

Lab 2: Matrices and Data Frames

The following worksheet is due within 24 hours after the end of the lab session. You will submit your lab report in crowdmark.

0. Open a new Quarto file. Label the title "Stat 123 Lab 2" and type in your name as the author and select output as a Word document.
 - (a) Delete all sample code in the Quarto file.
 - (b) For each question, type in the question number.
 - (c) Insert a code chunk (hit the "/" key and select R Chunk) and answer the question inside the chunk. Label any part by typing "#" and then the part number.
1. Download the data file FlowerData.csv posted under Lab Content in Brightspace (under Lab 2) and save it to whatever folder you are using for this course.
 - (a) Read the FlowerData file into R and call it *Fdata*.
 - (b) Is *Fdata* a matrix or a data frame? How did you know that?
 - (c) Create a matrix called *FlowerMatrix* which contains the numerical columns of *Fdata*. Show the first few rows of the matrix.
 - (d) Re-name the columns of *FlowerMatrix* to be: "Age (in days)" and "Height (in cm)".
 - (e) Re-name the rows of *FlowerMatrix* using the Individuals column from *Fdata*. Show the first few rows of the matrix again. Note the difference between the two display.
2. Use the *FlowerMatrix* matrix:
 - (a) Determine the average age of the flowers in the data set.
 - (b) Determine the average height of the flowers in the data set.
 - (c) Determine the first individual in the matrix which has the largest height and its height.
 - (d) Determine the first individual in the matrix which is the youngest and its age.
 - (e) What colour are the flowers in your answer to parts (c) and (d)?
3.
 - (a) In R console, display the data set *Fdata*, not FlowerData. There are two potential "issues" in the data set. Where are they?
 - (b) Now your TA will show you how to "fix" them?

IMPORTANT: When you are working with real dataset, **DO NOT** change data values unless you are sure that they are real errors. Also make sure the original raw data file is unchanged.

4. Once you make sure all the code works in the Quarto file, render it to a Word document. Then open the file and print it as a PDF file. The name of the file should be **Stat123_Lab02_YourName.pdf**. Double check that the file is readable before submitting. Then submit the pdf to crowdmark. Submission that is not readable will receive a grade of 0. If you can't open the word document from your computer, submit the word file and let me know.