BACS HW (Week 1)

Setting Up

Create a new project in RStudio for your first coding assignment.

Download the data file for customers.txt from Canvas

Try repeating the simple R commands we saw in class before attempting the more difficult questions below.

Your Assignment

Within your project, create a new R script file to keep a copy of the commands you use (you can call it 'HW1.R'). Try to solve each problem through code rather than manual calculations or observation. You are free to publicly discuss homeworks (and R code) on this week's MS Teams channel.

1. What is the 5th element in the original list of ages?
2. What is the fifth lowest age?
3. Extract the five lowest ages together
   HINT: to get a sequence of numbers from a list, you can use:
   `my_list[c(1,2,3,4,5)]` *but can you think of a shorter or clearer way of doing this?*
4. Get the five highest ages by first sorting them in decreasing order first.
   HINT: find out how to sort in decreasing order by using: `help(sort)` *or* `?sort`
5. What is the average (mean) age?
6. What is the standard deviation of ages? (guess or google the standard deviation function in R)
7. Make a new variable called *age_diff*, with the difference between each age and the *mean* age
8. What is the average "difference between each age and the mean age"?
   HINT: think carefully why someone would want to know this, and what it implies about how to do #7
9. Visualize the raw data as we did in class: (a) histogram, (b) density plot, (c) boxplot+stripchart

Submitting Your Work

Report: Create a concise report using a word processor (e.g., MS Word) or other tool (e.g., RMarkdown).

Anonymous: Do NOT put your name on the assignment; Only put your student ID at the top of each page

Credit Help: If anyone has helped you greatly, mention it and add their student ID at the top of your assignment

For each question:

- Show the question number you are solving, and a brief (< 1 line) description of the problem
- Show your code (see Canvas link on how to put code into MS Word)
  - copy/paste code into your report as text (do NOT use a screenshot!)
  - use comments (lines starting with '#') to give us additional information to understand your code.
- Show *relevant* results (see Canvas link on how to insert R plot graphics into MS Word)
  - results can be shown either as text or visualization (use copy/paste; do NOT use screenshots)
  - show results in the clearest way for the reader to understand that it is the result

Submit PDF: Please upload your report on Canvas as a PDF file.