

Object Oriented Programming (OOP) Design

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

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)
 - *"Thinking in C++, Volume One: Introduction to Standard C++(2nd Edition)"*, Bruce Eckel, Prentice Hall, 2000
 - *"Thinking in C++, Volume Two: Practical Programming"*, Bruce Eckel and Chuck Allison, Prentice Hall, 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

- Midterm Exam : 35%
- Final Exam : 35%
- Assignments + Projects : 25%
- 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 : 208-501 (Engineering Building II)
- Email : bongbong@cau.ac.kr
- Tel : 820-5843
- Office hour : Wednesday 4pm-5pm, or individual appointment
- Please feel free to contact me for any of class issues.

Announcement

- **Class Website**
 - <http://cau.ac.kr/~bongbong/oop12>
 - 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
2	OOP Introduction, Data Abstraction
3	Class and Encapsulation
4	Inheritance
5	Polymorphism
6	Case Study : Bank Account, Billiard
7	Template
8	Midterm Exam

Schedule

9	Advanced Template
10	STL (Standard Template Library)
11	STL, Reusability
12	UML Introduction
13	UML diagrams
14	UML practice
15	Term Project Presentation
16	Final Exam

Remarks

- We will mainly use C++ in our lecture.
- This course assumes that students have basic knowledge of C and C++ 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 difficult to follow the class.
- English Lecture + English Student Presentation

Projects Plan

- Make up a team
 - Deadline : 11:59pm on Sep. 13th (Thursday)
 - The leader of each team needs to post an article (name/email/student-id# of team members, mark the team leader) in eClass 과제방
 - Team size : around 6 students per team
- 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 12 teams in our class.
- Each of 4 teams will present project 1 , 2 , and 3 respectively.
- All teams should conduct the final term (4th) project and give presentation.

Team Project Presentation

- All student presentations should be given in English.
- Each team should give two presentation.
- One student is not allowed to give two presentations. (That means, each team will have at least two presenters)
- I strongly encourage English presenters to register English presentation short-term course. (Bonus scores will be given.)