DATA STRUCTURES AND ALGORITHM ANALYSIS

Instructor

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Course Descriptions

This course is really about the art of programming, and it mainly focuses on the following aspects:

- Object and component based programming concepts and techniques
- Data structures and algorithms (e.g., trees, hash tables, queues, heap, stack, etc)
- Algorithm analysis (e.g., time and space complexity analysis)

Text and References

- Mark Allen Weiss. Data Structures and Algorithm Analysis in Java. Addison-Wesley, 1999
- Any similar books about Java, C++, and/or C# from www.bookpool.com

Assignments

Generally the programming assignments will be a direct application of the materials covered in class. I may also assign you some of the exercises in the textbook.

Programming language: Java, C++, or C#
Development Cycles: Analysis, design, coding, debugging, unit-testing, and system testing if applicable
Due Date and Late Penalty: Assignments are due on the assigned due date (usually next lecturing date). A 25% grade reduction will be applied for each week late, for maximum of 2 weeks.

Collaboration, Cheating

Students are expected to finish their assignments on their own. Although discussions are encouraged, cheating will not be tolerated. Each student must sign the academic integrity form. Any violations to the agreement will severely be penalized.
Labeling

All materials must be clearly labeled on the outside, preferably with a covering page. Programming assignments you return should consist of the following:

- A hard copy of your testing data, both inputs and outputs
- Both the source code and executable
- Any other material, if any
- A disk containing the above (the disks should be labeled with your names)

Exams

There will be one midterm and a final as well as unannounced short quizzes if necessary. The midterm is tentatively scheduled as indicated on the course outline. Midterm will be on Thursday.

Grading

Class/Lab participation  approx. 10%
Assignments            approx. 30%
Midterm                approx. 30%
Final                   approx. 30%

Note that, if students fail to pass any of the two parts: the assignments and the combination of midterm and final exams will fail the course as a whole.

Course Outline

The outline of this course will give you an idea of the topics covered and reading materials. It may change when necessary. I will keep you up to date regularly.