CS601-01/CS601-02 Midterm Study Guide

Our first exam (the midterm) will take place on Friday, October 13th, in class. It's on paper and closed notes. You will be allowed to use a Java 8 API on your laptop.
Please note that per our syllabus, if a student scores less than 60% on both exams, the student automatically fails the class. The midterm will cover the following topics:

- Primitive types / Object reference types.
- Data Structures (Lists, Maps, Sets), including *nested* data structures
- File Processing. File input/output. JSON format
- Exceptions
- Interfaces. Writing you own interfaces; writing a class that implements a given interface; implementing built-in interfaces Comparable, Comparator, Iterator, Runnable, Callable. Default methods.
- Inheritance (including upcasting and downcasting)
- Abstract Classes
- Polymorphism (via Inheritance and via Interfaces)
- JUnit
- Multithreading (Basics: creating threads, thread states; Synchronization: volatile, synchronized blocks and methods, custom locks; Work Queue and Thread pool; Thread liveness)
- Nested classes (inner classes, static nested classes, anonymous classes, local classes)
- Generics (parameterized classes/parameterized methods)
- Web. HTTP (HEAD/GET/POST requests). Very basics of Html covered in class.
- Sockets (regular sockets and secure sockets). Using sockets to write network applications. Sending HTTP requests from the Java program.
- Regular Expressions

Problem Types

- Quiz-like questions where you need to provide a short answer or select from multiple choices
- Questions that ask you to write a code snippet or, given a partial implementation of a class, fill in the code for several methods
- Questions where you are asked to find bugs in a piece of code

How to Study for the Midterm

- Go over quizzes
- Go over in-class examples (posted on github: https://github.com/USF-CS601-Fall2017/Examples), try to modify them
- Go over labs
- Read the lecture notes
- Read the relevant chapters in the Deitel&Deitel book
- Read references on multi-threading (mentioned in the lecture slides)

- Attend the "code camp" (usually held ~2 days before the exam) where you will get to practice writing short code snippets on paper, and get immediate feedback from me or the TAs
- Drop by instructor's office hours with any questions about the material