21 September 2023 11:37 AM

given ⇒ xb xbc cxbc pcxbc pcxbcf = 5 words in chain

0 1 2 3 4

+c suff c pre p pre. f suffix.

Initially ⇒ 1 word in chain

≈ longest subsequence

⇒ 0 a | 1 b | 2 ba | 3 bca | 4 bda | 5 bdca.

i → x len = 2

len = 3

len = 4.

len = 3

len = 4.

a = 0

so len = 4

start string length = x jump to string length = x+1 → (1)

low to high

len = 1 len = 4

0 a | 1 b | 2 ba | 3 bca | 4 bda | 5 bdca.

x

Cant go anywhere.

len = 3

max(3,3)

1 + len[5] = 1+1

len = 2

start

start.

len = 1

conn ✓ len = 2

0 a | 1 b | 2 ba | 3 bca | 4 bda | 5 bdca.

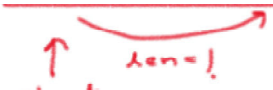
len array: 1 | 4 | 3 | 2 | 2 | 1 } final.

MAX.

algo:

0 a | 1 b | 2 ba | 3 bca | 4 bda | 5 bdca.

| -1 | -1 | -1 | -1 | -1 | 1 | len.



can move to only len "2." & a to ba is possible.

$len[0] = max(len[0], 1 + solve(2))$ ⟶ (1)

0	1	2	3	4	5
a	b	ba	bca	bda	bdca.

-1	-1	-1	-1	-1	1

len.

start. only can go to len = 3.

⇒ $len[2] = max(len[2], solve(3)$ & $solve(4))$ ⟶ (2)

0	1	2	3	4	5
a	b	ba	bca	bda	bdca.

-1	-1	-1	~~-1~~ 2.	-1	1

len.

starting can go to 4. possible

so $len[3] = max(len[3], 1 + solve(5))$

$= len[3] = max(-1, 2) = 2.$

0	1	2	3	4	5
a	b	ba	bca	bda	bdca.

-1	~~-1~~ 4	~~-1~~ 3	2.	~~-1~~ 2.	1

len.

start ↑ ⤷ possible.

4

start ↑ ↪ possible.

go back to (2)

go back to (1)

len[2] = max(-1, 3) = 3

len[1] = max(-1, 4) = 4

} returns 4 as answer

How to check if it is valid.?

"bca" to "bdca" is valid or not?

remove each character & see once.

"bca", "dca" → false

"bca", "bca" → true

0	1	2	3
b	d	c	a

↑ char. ↑

fn check.

for i=0 → s = substr(1, end)

for 0<i<n-1 → s = substr(0,i) + substr(i+1, end)

for i = n-1 → s = substr(0, end-1)