

# Effective OO Programming

Course Introduction

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# 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.
- Did you read any CS related stuff over the summer or do CS activities? 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 assigned reading for each class. You also need to get one of the design pattern books. There is a long list of recommended books that you should consider getting and reading.

# 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 did. 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.
- 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

- With 6 people we likely will want to have only 1 implementation of the world. You have to decide on a language.
- 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. What else gets added depends on what you decide to add.

# The 2000 Line Rule

- Specifying how much work you have to do in lines of code isn't ideal, but to give you a feel, you should probably contribute at least 2000 lines of code to the project by the end of the semester.
- If you are much below that, you can expect to fail the course regardless of how you do on other aspects.



# Discussion

- Let's talk now about the project, what you want to do for it, what language you want to use, and how we are going to get all of you working together on it.
- If there are strong enough feelings, we could do two implementations and some people could work in both languages. That will be stretching you a bit thin I fear, but it can be done.

# 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.
- What language do you want to work in and what do you want to add to the project?