Battle of the Neighborhoods

Capstone Project

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IBM/Coursera

Applied Data Science Capstone

INTRODUCTION

For this capstone project, we will try and find the optimal location to open a coffee shop in Berkeley, California, specifically targeting the area around the UC Berkeley campus. As this is an area that usually has a lot of foot traffic due to the university campus, it is a popular place for stakeholders looking to open a new location.

In order to avoid overcrowding of coffee shops, we will be looking for areas with varying density of previously existing coffee shops in order to determine where the best location would be. We will also be measuring and taking into account the distance from the university of each prospective location, putting higher priority on nearby locations.

Through this analysis, we will be able to find several locations to choose from that would fit the criteria of a good spot to open a new coffee shop.

DATA

As stated in the introduction, the factors that we will be taking into account for our analysis are:

- density of nearby restaurants and shops, coffee shops and others
- distance to UC Berkeley campus

We will be using the Foursquare API to obtain this information, both for the density of nearby restaurants and coffee shops, as well as for the distance to the UC Berkeley campus.

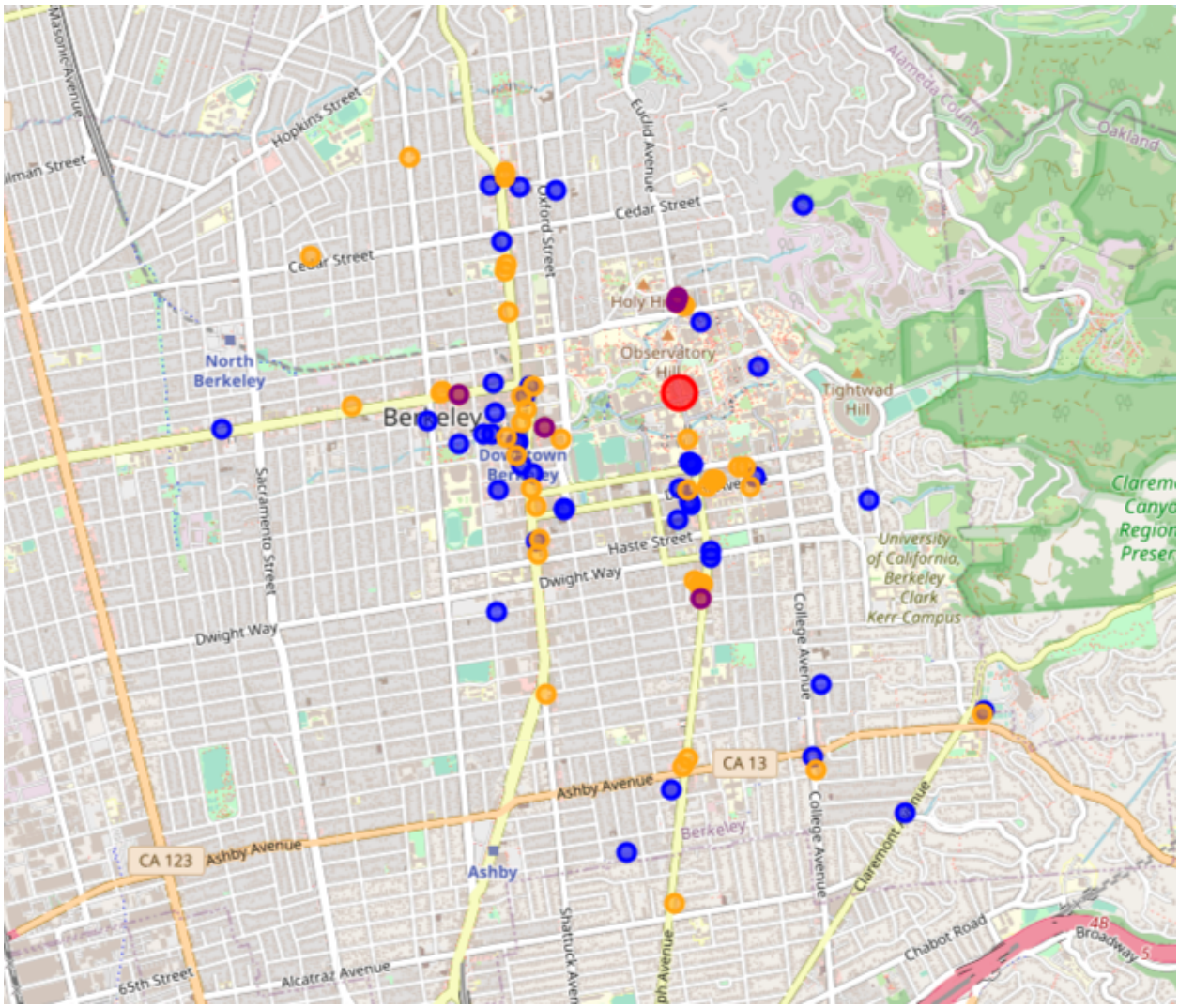
METHODOLOGY

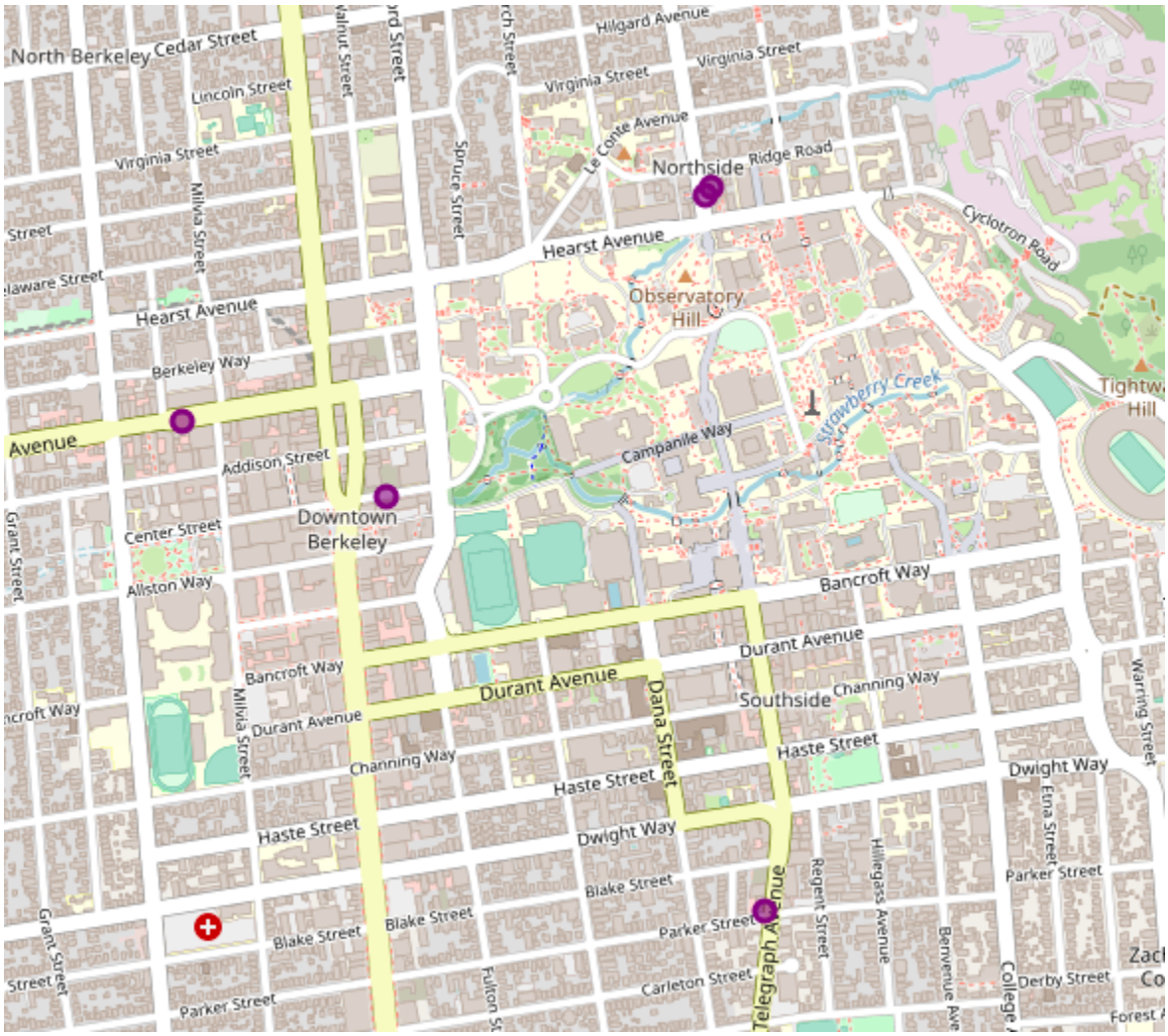
For this capstone project, we are specifically looking at areas around the University of California, Berkeley campus that have low density of coffee shops, but relatively higher density of other restaurants. The idea behind these parameters is to find various locations that would be ideal to open up a new coffee shop.

We have set up a function to gather the necessary data through the Foursquare API above, primarily consisting of both coffee shop and restaurant name, type, and location in latitude

and longitude values.

We will next be exploring the locations surrounding our area of interest to detect the blocks or neighborhoods which are ideal to open a new shop.





RESULTS AND DISCUSSION

Our analysis shows that there are few prime locations that have a high density of restaurants with no coffee shops nearby, indicating a location in which a new coffee shop could be sustained. The 4 distinct locations that were chosen are relatively spread out in relation to the university campus, being north, west, and south of campus respectively. This range of locations is not too surprising, as it makes sense that such under tapped areas are spread out from each other. It also gives any prospective stakeholders a wider variety of locations to choose from, in case any particular neighborhood is not to their liking.

CONCLUSION

The purpose of this capstone project was to detect prime target locations to open a new coffee shop around the UC Berkeley campus area. By leveraging the data made available through the Foursquare API, we were able to identify the restaurants and shops surrounding the campus and calculate their distance from both campus and from each other. Using this location data, we were able to find several locations of interest, which had high densities of restaurants yet low densities of coffee shops, making them prime targets for the construction of a new coffee shop. These stops varied a decent amount in their location relative to the campus, providing a suitable amount of options to stakeholders wanting to pursue the building of a new coffee shop in the area.