

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

```
data=pd.read_csv('Munnar.csv')
```

```
data.head()
```

	Hotel_Name\t\t\t\t\t\t\t\t	Rating	Rating_Description	Reviews	Star_Rating	Location	Nearest_Landmark	Dista_Lar
0	Gokulam Park	4.1	Very Good	1058	4	Chithirapuram	city centre	
1	Sterling Munnar	3.8	Very Good	1088	4	Chinnakanal	city centre	
2	Issacs Residency	4.1	Very Good	322	3	Central Munnar	Attukal Waterfalls	
3	Tea Valley Resort	4.3	Excellent	1337	4	Pallivasal	city centre	
4	Grand Plaza	4.3	Excellent	1058	4	Moolakadai	Attukal Waterfalls	

```
data.info()
```

```
<class 'pandas.core.frame.DataFrame'>
```

```
RangeIndex: 74 entries, 0 to 73
```

```
Data columns (total 10 columns):
```

#	Column	Non-Null Count	Dtype
---	-----	-----	-----
0	Hotel_Name	74 non-null	object
1	Rating	74 non-null	float64
2	Rating_Description	74 non-null	object
3	Reviews	74 non-null	int64
4	Star_Rating	74 non-null	int64
5	Location	74 non-null	object
6	Nearest_Landmark	74 non-null	object
7	Distance_to _Landmark	74 non-null	float64
8	Price	74 non-null	int64
9	Tax	74 non-null	int64

```
dtypes: float64(2), int64(4), object(4)
```

```
memory usage: 5.9+ KB
```

## Correct the name of 'Hotel' column

```
data=data.rename(columns={'Hotel_Name\t\t\t\t\t\t\t\t':'Hotel'})
```

```
data
```

	Hotel	Rating	Rating_Description	Reviews	Star_Rating	Location	Nearest_Landmark	Distance_to_Landmark	Price
0	Gokulam Park	4.1	Very Good	1058	4	Chithirapuram	city centre	10.2	2728
1	Sterling Munnar	3.8	Very Good	1088	4	Chinnakanal	city centre	19.2	4451
2	Issacs Residency	4.1	Very Good	322	3	Central Munnar	Attukal Waterfalls	9.5	2758
3	Tea Valley Resort	4.3	Excellent	1337	4	Pallivasal	city centre	4.8	2675
4	Grand Plaza	4.3	Excellent	1058	4	Moolakadai	Attukal Waterfalls	1.9	3203
...	...	...	...	...	...	...	...	...	...
69	The Fog Munnar (Resort & Spa)	4.5	Excellent	292	5	Ettycity Road	city centre	13.2	8103
70	Skylark Holidays   Rooms & Caretaker	4.1	Very Good	17	1	Chinnakanal	city centre	20.6	3317
71	Deshadan Mountain Resort- The highest resort i...	4.3	Excellent	395	4	Pallivasal	city centre	5.8	3953
72	Nature Zone Jungle Resort	4.1	Very Good	187	4	Pallivasal	city centre	6.6	6862
73	Lumino Highrange Homestay   Room & Guided Treks	3.2	Good	221	1	Moolakadai	Attukal Waterfalls	1.3	1014

74 rows × 10 columns

## Count each kinds of ratings available

```
data['Rating_Description'].value_counts()
```

Very Good      43  
 Excellent      25  
 Good            5  
 Average        1  
 Name: Rating\_Description, dtype: int64

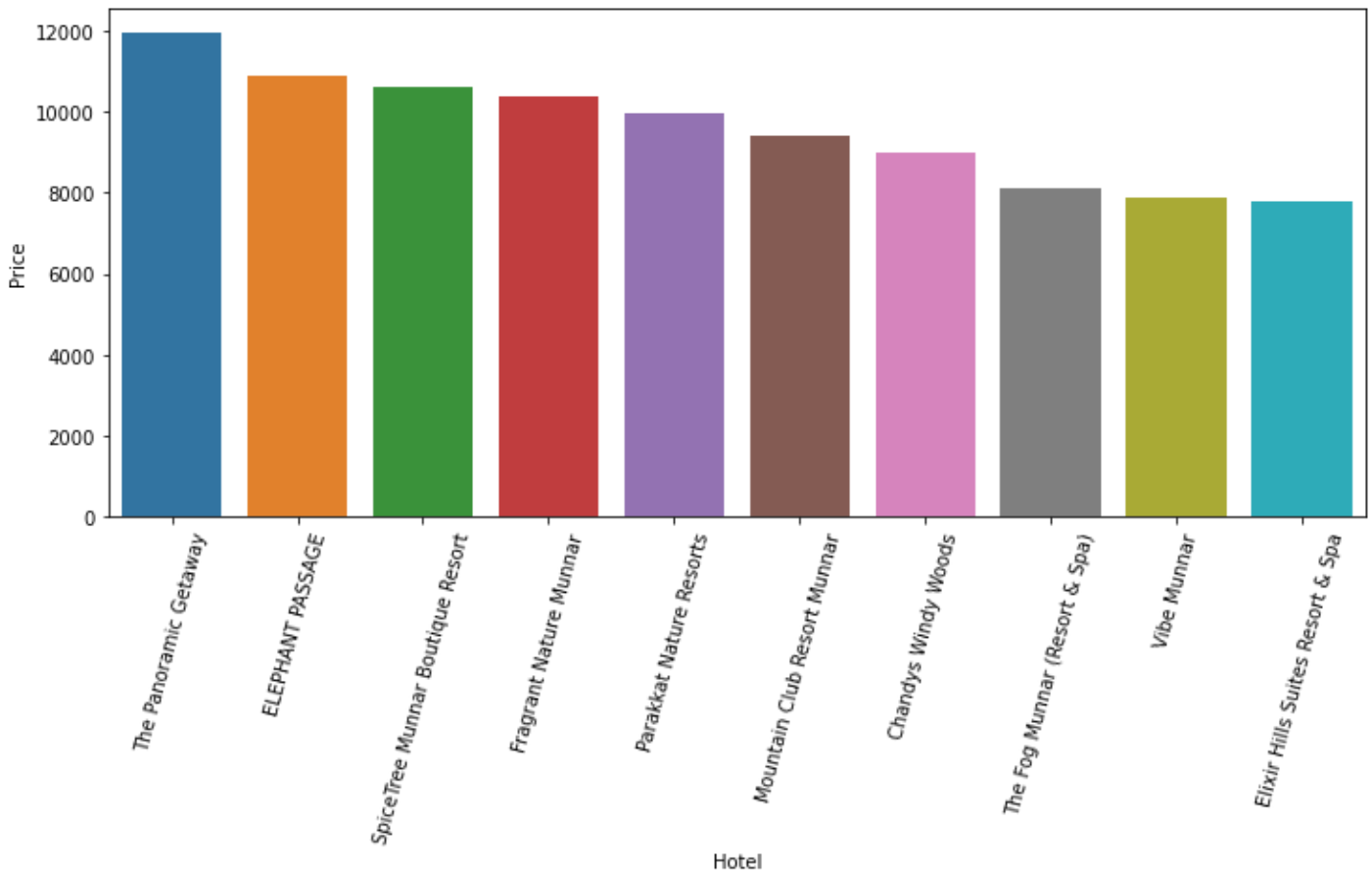
## Show the prices of top ten hotels in Munnar

```
data1=data.nlargest(10, 'Price')[['Hotel', 'Price']]
```

data1

	Hotel	Price
18	The Panoramic Getaway	11974
36	ELEPHANT PASSAGE	10881
54	SpiceTree Munnar Boutique Resort	10631
38	Fragrant Nature Munnar	10400
11	Parakkat Nature Resorts	9977
45	Mountain Club Resort Munnar	9417
27	Chandys Windy Woods	9000
69	The Fog Munnar (Resort & Spa)	8103
15	Vibe Munnar	7905
22	Elixir Hills Suites Resort & Spa	7784

```
plt.figure(figsize=(12,5))
sns.barplot(x='Hotel',y='Price',data=data1)
plt.xticks(rotation=75)
plt.show()
```



Show the details of Hotels having a 4 star rating and having their nearest landmark as city center

```
data[(data['Star_Rating']>4) & (data['Nearest_Landmark']=='city centre')]
```

	Hotel	Rating	Rating_Description	Reviews	Star_Rating	Location	Nearest_Landmark	Distance_to_Landmark	F
9	Broad Bean Resort & Spa	4.1	Very Good	249	5	Muthirapuzhayar Road	city centre	13.1	5
11	Parakkat Nature Resorts	4.3	Excellent	1310	5	Pallivasal	city centre	7.8	9
13	Devonshire Greens - The Leisure Hotel & Spa	3.9	Very Good	431	5	Pallivasal	city centre	5.9	4
15	Vibe Munnar	4.6	Excellent	136	5	Ettycity Road	city centre	13.1	7
18	The Panoramic Getaway	4.6	Excellent	939	5	Chithirapuram	city centre	9.8	11
22	Elixir Hills Suites Resort & Spa	4.2	Very Good	986	5	Laxmi Estate	city centre	13.0	7
24	Amber Dale Luxury Hotel and Spa	4.4	Excellent	1047	5	Pallivasal	city centre	6.4	5
27	Chandys Windy Woods	4.8	Excellent	355	5	Chithirapuram	city centre	8.8	9
36	ELEPHANT PASSAGE	4.6	Excellent	235	5	Anachal	city centre	11.9	10
38	Fragrant Nature Munnar	4.5	Excellent	228	5	Pallivasal	city centre	4.3	10
45	Mountain Club Resort Munnar	4.3	Excellent	420	5	Chinnakanal	city centre	21.3	9
54	SpiceTree Munnar Boutique Resort	4.6	Excellent	85	5	Periyakanal-Muttukad Road	city centre	22.6	10
55	Southern Panorama Indriya Resorts	4.0	Very Good	89	5	Pottankadu	city centre	15.6	3
60	Ragamaya Resort & Spa Munnar	4.3	Excellent	336	5	Munnar	city centre	23.6	6
69	The Fog Munnar (Resort & Spa)	4.5	Excellent	292	5	Ettycity Road	city centre	13.2	8

# Show details about resorts in Munnar having Prices below 3000

```
data[(data['Hotel'].str.contains('Resort')) & (data['Price']<3000)]
```

	Hotel	Rating	Rating_Description	Reviews	Star_Rating	Location	Nearest_Landmark	Distance_to_Landmark	Price
3	Tea Valley Resort	4.3	Excellent	1337	4	Pallivasal	city centre	4.8	2675
7	Seven Springs Plantation Resort	3.7	Very Good	6	3	Laxmi Estate	city centre	12.3	2255
23	Bellmount Resorts	3.9	Very Good	1204	3	Central Munnar	Attukal Waterfalls	0.8	2364
34	Star Emirates Luxury Resort And Spa	4.2	Very Good	289	4	Ambazhachal	city centre	13.8	2832
37	Dream Coconut Villa Resort	4.1	Very Good	219	3	Chithirapuram	city centre	11.0	2543
40	Westwood Riverside Garden Resort	3.4	Good	301	3	Moolakadai	Attukal Waterfalls	2.0	2428
41	Snow Line Resort	4.3	Excellent	165	3	Chithirapuram	city centre	10.4	2763
61	Dew Drops Farm Resorts   Rooms & Guided Treks\...	4.3	Excellent	437	1	Adimali	city centre	19.2	1719
62	Indrizzo Spice Valley Resort	3.5	Very Good	52	3	Chithirapuram	city centre	10.3	1674
65	Forest Haven Resort	3.6	Very Good	246	3	Kallar Vattiyar	city centre	16.4	2046

# Show the top 10 Hotels with maximum reviews near the Attukal Waterfalls

```
data2= data[data['Nearest_Landmark']=='Attukal Waterfalls'].groupby('Hotel')['Reviews']
```

```
data2
```

Hotel	
Bellmount Resorts	1204
Casa Montana	396
Clouds Valley Leisure Hotel	599
Eastend Munnar	437
Elysium Garden	844
Grand Plaza	1058
Hotel Hillview	501
Issacs Residency	322
KTDC Tea County	851
Landy Queen Homestay   Rooms & Caretaker	188
Name: Reviews, dtype: int64	

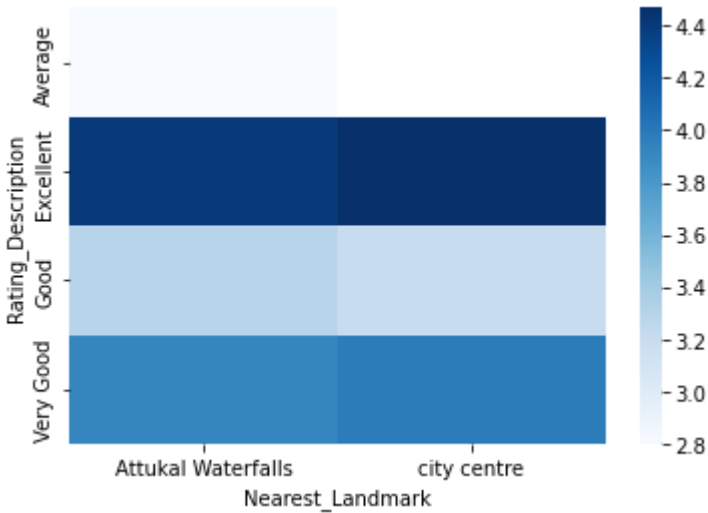
Derive a relationship between the average ratings of different Hotels near Attukal Waterfalls and city centre divided by Rating Description

```
data3=data.pivot_table(index='Rating_Description',columns='Nearest_Landmark',values='Ra
data3
```

Nearest_Landmark	Attukal Waterfalls	city centre
Rating_Description		
Average	2.800	NaN
Excellent	4.400	4.468182
Good	3.300	3.200000
Very Good	3.925	3.983871

```
sns.heatmap(data3,cmap='Blues' )
```

<AxesSubplot:xlabel='Nearest\_Landmark', ylabel='Rating\_Description'>



Determine the location type by distances

```
data=data.rename(columns={'Distance_to _Landmark':'Distance'})
```

data

	Hotel	Rating	Rating_Description	Reviews	Star_Rating	Location	Nearest_Landmark	Distance	Price	
0	Gokulam Park	4.1	Very Good	1058	4	Chithirapuram	city centre	10.2	2728	
1	Sterling Munnar	3.8	Very Good	1088	4	Chinnakanal	city centre	19.2	4451	
2	Issacs Residency	4.1	Very Good	322	3	Central Munnar	Attukal Waterfalls	9.5	2758	
3	Tea Valley Resort	4.3	Excellent	1337	4	Pallivasal	city centre	4.8	2675	
4	Grand Plaza	4.3	Excellent	1058	4	Moolakadai	Attukal Waterfalls	1.9	3203	
...	...	...	...	...	...	...	...	...	...	...
69	The Fog Munnar (Resort & Spa)	4.5	Excellent	292	5	Ettycity Road	city centre	13.2	8103	2
70	Skylark Holidays   Rooms & Caretaker	4.1	Very Good	17	1	Chinnakanal	city centre	20.6	3317	
71	Deshadan Mountain Resort- The highest resort i...	4.3	Excellent	395	4	Pallivasal	city centre	5.8	3953	
72	Nature Zone Jungle Resort	4.1	Very Good	187	4	Pallivasal	city centre	6.6	6862	2
73	Lumino Highrange Homestay   Room & Guided Treks	3.2	Good	221	1	Moolakadai	Attukal Waterfalls	1.3	1014	

74 rows × 10 columns

```
def typelocation(Distance):
    if Distance <2:
        return "Prime_Location"
    elif Distance<5:
        return "Good_Location"
    elif Distance<10:
        return " Average_Location"
    else:
        return " Poor_Location"
```

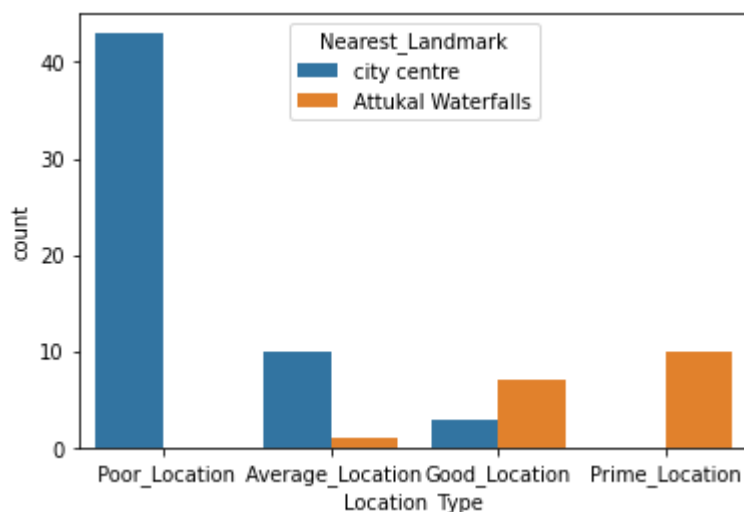
```
data['Location_Type']=data['Distance'].apply(typllocation)
```

```
data.head()
```

	Hotel	Rating	Rating_Description	Reviews	Star_Rating	Location	Nearest_Landmark	Distance	Price	Tax
0	Gokulam Park	4.1	Very Good	1058	4	Chithirapuram	city centre	10.2	2728	574
1	Sterling Munnar	3.8	Very Good	1088	4	Chinnakanal	city centre	19.2	4451	965
2	Issacs Residency	4.1	Very Good	322	3	Central Munnar	Attukal Waterfalls	9.5	2758	684
3	Tea Valley Resort	4.3	Excellent	1337	4	Pallivasal	city centre	4.8	2675	756
4	Grand Plaza	4.3	Excellent	1058	4	Moolakadai	Attukal Waterfalls	1.9	3203	654

Show the relation Location type and Nearest Landmark for hotels

```
sns.countplot(x='Location_Type',hue='Nearest_Landmark',data=data)
plt.show()
```

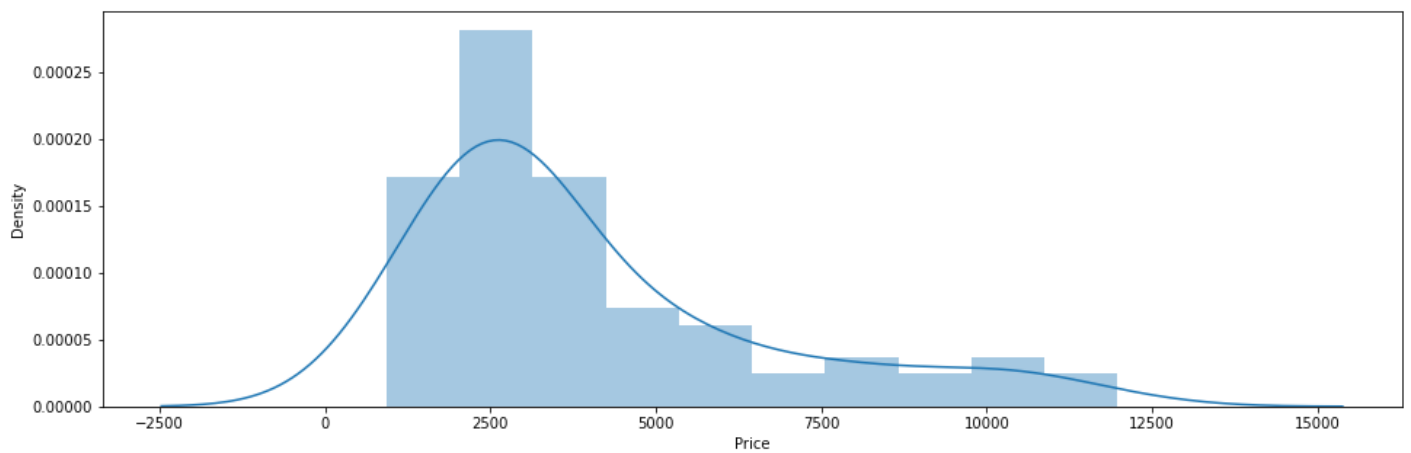


```
plt.figure(figsize=(16,5))
sns.distplot(data['Price'],bins=10)
plt.show()
```

/opt/conda/lib/python3.9/site-packages/seaborn/distributions.py:2619: FutureWarning: `distplot` is a deprecated function and will be removed in a future version. Please adapt your code to use either `displot` (a figure-level function with similar flexibility) or `histplot` (an axes-level function for histograms).

```
warnings.warn(msg, FutureWarning)
```





## Show the location with maximum tax

```
data4=data.groupby('Location').Tax.sum().sort_values(ascending=True).head(10)
```

data4

Location	
Near Pothamedu Viewpoint	0
Suryanelli	213
Kallar Vattiyar	418
Bison Valley	506
Devikulam	557
Muthuvaankudi	596
Ambazhachal	875
Pottankadu	953
Muthirapuzhayar Road	1141
Near Munnar Bus Stand	1271

Name: Tax, dtype: int64

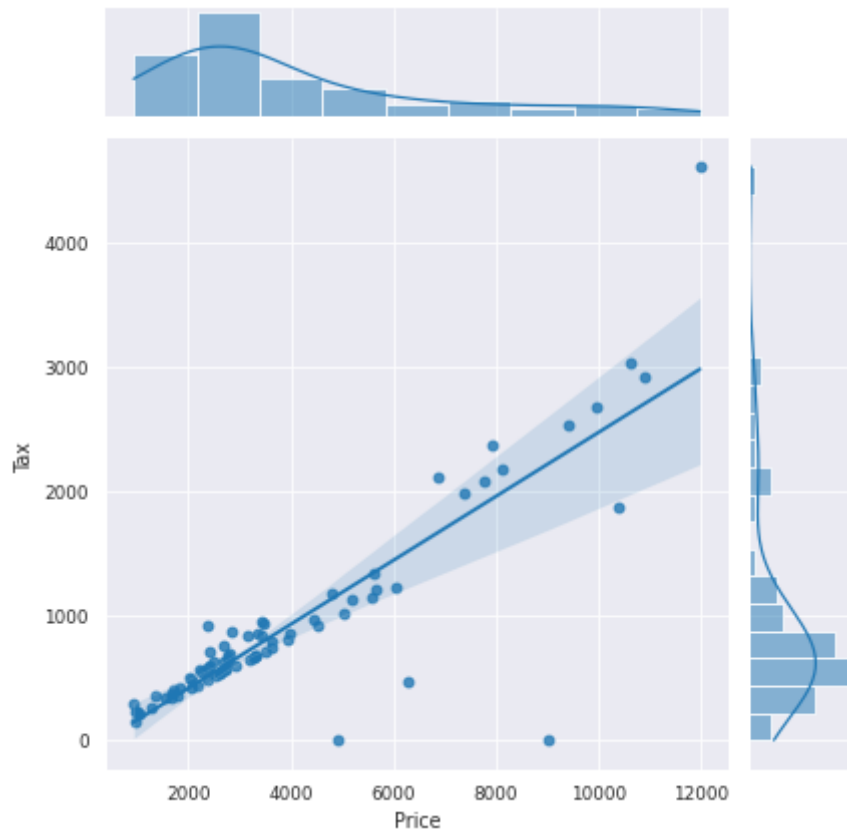
## Show a combined relation between Price and Tax and mention the potential outliers

```
sns.set_style('darkgrid')
plt.figure(figsize=(20,10))
sns.set_context('paper', font_scale=1.0)

sns.jointplot(x='Price', y='Tax', data=data, kind='reg')
```

<seaborn.axisgrid.JointGrid at 0x7fd5c0df3820>

<Figure size 1440x720 with 0 Axes>



Show the price range of Hotels in each location

```
plt.figure(figsize=(16,5))
sns.boxplot(x='Location',y='Price',data=data)
plt.xticks(rotation=90)
plt.show()
```

