



SNS COLLEGE OF TECHNOLOGY

**Coimbatore-35
An Autonomous Institution**

Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A+' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



DEPARTMENT OF INFORMATION TECHNOLOGY

DATASTRUCTURES

II YEAR III SEM

UNIT 1

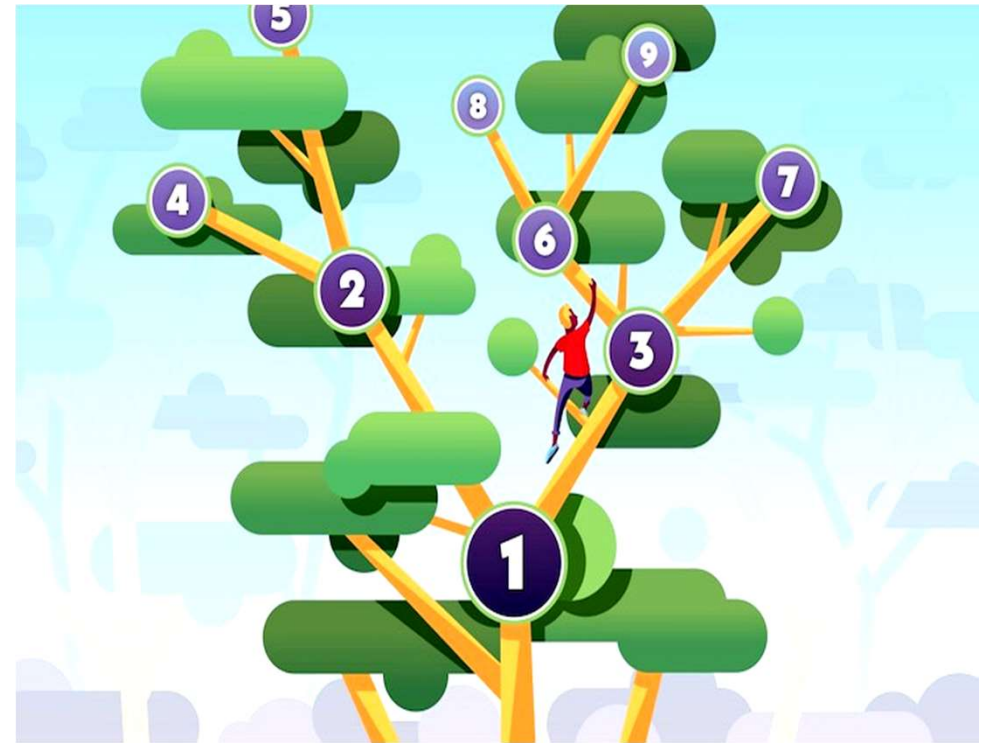
TREE TRAVERSALS



TREE TRAVERSAL



- process to visit all the nodes of a tree
- print all the values it contains
- **In-order Traversal**
- **Pre-order Traversal**
- **Post-order Traversal**



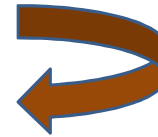


ROUTINES(VISIT)



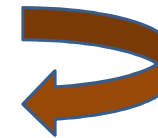
- Pre-order

<root><left><right>



- In-order

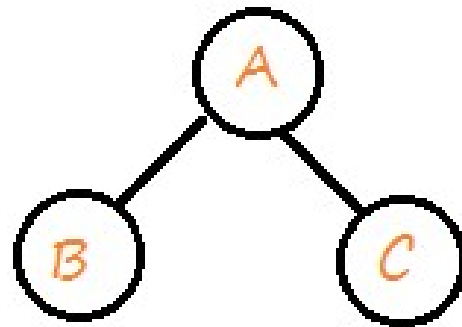
<left><root><right>



- Post-order

<left><right><root>

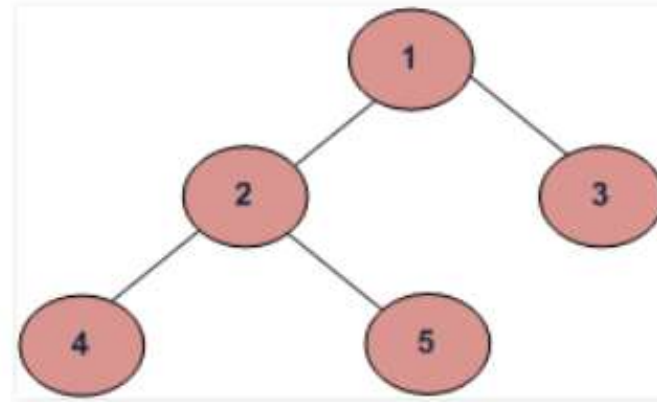




Inorder: B A C

Preorder: A B C

Postorder: B C A



Example Tree

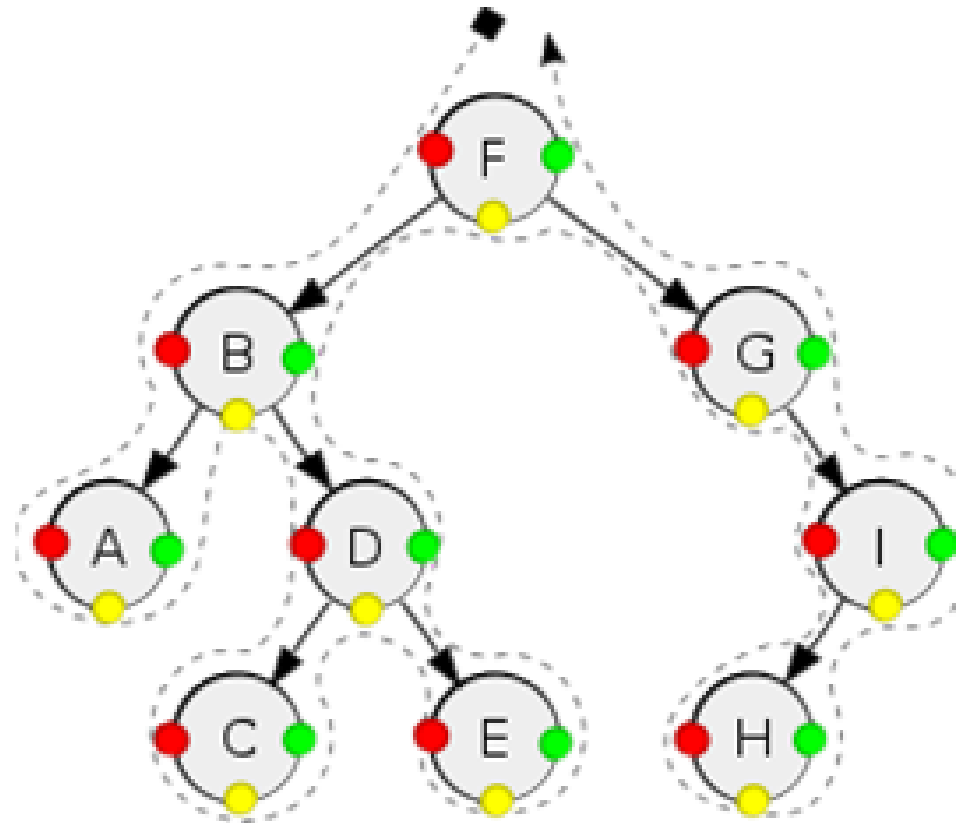
Depth First Traversals:

(a) Inorder (Left, Root, Right) : 4 2 5 1 3

(b) Preorder (Root, Left, Right) : 1 2 4 5 3

(c) Postorder (Left, Right, Root) : 4 5 2 3 1





Example - Tree traversal:

pre-order (**red**): F, B, A, D, C, E, G, I, H;

in-order (**yellow**): A, B, C, D, E, F, G, H, I;

post-order (**green**): A, C, E, D, B, H, I, G, F.





APPLICATIONS



- Used to make a prefix expression from Expression Trees
- Letter can easily be transformed into machine code
- Game Tree and Threads

