

COMP 7012
Final Study Guide
Spring 2012

Fair warning: The following list of topics may be incomplete (although it should be pretty good). Any material covered in the course is fair game for the Final (unless I specifically say otherwise).

The Final will focus on the following material covered since the midterm, but it may also include material covered prior to the midterm.

Logical Architecture

- Know what a logical architecture is.
- Be able to draw a UML package diagram representing a logical architecture.
 - Know how to denote packages and their dependencies.
 - Understand UML package namespaces.
- Know about layered architectures.
 - Know the common layers.
 - Know the benefits of layered architectures.
- Know/understand how the Domain Model relates to the Domain Layer.
- Know/understand the Model-View Separation principle.
- Know/understand how SSDs can influence a layered design.

Design Class and Sequence Diagrams

- Be able to represent interactions among software objects with sequence diagrams.
 - Be able to denote object creation/destruction, self/nested invocations, execution specification, looping/conditionals, static methods, etc.
- Be able to create Design Class Diagrams (DCDs).
 - Be able to denote attributes, operations, visibility, ordered lists, data types, non-data types, methods, constructors, inheritance, dependencies, interfaces, etc.
- Understand design as a refinement process.
 - Know how Domain Models can be refined into DCDs.

Object-Oriented Design

- Understand what is meant by Responsibility-Driven Design.
- Know and be able to apply Larman's GRASP patterns.
 - Creator pattern
 - Information Expert pattern
 - Low Coupling pattern
 - High Cohesion pattern
 - Polymorphism pattern
 - Protected Variations pattern
 - Pure Fabrication pattern

- Indirection pattern
 - Controller pattern
- Understand the relationship between coupling and cohesion.
- Know and be able to apply the Law of Demeter.