CS430 Programming Languages
Exam 3 Study Guide

Format

The exam will include essay, short answer, multiple-choice, and/or true/false questions. Some questions will require the interpretation of code (pseudocode or some language that we have studied), but no extensive coding problems will be included. Exam questions will be similar to homework and class activity questions and problems.

Content

The exam will cover the following learning objectives:

Chapter 7: Expressions and Assignment

- Define terms associated with expressions
- Explain design issues for expressions, including:
    - precedence, associativity, operand evaluation, lazy/eager evaluation,
- Interpret expressions under specific rules
- Explain options for mixed mode expressions and type conversion
- Explain relative strengths, weaknesses, and costs of design alternatives
- Evaluate different forms of assignment (strengths / weaknesses)

Chapter 8: Control Structures

- Define terms associated with control structures
- List and describe the standard types of statement-level control structures (iteration, selection, branching)
- List and describe the standard forms of selection statements, and explain design issues
- List and describe the standard forms of iterative statements, and explain design issues
- Explain conditional branching and evaluate its use
- Interpret control statements in Java, Perl, Racket, and Prolog
- Explain the significance of Dijkstra's claim and the Bohm-Jacopini Theorem

Chapters 9 & 10: Subprograms

- List and explain design Issues for subprograms
- Define terms associated with subprograms
- Explain and apply standard parameter-passing modes (both semantic and implementation models)
- Explain and apply standard return-value modes
- Explain how parameter passing and return values are implemented via the run-time stack, and interpret subprogram execution scenarios
- List and explain design issues for overloaded subprograms