Exploring and Comparing venues in Downtown and Back bay of Boston

Introduction

- Boston is the capital and most populous city of Massachusetts in the United States. Boston has a total area of 49 square miles. The most popular places in Boston are Back Bay and Downtown. There are many venues (especially restaurants, hotels and cafes) which can be explored. Let's explore the venues in Back Bay and Downtown in Boston. We will also compare these two popular places and make recommendations for tourists, residents and businessmen as to where to go and where to open a business.
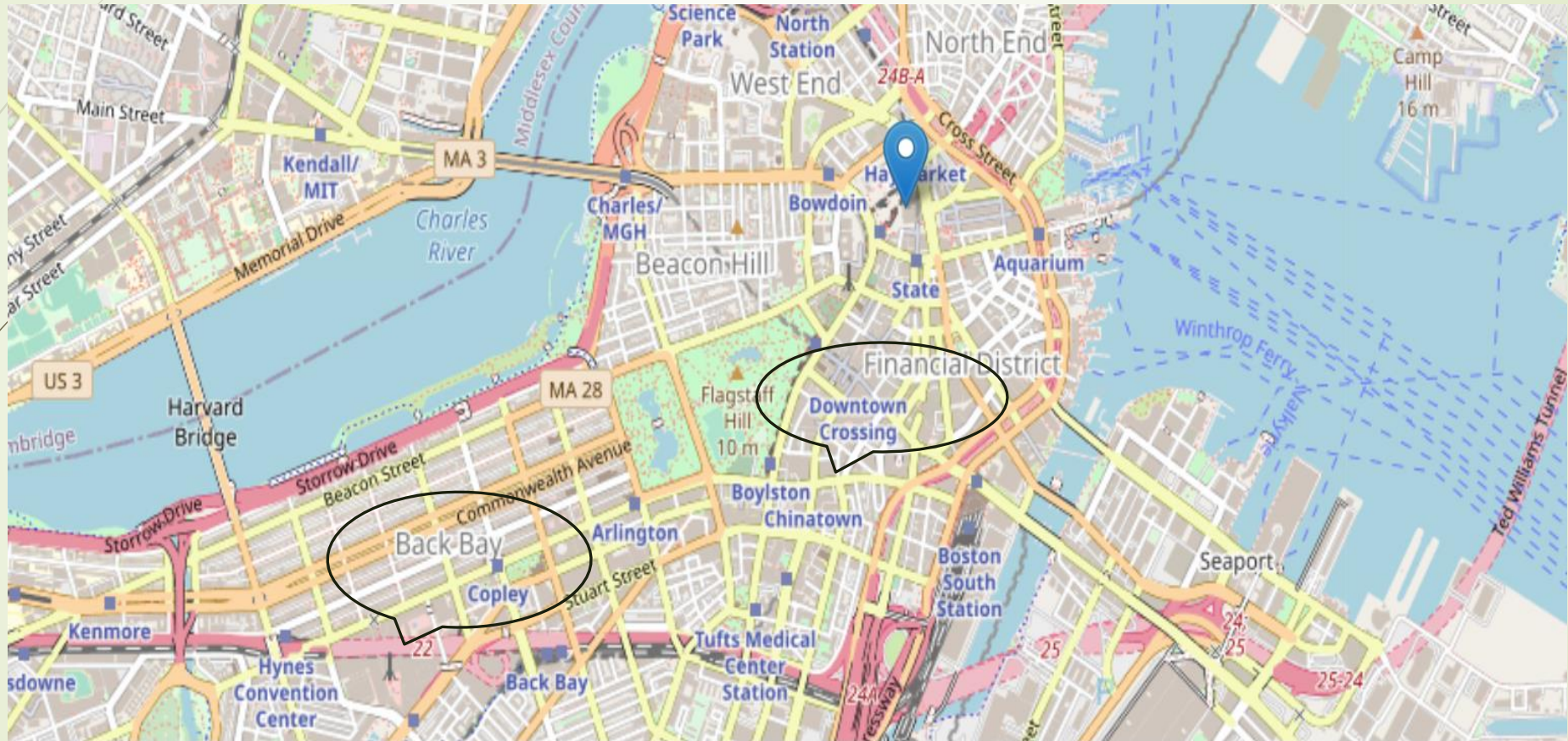
Data

- Kaggle is a free website to find various data. I have got the information of neighborhood and coordination data in Boston from Kaggle. From the Boston Neighborhood dataset, we can clip the neighborhood information for Downtown and Back Bay.

- The Foursquare API has the explore API which allows us to find venue recommendations within a given radius from the given coordinates. We will use this API to find all the venues we need in Downtown and Back Bay. With the number of each venue counted, we can provide recommendations to tourists, residents and businessmen.

Metholodolgy

- This project aims at identifying the venues Downtown and Backbay. This would enable any visitor/residnets to identify the venues he/she wants to visit, or businessman to identify where to open a store/restaurant.

- As a first step, we found the neighborhood data of Boston from Kaggle. We did data clipping and data cleaning to get the neighborhood and coordination information of Back Bay and Downtown.

- Secondly, we retrieved the data from Foursquare API. We extract venue information using the neighborhood information from above. The data from the two sources is carefully combined based on the name, latitude and longitude values from the two sources.

- Next, we'll analyse the data that we created based on the number of each venue. We'll identify places where many venues are located so that any visitor can go to one place and enjoy the option to choose amongst many venue options.

- Finally, we'll discuss and conclude which venues to be explored based on visitors/residents/businessmen requirement.
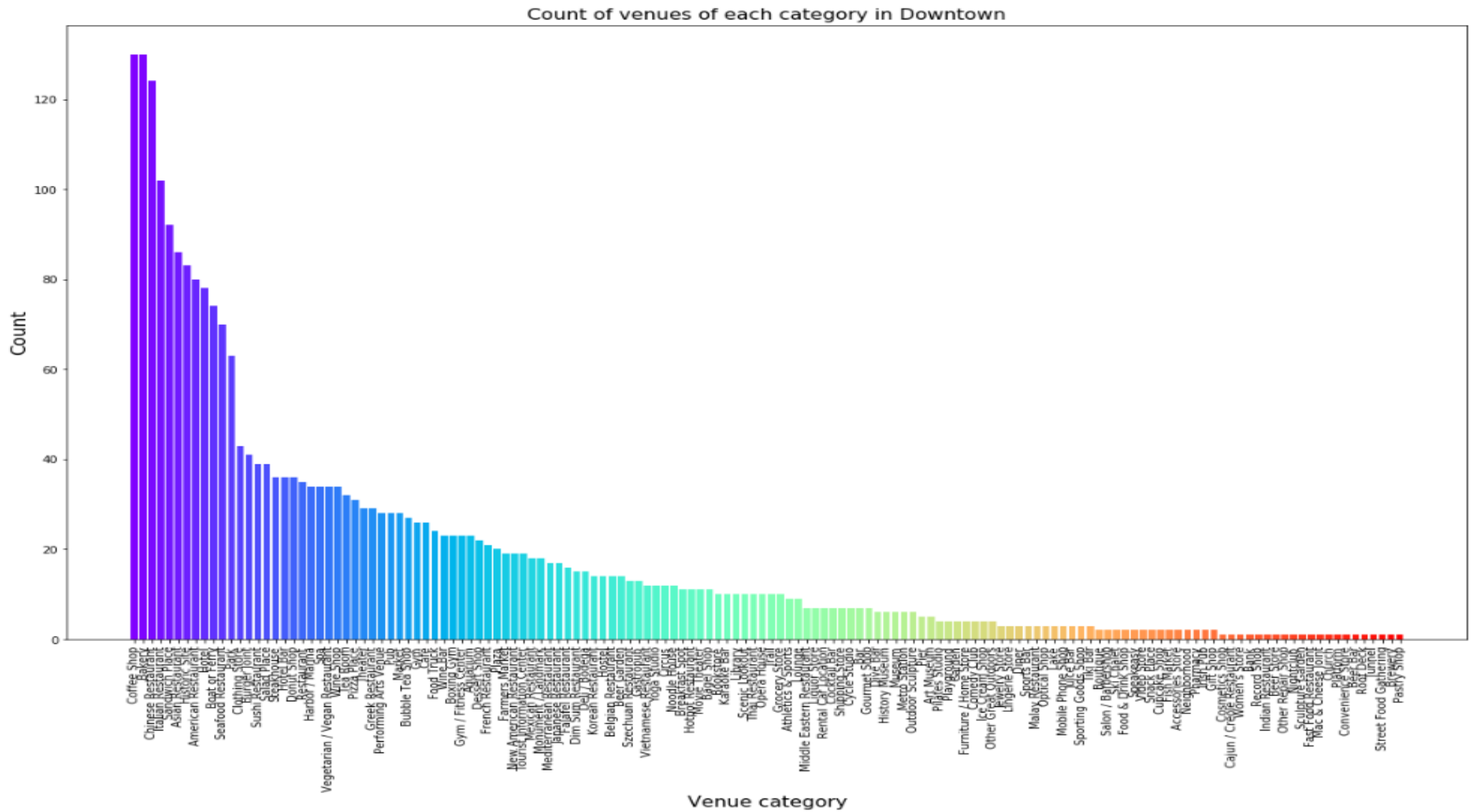
Result

Result

Table 1 Venue information in Downtown

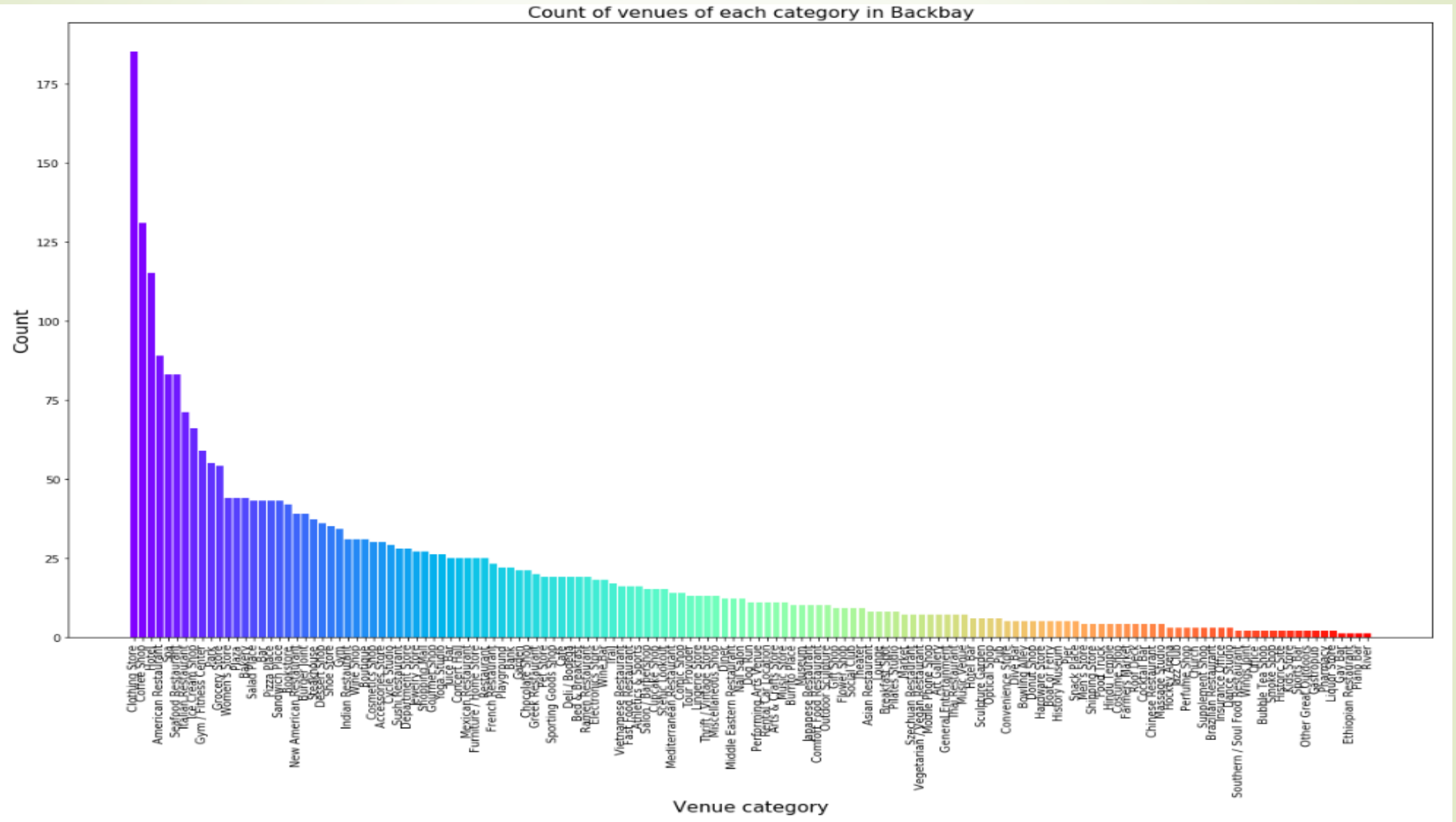|	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Downtown	42.360536	-71.061407	Health Yoga Life	42.361261	-71.063722	Yoga Studio
1	Downtown	42.360536	-71.061407	Florina	42.359375	-71.063219	Pizza Place
2	Downtown	42.360536	-71.061407	Grotto	42.359915	-71.062807	Italian Restaurant
3	Downtown	42.360536	-71.061407	Zo	42.359303	-71.060352	Greek Restaurant
4	Downtown	42.360536	-71.061407	Big Apple Circus	42.360208	-71.059269	Circus

Table 2 Venue information in Back Bay

	Neighborhood	Neighborhood Latitude	Neighborhood Longitude	Venue	Venue Latitude	Venue Longitude	Venue Category
0	Back Bay	42.355407	-71.072616	The Esplanade	42.356064	-71.074894	Park
1	Back Bay	42.355407	-71.072616	DCR Hatch Memorial Shell	42.356780	-71.073992	Music Venue
2	Back Bay	42.355407	-71.072616	Make Way For Ducklings	42.355569	-71.069764	Outdoor Sculpture
3	Back Bay	42.355407	-71.072616	Boston Public Garden	42.354096	-71.069865	Garden
4	Back Bay	42.355407	-71.072616	Cheers	42.355877	-71.071271	Bar

Result

Count of venues of each category in Downtown

Result

Count of venues of each category in Backbay

Conclusion

- After collecting data from the **Foursquare** and **Kaggle**, we got a list of 2673 venues in Downtown and Back Bay.

- As we can see the majority venues in Downtown are 'Coffee Shop' ,'Bakery', 'Chinese Restaurant' and 'Italian Restaurant'; in Back Bay are 'Clothing Store', 'Coffee Shop', 'Hotel'. The number of each venues are also shown above.

- If someone wants to buy clothes, then Back Bay is a good choice. If someone wants to eat Chinese food, then Downtown is a good choice. If a businessman wants to open a Italian Restaurant, it will be very competitive if he/she chooses the place at Back Bay.

- A company can use this information to build up an online website/mobile application, to provide users with up to date information about various venues in the city based on the search criteria.

Thank you!