

CS113 - Program Design and Algorithms

Study Guide

Summer 2002

- C++ Topics
 - Streams and files
 - Arrays
 - Structs
 - 2D Arrays
 - Classes (not including templates)
 - Recursion - how is it implemented?
 - Pointers
- Software Engineering
 - Modularity - Cohesion and Coupling
 - Design Heuristics
 - Software Life Cycle
- Search Algorithms - linear vs binary Search algorithms
- Algorithm efficiency, "Big-O" Analysis
- Problem-Solving techniques
 - Recursion
 - Backtracking
 - Induction
 - Divide and Conquer
- Sort algorithms
 - "Slow" Sorts - bubble, insertion, selection
 - "Fast" Sorts - Merge sort, Quicksort
- Dynamic Memory and Data Structures
- Linked Lists
- Character and String Algorithms
- Number and Data Storage