June - 02 LL

02 June 2020 21:12

Task for the day:
Implement Remove Loop Method 2

Ques Find the n^{th} node from end of LL.
(where $n <$ length of LL)

A → 1 → 2 → 3 → 4 → 5 → 6 → null

2^{nd} node from end of A → Answer → 5

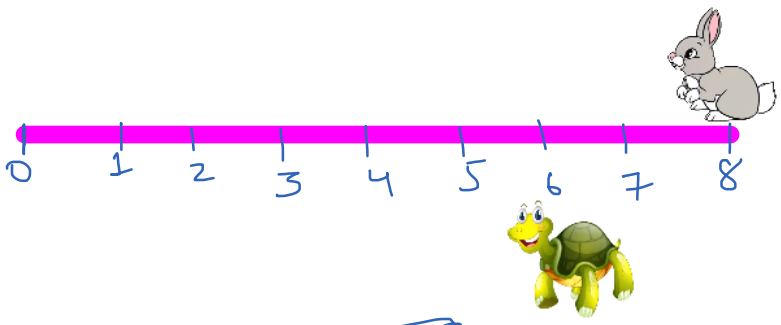
2^{th} node from end = $(len - 2 + 1)^{th}$ node from start

n^{th} → $(len - n + 1)^{th}$ node

O(len) → length
O(len − n + 1) → required Node

1 → 2 → 3 → 4 → 5 → 6 → null (S)

CONCEPT ?



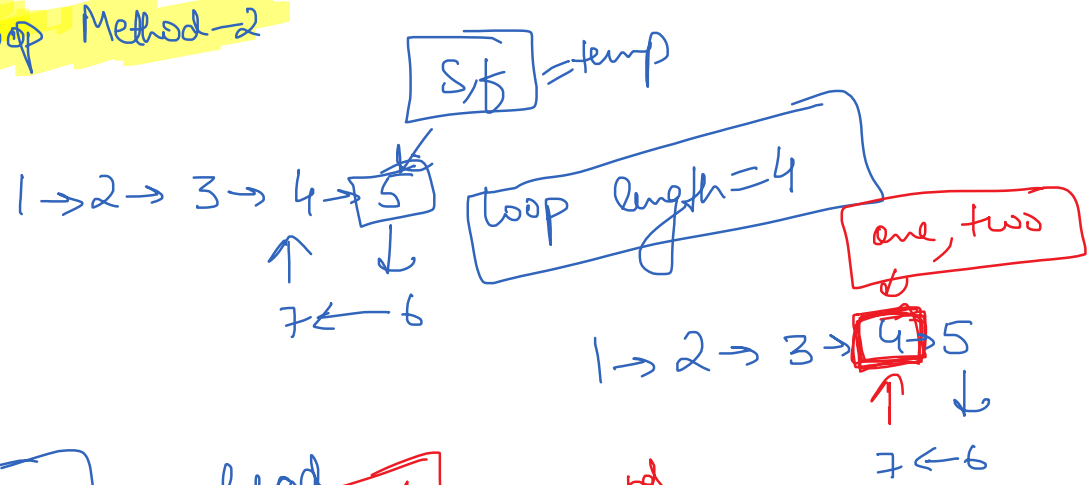
1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → null (S)

while (fast != null)

Find the 4^{th} node from end

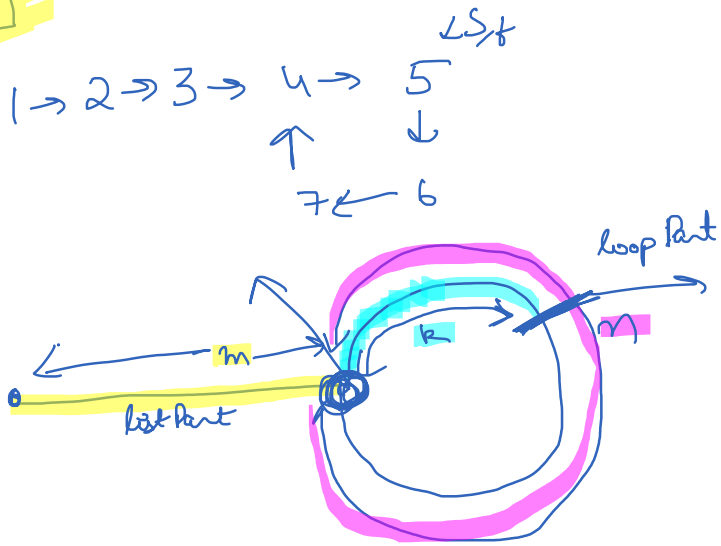
Find the 4th node pt

Remove loop Method-2



2 ptr

Method-3



Distance covered by slow ptr = $m + x \times n + k$

fast ptr = $m + y \times n + k$

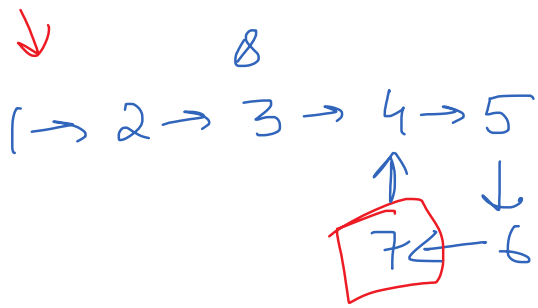
Distance of fptr = 2 × Dis of sptr

$m + y \times n + k = 2 \times [m + x \times n + k]$

$m + y \times n + k = 2m + x \times n + 2k$

$m + k = n(y - x)$ → where these all are integers

m + k is a multiple of n



slow.next == fast.next

fast.next = null