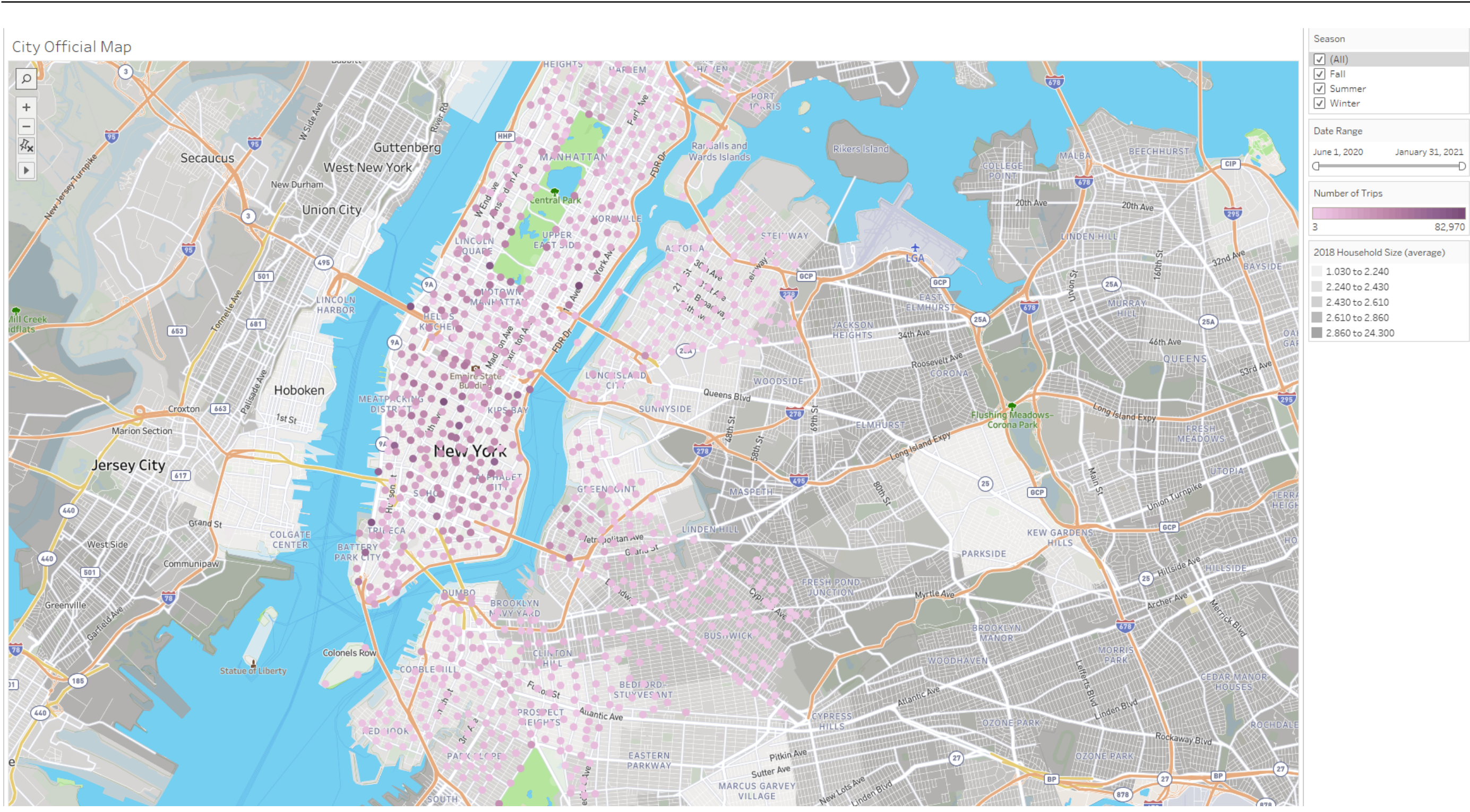


Citibike Analysis

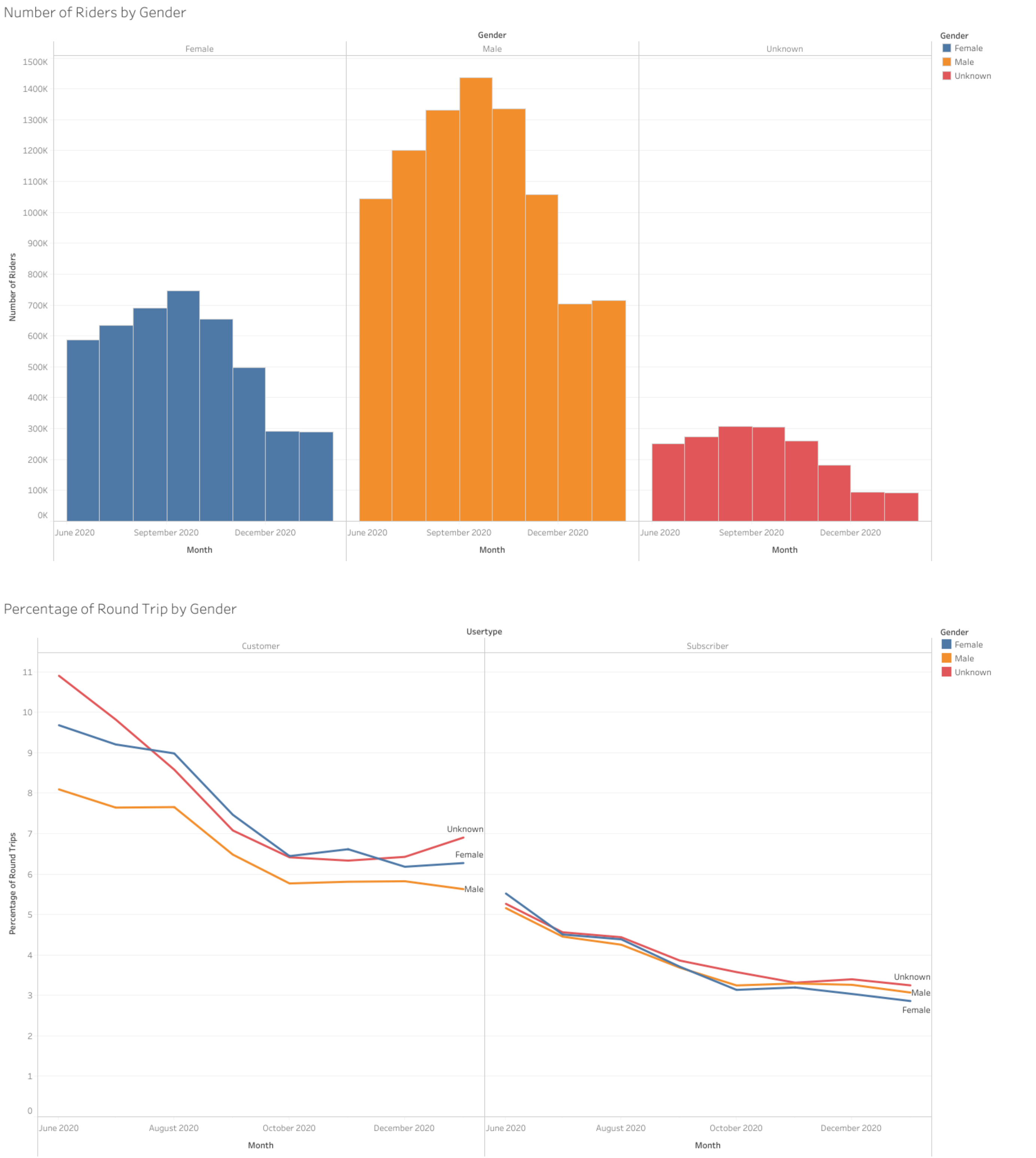
Yashraj Kadam (22BDS066), Parishri Shah (22BDS043), Harsh Raj (22BDS027), Arya Raj (22BDS007)
Overleaf Project Link

City Official Map



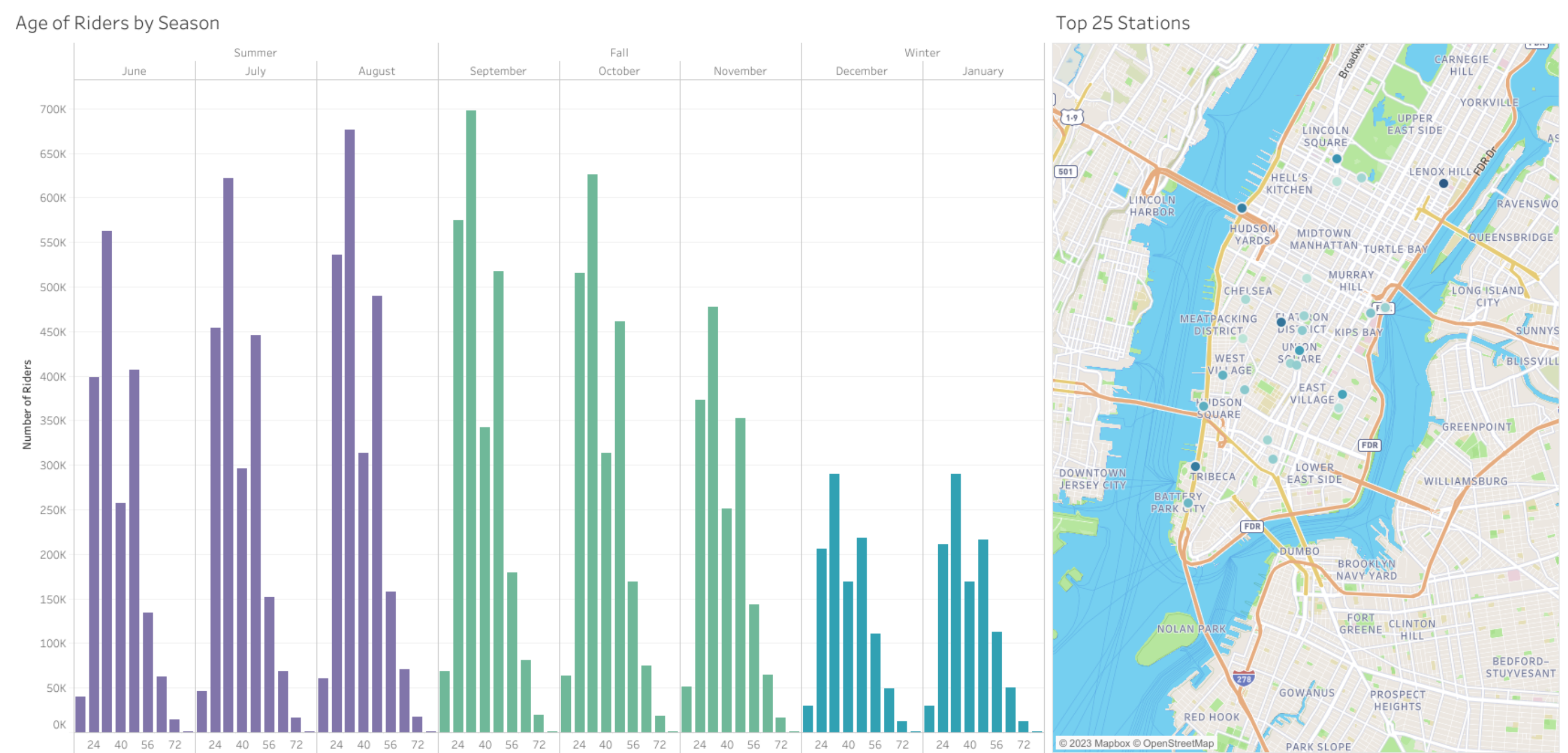
This visualization shows all bike stations used between June 2020 and January 2021. The more popular a station is, the darker the shade of purple for the corresponding circle is a darker shade of purple. Zip codes are colored a shade of grey depending on the 2018 Average Household Size from the US Census. The main trend that is apperent in this visual is that the bike stations in Manhattan are the most popular.

Gender-based Dashboard



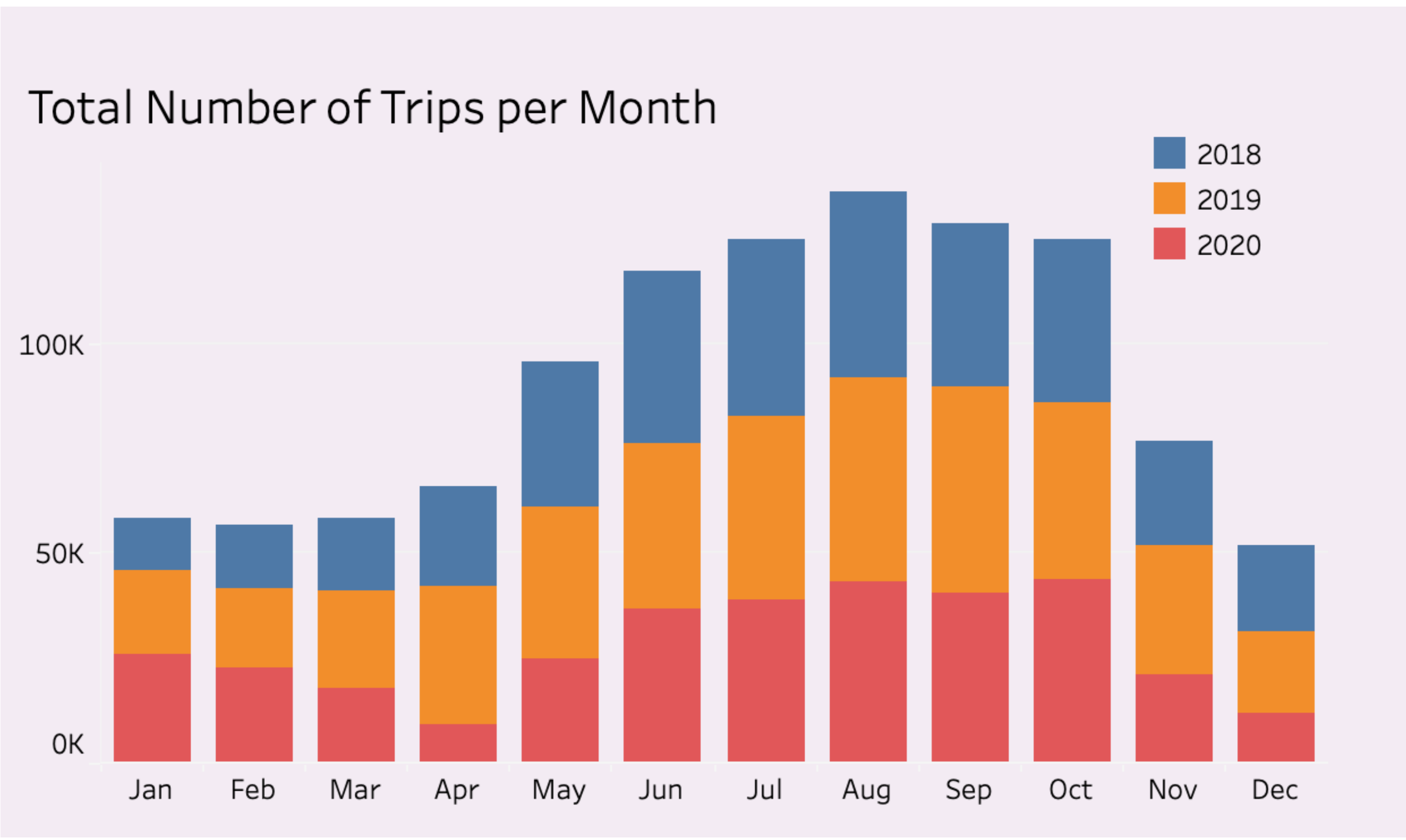
The bar chart showing the total number of riders for each gender by month. The visual along the bottom gives an idea of what people are using the bikes for. Typically when someone makes a "round trip" - meaning they start and end at the same station - they are using the bike for exercise. This visual looks at the percentage of trips that were round trips broken down by gender and user type. It also shows that female ridership has actually decreased over time.

Seasonal Use and Top Stations: Insights from Age Distribution



The first visualization illustrates the distribution of riders by age across different seasons. Notably, September (Fall season) stands out, displaying a peak with an average rider age of 32 and a total of 697,771 riders. The map features corresponding plots for the top 25 stations.

Yearwise and Monthwise Distribution



A review of the data by month reveals that the highest usage of bicycles in New York City occurs during the summer months of July, August, and September, in comparison to the winter months. In April of 2020, a marked decrease in bicycle usage was observed, which can be attributed to the restrictions imposed during the early stages of the COVID-19 pandemic.

Hourly Patterns and Trip Lengths



The line charts show an hourly breakdown by weekday and weekend of the number of riders each season and the average trip length each season. The most interesting thing that comes from these charts is the peak at 4am on summer weekends for average trip length. This is very likely people biking home from the bars since last call is 4am in New York City.

Conclusion

The analysis of bike usage in New York City reveals significant trends: Manhattan emerges as the primary hub for bike stations, summer months experience peak usage, declining female ridership raises concerns, and unique insights into late-night biking behaviors.