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Professor Smallberg

CS 32

5 June 2018

Homework 5

QUESTION 1A

50

20 60

10 40 70

15 30 65 80

25 37 73

QUESTION 1B

*In-order*: 10 15 20 25 30 37 40 50 60 65 70 73 80

*Pre-order*: 50 20 10 15 40 30 25 37 60 70 65 80 73

*Post-order*: 15 10 25 37 30 40 20 65 73 80 70 60 50

QUESTION 1C

50

25 60

10 40 70

15 37 65 80

73

QUESTION 2A

struct Node

{

int value;

Node\* parent;

Node\* left;

Node\* right;

};

QUESTION 2B

insert(Node\* insertNode, Node\* currNode, Node\* prevNode)

if currNode is null

set insertNode’s parent to prevNode

set insertNode’s children to null

if insertNode’s value is less than or equal to currNode’s value

insert the node into the left side

if insertNode’s value is greater than currNode’s value

insert the node into the right side

QUESTION 3A

8

3 6

0 2 4

QUESTION 3B

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 8 | 3 | 6 | 0 | 2 | 4 |

QUESTION 3C

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 6 | 3 | 4 | 0 | 2 |

QUESTION 4

1. O(C + S)
2. O(logC + S)
3. O(logC + logS)
4. O(logS)
5. O(1)
6. O(logC + S)
7. O(SlogS)
8. O(ClogS)