

Review Sheet for Exam 1

1. Review of 1115

- a. Arrays
- b. Methods
- c. Passing arrays to methods
- d. Logical length vs. allocated length of an array
- e. Strings and String manipulation

2. Recursion

- a. Review the examples we did in class
- b. Be able to trace through a recursion and predict the output
- c. Be able to write a simple recursive method

3. Command Line Arguments

- a. To know how to input command line arguments to a program
- b. To know how the operating system interprets these arguments
- c. To be able to convert the command line arguments from String to whatever type the program understands them to be (e.g. `Integer.parseInt()`, `Double.parseDouble()`)

- d. To be able to write a short program that accepts command line arguments

4. UNIX

- a. To be able to write a command to:
 - i. Create a file
 - ii. Create a directory
 - iii. Remove a file
 - iv. Rename a file
 - v. Move a file from one directory to another
 - vi. Copy a file
 - vii. List all files and directories
 - viii. Compile a java program
 - ix. Execute a Java program

5. Exceptions and Exception handling

- a. To be able to write a method that throws an Exception
- b. To be able to write a method that prepares to respond to an Exception being thrown (i.e. try/ catch)

6. Classes

- a. Writing Classes
 - i. Access specifiers (public vs. private)

- ii. The difference between public and private methods and instance variables
 - iii. Instance variables
 - iv. Accessors/getters
 - v. Mutators/setters
 - vi. Constructors
 - vii. Overridden methods for equals() and toString()
 - viii. How to write a class with all of the above features
- b. The difference between primitive types and reference types:
 - i. Where is the data stored?
 - ii. What happens when you assign one primitive variable to another? One reference to another?
 - iii. Aliasing
- c. The Object class
 - i. Where do all reference types inherit from by default?
 - ii. What methods does the Object class have?
 - 1. equals()
 - 2. toString()
 - iii. What do these methods do by default?
 - iv. How to change their default behavior

v. The difference between overloading and overriding.