EECS2030 Fall 2017
Guide to Lab Test 4

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1 Format

– Coding in Eclipse [**60 marks**]

  • You will be asked to implement 4 to 5 methods *recursively*. Any use of loops will result in an **immediate zero**.

  • You will be given an API of methods that you are required to implement, but you are expected to write JUnit tests yourself to verify the correctness of your implementation.

  • **For this coding part, your marks will be determined entirely by the number of JUnit tests that your code passes. <u>No</u> partial marks will be given to code that does not work or does not compile.**

  • Familiarize yourself particularly with primitive arrays.

– Concepts (written answers required) [**40 marks**]

  • Given a recurrence relation (e.g., one for the Tower of Hanoi), state and prove (via mathematical induction) its running time.

  • Given a recursive method (e.g., `isAllPositive(int[] a)`), prove its correctness (via mathematical induction).

2 Rules

– You must show up for your registered session only.

– Bring a piece of photo ID.

– No mobile phone usage is allowed during the test.

– No data sheet will be allowed.

– You may bring pen/pencil and a piece of blank paper for sketching your solutions.

3 Coverage

– This lab test only covers recursion (both coding and concepts). Linked lists, stack, and queues will be covered in the exam.

– Study the notes on the Lecture on Recursion.

– Sample Codes

– Try as many exercises as possible here:

  `http://codingbat.com/java/Recursion-1`
  `http://codingbat.com/java/Recursion-2`