LAB 09 TASKS

Task # 01:

A botanical research center is building a digital system to record plant species in a hierarchical form where each plant record is stored based on its classification order. To efficiently store and retrieve plant names, the center decides to use a Binary Tree structure, where each node contains the plant name and pointers to its left and right subtrees. Write a program that allows the user to create a Binary Tree by inserting plant names one by one, and then display the tree using Preorder, Inorder, and Postorder traversals. The program should show how the structure of the tree changes with each insertion and how different traversal methods present the stored data in different sequences.

Task # 02:

A hospital maintains patient records where each patient is assigned a unique numeric patient ID. To manage these records efficiently, the hospital wants to store the patient IDs in a Binary Search Tree (BST) so that searching, adding new patients, or removing discharged patients can be done quickly. Write a program that allows the user to insert multiple patient IDs into a BST, search for a specific patient ID to check whether the record exists, and delete a patient ID when the patient leaves the hospital. Additionally, display the BST using Inorder traversal to show the patient IDs in sorted order after each operation, demonstrating how the structure of the tree changes.