**ABC Hotel Group Toronto-Location Search**

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**Section-1**

**Introduction/Business Problem**

ABC Hotel Group was seeking an opportunity to expand their hotel business and have decided to build a new hotel in the city of Toronto. Now the top leadership team at ABC Hotel Group is facing the most of important thing for the business – picking an appropriate location.

**Background**

Toronto is not only the capital city of the province of Ontario, but also a centre of business, finance, arts, and is recognized as one of the most multicultural and cosmopolitan cities in the world. Included luxury, cheap, 5-star and other type hotels, Toronto already has about 183 hotels with a total of almost 36,000 rooms (according to Wikipedia).

**The importance in a hotel industry**

In every business location plays a very important role in its success and hotels are no exception. Every hotel will have its own target groups or customers which include local national and international tourists, people coming for business purposes, conferences, weeding bookings and so on. Target groups may differ in each hotel but most of these groups prefer locations which are attractive and locations usually located near to different transport links. Therefore, a combination of reasonable venues nearby is easier to catch people’s attentions and thus would stay longer in their memories.

**Competition**

There is consumer “theory” –according to Greg Kahn, founder and CEO of Kahn Research Group in Huntersville, NC, and a behavioral research veteran who's done location research for Arby's, Buffets Inc., Home Depot, Subway and other major and minor players. He said: “Quite simply, the best place to be is as close to your biggest competitor as you can be."

Therefore, the senior leadership team at ABC Hotel Group needs a data-driven analytics report to help them make a decision.

**Section-2**

**Data**

To solve the business problem, we will use the following source data:

**Toronto Borouhs/Neighbourhoods**

(Wikipedia - Toronto Boroughs/Neighbourhoods: <https://en.wikipedia.org/wiki/List_of_postal_codes_of_Canada:_M>)

It’s public data and its table contains a list of postal codes in Canada where the first letter is M. Postal codes beginning with M are located within the city of Toronto in the province of Ontario. Only the first three characters are listed, corresponding to the Forward Sortation Area.

Please refer to the Data Report for more details.

**GeoCoder/Google Geolocation APIs**

Geocoding is the process of converting addresses (like "1600 Amphitheatre Parkway, Mountain View, CA") into geographic coordinates (like latitude 37.423021 and longitude -122.083739), which we can use to place markers or position the map.

The Maps JavaScript API provides a geocoder class for geocoding and reverse geocoding dynamically from user input.

**Foursquare APIs**

Foursquare is a local search-and-discovery service mobile app which provides search results for its users. The app provides personalized recommendations of places to go to near a user's current location based on users' "previous browsing history, purchases, or check-in history". Basically, the API service included:

* Access to millions of fresh venue-related tips, tastes, photos & attributes from the Foursquare community
* Access places data - in real time - from any connected application
* Accurately assign a mobile app user to a specific location (Snap-to-Place)
* Enable users to search and discover venues via a mobile app or website
* Geo-tag content such as a photos, videos and more in your mobile app or website
* Know where your mobile app users go in the real world
* Build mobile audience segments for analysis, targeting and measurement

We first obtain the borough and its neighborhoods along with the postcodes from the public data. Based on the postcodes, we thus can obtain the unique latitude and longitude for each of the neighborhoods via (Google)GeoCoder. By using the Foursquare API, we can easily pull out the venues (included hotels) and its categories nearby each of the neighborhoods. After getting the location data for each of the neighborhoods in Toronto, we then manipulate the dataset and use K-mean algorithm to complete the data-driven analytics report eventually.