Executive Development Center
College of Business
University of Central Florida
Fall 2020

Assignment 1

Due Wednesday, September 2, 2020 at 11:59 PM
in your GitHub repo.

Instructions:

Complete this assignment within the space on your GitHub repo in a folder called `assignment_01`. In this folder, save your answer to Question 1 in a file called `Q1_answer.txt`. In the same folder, save a copy of the sample file called `Q2_answers.R` that will contain all your R code for Question 2 in this assignment.

When you are finished, upload your code to your GitHub repo using the interface in a browser. You are free to discuss your approach to each question with your classmates but you must upload your own work.

Question 1:

Write a RAP program that will run on a register machine to perform subtraction.

- Subtract the value in register 2 from the content in register 1

- Place the difference in register 4, leaving register 3 to store a minus sign, if necessary.

- Do not bother to preserve the values of the inputs in registers 1 and 2.

- You can test your program in a browser at `http://proto.atech.tufts.edu/RodRego/`.

- You can find a flow graph at the links at the bottom of the computing demo in the class repo.

Question 2:

Fill in the code underneath the lines marked "`# Code goes here:`"in the sample file called `Q2_answers.R` from the QMB6358F20 course repository. The exercises are already primed with appropriately-named variables that have been assigned values for the inputs. The commands should function correctly with any sensible values that are input. The suggested inputs are in place only to guide your naming convention for variables.

At this point, do not be too concerned with the syntax. The goal is not to get a perfectly working program on the first draft (although that would be nice) but to produce an initial version to revise as necessary. Start with the conditional logic and the arithmetic operations to produce the desired result. We will test and refine these examples next week.

Example 1 Write an R script that takes two numbers, multiplies them together and prints out their product.

Example 2 Write an R script that determines if the number input is not a 5 or a 6.

Example 3 Write an R script that performs the following: Take one number as input. If the number is between 0 and 10, print the word "blue". If the number is between 10 and 20, print the word "red". If the number is between 20 and 30, print the word "green". If it is any other number, print that it is not a correct color option.

Example 4 Write an R script to print all multiples of 5 between 1 and `n` (possibly including `n`).

Example 5 Write an R script that will *count* all the even numbers up to a user-defined stopping point.

Example 6 Write an R script that will perform the following.

   a) Read in 5 separate numbers.
   b) Calculate the average of the five numbers.
   c) Find the smallest (minimum) and largest (maximum) of the five entered numbers.
   d) Return the results found from steps b and c in a vector containing the three results. Use the concatenation command:
   `num_out <- c(min = my_min, avg = my_avg, max = my_max)`.