Homework 4 *(Due: Jun 06)*
C++ Programming - COSC 2321

Department of Computer Science and Electrical Engineering

Summer Session I, 2022

Exercises

*Create a **New Project** for every exercise. Take a screenshot of the source code along with its output and place the **source code** and the **screenshot** in a **zipped folder** named **LastNameFirstName_HW4***

Exercise 1

In **main**, ask user to enter a sentence that is stored on a **char array** (buffer) of size 100 using the **getline** method. You (the user) enter the sentence: **Computer Science is amazing**. Define a pointer that points to the **char array**. Use **only** the pointer to find the second occurrence of a white space in the sentence entered and replace it with the NULL character ('\0'). Use the same pointer to convert any lowercase characters to uppercase (until the NULL character is encountered). *cout* the buffer. The output of the program should be: **COMPUTER SCIENCE**

Note 1: Refer to Ch. 10 for **getline** and for converting lowercase characters to uppercase

Note 2: Do not use the **[]** notation when using the pointer, e.g., ptr[c]

Exercise 2

Declare an **int** variable named **x** and assign to it a value (e.g., 20). Create a **reference** variable (i.e., alias) to it. Declare a pointer that points to the **reference** variable. Modify the **reference** variable and print both the **reference** variable and **x**. Print the address of **x**, the address of the **reference** variable, and the address the pointer points to

Exercise 3

Ask the user to enter the size of an **int** array at **run-time**. Use a loop to enter values into it. Use a second loop to sum the elements of the **dynamically allocated** array and print the result

Exercise 4

Similarly to Ex. 3, use a **smart pointer** to **dynamically allocate** an array

Note: Submit through **Canvas**