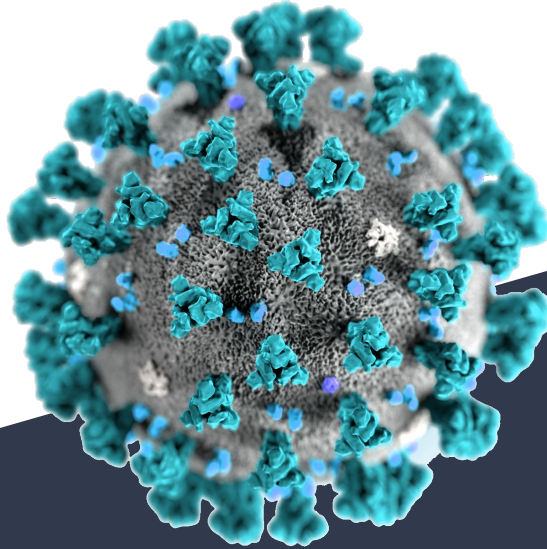


Ideal Locations for Covid-19 Testing Centers



CAPSTONE PROJECT
MEHUL SAMPATH, JULY 2020

FINDING THE IDEAL LOCATIONS FOR SETTING UP TESTING CENTERS

As public spaces open up and people come out to have a good time after months of being trapped, popular venues and destinations are going to get crowded. This also opens up the possibility of another outbreak emerging from such hotspots.

In regards to this, a safe prospect would be to set up Covid-19 testing centers in the proximity of these venues and trending places to conduct randomized testing to ensure regularly ensure that the place is not turning into a Covid-19 hotspot.

DATA SOURCES & CLEANING

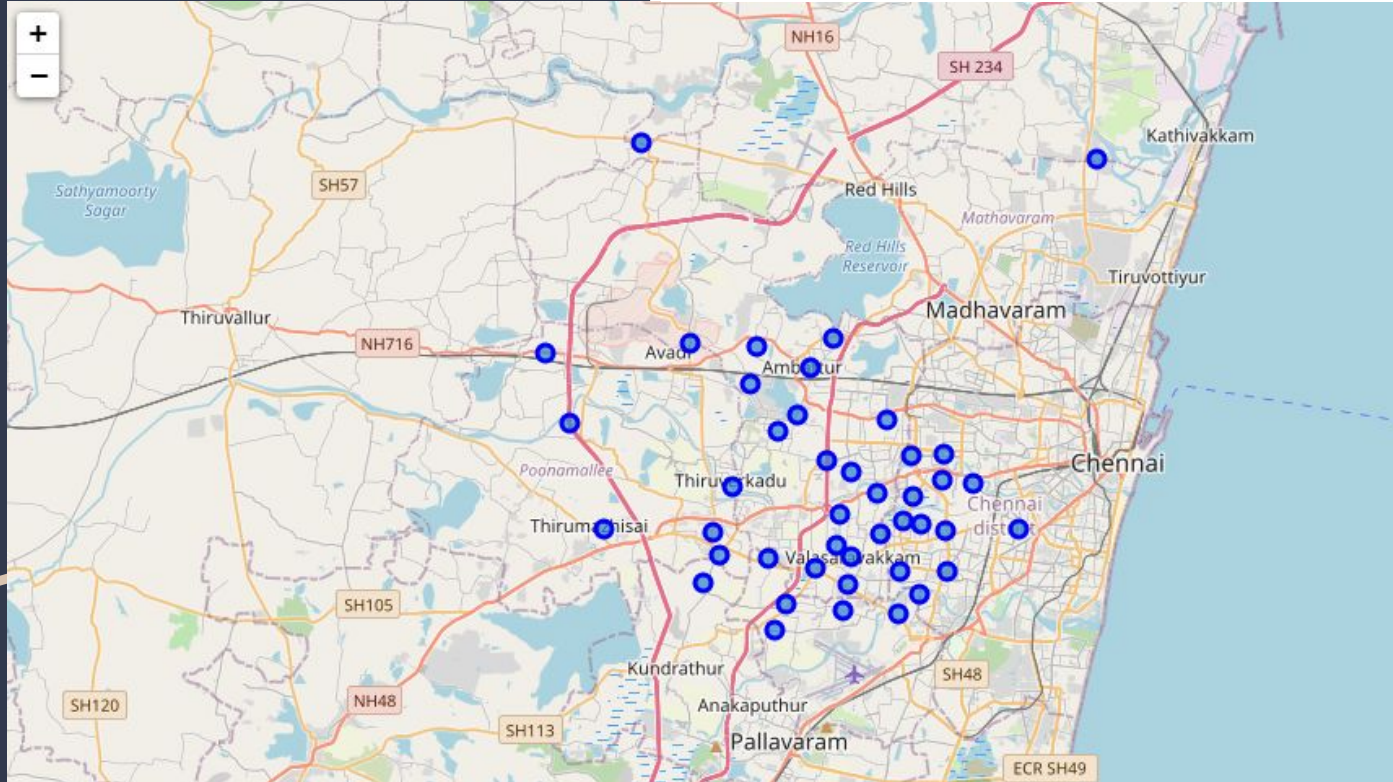
We will use the following data to come to come up with the best suggestions:

- [List of neighborhoods](#) in Chennai, Tamil Nadu and to be more specific, we can extract the neighborhoods in the western part of this large city.
- Geographical coordinates or latitudes and longitudes of the specific locations to plot the map for a visual outlook.
- Data of the popular places and venues in the western part of Chennai.
- We will also consider some commonly known facts about the Chennai to make the best possible model.

After cleaning up the data, we will use K-Means to create clusters of the neighborhoods and then we will figure out which cluster will need a testing center and what would be the most ideal spot.

USING GEOCODER TO FIND COORDINATES

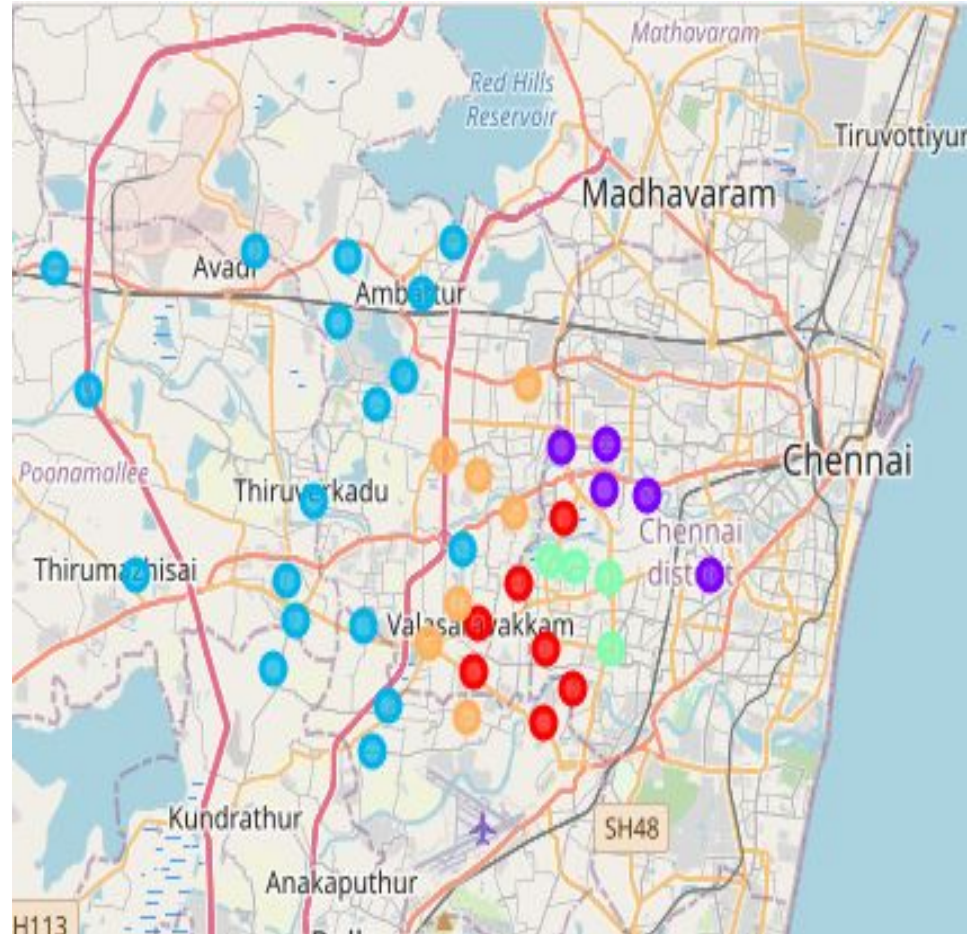
VISUALIZE A MAP USING FOLIUM FOR PRELIMINARY UNDERSTANDING



USING FOURSQUARE API & FINDING TOTAL ATTRACTIONS IN EACH AREA

Total	
Neighborhoods	
M.G.R Garden	100
Anna Nagar	100
Arumbakkam	99
Aminjikarai	91
Thirumangalam	89
Ashok Nagar	71
Vadapalani	66
Saligramam	61
Virugambakkam	54
Nesapakkam	45
Defence Colony	34
Porur	32
Valasaravakkam	29
Nandambakkam	29

USING K-MEANS TO CREATE 5 CLUSTERS & VISUALIZING USING FOLIUM



ANALYZING EACH CLUSTER & ASSIGNING PRIORITY TO EACH CLUSTER

RESULTS

PRIORITY

C1 > C0~C3 > C2~C4

	Cluster	Total Hotspots
0	C0	225
1	C1	479
2	C2	112
3	C3	252
4	C4	124

CONCLUSION & FUTURE SCOPE

Regular random testing in high risk neighborhood, C1 in this case can have multiple testing centers in and around to cater to the high needs. The remaining can have lesser number of centers or however the stakeholders propose the plan.

Future Scope:

- Use Covid-19 active cases dataset and combine with existing parameters.
- Use logistic regression as number of parameters increase.

THANK YOU

COURSERA
&
IBM