CYCLISTIC BIKE-SHARE ANALYSIS

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November 2022

Hello!

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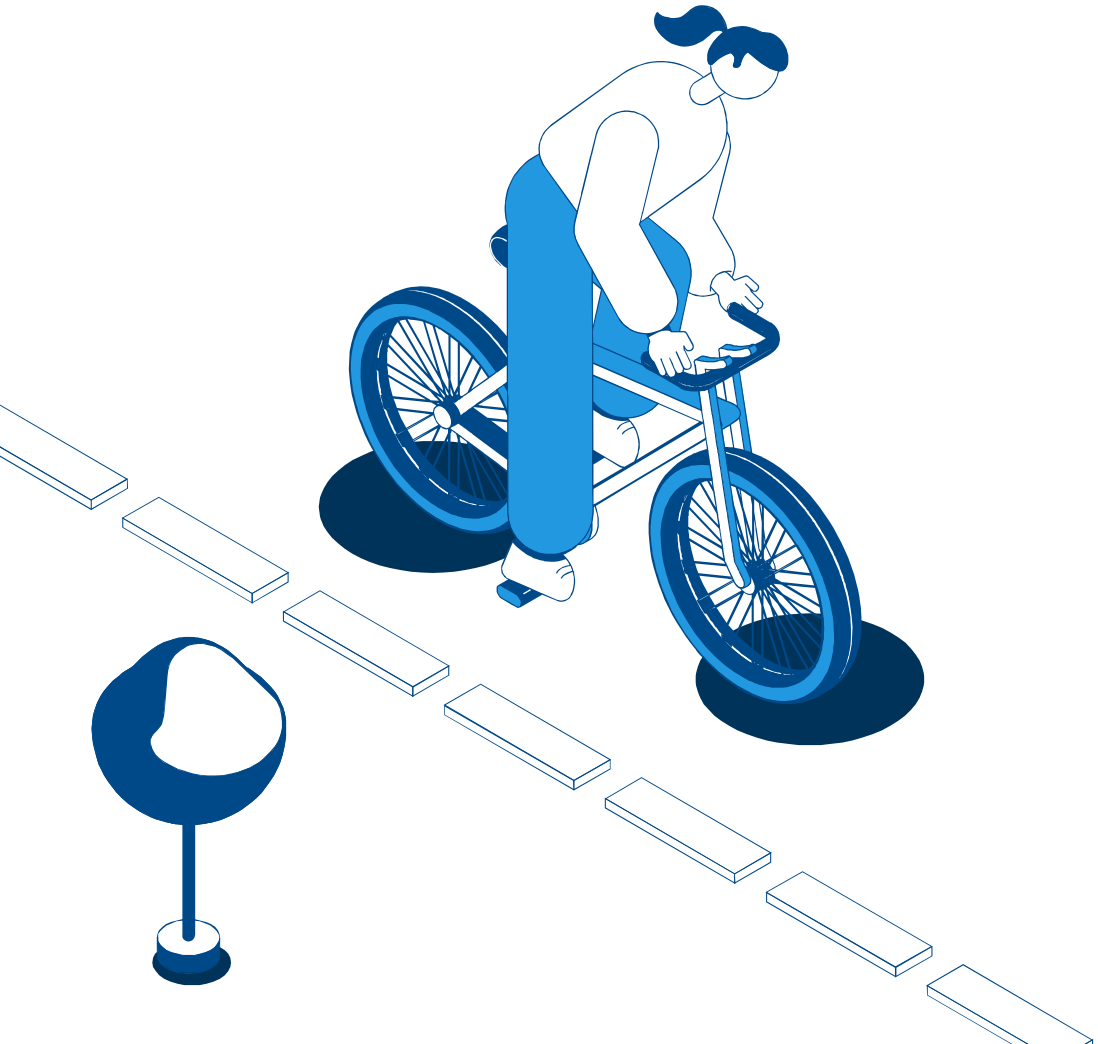

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Project Background

Company Overview

Cyclistic is a bike-sharing company in Chicago that features more than 5,800 bicycles and 600 docking stations. Cyclistic users are more likely to ride for leisure, but the users also use them to commute to work each day.

Customer Segmentation

Casual

purchases single-ride or full-day passes

Member

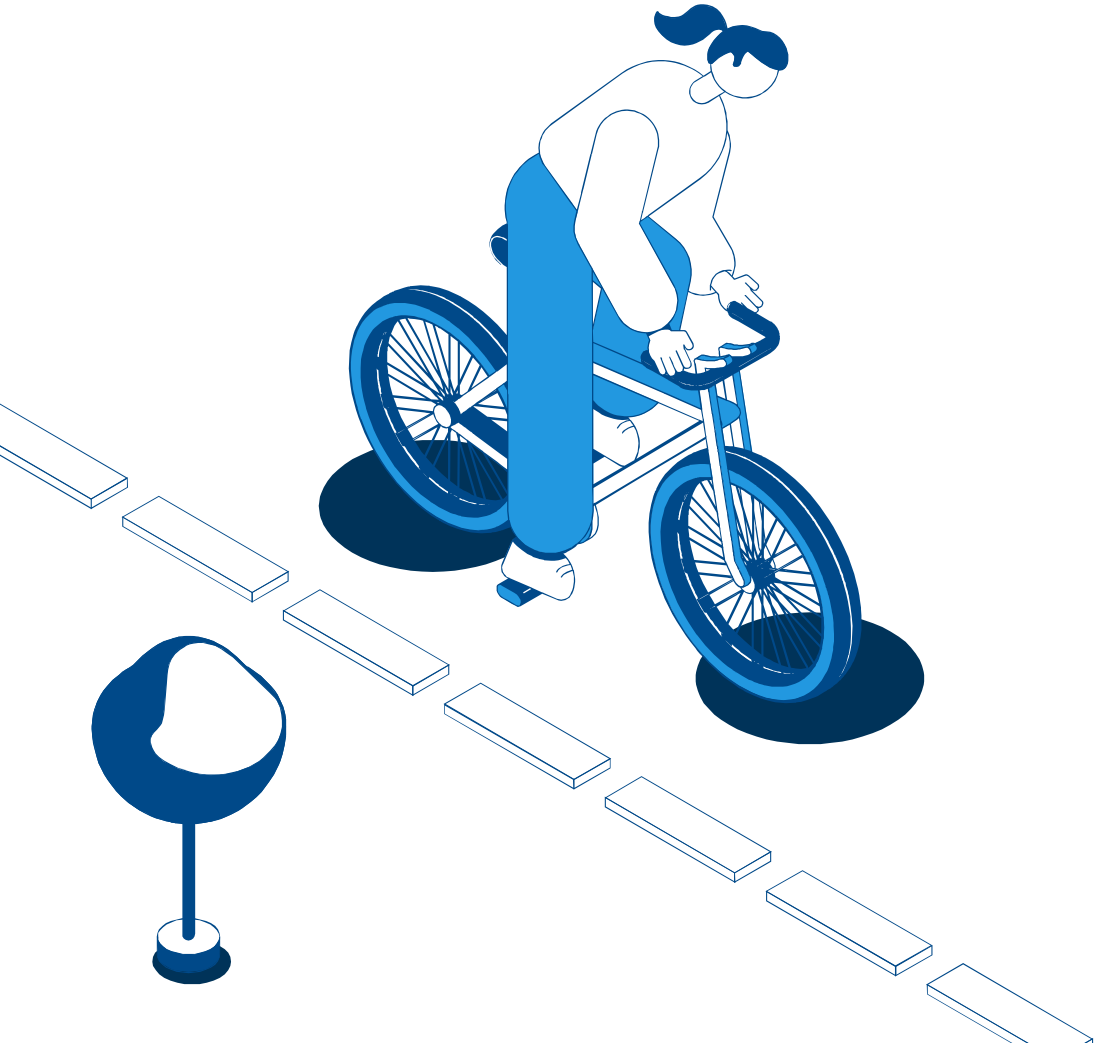
purchases annual memberships

Although the pricing flexibility helps Cyclistic attract more customers, Cyclistic believes that **maximizing the number of members** will be key to future growth.

Data Overview

The dataset was obtained from City of Chicago's Divvy, a bicycle sharing service operated by Lfyt Bikes and Scooters, LLC. The bike trip data can be downloaded here. The data has been made available by Motivate International Inc. under this license.

The analysis will covers previous 12 months of historical trip data, starting from October 2021 through September 2022. It includes information on **type of bicycle, date and time of a trip, and the type of rider membership (casual or member) for each trip.**



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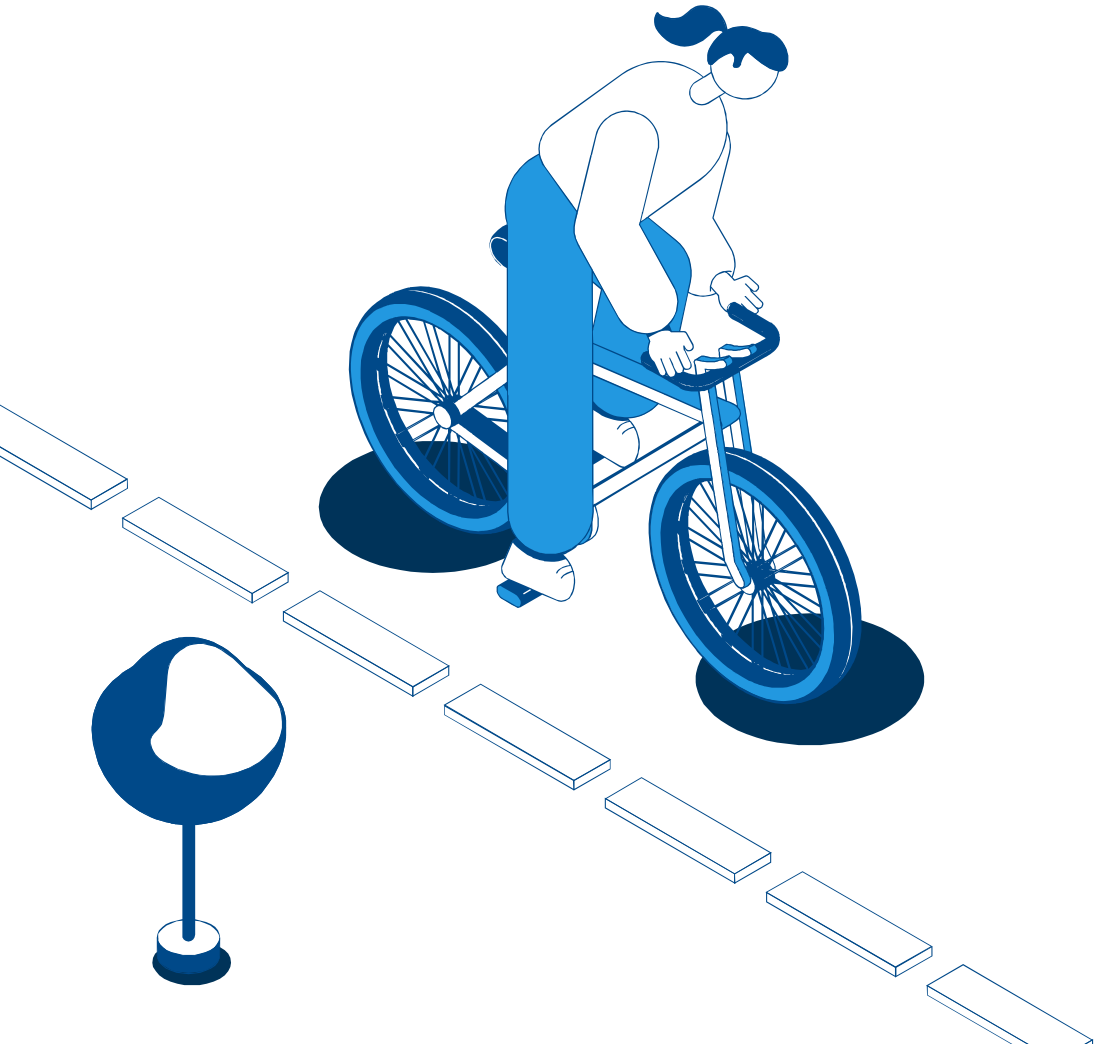
Project Goal

Problem Statement

Convert casual riders into Cyclistic members

Business Task

- Analyze how casual riders and annual members behave differently.
- Support stakeholder to make data-driven decision-making to create campaign or strategies that attempt to convert casual riders into Cyclistic members.



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Data Preparation

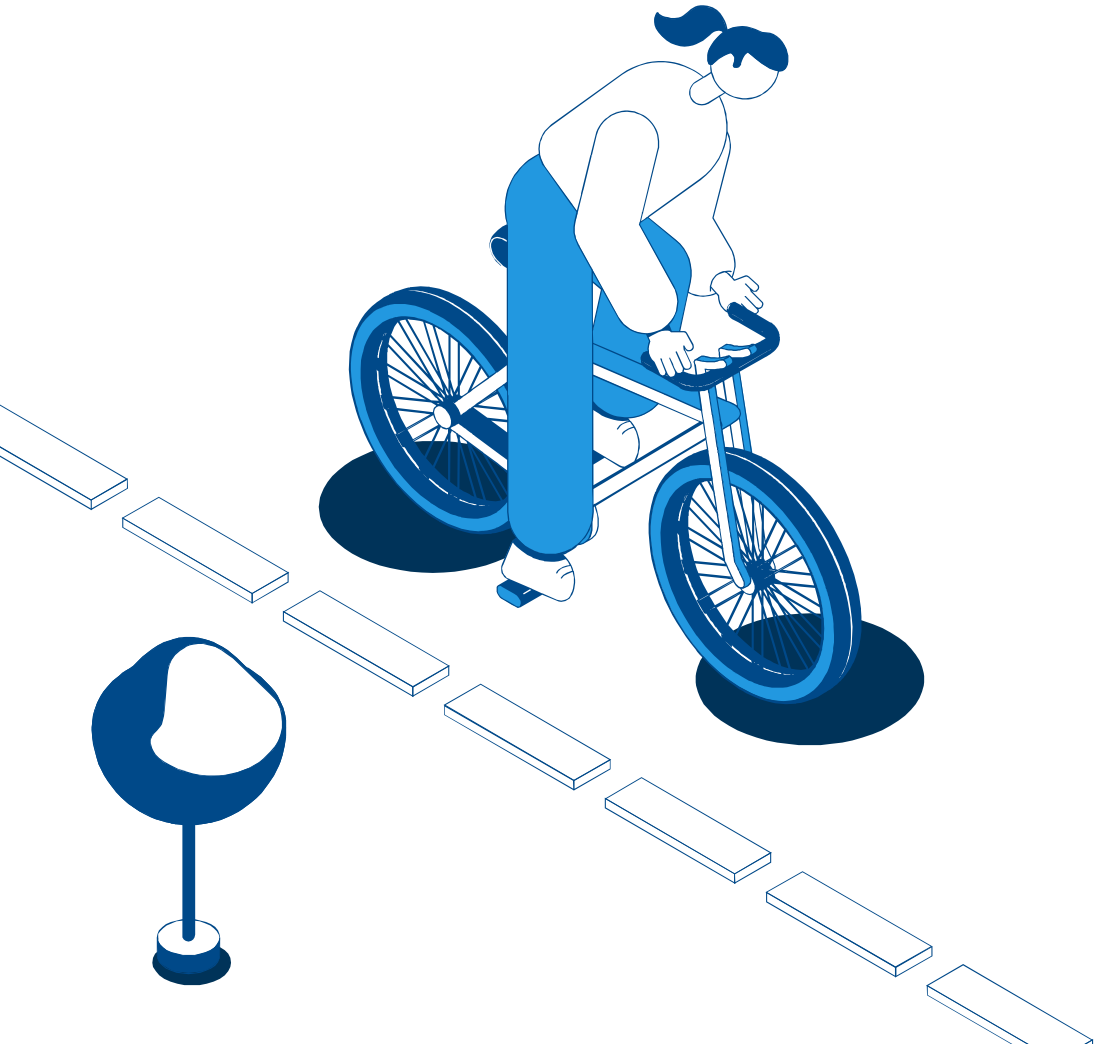
Data Source

The dataset consist of **5,828,234 rows**

Primary Key	Ride ID
Bike Type	Type of bike
Date and Time	Date and time of trip started, Date and time of trip ended
Bike Station	Start station name, Start station ID, End station name, End station ID, Latitude of start station, Longitude of start station, Latitude of end station, Longitude of end station
Membership	Membership status (casual or member)

Data Processing

- Check for missing values
- Check for duplicate values
- Create new column based on date and time of the trip:
  - Month of the trip
  - Season of the trip
  - Day of the trip
  - Time (hour) of the trip
  - Ride duration
- Check logic of ride duration; remove rows that has ride duration less than 0 minutes.



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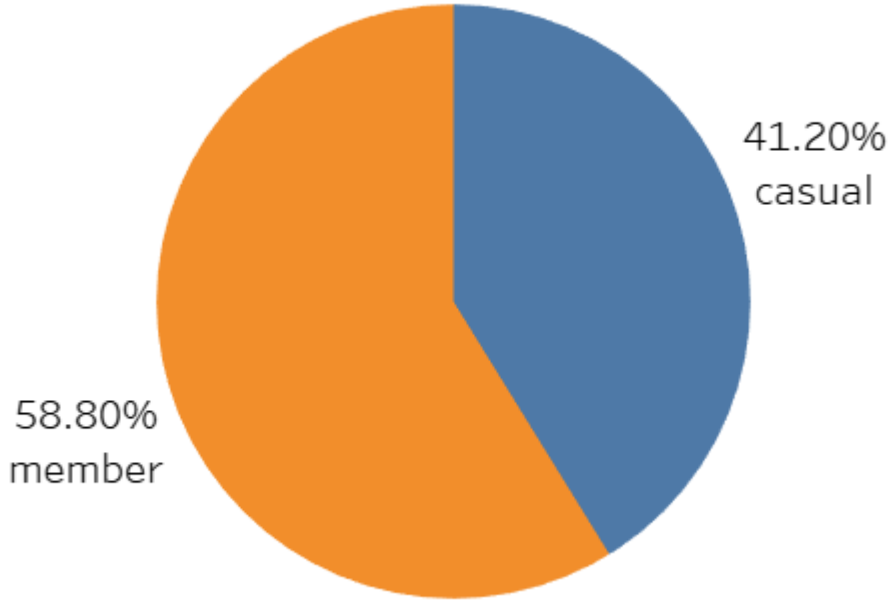
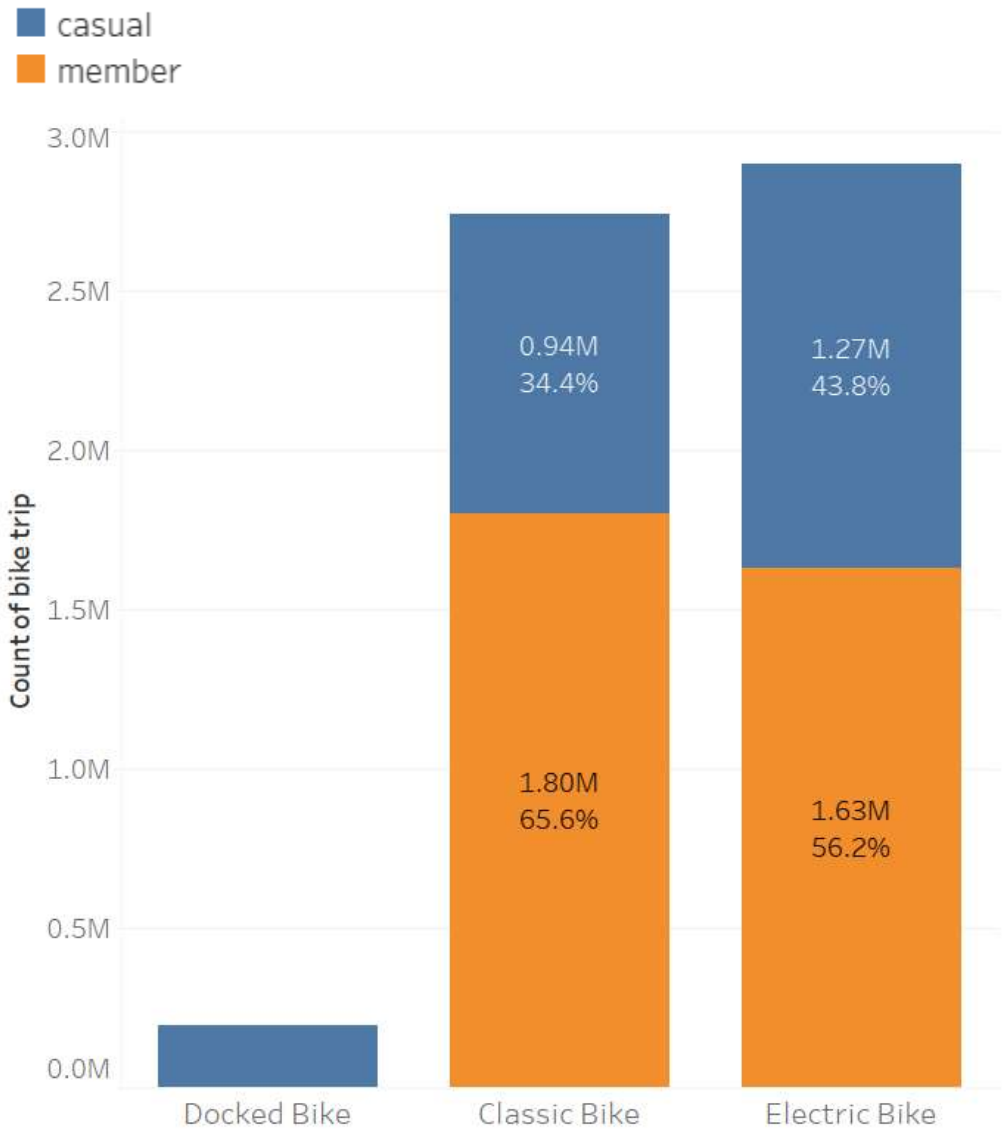
Data Analysis and Visualization

5.8M trips

In the last 1 year



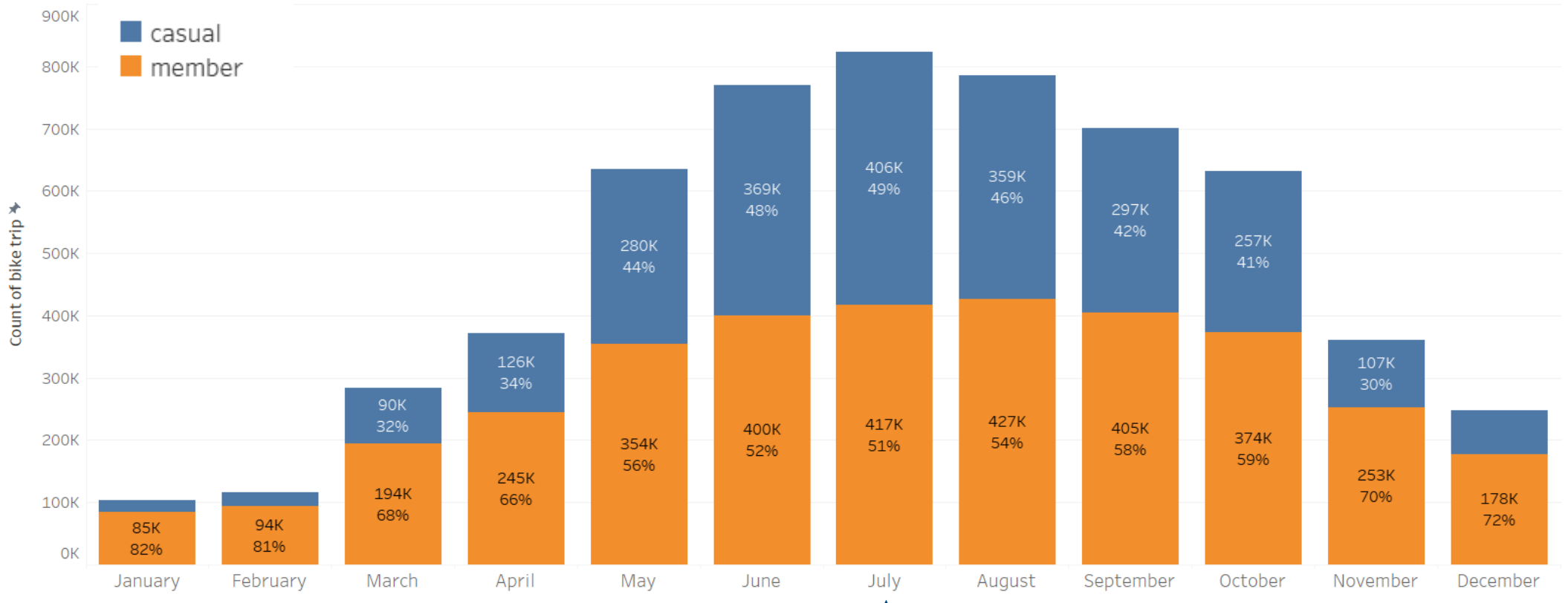
Most of the trip are by Cyclistic member



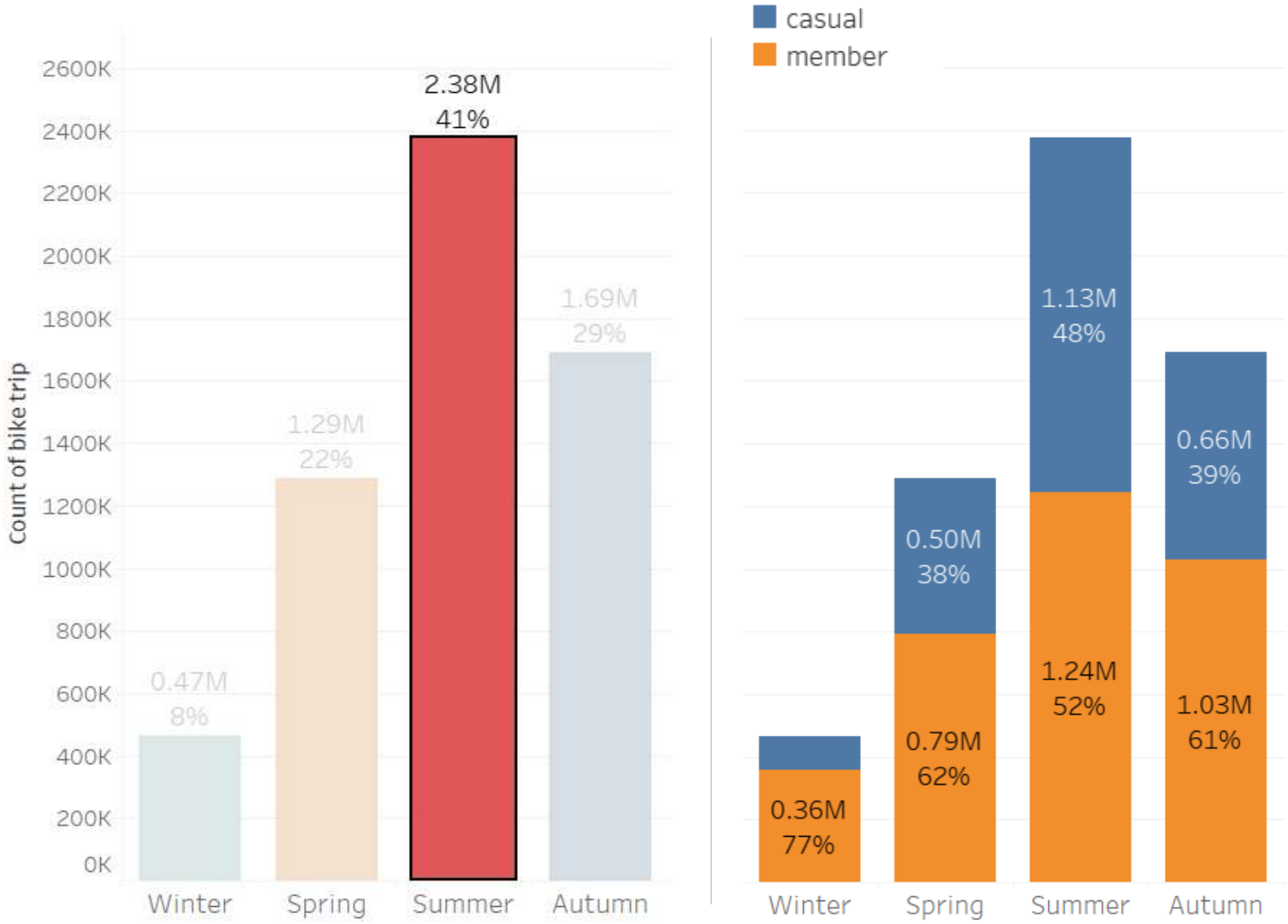
Electric Bike is the most used bike

- Member riders used more Classic Bike than Electric Bike.
- On the opposite, casual riders used more Electric Bike than Classic Bike.

Total trips by month



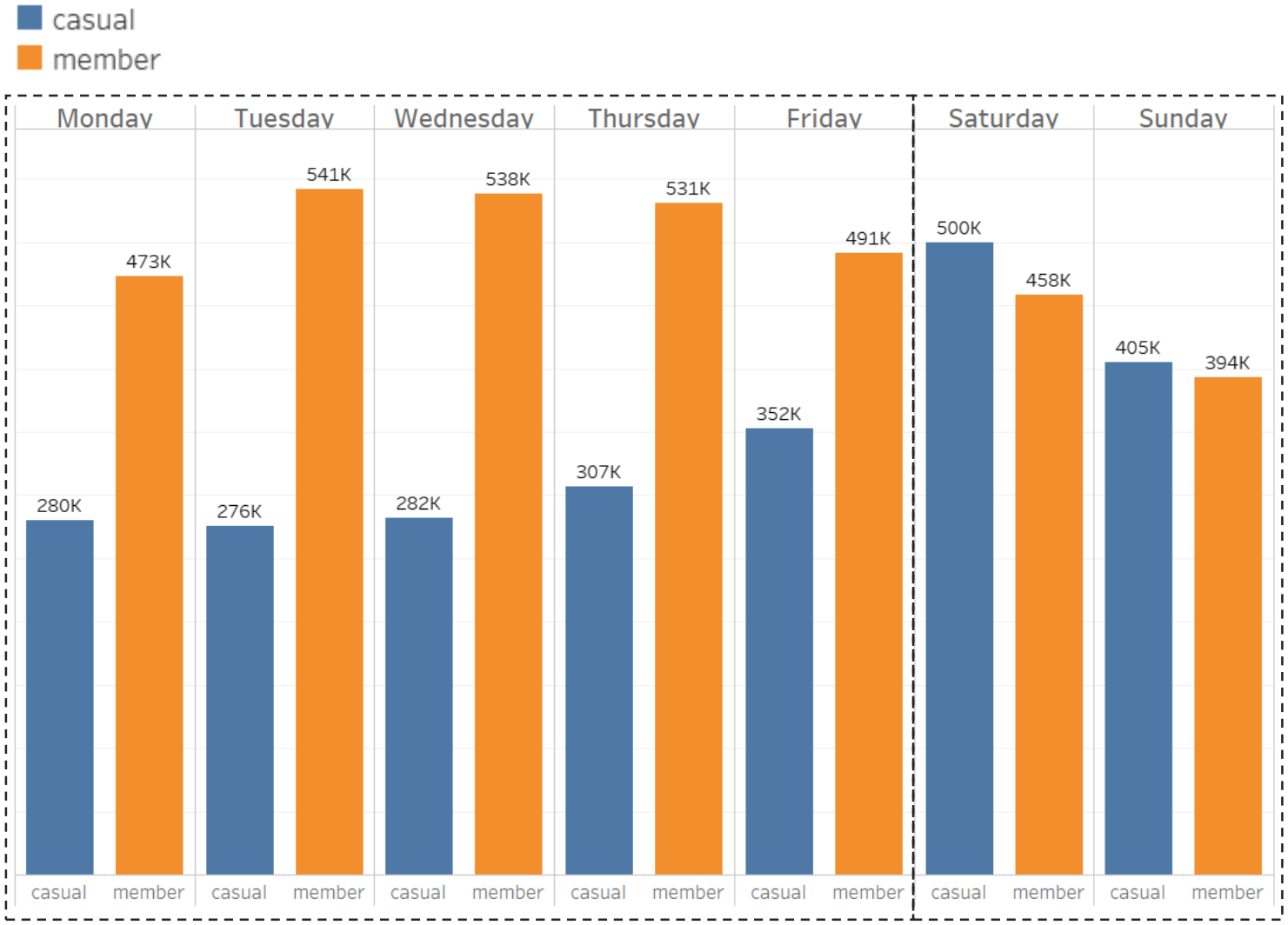
- July is the month with the highest total trips.
- There is a substantial increase of casual riders trip from May through October.
- January and February marks the lowest months with total trips of the year.



41% of trips occurred in summer

- The high number of trips in summer are most likely caused by a significant increase of casual riders.
- In summer, the number of trips by casual riders are almost equal as those of member riders.

Total trips by day of week



Casual = Weekend

Member = Weekday

- Member riders dominates the trip during weekday. The number of trips gradually decrease after Tuesday, and reach its lowest on Sunday.
- Casual riders' trips are quite modest during weekday. However, **during weekend the number of trips increases significantly.**
- It can be concluded that member riders mostly rent a bike during weekday, and casual riders mostly rent a bike during weekend.

Total trips by hour of day

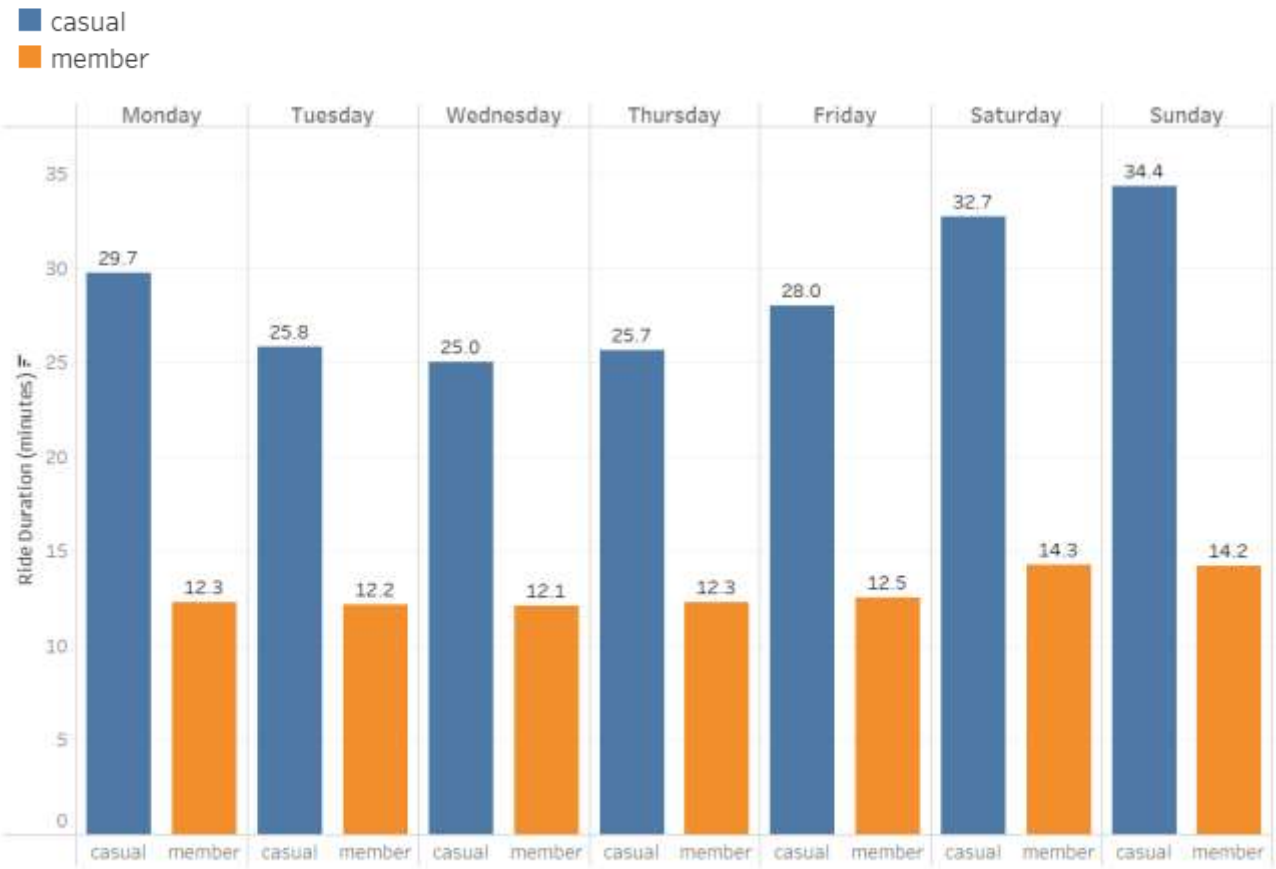
- There is a spike of increased trips at 8:00 and 17:00 for **member riders**.
- Considering those times are most likely be “rush-hour” for weekday workers, we can conclude that **member riders mostly used the bike to commute to work.**
- **Casual riders** trips start to increase from 5:00. It gradually increase over the time and reach its peak at 17:00.

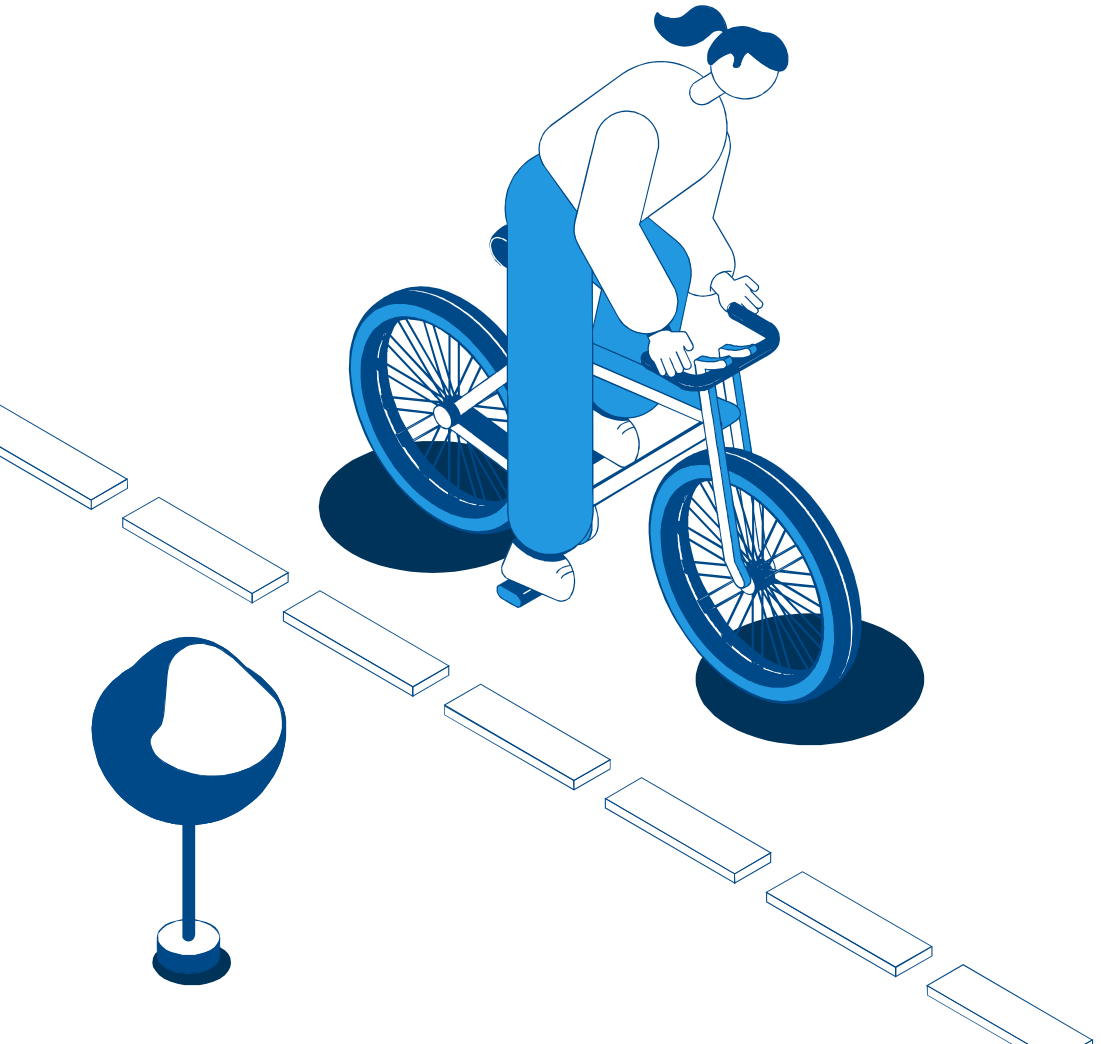
Average Trip Duration

Average Trip Duration
by Membership

Casual	Member
28 Minutes	12 Minutes

Casual riders used the bike longer than member riders, especially on weekend.





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Insight and Recommendation

Casual and Member Riders Differences

	Casual	Member
Bike Preference	Electric Bike	Classic Bike
Seasonality	Significant increase in summer season.	Moderately increased during summer.
Day of Trip Usage	Mostly during weekend.	Mostly during weekday.
Time of Trip Usage	Gradual increase from 5:00, reaches peak at 17:00.	“Rush hour” at 8:00 and 17:00, likely caused by commuting.
Ride Duration	Longer, especially during weekend.	Shorter, moderately consistent every day.

Business Recommendation

Introducing: The Weekend Pass

The Weekend Pass is targeted to **casual riders who mostly use a bike during weekend.**

The Weekend Pass will have lower price point than the Annual Pass, but can only be used during Friday, Saturday, and Sunday.

Reward Point based on Ride Duration

Casual riders used the bike **2.3 times longer** than current member riders.

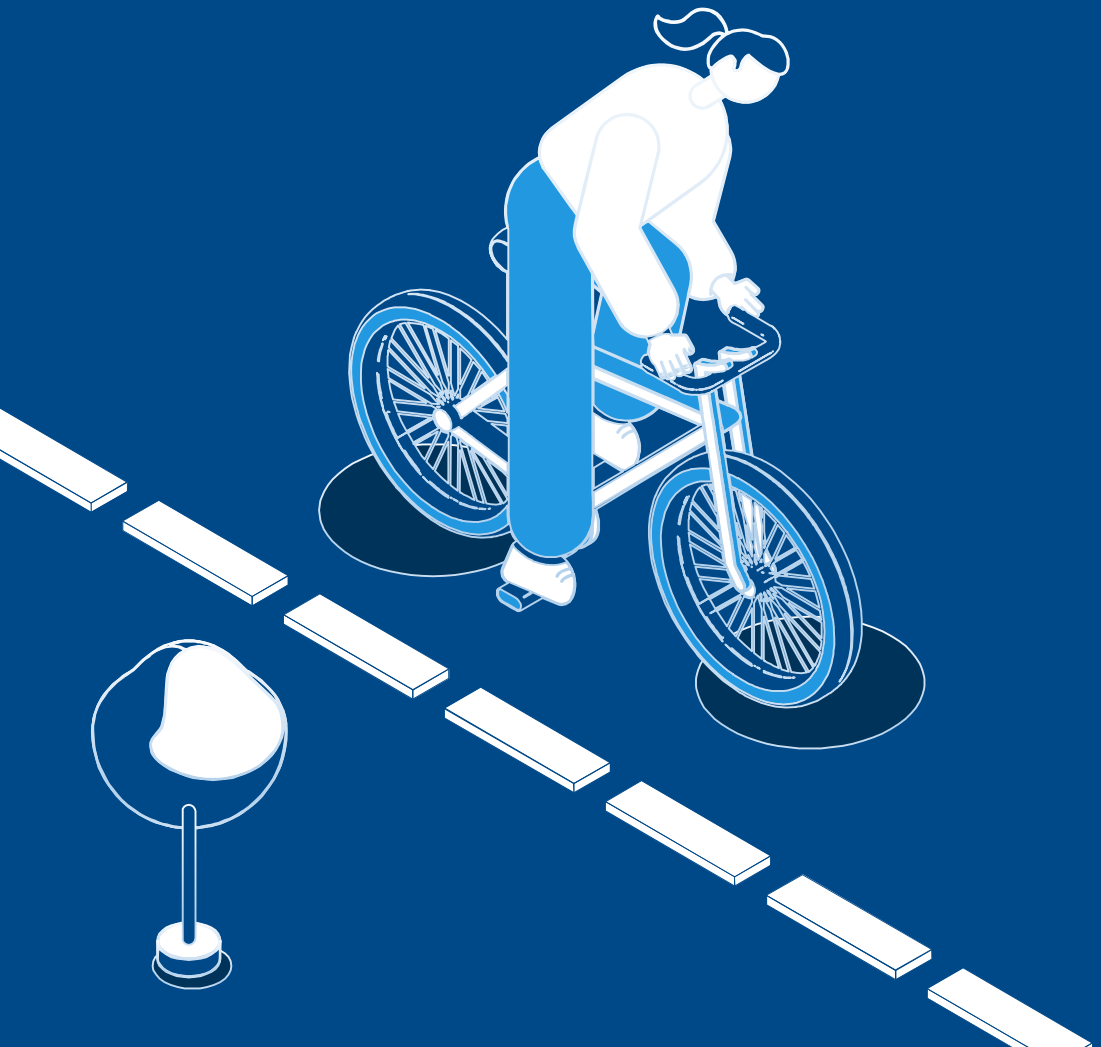
Casual riders will gain more benefit from this reward system.

Offer them membership discount based on accumulated ride-duration reward points.

Summer Campaign for Maximum Reach

The number of riders in summer are **1.8 – 5 times higher** than any other seasons.

This high amount of customers is suitable for Cyclistic marketing campaign; ads and promotions during this season could reach substantial amount of user base.



THANKS!

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Appendix

Python Jupyter Notebook