Final Exam Study Guide CPE/CSC 203

This list is not necessarily exhaustive. Just because it isn't on the list doesn't mean it won't be on the midterm. This exam will cover all the Lecture materials, Labs, and Project. The format of test is based on:

- **True/ False ,**
- **Fill in the blank**
- **Short answer,**
- **Partial code,**

Study Topics

1) Data types in Java
2) Array (creating, iterating)
3) Common classes – String, Map, Random, ArrayList, etc.
4) Java Specifiers
    a. Public
    b. Private
    c. Static
    d. Final
5) Class
    a. Instance variables
    b. Constructors
    c. Methods
6) Methods of class Object: toString, equals, hashCode
7) Override/ Overload
8) Reading from input (Scanner)
9) File I/O
10) Interface
    a. definition
    b. Compare interface and class
11) Casting
12) Refactoring
    a. How
    b. When
13) Inheritance
    a. Generalization vs. Specialization
    b. Super
    c. Is-A
    d. Has-A
14) Abstract
    a. class
    b. method
15) Polymorphism
16) Lambda Expression

17) Key Extractor
18) Comparator/ Comparable
19) Generic
20) A* algorithm, DFS, BFS
    a. general idea of what it does
    b. ability to step through the algorithm
21) Stream
22) Exceptions
    a. Philosophical differences between checked and unchecked exceptions
    b. Behavioral differences between checked and unchecked exceptions
    c. Flow of execution with exception handling
    d. Writing your own exceptions
23) UML diagrams:
    a. Be able to draw/understand UML diagrams using notations for:
        i. Extends (Is-A)
        ii. Implements (Is-A)
24) Understand ALL code (and be able to read/write similar code) that you have written for labs/ projects/ handouts