

Cyclistic Bike-Share Analysis Report

Business Task

The primary objective of this analysis is to understand how annual members ("members") and casual riders ("casual") use Cyclistic bikes differently. These insights will inform the marketing team's strategy to convert casual riders into annual members, thereby increasing profitability and long-term growth for Cyclistic.

Data Sources

- **Dataset:** 12 months of Cyclistic trip data (July 2023 to June 2024), sourced from publicly available CSV files.
 - **Variables Included:**
 - ride_id, rideable_type, started_at, ended_at, start_station_name, member_casual, and others.
 - **Data Integrity:** The data was combined from 12 monthly files, cleaned, and validated for consistency. Personal identifiable information was excluded to comply with privacy regulations.
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Data Cleaning and Preparation

1. **Combining Data:**
 - Merged 12 monthly CSV files into a single dataset containing 5,734,381 rows and 14 columns.
 2. **Cleaning Steps:**
 - Removed rows with null values.
 - Converted started_at and ended_at to datetime format.
 - Calculated ride_length (duration in minutes) and filtered out negative/zero values.
 - Added day_of_week to analyze usage patterns by weekday.
 3. **Final Dataset:**
 - Saved as cyclistic_tripdata_cleaned.csv for analysis.
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Analysis Summary

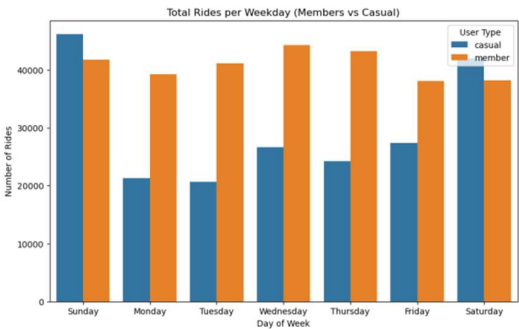
Key Metrics

User Type	Total Rides	Avg Ride Length (min)	Median Ride Length (min)
Casual	208,367	26.4	15.1
Member	285,959	13.7	9.9

- **Members** account for **57.8%** of total rides, while **casual riders** make up **42.2%**.
- Casual riders have **longer average ride durations** (26.4 mins) compared to members (13.7 mins).

Usage Patterns by Weekday

- **Members:** Peak usage on **weekdays** (Tuesday–Thursday), likely for commuting.
- **Casual Riders:** Peak usage on **weekends** (Saturday–Sunday), suggesting leisure use.



Casual riders dominate weekend usage, while members ride more on weekdays.

Bike Type Preference

- Both groups prefer **electric bikes** and **classic bikes**, with minimal use of docked_bike.

Recommendations

1. **Weekend Membership Promotions:**
 - Target casual riders on weekends with limited-time discounts or free trial memberships.
 - Highlight cost savings for frequent weekend users.
2. **Commuter Incentives:**
 - Offer flexible membership plans (e.g., weekday-only passes) to attract casual riders who occasionally commute.
3. **Seasonal Campaigns:**

- Launch promotions during peak casual rider months (e.g., summer) to convert high-activity users.

Supporting Visualizations

- **Bar Charts:** Compare ride counts and average durations by user type and weekday.
- **Pie Chart:** Illustrates the proportion of casual vs. member rides.

Conclusion

Casual riders and members exhibit distinct usage patterns, with casual riders favoring longer, leisure-focused trips on weekends. By tailoring marketing efforts to these behaviors—such as weekend promotions and commuter incentives—Cyclistic can effectively convert casual riders into annual members, driving long-term revenue growth.