

REPORT

BATTLE OF NEIGHBOURHOODS

LOCATION TO RENT HOUSE IN SINGAPORE

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1. Introduction:

1.1. Background

Changi Business Park (CBP) in Singapore is one of the main business hubs. It is second Business park of Singapore following the International Business Park (IBP) in Jurong East. CBP is located near to Changi Airport Singapore and also close to Singapore Expo, which is South East Asia's largest exhibition center. It is hub of business comprises a mix of high technology business, data and Software enterprises, research and development and knowledge intensive facilities.

As a result lot of people from other parts of the world migrate to this area with relation to their business and jobs. One of the concern of people is to know the neighbourhood, venues nearby and place to stay. This report is particularly focused on Indians to identify the places to hire where they can easily get Indian food, other necessary amenities and affordable house. Apart from that it is better if the area is nearby and they can easily commute to office.

1.2. Problem Statement

To find out an affordable house nearby CBP which can meet the below criteria:

1. Indian Restaurants
2. Breakfast Spot
3. Café/Coffee Shop
4. Food Court
5. Shopping Mall
6. Supermarket
7. Near to office(CBP)

8. Nearby MRT Station

1.3. Audience

Indians who are planning to migrate to Singapore to work in Changi Business Park will be interested in this report.

2. Data:

2.1. Data Requirement

To reach a conclusion following data will be required :

1. List of neighbourhood.
2. List of venues like Restaurants, Malls and shopping centers and other amenities.
3. Distance from workplace (CBP).
4. Transportation facilities.

2.2. Data Source

Data was acquired from below sources:

1. Neighbourhood and Postal code will be compiled from
https://en.wikipedia.org/wiki/Postal_codes_in_Singapore .
2. Algorithm using nomantim will be used to get geodata for various venues and neighbourhood.
3. Singapore MRT stations will be opbtatined from
<https://data.world/hxchua/train-stations-in-singapore> .
4. For rental rates we will get CSV from
<https://data.gov.sg/> which publishes district wise rental rates for various type of properties

2.3. Data Preparation Cleanup

Neighbourhood venues are extracted via algorithm using nomantim, we could get venue names, categories latitudes and longitudes. Postal Codes and Neighbourhood details are not available for most of the venues, which resulted in the situation where venues could not be linked to their Postal Districts.

We could extract the Postal Codes using Latitude and Longitude via OneMapSG API. Problems were faced in extracting the large amount of data from API, so the venues data was divided into chunks of 5 and made multiple calls to API. Results were compiled in CSV to avoid further problems. This CSV is used to get Postal codes and latitudes and longitude to associate Postal Codes to venues.

In order to overcome the deficiency neighbourhood Postal Data is scrapped from Wikipedia page. Singapore is divided into 28 Postal Districts and 80 Postal Sectors. It is not possible to divide Postal Districts into clear Postal Sectors as One Particular neighbourhood is divided into more than one Postal Sector and the same way under one Postal Sector there are more than one neighbourhoods. To simplify we distributed the Postal Sectors keeping the neighbourhood names collective (if 3 Neighbourhoods are grouped under 3 Postal Sectors, then each separated Postal Sector was associated to this entire group). First two letters of Postal Code represent Postal Sector. In the Venues Table we have created new field for Postal Sector, and using this Neighbourhood is populated to Venues table.

MRT data is OK and does not need clean-up.

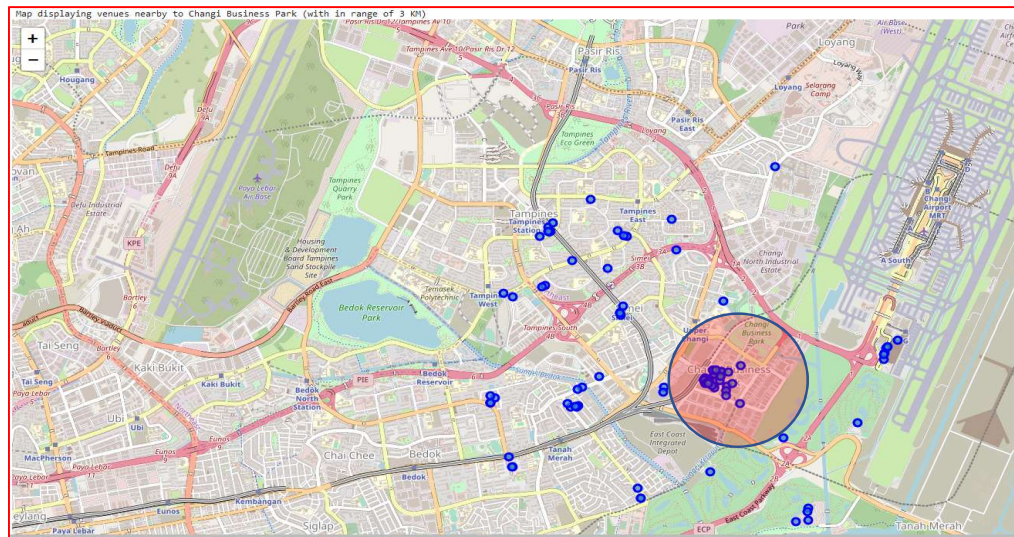
Rent data does not have the latitude and longitude, but have Postal District associated to it. Algorithm using nomantim also returned only one set of Latitude and Longitude for all the districts. So Latitude and Longitudes are tagged to Rent Data from venues table. It could suffice our requirement as our point of interest is within the

area of three kilometres from CBP and venues tables consisted of that data.

3. Methodology:

To reach to a result Visual Presentation of the information is considered better as it can present data readily comparable on the map itself.

Below Map shows the Nearby venues to Changi Business Park, marked as blue dots. As visible in red Circle, CBP has many venues.

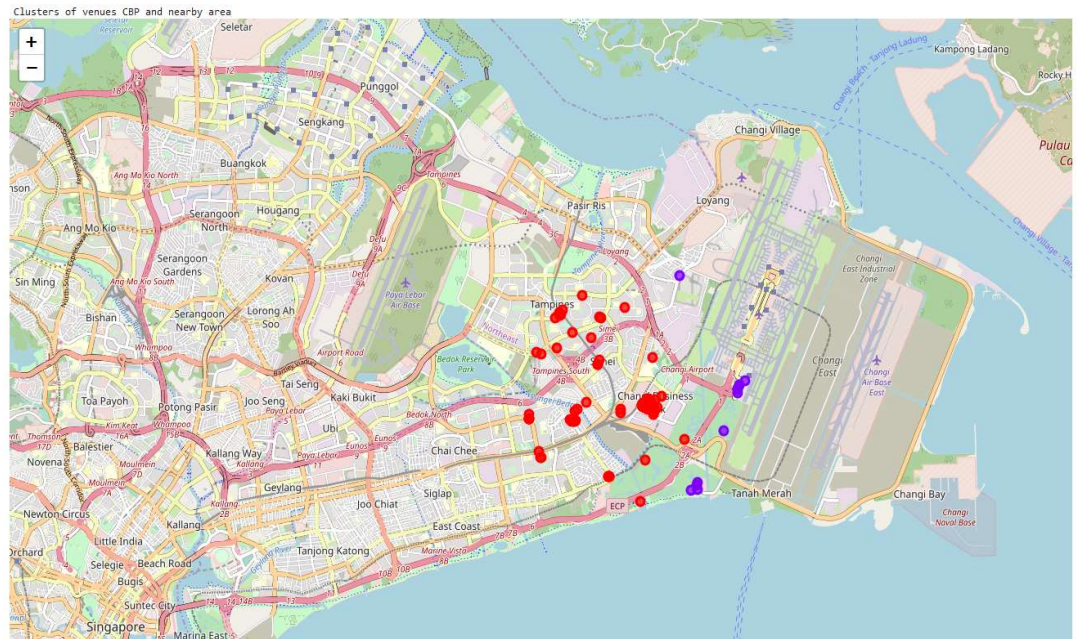


Venues are clustered in order to identify the distribution of venues which meet our selection criteria as mentioned below:

1. Indian Restaurants
2. Breakfast Spot
3. Café/Coffee Shop
4. Discount Store
5. Food Court

6. Ice Cream Shop
7. Malay Restaurant
8. Shopping Mall
9. Supermarket

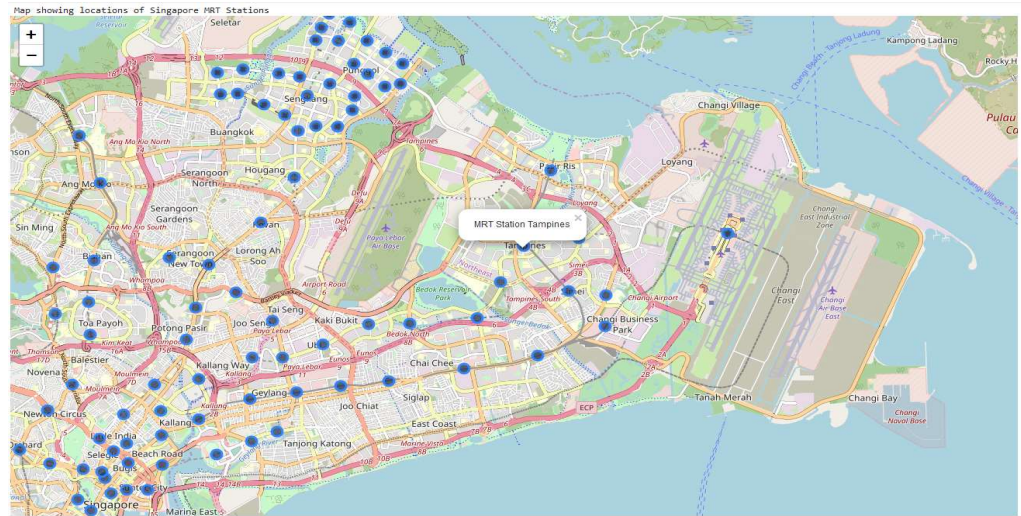
Below Map shows the Clustered venues. Red Dots are the clustered venue which meet the above criteria.



It can be observed that clusters meeting the above stated requirements are clustered in three areas, Tampines, Simei and Bedok.

Near By MRT Stations :

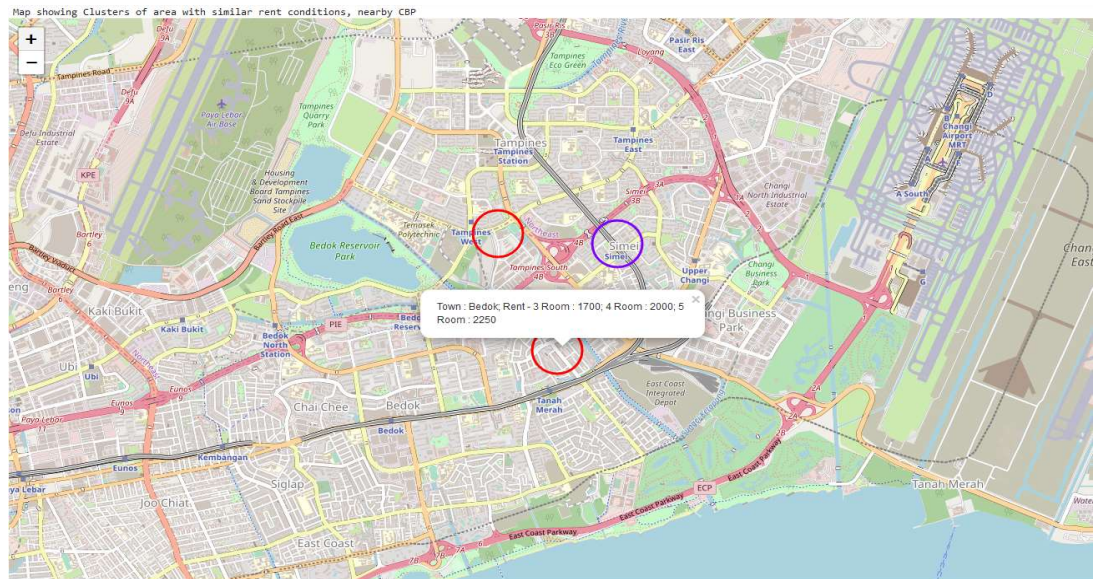
Below Map shows the MRT Station Exits :

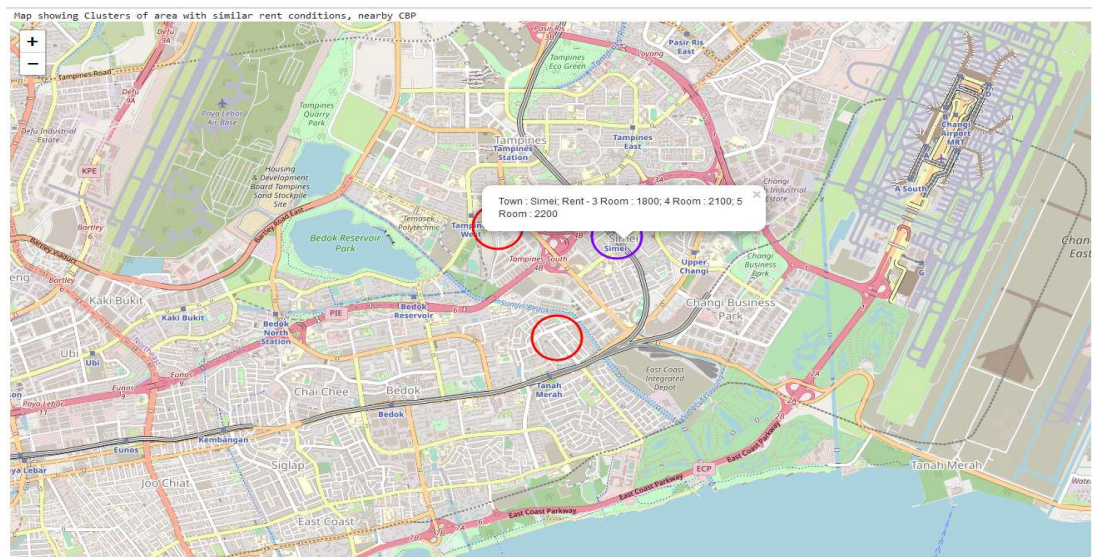
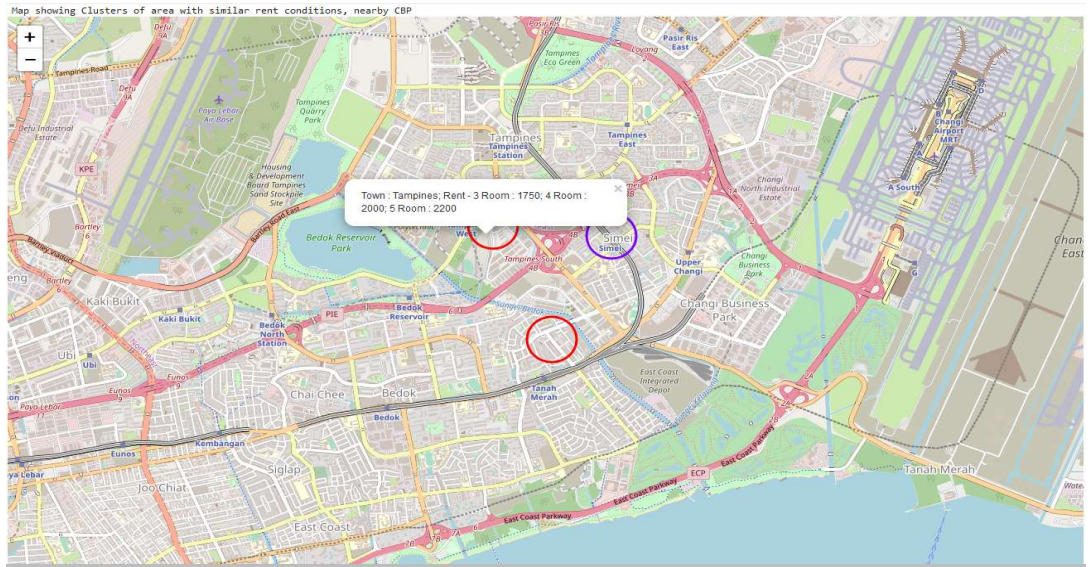


All the three areas highlighted above have nearby MRT stations. Hence, all the three areas meet the requirement.

So now need to check the rental rates in these areas.

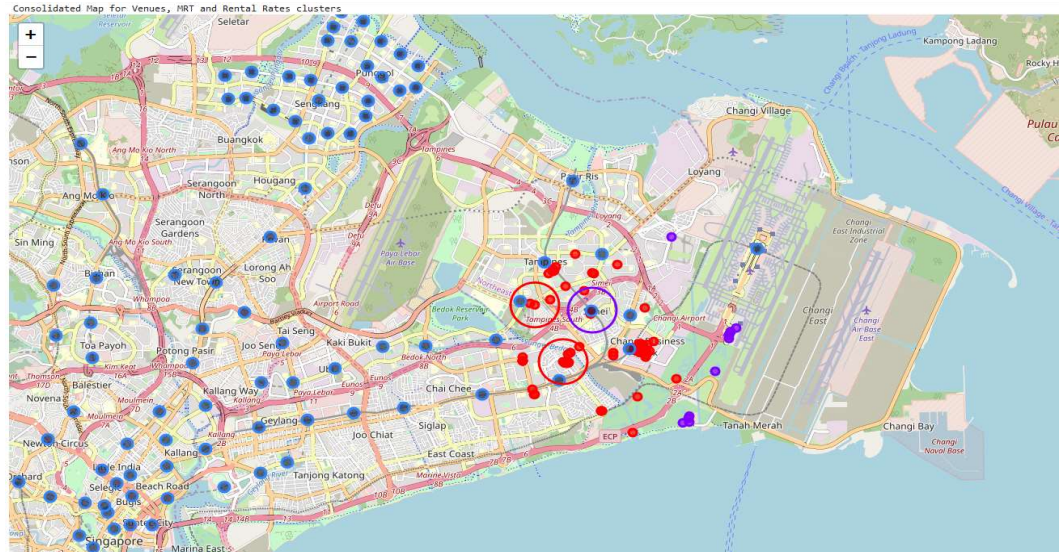
Below Maps show the details of rent for 3, 4 and 5 Room apartments in these areas.





We can see that All the three areas have almost same rent rates.

Below Map represents all the points at one place so that all the relevant information can be gotten from single place. Which make it easier for reaching to conclusion.



1. Small Red and Purple dots represent venues
2. Bigger Blue dots represent MRT Stations
3. Circles represent Rent information for that area

4. Results:

Following is observed from above maps:

1. Venues which meet the requirement are clustered in Bedok, Simei and Tampinese.
2. All the three places have nearby MRT stations.
3. There is no big difference in average rents in all the above mentioned three places.
4. Rents in Tampines and Bedok are comparatively lesser than Simei.
5. It can be observed that Tampines have more venues of interest than other 2 places.

5. Discussion :

Following is observed from above maps:

1. Bedok, Simei, Tampinese and Loyang Changi are the nearby places to Changi Business Park.
2. Whereas Loyang Changi is more suitable area for tourists and visitor for availability of mostly resort and other similar places, Bedok, Tampines and Simei are more suitable for residential purposes.
3. Both Bedok and Tampines area meets the selection preferences.
4. CBP Neighbourhood has good connectivity to nearby places through MRT and all the three point of interest have nearby MRT stations.
5. There is not much difference of Rent Rates in various residential areas nearby to CBP, however Bedok and Tampines are cheaper when compared to Simei.
6. Bedok is a big area and only Partially covered under 3 KM range

6. Conclusion :

From the above discussion and data analysis it can be easily concluded that Tampines is the most suitable place for Indians who are planning to migrate to Singapore to work in Changi Business Park because of following advantages:

1. Availability of Indian Food and other amenities.
2. Nearby MRT stations for easy commutation.
3. Affordable rents.
4. With-in 3 Kilometers of Changi Business Park.