Battle of the Neighbourhoods

SETTING UP JAPANESE RESTAURANT TOSHI DELIGHTS

Introduction

- Shinobi Holdings is Planning to open their newest branch of Japanese restaurant Called Toshi Delights.
- This will be their 10th restaurant and they have decided to setup the restaurant in the Central Los Angeles City.

Business Problem – The requirement

- The restaurant chain is more popular with the younger crowd
- Not in favor with setting up close to their competitors
- Need to give more attention to/target office crowd when selecting location
- Not willing spend more money on rents unless it's absolutely necessary.

Data Required

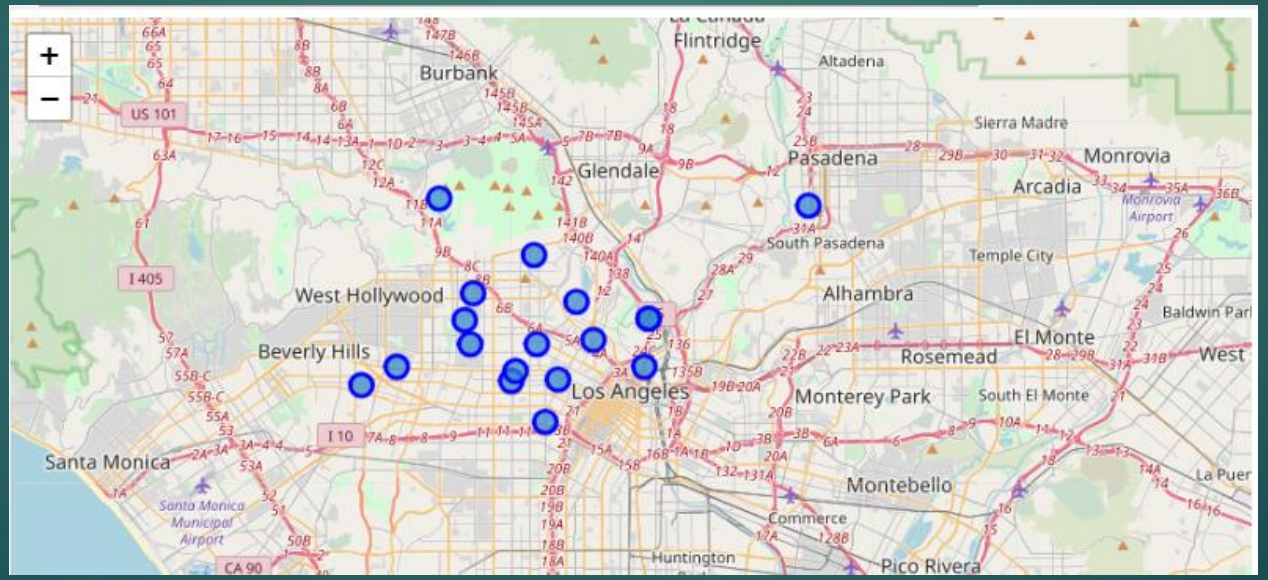
- Data of Distribution of Schools and Universities to locate the Younger Crowds.
- Data of distribution of Japanese Restaurants in Central LA to locate competitors.
- Data of Most Popular Places People Visit by Neighborhood to get an idea of the nature of the neighborhood.
- The Renting Cost for Business based on Neighborhoods in central LA.

How Data is Used

- Use OpenStreetMap to retrieve coordinates of the 17 neighborhoods of Central LA
- Use Foursquare service and geopy data to map top 10 venues for all Central LA neighborhoods
- Use foursquare service and geopy data to map schools, universities, office spaces that are essential for analysis of the customer
- Retrieving rent cost from rentcafe.com and storing on a pandas dataframe table.
- Developing a score system that takes into account the number of schools, universities, hotels and restaurants

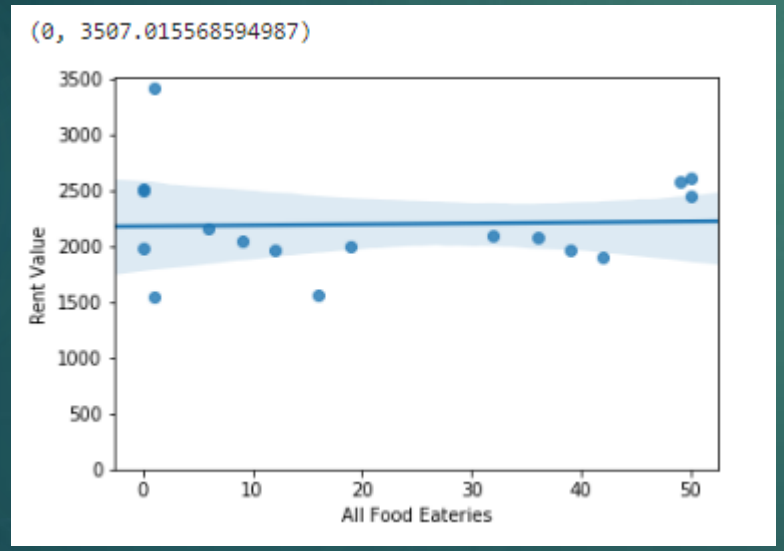
Methodology

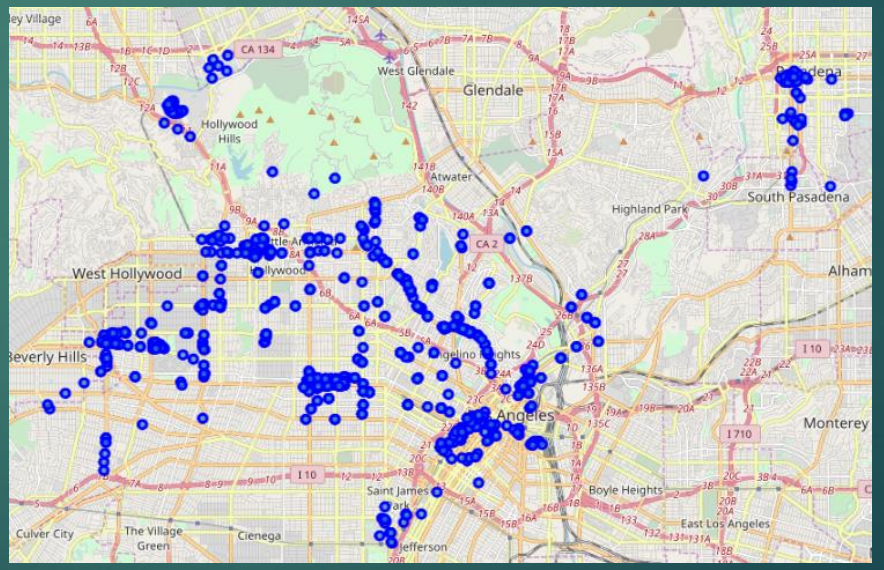
- Although we got the coordinates for all neighborhoods in LA city, it was decided to further reduce the concentration are to Central LA city as the data was a large data set. Below is the 17 neighbouhoods of Central LA.



Relationship of Land Value of Neighborhood with Food Eateries

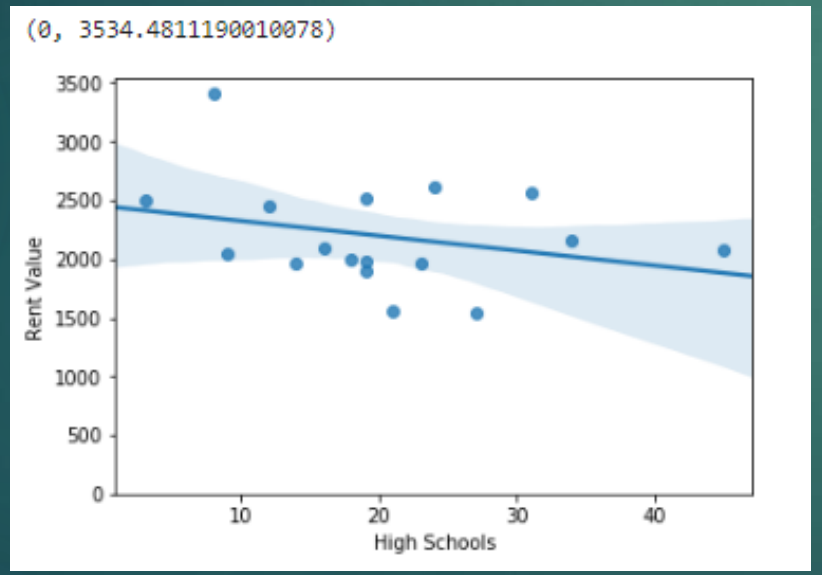
- The food eateries and restaurants are evenly distributed as shown below this may be the reason there's no good place of significance concerned with land value.

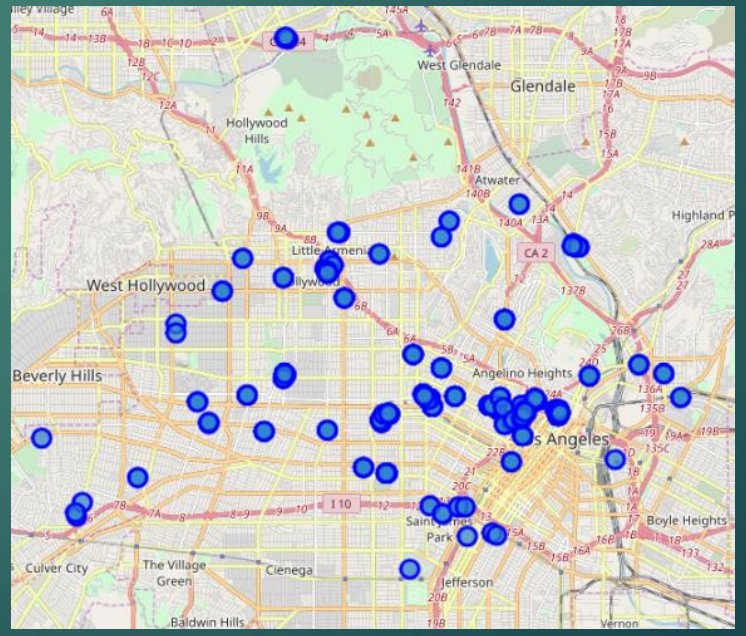




Relationship of School Distribution with Land Values

- Relationship of Land Value with number of schools. There's a slight decrease in Rent Value when number of high school increase in neighborhood. Testing with linear regression proves this.



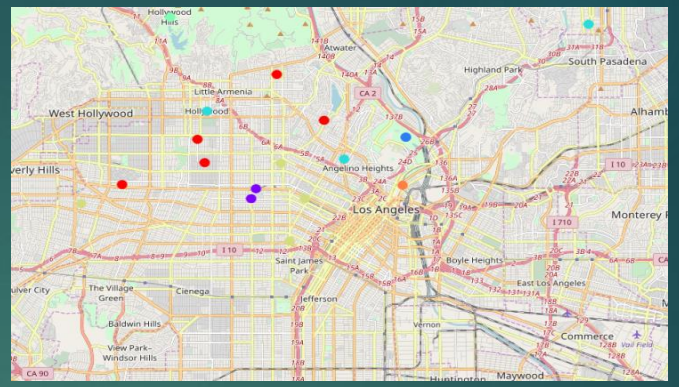


Descriptive Analytics

- Below was generated based on a score system that used the number of presence of schools, hotel, restaurants, offices, universities in the neighborhood. **Echo Park, Arlington Heights and Windsor Square** were the top 3 as there were very few eateries or restaurant and large number of office premises and school and universities which gave positive score. The weightages can be seen in the code.

	Neighbourhood	Score	Rent Value
0	Echo Park, Los Angeles	127.0	$2,156
1	Arlington Heights, Los Angeles	124.0	$1,543
2	Windsor Square, Los Angeles	122.0	$1,967
3	Carthay, Los Angeles	113.0	$3,410
4	Hollywood Hills West, Los Angeles	103.0	$2,498
5	Harvard Heights, Los Angeles	98.0	$1,560
6	East Hollywood, Los Angeles	95.0	$1,997
7	Elysian Park, Los Angeles	94.0	$2,509
8	Elysian Valley, Los Angeles	94.0	$1,977
9	Silver Lake, Los Angeles	84.0	$2,039
10	Koreatown, Los Angeles	77.0	$1,903

Inferential Analytics



- In order to further forward out case, Next, we find categories of venue mostly visited by people by neighborhood. In order to normalize data, we perform one hot encoding as well and after that we perform k-mean machine algorithm
- Based on the clustering that I have performed, we can say the neighborhoods that are located north and center or central LA is mostly saturated with food eateries. If we look below clusters Arlington Heights and Echo Park both regions belong to the same cluster. This cluster when looking for any discriminating category that there are only 2 occurrences of restaurants out of 15 hence it further proves these two neighborhoods are good for setting up restaurant due to lack of them.

```
central_LA_neightbourhoods_Cluster.loc[central_LA_neightbourhoods_Cluster['Cluster Labels'] == 3, central_LA_neightbourhoods_Cluster.columns[[
```

	Neighbourhood	1st Most Common Venue	2nd Most Common Venue	3rd Most Common Venue	4th Most Common Venue	5th Most Common Venue
0	Arlington Heights, Los Angeles	Gym	Coffee Shop	Sandwich Place	Garden	Gym / Fitness Center
3	East Hollywood, Los Angeles	Coffee Shop	Bar	Pizza Place	Food Truck	Vegetarian / Vegan Restaurant
4	Echo Park, Los Angeles	Café	Mexican Restaurant	Coffee Shop	Pizza Place	Bar

Discussion

- What is evident from the data analyzed is that the Central Los Angels City Region is highly saturated with commercial buildings.
- it was observed that all parts of the region were evenly priced.
- If there was one thing that could be added here would be the population's ethnicity distribution. If the ethnic distribution can be added to the scorecard system or the data analysis in general can have a broader view on where a Japanese restaurant can be placed. However, since there was no open source data to read demography on ethnicity of central LA region, it was passed.

Conclusion

- Mr. Tatsumi best bet will be to setup restaurant west of central LA. Near Arlington heights. Large number of office premises and the low number of restaurants is the primary reason for this. As far as the renting prices are concerned all regions are equally expensive and hence there is no clear differentiator in that regard.