**152112011 Computer Programming LAB**

**LAB WORK 5**

**05 April 2022**

**Objectives:**

- C++ Programming Pointers
- C++ File name is **StudentID_qNO.cpp**
- Note: Write comments in your code for explaining steps.
- Note: Pay attention to the indentations in your code.

**Question 1: Implement the codes that give the output given below.**

```
Using Integer Array => arrInteger(1,2,3,4,5)
arrInteger => 0.th value : 1  address : 0x7bfdd0
arrInteger => 1.th value : 2  address : 0x7bfdd4
arrInteger => 2.th value : 3  address : 0x7bfdd8
arrInteger => 3.th value : 4  address : 0x7bfddc
arrInteger => 4.th value : 5  address : 0x7bfde0

Using Integer Pointer
ptrInteger => 0.th value : 1  address : 0x7bfdd0
ptrInteger => 1.th value : 2  address : 0x7bfdd4
ptrInteger => 2.th value : 3  address : 0x7bfdd8
ptrInteger => 3.th value : 4  address : 0x7bfddc
ptrInteger => 4.th value : 5  address : 0x7bfde0


Using Char Array => arrChar(a,b,c,d,e)
arrChar => 0.th value : a  address : 0x7bfdcb
arrChar => 1.th value : b  address : 0x7bfdcc
arrChar => 2.th value : c  address : 0x7bfdcd
arrChar => 3.th value : d  address : 0x7bfdce
arrChar => 4.th value : e  address : 0x7bfdcf

Using Char Pointer
ptrChar => 0.th value : a  address : 0x7bfdcb
ptrChar => 1.th value : b  address : 0x7bfdcc
ptrChar => 2.th value : c  address : 0x7bfdcd
ptrChar => 3.th value : d  address : 0x7bfdce
ptrChar => 4.th value : e  address : 0x7bfdcf


Using Double Array => arrDouble(1.1, 2.2, 3.3, 4.4, 5.5)
arrDouble => 0.th value : 1.1  address : 0x7bfda0
arrDouble => 1.th value : 2.2  address : 0x7bfda8
arrDouble => 2.th value : 3.3  address : 0x7bfdb0
arrDouble => 3.th value : 4.4  address : 0x7bfdb8
arrDouble => 4.th value : 5.5  address : 0x7bfdc0

Using Double Pointer
ptrDouble => 0.th value : 1.1  address : 0x7bfda0
ptrDouble => 1.th value : 2.2  address : 0x7bfda8
ptrDouble => 2.th value : 3.3  address : 0x7bfdb0
ptrDouble => 3.th value : 4.4  address : 0x7bfdb8
ptrDouble => 4.th value : 5.5  address : 0x7bfdc0
```

**Question 2: Define an integer array with size of 5 and implement the given steps below via pointers:**

- Define a pointer p that points the array. Assign elements of array by integer values taken from user via pointer p. Print the elements of array via pointer p.
- Define an additional pointer r that points the last elements of the array. Print the elements of array last to first via pointer r.

**Question 3: Define an integer array with size of 5 and implement the given steps below via pointers:**

- Write a function "findValue" that takes two inputs, a pointer array "arr" and an index value "index". The function returns the value at the given index. Check your function and print the result in Main.
- Write a function "sumOfArray" that takes two inputs, a pointer array "arr" and an integer pointer value "result". The function calculates the sum of the elements of a given array and assigns the result to "result". Check your function and print the result in Main.

**Question 4: Define two integer arrays with size of 5 using initial values you specify and implement the given steps below via pointers:**

- Write a function "findCommon" that takes two arrays of integer pointers as input and finds the number of elements they have in common. If two values at the same index are equal, you can say it is common.