Using the diamonds data:

1. Figure out how to generically extract all numeric columns from any data frame so the method you develop can be used on any data.

2. Create a data frame that contains each pair of variable names in the first column in a single string separated by a -, e.g. for the variables x and y, you should form the string "x-y" (**HINT:** Look at the help provided for the paste function) and their corresponding Pearson correlation coefficient in the second column. (**HINT:** There is a function that calculates correlation coefficients – look carefully at what is returned and optimize how you extract the correlation coefficients). **Do not repeat any pairs.**

3. Create and label a scatter plot for every pair of numeric variables. Add a title to the plot that contains the calculated Pearson correlation coefficient of variables contained in the plot. (HINT: You should figure out how to extract all numeric columns from a data frame so your method can be used on any data frame.)

Submit your work on Github in a <u>single</u> Rmd file named HW5.