Game Café in Hyderabad, India

By

Apurva Ponnapalli

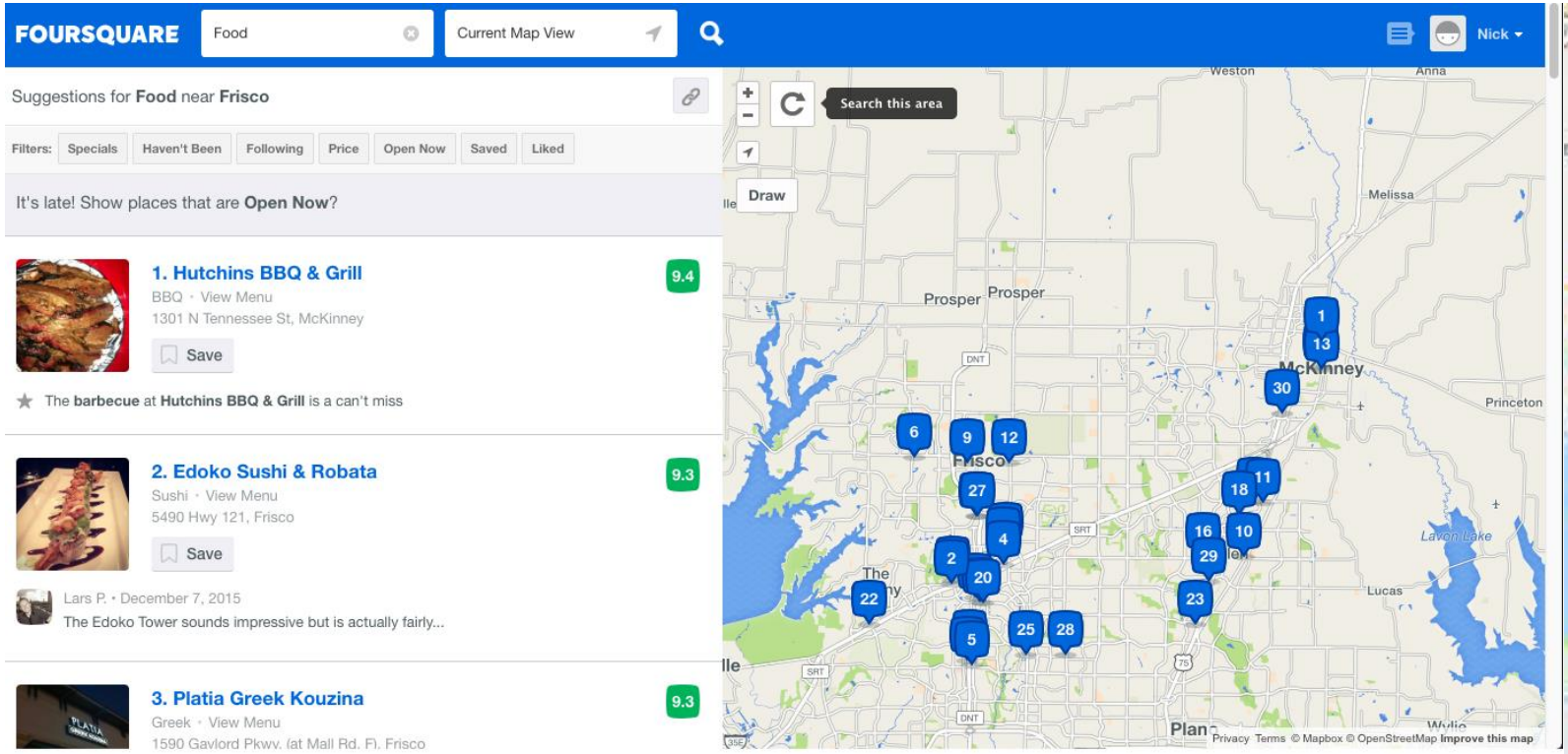
Contents

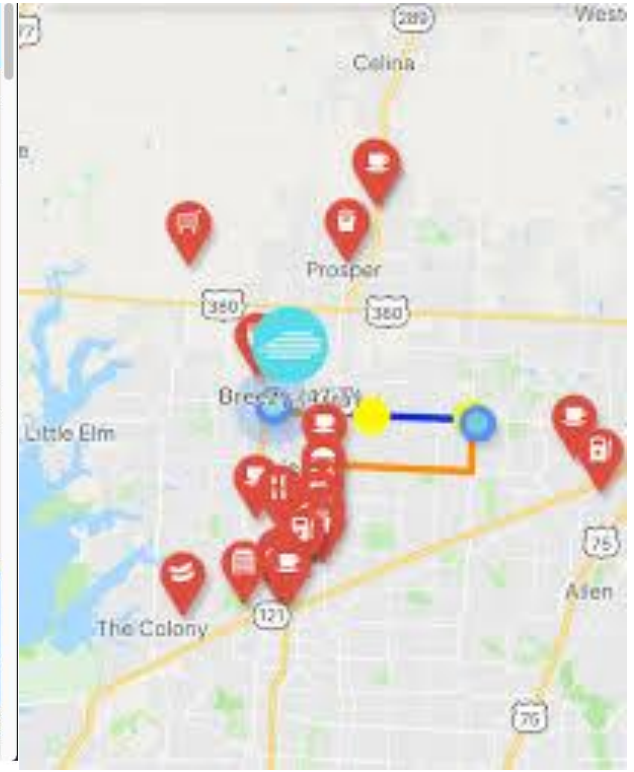
Introduction

- ✓ Gaming cafes are a great way to relax and enjoy during weekends and holidays.
- ✓ Opening a new cafe requires serious consideration of location and the way it has to be operated successfully.
- ✓ The objective of this project is to analyze and select the best locations in the city of Hyderabad, India, to open a new gaming cafe.

Business Problem

✓ Finding and recommend an appropriate **Location** for opening a gaming café.





Target Audience

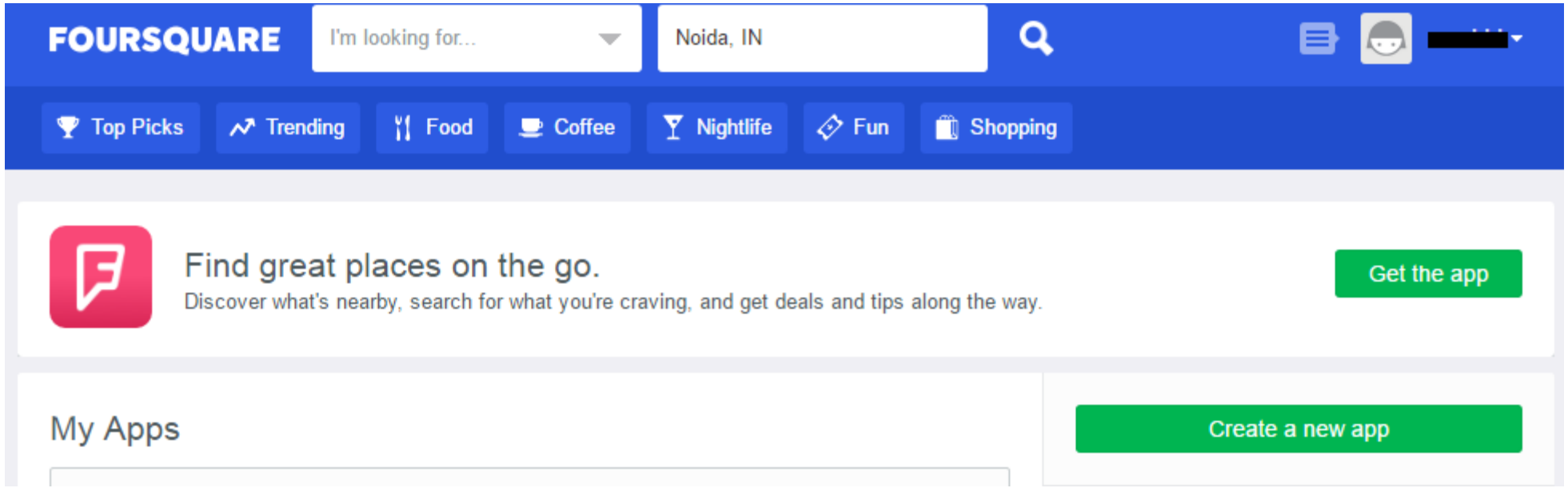
- ✓ Gaming Companies.
- ✓ Start-up Companies interested in gaming café.
- ✓ Gamers who are interested in playing in such cafes.

Data

- ✓ List of neighborhoods in Hyderabad.
- ✓ To plot the map latitude and longitude coordinates are required.
- ✓ To perform clustering, we need venue data related to gaming cafes in Hyderabad.

Sources Used

- ✓ Wikipedia
- ✓ Foursquare API



Methodology

- ✓ Getting the list of neighborhood of the city by Scrapping the webpage.
- ✓ Getting the geographical coordinates of the city and its neighborhood.
- ✓ Populate the pandas DataFrame.
- ✓ Visualize the neighborhoods in the form of maps.
- ✓ Using the Foursquare API for getting the venues.
- ✓ Performing clustering on the data by using K-mean clustering algorithm.

Analysis

Step 1: Import required Libraries.

- ✓ Numpy
- ✓ Pandas
- ✓ Geocoder
- ✓ BeautifulSoup
- ✓ Folium
- ✓ Sklearn
- ✓ Matplotlib

Analysis

Step 2: Web Scrapping the data from below link.

(https://en.wikipedia.org/wiki/Category:Neighbourhoods_in_Hyderabad,_India)

- ✓ Send the GET request Step.
- ✓ Parse data from the html into a beautifulsoup object.
- ✓ Create a list to store neighbourhood data.
- ✓ Append the data into the list.
- ✓ Create a new DataFrame from the list.

Analysis

Step 3: Geographical Coordinates

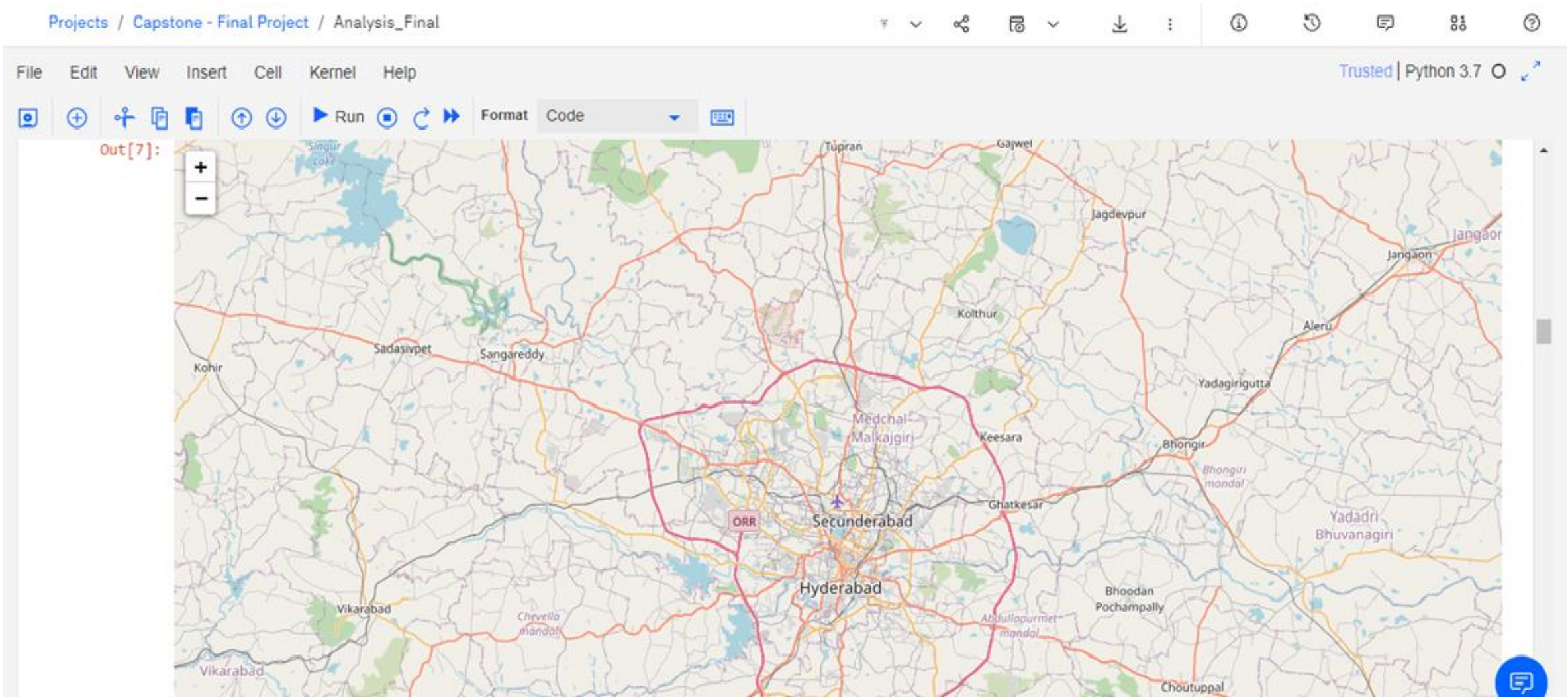
- ✓ Defining a function to get coordinates .
- ✓ Initialize variable to None.
- ✓ Looping until getting the coordinates.
- ✓ Call the function to get the coordinates.
- ✓ Store in a new list using list comprehension.
- ✓ Create temporary dataframe to populate the coordinates.
- ✓ Merge the coordinates into the original dataframe.
- ✓ Getting the Coordinates of Hyderabad.

Analysis

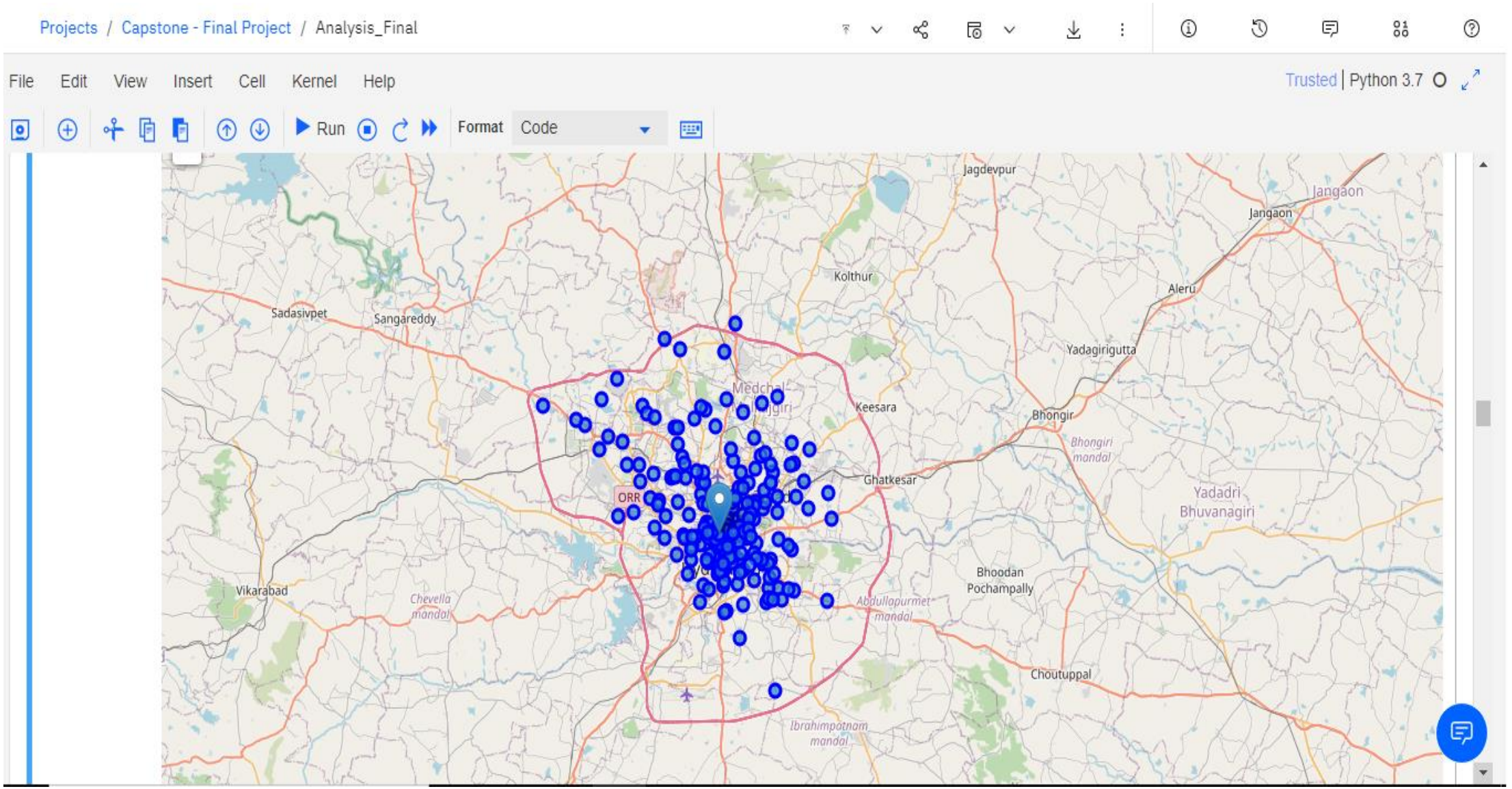
Step 4: Mapping and Visualizing

- ✓ Create Map of Hyderabad using latitude and longitude values.
- ✓ Add markers to Map.
- ✓ Markers for Localities.
- ✓ Create Map of Hyderabad with Markers.

Map of Hyderabad



Marked Map of Hyderabad



Analysis

Step 5: Foursqaure API

- ✓ Create the API request URL.
- ✓ Make the GET request.
- ✓ Return only relevant Information for each nearby venue.
- ✓ Creating a New DataFrame.
- ✓ Check how many venues were returned for each neighborhood.
- ✓ Check for unique categories which can be curated from all the returned values.

Analysis

Step 6: Analyzing each Neighborhood

- ✓ By using One hot encoding group the neighborhood.
- ✓ After this Creating a dataframe for Gaming Cafe only.

```
(198, 180)
```

Out[17]:

	Neighborhoods	ATM	Accessories Store	Afghan Restaurant	American Restaurant	Andhra Restaurant	Arcade	Arts & Crafts Store	Res
0	A. C. Guards	0	0	0	0	0	0	0	
1	A. S. Rao Nagar	0	0	0	0	0	0	0	
2	Abhyudaya Nagar	0	0	0	0	0	0	0	
3	Abids	0	0	0	0	0	0	0	
4	Adikmet	0	0	0	0	0	0	0	
...	...	...	...	...	...	...	...	...	
193	Serilingampally	0	0	0	0	0	0	0	
194	Shah-Ali-Banda	0	0	0	0	0	0	0	
195	Shahran Market	0	0	0	0	0	0	0	
196	Shanker Mutt	0	0	0	0	0	0	0	
197	Shivam Road	0	0	0	0	0	0	0	

198 rows × 180 columns

Analysis

Step 7: Clustering

By using K-means Algorithm

✓ Set the number of Clusters.

✓ Run k-means Clustering.

✓ Check cluster labels generated for each row in the dataframe.

```
Out[21]: array([0, 0, 0, 1, 0, 0, 0, 0, 0, 0], dtype=int32)
```

Analysis

Step 7: Clustering

- ✓ Creating a new dataframe that includes the cluster as well as the top10 venues for each neighborhood.
- ✓ Add the clustering labels.
- ✓ Adding latitude and longitude values to the existing dataframe.
- ✓ Sorting the results by Cluster Labels.

Output of Clustering

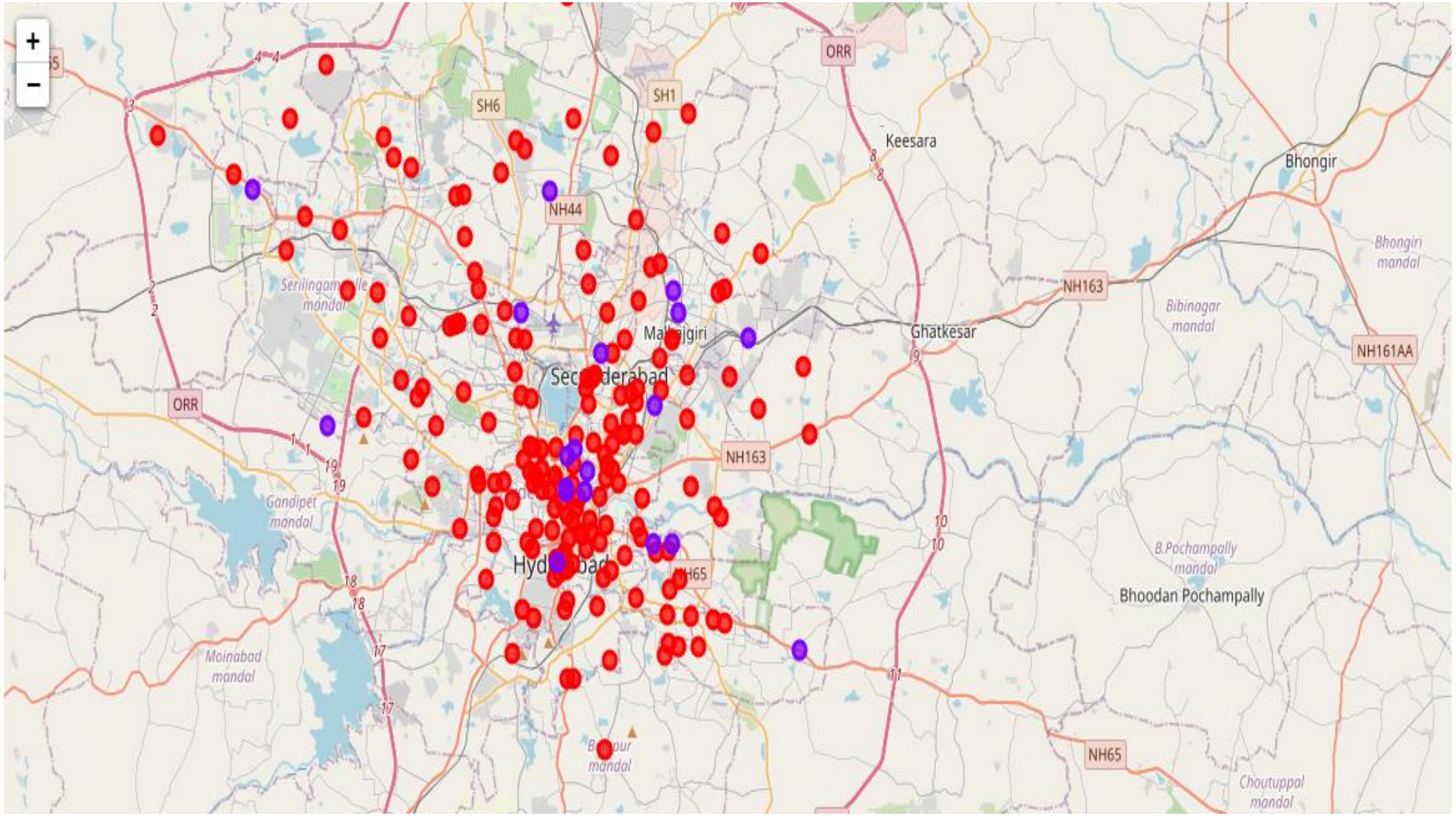
Out[23]:

	Neighborhood	Gaming Cafe	Cluster Labels	Latitude	Longitude
0	A. C. Guards	0	0	17.395015	78.459812
123	Malkajgiri mandal	0	0	17.374930	78.515670
124	Mallapur	0	0	17.447370	78.535200
125	Mallepally	0	0	17.447370	78.535200
126	Manikonda	0	0	17.288640	78.497960
...	...	...	...	...	...
35	Boggulkunta	1	1	17.505990	78.304540
167	Pisal Banda	1	1	17.442320	78.496170
27	Bank Street, Hyderabad	1	1	17.388601	78.476645
84	Jubilee Hills	1	1	17.421967	78.525592
15	Ashok Nagar, Hyderabad	1	1	17.457870	78.538820

198 rows × 5 columns

Map of Hyderabad after Clustering

Out[24]:



Cluster 0: Red
Cluster 1: Blue

Results

As per the analysis, the neighborhoods are divided into 3 clusters based on the frequency of occurrences for "Gaming Café":

- ✓ *Cluster 0*: Neighborhoods with high number of gaming cafes (179).
- ✓ *Cluster 1*: Neighborhoods with low number of gaming cafes (19).
- ✓ *Cluster 2*: Neighborhoods with no gaming cafes (0).

Discussion

- ✓*Cluster 0* has highest number of Gaming Cafes. Hence it is not recommended.
- ✓*Cluster 1* has low number of Gaming Cafes. Can open a café here but wow point is needed.
- ✓*Cluster 2* doesn't have any café. Hence, it is apt for opening a gaming café.

Limitations

- ✓ Only one factor was considered in this project.
- ✓ The project might lack in giving proper output due to certain limitations.
- ✓ Further research is required in different angles to select proper locations.

Conclusion

- ✓ It is recommended to open a gaming café in cluster 2 as there are no cafés present.


Thank you!