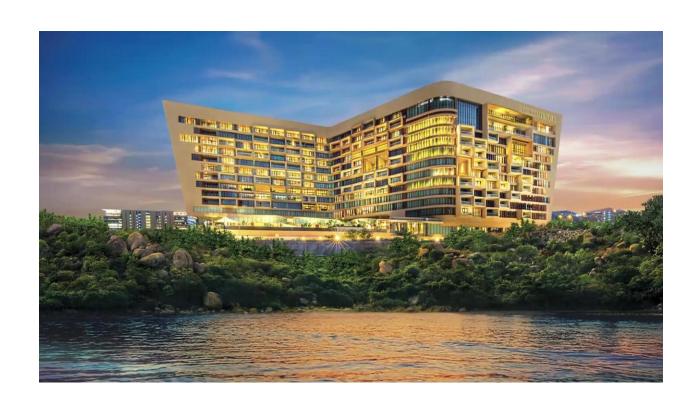COURSERA CAPSTONE PROJECT

IBM DATA SCIENCE PROFESSIONAL SPECIALIZATION

OPENING A NEW HOTEL IN CANADA

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1) INTRODUCTION

Tourism is a great way to generate revenue. It provides a boost the country's GDP. Tourists try to visit the place where a great number of hotels are available, making it convenient for them to relax and enjoy. Therefore hotels play a great role in attracting the tourists and generating revenue. Hotels can also result in increase in employment rate. Various shops are also set near the hotels to attract the tourists. However if a great number of hotels exist in an area, this results in competition, which can result in increasing the fare for a room in the hotels. Due to which the number of tourists visiting that place decreases.

1.1) BUSINESS PROBLEM

The objective of this capstone project is to study the distribution of various hotels in the cities of Canada. After studying the distribution determining which places have high number of hotels already present in that area and determining which areas would result in greater revenue if a new hotel is setup in that area using machine learning and data science methodology.

1.2) TARGET AUDIENCE

This project is particularly useful for the investors and developers who are looking to develop a hotel or invest in a hotel development project. The project will help in guiding the investors as well as the developers in identifying the locations with higher probability of generating high revenues.

2) DATA

To solve the given problem the following data is required:
- List of all the major cities in Canada.
- Latitudes and longitudes of all those cities. This is required to plot the graph and also get the venue data.
- Venue data, in this case the data about hotels. This data will be required to perform clustering.

2.1) SOURCES OF DATA

Firstly we would require the list of cities. Fortunately, the list of cities is available at *https://simplemaps.com/data/world-cities.* The dataset available here is very beneficial for the study. The dataset contains the list of all the cities in the world. Also the latitudes and longitudes of the cities are also provided. However the dataset contains many other attributes also like *city_ascii, iso2, iso3, admin_name, capital, population, id.* These attributes have to be dropped. Secondly, since the dataset contains the list of all the cities in the world the, Canadian cities have to be identified and the data set has to be cleaned.

2.2) ATTRIBUTES TO BE USED

city, latitude, longitude attributes will be used for the study. However, in order to clean the data set and identify the cities of Canada , attribute- *country* will be used.