Midterm review

CSE 331 Section 6

11/1/2012

Slides by Kellen Donohue

Agenda

- hw2 returned
- hw5 returned
- hw4 being graded
- hw6 due tonight

- Midterm on Monday
- hw7 due in 2 weeks

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Reasoning about code:

- Assertions
- Invariants
- Pre- and post-conditions
  - Forward and backward reasoning
  - Finding the weakest precondition
- Hoare triples
- Loop development
- ex0, hw1, hw2

Specifications (vs. implementation)

- When does an implementation satisfy a specification
  - proving where applicable
- Stronger vs weaker specs.
  - Effect on client/implementer
- Javadoc -- requires, effects, modifies, etc.
- hw4, hw5

JavaDoc

- Knowing when and how to use
- hw5

Abstract Data Types (ADT's)

- Abstraction vs. implementation/representation
- Representation Invariant
- Abstraction function
- Mutation & Advantage of immutable data
- Representation exposure
- hw4, hw5

Interfaces & Classes

- Specification
- Classes & Types
  - Coupling/Cohesion
- hw5

Testing

- JUnit basics
- Unit testing vs. other kinds
- Black box vs. white box
- Implementation vs. specification
- Revealing subdomains
- Boundary cases
- Coverage
- hw3, hw5, hw6

Debugging strategies

- Setting up experiments
- Use with testing
- Regression testing
- hw3, hw4, hw5, hw6

Exceptions and assertions

- Rationale behind exceptions
- Basic Uses
- Exception vs. assertions
- Checked vs. unchecked exceptions

Identity & Equality

- Reference equality
- hashCode() and equals()

Version control

- Repository vs. working copy
- Basic operations
  - add
  - checkin
  - checkout
  - commit
- hw3, hw4, hw5, hw6

Midterm topics

- Reasoning
- Specifications
- JavaDoc
- ADT’s
- Interfaces
- Class design
- Testing
- Debugging
- Exceptions & assertions
- Identity and Equality
- Version Control