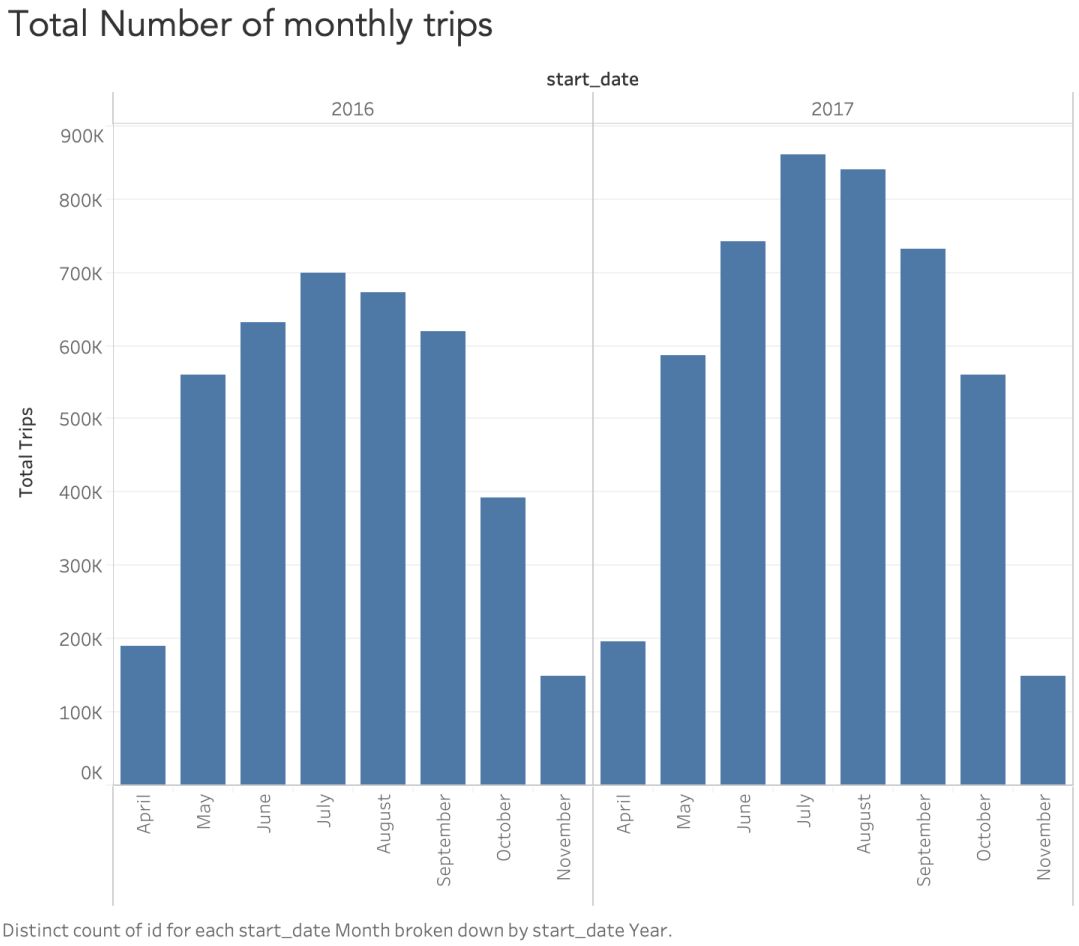
Bixi Project Part two
Visual Analytics in Tableau

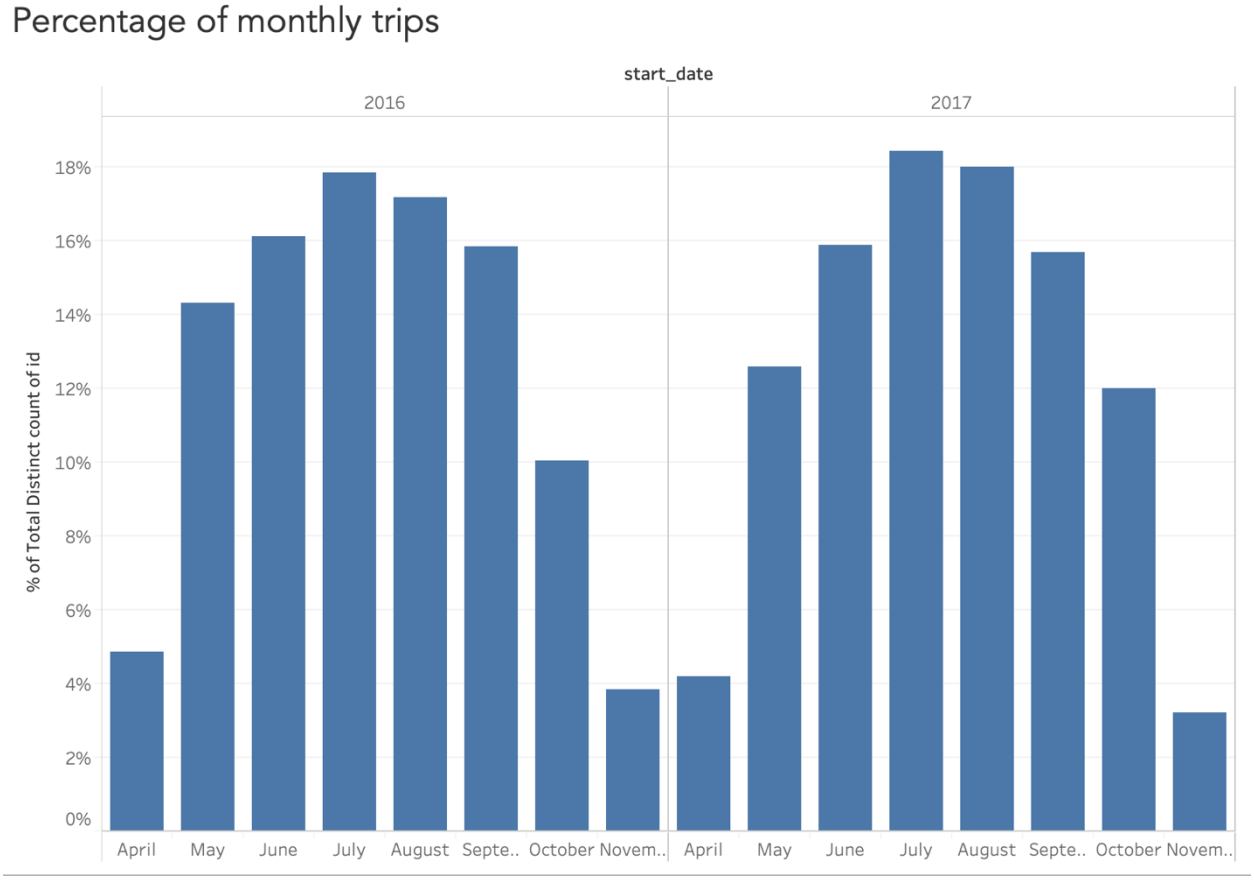
This report explores the data published by Bixi Montreal, Canada.
Primary objectives are to analyze data through visualizations in Tableau, find insights and answers business questions that are based on the company's operation during the year 2016-2017.

Question 1.1: Difference in the usage of the service between two years.



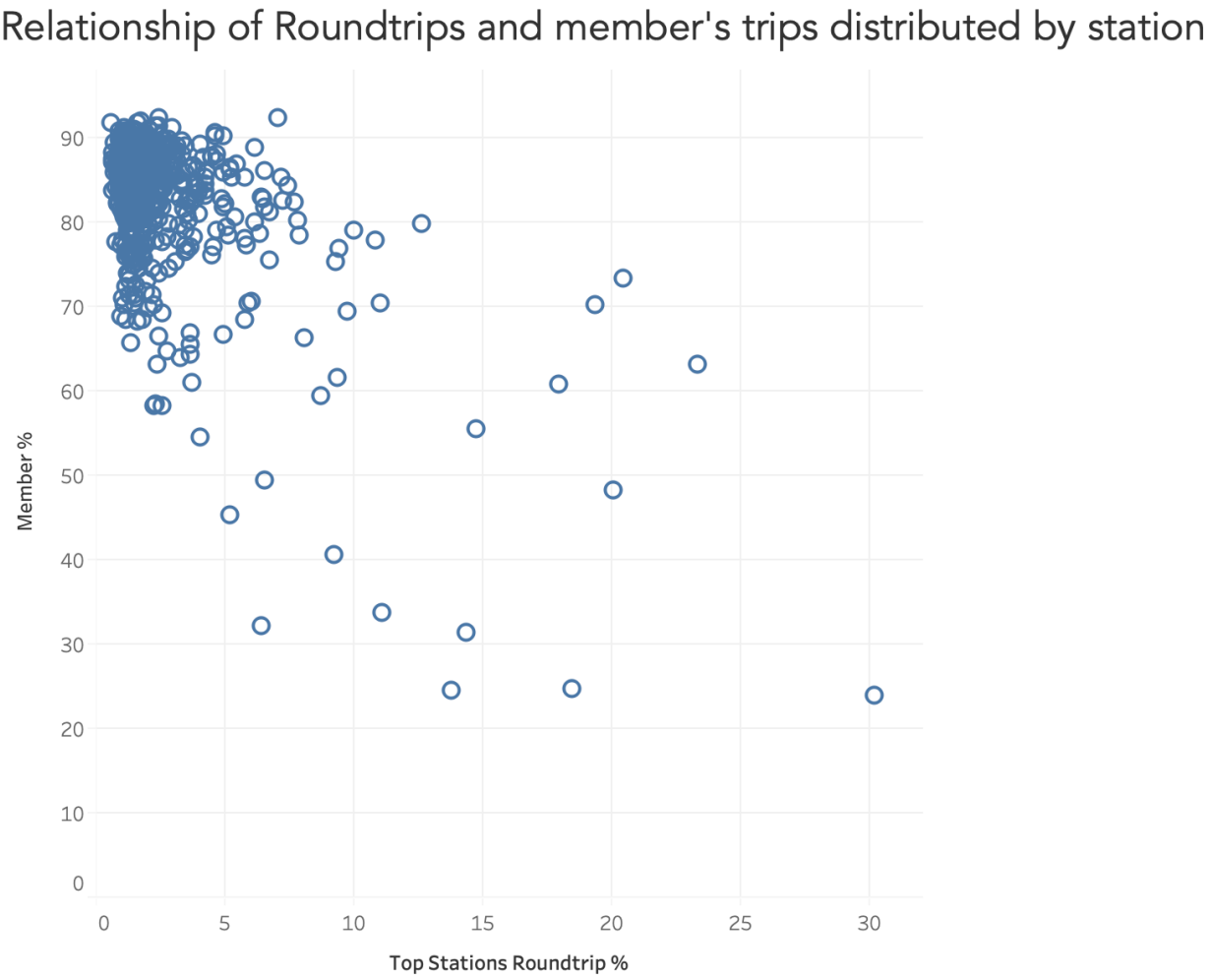
As we can see from this bar graph, total number of trips for every month varies in both years. Though there is a similarity in the pattern for growing numbers of trips in during the summer months of the year and then dropping down again due to changes in the weather.
In comparison between two year's total number of trips, year 2017 has a significant growth which represents the growing popularity of the service.

Question 1.2: How does the proportional monthly usage differ between 2016 and 2017?



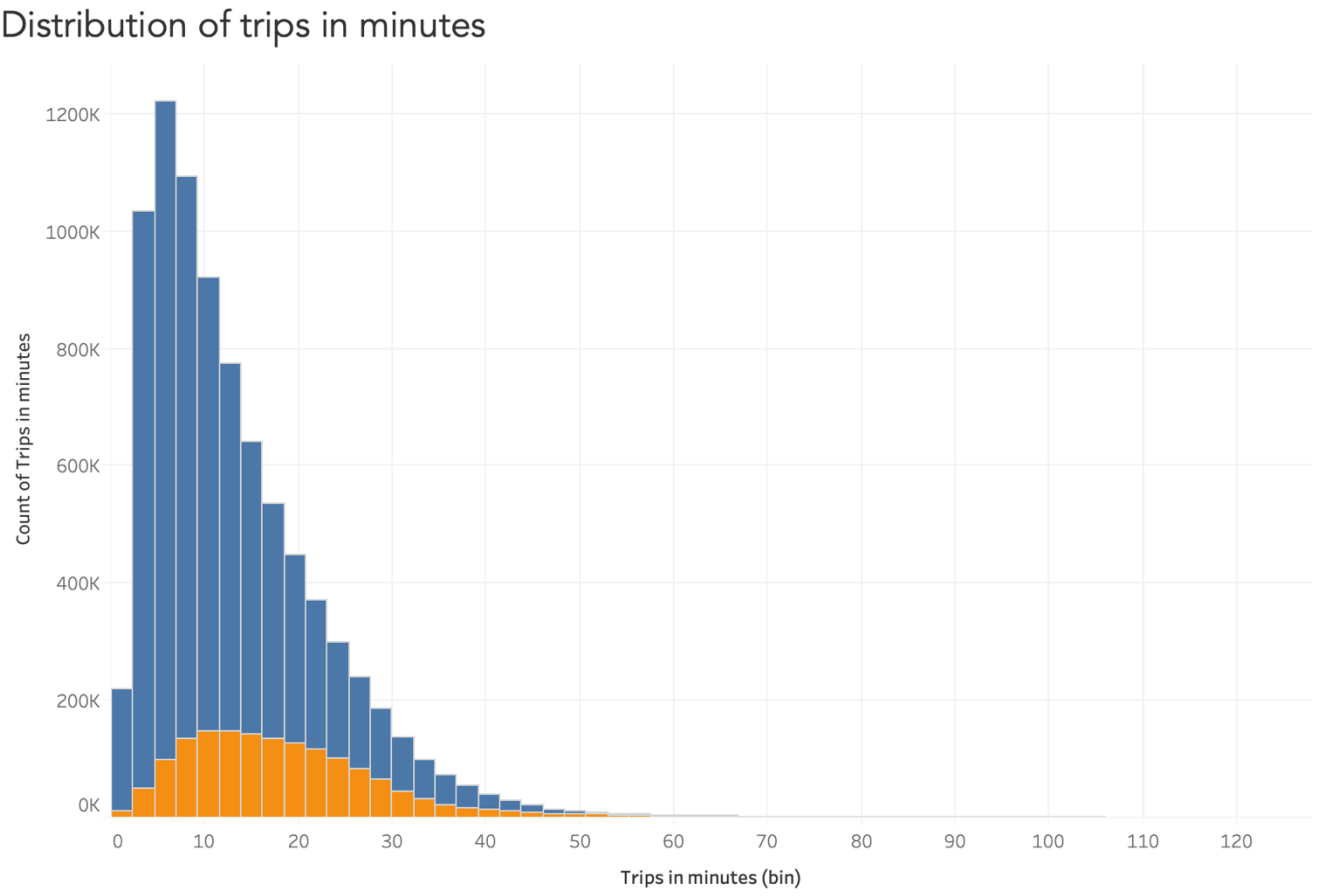
The proportions of monthly usage follow the same patter for both years. The monthly percentage of trips of the year varies drastically. Especially in the colder months, April and November have the least percentage of the trips. As the temperature gets warmer, usage is higher. As Montreal being the popular tourist city in north America, tourist activity does add up to the number, which we will explore later in the following questions.

Question 2.1: Relationship between percentage of round trips and percentage of member trips by station.



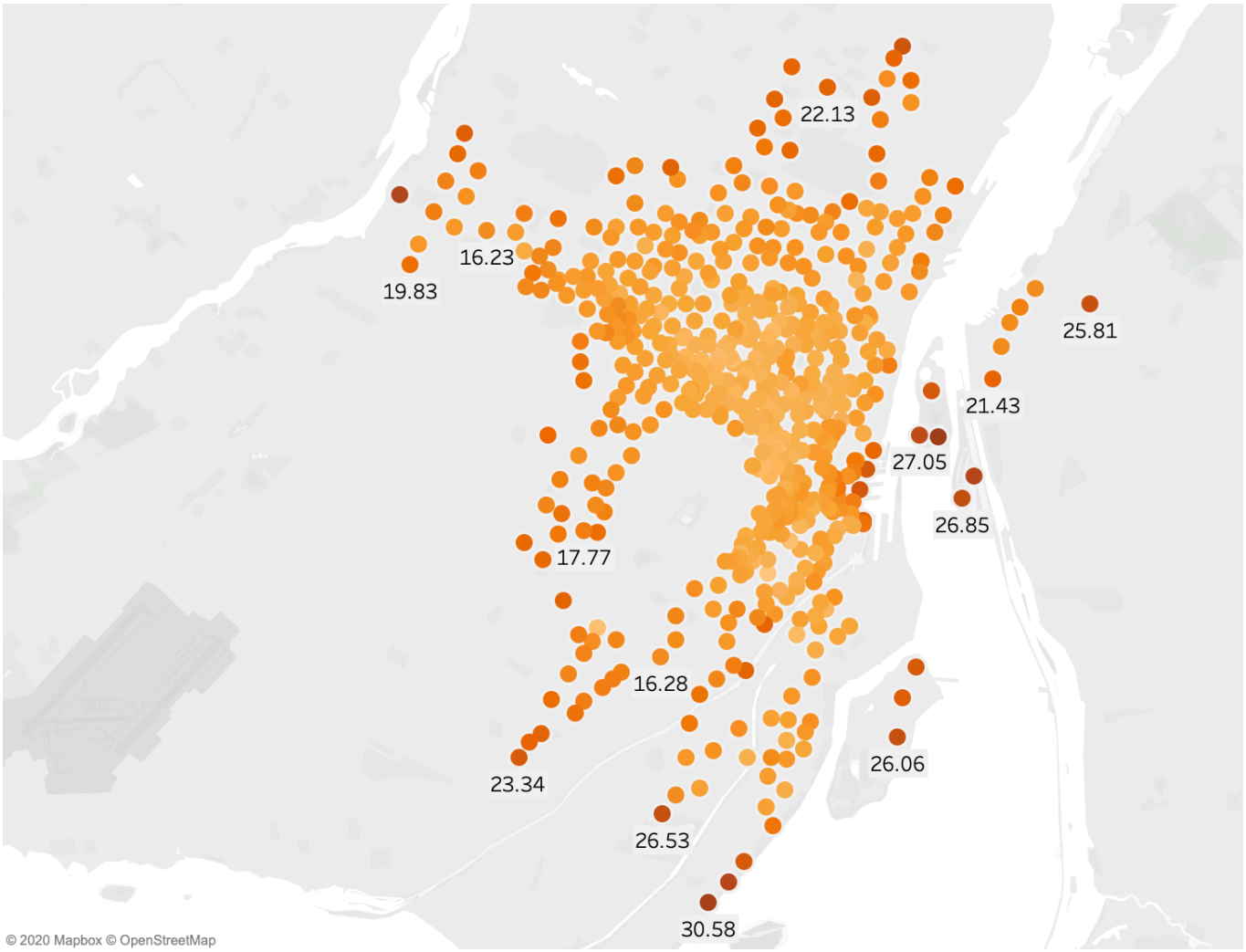
In this scatter plot we can notice that the stations with the highest percentage of roundtrips, have the least percentage of trips done by member. On the other hand, stations which gets more trips by members are least likely to have roundtrips. As per the hypothesis, the members are more likely to use the service to commute to other places rather than ending at the same stations. Thus, membership plans are more popular for the residents of the city. The tourists and visitors in the city, will prefer roundtrips as they use the service to visit places and come back.

Question 2.2: Behavior of members vs. non-members in terms of trips length.



The histogram gives us an insight about the trip durations of members and non-members. We can say that members tend to get trips lasting short times, with highest number of trips are lasting between 2 to 7 minutes. Where the non-members prefer to take longer trips ranging between 10 - 20 mins. Again, coming back to the tourist's theory, usually tourists and visitors need more time to explore and go to places.

Question 2.3: Map of average trip duration per station.



The map represents the all the stations in the city as orange dots, where darker dots being the stations that have higher average of trip durations. As we can most of the light-colored dots are scattered in the area where there can be many workplaces and educational institutes where users can commute, spending less time on average. And the darker dots representing popular picnic spots and tourist attractions. Further proving that tourists tends to take longer trips that are mostly roundtrips.

Question 3.4: Total dollar amounts and relative percentage of revenue from single trips for each of the three different pricing buckets.

Total revenue from single trips from each of the 3 price buckets

Membership Status	30 -45 min	45-60 mins	<=30 mins	Total Revenue
Non-Member	734,585	329,758	4,134,452	5,198,796

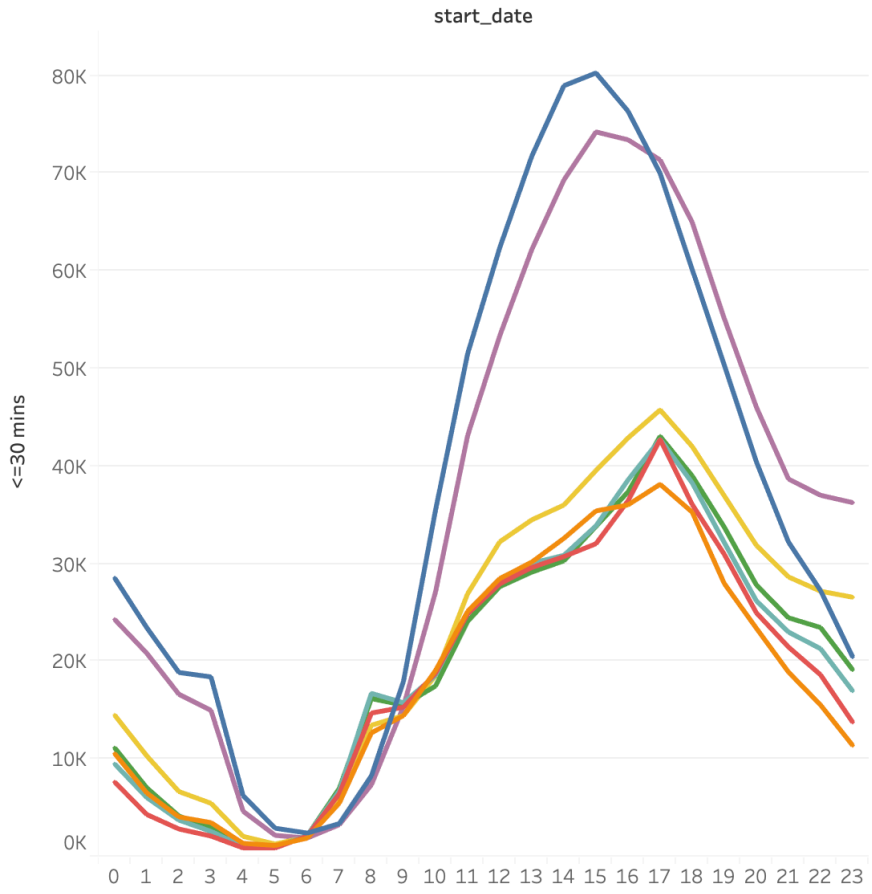
Total revenue in percentage

Membership Status	30-45 min %	45-60 min %	<=30 mins %
Non-Member	14.13	6.34	79.53

Above two tables show the highest revenue for single trips, is the trips which last 30 mins or less with almost 80% of the non-member's revenue. Followed by the trip lengths 30-45 minutes and 45 – 60 minutes.

Question 3.5: Total amount of the flat rate revenue for each hour and each of the week. Which days/times are generating most revenue?

Total amount of flat rate trips distributed by month adn hour of the day



From this comparison chart we can say that the weekends are generating significant amount of revenue from the flat rate single trips. The peak time would be afternoon, between 2:00pm to 5:00pm on Saturdays and Sundays. And also late evening time of Fridays between 5:00pm to 7:00pm, having fair amount of revenue compared to the weekdays.