Min Stack

Try to solve the Min Stack problem.

We'll cover the following

- Statement
- Examples
- Understand the problem
- Figure it out!
- Try it yourself

Statement

Design a custom stack class, **Min Stack**, allowing us to push, pop, and retrieve the minimum value in constant time. Implement the following methods for **Min Stack**:

- **Constructor:** This initializes the **Min Stack** object.
- **Pop():** This removes and returns from the stack the value that was most recently pushed onto it.
- **Push():** This pushes the provided value onto the stack.
- **Min Number():** This returns the minimum value in the stack in $O(1)$ time.

> **Note:** The time complexity of all the methods above should be $O(1)$.

Constraints:

- $-2^{31} \leq$ **value** $\leq 2^{31} - 1$
- The **Pop()** and **Min Number()** methods will always be called on non-empty stacks.
- At most, 3×10^3 calls will be made to **Push()**, **Pop()**, and **Min Number()**.

Examples

1 of 3

2 of 3

3 of 3

Understand the problem

Let’s take a moment to make sure you’ve correctly understood the problem. The quiz below helps you check if you’re solving the correct problem:

Min Stack

1

What is the correct output of **Min Number()** after four **Pop()** calls are made to the following stack?

stack = [3, 6, 2, 9, 0, 2, 5, -4, 12, -9, 6]

The top element of this stack is 6.

A) -4

B) 0

C) -9

D) 3

Submit Answer

Question 1 of 3
0 attempted

Reset Quiz

Figure it out!

We have a game for you to play. Rearrange the logical building blocks to develop a clearer understanding of how to solve this problem.

> **Note:** These building blocks relate to the scenario of pushing, popping, and retrieving the minimum value from the stack.

Drag and drop the cards to rearrange them in the correct sequence.

Push the input element in the stack.

If the pushed element is lesser than the current minimum value, update the minimum value.

After pushing the element when pop is called, the top element of the stack is removed and returned.

If the returned value is the same as the minimum value, update the minimum value based on the values in the stack.

Reset Show Solution Submit

Try it yourself

Implement your solution in `MinStack.java` in the following coding playground. You will need the provided supporting code to implement your solution.

Java

MinStack.java

MainStack.java

```java
class MinStack {
    //constructor
    public MinStack() {
        // TODO: Write your code here
    }

    // Pop() removes and returns value from minStack
    public int pop() {
        // Your code will replace this placeholder return statement
```

```java
    // Pushes values into min_stack
    public void push(Integer value) {
        // TODO: Write your code here
    }
    //returns minimum value in O(1)
    public int minNumber() {
        // Your code will replace this placeholder return statement

        return -1;
    }
}
```

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Test Cases Results

Case 1 Case 2 Case 3

Input #1

["MinStack","push()","push()","pop()","push()","pop()","push()","min_number()"]

Input #2

[null,9,3,null,4,null,5,null]

Min Stack

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Solution: Insert Delete...

Next →

Solution: Min Stack

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