

## **Introduction**

Houston Texas is the largest city in Texas comprising of 88 super neighborhoods with an estimated population of 2,325,502. Houston is commonly known for its food, job availability, night life, and NASA. With this popularity Houston is classified as one of the fastest growing cities in the nation. With this ever-increasing population comes a growing demand to address the needs the residents that make Houston home. One of the largest problems facing the city is that of food deserts. Food deserts according to the CDC are “areas that lack access to affordable fruits, vegetables, whole grains, low-fat milk, and other foods that make up the full range of a healthy diet.” Individuals living in areas classified as food deserts are shown to have an increased risk of developing diabetes, cardiovascular disease, and being obese. While food deserts can be present in areas typically associated as having low income, they can be present in any area that causes an individual to not have easy access to an available grocery store, and overall, about 23.5 million Americans and a reported 250,000 individuals living in Houston, TX lack easy access to grocery stores.

While living in food deserts are shown to negatively impact ones health, these areas would present lower competition for new grocery stores and allow for a perfect opportunity for business owners to open new grocery stores that not only help alleviate public health concerns, but to also serve the demand for fresh food for individuals that live in impacted areas leading to a greater possibility for a successful store.

## **Problem**

The objective of this project is to find what neighborhoods could possibly be labeled as food deserts and to select the best locations to open a new grocery store that not only alleviates the problem of food deserts but also has the best probability of success due to lack of competition in the city of Houston, Tx.

## **Interest**

This project is useful to a variety of groups, such as public health officials in finding possible food deserts within the Houston community, people looking to move into a neighborhood that has easy access to a grocery store, and finally business owners or developers looking to open new grocery store in an area with lower competition in Houston, Tx. This project is relevant as food deserts are not just a public health issue, but are an untapped resource for business and developers who are looking at finding an area to create a store with the highest probability of success and in areas with low competition.

## **Source of Data**

The data for the project comes from the page ([http://www.houstontx.gov/planning/Demographics/demograph\\_docs/income\\_avgs.htm](http://www.houstontx.gov/planning/Demographics/demograph_docs/income_avgs.htm)) which contains the list of neighborhoods within Houston as well as their location relative to downtown, Texas totaling to 88 super neighborhoods. The webpage along with the information contained in the table will be scraped using BeautifulSoup and geographical coordinates such as latitude and longitude data will be

found for each neighborhood using a geocoder. Further data for each neighborhood will be collected using the Foursquare API. The Foursquare API will allow for the gathering of venue data for each neighborhood such as the frequency and occurrence of groceries stores each neighborhood. Once the frequency of grocery stores are found using foursquare, the data will be combined with the location data of the neighborhoods and will be clustered and mapped using the merged data set. Lastly each cluster will be examined to determine the best location to place a new grocery store.