ABSTRACT

This C program implements an Employee Management System using a Binary Search Tree (BST) to manage employee records efficiently. Each employee record consists of an ID, name, position, and salary, and the BST structure allows for quick insertion, search, deletion, and in-order traversal of records. The system's primary features include adding, searching, deleting, and displaying employees, providing a simple yet effective solution for managing a dynamic set of employee data.

The program begins by presenting a menu to the user with options to add a new employee, search for an existing one, delete an employee by ID, or display all employees. When adding an employee, the user provides the employee's ID, name, position, and salary, which are stored in the tree. Searching for an employee by ID performs a standard BST search operation, quickly locating the requested employee, if present. Deletion is handled by managing three cases: when the node to be deleted has no children, one child, or two children, ensuring the tree remains balanced and valid.

The program includes input validation to handle invalid data, ensuring that only valid integers for IDs and floating-point numbers for salaries are accepted. The system also incorporates a clear input buffer function to prevent issues caused by lingering input from previous operations.

This user-friendly program runs in a loop until the user chooses to exit, making it a practical tool for small to medium-sized businesses or educational purposes. The combination of the BST data structure with clear user prompts and error handling results in an efficient and easy-to-use employee management system.