CS403: Programming Languages

Schedule

Daily preparation guide

Study the material listed in the preparation section *prior* to attending class that day. Try to formulate precise questions concerning the parts you don't understand or the importance of the material. If you come across some really difficult material, try searching the web for alternative explanations.

Thursday, August 24

Introduction:

- Classes begin
- Review of syllabus
- Introduction to Scheme and Scam

Tuesday, August 29

Preparation:

- Section 1.1, *The Elements of Programming*
- Example questions: `http://beastie.cs.ua.edu/proglan/1-1.html`
- Section 1.2, *Procedures and the Processes They Generate*
- Example questions: `http://beastie.cs.ua.edu/proglan/1-2.html`

Thursday, August 31

Preparation:

- Section 1.3, *Formulating Abstractions with Higher-Order Procedures*
- Example questions: `http://beastie.cs.ua.edu/proglan/1-3.html`
- Grammars `http://beastie.cs.ua.edu/proglan/readings/grammars.html`

Tuesday, September 5

Prerequisite exam

Thursday, September 7

Preparation:

- Section 3.2.1 The Rules for Evaluation
- Section 3.2.2 Applying Simple Procedures
- Section 3.2.3 Frames as the Repository of Local State
- Section 3.2.4 Internal Definitions

Programming assignment #1 due

Tuesday, September 12

Preparation:

- Lexical Analysis, `http://beastie.cs.ua.edu/proglan/readings/lexing.html`

Thursday, September 14 (***On-your-own Day***)

Tuesday, September 19 (*On-your-own Day*)

Preparation:

- Recognizing, `http://beastie.cs.ua.edu/proglan/readings/recognizing.html`
- Parsing, `http://beastie.cs.ua.edu/proglan/readings/parsing.html`

Thursday, September 21 (*On-your-own Day*)

Preparation:

- Environments, `http://beastie.cs.ua.edu/proglan/readings/storing.html`
- Section 2.1, *Introduction to Data Abstraction*
- Church numerals, `http://beastie.cs.ua.edu/proglan/readings/church.html`

Tuesday, September 26

Preparation:

- Section 2.2 (skip 2.2.4), *Hierarchical Data and the Closure Property*
- Example questions: `http://beastie.cs.ua.edu/proglan/2-2.html`

Thursday, September 28

Tuesday, October 3

Preparation:

- Section 2.3, *Symbolic Data*
- Example questions: `http://beastie.cs.ua.edu/proglan/2-3.html`

Exam: Chapter 1 and stuff

Thursday, October 5

Preparation:

- Section 2.4, *Multiple Representations for Abstract Data*

Programming assignment #1, resubmission 1 due

Tuesday, October 10

Preparation:

- Section 2.5, *Systems with Generic Operations*

Thursday, October 12

Preparation:

- Evaluation, `http://beastie.cs.ua.edu/proglan/readings/evaluating.html`
- Section 3.1.1 Local State Variables

Programming assignment #1, resubmission 2 due

Tuesday, October 17

Preparation:

- Section 3.1.2 The Benefits of Introducing Assignment
- Section 3.1.3 The Costs of Introducing Assignment
- Section 3.3.1 Mutable List Structure

Thursday, October 19

Exam: Chapter 2 and stuff

Programming assignment #1, final resubmission due
Programming assignment #2 due

Tuesday, October 24

Preparation:

- Section 3.3.2 Representing Queues
- Section 3.3.3 Representing Tables
- Section 3.3.4 A Simulator for Digital Circuits

Thursday, October 26

Class does not meet (Fall Break)

Programming assignment #2, resubmission 1 due

Tuesday, October 31

Preparation:

- Section 3.4.1 The Nature of Time in Concurrent Systems
- Section 3.4.2 Mechanisms for Controlling Concurrency

Thursday, November 2

Preparation:

- Section 3.5.1 Streams Are Delayed Lists
- Section 3.5.2 Infinite Streams

Programming assignment #2, resubmission 2 due

Tuesday, November 7

Preparation:

- Section 3.5.3 Exploiting the Stream Paradigm
- Section 3.5.4 Streams and Delayed Evaluation

Thursday, November 9

Programming assignment #2, final resubmission due
Programming assignment #3 due

Tuesday, November 14

Preparation:

- Builtin Functions, `http://beastie.cs.ua.edu/proglan/readings/builtins.html`
- Precedence and Associativity, `http://beastie.cs.ua.edu/proglan/readings/precedence.html`

Thursday, November 16

Programming assignment #3, resubmission 1 due
Designer programming language due

Tuesday, November 21

Preparation:

- *Parameter passing*

Thursday, November 23

Thanksgiving

Friday, November 24

Programming assignment #3, resubmission 2 due
Designer programming language, resubmission 1 due

Tuesday, November 28

Preparation:

- *invariants*
- *axiomatic semantics*

Thursday, November 30

Preparation:

- *more axiomatic semantics*
- *still more axiomatic semantics*

Programming assignment #3, final resubmission due
Designer programming language, resubmission 2 due

Tuesday, December 5

Dead week, optional class

Thursday, December 7

Dead week, optional class

Designer programming language, final resubmission due

Friday, December 8

Last day to withdraw from term

Tuesday, December 12

Final exam, 11:30am-2:00pm