Capstone Project

The Battle of the Neighborhoods - Week 4 Report

Introduction and Problem

As part of life, people move around for many reasons, for career prospects, to be closer to better schools, for culture or to be closer to parents. There could be intercity migration or international migration, but both cases will happen.

Prior to moving to any city, people will research the potential home and try to make sense of it all.   There are multiple features of a potential city or neighbourhood all of which define the character or type of place a neighbourhood is and most importantly whether it is a suitable location to settle in. However, it can be a daunting task to collect all of this information and a very time consuming process especially if the potential location is an unknown location.

Doing a search online for a good neighbourhood will only garner results that are opinionated and possibly be subjective as everyone has their own preferences. A young person may want to be close to places associated with nightlife such as restaurants and bars, whereas a young couple may want to be closer to their place of work and within the reach of all the necessary amenities such as gyms or cafes.

In order to truly know whether a neighbourhood is suitable to settle in, we need hard data. Data such as house prices, schools, crime, weather etc. Being able to get this data will better inform the potential resident of the things they may value more.

This project will focus on Mr Willis, Mr Willis is married to his Wife Mrs Willis for 9 years and they have one Daughter who is currently in Primary School. They are currently overseas

residing in Singapore as expatriates and have been doing so for the past 5 years, however they wish to return to the United Kingdom but at the same time wish to move to one of the major UK cities. One of the major cities that they are targeting is Manchester, however aside from having visited Manchester in the past, they have never spent a great deal of time there and do not know anyone there to assist.

They want to move to a location that is quiet, within budget and has restaurants and schools nearby.

What we want to do is to help Mr Willis and his family determine which of the boroughs in Greater Manchester can be called their future home through the collection and analysis of publicly available data on the web.

Other Target Audiences

- This model can also be used by others who may wish to move to Manchester, and can be reconfigured to analyse other Cities around the world.
- Data Scientists, who want to implement the Exploratory Data Analysis techniques to obtain necessary data and analyze it.

This project can be used by the user at the time of rental apartment or buy house in a locality based on the distribution of various facilities available around the borough. As an example, this project would compare Manchester's boroughs and analyses the venues in each of those boroughs based on the number of visits by people in each of those places.

The project will also use K-mean clustering unsupervised machine learning algorithm to cluster the venues based on the place category such as restaurants, park, coffee shop, gym, clubs etc. This would give a better understanding of the similarities and dissimilarities between the various neighborhoods.

City Background

Manchester is a city and metropolitan borough in Greater Manchester, England. It is historically and traditionally a part of the county of Lancashire. It has a population of

547,627 as of 2018 (making it the fifth most populous English district). It lies within the United Kingdom's second-most populous urban area, with a population of 2.5 million and third most populous metropolitan area, with a population of 3.3 million. It is fringed by the Cheshire Plain to the south, the Pennines to the north and east, and an arc of towns with which it forms a continuous conurbation. The local authority for the city is Manchester City Council.