In [1]:
```python
import numpy as np
import pandas as pd
import matplotlib.pyplot as plt
%matplotlib inline
import seaborn as sns
```

In [2]:
```python
df = pd.read_csv("Fast Delivery Agent Reviews.csv")
```

In [129]:
```python
df
```

Out[129]:

	Agent Name	Rating	Review Text	Delivery Time (min)	Location	Order Type	Customer Feedback Type	Price Range	Discount Applied	Product Availability	Customer Service Rating	Order Accuracy
0	Zepto	4.5	Purpose boy job cup decision girl now get job ...	58	Delhi	Essentials	Neutral	High	Yes	Out of Stock	4	Incorrect
1	Zepto	2.1	Prevent production able both the box school wa...	25	Lucknow	Grocery	Negative	Low	No	Out of Stock	2	Correct
2	JioMart	4.5	Family station listen agreement more kitchen I...	54	Ahmedabad	Essentials	Neutral	Low	No	Out of Stock	3	Correct
3	JioMart	2.6	World north people area everything enter beyon...	22	Chennai	Essentials	Neutral	Low	Yes	In Stock	1	Incorrect
4	Zepto	3.6	Hand way yourself tax whether sister anyone ef...	34	Pune	Pharmacy	Positive	High	No	In Stock	2	Incorrect
...	...	...	...	...	...	...	...	...	...	...	...	...
4995	Blinkit	2.4	Assume president far economic us discuss hand ...	56	Bangalore	Grocery	Neutral	High	No	In Stock	1	Correct
4996	JioMart	3.2	Chance new edge beyond pass treat laugh woman ...	45	Hyderabad	Grocery	Negative	Low	Yes	In Stock	2	Incorrect
4997	Zepto	4.7	Until few population choose value behavior win...	48	Pune	Pharmacy	Positive	High	No	In Stock	5	Incorrect
4998	JioMart	3.8	Fight where recently half enter information ki...	11	Bangalore	Food	Negative	High	Yes	Out of Stock	1	Correct
4999	JioMart	4.5	Agreement challenge boy coach low person these...	15	Pune	Grocery	Neutral	High	No	Out of Stock	1	Correct

5000 rows × 12 columns

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

Out[4]:

	Agent Name	Rating	Review Text	Delivery Time (min)	Location	Order Type	Customer Feedback Type	Price Range	Discount Applied	Product Availability	Customer Service Rating	Order Accuracy
0	Zepto	4.5	Purpose boy job cup decision girl now get job ...	58	Delhi	Essentials	Neutral	High	Yes	Out of Stock	4	Incorrect
1	Zepto	2.1	Prevent production able both the box school wa...	25	Lucknow	Grocery	Negative	Low	No	Out of Stock	2	Correct
2	JioMart	4.5	Family station listen agreement more kitchen I...	54	Ahmedabad	Essentials	Neutral	Low	No	Out of Stock	3	Correct
3	JioMart	2.6	World north people area everything enter beyon...	22	Chennai	Essentials	Neutral	Low	Yes	In Stock	1	Incorrect
4	Zepto	3.6	Hand way yourself tax whether sister anyone ef...	34	Pune	Pharmacy	Positive	High	No	In Stock	2	Incorrect

In [6]:
```python
df.info()
```

```
<class 'pandas.core.frame.DataFrame'>
RangeIndex: 5000 entries, 0 to 4999
Data columns (total 12 columns):
 #   Column                   Non-Null Count  Dtype
---  ------                   --------------  -----
 0   Agent Name               5000 non-null   object
 1   Rating                   5000 non-null   float64
 2   Review Text              5000 non-null   object
 3   Delivery Time (min)      5000 non-null   int64
 4   Location                 5000 non-null   object
 5   Order Type               5000 non-null   object
 6   Customer Feedback Type   5000 non-null   object
 7   Price Range              5000 non-null   object
 8   Discount Applied         5000 non-null   object
 9   Product Availability     5000 non-null   object
 10  Customer Service Rating  5000 non-null   int64
 11  Order Accuracy           5000 non-null   object
dtypes: float64(1), int64(2), object(9)
memory usage: 468.9+ KB
```

In [8]:
```python
df.shape
```

Out[8]: (5000, 12)

In [9]:
```python
df.isnull().sum()
```

Out[9]:
```
Agent Name                 0
Rating                     0
Review Text                0
Delivery Time (min)        0
Location                   0
Order Type                 0
Customer Feedback Type     0
Price Range                0
Discount Applied           0
Product Availability       0
Customer Service Rating    0
Order Accuracy             0
dtype: int64
```

In [10]:
```python
df.duplicated().sum()
```

Out[10]: np.int64(0)

In [11]:
```python
df.describe()
```

Out[11]:

	Rating	Delivery Time (min)	Customer Service Rating
count	5000.00000	5000.000000	5000.000000
mean	3.00290	34.962400	2.972000
std	1.15214	14.789656	1.409969
min	1.00000	10.000000	1.000000
25%	2.00000	22.000000	2.000000
50%	3.00000	35.000000	3.000000
75%	4.00000	48.000000	4.000000
max	5.00000	60.000000	5.000000

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

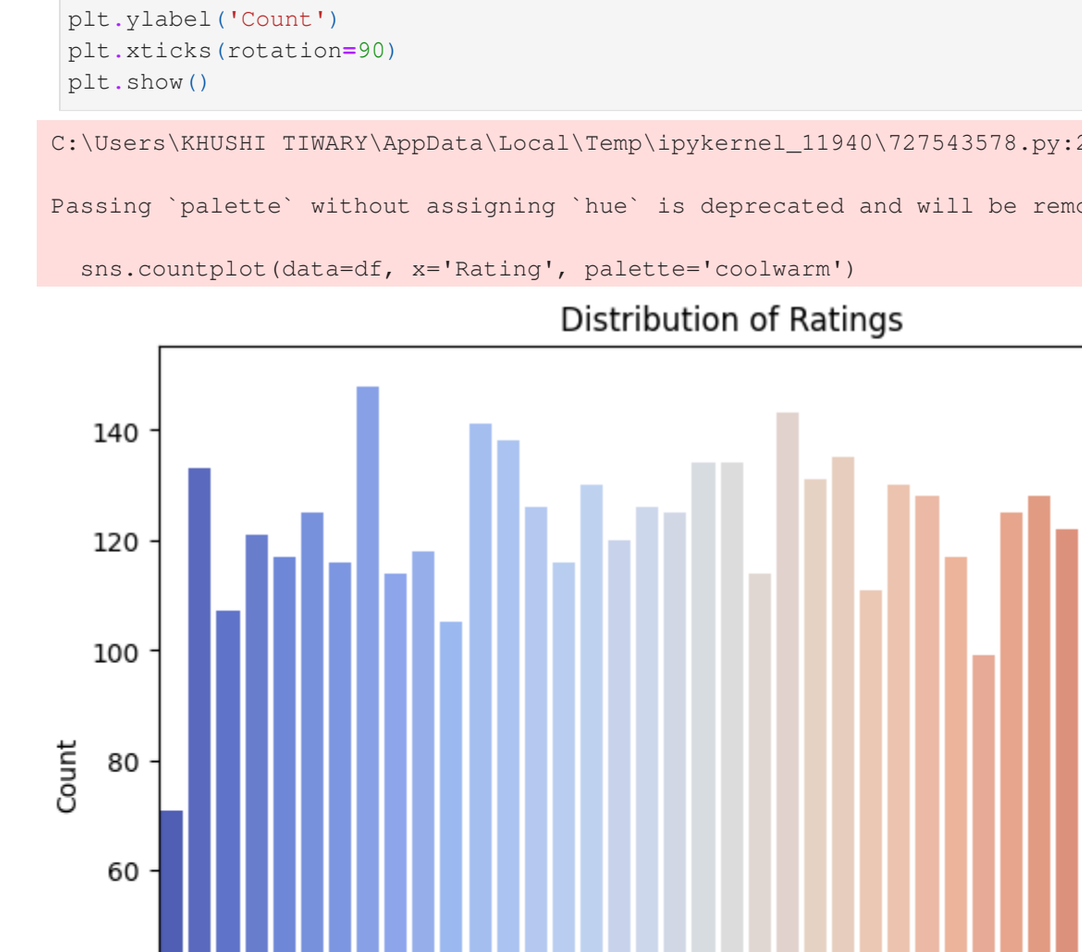
Out[12]:
```
Index(['Agent Name', 'Rating', 'Review Text', 'Delivery Time (min)',
       'Location', 'Order Type', 'Customer Feedback Type', 'Price Range',
       'Discount Applied', 'Product Availability', 'Customer Service Rating',
       'Order Accuracy'],
      dtype='object')
```

EDA

how many orders each agent (Zepto, Blinkit, Swiggy Instamart, JioMart) fulfilled.

In [21]:
```python
ax = sns.countplot(data = df, x= 'Agent Name' )

for bars in ax.containers:
    ax.bar_label(bars)
plt.title("Count of orders fulfilled")
```

Out[21]: Text(0.5, 1.0, 'Count of orders fulfilled')

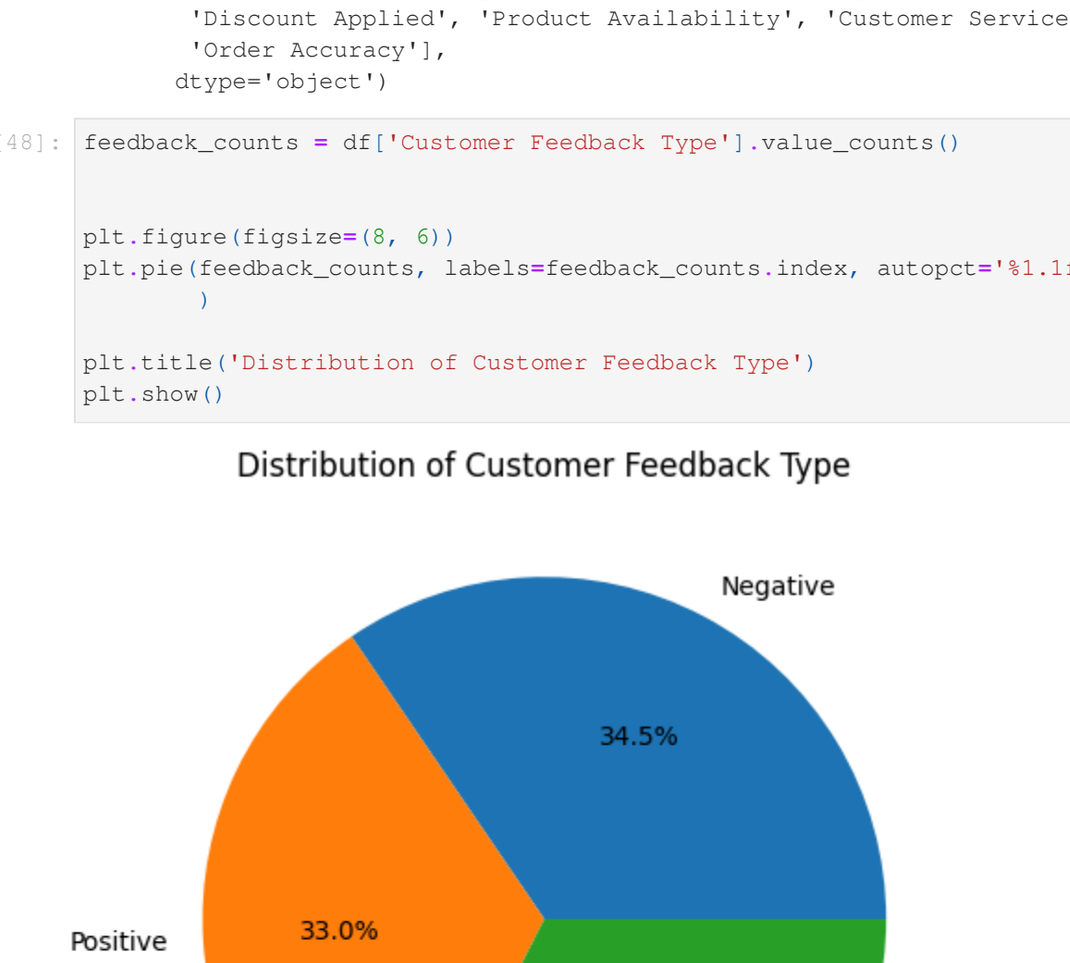


In [29]:
```python
plt.figure(figsize=(8,6))
sns.countplot(data=df, x='Rating', palette='coolwarm')
plt.title('Distribution of Ratings')
plt.xlabel('Rating')
plt.ylabel('Count')
plt.xticks(rotation=90)
plt.show()
```

```
C:\Users\KHUSHI TIWARY\AppData\Local\Temp\ipykernel_11940\727543578.py:2: 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.countplot(data=df, x='Rating', palette='coolwarm')
```

In [52]:
```python
gb = df.groupby(['Agent Name'], as_index = False)['Rating'].mean().sort_values(by = 'Rating' , ascending = False)
ax = sns.barplot(data= gb, x= 'Agent Name', y= 'Rating' , palette = 'deep')
plt.title("Average Ratings per Agent")
for bars in ax.containers:
    ax.bar_label(bars)
```

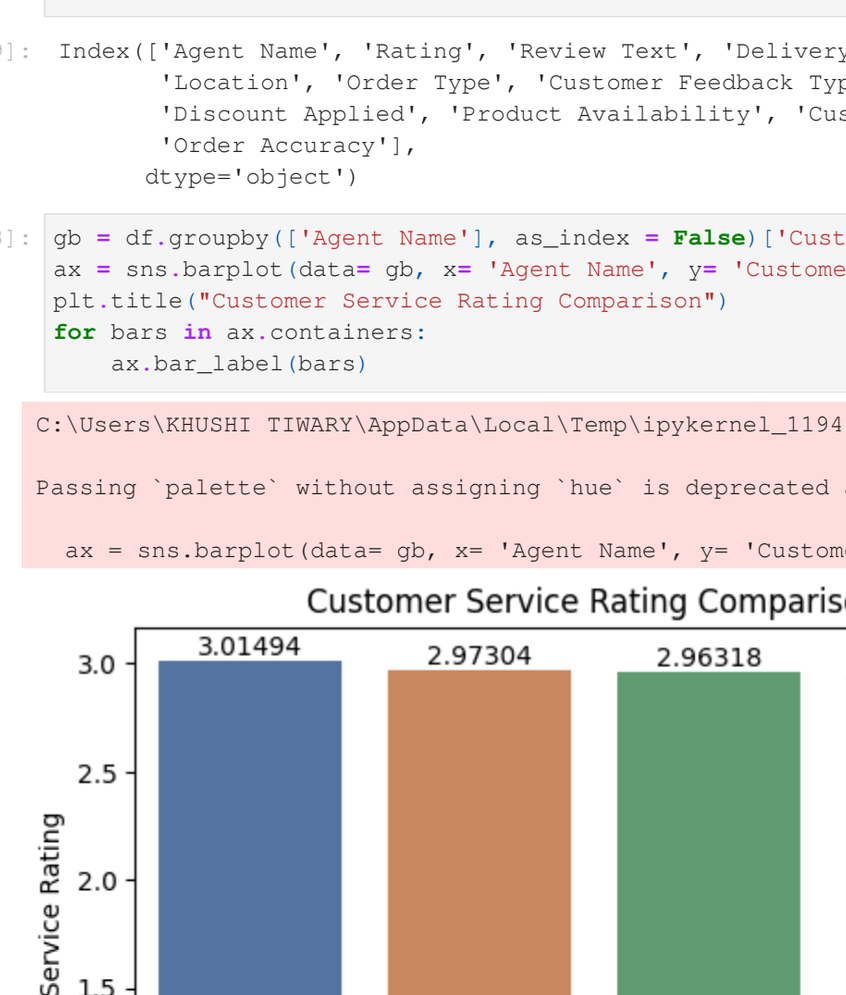
```
C:\Users\KHUSHI TIWARY\AppData\Local\Temp\ipykernel_11940\2997879919.py:2: FutureWarning:

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.

  ax = sns.barplot(data= gb, x= 'Agent Name', y= 'Rating' , palette = 'deep')
```



In [42]:
```python
df.columns
```

Out[42]:
```
Index(['Agent Name', 'Rating', 'Review Text', 'Delivery Time (min)',
       'Location', 'Order Type', 'Customer Feedback Type', 'Price Range',
       'Discount Applied', 'Product Availability', 'Customer Service Rating',
       'Order Accuracy'],
      dtype='object')
```

In [48]:
```python
feedback_counts = df['Customer Feedback Type'].value_counts()


plt.figure(figsize=(8, 6))
plt.pie(feedback_counts, labels=feedback_counts.index, autopct='%1.1f%%',
        )

plt.title('Distribution of Customer Feedback Type')
plt.show()
```

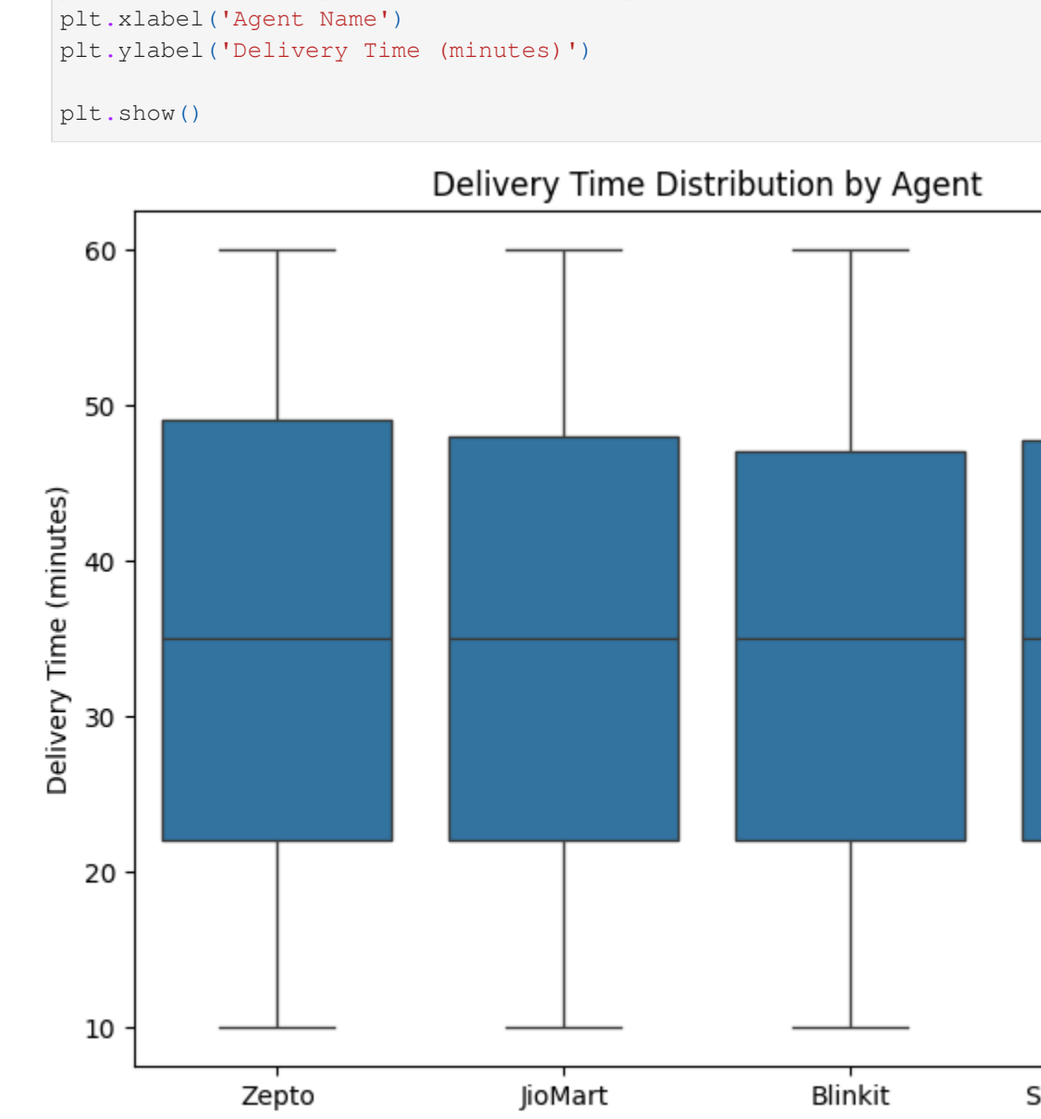


In [49]:
```python
df.columns
```

Out[49]:
```
Index(['Agent Name', 'Rating', 'Review Text', 'Delivery Time (min)',
       'Location', 'Order Type', 'Customer Feedback Type', 'Price Range',
       'Discount Applied', 'Product Availability', 'Customer Service Rating',
       'Order Accuracy'],
      dtype='object')
```

In [53]:
```python
gb = df.groupby(['Agent Name'], as_index = False)['Customer Service Rating'].mean().sort_values(by = 'Customer Service Rating' , ascending = False)
ax = sns.barplot(data= gb, x= 'Agent Name', y= 'Customer Service Rating' , palette = 'deep')
plt.title("Customer Service Rating Comparison")
for bars in ax.containers:
    ax.bar_label(bars)
```

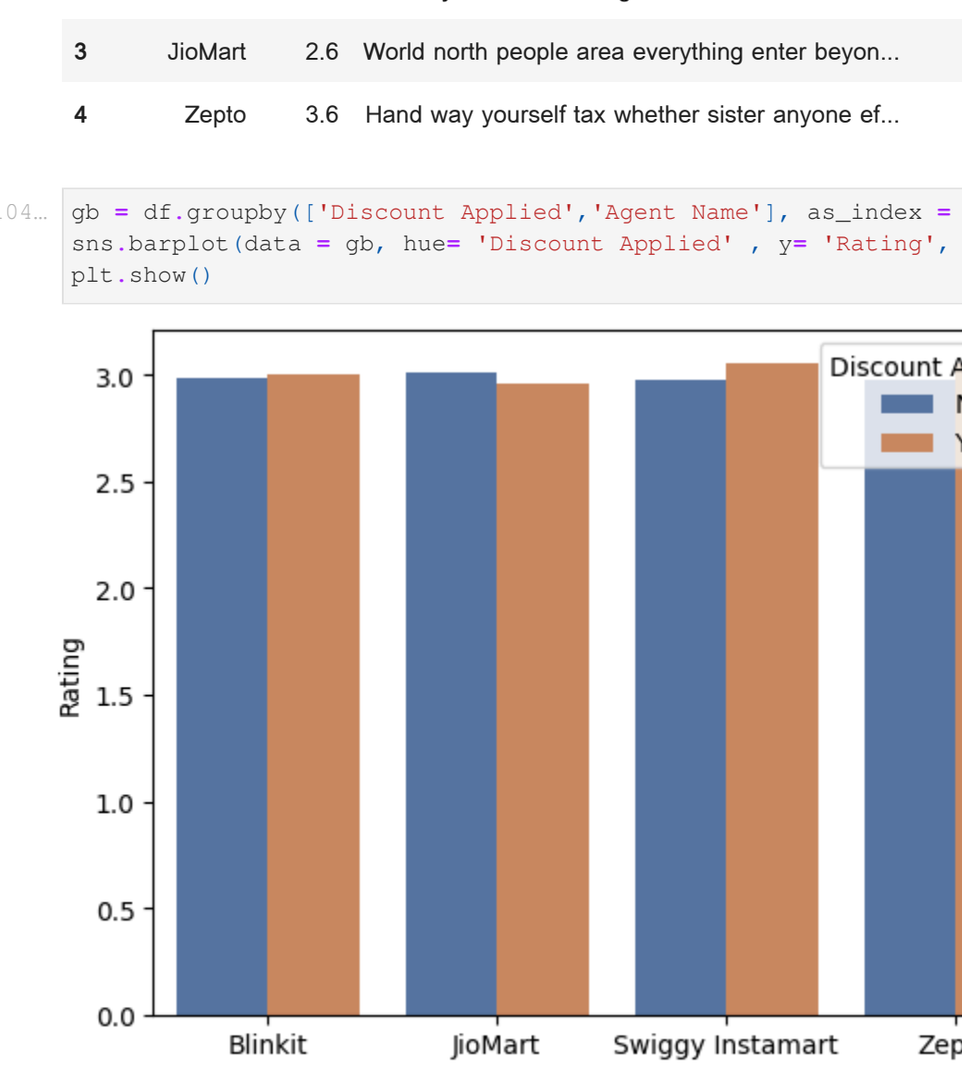
```
C:\Users\KHUSHI TIWARY\AppData\Local\Temp\ipykernel_11940\2420563648.py:2: FutureWarning:

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.

  ax = sns.barplot(data= gb, x= 'Agent Name', y= 'Customer Service Rating' , palette = 'deep')
```



In [67]:
```python
plt.figure(figsize=(8,6))

sns.boxplot(data=df, x='Agent Name', y='Delivery Time (min)')

plt.title('Delivery Time Distribution by Agent')
plt.xlabel('Agent Name')
plt.ylabel('Delivery Time (minutes)')

plt.show()
```

In [71]:
```python
corr = df[['Delivery Time (min)','Rating','Customer Service Rating']].corr()
sns.heatmap(data = corr, annot=True, cmap='coolwarm')
```

Out[71]: <Axes: >

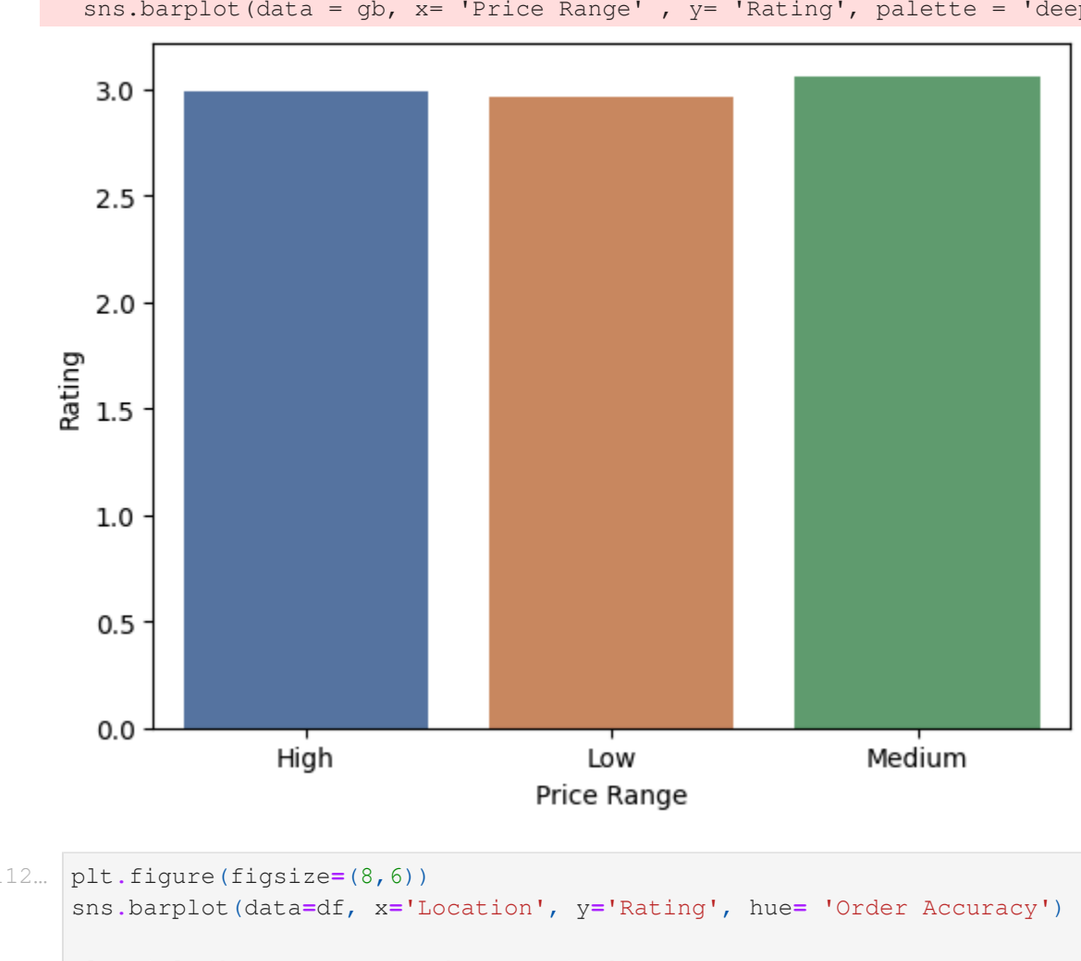


In [72]:
```python
df.head()
```

Out[72]:

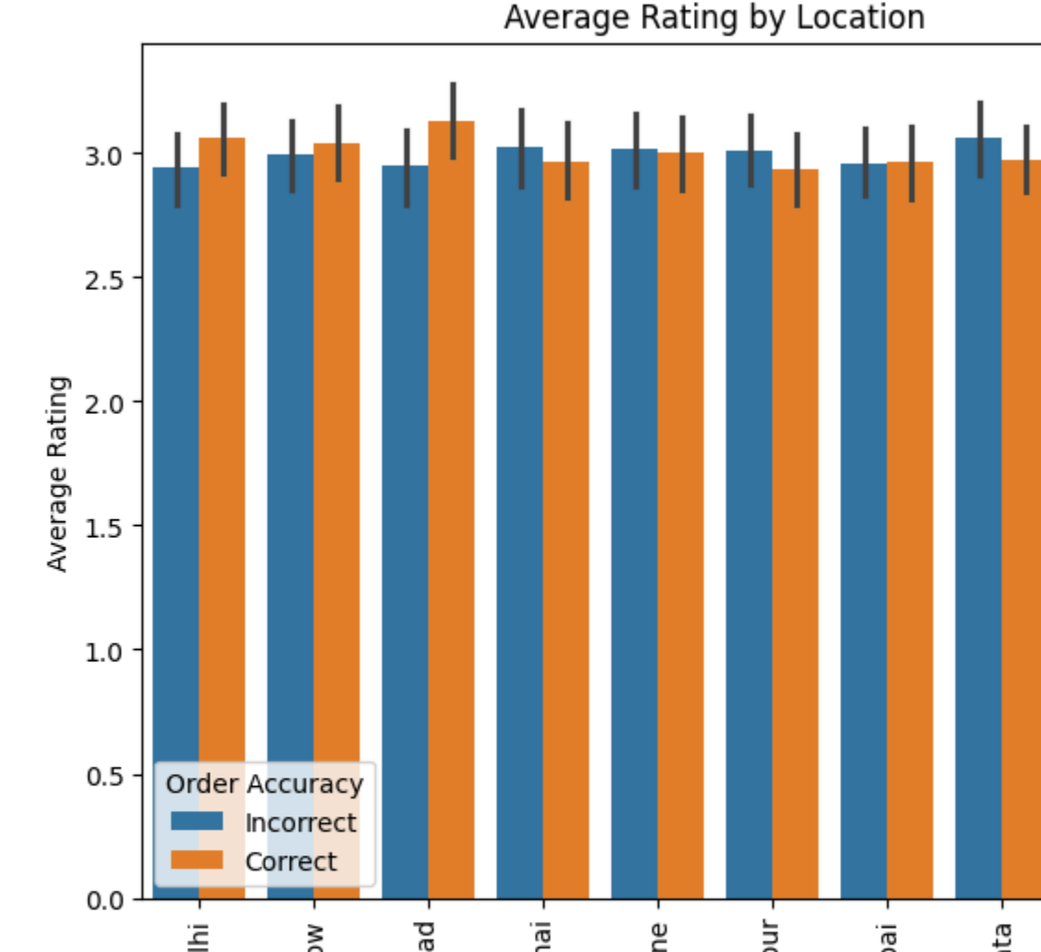
	Agent Name	Rating	Review Text	Delivery Time (min)	Location	Order Type	Customer Feedback Type	Price Range	Discount Applied	Product Availability	Customer Service Rating	Order Accuracy
0	Zepto	4.5	Purpose boy job cup decision girl now get job ...	58	Delhi	Essentials	Neutral	High	Yes	Out of Stock	4	Incorrect
1	Zepto	2.1	Prevent production able both the box school wa...	25	Lucknow	Grocery	Negative	Low	No	Out of Stock	2	Correct
2	JioMart	4.5	Family station listen agreement more kitchen I...	54	Ahmedabad	Essentials	Neutral	Low	No	Out of Stock	3	Correct
3	JioMart	2.6	World north people area everything enter beyon...	22	Chennai	Essentials	Neutral	Low	Yes	In Stock	1	Incorrect
4	Zepto	3.6	Hand way yourself tax whether sister anyone ef...	34	Pune	Pharmacy	Positive	High	No	In Stock	2	Incorrect

In [104]:
```python
gb = df.groupby(['Discount Applied','Agent Name'], as_index = False)['Rating'].mean()
sns.barplot(data = gb, hue= 'Discount Applied' , y= 'Rating', x= 'Agent Name' ,palette = 'deep')
plt.show()
```

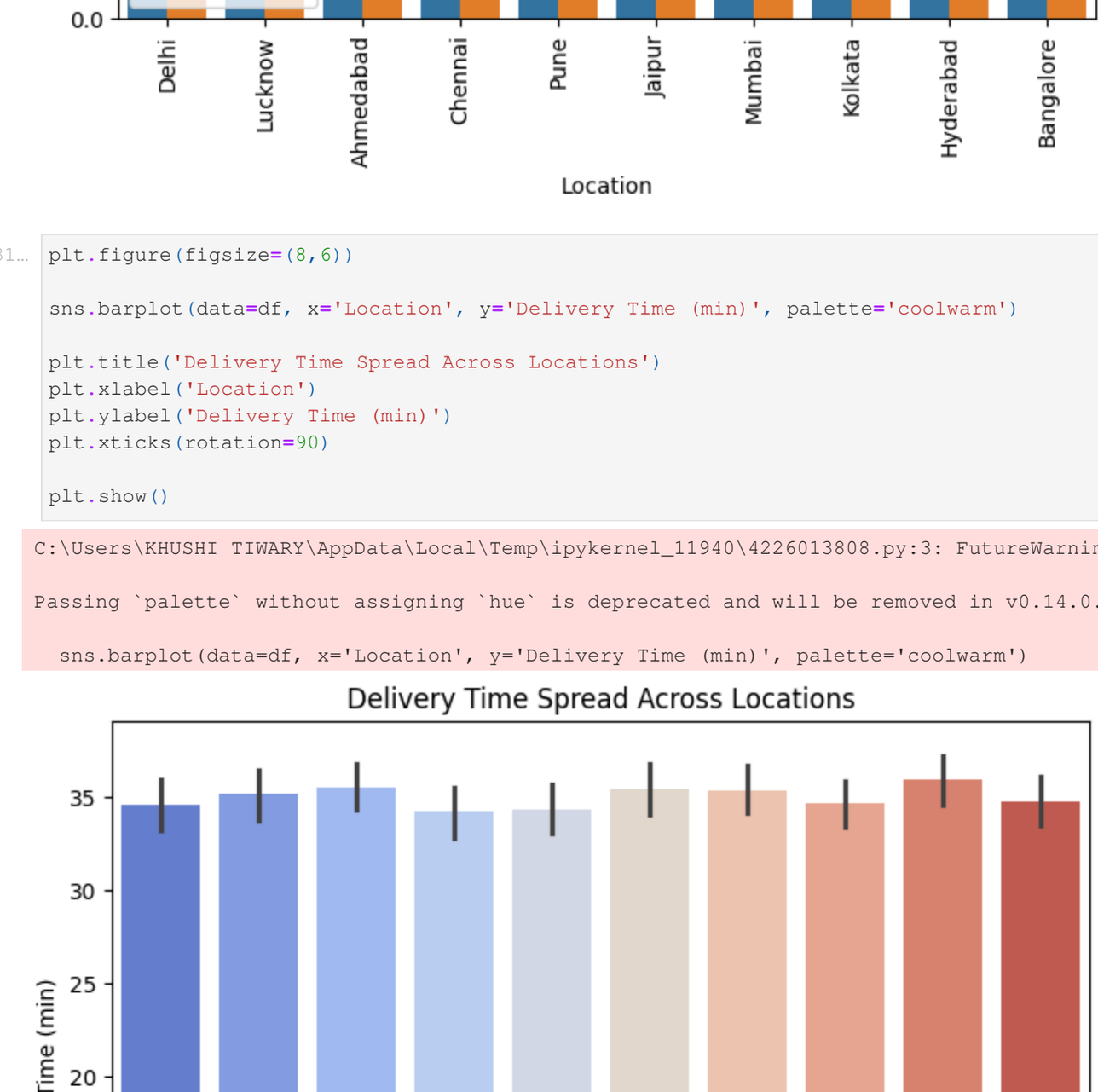


In [107]:
```python
gb = df.groupby(['Price Range'], as_index = False)['Rating'].mean()
sns.barplot(data = gb, x= 'Price Range' , y= 'Rating', palette = 'deep', )
plt.show()
```

```
C:\Users\KHUSHI TIWARY\AppData\Local\Temp\ipykernel_11940\3576569507.py:2: 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.barplot(data = gb, x= 'Price Range' , y= 'Rating', palette = 'deep', )
```

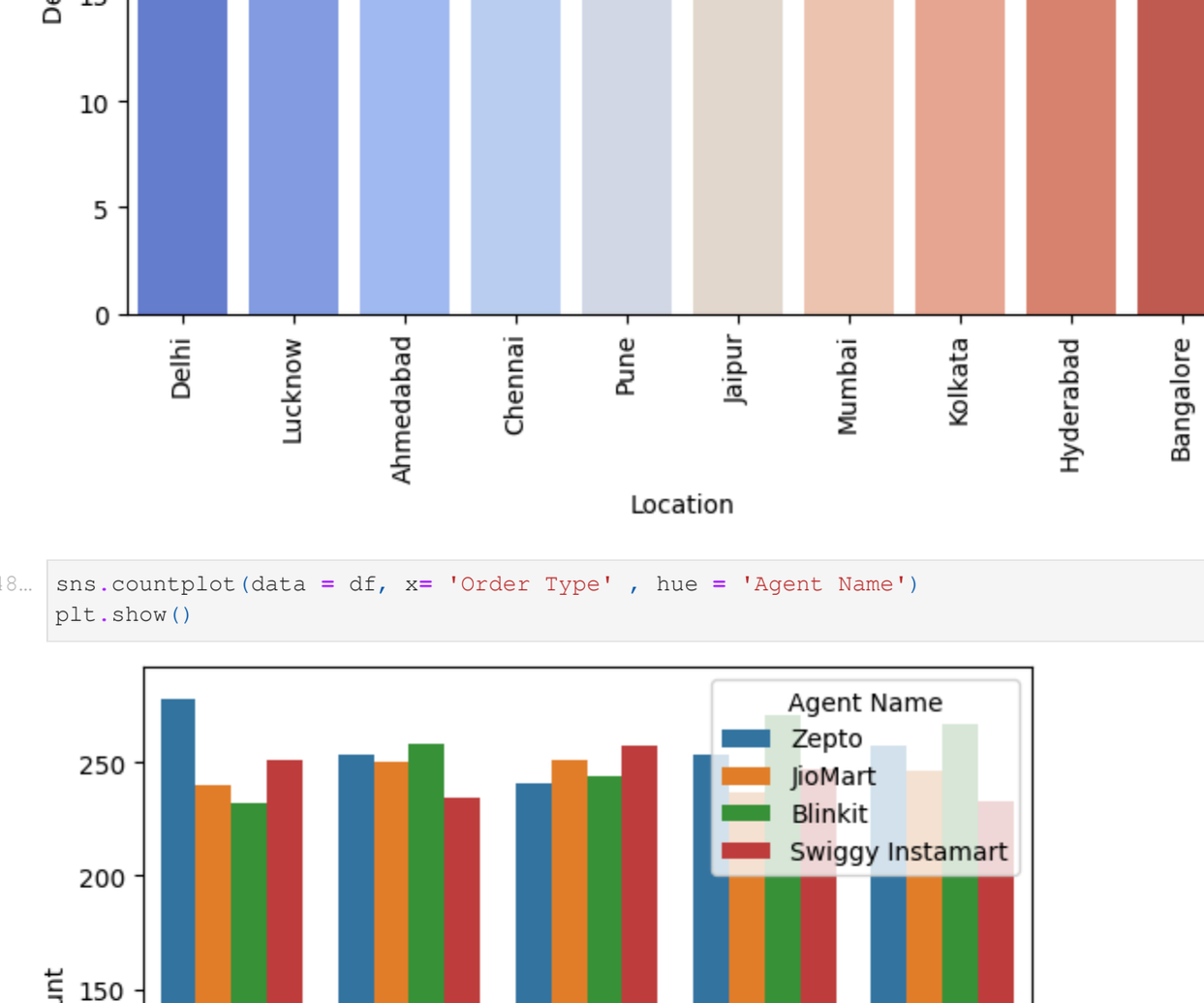


In [112]:
```python
plt.figure(figsize=(8,6))
sns.barplot(data=df, x='Location', y='Rating', hue= 'Order Accuracy')

plt.title('Average Rating by Location')
plt.xlabel('Location')
plt.ylabel('Average Rating')
plt.xticks(rotation=90)

plt.show()
```

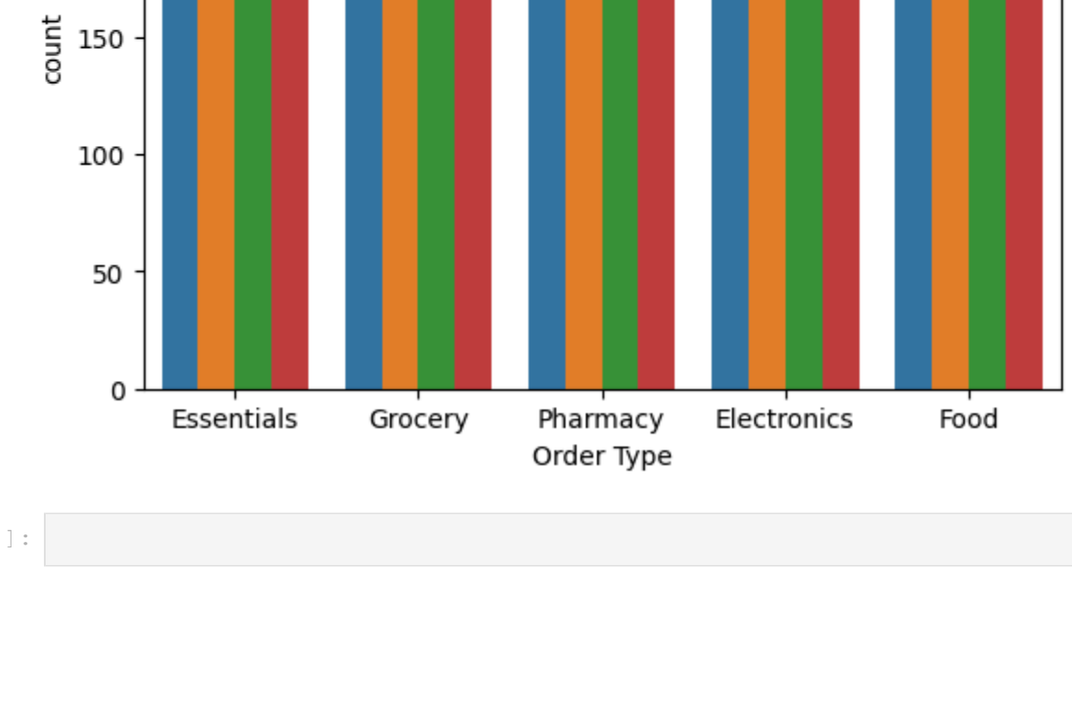


In [131]:
```python
plt.figure(figsize=(8,6))

sns.barplot(data=df, x='Location', y='Delivery Time (min)', palette='coolwarm')

plt.title('Delivery Time Spread Across Locations')
plt.xlabel('Location')
plt.ylabel('Delivery Time (min)')
plt.xticks(rotation=90)

plt.show()
```

```
C:\Users\KHUSHI TIWARY\AppData\Local\Temp\ipykernel_11940\4226013808.py: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.barplot(data=df, x='Location', y='Delivery Time (min)', palette='coolwarm')
```



In [148]:
```python
sns.countplot(data = df, x= 'Order Type' , hue = 'Agent Name')
plt.show()
```



In [ ]: