Topics for Exam 2

1. Programming Concepts
   (a) Program Logic
      i. insert and search of a list (using an array)
      ii. organizing your program into classes
   (b) Deep copy v.s. shallow copy
   (c) Recursion

2. Java concepts
   (a) Java References
      i. arrays and objects
      ii. the reference named “this”
   (b) Java References
   (c) Objects
   (d) Methods
      i. static v.s. non-static methods
         A. calling static methods
         B. calling non-static methods
      ii. input parameters
      iii. return types
      iv. overloading and signature of a method
      v. static v.s. non-static context
      vi. public v.s. private methods
      vii. constructors
   (e) Data and Scope
      i. data declared as final
      ii. local variables
      iii. object data members
      iv. use of keyword “new”
      v. shadowing
      vi. when to use: data members, parameters, local variables
      vii. type casting
   (f) Input and Output
      i. scanners
      ii. files
      iii. Java Exceptions
(g) Strings and string class methods
   i. `charAt()` method
   ii. `equals()` method
   iii. `length()` method
   iv. `toLowerCase()` and `toUpperCase()` methods
   v. `compareTo()` method

(h) Converting a string of numerals to an integer
   i. `parseInt()` method