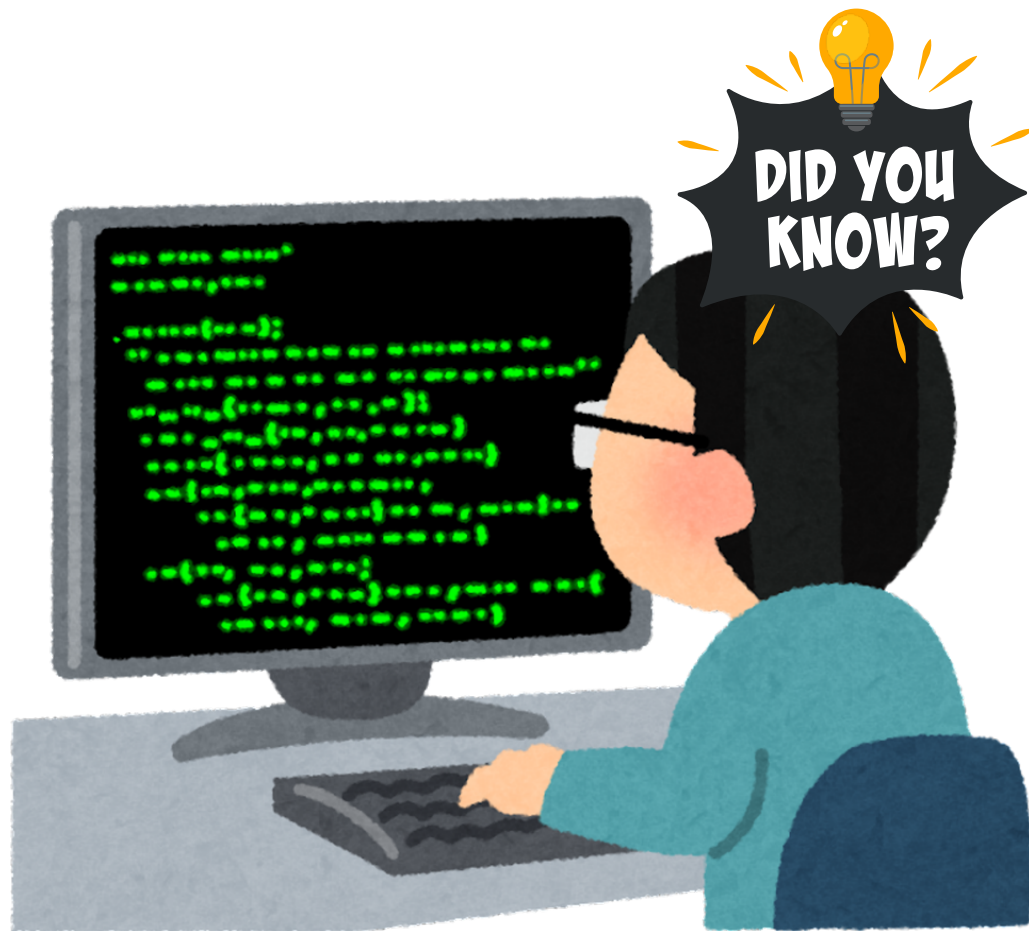


PROGRAMMERS MUST KNOW



+91-7260058093

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Binary Search

Quickly find a value in a sorted array.

Selection Sort

Selects the smallest element and swaps it to the front.

Bellman-Ford Algorithm

Computes shortest paths with negative edge weights allowed.

Kruskal's Algorithm

Finds minimum spanning tree for a graph using disjoint sets.

Merge Sort

Efficient, stable sorting via divide-and-conquer.

Heap Sort

Sorts using a binary heap data structure.

Floyd-Warshall Algorithm

Finds shortest paths between all pairs of vertices.

Hashing Algorithm

Converts data of arbitrary size to a fixed size

Quick Sort

Fast sorting with average-case $O(n \log n)$ complexity.

Depth-First Search (DFS)

Traverse deep in each branch before backtracking.

Knapsack Problem

Maximizes value within a weight limit (dynamic programming).

RSA Algorithm

A public-key cryptographic algorithm for secure data transmission

Bubble Sort

Simple sorting by repeatedly swapping adjacent elements.

Kadane's Algorithm

Finds the maximum sum contiguous subarray.

KMP Algorithm

Efficient substring search in a string.

Breadth-First Search (BFS)

Traverse all neighbors at the current depth first.

Insertion Sort

Builds the final sorted array one item at a time.

Dijkstra's Algorithm

Finds shortest paths from a single source in a graph.

Prim's Algorithm

Efficient minimum spanning tree for a connected graph.

Boyer-Moore Majority Vote Algorithm

Finds the majority element in an array.