National University
Of Computer and Emerging Sciences

CL2001 – Data Structures Lab

Lab Task # 09

Note:

- Copied task will be awarded **zero** marks.
- Use comments wherever applicable.
- Submit a pdf file containing all your C++ code with all possible screenshots of every task output on Google Classroom. The name of file should be your roll no followed by your name (roll-no-name.pdf) i.e., (23P-1234-Ali.pdf).
- Variables and functions names should be meaningful.

Problem: 1 | Managing Employee Hierarchy

Description:

Imagine you're developing a software system for a large corporation to efficiently manage its employee hierarchy. This system will be based on a Binary Search Tree (BST) implementation to facilitate various operations related to employee management.

Operations to Implement:

1. **Insertion of Nodes:**
   - As new employees are hired, their information (e.g., employee ID, name, department) needs to be inserted into the system.
   - Each employee is represented as a node in the BST, with the employee's unique ID serving as the key.
2. **Searching for Employees:**
   - Given an employee ID, the system should efficiently locate and retrieve the corresponding employee information from the BST.
3. **Finding Employees with Same Authority:**
   - For a given employee, the system should identify other employees who hold the same level of authority within the organizational hierarchy.
4. **Total Depth of the Employee Hierarchy:**
   - Calculate the total depth of the BST, representing the overall depth or height of the organizational hierarchy.
5. **Finding Subordinates of an Employee:**
   - Given an employee ID, the system should identify and list all employees who are

subordinates (direct reports) of that employee in the organizational hierarchy.

6. **Viewing All Employee Details:**
    - Provide functionality for users to view all employee details stored in the system.

By implementing a menu-based program with these considerations in mind, you can create an intuitive and user-friendly program for managing the employee hierarchy efficiently.