Object Oriented Programming (OOP)
Lecture 1 : Course Overview

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Course Overview

- Course Topics
  - OOP Concepts
    - Data Abstraction/Encapsulation
    - Inheritance
    - Polymorphism
    - Generic Programming and STL (Standard Template Library)
  - Advanced C++
  - UML (Unified Modeling Language)
    - Modeling Object-Oriented Software Systems

- Course Objectives
  - Understand OOP concepts and apply it to real programming
  - Improve the ability of using advanced OOP features of C++
  - Conduct Team Projects (Large Software Development)
    - Design/Implementation/Documentation

Course Format

- This course consists of
  - Lectures (will be given in pre-recorded videos)
    - Lecture videos will be uploaded into eclass on every Wednesday.
  - Projects (2 individual projects + 2 team-based projects)
  - Presentation (will be given through ZOOM)
  - We will have occasional ZOOM class (around once a month) to discuss projects and presentations.

Reference Books

- No Required Textbook.

- Reference Books
    - *"C++ : Effective Object-Oriented Software Construction : Concepts, Practices, Industrial Strategies and Practices"*, Kayshav Dattari, 2nd Edition, 1999 (Page 1 ~ Page 574)

    - *"An Intro. To Object Oriented Programming"* , T. A. Budd
    - *"Thinking in C++, Volume One/Two: Introduction to Standard C++(2nd Edition)"*, Bruce Eckel, Prentice Hall, 2000/2004
    - Full text of "Thinking in C++" is available as pdf files
        - http://www.cs.ust.hk/~dekai/library/ECKEL_Bruce

- Some of online materials will be used.

Evaluation

- There will be no midterm exam.
- Projects (+ Final Exam): 95%
  - It is not determined yet whether we will have final exam or not.
- Class Participation and Attendance : 5%

- You may get F grade if you miss ¼ of the whole classes

Instructor Information

- Name : Bong-Soo Sohn

- Office : 310-738

- Email : bongbong _at_ cau.ac.kr

- Tel : 820-5843

- Please feel free to contact me for any of class issues.

Announcement

- **Class Website**
  - http://cau.ac.kr/~bongbong/oop20
  - Class information such as lecture notes is accessible through this website
  - We will also use e-Class for the submission of homework and project results.

- **Individual Programming Assignments**
  - I encourage you to study and discuss together for doing programming assignments.
  - However, you must do programming YOURSELF.
  - You must not share any of source code with other students.
  - Academic dishonesty (e.g. cheating, plagiarism, and etc.) is seriously prohibited. Heavy penalty may be imposed for that.

Schedule

1	Course Overview, OOP Introduction
2	OOP Introduction, C++ Basics
3	C++ Basics, OO Design
4	Data Abstraction/Encapsulation
5	Inheritance
6	Project 1 Presentation
7	Polymorphism
8	Project 2 presentation

Schedule

9	Polymorphism Review, Template
10	Template
11	STL (Standard Template Library)
12	Project 3 Presentation
13	STL, UML concepts
14	UML diagrams, practice
15	Term Project Presentation
16	Final Exam

Remarks

- We will mainly use C++ in our lecture.

- Project/Programming Based Course
  - Prerequisite: C/JAVA programming, Data Structures
    - This course assumes that students have basic knowledge of C and JAVA grammars and programming ability.

  - We will have significant amount of programming assignments including team projects and presentation. If your programming ability is not good enough, it may be difficulty to follow the class.

- English Lecture + English Student Presentation
- You should use English for writing reports.

Projects Plan

- Make up a team
  - Deadline : 11:59pm on Sep. 11th
  - The leader of each team needs to post an article (name/email/phone#/student-id# of team members, mark the team leader) in eClass 과제방
  - Expected Team Size : up to 6

- There will be 4 programming projects during the semester.
  (2 projects will be done individually, the other 2 projects will be done in team.)
- We expect to have about 11~15 teams in our class.
- Each of 4~5 teams will present project 1 , 2 , and 3 respectively.
- All teams should conduct the final term (4th) project and give presentation.