HackerRank
For Work

Spring_2018_INFO6205_Se... 30 minutes

Question - 1

Question 1

SCORE: **5 points**

What is the worst case time complexity guarantee for search, insert and delete operations in a Binary Search Tree?

● O(n) for all

○ O(log n) for all

○ O(log n) for search and insert, O(n) for delete

○ O(log n) for search, O(n) for insert and delete

Question - 2

Question 2

SCORE: **5 points**

The following numbers are inserted into an empty binary search tree in the given order: 10, 1, 3, 5, 15, 12, 16. What is the height of the binary search tree?

○ 2

● 3

○ 4

○ 6

Question - 3

Question 3

SCORE: **5 points**

Which of the following is true about Red Black Trees?

○ At least one child of every black node is red

○ The root may be red

○ A leaf node may be red

● None of the above

Question - 4

Question 4

SCORE: **5 points**

Is the following statement true? A Red-Black Tree which is also a perfect Binary Tree has all black nodes.

● True

○ False

Question - 5

SCORE: **30 points**

Left Leaning Red Black Tree Implementation

You are required to implement following methods of RedBlackBST class:
1. get method for standard BST search

```
public Value get(Key key) {}
```

2. put method for RedBlackBST insertion
// hint: need to keep the Left Leaning RedBlackBST structure after each insertion

```
public void put(Key key, Value val) {}
```