Cs2851 Midterm Exam Study Guide – Jay Urbain

1. OO Concepts and Java collections framework
   a. Interfaces
   b. Abstract classes
   c. Programming to interfaces rather than implementations
   d. Collection classes interface/class hierarchy

2. Algorithmic analysis
   a. Exact time analysis
   b. Upper-bound, lower bound, and tightly bound asymptotic analysis
   c. Given a piece of code, identify time complexity.

3. Data Structures – understand how data is stored, accessed, and be able to explain the strengths and weaknesses of each of the following data structures. Know how to use and implement.
   a. Arrays
   b. Array lists
   c. Linked lists – Single and doubly linked lists
   d. Execution time analysis
   e. Stacks
      i. Infix, postfix processing
   f. Queues
   g. Hybrid