

Discuss about Depth First

Depth First Search is an algorithm to traverse a tree or graph, it works on directed and undirected graphs.

The DFS (Depth First Search) vertex attributes is: Discovery time, Finish time, color..

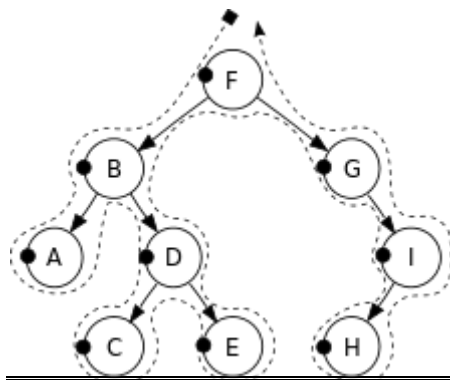
- **Discovery time:** is when you left from the parent node to the child node.
- **Finish time:** is when you left from the child node to the parent node.
- **Color:** the color can help you to know if you are not visited the node or you're visited in one time or two....

In mainly it based on recursive function, it can be traversed the tree in pre-order, in-order or post-order.

Pre-order:

It display the data part of the root (or current node) and traverse the left subtree by recursively calling the pre-order function, after the left subtree it traverse the right subtree by recursively calling the pre-order function.

Example:

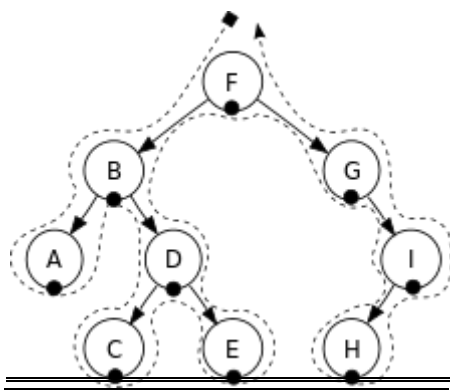


In-order:

It traverse the left subtree by recursively calling the in-order function and display the data part of the root (or current node) and traverse the right subtree by recursively calling the in-order function.

In a search tree, in-order traversal retrieves data in sorted order.

Example:



Post-order:

It traverse the left subtree by recursively calling the post-order function and traverse the right subtree by recursively calling the post-order function after it display the data part of the root (or current node).

Example: