

CSCI 135 – Introduction to Computer Science I

Exam I Study Outline

I. Java Basics

- A. How Java is compiled and run
- B. Java program parts
- C. Eclipse / Command Line Interface

II. Data Types

- A. Variables
 - 1. Declaration
 - 2. Assignment
 - 3. Scope of a variable
- B. Basic data types
- C. Type Conversion
- D. Boolean operators
- E. Creating random numbers

III. Error Types and Debugging

- A. Runtime errors (semantic errors)
- B. Compile time errors (syntax errors)
- C. Debugging
 - 1. Preventing bugs
 - a. Programming process
 - 1. Understand the problem
 - 2. Work out the logic
 - 3. Write code
 - a. Break problem into parts – code and test one at a time
 - 4. Test/Debug
 - 2. Finding bugs
 - a. Trace print statements

IV. Conditionals

- A. Format
- B. How to use them

V. Loops

- A. while
- B. for
- C. do... while
- D. Format
- E. How to use them

VI. Programming Style

- A. Comments
- B. Naming conventions – variables, classes, constants
- C. Whitespace
- D. Curly braces

VII. Command Line Input

VIII. Standard Input

- A. Interactive input
- B. Redirecting input from a file
 - 1. Reading from a file
- C. Redirecting output to a file
- D. Piping the output from one file to the input of another
- E. StdIn.java

IX. Arrays

- A. Declaration
- B. Creation
- C. Initializing array elements
- D. Accessing array elements
- E. Two-dimensional arrays

X. Graphics and Audio

- A. StdDraw.java and StdAudio.java
- B. Drawing Shapes
- C. Changing Color
- D. Window Coordinates (and changing them)
- E. Drawing Images
- F. Changing Window Size
- G. Animation Loop
- H. Keyboard Input
- I. Adding Sound