CS102 - Lab 9 - 28/06/2023

problem1

Write a menu driven C program to implement various operations of a Binary Search Tree such as Insert, Search, Display (in-order) and Deleting a specified key.

problem2

Implement a phonebook application using a Binary Search Tree in C. Each entry should contain a name and corresponding phone number. Provided the name, the program should display the contact details of the matching name. Also, display the contact details of all the names in the BST in in-order manner.

structure of a node:

```
typedef struct PhonebookEntry
{
    char name[50];
    char phoneNumber[15];
    struct PhonebookEntry* left;
    struct PhonebookEntry* right;
} PhonebookEntry;
```

pseudocode for insertion:

```
if (strcmp(name, root->name) < 0)
{
        root->left = insertEntry(root->left, name, phoneNumber);
    }
else if (strcmp(name, root->name) > 0)
{
        root->right = insertEntry(root->right, name, phoneNumber);
    }
```

problem3

Design a student grade tracking system using a Binary Search Tree in C. Each node represents a student, with associated grades. the program should be able search for a particular student and print the grade of that student. Also, display all the student (in-order) details and identify the highest and lowest performing students from the BST.