🚴 Cyclistic Bike-Share Data Analysis Report

Capstone Project | Google Data Analytics Certification

👋 Introduction

This project was undertaken as the capstone of the **Google Data Analytics Professional Certificate**. The objective is to use real-world data to develop insights and recommendations that can help **Cyclistic**, a Chicago-based bike-share company, grow its membership base by converting casual riders into annual members.

🏢 Company Background

Cyclistic operates more than 5,800 bicycles distributed across 600+ docking stations. Users can either purchase single-ride passes, day passes, or annual memberships. Cyclistic's marketing team believes the future of the company lies in maximizing the number of long-term members, and they are especially interested in understanding how casual riders could be encouraged to become annual members.

📌 Project Overview

- This analysis supports **Cyclistic's goal** to grow long-term memberships.
- Real ride data is used to **uncover usage patterns** and behavioral trends.
- Casual riders and members are **compared across multiple dimensions** such as time, day, duration, and bike type.
- Findings help identify **conversion opportunities** and shape **marketing and pricing strategies**.

❓ Key Questions Driving the Analysis

1. How do annual members and casual riders use Cyclistic bikes differently?
2. What behaviors or trends suggest that casual riders could be motivated to buy memberships?
3. How can Cyclistic use **digital media** and personalized campaigns to influence more casual riders to convert?

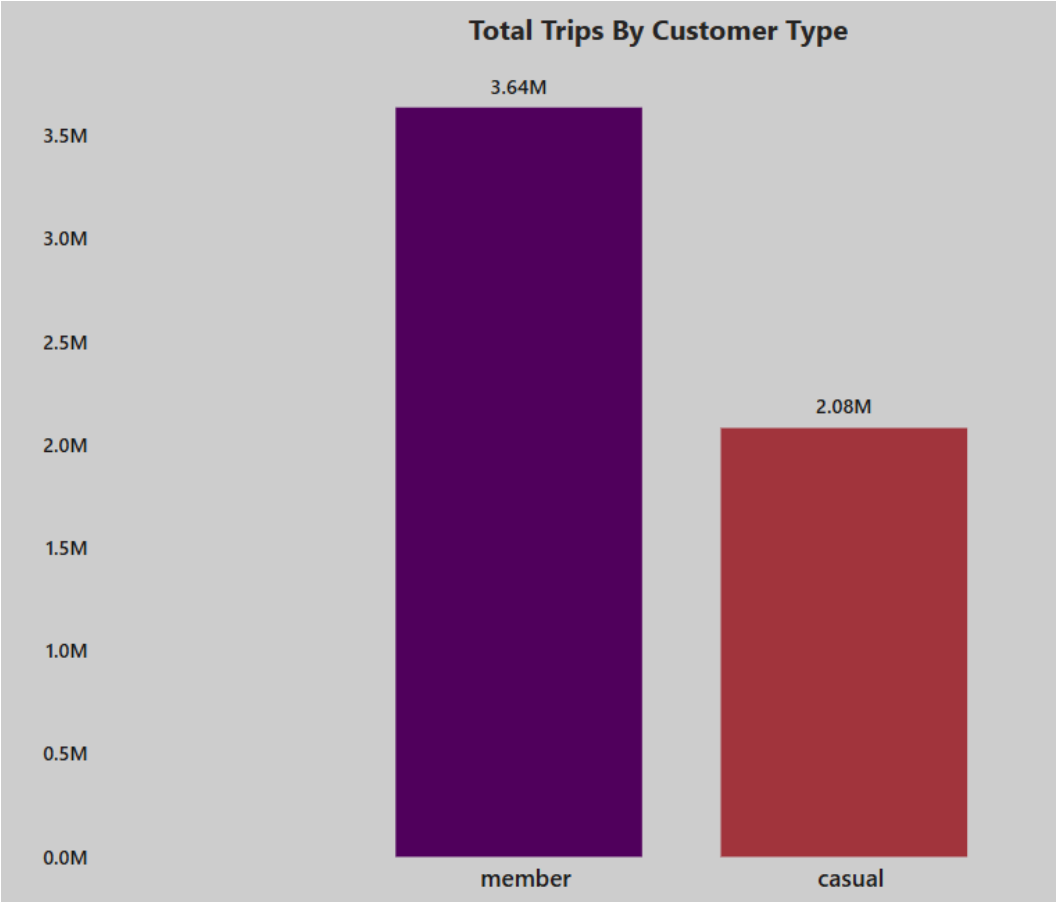
📊 Data Summary

- Dataset: Cyclistic trip data from the past 12 months [Feb 2024-Jan 2025]
- Total rides analyzed: **5.72 million**
- Members: **3.64M (63.64%)**
- Casual riders: **2.08M (36.36%)**

🔍 Exploratory Data Analysis (EDA)

1 Total Rides by Customer Type

- Members take the majority of trips: **63.64%** of all rides
- Casual riders: **36.36%**, indicating a **high potential for conversion**



📌 *Insight*: Members are clearly the core user base, but casual riders still form over a third of total activity—making them a prime target group for marketing and growth strategies.

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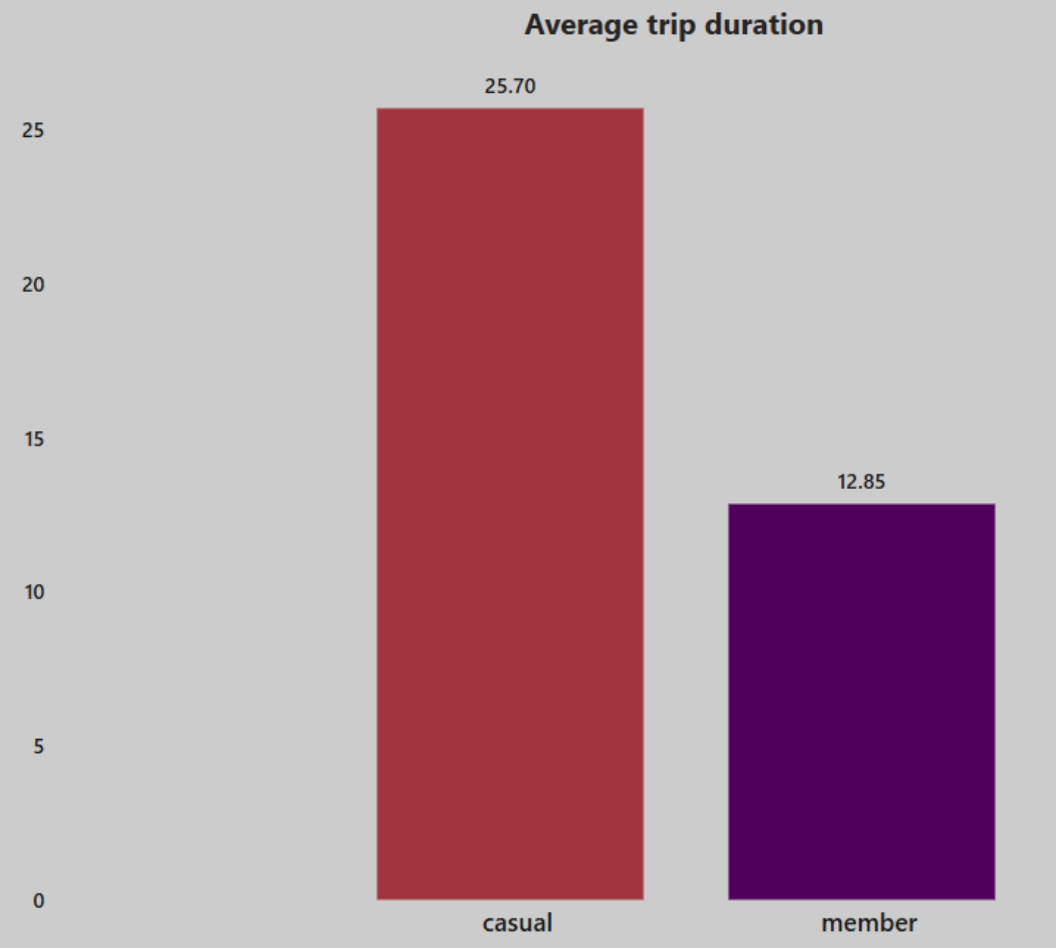
2 Average Trip Duration

- **Casual riders average ~25 minutes** per ride
- **Members average ~12 minutes**, almost half the time



📌 *Insight*: Casual riders tend to use bikes for leisure or longer exploration trips, while members often use them for short commutes.

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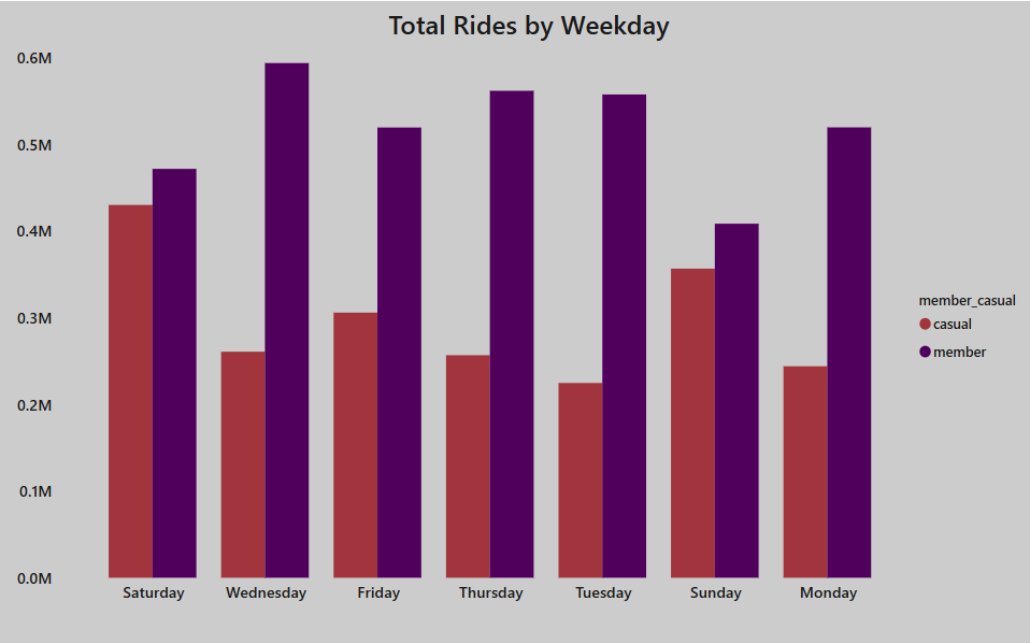
3 Rides Frequency by Weekday

- Members: Peak usage during **weekdays (esp. Wed & Tues)**
- Casuals: Peak usage during **weekends (esp. Saturday & Sunday)**



📌 *Insight*: Members rely on bikes for workday commutes; casual riders show a strong **recreational behavior**, ideal for weekend-oriented promotions.

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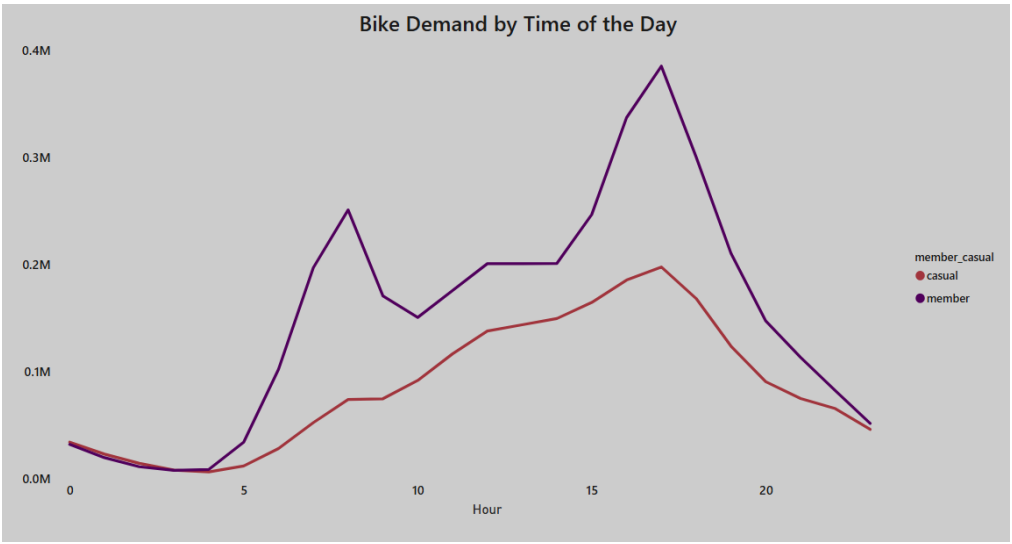
4 Hourly Ride Patterns

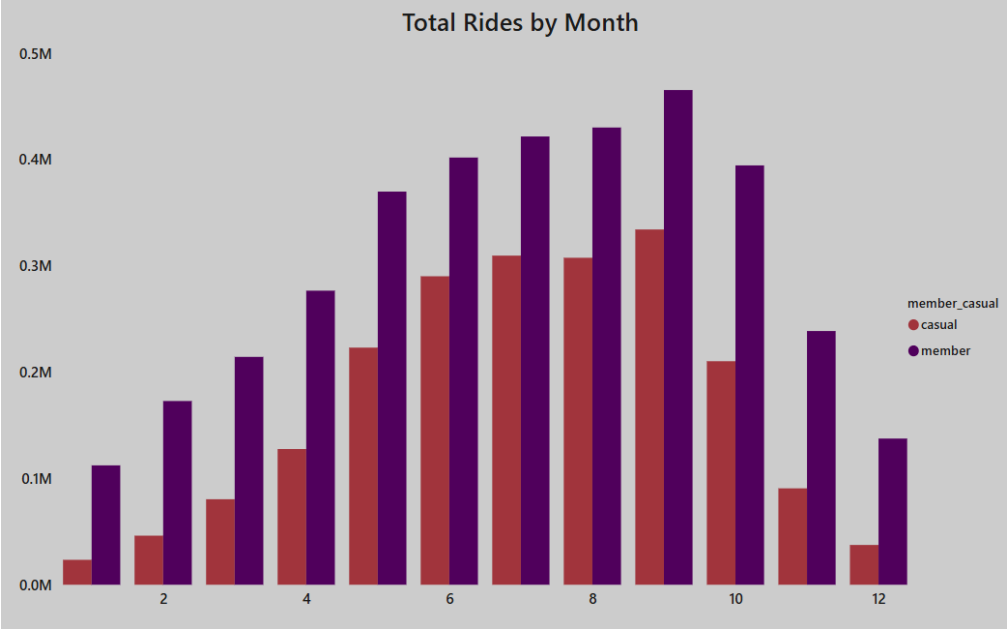
- Casual riders peak from **11 AM to 6 PM**, maxing at **5 PM**
- Members peak at **8 AM and 5 PM**, reflecting daily commutes



📌 *Insight*: Casual riders likely ride during leisure hours. Ads promoting flexible or weekend plans could be targeted around these times.

5 Seasonal Trends

- Peak months: **June to September**, with highest in **September**
- Lowest months: **January - February**, especially for casuals



📌 *Insight*: Cyclistic sees high seasonal variation. Seasonal plans or promotions can help maintain engagement during low-ride months.

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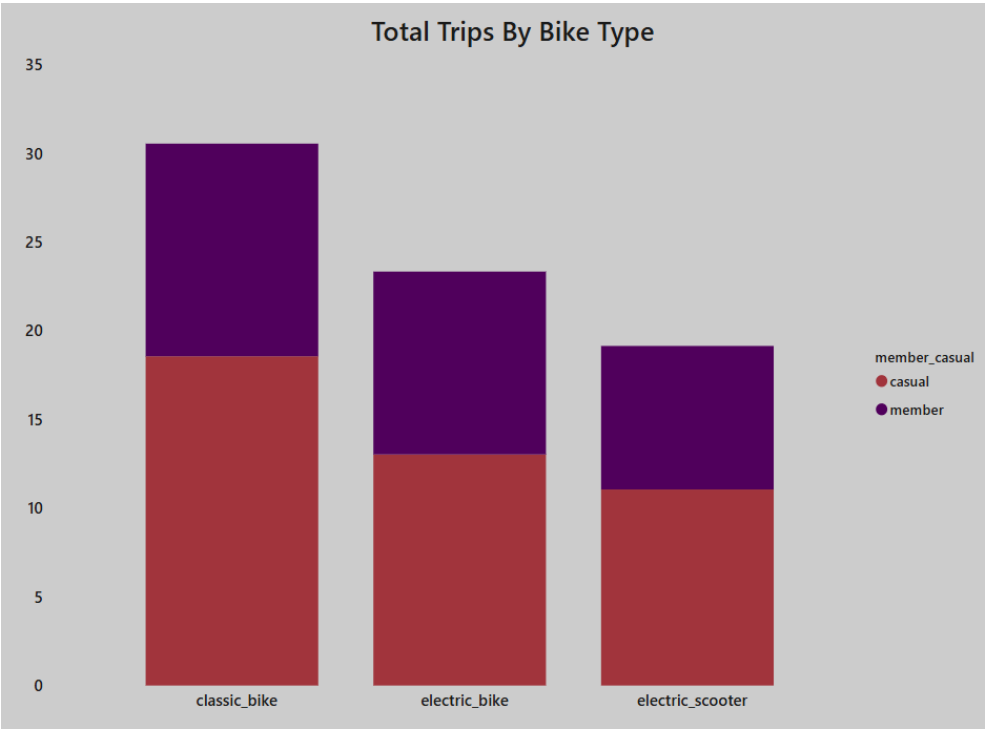
6 Rides by Bike Type



- Most used bike: **Classic Bikes**
- Least used: **Electric Scooters**
- E-Bikes popular with both groups:
    - Casuals: 50.9%
    - Members: 51.48%

📌 *Insight*: E-bike access is a strong incentive for both user types—offering **exclusive e-bike perks** could boost memberships.

💡 Key Metrics Snapshot

Metric	Members	Casual Riders
Total Rides	3.64M (63.64%)	2.08M (36.36%)
Avg Trip Duration	~12 mins	~25 mins
Busiest Weekday	Wednesday	Saturday
Peak Hour	5 PM	5 PM
Busiest Month	September	September

📈 Recommendations

🧲 1. Convert Casual Riders into Members

- Launch **leisure-friendly membership plans** focused on weekends
- Offer **ride-based loyalty rewards** (e.g., bonus rides or discounts)
- Run **referral incentives** to encourage peer sign-ups
- Use **seasonal offers** (summer/weekend passes) to drive interest

📱 2. Enhance Digital Experience

- Launch a mobile app with features like:
    - Live **bike location** and **mobile unlocking**
    - Ride **tracking stats** (miles, carbon saved)
    - **Gamified loyalty** dashboard
    - Exclusive member discounts

🎯 3. Improve Targeted Marketing

- Place digital ads near **popular casual rider hubs**
- Partner with **tourist attractions** for membership perks
- Use **micro-surveys** to understand casual riders' needs

💸 4. Optimize Pricing & Plans

- Introduce **flexible plans** (monthly, quarterly, annual)
- Offer **long-ride discounts** and emphasize cost savings in annual plans
- Design **"Try before you buy"** plans for hesitant users

📝 Summary

Behavioral Differences

- Members = short, commute-focused weekday rides
- Casuals = longer, weekend leisure rides
- E-bikes are preferred by both

Strategic Takeaways

- Push **weekend-friendly memberships**
- Improve engagement with **rewards & mobile tech**
- Use **targeted seasonal marketing** for high conversion potential
- Highlight **value and convenience** in digital and physical campaigns

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✍️ Author

This report was prepared as a capstone project for the Google Data Analytics course.

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