1902. Depth of BST Given Insertion Order

Medium 47 5 Add to List Share

You are given a **0-indexed** integer array `order` of length `n`, a **permutation** of integers from `1` to `n` representing the **order** of insertion into a **binary search tree**.

A binary search tree is defined as follows:

- The left subtree of a node contains only nodes with keys **less than** the node's key.
- The right subtree of a node contains only nodes with keys **greater than** the node's key.
- Both the left and right subtrees must also be binary search trees.

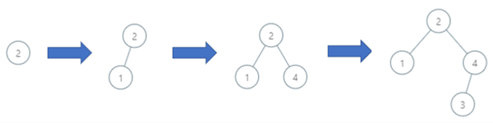
The binary search tree is constructed as follows:

- `order[0]` will be the **root** of the binary search tree.
- All subsequent elements are inserted as the **child** of **any** existing node such that the binary search tree properties hold.

Return *the **depth** of the binary search tree*.

A binary tree's **depth** is the number of **nodes** along the **longest path** from the root node down to the farthest leaf node.

Example 1:



```
Input: order = [2,1,4,3]
Output: 3
Explanation: The binary search tree has a depth of 3 with path 2->3->4.
```

Example 2:


```
Input: order = [2,1,3,4]
Output: 3
Explanation: The binary search tree has a depth of 3 with path 2->3->4.
```

Example 3:


```
Input: order = [1,2,3,4]
Output: 4
Explanation: The binary search tree has a depth of 4 with path 1->2->3->4.
```

Constraints:

- `n == order.length`
- `1 <= n <= 10^5`
- `order` is a permutation of integers between `1` and `n`.

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There are at most 2 possible places where a new node can be inserted?

Hide Hint 2

How can we keep track of the depth of each node?

Java | Autocomplete

```java
class Solution {
    public int maxDepthBST(int[] order) {

    }
}
```