

# Applied Data Science Capstone by IBM

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- Peer-graded Assignment: Capstone Project - The Battle of Neighborhoods

# Content

1. Introduction
2. Data Extraction
3. Methodology
4. Observation & Discussion
5. Conclusion

# Introduction

## **A description of the problem and a discussion of the background**

1. In Module 3, we explored New York City and the city of Toronto and segmented and clustered their neighborhoods. Both cities are very diverse and are the financial capitals of their respective countries.
2. One interesting idea would be to compare the neighborhoods of the two cities and determine how similar or dissimilar they are.
3. In this assignment we will compare the neighborhoods of the two indian cities namely Hyderabad and Mumbai
4. Is Hyderabad more like Mumbai in terms of Shops, Restaurants , Cafes etc?
5. In Hyderabad or Mumbai, if someone is looking to open a restaurant, where would we recommend that they open it? Similarly, if a contractor is trying to start their own business, where would you recommend that they setup their office? and other important points will be discussed
6. If a person wants to shift from Hyderabad to Mumbai or vice versa, then how likely he will be adjusted to these cities will be discussed.

# Data Extraction

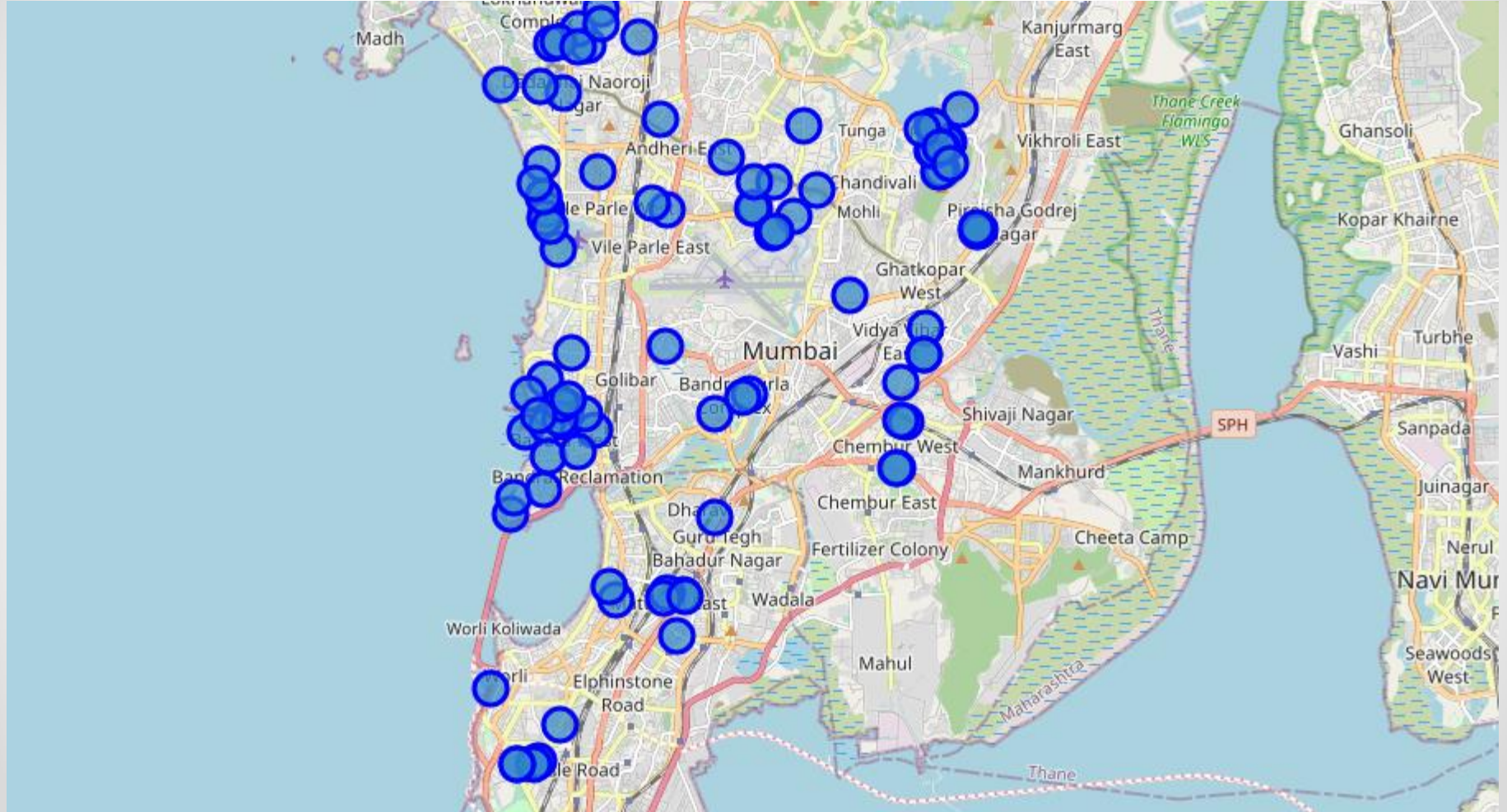
**The data extracted may include:**

1. List of Cafes and footstalls of Hyderabad with their latitude and longitude
2. List of Hotels, Book stores, Restaurant, Bakeries, and all relevant locations
3. All data is limited with in 10km radius

# Methodology

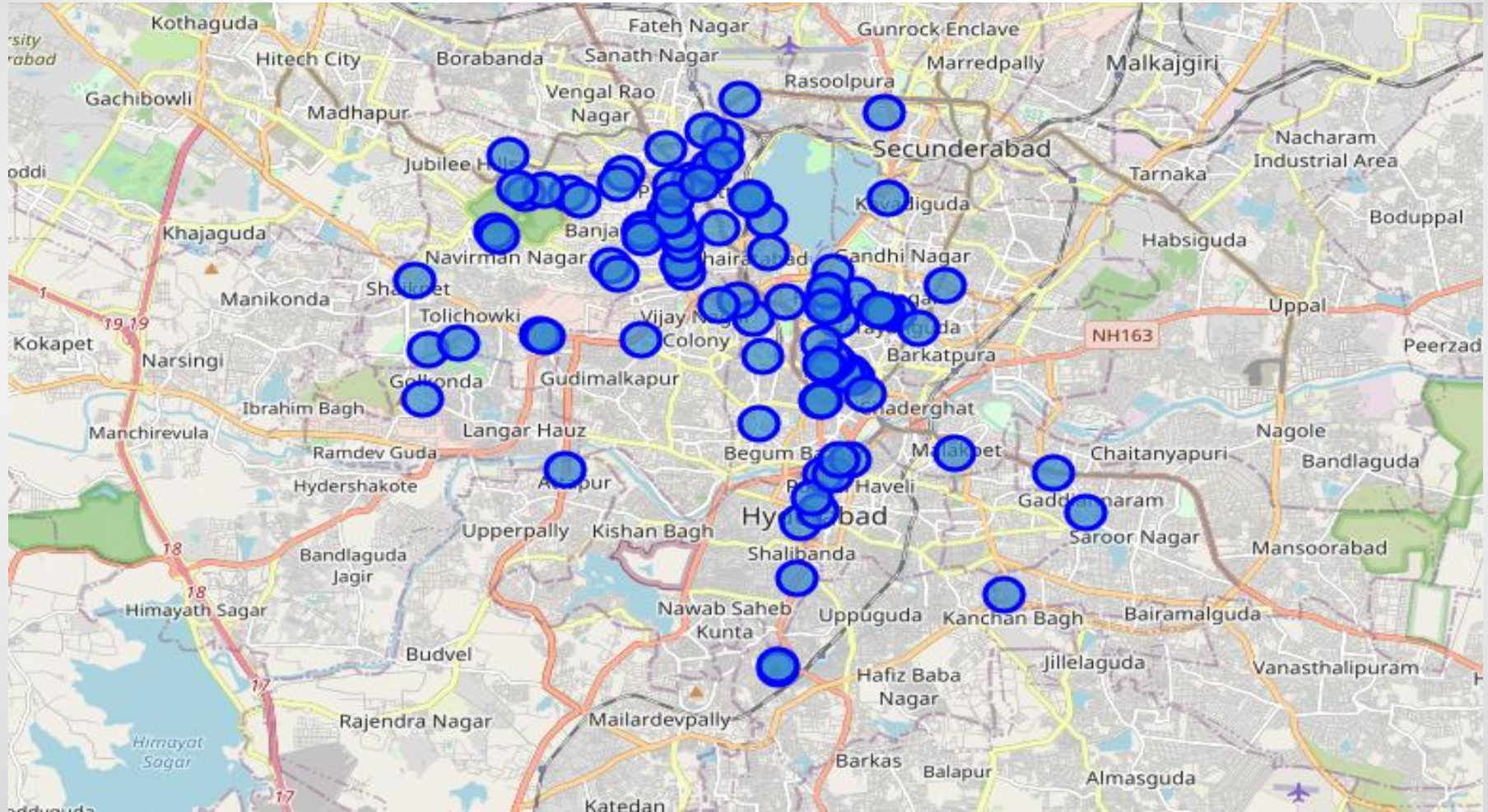
1. First extracting the geographical coordinates of Hyderabad & Mumbai through geolocator is to be done.
2. Then FOURSQUARE credentials are specified for the analysis of maps.
3. Then the data is gathered with FOURSQURE API url with a limit of 10 kms radius and maximum count of 200 in both Mumbai and Hyderabad
4. After the data is gathered, the venues are sorted according to their categories and printed by including both latitude and longitude.
5. Then the maps of Mumbai and Hyderabad are represented with the help of Folium.
6. Then the value count of with respect to each category is done and printed for both Hyderabad and Mumbai individually
7. The corresponding value counts are represented as bar graphs and the observations, intuitions are further discussed in "OBSERVATION & DISCUSSION" section.

# Mumbai map

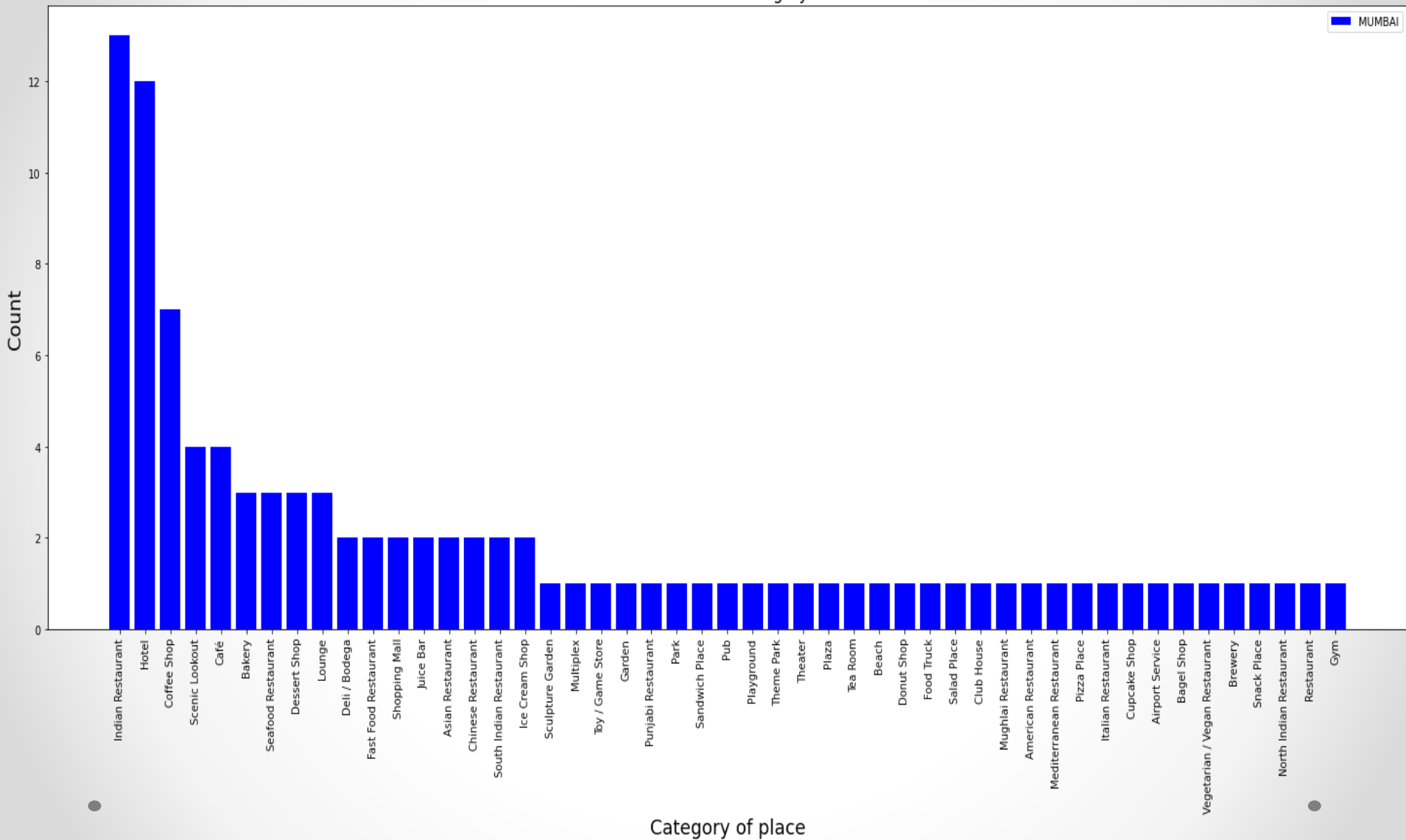




# Hyderabad map

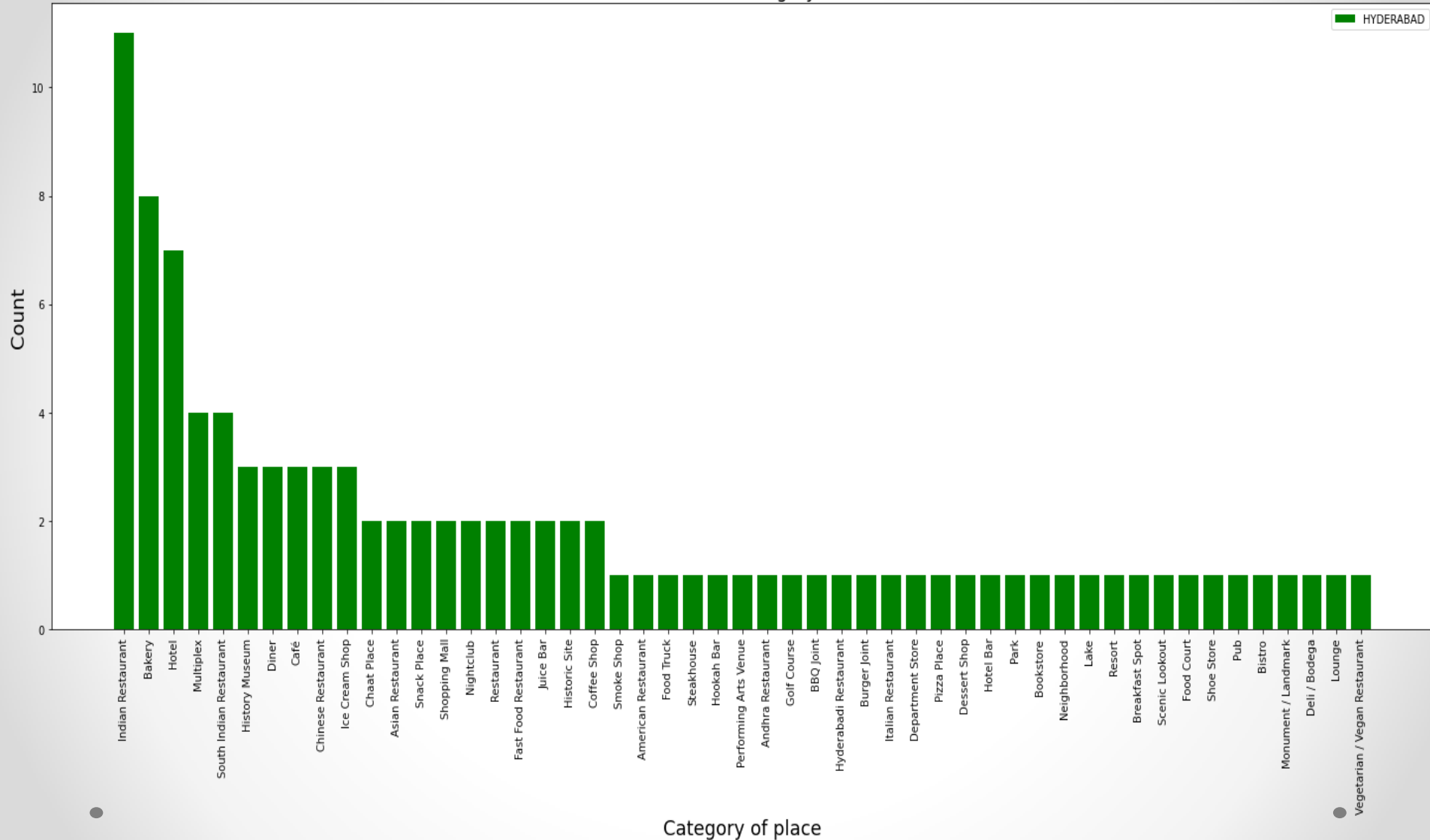


### Venues counts of each category in MUMBAI

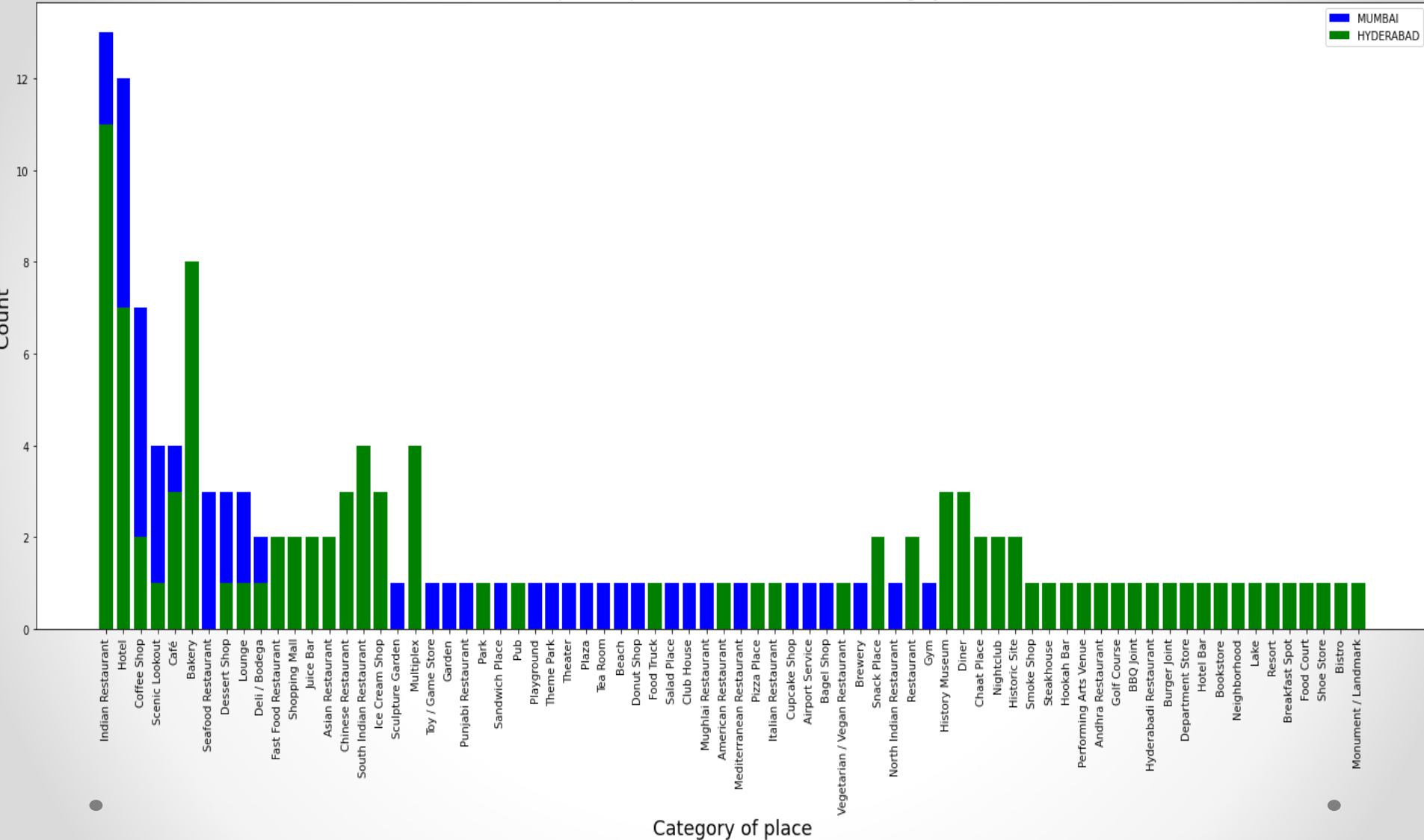




# Venues counts of each category in HYDERABAD



Comparative plot of venues counts of each category



# Observation & Discussion

1. From above bar graph, we can observe that both HYDERABAD and MUMBAI are similar in terms of Shops, Restaurants , Cafes etc.
2. However, the Mumbai is more versatile in terms of venues compare to Hyderabad.
3. In Mumbai, when we observe the Folium map created with the help of Foursquare credentials, more venues are clustered in "Bandra West & Juhu" area and less venues can be spotted in " Vidya Vihar " area.
4. In Hyderabad ,up on similar observation, more venues are clustered in "Abids, Ameetpet & Panjagutta" area and less venues can be spotted in " Golkonda " area.
5. Mumbai has significantly more number of Indian restaurants, Hotels, Coffee shops, lounges.
6. On other hand, Hyderabad has more number of Bakeries than Mumbai
7. In terms of Shopping malls, Chinese restaurants, Asian restaurants, Ice cream shops, Juice bar both Mumbai and Hyderabad are more similar.
8. Rest miscellaneous venues are found to be single or two for both Mumbai and Hyderabad

# Conclusion

1. From above observations we can conclude the following things:
2. In Mumbai, if some one wants to open a restautant, one can prefer "Bandra West or Juhu" area similarly in Hyderabad one can prefer "Abids or Ameerpet" area.
3. Opening Indian restaurant or Hotel in Hyderabad will be comparatively better than Mumbai because Mumbai already has a significantly more number of this category venues than Hyderabad.
4. One can always prefer starting up a miscellanies type of venues as they were low and easy entry to the market in both Mumbai and Hyderabad
5. On overall, if a person wants to shift from Hyderabad to Mumbai or vice versa , there wouldn't be any problems as both cities are more similar in terms of venues according to Foursquare API data

Thank you