Data Analysis Project

Data Analyst: Henry Mosana

Client/Sponsor: Cyclistic Bike-Share
> **Lily Moreno: Director of Marketing**
> **Executive Team**

Purpose:

The project is for the company Cyclistic Bike-Share based in Chicago. The aim and purpose of the project is to do an analysis on data from previous years; to determine how the company can better understand how their riders use Cyclistic Bike-Share. The riders are divided into casual riders and annual members. It has been established that income from members has made the company profitable. In this data analysis project's, the goal is to understand how each (casual riders & members) uses the Cyclistic Bike-Share services differently and how casual riders can be turned into members.

Business Task:

Design marketing strategies aimed at converting casual riders into annual members.
> How do annual members and casual riders use Cyclistic Bike-Share differently?
> Why would casual riders buy Cyclistic annual membership?
> How can Cyclistic Bike-Share use digital media to influence casual riders to become members?
> How are the casual riders preferential time and mode of rides, traditional bikes, differ from the members?
> Is location and season a deciding factor on the use of Cyclistic Bike-Share between the casual riders and members?

Scope / Major Project Activities:

Activity	Description
Download and secure data	The data is provided by the company as a primary source. The data analyst will download and save the data provided as csv format. The data will consist of monthly csv data for a period of a year from 2023/09.
Data cleaning and processing	The data analyst will clean and process the data. This will be allocated a time frame of about 3 days.
Data Analysis and reporting	The data analysis will do an analytical report on the data. The goal will be to determine how casual riders and members use Cyclistic Bike-Share in order to maximize company success and convert a significant number of casual riders into members.
Data Report and Recommendation	The data analyst will provide a report with visuals and data to outline recommendations to the company. The recommendation will outline the noted usage of Cyclistic Bike-Share and how the company can use this information in their marketing campaign such as digital marketing and primary goals.

This project does not include:

Specify the things that this project isn't responsible for doing (out of scope). For instance, "this project does not involve a summation of 2019 data analysis"

- This project does not include any financial or sales analysis
- The project will not include summation of data from previous years, the year include will be from 10/2022 – 09/2023
- The project will not include …

Deliverables:

A specific list of things that your project will deliver.

Deliverable	Description/ Details
Summary of Analysis	Presentation of the analysis of Cyclistic Bike-Share's client data. A brief summary on recommendation related to the company's goals for the project.
Key findings	How do casual riders and members use Cyclistic Bike-Share differently? Why would casual riders buy Cyclistic Bike-Share annual membership. How can Cyclistic Bike-Share use digital media to influence casual riders to become members
Supporting Visualizations	Presentation of data visuals: dashboard

Schedule Overview / Major Milestones:

Milestone	Expected Completion Date	Description/Details
Data Preparation and Processing	*Friday*	*Data loaded and cleaned*
Data Analysis and visualization	*Tuesday*	*Data analysis and visualization*
Share and Act	*Friday*	*Report compilation and presentation*

Introduction

In this Google Analytics Capstone project, we present an analysis of the pseudo-company "Cyclistic Bike-Share". The company's Director of Marketing, Ms. L Moreno, has presented a business task for analysis to be presented to the stakeholders of Cyclistic Bike-Share, which include the Executive Team and the Marketing Analytics Team. The primary stakeholder, the Marketing Manager for Cyclistic Bike-Share, has tasked the Data Analytics team with determining and understanding the differences in how the company's casual bike riders and annual member riders use Cyclistic bikes.

This business goal is based on the fact that the company's profits have largely been derived from annual members. The Marketing Manager's goal is to understand the differences between casual riders and members so that the company can convert the current casual riders into annual members.

Problem and Business Task Summary

The company's main challenge is the difficulty in growing revenue due to the inability to attract more riders to become annual members.

The business task will be to use the available data to answer the following question: How do annual members and casual riders use Cyclistic bikes differently?

From the business task, the data analyst will present to the stakeholders how the riders use Cyclistic bikes differently, also outlining how this can be used to improve marketing campaigns such as digital media to influence and convert the current casual bike riders into annual members.

The Analysis

For the analysis, the following tools were used:

- Spreadsheet
- SQL Database Management System
- R-Studio
- Tableau

The Resources and Data

- The data is sourced from the company's database.
- The data is collected by the company using the company's bike-share app.
- The bike-share app collects the following information: Starting Station name and coordinates, Type of ride used, the starting date and time, the ride ending time and date, and the user status (casual or member).
- The data stores a unique ride id, which it assigns to a trip.
- The data is collected and stored in a CSV format; grouped by month and stored.
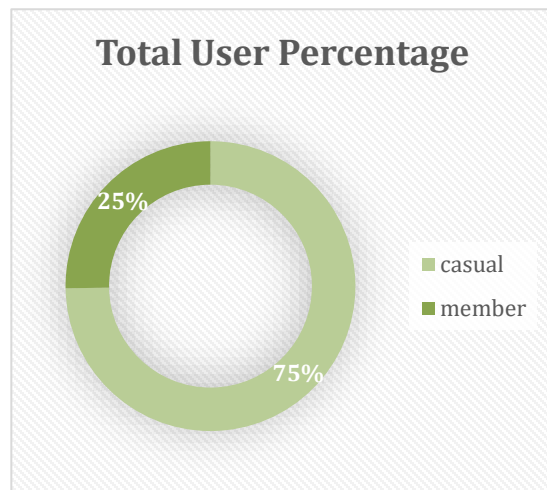
Data Processing and Cleaning

The data was downloaded from the company's database and cleaned and manipulated as follows:

- Duplicates were removed using the spreadsheet
- Spaces and unwanted characters were removed – no major changes were made to alter the naming of the columns and data
- Missing data was observed mainly in the station names and coordinates – all missing data was removed as the system could not store the correct coordinates to refill the missing data with the available data
- Data Manipulation – new columns were added:
  - Trip duration
  - Day of Week
  - Month of the year
  - Seasons of the year

Analysis Summary

Dashboard Link:

https://public.tableau.com/app/profile/henry.mosana/viz/HMosanaGoogleCapstoneProject/Dashboard1?publish=yes

Total User Percentage

25%

75%

■ casual
■ member

According to the data provided, majority of users of Cyclistic Bike-Share services are the casual riders. The other factors looked into when trying to understand how the casual riders and annual members use the bike share services differently were:

- The preference in the type of bike used
- The season, month and day of week preferred and with the longest trip rides
- Most preferred starting station

Summary Analysis

- The data indicated that the most preferred bike type is the classic bike. The casual riders use the classic bike more frequently than the annual members. The preference in bike type shows a distinct difference between the ride users. The annual members also use the docked bike more than the casual riders. This could be due to benefits of being an annual member.

Rider Count Per Week Day Per Season
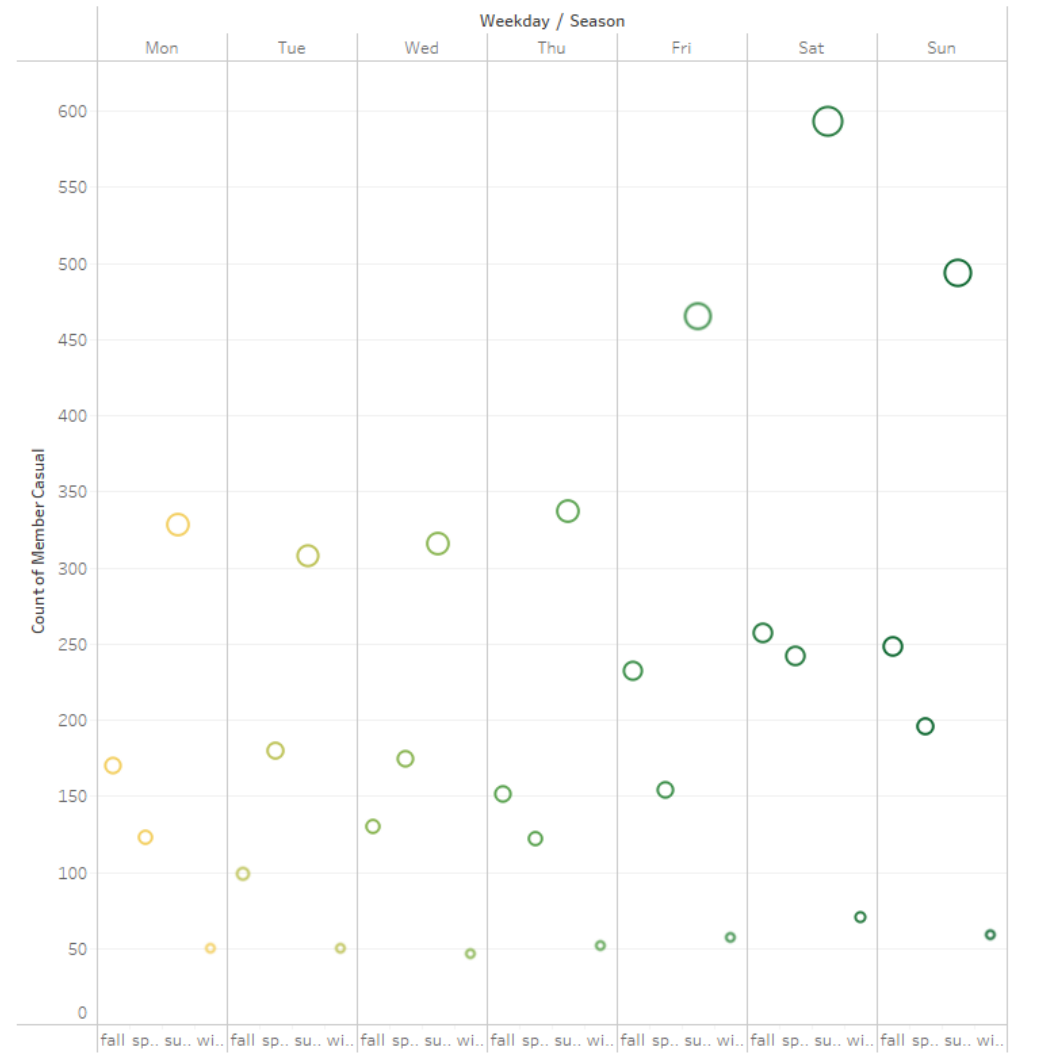
- The summer season sees a more increase in bike rides between the two categories of bike share users. There is a significant difference in the week day bike ride usage between the casual and annual members. A notable percentage of casual riders prefer using the bike on Thursdays. Although even generally the casual members out number the annual members.

Week Of Day Per User
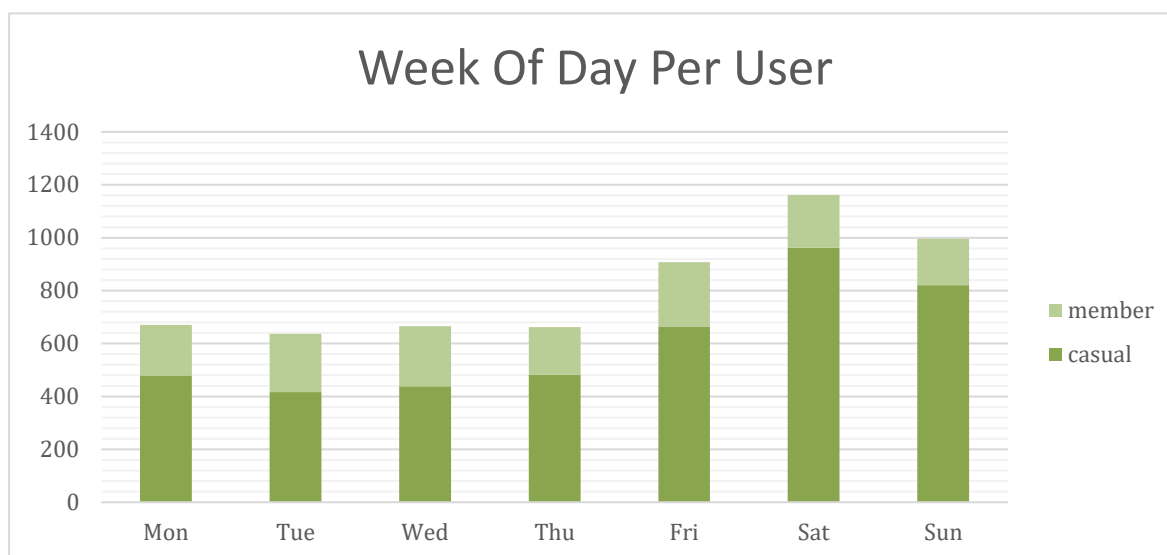
- Streeter St and Grand Ave is the most favorite start station among the bike users. The majority of casual users use this start station more significantly.

Top Start Station with Longer Trips For Users
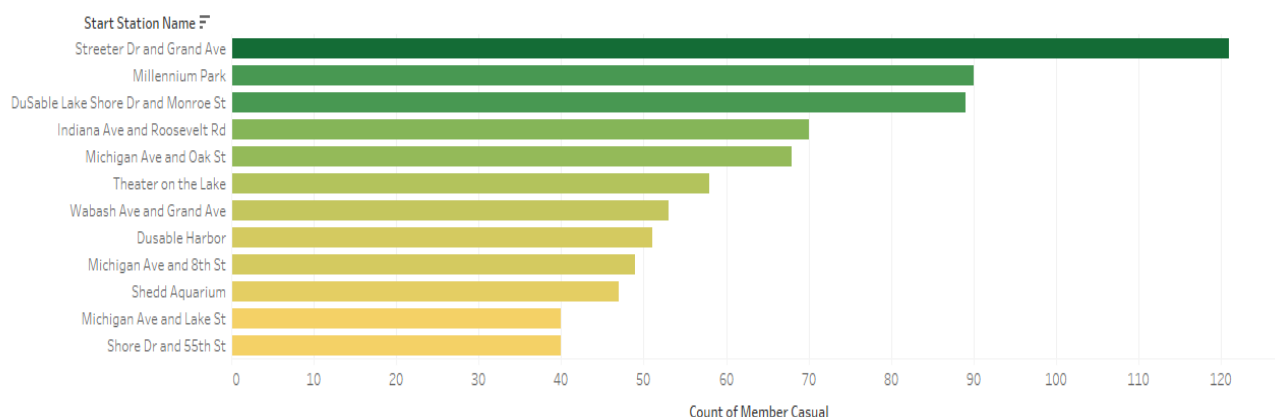
Solutions

The company's business task goal was to determine how to convert casual riders into annual members. The following solutions are suggested based on the data analysis:

- The marketing campaign can take advantage of the fact that the favorite Start station among the casual riders is Streeter St and Grand Ave. Targeted marketing can have a positive outlook by targeting a significant portion of the marketing in that Station.
- The use of new tech-bikes is mostly attributed to the annual members. The use of the new tech bikes can be used to market to the casual riders, where it becomes a benefit in becoming an annual member. This answers partly the question why would casual riders be members.
- The trip length for a significant number of casual riders is around 10 min. Only annual members have rides that go more than 30 min. As a benefit of being a member, casual riders can have this benefit.

Conclusions

In conclusion the data collected focused mostly on the bike rides. This allowed the analysis to focus on how the casual riders and annual members use the Bike-Sharing services. It is an obvious observation that most rides are taken during summer. Peaking around July and August.

The other metrics to consider for further analysis are customer feedback and spending patterns. These can further allow for analysis on how the casual riders and annual members use the bike-sharing services.