This capstone project is the final project in my Google Data Analytics Professional Certificate course. In this case study I will be analyzing a public dataset for a fictional company provided by the course. I will be using R programming language for this analysis.

Following steps will be used

1. Ask
2. Prepare
3. Process
4. Analyze
5. Share
6. Act

**Scenario**

You are a junior data analyst working in the marketing analyst team at Cyclistic, a bike-share company in Chicago. The director of marketing believes the company’s future success depends on maximizing the number of annual memberships. Therefore, your team wants to understand how casual riders and annual members use Cyclistic bikes differently. From these insights, your team will design a new marketing strategy to convert casual riders into annual members. But first, Cyclistic executives must approve your recommendations, so they must be backed up with compelling data insights and professional data visualizations.

**Ask**

Three questions will guide the future marketing program:

1. How do annual members and casual riders use Cyclistic bikes differently?

2. Why would casual riders buy Cyclistic annual memberships?

3. How can Cyclistic use digital media to influence casual riders to become members?

Key Tasks

1. Identify the business Goals

The main objective is to design marketing strategies to increase revenue

1. Consider key stakeholders

Director of Marketing (Lily Moreno), Marketing Analytics team, Executive team.

**Deliverable**

To find clear statement of the business task

Find the difference between casual riders and annual members.

**PREPARE**

I will use Cyclistic’s historical trip data to analyze and identify trends. The data has been made available by Motivate International Inc.

* Download the data and store it
  + Data has been downloaded and stored on my desktop
* Identify how its organized
  + The data is CSV
* Sort and Filter data
  + I will be using 2021 January to December’s data for my analysis

Install and load all the necessary packages such as

* Tidyverse
* Lubridate
* Dplyr
* Ggplot2

After that import data into R studio

jan<-read\_csv("C:/Users/Hassan/Desktop/Coursera Project/202101-divvy-tripdata.csv")

We will be merging all the files into one in Rstudio

trip\_data <- bind\_rows(jan,feb,march,april,may,june,july,august,sept,oct,nov,dec)

**Process**

Cleaning the data for further analysis

Key tasks

1. Check the data for errors.
2. Choose your tools.
3. Transform the data so you can work with it effectively.
4. Document the cleaning process.

Deliverable

1. Documentation of cleaning or manipulation of data
   1. Checked for missing data
   2. Removed empty rows
   3. Calculated ride distance
   4. Added new column such as month, days of week, ride length

**Analyze**

Now that our data is stored appropriately and has been prepared for analysis.

Key tasks

1. Aggregate your data so it’s useful and accessible
2. Organize and format your data
3. Perform calculations
4. Identify trends and relationships

**Deliverable**

A summary of the analysis

1. Got a summary of the data
2. Calculated mean, median, min and max

**Share**

Visualizations were done and shared

1. Created Visualizations
   1. Member vs casual count
   2. Days of the week and number of rides taken by member and casual riders
   3. Average ride by day of the week
   4. Total rides by members and casuals each month
   5. Members and casual ride distance

**Act**

Present recommendations based on my analysis

Conclusions

1. Casual travel more distance as compared to members
2. There are more casual riders on weekends as compared to members
3. Casuals Average ride time is more as compared to members
4. There are more causal riders in summer as compared to members
5. In the winters we see a drop in casual riders as compared to members
6. Members have more bikes as compared to casuals

Recommendations

1. Members should be given incentives such as discount or coupons to convert casuals into members.
2. Fun events should be done on weekends for members which would help in converting casuals to members.
3. There should be a competition in winters to get more users.

**Resources**

1. RDocumentation
2. Stackoverflow
3. Kaggle/github