

L2: Deletion & Insertion in LL (8 problems)

(A) DELETION



• Head
• Tail
• Position
• Value

4 cases

(1) Delete the head of LL

Node* deleteHead (Node* head) {

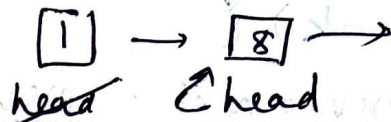
Node* temp = head;

head = head → next;

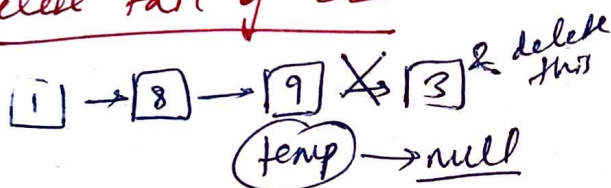
free(temp); //OR

return head; delete temp;

}



(2) Delete tail of LL



if temp → next → next
! = nullptr
then keep on iterating

(3) Delete the kth element of the LL

k = 5 & length of list = 4 → then not deleting anything

k = 1 → first element

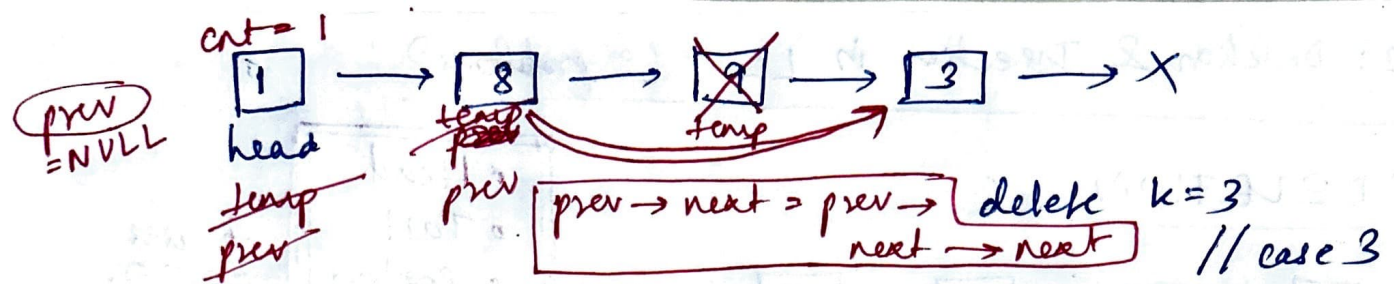
Node* deleteK (Node* head, int k) {

if (head == null) return head; // case 1 LL empty

if (k == 1) { Node* temp = head;
head = head → next; // case 2
delete(temp);
return head; delete head of LL

}

(next pg)



```

cnt = 0; prev = NULL;
Node * temp = head;
while (temp != NULL) {

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    cnt++;

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    if (cnt == k) {

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        prev->next = prev->next->next;

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        delete temp;

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        prev = temp;
        temp = temp->next;
    }

```

delete $k = 5 \rightarrow$ simply return as posn 5 not present

(4) Remove 'k' value
(see code)

(B) INSERTION

