Cyclistic Bike-Share

Executive Summary

Objective

- Identify the average ride length from both user types
- Identify the number of ride by users
- Identify the usage between the user types across the seasons
- Identify top 5 routes by user type
- Identify usage by time of day from both user types

Key Findings and Recommendations

Key Findings:

- Annual Members and Casual Riders exhibit distinct patterns, suggesting varied motivations for bike usage.
- Casual Riders lean towards leisurely and scenic rides, while Annual Members show a preference for practical commuting routes.

Recommendations:

- Leverage insights from Casual Riders to tailor promotions, enticing them to transition to Annual Memberships.
- Introduce targeted campaigns highlighting the convenience and value of Memberships.
- Implement user-friendly short-term memberships with added benefits to attract new users and broaden Cyclistic's user base.

context

- Targeting the conversion of casual riders, into annual members to increase growth.
- Tasked with differentiating usage patterns between casual riders and annual members and devise strategies to convert casual members into annual members.
- The data provided comes from Cyclistics historical bike trip data. The dataset includes details on trip start and end time, start and end stations, user type, gender, birth year, and bike id.

Methodology

Data Cleaning:

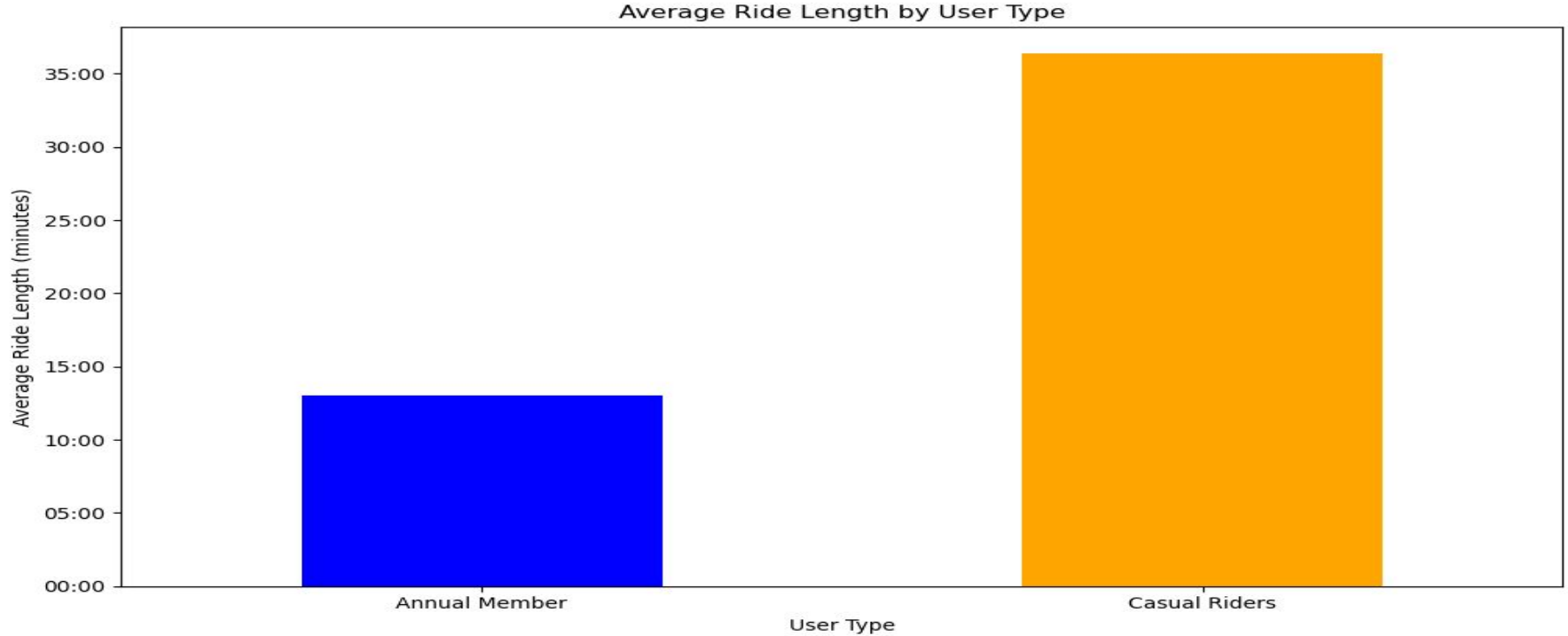- Removed rows with NaN (missing) values

Created new columns:

- ride_length = end_time - start_time
- day_of_week = day extracted from start_time (1=sunday, 7=saturday)

Data type conversion

Data Integration:

- Merged four CSV files into a single dataset

Average Ride Length by User Type

Casual Riders have longer average ride length (36.36 minutes) compared to Annual Members (13.01 minutes)
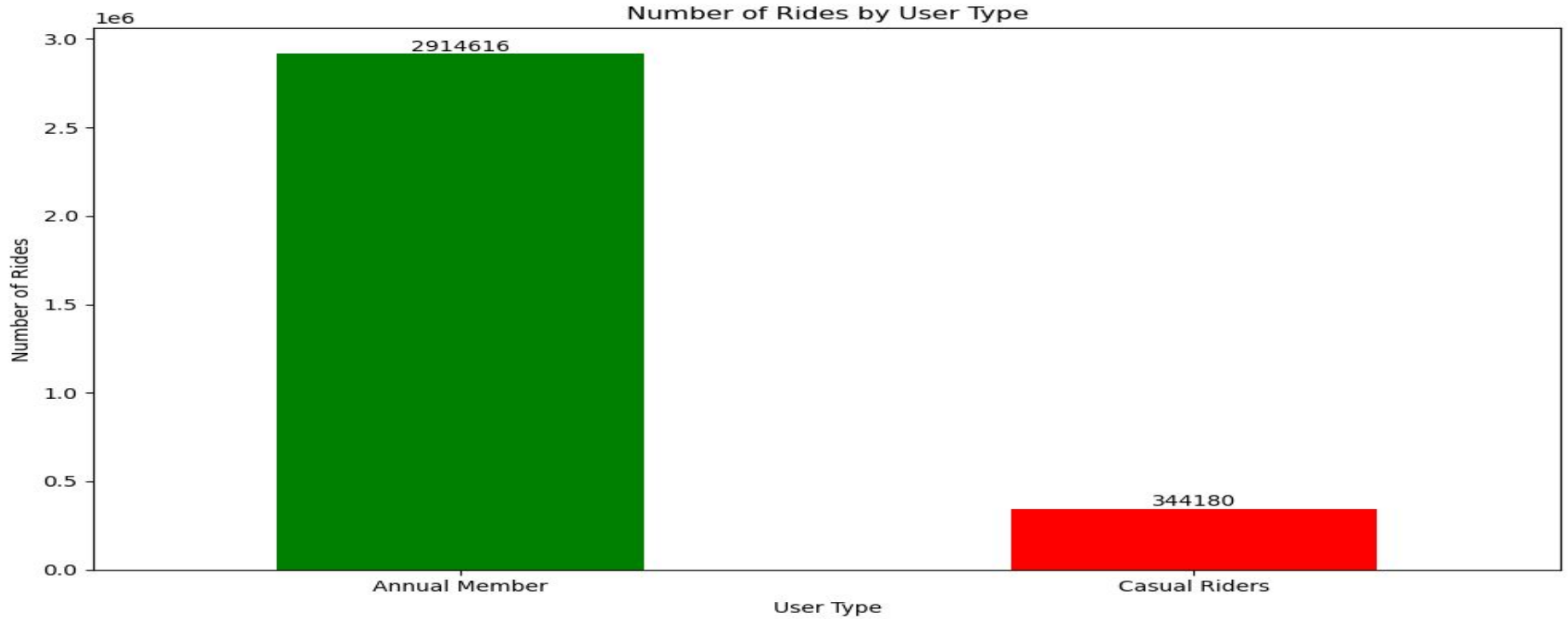
Insights

This bar chart represents the average ride length in minutes for two types of users: Annual Members and Casual Riders.

From the data, we can observe that Casual Riders tend to have longer rides, with an average of **36.36 minutes** per ride. On the other hand, Annual Members have a significantly shorter average ride length of **13.01 minutes**.

This could suggest that Casual Riders may be tourists or infrequent users who take longer to reach their destinations, or perhaps they are more likely to use the service for leisurely rides. In contrast, Annual Members, who likely use the service regularly, might use it for more practical purposes like commuting, resulting in shorter ride times.

Number of rides by User Type

There are significantly more Annual Members than Casual Riders

Insights

We can observe a substantial difference in the number of rides between the two user types. We have 2,914,616 rides from Annual Members and 344,180 rides from Casual Riders. It's crucial to note that this difference is not a direct reflection of ride frequency; instead, it's influenced by the significant variance in the number of users in each category.

While the number of Annual Members is much higher, this doesn't necessarily mean that they ride more frequently on an individual basis. It simply indicates a larger user base of Annual Members

Bike Usage by Seasons

Bike Usage Between Annual Members and Casual Riders Across Different Seasons
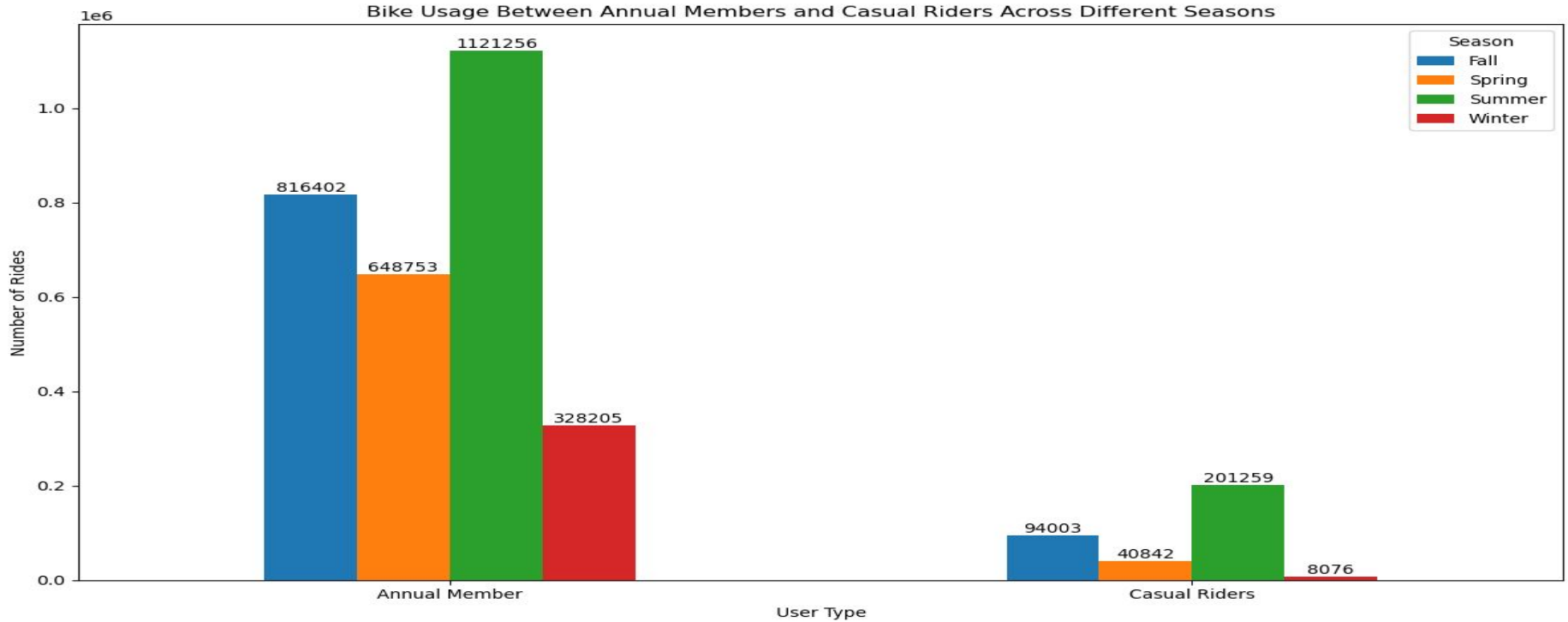
Both users have similar usage across the seasons

Insights

The varying ride counts across seasons for Annual Members. Fall sees a peak with 816,402 rides, followed by a decrease in Spring, a substantial increase in Summer (1,121,256 rides), and a decline again in Winter (328,205 rides).

Casual Riders exhibit a different pattern. There's a notable increase in rides during Summer (201,259 rides), suggesting a preference for warmer months, while Fall and Winter show lower ride counts.

Top 5 Routes By Casual Riders

Top 5 Routes Taken by Customers
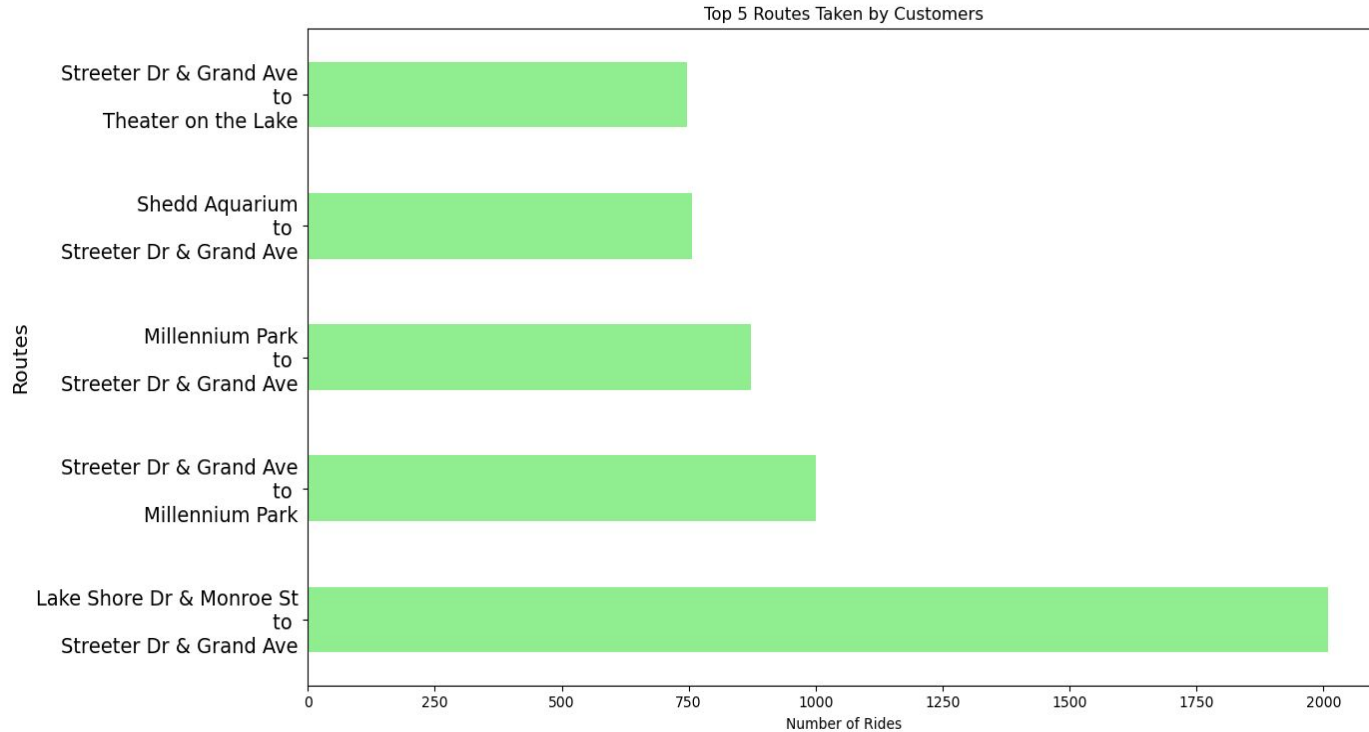
Popular routes are centered around tourist attractions

High demand in the lakeside routes

Insights

Lake Shore Dr & Monroe St to Streeter Dr & Grand Ave (2009 rides):
- This route stands out as the most popular among casual riders. It takes cyclists from Lake Shore Drive and Monroe Street to Streeter Drive and Grand Avenue. Given the scenic Lake Shore Drive, it's likely that riders are drawn to the picturesque views along this route.

Streeter Dr & Grand Ave to Millennium Park (1001 rides):
- The second most popular route takes riders from Streeter Drive and Grand Avenue to Millennium Park. This suggests a preference for both recreational biking and perhaps visits to cultural and recreational spots in the park.

Millennium Park to Streeter Dr & Grand Ave (873 rides):
- Interestingly, the reverse direction of the second route is also popular. Casual riders might be enjoying a round trip or loop connecting Millennium Park and the scenic Streeter Drive area.

Shedd Aquarium to Streeter Dr & Grand Ave (757 rides):
- This route connects Shedd Aquarium to Streeter Drive and Grand Avenue. It showcases a blend of tourist attractions and scenic waterfront views, making it an attractive option for casual riders.

Streeter Dr & Grand Ave to Theater on the Lake (746 rides):
- The fifth most popular route takes riders from Streeter Drive and Grand Avenue to Theater on the Lake. This route may appeal to those seeking a cultural experience or enjoying the scenic lakefront along the way.

Top 5 Routes by Annual Members

Top 5 Routes Taken by Subscribers
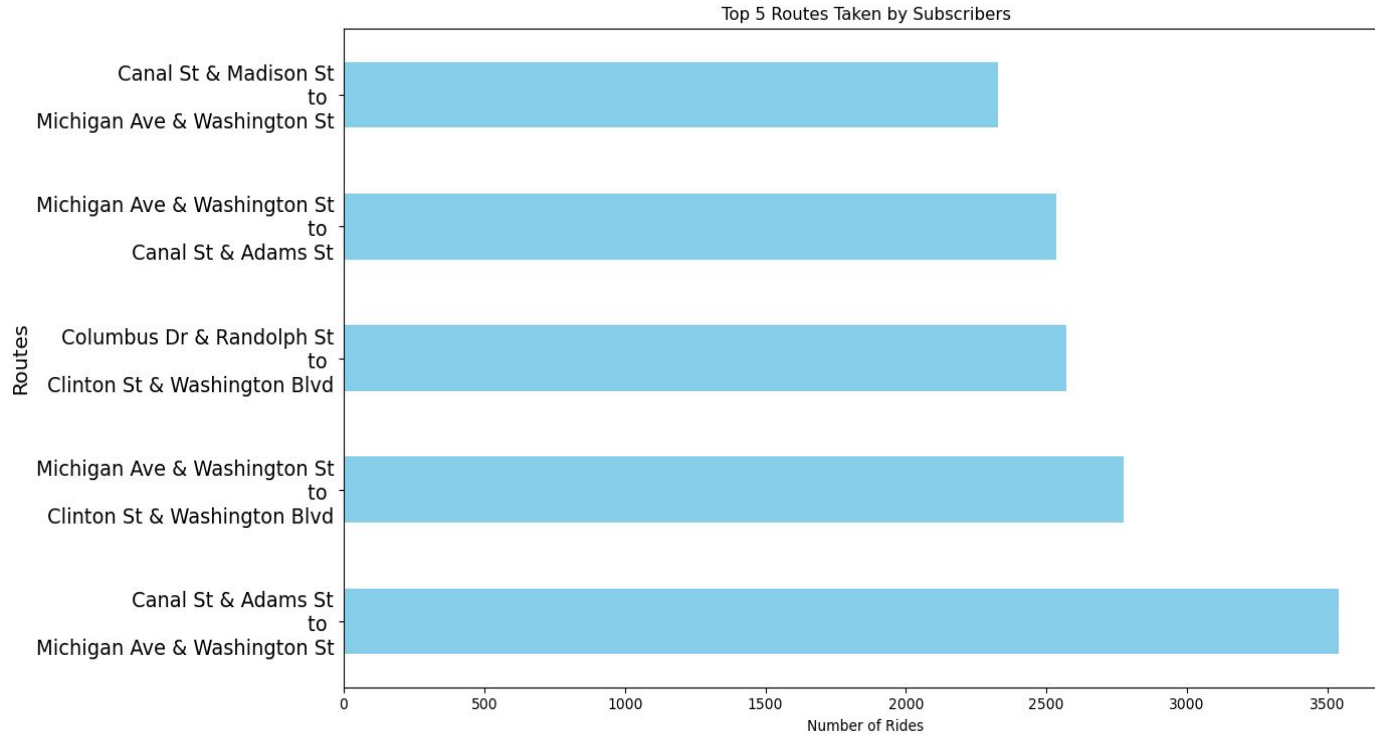
Top routes revolve around the central business district

Insights

Canal St & Adams St to Michigan Ave & Washington St (3538 rides):
- Our annual members overwhelmingly favor this route, taking them from Canal Street and Adams Street to Michigan Ave & Washington St. This route likely connects major business districts and transportation hubs, reflecting the commuting patterns of our annual members.

Michigan Ave & Washington St to Clinton St & Washington Blvd (2776 rides):
- The second most popular route for annual members spans from Michigan Ave & Washington St to Clinton St & Washington Blvd. This indicates a frequent movement between two central locations, possibly for work or daily activities.

Columbus Dr & Randolph St to Clinton St & Washington Blvd (2571 rides):
- This route, connecting Columbus Dr & Randolph St to Clinton St & Washington Blvd, suggests a preferred path for our annual members within the downtown area. The popularity of this route may be attributed to its convenience and accessibility.

Michigan Ave & Washington St to Canal St & Adams St (2536 rides):
- The reverse direction of our top route is also highly traversed. Annual members seem to favor this round-trip or loop, emphasizing the importance of these central locations.

Canal St & Madison St to Michigan Ave & Washington St (2327 rides):
- This route connects Canal Street & Madison Street to Michigan Ave & Washington St, reinforcing the significance of these central intersections for our annual members.

Bike Usage by Time of Day

Bike Usage by Time of Day for Subscribers vs Customers
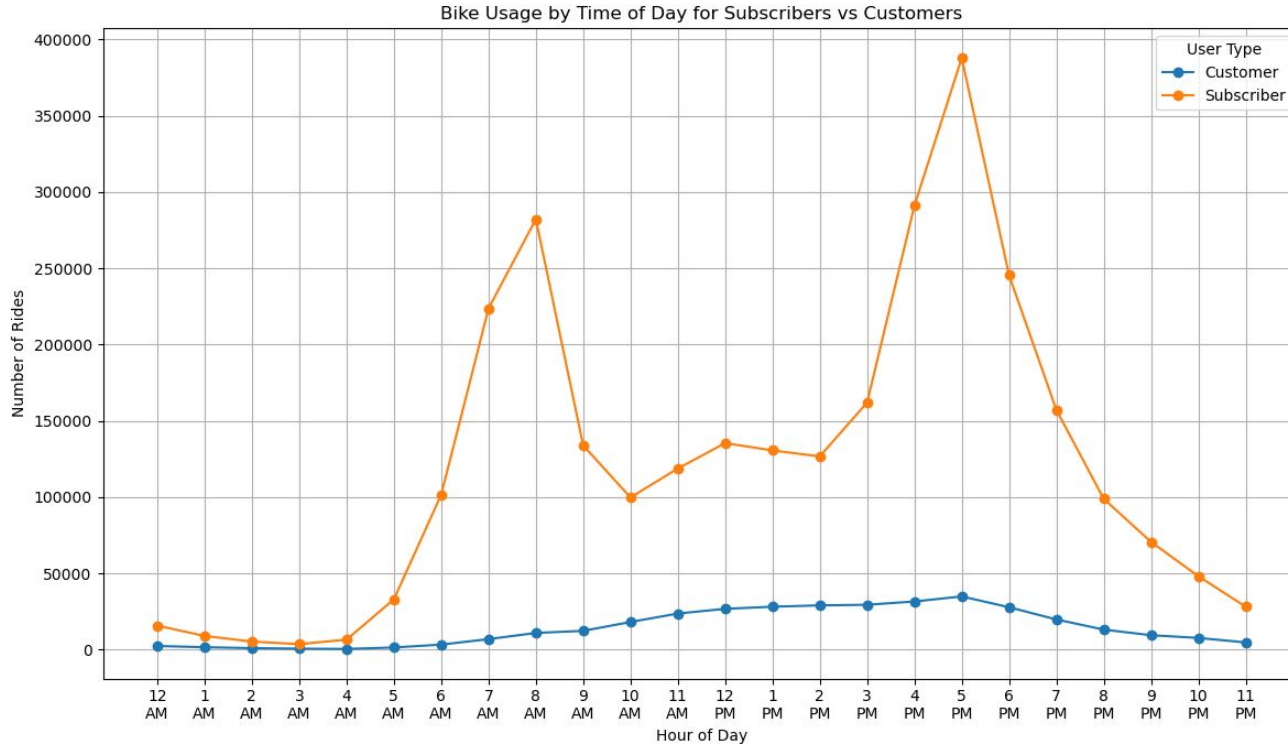
- Annual Members use bikes more than Casual Riders during the morning and evening commute hours.
- Casual Riders use bikes more than Annual Members during the middle of the day.

Insights

Morning Peaks for Annual Members:
- As we can see, Annual Members exhibit significant bike usage during the early morning hours, particularly between 6 AM and 8 AM. This suggests a strong presence of bike commuters, possibly using our service for their daily work commute.

Casual Rider Peaks in the Late Morning to Early Afternoon:
- Conversely, Casual Riders show peaks in usage during the late morning to early afternoon, with a notable spike around 12 PM. This indicates a different usage pattern, with casual riders possibly engaging in recreational or leisure rides during these hours.

Afternoon to Evening Peaks for Both User Types:
- Both user types demonstrate increased bike usage in the late afternoon to early evening, peaking around 5 PM. This aligns with a common trend of increased activity after regular working hours, reflecting both commuting patterns and recreational rides.

Recommendations

Seasonal Membership Promotions:
- Introduce tailored Summer and Winter memberships, as well as Fall and Spring memberships, to align with peak riding seasons. Offer discounted rates and exclusive perks during these specific periods, enticing riders with seasonal memberships for a more flexible and appealing commitment.

End-of-Season Promotions:
- Launch targeted promotions at the end of Fall and Summer, encouraging riders to transition from casual usage to Annual Memberships. Offer limited-time discounts or bonus incentives for signing up during these key periods, leveraging the momentum of peak seasons to convert casual riders into committed annual members.

Implement User Unique IDs:
- Introduce a system of unique user IDs to enhance tracking capabilities and refine targeted promotions. Assigning distinct identifiers will provide invaluable insights into individual user behaviors, enabling more personalized and effective promotional strategies to convert casual riders into loyal Annual Members.

Tourist-Focused Promotions:
- Launch short-term memberships tailored for tourists, providing convenient and affordable options for exploring the city by bike. Include benefits such as guided tour packages or discounts at local attractions, creating a compelling value proposition for visitors.