



# Case Study 1 - Cyclistic

## Scenario:

- Company's success depends on **maximizing the number of annual memberships**
- Understand how **casual riders** use Cyclistic Bikes.
- Design a **marketing strategy** to convert casual riders to annual members.

## Cyclistic:

- bike share program with 5,800 bikes and 60 stations.
- Unique in the sense that they offer reclining bikes, tricycles, cargo bikes; this makes them more desirable to those with **disabilities**. 8% of riders use assisted options.
- 30% of bikers use them to commute to work every day.
- Current strategy: building on general awareness, appealing to broad consumer segments. They have a plans with different prices.
- Team is interested in looking at **historical bike trip data**.

## Key Points to Analyze:

- Convert casual riders to annual members.
- Need to better understand how annual members and casual riders differ.
- Why would casual members want an annual membership?
- How can we utilize digital media to improve our conversion for these casual riders?

## Ask

Question provided by Moreno - How do annual members and casual riders use Cyclistic Bikes differently?

*What is the problem you are trying to solve?*

The problem is that there seems to be a lack of annual members that are using Cyclistic bikes when compared to casual riders. We would like to convert our casual riders into annual members, as the latter generates higher revenue for the company.

*How can your insights drive business decisions?*

My insights will be generated by analyzing historical bike trip data. They will help in providing multiple recommendations for marketing strategies that utilize digital media to maximize the number of annual memberships purchased by riders.

*Who are the key stakeholders?*

1. Lily Moreno - She is the director of marketing, and she handles all the promotion with regards to Cyclistic. She will be invested in this project in terms of discussing the marketing strategies that can be implemented based on my (junior data analyst) insights on the data.
2. Cyclistic Executive Team - will make the final decision on whether the marketing strategy proposed will be the right step forward for the company.
3. Cyclistic marketing analytics team - will play a role in generating insights from the data alongside me. I will be communicating with them for advice and feedback on my analysis.

## **Prepare**

The data was made available by Motivate International Inc.

The data is organized into CSV files, and it is located on a website online. The CSV contain trip data from different years/time periods. There is data that is as recent as this year (2024).

Does this data ROCC?

Reliable - Data is being provided by Divvy (Operated by City of Chicago) and Lyft, indicating that the data should be valid, accurate and credible.

Original - The data was not collected by Cyclistic themselves, but instead a third party collected and provided the information.

Comprehensive - The dataset provides a lot of relevant information that will be useful for the analysis, such as geographical locations, ride durations, and the type of riders.

Current - The data is up to date, as there are records that were taken from the same year of the analysis (2024)

Cited - As mentioned above, the work it cited to be collected and provide by Divvy and Lyft, and they have provided a license that allows us (Cyclistic) to analyze and interpret the data.

As mentioned above, the data is highly credible due to the credibility of the sources of which we retrieved the data from (Divvy and Lyft).

The CSV files are huge, so Excel is not a great tool for analyzing the data. We will work with R to perform the analysis and generate visualizations.

## Process

*What tools are you choosing?*

For the process stage, I have decided to work with Excel, as I find it easier to perform data transformation, formatting, and cleaning.

*What steps have you taken to ensure that your data is clean?*

To make sure that the data was clean, I scanned the spreadsheet for errors, duplicates, and incorrect/missing information. I also created a couple of metrics with the columns *ride\_length* and *day\_of\_week*, which I think will be extremely useful once I move onto the analysis phase. Both columns provide more information about consumer behaviour, and will help to spot differences and trends among riders.

*Documenting the cleaning process*

1. Scanned for duplicates.
2. Scanned for missing information.
3. Added new attribute *ride\_length* by taking the difference between the start and end times.

4. Added new attribute day\_of\_week which finds the day of the week the bike trip was taken.

## Analyze

Refer to RStudio Cloud for Analysis Script and Visualizations

Link - <https://posit.cloud/content/8441539>

## Share

*How do annual members and casual riders use Cyclistic bikes differently?*

As shown from the two visualizations we created in R, there are much more annual members going on rides when compared to casual riders. However, the length of the bike rides are much longer for casual riders when compared to annual members, as casual riders have an average ride duration that is around 4 to 5 times that of the annual members.

*What story does your data tell?*

The data shows that there is a significant difference in the way casual riders and annual members use Cyclistic bikes. The story seems to be that casual riders are likely use the bikes for longer trips, indicating that they like to be used as a special activity or occasion (e.g. dates, day trips, etc).

*How do your findings relate to your original question?*

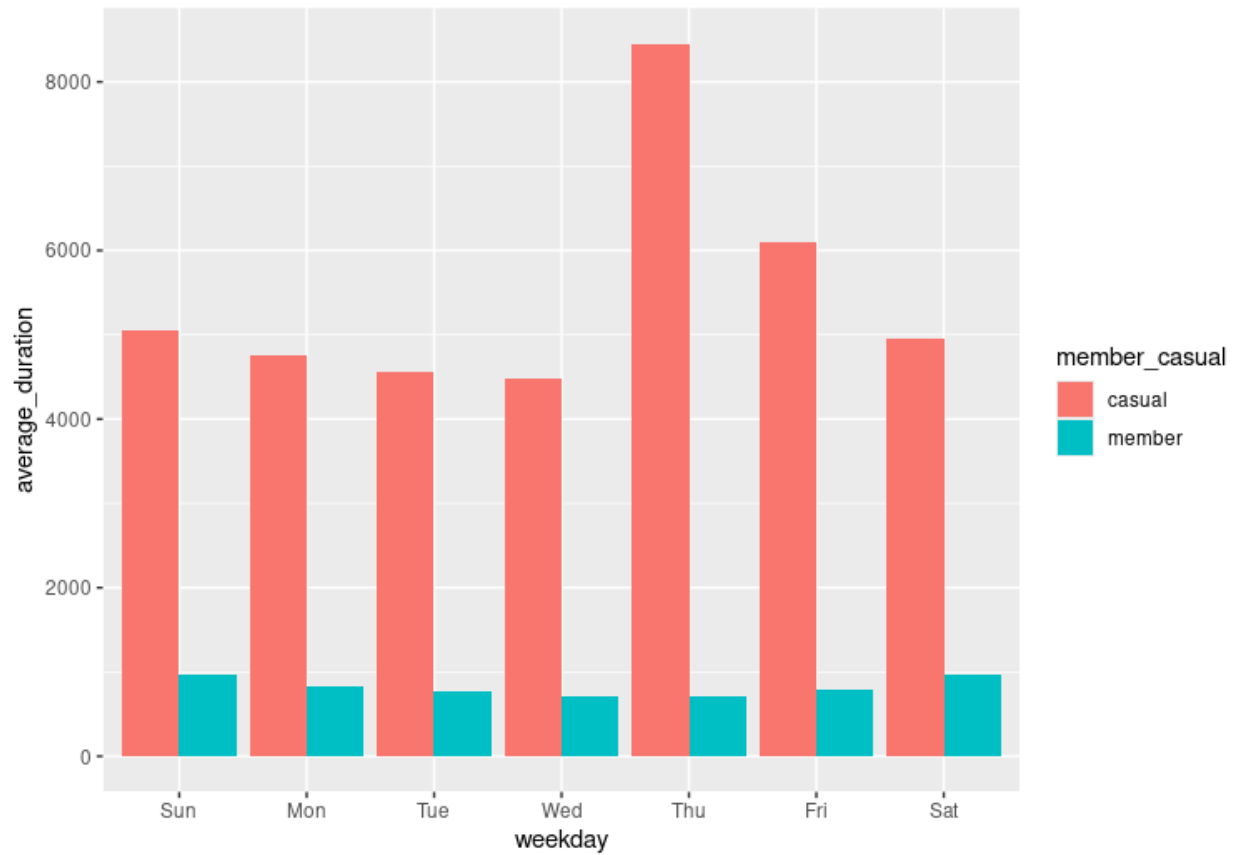
My findings show that a business strategy should be implemented to provide membership benefits for longer trips, in order to attract the attention of casual riders and possibly cause them to switch into becoming an annual member.

*Who is your audience? What is the best way to communicate with them?*

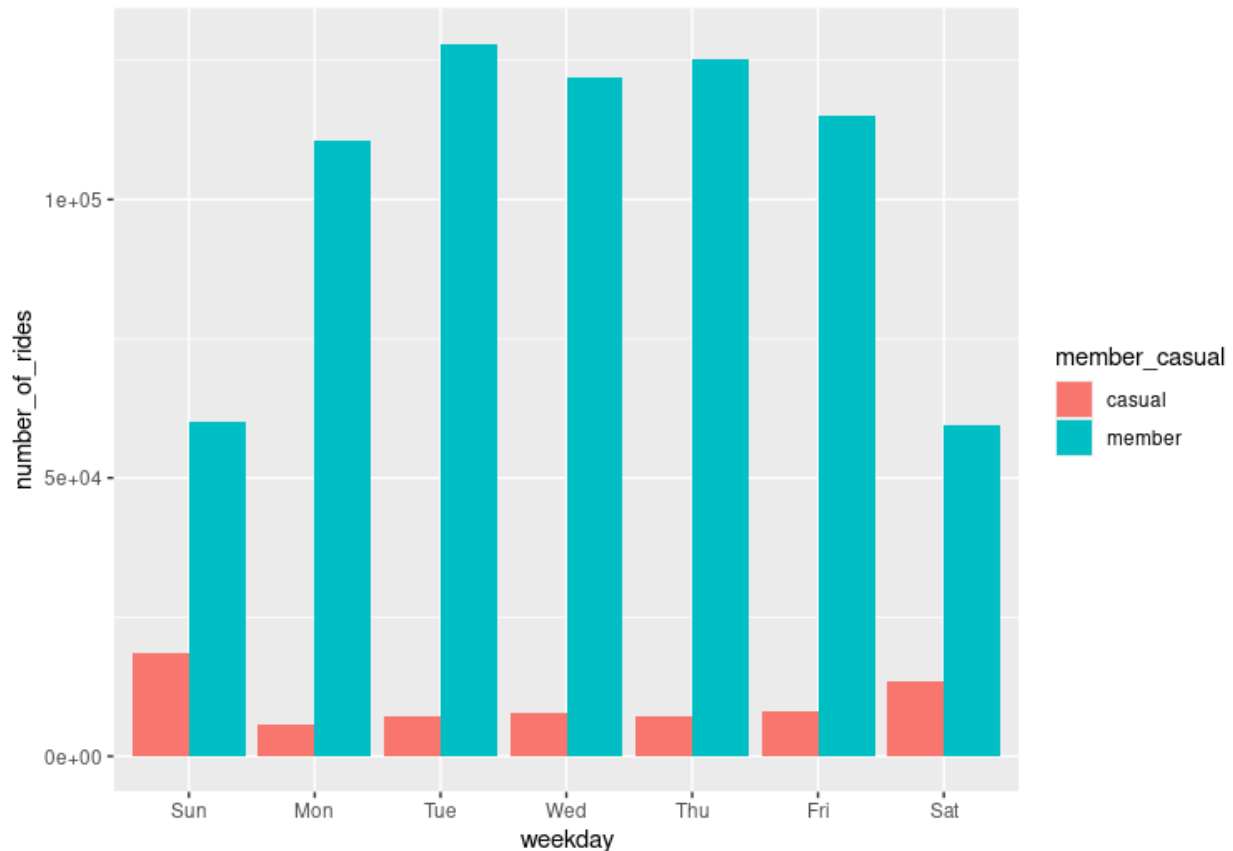
My audience for these visualizations will be the Executive and Marketing Teams at Cyclistic. This makes it important for me to provide a visualization that is simple and easy to understand, but also gets the point across clearly. Thus, the best way to communicate with them would be through charts and graphs that use color to distinguish between rider types.

## Visualizations:

Average trip duration (in seconds) over the course of the week:



Number of rides over the course of the week:



## Act

### Recommendations:

1. Set up a **rewards system** that provides benefits for going on longer trips. (BOGO, discounts, etc.)
2. Provide competitive challenges in the membership program, as well as the option to see the activity of other friends.
3. Educate casual riders about how members are achieving their fitness goals by doing much lower trips weekly, and imply that there are lessons and extra content that will help them achieve the same results if they join the membership.

*Is there additional data you could use to expand on your findings?*

Yes, it would be great to confirm whether a large portion of casual riders are health cautious, or are just using the bikes for entertainment purposes. This would

help with deciding which strategies to implement in the membership program that riders will find attractive.