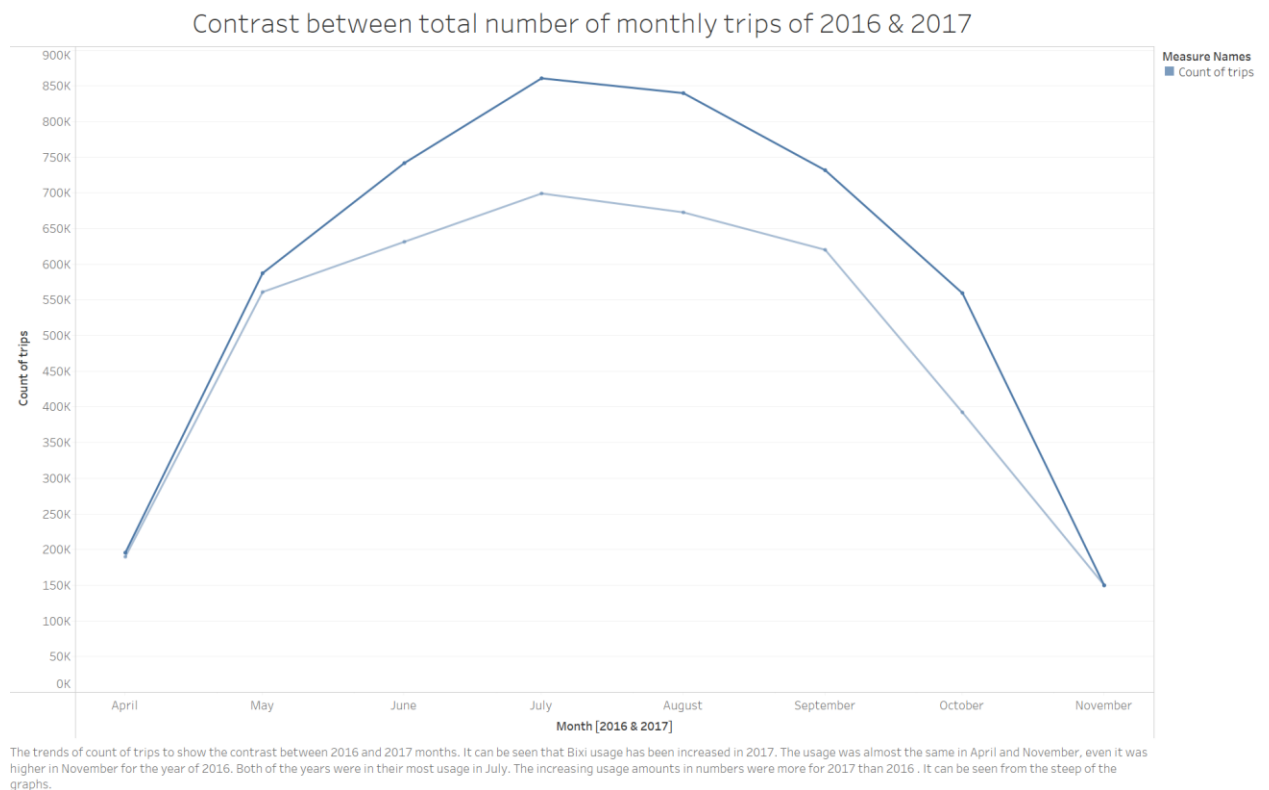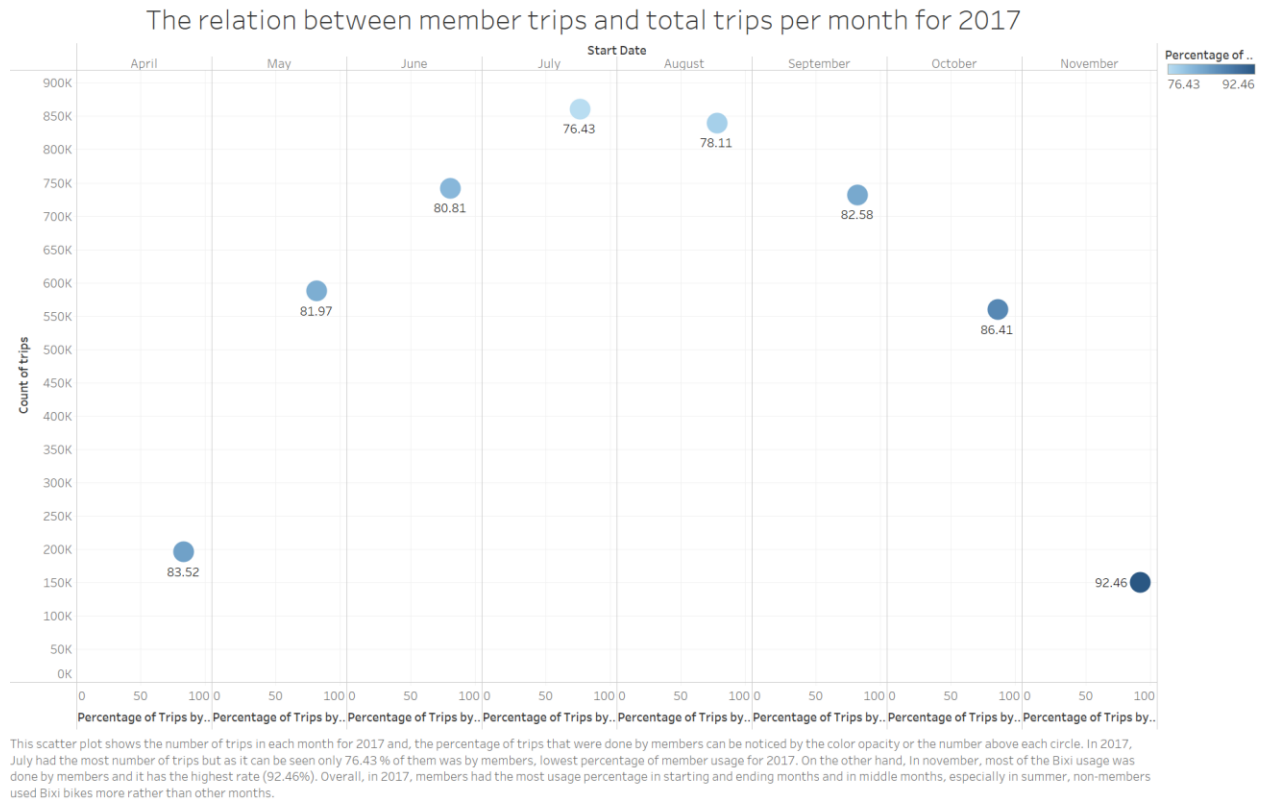# BIXI Project Key Insights

BIXI is an organization in the city of Montreal that manages bike-sharing system all over Montreal. The BIXI name comes from the contraction of the words 'bicycle' and 'taxi'. BIXI established an environmentally friendly system that people can get a bicycle from one station and drop it in other stations. The stations are spread all over the city of Montreal. We have connected Tableau to MySQL and we extend some of our key insights.

Contrast between total number of monthly trips of 2016 & 2017

The trends of count of trips to show the contrast between 2016 and 2017 months. It can be seen that Bixi usage has been increased in 2017. The usage was almost the same in April and November, even it was higher in November for the year of 2016. Both of the years were in their most usage in July. The increasing usage amounts in numbers were more for 2017 than 2016 . It can be seen from the steep of the graphs.

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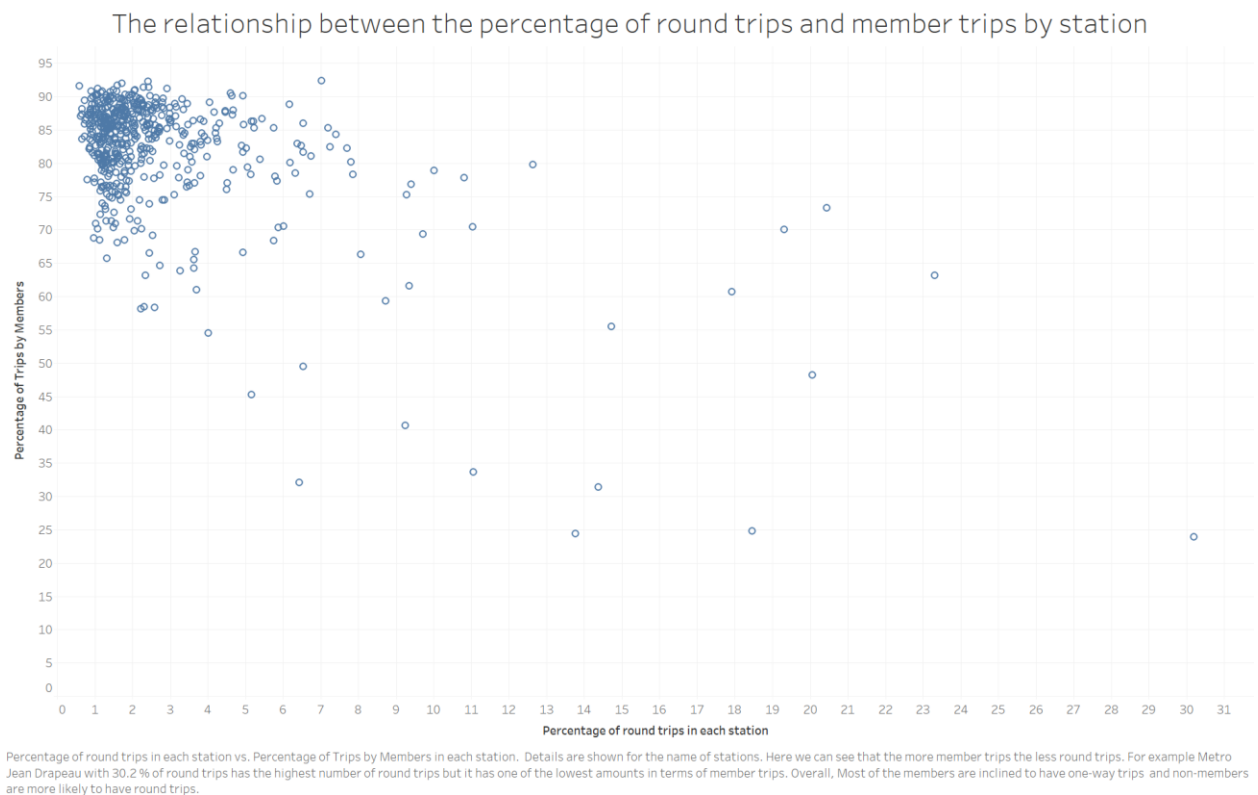
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The relation between member trips and total trips per month for 2017

This scatter plot shows the number of trips in each month for 2017 and, the percentage of trips that were done by members can be noticed by the color opacity or the number above each circle. In 2017, July had the most number of trips but as it can be seen only 76.43 % of them was by members, lowest percentage of member usage for 2017. On the other hand, In november, most of the Bixi usage was done by members and it has the highest rate (92.46%). Overall, in 2017, members had the most usage percentage in starting and ending months and in middle months, especially in summer, non-members used Bixi bikes more rather than other months.

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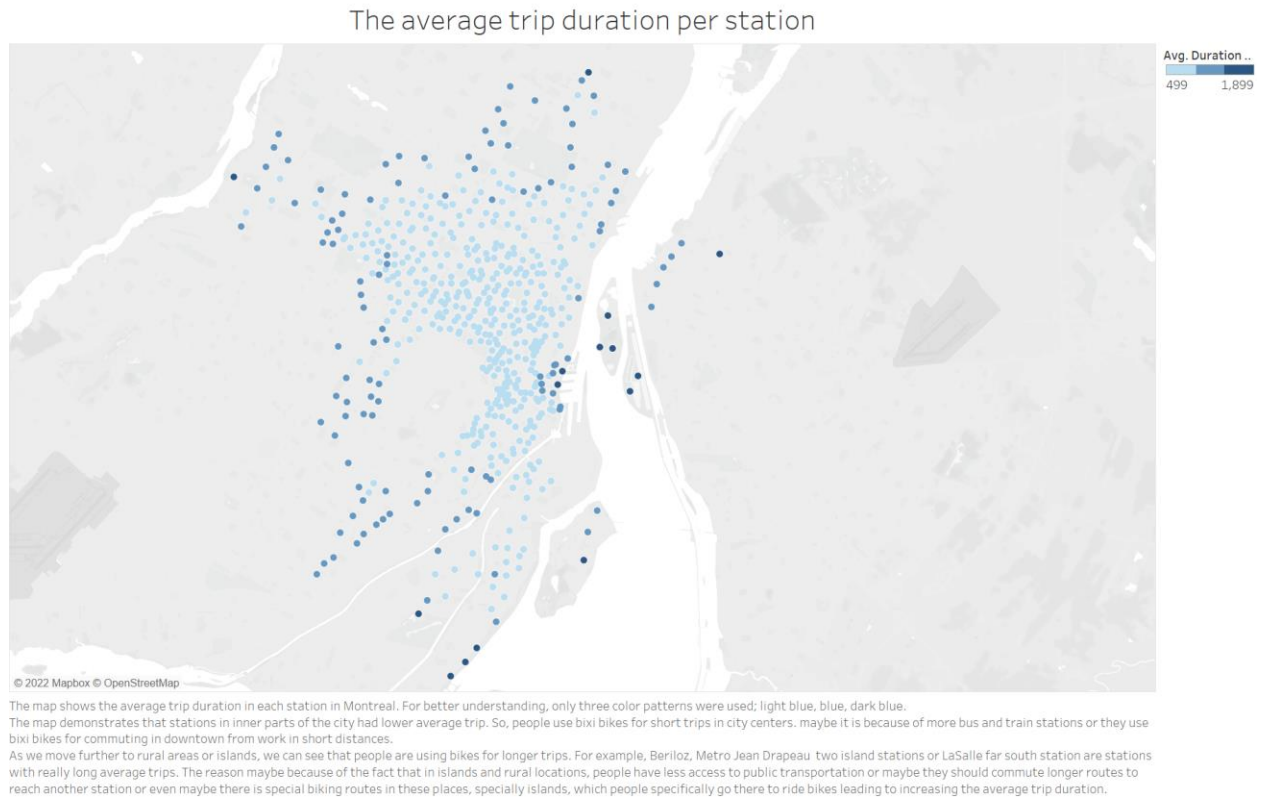
Visualization Process

Members used considerably more minutes in Bixi bikes rather than non-members. Members' usage of Bixi bikes was at its highest between 0-10 minutes and they rarely used bikes in duration more than an hour. On the other hand, non-members used longer trips; between 10-20 minutes was their peak and they rode bikes more than an hour relatively more than members. Overall, although number of trips were higher in members, non-members are more likely to use Bixi bikes for longer trips. For example, non-members used Bixi bikes twice than members in duration between 50-60 minutes.

The relationship between the percentage of round trips and member trips by station

Percentage of round trips in each station vs. Percentage of Trips by Members in each station. Details are shown for the name of stations. Here we can see that the more member trips the less round trips. For example Metro Jean Drapeau with 30.2 % of round trips has the highest number of round trips but it has one of the lowest amounts in terms of member trips. Overall, Most of the members are inclined to have one-way trips and non-members are more likely to have round trips.

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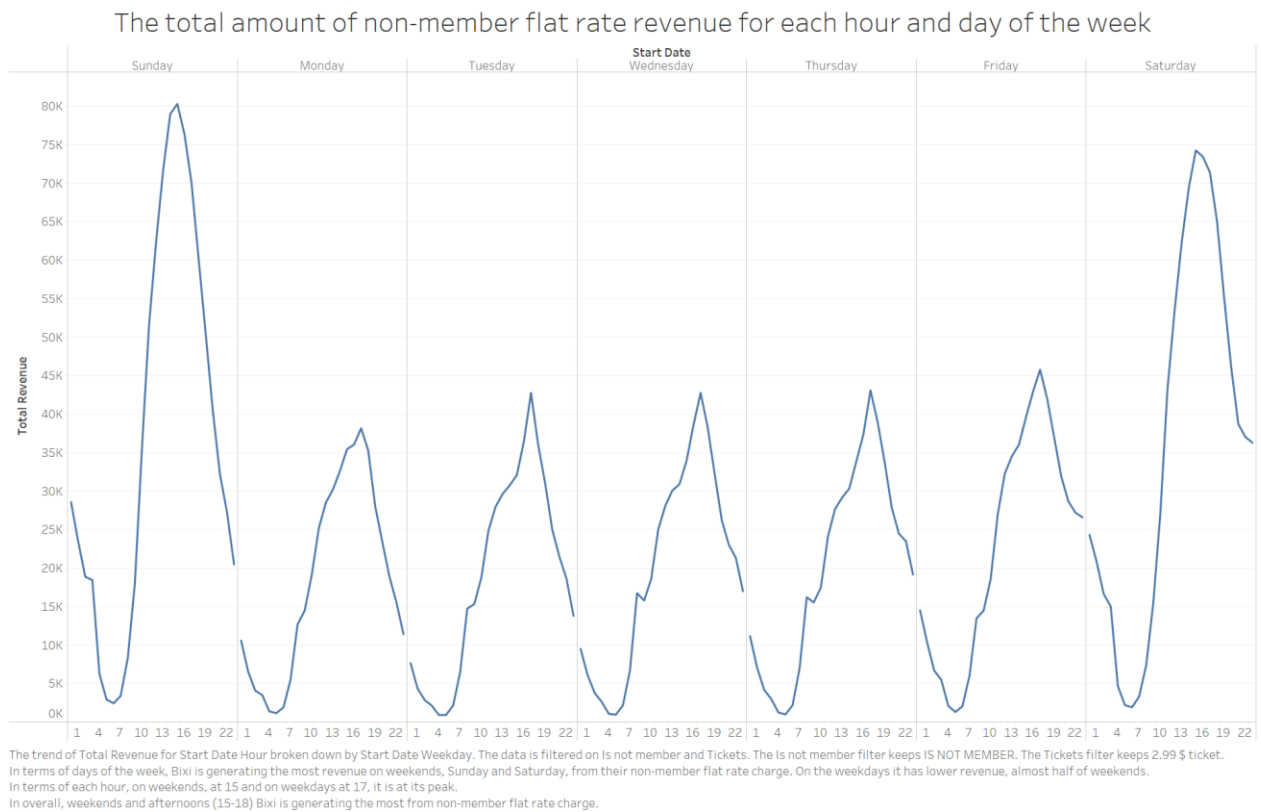
The average trip duration per station

The map shows the average trip duration in each station in Montreal. For better understanding, only three color patterns were used; light blue, blue, dark blue.
The map demonstrates that stations in inner parts of the city had lower average trip. So, people use bixi bikes for short trips in city centers. maybe it is because of more bus and train stations or they use bixi bikes for commuting in downtown from work in short distances.
As we move further to rural areas or islands, we can see that people are using bikes for longer trips. For example, Beriloz, Metro Jean Drapeau two island stations or LaSalle far south station are stations with really long average trips. The reason maybe because of the fact that in islands and rural locations, people have less access to public transportation or maybe they should commute longer routes to reach another station or even maybe there is special biking routes in these places, specially islands, which people specifically go there to ride bikes leading to increasing the average trip duration.

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The total amount of non-member flat rate revenue for each hour and day of the week

The trend of Total Revenue for Start Date Hour broken down by Start Date Weekday. The data is filtered on Is not member and Tickets. The Is not member filter keeps IS NOT MEMBER. The Tickets filter keeps 2.99 $ ticket.
In terms of days of the week, Bixi is generating the most revenue on weekends, Sunday and Saturday, from their non-member flat rate charge. On the weekdays it has lower revenue, almost half of weekends.
In terms of each hour, on weekends, at 15 and on weekdays at 17, it is at its peak.
In overall, weekends and afternoons (15-18) Bixi is generating the most from non-member flat rate charge.

The above image shows the total amount of non-member flat rate revenue for each hour and day of the week. Here we break down single non-member trips to three pricing buckets and the above graph is only for up to 30 minutes non-member trips.

The rates are as below:

- $2.99 flat rate for each trip that is 30 minutes or less

- $4.79 ($2.99 + $1.80) for trips greater than 30 minutes, up to 45 minutes in length

- $7.79 ($2.99 + $1.80 + $3) for trips greater than 45 minutes, up to 60 minutes

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Final Business Recommendation

For overall business growth I would like to offer a promotion to non-members to motivate them to become members. As we can see from analytical process and visualizations, non-members use Bixi bikes more in weekends and they are less likely to use them on weekdays. On the other hand, we saw that non-members are more likely to take longer trips than members. So, I am going to offer a 50% discount for people who ride a bike more than an hour each time, for their next ride. Moreover, since these range are mostly non-members, I am going to offer 5 free rides in mornings and nights of the weekdays if the become a member. With this approach Bixi will increase its revenue with increasing number of trips in uncrowded hours.