

Predicting Location for opening new Hotel/Restaurant

IBM APPLIED DATA SCIENCE CAPSTONE

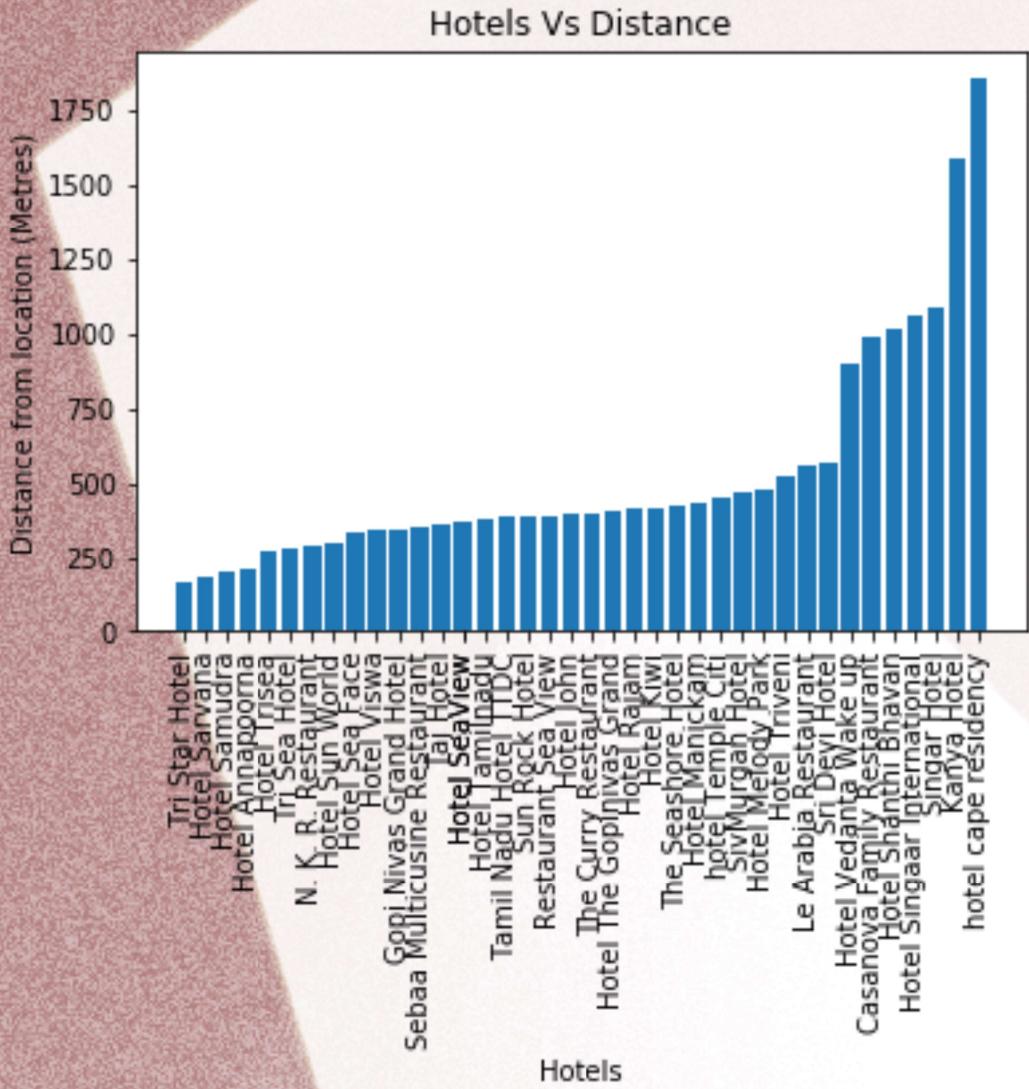
Opening of new restaurant / Hotel

- Regarding opening any business problem, It would be better to open a hotel/restaurant near beach side
- As it is a famous tourist spot, there is already lots of attention towards it., and there will be many competitors in terms of hotel and restaurant.
- It will attract foreign and local peoples attention towards the new hotel.
- The challenge is to find a suitable location for opening a new hotel / restaurant attracted to all local and foreign people in the center of all famous venues.

Data Source and How will it be used

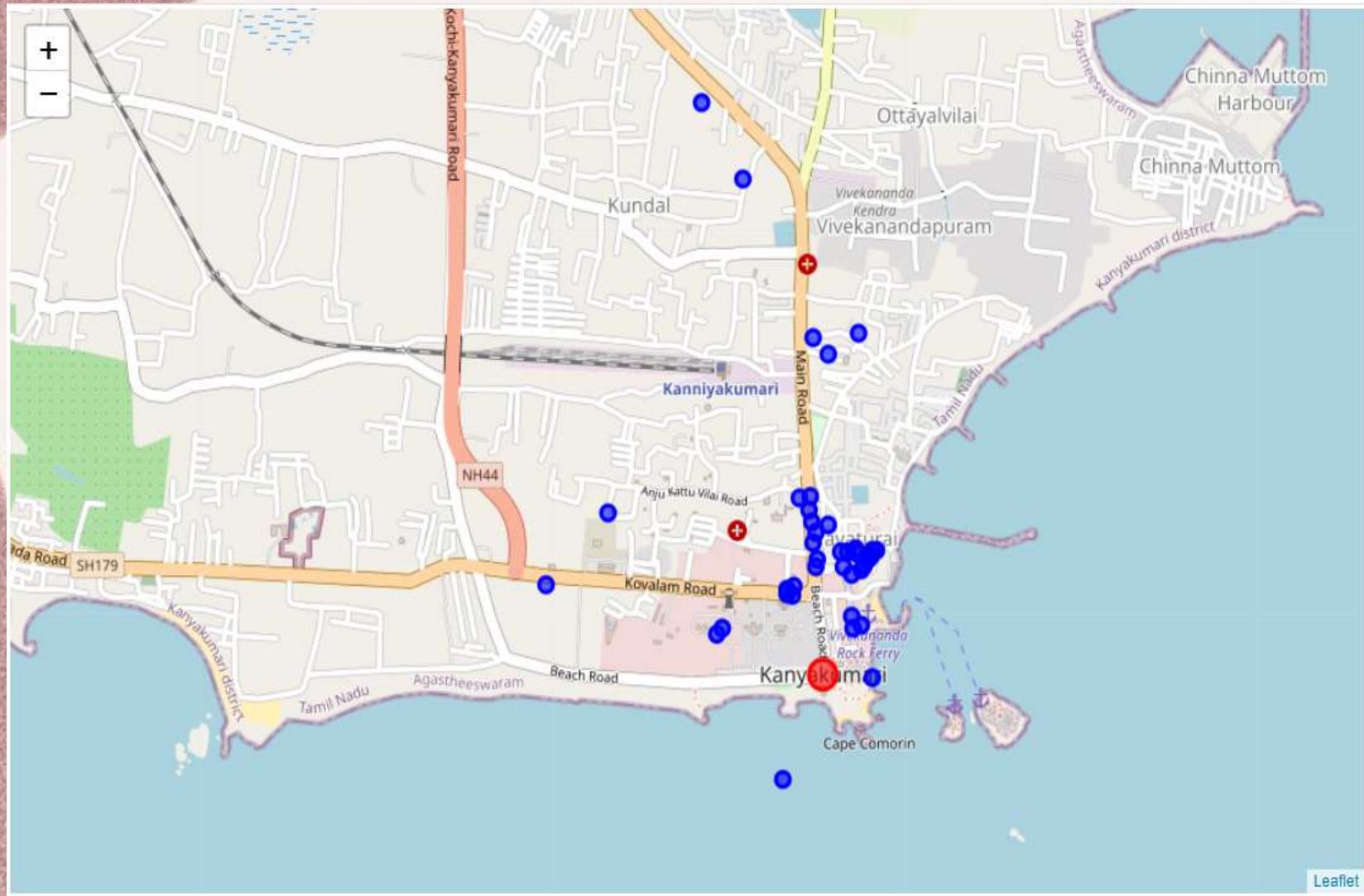
- We will be completely working on Foursquare data to explore and try to locate our new hotel where more venues like church, temples, beach, museums, memorials that are present nearby.
- We will looking for midpoint area of venues to locate our new hotel. Before that our major focus will be on all venues present in and around the core place of kanyakumari.
- Our Core Location of Kanyakumari location is spotted at: 8.079252, 77.5499338

Hotels



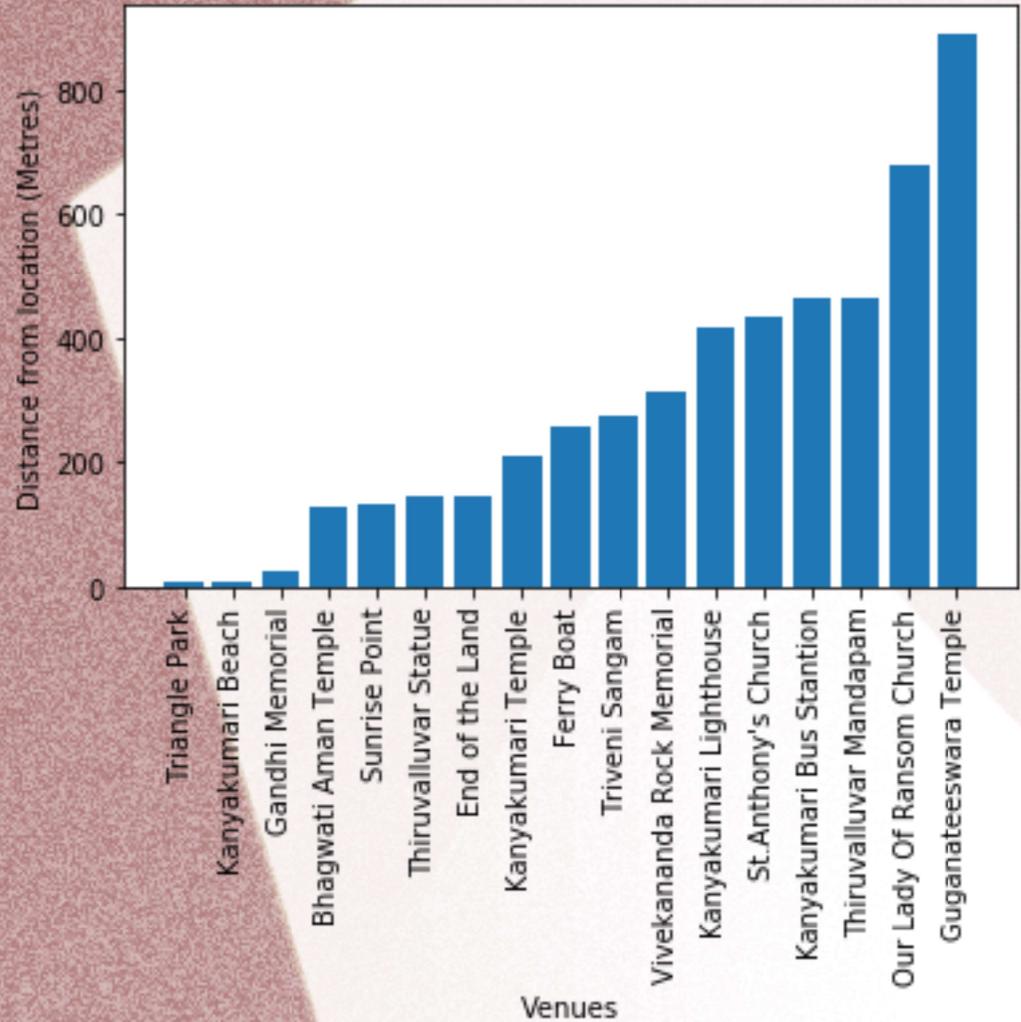
- There are 39 hotels & restaurants within 1km radius captured through foursquare data
- Tri Star Hotel is the closest of all other hotels
- Hotel Cape Residency remains far comparative to rest of the hotel/restaurants
- Average distance between all hotels to core location is 521 meters

Map - Hotels



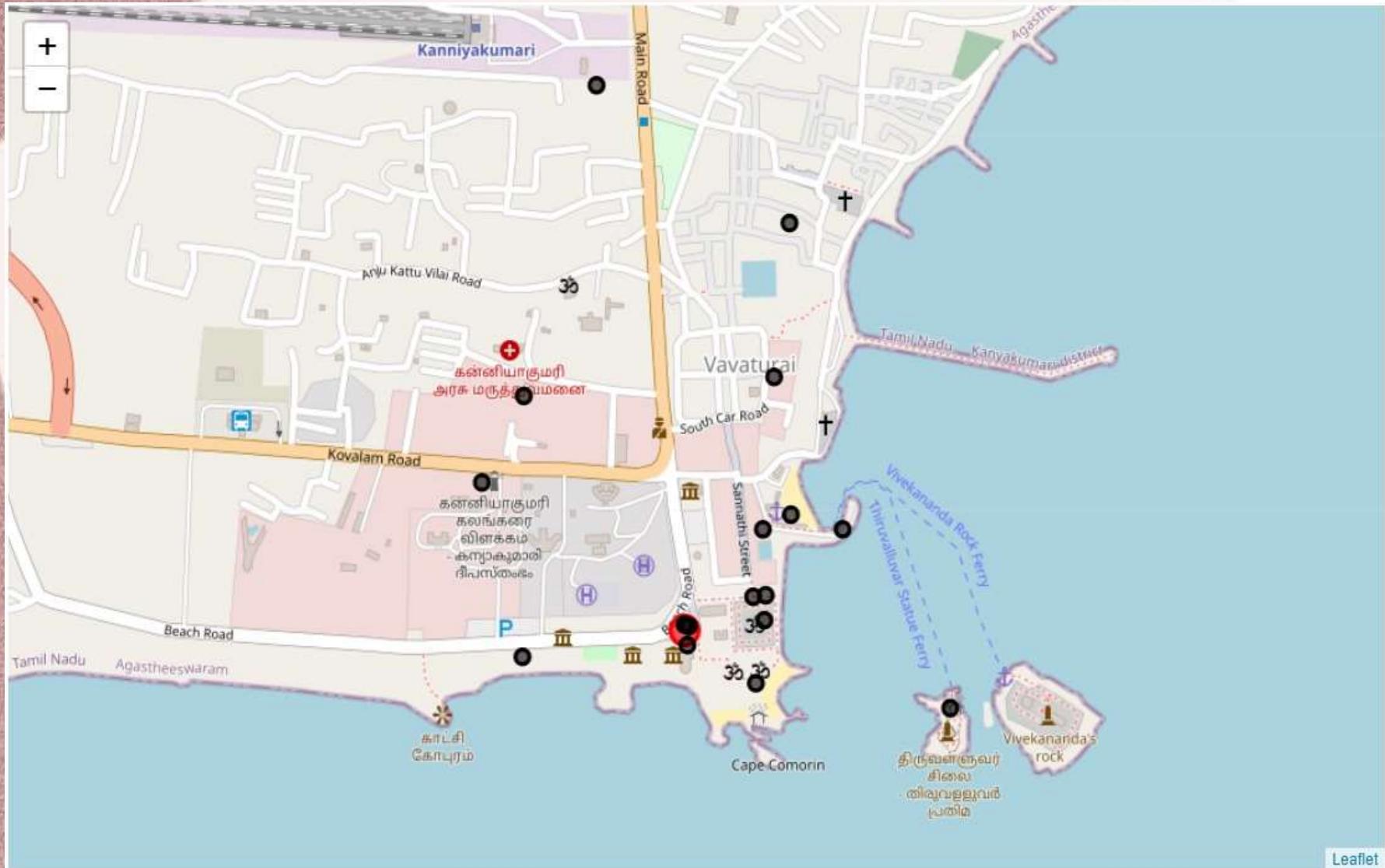
Venues

Famous Venues Vs Distance

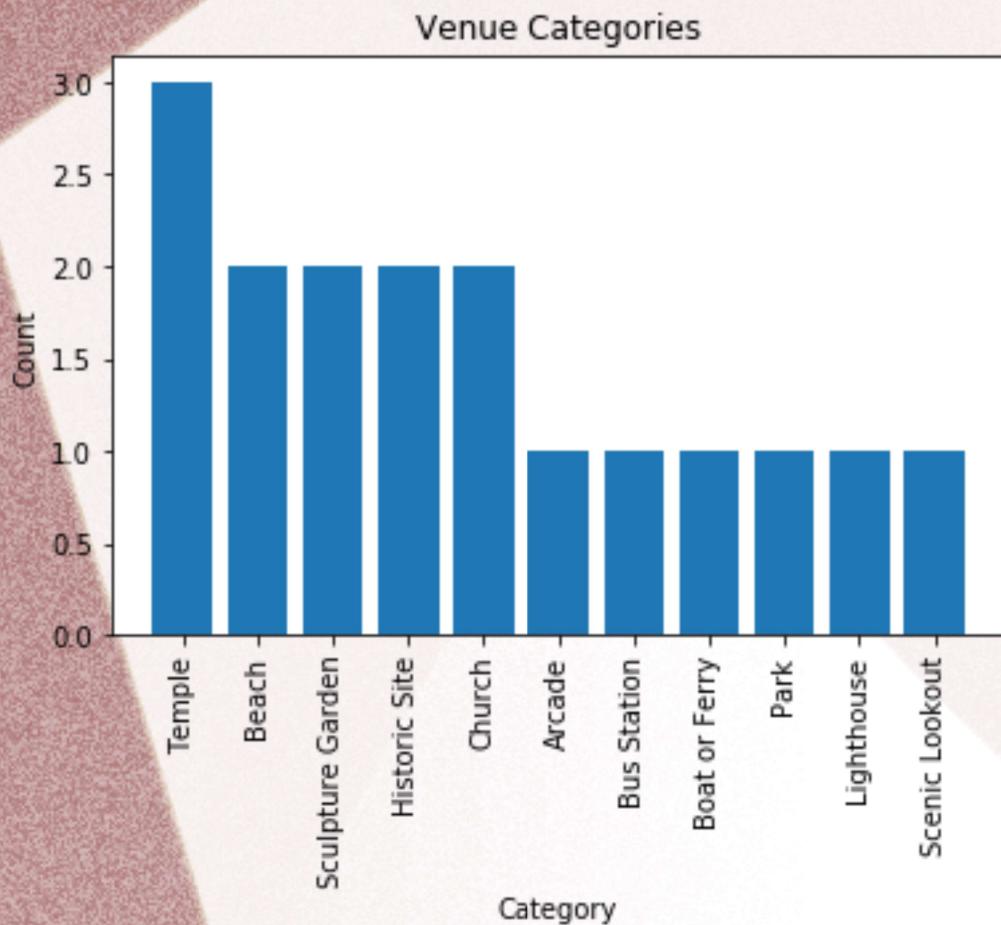


- There are 17 Venues within 1 km radius captured through foursquare data
- We could see Kanyakumari beach, Gandhi Memorial, Triangle Park are more closer to our location
- Guganateeswara Temple is far than rest of the places
- Bus Station is also important venue which is 465 meters from our location

Map - Venues



Venue Categories



- There are 11 venue categories found in the data
- We could see that Temple, Church, Historic Sites and Beach are more common venues
- There is no venue with high variations

Rating and Tips

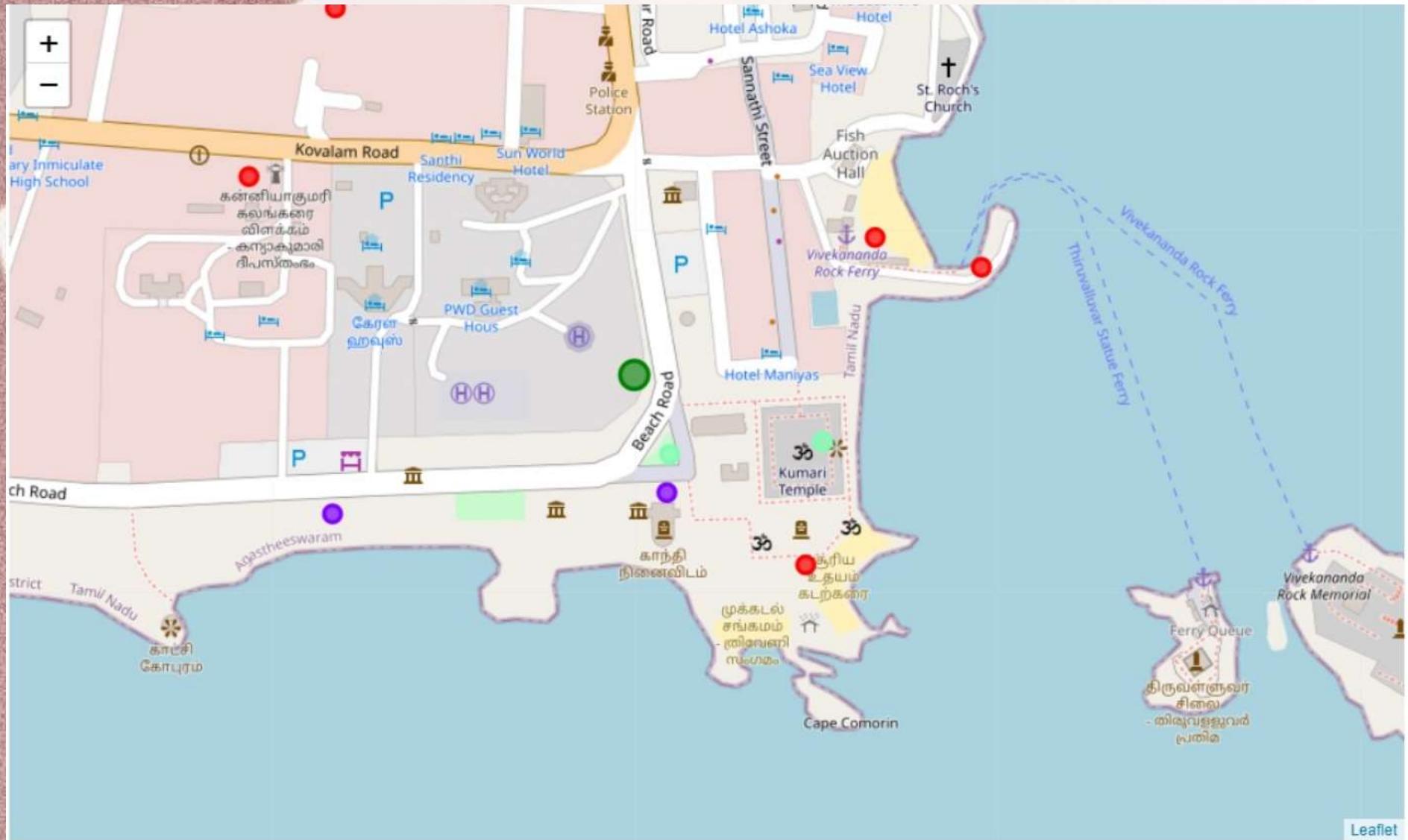
	Venue	Rating	distance	Tips
0	Sunrise Point	7.9	135	4
1	Vivekananda Rock Memorial	8	312	16
2	End of the Land	7.5	148	2
3	Kanyakumari Beach	7.1	10	3
4	Triveni Sangam	6.9	277	1
5	Gandhi Memorial	5.5	26	2
6	Ferry Boat	No Rating Yet	259	4
7	Kanyakumari Lighthouse	No Rating Yet	417	1
8	Kanyakumari Bus Stanton	No Rating Yet	465	1

- Vivekananda Rock Memorial has got highest rating and more tips
- Other interested venues could be Sunrise Point, Kanyakumari beach, Gandhi Memorial, Light house
- Other venues which are not given list doesn't receive any tips or rating

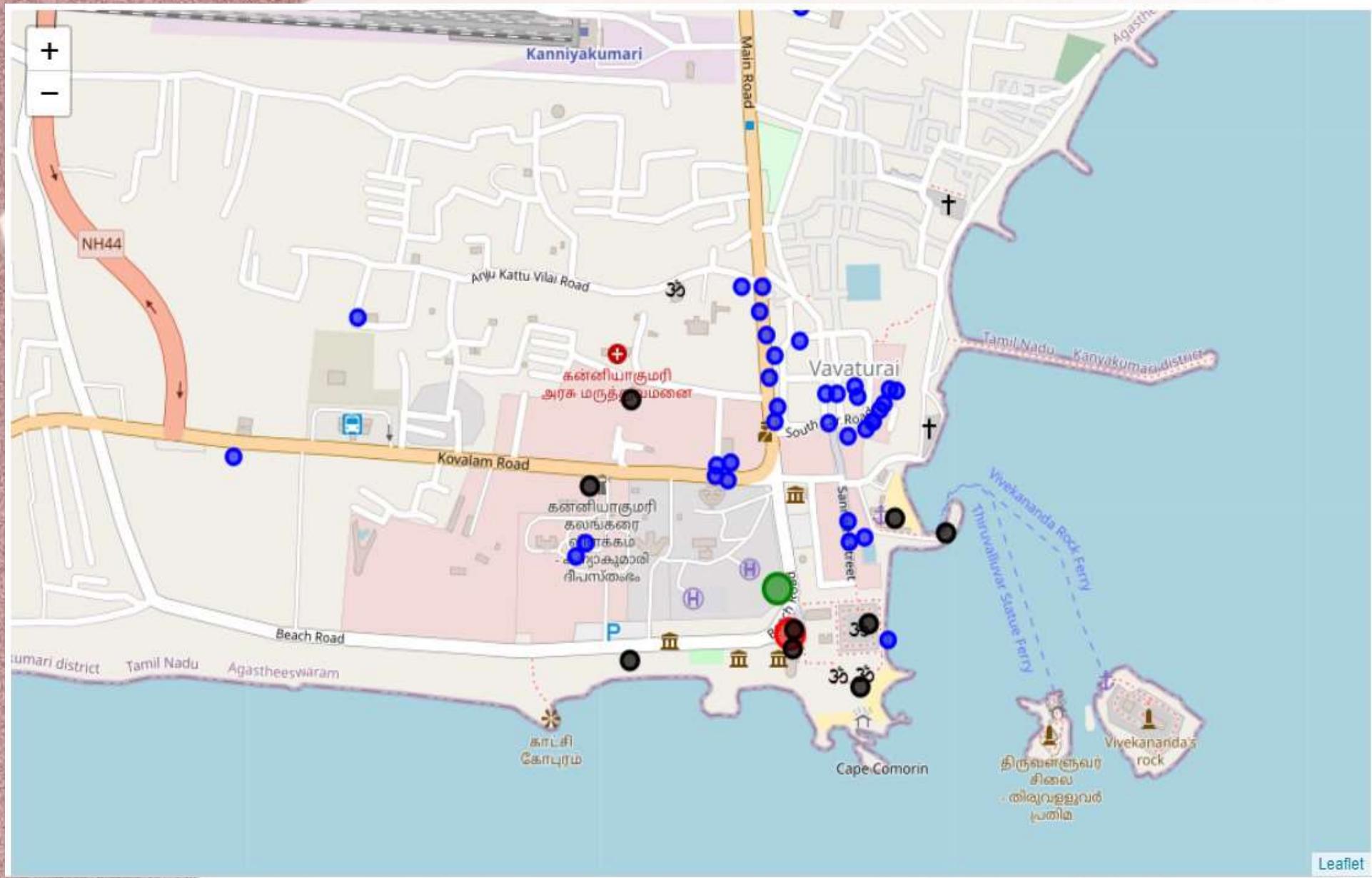
Clustering and Midpoint venues

- The ideology behind this could be to produce the center location of all famous top rated venues
- First we find the clusters and based on it, we will take advantage of all centroids
- Secondly, we will get midpoint of all shortlisted rated venues
- Now we will get mean of both and decide our final location
- We looked for three clusters and they were sorted out as shown in map (next slide)

Clustered Map



Combined



My Prediction Location

- Final location (for opening a new hotel) pointed at: 8.07989, 77.54973
- This location is at Beach Road opposite to Gandhi Memorial and Kumari Temple
- Located at exact junction of two cross roads which can give more attention to people who pass by
- Main venues are Sunrise Point, Vivekananda Rock Memorial, End of Land and Kanyakumari Beach

Discussion & Conclusion

- The output which we achieved was very adjacent to the core location. This proved the accurate spotting of our prediction algorithm
- As a business person, one would be able to setup a hotel/restaurant on given spot. This will bring revenue automatically as we have located in very near core location. We proved this with combination of kmeans and midpoint coordinates
- Despite of the findings, there were some lack of data. Tips and ratings were missing for most of the venues. As I compared foursquare data with google map, there were many hotels and venues found missing in foursquare
- I enjoyed learning and implementing this capstone