



Cyclistic Bike-Share Analysis Report

1. Executive Summary

Cyclistic aims to grow its annual memberships. This analysis of 5.47M rides (Aug 2024 – Jul 2025) compares behaviors of casual riders vs annual members.

Key Insights:

- Casual riders: longer rides, prefer weekends, peak midday/afternoon, highly seasonal.
- Members: shorter but more frequent rides, commute-hour peaks, steady year-round.
- E-bikes are popular across both groups, with casuals slightly more reliant.

Top Recommendations:

1. Weekend-to-Weekday Trial Passes for casuals.
2. E-bike perks for members (discounted/free unlocks).
3. Corporate/university membership partnerships to capture commuter groups.

2. Background & Objectives

Business Problem: Cyclistic wants to increase annual memberships, which are more profitable than casual usage.

Objective: Use trip data to identify differences between casual riders and members, and recommend strategies to convert casuals to annual members.

3. Data Overview

- Source: 12 months of Cyclistic public trip data (Aug 2024 – Jul 2025)
- Records: 5.47 million valid rides
- Fields: Ride ID, bike type, timestamps, user type, start/end stations, GPS
- Limitations: No demographics (age, gender, income), some missing station data, weather not included.

4. Methodology

- Combined 12 monthly CSVs into BigQuery
- Cleaned data: removed invalid values (negative durations, >24hr rides, missing timestamps)
- Standardized fields (lowercased member/casual, added ride_length_min, day_of_week, month, etc.)
- Final dataset: trips_clean table with 5.47M rows
- Analysis performed with SQL in BigQuery, visualized in Looker Studio

5. Findings & Insights

5.1 Ride Duration

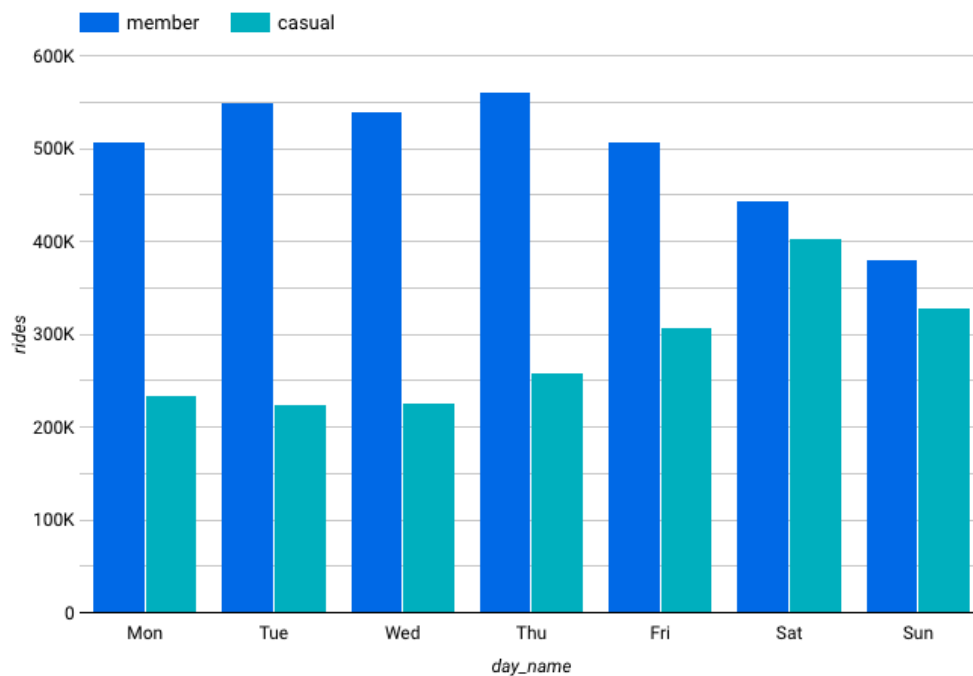
Finding: Casuals ride longer (avg ~20 min) than members (avg ~11.5 min).

member_casual	avg_minutes	median_minutes	total_rides
casual	19.73603391	11	1981353
member	11.49116552	8	3491660

5.2 Weekday vs Weekend

Finding: Members dominate weekdays; casuals surge on weekends.

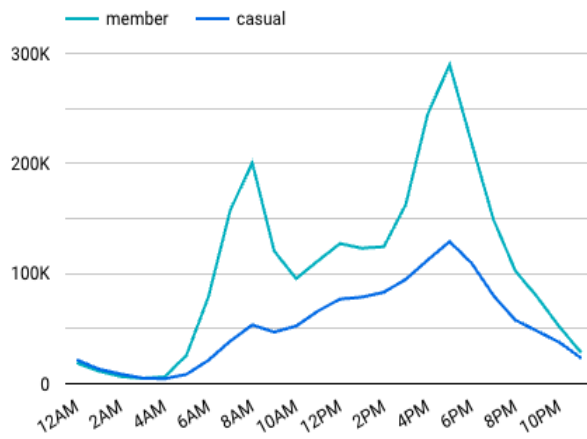
No of rides by day



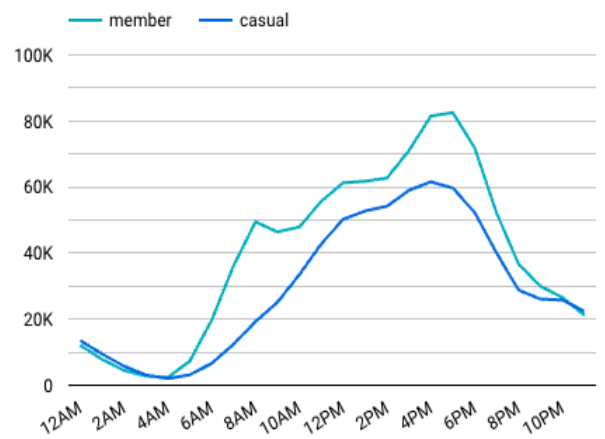
5.3 Hourly Usage Patterns

Finding: Members peak during commute hours (8AM, 5PM); casuals peak afternoons/weekends.

rides by hour - Weekdays



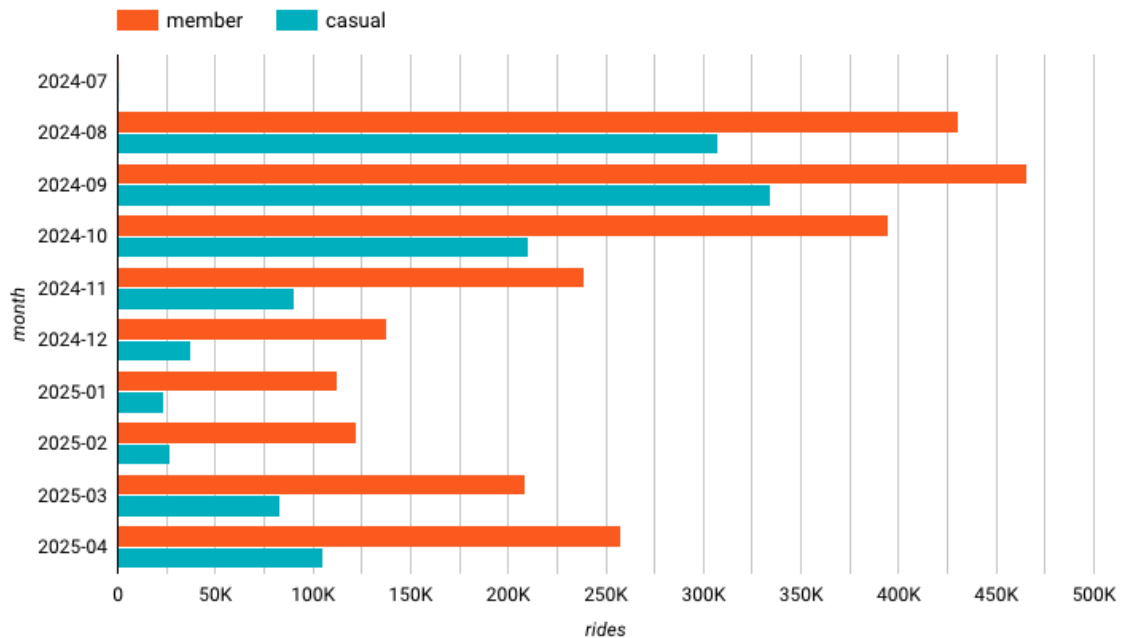
rides by hour - Weekend



5.4 Monthly Seasonality

Finding: Casuals are highly seasonal; members ride consistently year-round.

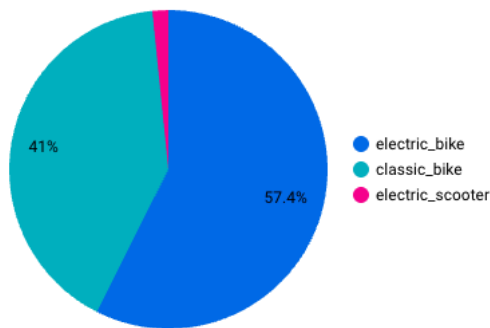
rides by Monthly Ride Trends: Members vs Casuals and member_casual



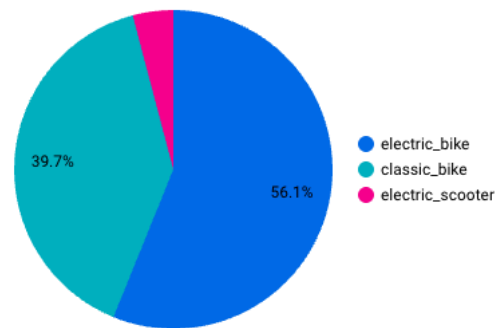
5.5 Bike Type Preferences

Finding: Both groups favor e-bikes; casuals rely slightly more on them.

Members - rideable_type by rides



Casual - rideable_type by rides



6. Recommendations

1. Launch Weekend-to-Weekday Trial Passes to convert casual weekend riders into weekday commuters.
2. Add exclusive e-bike membership perks (discounted unlocks/free rides) to attract e-bike-loyal casuals.
3. Build corporate and university membership partnerships to secure bulk commuter adoption.

7. Next Steps

- Pilot weekend-to-weekday trial pass campaign
- Launch e-bike perks for members
- Develop partnership program with universities and employers

8. Appendix

8.1 Data Cleaning Log

- Removed invalid rows (negative/0 duration, >24 hrs)
- Standardized fields (member_casual, ride_length_min, etc.)
- Final dataset: 5.47M valid rides

Explorer

+ Add data

IK

Search BigQuery resources

Show starred only

202409

202410

202411

202412

202501

202502

202503

202504

202505

202506

202507

trips_all

trips_clean

bigquery-public-data

Repository

Preview

Get started with Repositories

Store code, edit files, and track changes using version control through repositories or via remote Git based repositories.

View repositories

trips_clean

Query

Open in

Share

Table Explorer

Preview

Insights

Lineage

Date

This is a partitioned table. [Learn more](#)

Dismiss

Schema

Details

Preview

Table Explorer

Preview

Insights

Lineage

Date

Row	ride_id	rideable_type	started_at	ended_at
1	20E1B269CA8931CA	classic_bike	2024-11-19 00:09:58.779000 UTC	2024-11-19 00:12
2	354B0EC418F350CC	electric_bike	2024-11-19 00:32:01.403000 UTC	2024-11-19 00:34
3	1D28C0DDC9A93ACF	classic_bike	2024-11-19 00:39:38.658000 UTC	2024-11-19 00:43
4	00C7EE0025B6AB9	electric_bike	2024-11-19 00:32:31.323000 UTC	2024-11-19 00:36
5	0CA115B10FD83234	classic_bike	2024-11-19 00:47:48.362000 UTC	2024-11-19 00:52
6	12AD3ACEFAD4A27A	electric_bike	2024-11-19 00:58:36.296000 UTC	2024-11-19 01:03
7	A81C8F7A3056B59D	classic_bike	2024-11-19 00:55:50.701000 UTC	2024-11-19 01:00
8	AADBEB1EA8F48827	classic_bike	2024-11-19 00:01:57.113000 UTC	2024-11-19 00:06
9	48CD7942FDBB2814	electric_bike	2024-11-19 00:56:53.811000 UTC	2024-11-19 01:02
10	5144DE7056EC6094	electric_bike	2024-11-19 00:20:56.636000 UTC	2024-11-19 00:24
11	9774E3A710D19165	electric_bike	2024-11-19 00:02:44.617000 UTC	2024-11-19 00:09
12	7F6C3A59CA16D6E6	electric_bike	2024-11-19 00:11:32.175000 UTC	2024-11-19 00:17
13	77618E7A58B8D292	electric_bike	2024-11-19 00:01:16.486000 UTC	2024-11-19 00:08
14	13B048715A75A4FF	electric_bike	2024-11-19 00:53:57.443000 UTC	2024-11-19 01:02
15	C95SD3E38B4F376C	classic_bike	2024-11-19 00:03:28.193000 UTC	2024-11-19 00:12
16	93A6DE6090ECD28A	classic_bike	2024-11-19 00:39:32.858000 UTC	2024-11-19 00:45
17	EF6A86C47840C599	electric_bike	2024-11-19 00:41:11.293000 UTC	2024-11-19 00:52
18	E30F466CB2970F62	electric_bike	2024-11-19 00:00:30.840000 UTC	2024-11-19 00:12
19	C307E38184F4D834	electric_bike	2024-11-19 00:28:24.660000 UTC	2024-11-19 00:40

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Job history

Untitled query

Run

Save

Download

Share

Query completed

Query results

Save results

Open in

Job information	Results	Visualization	JSON	Execution details	Execution graph
ride_id	rideable_type	started_at	ended_at		
1	5431C3E54038A894	classic_bike	2024-12-22 16:14:41.323000 UTC	2024-12-23 17:14:21.4	
2	42B562B45D2C683E	classic_bike	2024-12-13 21:50:07.640000 UTC	2024-12-14 22:49:46.2	
3	4B1097BDBFCE4BCE	classic_bike	2024-12-18 13:56:56.595000 UTC	2024-12-19 14:56:37.7	
4	FAFBBD3E3B9CDB5F	classic_bike	2024-12-07 14:59:19.943000 UTC	2024-12-08 15:59:13.2	
5	6815BBE9DBBE35B0	classic_bike	2024-12-20 18:19:42.672000 UTC	2024-12-21 19:19:36.3	
6	C83B09BA319BBB4D	classic_bike	2024-12-16 01:15:25.786000 UTC	2024-12-17 02:15:18.6	
7	7EDAA16E038DC9FE	classic_bike	2024-12-24 14:08:48.851000 UTC	2024-12-25 15:08:28.3	
8	728BDF7AC6F22CC6	classic_bike	2024-12-28 15:03:17.842000 UTC	2024-12-29 16:03:12.0	
9	CE32D9C3B2006CC8	classic_bike	2024-12-25 14:49:32.946000 UTC	2024-12-26 15:49:12.8	
10	F7A716CA9D2400BA	classic_bike	2024-12-12 16:41:36.718000 UTC	2024-12-13 17:41:29.9	
11	F7CE50A0D8426E3A	electric_bike	2024-12-14 11:17:34.433000 UTC	2024-12-14 11:32:00.3	
12	C566EC50ED44F079	electric_bike	2024-12-31 17:00:32.073000 UTC	2024-12-31 17:18:48.9	
13	D1CF4A4E8EC6D45F5	electric_bike	2024-12-30 08:53:45.782000 UTC	2024-12-30 09:00:26.0	
14	F86EBD9A563E6E1F	electric_bike	2024-12-07 15:40:05.680000 UTC	2024-12-07 15:51:22.9	
15	4927746206B89FDAC	electric_bike	2024-12-30 16:50:09.160000 UTC	2024-12-30 17:10:44.2	
16	091DD8216AFD52F7	electric_bike	2024-12-25 11:58:19.580000 UTC	2024-12-25 12:50:39.7	

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Refresh

8.2 Technical Queries

SQL scripts stored in GitHub repo (or provided in project files).

8.3 Limitations

- No demographic information available
- Missing or incomplete station data
- Weather, holidays, and external factors not included