CRACKING THE CODING SKILLS

Best Conceivable Runtime (BCR)

BCR is the runtime you know you can't beat. For example, if asked to compute the intersection of two sets, you know you can't beat \(O(|A|+|B|)\).

5 Approaches
- **BUD**: Look for bottlenecks, unnecessary work, duplicated work.
- **DIY**: Do It Yourself
- **Simplify & Generalize**: Solve a simpler version.
- **Base Case & Build**: Solve for the base cases then build from there.
- **Data Structure Brainstorm**: Try various data structures.

What You Need To Know

1. **Data Structures**: Hash Tables, Linked Lists, Stacks, Queues, Trees, Tries, Graphs, Vectors, Heaps.
2. **Algorithms**: Quick Sort, Merge Sort, Binary Search, Breadth-First Search, Depth-First Search.
3. **Concepts**: Big-O Time, Big-O Space, Recursion & Memoization, Probability, Bit Manipulation.

Exercises:

- Implement data structures & algorithms from scratch.
- Prove to yourself the runtime of the major algorithms.

Do not...

- Do not ignore information given. Info is there for a reason.
- Do not try to solve problems in your head. Use an example!
- Do not push through code when confused. Stop and think!
- Do not dive into code without interviewer "sign off."

Books by Gayle