

Level 1: Algorithm Basics

- What is an Algorithm
 - Characteristics of a Good Algorithm
 - Algorithm vs Program
 - Flowcharts
 - Pseudocode
 - Steps to solve a problem
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Level 2: Time & Space Complexity

- Introduction to Complexity
 - Time Complexity
 - Space Complexity
 - Big-O Notation
 - Best, Average, Worst Case
 - Asymptotic Notations (O , Ω , Θ)
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Level 3: Sorting Algorithms

- Bubble Sort
 - Selection Sort
 - Insertion Sort
 - Merge Sort
 - Quick Sort
 - Comparison of Sorting Algorithms
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Level 4: Searching Algorithms

- Linear Search
 - Binary Search
 - Searching in Arrays
 - Searching in Sorted Data
 - Complexity of Searching Algorithms
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Level 5: Recursion & Divide and Conquer

- Recursion Concept
 - Recursive vs Iterative Approach
 - Recursion Tree
 - Divide and Conquer Technique
 - Examples of Recursive Problems
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Level 6: Advanced Algorithms

- Greedy Algorithms
- Dynamic Programming
- Backtracking
- Optimization Techniques
- Problem Solving Strategies

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