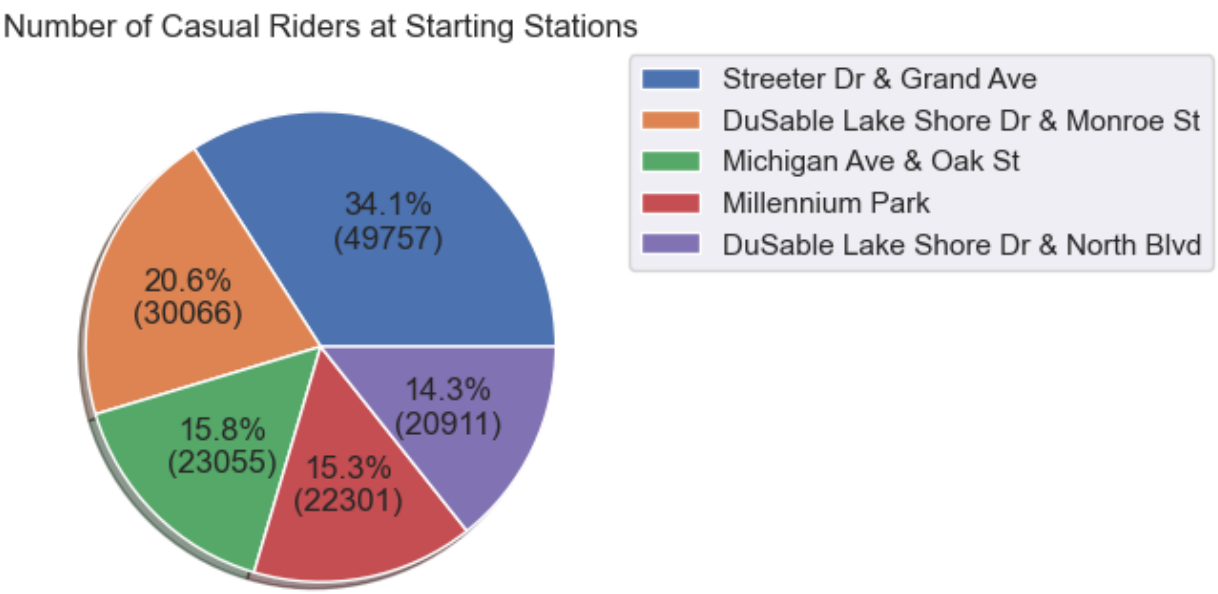
Analysis of Cyclistic Members and Casual Riders

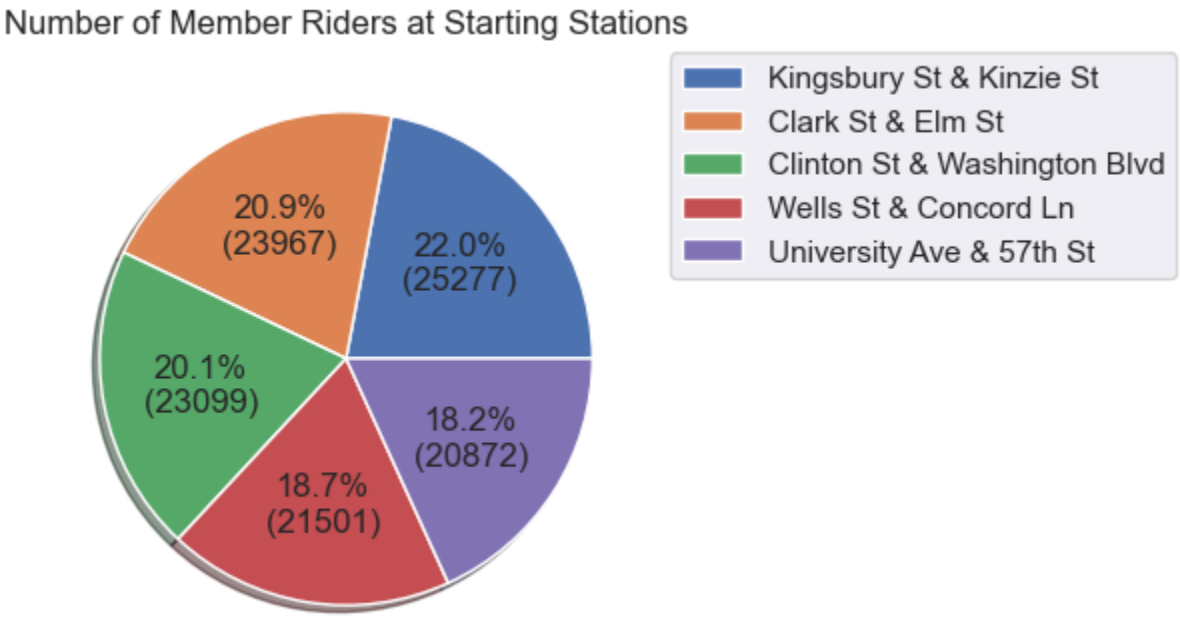
Our goal is to convert the casual bike users of Cyclistic over to annual members, as this will increase revenue and profit for the company. To analyze this, we take a look at the recent Cyclistic trip data for a whole year from beginning from 2022-08-01 00:00:00 AM to 2023-07-31 23:59:56 PM, which provides insights on how members and casual riders choose to take trips as well as which types of bikes they use. The data is taken from the S3 bucket here: https://divvy-tripdata.s3.amazonaws.com/index.html.

The data contains trip data with columns such as the bike type, starting station, ending station, starting time, ending time, and whether the ride was taken by a member or casual rider. From this data, we calculated the ride duration for each ride, the distance from starting point to ending point, and aggregated the data to determine various metrics to compare between members and casual riders. When calculating the distance from starting point to ending point, we did drop 6102 rows of data of missing information about the end point to proceed with analysis.

Although the data is current and reliable, it lacks financial information such as how much a member's annual pass costs and how often and when each member uses their annual pass. This information could have guided us to insights such as how much a casual rider can save by switching to an annual pass. Nonetheless, there are still several insights we can derive from the existing data to develop a marketing strategy.

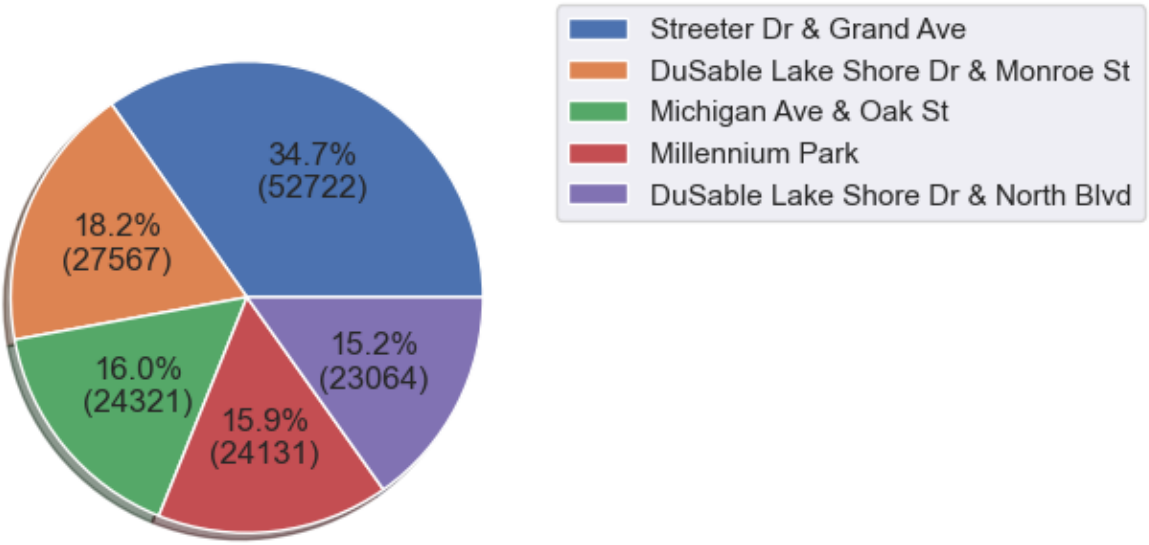
The following charts show the most common starting stations for casual riders and member riders for an entire year.



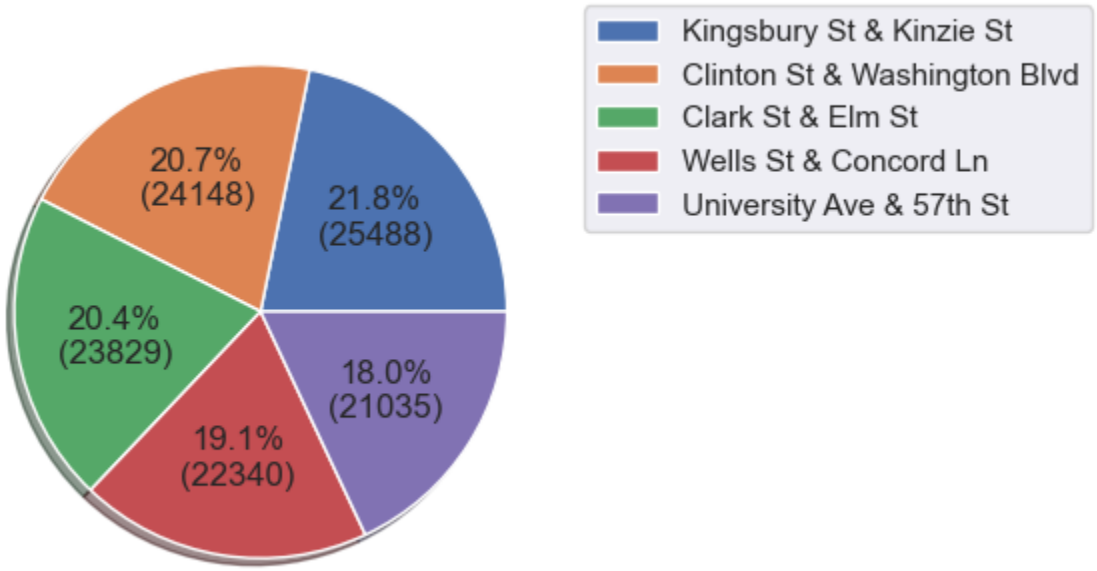


The most common ending stations are listed below:

Number of Casual Riders at Ending Stations



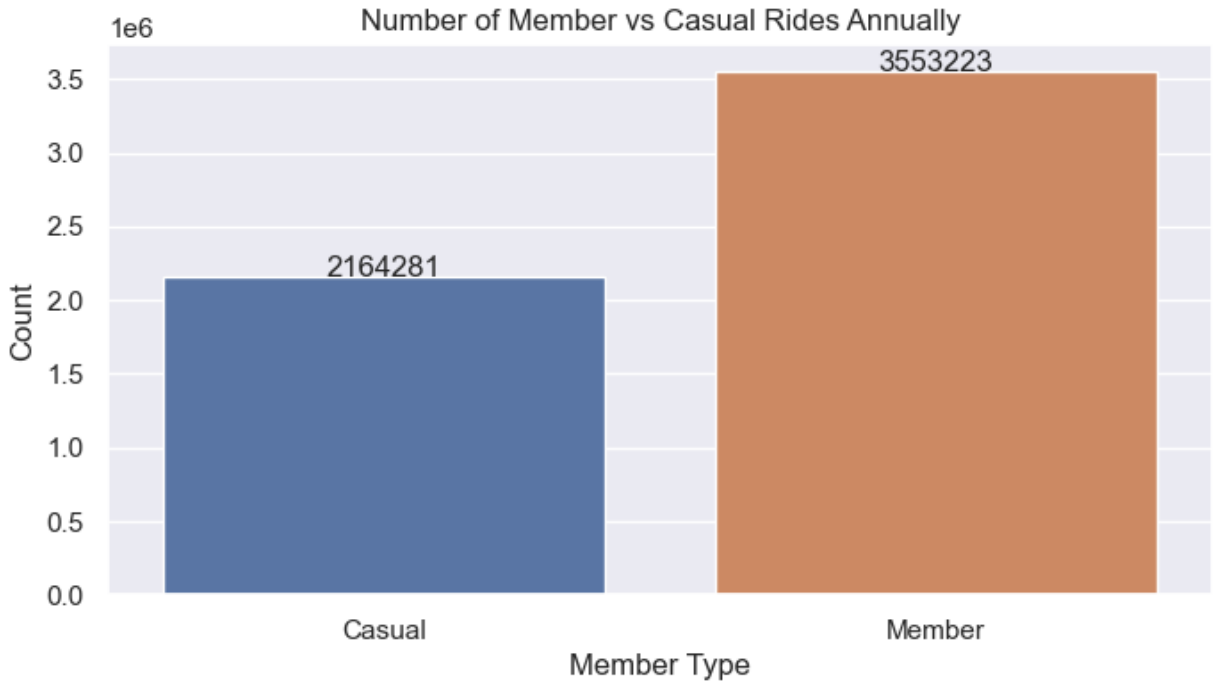
Number of Member Riders at Ending Stations

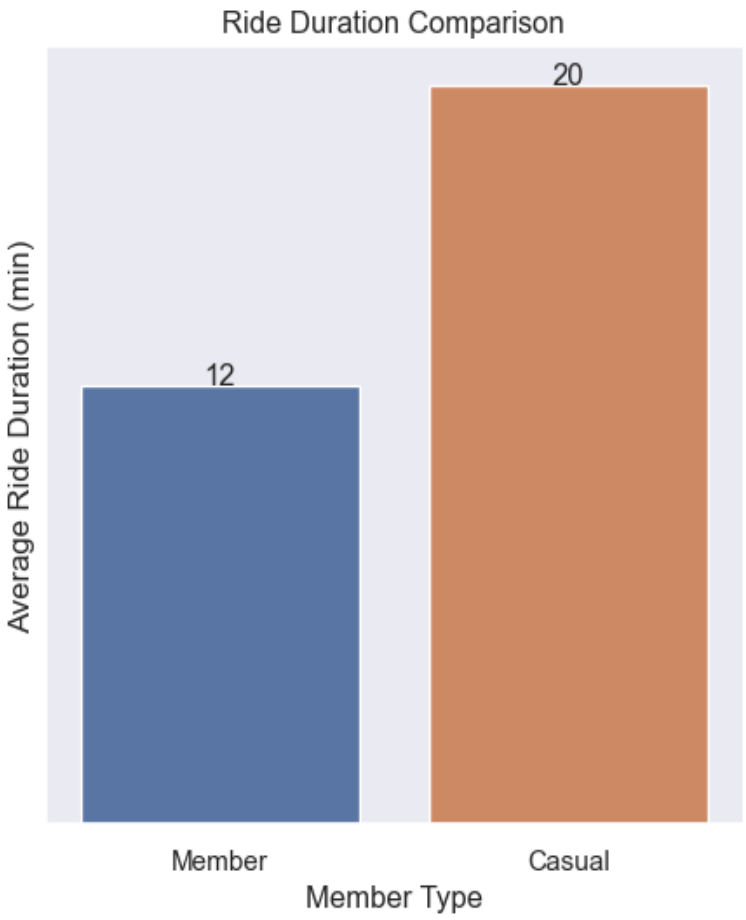


One possible explanation why certain stations have more members while others have more casual riders is because members likely use bikes for commuting purposes while casual riders may ride those bikes for leisure. The most common member stations may be starting points to get into work while the most common casual stations may be attractions. With this information, it is recommended to place flyers at the most common casual rider stations such as Streeter Dr &

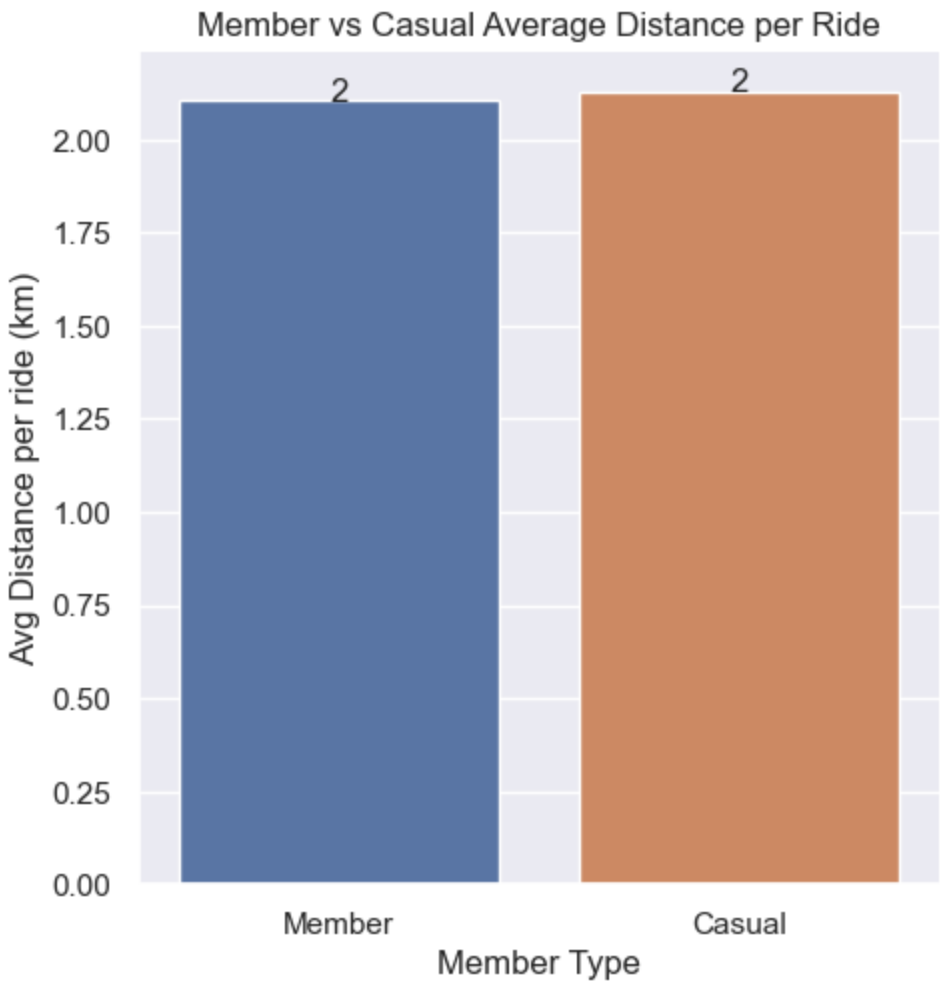
Grand Ave, DuSable Lake Shore Dr & Monroe St, Michigan Ave & Oak St, Millennium Park, and DuSable Lake Shore Dr & North Blvd. By doing so, we can use our advertisements to generate conversions from casual riders to members.

Another insight we can gather from the data is that although the number of member rides (3.55 million per year) is much greater than the number of casual rides (2.16 million per year), a casual rider spends nearly twice the time on their ride than members. A casual rider, on average, bikes for 20 minutes per session while a member, on average, bikes for 12 minutes per session.



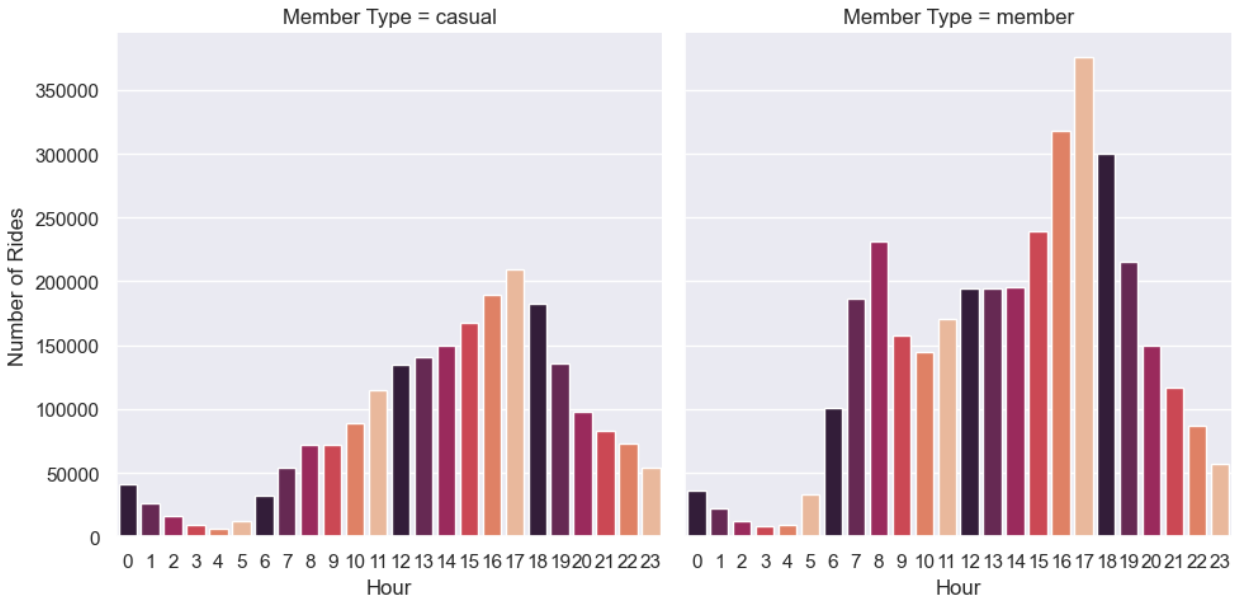


In each ride, on average, members and casual riders travel 2 km from starting location to ending location.

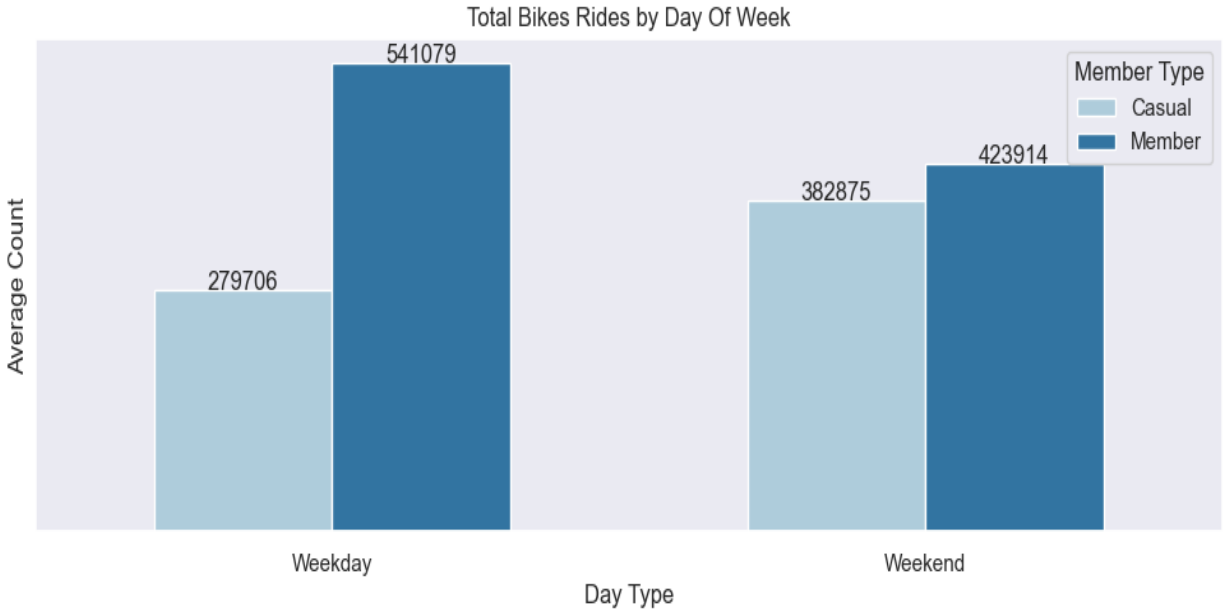


It is likely that a casual rider uses the bike for leisure, and thus spends a lot more time on their bike. Casual riders also commonly have the same starting location and ending location, which further indicates they use the bike for leisure purposes. Members, on the other hand, rarely start and end at the same location, and spend far less time on their bikes despite traveling the same average distance from start to end location. This indicates that members likely use the bikes for commute or non-leisure purposes.

The following graph shows that members likely use the bikes to commute to and from work, as there is a rise in rides between 7-9 AM and 4-6 PM.



Members also have far more rides during the weekday than casual riders, also likely because they are commuting to work on those days.



One final insight from the dataset is the distribution of types of bikes chosen by members and casual riders. It seems like members, who are more experienced with Cyclistic bikes, never choose to ride a docked bike. Even among casual riders, that bike type is the least chosen. In the

future, we can investigate what about docked bikes makes the riding experience less pleasant than classic and electric bikes, or we can just do away with docked bikes altogether.