Title about Cyclistic Case study

Ask

The Business task

What is the best value offering Cyclistic can provide its existing customers to upsell them to an annual model resulting in a revenue increase.

Prepare

The dataset is provided by Lyft Bikes and Scooters, LLC under this license agreement (https://ride.divvybikes.com/data-license-agreement) which allows the non-commercial use of this data in scope of this project. The data used and analyzed is not personally identifiable and is not tied to specific users. It is a dataset created for a fictional company, but the data is owned by the city of chicago and is from a reliable government source. It is a primary data source, and as described in the prompt can be considered comprehensive for the scope of this project. The dataset is updated monthly and contains data back to 2013. The data format is not consistent and some data cleaning/ management needed to be done before analysis.

The database is composed of information about the services provided by Cyclistic from 2013 through to November 2022 (present). The data up to and including 2017 is organized into 2 tables; stations and trips. With stations containing data such as the location and opening date of stations, and Trips containing data concerning individual user trips such as duration and to and from which stations. Starting 2018 these tables are combined into one.

Analyzing the aggregated trip data can allow for insights into patterns of how Cyclistic customers and subscribers use the service. Finding patterns allows for a more effective marketing and customer acquisition/upselling strategy.

Process

The primary analysis for this project is done in R because I have the most experience working in R and find it the best tool for analyzing and visualizing data.

DATA CLEANING

Initial data wrangling

- removed all rows containing NA's
- removed row count column
- removed all rides with a negative length or a length over 24 hours
- changed the datatype of the dates to allow easier plotting.

Analyze

The project involves analyzing data that has been organized in a single dataframe, which is then subsetted for specific analyses. The main objective is to identify trends among subscribing customers of Cyclistic and utilize this information to target casual users who exhibit similar patterns, as they are more likely to upgrade to a membership. Additionally, the study focuses on understanding the most common usage times and popular locations among members and casual users in order to determine the optimal routes or hubs for advertising.

By examining the data, it is observed that members of Cyclistic tend to utilize the service more frequently during weekdays compared to casual users [**Figure 1**]. Furthermore, the analysis reveals that members predominantly engage with Cyclistic during work hours [**Figure 2**]. These insights highlight the specific timeframes when advertisements can be strategically targeted towards potential casual users who may convert into members.
Another significant finding is that the months of May to October are the most suitable for advertising campaigns [**Figure 3**]. This conclusion is drawn based on the observation that both members and casual users utilize Cyclistic less frequently during the winter months. By leveraging this information, the company can allocate its resources more effectively and prioritize advertising efforts during the optimal months for maximum impact. The most effective location to advertise to is Streeter Dr & Grand Ave as it is the most popular start point and destination for Cyclistic users [**Table 1**].

Figures

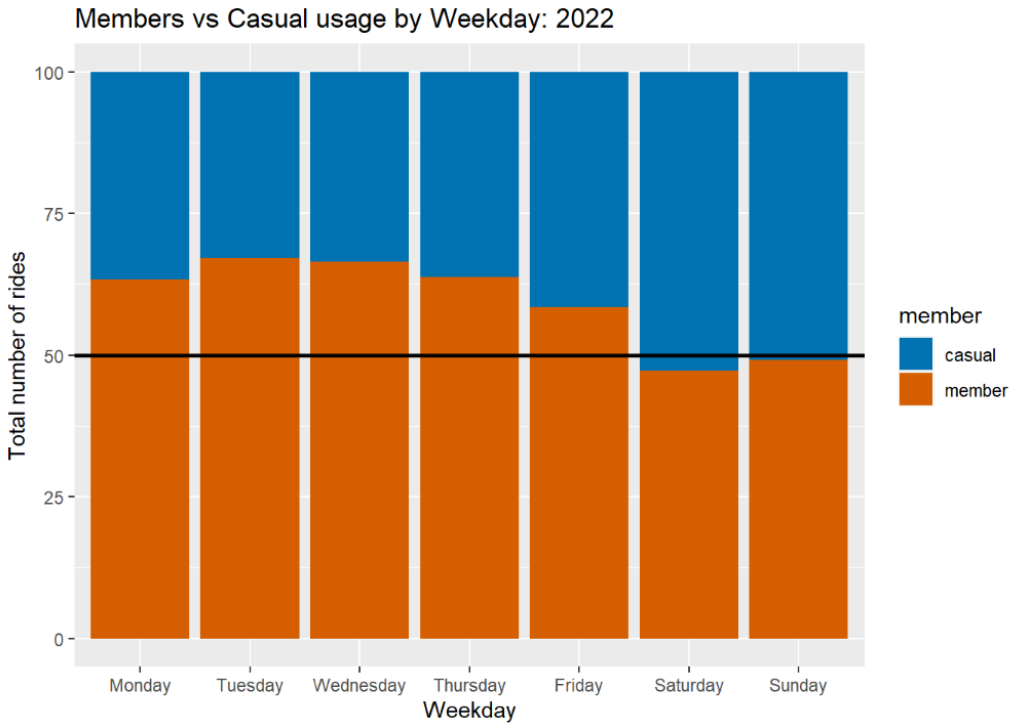

Figure 1: Comparison of usage between subscribing members and casual users

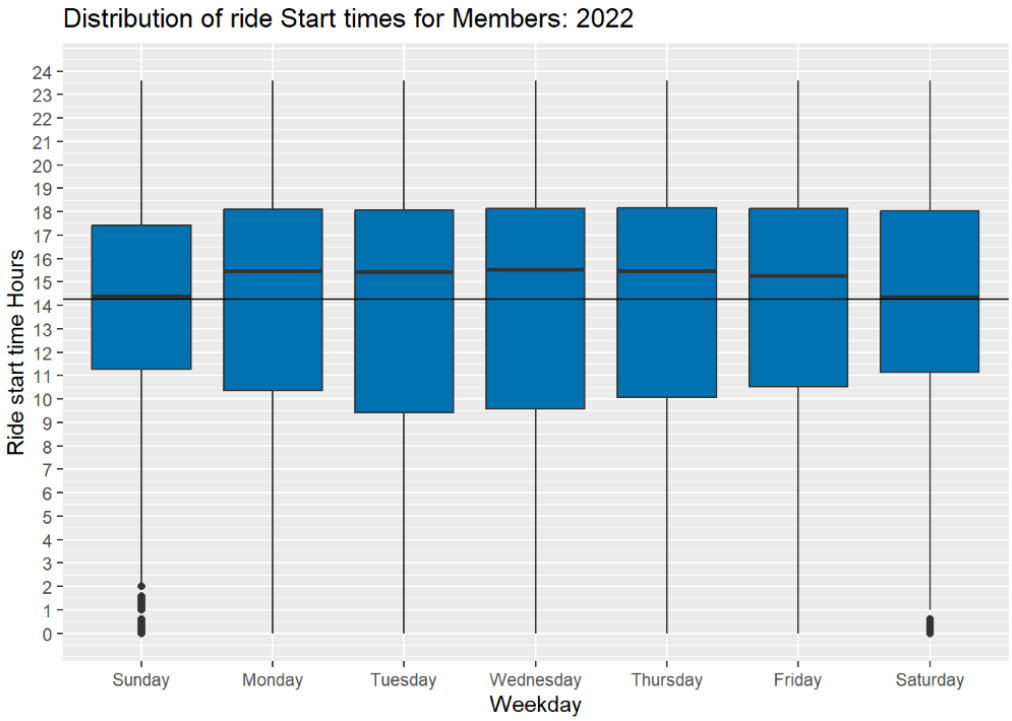

Figure 2: The distribution of ride start times by weekday

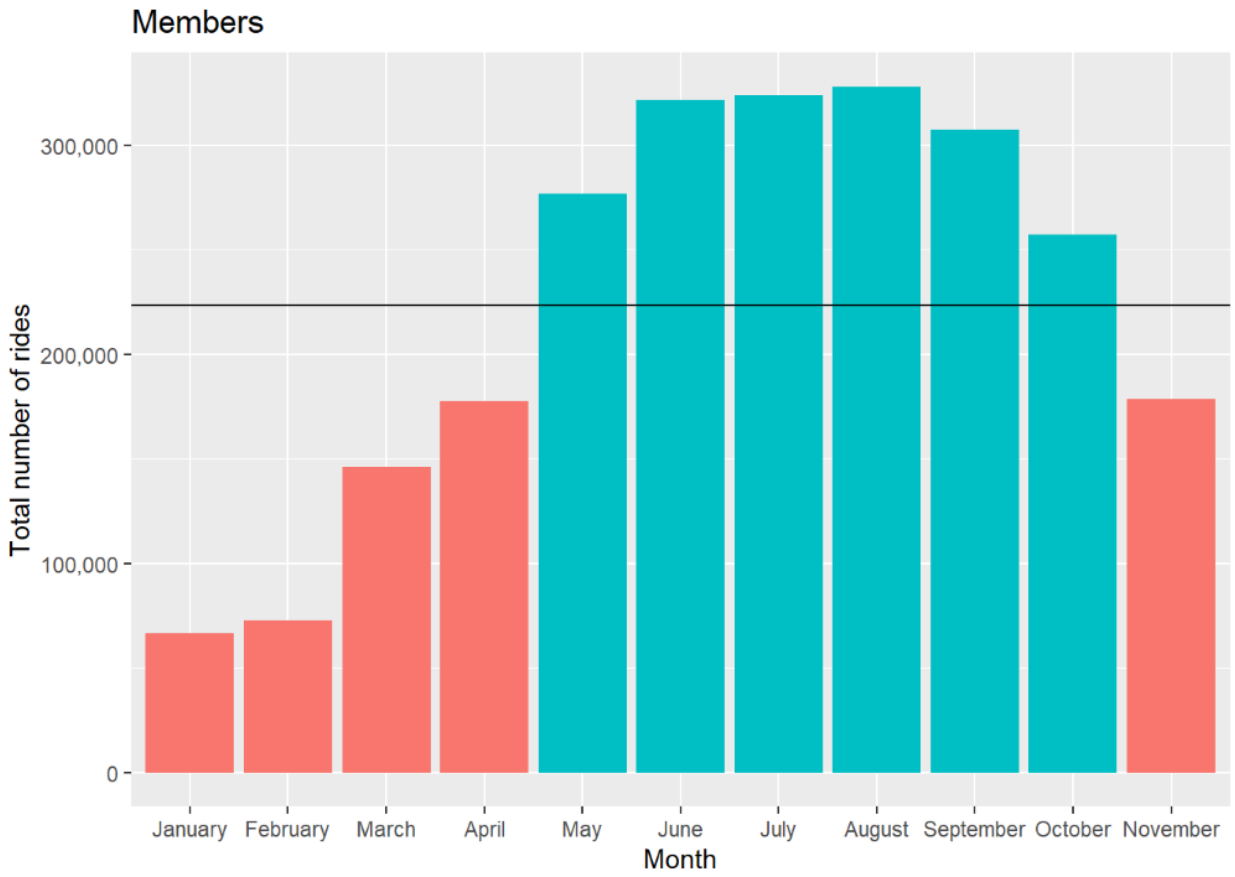

Figure 3: Distribution of rides members make by month

Most popular locations	Number of trips started	Number of trips ending
1. Streeter Dr & Grand Ave	69292	70550
2. DuSable Lake Shore Dr & Monroe St	38164	39752
3. DuSable Lake Shore Dr & North Blvd	36873	37444
4. Michigan Ave & Oak St	36266	37280
5. Wells St & Concord Ln	33111	33231

Table 1: Shows the most popular starting and ending locations for trips with Cyclistic.

Share

The analysis, all generated scripts and plots and the presentation can be found on the Github : https://github.com/AlexanderFastner/Cyclystic_Case_Study

The presentation to shareholders can be found here: Presentation