Citibike Analysis

Today, what are the top 10 stations in the city for starting and ending a journey? Based on data, why?

The bar graphs show the top 10 stations in the city for starting and ending a journey. The following shows the top 10 stations for the starting point:

1. W 21 St & 6 Ave
2. 1 Ave & E 68 St
3. West St & Chambers St
4. W 31 St & 7 Ave
5. Broadway & W 25 St
6. 6 Ave & W 33 St
7. E 33 St & 1 Ave
8. University PI & E 14 St
9. Canal St & Rutgers St
10. 8 Ave & W 16 St

The following shows the top 10 stations for the ending point:

1. W 21 St & 6 Ave
2. Cleveland PI & Spring St
3. 6 Ave & W 34 St
4. 1 Ave & E 62 St
5. W 24 St & 7 Ave
6. E 10 St & 2 Ave
7. 11 Ave & W 41 St
8. Allen St & Rivington St
9. 8 Ave & W 33 St
10. W 20 St & 10 Ave

The results for both the starting and ending points stations display that W 21 St & 6 Ave is number one on the list. The reason this location is very popular is because the daily errands done there do not require the use of a car and walking from one location to another is more commonplace. So, it stands to reason that biking there is more frequent due to the nature of the location.

What are the peak hours when classic and electric bikes are used during the spring months vs during the fall months?

The line graphs on the top left and top right represent the peak hours of where classic bikes and electric bikes were being used during the spring and fall of 2023. During the Spring, the peak hours classic bikes were used were at 8:00h (8:00 am) and 17:00h (5:00 pm) with the number of bikes being 149,342 and 237,353 respectively. The peak electric bikes were used were at 8:00h (8:00 am) and 17:00h (5:00 pm) with the number of bikes being 28,292 and 49,589 respectively.

During the Fall, the peak hours classic bikes were used were at 8:00h (8:00 am) and 17:00h (5:00 pm) with the number of bikes being 178,584 and 254,673 respectively. The peak electric bikes were used were at 8:00h (8:00 am) and 17:00h (5:00 pm) with the number of bikes being 10,167 and 14,677 respectively.

From the data, there are many factors that can relate to why these bikes are used mostly at the specified times. For instance, at 8:00am there are people who need to use bikes to commute to work. Thus, the reason why bikes are used more often during that time. The same can be said for why bikes are used during 5:00pm. People need to commute from work to get back home. In addition, classic bikes are used more often than electric bikes due to the former being more convenient and less expensive to use.

How does the average trip duration change by the member\_causal rides?

The bar graphs on the bottom left and bottom right represent the average time duration of both casual and member rides for the first and second halves of the year 2023. For the first half of the year 2023, the average trip duration for casual rides was 21.273 minutes while the average duration for members was 11.571 minutes. For the second half of the year, the average trip duration for casual rides was 20.047 minutes while the average duration for members was 11.773 minutes.

From the data, it is shown that casual rides have a higher average trip duration than member rides in both the first and second half of the year. There are many factors that contribute to this discovery. Firstly, cyclists who are members tend to use bikes to commute to work and back home while casual cyclists use their bikes mostly on weekends and to run small errands. Due to this fact, it would make sense that casual bike rides would have a longer trip duration considering people have more free time during the weekends and tend to drive longer distances and to more than one location more often. This being the opposite of member bike rides which have destinations (their workplace) and a shorter trip duration in most cases. Another factor is that casual riders purchase single-ride or full-day passes to ride their bikes while member riders purchase annual memberships for theirs. This means that the casual riders are more likely to use their bikes than member riders since they only have a one-time use for their bikes.