**A description of the problem and a discussion of the background.**

When looking to move to a new place, there are so many things that we consider. So many variables we juggle, to try to find a sort of right fit. However, the one thing that becomes the major constraint is the housing price. After which we rank things as per our own preference, one way to look at a place would be to consider neighborhoods, the availability of housing and the places or venues nearby. The last one is really intriguing to me, as the places can be varied to a great extent. There can be places that everyone wants to live close to (e.g. public transport, grocery stores, etc.), other times we may avoid some places completely (e.g. factories, airports), while there are many that depend on personal preferences (e.g. different restaurants).

In this project, I wanted to look at what affect do nearby venues have on housing market prices. I have decided to perform this study on the city of Seattle as it is where I currently reside. The city of Seattle has a population of around 745,000 people, with over 2 million people living around the area in King county [1]. Seattle is surrounded by water with a total of 200 miles of shoreline [1], and sits close to various hiking trails, national parks and much more [1]. It is also the city with highest number of bookstores and libraries per capita. This showcases the variety of places and therefore we can see their impact on housing prices.

**A description of the data and how it will be used to solve the problem.**

To consider the problem, we are going to be utilizing

* Zillow housing data: Data provided by Zillow for housing prices and rent prices in the various neighborhoods of Seattle. In this dataset we would be looking at the Zillow Home Value Index (ZHVI) and Zillow Rent Index (ZRI). We shall only be looking at the current values of both ZHVI and ZRI, and later would look into various venues, to see if they affect rent prices or home values differently. Data taken from Zillow in July 2020.
* American Community Survey (ACS): The ACS 5 year-survey (2013-2017) focusing on the neighborhoods of Seattle is taken from Seattle.gov. This dataset contains the basic demographics of each neighborhood and provides various important metrics like household income and number of people in neighborhoods. It is according to this datasets demarcation that we define the various neighborhoods in the city. According to which there are 53 neighborhood districts. We will first look at this dataset to build our first model, which will form the control subject of our test. This will explain the effects of demographics and then we can build upon the differences caused by nearby venues.
* Foursquare API: Lastly, we will look at nearby venues using the Foursquare API. This would provide us with venues in a neighborhood and their associated details.
* In the ACS dataset, there were no coordinates for a neighborhood and since I wanted to map the results, I utilized Google Maps to find centralized positions for each neighborhood, and then use these as the positions for the coordinates of the neighborhoods. This data was attached to the ACS dataset.