COURSERA APPLIED DATA SCIENCE CAPSTONE PROJECT

SETTING UP A RESTAURANT IN HYDERABAD, INDIA

BY

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BUSINESS PROBLEM

➢ LOCATION OF THE RESTAURANT IS ONE OF THE MOST IMPORTANT DECISIONS THAT WILL DETERMINE WHETHER THE RESTAURANT WILL BE A SUCCESS OR A FAILURE.

➢ OBJECTIVE: TO ANALYSE AND SELECT THE BEST LOCATIONS IN THE CITY OF HYDERABAD, INDIA TO OPEN A NEW RESTAURANT.

➢ THIS PROJECT IS TIMELY AS THE CITY IS CURRENTLY SUFFERING FROM OVERSUPPLY OF RESTAURANTS.

➢ BUSINESS QUESTION : IN THE CITY OF HYDERABAD, IF A PROPERTY DEVELOPER IS LOOKING TO OPEN A NEW RESTAURANT, WHERE WOULD YOU RECOMMEND THAT THEY OPEN IT?

DATA

DATA REQUIRED:

- LIST OF NEIGHBOURHOODS IN HYDERABAD

- LATITUDE AND LONGITUDE COORDINATES OF THE NEIGHBOURHOODS

- VENUE DATA, PARTICULARLY DATA RELATED TO RESTAURANTS

SOURCES OF DATA:

- WIKIPEDIA PAGE FOR NEIGHBOURHOODS

- [HTTPS://EN.WIKIPEDIA.ORG/WIKI/CATEGORY:NEIGHBOURHOODS_IN_HYDERABAD,_INDIA)

- GEOCODER PACKAGE FOR LATITUDE AND LONGITUDE COORDINATES

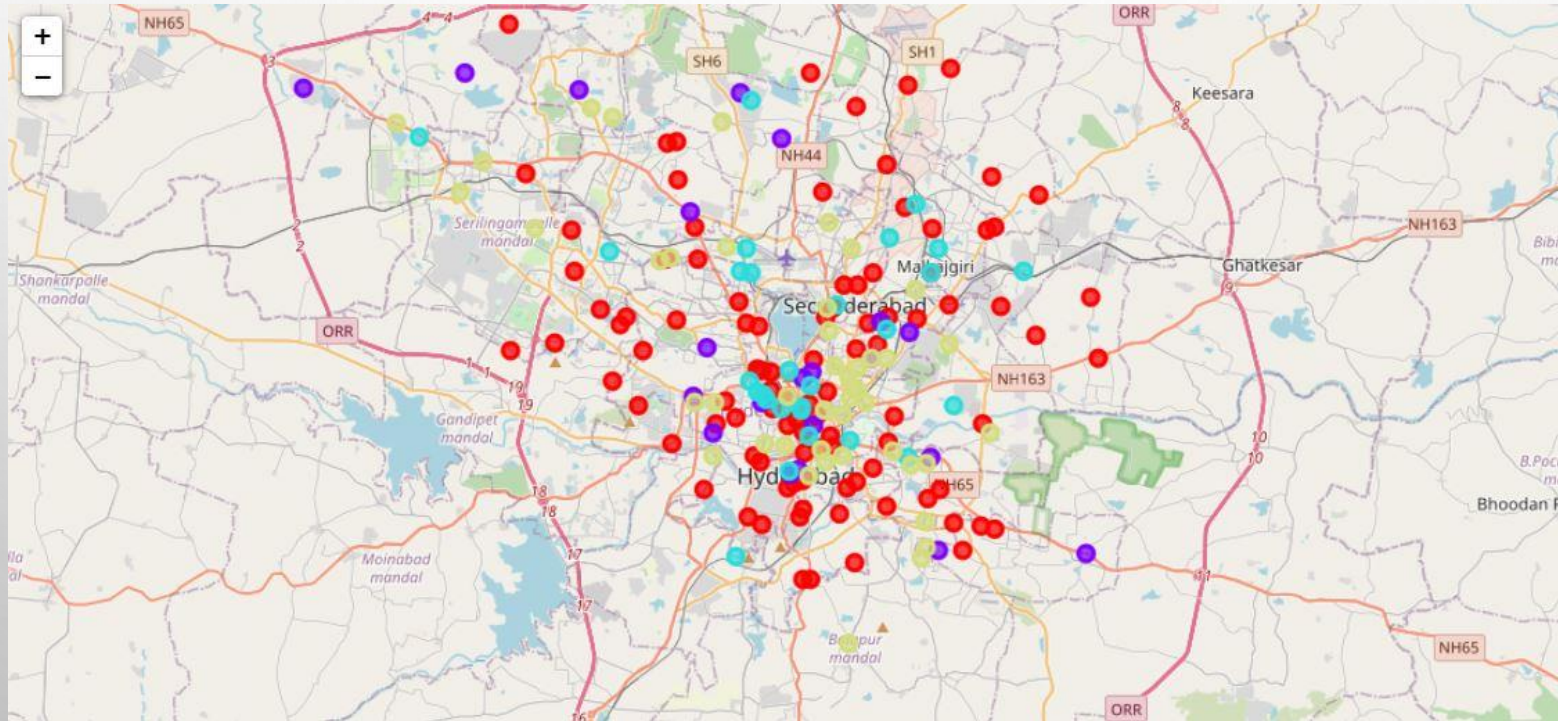- FOURSQUARE API FOR VENUE DATA

METHODOLOGY

- WEB SCRAPING WIKIPEDIA PAGE FOR NEIGHBOURHOODS 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 RESTAURANT
- PERFORM CLUSTERING ON THE DATA BY USING K-MEANS CLUSTERING
- VISUALIZE THE CLUSTERS IN A MAP USING FOLIUM

RESULTS

➢ MAJOR NUMBER OF RESTAURANTS ARE CONCENTRATED IN THE CENTRAL AREA OF HYDERABAD CITY, WITH THE HIGHEST NUMBER IN CLUSTER 1 & 2 AND MODERATE NUMBER IN CLUSTER 3.

➢ THIS REPRESENTS A GREAT OPPORTUNITY AND HIGH POTENTIAL AREAS TO OPEN NEW RESTAURANTS AS THERE IS RELATIVELY LESS COMPETITION FROM EXISTING RESTAURANTS.

➢ MEANWHILE, RESTAURANTS IN CLUSTER 1 ARE LIKELY SUFFERING FROM INTENSE COMPETITION DUE TO OVERSUPPLY AND HIGH CONCENTRATION OF RESTAURANTS. THEREFORE, THIS PROJECT RECOMMENDS PROPERTY DEVELOPERS TO CAPITALIZE ON THESE FINDINGS TO OPEN NEW RESTAURANTS IN NEIGHBOURHOODS IN CLUSTER 0 WITH RELATIVELY LESS COMPETITION.

➢ PROPERTY DEVELOPERS WITH UNIQUE SELLING PROPOSITIONS TO STAND OUT FROM THE COMPETITION CAN ALSO OPEN NEW RESTAURANTS IN NEIGHBOURHOODS IN CLUSTER 3 WITH MODERATE COMPETITION.

➢ LASTLY, PROPERTY DEVELOPERS ARE ADVISED TO PREFER CENTRAL AREA OF HYDERABAD CITY WITH THE RECOMMENDED CLUSTER BECAUSE LOT OF DEMAND CAN BE SEEN AND WITH BEST BUSINESS MODEL CAN YIELD A BEST RESTAURANT.

CLUSTERS MAP

DISCUSSION

➤ HUGE NUMBER OF RESTAURANTS ARE CONCENTRATED IN THE CENTRAL AREA OF THE CITY

➤ HIGHEST NUMBER IN CLUSTER 1 AND MODERATE NUMBER IN CLUSTER 3

➤ CLUSTER 0 HAS RELATIVELY LESS NUMBER OF RESTAURANTS IN THE NEIGHBOURHOODS

➤ THEREFORE, THE PROJECT RECOMMENDS THE PROPERTY DEVELOPERS TO CAPITALIZE ON THESE FINDINGS TO OPEN NEW RESTAURANTS IN NEIGHBOURHOODS IN CLUSTER 0 WITH RELATIVELY LESS COMPETITION.

RECOMMENDATIONS

- OPEN NEW RESTAURANTS IN NEIGHBOURHOODS IN CLUSTER 0 WITH LITTLE COMPETITION

- CAN ALSO OPEN IN NEIGHBOURHOODS IN CLUSTER 3 WITH MODERATE COMPETITION IF HAVE UNIQUE SELLING PROPOSITIONS TO STAND OUT FROM THE COMPETITION.

- AVOID NEIGHBOURHOODS IN CLUSTER 1 AND 2, ALREADY HIGH CONCENTRATION OF RESTAURANTS AND INTENSE COMPETITION.

CONCLUSIONS

- ANSWER TO BUSINESS QUESTION: THE NEIGHBOURHOODS IN CLUSTER 0 ARE THE MOST PREFERRED LOCATIONS TO OPEN A NEW RESTAURANT

- FINDINGS OF THIS PROJECT WILL HELP THE RELEVANT STAKEHOLDERS TO CAPITALIZE ON THE OPPORTUNITIES ON HIGH POTENTIAL LOCATIONS WHILE AVOIDING OVERCROWDED AREAS IN THEIR DECISIONS TO OPEN A NEW RESTAURANT.

THANK YOU!