House Market and Venues in Austin (Data)
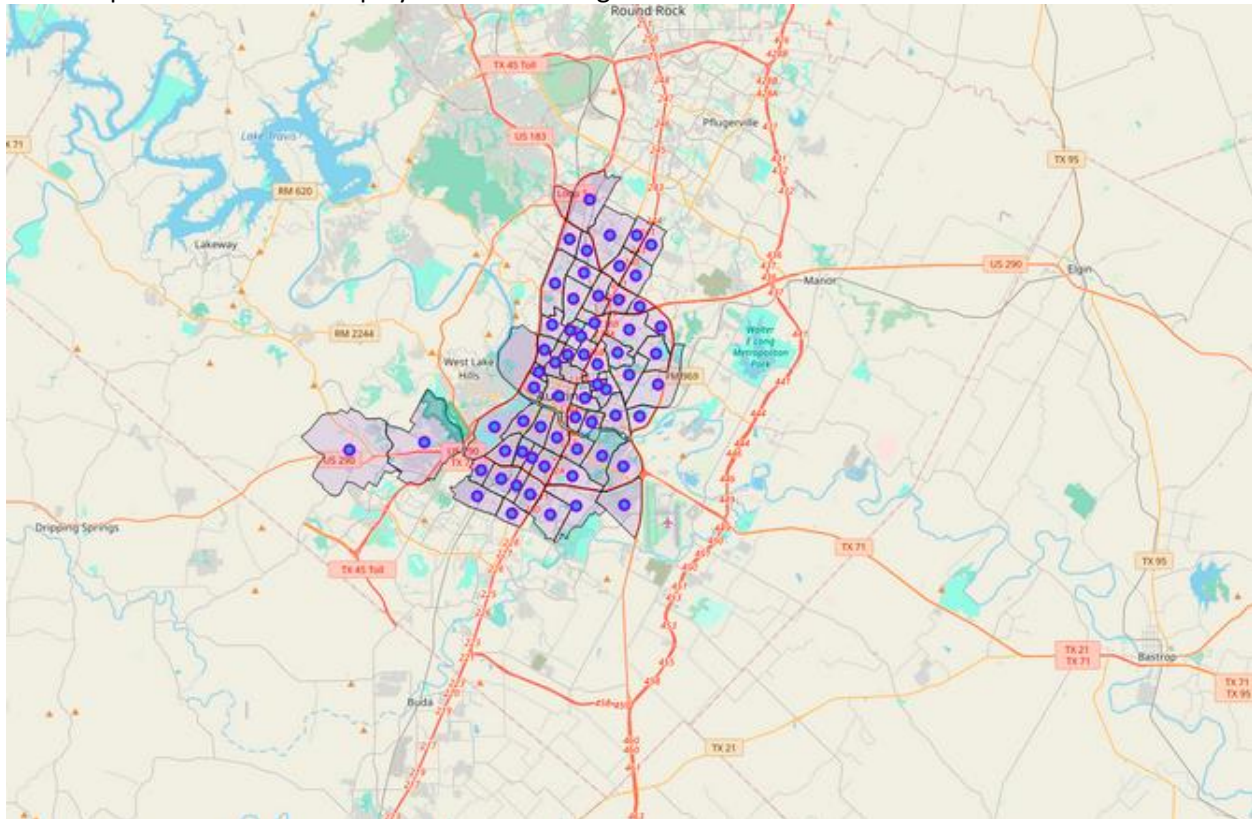Author: Rahul Ravi;

We will be using the following sources to get our required data:

1. Foursquare API to get the most common venues of given neighborhood of Austin

2. To present users with an interactive map, we need folium to render a map and allow us to put additional information
An example of a rendered map by folium with neighborhood boundaries and markers:

2. To localize Austin on the map, we need geopy to get the geographic coordinate of Austin
3. To assist in finding a location data for each to open an Asian restaurant from a neighborhood basis. We need a GeoJSON file [1] that gives us the coordinates of boundaries of neighborhoods in Austin
An example of part of the dataset from a GeoJSON file with centroid of polygon and subsequently unique coordinates extracted:

	planning_a	shape_area	label	shape_leng	_feature_i	geometry	Center_point	lat	long
0	ALLANDALE	65792689.5531	Allandale	42253.1072105	1.0	MULTIPOLYGON (((-97.73974 30.32808, -97.73962 ...	POINT (-97.74517 30.34030)	30.340301	-97.745169
1	BARTON HILLS	88901714.7947	Barton Hills	48353.9339254	2.0	MULTIPOLYGON (((-97.79627 30.23398, -97.79767 ...	POINT (-97.78837 30.25202)	30.252021	-97.788367
2	BOULDIN CREEK	33258999.9494	Bouldin Creek	25667.3403756	3.0	MULTIPOLYGON (((-97.75962 30.24211, -97.76031 ...	POINT (-97.75563 30.25170)	30.251705	-97.755626
3	BRENTWOOD	44207756.068	Brentwood	29612.4036976	4.0	MULTIPOLYGON (((-97.73692 30.31449, -97.73757 ...	POINT (-97.73245 30.33062)	30.330625	-97.732451
4	CENTRAL EAST AUSTIN	26970983.8606	Central East Austin	22198.5298969	5.0	MULTIPOLYGON (((-97.71925 30.27073, -97.71903 ...	POINT (-97.72415 30.26974)	30.269742	-97.724153

4. We get the Median House Price for each neighborhood from Zillow [2] and merge it with the geojson location data

	Region Name	Region Type	Type	Current
0	Allandale	neighborhood	All Homes	621300
1	Barton Creek	neighborhood	All Homes	1384600
2	Barton Hills	neighborhood	All Homes	690100
3	Bouldin Creek	neighborhood	All Homes	710300
4	Brentwood	neighborhood	All Homes	493800

Cleaned and Merged with the geojson data to achieve the below dataset

	Neighborhood	Median-HousePrice	Latitude	Longitude
0	Allandale	621300	30.340301	-97.745169
1	Barton Hills	690100	30.252021	-97.788367
2	Bouldin Creek	710300	30.251705	-97.755626
3	Brentwood	493800	30.330625	-97.732451
4	Central East Austin	483800	30.269742	-97.724153

5. To get a list of existing venues in each neighborhood in Austin [2], we need Foursquare API to explore based on given locations
An example of part of the cleaned and merged dataset returned by FourSquare API:

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Allandale	30.340301	-97.745169	Barley Swine	30.341256	-97.738458	New American Restaurant
1	Allandale	30.340301	-97.745169	Yard Bar	30.342881	-97.738871	Bar
2	Allandale	30.340301	-97.745169	Lick Ice Creams Burnet Road	30.341143	-97.738408	Ice Cream Shop
3	Allandale	30.340301	-97.745169	Bufalina Due	30.341030	-97.738422	Pizza Place
4	Allandale	30.340301	-97.745169	Three Little Pigs	30.340192	-97.738426	Food Truck

References:
[1]. Boundaries: Austin Neighborhood Planning Areas, data.austintexas.gov, the official City of Austin open data portal. Retrieved from:
https://data.austintexas.gov/dataset/Boundaries-Austin-Neighborhood-Planning-Areas/nz5f-3t2e/data
[2]. Austin Home Prices & Values,Zillow. Retrieved from
https://www.zillow.com/austin-tx/home-values/

[3] Queried venue data for each neighbood using the foursquare API, FourSquare API. Retrieved from:
https://developer.foursquare.com/docs/api-reference/venues/explore/