DFS (Depth-First Search) — Illustrated Guide

What is DFS?

Depth-First Search explores as far as possible along one branch before backtracking.
It applies to graphs, trees, grids, and backtracking search spaces.

Variants:
- Recursive DFS (implicit call stack)
- Iterative DFS (explicit stack)
- Backtracking (DFS with undo steps to explore alternatives)

Examples included (1..5):
1) Graph DFS traversal (adjacency list)
2) Binary tree preorder traversal
3) Counting connected components in a graph
4) Counting islands in a 2D grid
5) Enumerating all paths (backtracking)