# SCOPE OF WORK

## Data Analyst: Arez Shahid

## Client/Sponsor:

Cyclistic

## Purpose:

The main aim is to increase the number of annual memberships by converting casual riders into annual members. To achieve this, it's essential to understand how casual riders and annual members use Cyclistic bikes differently. The approach will start with aggregating and cleaning 12 months of trip data to ensure it is accurate and consistent, addressing any missing or erroneous information. Basic descriptive statistics, such as average ride duration and the most frequent day of usage, will be calculated for each month to provide an initial overview. The analysis will then investigate seasonal trends by looking at data from each month separately. Ultimately, all monthly datasets will be combined to create a detailed year-long view, allowing for a comparative analysis of casual riders versus annual members. This unified dataset will be analyzed using a chosen platform to gain deeper insights into customer behavior, with the goal of finding effective strategies to convert casual riders into annual members.

Finally, the project will provide recommendations based on the analysis.

The deliverables will include the following:

1. A clear statement of the business task

2. A description of all data sources used

3. Documentation of any cleaning or manipulation of data

4. A summary of analysis

5. Supporting visualizations and key findings

6. Minimum three recommendations based on analysis

## Scope / Major Project Activities:

| Activity | Description |
| --- | --- |
| Data preparation | Aggregate and clean 12 months of trip data to ensure it is accurate and consistent, addressing any missing or erroneous information. Document any cleaning or manipulation of data. |
| Descriptive analysis | Conduct initial exploration to understand the overall characteristics of the dataset.   * Calculate basic descriptive statistics for individual months. * Analyze and compare seasonal trends. * Combine monthly data to create a comprehensive year-long view. * Visualize data to uncover initial trends and patterns in usage. |
| Comparative analysis | Perform detailed comparisons between casual riders and members across various dimensions:   * Ride duration (average, distribution) * Ride frequency (per day/week/month) * Peak usage times and days * Popular start/end stations * Seasonal trends   Identify significant differences and potential underlying reasons for these disparities. |
| Segmentation (Optional) | Segment casual riders based on their usage patterns (e.g., frequent vs. infrequent riders).  Analyze each segment's characteristics and preferences to tailor marketing strategies. |
| Preparing Deliverables | Submit final deliverables and report. |

## This project does not include:

* **Collection of new data:** The analysis will be based on existing data within Cyclistic's databases. No new surveys, interviews, or data collection initiatives will be conducted as part of this project.
* **In-depth demographic analysis:** While basic demographic information (if available) may be considered, the primary focus will be on analyzing usage patterns rather than delving into detailed demographic segmentation.
* **Financial modeling:** This project will not include financial projections or modeling of the potential revenue impact of converting casual riders to members. The focus is on understanding the behavioral differences between the two groups.
* **Longitudinal analysis of individual users:** This project will focus on aggregated trends and patterns rather than tracking individual users over extended periods. The goal is to understand group behavior, not individual user journeys.

## Deliverables:

| Deliverable | | Description/ Details |
| --- | --- | --- |
| A Clear statement of business task | | A document will be provided containing Scope Of Work focusing on Project Purpose, Major Activities, What the project does not include, Deliverables, Major Milestones, Estimated Time of Completion |
| Data Document | | A document will be provided containing:   * A description of all data sources used   + The 12 months of historical trip data, specifying the time period covered.   + A description of each relevant field within the dataset (e.g., start/end time, station names, member type, etc.). * Documentation of any cleaning or manipulation of data including handling missing values, conversion of data types, removal of duplicates or irrelevant data, creation of new variables, aggregation or filtering of data. |
| Final Report | A summary of analysis | This section will summarize the key findings from the analysis, including:   * Notable differences in usage patterns between casual riders and annual members. * Significant trends observed in ride frequency, duration, start/end locations. * The influence of external factors like time of day, day of week, and seasonality on usage. * Potential explanations for the observed differences between user groups. |
| Supporting visualizations and key findings | * This section will present a variety of data visualizations (e.g., bar charts, line graphs, maps) that effectively illustrate the key findings from the analysis. * Each visualization will be accompanied by a clear explanation of the insights it conveys. * The goal is to make the findings easily understandable and impactful for the target audience. |
| Recommendations | * This section will distill the analysis findings into a minimum of 3 actionable recommendations for Cyclistic's marketing team. * Recommendations will be prioritized based on their potential impact on increasing annual memberships. * Each recommendation will be supported by specific evidence from the data analysis, outlining the rationale and potential benefits. |

## Schedule Overview / Major Milestones:

| Milestone | Expected Completion Date |
| --- | --- |
| *SOW Document* | *7/19/24* |
| *Data Preparation + Documentation* | *7/23/24* |
| *Descriptive Analysis + Documentation* | *7/26/24* |
| *Comparative Analysis + Documentation* | *8/2/24* |
| *Recommendations list + Documentation* | *8/7/24* |
| *Final report* | *8/13/24* |

## \*Estimated date for completion:

August 13, 2024