Executive Summary

This capstone project examines one year of bike-share data from Cyclistic (operated by Motivate International Inc.) to identify trends in rider behavior and generate data-driven recommendations for enhancing annual membership conversions. The analysis distinguishes between two primary user groups—casual riders and annual members—and seeks to understand their ride patterns, preferences, and usage frequency.

Objectives

- Identify behavioral differences between casual riders and members
- Analyze ride duration, time of use, and bike type preferences
  Develop insights to support marketing and operations teams in improving customer retention and acquisition

Methodology

Using R and various tidyverse packages, we processed and combined 12 months of trip data (November 2020 to October 2021). After cleaning and standardizing the datasets, we performed exploratory data analysis (EDA) to identify usage trends by customer type. Visualizations were created using ggplot2 to support pattern recognition and storytelling.

Key Findings

- Casual riders tend to ride longer, prefer weekends, and are more likely to use docked bikes
- Annual members ride more frequently on weekdays, especially during commute hours
- Casual usage spikes in warmer months, while member usage is more stable year-round

Recommendations

- Promote time-limited membership trials to weekend casual riders
- Expand docked bike availability in high-traffic casual rider areas
- Tailor marketing campaigns around seasonal trends and popular ride times

This analysis demonstrates how descriptive analytics can inform customer segmentation and strategy, supporting Cyclistic's goal of increasing long-term customer engagement.