BSDS 100: Intro to Data Science with `R`
Assignment 2

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Before we begin, make sure that you have `R` and `R`Studio properly installed.

Directions: Write a single `R` script (.R file) that answers each of these questions. Make sure that all code can be successfully run on any computer. Put your name and date at the top of the script, commented out. For all questions that require written responses, write the answer (numbered appropriately) in the `R` script so that the text is commented out. Turn in a hard copy of your script file. This assignment is due in the next class period at the beginning of class. Late assignments will automatically have 10 points deducted.

1. Create an `.R` script that when run performs the following tasks

   (a) Assign $x = 3$ and $y = 4$

   (b) Calculates $\ln(x + y)$

   (c) Calculates $\log_{10}(\frac{xy}{2})$

   (d) Calculates the $2\sqrt[3]{x} + \sqrt[4]{y}$

   (e) Calculates $10^{x-y} + \exp\{xy\}$

2. Why does the following code not work?

   ```
   my_variable <- 10
   my_varlable
   #> Error in eval(expr, envir, enclos): object 'my_varlable' not found
   ```

   This is in fact a simple question; however, it is important to get yourself well-trained at seeing such errors for when coding gets a lot longer and more difficult. (Don't worry, we're getting there!)

3. While in `R`, press Alt + Shift + K. What happens? How can you get to the same place using the menus?

4. Name 3 other integrated development environments, and discuss the advantages and disadvantages of `R` compared to these software.

5. Do you currently use Excel? What are the advantages to using `R` over Excel?

6. What does GUI stand for?

7. The term *Big Data* is used frequently these days, but a formal definition doesn't really exist. I provided one commonly used definition in the lecture. Discuss what *Big Data* means to you and where you've run across the term. If you have not witnessed the term before, find an article or website that uses it and talk about its use in that article.