OYO_COMBINED

May 9, 2024

```python
[2]: import numpy as np
     import pandas as pd
     import requests
     from bs4 import BeautifulSoup as bs
     import csv
```

```python
[3]: # Function to scrape data from a single page
     def scrape_page(url, headers):
         page = requests.get(url, headers=headers)
         soup = bs(page.content, 'html.parser')
         lists = soup.find_all('div', class_='oyo-row oyo-row--no-spacing␣
      ↪listingHotelDescription')

         data_list = []

         for li in lists:
             hotel_name = li.find('h3', class_='listingHotelDescription__hotelName␣
      ↪d-textEllipsis').text
             location = li.find('span', class_='u-line--clamp-2').text
             original_price = li.find('span', class_='listingPrice__slashedPrice␣
      ↪d-body-lg').text
             discount_price = li.find('span', class_='listingPrice__finalPrice').text
             discount = li.find('span', class_='listingPrice__percentage').text
             rating = li.find('div', class_='hotelRating').text
             rating_summary = li.find('div', class_='hotelRating__wrapper').text  if␣
      ↪li.find('div', class_='hotelRating__wrapper') else "N/A"
             total_ratings = li.find('span', class_='hotelRating__ratingSummary').
      ↪text if li.find('span', class_='hotelRating__ratingSummary') else "N/A"
             tax = li.find('div', class_='listingPrice__perRoomNight').text if li.
      ↪find('div', class_='listingPrice__perRoomNight') else "N/A"
             amenities = li.find('div', class_='amenityWrapper').text if li.
      ↪find('div', class_='amenityWrapper') else "N/A"

             data = [hotel_name, location, original_price[1:], discount_price[1:],␣
      ↪discount[0:3], rating[0:3], rating_summary, total_ratings[1:], tax,␣
      ↪amenities]
             data_list.append(data)
```

```
        return data_list
```

1 Scraping Chennai data

```python
[4]: # OYO rooms base url
     base_url = 'https://www.oyorooms.com/hotels-in-chennai/'
     headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
      ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
                 "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

     # Number of pages to scrape (you may need to adjust this based on the actual␣
      ↪number of pages)
     num_pages = 6

     # Context manager for creating a CSV file
     with open('Chennai_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
         writer = csv.writer(file)
         header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',␣
      ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',␣
      ↪'Amenities', 'Region']
         writer.writerow(header)

         # Loop through pages and scrape data
         for page_num in range(1, num_pages + 1):
             url = f'{base_url}?page={page_num}'
             page_data = scrape_page(url, headers)
             for data_row in page_data:
                 data_row.append('Chennai')
                 writer.writerow(data_row)
```

```python
[5]: # Dataframe creation
     df_chennai = pd.read_csv('Chennai_hotelData.csv')
     df_chennai
```

```
[5]:                                              Hotel Name  \
     0                                     Flagship Tambaram
     1                             Collection O Tranquil Nest
     2                           OYO Flagship Elite Residency
     3                          Collection O The Oaks Residency
     4                             Townhouse 1248 Majestic Inn
     ..                                                    …
     115                                 OYO Flagship Manvaar
     116                          Collection O  142 Vadapalani
     117                            OYO Flagship Golden Manor
     118  OYO Home Harma Residency Near Koyambedu Metro …
```

119   Collection O 812359 Golden Tower

```
                                           Location   Original Price  \
0      Near Tambaram Railwaystation, Tambaram, Chennai           2833
1                             Pallikaranai, Chennai              2474
2                               Rajan Nagar, Chennai             2333
3        Dental Collage,Kamakotti Nagar,Pallikaranai             3282
4                  Viveks Showroom Backside, Chennai             5258
..                                              …                  …
115                               Chennai, Chennai               4368
116              Arumbakkam(mmda Bustop), Chennai                5179
117                             Periyamet, Chennai               3397
118                       Mugappair West, Chennai                4577
119                             Chennai, Chennai                 2978
```

```
      Discounted Price Discount User Rating            Rating Summary  \
0                  591      75%         4.2   4.2 (1015 Ratings)·Very Good
1                  499      75%         3.3        3.3 (10 Ratings)·Fair
2                  479      75%         4.6   4.6 (198 Ratings)·Excellent
3                  421      84%         4.1   4.1 (776 Ratings)·Very Good
4                 1279      72%         4.7   4.7 (925 Ratings)·Excellent
..                   …        …           …                          …
115                845      77%         4.2     4.2 (6 Ratings)·Very Good
116               1259      72%         3.8       3.8 (186 Ratings)·Good
117                767      73%         3.0        3.0 (12 Ratings)·Fair
118               1100      71%         4.0   4.0 (343 Ratings)·Very Good
119                690      72%         3.7        3.7 (29 Ratings)·Good
```

```
      Total Ratings                                         Tax  \
0     1015 Ratings)  + 111 taxes & fees · per room per night
1       10 Ratings)  + 100 taxes & fees · per room per night
2      198 Ratings)   + 97 taxes & fees · per room per night
3      776 Ratings)   + 90 taxes & fees · per room per night
4      925 Ratings)  + 193 taxes & fees · per room per night
..                …                                        …
115      6 Ratings)  + 141 taxes & fees · per room per night
116    186 Ratings)  + 191 taxes & fees · per room per night
117     12 Ratings)  + 132 taxes & fees · per room per night
118    343 Ratings)  + 182 taxes & fees · per room per night
119     29 Ratings)  + 123 taxes & fees · per room per night
```

```
                                          Amenities    Region
0      Free Wifi  Geyser  Daily housekeeping  + 2 more  Chennai
1    Parking facility  Reception  Free Wifi  + 15 …   Chennai
2              Elevator  Free Wifi  Geyser  + 5 more   Chennai
3    Doctor on call  Reception  Ticket tour assist…   Chennai
4              Elevator  Free Wifi  Geyser  + 5 more   Chennai
```

```
..                                                    …        …
115        Free Wifi  Daily housekeeping   AC  + 1 more   Chennai
116   Private entrance  Parking facility  Reception…  Chennai
117       Reception  Free Wifi  Power backup  + 12 more   Chennai
118        Free Wifi  Daily housekeeping   AC  + 4 more   Chennai
119            Elevator  Free Wifi  Geyser  + 5 more   Chennai

[120 rows x 11 columns]
```

2 Scraping Banglore data

```python
[6]: # OYO rooms base url
     base_url = 'https://www.oyorooms.com/hotels-in-bangalore/'
     headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
      ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
               "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

     # Number of pages to scrape (you may need to adjust this based on the actual␣
      ↪number of pages)
     num_pages = 14

     # Context manager for creating a CSV file
     with open('Bangalore_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
         writer = csv.writer(file)
         header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',␣
      ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',␣
      ↪'Amenities', 'Region' ]
         writer.writerow(header)

         # Loop through pages and scrape data
         for page_num in range(1, num_pages + 1):
             url = f'{base_url}?page={page_num}'
             page_data = scrape_page(url, headers)
             for data_row in page_data:
                 data_row.append('Bangalore')
                 writer.writerow(data_row)
```

```python
[7]: # Dataframe creation
     df_bangalore = pd.read_csv('Bangalore_hotelData.csv')
     df_bangalore
```

```
[7]:                                            Hotel Name  \
     0        Super OYO Townhouse Reva College University
     1   OYO Flagship HOTEL SKYSPACE Near Hare Krishna …
     2                              OYO Athithi Comforts
     3                   Super OYO Townhouse 1292 XOTEL
```

```
4                        Super OYO Collection O Hotel Manu
..                                                       …
275                            OYO Sri Sai Guru Comforts
276                          OYO CHAMUNDESHWARI COMFORT
277               Collection O Hotel Champion Paradise
278                          OYO Flagship 812664 Slv Hotel
279              SPOT ON 71449 Ssr Lodging And Boarding


                                            Location  Original Price  \
0                                    India, Bangalore            3397
1                 Yeswantpur Near Railway Station, Bangalore      2736
2    Near Happy Home Shopping Mall, RR Nagar, Banga…          2790
3                                   Phase 2, Bangalore         3185
4                              Babusabpalya, Bangalore         4309
..                                                  …              …
275  Near Kodigihalli Gate, Byatarayanapura, Bangalore       3414
276                        Near Vishal Mart, Bangalore        2426
277                                   India, Bangalore        4179
278                         Vidyaranyapura, Bangalore         4475
279         Near Jumma masjid, Shivaji Nagar, Bangalore      2592


     Discounted Price Discount User Rating          Rating Summary  \
0                 906      68%        5.0  5.0 (4131 Ratings)·Fabulous
1                 499      78%        4.0  4.0 (738 Ratings)·Very Good
2                 482      78%        3.9      3.9 (211 Ratings)·Good
3                 761      71%        4.9  4.9 (1043 Ratings)·Fabulous
4                1042      71%        4.4  4.4 (461 Ratings)·Very Good
..                  …        …          …                          …
275               818      72%        3.6      3.6 (59 Ratings)·Good
276               542      73%        2.4      2.4 (12 Ratings)·Fair
277              1127      68%        3.8     3.8 (161 Ratings)·Good
278               971      74%        3.5      3.5 (32 Ratings)·Good
279               758      65%        3.4     3.4 (132 Ratings)·Fair


     Total Ratings                                     Tax  \
0    4131 Ratings)  + 149 taxes & fees · per room per night
1     738 Ratings)  + 100 taxes & fees · per room per night
2     211 Ratings)  + 128 taxes & fees · per room per night
3    1043 Ratings)  + 131 taxes & fees · per room per night
4     461 Ratings)  + 165 taxes & fees · per room per night
..              …                                         …
275    59 Ratings)  + 138 taxes & fees · per room per night
276    12 Ratings)  + 105 taxes & fees · per room per night
277   161 Ratings)  + 175 taxes & fees · per room per night
278    32 Ratings)  + 157 taxes & fees · per room per night
279   132 Ratings)  + 141 taxes & fees · per room per night
```

```
                                              Amenities     Region
0              Elevator  Reception  Free Wifi  + 7 more  Bangalore
1      Elevator  Parking facility  Free Wifi  + 6 more  Bangalore
2        Reception  Free Wifi  Power backup  + 11 more  Bangalore
3                  Elevator  Free Wifi  Geyser  + 5 more  Bangalore
4                  Elevator  Free Wifi  Geyser  + 5 more  Bangalore
..                                                  …          …
275    Hair Dryer  Free Wifi  Power backup  + 14 more  Bangalore
276        Free Wifi  Geyser  Power backup  + 3 more  Bangalore
277                Elevator  Free Wifi  Geyser  + 5 more  Bangalore
278                Elevator  Free Wifi  Geyser  + 5 more  Bangalore
279                  Free Wifi  TV  Daily housekeeping   Bangalore

[280 rows x 11 columns]
```

3   Scraping Hyderabad data

```python
[8]:  # OYO rooms base url
      base_url = 'https://www.oyorooms.com/hotels-in-hyderabad/'
      headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
       ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
               "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

      # Number of pages to scrape (you may need to adjust this based on the actual␣
       ↪number of pages)
      num_pages = 17

      # Context manager for creating a CSV file
      with open('Hyderabad_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
          writer = csv.writer(file)
          header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',␣
       ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',␣
       ↪'Amenities', 'Region' ]
          writer.writerow(header)

          # Loop through pages and scrape data
          for page_num in range(1, num_pages + 1):
              url = f'{base_url}?page={page_num}'
              page_data = scrape_page(url, headers)
              for data_row in page_data:
                  data_row.append('Hyderabad')
                  writer.writerow(data_row)
```

```python
[9]:  # Dataframe creation
      df_hyderabad = pd.read_csv('Hyderabad_hotelData.csv')
      df_hyderabad
```

[9]:

	Hotel Name
0	Super OYO Townhouse OAK Hotel SSV Grand
1	Super OYO Collection O White Ridge Kamineni
2	Super OYO Collection O Hotel Pnr International…
3	Super OYO 819847 Magnus Suites Luxury rooms
4	SilverKey Gachibowli Near JV Colony Gachibowli
..	…
335	Collection O Hotel Stayo
336	OYO ARKA RESORTS VENUE OF JOY
337	OYO 820761 HOTEL SITA GRAND
338	OYO ROYAL HAVEN
339	Super OYO Collection O Hotel 7 Hills Suites

	Location	Original Price
0	Near Radhe Nagar, Gachibowli, Hyderabad	5662
1	Rajeevgandhi Nagar, Hyderabad	4149
2	Hyderabad, Hyderabad	2950
3	Hyderabad, Hyderabad	3397
4	Near KFC, JV Colony, Hyderabad	4338
..	…	…
335	HyderabadBeside Desi chai, Hyderabad	4385
336	Hayath Nagar, Hyderabad	6494
337	6-111/1Shamshabad, Hyderabad	2977
338	62/APadma Sri Gardens, Hyderabad	3819
339	Suchitra X Roads, Hyderabad	5094

	Discounted Price	Discount	User Rating	Rating Summary
0	915	81%	4.4	4.4 (1197 Ratings)·Very Good
1	895	74%	4.7	4.7 (144 Ratings)·Excellent
2	641	74%	4.5	4.5 (889 Ratings)·Excellent
3	735	74%	4.4	4.4 (95 Ratings)·Very Good
4	1049	71%	4.7	4.7 (1195 Ratings)·Excellent
..	…	…	…	…
335	1061	72%	3.9	3.9 (120 Ratings)·Good
336	1587	72%	4.0	4.0 (3 Ratings)·Very Good
337	499	79%	3.7	3.7 (17 Ratings)·Good
338	920	71%	2.5	2.5 (7 Ratings)·Fair
339	1237	72%	4.6	4.6 (45 Ratings)·Excellent

	Total Ratings	Tax
0	1197 Ratings)	+ 150 taxes & fees · per room per night
1	144 Ratings)	+ 147 taxes & fees · per room per night
2	889 Ratings)	+ 117 taxes & fees · per room per night
3	95 Ratings)	+ 118 taxes & fees · per room per night
4	1195 Ratings)	+ 166 taxes & fees · per room per night
..	…	…
335	120 Ratings)	+ 167 taxes & fees · per room per night

```
336      3 Ratings)  +  231 taxes & fees · per room per night
337     17 Ratings)  +  100 taxes & fees · per room per night
338      7 Ratings)  +  150 taxes & fees · per room per night
339     45 Ratings)  +  189 taxes & fees · per room per night

                                              Amenities       Region
0            Free Wifi  AC  Daily housekeeping  + 1 more  Hyderabad
1                    Elevator  Free Wifi  Geyser  + 5 more  Hyderabad
2                    Elevator  Free Wifi  Geyser  + 5 more  Hyderabad
3                    Elevator  Free Wifi  Geyser  + 5 more  Hyderabad
4    Private entrance  Reception  Free Wifi  + 14 …  Hyderabad
..                                                 …        …
335                  Elevator  Free Wifi  Geyser  + 5 more  Hyderabad
336            Free Wifi  Geyser  Power backup  + 3 more  Hyderabad
337            Free Wifi  Geyser  Power backup  + 2 more  Hyderabad
338                  Elevator  Free Wifi  Geyser  + 4 more  Hyderabad
339            Free Wifi  Geyser  Power backup  + 2 more  Hyderabad

[340 rows x 11 columns]
```

4 Scraping delhi data

```python
[10]: # OYO rooms base url
      base_url = 'https://www.oyorooms.com/hotels-in-delhi/'
      headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
       ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
               "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

      # Number of pages to scrape (you may need to adjust this based on the actual␣
       ↪number of pages)
      num_pages = 15

      # Context manager for creating a CSV file
      with open('Delhi_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
          writer = csv.writer(file)
          header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',␣
       ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',␣
       ↪'Amenities', 'Region' ]
          writer.writerow(header)

          # Loop through pages and scrape data
          for page_num in range(1, num_pages + 1):
              url = f'{base_url}?page={page_num}'
              page_data = scrape_page(url, headers)
              for data_row in page_data:
                  data_row.append('Delhi')
```

```
            writer.writerow(data_row)
```

```
[11]:  # Dataframe creation
       df_delhi = pd.read_csv('Delhi_hotelData.csv')
       df_delhi
```

[11]:   Hotel Name \
      0   Super OYO Flagship SK Residency Rohini Near Ri…
      1   Collection O Jps Grand Hotel Near Dwarka Metro…
      2   Super OYO Townhouse 654
      3   OYO Hotel Crystal INN
      4   OYO Flagship Blue Moon Residency
      ..   …
      295 Flagship Imperial Residency Near Dashrath Puri…
      296   OYO Flagship Hotel Cozy Stay
      297   OYO Flagship Ls Banquet & Rooms
      298   OYO Sunrise Villa Near Select Citywalk Mall
      299   OYO Diamond Deluxe

                                              Location Original Price \
      0   G-8 Mange Ram Park Extension Rohini Sector 23,…   2717
      1   B2/314,Old Palam Road, Near Dwarka Mor Metro S…   1962
      2   North Delhi, Delhi   3143
      3   near Dwarka mod metro station near Dwarka mod…   2669
      4   New Delhi, Delhi   2909
      ..   …   …
      295   New Delhi, Delhi   2331
      296   Rohini, Delhi   5359
      297   Near Harsh Vihar, Shakti Vihar, Delhi   3519
      298 Paras pg mb road khanapur near Manu lal buildi…   3398
      299   Dwarka Sector 7, Delhi   3229

           Discounted Price Discount User Rating   Rating Summary \
      0   544   76%   4.7 4.7 (1148 Ratings)·Excellent
      1   499   69%   3.5   3.5 (215 Ratings)·Good
      2   605   76%   4.5 4.5 (2463 Ratings)·Excellent
      3   602   73%   4.2   4.2 (311 Ratings)·Very Good
      4   565   76%   3.6   3.6 (152 Ratings)·Good
      ..   …   …   …   …
      295   549   71%   2.6   2.6 (20 Ratings)·Fair
      296   1304   71%   4.3   4.3 (19 Ratings)·Very Good
      297   943   68%   3.9   3.9 (9 Ratings)·Good
      298   813   72%   3.5   3.5 (30 Ratings)·Good
      299   771   72%   3.7   3.7 (16 Ratings)·Good

           Total Ratings   Tax \
      0   1148 Ratings)   + 105 taxes & fees · per room per night
```

```
1       215 Ratings)  + 100 taxes & fees · per room per night
2      2463 Ratings)  + 123 taxes & fees · per room per night
3       311 Ratings)  + 112 taxes & fees · per room per night
4       152 Ratings)  + 108 taxes & fees · per room per night
..              …                                        …
295      20 Ratings)  + 116 taxes & fees · per room per night
296      19 Ratings)  + 197 taxes & fees · per room per night
297       9 Ratings)  + 153 taxes & fees · per room per night
298      30 Ratings)  + 138 taxes & fees · per room per night
299      16 Ratings)  + 133 taxes & fees · per room per night


                                          Amenities Region
0           Free Wifi  Daily housekeeping  AC  + 1 more  Delhi
1             Reception  Free Wifi  Power backup  + 6 more  Delhi
2     Ticket tour assistance  Reception  Free Wifi …  Delhi
3             Free Wifi  Geyser  Power backup  + 4 more  Delhi
4             Free Wifi  Geyser  Power backup  + 4 more  Delhi
..                                                …     …
295       Reception  Free Wifi  Power backup  + 10 more  Delhi
296           Free Wifi  Geyser  Power backup  + 3 more  Delhi
297   Parking facility  Free Wifi  Power backup  + …  Delhi
298            Elevator  Reception  Free Wifi  + 9 more  Delhi
299   Parking facility  Reception  Free Wifi  + 11 …  Delhi

[300 rows x 11 columns]
```

5 Scraping Mumbai data

```python
# OYO rooms base url
base_url = 'https://www.oyorooms.com/hotels-in-mumbai/'
headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
 ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
        "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

# Number of pages to scrape (you may need to adjust this based on the actual
 ↪number of pages)
num_pages = 6

# Context manager for creating a CSV file
with open('Mumbai_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
    writer = csv.writer(file)
    header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',
 ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',
 ↪'Amenities', 'Region' ]
    writer.writerow(header)
```

```
    # Loop through pages and scrape data
    for page_num in range(1, num_pages + 1):
        url = f'{base_url}?page={page_num}'
        page_data = scrape_page(url, headers)
        for data_row in page_data:
            data_row.append('Mumbai')
            writer.writerow(data_row)
```

[16]:
```
# Dataframe creation
df_mumbai = pd.read_csv('Mumbai_hotelData.csv')
df_mumbai
```

[16]:

	Hotel Name \
0	Super OYO Flagship Hotel Golden Nest
1	Capital O Hotel Geeta Palace
2	OYO Flagship Yatri Inn
3	Flagship Hotel Yatri Yadgar
4	OYO Flagship Hotel Elite Plaza
..	…
115	OYO Townhouse 781 Royal Palms Hotel
116	OYO Flagship Green Hills Resort
117	Super OYO Collection O Jk Regency
118	OYO Della Comforts
119	OYO Townhouse 808 Royal Palms Shared Serviced …

	Location	Original Price \
0	Boisar east, Mumbai	3964
1	Navi Mumbai, Mumbai	5070
2	Sector 26, Mumbai	4368
3	Vashi Navi Mumbai, Mumbai	4853
4	Navi Mumbai, Mumbai	5602
..	…	…
115	On main street, Near Aarey Colony, Goregaon Ea…	10414
116	Nalasopara, Mumbai	6188
117	Near Pump House Subway, Andheri East, Mumbai	10707
118	Ulhasnagar 5, Mumbai	4438
119	Goregaon East, Mumbai	10577

	Discounted Price	Discount	User Rating	Rating Summary \
0	936	72%	4.5	4.5 (51 Ratings)·Excellent
1	1113	74%	4.0	4.0 (390 Ratings)·Very Good
2	862	76%	4.3	4.3 (386 Ratings)·Very Good
3	961	76%	3.8	3.8 (506 Ratings)·Good
4	1392	71%	5.0	5.0 (138 Ratings)·Fabulous
..	…	…	…	…
115	2568	72%	3.8	3.8 (439 Ratings)·Good
116	1157	78%	NEW	NaN

11

```
117              2632      72%         4.1   4.1 (31 Ratings)·Very Good
118              1190      68%         3.1       3.1 (24 Ratings)·Fair
119              2609      72%         3.7       3.7 (389 Ratings)·Good

        Total Ratings                                          Tax  \
0       51 Ratings)  + 152 taxes & fees · per room per night
1      390 Ratings)  + 184 taxes & fees · per room per night
2      386 Ratings)  + 144 taxes & fees · per room per night
3      506 Ratings)  + 165 taxes & fees · per room per night
4      138 Ratings)  + 207 taxes & fees · per room per night
..              …                          …
115    439 Ratings)  + 348 taxes & fees · per room per night
116             /A  + 179 taxes & fees · per room per night
117     31 Ratings)  + 366 taxes & fees · per room per night
118     24 Ratings)  + 193 taxes & fees · per room per night
119    389 Ratings)  + 353 taxes & fees · per room per night


                                           Amenities   Region
0           Free Wifi  Daily housekeeping  AC  + 1 more  Mumbai
1      Ticket tour assistance  Reception  Free Wifi …  Mumbai
2      Free Wifi  Full Sized Bed  Attached Washroom …  Mumbai
3            Reception  Free Wifi  Caretaker  + 9 more  Mumbai
4              Elevator  Free Wifi  Geyser  + 5 more  Mumbai
..                                                …       …
115    Private entrance  Parking facility  Reception… Mumbai
116            Free Wifi  Geyser  Power backup  + 3 more  Mumbai
117    Parking facility  Private entrance  Reception… Mumbai
118        Doctor on call  Elevator  Reception  + 9 more  Mumbai
119    Reception  Power backup  24/7 check-in  + 35 …  Mumbai

[120 rows x 11 columns]
```

[ ]:

6 Scraping Gurgaon data

```python
[17]: # OYO rooms base url
base_url = 'https://www.oyorooms.com/hotels-in-gurgaon/'
headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
  ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
         "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}


# Number of pages to scrape (you may need to adjust this based on the actual␣
  ↪number of pages)
num_pages = 6
```

```python
# Context manager for creating a CSV file
with open('Gurgaon_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
    writer = csv.writer(file)
    header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',
    ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',
    ↪'Amenities', 'Region' ]
    writer.writerow(header)

    # Loop through pages and scrape data
    for page_num in range(1, num_pages + 1):
        url = f'{base_url}?page={page_num}'
        page_data = scrape_page(url, headers)
        for data_row in page_data:
            data_row.append('Gurgaon')
            writer.writerow(data_row)
```

```python
[18]: # Dataframe creation
df_gurgaon = pd.read_csv('Gurgaon_hotelData.csv')
df_gurgaon
```

```
[18]:                                        Hotel Name  \
0                              Super OYO Hotel Samrat
1       POP Garden View Hotel And Restaurant Near Omax…
2                             Collection O Hotel Dev Villa
3                                     OYO Starlight Inn
4       Super OYO Collection O 1064 Tipsyy Inn Suites 17
..                                               …
115                           OYO Flagship Jmd Residency
116                            Collection O The Habitat
117                          OYO Flagship Hotel Majestic
118                     Collection O Green Leaf Residency
119                              OYO Welcome Residency


                                        Location  Original Price  \
0                  Near Bus Stand, Sadar Bazar, Gurgaon            2522
1                        Natcom Institute, Gurgaon            2181
2                   Nearby Medanta Hospital, Gurgaon            2669
3       G-563 Sushant Lok 2 Near Hongkong bazar, Gurgaon            2426
4            Near GD Goenka University, Dhunela, Gurgaon            2708
..                                               …               …
115                              GURGAON , Gurgaon            2372
116             Near Medanta Hospital, Sector 38, Gurgaon            3276
117                   Nai Basti Sadar bazar, Gurgaon            2886
118       Near Artemis hospital, Mall fifty one, Gurgaon            3882
119         Near Maruti Suzuki, Noble Enclave, Gurgaon            4559


        Discounted Price Discount User Rating              Rating Summary  \
```

```
0          526    75%       4.2   4.2 (1952 Ratings)·Very Good
1          495    73%       4.3   4.3 (1432 Ratings)·Very Good
2          454    79%       4.1    4.1 (151 Ratings)·Very Good
3          525    74%       4.3    4.3 (266 Ratings)·Very Good
4          767    66%       4.3    4.3 (192 Ratings)·Very Good
..         …      …         …                         …
115        542    72%       3.2          3.2 (51 Ratings)·Fair
116        868    69%       4.0     4.0 (23 Ratings)·Very Good
117        583    75%       3.7          3.7 (21 Ratings)·Good
118        721    77%       3.8          3.8 (16 Ratings)·Good
119       1232    68%       4.5     4.5 (77 Ratings)·Excellent

        Total Ratings                                    Tax  \
0     1952 Ratings)  + 103 taxes & fees · per room per night
1     1432 Ratings)   + 89 taxes & fees · per room per night
2      151 Ratings)   + 95 taxes & fees · per room per night
3      266 Ratings)  + 103 taxes & fees · per room per night
4      192 Ratings)  + 132 taxes & fees · per room per night
..           …                        …
115     51 Ratings)  + 105 taxes & fees · per room per night
116     23 Ratings)  + 144 taxes & fees · per room per night
117     21 Ratings)  + 110 taxes & fees · per room per night
118     16 Ratings)  + 137 taxes & fees · per room per night
119     77 Ratings)  + 188 taxes & fees · per room per night


                                        Amenities    Region
0       Reception  Free Wifi  Power backup  + 16 more   Gurgaon
1               Elevator  Free Wifi  Geyser  + 9 more   Gurgaon
2           Free Wifi  Geyser  Power backup  + 4 more   Gurgaon
3           Free Wifi  Geyser  Power backup  + 3 more   Gurgaon
4     Parking facility  Free Wifi  Seating area  + …  Gurgaon
..                                            …         …
115         Free Wifi  Geyser  Power backup  + 4 more   Gurgaon
116       Living Room  Reception  Balcony  + 37 more   Gurgaon
117         Free Wifi  Geyser  Power backup  + 6 more   Gurgaon
118         Elevator  Reception  Free Wifi  + 8 more   Gurgaon
119       Free Wifi  Daily housekeeping  AC  + 1 more   Gurgaon

[120 rows x 11 columns]
```

7 Scraping Pune data

```python
[19]: # OYO rooms base url
      base_url = 'https://www.oyorooms.com/hotels-in-pune/'
      headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
       ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
```

```
              "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

# Number of pages to scrape (you may need to adjust this based on the actual␣
 ↪number of pages)
num_pages = 9

# Context manager for creating a CSV file
with open('Pune_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
    writer = csv.writer(file)
    header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',␣
 ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',␣
 ↪'Amenities', 'Region' ]
    writer.writerow(header)

    # Loop through pages and scrape data
    for page_num in range(1, num_pages + 1):
        url = f'{base_url}?page={page_num}'
        page_data = scrape_page(url, headers)
        for data_row in page_data:
            data_row.append('Pune')
            writer.writerow(data_row)
```

```
[20]: # Dataframe creation
      df_pune = pd.read_csv('Pune_hotelData.csv')
      df_pune
```

[20]:

	Hotel Name	Location \
0	Super OYO Flagship Hotel Saiinn	Hinjewadi Phase 1, Pune
1	820312 Hotel Royal Inn	pimpri chinchiwad, Pune
2	Super OYO Sai Avenue	Pune, Pune
3	Super OYO Flagship Flagship Hotel Pioneer	Mohinder Ashok Singh, Pune
4	Collection O White Castle	Maharashtra , Pune
..	…	…
175	OYO Collection O Hotel Gargi Deluxe	India 411030, Pune
176	Collection O Hotel Bliss Executive	Haveli, Pune
177	OYO Royal Lodge	Post Phulgaon, Pune
178	OYO Wakad Villa	Wakad, Pune
179	OYO Flagship Laxmi Chowk	Hinjewadi, Pune

	Original Price	Discounted Price	Discount	User Rating \
0	2835	673	71%	4.4
1	2268	544	71%	4.2
2	2914	693	72%	4.5
3	3382	819	72%	4.3
4	4853	846	79%	3.7
..	…	…	…	…
175	5822	1420	72%	3.6

```
176          4610          1117      72%        NEW
177          3119           745      71%        NEW
178          4368           739      79%        2.3
179          3547           860      72%        3.0


                   Rating Summary  Total Ratings  \
0     4.4 (1292 Ratings)·Very Good  1292 Ratings)
1       4.2 (45 Ratings)·Very Good    45 Ratings)
2      4.5 (448 Ratings)·Excellent   448 Ratings)
3     4.3 (1418 Ratings)·Very Good  1418 Ratings)
4            3.7 (46 Ratings)·Good    46 Ratings)
..                             …              …
175        3.6 (248 Ratings)·Good   248 Ratings)
176                          NaN            /A
177                          NaN            /A
178          2.3 (2 Ratings)·Fair     2 Ratings)
179         3.0 (33 Ratings)·Fair    33 Ratings)


                                       Tax  \
0     +  121 taxes & fees · per room per night
1     +  105 taxes & fees · per room per night
2     +  123 taxes & fees · per room per night
3     +  128 taxes & fees · per room per night
4     +  131 taxes & fees · per room per night
..                                        …
175   +  210 taxes & fees · per room per night
176   +  174 taxes & fees · per room per night
177   +  129 taxes & fees · per room per night
178   +  139 taxes & fees · per room per night
179   +  133 taxes & fees · per room per night


                                          Amenities Region
0        Reception  Caretaker  Power backup  + 22 more   Pune
1            Free Wifi  Geyser  Power backup  + 4 more   Pune
2               Elevator  Free Wifi  Geyser  + 5 more   Pune
3     Private entrance  Reception  Free Wifi  + 14 …   Pune
4                                        AC   TV   Pune
..                                          …      …
175        Reception  Free Wifi  Caretaker  + 15 more   Pune
176           Elevator  Free Wifi  Geyser  + 4 more   Pune
177          Free Wifi  Geyser  Power backup  + 3 more   Pune
178          Reception  Free Wifi  Caretaker  + 11 more   Pune
179   Private entrance  Parking facility  Reception…   Pune


[180 rows x 11 columns]
```

8 Scraping Noida data

```
[21]: # OYO rooms base url
      base_url = 'https://www.oyorooms.com/hotels-in-noida/'
      headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
       ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
                 "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

      # Number of pages to scrape (you may need to adjust this based on the actual␣
       ↪number of pages)
      num_pages = 11

      # Context manager for creating a CSV file
      with open('Noida_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
          writer = csv.writer(file)
          header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',␣
       ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',␣
       ↪'Amenities', 'Region' ]
          writer.writerow(header)

          # Loop through pages and scrape data
          for page_num in range(1, num_pages + 1):
              url = f'{base_url}?page={page_num}'
              page_data = scrape_page(url, headers)
              for data_row in page_data:
                  data_row.append('Noida')
                  writer.writerow(data_row)
```

```
[22]: # Dataframe creation
      df_noida = pd.read_csv('Noida_hotelData.csv')
      df_noida
```

```
[22]:                                            Hotel Name  \
      0                              OYO Hotel Green View
      1                   Super OYO Hotel Crosswinds Residency
      2                         OYO Flagship 9339 Terrene Empire
      3      Grand Empire Expressway Near Noida Sector 83 M…
      4                            Townhouse 1123 DSR Classic
      ..                                               …
      215                         Collection O Hotel Liv Inn
      216                     OYO Collection O Hotel Sg Inn
      217                                    OYO Red Velvet
      218                 Collection O Trihans Mantion Hotel
      219                             OYO Vishal Residency

                                            Location  Original Price  \
      0       Near Vansthali Public School, Sector 56, Noida            3640
```

```
1      Near Sapphire International School, Sector 71,…          5654
2                   Near Dainik Jagran, Sector 63, Noida        2184
3                    Near Supertech Emerald Court, Noida        2442
4      Near Mother Dairy, Sec 12  Plot No-H 101, Noida          2565
..                                                         …          …
215                      NEAR TIGRI GOAL CHAKKAR, Noida         5422
216    Plot number – 24 A Knowledge park 3 Greater no…        10794
217                            222 sector 63A, Noida           5932
218                                          , Noida          10794
219                    A-6 sector 10 red light, Noida          3974

     Discounted Price Discount User Rating          Rating Summary  \
0                 412      86%       4.3   4.3 (16 Ratings)·Very Good
1                1537      68%       4.4   4.4 (28 Ratings)·Very Good
2                 509      72%       4.1   4.1 (24 Ratings)·Very Good
3                 653      68%       3.5        3.5 (89 Ratings)·Good
4                 758      64%       4.2  4.2 (139 Ratings)·Very Good
..                  …        …         …                           …
215              1345      71%       NEW                          NaN
216              2966      68%       4.0   4.0 (12 Ratings)·Very Good
217              1299      74%       3.4         3.4 (6 Ratings)·Fair
218              2662      72%       3.8        3.8 (20 Ratings)·Good
219               958      71%       NEW                          NaN

     Total Ratings                                        Tax  \
0      16 Ratings)   + 89 taxes & fees · per room per night
1      28 Ratings)  + 224 taxes & fees · per room per night
2      24 Ratings)  + 101 taxes & fees · per room per night
3      89 Ratings)  + 108 taxes & fees · per room per night
4     139 Ratings)  + 141 taxes & fees · per room per night
..              …                                         …
215            /A  + 201 taxes & fees · per room per night
216    12 Ratings)  + 396 taxes & fees · per room per night
217     6 Ratings)  + 196 taxes & fees · per room per night
218    20 Ratings)  + 360 taxes & fees · per room per night
219            /A  + 155 taxes & fees · per room per night

                                    Amenities Region
0        Parking facility  Free Wifi   Geyser  + 9 more   Noida
1        Parking facility  Free Wifi   Geyser  + 9 more   Noida
2      Parking facility  Reception  Free Wifi  + 12 …   Noida
3       Parking facility  Elevator   Free Wifi  + 8 more   Noida
4      Free Wifi  Power backup  Card payment  + 10 more   Noida
..                                              …        …
215             Elevator  Free Wifi   Geyser  + 5 more   Noida
216             Elevator  Free Wifi   Geyser  + 5 more   Noida
217             Elevator  Free Wifi   Geyser  + 5 more   Noida
```

```
218        Free Wifi  Geyser  Power backup  + 4 more  Noida
219            Elevator  Free Wifi  Geyser  + 3 more  Noida

[220 rows x 11 columns]
```

9   Scraping Ahmedabad data

```python
[23]: # OYO rooms base url
      base_url = 'https://www.oyorooms.com/hotels-in-ahmedabad/'
      headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
        ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
                  "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

      # Number of pages to scrape (you may need to adjust this based on the actual␣
        ↪number of pages)
      num_pages = 3

      # Context manager for creating a CSV file
      with open('Ahmedabad_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
          writer = csv.writer(file)
          header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',␣
        ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',␣
        ↪'Amenities','Region' ]
          writer.writerow(header)

          # Loop through pages and scrape data
          for page_num in range(1, num_pages + 1):
              url = f'{base_url}?page={page_num}'
              page_data = scrape_page(url, headers)
              for data_row in page_data:
                  data_row.append('Ahmedabad')
                  writer.writerow(data_row)
```

```python
[24]: # Dataframe creation
      df_ahmedabad = pd.read_csv('Ahmedabad_hotelData.csv')
      df_ahmedabad
```

```
[24]:                              Hotel Name  \
      0              Townhouse 165 Netaji Road
      1         Collection O Hotel Green Park
      2           OYO Flagship Hotel The Heaven
      3     Super OYO Townhouse 858 Hotel N Y
      4                  Collection O Greenwood
      5         Collection O Hotel Konark Inn
      6          Collection O Hotel Royal Inn
      7                   OYO Hotel Westin Park
```

```
8                            OYO Hotel bhanu Villa
9                     OYO Flagship Hotel Meet Palace
10                       OYO Hotel Haari Jayati
11                        Collection O Hotel Santro
12                    Collection O Hotel Crystal Inn
13                            OYO HOTEL KING VIEW
14                     Collection O Hotel Govindam
15                           Flagship Hotel Swell
16                             OYO Vanya Palace
17                        SPOT ON Hotel Sleep Inn
18                              Hotel Green Land
19               Collection O 1127 Hotel Metro INN
20                    Collection O Hotel Relax Inn
21                    Collection O Hotel Raj Ratna
22                   OYO Hotel Apsara Guest House
23                             OYO Hotel Surya
24                   Collection O Hotel Park View
25                       OYO Home Hotel Skyland
26             OYO Flagship 22477 Hotel Blue Moon
27    OYO SilverKey C3 Celebration City Centre
28         Super OYO Townhouse 190 Rajyash Rise
29                        OYO Flagship Hotel A1
30            Capital O Hotel Kalash Residency
31           Collection O Hotel Green Valley
32                     Flagship Hotel Bharosa
33                          OYO HOTEL AMBICA
34                    Flagship Hotel Navjivan
35              Collection O Hotel Raj Palace
36              OYO Flagship Hotel Reet Villa
37                    OYO Vibrant Residency
38                 Flagship Hotel Rudra Palace
39                  Collection O Hotel Paris
40                    Collection O Hotel KP
41             Super OYO Hotel Namaste inn
42                       OYO Hotel NEW View
43        Townhouse 812 Hotel The Grand White
44                 OYO Hotel Kanchan Palace
45          OYO Flagship Hotel Himalaya Inn
46            Collection O Hotel Alpha One
47             Collection O Hotel Paradise
48                    Flagship Hotel Bhavy
49            Capital O Hotel Maple View
50          Collection O Hotel Geetanjali
51             Super OYO Hotel Vishala Inn
52                  Collection O Greenwood
53                        OYO Hotel Liberty
54                        OYO Hotel Jasraj
```

```
55                            OYO Flagship Hotel Raj
56                    3 BY OYO Nami Residency Ahmedabad
57                           Collection O Hotel Kyra
58                         OYO Flagship Hotel Amber
59                           OYO Hotel R S Palace


                                          Location  Original Price  \
0             Nr Paldi cross Road, Paldi, Ahmedabad            4830
1                            Behrampura, Ahmedabad            3640
2                Ahmedabad. Nana chiloda, Ahmedabad            3093
3                                  Gota, Ahmedabad            4414
4      Near Income Tax Circle, Ashram Road, Ahmedabad          7525
5                                      , Ahmedabad            2540
6                            Behrampura, Ahmedabad            4351
7                                  Gota, Ahmedabad            3640
8                         Navrangpura, Ahmedabad            3237
9                      Vastrapur Road, Ahmedabad            3276
10              Lala Lajpat Rai Marg, Ahmedabad            3094
11     Telephone Exchange Road, Makarpura, Ahmedabad           3113
12              Opposite Cosmos Bank, Ahmedabad            3134
13                 380009Inside city, Ahmedabad            3276
14              Sola Rd Ghatlodiya, Ahmedabad            3276
15  4th floor, Smitdhara complex center, Opp. Hero…           3225
16                              Odhav, Ahmedabad            2784
17              Ghodasar Char Rasta, Ahmedabad            3397
18 Near Shivranjani rasta, Akshar Complex, Ahmedabad          3398
19   Near Shell Petrol Pump, Jivaraj Park, Ahmedabad          3818
20                                     , Ahmedabad            3591
21                     Ashram Road, Ahmedabad            3189
22                        Kathwada, Ahmedabad            2140
23                         Kalupur, Ahmedabad            5445
24                                     , Ahmedabad            4475
25  5th Floor, Bhavya Shopping Complex, Opp- Govt …           4395
26       Near Railway Station, Bapu Nagar, Ahmedabad          4177
27            Near Bopal Police Station, Ahmedabad            6188
28                      South Vasna, Ahmedabad            6817
29  Near Swastik Cross road, Navrangpura, Ahmedabad           3082
30  Centrally Located, Near Mithakali Six Road, Vi…           3918
31                      Ahmedabad, Ahmedabad            3599
32  2nd Floor, Jahnvi Arcade, Odhav Cross road, Od…           4125
33                   Drive In Road, Ahmedabad            3237
34   Near Shraddha Complex, Govind Vadi, Ahmedabad            3640
35                              Sola, Ahmedabad            3882
36                       Navrangpura, Ahmedabad            4651
37   Near Vaibhav Laxmi Temple, Thaltej, Ahmedabad            4225
38                      B S G Highway, Ahmedabad            3455
39                      S.G.Highway, Ahmedabad            3899
```

```
40                            Navrangpura, Ahmedabad            2645
41  sahjanad complex shrinath travels shahibaug , …    3738
42  402 4th floorsigma ligasi Vikram Sarabhai marg…    3887
43                               India, Ahmedabad       4352
44      Near Ahmedabad Railway Station,  Ashram Road    2195
45                             Memnagar, Ahmedabad      3297
46                    Ring Road Circle, Ahmedabad       5602
47      Near Chaman Nagar Society, Odhav, Ahmedabad     3709
48                            Ambawadi, Ahmedabad       3577
49                   Ahmedabad District, Ahmedabad      2502
50     Near Odhav Chowkdi, Nilkanth Avenue, Ahmedabad   5257
51  nr torrent power station Thakkarbapanagar, Ahm…    3812
52    Near Income Tax Circle, Ashram Road, Ahmedabad    7525
53                  Mithakhali Six Road, Ahmedabad      3855
54  above goldy pan opp.torrent power nikol naroda…    4392
55        Near New Cloth market.Sarangpur , Ahmedabad   5359
56         Near Vs Hospital, V S Hospital, Ahmedabad    6000
57  Near Indira Bridge Circle, Airport-Gandhinagar…    6769
58                       Rakhial Road, Ahmedabad        4019
59           Navrangpura Ahmedabad, Ahmedabad           3912

    Discounted Price Discount  User Rating           Rating Summary  \
0                921     77%          3.9       3.9 (602 Ratings)·Good
1                772     75%          4.0  4.0 (396 Ratings)·Very Good
2                640     75%          4.4   4.4 (18 Ratings)·Very Good
3                966     74%          4.0  4.0 (586 Ratings)·Very Good
4               1846     72%          3.6        3.6 (73 Ratings)·Good
5                544     74%          4.1   4.1 (31 Ratings)·Very Good
6               1052     72%          3.5        3.5 (80 Ratings)·Good
7                715     76%          4.0   4.0 (28 Ratings)·Very Good
8                773     72%          4.8  4.8 (58 Ratings)·Excellent
9                773     72%          4.8  4.8 (12 Ratings)·Excellent
10               665     74%          4.4   4.4 (48 Ratings)·Very Good
11               656     75%          5.0   5.0 (16 Ratings)·Fabulous
12               748     71%          3.7        3.7 (54 Ratings)·Good
13               745     73%          4.6   4.6 (4 Ratings)·Excellent
14               553     80%          4.0    4.0 (7 Ratings)·Very Good
15               677     75%          4.0   4.0 (65 Ratings)·Very Good
16               660     72%          3.9         3.9 (5 Ratings)·Good
17               752     74%          3.8        3.8 (24 Ratings)·Good
18               787     71%          3.8       3.8 (290 Ratings)·Good
19               918     72%          3.7       3.7 (207 Ratings)·Good
20               873     71%          4.4    4.4 (5 Ratings)·Very Good
21               762     72%          3.9        3.9 (57 Ratings)·Good
22               499     72%          3.4        3.4 (54 Ratings)·Fair
23              1162     74%          4.1  4.1 (158 Ratings)·Very Good
24               971     74%          3.9        3.9 (96 Ratings)·Good
```

25	1063	71%	4.6	4.6 (230 Ratings)·Excellent
26	913	74%	3.8	3.8 (100 Ratings)·Good
27	1124	79%	4.2	4.2 (358 Ratings)·Very Good
28	1660	72%	4.1	4.1 (366 Ratings)·Very Good
29	735	72%	3.4	3.4 (72 Ratings)·Fair
30	881	73%	3.9	3.9 (86 Ratings)·Good
31	965	68%	4.0	4.0 (13 Ratings)·Very Good
32	758	78%	3.5	3.5 (7 Ratings)·Good
33	773	72%	4.2	4.2 (5 Ratings)·Very Good
34	805	74%	3.7	3.7 (64 Ratings)·Good
35	809	75%	3.9	3.9 (21 Ratings)·Good
36	1011	74%	4.4	4.4 (39 Ratings)·Very Good
37	1130	68%	3.7	3.7 (183 Ratings)·Good
38	715	74%	3.2	3.2 (97 Ratings)·Fair
39	939	71%	5.0	5.0 (5 Ratings)·Fabulous
40	626	71%	2.7	2.7 (16 Ratings)·Fair
41	901	71%	3.9	3.9 (27 Ratings)·Good
42	936	72%	4.1	4.1 (12 Ratings)·Very Good
43	1026	71%	4.1	4.1 (325 Ratings)·Very Good
44	696	62%	3.2	3.2 (392 Ratings)·Fair
45	788	72%	3.3	3.3 (63 Ratings)·Fair
46	1522	68%	4.1	4.1 (172 Ratings)·Very Good
47	892	71%	3.4	3.4 (16 Ratings)·Fair
48	778	74%	3.8	3.8 (39 Ratings)·Good
49	599	71%	3.2	3.2 (57 Ratings)·Fair
50	1147	74%	3.3	3.3 (24 Ratings)·Fair
51	1025	68%	4.3	4.3 (27 Ratings)·Very Good
52	1846	72%	3.6	3.6 (73 Ratings)·Good
53	1046	68%	3.7	3.7 (146 Ratings)·Good
54	499	86%	2.1	2.1 (13 Ratings)·Fair
55	1171	74%	3.3	3.3 (104 Ratings)·Fair
56	2857	45%	4.6	4.6 (517 Ratings)·Excellent
57	1071	81%	3.5	3.5 (28 Ratings)·Good
58	999	71%	4.4	4.4 (4 Ratings)·Very Good
59	1026	68%	3.5	3.5 (68 Ratings)·Good

	Total Ratings	Tax \
0	602 Ratings)	+ 181 taxes & fees · per room per night
1	396 Ratings)	+ 133 taxes & fees · per room per night
2	18 Ratings)	+ 117 taxes & fees · per room per night
3	586 Ratings)	+ 156 taxes & fees · per room per night
4	73 Ratings)	+ 261 taxes & fees · per room per night
5	31 Ratings)	+ 105 taxes & fees · per room per night
6	80 Ratings)	+ 166 taxes & fees · per room per night
7	28 Ratings)	+ 126 taxes & fees · per room per night
8	58 Ratings)	+ 133 taxes & fees · per room per night
9	12 Ratings)	+ 133 taxes & fees · per room per night

```
10    48 Ratings)   + 120 taxes & fees · per room per night
11    16 Ratings)   + 119 taxes & fees · per room per night
12    54 Ratings)   + 130 taxes & fees · per room per night
13     4 Ratings)   + 129 taxes & fees · per room per night
14     7 Ratings)    + 96 taxes & fees · per room per night
15    65 Ratings)   + 121 taxes & fees · per room per night
16     5 Ratings)   + 109 taxes & fees · per room per night
17    24 Ratings)   + 130 taxes & fees · per room per night
18   290 Ratings)   + 165 taxes & fees · per room per night
19   207 Ratings)   + 150 taxes & fees · per room per night
20     5 Ratings)   + 145 taxes & fees · per room per night
21    57 Ratings)   + 131 taxes & fees · per room per night
22    54 Ratings)   + 100 taxes & fees · per room per night
23   158 Ratings)   + 210 taxes & fees · per room per night
24    96 Ratings)   + 157 taxes & fees · per room per night
25   230 Ratings)   + 168 taxes & fees · per room per night
26   100 Ratings)   + 140 taxes & fees · per room per night
27   358 Ratings)   + 175 taxes & fees · per room per night
28   366 Ratings)   + 249 taxes & fees · per room per night
29    72 Ratings)   + 128 taxes & fees · per room per night
30    86 Ratings)   + 156 taxes & fees · per room per night
31    13 Ratings)   + 156 taxes & fees · per room per night
32     7 Ratings)   + 121 taxes & fees · per room per night
33     5 Ratings)   + 133 taxes & fees · per room per night
34    64 Ratings)   + 127 taxes & fees · per room per night
35    21 Ratings)   + 127 taxes & fees · per room per night
36    39 Ratings)   + 161 taxes & fees · per room per night
37   183 Ratings)   + 186 taxes & fees · per room per night
38    97 Ratings)   + 156 taxes & fees · per room per night
39     5 Ratings)   + 153 taxes & fees · per room per night
40    16 Ratings)   + 115 taxes & fees · per room per night
41    27 Ratings)   + 148 taxes & fees · per room per night
42    12 Ratings)   + 152 taxes & fees · per room per night
43   325 Ratings)   + 193 taxes & fees · per room per night
44   392 Ratings)   + 124 taxes & fees · per room per night
45    63 Ratings)   + 135 taxes & fees · per room per night
46   172 Ratings)   + 223 taxes & fees · per room per night
47    16 Ratings)   + 147 taxes & fees · per room per night
48    39 Ratings)   + 123 taxes & fees · per room per night
49    57 Ratings)   + 102 taxes & fees · per room per night
50    24 Ratings)   + 178 taxes & fees · per room per night
51    27 Ratings)   + 163 taxes & fees · per room per night
52    73 Ratings)   + 261 taxes & fees · per room per night
53   146 Ratings)   + 155 taxes & fees · per room per night
54    13 Ratings)   + 100 taxes & fees · per room per night
55   104 Ratings)   + 180 taxes & fees · per room per night
56   517 Ratings)   + 443 taxes & fees · per room per night
```

```
57    28 Ratings)  + 169 taxes & fees · per room per night
58     4 Ratings)  + 150 taxes & fees · per room per night
59    68 Ratings)  + 193 taxes & fees · per room per night


                                          Amenities      Region
0   Private entrance  Parking facility  Reception…  Ahmedabad
1             Free Wifi  Geyser  Power backup  + 3 more  Ahmedabad
2          Free Wifi  Daily housekeeping  AC  + 1 more  Ahmedabad
3    Doctor on call  Reception  Security  + 32 more  Ahmedabad
4   Private entrance  Parking facility  Reception…  Ahmedabad
5            Elevator  Free Wifi  Geyser  + 5 more  Ahmedabad
6            Elevator  Free Wifi  Geyser  + 5 more  Ahmedabad
7         Free Wifi  Geyser  Power backup  + 3 more  Ahmedabad
8            Elevator  Free Wifi  Geyser  + 4 more  Ahmedabad
9            Elevator  Free Wifi  Geyser  + 4 more  Ahmedabad
10           Elevator  Free Wifi  Geyser  + 4 more  Ahmedabad
11     Reception  Free Wifi  Power backup  + 10 more  Ahmedabad
12      Reception  Power backup  Security  + 24 more  Ahmedabad
13           Elevator  Free Wifi  Geyser  + 5 more  Ahmedabad
14                                          AC  TV    Ahmedabad
15           Elevator  Free Wifi  Geyser  + 8 more  Ahmedabad
16  Parking facility  Reception  Free Wifi  + 12 …  Ahmedabad
17           Elevator  Free Wifi  Geyser  + 4 more  Ahmedabad
18    Free Wifi  Geyser  Daily housekeeping  + 4 more  Ahmedabad
19  Parking facility  Free Wifi  Power backup  + …  Ahmedabad
20        Free Wifi  Geyser  Power backup  + 2 more  Ahmedabad
21           Elevator  Free Wifi  Geyser  + 4 more  Ahmedabad
22     Reception  Free Wifi  CCTV cameras  + 3 more  Ahmedabad
23       Free Wifi  Daily housekeeping  AC  + 8 more  Ahmedabad
24           Elevator  Free Wifi  Geyser  + 5 more  Ahmedabad
25                                          AC  TV    Ahmedabad
26  Parking facility  Reception  Free Wifi  + 15 …  Ahmedabad
27          Reception  Free Wifi  Geyser  + 9 more  Ahmedabad
28  Parking facility  Reception  Free Wifi  + 20 …  Ahmedabad
29  Private entrance  Parking facility  Reception…  Ahmedabad
30           Elevator  Free Wifi  Geyser  + 6 more  Ahmedabad
31           Elevator  Free Wifi  Geyser  + 3 more  Ahmedabad
32  Parking facility  Reception  Free Wifi  + 18 …  Ahmedabad
33           Elevator  Free Wifi  Geyser  + 4 more  Ahmedabad
34  Doctor on call  Parking facility  Reception  …  Ahmedabad
35                                          AC  TV    Ahmedabad
36     Free Wifi  Daily housekeeping  AC  + 1 more  Ahmedabad
37          Free Wifi  Card payment  TV  + 16 more  Ahmedabad
38  Reception  Free Wifi  Bedside Table / Desk  +…  Ahmedabad
39           Elevator  Free Wifi  Geyser  + 4 more  Ahmedabad
40           Elevator  Free Wifi  Geyser  + 4 more  Ahmedabad
41           Elevator  Free Wifi  Geyser  + 5 more  Ahmedabad
```

```
42            Free Wifi  Geyser  Power backup  + 2 more   Ahmedabad
43   Reception  Ticket tour assistance  Public was…  Ahmedabad
44               Twin Single Bed  AC  TV  + 26 more   Ahmedabad
45         Free Wifi  Geyser  Power backup  + 4 more   Ahmedabad
46            Elevator  Free Wifi  Geyser  + 5 more   Ahmedabad
47   Parking facility  Reception  Free Wifi  + 17 …   Ahmedabad
48   Reception  Ticket tour assistance  Power back…  Ahmedabad
49   Parking facility  Reception  Free Wifi  + 16 …   Ahmedabad
50        Free Wifi  Daily housekeeping  AC  + 1 more   Ahmedabad
51            Elevator  Free Wifi  Geyser  + 4 more   Ahmedabad
52   Private entrance  Parking facility  Reception…   Ahmedabad
53         Free Wifi  AC  Daily housekeeping  + 5 more   Ahmedabad
54          Free Wifi  Geyser  Power backup  + 3 more   Ahmedabad
55            Elevator  Free Wifi  Geyser  + 5 more   Ahmedabad
56      Reception  Bath Tub  Power backup  + 68 more   Ahmedabad
57   Parking facility  Reception  Free Wifi  + 15 …   Ahmedabad
58                                     AC  TV    Ahmedabad
59   Cutlery/crockery  Free Wifi  Daily housekeepi…  Ahmedabad
```

10 Scraping Jaipur data

```python
[25]:  # OYO rooms base url
       base_url = 'https://www.oyorooms.com/hotels-in-jaipur/'
       headers = {"User-Agent": "Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/
        ↪537.36 (KHTML, like Gecko) Chrome/108.0.0.0 Safari/537.36",
                  "X-Amzn-Trace-Id": "Root=1-63956ce4-077f2bd27750e28d3db65397"}

       # Number of pages to scrape (you may need to adjust this based on the actual␣
        ↪number of pages)
       num_pages = 11

       # Context manager for creating a CSV file
       with open('Jaipur_hotelData.csv', 'w', newline='', encoding='UTF8') as file:
           writer = csv.writer(file)
           header = ['Hotel Name', 'Location', 'Original Price', 'Discounted Price',␣
        ↪'Discount', 'User Rating', 'Rating Summary', 'Total Ratings', 'Tax',␣
        ↪'Amenities', 'Region' ]
           writer.writerow(header)

           # Loop through pages and scrape data
           for page_num in range(1, num_pages + 1):
               url = f'{base_url}?page={page_num}'
               page_data = scrape_page(url, headers)
               for data_row in page_data:
                   data_row.append('Jaipur')
                   writer.writerow(data_row)
```

```
[26]:  # Dataframe creation
       df_jaipur = pd.read_csv('Jaipur_hotelData.csv')
       df_jaipur
```

```
[26]:                                          Hotel Name  \
       0                        OYO Flagship Ahinsha Cicle
       1                        OYO Townhouse 632 Pisto Inn
       2                     Collection O Hotel Salasar Inn
       3                    Collection O Hotel Sanjay Palace
       4                    Collection O Hotel Krishana stays
       ..                                              …
       215                                   OYO Hotel Kenin
       216                             OYO Hotel Shyam Palace
       217                         OYO Flagship Hotel Ganesham
       218                                       OYO KK Hotel
       219  Super OYO Palette - Pentagon Boutique Hotel


                                            Location  Original Price  \
       0                              C Scheme, Jaipur            3251
       1                            Jagatpura, Jaipur            3619
       2              J P Colony Imli Wala Phatak, Jaipur         3214
       3                  Near Polo Victory Cinema, Jaipur        2839
       4                  Opp Polo Victory Cinema, Jaipur         3564
       ..                                         …              …
       215                            Sector-3, Jaipur           2184
       216                               Jaipur, Jaipur           2909
       217         Near NWR Headquarter, Jagatpura, Jaipur        3067
       218  Near Narayana hospital roadsector 10, Jaipur       2881
       219                      Vaishali Nagar, Jaipur          3628


            Discounted Price Discount User Rating            Rating Summary  \
       0                 768      72%        4.1  4.1 (1853 Ratings)·Very Good
       1                 874      71%        4.0   4.0 (434 Ratings)·Very Good
       2                 687      74%        4.4   4.4 (356 Ratings)·Very Good
       3                 674      72%        4.7   4.7 (186 Ratings)·Excellent
       4                 766      74%        4.5   4.5 (259 Ratings)·Excellent
       ..                 …        …          …                           …
       215               509      72%        NEW                        NaN
       216               641      73%        NEW                        NaN
       217               826      68%        3.5       3.5 (4 Ratings)·Good
       218               685      71%        2.0       2.0 (1 Ratings)·Fair
       219              1665      47%        4.0   4.0 (33 Ratings)·Very Good


            Total Ratings                                      Tax  \
       0    1853 Ratings)  + 142 taxes & fees · per room per night
       1     434 Ratings)  + 165 taxes & fees · per room per night
       2     356 Ratings)  + 123 taxes & fees · per room per night
```

```
3      186 Ratings)  + 121 taxes & fees · per room per night
4      259 Ratings)  + 132 taxes & fees · per room per night
..              …                       …
215            /A  + 101 taxes & fees · per room per night
216            /A  + 117 taxes & fees · per room per night
217      4 Ratings)  + 129 taxes & fees · per room per night
218      1 Ratings)  + 122 taxes & fees · per room per night
219     33 Ratings)  + 240 taxes & fees · per room per night

                                         Amenities  Region
0     Parking facility  Reception  Free Wifi  + 16 …  Jaipur
1     Doctor on call  Reception  Public washroom +…  Jaipur
2                 Elevator  Free Wifi  Geyser  + 5 more  Jaipur
3           Reception  Free Wifi  Caretaker  + 12 more  Jaipur
4                 Elevator  Free Wifi  Geyser  + 5 more  Jaipur
..                                            …        …
215        Free Wifi  Geyser  Power backup  + 3 more  Jaipur
216          Elevator  Free Wifi  Geyser  + 4 more  Jaipur
217                                         AC  TV  Jaipur
218          Elevator  Free Wifi  Geyser  + 4 more  Jaipur
219             Free Wifi  Geyser  AC  + 5 more  Jaipur

[220 rows x 11 columns]
```

11   Combining all the data frames

```python
import os

# Concatenate them into a single DataFrame
combined_df = pd.concat([df_chennai, df_bangalore, df_hyderabad, df_delhi,
  df_mumbai, df_gurgaon, df_pune, df_noida, df_ahmedabad, df_jaipur],
  ignore_index=True)

# Save the combined DataFrame to a CSV file
combined_df.to_csv('combined_data.csv', index=False, mode='a', header=not os.
  path.exists('combined_data.csv'))


combined_df
```

```
[27]:                          Hotel Name  \
     0              Flagship Tambaram
     1         Collection O Tranquil Nest
     2        OYO Flagship Elite Residency
     3      Collection O The Oaks Residency
     4        Townhouse 1248 Majestic Inn
```

```
...                                             ...
1955                           OYO Hotel Kenin
1956                     OYO Hotel Shyam Palace
1957                 OYO Flagship Hotel Ganesham
1958                              OYO KK Hotel
1959  Super OYO Palette - Pentagon Boutique Hotel


                                           Location  Original Price  \
0     Near Tambaram Railwaystation, Tambaram, Chennai            2833
1                              Pallikaranai, Chennai            2474
2                                 Rajan Nagar, Chennai           2333
3                Dental Collage,Kamakotti Nagar,Pallikaranai       3282
4                      Viveks Showroom Backside, Chennai         5258
...                                             ...             ...
1955                                  Sector-3, Jaipur          2184
1956                                    Jaipur, Jaipur          2909
1957             Near NWR Headquarter, Jagatpura, Jaipur         3067
1958      Near Narayana hospital roadsector 10, Jaipur         2881
1959                             Vaishali Nagar, Jaipur         3628


      Discounted Price Discount User Rating            Rating Summary  \
0                  591      75%         4.2   4.2 (1015 Ratings)·Very Good
1                  499      75%         3.3        3.3 (10 Ratings)·Fair
2                  479      75%         4.6    4.6 (198 Ratings)·Excellent
3                  421      84%         4.1    4.1 (776 Ratings)·Very Good
4                 1279      72%         4.7    4.7 (925 Ratings)·Excellent
...                ...      ...         ...                         ...
1955               509      72%         NEW                         NaN
1956               641      73%         NEW                         NaN
1957               826      68%         3.5        3.5 (4 Ratings)·Good
1958               685      71%         2.0        2.0 (1 Ratings)·Fair
1959              1665      47%         4.0    4.0 (33 Ratings)·Very Good


      Total Ratings                                    Tax  \
0     1015 Ratings)   + 111 taxes & fees · per room per night
1       10 Ratings)   + 100 taxes & fees · per room per night
2      198 Ratings)    + 97 taxes & fees · per room per night
3      776 Ratings)    + 90 taxes & fees · per room per night
4      925 Ratings)   + 193 taxes & fees · per room per night
...             ...                                     ...
1955           /A   + 101 taxes & fees · per room per night
1956           /A   + 117 taxes & fees · per room per night
1957      4 Ratings)   + 129 taxes & fees · per room per night
1958      1 Ratings)   + 122 taxes & fees · per room per night
1959     33 Ratings)   + 240 taxes & fees · per room per night


                                        Amenities   Region
```

```
0          Free Wifi   Geyser   Daily housekeeping    + 2 more   Chennai
1     Parking facility   Reception   Free Wifi    + 15 …   Chennai
2              Elevator   Free Wifi   Geyser    + 5 more   Chennai
3     Doctor on call   Reception   Ticket tour assist…   Chennai
4              Elevator   Free Wifi   Geyser    + 5 more   Chennai
…                                        …          …
1955          Free Wifi   Geyser   Power backup    + 3 more    Jaipur
1956              Elevator   Free Wifi   Geyser    + 4 more    Jaipur
1957                                        AC   TV    Jaipur
1958              Elevator   Free Wifi   Geyser    + 4 more    Jaipur
1959                  Free Wifi   Geyser   AC    + 5 more    Jaipur

[1960 rows x 11 columns]
```

[28]:
```python
unique_rows_count = combined_df.drop_duplicates().shape[0]
unique_rows_count
```

[28]: 1830

[31]:
```python
# Save the DataFrame to a CSV file
combined_df.to_csv('C:/Users/Vasu/Documents/web scraping/new/
 ↪combined_weekday_final1_oyo.csv', index=False)
```

[ ]: