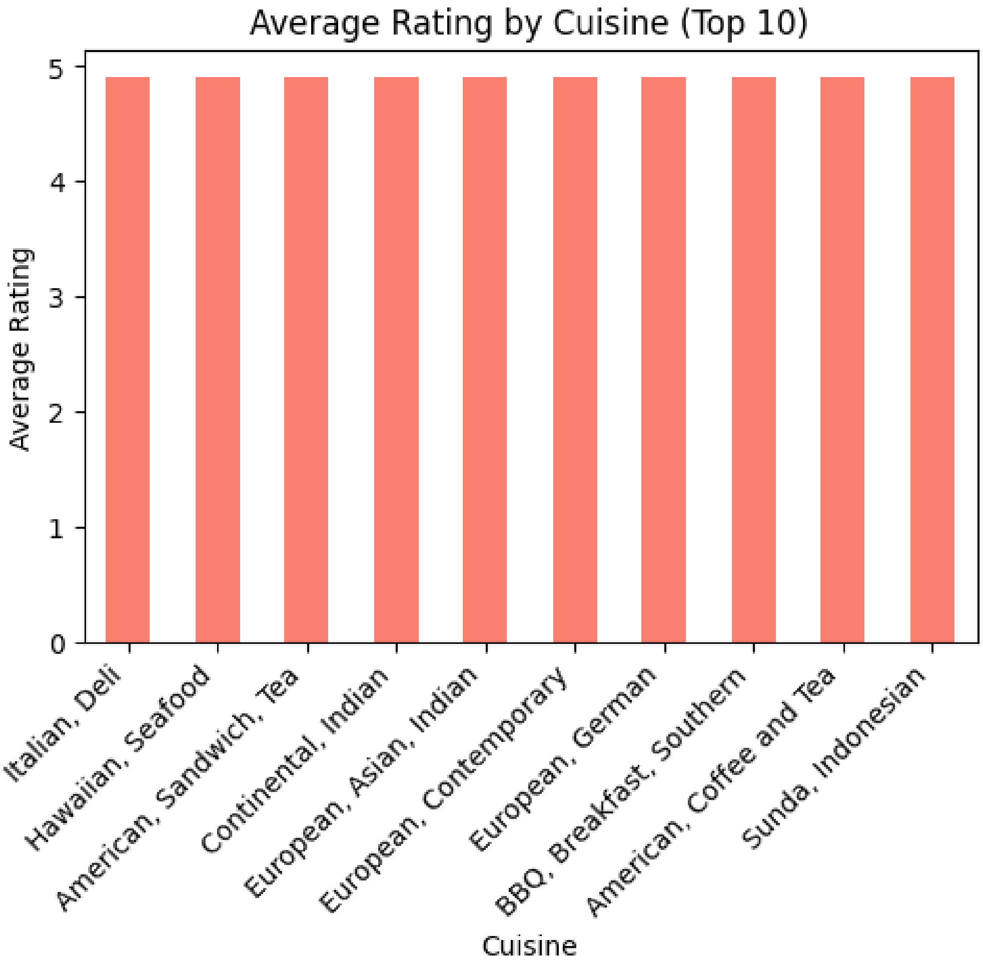


Bar Plots:

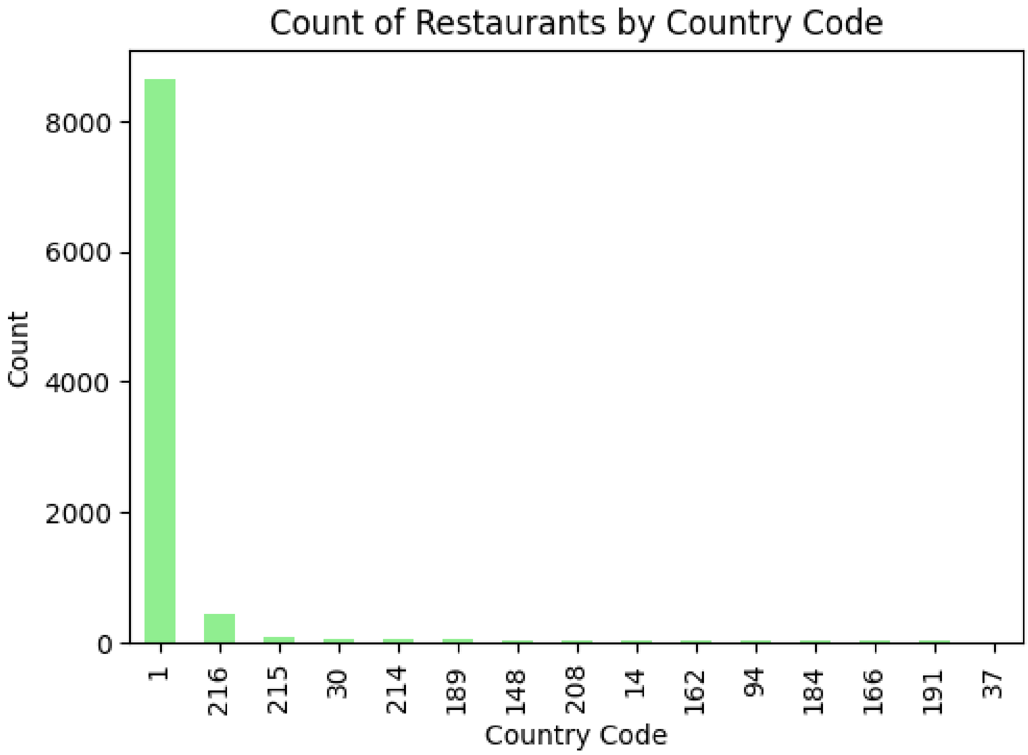
```
[11]: # Bar Plot 1: Average Rating by City
average_rating_by_city = data.groupby('City')['Aggregate rating'].mean().
  ↪sort_values(ascending=False).head(10)
plt.figure(figsize=(6, 4))
average_rating_by_city.plot(kind='bar', color='skyblue')
plt.title('Average Rating by City (Top 10)')
plt.xlabel('City')
plt.ylabel('Average Rating')
plt.xticks(rotation=45, ha = 'right')
plt.show()
```



```
[12]: # Bar Plot 2: Average Rating by Cuisine
average_rating_by_cuisine = data.groupby('Cuisines')['Aggregate rating'].mean().
  ↪sort_values(ascending=False).head(10)
plt.figure(figsize=(6, 4))
average_rating_by_cuisine.plot(kind='bar', color='salmon')
plt.title('Average Rating by Cuisine (Top 10)')
plt.xlabel('Cuisine')
plt.ylabel('Average Rating')
plt.xticks(rotation=45, ha = 'right')
plt.show()
```

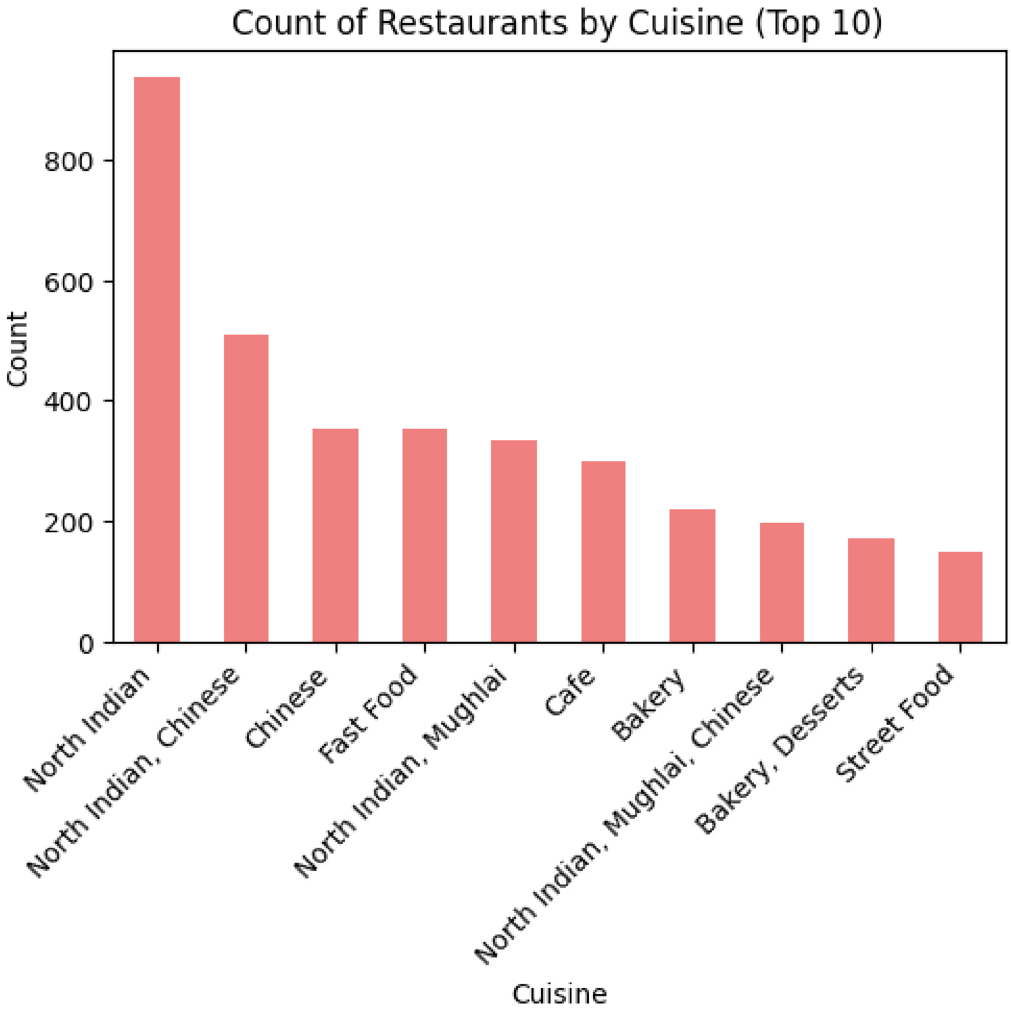


[13]:
```
# Bar Plot 3: Count of Restaurants by Country Code
plt.figure(figsize=(6, 4))
data['Country Code'].value_counts().plot(kind='bar', color='lightgreen')
plt.title('Count of Restaurants by Country Code')
plt.xlabel('Country Code')
plt.ylabel('Count')
plt.show()
```



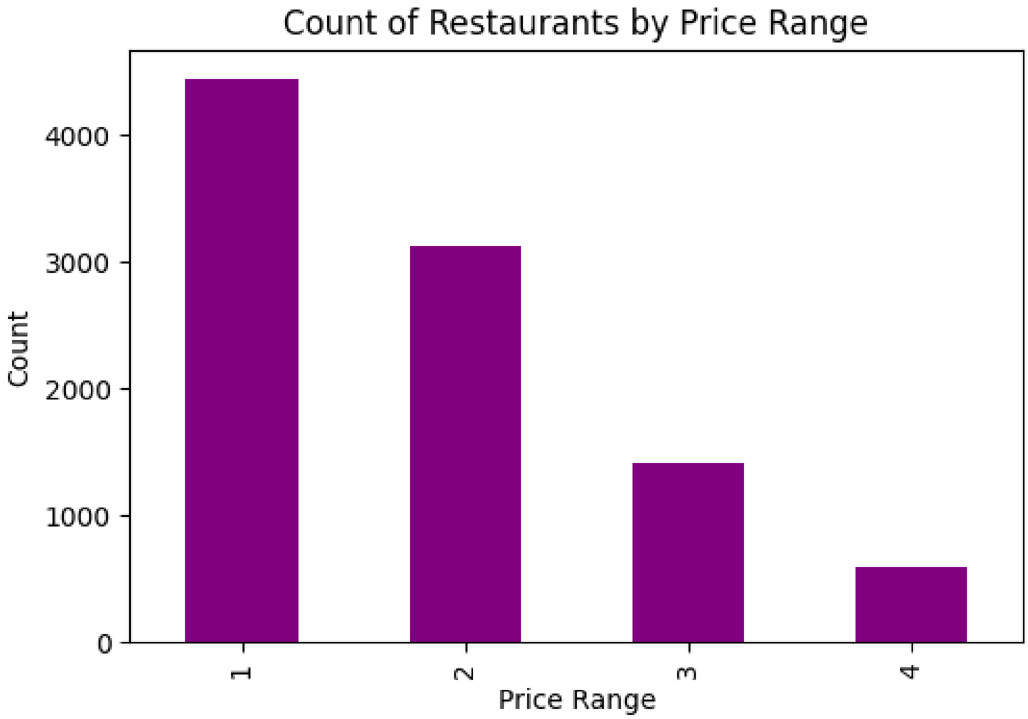
[14]:

```
# Bar Plot 4: Count of Restaurants by Cuisine (Top 10)
top_10_cuisines = data['Cuisines'].value_counts().head(10)
plt.figure(figsize=(6, 4))
top_10_cuisines.plot(kind='bar', color='lightcoral')
plt.title('Count of Restaurants by Cuisine (Top 10)')
plt.xlabel('Cuisine')
plt.ylabel('Count')
plt.xticks(rotation=45, ha = 'right')
plt.show()
```



[15]:

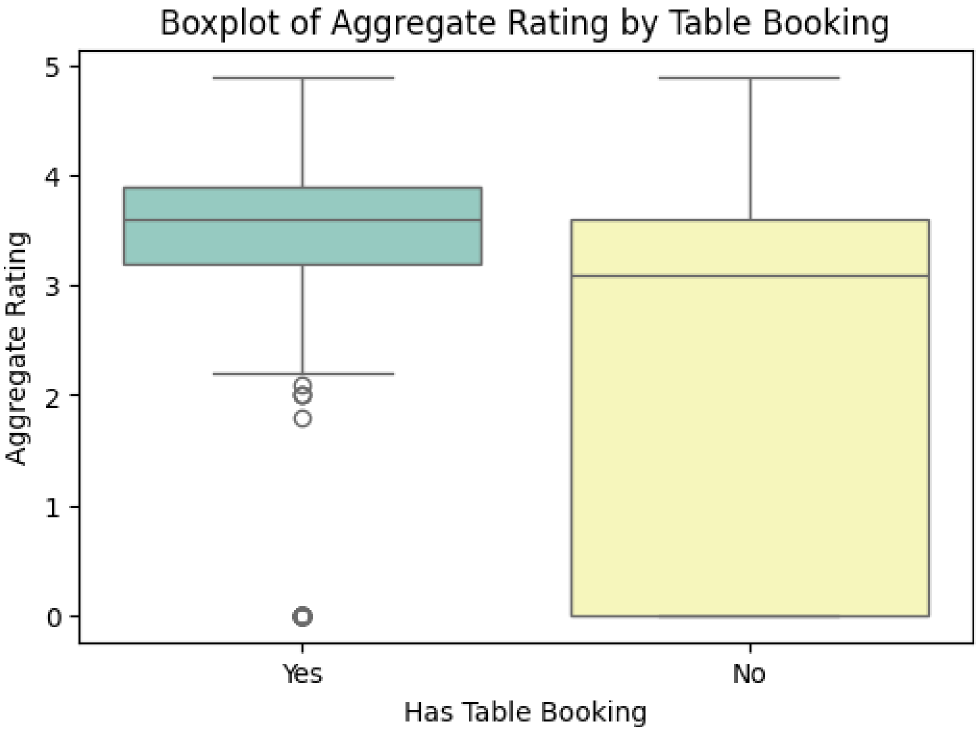
```
# Bar Plot 5: Count of Restaurants by Price Range
plt.figure(figsize=(6, 4))
data['Price range'].value_counts().sort_index().plot(kind='bar', color='purple')
plt.title('Count of Restaurants by Price Range')
plt.xlabel('Price Range')
plt.ylabel('Count')
plt.show()
```



Box Plots:

```
[16]: # Box Plot 1: Boxplot of Aggregate Rating by Has Table Booking
plt.figure(figsize=(6, 4))
sns.boxplot(x='Has Table booking', y='Aggregate rating', data=data,␣
 ↪palette='Set3')
plt.title('Boxplot of Aggregate Rating by Table Booking')
plt.xlabel('Has Table Booking')
plt.ylabel('Aggregate Rating')
plt.show()
```

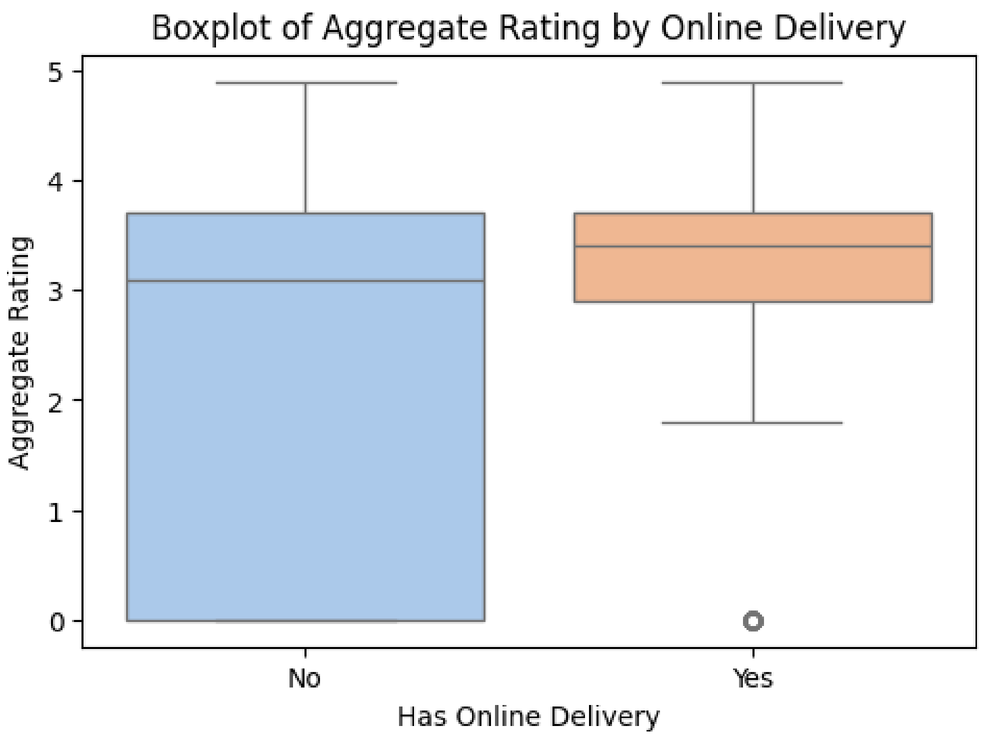
```
<ipython-input-16-b05da9da89ed>:3: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in
v0.14.0. Assign the `x` variable to `hue` and set `legend=False` for the same
effect.

  sns.boxplot(x='Has Table booking', y='Aggregate rating', data=data,
palette='Set3')
```



[17]:

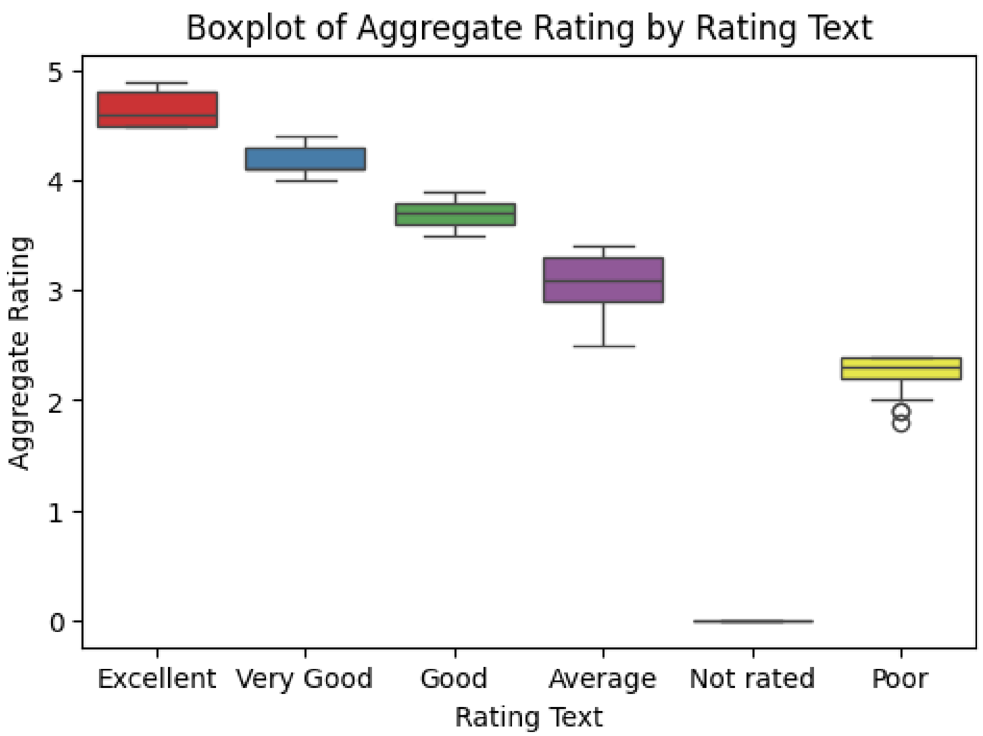
```
# Box Plot 2: Boxplot of Aggregate Rating by Has Online Delivery
plt.figure(figsize=(6, 4))
sns.boxplot(x='Has Online delivery', y='Aggregate rating', data=data,␣
  ↪palette='pastel')
plt.title('Boxplot of Aggregate Rating by Online Delivery')
plt.xlabel('Has Online Delivery')
plt.ylabel('Aggregate Rating')
plt.show()
```

```
<ipython-input-17-1a273f3fc6d6>:3: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in
v0.14.0. Assign the `x` variable to `hue` and set `legend=False` for the same
effect.

  sns.boxplot(x='Has Online delivery', y='Aggregate rating', data=data,
palette='pastel')
```



```
[18]: # Box Plot 3: Boxplot of Aggregate Rating by Rating Text
      plt.figure(figsize=(6, 4))
      sns.boxplot(x='Rating text', y='Aggregate rating', data=data, palette='Set1')
      plt.title('Boxplot of Aggregate Rating by Rating Text')
      plt.xlabel('Rating Text')
      plt.ylabel('Aggregate Rating')
      plt.show()
```

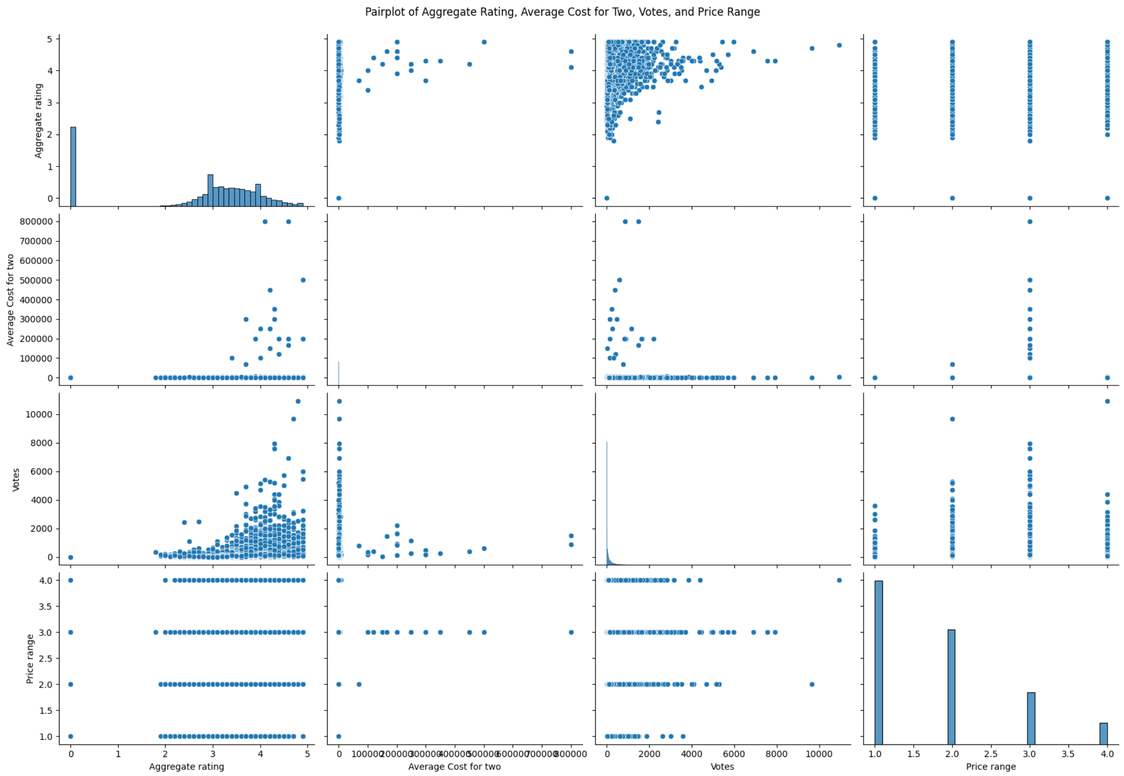
```
<ipython-input-18-370152d42af5>:3: FutureWarning:

Passing `palette` without assigning `hue` is deprecated and will be removed in
v0.14.0. Assign the `x` variable to `hue` and set `legend=False` for the same
effect.

  sns.boxplot(x='Rating text', y='Aggregate rating', data=data, palette='Set1')
```



Pair Plots:

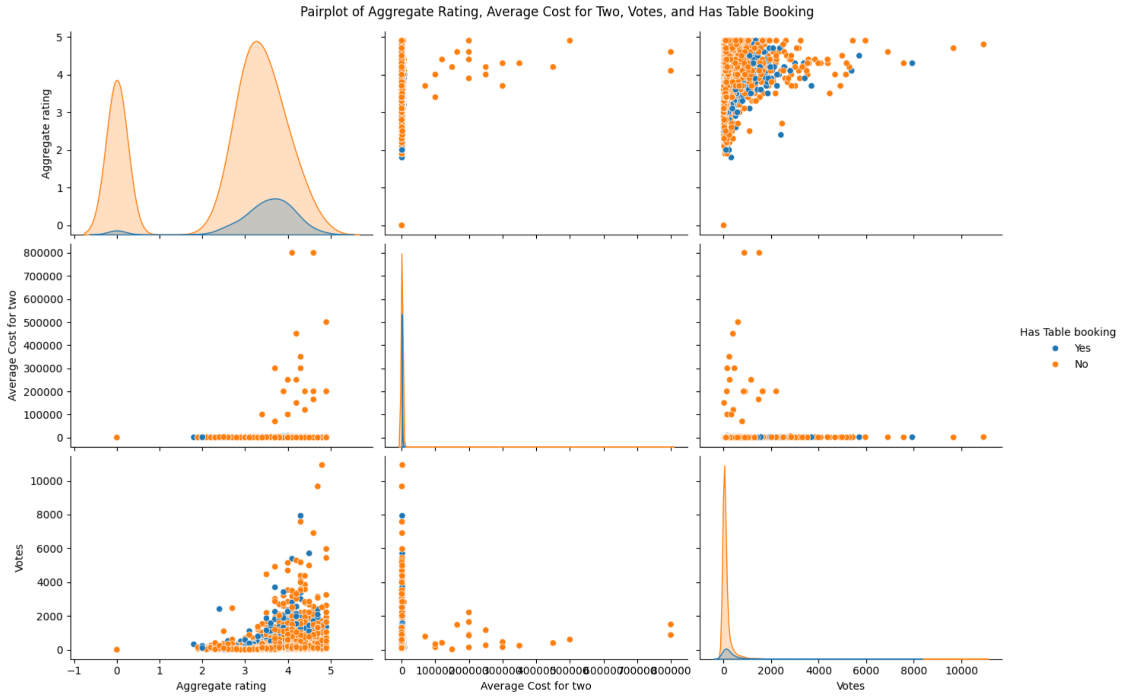
[19]:

```python
# Pairplot 1: Pairplot of Aggregate Rating, Average Cost for Two, Votes, and Price Range
sns.pairplot(data, vars=['Aggregate rating', 'Average Cost for two', 'Votes', 'Price range'], height=3, aspect=1.5)
plt.suptitle('Pairplot of Aggregate Rating, Average Cost for Two, Votes, and Price Range', y=1.02)
plt.show()
```

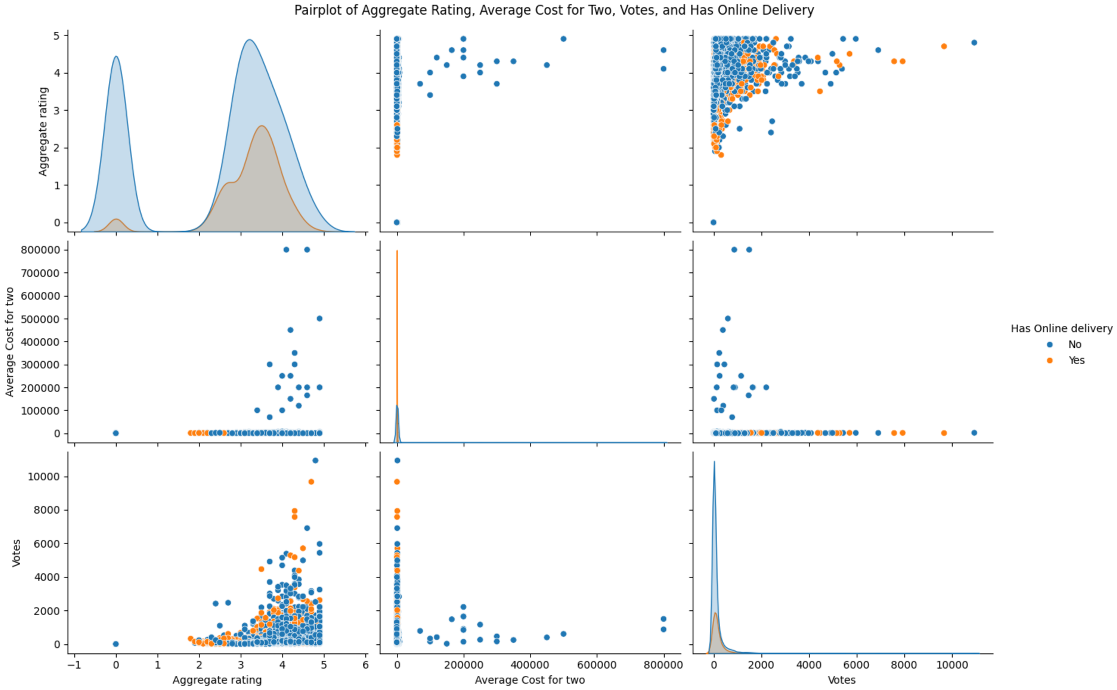


[20]:

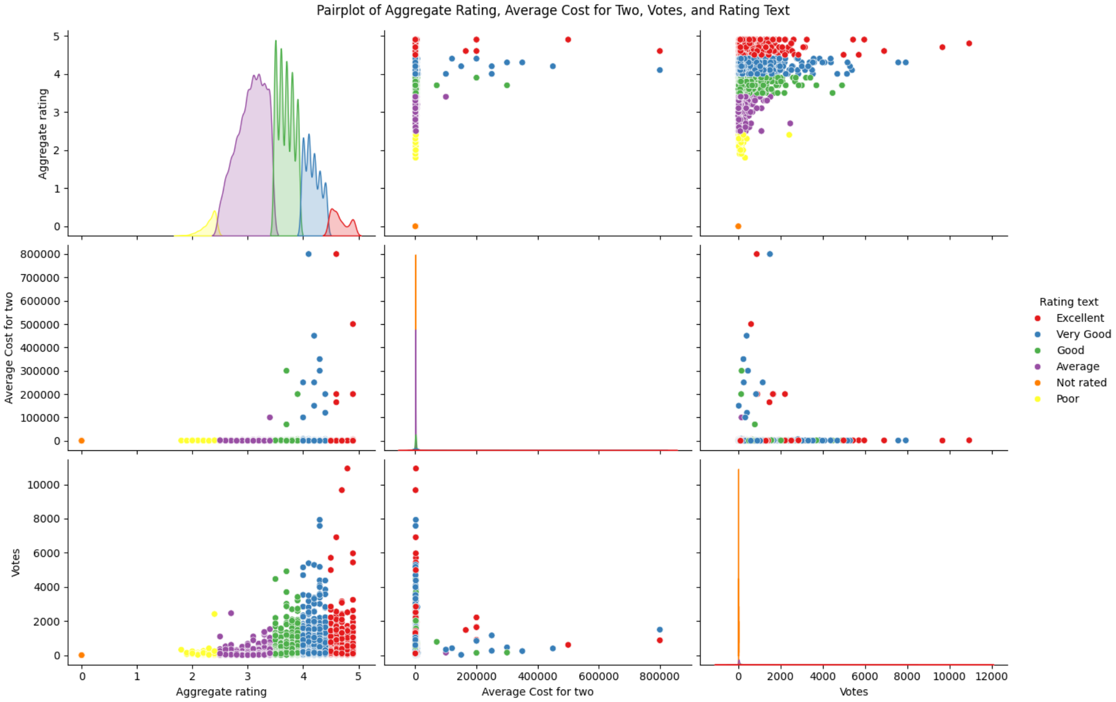
```
# Pairplot 2: Pairplot of Aggregate Rating, Average Cost for Two, Votes, and Has Table Booking
sns.pairplot(data, vars=['Aggregate rating', 'Average Cost for two', 'Votes'], hue='Has Table booking', height=3, aspect=1.5)
plt.suptitle('Pairplot of Aggregate Rating, Average Cost for Two, Votes, and Has Table Booking', y=1.02)
plt.show()
```



```
[21]: # Pairplot 3: Pairplot of Aggregate Rating, Average Cost for Two, Votes, and␣
       ↪Has Online Delivery
      sns.pairplot(data, vars=['Aggregate rating', 'Average Cost for two', 'Votes'],␣
       ↪hue='Has Online delivery', height=3, aspect=1.5)
      plt.suptitle('Pairplot of Aggregate Rating, Average Cost for Two, Votes, and␣
       ↪Has Online Delivery', y=1.02)
      plt.show()
```



```
[22]: # Pairplot 4: Pairplot of Aggregate Rating, Average Cost for Two, Votes, and␣
      ↪Rating Text
      sns.pairplot(data, vars=['Aggregate rating', 'Average Cost for two', 'Votes'],␣
      ↪hue='Rating text', palette='Set1', height=3, aspect=1.5)
      plt.suptitle('Pairplot of Aggregate Rating, Average Cost for Two, Votes, and␣
      ↪Rating Text', y=1.02)
      plt.show()
```


Pairplot of Aggregate Rating, Average Cost for Two, Votes, and Rating Text
Aggregate rating
0
1
2
3
4
5
Average Cost for two
0
100000
200000
300000
400000
500000
600000
700000
800000
Votes
0
2000
4000
6000
8000
10000
0
200000
400000
600000
800000
0
2000
4000
6000
8000
10000
12000
Rating text
Excellent
Very Good
Good
Average
Not rated
Poor