

Wrap-Up



EECS2101 X & Z:
Fundamentals of Data Structures
Winter 2025

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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

3 of 6

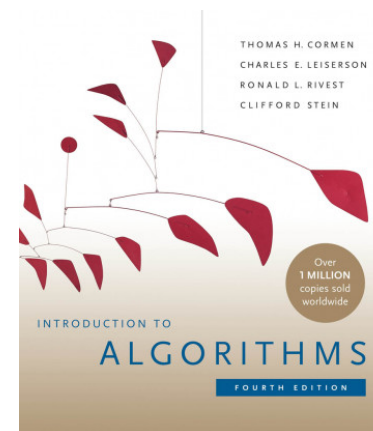
What You Learned (1)



- **Java Programming**
 - JUnit
 - Recursion
 - Generics

2 of 6

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

4 of 6

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

5 of 6

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]

6 of 6