

Coursera Capstone Project The Battle of Neighborhoods

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CONTENTS

- Introduction where you discuss the business problem and who would be interested in this project.
- Data where you describe the data that will be used to solve the problem and the source of the data.
- Methodology section which represents the main component of the report where you discuss and describe any exploratory data analysis that you did, any inferential statistical testing that you performed, if any, and what machine learnings were used and why.
- Results section where you discuss the results.
- Discussion section where you discuss any observations you noted and any recommendations you can make based on the results.
- Conclusion section where you conclude the report.

Introduction

Staying here, living here, dreaming it over here, makes one wonder how close is your next city to your home. Any city in India, there are many things that can be availed like the back of your hand. So, when comparing a city like New York or Toronto one would be very mindful on which city feels like home by not only on the availability of the home made products but also the cost of living matters the most. I would like to explore the option in New York Manhattan as it would be close to place of work and have many eateries too. So, in search of an apartment, the requirements would be a single bedroom with rent not more than 5000 dollars per month. And should have Indian restaurants and grocery shopping with amenities such as gym and community centres and location should be near subways. Challenges are meeting the price, location and amenities in and around the apartment in New York Manhattan (as mentioned above). People all around the world who want to move cities, will have similar preferences of their own ethnicity and culture. Here, we could target the Asian audience even though it's applicable similarly to all who want to join a new company or settle in the city for a long time or look out on a job of their preference or even business.

DATA

Using Foursquare and geopy data to pinpoint the venues for the above data requirement. This includes the subway station, apartment price, neighborhood etc. Conversion of location information to latitude and longitude. Using this, we can solve the questions pertaining to rental pricing options, distance from subway to apartment to place of work. Also, the neighborhood and other data related to amenities and community centres.

So, we would need lat, long, borough, neighborhood information as columns in the dataframe of New York. The subway related information is gathered from the wikipedia page for web scraping -

https://en.wikipedia.org/wiki/List_of_New_York_City_Subway_stations_in_Manhattan

A csv file is obtained to represent the data as mentioned above and the data is mapped.

METHODOLOGY

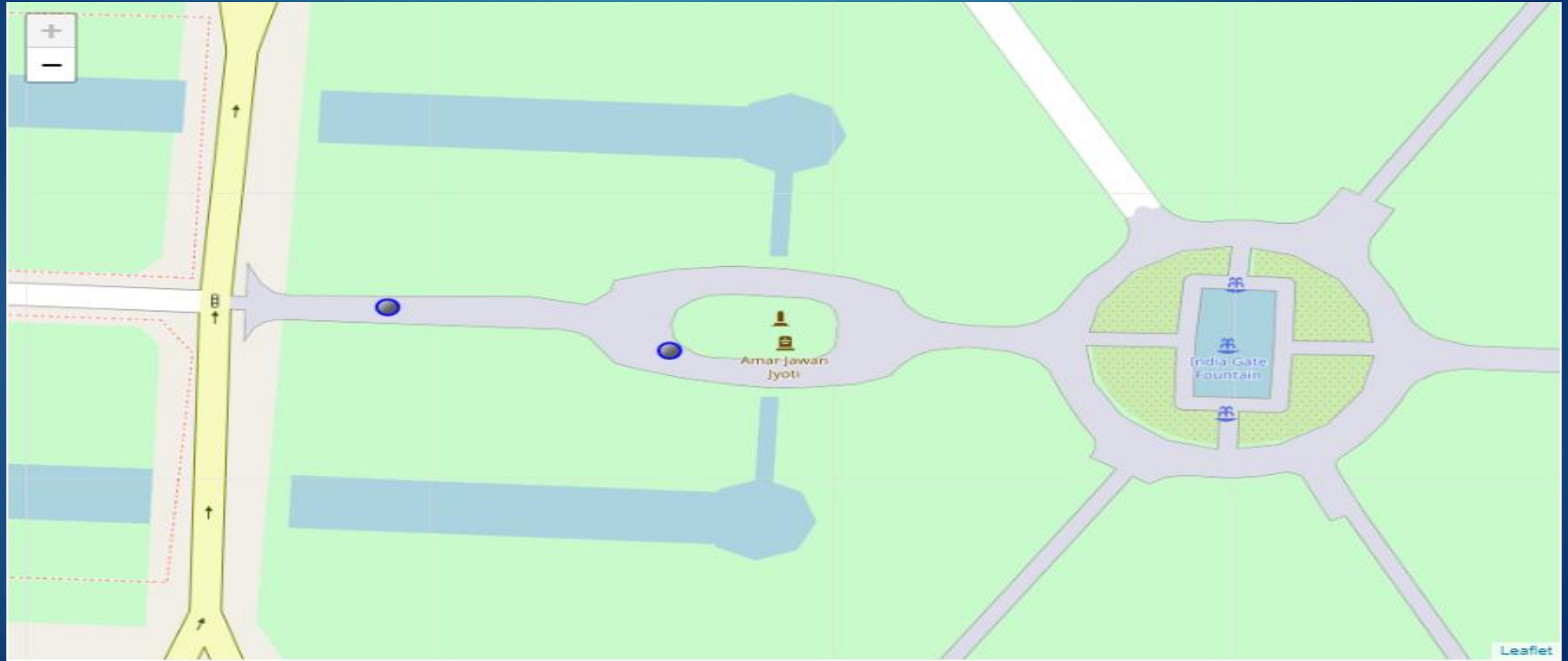
Details of the apartment including price, address, single bedroom & venues
Subway stations details & venues
Neighbourhood details including the amenities & venues\
Use Wikipedia to gather the details

The key is to find out and get one map which has markers of all the clusters visually so that it would be easy to comprehend on the distance that needs to be covered from place of work to place of living.

Web scraping is used to get all the details pertaining to the apartments and subway stations so that it can be used to get an idea on the distance covered using geopy and seaborn is used for statistical data of the rental information.

EXECUTION

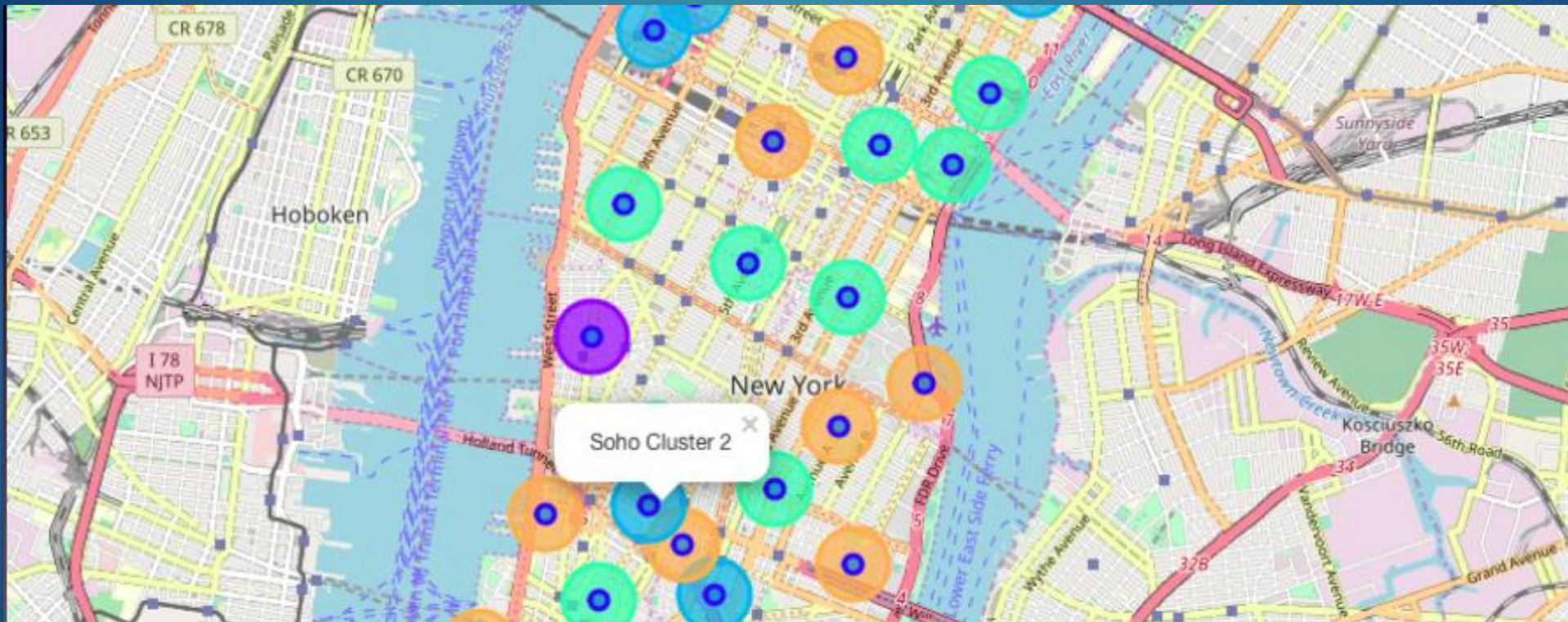
CURRENT ADDRESS IN DELHI, INDIA



Nearby places in the Venue

	name	categories	lat	lng
0	Amar Jawan Jyoti अमर जवान ज्योति (Amar Jawan...	Sculpture Garden	28.612980	77.228247
1	India Gate इंडिया गेट (India Gate)	Monument / Landmark	28.612796	77.229207
2	UPSC Chaat	Snack Place	28.609324	77.227879
3	Veg Gulati Restaurant	Vegetarian / Vegan Restaurant	28.609089	77.230743
4	Children's Park	Playground	28.610664	77.230816
5	National War Memorial	Memorial Site	28.613303	77.232579
6	UPSC Lane	Smoke Shop	28.609346	77.227874
7	Chor Bizzare	Indian Restaurant	28.608837	77.229894
8	Lovely Chuski	Park	28.612823	77.224908

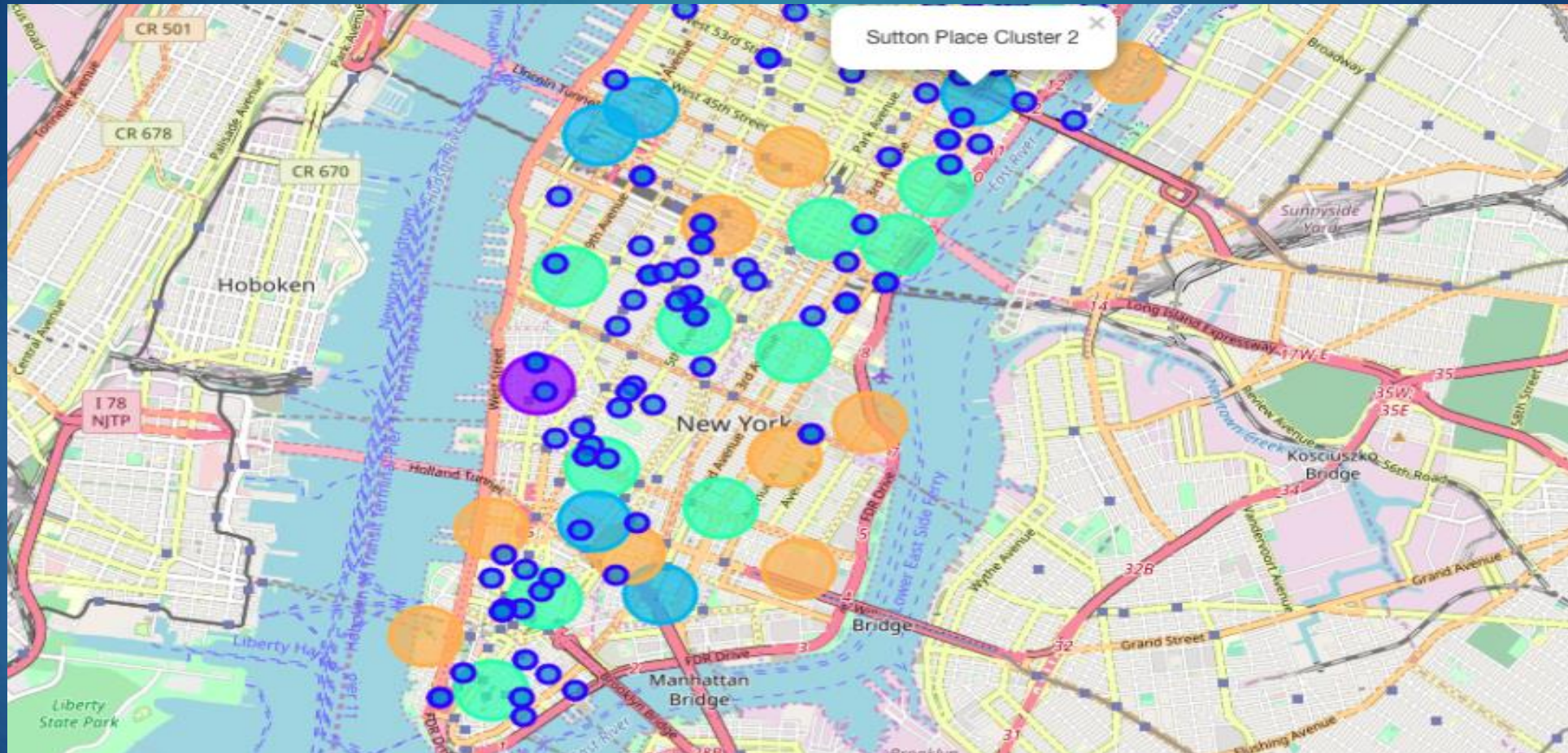
Map: Manhattan, New York



Rental Apartments in Manhattan



Venue clusters in Manhattan



DISCUSSIONS

Apartment choices in Manhattan

Choice 1: The Grand apartment has 1849 dollars which is very much inside the budget. Along with the John's Boxing Gym and has convenience stores. Subway station is within walking distance of around 10 minutes.

Choice2: Manhattan Park apartment has pricing upto 3200 dollars inside the budget.

Along with the Hospital near to it.

Has Indian hotels near it.

Subway station is near and more easy to go to workplace on a daily basis.

I would like to take upon Choice 1 as The Grand apartment even though is a bit far from workplace, it's more cheaper than Manhattan Park. And has a gym which would be necessary in the deal near it.

CONCLUSION

Folium makes it easy to visualize data that's been manipulated in Python on an interactive leaflet map.

Using the Data Science tools to analyze the movement of cities, impact on the personal lives all sum up to the ease of understanding the data with visualization is a great plus among any other tools available used for practical applications.

All these help one or an organization to provide service to the public with variety of options to choose from and giving a detailed analysis on their work.