

155. Min Stack

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Total Accepted: **108721** Total Submissions: **411477** 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.

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

Notes

```
38     Node* head;
39 };
40
41 /**
42  * Your MinStack object will be instantiated and called as such:
43  * MinStack obj = new MinStack();
44  * obj.push(x);
45  * obj.pop();
46  * int param_3 = obj.top();
47  * int param_4 = obj.getMin();
48  */
```

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