

7 DSA

**Approaches
to get you hired**



Hashing

- ◆ Data Structure: Array and String
- ◆ Involves using a hash function to map data to an index in an array. Often used for fast lookups and storing key-value pairs.

Divided and Conquer

- ◆ Data Structure: Array
- ◆ Usage: Involves breaking down a problem into smaller sub-problems that can be solved independently. Often used for sorting and searching algorithms.

Slow and Fast Pointer

(tortoise and hare)

- ◆ Data Structure: Linked List
- ◆ Usage: Involves using two pointers, one moving slowly and the other moving quickly through the linked list. This approach is particularly useful for detecting cycles in a linked list.

Dynamic Programming

- ◆ Data Structure: Array and String
- ◆ Usage: Involves breaking a problem down into smaller sub-problems and solving each sub-problem only once. The results of each sub-problem are stored in memory to avoid duplicate calculations.

Sliding Window

- ◆ Data Structure: Array
- ◆ Usage: Involves selecting a subarray of a given length from a larger array and then sliding it across the larger array to solve the problem.

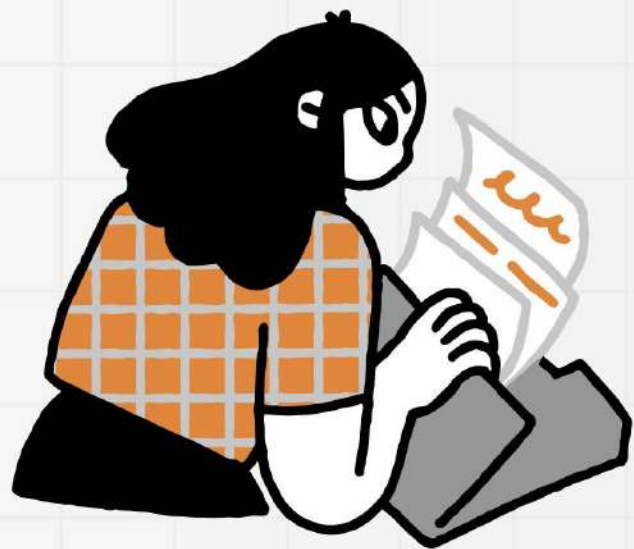
Depth First Search (DFS)

- ◆ Data Structure: Tree and Graph
- ◆ Usage: Involves exploring a tree or graph by going as deep as possible before backtracking. Often used for graph problems and maze-solving.

Breadth First Search (BFS)

- ◆ Data Structure: Tree and Graph
- ◆ Usage: Involves exploring a tree or graph level by level. Used for finding the shortest path between two nodes in a graph.

**You might need to
learn a lot of things...
but it doesn't have to
be stressful**



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