EXERCISE
Advanced graphics 4 (bar charts)

Use the excel file "Stroke" containing data about lipid profile of individuals with and without stroke

A] Draw a combined bar chart showing the 4 lipid types in both patients and controls, through following the steps below:

1- Melt the data while using Group as id.vars. Name the new data strokemelted

2- From strokemelted, calculate the mean and sd of 'value' according to 'Group' and 'variable'. Name this file strokesummary

3- Draw a bar plot of strokesummary where x is the variable, y is the mean of the value and <u>fill</u> is by Group. Bars should be beside each other.

4- Make the bars in a descending order according to their value

5- Add an error bar

6- Adjust size of error bar to 1 and width to 0.5

7- Make the <u>colour</u> of error bars the same as the bar colour i.e: by Group (Colour=Group) and make the bars a little transparent (alpha 0.7)

8- Make the background white, remove x-axis label and make y axis label 'mg/dl'

9- Change the colours to palette "Set2" according to the R brewer colours

B] Change the bar chart you just did to a proportional stacked bar chart (100% stacked) through following the steps below

1- Divide the file strokemelted into groups based on the variable Group (use function group_by). Name that file strokegrouped.

2- To the file strokegrouped add the percentage of the mean (use %>% and mutate function). Name this file strokesummary2.

3- Use the same ggplot function of the previous bar plot except:
   a. Change the name of data plotted to **strokesummary2**
   b. Remove the error bar code
   c. Remove position="dodge" from the geom_bar

4- Make the bars have a total of 100% i.e. Of equal size (use position = "fill" in geom_bar)

5- Change y-axis label to "Proportion"

Congratulations!
You have finished all advanced graphics exercises