

CSCI209 2nd Midterm Prep

Similarities to, differences from Python

Collections Framework

Common interfaces, implementations

Generics

How/when to use

Enumerated Types

Comparators

Resolving Overloaded vs Overridden Methods

Software Development

Development Models – waterfall, iterative, spiral

Prototypes

Testing

Different levels of testing (unit, integration, system, ...)

Black-box testing vs. White-box testing

Coverage criteria

JUnit testing framework

- How to write “good” JUnit test cases

Design Principles

Design goals

Open-closed principle

- Open to extension, closed to modification
- Liskov substitution principle

DRY (Don't repeat yourself)

Shy code (avoiding coupling)

Single Responsibility Principle

Code smells

Metrics to quantify design qualities

Appropriate solutions

Defending solutions using appropriate terminology and design principles

Refactoring

Resolving code smells using abstraction

GUI Development

Common components, containers

Layout Managers

Event-driven programming

- ActionListeners, handling events, inner classes, anonymous inner classes, adapter classes

Jar Files

Deploying Java applications

How to create, extract, use

What I expect from you on the exam:

- To know Java/OO-programming/design terminology
- To design a solution and be able to defend it
- To be able to read, understand, and write Java programs, with or without documentation
- To be able to write a program (given an algorithm or creating your own algorithm, given a problem) or class
 - o Syntax must be very close to correct (correct keywords, punctuation, special characters, variable naming, operations)
 - o Since it's on paper, there is some leniency

Suggestions on how to prepare:

- Exam is ***terminology heavy***. Make sure you know the terminology (much of it is in the list above).
- Read through slides for vocabulary, review questions, exercises
- Think about the various designs we have discussed in certain situations and what the tradeoffs are to each design.
- Practice reading through programs, tracing through them, and saying what the output should be
 - o Review your assignments