

Coursera Capstone

IBM Data Science

May 2020

1. Problem

1.1 Description

Exploring venues in Pune West, India using Foursquare and Zomato API

- In Pune West, are many venues (especially restaurants, hotels and cafes) which can be explored. This project explores various venues in Pune and attributes the data based on user ratings and average price.
- To explore this information, this project involves the data from both the Foursquare API and the Zomato API to fetch complete information of various venues (including name, address, category, rating, and price).

2. Data

2.1 Data Sources

To get location and other information about various venues in the western part of Pune, a combination of data from the 2 API sources will be used together.

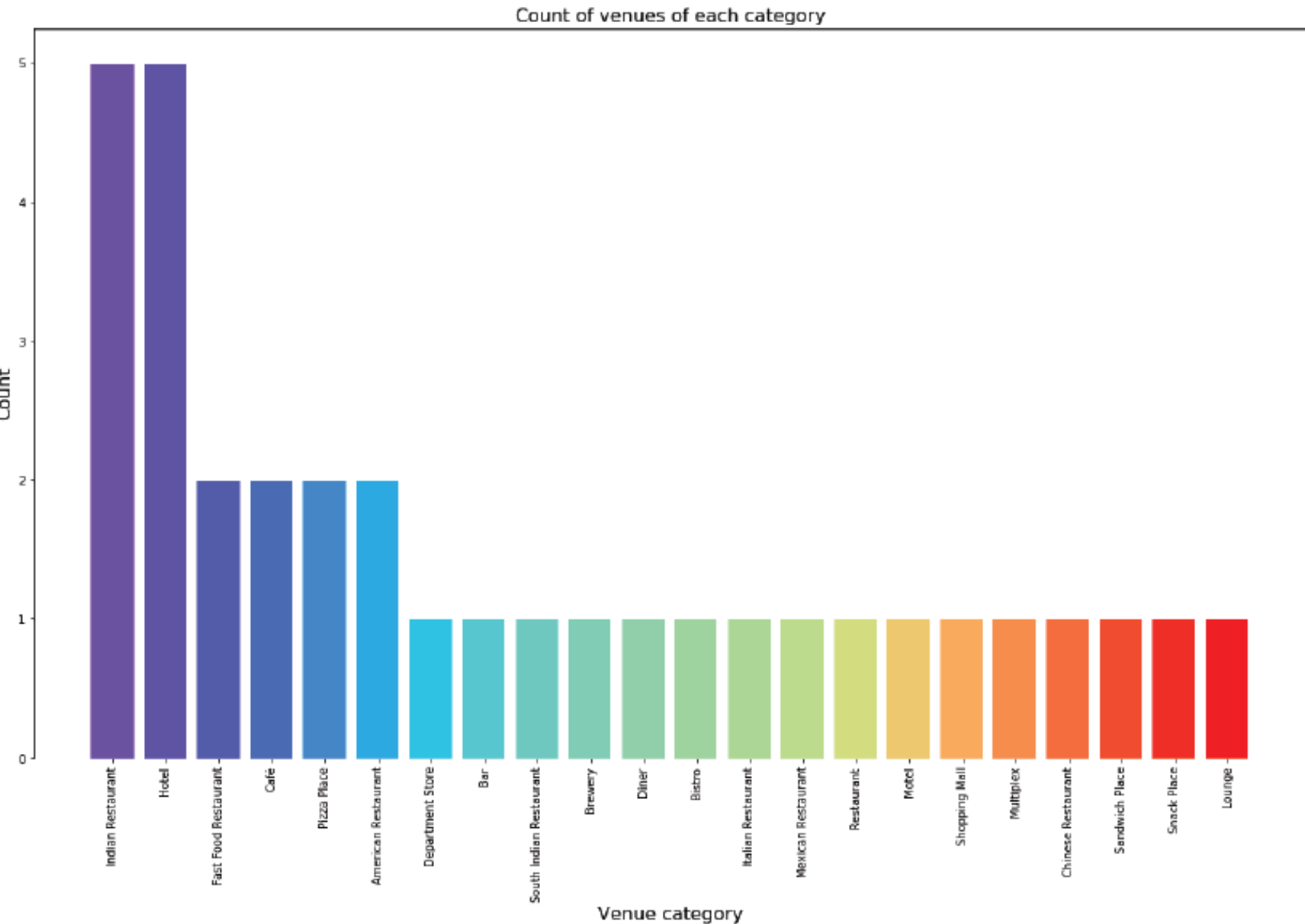
- Using the Four square's explore API (which gives venues recommendations), I fetched venues up to a range of 4 kilometres from the centre of Wakad, i.e. the heart of West Pune and their names, categories and locations (latitude and longitude) will be collected. Using the name, latitude and longitude values, Zomato search API will be used to fetch venues from its database.
- This API allows us to find venues based on search criteria (usually the name), latitude and longitude values and more.

3. Methodology

- This project aims at identifying the venues in Pune based on their rating and average costs. This would enable any visitor to identify the venues he/she wants to visit based on their rating and cost preference.
- As a first step, we retrieved the data from two APIs (Foursquare and Zomato). We extract venue information from the center of Pune, upto a distance of 4 Km. The latitude and longitude values are then used to fetch venue rating and price from Zomato.
- Secondly, we then explored the data retrieved from the two APIs on the map and identified the top category types. The data from the two sources is carefully combined based on the name, latitude and longitude values from the two sources. The final dataset would include the rating and price values for each venue.

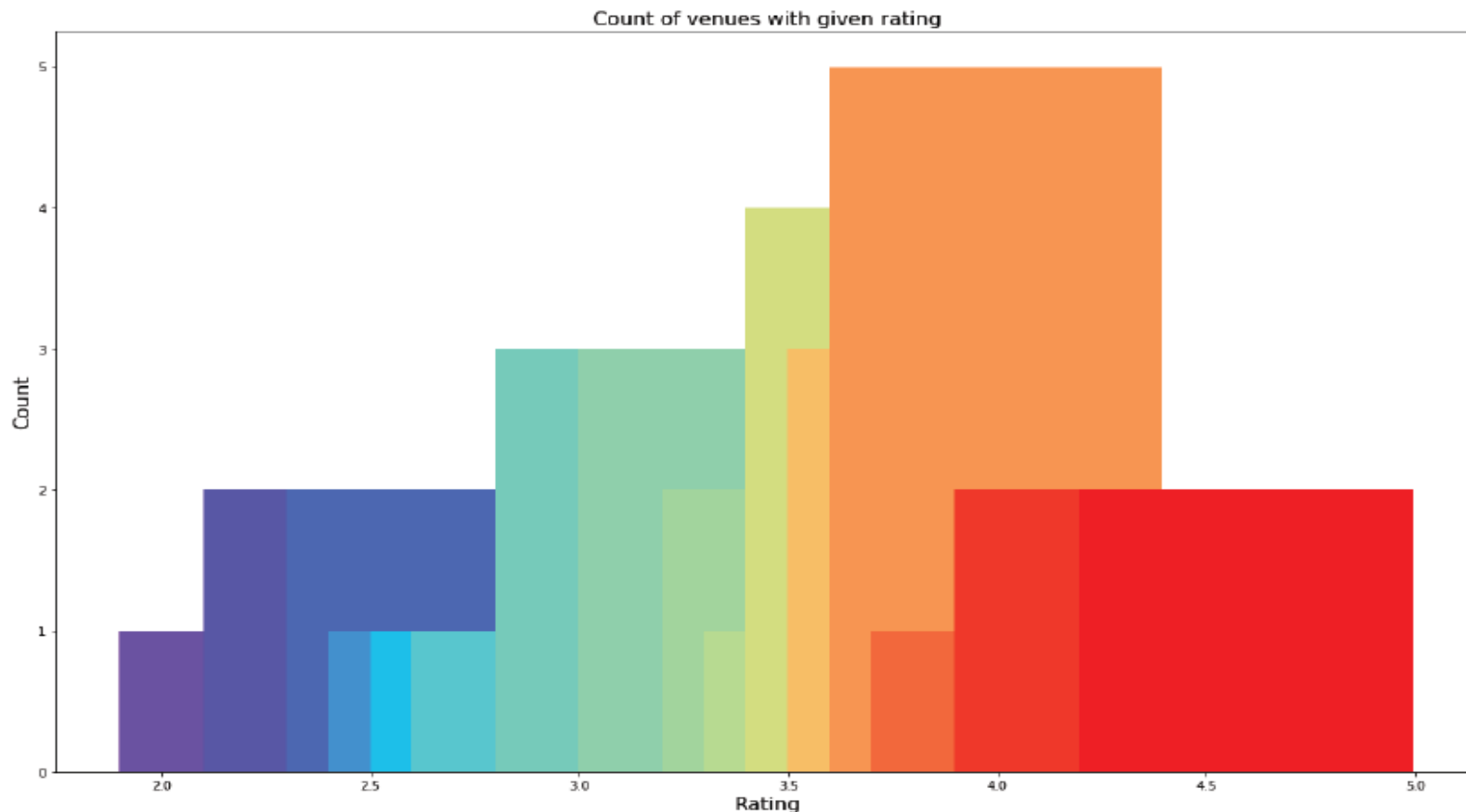
4. Analysis-Results

As we can see the majority venues are Hotel and Indian Restaurant. So, if as a tourist, you're looking for cafes and Indian restaurants.



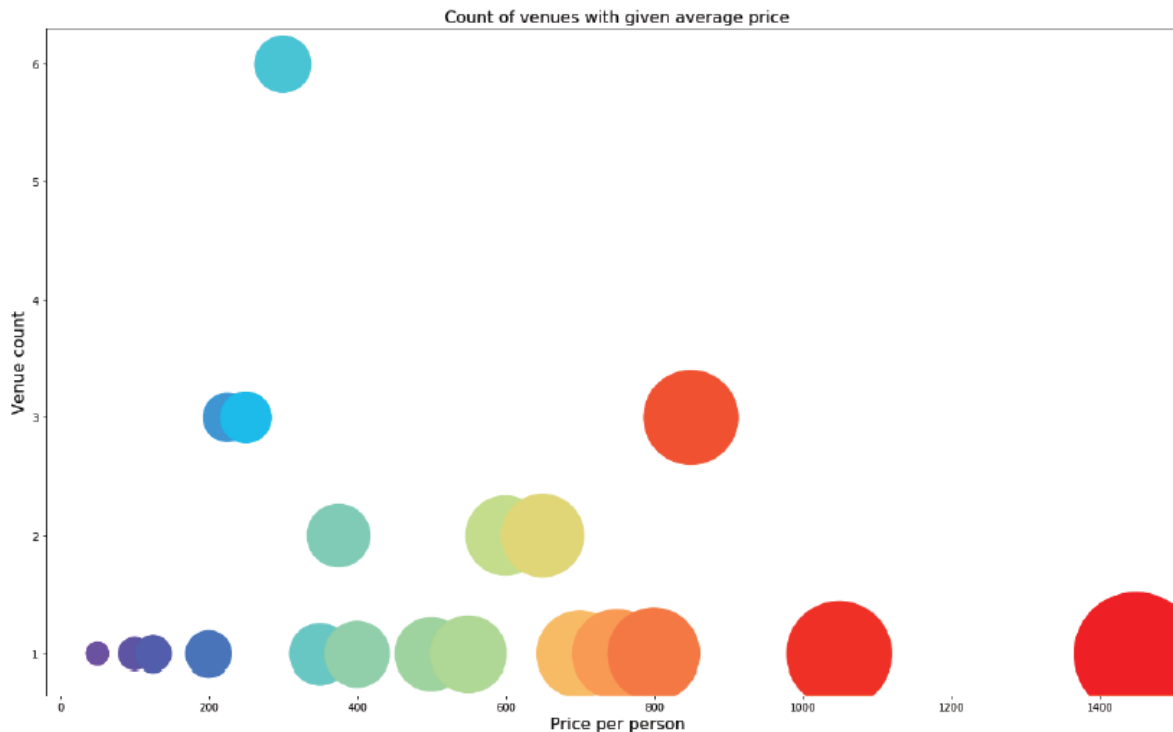
5. Rating

- Rating of a venue is an important factor on which a visitor decides whether it is worth it to visit the place. To cater to this, we will first see what is the average rating for all the venues in the city. Next, we will plot the venues on the map and color code them.
- We'll first identify the various rating values and plot them as a bar plot with their counts to see the most common rating.



6. Price

- We will now take a look the venues based on the price values. We have two price features for our venues, one is average price which defines the average cost for one person and the other is price range which determines the price range as defined by Zomato.
- We will first explore the average price using a scatter plot between the price and the count of venues with that average price. We'll size the points based on the price to highlight their price.



Results and Discussion

- We identified that from the total set of venues, majority of them were Cafes and Indian Restaurants. A visitor who loves Cafes/Indian Restaurants would surely benefit from coming to Pune.
- While the complete range of ratings range from 1 to 5, the majority venues have ratings close to 4. This means that most restaurants provide good quality food which is liked by the people of the city, thus indicating the high rating. When we plot these venues on the map, we discover that there are clusters of venues around Hinjewadi, Balewadi High Street and Baner. These clusters also have very high ratings (more than 3).
- Finally, through clusters we identified that there are many venues which are relatively lower priced but have an average rating of 3.57. On the other hand, there are few venues which are high priced and have average rating of 4.03.

Conclusion

- The purpose of this project was to explore the places that a person visiting Pune West could visit. The venues have been identified using Foursquare and Zomato API and have been plotted on the map. The map reveals that there are three major areas a person can visit: Hinjewadi, Baner & Balewadi High Street. Based on the visitor's venue rating and price requirements, he/she can choose amongst the three places.