

\$1.6 trillion

Economic output generated from global travel bookings (2017)

24.3%

Bookings via 3rd party services (2018)

>4%

CAGR growth from 2009 to 2017



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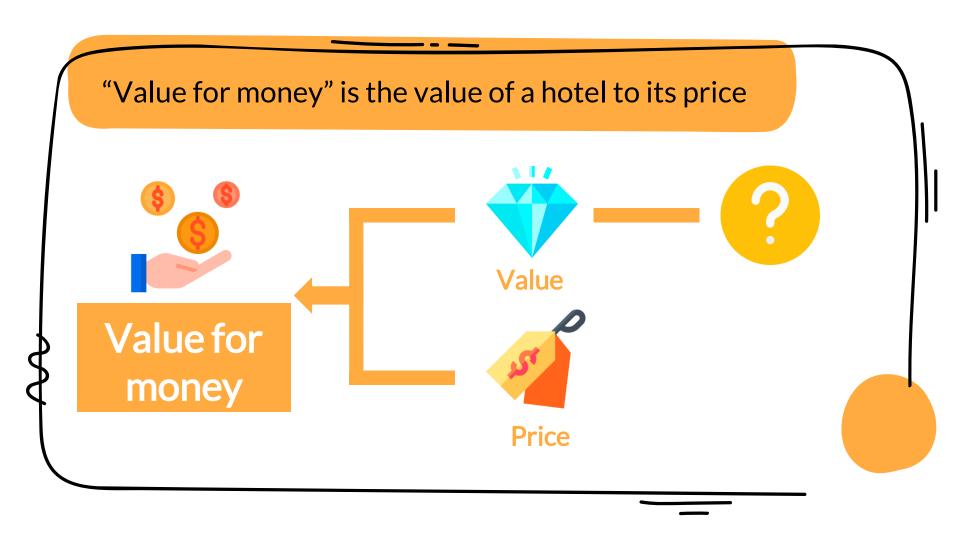
Technology can bring the travel bookings industry to greater heights

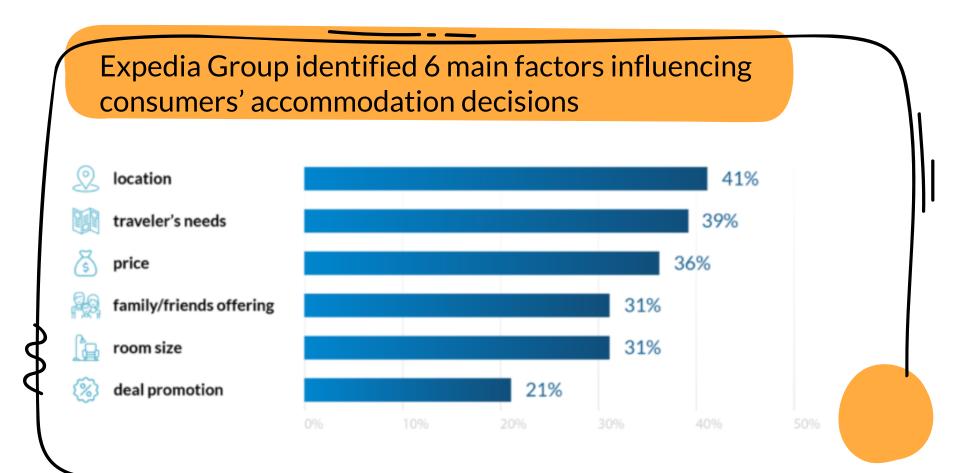
25%

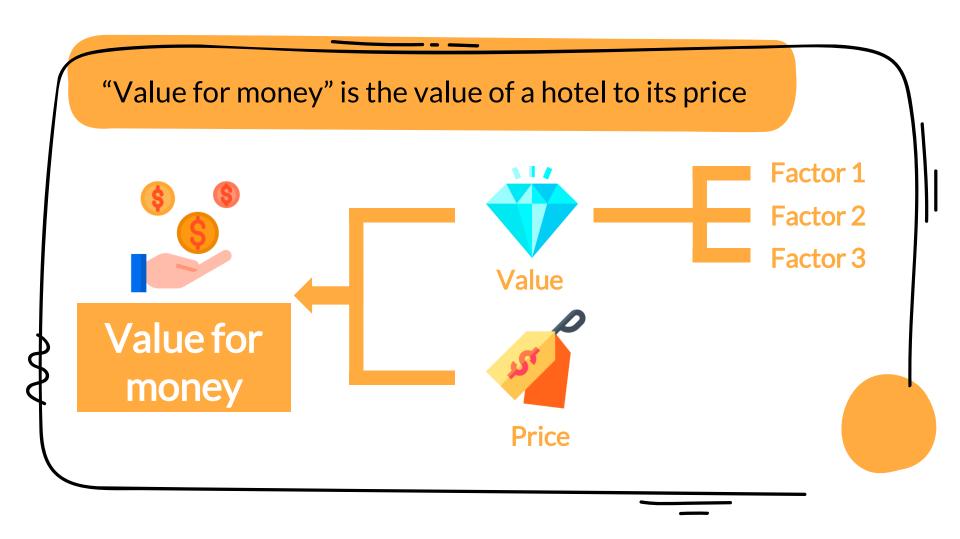
1/4 of all Hospitality and leisure CEOs think technology will significantly impact the way they operate in the next five years



81% of travellers want greater digital customer experience





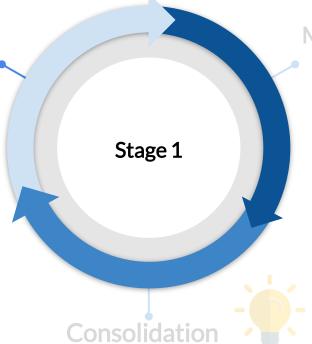


## We propose a hotel recommendation system comprising 3 key stages



#### Web Scraping

- Scraping for key hotel variables
- 2 separate phases



#### Modelling

- Weightage-based
- Recommends Top 5
   value-for-money

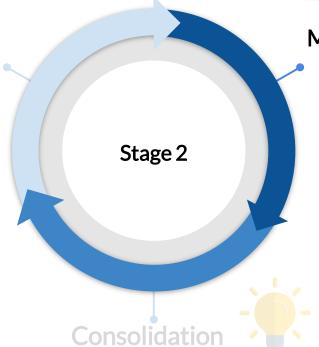


## We propose a hotel recommendation system comprising 3 key stages



#### Web Scraping

- Scraping for key hotel variables
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#### Modelling

- Weightage-based
- Recommends Top 5
   value-for-money
   hotels



Additional insights useful for the consumer

## We propose a hotel recommendation system comprising 3 key stages



#### Web Scraping

- Scraping for key hotel variables
- 2 separate phases

#### Modelling

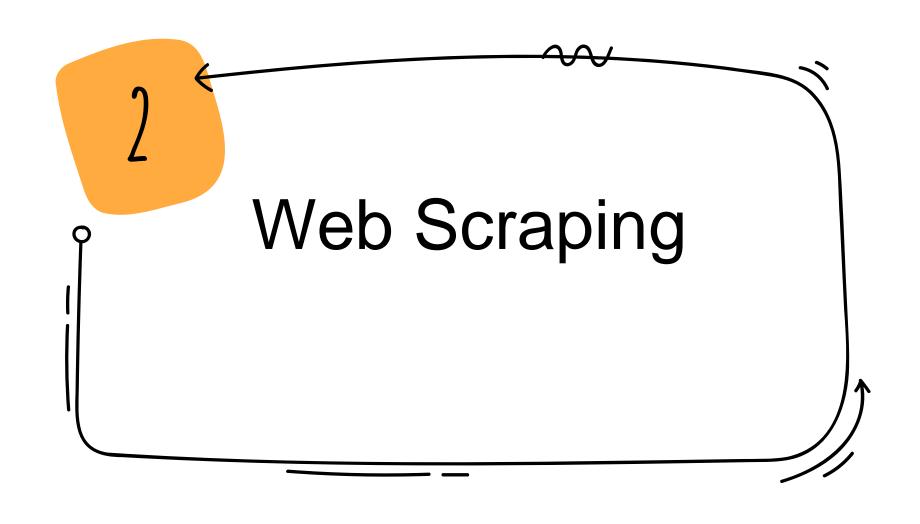
- Weightage-based
- Recommends Top : value-for-money







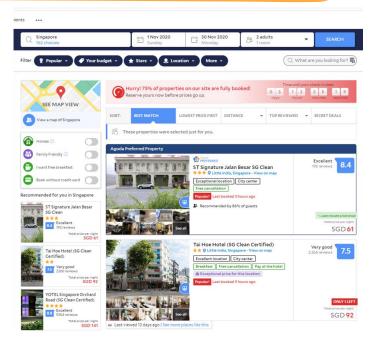
Stage 3



### Scraping considerations

- Segmented search list
- Interactive web page







### Scraping phases

- 1. Scraping AGODA search lists
  - a. Get URL for individual hotels
  - b. Get daily price data
- 2. Scraping individual hotels pages
  - a. Use URL list from step 1
  - b. Get more detailed information on each hotel



SORT:

**BEST MATCH** 

LOWEST PRICE FIRST

DISTANCE

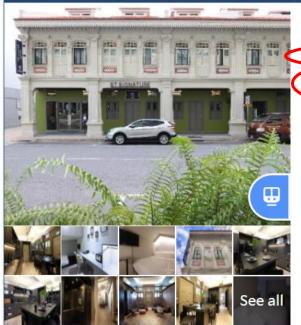
TOP REVIEWED ▼

SECRET DEALS



These properties were selected just for you.

#### **Agoda Preferred Property**



#### ST Signature Jalan Besar SG Clean

🜟 🔾 Little India, Singapore - View on map

**Exceptional location** 

City center

Free cancellation

Popular! Last booked 3 hours ago

Recommended by 86% of guests

192 reviews

8.4

\( \sigma \) Last minute price drop!

Total price per night

## CSV of URLs dfclean\_1adult.csv

4	A	В	С	D	Ε	F
1	hotel_name	link	reviews	score	star	short_name
2	M Social Singapore	https://www.agoda.com/en-us/m-	6553	8.2	4	m-social-singapore
3	YOTEL Singapore Orchard Road (SG Clean Certified)	https://www.agoda.com/en-us/yot	9313	8.8	0	yotel-singapore-orchard-road
4	Hotel G Singapore (SG Clean Certified)	https://www.agoda.com/en-us/hot	8124	8.4	0	hotel-g-singapore
5	Resorts World Sentosa - Hotel Michael (SG Clean Certified)	https://www.agoda.com/en-us/res	5228	8.1	5	resorts-world-sentosa-hotel-michael
6	Pan Pacific Serviced Suites Beach Road (SG Clean Certified)	https://www.agoda.com/en-us/par	4813	8.8	0	pan-pacific-serviced-suites-beach-road-singapore
7	Hotel Boss	https://www.agoda.com/en-us/hot	14023	7.8	0	hotel-boss
8	Carlton Hotel Singapore - SG Clean Certified	https://www.agoda.com/en-us/car	28366	8.5	0	carlton-hotel-singapore
9	Goodwood Park Hotel (SG Clean Certified)	https://www.agoda.com/en-us/god	6453	8.6	5	goodwood-park-hotel
10	PARKROYAL on Beach Road Singapore (SG Clean Certified)	https://www.agoda.com/en-us/par	7409	8.3	0	parkroyal-on-beach-road-singapore
11	InterContinental Singapore (SG Clean Certified)	https://www.agoda.com/en-us/inte	2485	8.8	5	intercontinental-singapore
12	Amara Sanctuary Resort Sentosa (SG Clean Certified)	https://www.agoda.com/en-us/am	7239	7.6	0	amara-sanctuary-resort-sentosa
13	lyf Funan Singapore	https://www.agoda.com/en-us/lyf-	917	8.7	4	lyf-funan-singapore
14	Hilton Singapore (SG Clean Certified)	https://www.agoda.com/en-us/hilt	1575	8.3	0	hilton-singapore_6
15	Capri by Fraser - Changi City (SG Clean Certified, Staycation approved)	https://www.agoda.com/en-us/cap	6801	8.6	0	capri-by-fraser-changi-city
16	YOTELAIR Singapore Changi Airport at Jewel (SG Clean Certified)	https://www.agoda.com/en-us/yot	2260	8.2	0	yotelair-singapore-changi-airport_2
17	Marina Bay Sands (SG Clean Certified)	https://www.agoda.com/en-us/ma	48854	8.7	0	marina-bay-sands
18	One Farrer Hotel (SG Clean)	https://www.agoda.com/en-us/one	6640	9	0	one-farrer-hotel
19	Resorts World Sentosa - Equarius Hotel (SG Clean Certified)	https://www.agoda.com/en-us/res	6074	8.3	5	resorts-world-sentosa-equarius-hotel
20	Amara Singapore (SG Clean Certified)	https://www.agoda.com/en-us/am	7862	8	0	amara-singapore
21	Hotel Soloha @ Chinatown (SG Clean)	https://www.agoda.com/en-us/chi	351	8.8	0	chinatown-hotel-singapore
22	Hotel Mono - (SG Clean Certified)	https://www.agoda.com/en-us/hot	1745	8.4	3	hotel-mono
23	Mandarin Orchard Singapore -SG Clean Certified	https://www.agoda.com/en-us/ma	27977	8.4	0	mandarin-orchard-singapore
24	The Quay Hotel	https://www.agoda.com/en-us/the	3296	8.2	0	the-quay-hotel 2

## **Daily Price Data**

	A	В	С	D	Е	F	G	н	1	J	K	L
1		1/11/2020	2/11/2020	3/11/2020	4/11/2020	5/11/2020	6/11/2020	7/11/2020	8/11/2020	9/11/2020	10/11/2020	11/11/2020
2	5footway.inn Project Chinatown	22	27	27	27	22	22	22	22	22	22	22
3	AMOY by Far East Hospitality (SG Clean Certified)	231	257	257	[]	[]	[]	[]	231	244	244	244
4	Adler Hostel	[]	[]	[]	[]	[]	[]	[]	[]	[]	[]	
5	Aerotel Transit Hotel, Terminal 1	[]	247	[]	247	[]	[]	[]	[]	[]	247	
6	Aliwal Park Hotel	67	62	61	62	62	66	59	59	55	55	55
7	Amara Sanctuary Resort Sentosa (SG Clean Certified)	403	300	359	359	359	[]	[]	327	318	326	320
8	Amara Singapore (SG Clean Certified)	213	228	228	228	228	248	[]	222	222	222	222
9	Amber Hotel Katong	[]	90	90	90	90	90	100	[]		90	
10	Amrise Hotel	63		54		67	71	69	70	[]	71	
11	Andaz Singapore - A Concept by Hyatt (SG Clean Certified)	[]	435	[]	459	[]	518	[]	471	459	471	447
12	Aqueen Hotel Balestier	[]	140	133	[]	133	[]	[]	[]	133	[]	133
13	Aqueen Hotel Lavender (SG Clean, Staycation Approved)	[]		86	89	87	88	81	84	82	83	82
14	Aqueen Hotel Paya Lebar (SG Clean, Staycation Approved)	114	114	114	114	114	[]	[]	153	153	153	153
15	Arcadia Hotel	[]	100	[]	100	[]	[]	[]	[]	[]	100	[] []
16	Arianna Hotel	59	53	75	71		[]	75	75	[]		[]
17	Arton Boutique Hotel (SG Clean Certified)	102	102	102	102	102	104	109	101	101	101	101
18	Ascott Orchard Singapore (SG Clean Certified)	270	270	270	288	[]	[]	[]	[]	[]	[]	
19	Ascott Raffles Place Singapore	306	306	306	306	306	306	[]	306	306	306	306

## Phase 2: Scraping Each Hotel URL

- Iterate through the URLs in previous CSV
- Scrape for additional features
- Assume first room option selected
- Combine all relevant information into one CSV



## Features Scraped in Each Hotel Website

Property Type Gym Bathtub

Number of Hotel Stars Swimming Pool Balcony

Cleanliness Carpark Kitchen

Distance to Mall Airport Transfer TV

Distance to MRT

Breakfast

Internet

Early Check-in (before 3pm)

Hygiene+ (Covid-19

Air-Conditioning

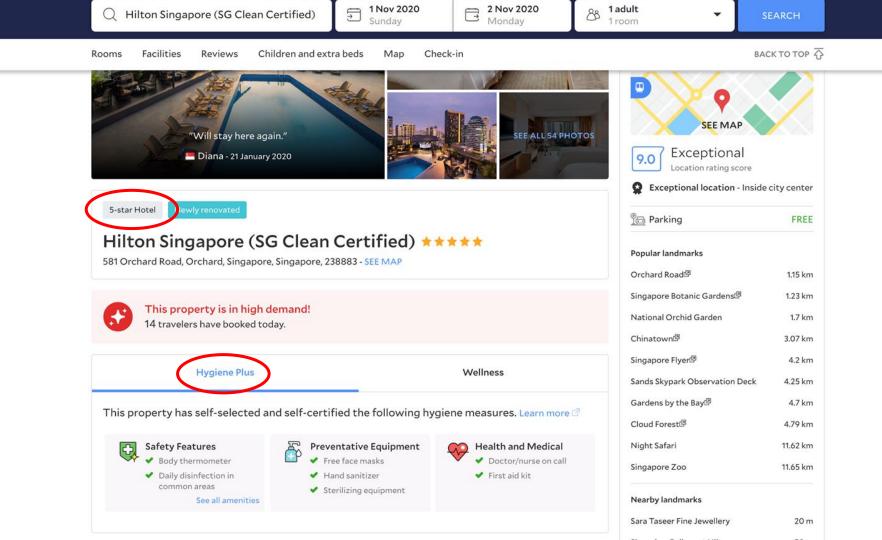
Late Check-out (after 12pm) Measures)
Ironing

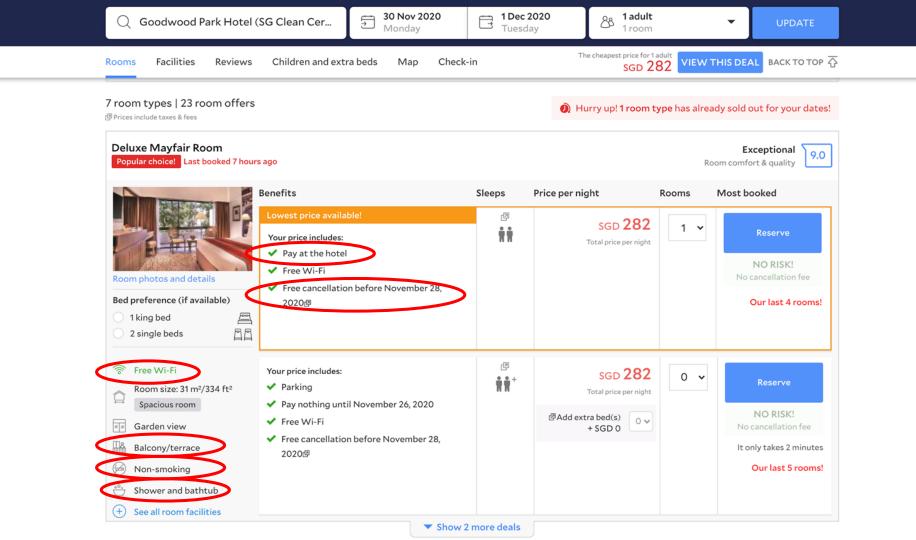
Pay Later 24h Front Desk

Free Cancellation Laundry Service



**Non-Smoking** 





1 Nov 2020 Sunday 2 Nov 2020 Monday

8 1a

1 adult 1 room

SEAR

Rooms

Facilities

Reviews

Children and extra beds

Map

Check-in

110

BACK TO TOP ↔

Overall rating:

8.3 Excellent
1,578 reviews

Cleanliness 8.6
Facilities 8.0
Location 9.0

Read all reviews >

What travelers say they love:

Big rooms, excellent location

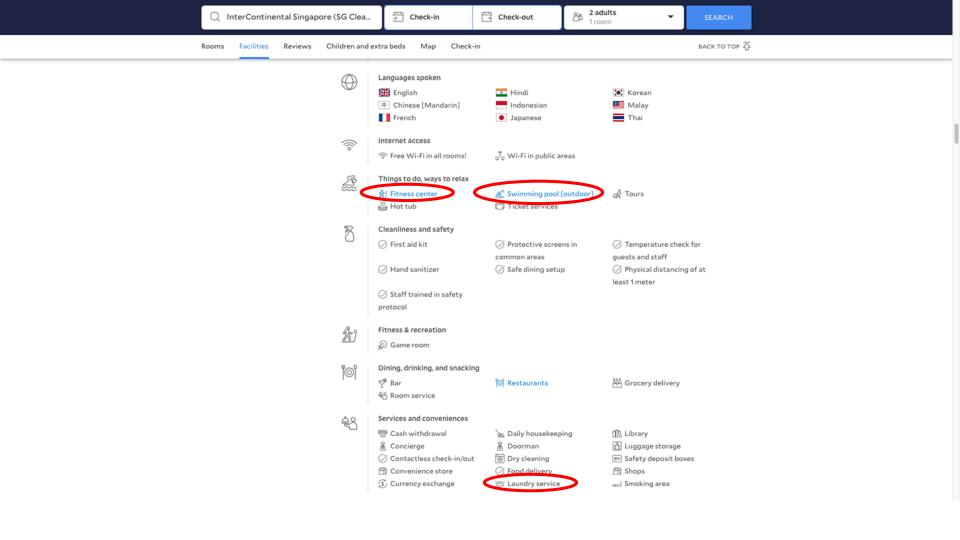
Therese M. from Philippines
Business traveler

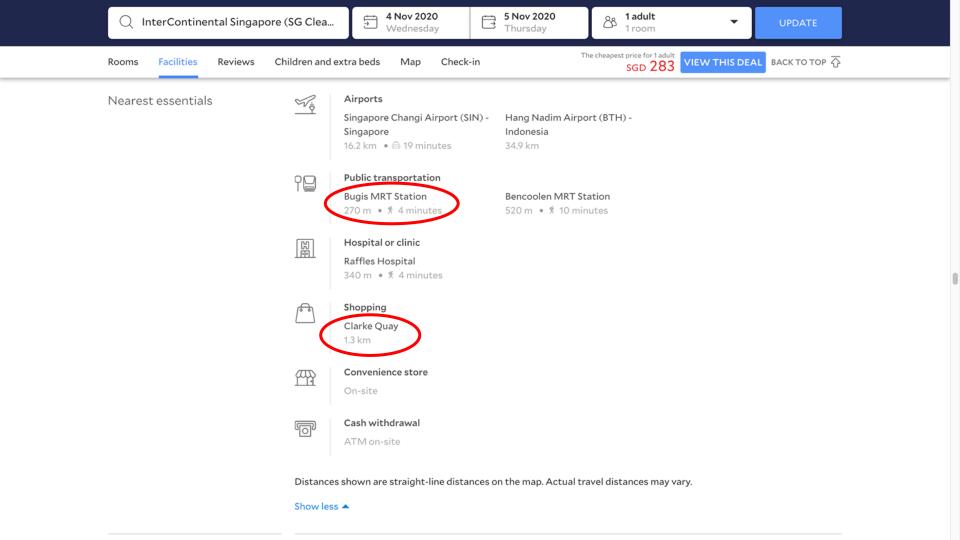


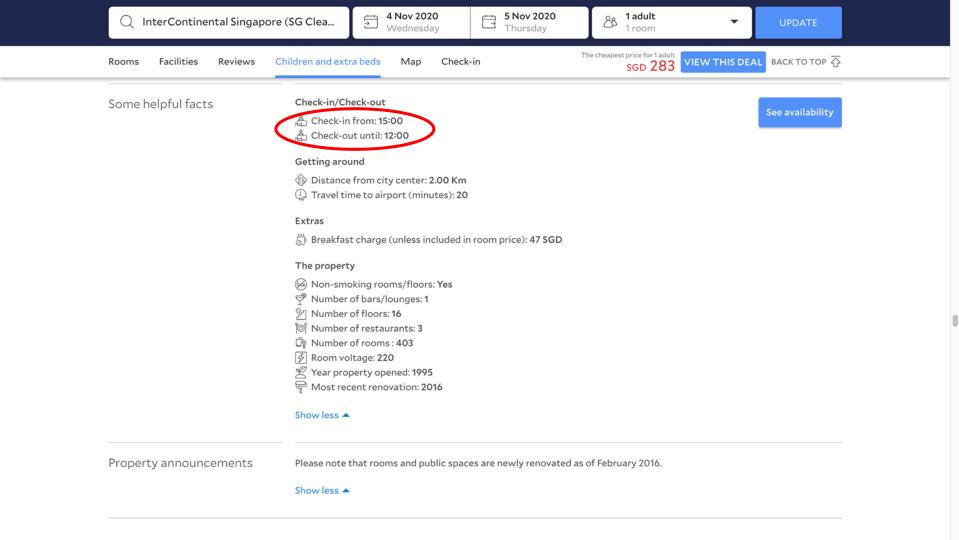
Situated in the heart of Orchard Road, Singapore's popular entertainment and shopping district, Hilton Singapore (SG Clean Certified) is close to both ION Orchard and Takashimaya shopping centres. This award-winning Singapore hotel is a convenient 20-minute drive from Singapore Changi International Airport and close to Singapore's popular attractions.

Stay active during your stay at this Singapore hotel. Swim laps in the rooftop pool, work out in the 24-hour fully equipped fitness center, or indulge in rejuvenating beauty treatments. Enjoy shopping in luxury boutiques without leaving the hotel in the two-storey Hilton Shopping Gallery.

Indulge in 6 innovative dining options available at the hotel. Try Opus Bar & Grill's signature prime cuts that are dry aged in-house and grilled over an open-flame charcoal grill. For authentic Italian cuisine, the award-winning rooftop Italian restaurant, il Cielo is known for its high culinary standards using seasonal produce. Located on the rooftop floor, Sky Bar is the perfect oasis to relax over drinks while taking in sunset views of the city. Revitalize with a variety of wholesome dishes and freshly-blended juices from Verde Kitchen. For the sweet-toothed ones, D9 Cakery offers an impressive six-meter showcase of delicious cakes, pastries, and more.

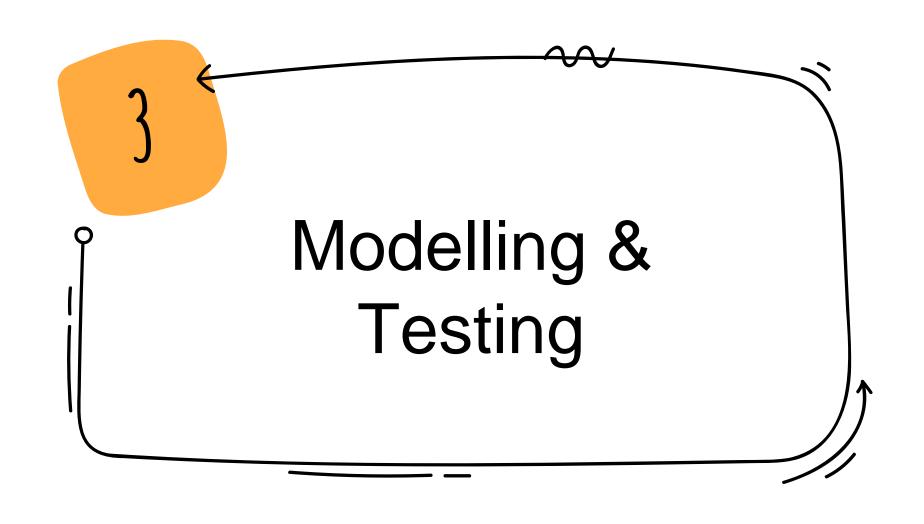






## final\_df.csv

Name and Typ		Daily Price (if applicable)	Relevant Features
None			To Marcher of Signs Services Daves to State Orders to March and Contract to March State St
M Social Singapore     YOFD, Singapore Orchand Road (SS Osen Certified)	Hotel	788 789 789 789 789 789 789 789 789 789	69 4 5.5 85 1595 1596 N N N N N V V V V N V V N N N N V V V N N N N V V V N N N N V V V N N N N N V V V N N N N N V V V N N N N N V V N N N N N N N N V V N
2 Hotel S Singapore (SS Clean Certified)	Hotel	500 500 500 500 500 500 113 117 500 500 500 500 500 500 113 117 500 500 500 500 500 500 500 500 500 50	70
Resons World Sentose - Hotel Michael (SG Clean Centified)	Resort	450 457 359 352 339 450 NA 598 559 430 431 433 433 559 TH 558 504 350 359 359 359 504 457 457 559 662 460	57 5 6.1 55 4808 508 N V V V V V V V V V V V V V V V V V V
# Pan Pacific Serviced Sulter Breach Road (SG Over Certified)	Serviced spetment	242 241 253 251 251 251 347 NA 253 253 241 251 251 251 251 251 251 251 251 251 25	22 5 8.5 9.2 1800 415 N N N V V V V V N V V N N N V N V N N V N N N
5 Hotel Sess	Hotel	112 112 112 112 112 112 112 113 114 115 115 115 115 115 115 115 115 115	12 4 7.5 8.5 2500 505 N N N N V V N N N V V N N N V V N N N V V N N N V V
Continue Hotel Strappore - 55 Clean Certified     Goodwood Park Hotel (SS Clean Certified)	Hotel	250 250 250 250 250 250 250 250 250 250	50 5 65 87 919 500 N N Y V Y Y N N N Y V Y N N N Y V Y Y N N N Y Y Y Y
# PAPRITONAL on Beach Road Singapore (80 Clean Certified)	Hotel	28  28  28  28  28  29  29  29  29  29	
InterContinued Singapore SS Over-Centred	Hotel	207 206 206 207 20 300 NA 500 206 207 20 300 NA 500 206 207 201 201 201 201 201 201 201 201 201 201	08 9 45 91 3300 271 N N V V V V V N V V V V N N V V V N N V V V N N N V V V N
50 Americ Sanchury Resort Sentons (SG Clean Centried)	Resort	400 300 300 300 300 NA NA 327 318 303 307 307 NA NA 327 318 303 307 307 NA NA NA 307 N	21 5 7.6 7.8 5100 300 N N N N V V V V N V V N N V V N N V V V
15 of Foren Singapore	Hotel	92 M3 M4 M3 M5	
10 Hiten Singapore (SG Clean Cartified)	Hotel	204 274 275 275 277 277 277 277 277 277 277 277	27 S 85 86 2500 271 N N V V V V N N V V V N N N V V V N N N V V V N N N V V V N N N V V V N N N N V V V N N N N V V V N N N N N V V V N N N N N N V V V N N N N N N V V V N N N N N N N V V V N
Copi by Proor - Changi Chy SS Oven Certified Staycolon-approved     VOTSLAR Singapore Changi Algori of Javesi ISS Clean Certified)	Hotel	176 173 187 187 187 187 188 Na 288 184 185 184 184 185 184 184 184 184 184 184 184 184 184 184	
18 Marine Bay Sands 250 Coun Certified	Model	400 400 400 400 500 Na 504 NA 504 517 400 405 405 405 405 405 504 NA 507 400 400 400 400 507 504 517 517 517 517 517 504 507 504	
98 One Farrer Hotel (50 Clear)	Hotel	250 250 250 250 250 250 250 250 250 250	77 5 5.0 8.3 2500 GEN N Y Y Y Y N N N N N N N Y Y N Y
19 Resorts World Sentons - Equatus Hotel (SS Clean Certified)	Resort	558 504 508 471 508 NA NA 508 508 407 407 407 NA NA 508 508 407 407 407 NA NA SA SC1 509 400 400 400 NA NA 508 514 504 504 504 508 NA NA SC1	
III Amere Singapore (SS Clean Certified)	Hotel	275 278 278 278 278 278 278 278 278 278 278	
19 Notel Solide & Chinatown SG Chart  36 Notel Mono - (SC Chart Certified)	Hotel	UP UP 109 UN 109 UN 109 UN 109 UN 109 UN UN 109 UN UN UN 109 UN	29 a 6.6 5.2 5500 272/N N V V N N V V N N V V N N N V V V N N N V V V N N N V V V V N N N V V V N V 22 23 3 6.4 6.4 750 172/N N V V N N V V N N N V V V N N N V V N N N V V N N N V V N N N N V V N N N N V V N N N N V V N N N N V V N N N N V V N N N N V V N N N N V V N N N N V N N N V N N N N V N N N N V N N N N V N N N N V N N N N N V N
25 Mandam Orchant Singapore (SG Clean Certified)	Potest	201 138 138 138 138 138 138 138 138 138 13	
IB The Gusp Hotel	Hotel	00 115 NA 116 NA 106 NA 00 NA 01 NA 114 NA NA 130 NA 115 NA 105 NA 00 NA 114 NA NA 120 NA 120 NA 120 NA NA 00 NA 00 NA 00 00 00 00 00 NA 120 N	5
28 Fahrort Singapore (SS Clean Certified)	Hotel	502 200 200 200 200 500 NA 502 200 200 200 200 500 500 502 500 500	50 5 5.0 5.0 910 500 N N V V V V V V N V V N N N N N V V N N N N N V V N
24 G Luft Helwit 52/98Chinatown	Hotel	66 85 87 87 82 68 64 NA 88 88 88 88 88 88 88 88 88 88 88 88 88	3 75 75 78 1300 20 N N V V N N N N V V N N N N N N N N N
25 The Capital Kampinaki Hotel Singapore (SO Clean Certified) 26 Strend Hotel (SO Clean Certified)	Hotel Hotel	691 67 67 67 68 68 68 68 67 67 67 67 68 68 68 68 68 68 68 68 68 68 68 68 68	00 5 95 95 950 100 N N N N N N N V V N V V V V N N V
25 Street Pose (50 Ower Centre)  27 Onhard Pose Street	Hotel	66 06 06 07 08 07 12 NA 08 08 08 08 08 08 08 08 08 08 08 08 08	0 7.0 7.0 80 116 N N N N N N N V V V N N V V V N N V V V V N N V V V N N V V V N N V V V N N V V V N N V V N N V V V V N N V V V N N V V V N N V V V N N V V V N N V V V N N V V V N N V V V N N N V V V V N N N V V V V N N N V V V N N N V V V V N N N V V V N N N V V V N N N V V V N N N V V V V N N N V V V N N N V V V V N N N V V V V N N N V V V N N N V V V N N N V V V N N N V V V N N N V V V N N N V V V V N N N V V V N N N V V V N N N V V V N N N V V V N N N V V V V N N N V V V N N N V V V N N N V V V V N N N V V V N N N V V V N N N V N V N N N V V V V N N N V N V N N N V V V N N N V N N V N N N V N N V N N N V N N N V N
Bit Roberton Copy Polisi	Hotel	50 C2 C2 U27 U27 U27 U37 U37 U37 U37 U37 U37 U37 U37 U37 U3	
39 W Singapore - Sentono Cove (SG Closm Certified)	Resort	677 S40 S40 S40 S40 S40 S40 R3 NA 611 S90 S40 S40 S40 S99 673 NA 775 611 S40 S40 S70 R74 NA 740 R9 R40	40 5 6.6 8.3 4800 2000 % N V V V V V V N V V V N N V V V N N V V N N N
30 Grand Hyelt Singapore	Hotel	341 341 341 341 341 341 341 341 341 341	41 5 8.8 20 2500 260N N V V V V V N V V N N N N V V V N N N N V V
86 Hotel Royal (5G Over-Certified)	Hotel	560 US	A 750 75 8800 4970 N N N N V V V N N N V V V N N N N V V V N N N N V V V N N N N N V V V N
30 Create Hotel Downtown Singapore by Far Cost Reportality (SG Clean-Contributed SM) Champion Hotel	Noted States	254 254 254 254 255 255 255 255 255 255	80 A 50 80 1600 1600 N V V V V N N V V V N N N V V N N N V V N N N V V V N N N V V V V N N N N V
SM Accel Dehard Singapore (SG Clean Certified)	Trotal	00 71 71 72 72 72 72 72 73 74 74 74 74 74 74 74 74 74 74 74 74 74	5) -7 80 500 700 N V V V N N V V V N N V V V V V V V V
36 The Riz-Carlon, Milenia Singapore	Hotel	500 500 500 500 500 500 500 500 500 500	41 5 9.0 9.4 1900 316 N V V V V V V V V V V V V V N N V V N N V V N N V
36 Accet Faffes Flace Singapore	Hotel	328 328 328 328 328 328 328 328 328 328	DE 0 0 0.7 0.0 1000 NO
37 The Pallerton Hotel  39 Park 22 Hotel Little India (RD Claur Cartified & Staymaton September)	Motor	42] 42] 42] 43] 44] 44] 45] 44] 45] 48] 48] 48] 48] 48] 48] 48] 42] 42] 42] 42] 42] 42] 42] 42] 42] 42	12 S GG) 82 860 373 N N N N N N N V V V V N N N N N N N N
36 Park 22 Hotel Little India (SO Clean Certified & Staycaston Approved) 36 Assesse Hotel Pays Leber 250 Clean, Staycaston Approved)	Hotel	06 06 08 71 08 NA	3 75 75 100 2018 N N N N N N N N V V V V N N N N V V V V S 1 N N V V V V N N N N V V V V V N N N N
40 The St. Regis Singapore (SS Clean Certified)	Hotel	48	5
#8 Ordred Country Club	Resort	216 007 NA 007 007 NA 0 216 007 NA 0 216 004 007 007 NA 0 216 004 007 005 009 NA NA 0 210 005 009 NA NA 0 210 005 NA NA 0 210 005 NA NA 0 210 NA NA 0 210 NA NA 0 210 NA NA 0 210 NA 0 NA	a 77 83 NA 1420 N N N N V V V N N V V N N N V V V V
42 Hotel 1887, The New Opera House	Hotel	79 74 68 73 68 74 NA NA NA NA NA 73 NA NA NA 77 88 88 78 88 79 NA	5 7.5 7.8 900 200 N N Y Y N N N Y Y N N N N N N N N N N
45 Usyte he 46 Wass Note Such by Fer Sud Hospitalin SS Over Certified	Hotel	177   158   176   177   177   184   185   177   184	3 65 87 550 508 N V V N V V V V V V N N N N V V N V V N N N N V V V N N N N N V V V N N N N N V V N
all that both bags by her call hospitally (bit Cean Centre).  If the Southbridge Hala!	Potal Potal	50 00 00 00 00 00 00 00 00 00 00 00 00 0	50 4, 75 W80 50 N N N N N V V V N N V V N N V V V N N V V V N N N V V V N N N V V N
# 57 Signature Life	Hotel	489 449 449 449 449 449 449 449 449 449	3 TA 79 1700 370 N N N N N N N N N N N N N N N N N N V
87 Q Loft HaratoRifeed & SQ Over Centred	Hotel	SS 77 CS CS CS NA	77 3 75 83 5500 650 N N V V N N V V N V N N N N N N N N N
Amine Motel	Hotel	50 NA 54 NA 67 T1 69 75 NA 71 NA NA NA 50 NA 67 50 NA NA NA NA 60 NA 71 NA 50 NA NA 50 NA NA NA	2 64 82 85% N N N N N N V V N N N N N V V V
48 Bullianut Treo Hotel (SG Over Certification) 88 Stoc Hotel Segapore (SG Over Certified)	Hotel	71 71 69 73 70 60 Na	72
51 ST Signature Chinalown(50-Clean Certified)	Hotel	18 10 10 10 10 10 10 10 10 10 10 10 10 10	3 6.0 5.1 1500 500 N N N N N N N N N N N N N N N N
50 Arion Soutique Halal (50 Clean Cardinal)	Hotel	100 100 100 100 100 100 100 100 100 100	5 00 80 200 200 N N N N N N N V V V N N N N N N N N
89 RedDoors Hotel near Marine Parade Central (50 Clean Certified)	Hotel	06 05 05 07 07 07 07 NA 00 07 07 07 NA 00 07 07 07 08 02 08 NA 79 07 07 07 72 NA 62 55 55 07 00 73 73 NA 63 74	58 5 7.5 75 760 1400 N N V N N N V N N N V Y N N N N V V N N N N
56 RedCook Hotel & Coplany 510 Over-Cetified: 56 Summer View Hotel 510 Overs	Hotel	08 05 04 05 08 02 08 02 08 72 07 08 12 07 07 07 08 12 07 07 07 07 07 07 07 07 08 12 12 14 14 15 17 07 08 14 14 14 14 14 14 14 14 14 14 14 14 14	69 2 77 78 4600 575 N N N N N N N N N N N N N N N N N N
SE SY Hotel Bugis by ASANDA Hotels and Resorts SG Clean-Cartified	Poted	100 177 179 179 179 109 NA NA 100 NA 100 100 179 179 179 NA 100 NA NA 100 NA 10	0 0.0 6.0 100 0.0 10 10 10 10 10 10 10 10 10 10 10 10 10
57 RedDoors Hotel Plus & Little India (50 Clean Certified)	Hotel	00 00 00 00 00 00 00 00 00 00 00 00 00	
56 Chartege Hotel (50 Clear-Certified)	Hotel	88 68 NA 68 NA 68 NA NA NA 67 NA 88 NA NA 87 NA 88 NA NA 88 NA NA 88 NA	3 75 76 260 558 N N N N N N V V V N N N N N V V N N N N N V
58 Hotel Noile - 50 Cean Certified	Hotel	100 108 119 108 109 NA	00 5 7.5 7.9 1900 300 N N N N N N N Y N N Y Y N N N N Y Y N
69 Projulous Hotal © Bugls (SG-Clean Certified) 69 ST Digmelure Bugle Seach	Hotel	112 307 122 100 107 84 NA 112 112 100 107 A NA 1 NA 112 112 100 112 100 NA NA NA 100 100 100 100 100 NA NA NA 100 112 100 10 NA NA NA 100 100 100 NA NA NA 100 100 100 NA NA 100 100 100 NA NA 100 100 100 NA NA 100 100 NA NA 100 100 NA NA 100 NA 100 NA 100 NA 100 NA 100 NA 100 NA NA 100 NA 100 NA NA NA 100 NA NA 100 NA NA NA 100 NA NA NA 100 NA	50 2 75 43 1970 3970 N N N N N N N N N N N N N N N N N N N
60 ST Diphature Displa Seach 60 RELC Informational Hotel	Hotel	99 97 97 97 97 97 97 107 107 107 107 107 97 97 97 97 97 97 107 107 108 44 97 97 97 97 97 97 97 97 97 97 97 97 97	
fb (perspecifiarendar	Hostel	27 27 27 27 27 27 27 27 27 27 27 27 27 2	1 0.0 79 280 371N N V N N N N N N V N V N N N N V N V N
64 Four Seasons Hotel Singapore (SS Clean Certified)	Hotel	307 447 447 447 447 NA NA 307 447 447 447 447 A47 HA NA 307 447 447 447 HA NA 307 447 447 447 447 HA NA NA	
68 MET A Space Port & Bost Owey	Copeute heled	41 37 57 57 58 41 37 57 54 54 54 55 56 57 58 42 57 58 54 54 55 56 57 58 58 58 58 58 58 58 58 58 58 58 58 58	2 00 73 310 25 N N N N N N N N N N N V N N N N N N V
K Hotel 54	Hotel	67 G2 NA 62 01 72 73 NA NA 52 NA NA 52 NA NA 71 NA NA 52 NA NA 52 NA	9 5.6 51 428 695 N N N N N N N V V N N N N N V V N N N N V V N N N N V V N N N N V V N N N N N V V N
67 Hotel Note Urbane - 50 Oran Certified  68 Faux Frieds by Shareton Snoppore, Electrical 253 Claus Certified	Hotel	108 108 109 109 109 109 109 109 109 109 109 109	
Flux Plans by Sharesh Singapore, Finances (50 Cean Catholo)     Galaxy Pada & Crimitown	Hotel	100 100 100 100 100 100 100 100 100 100	2   62   72   80   20   N   N   V   V   N   N   N   N   N   N
39 Almai Park Hotel	Hotel	67 C2 61 C2 C2 C8 59 59 59 55 55 55 55 59 NA 59 55 55 55 NA 59 55 55 NA 59 59	55 2 62 5.5 2°00 50°0 N N N N N N N N N N N N N N N N N N
39 Hotel 81 Tristar (5G Clean Certified)	Rotal	05 05 05 05 06 00 00 00 104 104 00 05 05 05 05 05 05 05 05 05 05 05 05	80 2 T.O 8.0 6000 500 N  N  Y  Y  N  Y  Y  N  Y  Y  Y  Y  N  N  Y  Y  Y  N  N  Y  Y  N  N  Y  Y  N  Y  Y  N  Y  Y  N  Y  Y  N  Y  Y  N  Y  Y  N  Y  Y  N  Y  Y  N  Y  Y  N  Y  Y  N  Y  Y  Y  N  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y  Y



# Inputs & Filtering

#### 1. Date

#### 1Nov - 30Nov

#### 2. Hotel Types

- 1. Hotel
- 2. Resort
- 3. Serviced Apartment
- 4. Hostel
- 5. Capsule
- 6. Entire Apartment
- 7. Boat/cruise
- 8. Resort villa

#### 3. Top 3/28 Features & Weights

- 1. Price
- 2. No. of reviews
- 3. Score
- 4. Number of Star
- 5. Review score
- 6. Cleanliness
- 7. Distance from MRT/ Mall
- 8. 20 Services & Facilities

# Scoring

#### Feature Types

- 1. Boolean
- 2. Continuous: *lower* value is better
- 3. Continuous: *higher* value is better

+ (Feature 2 \* Weight 2)

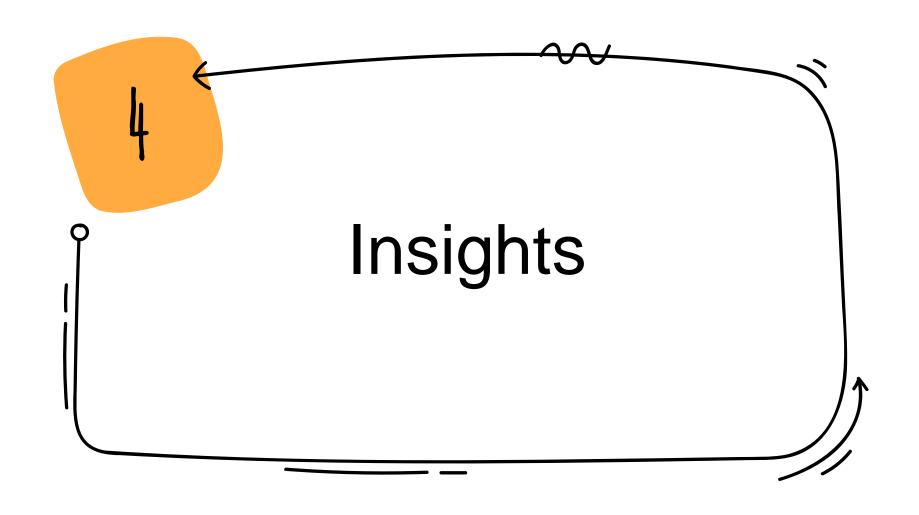
+ (Feature 3 \* Weight 3)

Value-to-Price Ratio = Score / Price

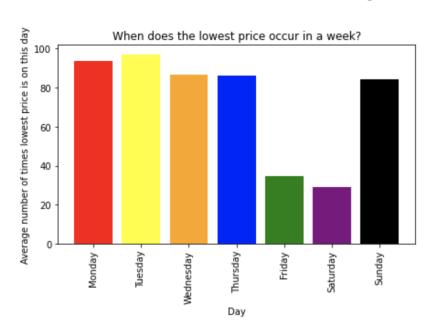
Hotel	Wifi	Price	Price 'Rank'	No. of Reviews	Reviews 'Rank'
Α	1	60	3	800	3
В	1	150	2	430	2
С	0	180	1	205	1

# Modelling





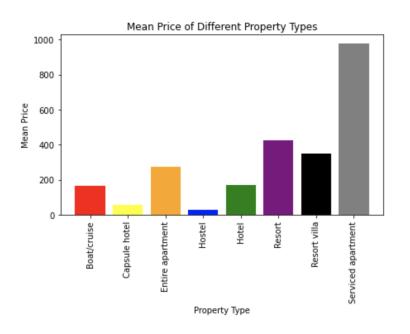
### Insight #1



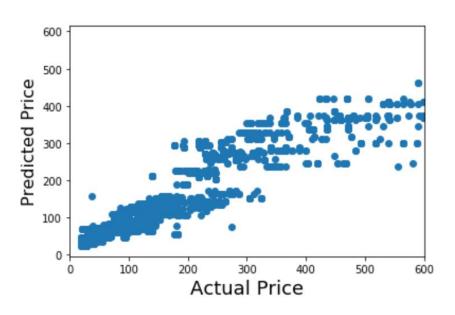
- Find the number of times the lowest price of the month occurred on a particular day of the week
- To avoid a higher price, we should avoid booking accommodations on Fridays and Saturdays

## Insight #2

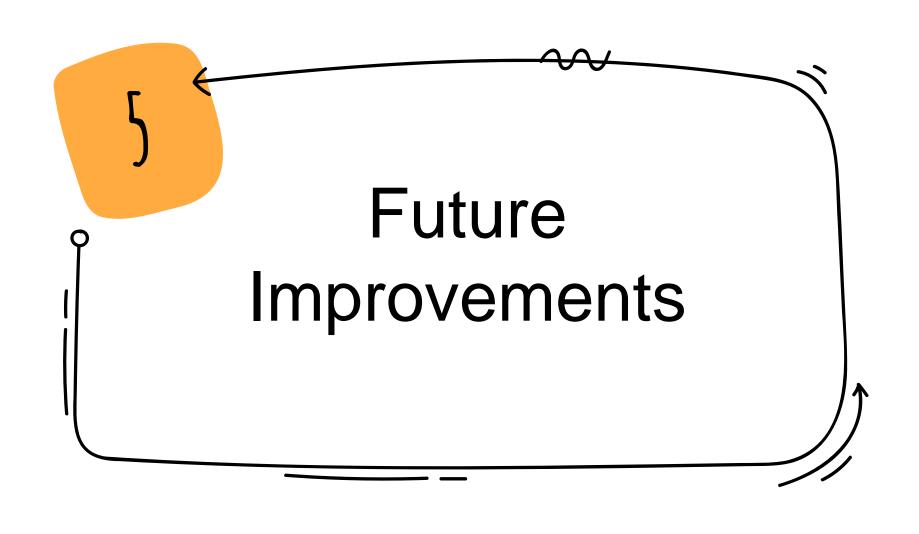
- Find the mean price of different property types
- Serviced apartments are generally more expensive than the rest
- Hostels and capsule hotels are the cheapest among the property types



## Insight #3



- Understanding if hotels are overpriced or underpriced
- Based on the scatter plot, hotels tend to be overpriced



## **Future Improvements**

#1

Allow for budget input to filter the range of prices

#2

Use NLP and network sentiment analysis to derive insights from the hotel reviews



# Thanks!

**Any questions?** 

