The Battle of Neighbourhood: Vishakhapatnam

IBM DATA SCIENCE CAPSTONE PRESENTATION

Problem statement:

How to choose a right place to start a new restaurant? What type of restaurant will work good?

- Background:
- One who wants to start a business in a city with high density population and good climatic conditions my project will help to find which type of business will work. Restaurants are the good to start in a city like Vishakhapatnam. Beach cities will have good night life for food.

Target Audience:

First focus is on middle class public who choose to have different varieties of food with high quality at reasonable cost.

Stakeholders:

Who are willing to start a restaurant or food business in Vishakhapatnam or nearby areas?

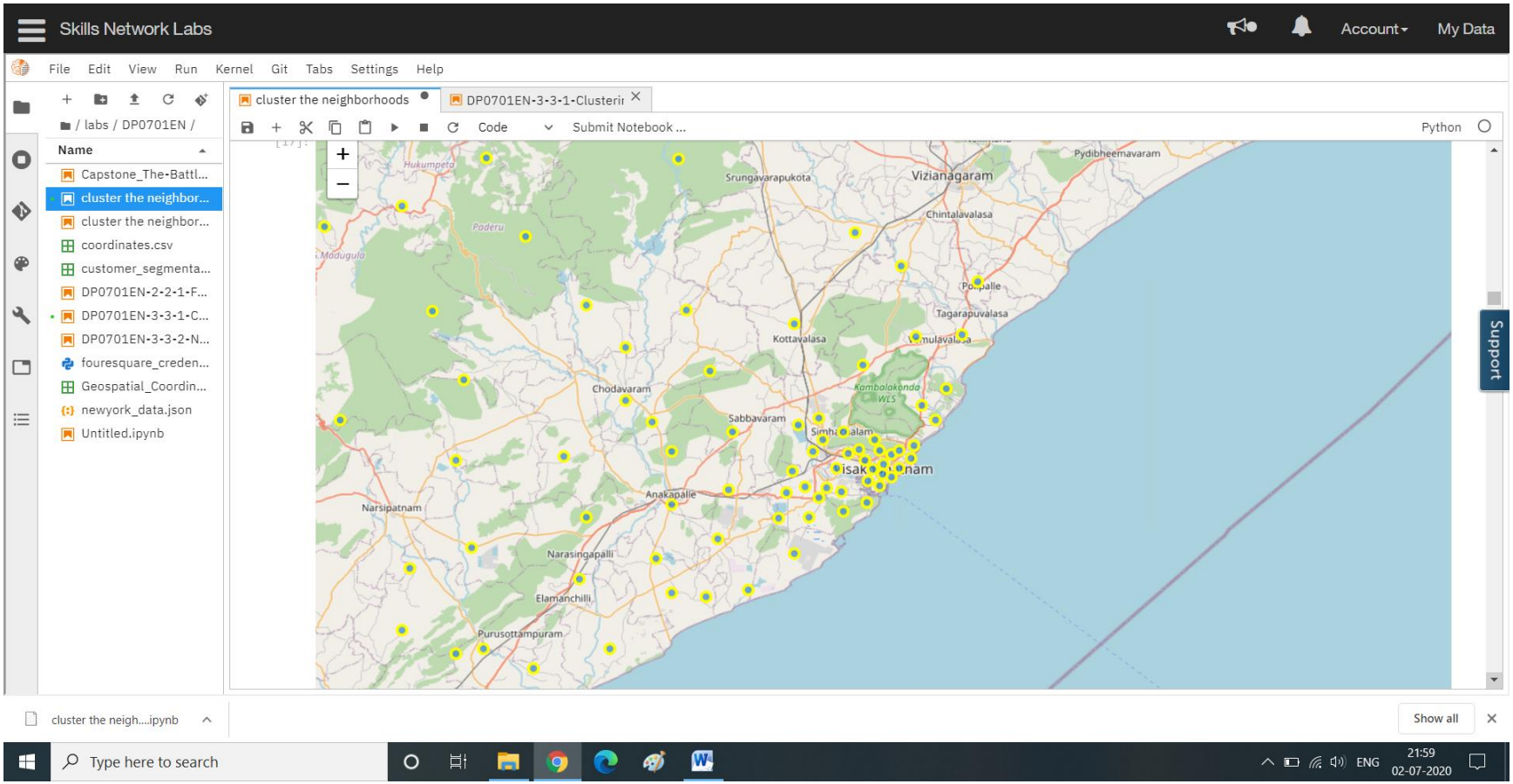
Source of the data :

- All neighbouring coordinates of Vishakhapatnam.
- https://finkode.com/ap/visakhapatnam.html
- And all the coordinates are collected from Google search engine and made a Excel .csv file.

Methodology:

- All the coordinates using postal codes in and around Vishakhapatnam are identified.
- Using Fouresquare credentials, json file was decoded for respective coordinates.
- Venues with same postal codes are merged together into a data frame.
- These merged data is divided into 5 clusters and analysed which was the most visited venue.

Results: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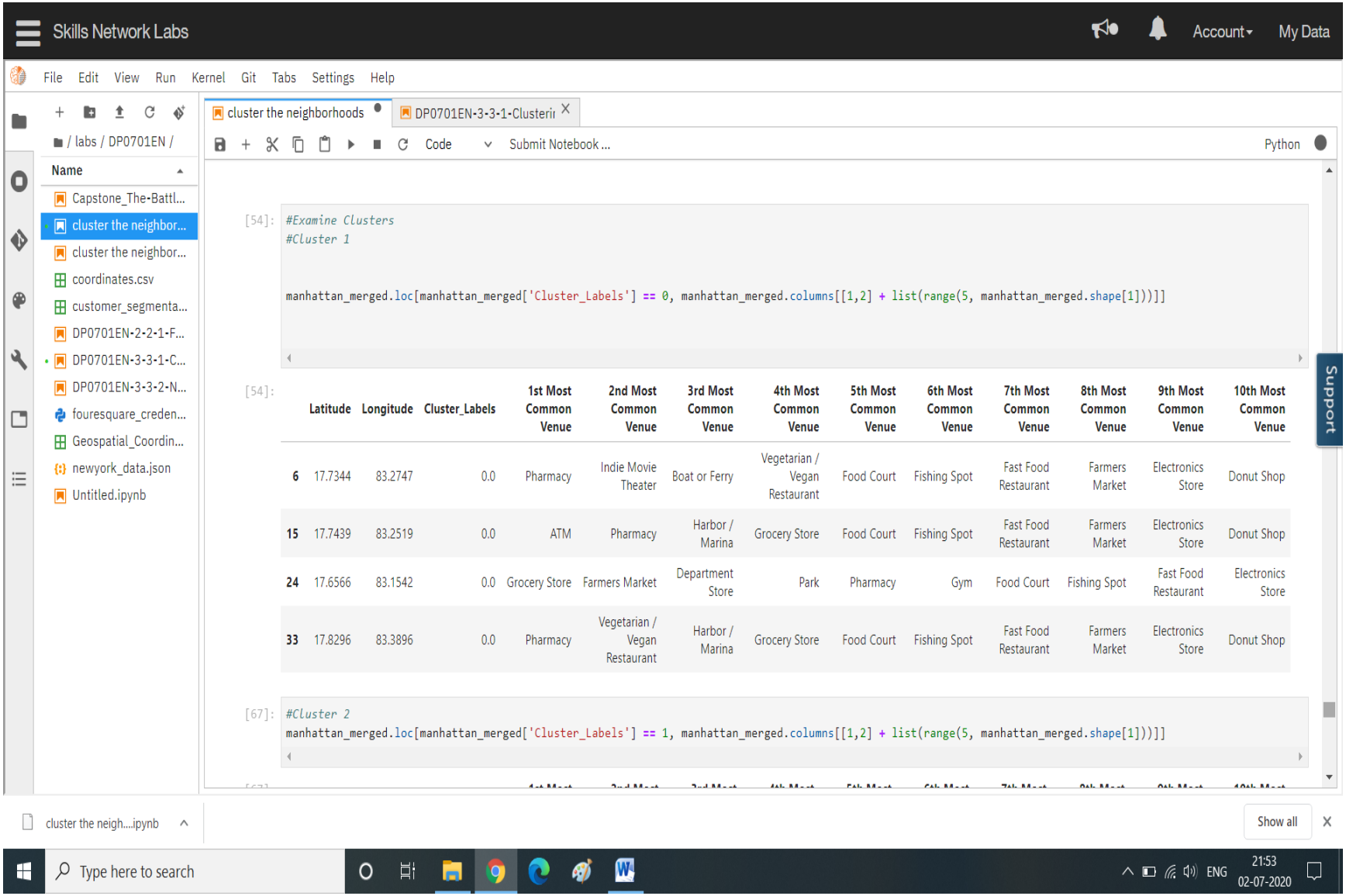
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#Examine Clusters
#Cluster 1
manhattan_merged.loc[manhattan_merged['Cluster_Labels'] == 0, manhattan_merged.columns[[1,2] + list(range(5, manhattan_merged.shape[1]))]]
[54]:
Latitude Longitude Cluster_Labels 1st Most Common Venue 2nd Most Common Venue 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
6 17.7344 83.2747 0.0 Pharmacy Indie Movie Theater Boat or Ferry Vegetarian / Vegan Restaurant Food Court Fishing Spot Fast Food Restaurant Farmers Market Electronics Store Donut Shop
15 17.7439 83.2519 0.0 ATM Pharmacy Harbor / Marina Grocery Store Food Court Fishing Spot Fast Food Restaurant Farmers Market Electronics Store Donut Shop
24 17.6566 83.1542 0.0 Grocery Store Farmers Market Department Store Park Pharmacy Gym Food Court Fishing Spot Fast Food Restaurant Electronics Store
33 17.8296 83.3896 0.0 Pharmacy Vegetarian / Vegan Restaurant Harbor / Marina Grocery Store Food Court Fishing Spot Fast Food Restaurant Farmers Market Electronics Store Donut Shop
[67]:
#Cluster 2
manhattan_merged.loc[manhattan_merged['Cluster_Labels'] == 1, manhattan_merged.columns[[1,2] + list(range(5, manhattan_merged.shape[1]))]]
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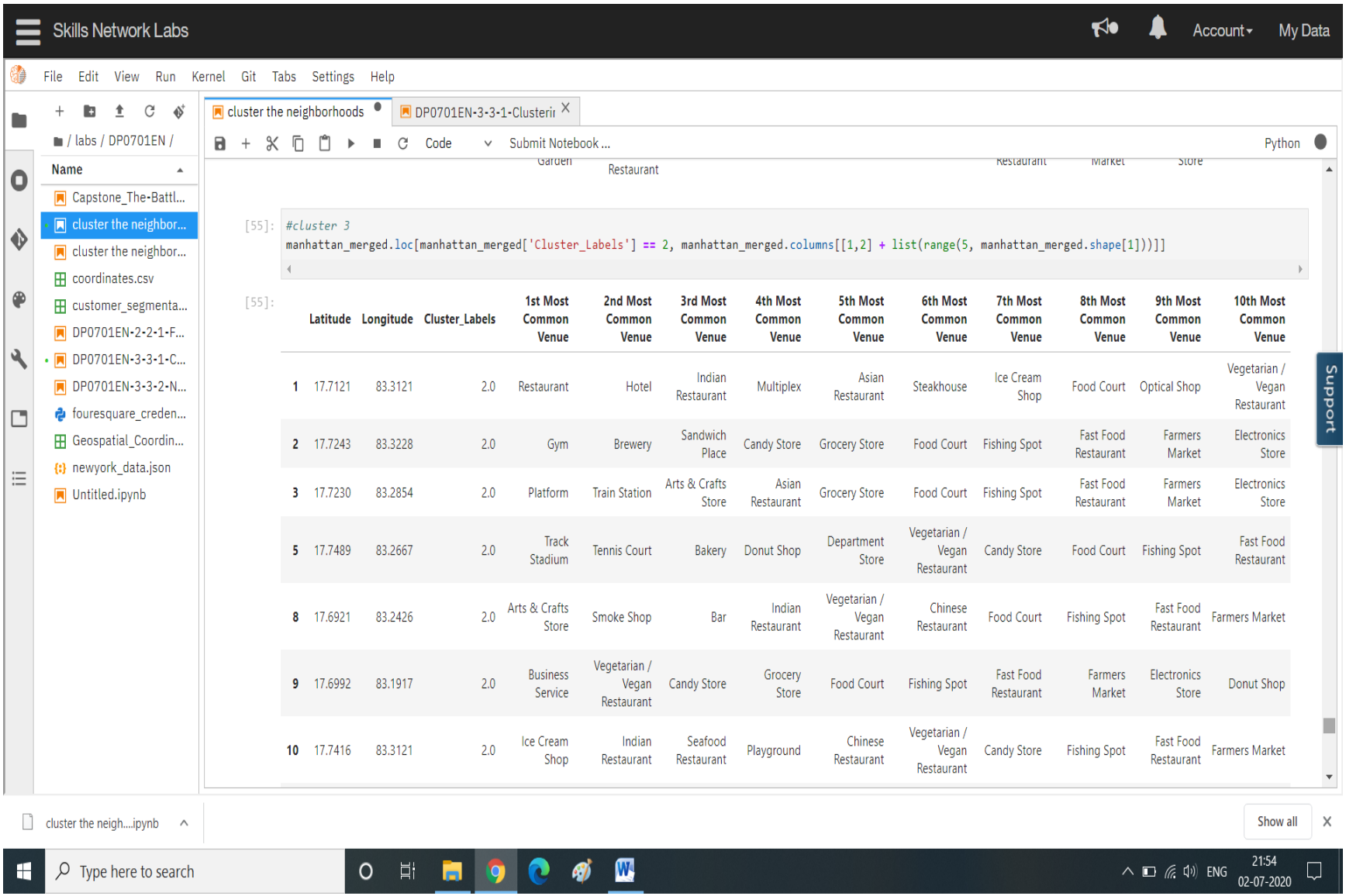
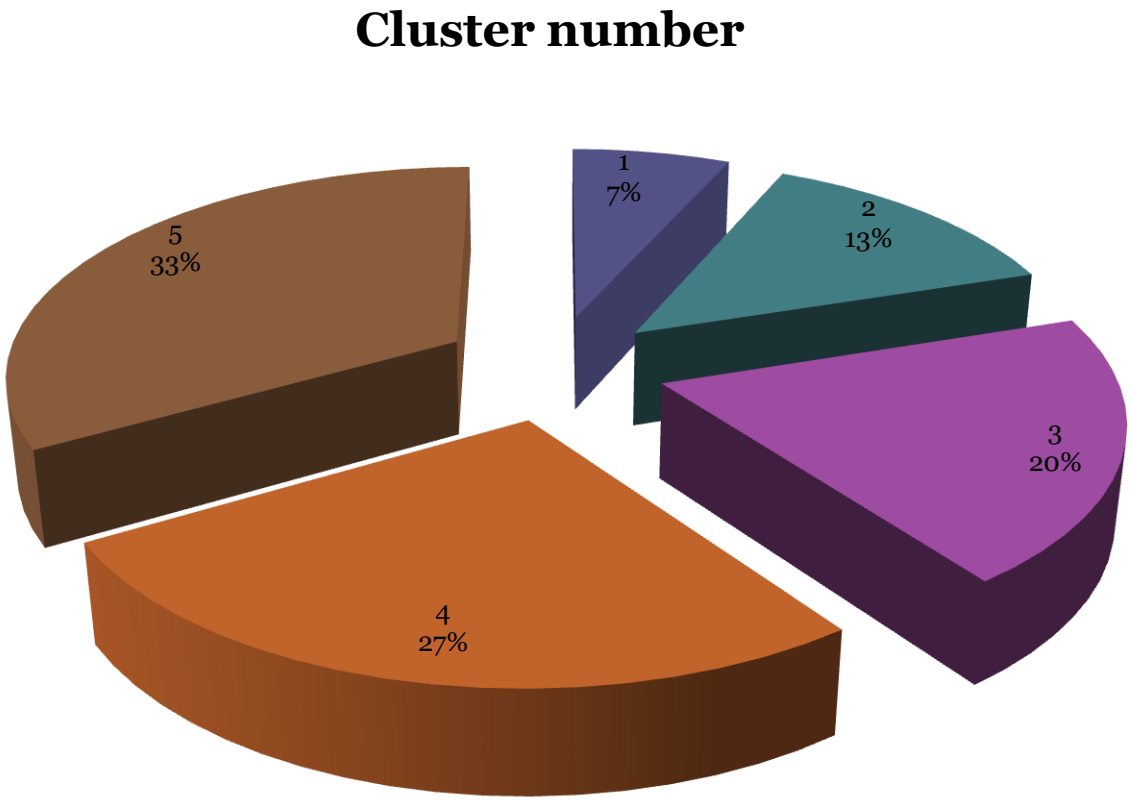


	Latitude	Longitude	Cluster_Labels	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue	6th Most Common Venue	7th Most Common Venue	8th Most Common Venue	9th Most Common Venue	10th Most Common Venue
1	17.7121	83.3121	2.0	Restaurant	Hotel	Indian Restaurant	Multiplex	Asian Restaurant	Steakhouse	Ice Cream Shop	Food Court	Optical Shop	Vegetarian / Vegan Restaurant
2	17.7243	83.3228	2.0	Gym	Brewery	Sandwich Place	Candy Store	Grocery Store	Food Court	Fishing Spot	Fast Food Restaurant	Farmers Market	Electronics Store
3	17.7230	83.2854	2.0	Platform	Train Station	Arts & Crafts Store	Asian Restaurant	Grocery Store	Food Court	Fishing Spot	Fast Food Restaurant	Farmers Market	Electronics Store
5	17.7489	83.2667	2.0	Track Stadium	Tennis Court	Bakery	Donut Shop	Department Store	Vegetarian / Vegan Restaurant	Candy Store	Food Court	Fishing Spot	Fast Food Restaurant
8	17.6921	83.2426	2.0	Arts & Crafts Store	Smoke Shop	Bar	Indian Restaurant	Vegetarian / Vegan Restaurant	Chinese Restaurant	Food Court	Fishing Spot	Fast Food Restaurant	Farmers Market
9	17.6992	83.1917	2.0	Business Service	Vegetarian / Vegan Restaurant	Candy Store	Grocery Store	Food Court	Fishing Spot	Fast Food Restaurant	Farmers Market	Electronics Store	Donut Shop
10	17.7416	83.3121	2.0	Ice Cream Shop	Indian Restaurant	Seafood Restaurant	Playground	Chinese Restaurant	Vegetarian / Vegan Restaurant	Candy Store	Fishing Spot	Fast Food Restaurant	Farmers Market

OBSERVATIONS:

Cluster number	No. of postal codes Covered	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue
1	4	Pharmacy	Theatre	Ferry
2	1	Sculpture garden	Veg. Restaurant(1)	Candy store
3	14	Bakery -2 Restaurant -2 Ice cream shop - 1	Restaurants -5 Hotel -2	Restaurants- 4 Food courts- 2 Hotels - 1
4	1	Fishing spot	Veg restaurant	Candy store
5	1	Harbour	Veg restaurant	Candy store

PERCENTAGE OF VENUES AT DIFFERENT CLUSTERS



CONCLUSION:

- It is observed that cluster-3 is having more number of coordinates. Food business is also going fine there. 27% of postal codes are covered in this region and more number of food courts established here. So, we can suggest stakeholders to go with any of those 14 coordinates and start a new variety of food business.