

# Contents

## **1. Introduction and Efficiency**

- Syntax
- Efficiency
- Notation of Efficiency

## **2. List-Based Collections**

- Lists/Arrays
- Linked Lists
- Stacks
- Queues

## **3. Searching and Sorting**

- Binary Search
- Recursion
- Bubble Sort
- Merge Sort
- Quick Sort

## **4. Maps and Hashing**

- Maps
- Hashing
- Collisions
- Hashing Conventions

## **5. Trees**

- Trees
- Tree Traversal
- Binary Trees
- Binary Search Trees
- Heaps
- Self-Balancing Trees

## **6. Graphs**

- Graphs
- Graph Properties
- Graph Representation
- Graph Traversal
- Graph Paths

## **7. Case Studies in Algorithms**

- Shortest Path Problem
- Knapsack Problem
- Traveling Salesman Problem

## **8. Technical Interview Tips**

- Mock Interview Breakdown
- Additional Tips