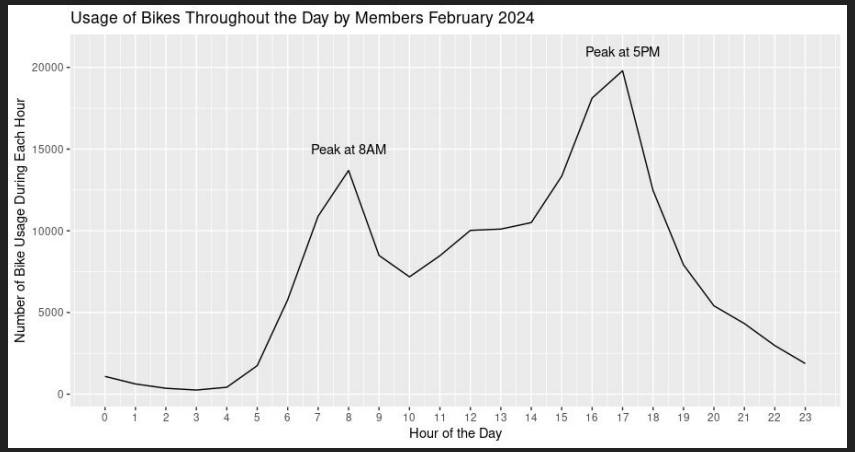
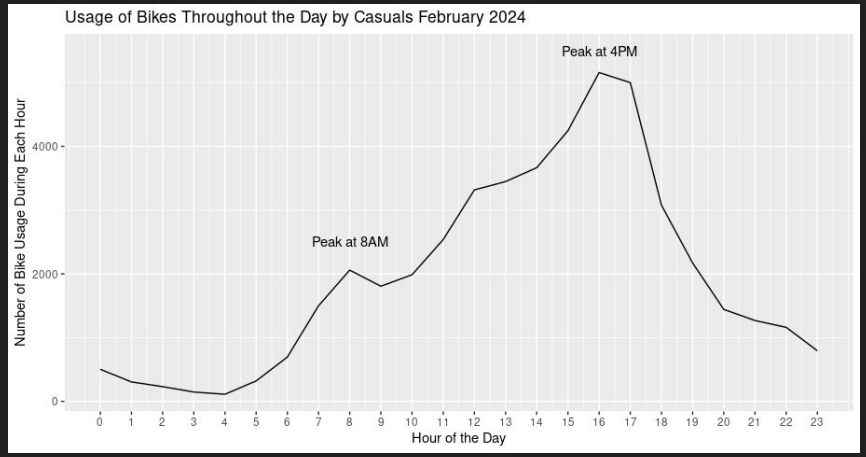
My first thought process when looking at the data was to look at the times throughout the day that Cyclistic bikes were used and I hypothesized that I would understand the casual consumer base better and therefore create a better action plan for advertising subscription plans for these casuals. The dataset came with time stamps of when the bikes were taken out and when they were returned. Using the ___$hour <- hour(___$started_at) I created a new column that takes the hour value from hr:min:sec at started_at. The limitation with doing things this way is that we wouldn't have an accurate line graph that displays each minute throughout the day. Suppose we had times 13:01:59, 13:59:02, and 13:58:03, the code would end up displaying "13" three times and as such when we are to do a line graph we would not see a peak towards 14:00:00 but rather above 13:00:00. As such, when the graphs are looked at, it is better to assume the hour gap (eg: 1pm = 1-2pm).

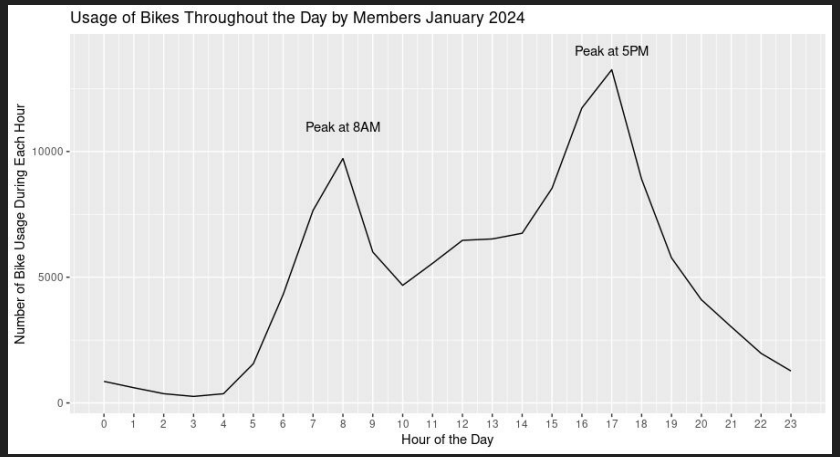
February 2024

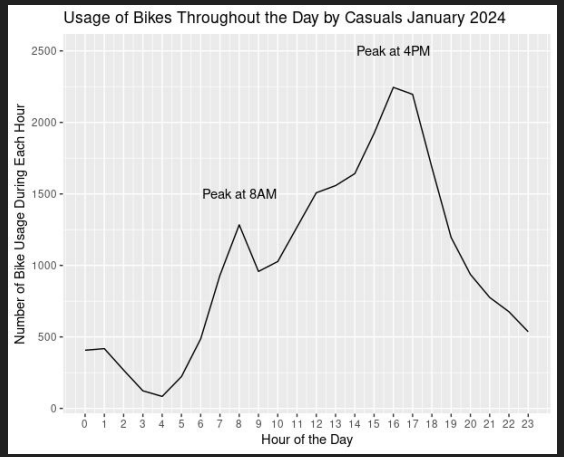




February had peaks at 8-9am and 4-6pm. Both members and casuals have peaks at 8am whereas casual riders have peaks at 4-5pm and member riders have peaks at 5-6pm. There seems to be another peak at around the 12pm-1pm hour mark but the peak doesn’t seem to be significant enough to be taken into account.

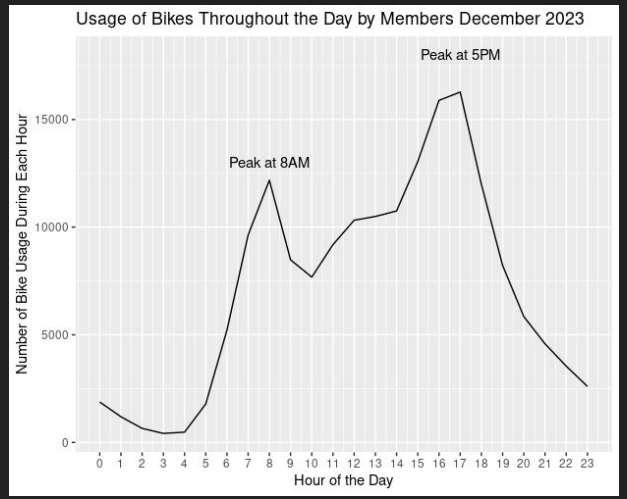
January 2024

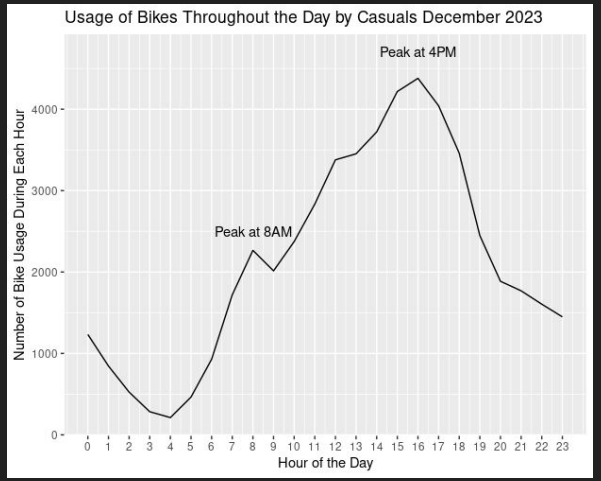




January had peaks at 8-9am and 4-6pm. Both members and casuals have peaks at 8am whereas casual riders have peaks at 4-5pm and member riders have peaks at 5-6pm.There seems to be another peak at around the 12pm-1pm hour mark but the peak doesn’t seem to be significant enough to be taken into account.

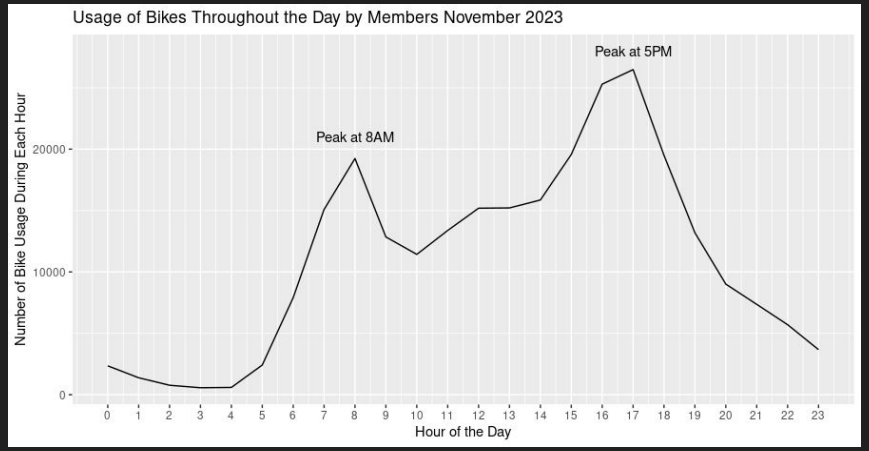
December 2023

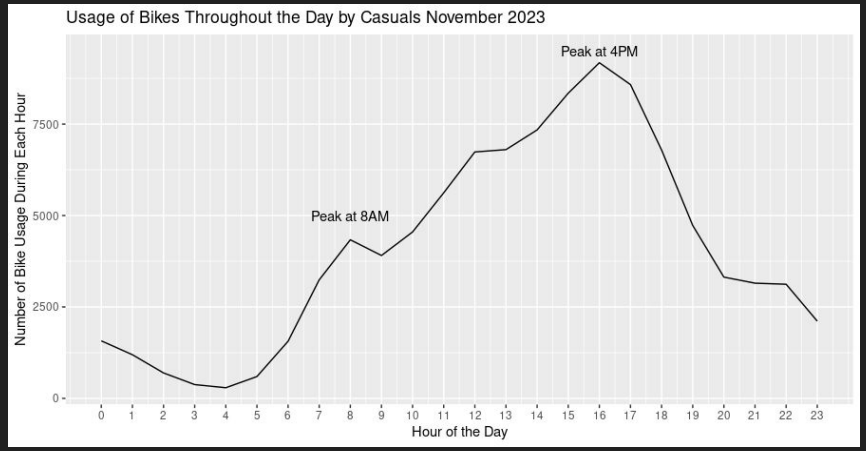




December had peaks at 8-9am and 4-6pm. Both members and casuals have peaks at 8am whereas casual riders have peaks at 4-5pm and member riders have peaks at 5-6pm. There seems to be another peak at around the 12pm-1pm hour mark but the peak doesn't seem to be significant enough to be taken into account.

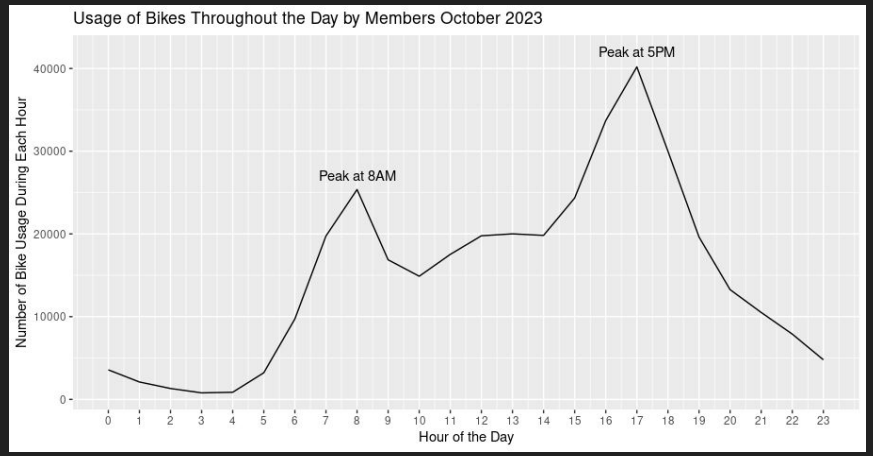
November 2023

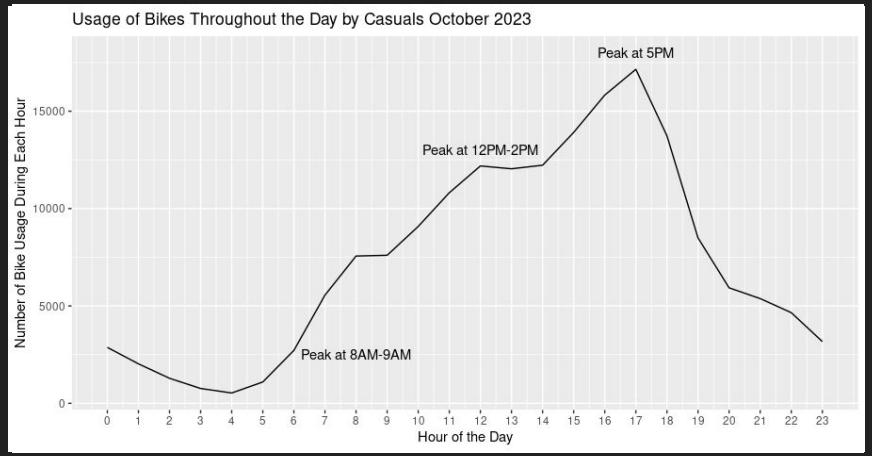




November had peaks at 8-9am and 4-6pm. Both members and casuals have peaks at 8am whereas casual riders have peaks at 4-5pm and member riders have peaks at 5-6pm. There seems to be another peak at around the 12pm-1pm hour mark but the peak doesn't seem to be significant enough to be taken into account.

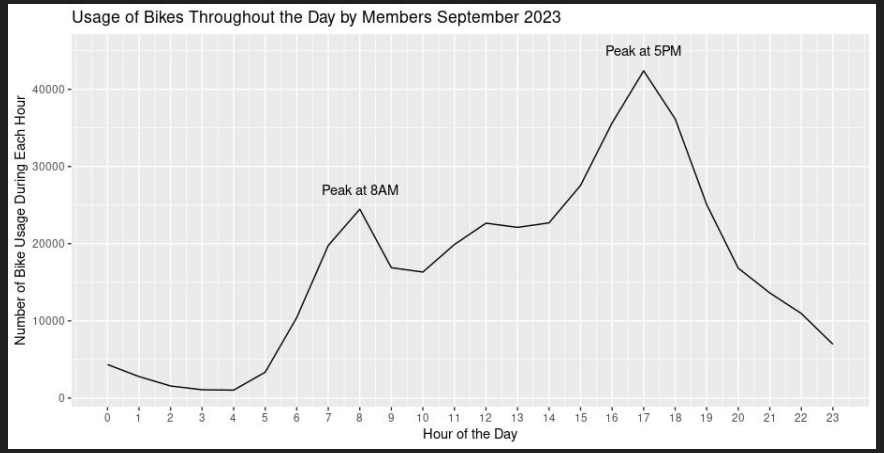
October 2023

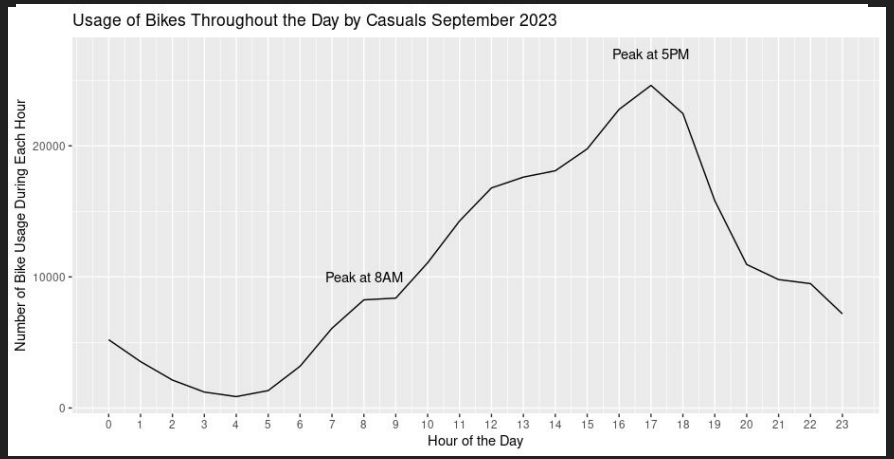




October had peaks at 8-9am and 4-6pm. Only members have a significant enough peak at 8-9am compared to that of casual riders. Compared to February 2024 - November 2023, October 2023 seems to have both casual riders and member peaks at 5-6pm. 12pm-2pm seem to have a large plateau for casual riders in October.

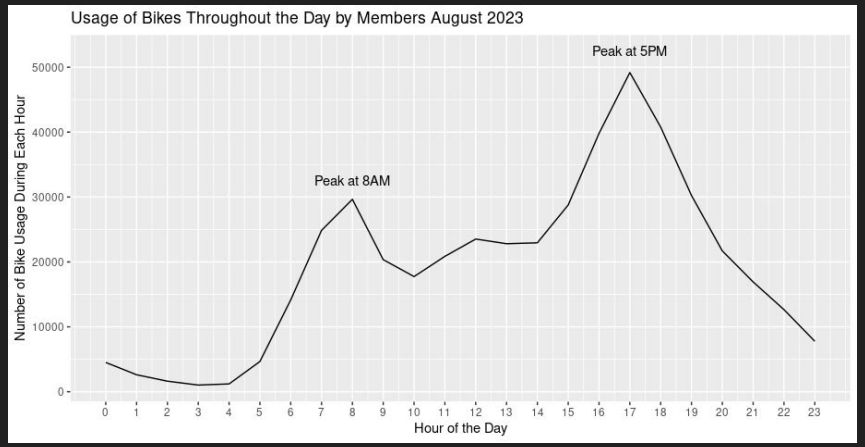
September 2023

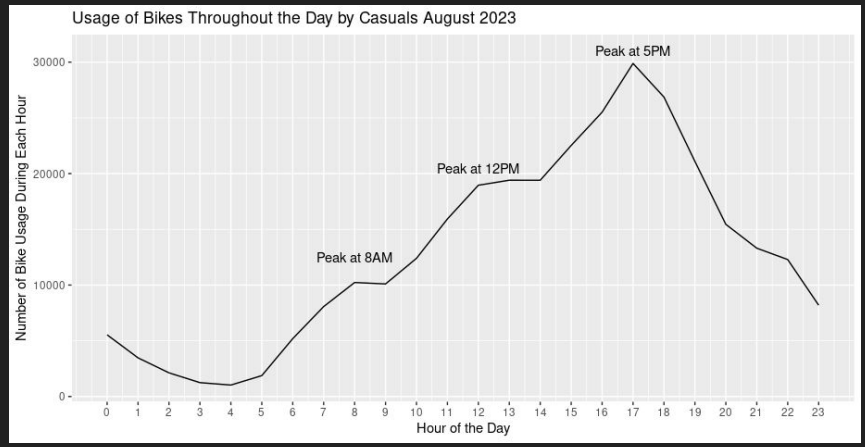




September had peaks at 8-9am and 5-6pm. Compared to February 2024 - November 2023, October 2023 seems to have both casual riders and member peaks at 5-6pm. Only members have a significant enough peak at 8-9am compared to that of casual riders. 12pm-1pm is also similar to those in previous months.

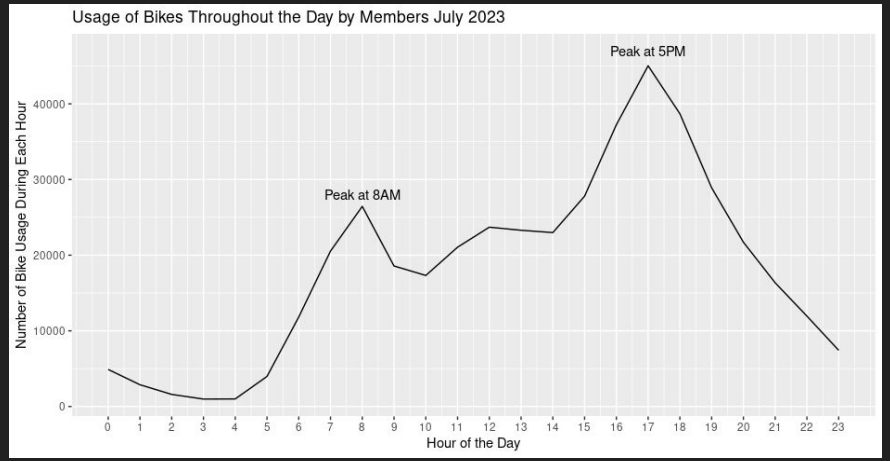
August 2023

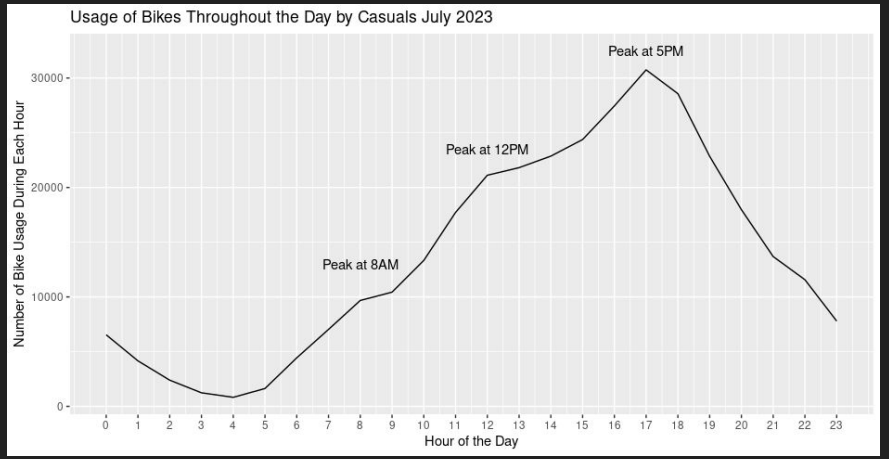




August had peaks at 8-9am and 5-6pm. Compared to February 2024 - November 2023, October 2023 seems to have both casual riders and member peaks at 5-6pm. Only members have a significant enough peak at 8-9am compared to that of casual riders. 12pm-1pm is also similar to those in previous months.

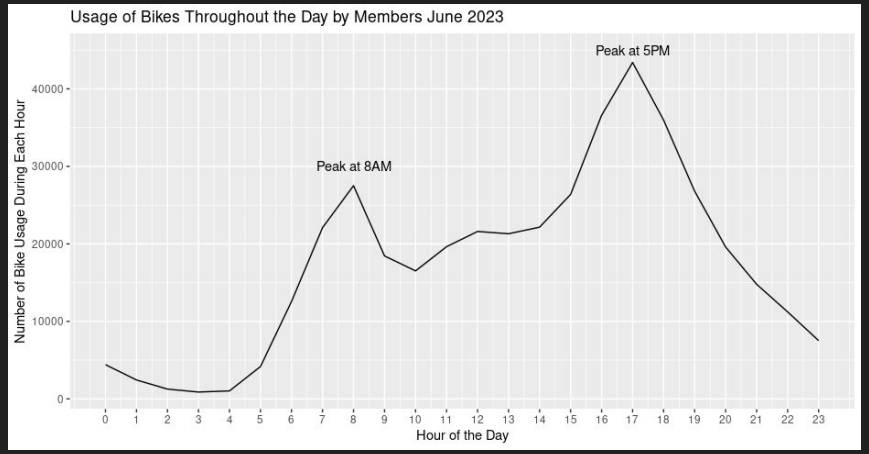
July 2023

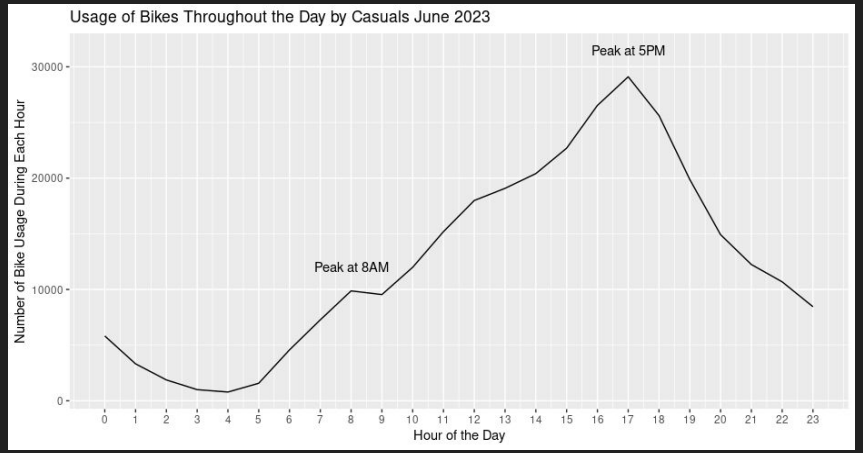




July had peaks at 8-9am and 5-6pm. Compared to February 2024 - November 2023, July 2023 seems to have both casual riders and member peaks at 5-6pm. Only members have a significant enough peak at 8-9am compared to that of casual riders. 12pm-1pm is also similar to those in previous months.

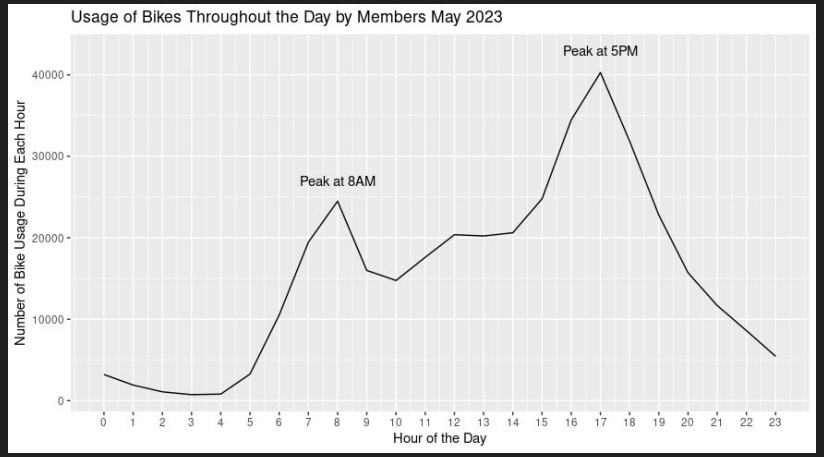
June 2023

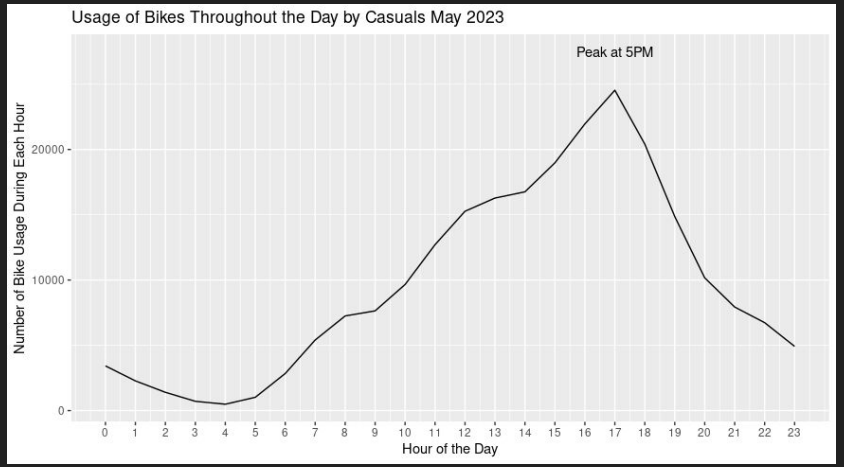




June had peaks at 8-9am and 5-6pm. Compared to February 2024 - November 2023, June 2023 seems to have both casual riders and member peaks at 5-6pm. Only members have a significant enough peak at 8-9am compared to that of casual riders. 12pm-1pm is also similar to those in previous months.

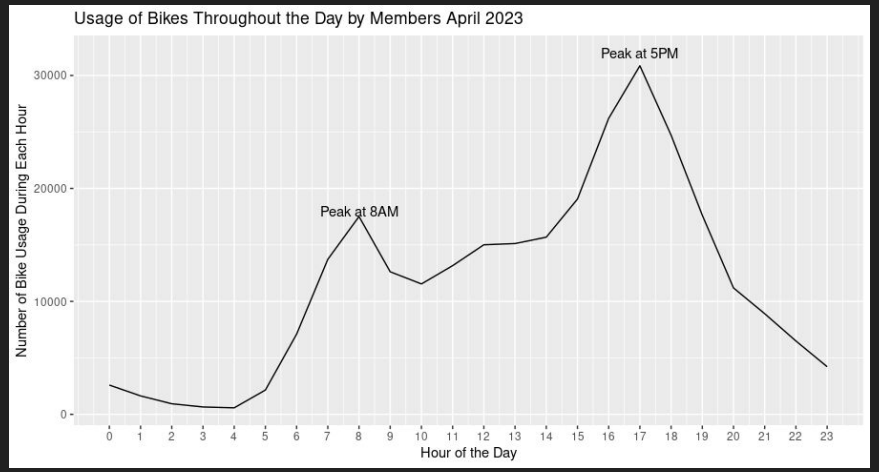
May 2023

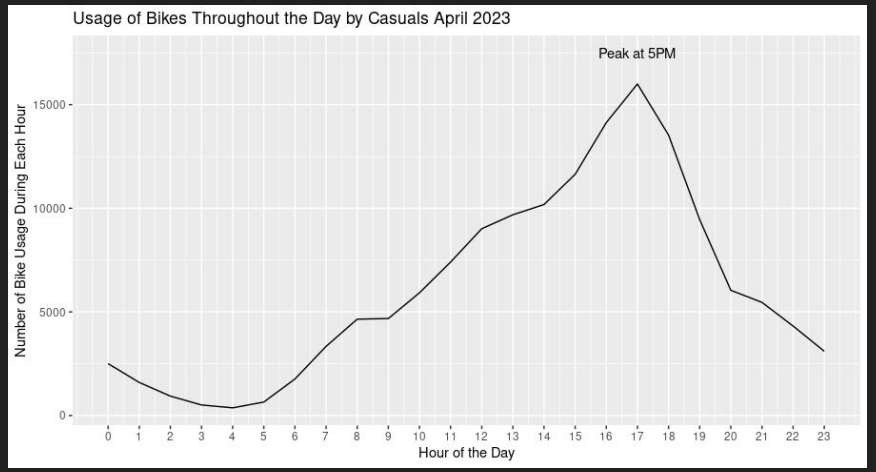




May had peaks at 8-9am and 5-6pm. Compared to February 2024 - November 2023, May 2023 seems to have both casual riders and member peaks at 5-6pm. Only members have a significant enough peak at 8-9am compared to that of casual riders. 12pm-1pm is also similar to those in previous months.

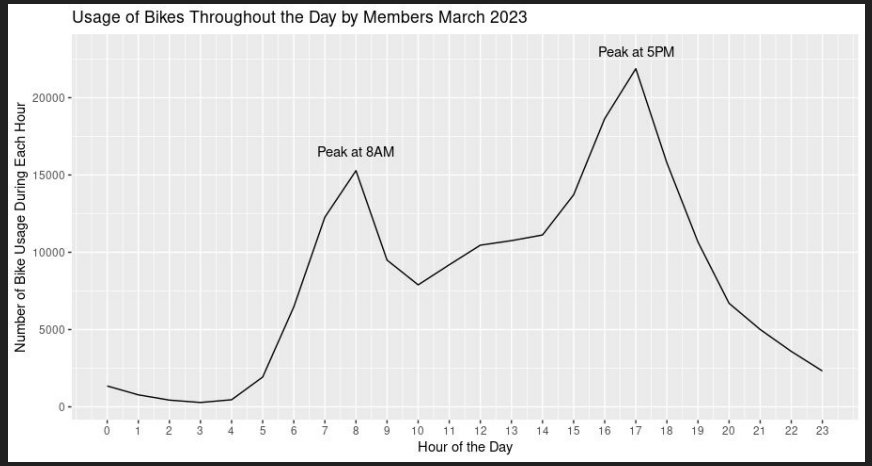
April 2023

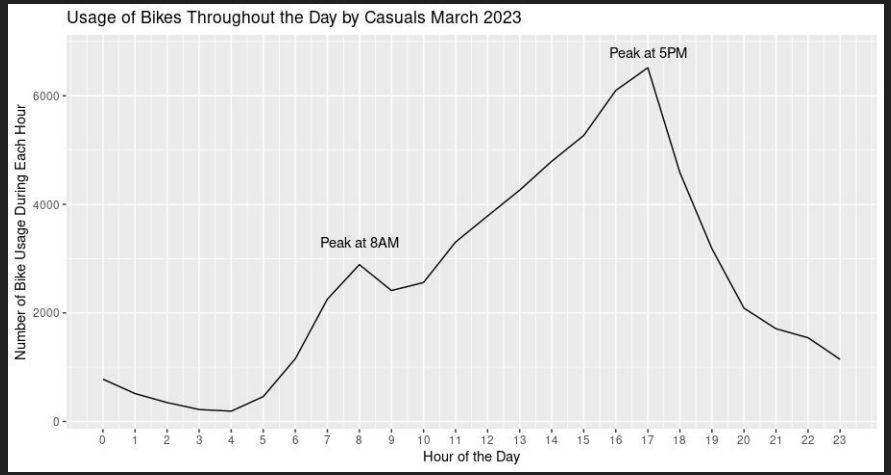




April had peaks at 8-9am and 5-6pm. Compared to February 2024 - November 2023, April 2023 seems to have both casual riders and member peaks at 5-6pm. Only members have a significant enough peak at 8-9am compared to that of casual riders. 12pm-1pm is also similar to those in previous months.

March 2023





March had peaks at 8-9am and 5-6pm. Compared to February 2024 - November 2023, March 2023 seems to have both casual riders and member peaks at 5-6pm. In March 2023, casual riders seem to have a significant enough peak at 8-9am compared to that of November 2023 - April 2023. 12pm-1pm is also similar to those in previous months.

In depth

Looking at the graphs for February 2024 - March 2023, I can see that Members seem to be consistently using the cyclistic bikes from 8-9am and 5-6pm. I believe this can largely be due to the fact that these users ride to and from work. The most common workplace hours are 9am-5pm. If we take this into account, this seems to be a very good reason at to why we see peaks at 8-9am and 5-6pm. In both casual and member riders, it seems like there might be another peak at 12-1pm but it isn’t significant enough to be taken into account. However, I believe that these peaks are most likely due to it being lunchtime for member workers and casual riders. Casual riders are more likely to be awake and use cyclistic bikes for brunch at 12-1pm. For casual riders, there seems to only be significant peaks at 8-9am in February 2024, January 2024, December 2023, November 2023, and March 2023. These months don’t seem to have any relation to each other as of looking at just the hour usage throughout the day. Further analysis later will most likely provide insight as to why there are significant peaks at 8-9am from casual riders too.