Introduction

Due to the higher number of people using bikes in New York City, this paper aims to understand the type of membership in this cosmopolitan city. There are two main types, one that is casual or takes only 24-hour pass or 3-day pass and the other that is annual. The problem is that if the city Citibike knows how many people are interested in the type of bikes, they can predict the number of people taking each membership, which may make them able to reduce their costs and improve their income.

Data

The data used here is obtained from https://www.citibikenyc.com/system-data where it is possible to see how people are using their bikes to commute. The number of different types of membership is assigned 0 and 1 after being changed in Excel. Therefore, we can provide a heatmap to see which places people prefer to use which membership type.

Methodology

In this report, I work on the data to capture the approximate number and coverage of different types of memberships in New York City. I use the mentioned data to find the start latitude and longitude of bike stations in this city. Then, due to the importance of simplicity, I use '0' as the type of annual membership and '1' as the type of casual membership. After that, I use a sample of 2000 participants in this facility to find an approximate way that people have used bikes in different locations. Thanks to the feature of HeatMap in Folium, I have managed to have the heatmap of the way people have used bikes in this city, which highlights the dominance of casual membership in New York City.

I use Pandas and Folium as the main types of libraries.
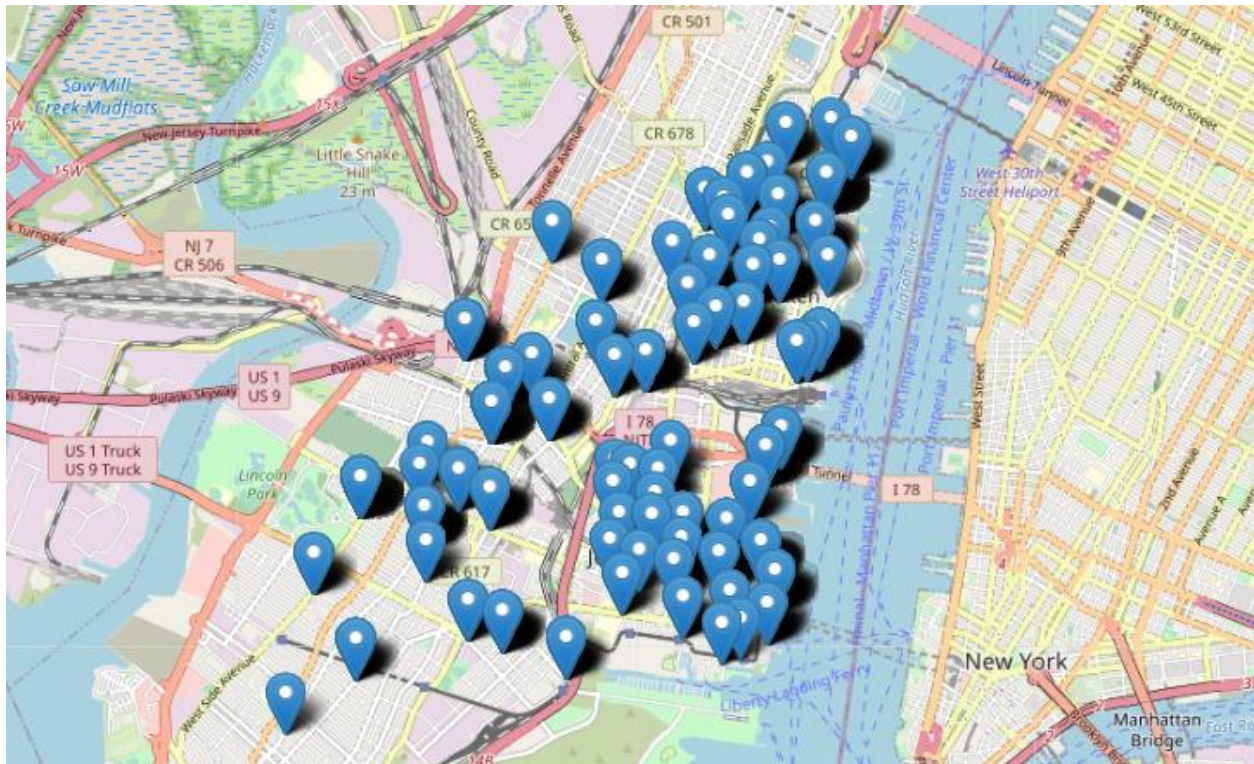
Results

Due to the heatmap, it is possible to say that the higher number of people are using casual types of this system to use bikes. This can help Citibike to know how their users prefer their bike membership. Therefore, they can understand that their long-run membership (annual) cannot be interesting for people. This can help them revise their plan if they want to improve this quality by providing other options to make this plan more attractive to people.

Discussion

If Citibike tries to add more options such as discounts to their plan, they can absorb more people to their program and make that better for people to pay lower costs but longer-run ones.

Conclusion

Due to the importance of possible air pollution in cities, New York City as a famous cosmopolitan one has to develop programs that can help people and also the city itself to improve its quality. One way to do so is to use bikes and when the city counselor knows how they should improve the city in order to have better options and also help people use bikes in a better way. Now that people prefer to use short-term plans, it seems necessary for the city to provide an option to make it interesting for people living there.