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/*
Filename: p5.h
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Description: The header file for p5
*/
#ifndef __P5_H
#define __P5_H

#include <string>
//*****
class sAVL;
class sNode {
private:
    //Node key
    std::string text;
    //For future use
    int h;
    //Pointers for left and right children
    sNode *left, *right;
    //Constructor for the node
    sNode(std::string text = "");
    friend sAVL;
};

class sAVL {
private:
    //Current size of the tree
    int treeCount;
    //Points to the top of the tree of nodes
    sNode *root;
    //Function to find the minimum value of the subtree
    std::string findMin(sNode *ptr) const;
    //Function for help with recursion
    bool insert(sNode *&p, std::string text);
    //Function for help with recursion
    bool remove(sNode *&p, std::string text);
    //Function for help with recursion
    bool isIn(sNode *p, std::string text) const;
    //Function for help with recursion
    void printIt(sNode *p, int &index) const;
    //Function for help with recursion
    void clear(sNode *p);
    //Function for a left rotate
    void rotateLeft(sNode *&p1);
    //Function for a right rotate
    void rotateRight(sNode *&p1);
    //Function to balance a node
    void bal(sNode *&p);
    //Function to return the height of a node
    int height(sNode *p) const;
    //Function to calculate the height of a node based on children
    int calcHeight(sNode *p) const;
public:
    //Constructor
```

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sAVL();  
//De-constructor  
~sAVL();  
//Function to insert the text into the tree  
bool insert(std::string text);  
//Function to remove the node with the given text  
bool remove(std::string text);  
//Function to tell if the tree contains the text  
bool isIn(std::string text) const;  
//Function to print the BST values in ascending order  
void printIt() const;  
//Function to show the number of nodes in the tree  
int count() const;  
//Function to remove all nodes from the tree  
void clear();  
};  
#endif
```