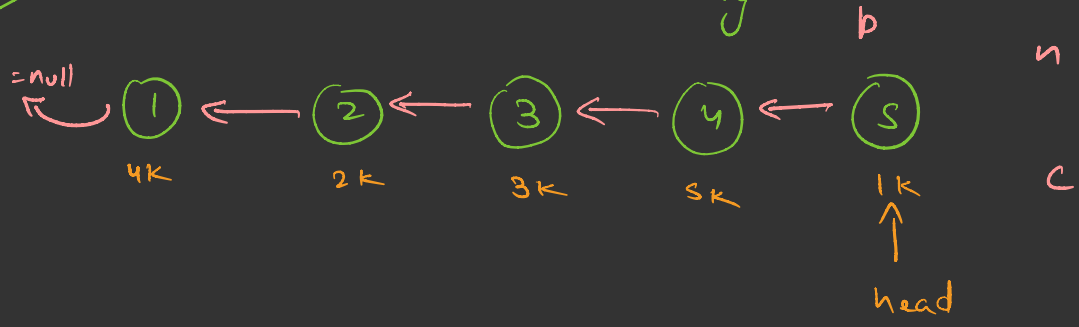
## Ques Reverse Pointers Iteratively




c
n
p

1. Find next (n = c.n)
2. c.next = p
3. p = c
4. c = n

head = p

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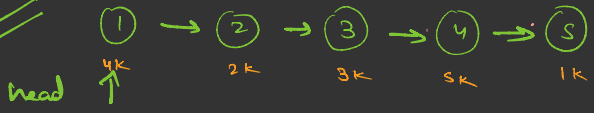
## Ques Reverse Pointers Recursively

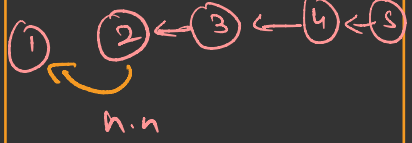



### Expectation

Reverse PR (4K)


### Faith

Reverse PR (2K)

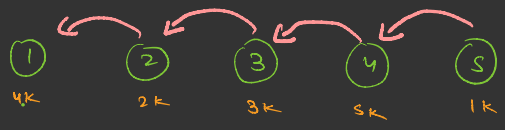


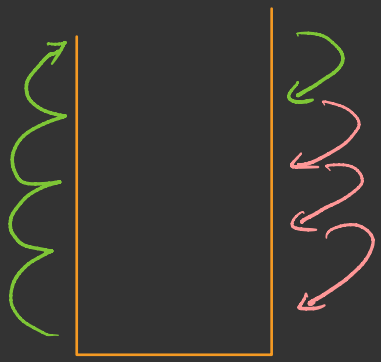

### Combine

Reverse PR (h.n)

h.n.n = h
h.n = null;

```
ReversePR(Node head) {
    if(head.next == null)
        return
    ReversePR(head.next)
    head.next.next = head
    head.next = null;
}
```



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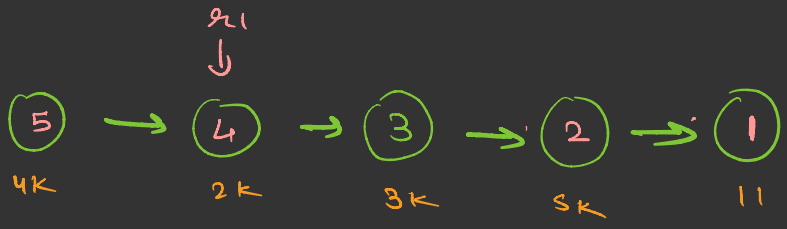
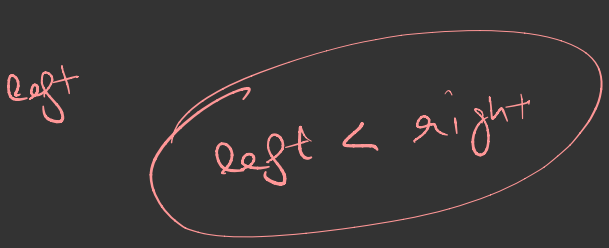
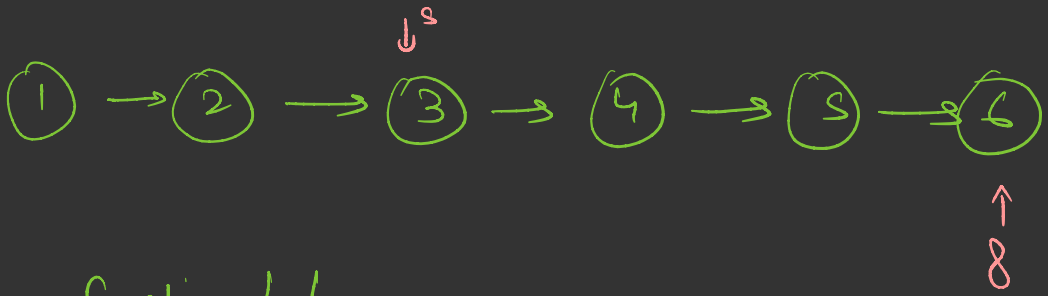
## Ques Reverse data Recursively

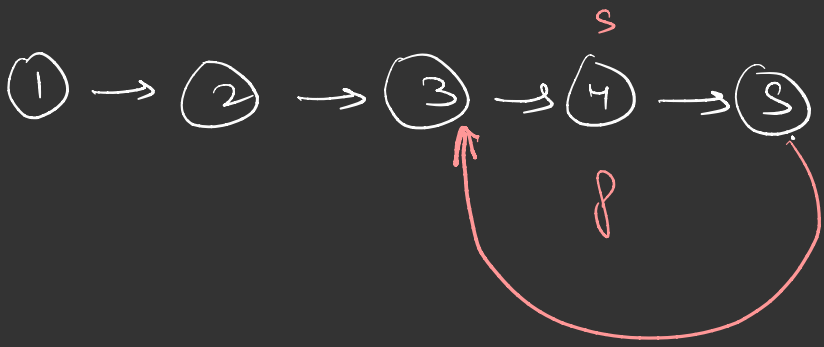


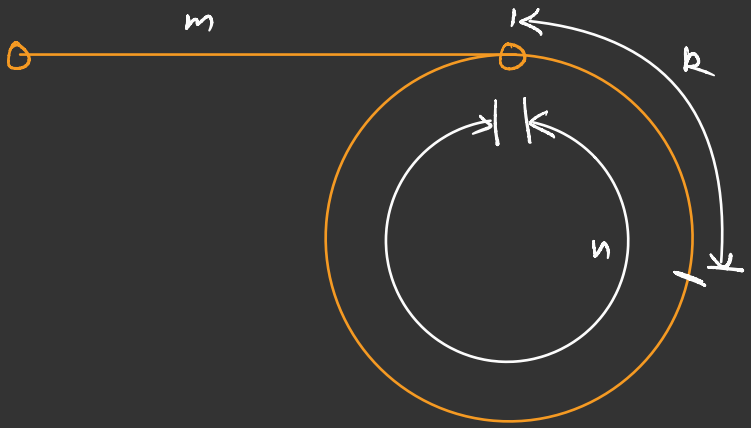

**Ques** Find mid node




**Ques** Cyclic LL




**Ques** starting point of cycle




dist travelled by f = 2 x dist travelled by slow

$$m + (i \times n) + k = 2 \times (m + (j \times n) + k)$$

$i, j \geq 0$ $\quad m + (i \times n) + k = 2m + 2(j \times n) + 2k$

$$in - 2jn = m + k$$

$$n(i - 2j) = m + k$$

$A = i - 2j$ $\quad An = m + k$

$$m = An - k$$

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## Ques Length of cycle