CS 3035, Fall 2022
In-Lab Exercise 9

Due: September 21, 2022 (11:59 PM midnight)

The following programming exercise has two parts. Parts 1 is compulsory for everyone and part 2 is optional for those who might want to attempt it. Please submit a zip/tar compressed file containing the following:

1. Your program for Parts 1 (and Part 2 if you attempted it). Both text file (.txt) or a C program file (.c) are acceptable.
2. A file with screenshot of your outputs for each part. Please submit this file as a PDF.

Part 1: Function to swap two numbers in place

Swapping two numbers in place is an important function in C. It is used in a variety of sorting algorithms, e.g. quick sort or bubble sort. Please write a program in C that uses a function swap() to interchange two numbers in place, i.e., without making copies of the variables holding the two numbers. Your program must prompt the user to enter the two numbers, store them in variables num1 and num2, print the initial values of num1 and num2, and then the swapped values after calling the swap() function.

Hint: pass the variable values by reference to the function swap().

Part 2: Sort a 3 element array

You are given an array testArray[3] = {1, 3, 2}. Extend your swap() function such that you can sort this array in ascending order using only one call to the swap function. The output of the swap() function should result in {1, 2, 3}. You will need to define and initialize the array in your program.