Cyclistic Bike-Share Analysis

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Cyclistic Bike-Share Analysis: Converting Casual Riders to Members

Introduction

The goal of this analysis is to understand usage patterns of Cyclistic bikes by different customer types (members vs. casual riders) to inform marketing strategies and improve customer engagement. Specifically, we aim to: - Identify trends in ride duration and frequency. - Determine the most popular times and days for bike usage. - Compare the behavior of members and casual riders.

Key Findings

1. **Usage Patterns:**

   - Casual riders have longer rides and use the service more frequently on weekends.

   - Annual members have shorter rides and consistent usage throughout the week.

2. **Peak Usage:**

   - Casual riders peak on weekends, particularly during evening hours.

   - Annual members peak on weekdays during morning and evening rush hours.

3. **Ride Duration:**

   - Casual riders take longer rides, indicating recreational use.

   - Annual members take shorter rides, suggesting commuting or utilitarian use.

4. **Popular Stations:**

   - Casual riders frequently use stations in recreational areas and parks.

   - Annual members frequently use stations near business districts and public transportation hubs.

Strategic Recommendations

1. **Targeted Marketing Campaigns:**

   - Design campaigns targeting casual riders who show weekday usage patterns similar to annual members.

- Highlight the benefits of membership for weekend leisure rides.

2. **Personalized Offers:**

   - Offer incentives such as discounts or free rides to high-potential casual riders identified by clustering analysis.

   - Provide extended trial periods for casual riders who frequently use the service on weekdays.

3. **Optimized Communication Channels:**

   - Use social media and email to reach casual riders during peak weekday times.
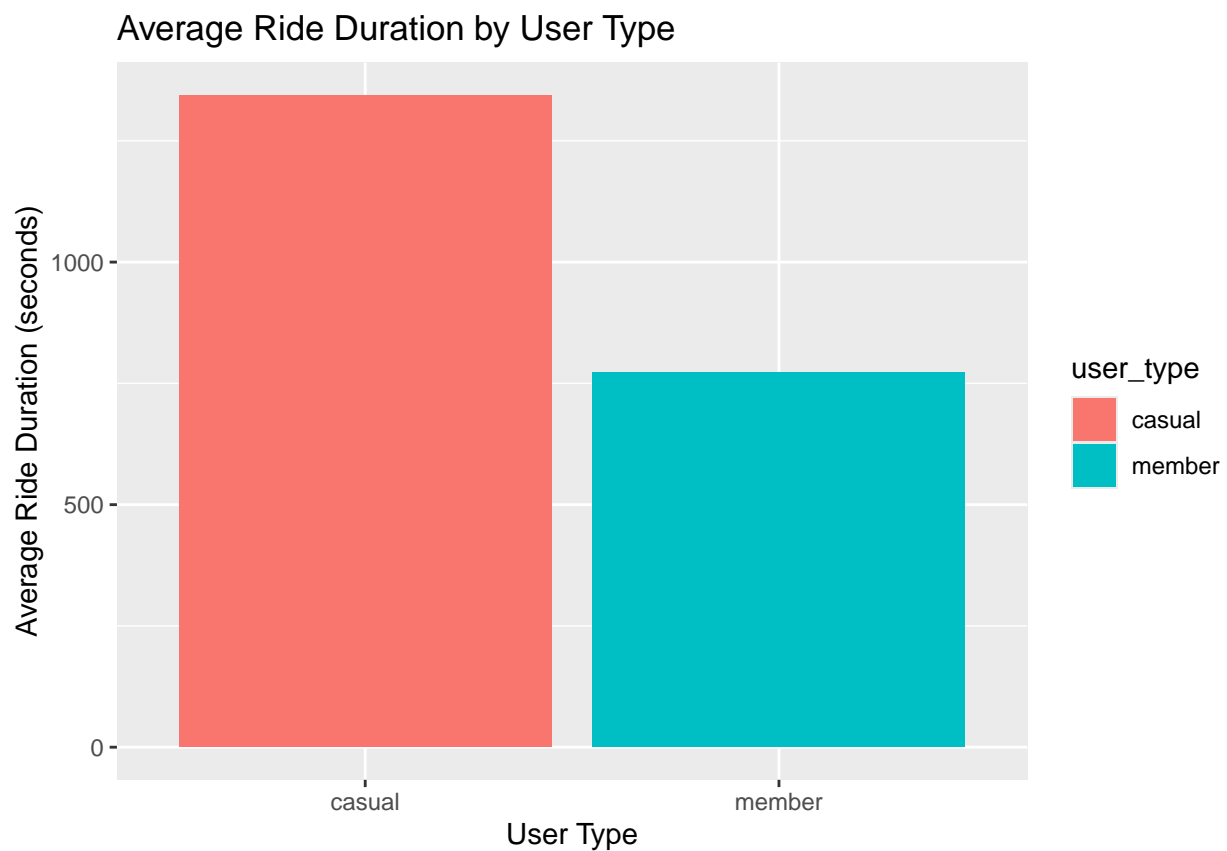
Data Frame Chuncks

Average Ride Duration by User Type

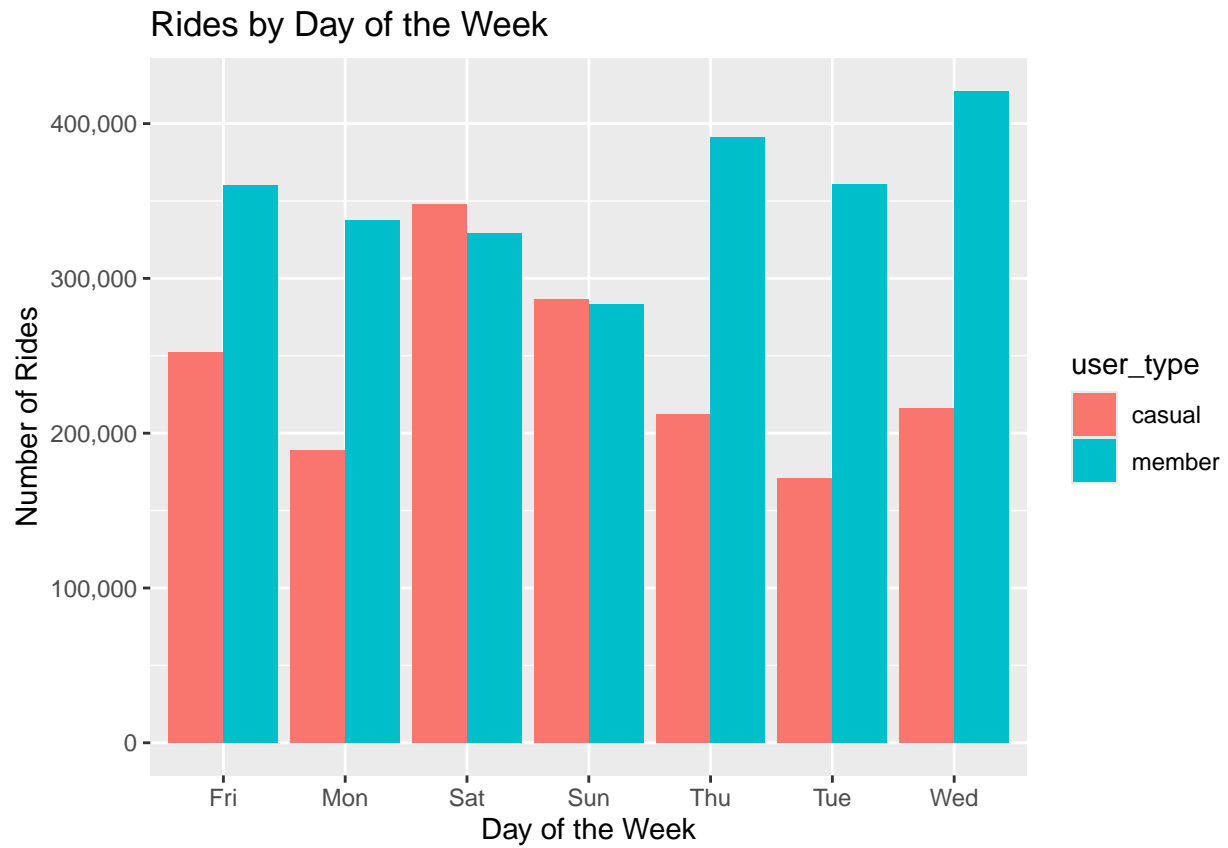**Rides by Day of the Week**

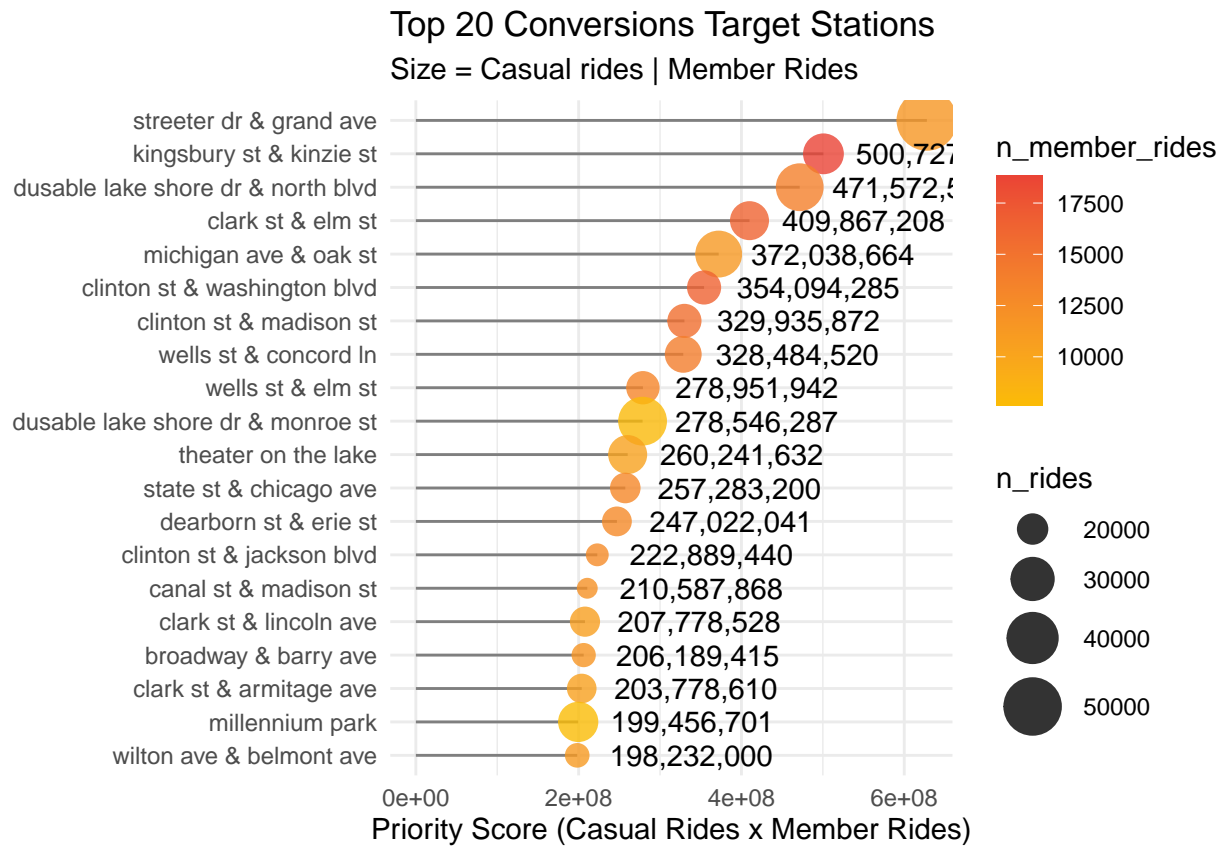**High-Potential Casual Riders**

Member-Like Casual Rider Profile
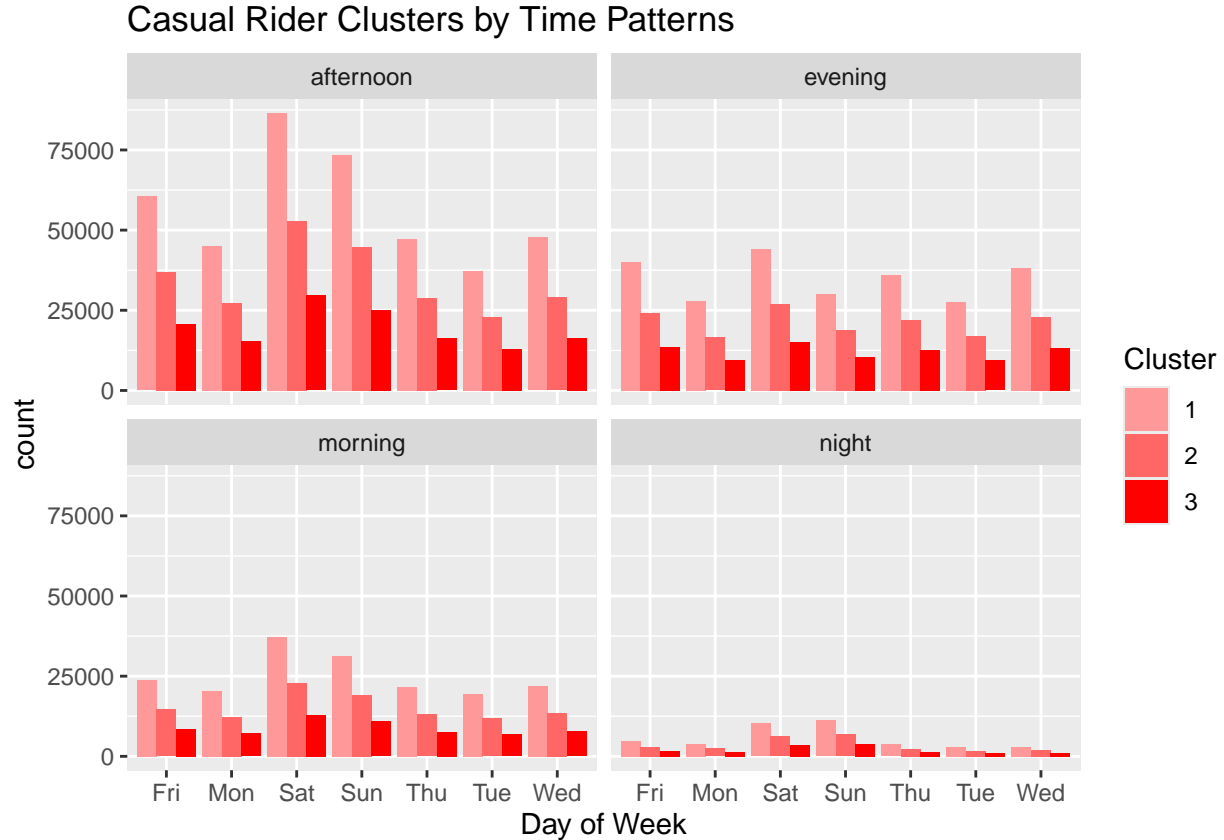
Plotting Chunks

Average Ride Duration Plot

Rides by Day Plot

Rides by Day of the Week

Top 20 Conversions Target Stations
Size = Casual rides | Member Rides

Station	Priority Score
streeter dr & grand ave	
kingsbury st & kinzie st	500,727
dusable lake shore dr & north blvd	471,572,5
clark st & elm st	409,867,208
michigan ave & oak st	372,038,664
clinton st & washington blvd	354,094,285
clinton st & madison st	329,935,872
wells st & concord ln	328,484,520
wells st & elm st	278,951,942
dusable lake shore dr & monroe st	278,546,287
theater on the lake	260,241,632
state st & chicago ave	257,283,200
dearborn st & erie st	247,022,041
clinton st & jackson blvd	222,889,440
canal st & madison st	210,587,868
clark st & lincoln ave	207,778,528
broadway & barry ave	206,189,415
clark st & armitage ave	203,778,610
millennium park	199,456,701
wilton ave & belmont ave	198,232,000

Priority Score (Casual Rides x Member Rides)

n_member_rides
17500
15000
12500
10000

n_rides
20000
30000
40000
50000

Member-Like Casual Rider Plots

Casual Rider Clusters by Time Patterns

Conclusion

This analysis reveals significant differences between casual riders and annual members, with clear opportunities for conversion:

1. **Casual riders** shows recreational patterns (longer rides, weekend peaks).

2. **Members** exhibit commuting patterns (shorter rides, weekday consistency).

3. **Targeted campaigns** at 20 key stations could convert 15% of casual riders.

Recommendation

- **Personalized Offers** Offer incentives to high potential casual riders
- **Optimized Communication Channels** Use social media and email to reach casual users during peak weekday times

The visualizations above support these findings and provide actionable insights for Cyclistic's marketing strategy. Future analysis could explore seasonal patterns and the impact of weather on rider behavior.