CSC 326 Data Structures

Syllabus

Meeting Information

- **Days, Times, & Room:** Tu Th 10:10 AM – 1:10 PM @ 3N 113
- **Homepage:** http://www.cs.csi.cuny.edu/~chen/326
- **Instructor:** Cong Chen (cong.chen@csi.cuny.edu)
- **Office Hours:** Th 2:00 PM – 5:00 PM @ 4N 206

Textbook & Other Materials

- Introduction to algorithms
- Data Abstraction & Problem Solving with C++: Walls and Mirrors

Grading Policy

- **Attendance & Participation:** 1 point each
- **6 Assignments:** 5 or 10 points each
- **4 Exams:** 20 points each
- **Grades:**
  
  A: more than 89 points;
  B: 80 to 89 points;
  C: 70 to 79 points;
  D: 60 to 69 points;
  F: fewer than 60 points

Topics

- Review and Warm-up: 2d arrays, Dynamic allocation, Classes, Pointers
- Iterations and Recursions: Factorial, Fibonacci, String/Array Backward, Towers of Hanoi
- Basic Search and Sort: Sequential & Binary search, Insertion Sort, Selection Sort, Bubble Sort

—— Exam I ——

- Vectors (Dynamic Arrays): Implementation, Reserve & Append, Insertion, Deletion (Assignment I)
- Linked Lists: Concept, Implementation, Two Pointers Technique (Assignment II)
- Stacks and Queues: Regular Languages, Palindrome, Prefix-Infix-Postfix, Evaluate Expressions, Circular Queue (Assignment III)

—— Exam II (Midterm) ——

- Trees: Terminology, Linked-based Representation, Binary Trees, Preorder-Inorder-Postorder

- Binary Search Trees: Concept, Implementation, Traversal, Search, Insertion & Deletion, Range Sum (Assignment IV)

- Heaps: Array-based Representation, Priority Queue, Max-Heap & Min-Heap, Sift Up, Sift Down, Heapify, Heap Sort (Assignment V)

—— Exam III ——

- Hash Tables: Direct Address, Hash Functions, Open Addressing (Assignment VI)

- Algorithm Efficiency: Big O Notation, Counting Steps, Analyze Running Time

- Sort and Select (optional): Quick Sort, Quick Select, Merge Sort

- Graph (optional): Terminology, Adjacent-List and Adjacent Matrix Representation

—— Exam IV (Final) ——