



# At a Glance

Business Task	Data Sources	Cleaning	Analysis	Key Insights	Recommendations

## Business Task Statement

The primary business objective is to identify differences in bike usage between annual members and casual riders. These insights are intended to inform marketing strategies that convert casual riders into annual members, supporting Cyclistic's long-term growth and profitability.

The business task for the Cyclistic Bike-Share case study is centered on designing data-driven marketing strategies that convert casual riders into annual members, maximizing the company's profitability and growth potential. Specifically, we believe the company's future success hinges on increasing annual memberships, which are more profitable than casual rides. The analysis aims to understand the behavioural differences between casual riders and members by exploring historical trip data to identify patterns in ride frequency, duration, trip timing, and station usage. Insight into why casual riders might purchase memberships and how digital media can influence this transition is crucial. This involves answering three core questions: how members and casual riders use Cyclistic bikes differently, reasons casual riders might become members, and how Cyclistic can utilize digital media to promote membership uptake. The overall goal is to provide compelling data-backed insights and recommendations that enable Cyclistic's marketing team to tailor campaigns effectively, targeting

the right user segments at the right times, and ultimately growing the subscriber base for sustainable business growth.

This project emphasizes leveraging historical trip data to drive actionable marketing decisions aimed at conversion and retention, addressing the key business challenge of transforming casual riders into loyal annual members.

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## Data Sources

The analysis relies on Cyclistic's publicly available historical bike trip data representing the previous 12 months of operations. Supplementary data includes user type (member/casual), ride dates and times, trip start and end stations, and ride durations.

This public dataset originates from Motivate International Inc. but is rebranded for the fictional company Cyclistic. Personal rider data is excluded for privacy.

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## Data Cleaning and Manipulation

- Downloaded and aggregated 12 months of trip data.
  - Calculated ride length (ridelength) by subtracting start from end times.
  - Generated additional fields: day of week (for trip start), membership status.
  - Unified data structures across all files, addressing inconsistencies or missing values.
  - Filtered out erroneous or extreme values in ridelength or coordinates.
  - Prepared summary tables: number of rides, average duration, ride frequency by user type, day of week, and station
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## Analysis Summary

- Members account for approximately 64% of total rides, with casuals at 36%.
- Ride volume peaks on weekends, especially Saturday, for both groups, but members display steadier weekday usage, aligning with commuting trends.
- Casual riders consistently take longer rides (average 23 minutes) compared to members (average 12 minutes).
- Seasonality is clear in monthly ride trends, with peak usage in summer.

- The most popular start and end stations are clustered in key Chicago neighborhoods.
  - E-bike and classic bike usage metrics reveal different rider preferences.
  - Key operational metrics: more rides originate and end at high-traffic stations like Kingsbury and Streeter Drivest.
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# Key Insights

- **Who uses Cyclistic bikes?**

Approximately 64% of rides are by annual members, while 36% are casual riders, indicating a substantial member base but room for growth in membership conversion.

- **How do members and casual riders differ in bike usage?**

Members tend to take shorter rides (average ~12 minutes) and use the service consistently during weekdays, aligning with commuting patterns. Casual riders take longer rides (average ~23 minutes) and prefer weekends, suggesting leisure usage.

- **When are bikes used most frequently?**

Weekends are peak usage days for both members and casual riders, particularly Saturday. Summer months show higher ride volumes, highlighting seasonality in bike-share demand.

- **Where are bikes most commonly picked up and dropped off?**

Key start and end stations cluster in downtown Chicago and busy neighborhoods, particularly at major commuter hubs, indicating core areas of demand.

- **What opportunities exist to increase annual memberships?**

Targeting casual riders with promotions during summer and weekends and enhancing member perks can drive conversions. Marketing should emphasize the cost and convenience benefits of annual membership tailored to casual riders' leisure usage patterns.

- **How can Cyclistic improve profitability and customer experience?**

Focusing efforts on high-traffic stations for membership incentives and refining bike availability based on usage spikes can optimize operational efficiency and user satisfaction.

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# Top Three Recommendations

1. Targeted Digital Campaigns: Design social and email promotions focused on casual riders during high-usage summer months and weekends, highlighting the benefits (e.g., cost savings, flexibility) of becoming an annual member.
2. Product Bundling and Incentives: Offer limited-time discounts or bundled memberships tied to high-demand stations and leisure events, capitalizing on casual riders' peak behavior.
3. Experience Differentiation: Improve value for members through exclusive perks (priority at peak stations, bike type access) and streamline the transition process from casual to member status, making it easy and attractive for current casual users to convert

**Targeted Digital Campaigns**

**Product Bundling and Incentives**

**Experience Differentiation**

# Other Recommendations

- Launch targeted summer and weekend marketing campaigns focused on casual riders.
- Offer incentives and bundled discounts to encourage casual riders to become members.
- Enhance member benefits such as exclusive access and priority bike availability.
- Optimize station inventory based on usage peaks to improve availability and satisfaction.
- Use data-driven insights to tailor promotions around ride patterns and popular stations