Lab session 2: Functions

Objective

The objective of **lab session 2** is

- To declare and define a function
- To write correct syntax for calling a given function
- To write a function that solve a given problem

Pre-lab Exercise

1. From the below function prototype identify each of the following
    a. Return type
    b. The name of the function
    c. Parameters list

    int CalcSum(int n1, int n2);
2. Write a C++ statement that calls the above function?
3. List out true statements about a function
    a. The function name should be a valid C++ identifier
    b. All functions must have at least one parameter
    c. We can call a function before declaring
    d. If a function does not return anything, we use void as a return type.
    e. All functions contains return statement
4. Write a function that has an integer n as argument and return n^2.
5. Write a function that take a single integer number and return n!
6. Write a function that has an argument x (real), and returns its absolute value $|x|$. The function needs to test the sign of x and returns x or −x depending on its sign.

In-lab Exercise

7. Write a C++ program that will display the calculator menu. The program will prompt the user to choose the operation choice (from 1 to 5). Then it asks the user to input two integer vales for the calculation. See the sample below.

MENU

1. Add
2. Subtract
3. Multiply
4. Divide
5. Modulus

Enter your choice: 1
Enter your two numbers: 12 15
Result: 27

Continue? y

The program also asks the user to decide whether he/she wants to continue the operation. If he/she input 'y', the program will prompt the user to choose the operation gain. Otherwise, the program will terminate.

8. Write a program that will ask the user to input three integer values from the keyboard. Then it will print the smallest and largest of those numbers
9. Write a C++ program to pass an array containing age of person to a function. This function should find average age and display the average age in main function.

Post-lab Exercise

10. What are the basic differences between local and global variables?
11. List some advantage of using functions rather than using any code from somewhere?
12. Differentiate the below terms in detail by example
    a. Function calling by value
    b. Function calling by reference