

CYCLISTIC BIKE - CASE STUDY

BY ANNAN AHMAD

My name is **Annan Ahmad**.

I am an aspiring data analyst who has completed the

Google Data Analytics Certificate.

Today, I will be presenting my capstone case study on

Cyclistic.

WHO AM I?

The goal is to convert **casual riders** into **membership** holders to drive long-term business growth and profitability.

To achieve this, we need to understand how casual riders and annual members differ in their usage patterns.

OBJECTIVE OF CASE STUDY

- **Cyclistic** is a bike-share program with **5,800 bicycles** and **600 stations** in **Chicago**.
- Pricing options: **Single-ride passes, full-day passes, and annual memberships**.
- **Annual members** = long-term revenue, **casual riders** = occasional, short-term usage.
- **Business goal:** Convert more casual riders into annual members for sustainable growth.

BUSINESS MODEL

- Analysis uses **12 Months of Cyclistic trip data**(January2024 – December2024).
- Data is publically available under **Motivate International Inc.'s** license and provided by **Coursera**.
- All data is **anonymized** and **safe** for analysis.

DATA USED

- Combined all **12** Monthly datasets into a **single dataset**.
- Removed **Unnecessary** data that does not impact analysis.
- Added new Columns.

DATA PROCESSING

Station names, longitude, and latitude

Removed **Unnecessary** data that does not impact analysis.

	ended_at	A ^B start_station_name	A ^B start_station_id	A ^B end_station_name	A ^B end_station_id	1.2 start_lat	1.2 start_lng	1.2 end_lat	1.2 end_lng	A ^B member_casual
1	023 6:44:01 PM	12/2/2023 6:47:51 PM				41.92	-87.66	41.92	-87.66	member
2	023 6:48:19 PM	12/2/2023 6:54:48 PM				41.92	-87.66	41.89	-87.64	member
3	023 1:56:32 AM	12/24/2023 2:04:09 AM				41.89	-87.62	41.9	-87.64	member
4	23 10:58:12 AM	12/24/2023 11:03:04 AM				41.95	-87.65	41.94	-87.65	member
5	023 12:43:16 PM	12/24/2023 12:44:57 PM				41.92	-87.64	41.93	-87.64	member
6	023 1:59:57 PM	12/24/2023 2:10:57 PM				41.91	-87.63	41.88	-87.65	member
7	023 9:01:58 AM	12/24/2023 9:07:51 AM				41.99	-87.68	42	-87.67	member
8	023 8:21:38 AM	12/24/2023 8:27:09 AM				42	-87.67	41.99	-87.68	member
9	023 6:17:46 PM	12/11/2023 6:22:43 PM				41.96	-87.68	41.97	-87.68	member
10	023 6:05:56 AM	12/3/2023 6:06:06 AM				41.9	-87.63	41.9	-87.63	member
11	023 6:56:42 PM	12/2/2023 7:01:19 PM				41.95	-87.65	41.96	-87.65	member
12	023 7:07:38 PM	12/2/2023 7:25:44 PM				41.94	-87.64	41.94	-87.64	member
13	023 7:27:57 PM	12/2/2023 7:30:46 PM				41.94	-87.64	41.94	-87.64	member
14	23 12:13:13 AM	12/3/2023 12:57:07 AM				41.89	-87.62	41.93	-87.72	member

REMOVED!!

DATA PROCESSING

Month & Month Names, Seasons, Days of Week & Names, Weekend Check, Ride Length, Start & End Hours

Added new **Necessary Columns**.

Month	Month Name	Seasons	Day	Day of Week	Weekend_check	Day Name	ride_length	Star_Hour	end_hour
3	March	Spring	13	3	weekdays	Wednesday	0.283333333...	17	17
3	March	Spring	13	3	weekdays	Wednesday	12.3	17	17
3	March	Spring	13	3	weekdays	Wednesday	5.65	17	17
3	March	Spring	13	3	weekdays	Wednesday	2.133333333...	17	17
3	March	Spring	13	3	weekdays	Wednesday	7.116666666...	17	17
3	March	Spring	13	3	weekdays	Wednesday	13.75	17	17
3	March	Spring	13	3	weekdays	Wednesday	4.816666666...	17	17
3	March	Spring	13	3	weekdays	Wednesday	1.583333333...	17	17
3	March	Spring	13	3	weekdays	Wednesday	6.483333333...	17	17
3	March	Spring	13	3	weekdays	Wednesday	30.78333333...	17	17
3	March	Spring	13	3	weekdays	Wednesday	29.73333333...	17	17
3	March	Spring	13	3	weekdays	Wednesday	11.3	17	17

DATA PROCESSING

CLEANED

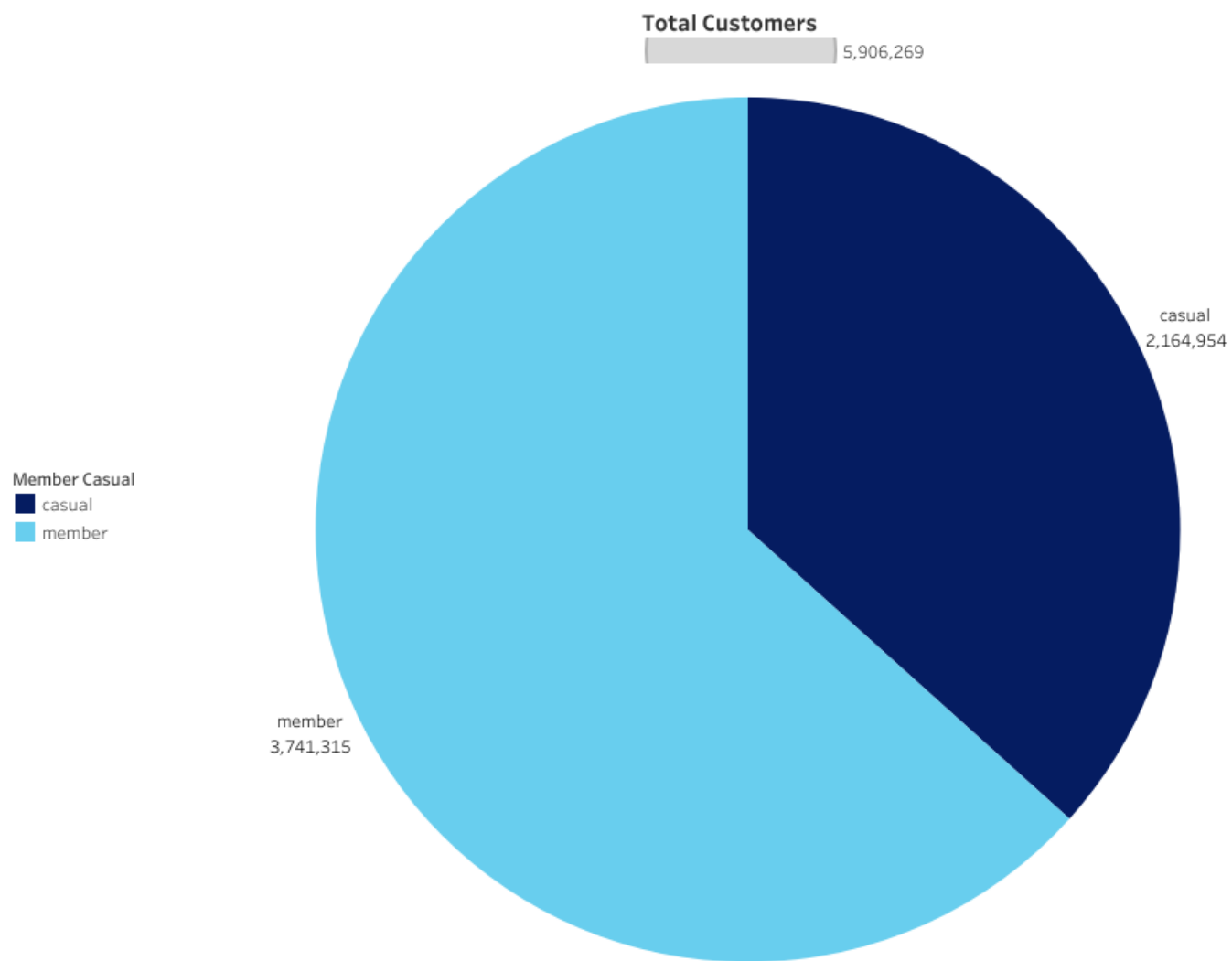
ride_id	rideable_type	started_at	ended_at	member_casual	Month	Month Name	Seasons	Day	Day of Week	Weekend_check	Day Name	ride_length	Star_Hour	end_hour
E84131...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	0.283333333...	17	17
152F964...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	12.3	17	17
138E86...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	5.65	17	17
4E4502...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	2.133333333...	17	17
CA3DF2...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	7.116666666...	17	17
FC0CC...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	13.75	17	17
56BFA3...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	4.816666666...	17	17
7A2E4D...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	1.583333333...	17	17
7BA898...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	6.483333333...	17	17
281B4C...	classic_bike	3/13/2024 5...	3/13/2024 ...	member	3	March	Spring	13	3	weekdays	Wednesday	30.78333333...	17	17

ORIGINAL

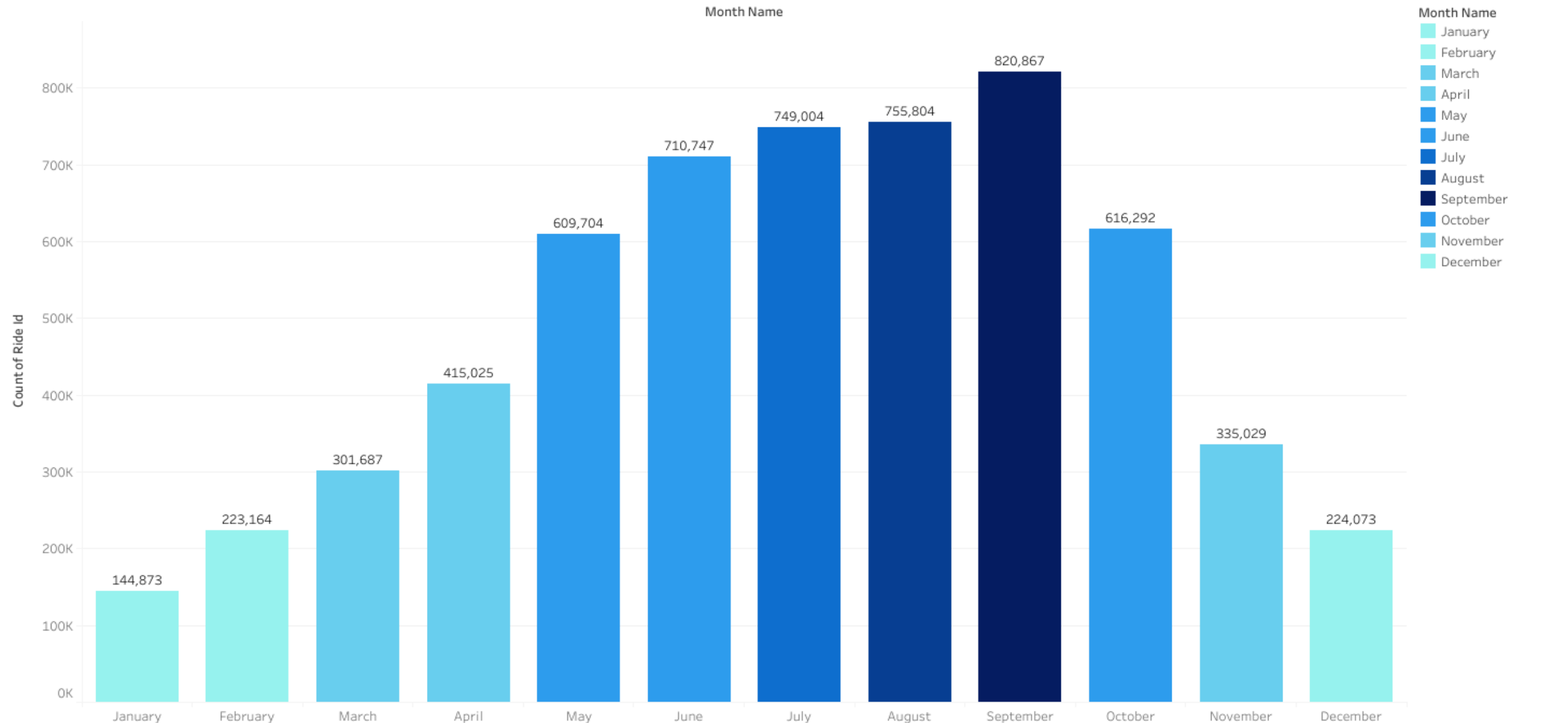
	ended_at	A _C start_station_name	A _C start_station_id	A _C end_station_name	A _C end_station_id	1.2 start_lat	1.2 start_lng	1.2 end_lat	1.2 end_lng	A _C member_casual
1	'023 6:44:01 PM	12/2/2023 6:47:51 PM				41.92	-87.66	41.92	-87.66	member
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DATA COMPARISON

KEY INSIGHT

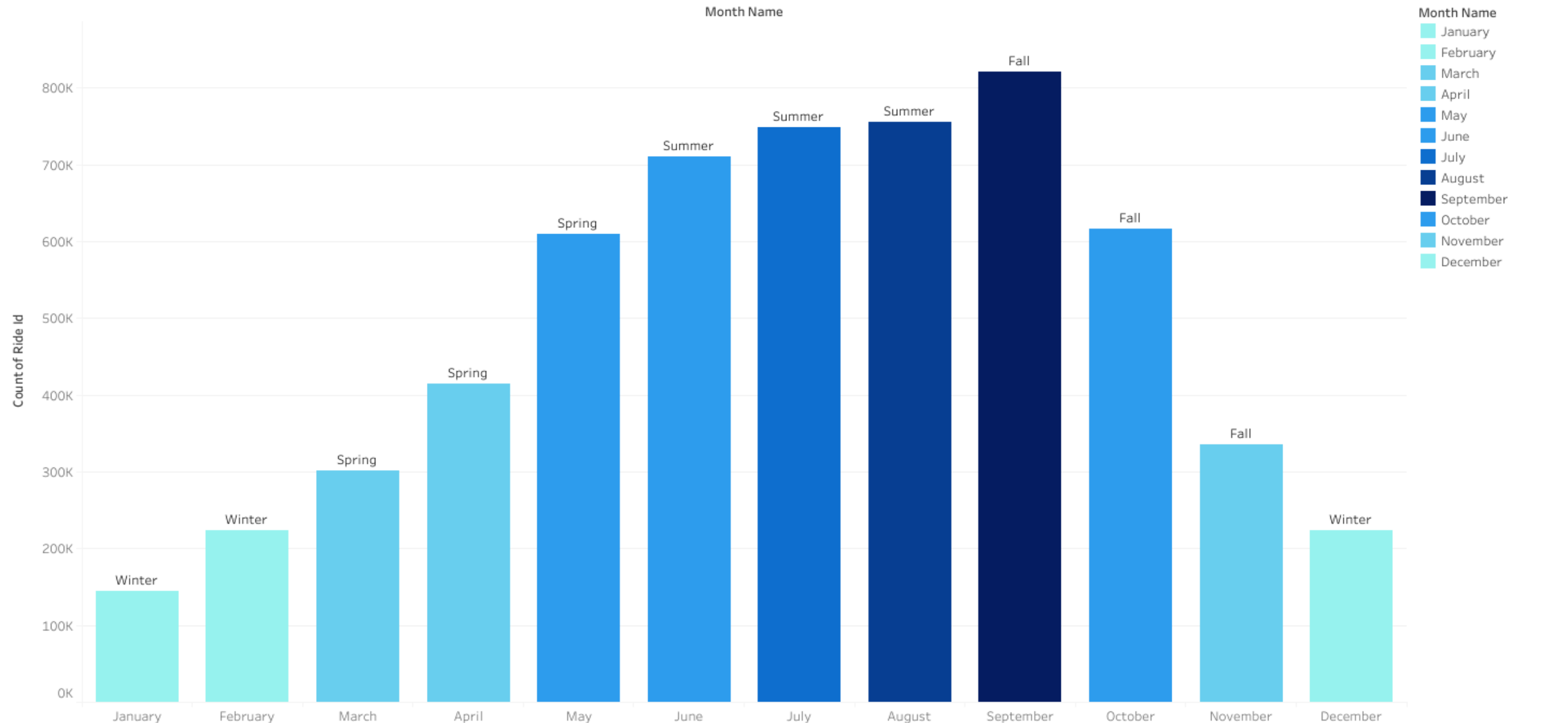


RIDERS COUNT DIFFERENCE



MONTHLY RIDERS

June, July, August & September were the Busiest Month.



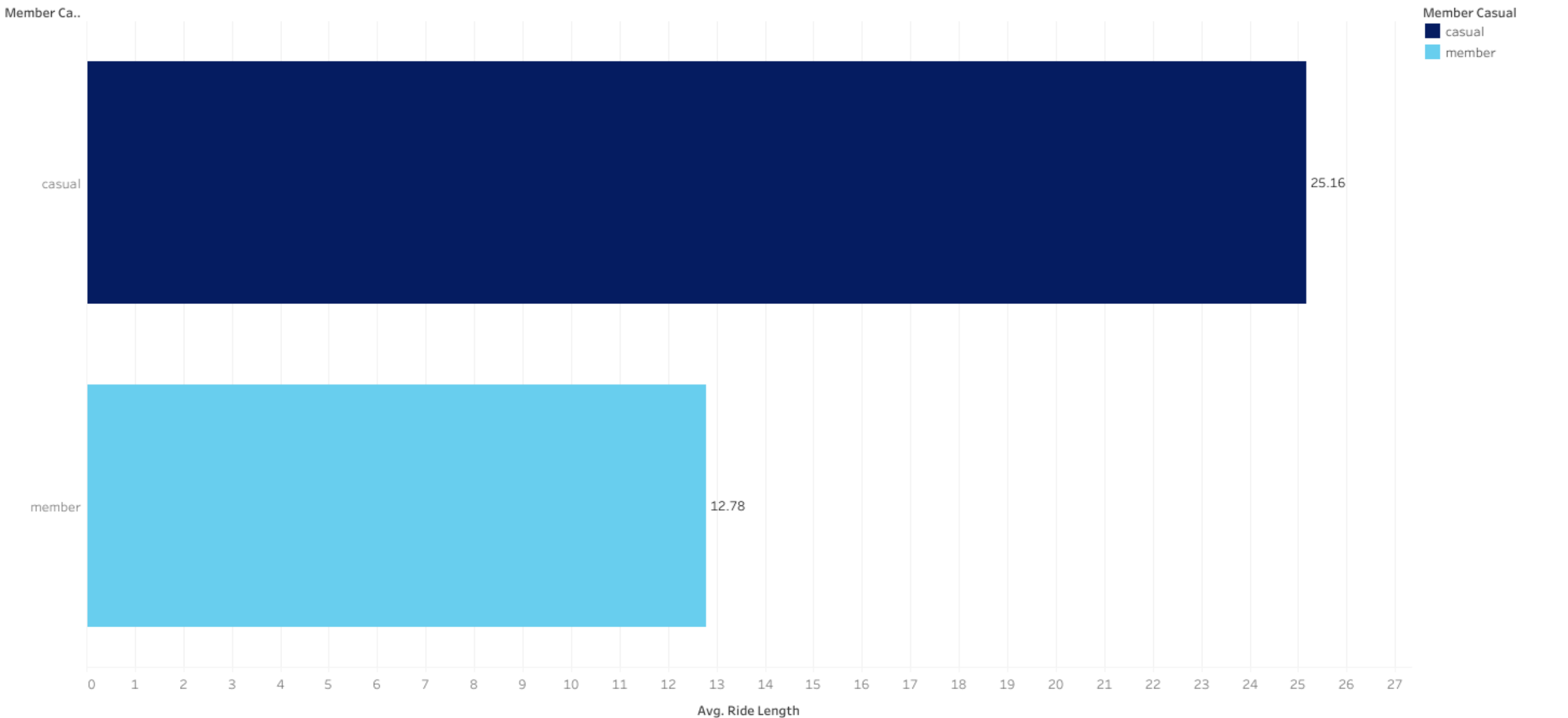
SEASONAL RIDERS

Rides are highest in summer.
Usage drops sharply in winter (cold weather effect).



DAILY RIDES COMPARISON

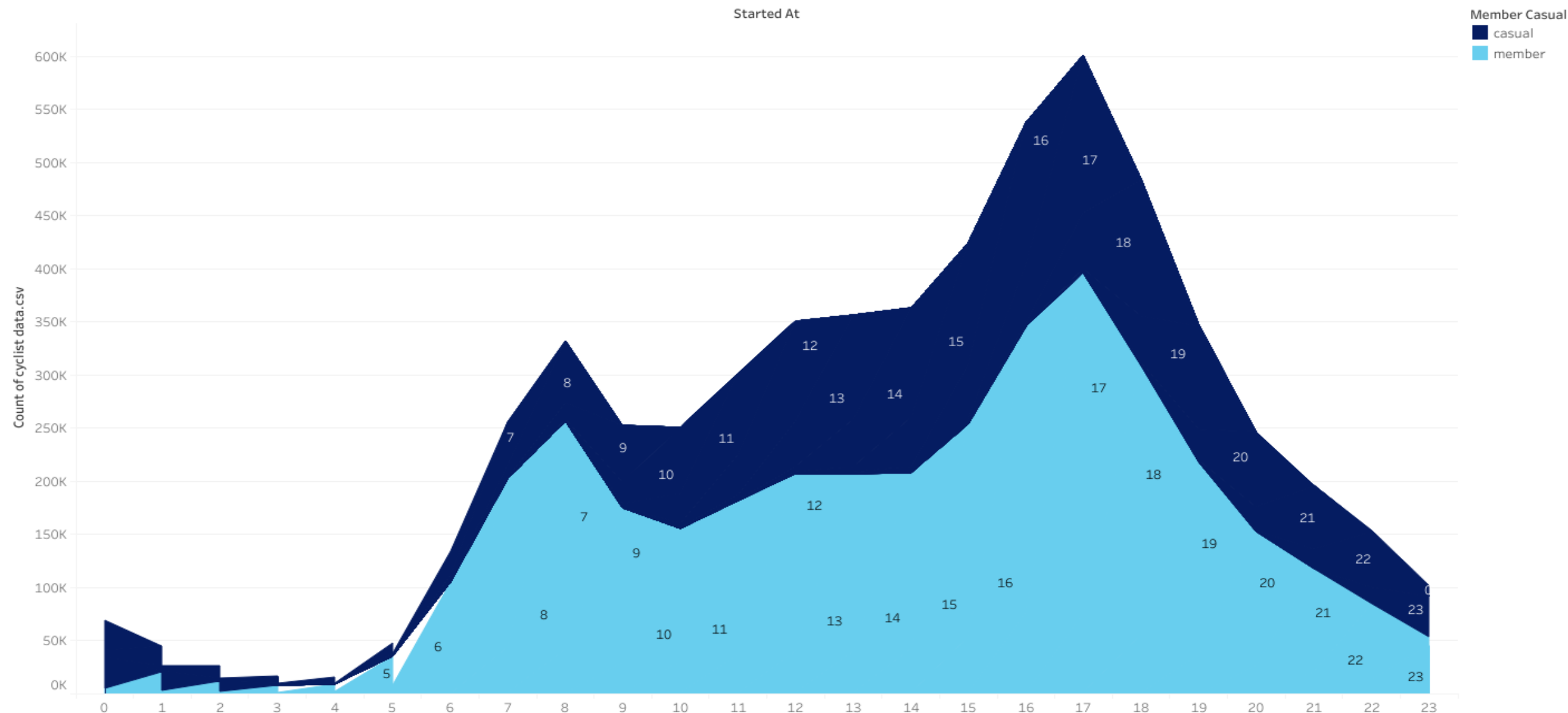
Members ride more on weekdays.
Casual riders increases on weekends.



AVERAGE RIDE LENGTH

Casual riders take longer rides on average than members.

Start Time Comparison



START TIME COMPARISON

Casual rides increase around 8 AM and 5 PM.
Member rides align closely with standard work hours.

INSIGHTS SUMMARY

Bike rides are highest in **June, July, and August** (summer), lowest in winter months, suggesting marketing efforts in winter may have limited impact.

SUMMARY 1 - SEASONS

Casual riders tend to take **longer rides**, indicating they actively use the service but may not find annual memberships attractive.

SUMMARY 2 – RIDE LENGTH

Members take shorter, frequent rides,
which aligns with commuting patterns.

SUMMARY 2 – RIDE LENGTH

Casual riders are engaged but may face barriers (**pricing, package structure**) that prevent them from upgrading to annual membership.

SUMMARY 2 – RIDE LENGTH

Members ride more on weekdays
→ consistent commuter usage.

SUMMARY 3 – DAILY & TIME OF DAY INSIGHTS

Casuals ride more on weekends
→ Leisure Oriented.

SUMMARY 3 – DAILY & TIME OF DAY INSIGHTS

Peak Hours

Casual rides peak around **8 AM** and **5 PM**, aligning with typical work hours.

SUMMARY 3 – DAILY & TIME OF DAY INSIGHTS

Casual riders still need the service for work-related travel, but **existing packages** may **not** suit their needs.

SUMMARY 3 – DAILY & TIME OF DAY INSIGHTS

Annual memberships are more **profitable** because they capture regular commuters (**members**), while **casual riders** (many 9–5 workers) are **underrepresented** in annual plans.

SUMMARY 3 – DAILY & TIME OF DAY INSIGHTS

Recommendations

Note: Pricing values mentioned in the following recommendations are hypothetical examples, used only to illustrate potential strategies.

Adjust Annual Pass Pricing and Benefits

- Reduce the annual pass price and extend ride-time (e.g., from 1 hour daily to 3 hours).
- *If the current pass is \$9 per month (\$108 per year), reducing it to around \$5 per month (\$60 per year) could attract more casual riders.*
- This way, the company can still profit by increasing the customer base while encouraging more people to choose annual memberships over casual rides.

RECOMMENDATION 1

Introduce a Premium Pass

- Create a new premium annual pass with greater benefits and flexibility.
- If the annual pass is \$9 per month, a premium option at \$15 per month could include up to 9 hours of daily ride time.
- This would appeal to heavy casual users (such as working professionals commuting daily), who would see better value compared to paying repeatedly for daily or weekly passes.

RECOMMENDATION 2

Simplify Daily & Weekly Passes

- Replace daily and weekly passes with a **pay-per-use model** (e.g., cents per minute/hour).
- If casual riders currently pay around \$1 per daily ride, this could amount to ~\$365 annually, whereas offering a flexible \$150–\$180 annual pay-per-use hybrid option would feel more affordable and valuable.
- Adding extra perks to the standard annual pass (e.g., 1–2 bonus hours) could further increase adoption and satisfaction.

RECOMMENDATION 3

Thank you for taking the time to go through my presentation. I truly appreciate your attention and would be happy to receive any feedback or suggestions for improvement. Your input will help me learn and grow further. Thanks again, and goodbye!