PROBLEM

Insert an Element at the Bottom of a Stack

Easy Accuracy: 71.19% Submissions: 19K+ Points: 2

You are given a stack **st** of **n** integers and an element **x**. You have to insert **x** at the bottom of the given stack.

Note: Everywhere in this problem, the bottommost element of the stack is shown first while priniting the stack.

Example 1:

Input:
n = 5
x = 2
st = {4,3,2,1,8}
Output:
{2,4,3,2,1,8}
Explanation:
After insertion of 2, the final stack will be {2,4,3,2,1,8}.

Example 2:

Input:
n = 3
x = 4
st = {5,3,1}
Output:
{4,5,3,1}
Explanation:
After insertion of 4, the final stack will be {4,5,3,1}.

Your Task:

You don't need to read input or print anything. Your task is to complete the function **insertAtBottom()** which takes a stack **st** and an integer **x** as inputs and returns the modified stack after insertion.

Expected Time Complexity: O(n)
Expected Auxiliary Space: O(n)

Constraints:
$1 <= n <= 10^5$
$0 <= x$, elements of stack $<= 10^9$

CODE

```
class Solution {
   public Stack<Integer> insertAtBottom(Stack<Integer> st, int x) {
         if (st.isEmpty()) {
         st.push(x);
       } else {

         int temp = st.pop();
```

```
            insertAtBottom(st, x);

            st.push(temp);
        }
        return st;
    }
}
```

OUTPUT

Compilation Completed

For Input:

3 4
2 1 5

Your Output:

4 2 1 5

Expected Output:

4 2 1 5

EXPLANATION

This Java class Solution provides a method insertAtBottom to insert an element at the bottom of a stack recursively. This method takes a Stack<Integer> named st and an integer x as input parameters. Here's how the method works:

- If the stack st is empty, it directly pushes the element x onto the stack.
- If the stack st is not empty, it does the following:
- Removes the top element of the stack st and stores it in a temporary variable temp.
- Recursively calls insertAtBottom with the updated stack st and the integer x.
- Once the recursive call returns, it pushes the temp back onto the stack st.
- Finally, it returns the modified stack st after the insertion operation.