

## Q-1 NEXT SMALLEST NUMBER USING STACK

APPROACH: start from the last of the array if the stack is empty then put -1 else while the stack is empty or a smallest element is found iterate the while loop if element is found push and change the array element if it is not found and stack is empty push and change to -1

```
import java.util.*;
public class MyClass {
    public static void main(String args[]) {
        int arr[]={4,8,5,2,25};
        Stack<Integer> stack=new Stack<>();
        int brr[]=smallest(arr,stack);
        System.out.println(Arrays.toString(brr));
    }
    public static int[] smallest(int[] arr,Stack<Integer>stack){
        for(int i=arr.length-1;i>=0;i--){
            if(stack.isEmpty()){
                stack.push(arr[i]);
                arr[i]=-1;
            }
            else{
                while(!stack.isEmpty() && arr[i]<stack.peek()){
                    stack.pop();
                }
                if(stack.isEmpty()){
                    stack.push(arr[i]);
                    arr[i]=-1;
                }
                else{
                    int t=stack.peek();
                    stack.push(arr[i]);
                    arr[i]=t;
                }
            }
        }
        return arr;
    }
}
```