Coursera Capstone

IBM Applied Data Science

Opening a Shopping Mall in Nelson, New Zealand

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Introduction

Visiting shopping malls is a great way to relax and enjoy themselves during weekends. They can do grocery shopping, dine at restaurants, shop at the various fashion outlets, watch movies and perform many more activities. Shopping malls are like a one-stop destination for all types of shoppers. For retailers, the central location and the large crowd at the shopping malls provides a great distribution channel to market their products and services.

Business Problem

The objective of this capstone project is to analyses and select the best locations in the city of Nelson, New Zealand to open a new shopping mall. Using machine learning like clustering, this project aims to provide solutions to answer the business question: In the city of Nelson, New Zealand, where would you recommend that they open it? Target Audience of this project this project is particularly useful to property developers and investors looking to open or invest in new shopping malls in the capital city of Nelson.

Data to solve the problem

We will need the following data:

• List of neighborhoods in Nelson.

• Latitude and longitude coordinates of those neighborhoods.

• Venue data

Sources of data and methods to extract them This Wikipedia page (https://en.wikipedia.org/wiki/Category:Suburbs_of_Nelson,_New_Zealand) contains a list of neighborhoods in Nelson , We will use web scraping techniques to extract the data from the Wikipedia page, with the help of Python requests and beautiful soup packages. Then we will get the geographical coordinates of the neighborhoods using Python Geocoder package which will give us the latitude and longitude coordinates of the neighborhoods. After that, we will use Foursquare API to get the venue data for those neighborhoods. Foursquare has one of the largest database of 105+ million places and is used by over 125,000 developers. Foursquare API will provide many categories of the venue data, we are particularly interested in the Shopping Mall category in order to help us to solve the business problem, This is a project that will make use of many data science skills, from web scraping (Wikipedia),

working with API (Foursquare), data cleaning, data wrangling, to machine learning (K-means clustering) and map visualization (Folium).