1. Data Structures

   A. Lists
      i. arrays
      ii. lists of lists (e.g. 2-d arrays)
      iii. ArrayList<type>
      iv. stacks & queues

   B. Trees
      i. Binary trees
      ii. Binary search trees
      iii. Heaps
      iv. nary trees
      v. game trees and minimax

   C. Tables
      i. Hash tables, HashMap<type>
      ii. look-up tables

   D. Java interfaces
      i. Collection
      ii. List
      iii. Set

2. Algorithms

   A. Sorting
      i. \(O(n)\) - oracle, table
      ii. \(O(n \log(n))\) - merge, quick, heap, tree
      iii. \(O(m \log(n))\) -- radix
      iv. \(O(n^2)\) - bubble, insert, selection
      v. \(O(n^3)\) - usually due to a programmer error
      vi. \(O(n!)\) - random

   B. Searching
      i. linear
      ii. binary
      iii. look-up

   C. Dynamic programming
      i. Fibonacci
      ii. Bioinformatics

3. Analysis of Algorithms

   A. Definition of \(O\)
   B. Best/worst/average case analysis
   C. Counting cycles
   D. Empirical verification