Section Assignment 3_Grading_Rubric

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Questions:

1. (0.5 point): The goal for this week is to generate high quality figures from the hospital data that you worked with last week. We will use the ggplot2 package to accomplish this. Install the ggplot2 package and load it into your function library.

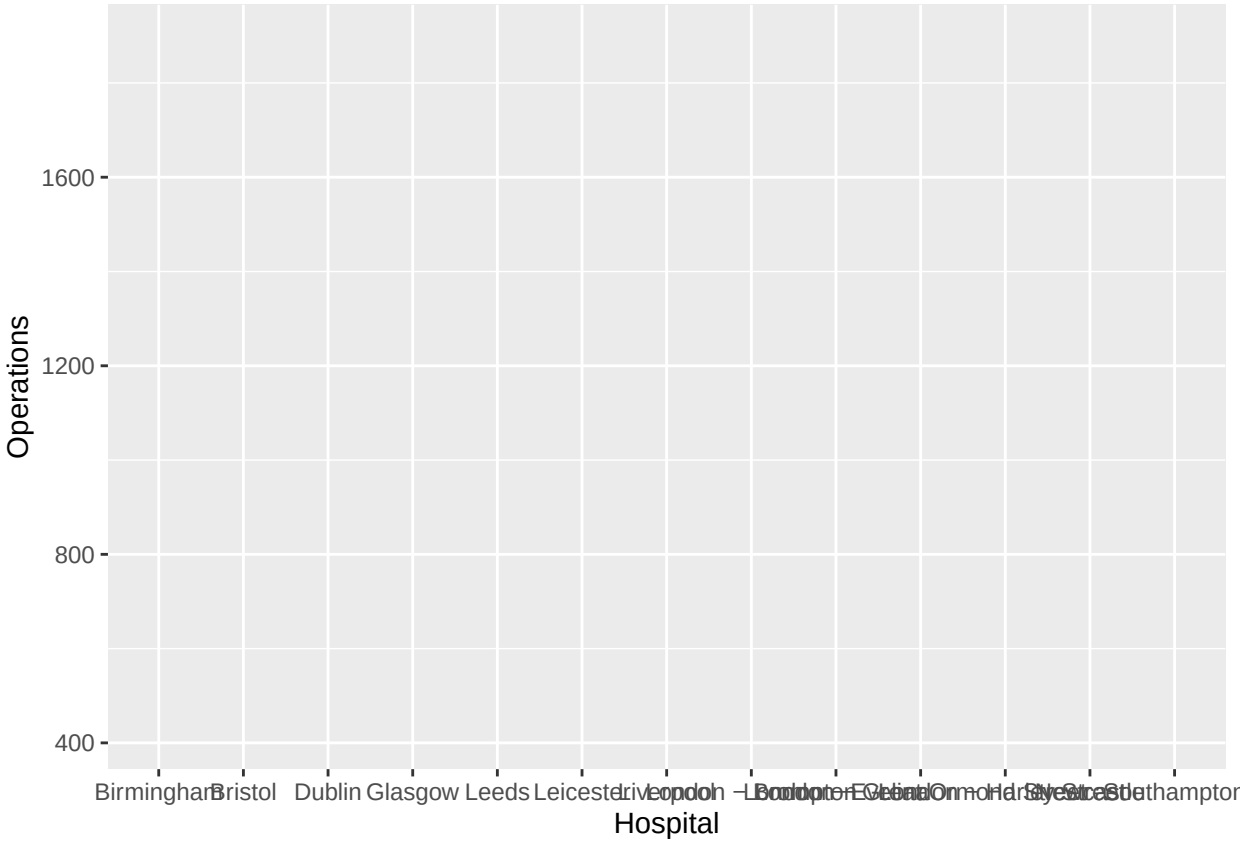
```
## Installing package into 'C:/Users/liamm/Documents/R/win-library/4.1'
## (as 'lib' is unspecified)
```

```
## Error in contrib.url(repos, "source"): trying to use CRAN without setting a mirror
```

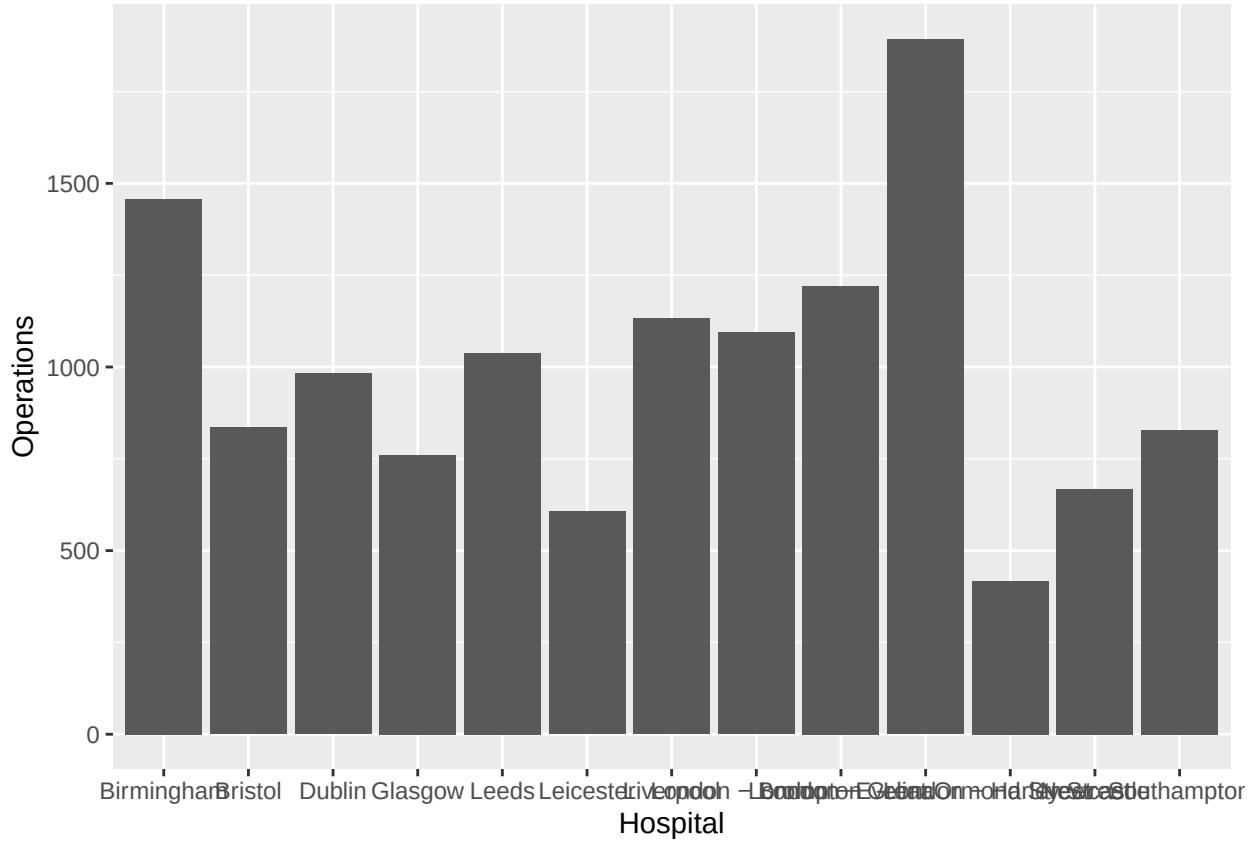
2.(0.5 point): You will need to read in the data table that you created in last week's section activity. Assign that .csv file to an object on the line below:

3. (9 points over 8 steps): Generate a bar chart representing the number of child heart operations each hospital performed during the study period where the color of the bar represents the survival rate in that hospital. We will do this in a number of steps:

Step 1 (1 point). Generate the empty space that we can fill with data. In this step we will define for ggplot the data set and the x and y axes. It will look super messy, and that is okay, in each step it will look more and more professional. Before moving on to step 2, check that your figure 1 looks identical to this one.

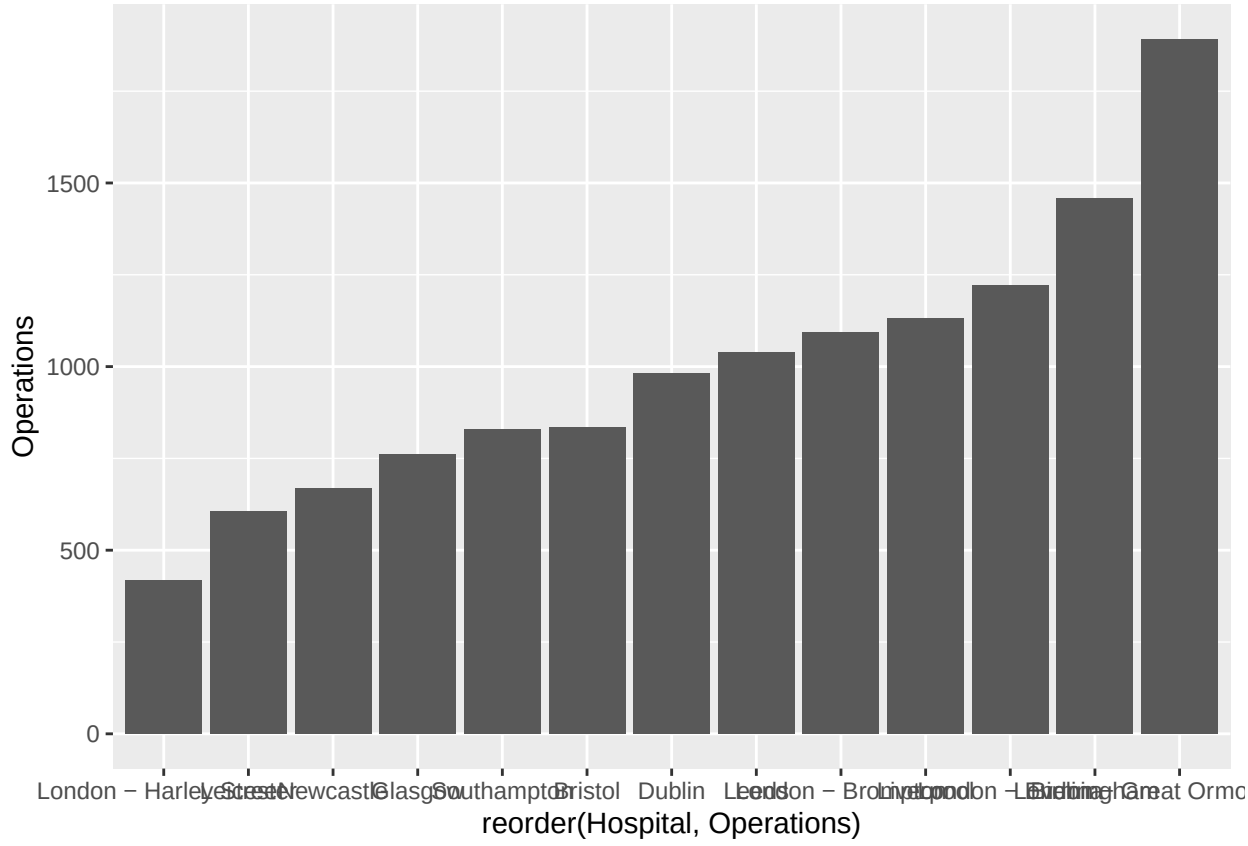


Step 2 (1 point): Now it is time to set up the type of plot we want to visualize, in this case a bar plot. Copy your code from step 1 into the box below, then add the appropriate code on a new line. Again, check your figure with this one and move on to step 3 if your graph is identical to the one directly below.



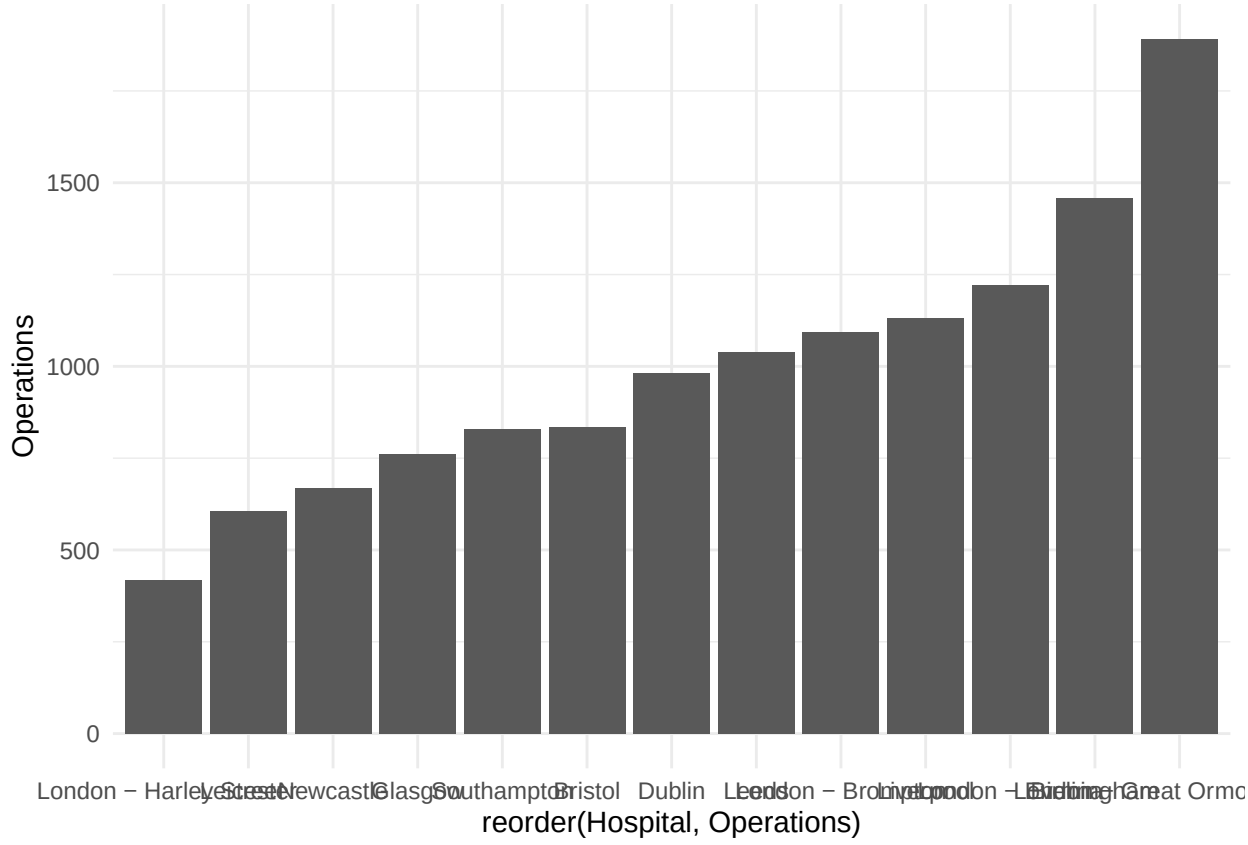
step 3 (1 point): In this step we are going to reorder the bars in acceding order by the number of operations. Copy the code from step 2 into the box below and modify the code that reorders the x axis. Hint: Instead of adding a new line, this time we need to change an argument in how we assigned the X axis in the aes() argument that we first put in step 1. Check out the "sorting bars by some numeric variable" section of this link: https://sebastiansauer.github.io/ordering-bars/

Check your fig 3 with this one and if they look identical, move on to step 4.



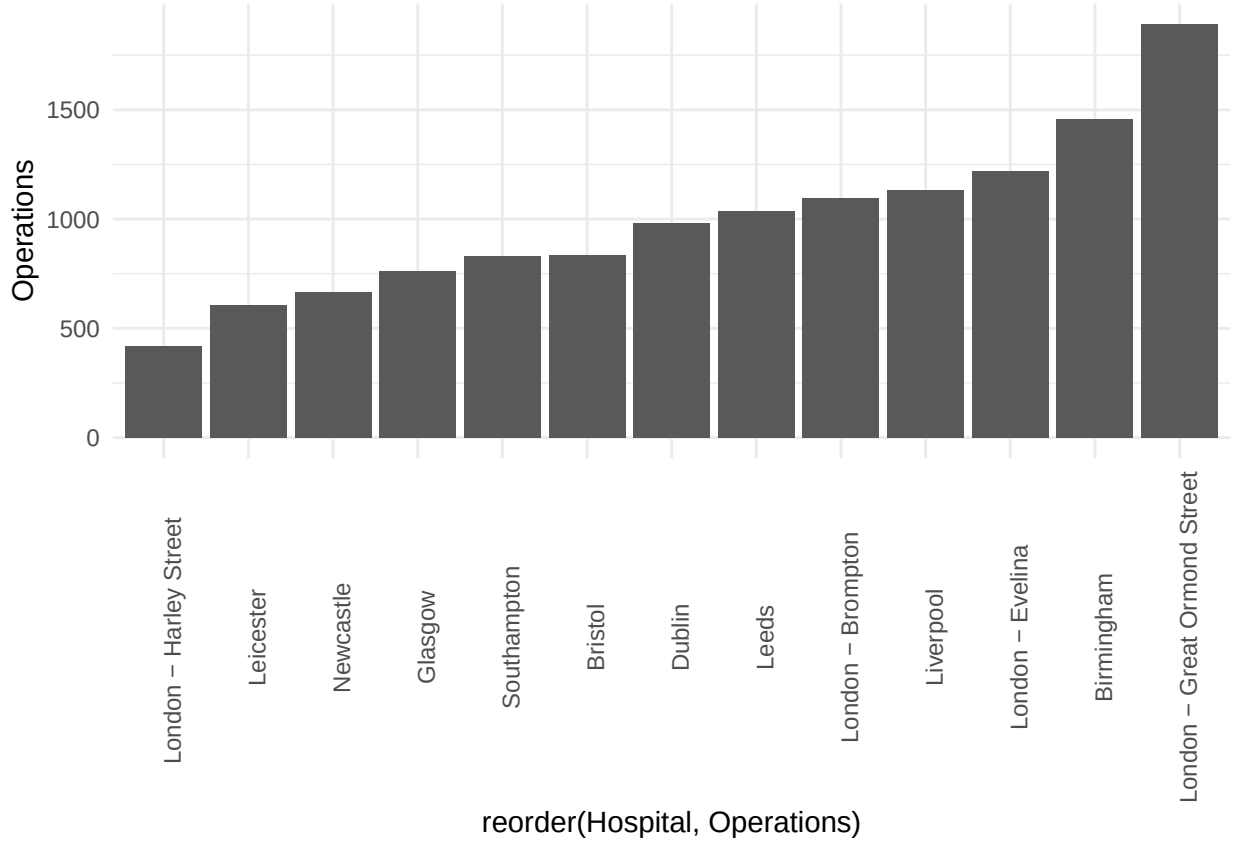
step 4 (1 point): Now that we have an organized plot, it is time to start working on legibility. First, we will start making changes that make it look more professional and less like an EXCEL output. The main thing making it look like an excel plot is that grey background that journals hate (to be fair, it just wastes ink). And don't worry, we will fix that messy x axis soon, we just need to have this line happen first. The easiest way to get rid of the grey background is by changing the plot theme. Check out how to create the "theme_minimal" theme here: https://r-charts.com/ggplot2/themes/ Copy your code from step 3 into the box below and add a line that modifies the theme to minimal.

Check your fig 4 with this one and if they look identical, move on to step 5.



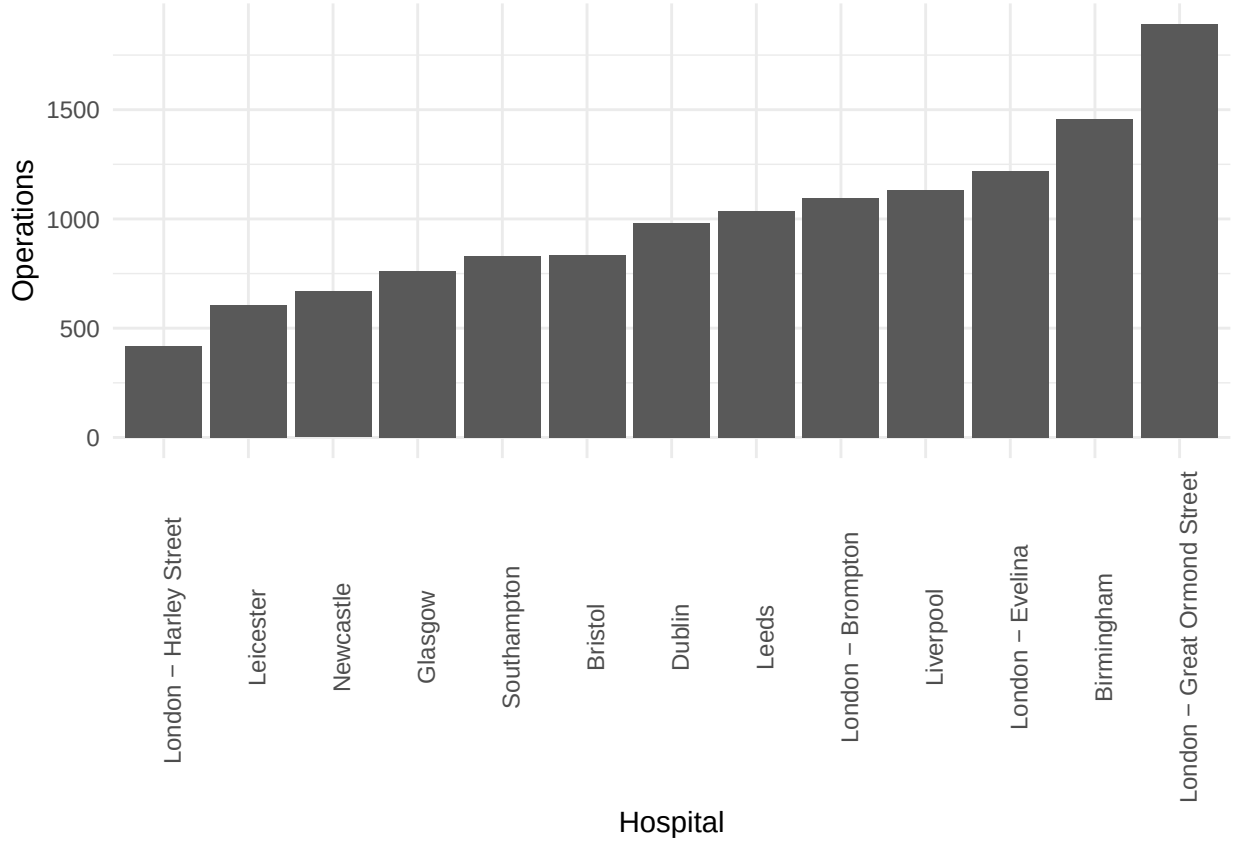
step 5 (1 point): In this step we are going to rotate the axis text on the x axis so we can see the names of each hospital more easily. Copy your code from step 4 into the box below and add a new line that changes the axis text of the x axis. Start here: https://datavizpyr.com/rotate-x-axis-text-labels-in-ggplot2/

Check your fig 5 with this one and if they look identical, move on to step 6.



step 6 (1 point): It is really coming together! We are in the home stretch now! Since we reordered the x axis, the x axis label no longer looks good. Lets rename the X axis back to simply: "Hospital". Copy the code you wrote in step 5 into the box below and add a new line that changes the x label. If lost, start here: http://www.sthda.com/english/wiki/ggplot2-title-main-axis-and-legend-titles

Check your fig 6 with this one and if they look identical, move on to step 7.



Step 7 (2 points): Now the big step. Copy your code from step 6 into the box below and once again add to the aes() function to add a gradient fill color to the bars associated with the survival rate you calculated in last week's assignment. Check out how the "fill =" argument is used with a third data column here: https://r-graphics.org/recipe-bar-graph-colors

Check your fig 7 with this one and if they look identical, move on to step 8.