DSA PROJECT-FINAL REVIEW

TITLE: Binary Search Tree

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Tech Stack Used:

- **Programming Language:** C++
- **Tools:** Standard C++ libraries (iostream, string, etc.)

Project Details: This project implements a Binary Search Tree (BST) in C++. Here's an overview of its features and functionalities:

1. **BST Implementation:**
    - **TreeNode Structure:** Defines nodes with integer values and pointers to left and right children.
    - **BinarySearchTree Class:** Encapsulates BST operations.
        - **Insertion:** Adds nodes while maintaining BST properties.
        - **Search:** Finds nodes with specific values.
        - **Deletion:** Removes nodes, handling various cases (no children, one child, two children).
        - **Inorder Traversal:** Prints nodes in ascending order.
2. **User Interface:**
    - **Menu-Driven Interface:** Provides options to insert, search, delete nodes, perform inorder traversal, and exit.
    - **Input Handling:** Ensures robust handling of user input, including validation to prevent errors.
3. **Educational Tool:**
    - Ideal for learning data structures and algorithms concepts such as BST operations.
    - Demonstrates recursive algorithms for insertion, search, and deletion.
    - Illustrates tree traversal techniques.

This project serves as a practical application to understand and practice BST operations using C++. It's designed to be user-friendly and educational, suitable for learning and experimenting with fundamental data structure concepts.