

Cyclistic Bike-Share Case Study Report

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1. Business Task

The purpose of this analysis is to understand how annual members and casual riders use Cyclistic bikes differently. The goal is to identify actionable insights that can help convert casual riders into annual members and increase long-term revenue.

2. Data Sources

Data was obtained from Divvy Bike Share's public trip data:

- Divvy 2019 Q1 dataset
- Divvy 2020 Q1 dataset

The data included ride IDs, timestamps, stations, and user type (member or casual). Data was anonymized and publicly licensed.

3. Data Cleaning and Preparation

The datasets were cleaned and prepared in R:

- Renamed columns for consistency.
 - Added missing columns to 2019 data.
 - Parsed date-time columns into standard formats.
 - Combined both datasets into a single dataframe.
 - Created ride_length (in minutes).
 - Filtered out rides under 1 minute or over 24 hours.
 - Added day_of_week.
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4. Analysis Summary

- Casual riders have longer average ride durations.

- Casual usage peaks on weekends, suggesting recreational use.
- Annual members ride more on weekdays, indicating commuting patterns.
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5. Summary Statistics

Average Ride Length (minutes):

	member_casual	mean_ride_length	median_ride_length	max_ride_length	min_ride_length
1	casual	40.14820	23.13333	1435.917	1.016667
2	member	11.61133	8.65000	1432.133	1.000000

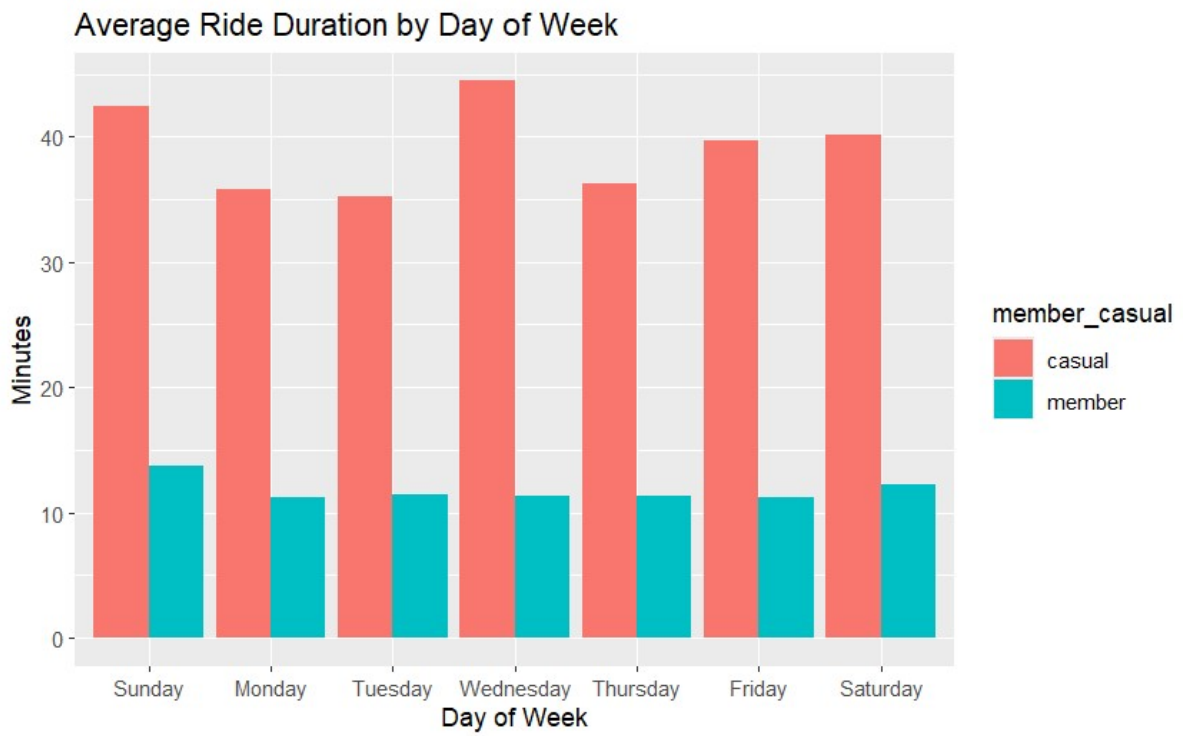
6. Rides by Day of Week

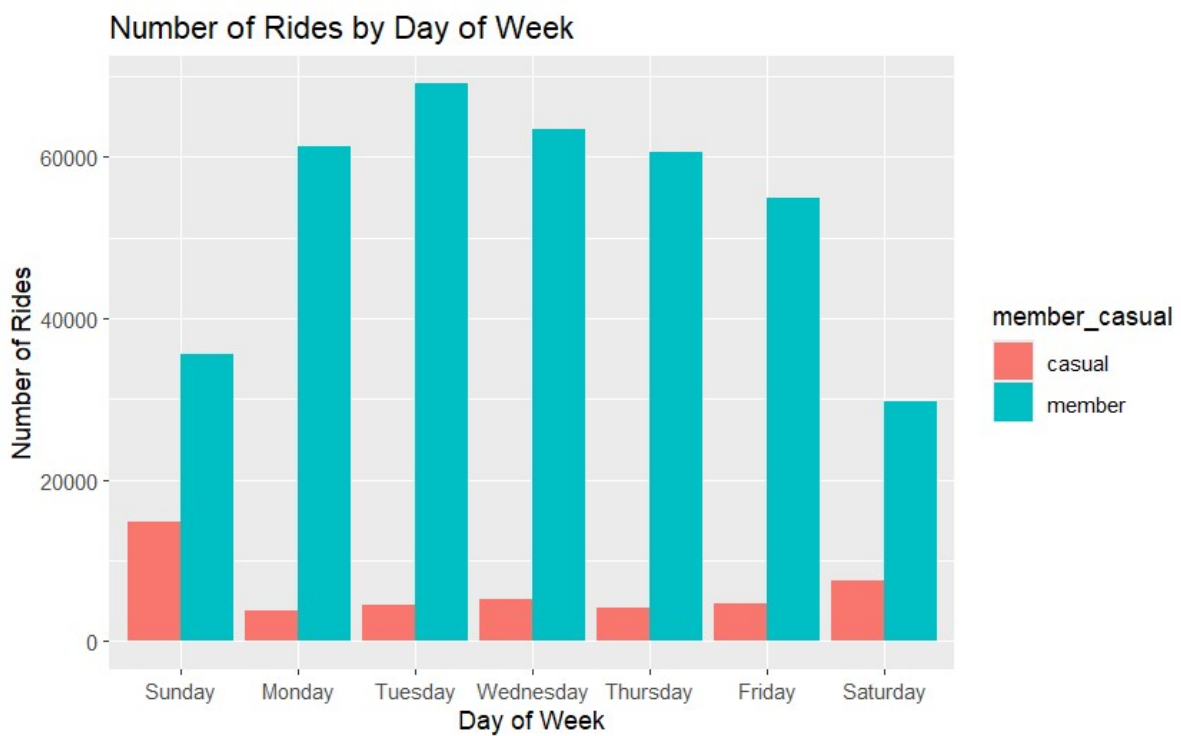
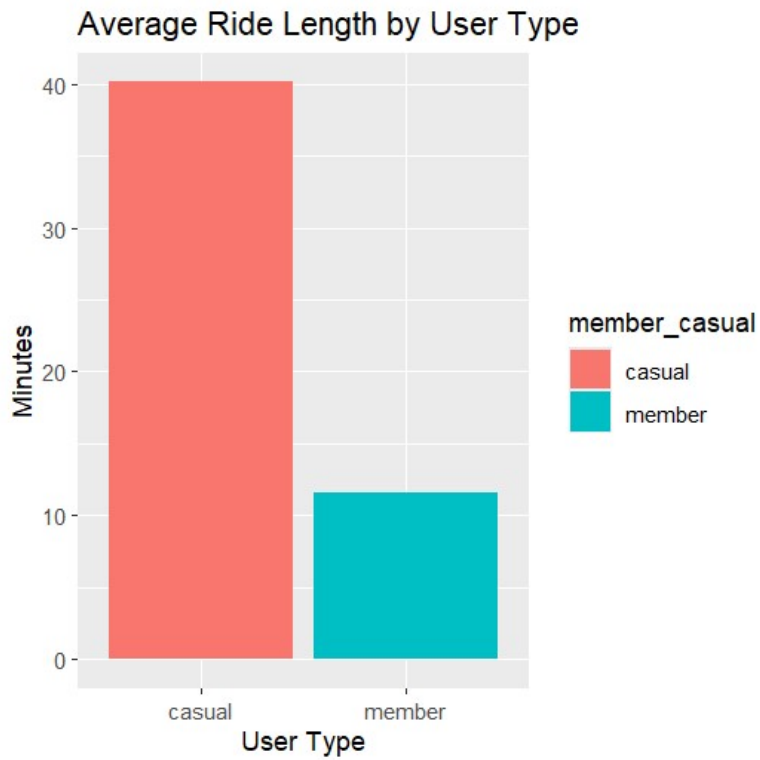
	member_casual	day_of_week	num_rides	avg_duration
1	casual	Sunday	14754	42.46323
2	casual	Monday	3671	35.84492
3	casual	Tuesday	4542	35.22794
4	casual	Wednesday	5141	44.46919
5	casual	Thursday	4175	36.29893
6	casual	Friday	4591	39.69267
7	casual	Saturday	7428	40.13974
8	member	Sunday	35478	13.79306
9	member	Monday	61359	11.22698
10	member	Tuesday	69109	11.44439
11	member	Wednesday	63392	11.31247
12	member	Thursday	60606	11.28827

13 member Friday 54933 11.18409

14 member Saturday 29747 12.27391

7. Visualizations





8. Recommendations

Based on this analysis:

1. **Weekend Promotions:** Target casual users with weekend membership offers.
 2. **Commuter Advertising:** Emphasize weekday commuting benefits in ads.
 3. **Personalized Offers:** Provide discounts to high-frequency casual riders.
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