

Wrap-Up



EECS2101 X & Z:
Fundamentals of Data Structures
Winter 2025

CHEN-WEI WANG

What You Learned (1)

- ***Java Programming***

- JUnit
- Recursion
- Generics

What You Learned (2)

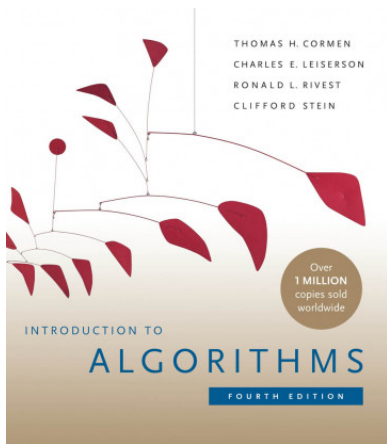
- ***Data Structures***

- Arrays
- Circular Arrays
- Singly-Linked Lists and Doubly-Linked Lists
- Stacks, Queues, Double-Ended Queues
- Trees, Binary Trees, Binary Search Trees, Balanced BSTs
- Priority Queues and Heaps

- ***Algorithms***

- Asymptotic Analysis
- Binary Search
- Insertion Sort, Selection Sort, Merge Sort, Quick Sort, Heap Sort
- Pre-order, in-order, and post-order traversals

Beyond this course... (1)



- *Introduction to Algorithms (4th Ed.)* by Cormen, *etc.*
- DS by DS, Algo. by Algo.:
 - **Understand** math analysis
 - **Read** pseudo code
 - **Implement** in Java
 - **Test** in JUnit

Beyond this course... (2)

A tutorial on building a language compiler using Java (from **EECS4302-F22**):

Using the ANTLR4 Parser Generator to Develop a Compiler

- Trees
- Recursion
- Composite & Visitor Design Patterns

Wish You All the Best

- What you have learned will be **assumed** in the third year.
- Some topics we did not cover:
 - Hash table [See Weeks 10 – 11 of EECS2030-F19]
 - Graphs [EECS3101]
- If you're interested in taking a more advanced course with me:
 - **EECS3342** System Specification & Refinement [F'25]
Applying EECS1090 to construct & verify software systems
 - **EECS3101** Design and Analysis of Algorithm [F'25, W'26]