

155. Min Stack

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Total Accepted: **108724** Total Submissions: **411482** Difficulty: **Easy** Contributors: **Admin**

Design a stack that supports push, pop, top, and retrieving the minimum element in constant time.

- push(x) -- Push element x onto stack.
- pop() -- Removes the element on top of the stack.
- top() -- Get the top element.
- getMin() -- Retrieve the minimum element in the stack.

[Notes](#)

Example:

```
MinStack minStack = new MinStack();
minStack.push(-2);
minStack.push(0);
minStack.push(-3);
minStack.getMin(); --> Returns -3.
minStack.pop();
minStack.top(); --> Returns 0.
minStack.getMin(); --> Returns -2.
```

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C++ ▾



```
1 class MinStack {
2 public:
3     struct Node {
4         int val;
5         Node* next;
6         Node(int x):val(x),next(NULL){};
7     };
8
9     /** initialize your data structure here. */
10    MinStack() {
11        head = NULL;
12        minS = NULL;
13    }
14
15    void push(int x) {
16        if(head==NULL){
17            head = new Node(x);
18            minS = new Node(x);
19        }
20        else {
21            Node* cur = new Node(x);
22            cur->next = head;
23            head = cur;
24            if(x<=minS->val){
25                cur = new Node(x);
26                cur->next = minS;
27                minS = cur;
28            }
29        }
30    }
31
32    void pop() {
33        if(head==NULL) return;
34        int x = head->val;
35        head = head->next;
36        if(x==minS->val) minS = minS->next;
37    }
```

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```
38
39     int top() {
40         return head->val;
41     }
42
43     int getMin() {
44         return minS->val;
45     }
46
47     Node* head;
48     Node* minS;
49 };
50
51 /**
52  * Your MinStack object will be instantiated and called as such:
53  * MinStack obj = new MinStack();
54  * obj.push(x);
55  * obj.pop();
56  * int param_3 = obj.top();
57  * int param_4 = obj.getMin();
58  */
```

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