



Battle of the Neighborhood: Singapore Foodie Tour

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Introduction

- Tourism in Singapore is a major industry and it is a huge contributor to the Singaporean economy, attracting millions of international tourists every year.
- The *Travel and Tourism Competitiveness Report 2017* ranks Singapore **13th** out of 136 countries overall.
- Singapore also has **an exceptional food scene**, in Singapore food is viewed as crucial to its national identity and a unifying cultural thread.



Problem

A hypothetical travel agency is looking to open a location in Singapore, where they will be offering food-specific tours for international tourists visiting Singapore.

The travel agency is looking for a location that:

- **Has many local restaurants**
- **Has high tourism density.**

Our task would be to recommend an appropriate location that will fulfill the agency's requirements.

Data Summary

- Regional Geographical Data (Wikipedia)
- Planning area-specific Geographical Data (Wikipedia)
- Latitude and Longitudes of Singapore and its Regions (Geocoder and OneMap API)



Methodologies

- Found the top 10 common venues within each region, and compared them.
- Selected one region that has the most presence of hotels and tourist attractions, and further broke it down into planning areas.
- Found the top 10 common venues within each planning area.
- Ran k-means to cluster the planning areas into 5 clusters, then the resulting clusters are visualized in the form of a map.

```
import numpy as np # library to handle data in a vectorized manner

import pandas as pd # library for data analysis
pd.set_option('display.max_columns', None)
pd.set_option('display.max_rows', None)

import json # library to handle JSON files

!pip install geopy
from geopy.geocoders import Nominatim # convert an address into coordinates

import requests # library to handle requests
from pandas.io.json import json_normalize # tranform JSON :> DataFrame

# Matplotlib and associated plotting modules
import matplotlib.cm as cm
import matplotlib.colors as colors

# import k-means from clustering stage
from sklearn.cluster import KMeans

!pip install folium
import folium # map rendering library
```

Results

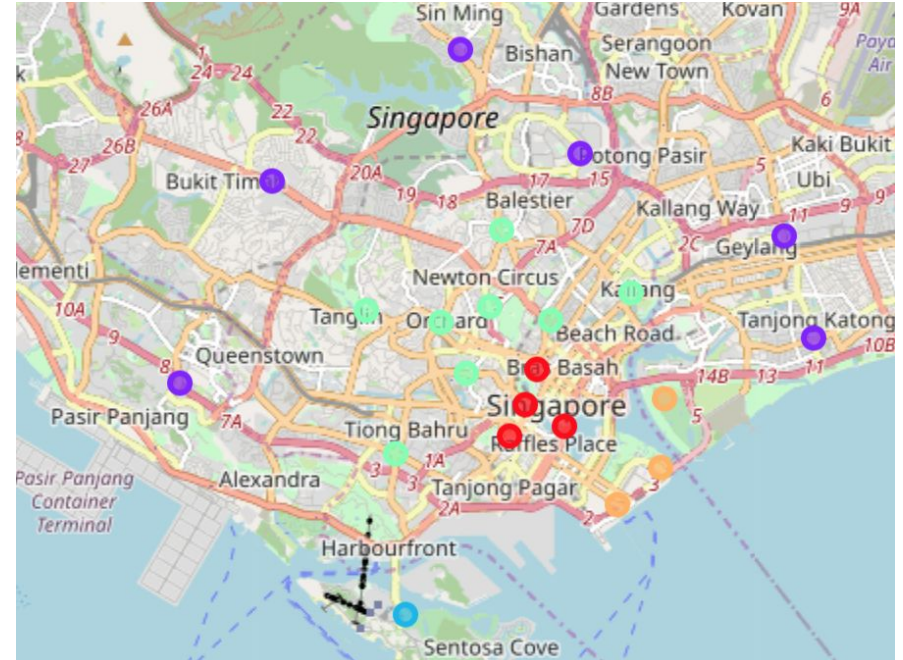
Red: Cluster 0

Purple: Cluster 1

Blue: Cluster 2

Green: Cluster 3

Orange: Cluster 4



Recommendation

I would recommend opening the new location of the agency in any planning areas within Cluster 3.

	Name (English)	Cluster Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
1	Bukit Merah	3	Café	Japanese Restaurant	Hotel	Food Court	Park	Coffee Shop	Scenic Lookout	Chinese Restaurant	Bookstore	Supermarket
5	Kallang	3	Hotel	Chinese Restaurant	Indian Restaurant	Thai Restaurant	Bakery	BBQ Joint	Coffee Shop	Food Court	Supermarket	Restaurant
10	Newton	3	Hotel	Japanese Restaurant	Shopping Mall	Sushi Restaurant	Chinese Restaurant	Clothing Store	Coffee Shop	Cosmetics Shop	Boutique	Bubble Tea Shop
11	Novena	3	Hotel	Indian Restaurant	Chinese Restaurant	Café	Bakery	Restaurant	Food Court	Japanese Restaurant	Italian Restaurant	Dessert Shop
12	Orchard	3	Hotel	Japanese Restaurant	Shopping Mall	Boutique	Sushi Restaurant	Bakery	Coffee Shop	Clothing Store	Chinese Restaurant	Cosmetics Shop
15	River Valley	3	Hotel	Japanese Restaurant	Shopping Mall	Sushi Restaurant	Coffee Shop	Wine Bar	Bakery	Cosmetics Shop	Bubble Tea Shop	Chinese Restaurant
16	Rochor	3	Hotel	Café	Indian Restaurant	Chinese Restaurant	Japanese Restaurant	Clothing Store	Ice Cream Shop	Vegetarian / Vegan Restaurant	Bakery	Cocktail Bar
20	Tanglin	3	Hotel	Japanese Restaurant	Sushi Restaurant	Boutique	Garden	French Restaurant	Chinese Restaurant	Coffee Shop	Cosmetics Shop	Modern European Restaurant