

Battle Of Neighborhood Capstone Project

Introduction-Business Problem

In this project we will try to find an optimal location for a restaurant. Specifically, this report will be targeted to stakeholders interested in opening an **Fast Food Restaurants** near **Chicago Public Schools**, USA.

Since there are lots of restaurants in Chicago we will try to **detect locations that are not already crowded with restaurants**. We are also particularly interested in areas with few Fast Food Restaurants in vicinity. We would also prefer locations as **close to school neighborhood as possible**, assuming that first two conditions are met.

We will use our data science powers to generate a few most promising neighborhoods based on this criteria. Advantages of each area will then be clearly expressed so that best possible final location can be chosen by stakeholders.

Data

Based on definition of our problem, factors that will influence our decision are:
number of existing restaurants in the school neighborhood (any type of restaurant) number of and distance to Fast Food Restaurants in the neighborhood, if any distance of neighborhood from city center.

We decided to use regularly spaced grid of locations, centered around city center, to define our neighborhoods. Following data sources will be needed to extract/generate the required information: centers of candidate areas will be generated algorithmically and approximate addresses of centers of those areas will be obtained using Maps number of restaurants and their type and location in every neighborhood will be obtained using Foursquare API coordinate of Chicago center will be obtained using Maps API geocoding of well known Chicago location.

Here, I used Chicago Public Schools Progress Report Cards 2011-2012 as a dataset for this project. Used Foursquare API to find latitude and longitude for Chicago city center.

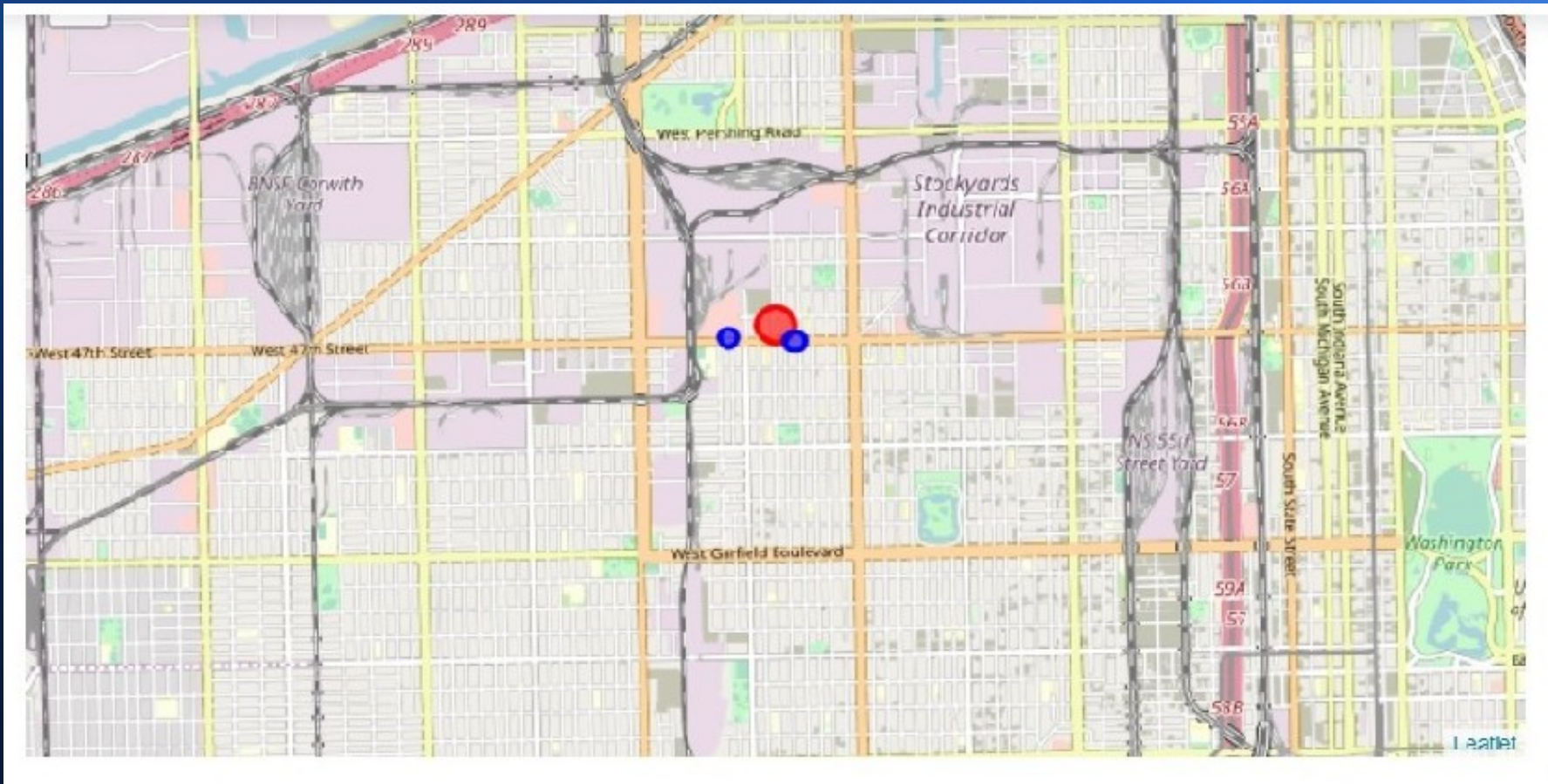
Neighborhood

	Name_Of_School	Address	ZIP Code	Latitude	Longitude	Neighborhood
3	Agustin Lara Elementary Academy	ES,4619 S Wolcott Ave ,Chicago,IL	60609.0	41.809757	-87.672145	NEW CITY
4	Air Force Academy High School	HS,3630 S Wells St ,Chicago,IL	60609.0	41.828146	-87.632794	ARMOUR SQUARE
1 1	Alexander Graham Elementary School	ES,4436 S Union Ave ,Chicago,IL	60609.0	41.813292	-87.643381	NEW CITY

Location of Pizza Place Using Foursquare

	Address	Distance To Location	Latitude	Longitude	Pizza Place
0	2042 W 47th St	376	41.808810	-87.676289	Pizza Hut
1	1812 W 47th St	188	41.808551	-87.670278	Chicago Pizza
2	558 W 43rd St	445	41.816362	-87.640777	Pizza Nova
3	558 W 43rd St	461	41.816473	-87.640663	Pizza Nova Express - W 43rd St
4	704 W 47th St	462	41.808935	-87.643160	T's Pisan's Pizza
5	10900 S Western Ave	309	41.814264	-87.6471	Homerun Inn Pizza

New City Chicago-Pizza Place located



Conclusion

Our analysis shows that although there is a great number of restaurants in Chicago, we mainly focused in New City, Chicago with in the radius of 500 from the respective distances. From the above analysis we can say that the area that are closer to the location got less number of pizza place. So, it is better to open a pizza place close to those particular locations.