

Let's begin at 9:05 PM

L99  
Final Problem Solving

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RECAP

# 1. Longest Duplicate String

## Intuition / Solution



$$l \rightarrow l-1 \rightarrow l-2 \rightarrow l-3 \rightarrow \dots \rightarrow 1$$

true                  true                                  false  
P                  P                  - - - -  
l<sub>1</sub> 1 | l<sub>2</sub> 2 | 3 | 4 | 5 | ↗ - - -

$l \leq mid$

Able to find



ans = str

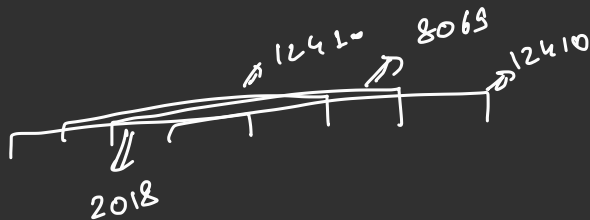
Continue search  
in  $[mid+1, end]$

Not able  
to find



Search in  
range  $[beg, mid-1]$

Rolling Hash to  
our rescue!  $\Rightarrow$  (Hopefully :))



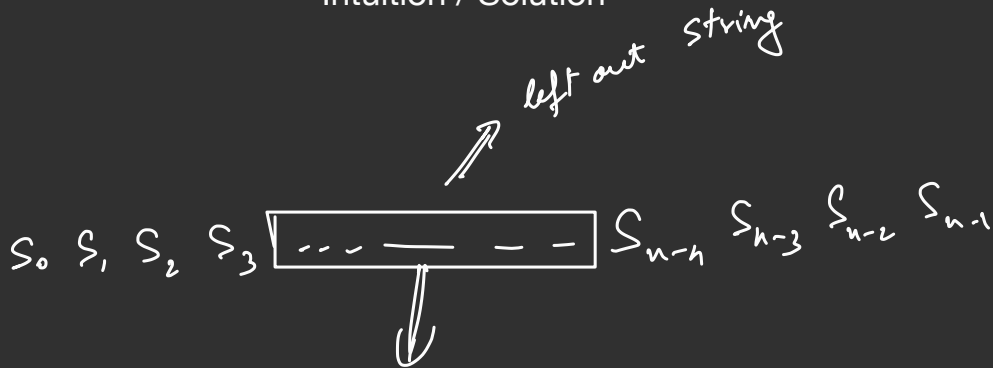
{ 2018,  
1242,  
8069,  
}

Let's implement



## 2. Prefix-Suffix Palindrome

## Intuition / Solution



1. Find longest palindromic prefix.
2. Find longest palindromic suffix.
3. Take the longer one.

String S



We need to find longest palindromic  
prefix of S.

$S_0 - \text{-----} S_{n-1}$

$\Downarrow = \text{reverse of itself}$

$T = S_0 - \text{-----} S_{n-1} \# S_{n-1} \text{-----} S_0$

longest prefix which is also a suffix.

Let's implement

# *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!