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

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Project Overview

- This report analyzes the ride duration to identify the patterns of annual members and casual riders, and the data used was from the ride logs collected in the first month of 2023 and the first month of 2024.

- The key findings:

✓ Average ride duration is 32:07 minutes in 2023 and 22:07 in 2024
✓ The annual membership usage increased and the casual rider usage decreased
✓ Some rides show negative duration due to logging errors

- The data suggests that the annual membership usage has increased from 2023 to 2024, indicating that the casual riders are using the Cyclistic bike-share services less. The company should device a strategy to increase the casual riders and highlighting the benefits of being an annual member, in order to convert them.

Introduction

- Cyclistic bike-share is a bike program that features more than 5,800 bicycles and 600 docking stations, it offers reclining bikes, hand tricycles and cargo bikes, making bike-share more inclusive to people with disabilities and riders who can't use a standard two-wheeled bike. The majority of riders opt for traditional bikes; about 8% of riders use the assistive options. It's users are more likely to ride for leisure, but about 30% use the bikes to commute to work each day.

- There are single-ride passes and full-day passes, which are purchased by casual riders, and Cyclistic members who purchase the annual memberships. Annual members are much more profitable than casual riders, the company believes that maximizing the number of annual members would be the key to future growth.

- The goal is to design marketing strategies to convert casual riders into annual members. To do this it's better to understand how annual members and casual riders differ, what would make casual riders buy a membership.

Data description and methodology

- The data has been made available by Motivate International Inc. as public data. We used time logs which has start stations and end stations, these time logs were stored in excel spread sheets. Since the data had shown negative durations, time formats were converted from 24 hours to decimal times, filtering blanks and proper labelling of the columns.

- The time log data was stored on a spread sheet and converted to excel sheets in order to perform calculations. After cleaning and filtering the data pivot tables where constructed to be able to compare the different types of users.

Analysis and findings

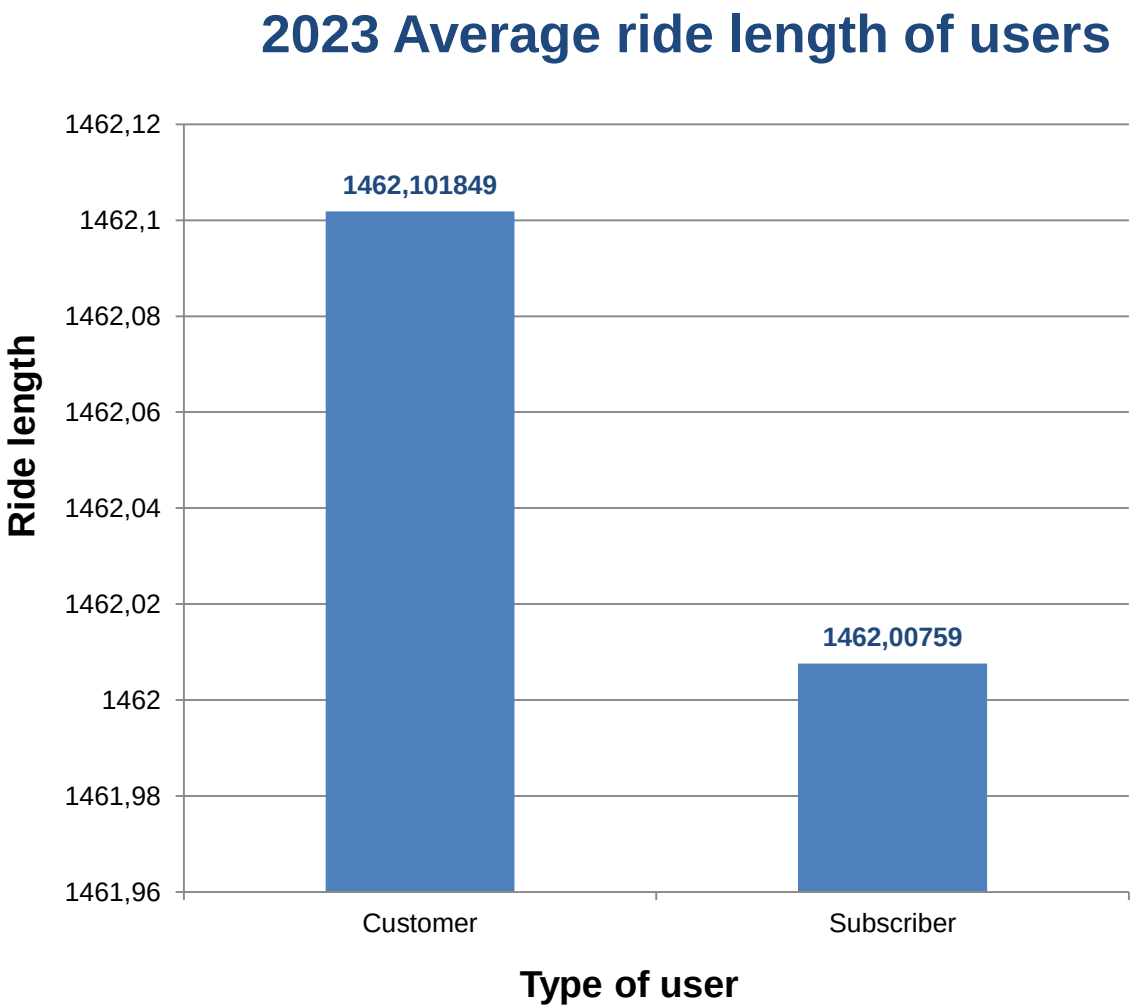
- Ride length distribution (times) and outliers

	Minimum ride length	Maximum ride length	Average ride length
2023	01:40	07:14:26	32:07
2024	-09:12	15:30:24	22:07

We calculated the minimum, maximum and average ride length for each year. The negative minimum ride length shows there might have been a time log error or the error occurred during the conversion of the data into excel sheets.

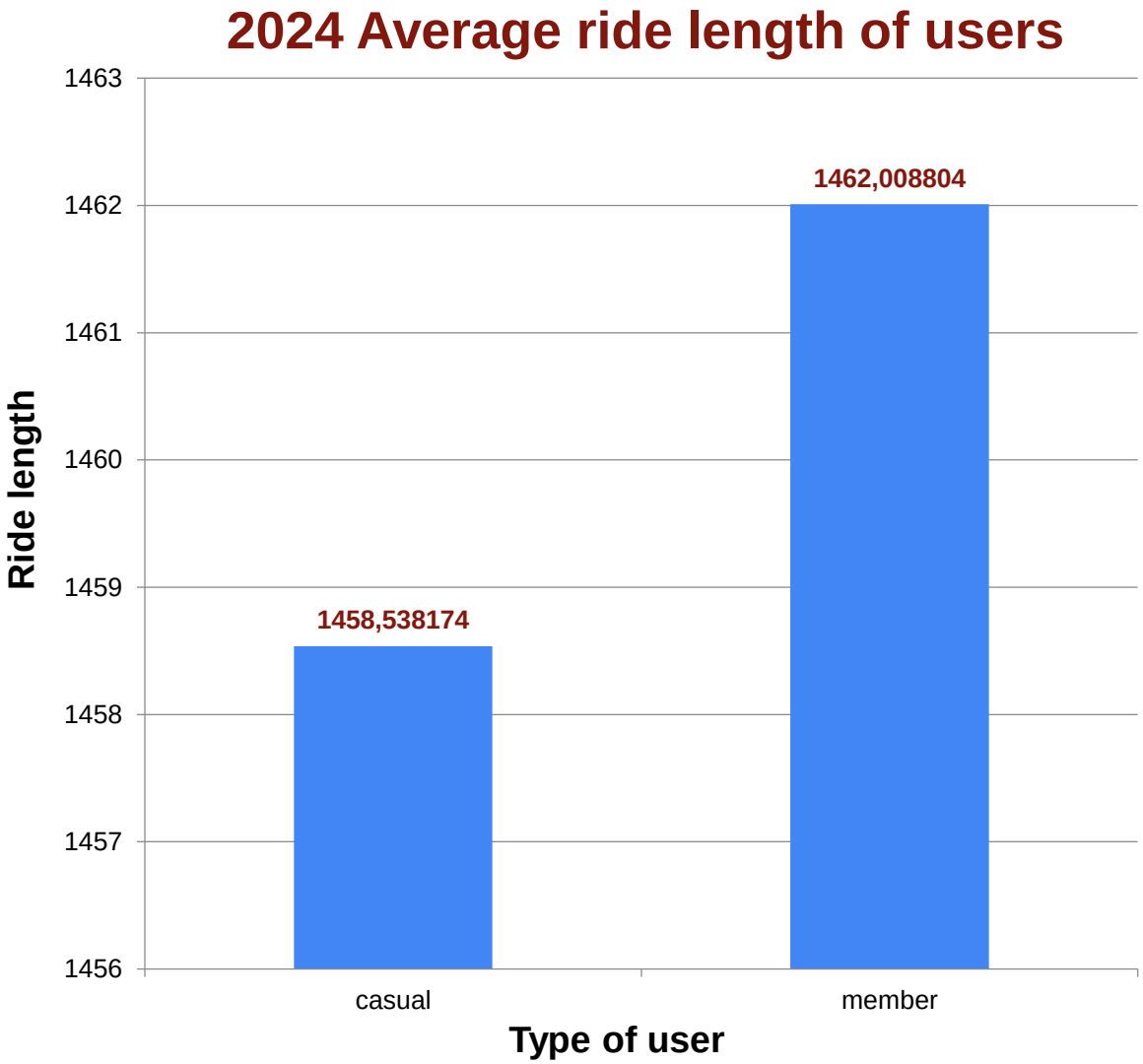
Charts

The average ride length of casual riders is more than that of the members, meaning they used bike-share services more/longer during the first month of 2023. This is visible by the value difference of 0,094259 in the ride lengths.

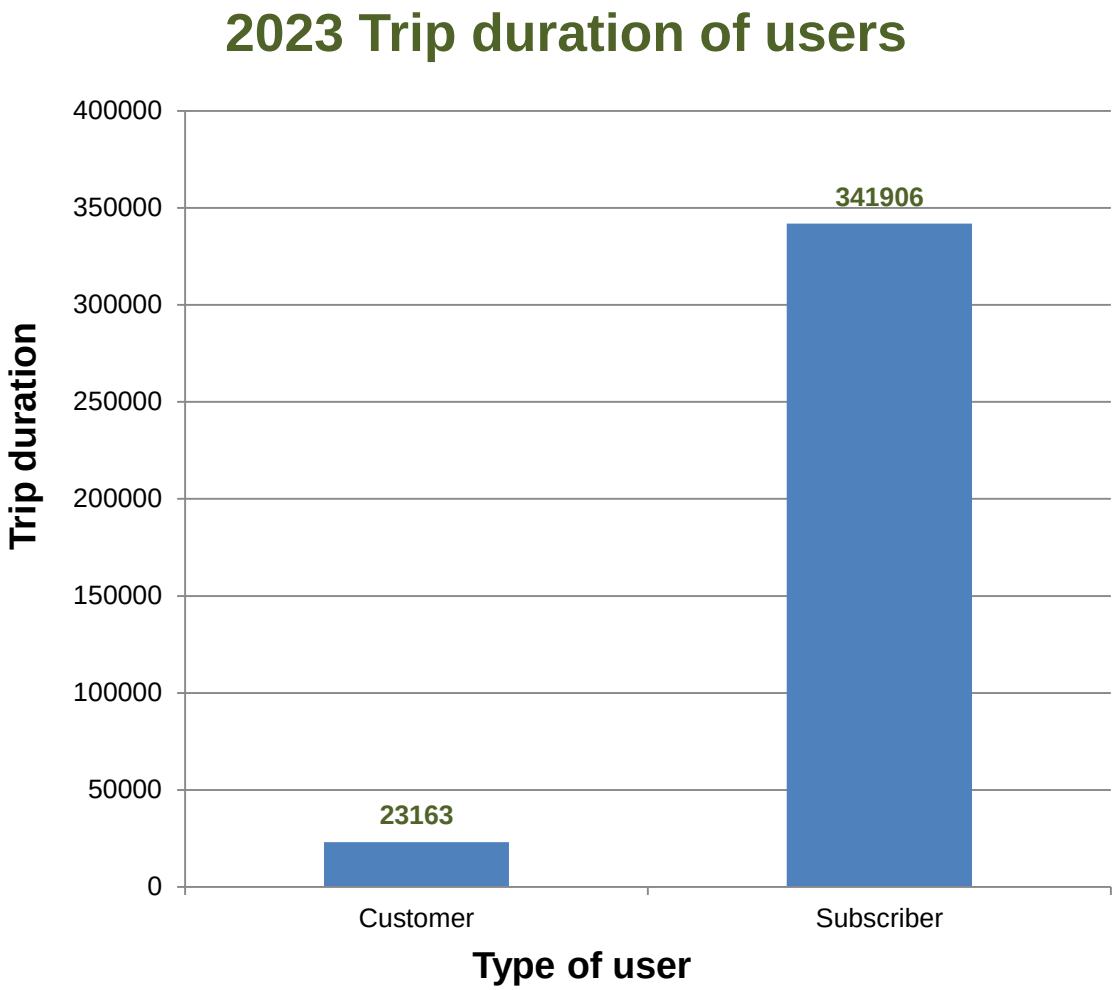


Please note that "Customers" are casual riders and "Subscribers" are annual members.

That changed during 2024 as members' average ride length rose to 1462,008804, we see a 0,001214 difference for members and 3,563675 difference in casual riders.



Meaning there was a significant drop in terms of casual riders and only a minor increase by the annual members, although members spent more time during the trips in 2023.



Looking Ahead

- Since there was a significant drop in casual riders' usage and only a minor increase by the annual members' usage, marketing campaigns should target both the casual members and annual members. The annual members spent more time during the trips in 2023 but ride lengths shows a different story, we can then investigate further by looking if annual members were riding for leisure or commuting to work during that time.

- Time logging systems should also be improved by determining both the times and distances on each rider, to avoid time logging errors and eliminate any discrepancies in the data logged.

Conclusion

In this case study, I used the Cyclistic bike-share company data to evaluate how casual riders and annual members use of the services differently; determine trends and theorize what was causing them. I was then able to device a corrective action plan based on those findings. The investigation has yielded proof that they do use them differently, and there is a huge drop in usage by the casual riders.