

Battle of Neighborhoods

***Starting an Hospital for COVID-19 in
Bangalore***

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COURSERA CAPSTONE PROJECT

Business Problem

- **Location of the New Hospital for COVID-19 is one of the most important decisions that will determine whether the hospital will be reachable to people or not**
- **Objective: To analyze and select the best locations in the city of Bangalore, to open a new hospital in particular area**
- **This project is timely as the city is currently suffering from COVID-19**
- **Business question**
 - **In the city of Bangalore if Government is looking to open a new hospital, where would you recommend that they open it?**

Data Description

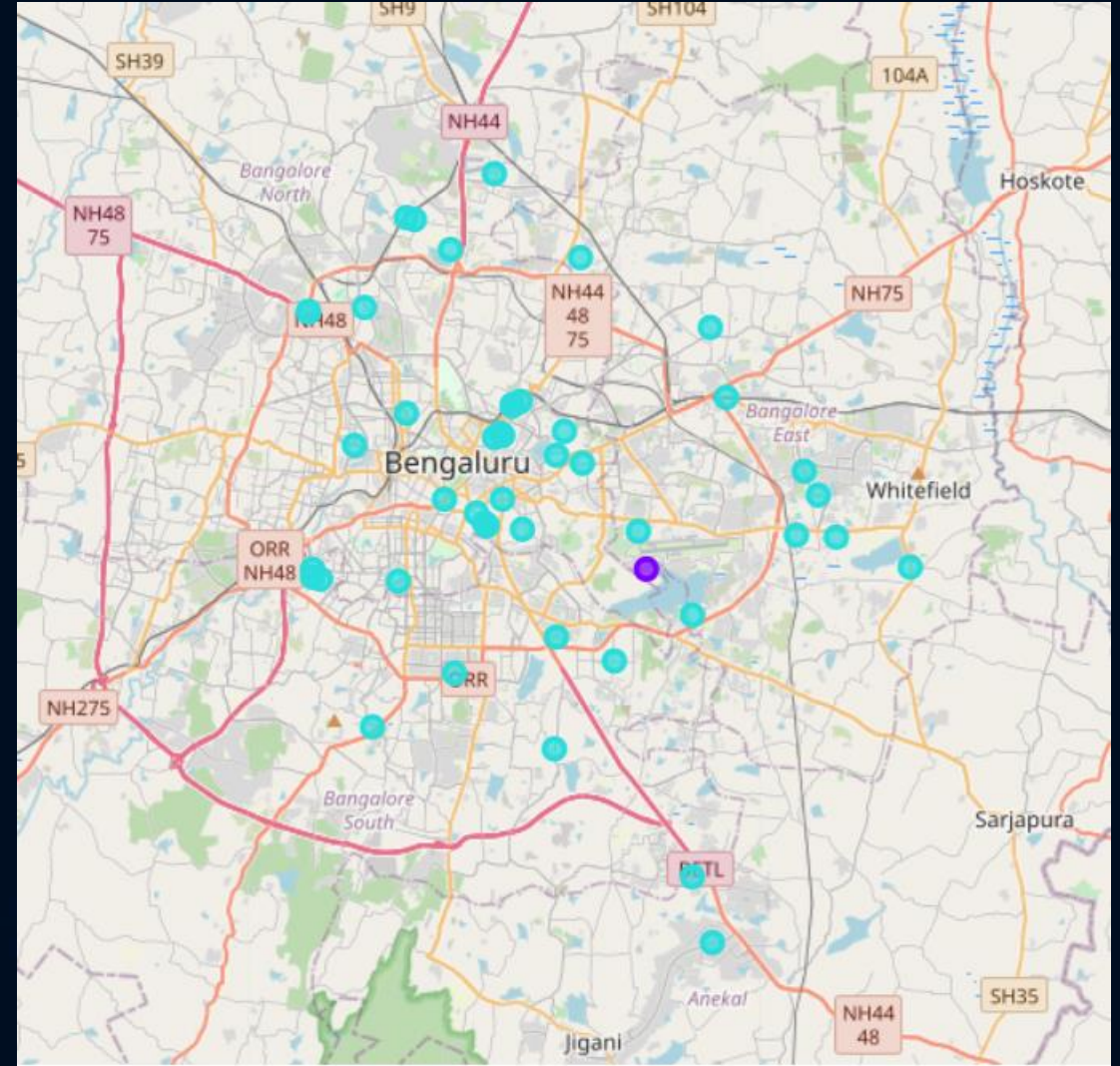
- **Data required**
 - **List of neighborhoods in Bangalore, India**
 - **Latitude and longitude coordinates of the neighborhoods**
 - **Venue data, particularly data related to hospitals**
- **Sources of data**
 - **Wikipedia page for neighbourhoods**
(https://commons.wikimedia.org/wiki/Category:Suburbs_of_Bangalore)
 - **Geocoder package for latitude and longitude coordinates**
 - **Foursquare API for venue data**

Methodology

- **Web scraping Wikipedia page for neighbourhood list.**
- **Get latitude and longitude coordinates using Geocoder.**
- **Use Foursquare API to get venue data.**
- **Group data by neighbourhood and taking the mean of the frequency of occurrence of each venue category.**
- **Filter venue category by Hospital.**
- **Perform clustering on the data by using k-means clustering.**
- **Visualize the clusters in a map using Folium.**

Results

- Categorized the neighborhoods into 4 clusters :
- 1. Cluster 0: Neighborhoods with no existence of hospitals
- 2. Cluster 1: Neighborhoods with low number to no existence of hospitals
- 3. Cluster 2: Neighborhoods with high concentration of hospitals
- 4. Cluster 3: Neighborhoods with no existence of hospitals



Recommendations

- Start a new hospital in neighborhoods in cluster 0 and cluster 3 as there is scarcity of hospitals
- Can also start in neighborhoods in cluster 1 with only one hospital in this cluster demands hospital in this situation.
- Avoid neighborhoods in cluster 2, already high concentration of hospitals

Conclusion

- Answer to business question: The neighbourhoods in cluster 0, cluster 1 and cluster 3 are the most preferred locations to start a new hospital for COVID-19
- Findings of this project will help Government to start hospitals for COVID-19 on high potential locations while avoiding overcrowded areas in their decisions to start a new hospital.

Thank you