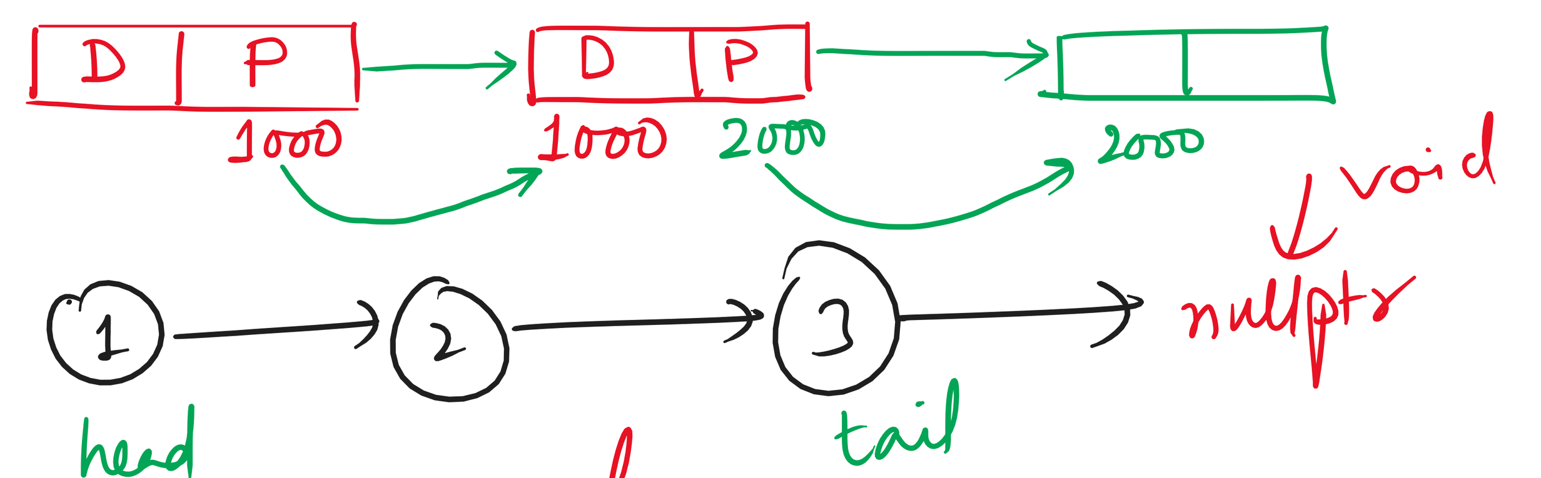
Linear Data Structures Continued...

* Linked Lists :→ It is a linear data structure containing entities called "nodes" connected to each other via "pointers". Depending on the connection, they are categorised into three types:

(i) Singly Linked Lists
(ii) Doubly Linked Lists
(iii) Circular Linked Lists

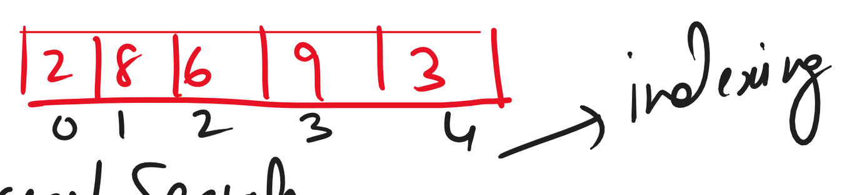
Linked Lists
[Web Browsers
Music Playlists]

SLL



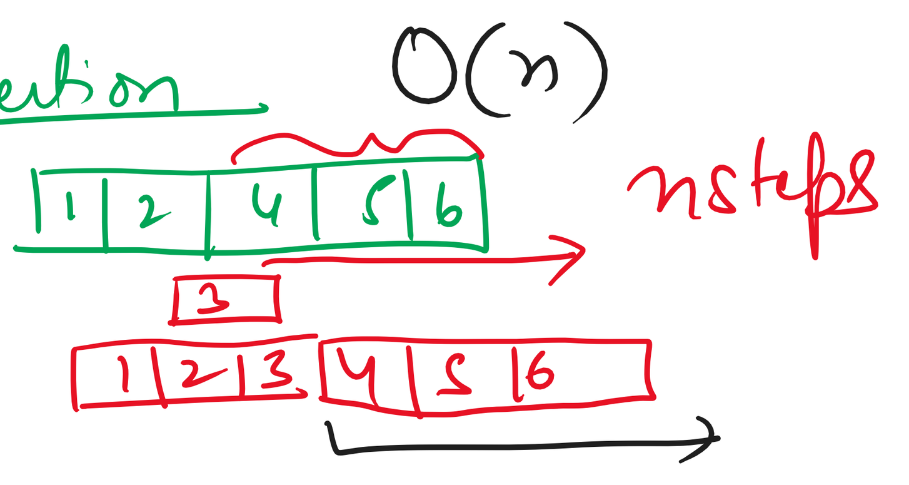
Forward Traversal

Arrays

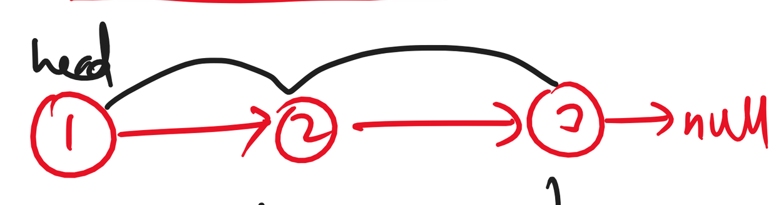


Access/Search
5th element arr[4]
TC O(1)

Insertion O(n)

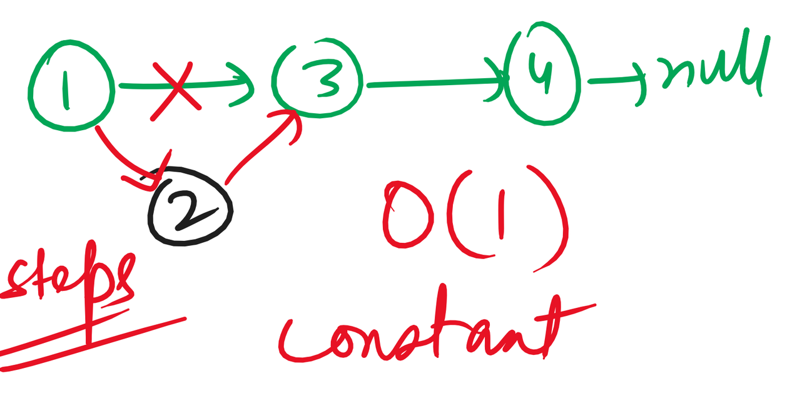


Linked Lists



Access/Search 3rd element
TC O(n)

* Insertion

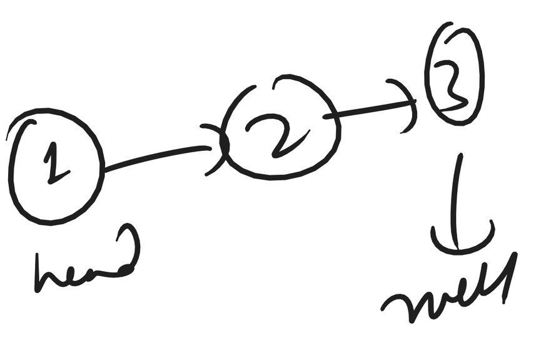


3 steps O(1)
constant

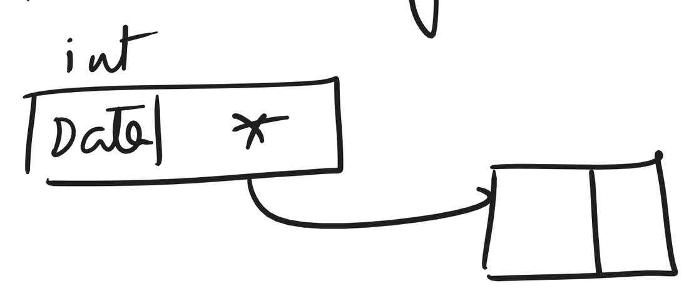
Important Questions / Operations on Linked Lists :→

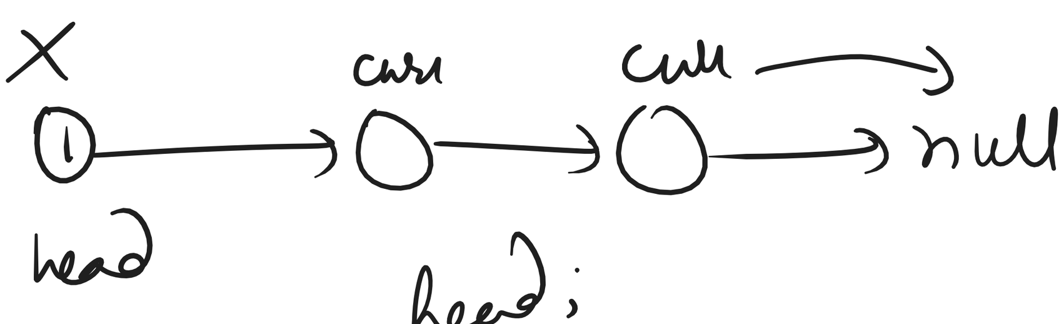
Insert Operations
(i) Insert At Head/Front
(ii) Insert At Tail/End
(iii) Insert After Specific Node

Delete Operations
(i) Delete Head
(ii) Delete Tail
(iii) Delete Target Node



class Node {
int data;
→Node * next;
}

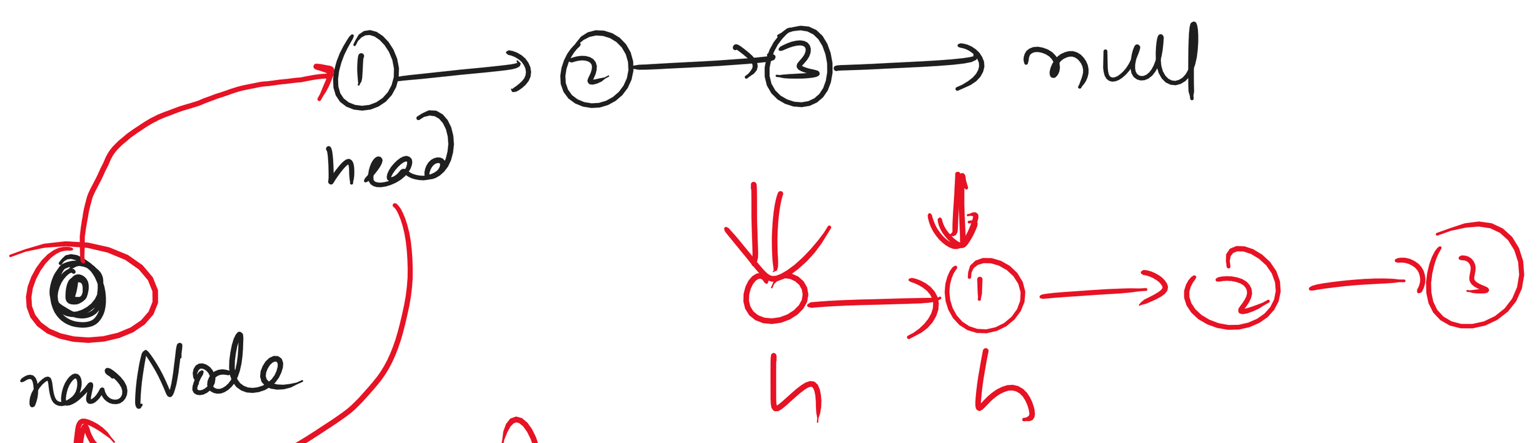





```
Node * curr = head;
while (curr != null) {
    cout << curr→data << " ";
    curr = curr → next;
```

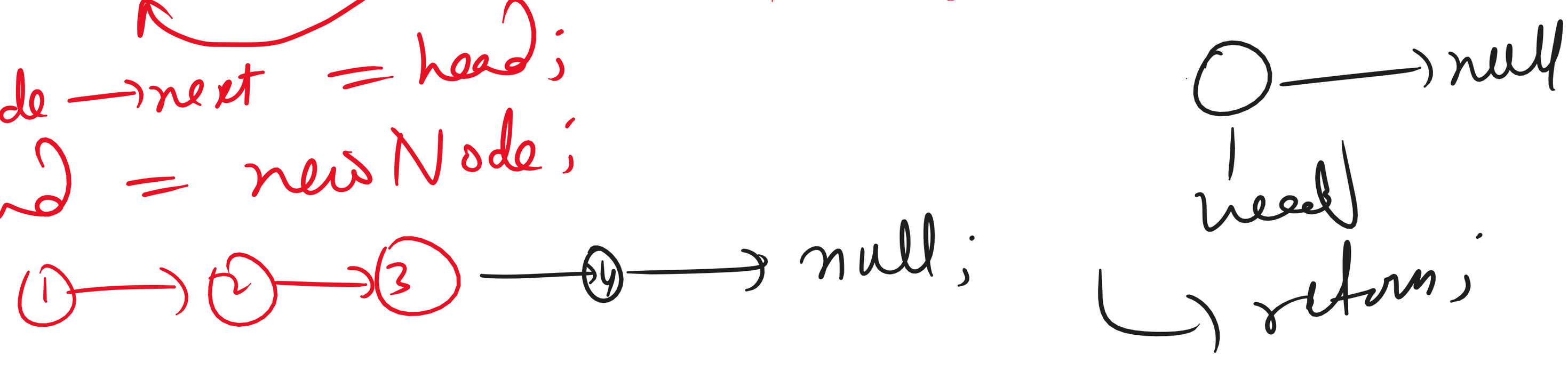
1→2→3

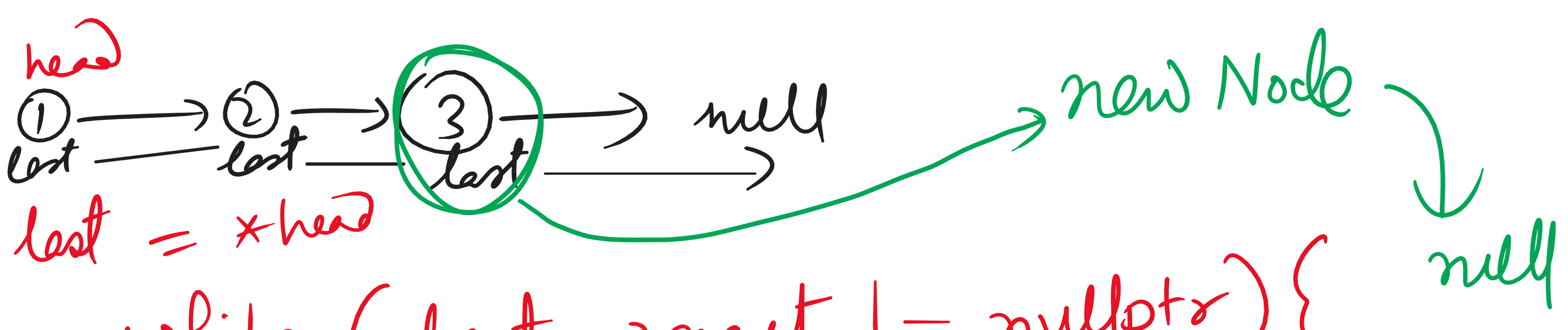
Insert At Front:→



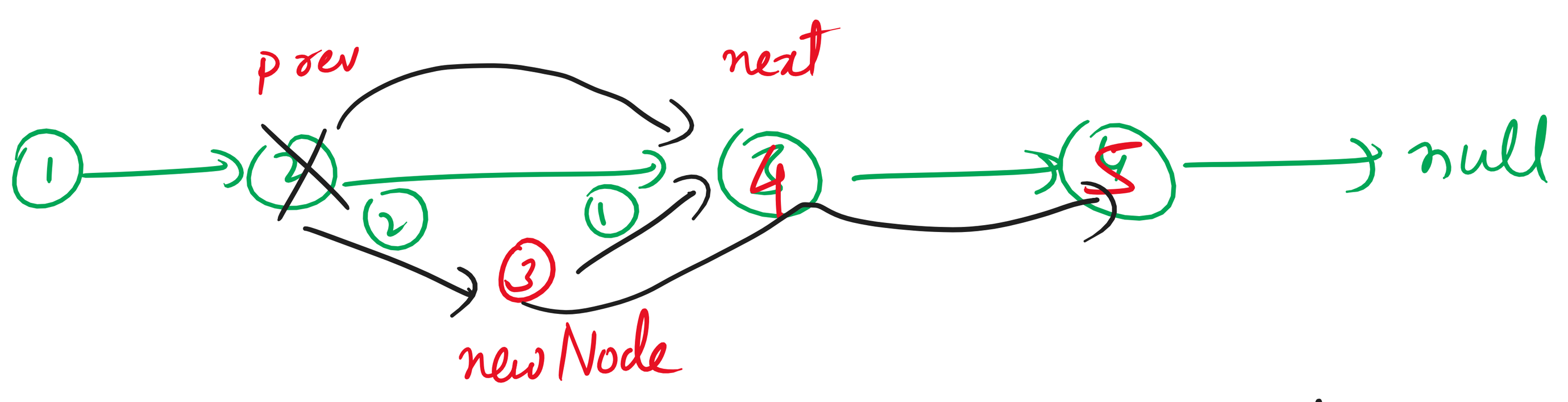
[Node creation]

newNode → next = head;
head = newNode;

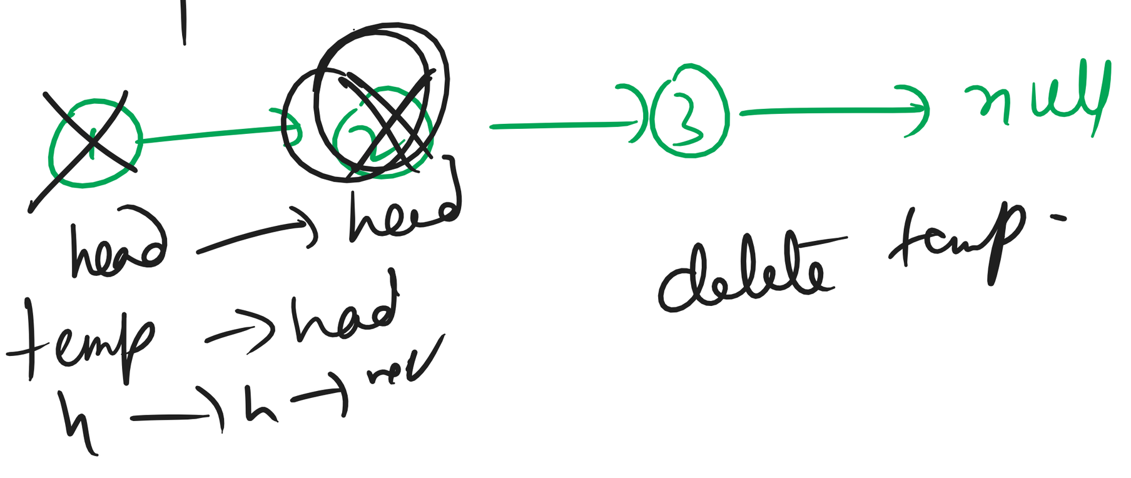





```
Node * last = *head
while (last → next != nullptr) {
    last = last → next;
}
```



newNode → next = prev → next
prev → next = newNode



delete head

delete temp.