Let's begin at 9:02 PM.

L42
Stack : Classical Problems

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# RECAP

How do we evaluate a given expression?

$(6+21)/3 - 5*2$

BODMAS

$\Rightarrow 27/3 - 5*2$

$\Rightarrow 9 - 5*2$

$\Rightarrow 9 - 10 = -1$

[In-fix Expression]

Can those expressions written in a different way also?

1) Pre-fix [Polish Notation]
2) Post-fix [Reverse Polish Notation]

# In-fix to Post-fix Notation.

Infix ⇒ $(6+21)/3 - 5*2$

$6\ 21\ +\ 3\ /\ 5\ 2\ *\ -$

$-1$

$a+b$

$a\ b\ +$

$$(6 + 21) / 3 * 4 - 5 * 2$$

ans (post) = 6 21 + 3 / 4 * 5 2 * -

# 1. Evaluating a given post-fix expression

Eg. 1

4 13 5 / +

[4, 13, 5] → [4, 2] → [6]

↳ 6

Eg. 2. 10 6 9 3 + -11 * / * 17 + 5 +

↳ 22

[10, 6, 9, 3] → [10, 6, 12, -11] → [10, 6, -132] → [10, 0] → [0, 17] → [17, 5] → [22]

# 2. Next Greater Element

Eg 1. [1, 3, 2, 4]

ans [3, 4, 4, -1]

Eg 2. [6, 8, 0, 1, 3]

ans [8, -1, 1, 3, -1]

$a[0] \quad \ldots \quad a[i] \quad a[k] \quad a[n-1]$

($\leq a[i]$) ($\geq a[i]$)

$i < j$

$a[i] \geq a[k]$

$a[j]$ is useless

Eg. [105, 85, 75, 60, 70, 60, 80, 100]

[-1, 100, 80, 70, 80, 80, 100, -1]

# 3. Stock Span Problem

Eg. 1. N = 7

[100, 80, 60, 70, 60, 75, 85]

↑(7)

ans = [1, 1, 1, 2, 1, 4, 6]

Eg 2. N = 6

[10, 4, 5, 90, 120, 80]

ans = [1, 1, 2, 4, 5, 1]

# *Thank You!*

Reminder: Going to the gym & observing the trainer work out can help you know the right technique, but you'll muscle up only if you lift some weights yourself.

So, PRACTICE, PRACTICE, PRACTICE!