Coursera Capstone

IBM Data Science Professional Certificate

Los Angeles Neighborhood Analysis

By:

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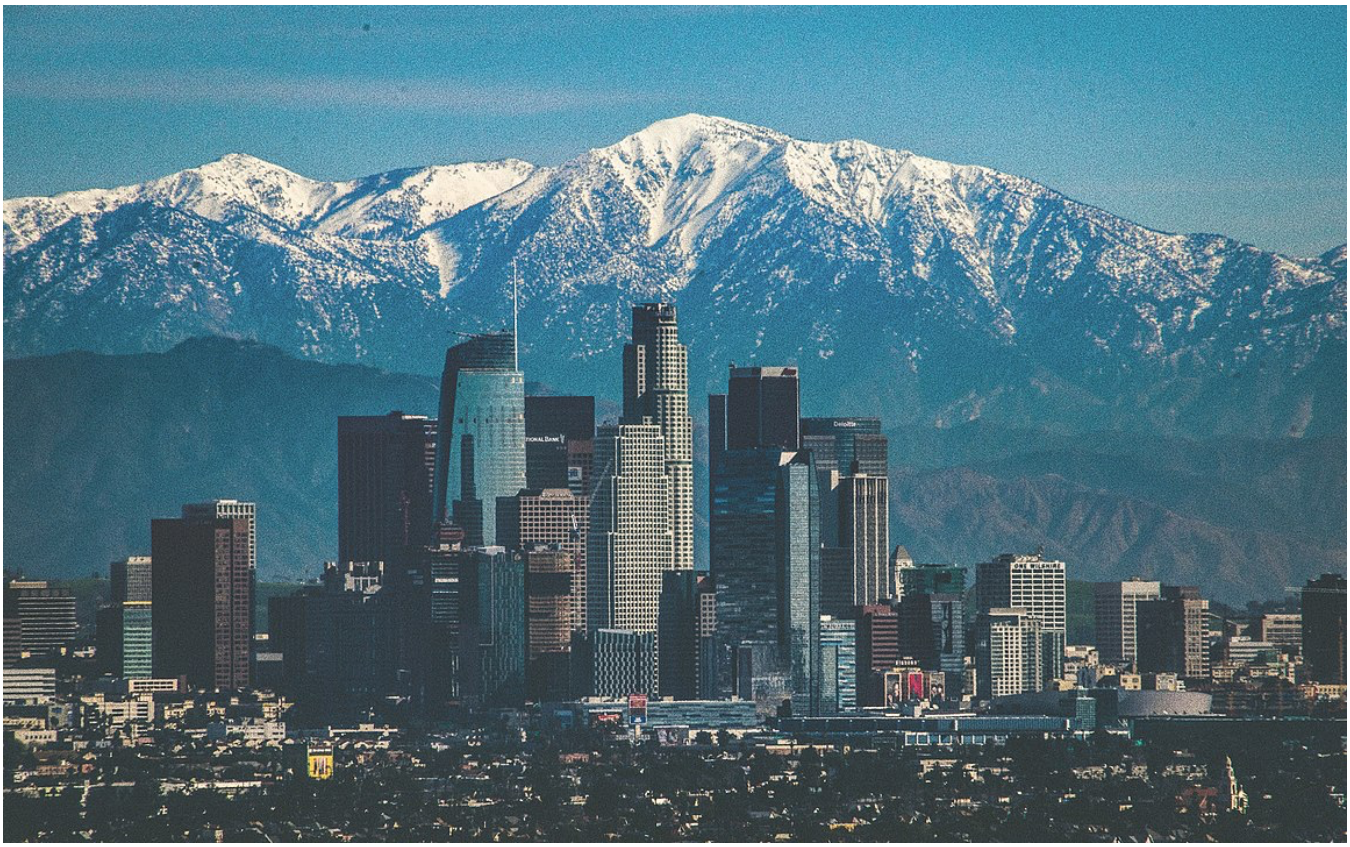

Introduction

Los Angeles is a very vibrant city with a lot of neighborhoods, each with unique character. Some neighborhoods are quiet and cozy, has convenient store locations, while others offer a lot of fun and nightlife activities. Choosing a neighborhood to live in or open a business can be a complicated task to do, but with the help of location data from Foursquare and crime data, we can make it a little bit easier.

Business Problem

The objective of this capstone project is to analyze and select the best locations in the city of Los Angeles, California to choose a neighborhood to live in or open a new business. Using data science methodology and machine learning techniques like clustering, this project aims to provide solutions to answer the business question: In the city of Los Angeles, California, what would be a better place to live in or start a business?

Target Audience

- People interested in moving to Los Angeles and looking for a perfect neighborhood for their needs
- Business owners looking to expand their business to a new location
- A beginner data scientist who may use this research as an example

Data

For this project, the following data is needed:

- List of neighborhoods in Los Angeles
- Latitude and longitude coordinates of neighborhoods to get the venue data
- Crime data in Los Angeles
- Venues Details

Data Sources and Preparation:

1. Location Data

- First, we need to get a full list of all LA neighborhoods. Wikipedia article List of districts and neighborhoods in Los Angeles is a great place to start. Can you guess how many of them are in LA? 200!
- BeautifulSoup is a Python library used for pulling data out of HTML. We will use it to parse the Wikipedia page
- For geolocation data, we will use the Geocoding API. To get more information about it, follow the Geocoding Developer Guide.

2. Crime Data

- To analyze criminal activity for each neighborhood we use Los Angeles Crime & Arrest Data: from 2010 to Present dataset from Kaggle. It contains information about location, time, category and other miscellaneous data from the LA Police Department.
- We filter data to exclude certain crime categories, such as traffic collision and suspicious activity that doesn't relate to the quality of life in the neighborhood. Also, we delete miscellaneous data about incidents, that doesn't play a role in our analysis.

3. Venues Data (Foursquare API)

Foursquare API provides information about venues and geolocation. We will use Foursquare API to get the venue data for LA neighborhoods. Foursquare has one of the largest databases of 105+ million places and is used by over 125,000 developers. Foursquare API will provide many categories of the venue data such as name, location, hours, rating, prices, etc.