Cyclistic Case Study

How does a bike-share navigate speedy success?

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Ask

Business Task

Cyclistic, a bike-share company in Chicago, aims to increase its number of annual memberships. The marketing team has identified that understanding the differences in usage patterns between casual riders and annual members is key to achieving this goal. By analyzing these differences, the team can develop targeted strategies to convert more casual riders into long-term members.

The primary objective of this analysis is to **examine how casual riders and annual members use Cyclistic bikes differently**, focusing on factors such as ride duration, popular days and frequency of use. These insights will guide the marketing team in designing data-driven campaigns that highlight the benefits of an annual membership.

Stakeholders:

- **Lily Moreno** (Director of Marketing) – Oversees the strategy.
- **Cyclistic Marketing Analytics Team** – Conducts data analysis.
- **Cyclistic Executive Team** – Approves the marketing plan

Prepare

Data Sources

The data for this analysis comes from **Cyclistic's historical trip records**, provided by **Motivate International Inc.** under a public license. The dataset includes trip details such as ride ID, start and end times, trip duration, bike type, and user type (casual or member).

The data is **organized in CSV format**, with each row representing an individual bike trip. It has been verified for integrity by checking for missing values and inconsistencies. Personal identifiable information is excluded to ensure privacy compliance. This means that it is not possible to connect pass purchases to credit card numbers to determine if casual riders live in the Cyclistic service area or if they have purchased multiple single passes.

To maintain credibility, only official data sources are used, ensuring reliability and relevance. The dataset enables the identification of key usage patterns to support Cyclistic's marketing strategy.

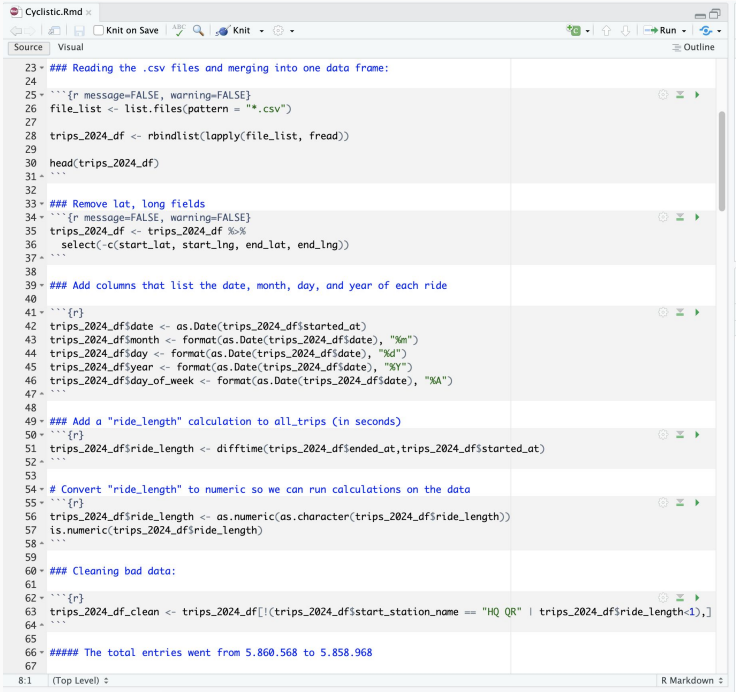
Process

Cleaning and manipulating data

After attempting to upload the data to Google Sheets, I realized it exceeded the tool's processing capacity. To handle the large dataset efficiently, I opted to use **Posit's RStudio Desktop** for data cleaning and manipulation.

With RStudio, I removed rows containing blanks and null values and identified inconsistencies, such as negative values in the **"ride_length"** column. As a result, the total number of entries was reduced from **5,860,568 to 5,858,968**.

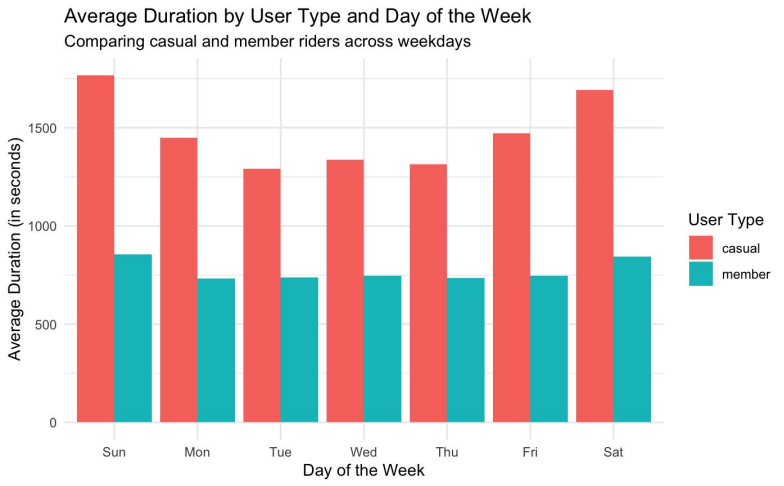
Additionally, I created new columns to extract the **date, month, day, and year** of each ride, along with a refined **"ride_length"** column to facilitate later calculations.

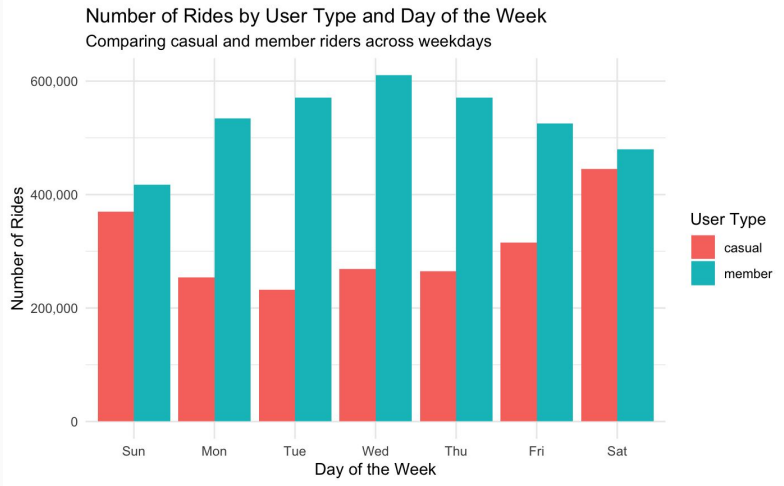


Analyze

Analysis Summary

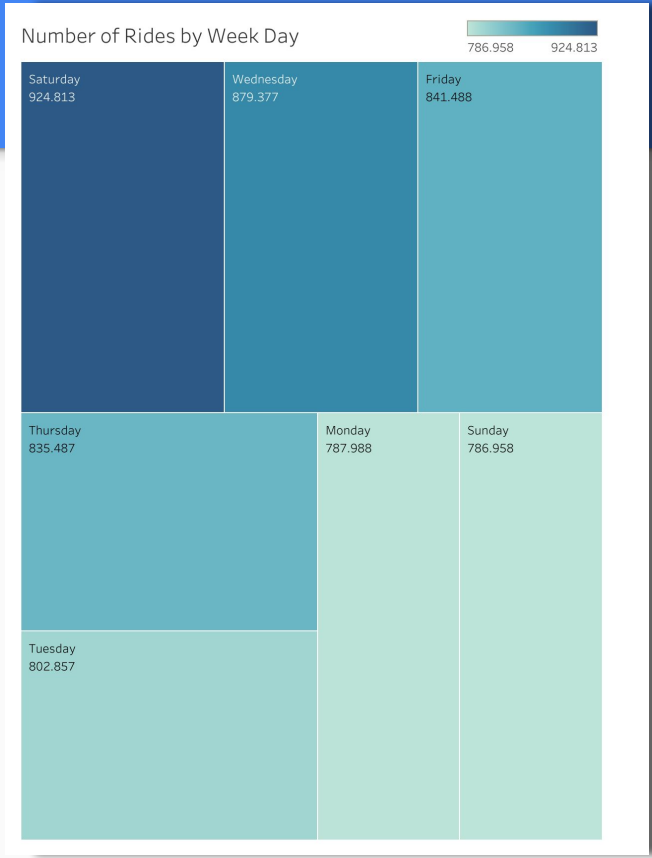
Part of the analysis involved calculating the **mean, median, maximum, and minimum ride lengths** for both members and casual users. Additionally, I determined the **average ride length** and **total number of rides** for each user type across different days of the week.

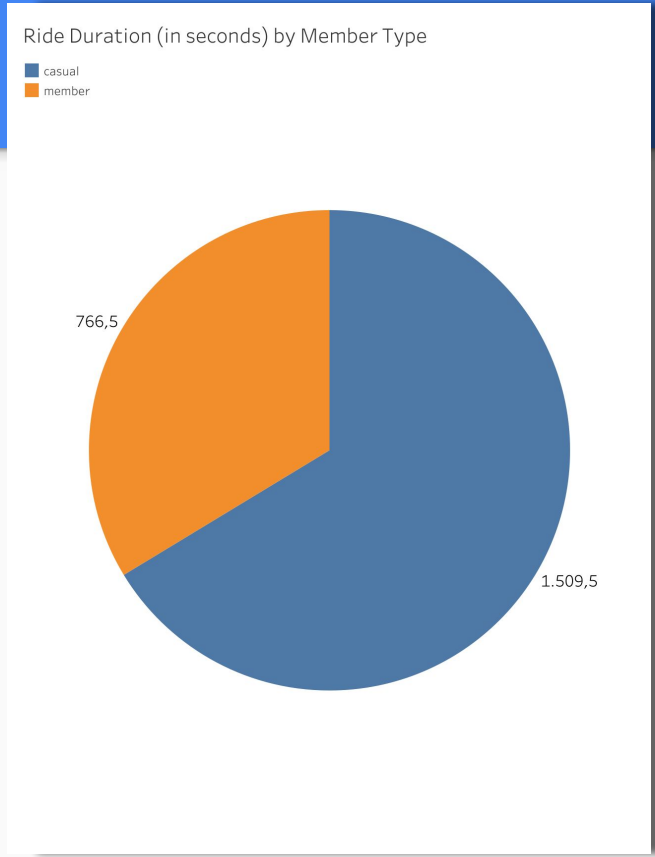




Share

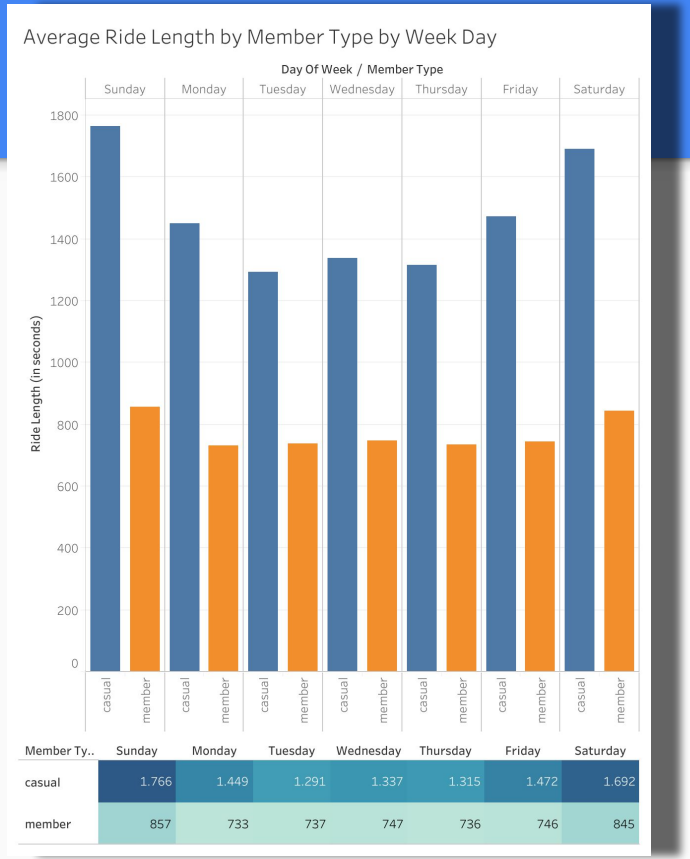
Visualizations





Key Findings

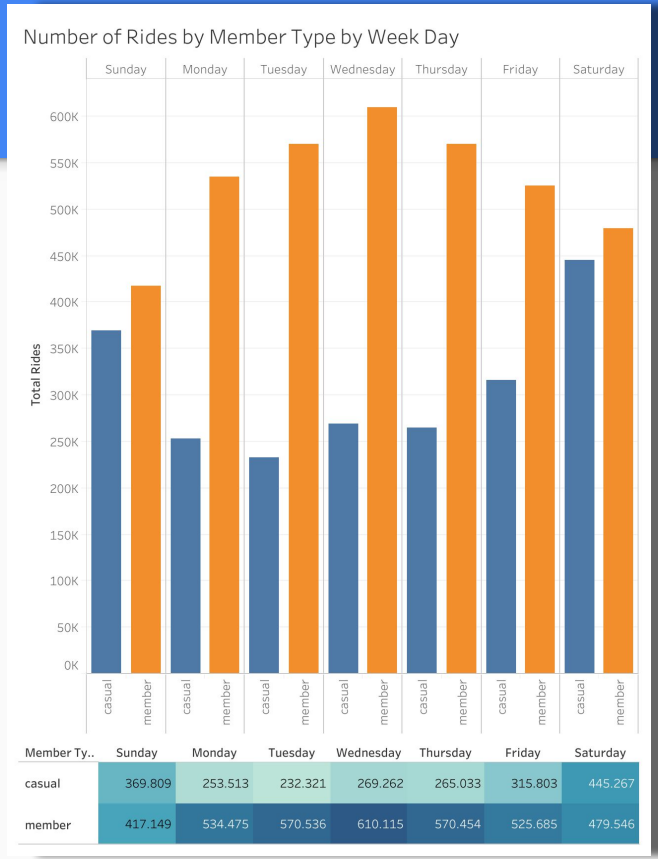
- Casual users tend to have longer ride durations compared to members.
- Ride lengths increase on weekends, peaking on Sundays for both casual riders and members.
- From Monday to Friday, members maintain a consistent average ride duration, suggesting they primarily use the bikes for commuting.



Member Ty..	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
casual	1.766	1.449	1.291	1.337	1.315	1.472	1.692
member	857	733	737	747	736	746	845

Key Findings

- When it comes to ride frequency, members take more trips than casual users.
- Members' rides peak on weekdays, with Wednesday seeing the highest activity, while casual users ride more on weekends, peaking on Sunday—similar to average ride length trends.
- This suggests distinct usage patterns: members likely use the service for commuting, whereas casual riders primarily use it for leisure.



Member Ty..	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
casual	369.809	253.513	232.321	269.262	265.033	315.803	445.267
member	417.149	534.475	570.536	610.115	570.454	525.685	479.546

Act

Conclusion and recommendations

The analysis reveals distinct usage patterns between Cyclistic's **casual riders and annual members**. Members take more trips, primarily using the service for commuting, with peak usage on weekdays—especially Wednesdays. Casual riders, on the other hand, take fewer but longer rides, mostly on weekends, peaking on Sundays. These trends indicate that **members rely on the service for daily transportation, while casual users primarily ride for leisure.**

1. **Develop promotional offers** for casual users, such as discounted first-month memberships or weekend-exclusive incentives.
2. **Introduce a Weekend Membership Plan:** Since casual users ride more on weekends, Cyclistic could offer a weekend-specific membership at a lower price. This plan could serve as a bridge to encourage casual riders to transition to full annual memberships.
3. **Personalized Marketing Campaigns:** Utilize targeted email and app notifications to promote membership benefits, emphasizing **cost savings, unlimited rides, and convenience**—especially for casual users with frequent weekend rides

Links

- Kaggle Notebook
- Tableau Public Project

Thanks!

Contacts:

Email
Github
Linkedin