

## Case Study: How does a bike-share navigate speedy success?

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### Background:

As a junior data analyst working on the marketing analyst team at Cyclistic, a bike-share company in Chicago, the director of marketing believes the company's future success depends on maximizing the number of annual memberships. Therefore, my team wants to **understand how casual riders and annual members use Cyclistic bikes differently.**

From these insights, my team will design a new marketing strategy to convert casual riders into annual members. But first, Cyclistic executives must approve my recommendations, so they must be **backed up with compelling data insights and professional data visualizations.**

### Business Task:

Gain insights into how annual members and casual riders use Cyclistic bikes **differently to inform a new marketing strategy** aimed at **converting casual riders into annual members.**

### Data Source:

#### 12 Months of Historical Cyclistic Trip Data:

- **Period Covered:** May 2023 to May 2024
- **Fields Included:** Ride ID, ride type, start/end times, station names/IDs, coordinates (latitude and longitude), and member type (annual member or casual rider).

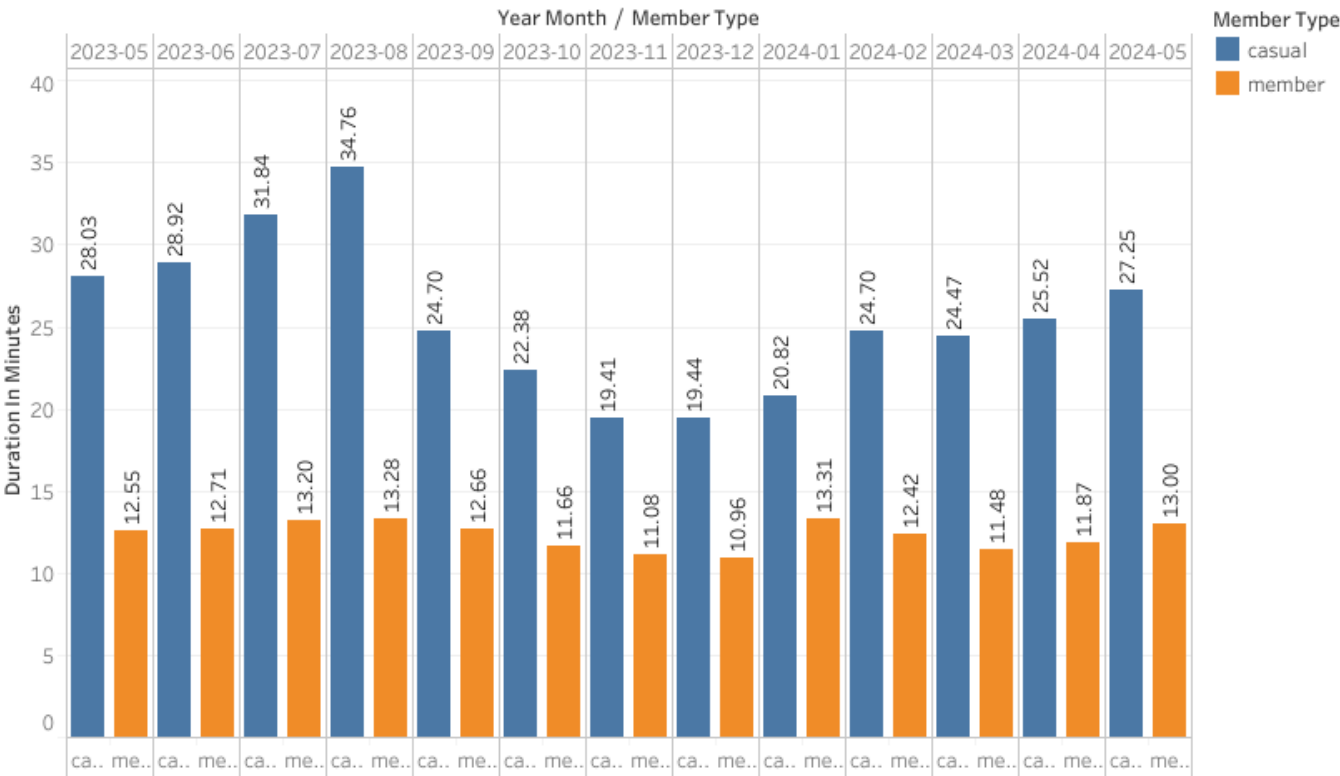
**Documentation of data cleaning and manipulation:**

Activity	Description
1. Upload Data	<b>Tool:</b> MySQL <b>Activity:</b> <ul style="list-style-type: none"><li>• Import dataset from May 2023 to May 2024</li></ul>
2. Data Manipulation	<b>Tool:</b> MySQL <b>Activities:</b> <ul style="list-style-type: none"><li>• Derive <b>average ride duration</b> for casual and annual members for the past year</li><li>• Analysed the <b>total number of rides per day/month</b> for both groups</li><li>• Cleaned and grouped longitude and latitude data to analyze the <b>number of ride-starting locations</b></li></ul>
3. Create Visualisation	<b>Tool:</b> Tableau <b>Activities:</b> <ul style="list-style-type: none"><li>• <b>Bar Chart:</b><ul style="list-style-type: none"><li>○ Compare trip duration for the past years between the rider types</li><li>○ Compare the usage of different mode of rides</li></ul></li><li>• <b>Map:</b> Displayed the density of rides starting or ending at different stations</li><li>• <b>Line Graphs:</b> Illustrate trends in ride count for casual and annual members over time in days/months for the past year</li></ul>

Summary of analysis:

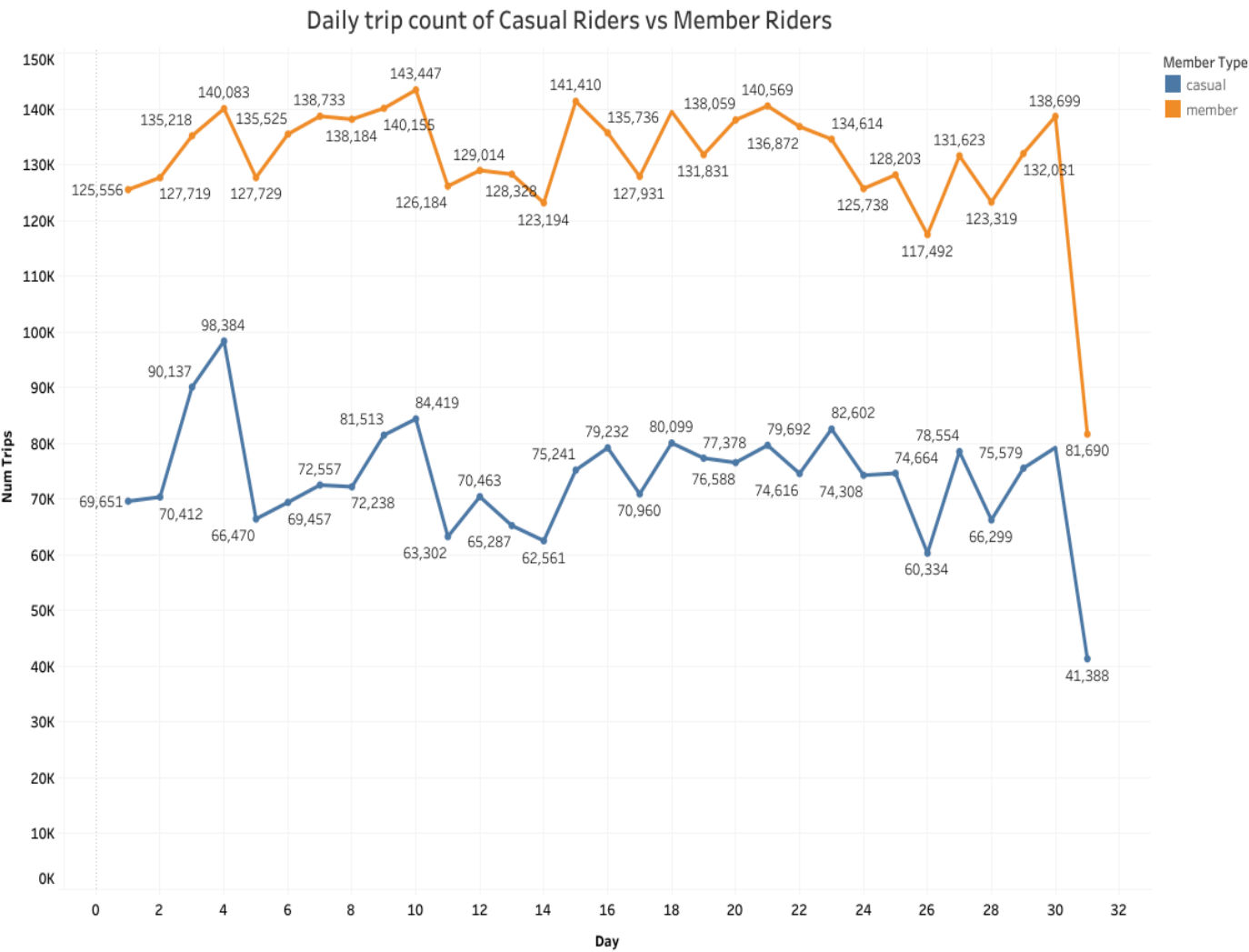
- **Average Ride Duration Trend (Past Year)**
  - Duration Comparison
    - On average, annual members ride for approximately twice the duration of casual users throughout the year.
  - Peak Duration
    - Casual riders experienced a notable peak in ride duration in August 2023, while the ride duration for annual members remained consistent throughout the year.

Average Ride Duration of Casual Riders vs Member Riders

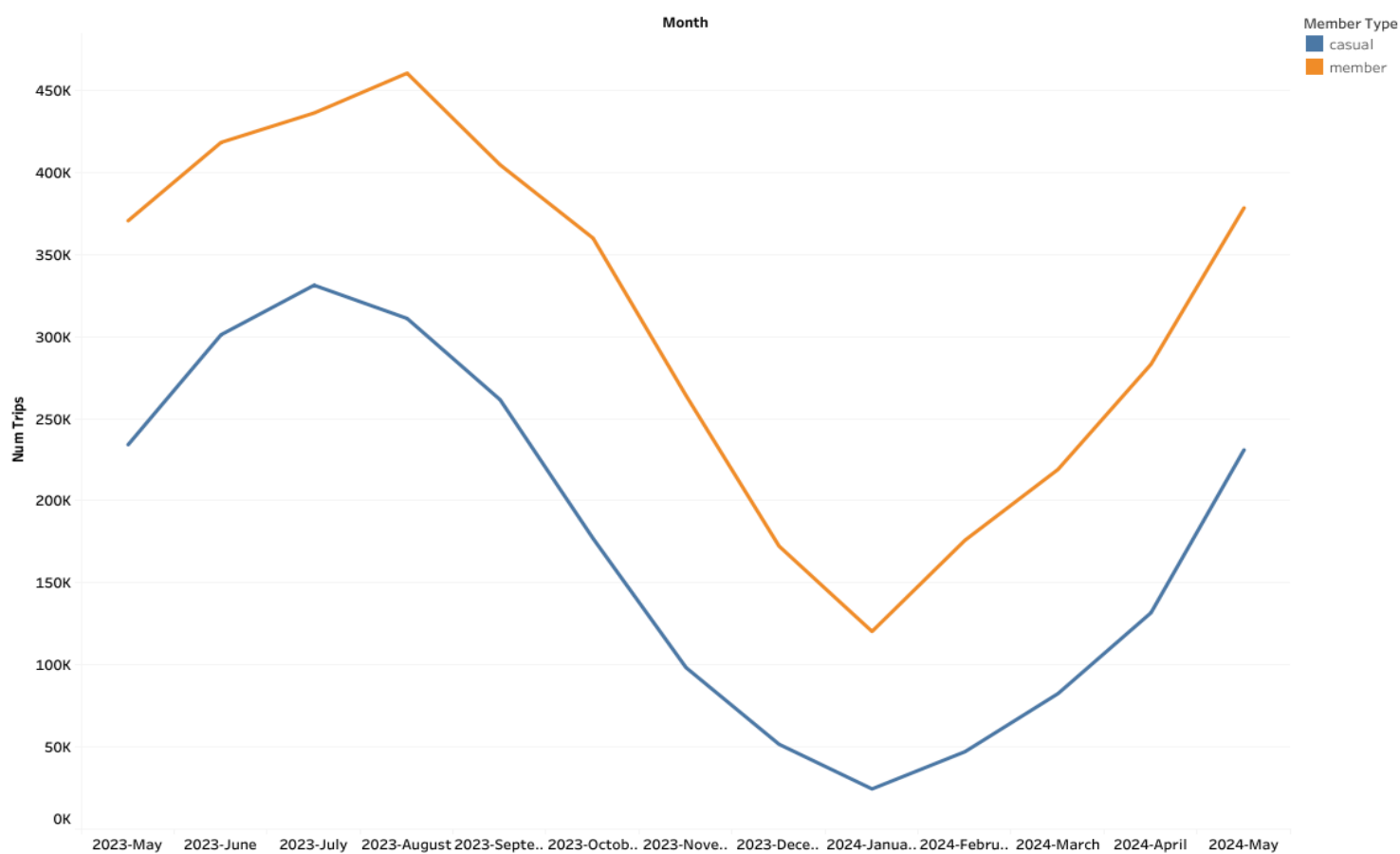


- **Trip ride visualisation of casual riders vs member riders**

- Trip Frequency
  - Overall, annual members take approximately twice as many trips as casual riders both daily and monthly.
- Peak Usage
  - Casual riders reached their peak trip count in July 2023, whereas annual members peaked in August 2023.
- High Activity Period
  - Both casual and annual riders exhibit higher trip counts during the first five days of each month.



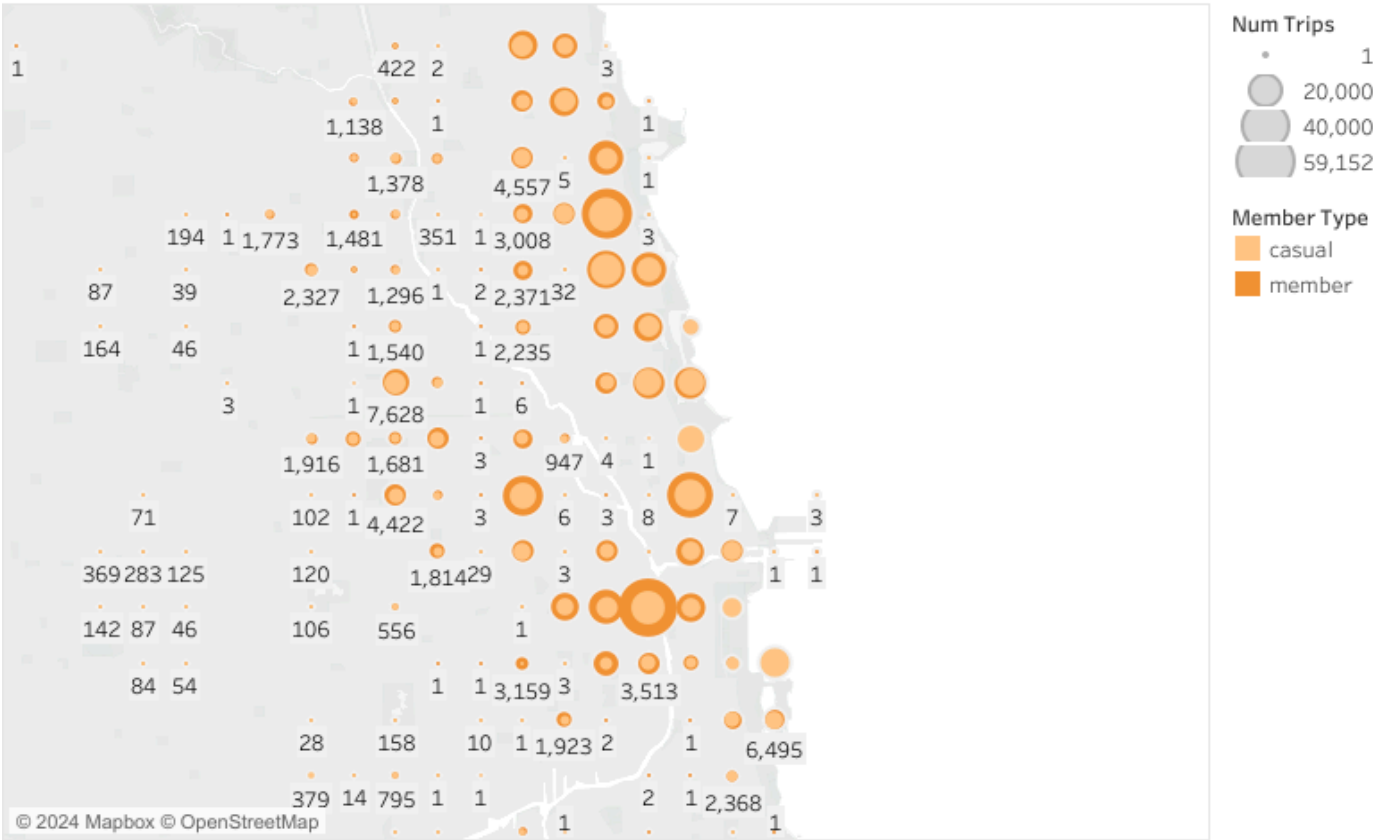
Monthly trip count of Casual Riders vs Member Riders



- **Map distribution of start stations**

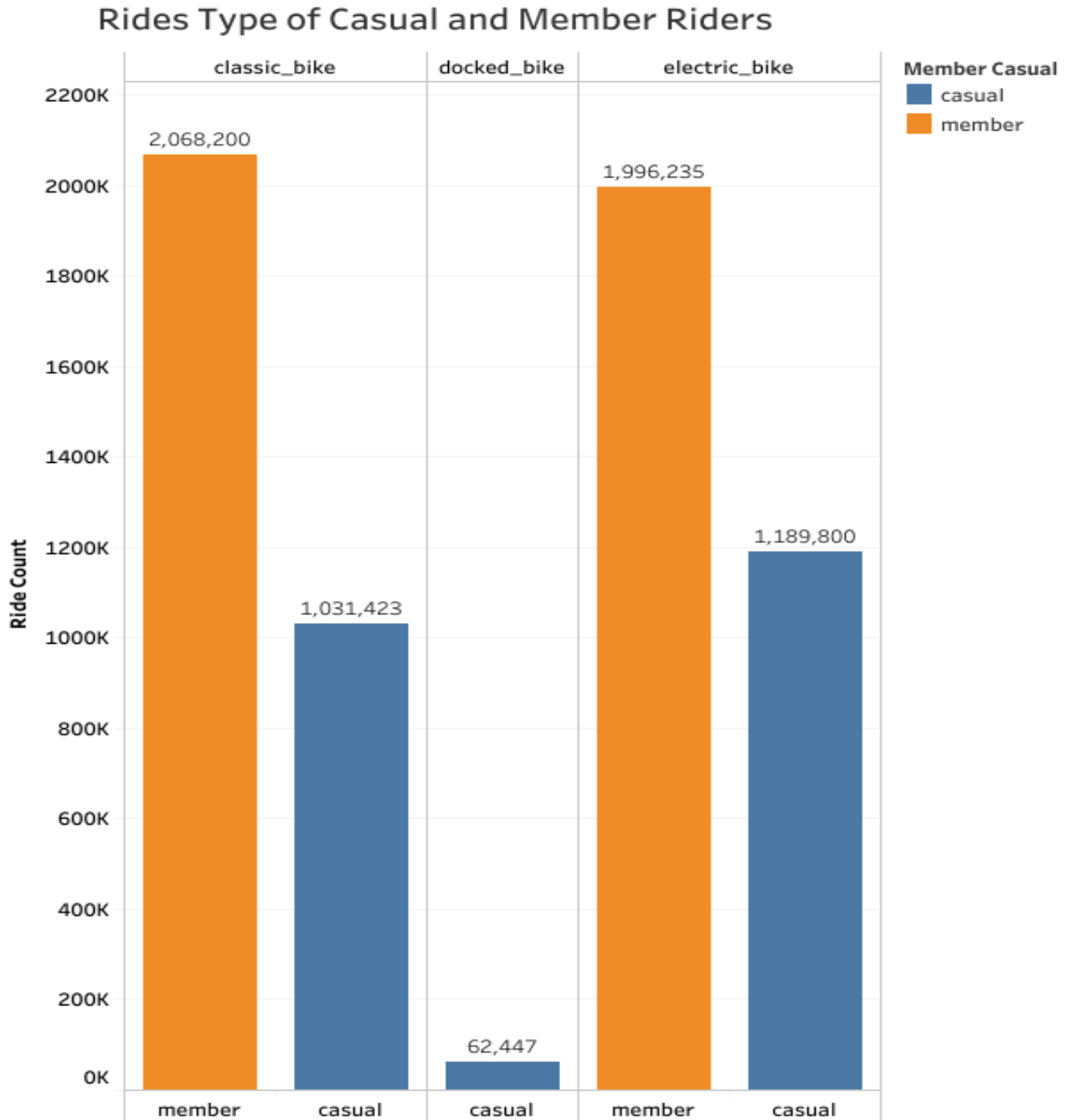
- While certain start stations are more popular among annual members, these stations also experience considerable usage by casual riders. This indicates potential opportunities for targeted marketing efforts at these locations to convert casual riders into members.

Map Distribution of Rides



- **Popularity of different ride types**

- Both classic and electric bikes are favored by casual and annual members, while docked bikes are exclusively used by casual riders and are less popular overall. This suggests a preference for more flexible and versatile bike options among all users.





## Recommendations:

### 1. Targeted Promotions at Popular Start Stations

- a. Focus on stations that are popular among both casual riders and members. Use targeted promotions or incentives (such as discounted annual memberships, free trials, or loyalty rewards) to encourage casual riders to switch to annual memberships.

### 2. Seasonal Campaigns Based on Peak Months

- a. Launch marketing campaigns around peak months: July for casual riders and August for members.
- b. Highlight the benefits of annual memberships during these periods, emphasising increased ride duration and trip frequency.

### 3. Referral Programs

- a. Introduce referral programs where existing members can earn rewards for referring friends or family to sign up for annual memberships.
- b. Leverage word-of-mouth marketing to boost member numbers, especially at popular locations where casual rider usage is high.

### 4. Removal of docked bikes

- a. Remove docked bikes, which have low usage by casual riders and no usage by members.
- b. Redirect marketing efforts and resources towards promoting electric and classic bikes to increase membership and profitability.

**Tableau Visualisation link:**

[https://public.tableau.com/views/Cyclistic-Analytics-Google-Capstone-Project/RiderHistoryDashboard?:language=en-GB&:sid=&:display\\_count=n&:origin=viz\\_share\\_link](https://public.tableau.com/views/Cyclistic-Analytics-Google-Capstone-Project/RiderHistoryDashboard?:language=en-GB&:sid=&:display_count=n&:origin=viz_share_link)

**Github link:**

<https://github.com/Luanjie-Dong/Cyclistic-Analytics-Google-Capstone-Project>