Midterm review

CSE 331 Section 6
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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

Exceptions and assertions

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

Identity & Equality

- Reference equality
- hashCode() and equals()

Subtypes & Subclasses

- Subtype Substitution principle
- Composition VS Subclassing

Midterm topics

- Reasoning
- Specifications
- JavaDoc
- ADT's
- Interfaces
- Class design
- Testing
- Exceptions & assertions
- Identity and Equality
- Subtypes & Subclasses