

The Battle of Houston Neighborhoods

Capstone Project



Introduction: Business Problem

- Finding the best type of store for wealthy people;
- Determining the location for the new store in the city of Houston.

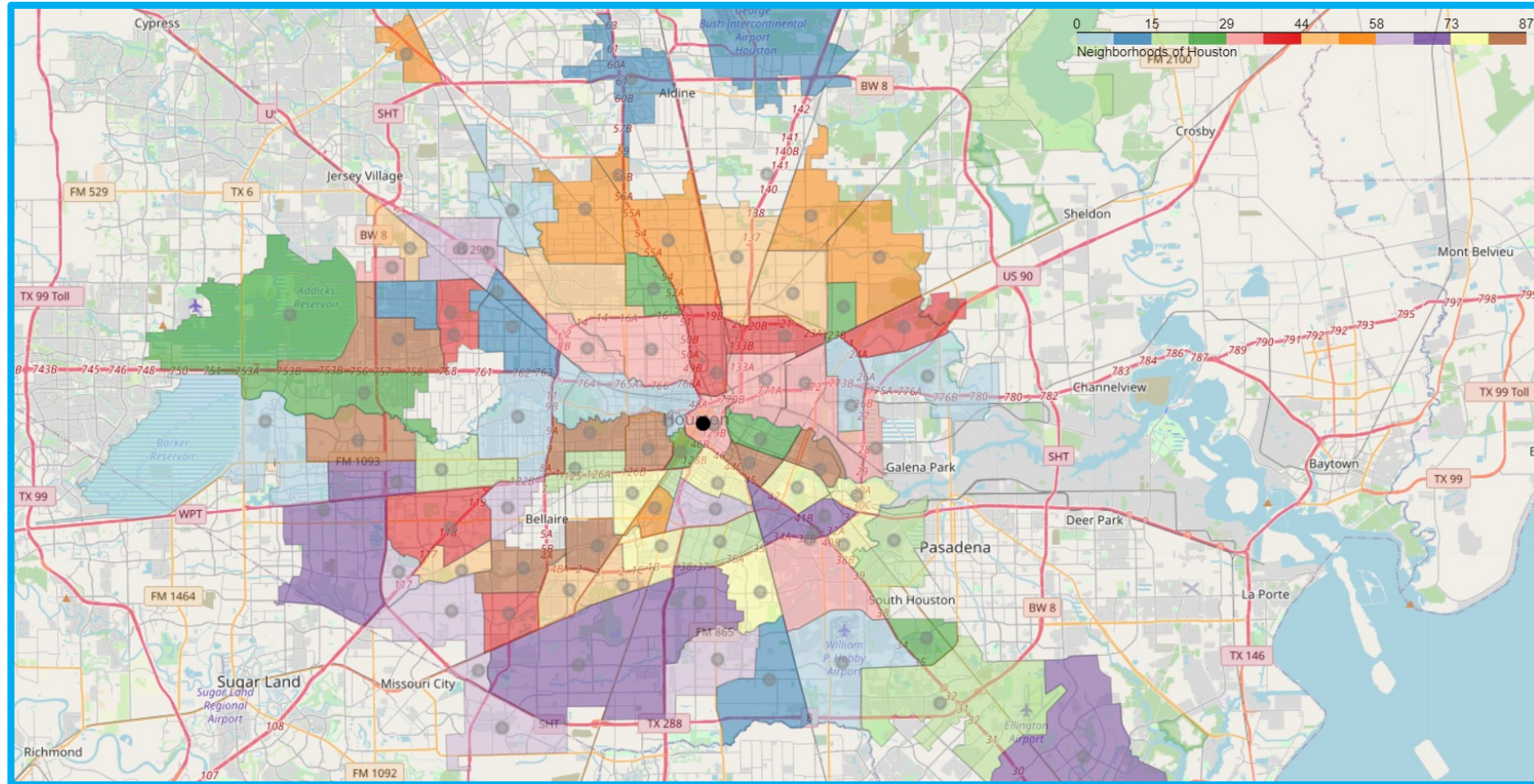
Data

- Considered factors:
 - prevalence of certain types of shops in the city
 - the location of these stores
 - areas with wealthy residents
 - type of store to open
 - approximate store location
- APIs:
 - Google Maps API – finding centers of candidate areas and coordinate of Houston center
 - Foursquare API – reversing geocoding number of venues and their type and location in every neighborhood

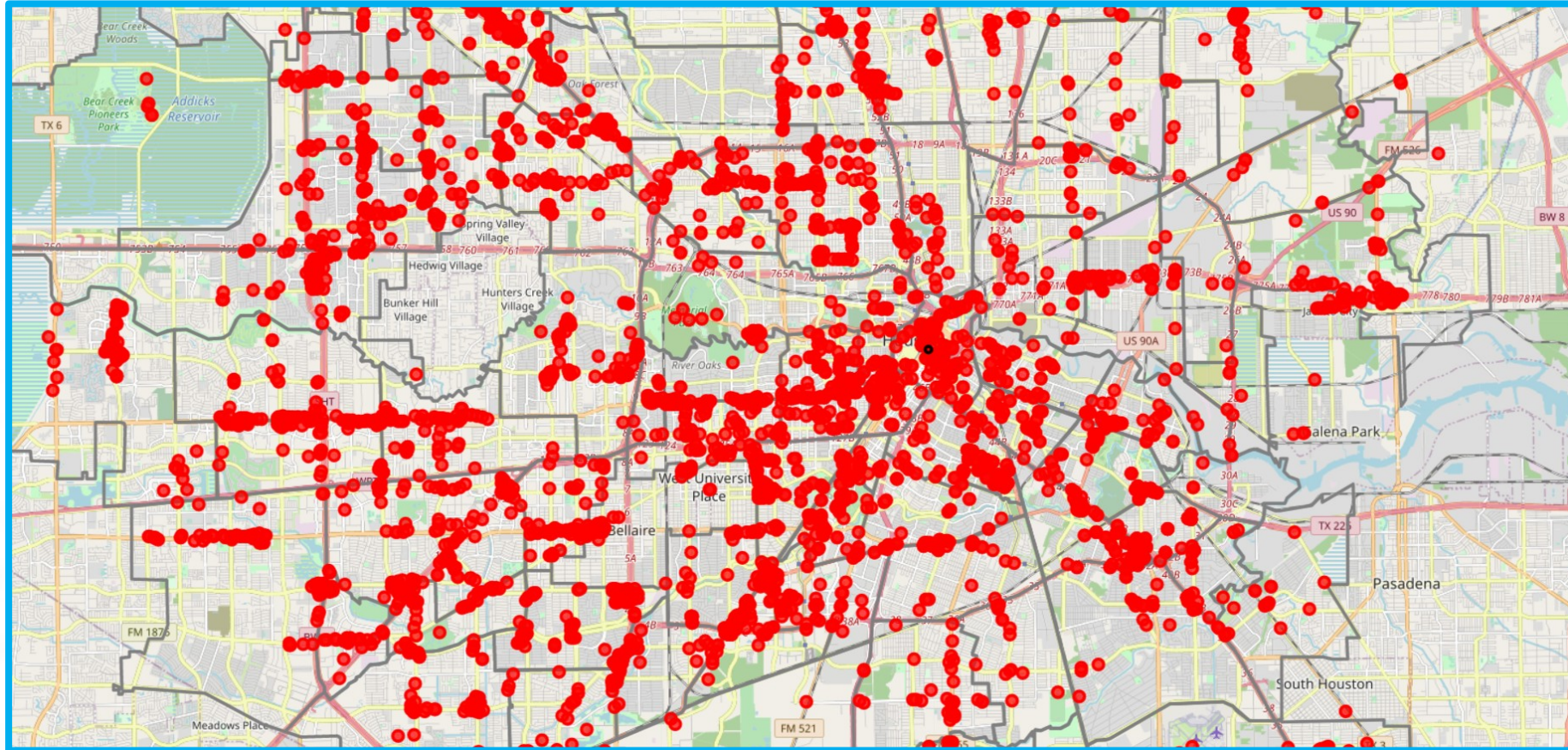
Methodology

- Collecting data to describe the city at the district level, and data on venues located in this city in order to determine where the density of vents is higher and there is a demand and an opportunity to discover a new one.
- Working with data for all stores to determine the density of stores in the city and find a niche.
- Finding common patterns between areas in order to determine the approximate contingent of our clients with the use of clustering: KMeans and Agglomerative Clustering algorithms.
- Narrowing down the category of stores that can be opened in one of the districts of these clusters.
- Using the data for the wealthiest neighborhoods in the city to find neighborhoods where customers can afford to shop in our store.
- Getting the approximate location of the store and the type of store that have development prospects.

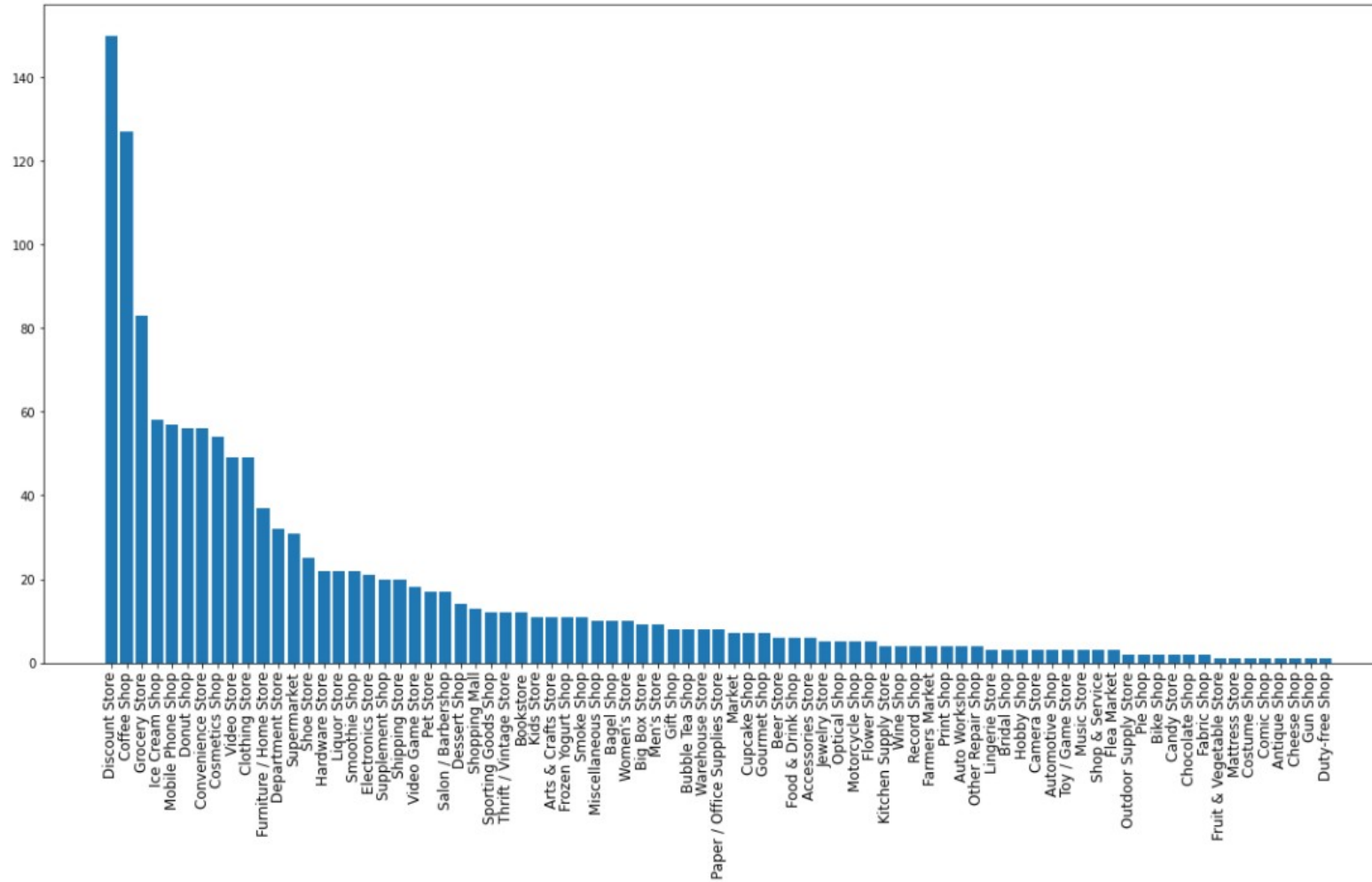
Displaying city neighbourhoods



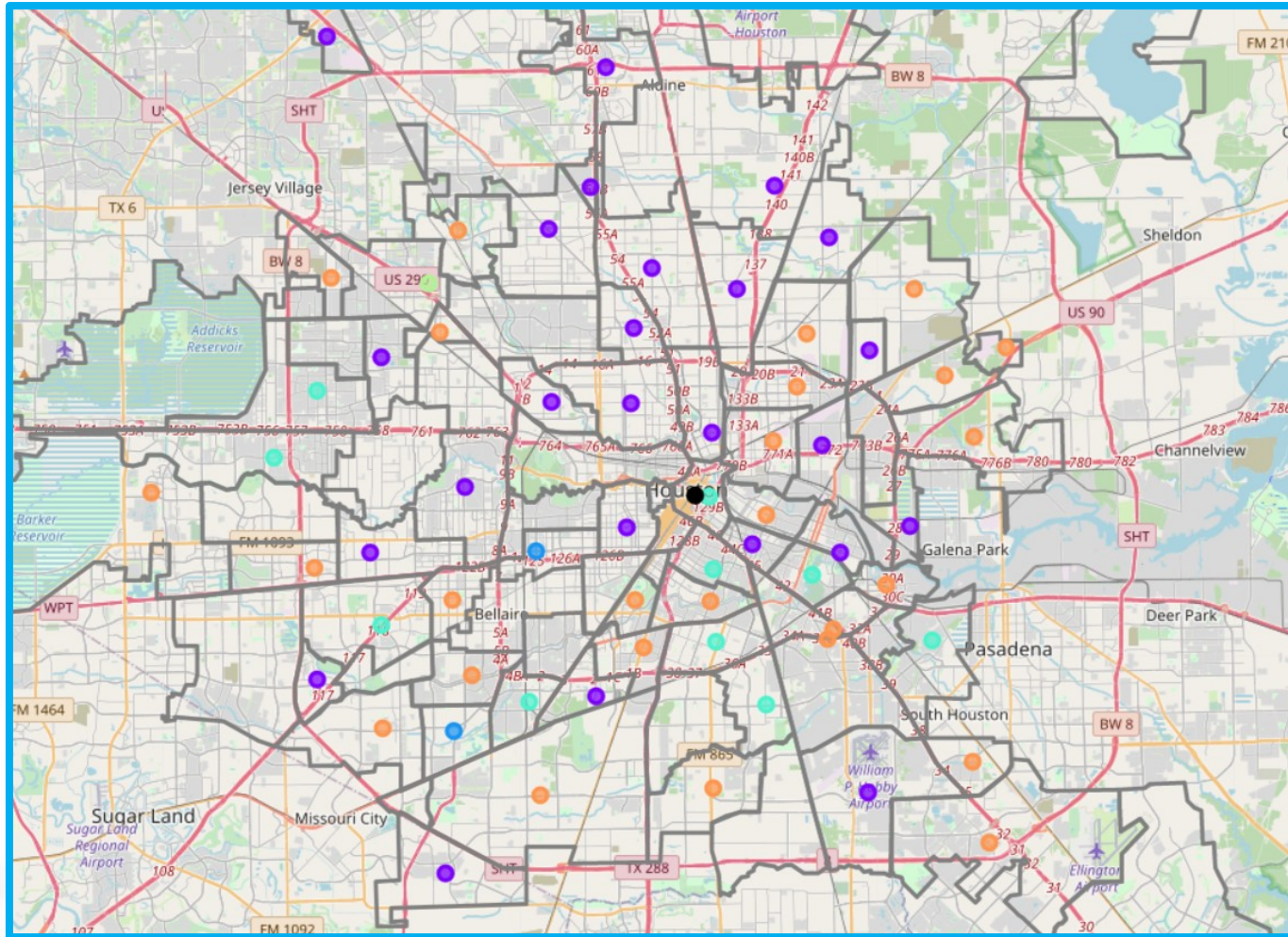
Loading nearby venues



Analysis of prevalence stores

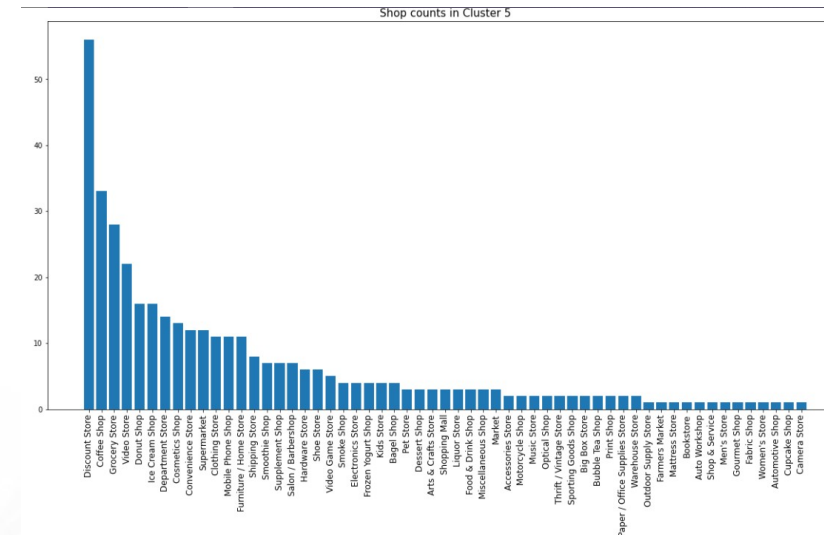
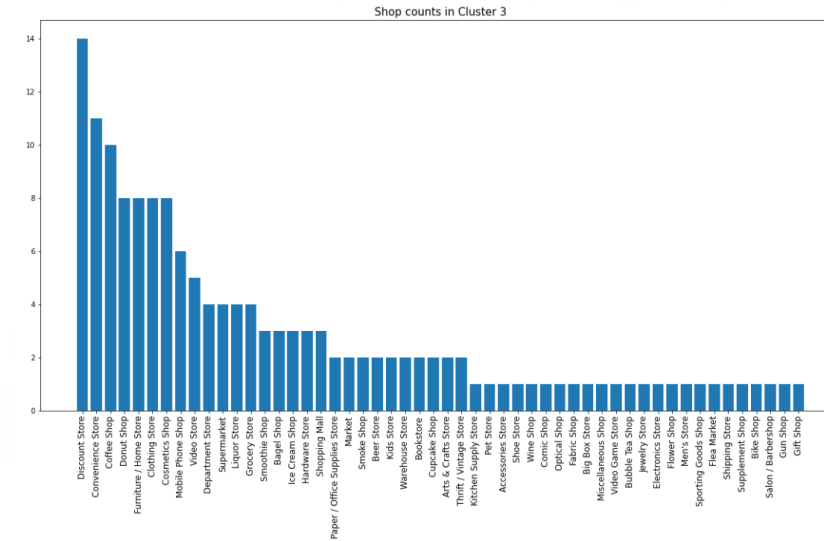
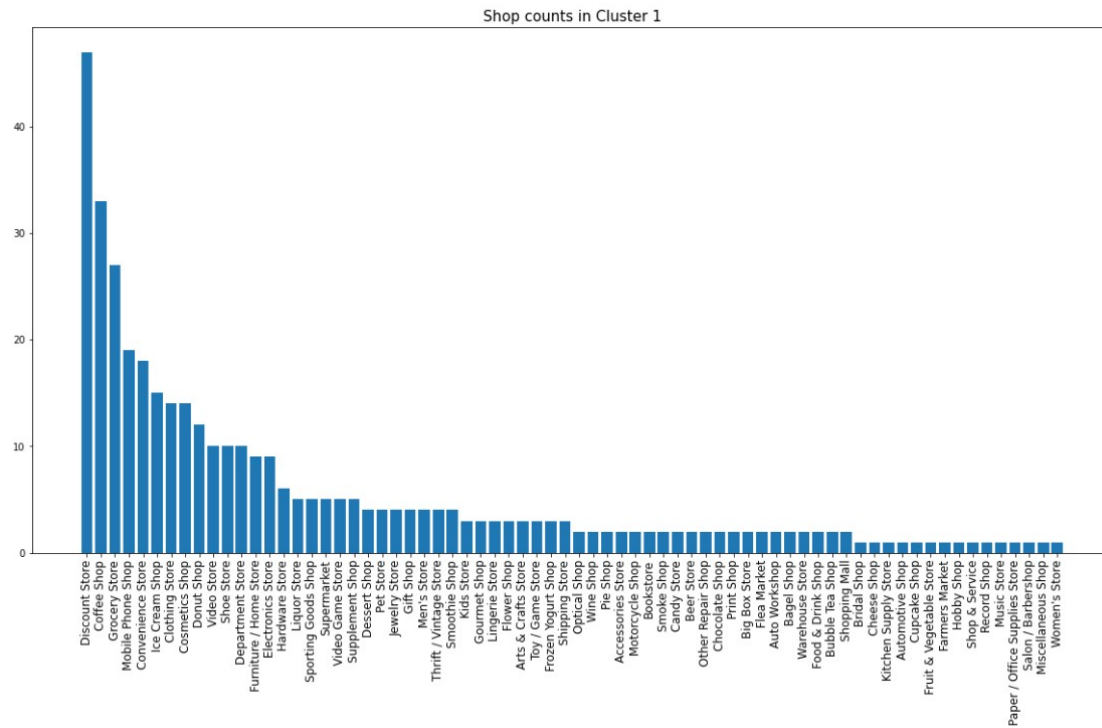


Identifying patterns in similar areas

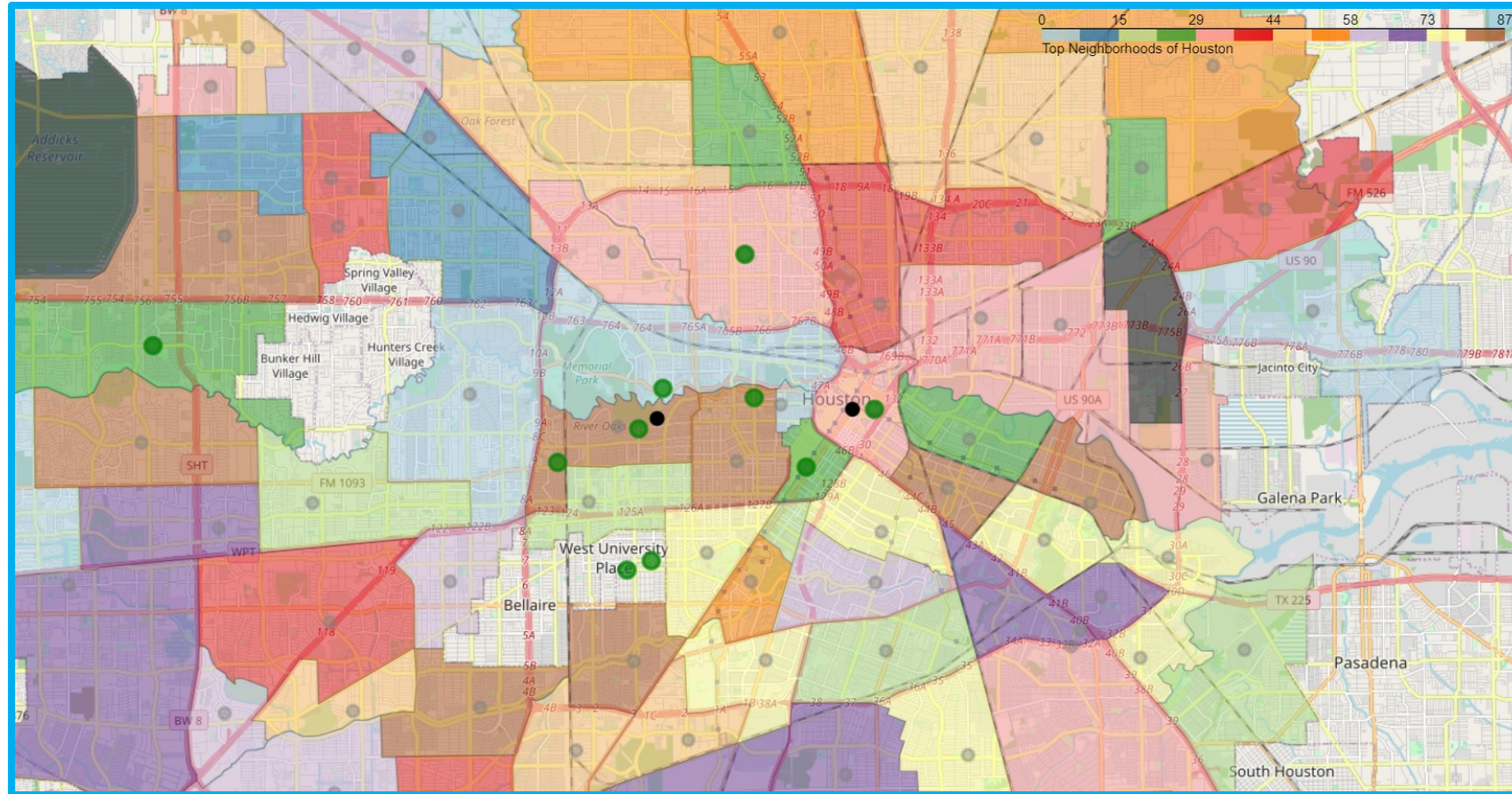


Identifying patterns in similar areas

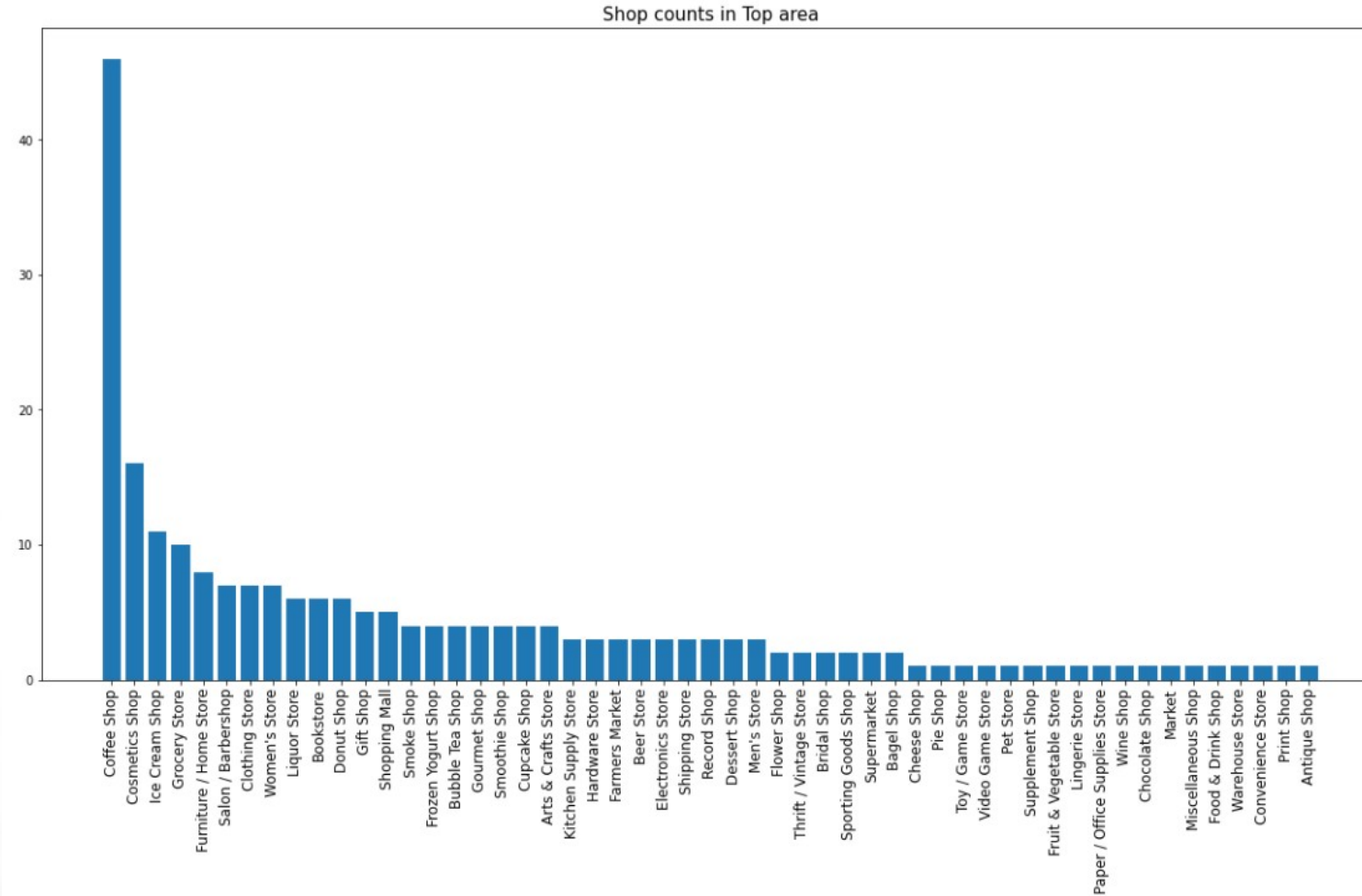
- Distributions for each cluster



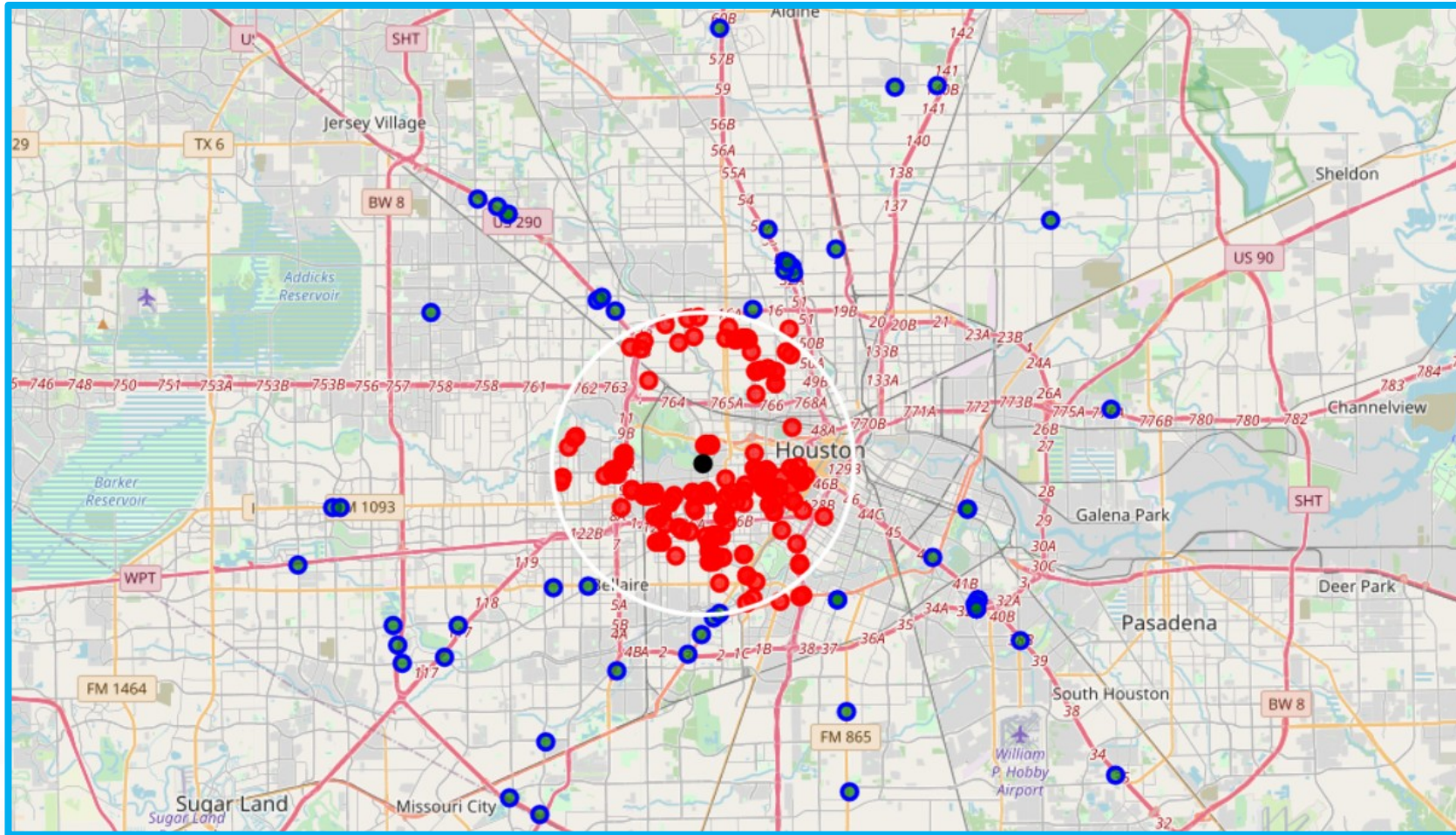
Determining the type and location for opening a store: Map of the best areas



Determining the type and location for opening a store: most common shops in Top areas



Determining the type and location for opening a store: Map of mobile phone shops



Results and Discussion

- The most common stores in Houston are Discount Shop, Coffee Shop, Grocery Shop.
- Top areas are located to the west of the city center and according clustering, the consumer interests of citizens are approximately similar. That is, citizens from areas where there are no mobile phone stores may be inclined to shop in such stores as citizens in areas similar to this.
- One of the promising stores to open are Mobile phone stores. In several developed areas there are no such shops, opening a store in one of the areas close to prosperous is a promising business start.
- We identified a possible store location to the west of the city center and decided that it would be optimal to open a mobile phone store there.