CS2023 - Data Structures and Algorithms
In-class Lab Exercise

Week 7

You are required to answer the below questions and submit a PDF to the submission link provided under this week lab section before end of the session time (no extensions will be provided). You can either write / type your answers, but either way your answers should be readable.

Create GitHub repository, add your codes there and add respective link to the submission file.

Exercise:

Modify the given program to implement a binary search tree with the following basic operations. You have to define the below functions to implement the operations.

- *insertNode*()
- *deleteNode*()
- Additionally, you have to implement *traverseInOrder*() function to travese the BST inorder.

Do not modify the main function and other utility functions. You may implement any additional utility functions as you need.

Input Format

Each line has two space-separated integers. The first integer is the operator (corresponds to the integer above), while the second integer is the operand.
-1 marks the end of the input sequence.

Constraints

1 <= operator <= 2
-10000 <= operators <= 10000

Output Format

Prints the resulting BST after performing a sequence of insert and delete operations on the BST, using in order traversal. Each number is separated by a space.

Sample Input

```
1 1
1 2
1 3
1 4
1 5
1 6
2 3
-1
```

Sample Output

```
1 2 4 5 6
```

Upload the PDF includes the output from your terminal for the given inputs. Note that the input should be taken at runtime.

ANSWERS:

TEST CASE 1:

1 2

1 3

1 4

1 5

1 6

-1

2 3 4 5 6

TEST CASE 2:

1 50

1 49

1 48

2 48

2 49

-1

50

TEST CASE 3:

```
/tmp/xYK34eJOI0.o
2 58
1 59
2 59
1 45
1 45
1 45
2 85
1 85
-1
45 85
```

LINK TO GITHUB REPO : https://github.com/Hansa2000/CS2023-labs