Term Project

Objectives

• Demonstrate understanding of object oriented design principles
• Demonstrate understanding software development process
• Demonstrate mastery of Java syntax and program structure

Requirements

• Select a significant programming project.
• Research the project domain
• Define requirements for the project
• Employ the software development process and object oriented design principles to develop a working Java program that meets the requirements
• Format program to conform to coding conventions
• Use appropriate Java APIs as necessary
• Insure the program is readable and maintainable
• Prepare a brief presentation to explain the requirements, review the design and demonstrate the working program

Ideas

The ideas below are to get the creative juices flowing. You may choose one of them or find one on your own.

• Text based adventure game similar to Colossal Cave Adventure
• Conway’s Game of Life including 2D graphics
• Sudoku Game including creating the puzzle, displaying moves and providing helps
• Tile based game
• Yahtzee-like game including the computer as a player
• Reading complexity tool
• Simple aircraft autopilot (see me if you want to try this one)
• Simple code breaker
• A particle system (e.g. lottery ball simulator)
• Gradebook or checkbook program
• A full up game of Nim (see Wikipedia) or a variant of your own design
Submittal

Proposals due in class 25/26 Feb.
Outline in sufficient detail to determine if the project is scope.

Presentations due in class 15/16 Apr.
Must include all source and project files.

Grading Criteria
30 points possible

• 15 points – Meets Requirements
  o The program produces the expected output with correct values (-1 per error, 4 points total)
  o The output values are correctly calculated and displayed (2 points possible)
  o Program correctly employs a variety of OO concepts (4 points possible)
  o Uses APIs appropriately (3 points possible)
  o User interface appropriate to the problem (2 points possible)

• 5 points - Presentation

• 4 points - Class Definition
  o Classes are defined correctly with:
    o Instance variables declared as private and the correct type (1 point possible)
    o Constructor and methods declared as public and typed appropriately (1 point possible)
    o Helper methods declared private and typed appropriately (1 point possible)

• 3 points - Comments and Alignment
  o File header comments are present and complete for each class (2 points possible)
  o Single-line comments are present, helpful, and sufficient (1 point possible)
  o Code is aligned and indentation consistent (-1 per error)

• 2 points - Identifier Names
  o Meaningful identifier names used for all identifiers (-1 per problem, 2 points possible)
  o Variable and method names should begin with a lower case letter, and each subsequent word should start with an upper-case letter.
  o Class names should begin with an upper case letter, and each subsequent word should start with an upper-case letter.
  o Avoid the use of abbreviations in choosing variable names

• 1 point - Creation of Assignment Folder and Files