Cyclistic Bike-Share Case Study – Deliverables

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This deliverables report summarizes the outcomes of the Cyclistic (Divvy) bike-share case study. The goal of the analysis was to identify differences in ride behavior between casual riders and annual members using Divvy trip data (Q1 2019 & Q1 2020). The insights will guide marketing strategies to convert casual riders into annual members.

1. A clear statement of the business task

Design marketing strategies aimed at converting casual riders into annual members. In order to do that, however, the team needs to better understand how annual members and casual riders differ, why casual riders would buy a membership, and how digital media could affect their marketing tactics.

2. A description of all data sources used

Divvy Q1 2019 Dataset

- **Time Period:** January 1 – March 31, 2019
- **Number of trips:** ~365,000
- **File name:** Divvy_Trips_2019_Q1.csv

Column Name	Description
trip_id	Unique trip identifier
start_time	Date & time trip started
end_time	Date & time trip ended
Bikeid	Numeric ID of the bike used
Tripduration	Duration of trip in seconds
from_station_id	Station ID where the trip started
from_station_name	Station name where the trip started
to_station_id	Station ID where the trip ended
to_station_name	Station name where the trip ended
Usertype	Rider type → **Subscriber** (member) or **Customer** (casual)
gender	Gender of rider (if provided)
birthyear	Birth year of rider

Divvy Q1 2020 Dataset

- **Time Period:** January 1 – March 31, 2020
- **Number of trips:** ~426,000
- **File name:** Divvy_Trips_2020_Q1.csv

Column Name	Description

ride_id	Unique trip identifier
rideable_type	Type of bike (classic_bike, docked_bike, electric_bike)
started_at	Date & time trip started
ended_at	Date & time trip ended
start_station_name	Station name where the trip started
start_station_id	Station ID where the trip started
end_station_name	Station name where the trip ended
end_station_id	Station ID where the trip ended
member_casual	Rider type → **member** (annual) or **casual** (single-ride/day pass)
start_lat / start_lng	GPS location of start station
end_lat / end_lng	GPS location of end station

Documentation of any cleaning or manipulation of data

- **Renamed columns** in the 2019 dataset to match 2020 schema (e.g., trip_id → ride_id, bikeid → rideable_type).
- **Combined Q1 2019 & Q1 2020 datasets** using bind_rows() after making column names consistent.
- **Re-coded rider types** → Subscriber → member, Customer → casual.
- **Created new columns**: date, month, day, year, day_of_week, ride_length.
- **Calculated ride duration** for all trips (ended_at - started_at).
- **Removed bad data** → trips with negative durations or quality-control rides.

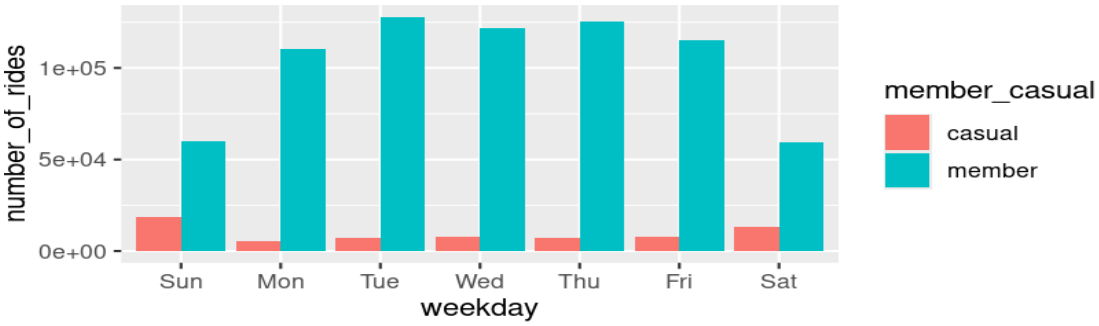
For detailed cleaning steps and exact code implementation, please refer to the provided R script (cyclistic_analysis.R).

A summary of your analysis

1. Number of Rides(plot1)-
    - Members ride more than casual
    - Members use bicycles highly from Monday to Friday
    - From this we can conclude that members use bicycle for Work Travelling.

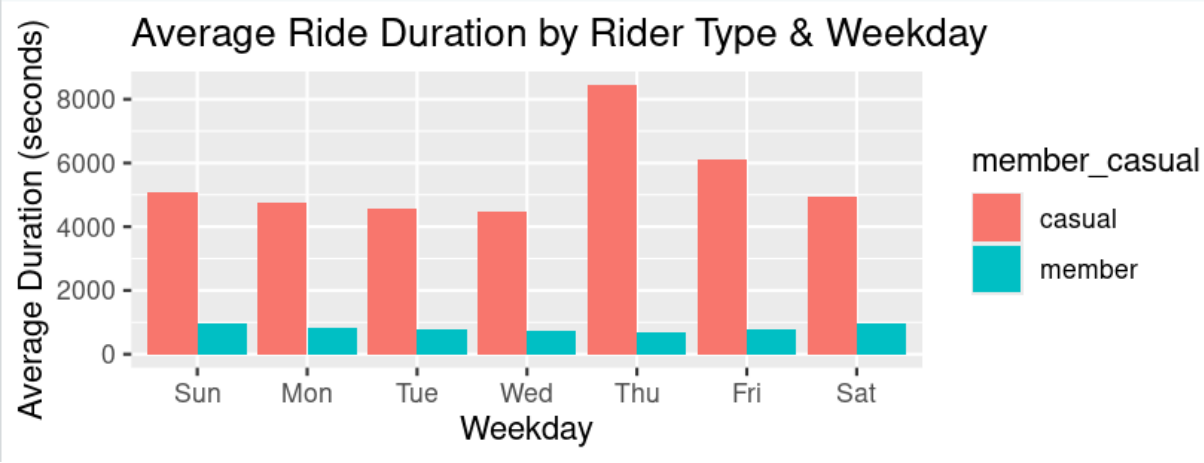
2. Duration of ride(plot2)-
    - Casuals have more duration of rides than members
    - Casuals ride bicycles at leisure.
    - Members use it for shorter trips.

Supporting visualizations and key findings



Number of Rides by Weekday & Rider Type-

1. Members ride **more frequently** than casual riders, especially on weekdays (Mon–Fri).
2. **Key insight:** Members likely use the service for **work commuting**, while casual riders are more active on weekends → suggesting **recreational use**.



Average Ride Duration by Weekday & Rider Type-

1. Casual riders have **longer average ride durations** than members, especially on weekends.
2. **Key insight:** Casual riders tend to take **leisurely, longer rides**, while members ride **shorter, practical trips**.

Your top three recommendations based on your analysis

1. Since Casual riders ride during leisure it might be during weekends so introduce pricing plans of weekend.
2. Members can ride and have discount, also collect their information(eg-phone number) and message them about new pricing plans and discount and encourage them to ride cycle and save environment (go green initiative).
3. Digital Marketing- use apps to send notifications and their daily riding kms.