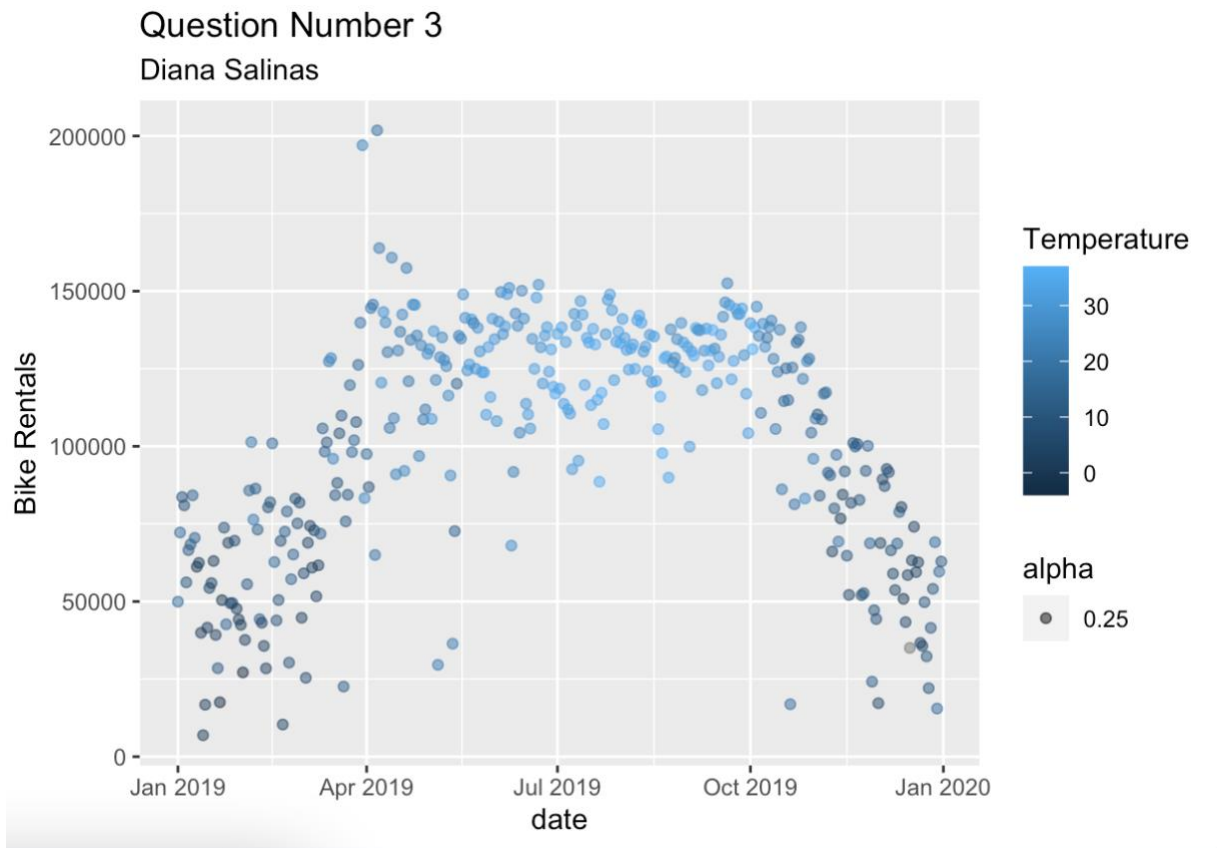# Diana Salinas
CSCI 444 -- Homework 2
Washington DC Bike Sharing Rentals

1. **What are the new data types of these variables? In a table list the variable name followed by its data type. How many observations in bikes?** The new data type for season and member type is character, and the new data type for start date is date. There are 33,983,989 observations in bikes.
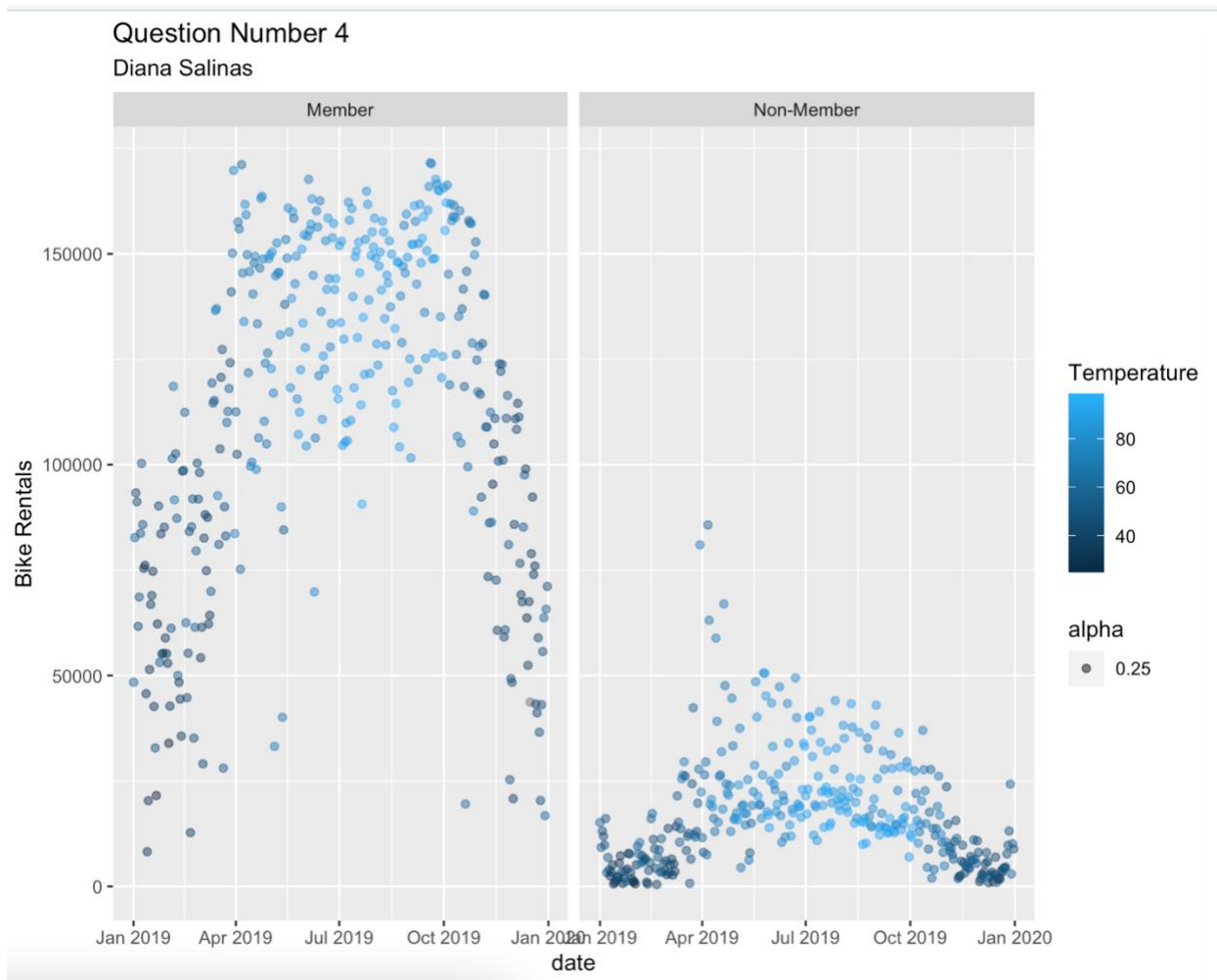
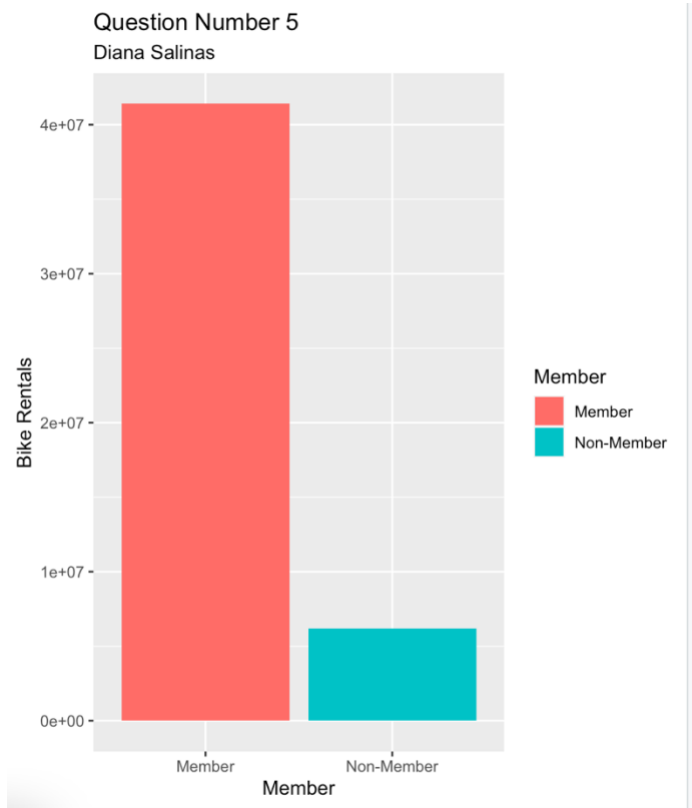|	
Duration	<dbl>
`Start date`	<chr>
`End date`	<chr>
Season	<chr>
`Start station number`	<dbl>
`Start station`	<chr>
`End station number`	<dbl>
`End station`	<chr>
`Bike number`	<chr>
Member	<chr>
date	<date>

2. **How many observations in weather?** There are 365 observations in weather. Referenced for this section: https://www.buffalo.edu/content/dam/www/ccr/pdfs/hswshp2013/4-WritingFunctions.pdf

3. **What trends do you see with bike rentals relative to temperature? Do you see any outliers in the data points (state what months, approximately – don't need to list exact dates)? Are these the dates you would expect, why or why not?** It appears that the warmer it is, the more likely someone is to rent a bike. There are a few outliers in the data points (around April 2019 and late October 2019). I would expect these dates since this is around beginning of Spring and late Fall time where the weather is quite unpredictable.
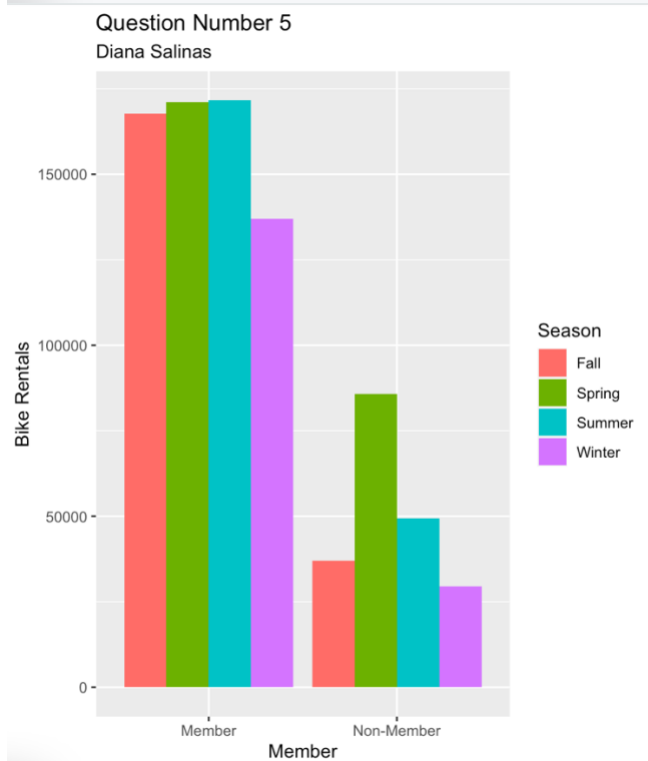
4. **What comparisons do you see between bike rentals from members versus non-members? Again, do you see any outliers (state what months, approximately – don't need to list exact dates)? Are these the dates you would expect, why or why not?** Once more, there are some outliers. For both charts, there are some outliers are in the beginning of April and late December/Early January. It appears that most members and non-members rent bikes during the warmer seasons. Not as many non-members rent bikes as members, but there are still several that do rent. For the same reason as the last, I did expect for those to be the outliers since that is around the time that the weather is quite unpredictable. I was still surprised, however, on how many people, which were non-members, still rode bikes during the colder season.

Question Number 5
Diana Salinas

Member
- Member
- Non-Member

Bike Rentals

5. Which season had the most rentals from members? Which season had the most rentals from non-members? Does either answer surprise you (it did me)?

Summer had the most rentals for members. Spring had the most rentals for non-members. The answer for the non-members surprised me. I thought it would also be the highest in summer instead of spring.

Question Number 5
Diana Salinas

Bike Rentals

Season
- Fall
- Spring
- Summer
- Winter

Member   Non-Member

Member

6. Question 6

a. By observation, what dates had the highest bike rentals for both members and non-members (give approximate month and day)?

By observation, early April 2019, June, and September seem to be high for both members and non-members.

b. What day had the most rentals for non-members? Does this surprise you? What was happening in Washington DC on this day that would explain why? In your writeup, include the URL where you found your information.

For non-members, it was April 6. This does not surprise me since it appeared that way in the charts. The reason it could be like this, could be because of the 2019 National Cherry Blossom Fest which was occurring on that day.

https://www.amaconferencecenters.org/2019-national-cherry-blossom-fest-in-dc/

2019-04-06	Non-Member	85694

c. What day had the most rentals for members? Does this surprise you? What was happening in Washington DC on this day that would explain why? In your writeup, include the URL where you found your information.

September 19, 2019 has the highest rentals for members. This does surprise me, I thought it would be sometime in April. The reason there were so many people there and probably biking was because the Washington Monument was to reopen on that day. Biking was probably the easiest way to get there and not have to deal with traffic as much.

https://www.nps.gov/nama/learn/news/wamoreopen.htm

2019-09-19	Member	171584

Question Number 6
Diana Salinas