

Cyclistic Bike Sharing

**Google DAta analytics capstone project**

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# Introduction

The Cyclistic bike-share analysis case study! In this case study, I would be working for a fictional company, “Cyclistic Bike Share” along with some key team members in order to answer the business questions.

# Characters and teams

● Cyclistic: A bike-share program that features more than 5,800 bicycles and 600 docking stations. Cyclistic sets itself apart by also offering reclining bikes, hand tricycles, and cargo bikes, making bike-share more inclusive to people with disabilities and riders who can’t use a standard two-wheeled bike. The majority of riders opt for traditional bikes; about 8% of riders use the assistive options. Cyclistic users are more likely to ride for leisure, but about 30% use bikes to commute to work each day.

● Lily Moreno: The director of marketing and your manager. Moreno is responsible for the development of campaigns and initiatives to promote the bike-share program. These may include email, social media, and other channels.

● Cyclistic marketing analytics team: A team of data analysts who are responsible for collecting, analyzing, and reporting data that helps guide Cyclistic marketing strategy. You joined this team six months ago and have been busy learning about Cyclistic’s mission and business goals—as well as how you, as a junior data analyst, can help Cyclistic achieve them.

● Cyclistic executive team: The notoriously detail-oriented executive team will decide whether to approve the recommended marketing program.

# About the company

In 2016, Cyclistic launched a successful bike-share offering. Since then, the program has grown to a fleet of 5,824 bicycles that are geotracked and locked into a network of 692 stations across Chicago. The bikes can be unlocked from one station and returned to any other station in the system anytime.

Until now, Cyclistic’s marketing strategy relied on building general awareness and appealing to broad consumer segments. One approach that helped make these things possible was the flexibility of its pricing plans: single-ride passes, full-day passes, and annual memberships. Customers who purchase single-ride or full-day passes are referred to as casual riders. Customers who purchase annual memberships are Cyclistic members.

Cyclistic’s finance analysts have concluded that annual members are much more profitable than casual riders. Although the pricing flexibility helps Cyclistic attract more customers, Moreno believes that maximizing the number of annual members will be key to future growth. Rather than creating a marketing campaign that targets all-new customers, Moreno believes there is a solid opportunity to convert casual riders into members. She notes that casual riders are already aware of the Cyclistic program and have chosen Cyclistic for their mobility needs.

Moreno has set a clear goal: Design marketing strategies aimed at converting casual riders into annual members. In order to do that, however, the team needs to better understand how annual members and casual riders differ, why casual riders would buy a membership, and how digital media could affect their marketing tactics. Moreno and her team are interested in analyzing the Cyclistic historical bike trip data to identify trends.

## Act

* **Annual members**: Annual members use Cyclistic bikes for commuting to work on a daily basis or to reach other destinations required. They tend to have a regular usage pattern throughout the year.

Short distance riders: These riders tend to use their bikes for practical purposes and for a shorter distance.

* **Casual Riders**: Casual riders use their bikes more for recreational purposes such as leisurely rides, outdoor activities etc...

Based on the analysis, their usage varies from season to season. Peak seasons are during weekends and warmer months.

Some casual riders do take longer rides as they use bikes for enjoyment, rather than commuting.

**Key Task:**

* Identifying how members and casual riders use the Cyclistic bike sharing differently.
* Understanding the business perspective and converting more casual riders to memberships for business growth.

## Prepare and Process

**Data Collection:**

* Gathered the relevant data needed for analysis. In this case, I used the historical trip data.
* Ensured that the data is reliable.

**Data cleaning and preparing for analysis:**

* Checked for missing values and removed them.
* Identified any errors in the data.
* Made sure data is consistent.
* Transformed data by converting the date/ time. Separating the date/ time into sperate columns.
* Calculated and created new columns (ride\_length, day\_of\_week).
* Organized data in the correct order required for analysis.

**Data exploration:**

* Conducted statistical analysis by calculating the mean, max for ride length and by day of week.
* Created charts for exploration.

**Date validation:**

* Validated the data to check if it aligns with business task and stakeholder requirements.
* Made sure the data is ready for analysis.

## Analyze

**Date Analysis**

* Visualized and explored the data by creating relevant charts.
* Calculated and compared the ride length and patterns between casual riders and subscribed members.
* Understood the behavioral pattern of riders by finding differences in the ride length.
* Identified any preferences or trends by riders. E.g.: - Popular routes or stations taken by riders, seasonal variations.
* Used insights taken from the analysis to implement marketing strategies.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Count of number of rides by (rideable\_type) and member type(member\_casual)** | | | | | | |
|  |  |  |  |  |  |  |
| **Count of ride\_length** | **Column Labels** |  |  |  |  |  |
| **Row Labels** | **docked\_bike** | **Grand Total** |  |  |  |  |
| casual | 48279 | 48279 |  |  |  |  |
| member | 378274 | 378274 |  |  |  |  |
| **Grand Total** | **426553** | **426553** |  |  |  |  |



In the above graph we can notice a considerable difference between casual riders and members.

|  |  |  |  |
| --- | --- | --- | --- |
| **Count of rides by day\_of\_week** | |  |  |
|  |  |  |  |
| **Count of ride\_length** | **Column Labels** |  |  |
| **Row Labels** | **casual** | **member** | **Grand Total** |
| 1 | 14832 | 35954 | 50786 |
| 2 | 4839 | 61903 | 66742 |
| 3 | 5247 | 69675 | 74922 |
| 4 | 5899 | 63961 | 69860 |
| 5 | 4874 | 61221 | 66095 |
| 6 | 5135 | 55475 | 60610 |
| 7 | 7453 | 30085 | 37538 |
| **Grand Total** | **48279** | **378274** | **426553** |

A screenshot of a graph

Description automatically generated

**Observation:** Here**,** we notice that there has been an increase in casual riders in the 1st week (Sunday). But there was a decrease in the 2nd and 3rd week. Whereas there has been an increase in people using bikes the most in the 3rd week (Tuesday).

## share

* Shared analysis, data visualizations to stake holders to implement marketing strategies.
* Presented to stakeholder’s findings from the analysis and discussed points with them.
* Created and shared interactive dashboards with stakeholders helping them explore the data.
* Shared the tools used and the documented analysis process.
* Summarized findings in a clear and concise manner.

## ACT

**Recommendations for marketing strategy:**

* We could introduce eco-friendly bikes and bikes for the disabled with GPS system, that would help customers.
* Organize riders’ clubs where riders could meet and share their experiences.
* Propose campaigns to promote annual membership sign-ups.
* Proposed a pricing plan to attract more riders.
* Have flexible payment options.

**Operational decisions:**

* Presented insights to ensure bike availability and station placements.
* Allocated resources to make sure bikes are available to riders as per preference and efficiently to high demand stations.

**Customer satisfaction:**

* Improve the overall riding experience.
* Provide good customer support for any problems faced by riders.
* Provide regular bike maintenance schemes.

**Monitoring:**

* Monitor the impact of implemented strategies.
* Conduct regular analysis by taking feedback.
* Improve feedback given by customers.