

Task 3

Task: Price Range vs. Online Delivery and Table Booking

Analyze if there is a relationship between the price range and the availability of online delivery and table booking.

Determine if higher-priced restaurants are more likely to offer these services.

```
In [1]: # import library
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sb
```

```
In [2]: df=pd.read_csv("C:\\Users\\abhis\\Downloads\\Dataset .csv")
df
```

Out[2]:

	Restaurant ID	Restaurant Name	Country Code	City	Address	Locality	Locality Verbose
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..
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..
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..
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..
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..
...
9546	5915730	Namlı Gurme	208	İstanbul	Kemankeş Karamustafa Paşa Mahallesi, Rıhtım ...	Karaköy	Karaköy İstanbul
9547	5908749	Ceviz Aca	208	İstanbul	Koşuyolu Mahallesi, Muhittin İstinda Cadd...	Koşuyolu	Koşuyolu İstanbul
9548	5915807	Huqqa	208	İstanbul	Kuruçeşme Mahallesi, Muallim Naci Caddesi, N...	Kuruçeşme	Kuruçeşme İstanbul
9549	5916112	Ak Kahve	208	İstanbul	Kuruçeşme Mahallesi, Muallim Naci Caddesi, N...	Kuruçeşme	Kuruçeşme İstanbul
9550	5927402	Walter's Coffee Roastery	208	İstanbul	Cafea Mahallesi, Bademaltı Sokak, No 21/B, ...	Moda	Moda İstanbul

9551 rows × 21 columns

```
In [3]: df.info
```

```

Out[3]: <bound method DataFrame.info of
y 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
...      ...      ...      ...      ...
9546      5915730      Naml\ Gurme      208      🇹🇷istanbul
9547      5908749      Ceviz A🇹🇷ac\      208      🇹🇷istanbul
9548      5915807      Huqqa      208      🇹🇷istanbul
9549      5916112      A🇹🇷🇹🇷k Kahve      208      🇹🇷istanbul
9550      5927402      Walter's Coffee Roastery      208      🇹🇷istanbul

      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...
...      ...
9546      Kemanke🇹🇷 Karamustafa Pa🇹🇷a Mahallesi, R\ht\m ...
9547      Ko🇹🇷uyolu Mahallesi, Muhittin 🇹🇷st🇹🇷nda🇹🇷 Cadd...
9548      Kuru🇹🇷_e🇹🇷me Mahallesi, Muallim Naci Caddesi, N...
9549      Kuru🇹🇷_e🇹🇷me Mahallesi, Muallim Naci Caddesi, N...
9550      Cafea🇹🇷a Mahallesi, Bademalt\ Sokak, No 21/B, ...

      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
...      ...
9546      Karak🇹🇷_y
9547      Ko🇹🇷uyolu
9548      Kuru🇹🇷_e🇹🇷me
9549      Kuru🇹🇷_e🇹🇷me
9550      Moda

      Locality Verbose      Longitude \
0      Century City Mall, Poblacion, Makati City, Mak...      121.027535
1      Little Tokyo, Legaspi Village, Makati City, Ma...      121.014101
2      Edsa Shangri-La, Ortigas, Mandaluyong City, Ma...      121.056831
3      SM Megamall, Ortigas, Mandaluyong City, Mandal...      121.056475
4      SM Megamall, Ortigas, Mandaluyong City, Mandal...      121.057508
...      ...
9546      Karak🇹🇷_y, 🇹🇷istanbul      28.977392
9547      Ko🇹🇷uyolu, 🇹🇷istanbul      29.041297
9548      Kuru🇹🇷_e🇹🇷me, 🇹🇷istanbul      29.034640
9549      Kuru🇹🇷_e🇹🇷me, 🇹🇷istanbul      29.036019
9550      Moda, 🇹🇷istanbul      29.026016

      Latitude      Cuisines      ...      Currency \
0      14.565443      French, Japanese, Desserts      ...      Botswana Pula(P)
1      14.553708      Japanese      ...      Botswana Pula(P)
2      14.581404      Seafood, Asian, Filipino, Indian      ...      Botswana Pula(P)
3      14.585318      Japanese, Sushi      ...      Botswana Pula(P)
4      14.584450      Japanese, Korean      ...      Botswana Pula(P)
...      ...      ...      ...

```

9546	41.022793		Turkish	...	Turkish Lira(TL)
9547	41.009847	World Cuisine, Patisserie, Cafe		...	Turkish Lira(TL)
9548	41.055817	Italian, World Cuisine		...	Turkish Lira(TL)
9549	41.057979	Restaurant Cafe		...	Turkish Lira(TL)
9550	40.984776	Cafe		...	Turkish Lira(TL)

	Has Table booking	Has Online delivery	Is delivering now	\
0	Yes	No	No	
1	Yes	No	No	
2	Yes	No	No	
3	No	No	No	
4	Yes	No	No	
...	
9546	No	No	No	
9547	No	No	No	
9548	No	No	No	
9549	No	No	No	
9550	No	No	No	

	Switch to order menu	Price range	Aggregate rating	Rating color	\
0	No	3	4.8	Dark Green	
1	No	3	4.5	Dark Green	
2	No	4	4.4	Green	
3	No	4	4.9	Dark Green	
4	No	4	4.8	Dark Green	
...	
9546	No	3	4.1	Green	
9547	No	3	4.2	Green	
9548	No	4	3.7	Yellow	
9549	No	4	4.0	Green	
9550	No	2	4.0	Green	

	Rating text	Votes
0	Excellent	314
1	Excellent	591
2	Very Good	270
3	Excellent	365
4	Excellent	229
...
9546	Very Good	788
9547	Very Good	1034
9548	Good	661
9549	Very Good	901
9550	Very Good	591

[9551 rows x 21 columns]>

In [5]: `df.columns`

Out[5]: 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')

In [50]: `price_del_book=df.groupby(by='Price range')['Has Online delivery','Has Table booking']
price_del_book`

C:\Users\abhis\AppData\Local\Temp\ipykernel_15788\1093992111.py:1: FutureWarning: Indexing with multiple keys (implicitly converted to a tuple of keys) will be deprecated, use a list instead.

```
price_del_book=df.groupby(by='Price range')['Has Online delivery','Has Table booking'].value_counts().reset_index(name='Values')
```

Out[50]:

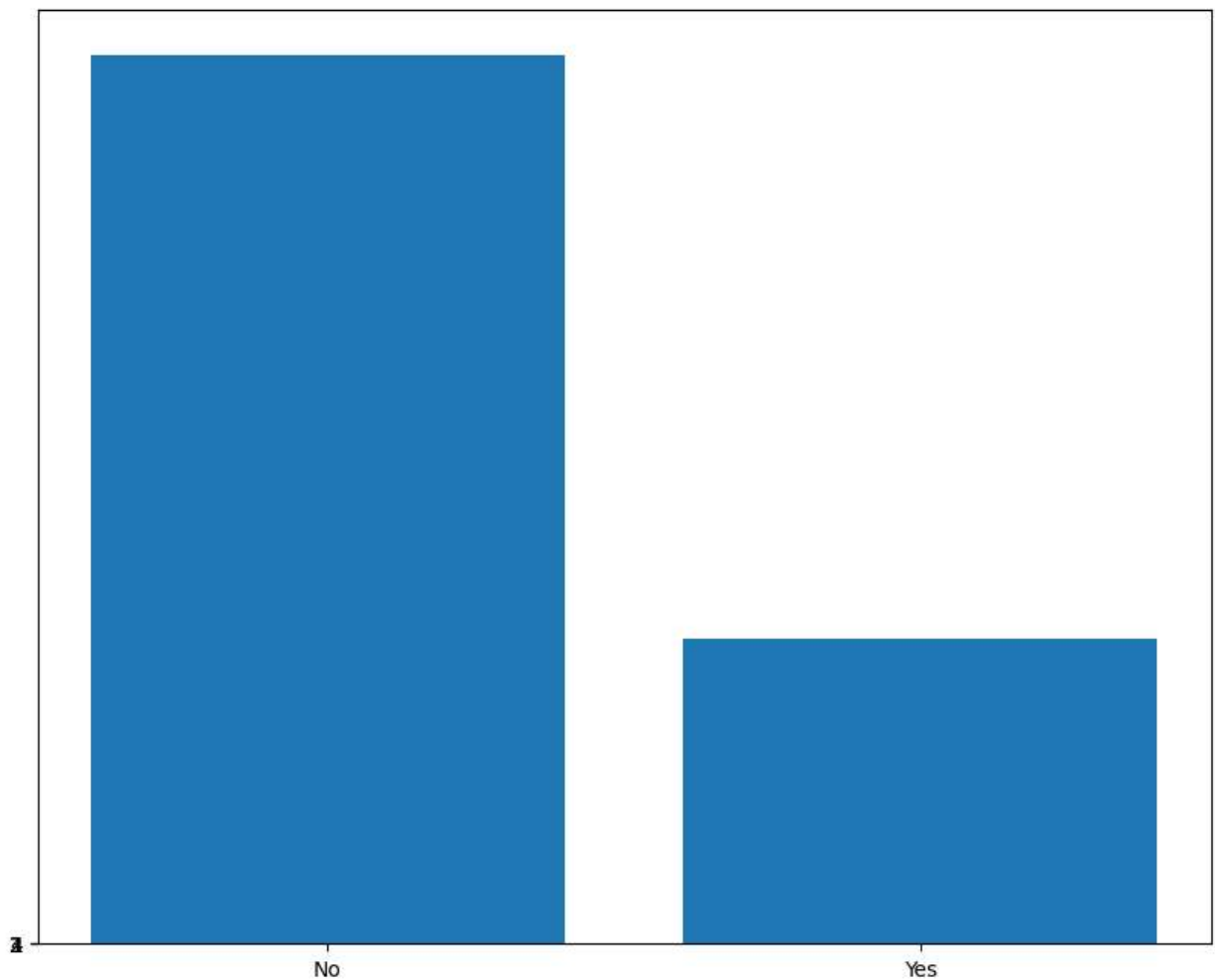
	Price range	Has Online delivery	Has Table booking	Values
0	1	No	No	3743
1	1	Yes	No	700
2	1	Yes	Yes	1
3	2	No	No	1711
4	2	Yes	No	1163
5	2	Yes	Yes	123
6	2	No	Yes	116
7	3	No	No	624
8	3	No	Yes	373
9	3	Yes	Yes	271
10	3	Yes	No	140
11	4	No	No	299
12	4	No	Yes	234
13	4	Yes	Yes	40
14	4	Yes	No	13

In [51]: `price_del=df.groupby(by='Price range')['Has Online delivery'].value_counts().reset_index(name='Values')`

Out[51]:

	Price range	Has Online delivery	Values
0	1	No	3743
1	1	Yes	701
2	2	No	1827
3	2	Yes	1286
4	3	No	997
5	3	Yes	411
6	4	No	533
7	4	Yes	53

In [47]: `plt.figure(figsize=(10, 8))
plt.bar(price_del["Has Online delivery"], price_del['Values'])
plt.xticks(range(1,5,1))
plt.show()`



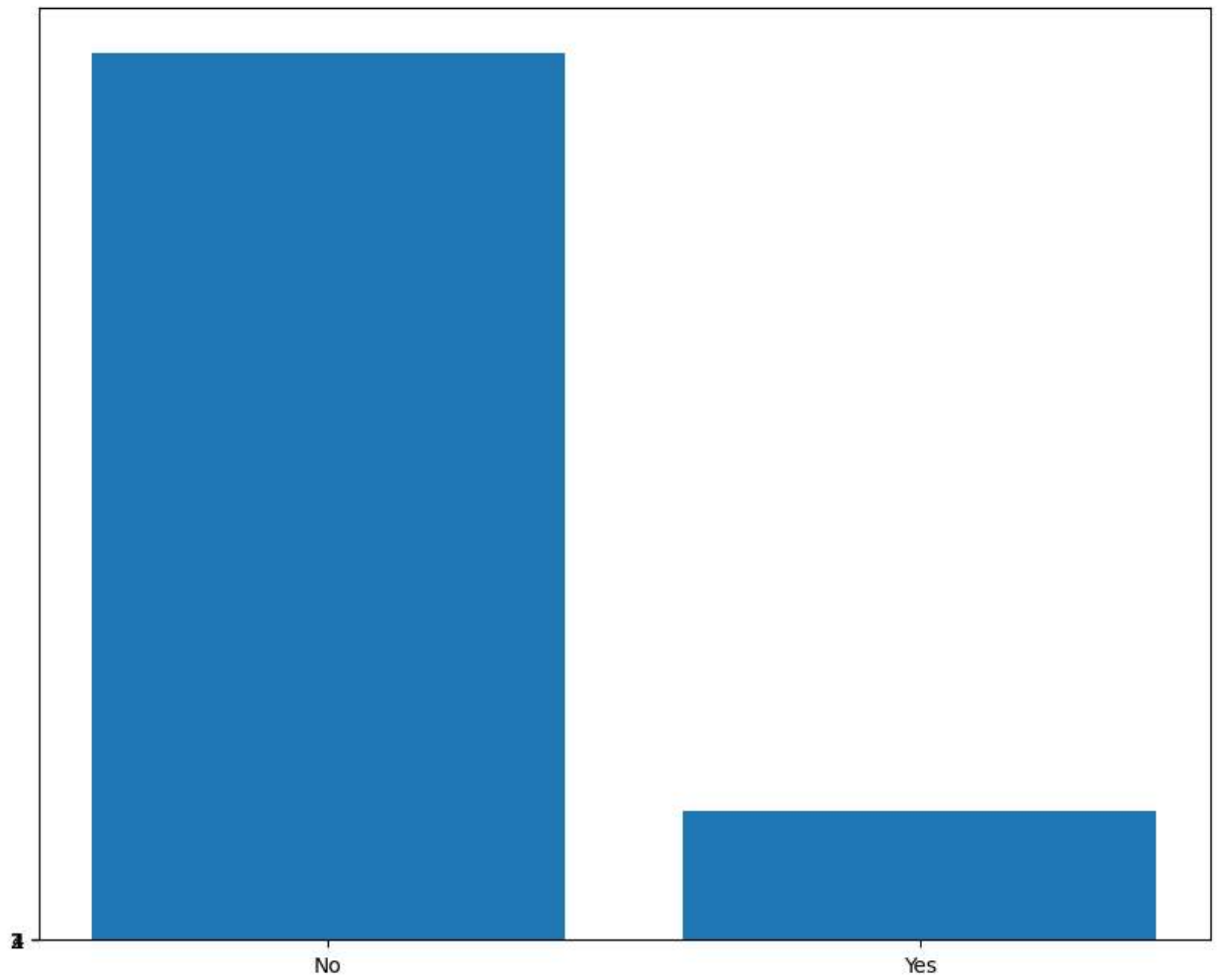
```
In [35]: price_book = df.groupby(by='Price range')['Has Table booking'].value_counts().reset_index
```

```
In [36]: price_book
```

```
Out[36]:
```

	Price range	Has Table booking	Values
0	1	No	4443
1	1	Yes	1
2	2	No	2874
3	2	Yes	239
4	3	No	764
5	3	Yes	644
6	4	No	312
7	4	Yes	274

```
In [77]: plt.figure(figsize=(10, 8))
plt.bar(price_book["Has Table booking"], price_book['Values'])
plt.yticks(range(1,5,1))
plt.show()
```



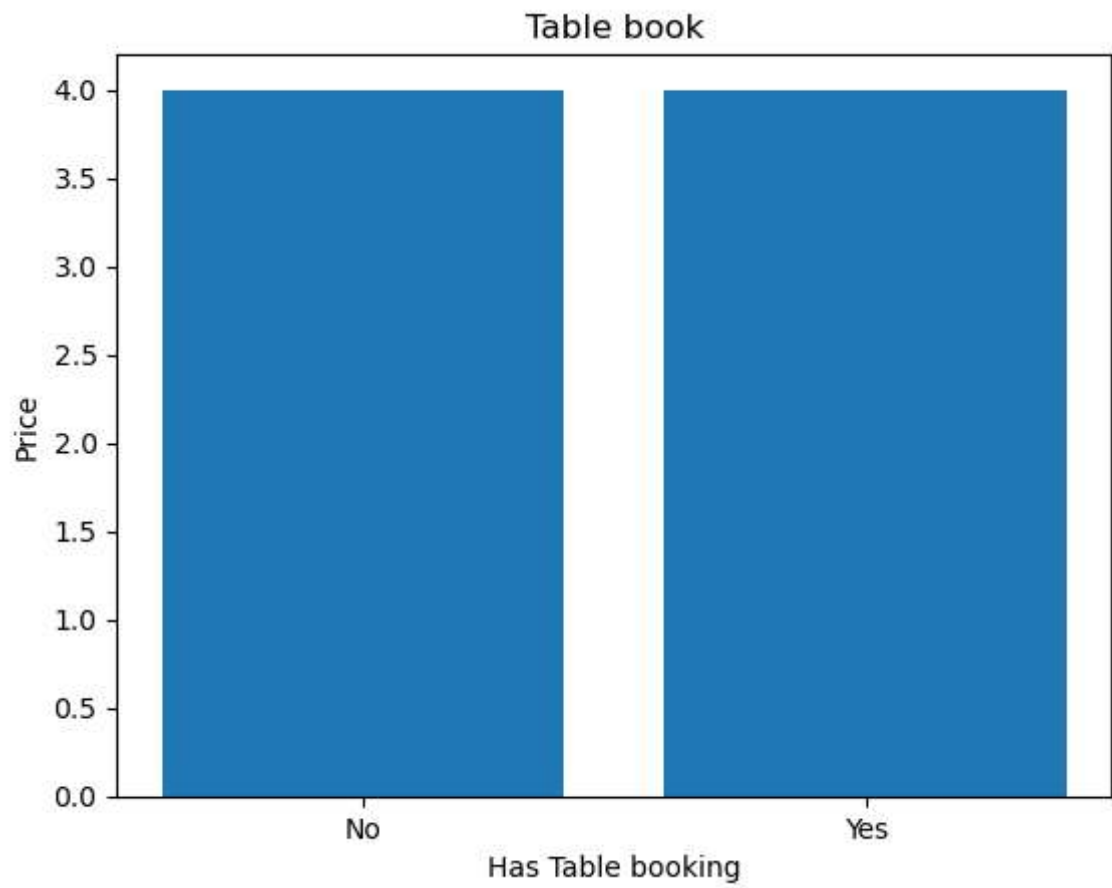
```
In [52]: price_del_book
```


Out[52]:

	Price range	Has Online delivery	Has Table booking	Values
0	1	No	No	3743
1	1	Yes	No	700
2	1	Yes	Yes	1
3	2	No	No	1711
4	2	Yes	No	1163
5	2	Yes	Yes	123
6	2	No	Yes	116
7	3	No	No	624
8	3	No	Yes	373
9	3	Yes	Yes	271
10	3	Yes	No	140
11	4	No	No	299
12	4	No	Yes	234
13	4	Yes	Yes	40
14	4	Yes	No	13

```
In [75]: plt.subplot(1, 1, 1)
plt.bar(price_book["Has Table booking"],price_book['Price range'])
plt.xlabel("Has Table booking")
plt.ylabel("Price")
plt.title("Table book")
```

```
Out[75]: Text(0.5, 1.0, 'Table book')
```



In []: