Effective OO Programming

Course Introduction
1-20-2004
Dr. Mark Lewis

Opening Discussion

- Every class will open with a brief discussion period where you can ask me about the readings for that day. After the discussion you will take a quiz on the readings.
- What references did you choose to read over the break? Do you understand what the “Effective” books are about? Do you feel confident in your ability to read them and stay up with the material?

Syllabus

- The course is basically broken into three pieces.
  - Effective readings and quizzes (13, one dropped, 36% of grade)
  - Design pattern lectures and final exam (24% of grade)
  - Project (40% of grade, includes presentations)
- The effective books are the only required reading, but there is a long list of recommended books that you should consider getting and reading at some point if not this semester.

Classes and Calendar

- The web page has a schedule listing what items you should read from the books for each day and what design patterns we will be covering.
- After the discussion and quiz each day I will give a brief lecture on the design patterns.
- Roughly half of each class will be spent working on the project. During this time I will circulate to see how people/groups are doing and I might ask you to present what you are working on or how you are approaching a problem.

Design Patterns

- Design patterns are very general descriptions of different situations that commonly arise in OO design and programming. They can be implemented in many languages. They exist to help you think about the structure of what you are doing and to communicate with other people.
- You have likely been using multiple design patterns without knowing it. I was. We will try to give you a name for those things and the ability to better see their capabilities.

Course Project

- In your eyes, the meat of this course will likely be in the programming project. The project is intended to grab your interest and make you want to work on it. You should be using all the other things that we have discussed as part of this project.
- As you know, the project focuses on having you develop a large-scale, dynamically loaded virtual world. You should be able to create an Earth-sized world with a small disk footprint and no human intervention.

Project Specifics

- There will actually be two projects for the class, one in C++ and one in Java.
- The program will keep track of objects in the world using a spatial tree and when certain key entities in the world get near things they will increase their resolution.
- Terrain can be done with fractals, and vegetation can be done with L-systems. You can explore other methods for both if you want. What else gets added depends on what you decide to add.

Minute Essay

- We don't have another class before the end of add/drop so you need to think very hard about how much you want to do this. Remember that I expect this course to take significantly more of your time than a 2 hour class normally would. 8 hours each week is probably a minimum.
- What language do you want to work in and what do you want to add to the project?