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Section 002
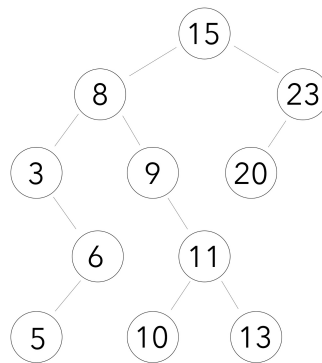
CS014 Homework #2

1. What is the height of the resulting Binary Search Tree?

   4

2. What is the depth of the node that stores the value 11?

   3

3. Is there a path from the node storing the value 15 to the node storing the value 5? If so, show the path.

Yes; 15 -> 8 -> 3 -> 6 -> 5.

4. Is there a path from the node storing the value 8 to the node storing the value 20? If so, show the path.

No.

5. Is there a path from the node storing the value 8 to the node storing the value 10? If so, show the path.
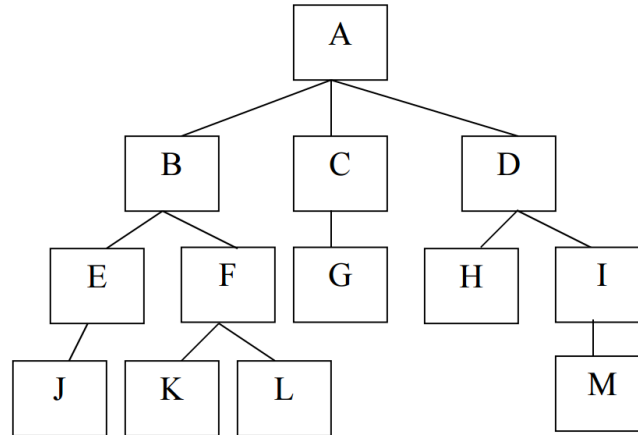
Yes; 8 -> 9 -> 11 -> 10.

6. What is the largest possible height for a Binary Search Tree with 8 nodes?

   7

7. What is the smallest possible height for a Binary Search Tree with 8 nodes?

3

8. List all internal nodes of the above tree.

A,B,C,D,E,F,I.

9. List all ancestors of node F.

B,A.

10.   List all siblings of node F.

K,L.

11.   List the nodes in the above tree in pre-order.

A,B,E,J,F,K,L,C,G,D,H,I,M.

12.   List the nodes in the above tree in in-order.

J,E,K,F,L,B,A,G,C,H,D,M,I.

13.   List the nodes in the above tree in post-order.

J,E,K,L,F,B,G,C,H,M,I,D,A.