

**Depth-First Search** is an algorithm for traversing or searching a directed graph. It explores as deeply as possible along each branch before backtracking. It can be implemented either using recursion or iterative (a loop without recursion) using a stack.

Here's the iterative version of the algorithm:

1. Initialization:

- Create a stack to store nodes to visit.
- Create a Boolean array called *visited* to track visited nodes (initially all false).
- Choose a starting node.
- Push the starting node onto the stack.

2. Iteration:

- While the stack is not empty:
  - Pop a node from the stack
  - If the node has not been visited:
    - Mark the node as visited.
    - Process the node (e.g., print its value).
    - For each neighbor of the current node:
      - If the neighbor has not been visited, push it onto the stack.

3. Termination:

- The algorithm terminates when the stack is empty, indicating that all reachable nodes have been explored.