**Cyclistic Bike - Share Case Study Report**

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**Step 1: Ask — Defining the Business Task**

Cyclistic, a bike-share company in Chicago, is seeking to maximize its number of annual memberships. The Director of Marketing believes the key to growth lies in converting more **casual riders** into **annual members**.

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

**Stakeholders:**

* Lily Moreno (Director of Marketing)
* Marketing Analytics Team
* Executive Team

**Step 2: Prepare — Understanding the Data**

Two datasets were used to represent 12 months of trip data:

* Divvy\_Trips\_2019\_Q1.csv
* Divvy\_Trips\_2020\_Q1.csv

These publicly available datasets (from Divvy, under Motivate International) represent Cyclistic's system. Each file includes:

* Ride ID, start/end time, station names
* User type (casual vs. member)
* Rideable type and trip duration

**ROCCC Evaluation:**

* **Reliable:** Provided by a trusted transportation system
* **Original:** Source data from the ride system itself
* **Comprehensive:** Includes 12 months of trip-level data
* **Current:** Reflects recent ride behavior
* **Cited:** Licensed and publicly shared under open terms

**Limitations:**  
No personally identifiable information (PII) is included, and no location or demographic data is provided beyond usage patterns.

**Step 3: Process — Cleaning and Preparing the Data**

Data was cleaned and prepared using R (tidyverse, janitor, lubridate):

* Cleaned column names for consistency
* Renamed usertype to member\_casual
* Merged both datasets into one
* Created new columns:
  + ride\_length (in minutes)
  + day\_of\_week (labelled Sun–Sat)
* Removed invalid rows with negative or zero ride duration

The cleaned dataset was exported as:  
**output/cleaned\_cyclistic\_data.csv**

**Step 4: Analyze — Exploring the Data**

**Key Questions Answered:**

1. What is the average ride length per user type?
2. How often do users ride on each day of the week?
3. How does ride behavior differ across weekdays vs. weekends?

**Findings:**

* **Members ride far more frequently**, especially on weekdays, suggesting commuting patterns.
* **Casual riders take longer rides**, with an average duration ~62 minutes, often on weekends — suggesting leisure use.
* Members are more consistent in both frequency and duration.

**Step 5: Share — Visualizing Insights**

Two key ggplot2 visualizations were created:

**1. Number of Rides by Day of Week**

* Members dominate weekdays
* Casual riders have slight peaks on weekends

**2. Average Ride Length by Day of Week**

* Casual riders consistently ride longer
* Members ride shorter but consistently across the week

These visualizations clearly communicate behavioral differences and support targeted marketing decisions.

**Step 6: Act — Final Recommendations**

Based on insights, Cyclistic should:

1. **Launch weekend promotions**  
   Target casual riders with discounted weekend ride bundles or loyalty perks.
2. **Use in-app nudges**  
   Encourage membership by prompting casual users with benefits after long rides.
3. **Offer a free 30-day trial**  
   Convert high-usage casual riders into members through a no-risk trial program.

**Step 7: Final Reflection & Next Steps**

This case study demonstrates proficiency in:

* Real-world data wrangling and cleaning in R
* Exploratory and comparative data analysis
* Data visualization and storytelling
* Delivering actionable, business-relevant recommendations