

Minimum Stack

My initial code was

```
class MinStack:

    def __init__(self):
        self.min_stack = []
        self.stack = []

    def push(self, val: int) -> None:
        if self.min_stack == []:
            self.stack.append(val)
            self.min_stack.append(val)

        elif val < self.min_stack[-1]:
            self.stack.append(val)
            self.min_stack.append(val)

        else:
            self.stack.append(val)

    def pop(self) -> None:
        if self.stack == []:
            return []

        if self.stack[-1] == self.min_stack[-1]:
            self.min_stack.pop()
```

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        self.stack.pop()

def top(self) -> int:
    if self.stack == []:
        return []
    else:

        return self.stack[-1]

def getMin(self) -> int:
    if self.min_stack == []:
        return []
    else:
        return self.min_stack[-1]

```

This was the code that worked

```

class MinStack:

    def __init__(self):
        self.stack = []      # Main stack to store all values
        self.min_stack = []  # Auxiliary stack to store the min:

    def push(self, val: int) -> None:
        # Push value onto the main stack
        self.stack.append(val)
        # Push value onto the min_stack if it's the first value
        if not self.min_stack or val <= self.min_stack[-1]:
            self.min_stack.append(val)

    def pop(self) -> None:
        # Check if the stack is empty before attempting to pop

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        if not self.stack:
            return
        # Pop from min_stack only if the value being popped from stack is equal to the current minimum
        if self.stack[-1] == self.min_stack[-1]:
            self.min_stack.pop()
        self.stack.pop()

    def top(self) -> int:
        # Return the top of the stack if not empty, otherwise return -1
        if not self.stack:
            return -1
        return self.stack[-1]

    def getMin(self) -> int:
        # Return the top of the min_stack if not empty, otherwise return -1
        if not self.min_stack:
            return -1
        return self.min_stack[-1]

```

The main issue was that it did not handle duplicate minimums, so a \leq is added to account for the minimum stack.append