DSA Assignment: Trees

1. Define a tree data structure and explain its key properties.
2. What is the difference between a binary tree and a binary search tree?
3. Explain inorder, preorder, and postorder tree traversals with examples.
4. What is the height of a tree? How is it different from depth?
5. Write an algorithm to insert a node in a Binary Search Tree.
6. What is a complete binary tree? Give an example.
7. Explain the concept of balanced and unbalanced trees.
8. What is a heap? How is it related to binary trees?
9. Write a program to count the number of leaf nodes in a binary tree.
10. Explain AVL trees and why rotations are required.