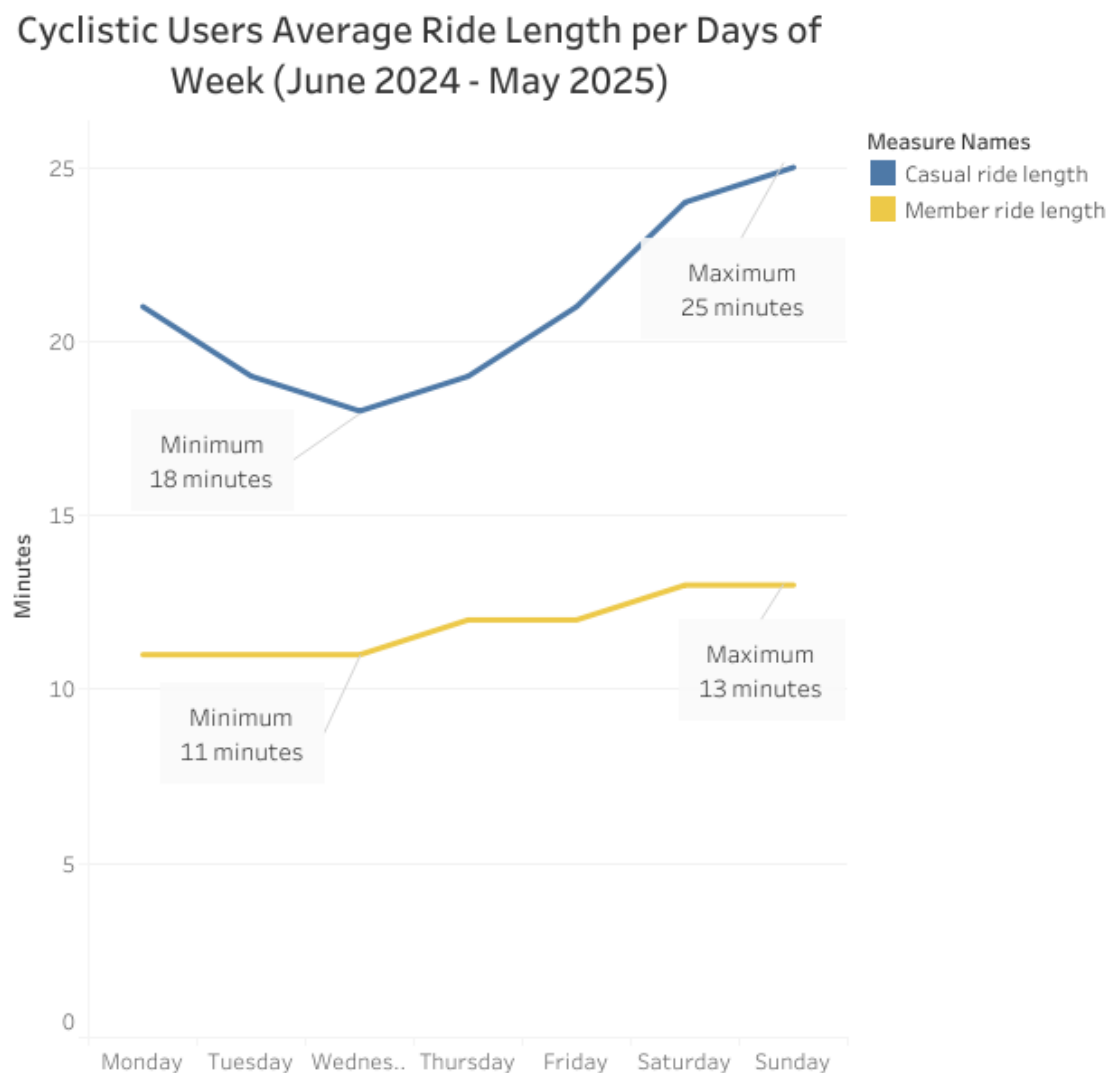


Visualizations and Insights

Based on the data provided in the Summary file I identified some insights. To better demonstrate these insights, I created some data visualizations. The Tableau platform was used to create these data visualizations.

During our Google Data Analytics Certificate Program **Kevin Hartman** (one of our instructors and former Chief Analytics Strategist at Google) pointed our attention to one important moment. The executive team doesn't have too much time. In this situation the best option is to show your most important insights using one visualization. Our goal is to demonstrate the main difference between Cyclistic casual users and members. In my opinion the best candidate for completing this task is the visualization that shows **Cyclistic users' average ride length per day of week** (look at the following graph).

Cyclistic Users Average Ride Length per Days of Week



Source: author's calculations based on the data provided by Motivate International Inc. as part of the Google Data Analytics Certificate

According to this graph we can draw some conclusions. **First**, casual users' average ride length for each day of week is longer than members average ride length. Casual users' average ride length jumps from 18 to 25 minutes throughout the week. While members average ride length is located between 11-13 minutes. **Second**, members demonstrate more stable riding habits throughout the weekdays. While casual users' average ride length increases in the weekend. **Finally**, average ride length for casual riders equals about 22 minutes. This value for members is about 12 minutes and for overall users is 15 minutes (see more details in the Summary file).

Cyclistic Users Number of Rides per Days of Week

After demonstrating the main insights, we can support our ideas using other visualizations. For example, to confirm our **thesis about users' riding preferences** we can analyze the next visualization. The following graph shows the number of rides per day of week for user type.

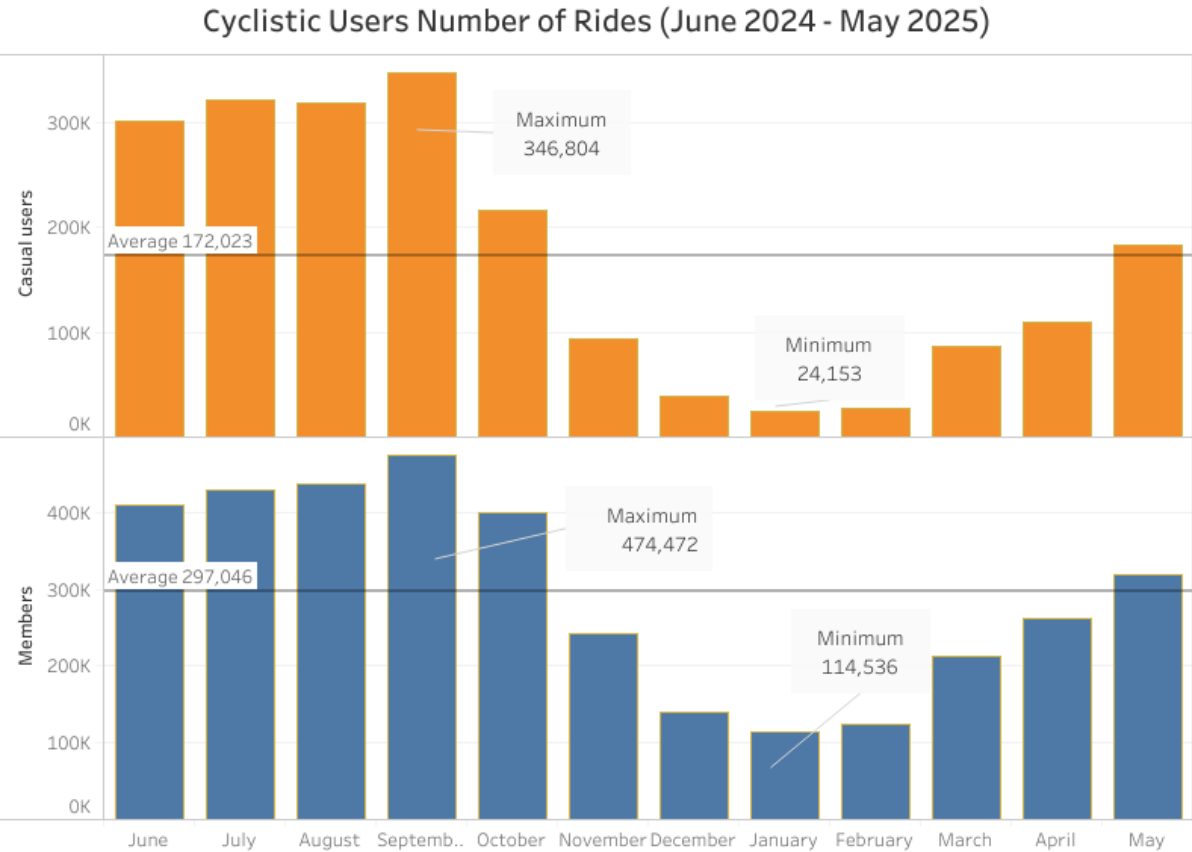
Cyclistic Users Number of Rides per Days of Week
(June 2024 - May 2025)



Source: author's calculations based on the data provided by Motivate International Inc. as part of the Google Data Analytics Certificate

According to this graph casual users' number of rides stay around 20 thousand most of the weekdays. Then on Friday this indicator rises to 26,6 thousand number of rides, hits the peak (35,5 thousand rides) on Saturday and goes down to 28,8 thousand on Sunday. While members' number of rides stay around 45 thousand throughout the weekdays and then falls in the weekend. The minimal number of rides for members is 32,9 thousand on Sunday. The difference between average and maximum number of rides per day of week for casual users is 77,5%, while for members it is only 26,9%. These figures can be explained by the fact that about 30% of Cyclistic users ride a bike to work (look at the Scenario, on page 1 of Full Report). It is very likely that a part of Cyclistic members use bikes to commute to work. Generally, people don't work on Sundays and in many on Saturdays too. So, this decrease in the number of member rides is obvious. The increase in the number of casual users' rides is also not surprising. The majority of Cyclistic users ride bikes to spend leisure time (again look at the Scenario, on page 1 of Full Report). Because of no work at the weekend there is more leisure time that can be used for other matters, such as cycling. Days with the fewest trips are Sunday and Monday. So, these days can be selected for carrying out technical maintenance.

Cyclistic Users Number of Rides

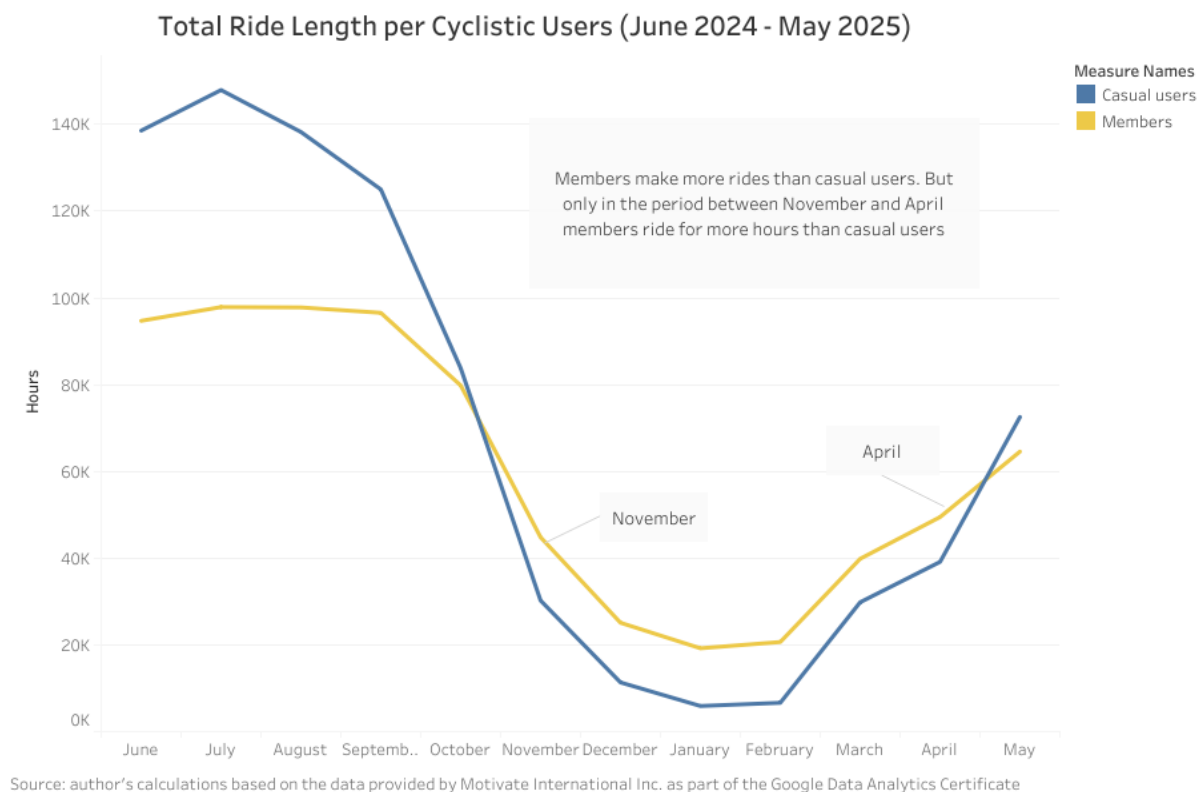


Source: author's calculations based on the data provided by Motivate International Inc. as part of the Google Data Analytics Certificate

The next difference between Cyclistic users is **the total number of rides by users**. This bar graph shows the number of Cyclistic users' rides during the year. We can see that the number of Cyclistic users' rides changes throughout the year. The main reason for these changes is associated with the

revolution of the seasons. The weather in Chicago from November to March is usually cold and snowy. This type of weather is not very suitable for bike riding. According to the graph we can conclude that the number of members' rides is greater than the number of casual users' rides. On average 297 thousand rides are made by members and 172 thousand by casual riders during the year. The number of rides exceeds average values in the period from May to October and does not achieve average values in the period from November to April. September is the month with the maximum number of rides and January is the month with the minimum number of rides for both groups (members and casual users).

The total ride length



The last graph shows **the total ride length** for members and casual riders throughout the year. During the period from May to October casual users ride more hours on a bike than members. This fact confirms again the importance of casual riders and their potential for future company growth. It is caused by the average ride length of casual users. The average ride length for casual users is almost twice as much as the average ride length for members (look at page 2). Due to this the total ride length for casual riders is more than the same indicator for members. Even though the total number of rides made by casual users is less than members' rides. Only in the period from November to April, the members' total ride length is greater than the casual users' total ride length. It is caused by the fact that the number of casual users' rides in this period is too small. And even a longer average ride length can't compensate for this drop in the number of rides.

Other insights

During the analysis of **the maximum ride length**, we did not find any significant differences between casual users and members. Throughout the year the maximum ride length for both types of riders stays around 25 hours. Only in March the maximum ride length for casual users exceeds the same value for members by an hour (about 26 hours for casual users and 25 hours for members). During the rest of the year the maximum ride length for both types of users is almost identical (see more details in the Summary file).

There are no differences in **bike type preferences** for casual users and members. Both casual users and members gave a more preference to electric bikes rather than classic bikes (see more details in the Summary file).

Summing up all the above we can conclude that **the main differences between annual members and casual riders in the use of Cyclistic bikes** consist of the following:

1. Casual users' average ride length is longer than members average ride length. Casual users' average ride equals about 22 minutes. This value for members is about 12 minutes and for overall users is 15 minutes.
2. Casual users give a greater preference to bike rides on the weekend. While members demonstrate more stable riding habits throughout the weekdays. In the weekend both the average ride length and the number of rides for casual riders significantly go up. While the changes for members are less dramatic.
3. The total number of rides made by casual users is less than the same value for members. On average during the year casual users make around 172 thousand casual rides per month. While members make around 297 thousand rides for the same period. But these values changes depending on the weather conditions.