

Battle of the Neighbourhoods

Choosing the best suburb in Cape Town for you to live

Introduction



Moving to a new city is daunting and its useful to know as much information about the city and its suburbs before choosing where to live



South Africa is notoriously dangerous, so crime rate plays a huge role in considerations.



Close proximity to a hospital is also important in case of emergencies.



Additionally, people will want to know the popular venues in each suburb to find one that suits their taste and interests.

Data



Cape town list of suburbs
scraped from wikipedia
webpage.



Cape town suburbs crime
rate data downloaded
from the south african
police service webpage.



Distance from suburb to
nearest hospital sourced
from google maps.



Population demographic
data

Methodology

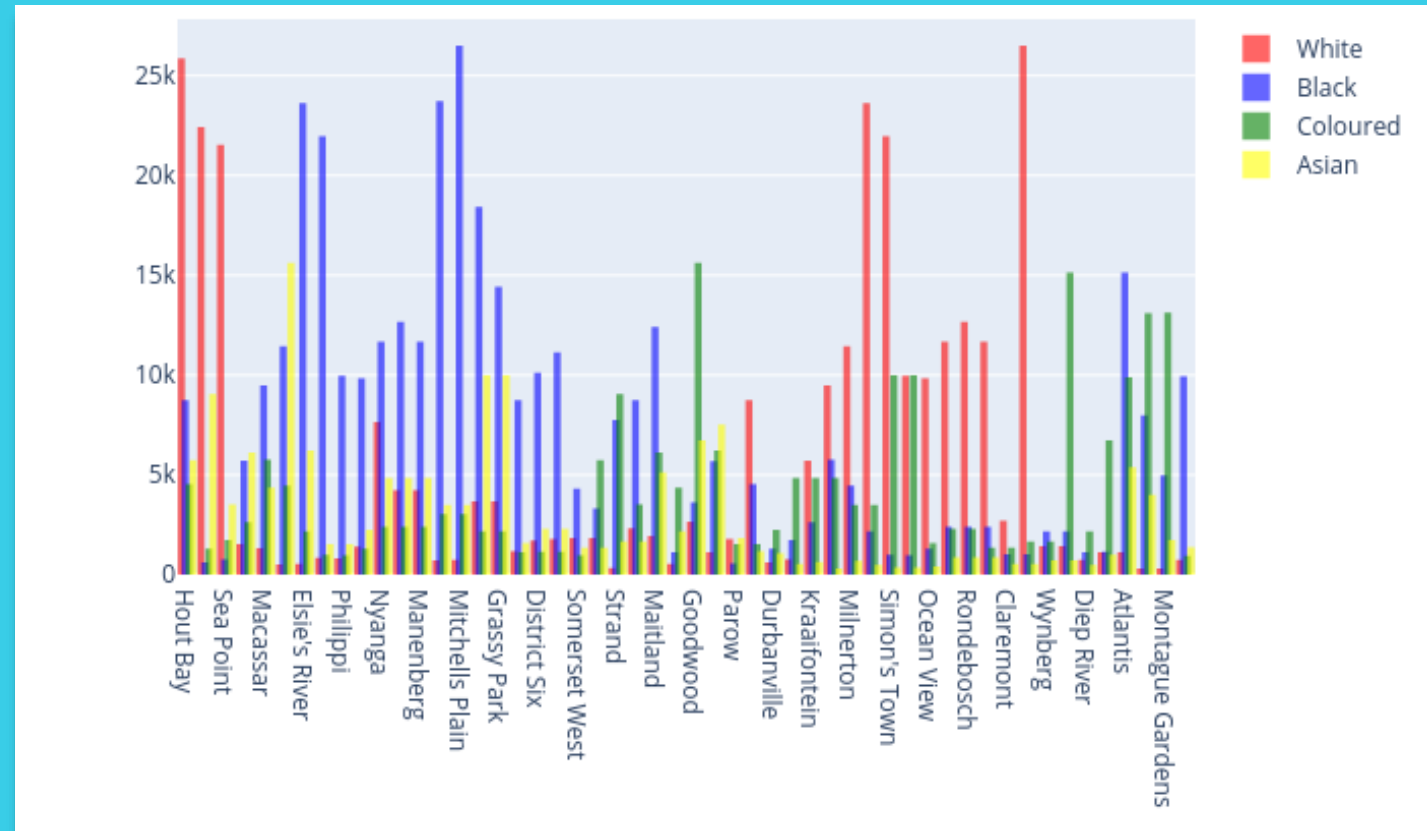
- This project uses Foursquare API to retrieve data on Cape Town suburbs in terms of their most popular venues.
- K-means clustering is used to cluster suburbs based on their most popular venues.
- Folium is used to create interactive leaflet maps of Cape Town and its suburbs.

Python packages needed

- Pandas: for analysing datasets
- Numpy: for handling vector data
- json: for handling json files used in folium
- Geopy Nominatim: for getting location data
- matplotlib: for plotting in Python
- sklearn: for kmeans clustering
- folium: to generate maps

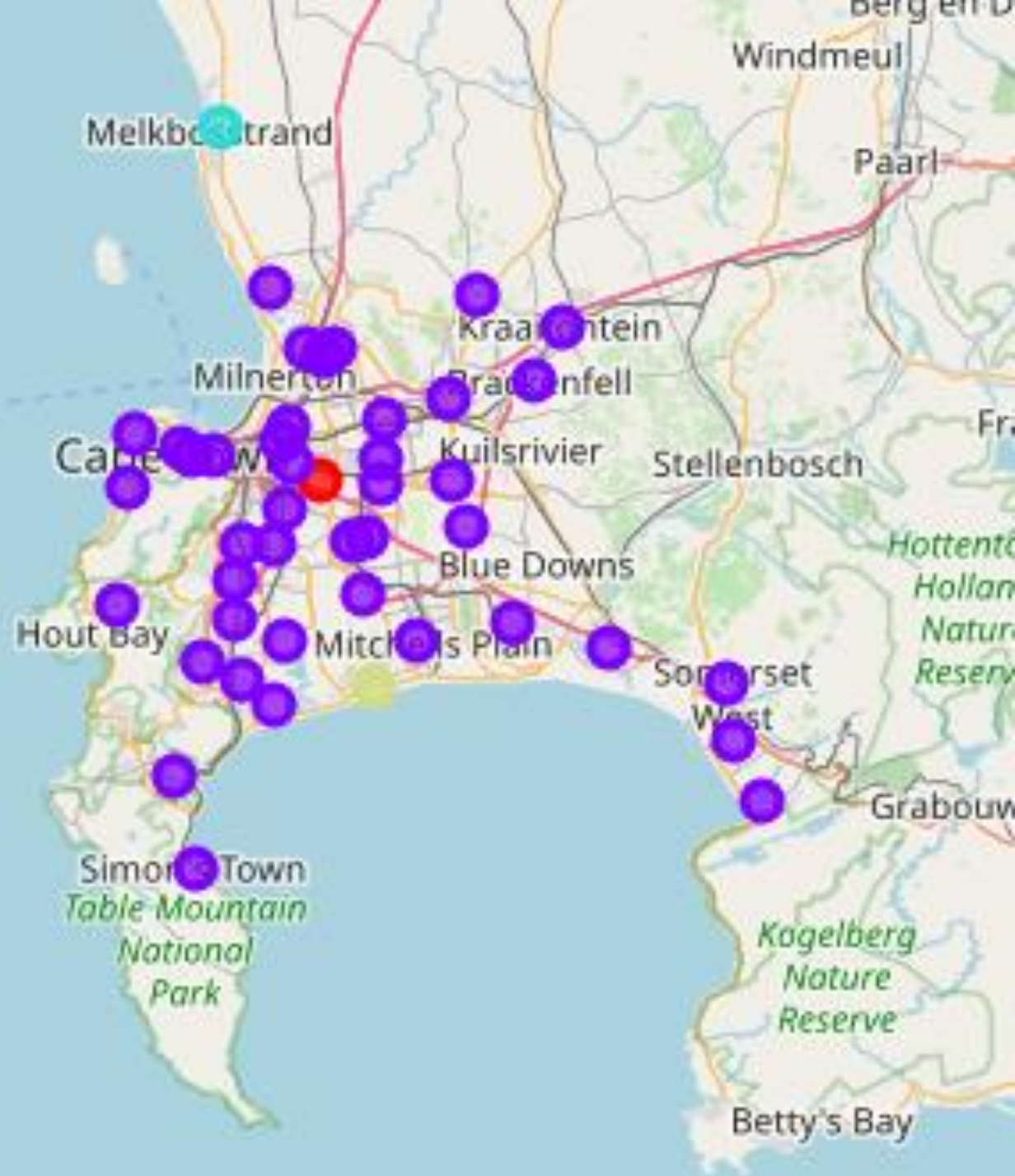
Results

- Population demographics of Cape Town Suburbs



Folium map of clustered suburbs

- There are four clusters, as suggested by the elbow curve
- The vast majority of suburbs fall into cluster 2



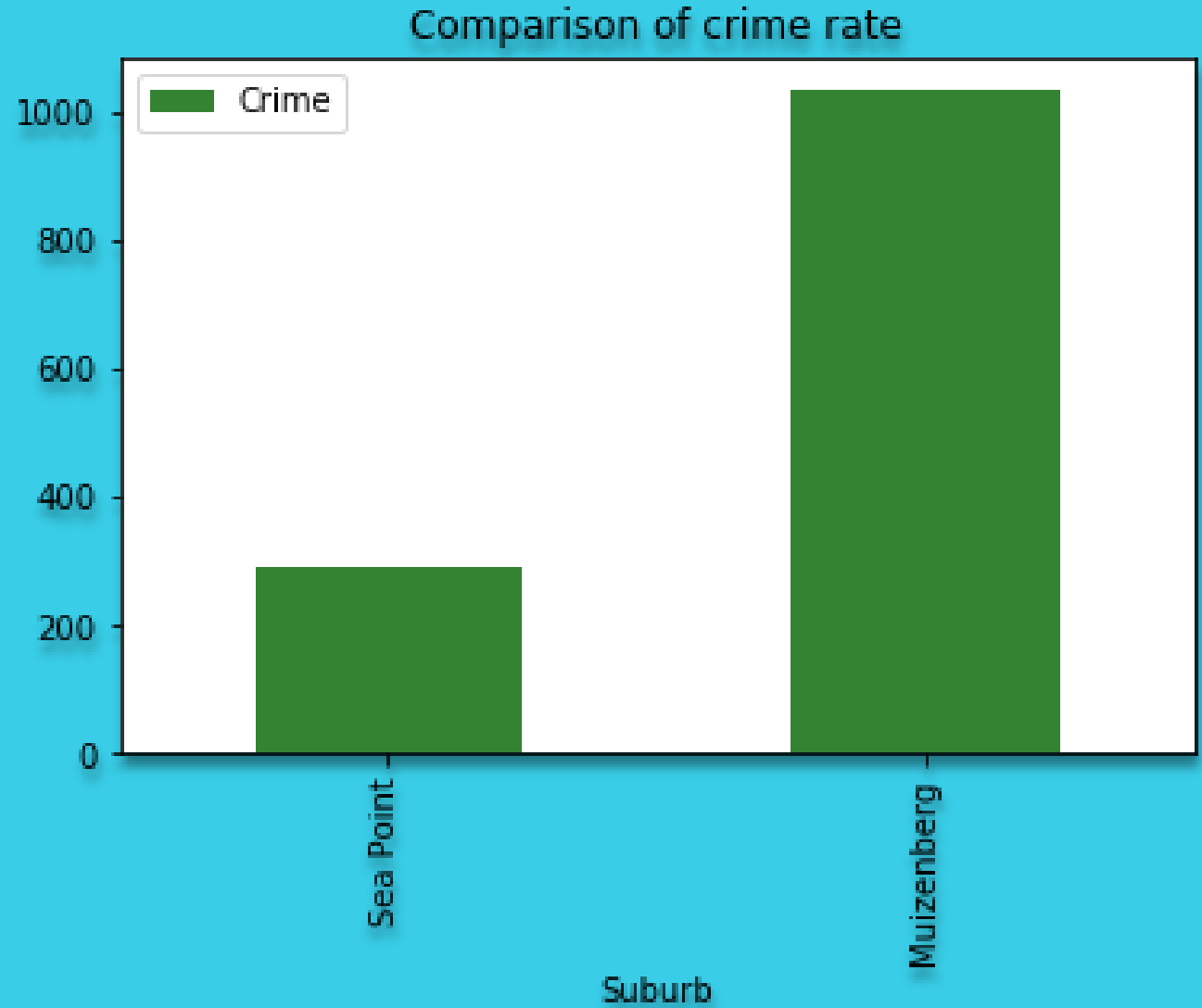
Results: Comparison of two suburbs

- The user wants to compare Sea Point (top) and Muizenberg (bottom), two very popular seaside suburbs of Cape Town



Crime comparison

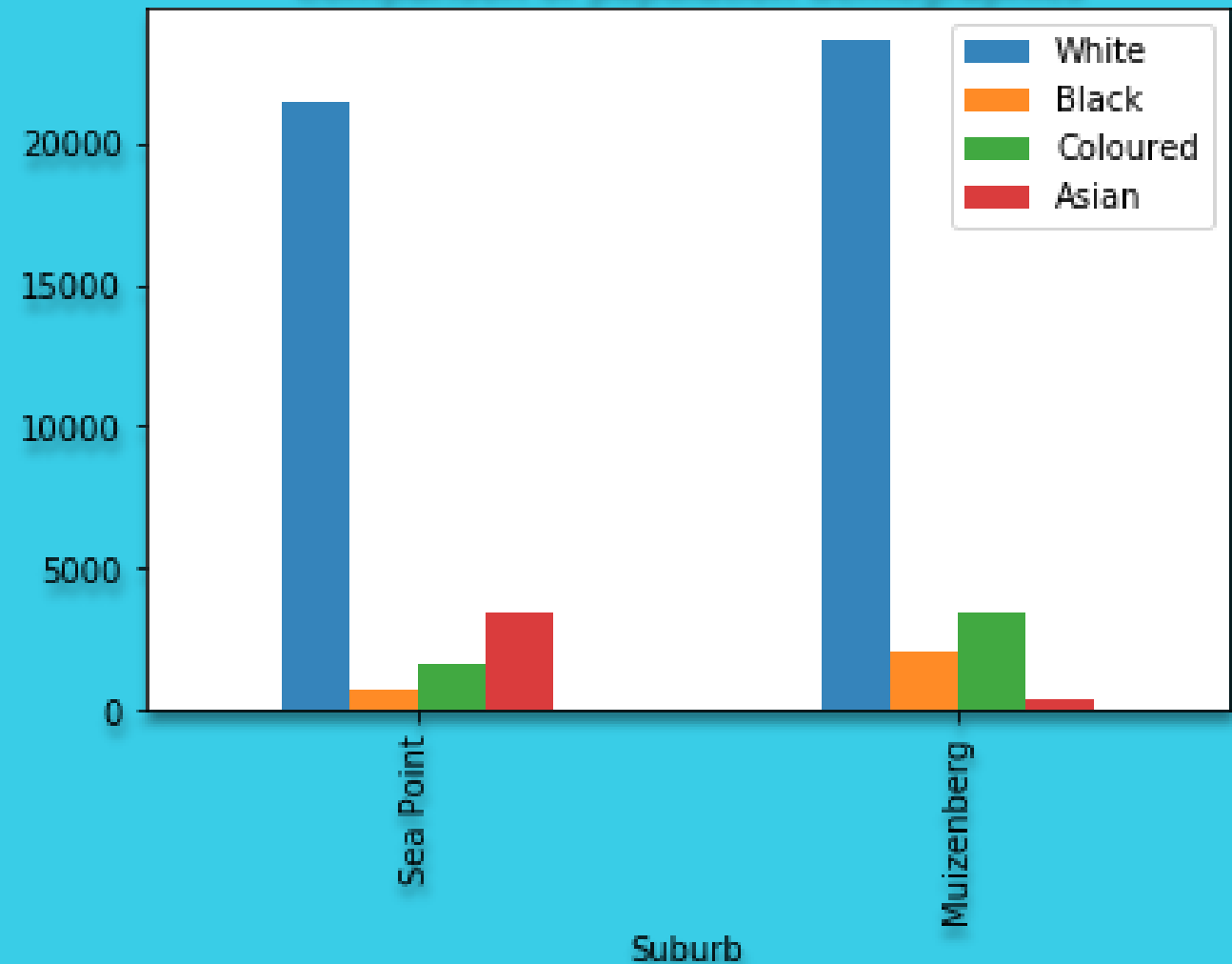
We can see that Muizenberg has a much higher crime rate (almost three times higher) than Sea Point



Demographic comparison

- The user is immigrating from Japan and would prefer a larger Asian population
- Sea Point has a substantially higher Asian population, and, for that reason, Sea Point is more appealing

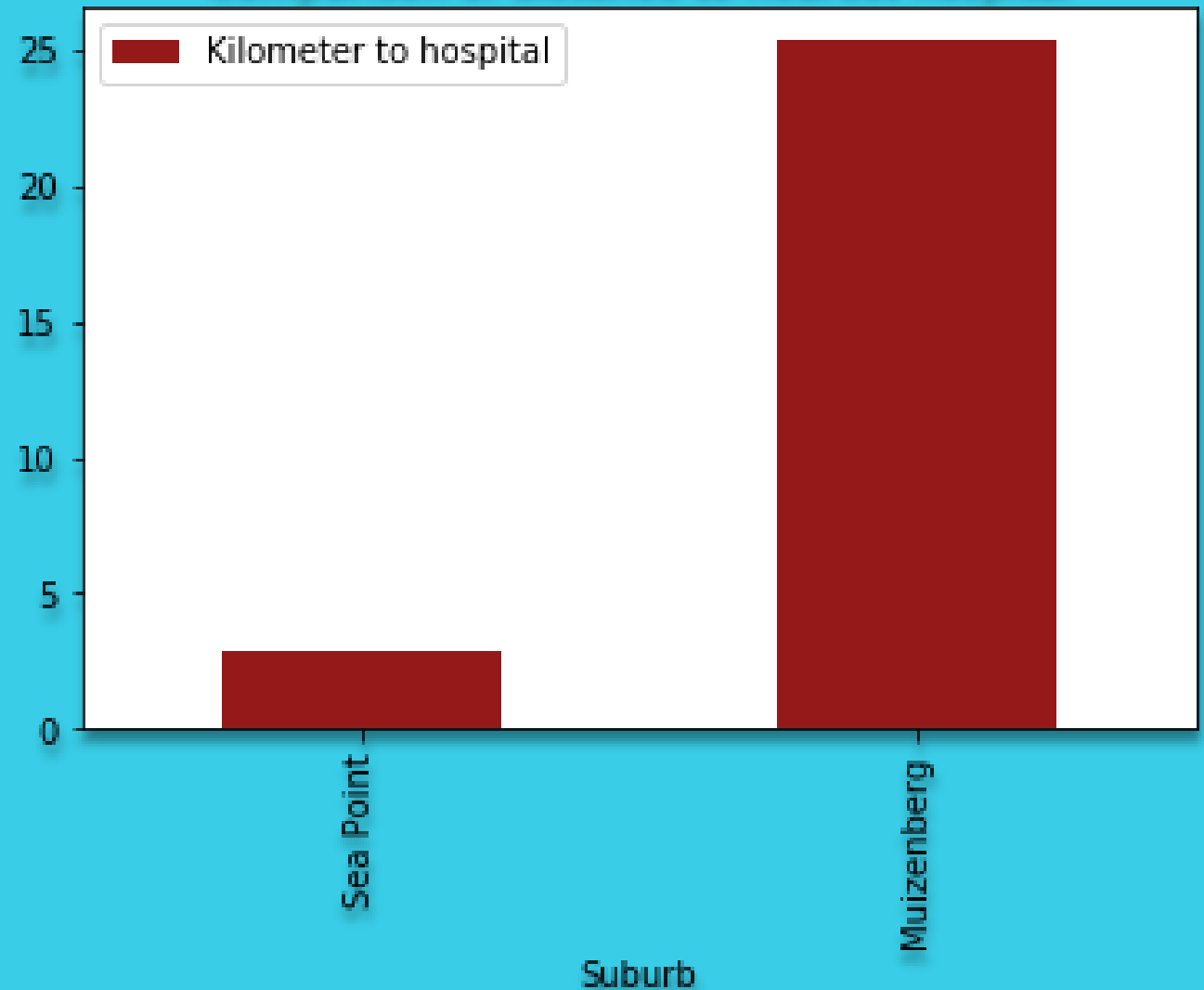
Comparison of population demographics



Hospital comparison

- The user suffers from renal issues so it is important the suburb is in close proximity to a hospital that offers dialysis.
- Sea Point is much closer to a major hospital and is therefore a far safer place to live in case of emergencies.

Comparison of distance to nearest hospital



Popular venues comparison

- The table shows us that Sea Point is a more upmarket suburb by the likes of what it offers: hotels, restaurants and shopping malls, compared to Muizenberg's flea markets, fast food and fishing store and convenient stores, which are less upmarket.

	Suburb	Sea Point	Muizenberg
1st Most Common Venue		Hotel	Coffee Shop
2nd Most Common Venue		Pizza Place	Event Space
3rd Most Common Venue		Burger Joint	Flea Market
4th Most Common Venue		Coffee Shop	Fishing Store
5th Most Common Venue		Sushi Restaurant	Fish & Chips Shop
6th Most Common Venue		Italian Restaurant	Fast Food Restaurant
7th Most Common Venue		Restaurant	Factory
8th Most Common Venue		Grocery Store	Fabric Shop
9th Most Common Venue		Shopping Mall	Ethiopian Restaurant
10th Most Common Venue		Indian Restaurant	Convenience Store

Conclusion



- Sea Point has a substantially lower crime rate
- Sea Point has a more Asian population
- Muizenberg is too far from a hospital
- Sea Point is more upmarket and offers nice restaurants and malls
- Sea Point is the best suburb for this user