LAB 10: Pointers

1. Scope of Knowledge:

- Concept and usage of pointers
- Operations on pointers
- Relationship between pointers and one-dimensional and two-dimensional arrays
- Dynamic memory allocation by using malloc(), calloc(), realloc(), free() functions
- Passing pointer as arguments to function

2. Marterials/Softwares/Tools:

- Visual Studio Code

3. Coding Convention:

- All identifiers must be in English and lower case
- Follow the valid identifers naming rules in C
- Tab is 4 characters
- Curly braces must be aligned
- Statements in curly brackets must be indented by 1 tab

4. Exercise:

Exercise 1:

Use pointers to assign values to 2 integer variables (a, b) entered from the keyboard, then display the 2 variables after swapping the values and addresses of the memory areas of these 2 variables.

Exercise 2:

Write a program to input data for an integer array of 5 elements through the pointer ptr. Display the array using the array pointer (use the array name as the pointer).

Exercise 3:

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Given 2 integer arrays a, b with 5 elements, enter values for the elements of these 2 arrays. Use pointers to sum the elements of array a, b into array c (c[i] = a[i] + b[i]). Print the entire array to the screen.

Exercise 4:

Enter an integer n from the keyboard, then perform memory allocation for the array of real numbers with n elements. Enter data for this array and display all elements of array in ascending order.

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