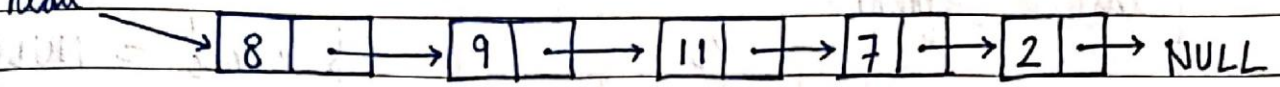
Deletion in a Linked List

Consider the following Linked List

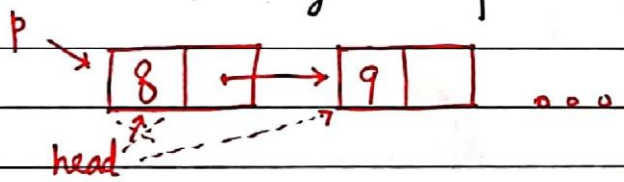


Deletion can be done for the following cases:

1. Deleting the first Node
2. Deleting the node at an index
3. Deleting the last Node
4. Deleting the first node with a given value.

The deletion just like insertion is done by rewiring the pointer connections, the only caveat being: we need to free the memory of the deleted node using free().

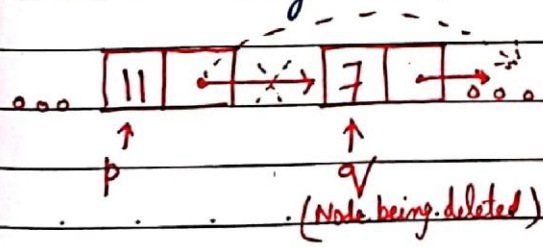
Case 1: Deleting the first node




```
Struct Node * p = head
head = head → next;
free(p);
```

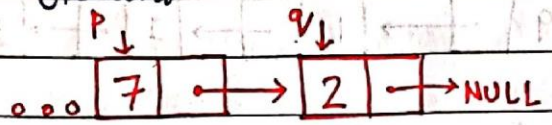
Case 2: Deleting the node at an index

for deleting a given node, we first bring a temporary pointer p before element to be deleted and q on the element being deleted



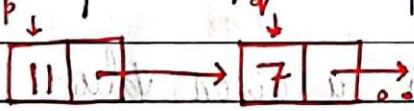

```
p → next = q → next;
free(q);
```

Case 3: Deleting the last Node
Last node can be deleted just like Case 2 by bringing p on second last element and q on last element.



p→next = NULL
free(q) → To free the memory!

Case 4: Delete the first node with a given value
This can be done exactly like Case 2 by bringing pointers p & q to appropriate positions



p→next = q→next;
free(q);