

The Battle of Neighbourhoods
IBM Applied Data Science Capstone

Identifying the Better Location to Open a Hotel/Resort in Visakhapatnam, Andhra Pradesh, India

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Business Problem

- Identifying the right location for setting up a Hotel or Resort is utmost important for the success or failure of the venture
- The main objective of this study is to address the problem stated above, by analysing the neighbourhoods and select the best locations in the city of Visakhapatnam, India to start a new Hotel or Resort.
- This project helps Government officials and infrastructure developers to understand the pulse of tourism and required demand for hotels and resorts since Visakhapatnam is considered as the executive capital of the state Andhra Pradesh, India.
- By this analysis we are going to answer the question:
 - ✓ If an infrastructure developer wants to start a new hotel or resort in Visakhapatnam city, what could be the better location to concentrate?

Data

- **Data Requirements**

- List of neighbourhoods in and around Visakhapatnam city
- Geo coordinates latitude and longitude for each of the neighbourhoods
- Venue details such as 'VenueName', 'VenueLatitude', 'VenueLongitude', 'VenueCategory' particularly for the hotels and resorts

- **Data Sources**

- Wikipedia page for neighbourhoods
https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Visakhapatnam.
- Geocoder python package for longitude and latitude of neighbourhoods
- Foursquare API credentials for venue data provisioning

Methodology

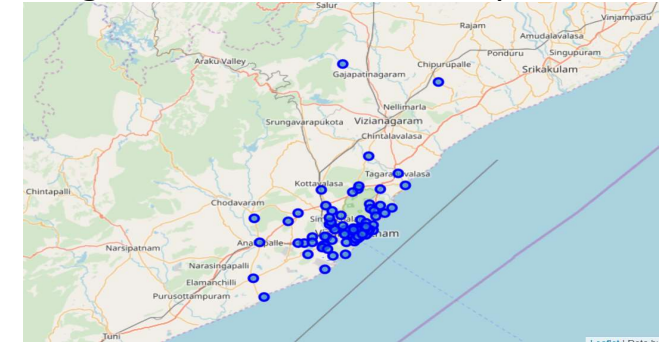
- Web scrape Wikipedia page for neighbourhoods list of Visakhapatnam city
- Get the information about latitude and longitude of neighbourhoods using Geocoder package in Python
- Get the Venue details specially for Hotels and Resorts using Foursquare API
- Group the data for hotels and resorts by considering the frequency of occurrence in the neighbourhoods
- Perform K-means cluster with 3 clusters to define the clusters based on the similarity of distance.
- Visualize and analyse the cluster and provide recommendations.

Findings

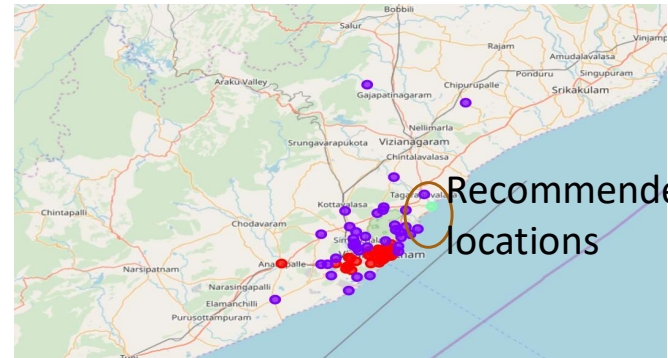
- The results of k-means clustering are as described below: we have restricted to 3 cluster for easy analysis and provide better recommendations based on the frequency occurrence of hotels and resorts.
- The below table gives us the evidence that the concentration of the hotels and resorts in
- Visakhapatnam are in south and north parts of the city only.

Cluster Number	#Hotels or Resorts	Description
Cluster 0	55	North part of the city
Cluster 1	54	South part of the city
Cluster 2	2	Less number in east part of the city

Neighbourhoods of Visakhapatnam



Cluster Results



Thank you
