

# Cyclistic Bike-Share Analysis

Data Analyst Case Study

Prepared by : Krishita Solanki

Tools Used : SQL (Big Query), Google Sheets

# About the Project

## Company

**Cyclistic** is a Bike-Share Company that offers short term bike rentals through both casual rides and annual memberships.

## Context

Two main Customers:

1} *Casual Riders* -

Purchase single-ride or short-term passes.

2} *Annual Members* -

Subscribe to a yearly membership.

## Problem statement

1} To understand how casual riders and annual members use bikes differently.

2} Find ways to convert the casual riders into annual members.

# Business Questions

Question 1

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

Question 2

**Why would casual riders buy Cyclistic annual memberships?**

Question 3

**How can Cyclistic use digital media to influence casual riders to become members?**

| <b>Data Source</b> | <b>Description</b>  |
|--------------------|---|
| Dataset            | Cyclistic Bike Trip Data                                  |
| Content            | Start time, End time, Rider type, Trip Duration and more  |
| Purpose            | Analyze the riding behaviour of members and casual riders |

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| <b>Tool</b>    | <b>Purpose</b>                       |
|----------------|--------------------------------------|
| SQL(Big Query) | Data cleaning, aggregation, analysis |
| Google Sheets  | Pivot tables and data visualization  |

The analysis was conducted using SQL to aggregate trip data at different levels.

A Common Table Expression (CTE) was used to separate aggregation logic from calculation logic.

1} Monthly analysis was performed to identify *seasonal trends*.

2} Day-of-Week analysis was performed to understand the *weekday* and *weekend* riding behaviour.

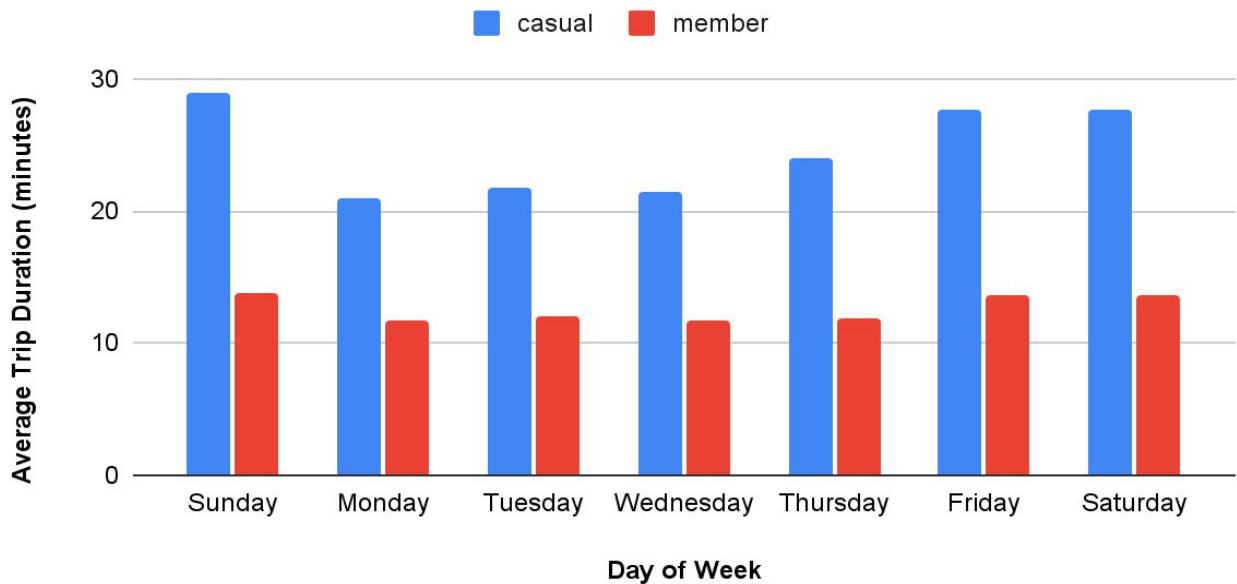
3} *Average* and *Median* trip durations were calculated to compare the rider behaviour.

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# Average Trip Duration by Day of Week :

Annual members show consistent trip durations throughout the week, indicating routine usage, while casual riders exhibit leisure-oriented behavior with long weekend rides.

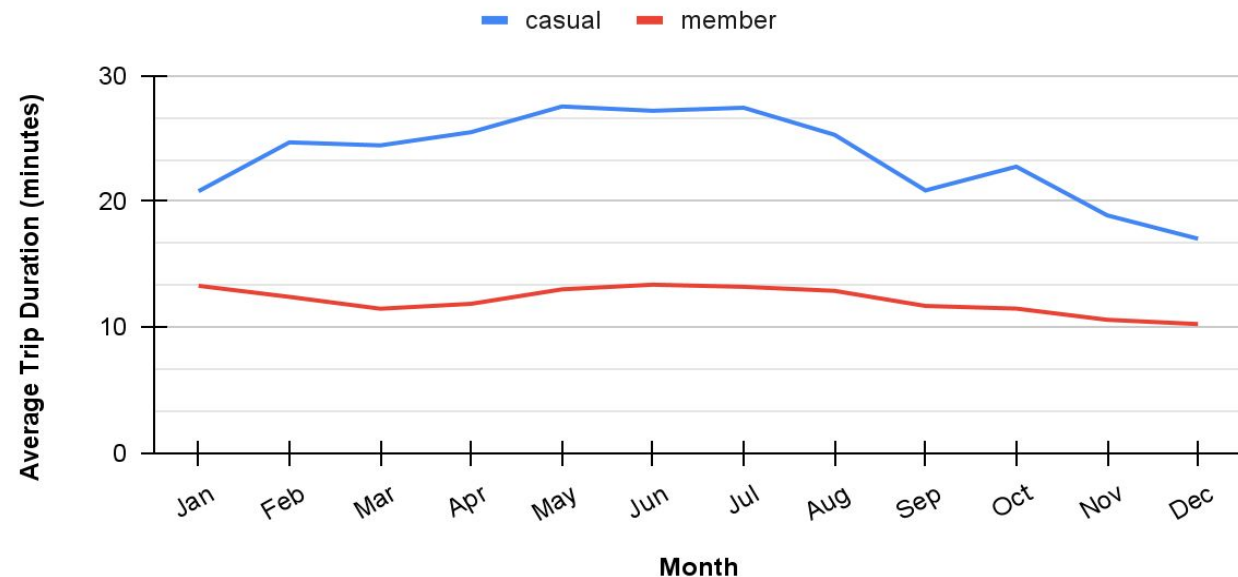
## Average Trip Duration by Day of Week: Members vs Casual Riders



# Average Trip Duration by Month :

Casual riders consistently take longer trips than annual members across months, with higher engagement during warmer seasons, while member usage remains relatively stable throughout the year.

## Average Trip Duration by Month(2024): Members vs Casual Riders



# Recommendations :

- Target Peak Months - Focus on digital membership campaigns during spring and summer when casual rider engagement is highest.
- Leverage Weekends - Promote membership benefits on weekends, when casual riders take longer leisure trips.
- Highlight Cost Savings - Emphasize how annual memberships are most cost-effective for frequent and long-duration rides.
- Personalize digital outreach - Use ride frequency and duration to identify and target high-engagement casual riders with membership offers.



# Conclusion!

Casual riders and annual members show distinct riding behaviors. While annual members show consistent and routine usage; casual riders exhibit longer and seasonally driven trips particularly on weekends.

These patterns indicate strong potential to convert the casual riders into annual members through targeted, data-driven digital strategies.



Thank You!!