

## Lab 1 - Function, Pointer, Recursion (C/C++)

**Problem 1.** Write a program to manage a random integer array A with size of n using pointers (no array indexing). The program consists of the following functions:

- a) Input data (random numbers).
- b) Print out the array.
- c) Remove all odd numbers.

**Problem 2.** You want to develop an application managing a list of students. The information of a student is defined as follows:

```
typedef struct Student
{
    char name[30];
    char class[10];
    float mMath;
    float mPhysical;
};
```

Write a program including the following functions:

- a) Add a new student.
- b) Search a student by name.
- c) Search a student by name and edit class of the student.

***Suggestion:***

You should use malloc or calloc function (in C) or operator new (in C++) to allocate memory.

**Problem 3.** Write a program to find GCD (Greatest Common Divisor) and LCM (Lowest Common Multiple) of two integer numbers using recursion.

**Problem 4.** Write a program to store an array of integers (multi size) by using a dynamic array and pointers. Your program consists of the following functions:

- a) Input data randomly.
- b) Print out the array.