Capstone Project – The Battle of Neighborhoods (Week 1)

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# Introduction

## Background

Rockville is one of Maryland’s oldest towns, with its origin dating back to Colonial America. During Revolutionary times, Rockville was known as Hungerford’s Tavern, the name of its most familiar business and landmark. Rockville has grown very rapidly since its founding in 1803, from a leisurely, agriculturally-oriented county seat to a cosmopolitan city of many neighborhoods. Located approximately 14 miles north of Washington D.C., Rockville is home to a well-educated diverse population and serves as an employment center for national biomed corporations, the federal government and county government. Restaurants and shops are clustered around Rockville and its surrounding neighborhoods, with multitude of parks and recreation centers.

Due to its rapid growth, the city’s population is changing in some dramatic ways, which drive the housing needs of residents and workers including growing demand for rental housing, lower-cost housing and housing that can accommodate multi-generational households. The population of single-person households, including young people starting out in their careers has increased substantially. This population of young adults includes a significant number of people who may be heading towards marriage, children, and potentially, homeownership.

## Problem

Buying a home is an emotional process and a major commitment. One can find his/her home through a local real estate agent or via Multiple Listing Service (MLS) listings websites nowadays. Oftentimes it is challenging to have a clear set of preferences as first-time home buyers. As a result, this project aims to provide a big picture of the housing market (i.e. price range, home conditions, etc.) of Rockville and the surrounding neighborhoods.

## Interest

The interests of this project are followed:

* Analyzing the distribution of single-home housing in Rockville and its nearby neighborhoods
* Determining the common features that drive housing cost
* Exploring the most popular venues around the areas of interest

# Data

## Data sources

Multiple MLS-based listing websites such as Zillow provide real estate APIs but these databases are not open-source and can only be accessed with an agent’s credentials. I was able to download current property listings and sold properties data via Redfin for different neighborhoods; however, these are fixed datasets which were updated as of July 1st, 2020. These datasets were then used to analyze the distribution and explore most common housing features. For further exploration of venues, I utilized Foursquare location data to obtain a list of popular venues and their locations.

# References

<https://www.rockvillemd.gov/978/History>

<https://www.rockvillemd.gov/DocumentCenter/View/18286/Housing-Market-Analysis-and-Needs-Assessment?bidId=>