**Cyclistic Bike-Share Case Study Report**

**Business Task**

Analyze Cyclistic's bike usage data to identify key differences between annual members and casual riders, with the goal of providing actionable insights to design marketing strategies that convert casual riders into annual members and drive revenue growth.

**Data Sources**

* Dataset: Cyclistic bike-share trip data for the past 12 months.
* Source: The data was made available by Motivate International Inc. under a public license.
* Licensing and Privacy: The data is publicly available for use under the license provided by Motivate International Inc. However, due to privacy concerns, personally identifiable information (PII) such as credit card numbers or user addresses is not included in the dataset.

**Data Cleaning and Processing**

* Tools: Excel, used for data processing and performing calculations like ride\_length and day\_of\_week.
* Steps:

1. **Download the Data**: The trip data for the past 12 months was downloaded.
2. **Open the Data in Excel**: The files were opened in Excel or Google Sheets, depending on the tool being used.
3. **Create the** ride\_length **Column**: The ride length was calculated by subtracting the started\_at time from the ended\_at time using the formula
   * 1. =D 2-C2).
4. **Create the** day\_of\_week **Column**: The day of the week for each ride start was calculated using the WEEKDAY function (=WEEKDAY(C2,1)).
5. **Format the Columns**: The columns were formatted appropriately (formatting the ride\_length column as HH:MM:SS), ensuring no errors or missing values.
6. Removed any rides under 1 minute and longer than 24 hours by sorting the Excel.
7. Check Duplicates and delete it.
8. Delete Blanks or Null column.

**Data Cleaning & Processing**

* Tools: BigQuery
* Steps:

1. Combined multiple datasets into a single table.
2. Checked for duplicate records and removed them.
3. Identified and deleted columns with null values.
4. Cleaned the data by ensuring consistency and proper formatting.

**Data Analysis**

* Tools: BigQuery
* Metrics:

1. Total number of trips per rider type
2. Total number of trips per rider type per bike type
3. Average ride length per rider type
4. Total number of trips and average trip length per rider type per month, day

* Methods:

1. SQL queries for data aggregation and calculations
2. Grouping and filtering data to identify trends

**Visualizations**

* Tools: Tableau
* Charts:

1. Line charts for monthly ride trends
2. Bar charts for ride length, trip counts, and bike type usage

**Key Findings**

* Trends:

1. Casual riders tend to take longer rides compared to members.
2. Members make more frequent trips than casual riders.
3. Classic bikes are the most used bike type across both rider groups.
4. Peak riding months for both groups are during summer (June to August).

* Insights:

1. Casual riders prefer longer, more leisurely trips, while members prioritize frequent, shorter commutes.
2. Membership promotions could be more effective during summer months when ridership peaks.

**Recommendations**

• Strategy 1: Launch seasonal discounts and incentives to convert casual riders into members.

• Strategy 2: Promote classic bike usage with special deals and maintenance perks.

• Strategy 3: Introduce flexible membership plans tailored to casual riders’ preferences.

**Deliverables**

• Report: Data analysis report with key findings and recommendations

• SQL Queries: Used for data cleaning, processing, and analysis in BigQuery

• Visualizations: Created in Tableau, including line and bar charts

• Supporting Files: Dataset, processed data, and Tableau workbook