airbnb Singapore Data Analysis

Pandu Gusti Resworo

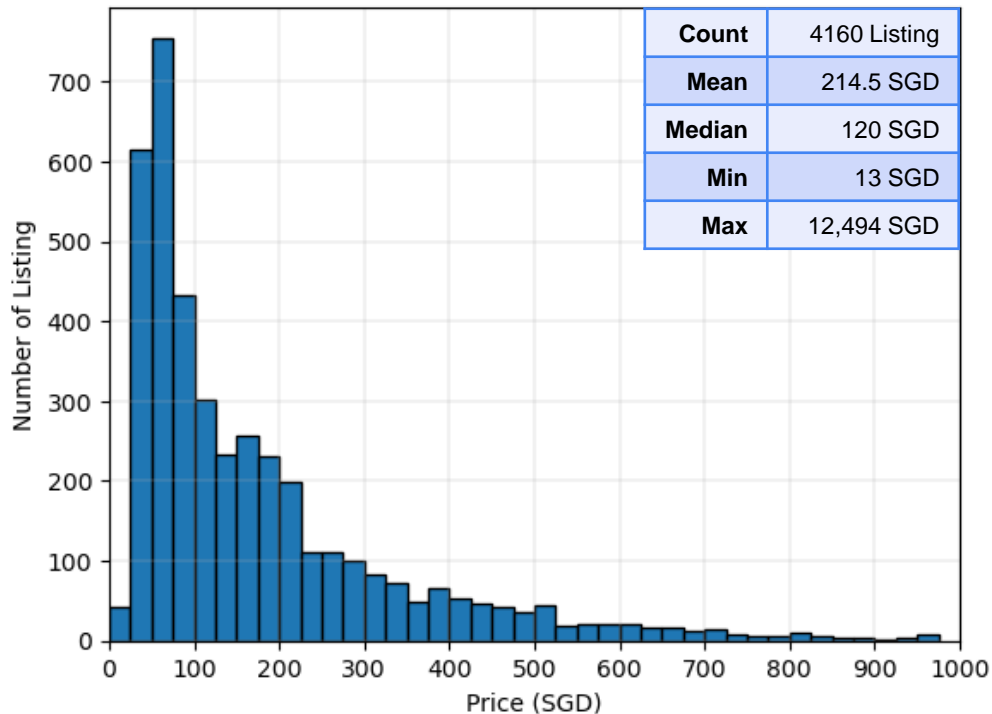**DQLab Bootcamp Data Analyst with Python and SQL**

Introduction

This work is the capstone project of DQLab's data analytics bootcamp. The datasets for this project were obtained from Inside Airbnb using the Singapore region data scraped on September 2022.
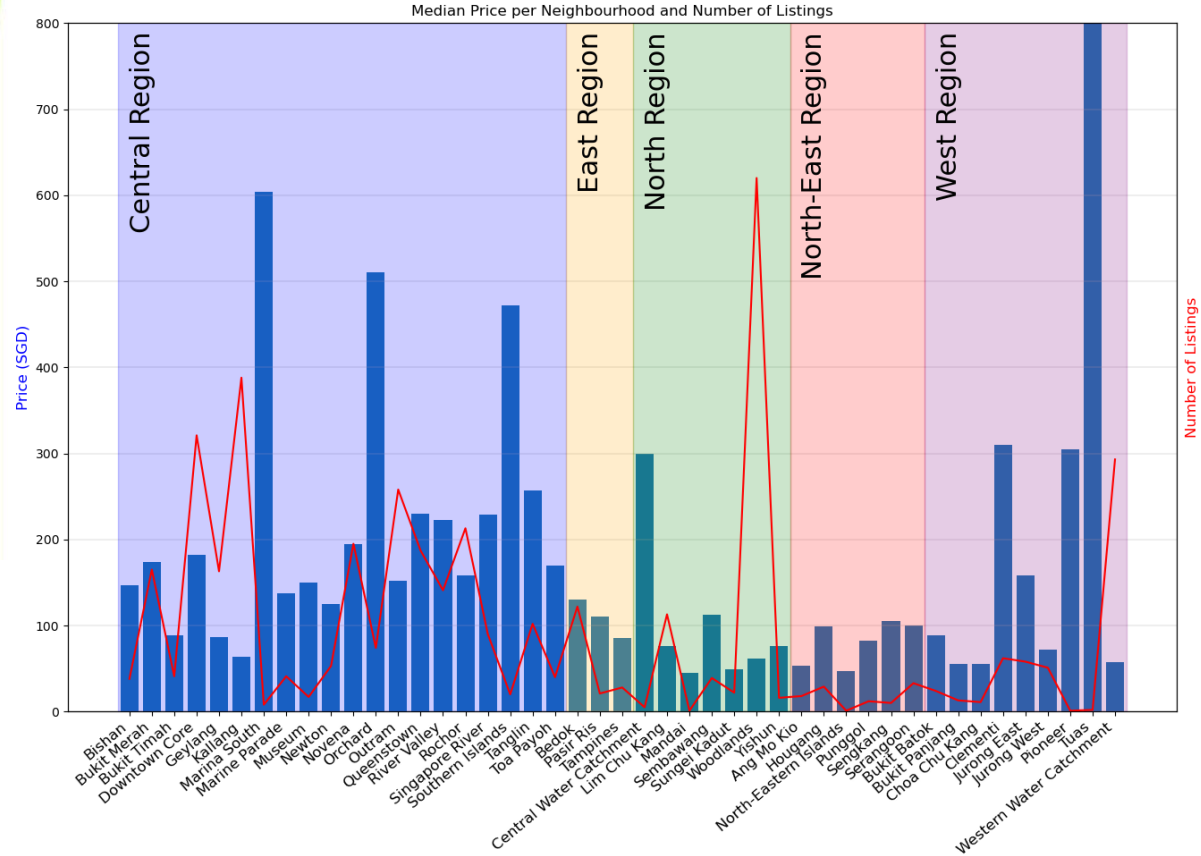
The project is coded with Python through the Jupyter Notebook, and mainly oriented towards descriptive analysis. For your convenience, the notebook and datasets used can be found on my GitHub repository here.

Price Distribution

- From 4160 listings in Singapore, the prices are widely spread out from as low as 13 SGD up to 12,494 SGD.
- However, **50%** of the listing is priced **below 120 SGD**.

Price Distribution of Airbnb Singapore Listing

Count	4160 Listing
Mean	214.5 SGD
Median	120 SGD
Min	13 SGD
Max	12,494 SGD

Neighbourhood Analysis

- The Central Region has most number of neighbourhoods. (**20**)
- Woodlands of the North Region has the most number of listings. (**620**)
- Certain neighbourhoods are more 'expensive' than others. However, some of those neighbourhoods does not have as many listings as others.
- For example, "**Tuas**" only has two listing and one them is a 10,000 SGD penthouse.

Median Price per Neighbourhood and Number of Listings
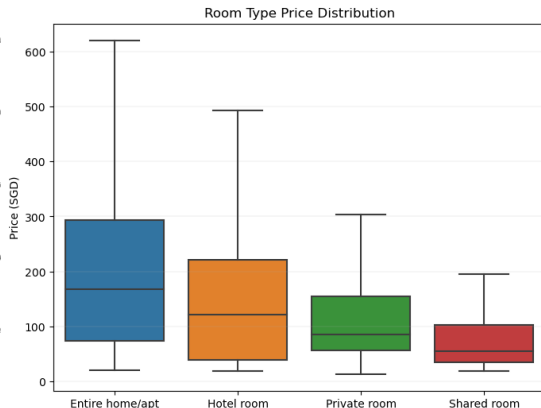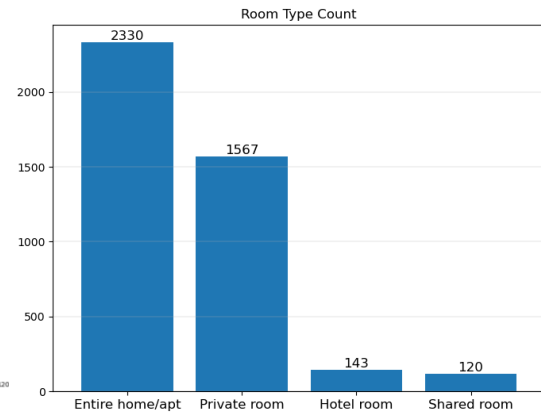
Region Analysis

- The **Central Region** has the **most listing** in the whole of Singapore, and is also the **most expensive**.

- The **North Region**, the region with the **second most** number of listing, is the **cheapest**.

| Neighbourhood Group	Number of Listings	Median Price (SGD)
Central Region	2555	175
North Region	816	65
West Region	515	74
East Region	171	115
North-East Region	103	90

Region Price Distribution
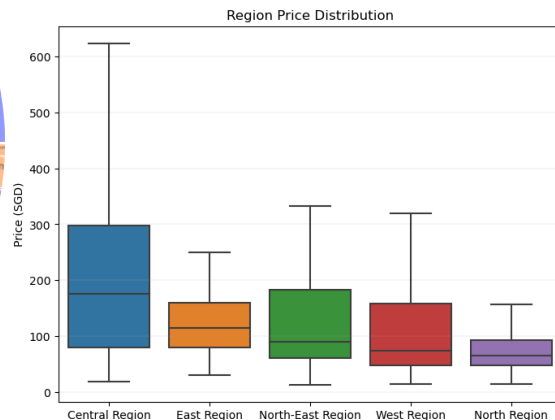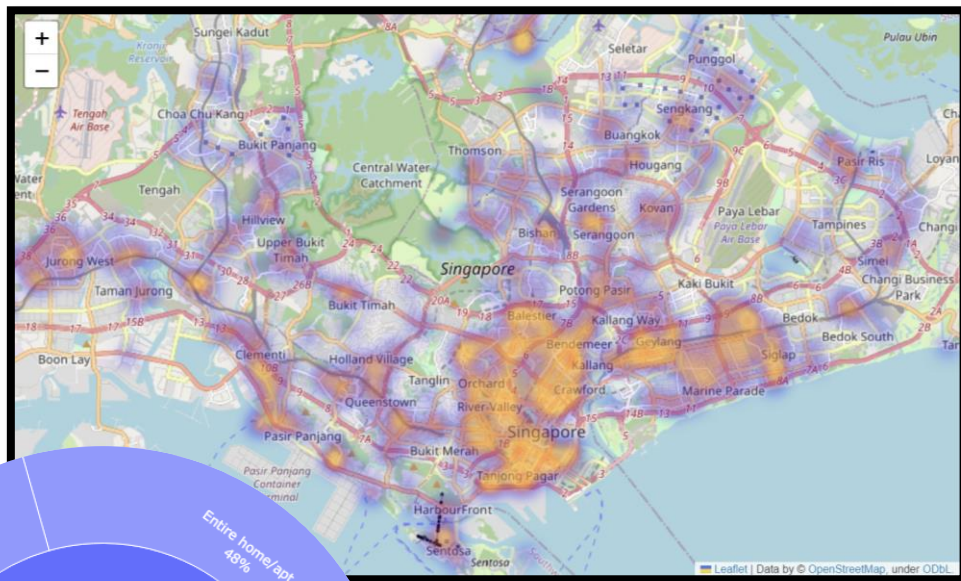
Room Type and Price Analysis

- In general, **entire home/apt** are the **most common** and the **most expensive**, while the **shared room** is the **cheapest**. However, the prices may vary on certain property types. An **unique** kind of property could **skew** the statistics.

- For example, an entire barn is cheaper than a room on a hotel or a shipping container. An entire boat would also be extremely expensive.

Listing Name Analysis

- Hosts are using **simple** and **descriptive** words that help users to have an idea of the listing without clicking on it.

- Words like "**studio**", "**suite**" and "**condo**" describe the property type, and then the hosts can elaborate more with descriptions and pictures.

- "**MRT**", "**Min**" and "**Bedroom**" are all words that appear often to describe the feature and the location of the listing.

Calendar and Reviews Analysis

- The Airbnb business has been on a steady incline since the beginning of its operation until the beginning of 2020. The Covid-19 pandemic severely impact Singapore as seen on the Reviews per Month plot.

- In 2022, the industry has rebounded and hits an **all-time high** of **2331 reviews on August 2022**.

- From the calendar dataset we can also infer that there's going to be **at least 15% increase** of revenue for 2023
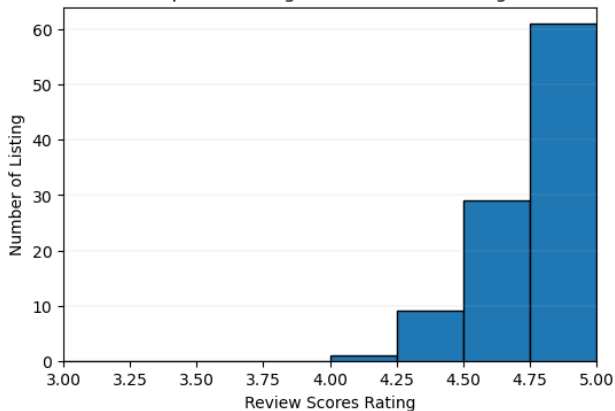

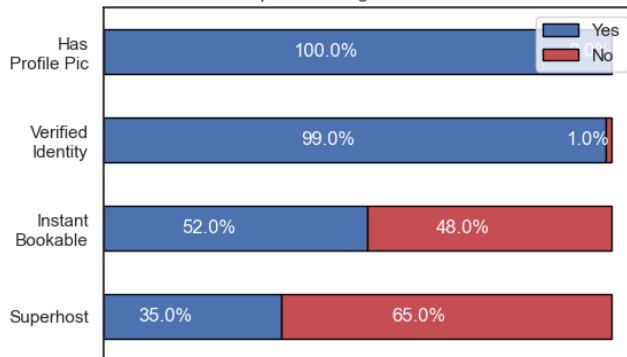Reviews per Month

Total Revenue per date
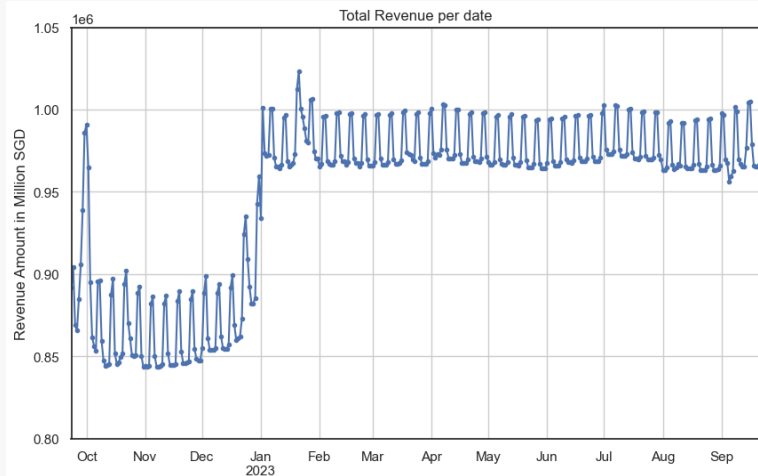
Top 100 Characteristics and Features

- All the Top 100 Listings have **more than 4.0 Review Scores** with 60% of the listings at the 4.75-5.00 range.

- The most shared characteristics are that the **host has profile picture** and has their **identity verified**. While the instant bookable feature and the superhost status doesn't affect the listing performance.

- There are shared common amnesties that the top 100 listing shares, such as **essentials**, **wifi**, and **various bathroom amenities**.

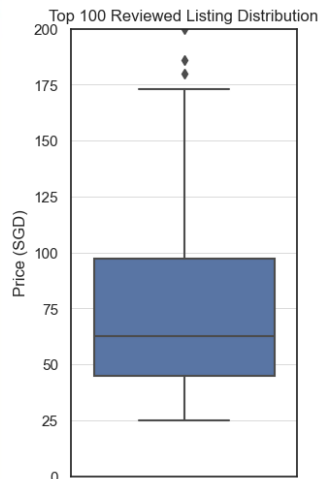## Top 100 Listing Review Scores Rating

Top 100 Most Common Amenities

Amenity	Count
Essentials	98
Wifi	97
Hair dryer	95
Shampoo	93
Hot water	91
Iron	90
Air conditioning	89
Hangers	88
Long term stays allowed	85
Kitchen	81

Top 100 Listing Characteristics

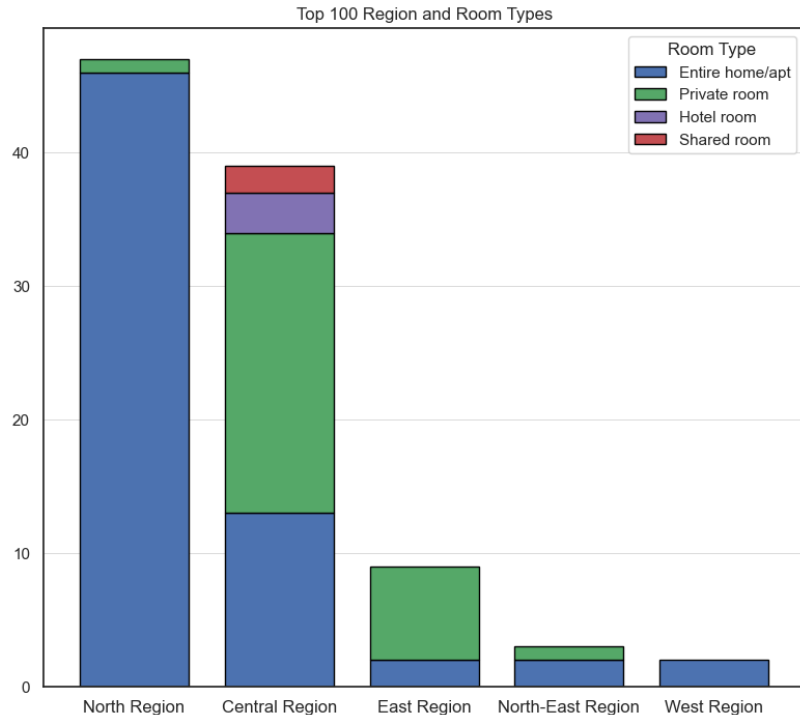| Characteristic	Yes	No
Has Profile Pic	100.0%	
Verified Identity	99.0%	1.0%
Instant Bookable	52.0%	48.0%
Superhost	35.0%	65.0%

Top 100
Price and Location

- The top 100 listings is mostly **priced below 100 SGD** with a few outliers that goes up to 819 SGD.

- Most of the top 100 listings are located in the **North Region** and **Central Region**.

- The **Entire home/apt** being the **most rented type** and the Private room as the second most rented type.

Top 100 Reviewed Listing Distribution

Mean	96.94 SGD
Median	62.5 SGD
Min	25.0 SGD
Max	819.0 SGD

Top 100 Region and Room Types

Room Type
- Entire home/apt
- Private room
- Hotel room
- Shared room

Summary

- The median price of 4160 Airbnb listings in Singapore is 120 SGD.
- The Central Region has most number of neighbourhoods.
- Woodlands of the North Region has the most number of listings.
- Central Region has the most number of listing and is also the most expensive.
- Entire home/apt are the most common and the most expensive.
- Hosts are using simple and descriptive words for the listing name.
- Airbnb industry in Singapore is on the rise and the revenue for 2023 is expected to increase at least 15% .
- The top 100 listing shares many characteristics and amenities.
- Most of the top 100 listing are priced under 100SGD and located on the North and Central Region. With Entire home/apt being the most rented type.