

Institute of Computer Technology
B. Tech. Computer Science and Engineering
Sub: DS (2CSE302)

Practical -16

Objective: Implement the real-life scenario using binary tree.

Cisco Systems, Inc. is an American multinational technology, which sells networking hardware, software, telecommunications equipment, and other high-technology services and products. Roshni is working at Cisco, Ahmedabad and she wants to capture all orders of telecommunications equipment in the form of a binary tree as each order is linked to the previous one in a parent-child relationship. Here, each node is having the constraint that it has either two children or zero. Kindly perform the below operation using C language:

- a. **Create the binary tree of the given list of order-Id (define max-size as 7)**
20, 15, 30, 25, 19, 31, 45
- b. **Print root node (level-0), level-1, and level-2 node.**
- c. **Perform the below binary tree traversal operations:**
 - i. **Preorder traversal**
 - ii. **Inorder traversal**
 - iii. **Postorder traversal**

Input:

20 15 30 25 19 31 45

Output:

Root element of binary tree is: 20

Level-1 element of binary tree is: 15 30

Level-2 element of binary tree is: 25 19 31 45

Preorder traversal of binary tree is: 20 15 25 19 30 31 45

Inorder traversal of binary tree is: 25 15 19 20 31 30 45

Postorder traversal of binary tree is: 25 19 15 31 45 30 20