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Webscrapping of Hotel Bookings Prices



AIM:

To develop a predictive model that can estimate hotel prices based on various features extracted from Booking.com. The goal is to enable travelers to make informed decisions and optimize their vacation budgets by tracking and forecasting accommodation costs.

Objectives:

Data Collection:

Scrape relevant hotel data from Booking.com, including hotel names, room types, locations, Reviews, and current prices.

Store and organize the collected data efficiently for further analysis.

Database Creation:

Compile the scraped data into a structured format to create a comprehensive database for easy access and analysis.

Price Monitoring and Analysis:

Implement a system that tracks price fluctuations over time and stores historical pricing data for analysis.

Provide users with insights into price trends, allowing them to choose the best time to book.

Customer Feedback Analysis:

Gather and analyze customer ratings and reviews to assess Booking quality and customer satisfaction.

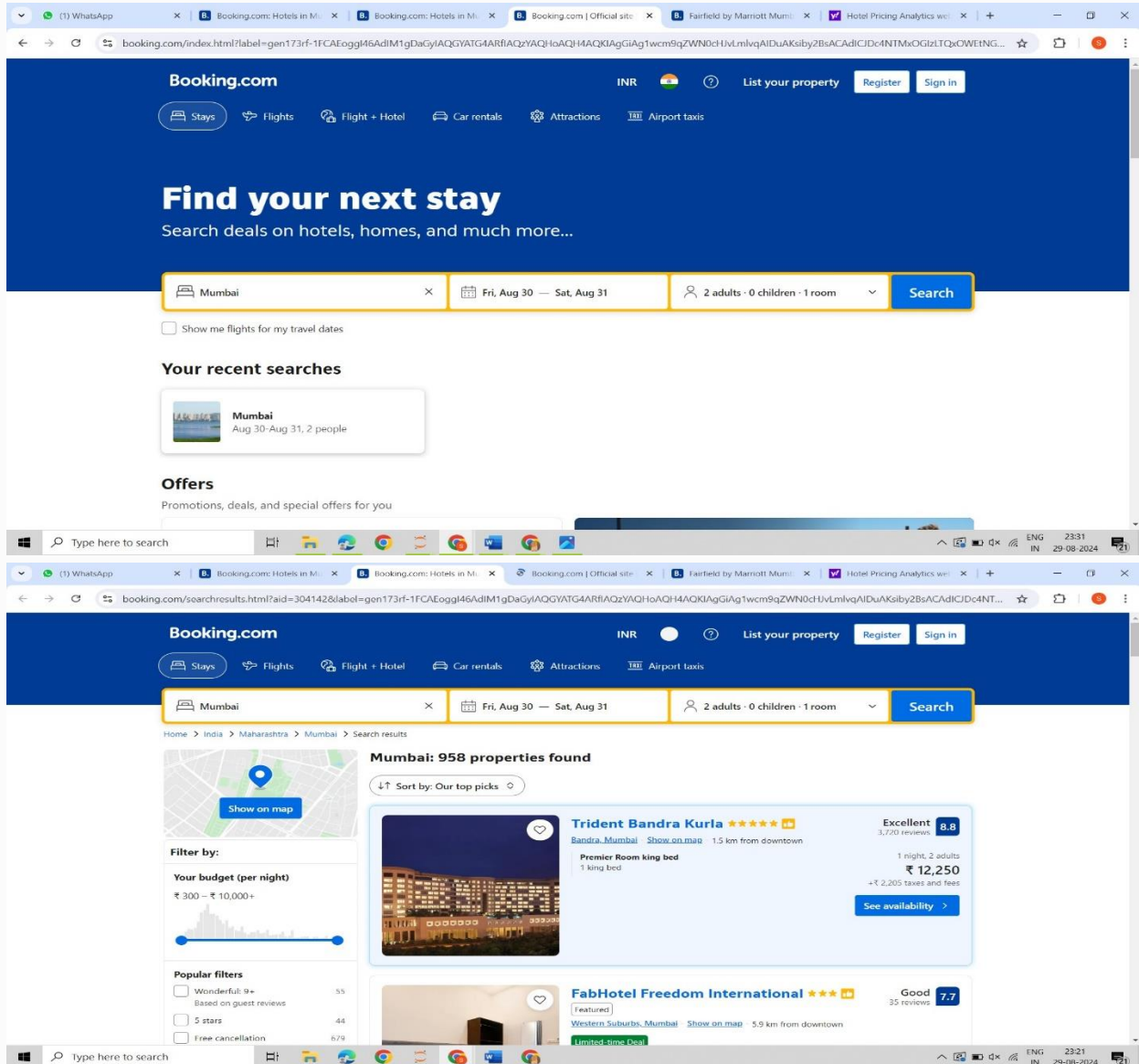
Outline:

From this site, we are going to grab the following information:

1. Hotel Name
2. Location
3. Distance
4. Description
5. More Description
6. Rating(out of 5)
7. Booking Score(out of 10)
8. FeedBack
9. No of reviews
10. Price

Choose the Website and Webpage URL:

The first step is to select the website you want to scrape. We will extract data of Hotels by using Booking.com.



In second image as we can see I choose Mumbai place where I scrapped the hotels which are placed in Mumbai.

1. Inspect the website:

Now the next step is to understand the website structure. Understand what the attributes of the elements that are of your interest are. Right click on the website to select “Inspect”. This will open HTML code. Use the inspector tool to see the name of all the elements to use in the code.

```

    <div class="ebeccab0fd d3819cf904" tabindex="0" data-
    testid="availability-single"> flex
    <div class="d12038db5a">
    <div data-testid="recommended-units" class="a2967c
    0c16"> </div> == $0
    </div>
    <div class="a5a4839483">
    <div data-testid="availability-rate-wrapper"
    class="adc8292e09 fb8796e1ae fbe4119cc7 bb61e9ba7
    9" style="--bui_stack_spaced_gap--s: 2;"> flex
    <div class="a9a0892c9b a303a5ca8c" data-testid=
    "availability-rate-information">
    <div data-testid="price-for-x-nights" class="e8
    acaa0d22 ab107395cb"> </div>
    <span class="cdebd92b49">
    <div tabindex="0">
    <span aria-hidden="true" class="e8acaa0d22
    f018fa3636 d9315e4fb0">&nbsp;3,754</span>
    <div class="d9315e4fb0 f823e6e160">
    <span data-testid="price-and-discounted-p
    rice" aria-hidden="true" class="e03799331
    5 ab91cb3011 d9315e4fb0">&nbsp;1,990
    </span>
  
```

2. Installing the important libraries:

Python has several web scraping libraries. We will use the following libraries:

- Requests – for making HTTP requests to website
- BeautifulSoup – for parsing the HTML code
- Pandas – for storing the scraped data in data frame

3. Write the Python source code:

We'll write the main python code. The code will perform the following steps:

- Using requests to send an HTTP GET requests
- Using BeautifulSoup to parse the HTML code
- Extracting the required data from the HTML code
- Store the information in a pandas DataFrame

3. Write the Python source code:

We'll write the main python code. The code will perform the following steps:

- Using requests to send an HTTP GET requests
- Using BeautifulSoup to parse the HTML code
- Extracting the required data from the HTML code
- Store the information in a pandas DataFrame

4. Exporting the extracted data:

We'll export the data as a CSV file.

We'll use the pandas library.

5. Benefits:

- Access to Valuable Data
- Automation of Data Collection
- Real-Time Insights

6. Risks:

- Legal Issues
- IP Blocking and Rate Limiting
- Data Accuracy and Integrity

5. HotelBooking website Web Scraping Coding Commands:

1. Accessing Bookings on the Booking.com website using the requests and BeautifulSoup libraries:

```
[6]: import requests
    from bs4 import BeautifulSoup
    import pandas as pd

[5]: url = 'https://www.booking.com/searchresults.html?aid=304142&label=gen173rf-1FCAEoggI46AdIMlgDaGyIAQGYATG4ARFIAQzYAAQHoAQH4AQKIAGGiAg1wcm9qZW0cHJvLmlvqAII
    headers = {'User-Agent': 'Mozilla/5.0 (Macintosh; Intel Mac OS X 10_14_5) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/84.0.4147.89 Safari/537.36'}

[4]: page = requests.get(url, headers=headers)
    soup = BeautifulSoup(page.content, 'html.parser')
    soup
```

2. Accessing the Hotels Names

```
[7]: HotelName = soup.findAll('div',{'class':'e037993315 f5f8fe25fa'})
    HotelName

[7]: [<div class="e037993315 f5f8fe25fa" data-testid="title">FabExpress Super 7 Inn</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Fairfield by Marriott Mumbai International Airport</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Hotel Sahara Star</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Grand Hyatt Mumbai Hotel and Residences</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Sofitel Mumbai BKC</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Trident Bandra Kurla</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">ibis Mumbai Airport - An Accor Brand</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Holiday Inn Mumbai International Airport, an IHG Hotel</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Lovely 1 bedroom rental unit in Mumbai, Carter Road</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Novotel Mumbai Juhu Beach</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">The Lalit Mumbai</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">ITC Maratha, a Luxury Collection Hotel, Mumbai</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Ramada Plaza By Wyndham Palm Grove</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Hotel Airport International Mumbai</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Hilton Mumbai International Airport Hotel</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">The Sahil Hotel</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">JW Marriott Mumbai Sahar Airport</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Hotel Eros - Near Mumbai International Airport T2</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Aralia - A Business Hotel, MIDC Andheri East</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Ginger Mumbai Airport</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Hyatt Centric Juhu Mumbai</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Trident Nariman Point</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">T24 Retro</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">ITC Grand Central, a Luxury Collection Hotel, Mumbai</div>,
    <div class="e037993315 f5f8fe25fa" data-testid="title">Lemon Tree Premier, Mumbai International Airport</div>]
```

we replaced all the empty spaces and new lines to get the product name.

```
[8]: HotelName_list = []
    for h in HotelName:
        HotelName_list.append(h.getText().strip())

    HotelName_list

[8]: ['FabExpress Super 7 Inn',
      'Fairfield by Marriott Mumbai International Airport',
      'Hotel Sahara Star',
      'Grand Hyatt Mumbai Hotel and Residences',
      'Sofitel Mumbai BKC',
      'Trident Bandra Kurla',
      'ibis Mumbai Airport - An Accor Brand',
      'Holiday Inn Mumbai International Airport, an IHG Hotel',
      'Lovely 1 bedroom rental unit in Mumbai, Carter Road',
      'Novotel Mumbai Juhu Beach',
      'The Lalit Mumbai',
      'ITC Maratha, a Luxury Collection Hotel, Mumbai',
      'Ramada Plaza By Wyndham Palm Grove',
      'Hotel Airport International Mumbai',
      'Hilton Mumbai International Airport Hotel',
      'The Sahil Hotel',
      'JW Marriott Mumbai Sahar Airport',
      'Hotel Eros - Near Mumbai International Airport T2',
      'Aralia - A Business Hotel, MIDC Andheri East',
      'Ginger Mumbai Airport',
      'Hyatt Centric Juhu Mumbai',
      'Trident Nariman Point',
      'T24 Retro',
      'ITC Grand Central, a Luxury Collection Hotel, Mumbai',
      'Lemon Tree Premier, Mumbai International Airport']
```

3. Accessing the Hotels Location where it is located

```
: Location = soup.findAll('span',{'class':'cf35c10683 d57d1b7d64'})
    Location

: [<span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Bandra, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Santacruz, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Bandra, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Juhu, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>,
  <span class="cf35c10683 d57d1b7d64" data-testid="address">Juhu, Mumbai</span>,
  <span class="cf35c10683 d57d1b7d64">Show on map</span>]
```



```

<span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>,
<span class="cf35c10683 d57d1b7d64" data-testid="address">South Mumbai, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>,
<span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>,
<span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>,
<span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>,
<span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>,
<span class="cf35c10683 d57d1b7d64" data-testid="address">South Mumbai, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>,
<span class="cf35c10683 d57d1b7d64" data-testid="address">Juhu, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>,
<span class="cf35c10683 d57d1b7d64" data-testid="address">Western Suburbs, Mumbai</span>,
<span class="cf35c10683 d57d1b7d64">Show on map</span>]

```

Now we removed the extra content as show on map and print only the location name part which we want by using lambda function.

For that first we created a list by using for loop as we done for hotel names. And then we are done by getting the final lists of location.

```

Location_list = list(map(str.strip, filter(lambda x: x != 'Show on map', Location_Address)))
Location_list

```

```

['Western Suburbs, Mumbai',
 'Bandra, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Santacruz, Mumbai',
 'Bandra, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Juhu, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Juhu, Mumbai',
 'Western Suburbs, Mumbai',
 'South Mumbai, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'Western Suburbs, Mumbai',
 'South Mumbai, Mumbai',
 'Juhu, Mumbai',
 'Western Suburbs, Mumbai']

```

4. Accessing the Distance of the hotels

```
Distance = soup.findAll('span',{'data-testid':'distance'})
Distance
```

```
[<span data-testid="distance">5.9 km from centre</span>,
<span data-testid="distance">1.5 km from centre</span>,
<span data-testid="distance">2.6 km from centre</span>,
<span data-testid="distance">3.3 km from centre</span>,
<span data-testid="distance">2.8 km from centre</span>,
<span data-testid="distance">1.3 km from centre</span>,
<span data-testid="distance">3.2 km from centre</span>,
<span data-testid="distance">3.4 km from centre</span>,
<span data-testid="distance">5.8 km from centre</span>,
<span data-testid="distance">3.2 km from centre</span>,
<span data-testid="distance">6.7 km from centre</span>,
<span data-testid="distance">3.2 km from centre</span>,
<span data-testid="distance">3.3 km from centre</span>,
<span data-testid="distance">5.9 km from centre</span>,
<span data-testid="distance">3.6 km from centre</span>,
<span data-testid="distance">In city centre</span>,
<span data-testid="distance">3.2 km from centre</span>,
<span data-testid="distance">5.3 km from centre</span>,
<span data-testid="distance">3.7 km from centre</span>,
<span data-testid="distance">3 km from centre</span>,
<span data-testid="distance">3.6 km from centre</span>,
<span data-testid="distance">3.5 km from centre</span>,
<span data-testid="distance">In city centre</span>,
<span data-testid="distance">5.5 km from centre</span>,
<span data-testid="distance">3.4 km from centre</span>]
```

```
: Distance_list = []
  for d in Distance:
      Distance_list.append(d.getText().strip())
```

```
Distance_list
```

```
: ['5.9 km from centre',
'1.5 km from centre',
'2.6 km from centre',
'3.3 km from centre',
'2.8 km from centre',
'1.3 km from centre',
'3.2 km from centre',
'3.4 km from centre',
'5.8 km from centre',
'3.2 km from centre',
'6.7 km from centre',
'3.2 km from centre',
'3.3 km from centre',
'5.9 km from centre',
'3.6 km from centre',
'In city centre',
'3.2 km from centre',
'5.3 km from centre',
'3.7 km from centre',
'3 km from centre',
'3.6 km from centre',
'3.5 km from centre',
'In city centre',
'5.5 km from centre',
'3.4 km from centre']
```


5. Accessing the Hotels Description

```
: Description = soup.findAll('h4',{'class':'e8acaa0d22 e7baf22fe8'})
Description

[<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Superior Double Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Trident Preferred Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Standard Twin Room with City View</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Mercury City View Room - King Bed (Non-Smoking)</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Queen Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Luxury King Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Lalit Deluxe Room, King/ Twin Bed with Bathtub</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Standard Twin Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Budget Double Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">1 King Standard</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Superior King Room with City View with 15% discount on Food & Beverage</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Executive Club</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Superior Double or Twin Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Deluxe Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Deluxe Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Deluxe Room King Bed</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">King Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Double or Twin Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Premier City View Room with 1+1 Happy hours are from 5pm to 7pm at 6 degrees on selected brands</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Guest room, 2 Double, City view</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Deluxe Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Luxe Queen Room </h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Premier Double or Twin Room with City View</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">King Room</h4>,
<h4 class="e8acaa0d22 e7baf22fe8" role="link" tabindex="0">Executive Club</h4>]
```

```
[10]: list_Description = []
      for h in Description:
          list_Description.append(h.getText().strip())

      list_Description

[10]: ['Superior Double Room',
      'Trident Preferred Room',
      'Standard Twin Room with City View',
      'Mercury City View Room - King Bed (Non-Smoking)',
      'Queen Room',
      'Luxury King Room',
      'Lalit Deluxe Room, King/ Twin Bed with Bathtub',
      'Standard Twin Room',
      'Budget Double Room',
      '1 King Standard',
      'Superior King Room with City View with 15% discount on Food & Beverage',
      'Executive Club',
      'Superior Double or Twin Room',
      'Deluxe Room',
      'Deluxe Room',
      'Deluxe Room King Bed',
      'King Room',
      'Double or Twin Room',
      'Premier City View Room with 1+1 Happy hours are from 5pm to 7pm at 6 degrees on selected brands',
      'Guest room, 2 Double, City view',
      'Deluxe Room',
      'Luxe Queen Room',
      'Premier Double or Twin Room with City View',
      'King Room',
      'Executive Club']
```

6. Accessing the hotels More description

More description means its all about the beds which are present in room as follows:

```
More_Description = soup.findAll('div',{'class':'dfdb404493'})
More_Description

[<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">2 single beds</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">Multiple bed types</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">Multiple bed types</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">2 large double beds</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">1 extra-large double bed</div></div>,
<div class="dfdb404493"><div class="e8acaa0d22">Beds: 1 double or 2 singles</div></div>]
```

```
More_Description_list = []
for m in More_Description:
    More_Description_list.append(m.getText().strip())

More_Description_list
```

```
['1 extra-large double bed',
 '1 extra-large double bed',
 '2 single beds',
 '1 extra-large double bed',
 '1 large double bed',
 '1 extra-large double bed',
 'Multiple bed types',
 '1 large double bed',
 '1 double bed',
 '1 extra-large double bed',
 '1 extra-large double bed',
 '1 extra-large double bed',
 'Multiple bed types',
 '1 double bed',
 '1 extra-large double bed',
 '1 double bed',
 '1 extra-large double bed',
 '1 double bed',
 '1 extra-large double double bed',
 '2 large double beds',
 '1 large double bed',
 '1 large double bed',
 '1 extra-large double bed',
 '1 extra-large double bed',
 'Beds: 1 double or 2 singles']
```

7. Accessing the Ratings That hotel gets (out of 5)

```
Productcard = soup.findAll('div',{'class':'adc8292e09 ea1e323a59 fffdb20d34 fbe4119cc7 fd229921e5'})
Rating_list = []
for p in Productcard:
    r = p.find('div',{'class':'f97c3d5c2f'})
    if r:
        Rating_list.append(r.get('aria-label'))
    else:
        Rating_list.append("NA")
Rating_list
```

```
['3 out of 5',
 '5 out of 5',
 '4 out of 5',
 '5 out of 5',
 '5 out of 5',
 '5 out of 5',
 '5 out of 5',
 '3 out of 5',
 'NA',
 '5 out of 5',
 '5 out of 5',
 '5 out of 5',
 '3 out of 5',
 '5 out of 5',
 '5 out of 5',
 '4 out of 5',
 '5 out of 5',
 '3 out of 5',
 '5 out of 5',
 '5 out of 5',
 '3 out of 5',
 '4 out of 5',
 '5 out of 5',
 '5 out of 5',
 '4 out of 5']
```

8. Accessing the Scores

```
Productcard = soup.findAll('div',{'class':'adc8292e09 ea1e323a59 fffdb20d34 fbe4119cc7 fd229921e5'})
Score_list = []
for p in Productcard:
    Score = p.find('div',{'class':'d0522b0cca fd44f541d8'})
    if Score:
        Score_list.append(Score.getText().strip().replace("Scored", "").split(" ")[1])
    else:
        Score_list.append("NA")
Score_list
```

```
['7.7',
 '8.8',
 '8.2',
 '7.7',
 '8.0',
 '8.2',
 '7.5',
 '6.4',
 'NA',
 '8.0',
 '6.6',
 '8.1',
 '6.8',
 '7.2',
 '7.4',
 '7.9',
 '8.0',
 'NA',
 '8.6',
 '8.7',
 '7.1',
 '7.6',
 '8.7',
 '8.1',
 '7.5']
```

9. Accessing the Feedbacks Of hotels like good, better, Fabulous

```
[18]: Rating_category = soup.findAll('div',{'class':'d0522b0cca eb02592978 f374b67e8c'})
      Rating_category
```

```
[18]: [<div class="d0522b0cca eb02592978 f374b67e8c">Good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Fabulous<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Very good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Very good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Very good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Review score<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Very good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Review score<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Very good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Review score<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Very good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Fabulous<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Fabulous<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Fabulous<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Very good<!-- --> </div>,
      <div class="d0522b0cca eb02592978 f374b67e8c">Fabulous<!-- --> </div>]
```

```
]: Rating_category_list = []
   for c in Rating_category:
       Rating_category_list.append(c.getText().strip())
```

```
Rating_category_list
```

```
]: ['Good',
    'Fabulous',
    'Very good',
    'Good',
    'Very good',
    'Very good',
    'Good',
    'Review score',
    'Very good',
    'Review score',
    'Very good',
    'Review score',
    'Good',
    'Good',
    'Good',
    'Very good',
    'Fabulous',
    'Fabulous',
    'Good',
    'Good',
    'Fabulous',
    'Very good',
    'Fabulous']
```

10. Accessing the No of reviews that hotel get

```
] : No_of_Ratings = soup.findAll('div',{'class':'e8acaa0d22 ab107395cb c60bada9e4'})
    No_of_Ratings
```

```
] : [<div class="e8acaa0d22 ab107395cb c60bada9e4">35 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">3,720 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">1,462 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">1,677 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">1,735 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">2,209 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">713 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">1,288 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">1,788 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">2,199 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">2,311 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">641 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">909 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">677 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">494 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">1,615 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">3,838 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">2,940 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">288 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">600 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">4,430 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">395 reviews</div>,
     <div class="e8acaa0d22 ab107395cb c60bada9e4">1,581 reviews</div>]
```

```
: No_of_Ratings_list = []
  for n in No_of_Ratings:
      No_of_Ratings_list.append(n.getText().strip())
```

```
No_of_Ratings_list
```

```
: ['35 reviews',
   '3,720 reviews',
   '1,462 reviews',
   '1,677 reviews',
   '1,735 reviews',
   '2,209 reviews',
   '713 reviews',
   '1,288 reviews',
   '1,788 reviews',
   '2,199 reviews',
   '2,311 reviews',
   '641 reviews',
   '909 reviews',
   '677 reviews',
   '494 reviews',
   '1,615 reviews',
   '3,838 reviews',
   '2,940 reviews',
   '288 reviews',
   '600 reviews',
   '4,430 reviews',
   '395 reviews',
   '1,581 reviews']
```


11. Accessing the Hotels Price

```
Price = soup.findAll('span',{'class':'e037993315 ab91cb3011 d9315e4fb0'})
Price
```

```
[<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 1,990</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 9,750</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 6,999</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 9,750</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 10,000</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 10,000</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 7,650</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 4,899</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 2,070</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 6,999</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 9,300</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 10,735</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 4,000</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 7,628</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 6,062</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 5,000</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 9,500</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 7,000</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 10,000</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 10,500</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 1,550</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 6,999</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 12,750</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 9,300</span>,
<span aria-hidden="true" class="e037993315 ab91cb3011 d9315e4fb0" data-testid="price-and-discounted-price">₹ 3,799</span>]
```

```
: Price_list = []

for p in Price:
    Price_list.append(p.getText().strip().replace("₹\xa0", ""))

Price_list
```

```
['1,990',
'9,750',
'6,999',
'9,750',
'10,000',
'10,000',
'7,650',
'4,899',
'2,070',
'6,999',
'9,300',
'10,735',
'4,000',
'7,628',
'6,062',
'5,000',
'9,500',
'7,000',
'10,000',
'10,500',
'1,550',
'6,999',
'12,750',
'9,300',
'3,799']
```

12. Importing the pandas and creating DataFrame:

```
import pandas as pd
Bookings = pd.DataFrame({
    "Hotel Name":HotelName_list,
    "Location":Location_list,
    "Distance":Distance_list,
    "Description":Description_list,
    "More Description":More_Description_list,
    "Rating(Out of 5)":Rating_list,
    "Booking Score(Out of 10)":Score_list,
    "Feedback":Feedback_list,
    "No of Reviews":No_of_reviews_list,
    "Price(Rs)":Price_list,
})
```

Bookings

	Hotel Name	Location	Distance	Description	More Description	Rating(Out of 5)	Booking Score(Out of 10)	Feedback	No of Reviews	Price(Rs)
0	FabHotel Freedom International	Western Suburbs, Mumbai	5.9 km from centre	Superior Double Room	1 extra-large double bed	3 out of 5	7.7	Good	35	1,990
1	Trident Bandra Kurla	Bandra, Mumbai	1.5 km from centre	Trident Preferred Room	1 extra-large double bed	5 out of 5	8.8	Fabulous	3,720	9,750
2	Fairfield by Marriott Mumbai International Air...	Western Suburbs, Mumbai	2.6 km from centre	Standard Twin Room with City View	2 single beds	4 out of 5	8.2	Very good	1,462	6,999
3	Hotel Sahara Star	Western Suburbs, Mumbai	3.3 km from centre	Mercury City View Room - King Bed (Non-Smoking)	1 extra-large double bed	5 out of 5	7.7	Good	1,677	9,750
4	Grand Hyatt Mumbai Hotel and Residences	Santacruz, Mumbai	2.8 km from centre	Queen Room	1 large double bed	5 out of 5	8.0	Very good	1,735	10,000
5	Sofitel Mumbai BKC	Bandra, Mumbai	1.3 km from centre	Luxury King Room	1 extra-large double bed	5 out of 5	8.2	Very good	2,209	10,000
6	The Lalit Mumbai	Western Suburbs, Mumbai	3.2 km from centre	Lalit Deluxe Room, King/ Twin Bed with Bathtub	Multiple bed types	5 out of 5	7.5	Good	713	7,650
7	ibis Mumbai Airport - An Accor Brand	Western Suburbs, Mumbai	3.4 km from centre	Standard Twin Room	1 large double bed	3 out of 5	6.4	Review score	1,288	4,899
8	Lovely 1 bedroom rental unit in Mumbai, Carter...	Western Suburbs, Mumbai	5.8 km from centre	Budget Double Room	1 double bed	NA	NA	NA	NA	2,070
9	Holiday Inn Mumbai International Airport, an I...	Western Suburbs, Mumbai	3.2 km from centre	1 King Standard	1 extra-large double bed	5 out of 5	8.0	Very good	1,788	6,999
10	Novotel Mumbai Juhu Beach	Juhu, Mumbai	6.7 km from centre	Superior King Room with City View with 15% dis...	1 extra-large double bed	5 out of 5	6.6	Review score	2,199	9,300
11	ITC Maratha, a Luxury Collection Hotel, Mumbai	Western Suburbs, Mumbai	3.2 km from centre	Executive Club	1 extra-large double bed	5 out of 5	8.1	Very good	2,311	10,735
12	Hotel Airport International Mumbai	Western Suburbs, Mumbai	3.3 km from centre	Superior Double or Twin Room	Multiple bed types	3 out of 5	6.8	Review score	641	4,000
13	Ramada Plaza By Wyndham Palm Grove	Juhu, Mumbai	5.9 km from centre	Deluxe Room	1 double bed	5 out of 5	7.2	Good	909	7,628
14	Lemon Tree Premier, Mumbai International Airport	Western Suburbs, Mumbai	3.6 km from centre	Deluxe Room	1 extra-large double bed	5 out of 5	7.4	Good	677	6,062
15	The Sahil Hotel	South Mumbai, Mumbai	In city centre	Deluxe Room King Bed	1 double bed	4 out of 5	7.9	Good	494	5,000

16	Hilton Mumbai International Airport Hotel	Western Suburbs, Mumbai	3.2 km from centre	King Room	1 extra-large double bed	5 out of 5	8.0	Very good	1,615	9,500
17	Aralia - A Business Hotel, MIDC Andheri East	Western Suburbs, Mumbai	5.3 km from centre	Double or Twin Room	1 double bed	3 out of 5	NA	NA	NA	7,000
18	The Leela Mumbai	Western Suburbs, Mumbai	3.7 km from centre	Premier City View Room with 1+1 Happy hours ar...	1 extra-large double bed	5 out of 5	8.6	Fabulous	3,838	10,000
19	JW Marriott Mumbai Sahar Airport	Western Suburbs, Mumbai	3 km from centre	Guest room, 2 Double, City view	2 large double beds	5 out of 5	8.7	Fabulous	2,940	10,500
20	Hotel Eros - Near Mumbai International Airport T2	Western Suburbs, Mumbai	3.6 km from centre	Deluxe Room	1 large double bed	3 out of 5	7.1	Good	288	1,550
21	Ginger Mumbai Airport	Western Suburbs, Mumbai	3.5 km from centre	Luxe Queen Room	1 large double bed	4 out of 5	7.6	Good	600	6,999
22	Trident Nariman Point	South Mumbai, Mumbai	In city centre	Premier Double or Twin Room with City View	1 extra-large double bed	5 out of 5	8.7	Fabulous	4,428	12,750
23	Hyatt Centric Juhu Mumbai	Juhu, Mumbai	5.5 km from centre	King Room	1 extra-large double bed	5 out of 5	8.1	Very good	395	9,300
24	T24 Retro	Western Suburbs, Mumbai	3.4 km from centre	Deluxe Double or Twin Room	Beds: 1 double or 2 singles	4 out of 5	7.5	Good	185	3,799

13. Converting and Storing DataFrame in the form of a CSV file and opening the file in application:

```
Bookings.to_csv("HotelBookingWebsite.csv",index = False)
```

```
Read = pd.read_csv("HotelBookingWebsite.csv")
Read
```

	Hotel Name	Location	Distance	Description	More Description	Rating(Out of 5)	Booking Score(Out of 10)	Feedback	No of Reviews	Price(Rs)
0	FabHotel Freedom International	Western Suburbs, Mumbai	5.9 km from centre	Superior Double Room	1 extra-large double bed	3 out of 5	7.7	Good	35	1,990
1	Trident Bandra Kurla	Bandra, Mumbai	1.5 km from centre	Trident Preferred Room	1 extra-large double bed	5 out of 5	8.8	Fabulous	3,720	9,750
2	Fairfield by Marriott Mumbai International Air...	Western Suburbs, Mumbai	2.6 km from centre	Standard Twin Room with City View	2 single beds	4 out of 5	8.2	Very good	1,462	6,999
3	Hotel Sahara Star	Western Suburbs, Mumbai	3.3 km from centre	Mercury City View Room - King Bed (Non-Smoking)	1 extra-large double bed	5 out of 5	7.7	Good	1,677	9,750
4	Grand Hyatt Mumbai Hotel and Residences	Santacruz, Mumbai	2.8 km from centre	Queen Room	1 large double bed	5 out of 5	8.0	Very good	1,735	10,000
5	Sofitel Mumbai BKC	Bandra, Mumbai	1.3 km from centre	Luxury King Room	1 extra-large double bed	5 out of 5	8.2	Very good	2,209	10,000
6	The Lalit Mumbai	Western Suburbs, Mumbai	3.2 km from centre	Lalit Deluxe Room, King/ Twin Bed with Bathtub	Multiple bed types	5 out of 5	7.5	Good	713	7,650
7	ibis Mumbai Airport - An Accor Brand	Western Suburbs, Mumbai	3.4 km from centre	Standard Twin Room	1 large double bed	3 out of 5	6.4	Review score	1,288	4,899

8	Lovely 1 bedroom rental unit in Mumbai, Carter...	Western Suburbs, Mumbai	5.8 km from centre	Budget Double Room	1 double bed	NA	NA	NA	NA	2,070
9	Holiday Inn Mumbai International Airport, an I...	Western Suburbs, Mumbai	3.2 km from centre	1 King Standard	1 extra-large double bed	5 out of 5	8.0	Very good	1,788	6,999
10	Novotel Mumbai Juhu Beach	Juhu, Mumbai	6.7 km from centre	Superior King Room with City View with 15% dis...	1 extra-large double bed	5 out of 5	6.6	Review score	2,199	9,300
11	ITC Maratha, a Luxury Collection Hotel, Mumbai	Western Suburbs, Mumbai	3.2 km from centre	Executive Club	1 extra-large double bed	5 out of 5	8.1	Very good	2,311	10,735
12	Hotel Airport International Mumbai	Western Suburbs, Mumbai	3.3 km from centre	Superior Double or Twin Room	Multiple bed types	3 out of 5	6.8	Review score	641	4,000
13	Ramada Plaza By Wyndham Palm Grove	Juhu, Mumbai	5.9 km from centre	Deluxe Room	1 double bed	5 out of 5	7.2	Good	909	7,628
14	Lemon Tree Premier, Mumbai International Airport	Western Suburbs, Mumbai	3.6 km from centre	Deluxe Room	1 extra-large double bed	5 out of 5	7.4	Good	677	6,062
15	The Sahil Hotel	South Mumbai, Mumbai	In city centre	Deluxe Room King Bed	1 double bed	4 out of 5	7.9	Good	494	5,000
16	Hilton Mumbai International Airport Hotel	Western Suburbs, Mumbai	3.2 km from centre	King Room	1 extra-large double bed	5 out of 5	8.0	Very good	1,615	9,500
17	Aralia - A Business Hotel, MIDC Andheri East	Western Suburbs, Mumbai	5.3 km from centre	Double or Twin Room	1 double bed	3 out of 5	NA	NA	NA	7,000
18	The Leela Mumbai	Western Suburbs, Mumbai	3.7 km from centre	Premier City View Room with 1+1 Happy hours ar...	1 extra-large double bed	5 out of 5	8.6	Fabulous	3,838	10,000
19	JW Marriott Mumbai Sahar Airport	Western Suburbs, Mumbai	3 km from centre	Guest room, 2 Double, City view	2 large double beds	5 out of 5	8.7	Fabulous	2,940	10,500
20	Hotel Eros - Near Mumbai International Airport T2	Western Suburbs, Mumbai	3.6 km from centre	Deluxe Room	1 large double bed	3 out of 5	7.1	Good	288	1,550
21	Ginger Mumbai Airport	Western Suburbs, Mumbai	3.5 km from centre	Luxe Queen Room	1 large double bed	4 out of 5	7.6	Good	600	6,999
22	Trident Nariman Point	South Mumbai, Mumbai	In city centre	Premier Double or Twin Room with City View	1 extra-large double bed	5 out of 5	8.7	Fabulous	4,428	12,750
23	Hyatt Centric Juhu Mumbai	Juhu, Mumbai	5.5 km from centre	King Room	1 extra-large double bed	5 out of 5	8.1	Very good	395	9,300
24	T24 Retro	Western Suburbs, Mumbai	3.4 km from centre	Deluxe Double or Twin Room	Beds: 1 double or 2 singles	4 out of 5	7.5	Good	185	3,799

14. Conclusion

This project showcases the power of web scraping with BeautifulSoup to automate hotel price tracking and provide valuable insights for travellers. By efficiently collecting, organizing, and visualizing hotel price data, the system empowers users to optimize their travel expenses. The project not only offers practical benefits but also serves as a strong demonstration of your web scraping skills.

Thank You.