THE BATTLE OF NEIGHBORHOODS

IBM DATA SCIENCE PROFESSIONAL CERTIFICATE PROJECT

THE COFFEE PROJECT

- Finding the best area to open a coffee shop in Arizona

- PRAKASH SUDHAKAR

BUSINESS PROBLEM

- Finding the right place to open up a new business to not so easy!

- Therefore, clustering neighborhood may become a helpful tool for newbies.

The main objective behind this project is to analyze the Coffee Chains in the neighborhoods in Phoenix Area, Arizona
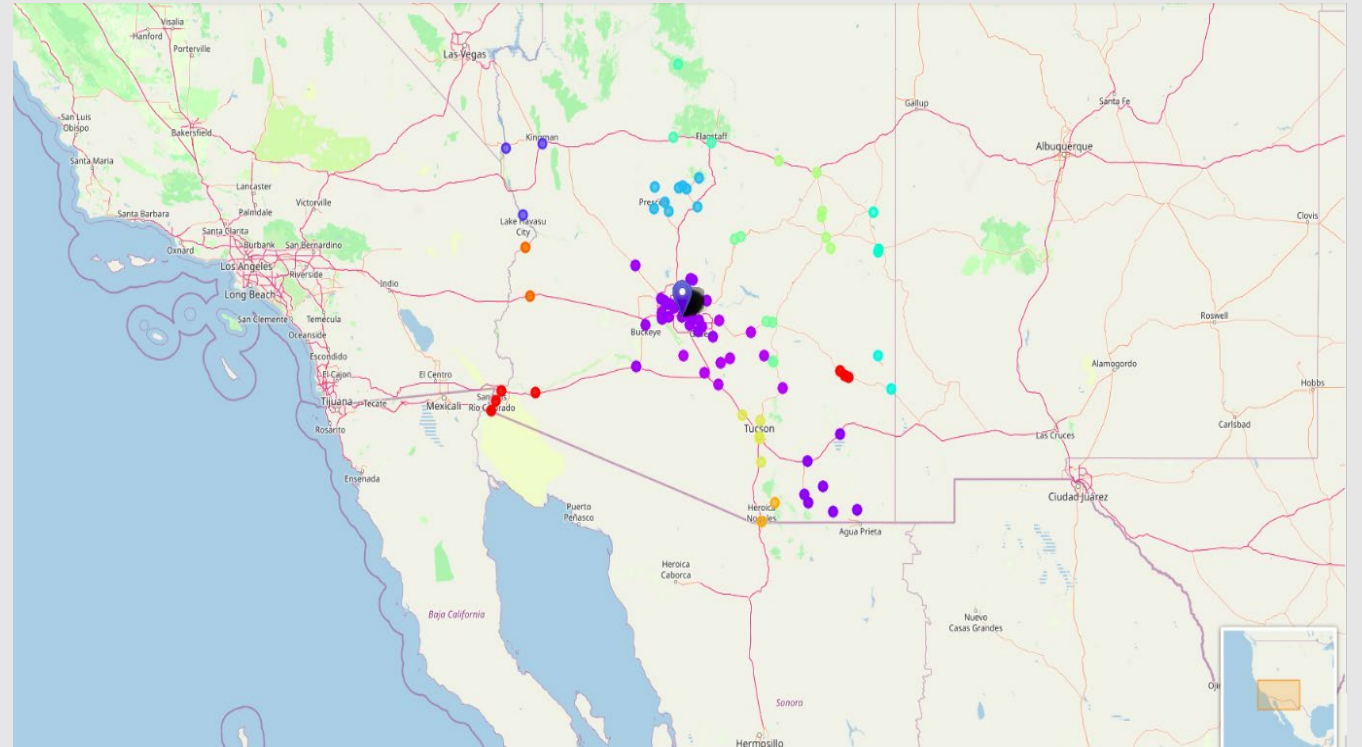
TARGET AUDIENCE ???

DATA ACQUISITION AND PREPROCESSING

- Wikipedia Page - List of Neighborhood in Arizona

- Geocoding Location - GeoPy documentation

- Foursquare API - Foursquare API

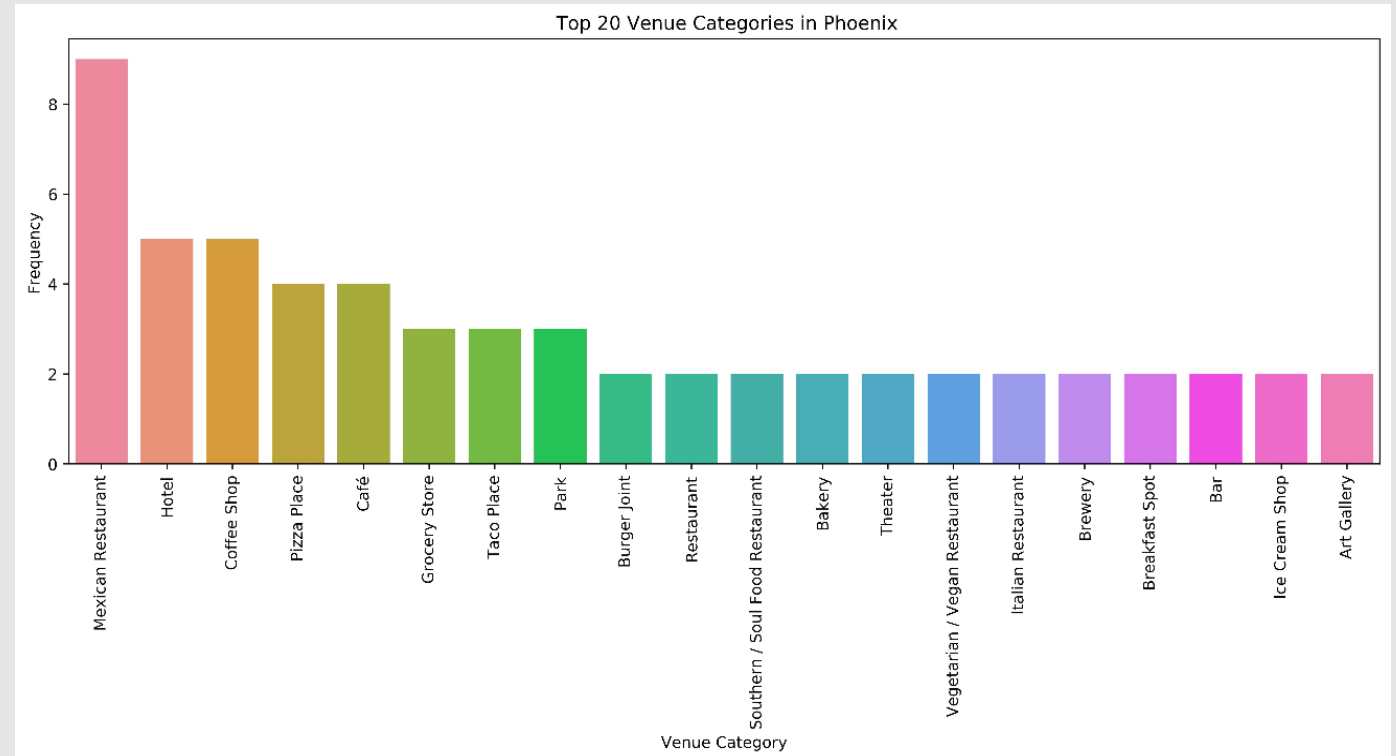|	Borough	Neighborhood	Latitude	Longitude	Venue	Venue_Category	Venue_Latitude	Venue_Longitude
0	Pinal	Apache Junction	33.415048	-111.549578	Handlebar Pub And Grill	Bar	33.415463	-111.553158
1	Pinal	Apache Junction	33.415048	-111.549578	Walgreens	Pharmacy	33.412688	-111.547010
2	Pinal	Apache Junction	33.415048	-111.549578	CVS pharmacy	Pharmacy	33.413972	-111.549677
3	Pinal	Apache Junction	33.415048	-111.549578	Los Gringos Locos	Mexican Restaurant	33.412419	-111.551119
4	Pinal	Apache Junction	33.415048	-111.549578	Papa Murphy's	Pizza Place	33.415576	-111.568613

METHODOLOGY

- Web scrap Wikipedia page
- Geocode locations
- Foursquare API

- Visualize using Folium
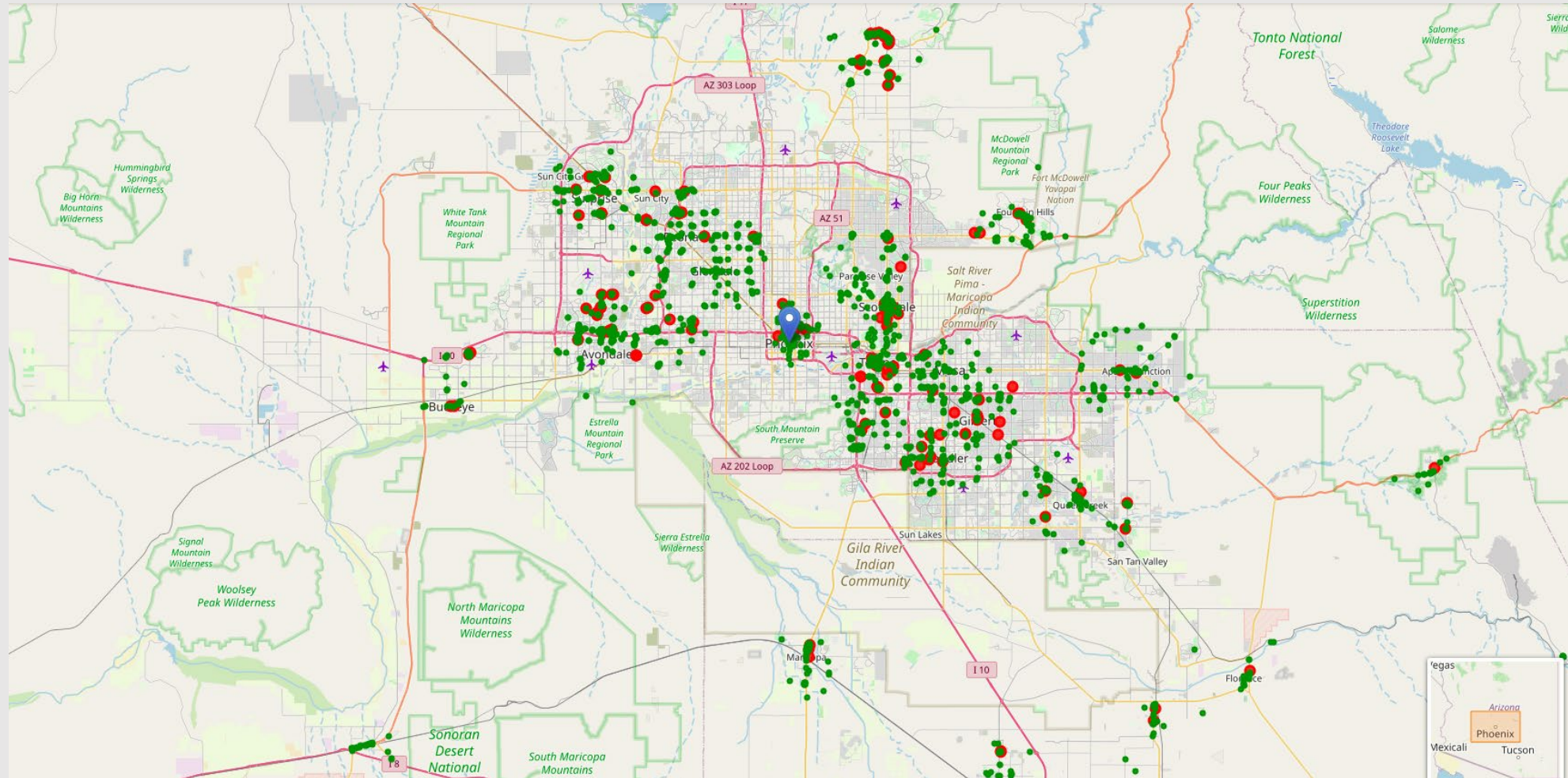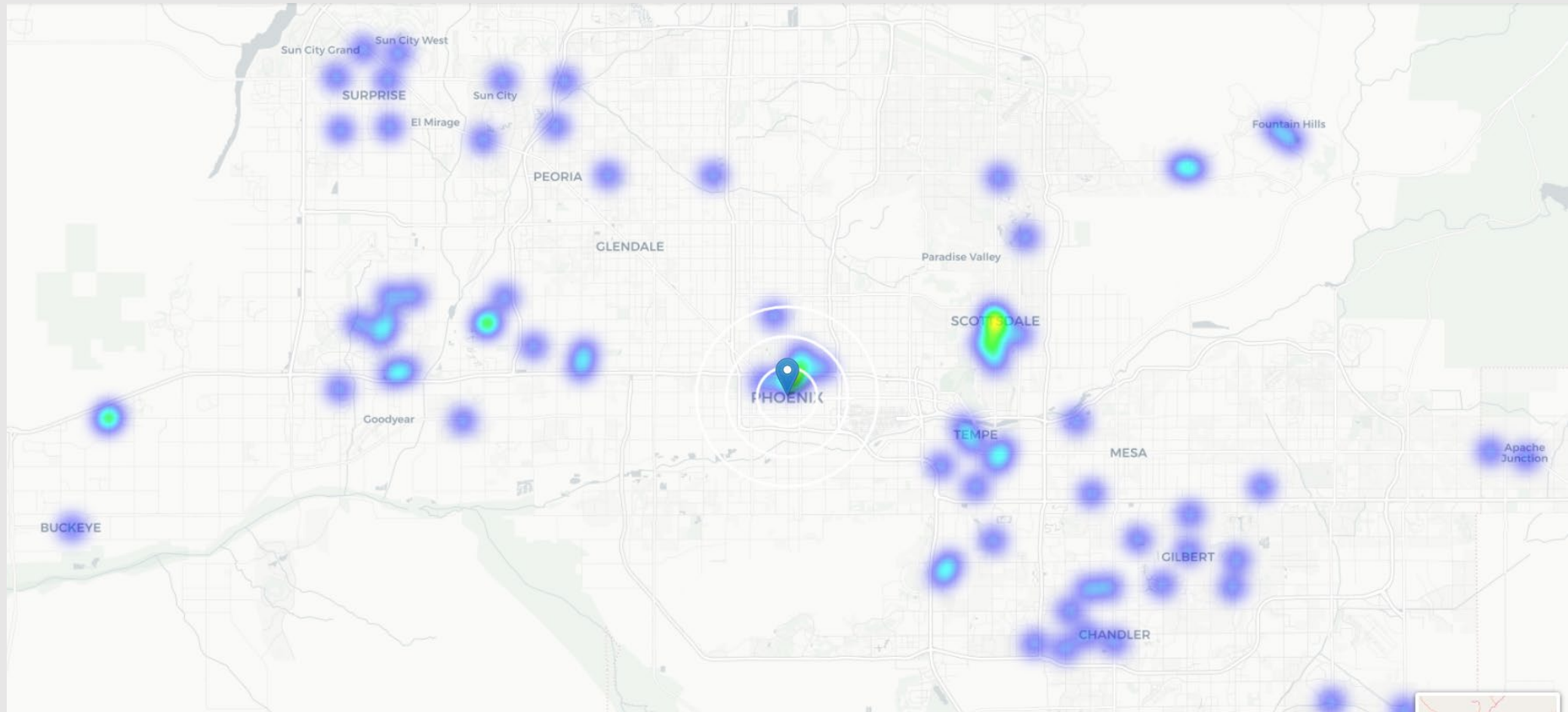- One Hot Encoding
- Clustering Analysis

CURATED DATASET

- Total Venues: 5123

- Distinct Venues: 2653

- From 303 Categories

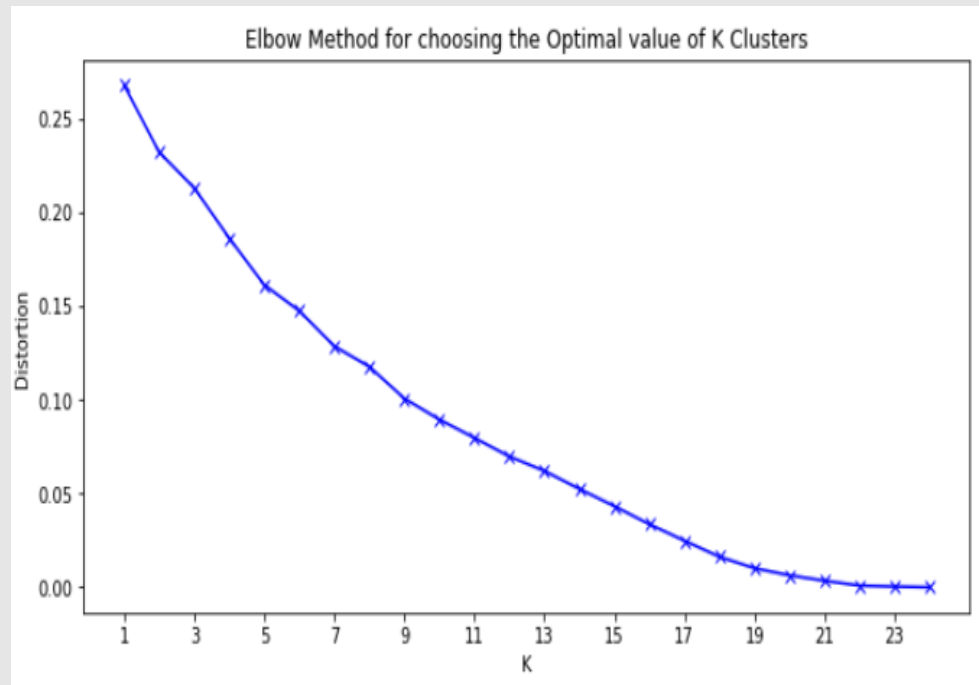- Coffee shops in Arizona: 309

- Coffee shops near Phoenix, AZ: 9

Top 20 Venue Categories in Phoenix

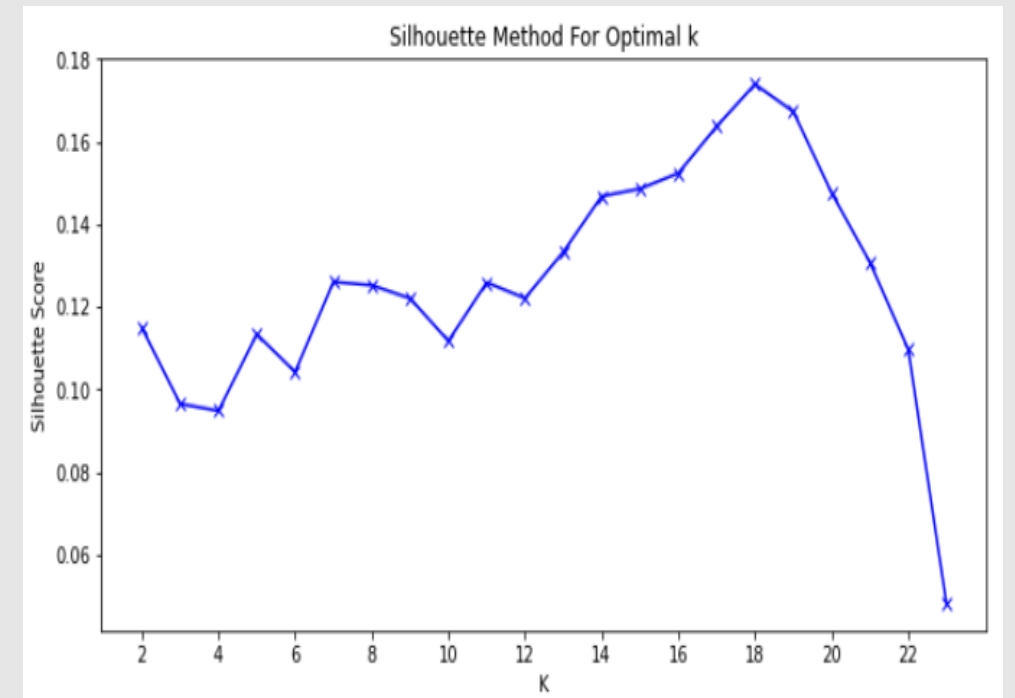# COFFEE VS OTHER VENUES
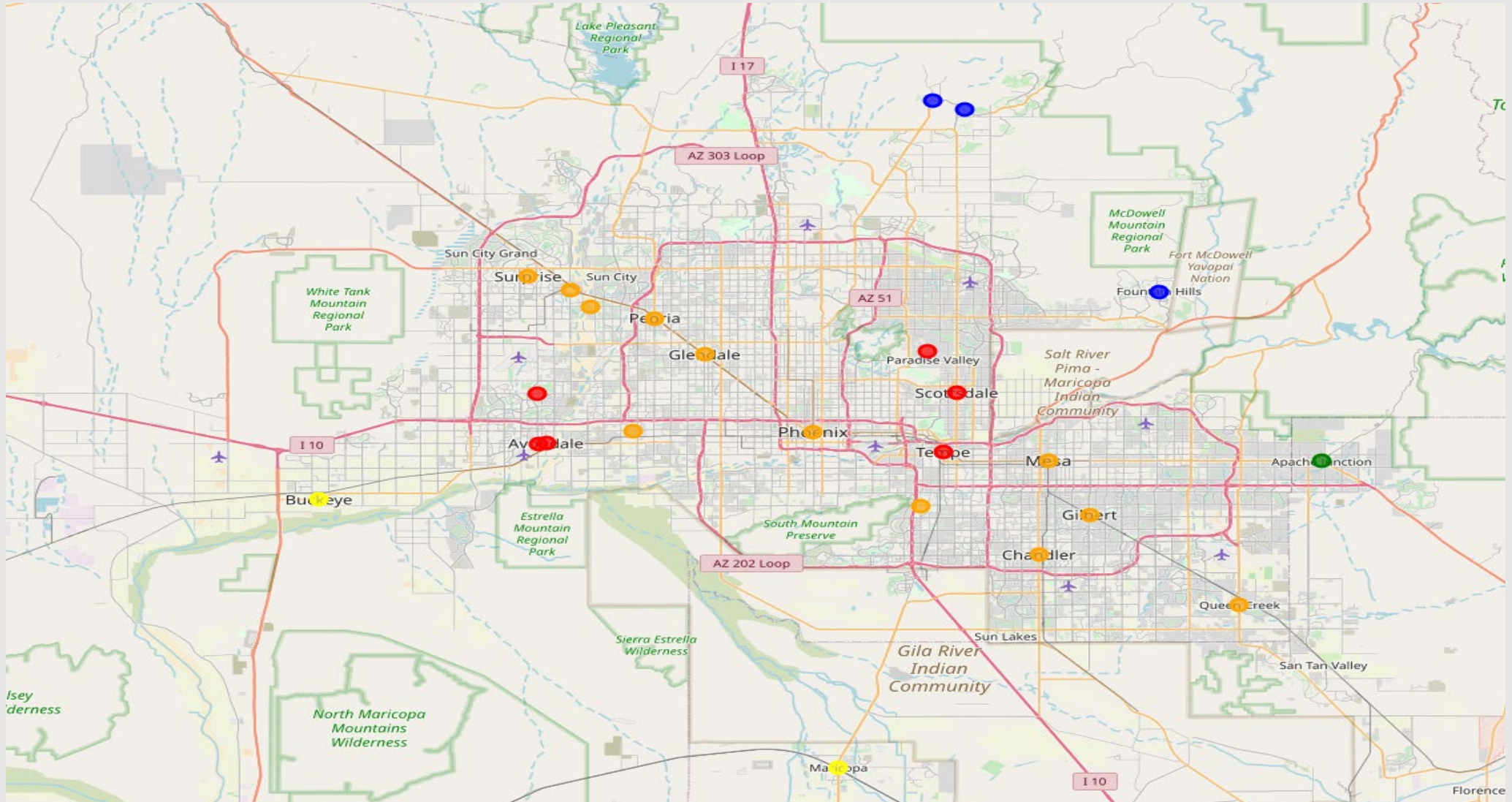
EXPLORING COFFEE SHOPS

CLUSTER SIZE ???

Why K-Means Clustering ?

Why Silhouette Method?

CLUSTERED NEIGHBORHOOD

DISCUSSION

- **Cluster 0:** Neighborhoods with little Coffee Shops
- **Cluster 1:** Neighborhoods with a high number of Coffee Shops
- **Cluster 2:** Neighborhoods with a high number of Coffee Shops
- **Cluster 3:** Neighborhoods with a high number of Coffee Shops
- **Cluster 4:** Neighborhoods with little Coffee Shops

So? Where Do I Open a New Coffee Shop?

CONCLUSION

- Final Decision to open a Coffee shop should be confirmed by the client based on other considerations.

- Clustering neighborhoods did help our project!

- Opening a Coffee shop in Cluster region zero and four would be less competitive. So, think if you want to shift over consider other factors!

Welcome to our Coffee Shop!