Segmenting and Clustering Neighbourhoods Gold Coast

Segmenting and Clustering Suburbs – Gold Coast City

❑ Gold Coast's population is forecasted to double by 2050 and reach over one-million people

❑ Gold Coast will likely attract many future businesses within the hospitality industry including food and beverages, tourism, lodging and recreation

Project Aim To segment and cluster the suburbs in Gold Coast city based on the most common venues within each suburb.

Results of segmentation and clustering, as well as population data of each suburb will be used to recommend optimal locations for future businesses in the hospitality sector.

Data Acquisition and Processing

❑ List of Gold Coast suburbs and population data from Wikipedia.
   2016 data scraped from https://en.wikipedia.org/wiki/List_of_Gold_Coast_suburbs

❑ Geographical coordinates of suburbs were determined using postcodes as inputs within the GeoCoder package on Python

❑ Suburbs with identical postcodes were combined as one neighbourhood and populations summed together

❑ 17 neighbourhoods were identified and visualized using Folium map
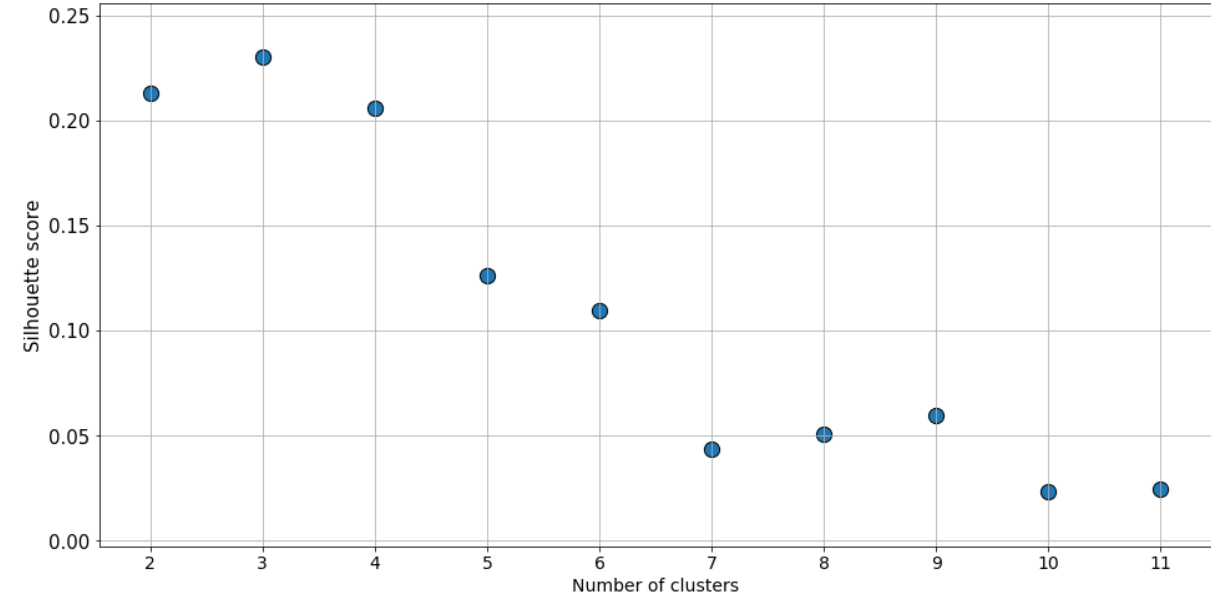
❑ Venue data scraped from FourSquare API
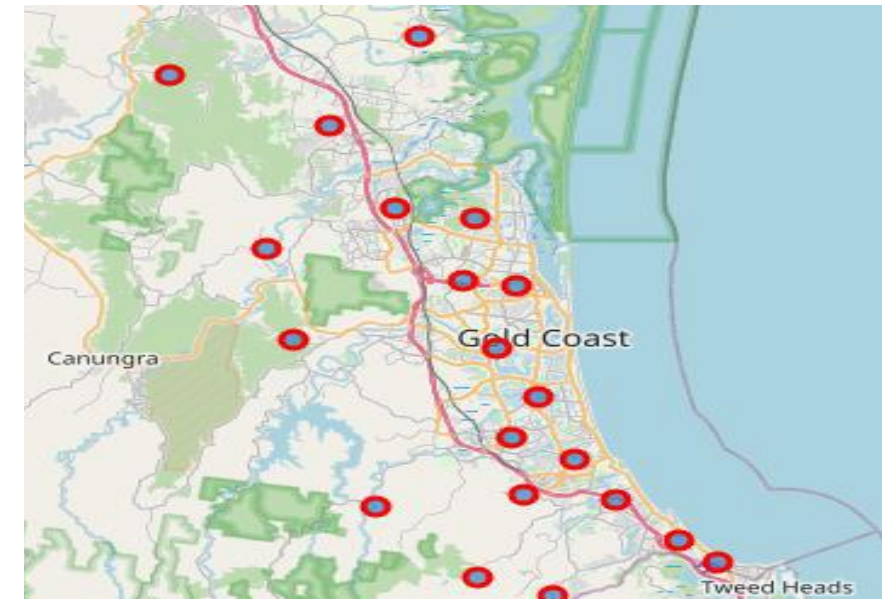
Exploratory Data Analysis

❑ K-means clustering was implemented to cluster the 17 neighbourhoods

❑ Elbow Curve Method and Silhouette Coefficient Method were used to find the optimal number of clusters *K*

The Elbow Method showing the optimal k
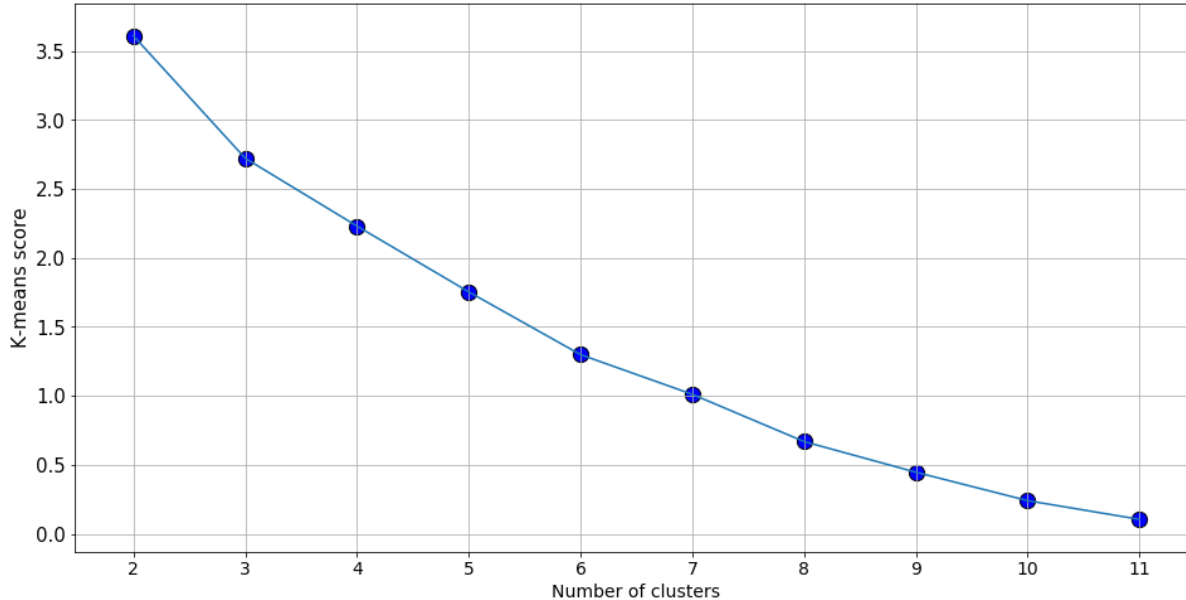
The silhouette coefficient method for determining number of clusters

❑ Optimal number of clusters *K* = 3

Results

❑ Clustered neighbourhoods separated into four groups

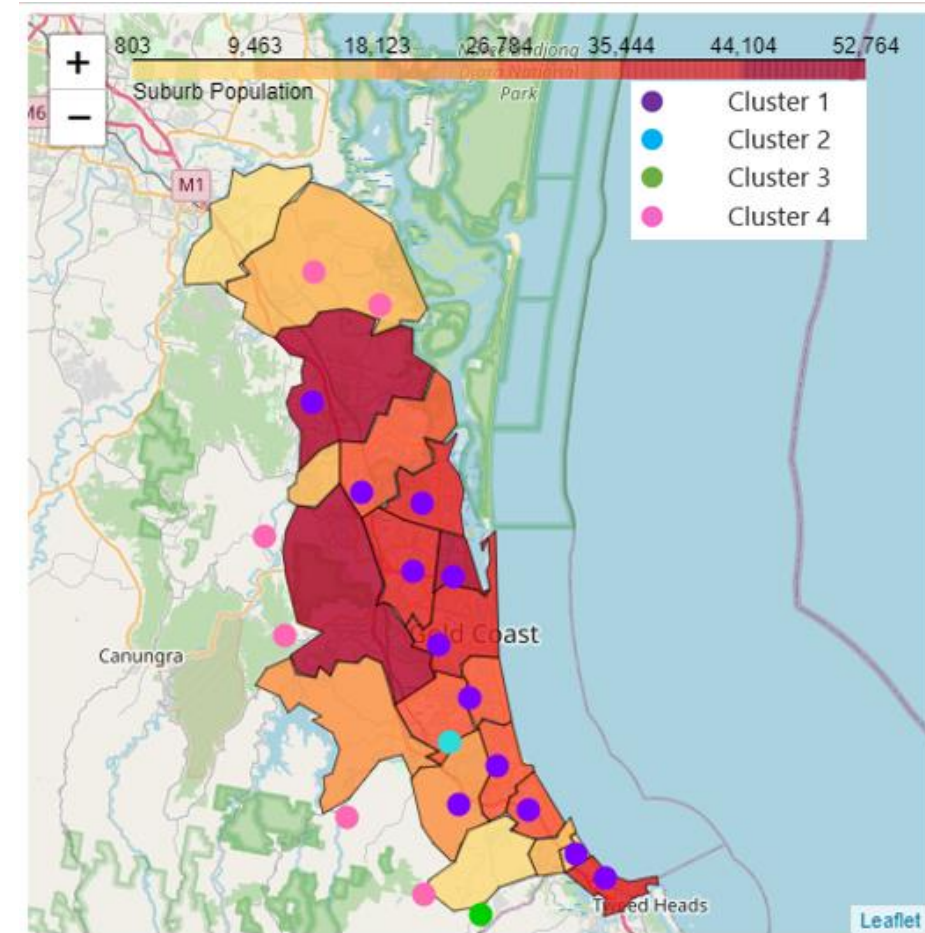Cluster 1 Dining/Grocery/Shopping Malls (Hospitality)

Cluster 2 Outdoor Recreation/Sports Stores

Cluster 3 Cafes/Clothing Stores

Cluster 4 No recorded venues

❑ Cluster 1 neighbourhoods are predominantly
 located along the coastline

❑ Cluster 4 neighbourhoods (no venues) tend
 to appear further inland

Conclusion and Future Work

❏ Based on the presented data alone, business owners in the hospitality sector have chosen to setup venues near the coastline – irrespective of population

❏ Future businesses in hospitality may be able to leverage the high population in neighbourhoods labelled as cluster 4 and acquire first mover advantage

❏Future work will involve assessing other factors that have an effect on the success of a business when it comes to deciding the venue location:

- ❖ Rental Pricing
- ❖ Demographics
- ❖ Household Income

Thank You

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