**Guided Project: Case Study Report from Google Data Analytics Certification:**

How does a bike-share navigate a speedy success?

**Introduction**

**Purpose**

To understand how annual members and casual rider differ in their duration of ride length throughout the week. This study identified the average length duration of casual riders and annual members each day from April 2019 to March 2020. This study also identified 3 recommendations after analysis.

**Business task**

Converting casual riders to annual members through design marketing strategies as annual members are much more profitable.

**Stakeholders**

Lily Moreno (directing manager), the president of the company and the executive team.

**Methods**

**Data source**

* [Historical trip data](https://divvy-tripdata.s3.amazonaws.com/index.html) from Divvy bicycle sharing service from the City of Chicago
* Made available by Motivate International Inc. under the [license LLC (“Bikeshare”)](https://ride.divvybikes.com/data-license-agreement)
  + 4 CSV files used (data from April 2019 – March 2020)

**Documentation for cleaning or manipulating of data.**

* Columns and labels were renamed for consistency in all files.
* Name of subscribers were kept consistent (customer renamed to casual, subscriber renamed to member)
* Added trip duration column for 2020 data and ride length column (in seconds) for all data.
* All trip duration negative values were removed.

*All data was cleaned, manipulated, and analyzed by using R.*

**Results**

Throughout April 2019 to March 2020, there were a total of 2973860 member rides and 902182 casual rides. The highest number of member rides are on Tuesday, and casual rides are on Saturday. Casual riders have a higher average trip duration (59 minutes) compared to member riders (14 minutes). In Figure 1, casual riders have the highest average trip duration for all days of the week.

Table 1. Average trip duration and number of rides for all riders from April 2019 to March 2020

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | **Average trip duration (mins)** | |  | **Number of rides** | |
| Member | Casual |  | Member | Casual |
| Monday | 14 | 56 |  | 472196 | 103296 |
| Tuesday | 14 | 60 |  | 508445 | 90510 |
| Wednesday | 14 | 62 |  | 500329 | 92457 |
| Thursday | 14 | 61 |  | 484177 | 102679 |
| Friday | 14 | 63 |  | 452790 | 122404 |
| Saturday | 16 | 56 |  | 287958 | 209543 |
| Sunday | 15 | 60 |  | 267965 | 181293 |

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|  |

**Figure 1. Average trip duration of rider between April 2019 to March 2020**

**Key findings**

* Member riders are more frequent during the weekday, whereas casual riders are more frequent during weekends. One possible reason is that member riders use bikes mainly to go to work whereas casual riders use bikes for leisure.
* Although the casual riders have a higher average trip duration compared to members, there are a greater number of total member riders than casual riders on each day of the week.

**Top three recommendations based on analysis.**

* Collect more information through surveys on why annual members and casual riders ride bikes.
* Provide discounts or promotions such as 1-month or 14-days free ride for casual riders that convert to annual members.
* Provide a 15-minute free ride for 3 months each for casual riders that convert to annual members.