

# Week03

## Constructor - Destructor



# 1

## Notes

Create a single solution/folder to store your source code in a week.

Then, create a project/sub-folder to store your source code of each assignment.

The source code in an assignment should have at least 3 files:

- A header file (.h): struct definition, function prototypes/definition.
- A source file (.cpp): function implementation.
- Another source file (.cpp): named YourID\_Ex01.cpp, main function. Replace 01 by id of an assignment.
- Image of commit list

Make sure your source code was built correctly. Use many test cases to check your code before submitting to Moodle.

Name of your submission: **StudentID\_Week03\_XX.zip**. XX: number of assignments you have done. XX: 00 – 99.

# 2

## Content

In this lab, we will review the following topics:

- Implement classes, attributes and methods in C++.
- Implement constructor, destructor

# 3

## Assignments

Draw 3 constructor and destructor for each of the following class.

### 3.1. Assignment 1

Write a console application to load an array of fractions from a text file. Find the sum of them. Find the maximum and the minimum of them. Sort the array in ascending order.

### 3.2. Assignment 2

Write a console application to load an array of points (Oxy plane) from a text file. Allow user to input a point P. Find an element in the array that the distance from it to P is longest.

### 3.3. Assignment 3

Write a console application to load an array of triangles from file. Remove all invalid triangles. How many invalid triangles did you have to remove? How many equilateral triangles? Right isosceles triangle? Right triangles? Acute triangles? Obtuse triangles? are there in the array?

### 3.4. Assignment 4

Write a console application to input a date (day, month, and year). Output to screen the date before (yesterday), the date after (tomorrow).

### 3.5. Assignment 5

Write a console application to input a time (hour, minute, second). Increase the time to one second and output to screen. What is the result if we decrease the time to one second?

### 3.6. Assignment 6

Write a console application to load an array of students (id, full name (first name and last name), address, date of birth, mark) from text file. Sort them by their last name and write the array to and XML file.

# 4

## In class assignment (A)

2 assignment (source code in C++)

# 5

## Homework (H)

All problems/assignments.