

Longest Palindromic Subsequence (LPS)

a c b b a d

a b b a \rightarrow palindromic string

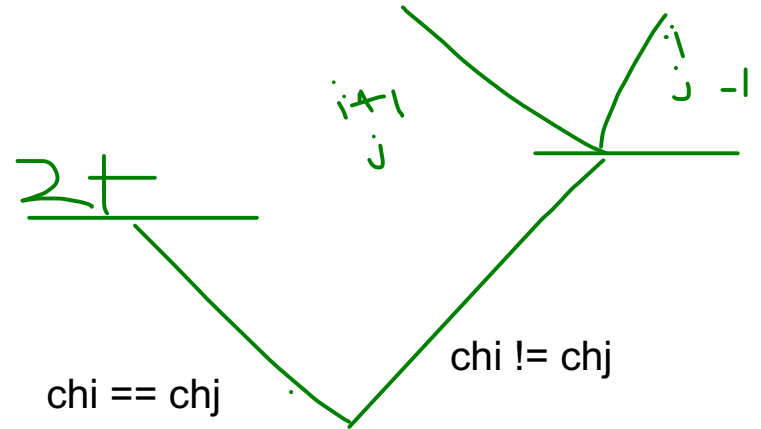
.

$a < b \quad b = d$

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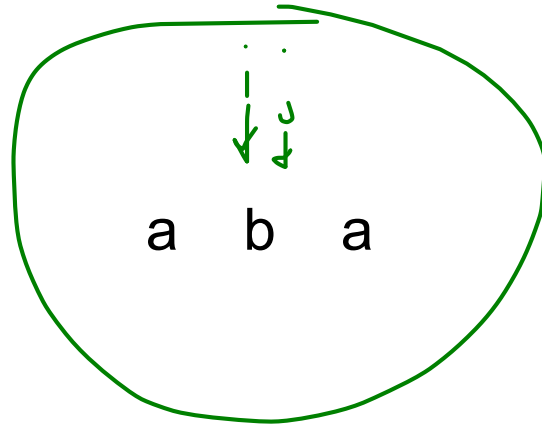
\uparrow
 j

0



$2+$
 $2+$

$i > j \rightarrow \text{break}$



dp approach

mean -> start at i end at j

		0	1	2	3	4	5
		a_b	c_1	b_2	b_3	a_4	d_5
0	a_b						$a_0 d_5$
1	c_1					$c_1 \rightarrow a_4$	
2	b_2			b_2 b_2	$b_2 \rightarrow b_3$ i, j		
3	b_3						
4	a_4						
5	d_5						

dp approach

		0	1	2	3	4	5
		a _b	c ₁	b ₂	b ₃	a ₄	d ₅
0	a _b						
1	c ₁	X			cbb	cbb a ← max	
2	b ₂	X	X		bb	bb a ↓	bb a a
3	b ₃	X	X	X			
4	a ₄	X	X	X	X		
5	d ₅	X	X	X	X	X	

dp approach

Q →

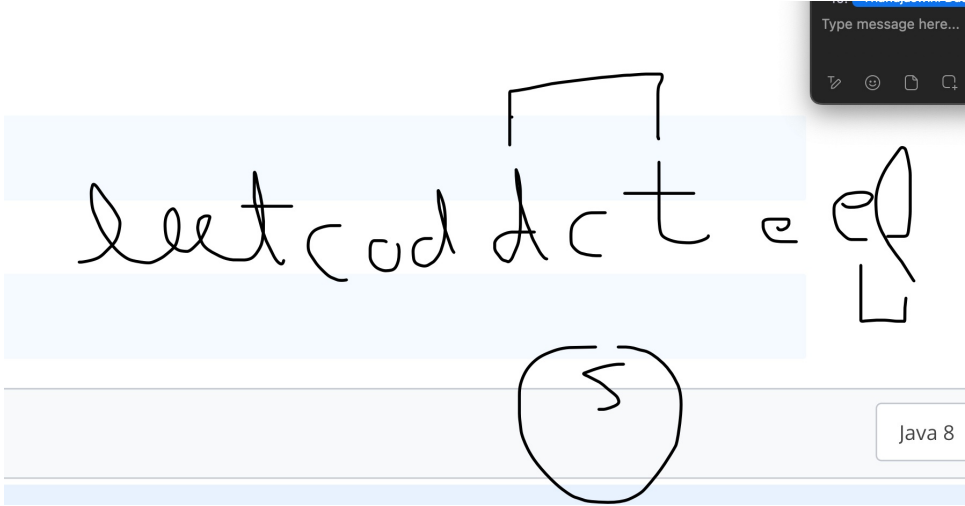
↓

		0	1	2	3	4	5
		a_0	c_1	b_2	b_3	a_4	d_5
0	a_0	g_0 1	g_1 1	g_2 1	g_3 2	g_4 2+2	g_5 4
1	c_1	X	1	1	2	2	2
2	b_2	X	X	1	2	2	2
3	b_3	X	X	X	1	1	1
4	a_4	X	X	X	X	1	1
5	d_5	X	X	X	X	X	1

→ ans

Minimum Insertion Steps to Make a String Palindrome

Str = leetcode



~~d~~ e e ~~t~~

c

↓
a d ~~cc~~ ~~t~~ e ~~t~~

e (d) e

LPS
||

↓
e e e

3

↓ ↓
e e e

e

length of String - LPS == ANS

Delete Operation for Two Strings

S_1 l s t c o d e. ←

$S_2 =$ e t d c l o
 |

LCS → e t d e

$$\text{ANS} = \text{Sum of two String length} - 2 * \text{LCS}$$

