# Queue and Stack → Getting the max element of a stack

**134** users solved this problem. Latest completion was **3 days ago**.

Hard ( 8 minutes ( Share:

Code Challenge — Write a program

Write a program simulating a stack that can effectively return the current max element. Your program should read a sequence of commands of different types from the standard input.

There are three types of commands:

- push v add an element (v) to a top of the stack;
- pop remove the top element of the stack;
- max return the current max in the stack.

The time complexity of these operations should not depend on the stack size (constant time, O(1)).

**Hint:** you may use several standard stacks to write a solution.

#### Input data format

The first line contains the number of commands. Next lines contain one of the following commands: push v, pop, max.

#### **Output data format**

The program must output the current max for each command max.

```
Sample Input 1:

5

push 2

push 1

max

pop

max
```

# Sample Output 1:

2

## Sample Input 2:

5
push 1
push 2
max
pop
max

# Sample Output 2:

2 1

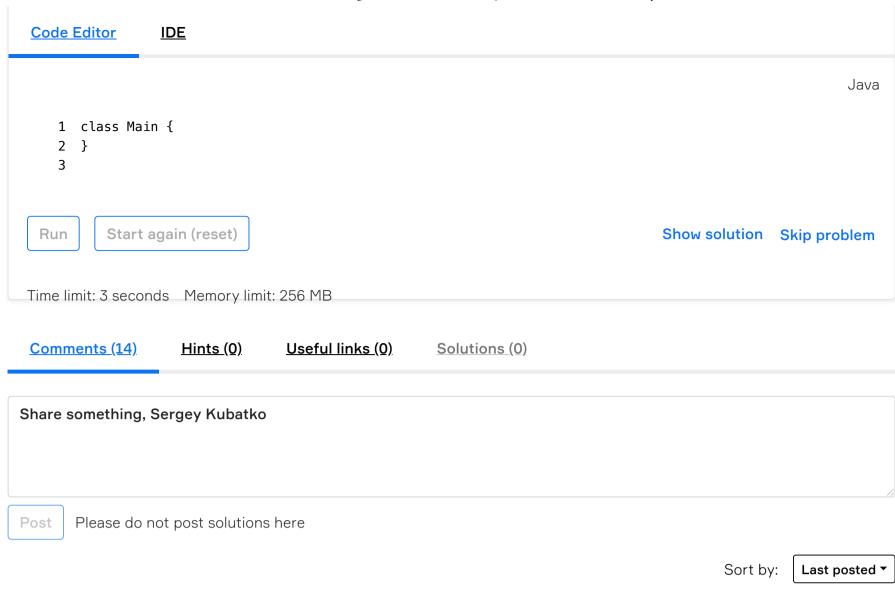
# Sample Input 3:

push 2
push 3
push 9
push 7
push 2
max
max
max
pop

## Sample Output 3:

9 9 9 9

https://hyperskill.org/learn/step/2784



#### Mn Mi ni about 2 months ago Report

This task is not hard at all but the problem(#54) with freaking 100000 operations makes this problem impossible to solve for some of us ... I don't know how their servers works but this seems like a waste of resources. They should fix it.

O Reply

### U1 <u>User 1738346</u> 4 days ago <u>Report</u>

I think its on purpose. I thought the same as you. Optimized even all my Scanner inputs, but in the description is a Hint about several Stacks. But if it works for 54 tests its not that obvious, that you solution wasn't the intended.

O Reply

## A1 Anonymous 1041478 3 months ago Report

care guys, first time - time execute excess, second time with same code is passed successful

2 Reply

# VT Vitaliy Tretyakov 4 months ago Report

Your compiler does not accept your solution:

Compilation error

Main.java:38: error: bad operand types for binary operator '>' if (maxStack.isEmpty() || n > maxStack.peek()) {

O Show all Reply

## VT Vitaliy Tretyakov 4 months ago Report

Failed test #54. Time limit exceeded - Are you kidding? 100000 push operations and 100000 max operations!

O Reply

## AL Alexej L 5 months ago Report

I love the provided solution. Also thought about solving it like this, but I was to lazy :-D

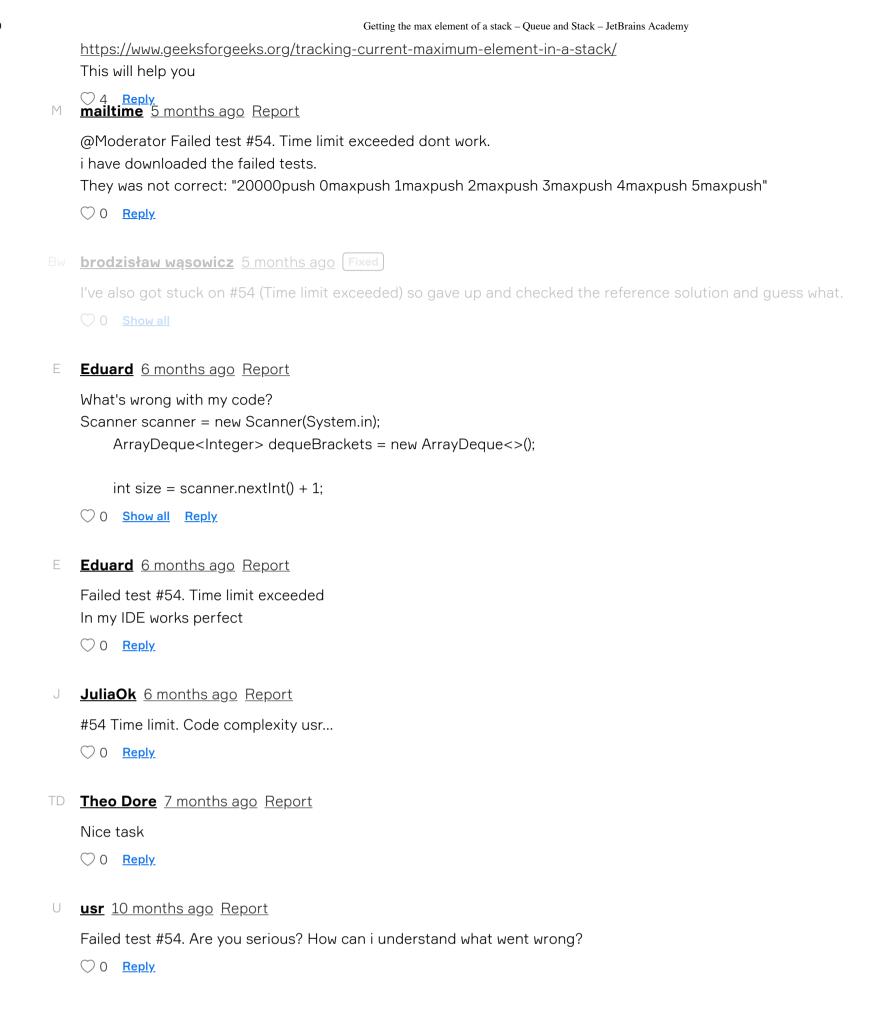
What still drives me crazy between the provided solution and my solution is, that Java doesn't have the ??-Operator like C#. So what is better/cleaner now to push on the maxStack? The provided if-else solution or a one liner like this with ?:-Operator as there is no ??-Operator, what I have used:

```java

O Show all Reply

# SK Sergey Kelnik 5 months ago Report

https://hyperskill.org/learn/step/2784



https://hyperskill.org/learn/step/2784