

Cyclistic Membership Analysis

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ASK

Problem to solve:

How do annual members and casual riders use Cyclistic bikes differently?

How can your insights drive business decisions?

Business Task: Identify the different usage habits of casual riders vs annual members from the dataset.

PREPARE

The data can be found [here](#).

The data has been made available by Motivate International Inc. under this [license](#).) This is public data that we can use to explore how different customer types are using Cyclistic bikes. There are 12 .CSV files that we have used for the year 2022. Each file contains data that is organized into rows and columns with ride_id being the unique identifier for each row.

In terms of bias and credibility, our data ROCCCs:

Reliable and Original: This data is a unbiased public dataset that is made available by Motivate International Inc. which we can use to explore how different customer types are using Cyclistic bikes.

Comprehensive and Current: The dataset contains all the data we need to understand how casual riders vs annual members use the Cyclistic bikes differently. The data is current as seen by the dates specified in the dataset. This will ensure that our insights are based on the latest data available.

Cited: The data is vetted and made public by Cyclistic. Such datasets are generally good sources of data.

PROCESS

1. Uploaded data to sql. Ran query to see mistakes/misspellings for different cols in all 12 tables using DISTINCT.
2. Combined all 12 tables into one
3. Calculated ride_length for each row
4. Removed rows where ride_length <= 0
5. Extracted day_of_the_week and month from started_at
6. Converted numerical value of month to text (eg: 1 = January, 2 = February and so on)

Average Ride Length

1. Based on results, average ride length for casual members is more than annual members.

```
35
36
37
38
39 --Select all users who have bikes less than 24 hours before returning
40 SELECT member_casual, COUNT(member_casual) AS total_riders, AVG(ride_length) AS Average_Ride_length, --in minutes
41 FROM `cyclisticdataanalysis-377116.Trips202201.combined_bike_data_2022` AS combined_data
42 WHERE ride_length < 1440 and end_lat IS NOT NULL AND end_lng IS NOT NULL
43 GROUP BY member_casual
44
45
```

Query results

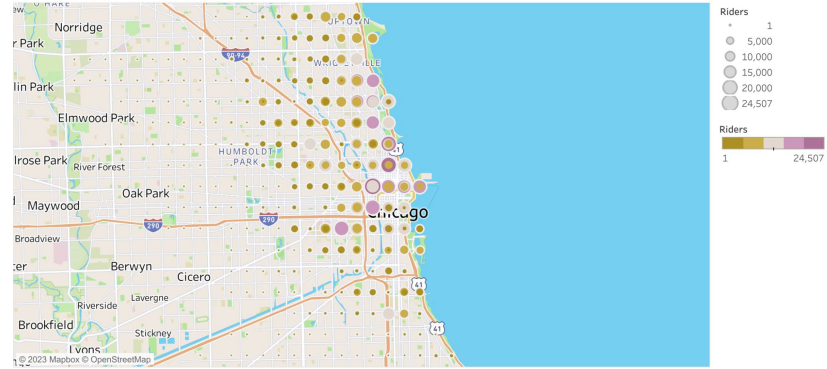
[SAVE RESULTS](#)

JOB INFORMATION		RESULTS	JSON	EXECUTION DETAILS	EXECUTION GRAPH	PREVIEW
Row	member_casual	total_riders	Average_Ride_lg			
1	casual	2268810	21.7115223...			
2	member	3271756	12.1711958...			

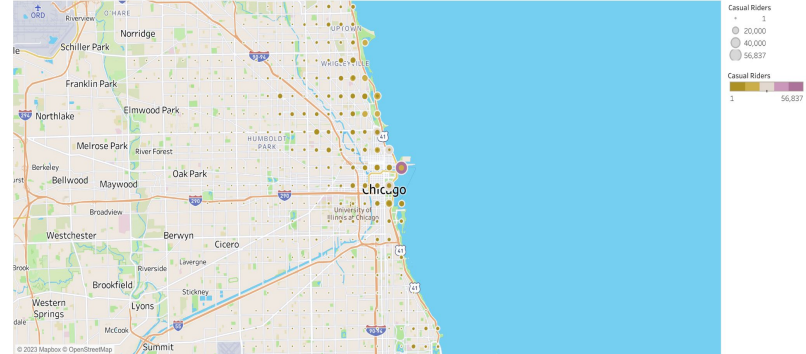
Number of Riders Based on Station Location

The maps indicate that while more people tend to pick up bikes from along the coast, there is not much of a difference between whether the member is casual or annual.

Total Member Riders Per Station



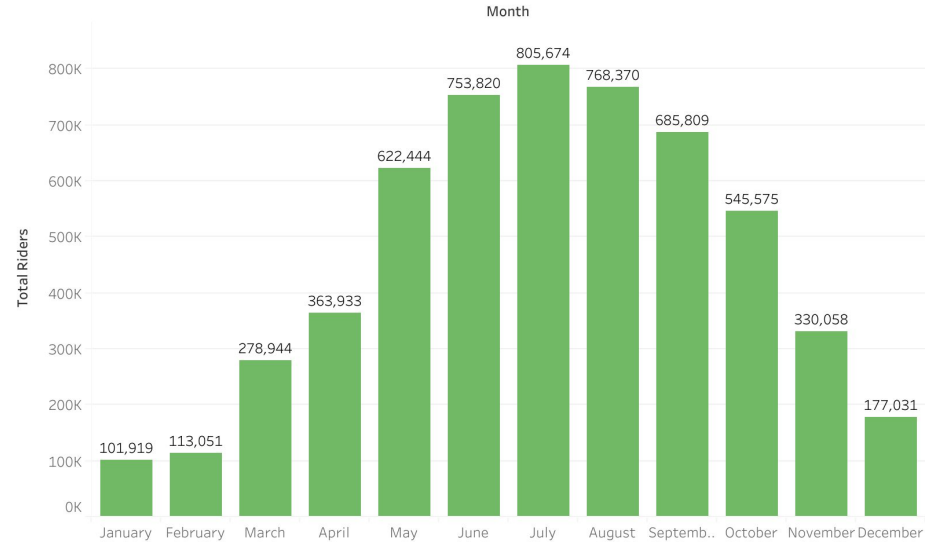
Total Casual Riders Per Station



Total Riders Based on Months

The graph indicates that ridership peaks during the summer months and declines during the colder months.

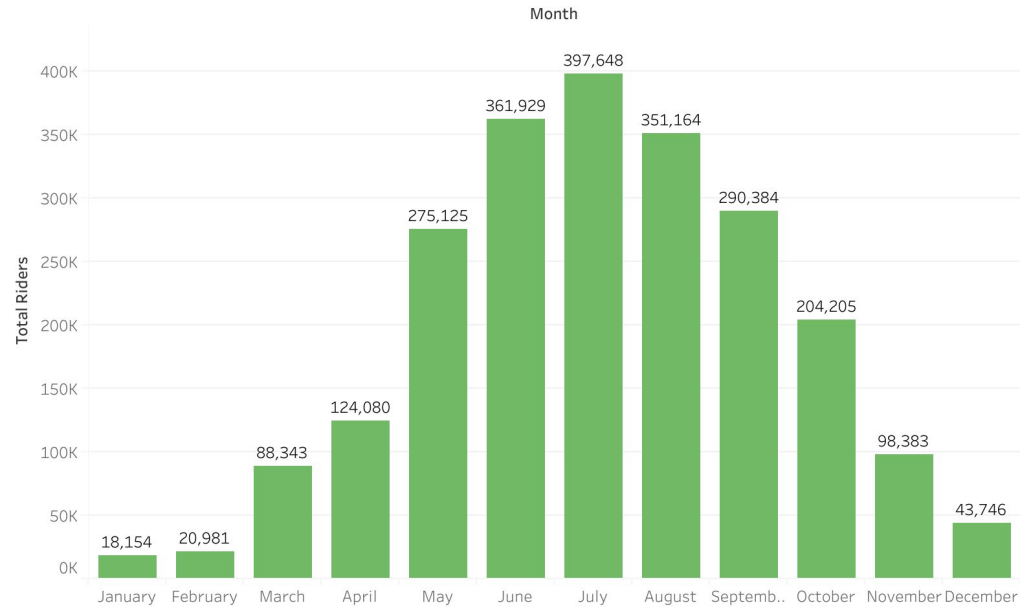
Total Riders By Month



Casual Riders Per Month

The graph indicates that for casual riders, the ridership peaks during summer months whereas it shows a sharp decline during winter months.

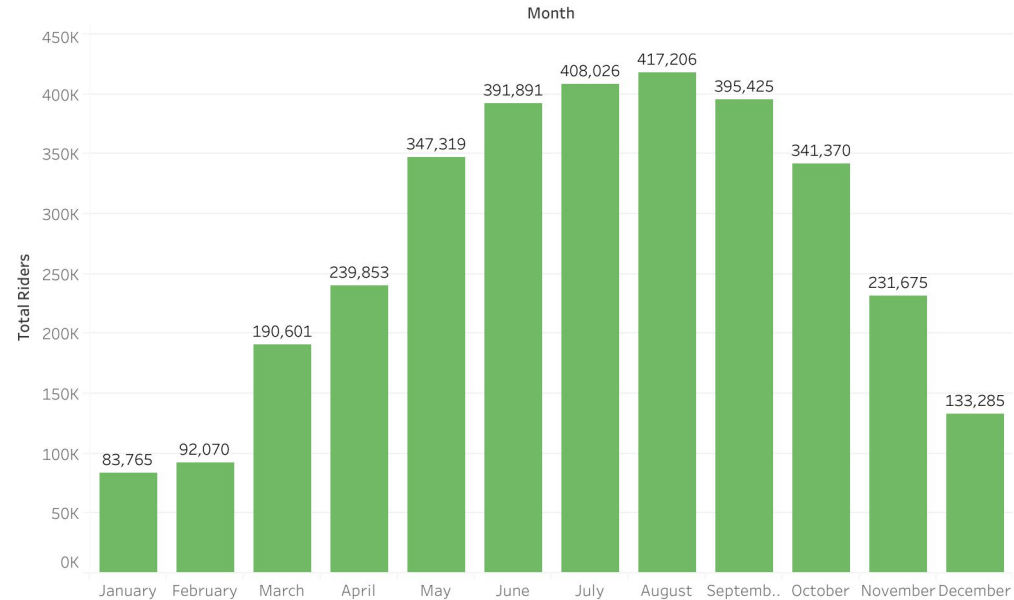
Total Casual Riders By Month



Annual Members Per Month

For annual members, while there is a marked difference in the ridership between summer and winter months, it is not as marked as it is for casual riders.

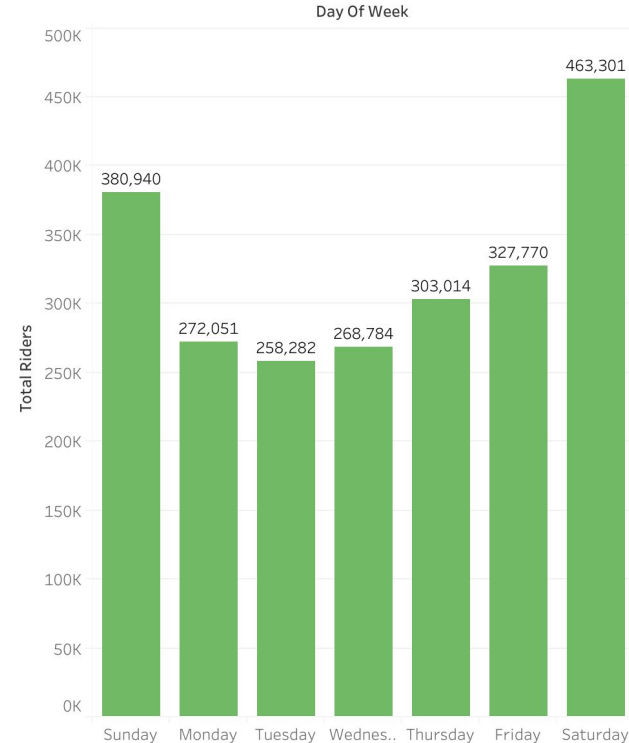
Total Member Riders By Month



Casual Ridership By Day Of Week

Casual ridership peaks on the weekend and plateaus during the week indicating that casual riders may use the bikes more for leisure activities.

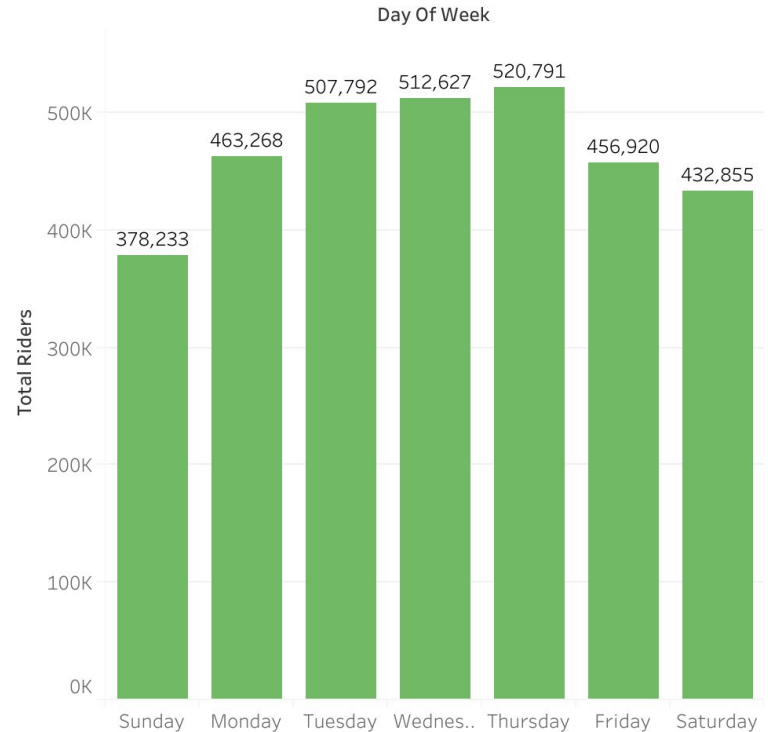
Total Casual Riders By Day Of The Week



Annual Member Ridership By The Day Of Week

The graph shows us that ridership for the annual members is fairly consistent throughout the week indicating that annual members may use the bikes for daily commuting as well.

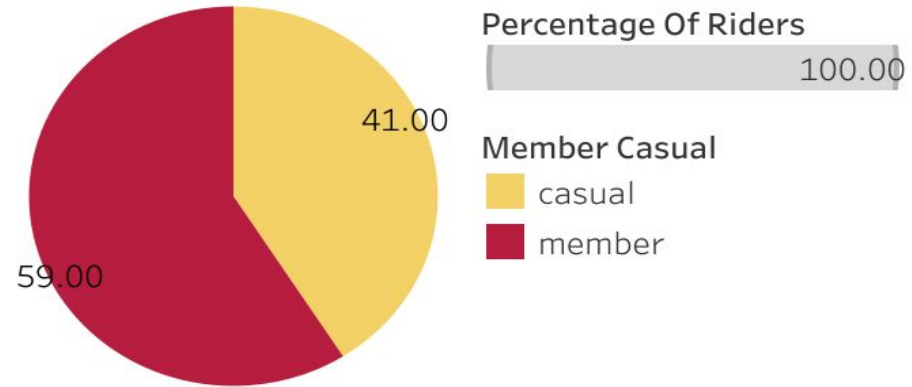
Total Member Riders By Day Of Week



Percent of Casual Vs Annual Members

Cyclistic has about 60% annual members and 41% casual members indicating they retain loyalty for most of their members.

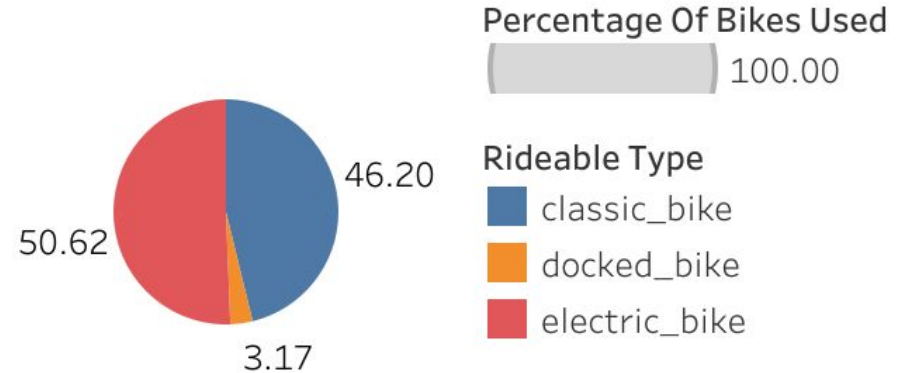
Percentage Of
Casual Vs
Annual
Members



Preferred Bike Types

It's is evident that riders prefer electric bikes followed by classic bikes.

Preferred Bike Types



Recommendations based on the analysis.

Based on the charts, I have the following recommendations:

1. Cyclistic can hold promotions for discount on annual membership during months of June to September to encourage casual riders to become annual members.
2. Specifically, the promotions can be held on weekends when we see a surge in the casual member ridership.
3. Additionally, Cyclistic can hold promotions for new annual members riders on their electric bikes since that is the bike type most preferred by riders.
4. Since average ride length is greater for casual riders, Cyclistic can include a promotion which automatically applies a discount based on the length of time the bike is held by the member i.e. the longer the bike kept by the member, the more discount they get when billed for the ride.