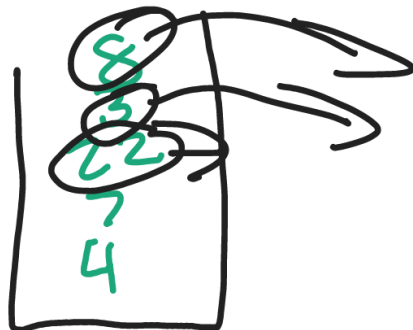


WHITEBOARD 14

Find a stack's maximum value

Visual



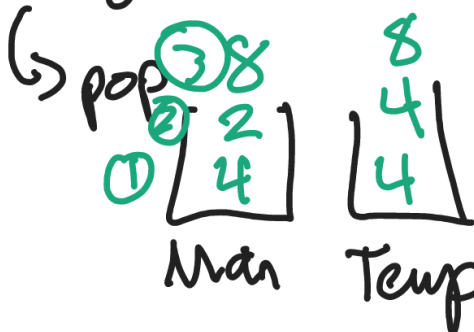
myStack.max

loop thru stack
compare
peek to current

if statement for
if max value
changes

original in Stack

make sure stack
is as was



- ① 4 is current max
- ② 4 is current max
- ③ 8 is current max

then pop max from stack back to myStack

Algorithm

- ① make sure stack isn't empty
- ② establish a current max
int = ϕ to compare
against as placeholder
stack
- ③ create a while loop
as long as stack
isn't empty
- ④ use a tempValue int
to hold stack.pop
value
compare tempValue
to max value using
Math.max

push the value
into the temp stack

⑤ Create a second
while loop to
recreate original
stack w/ while
temp stack !=
empty statement

⑥ Return Max value

Test Cases

empty stack
simple stack
both large & small stack w/ value added by
chaining 1st Max

Code

```
public class MaxStack {
```

```
    public class MaxStack  
        extends Stack {
```

```
        MaxStack<Integer>
```

```
        copyStack = new
```

```
        MaxStack<>();
```

```
        int max = 0;
```

```
    public int max() {
```

```
        if (empty stack.isEmpty()) {
```

```
            return 0;
```

```
while (!stack.isEmpty) {  
    int tempVal = stack.pop();  
    max = Math.max(tempVal,  
        max);  
    copyStack.push(tempVal);  
}
```

```
while (!copyStack.isEmpty) {  
    stack.push(copyStack.pop());  
}
```

```
return max;
```

```
}
```

```
}
```