Doubly Circular Linked List

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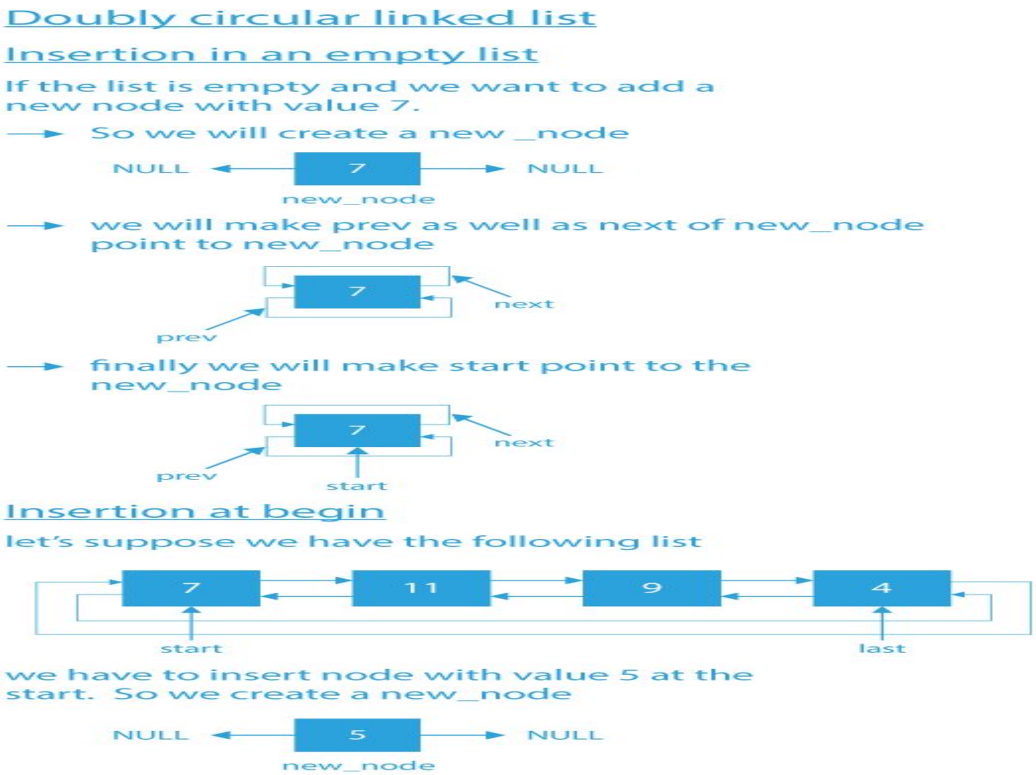
Insertion in empty list



Doubly circular linked list

Insertion in an empty list

If the list is empty and we want to add a new node with value 7.

→ So we will create a new _node

→ we will make prev as well as next of new_node point to new_node

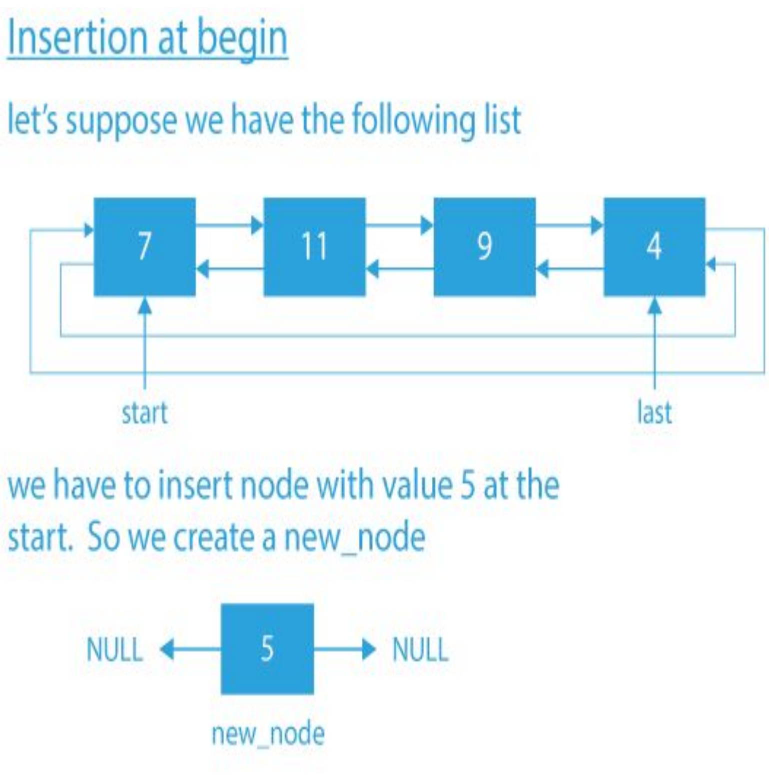
→ finally we will make start point to the new_node

Insertion at begin

let's suppose we have the following list

we have to insert node with value 5 at the start. So we create a new_node

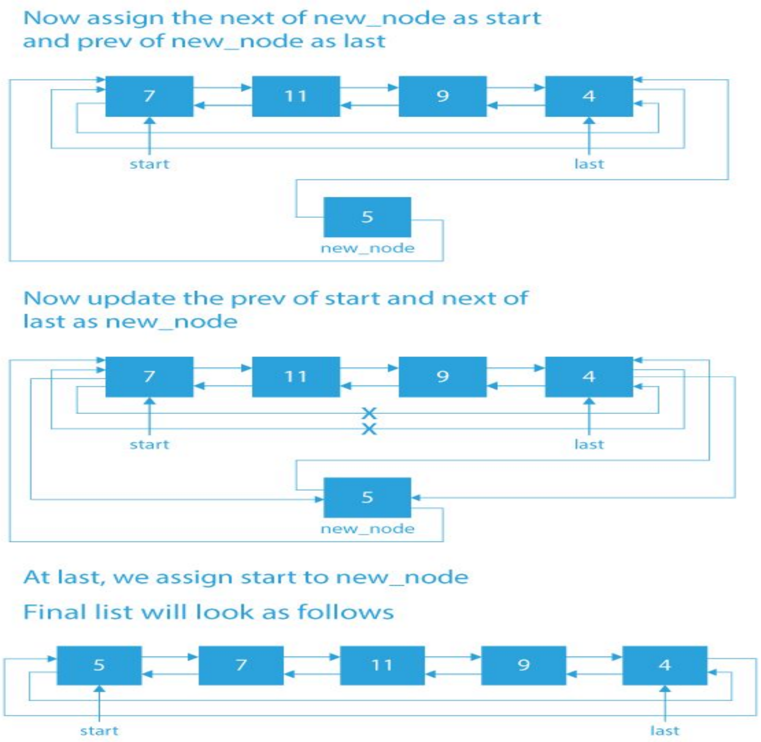
Insertion in beginning



Insertion at begin

let's suppose we have the following list

we have to insert node with value 5 at the start. So we create a new_node



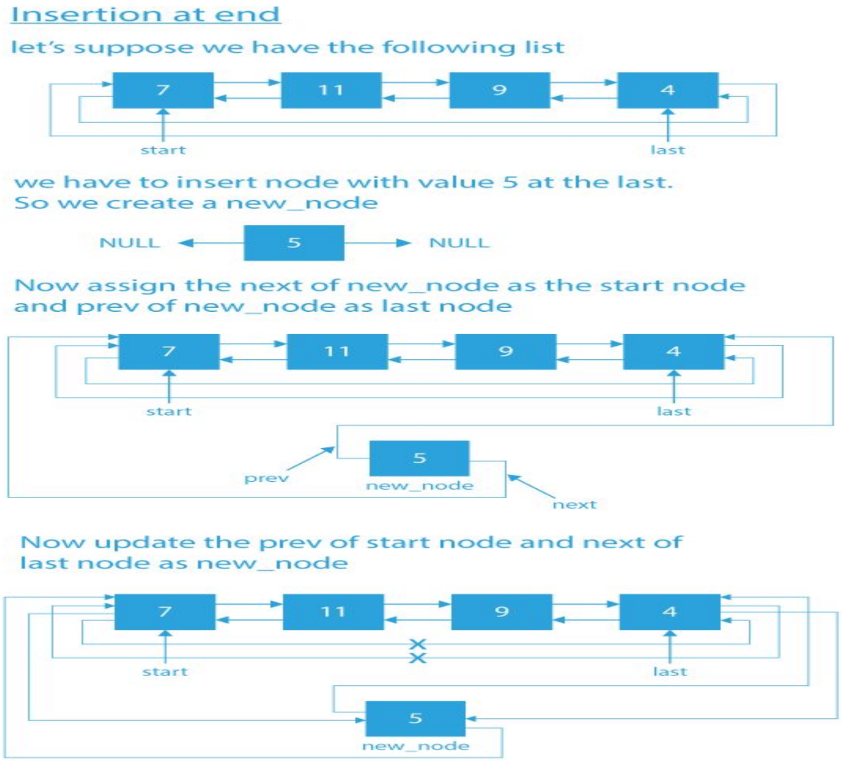
Now assign the next of new_node as start and prev of new_node as last

Now update the prev of start and next of last as new_node

At last, we assign start to new_node

Final list will look as follows

Insertion in end



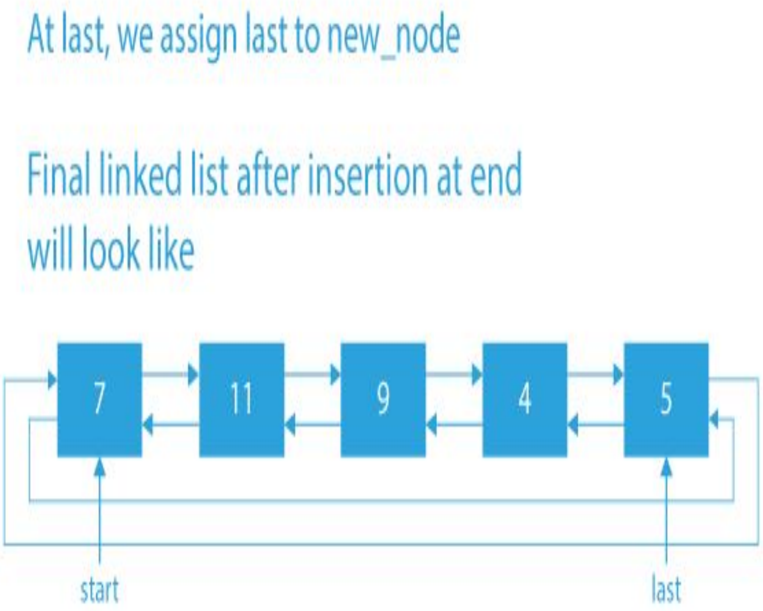
Insertion at end

let's suppose we have the following list

we have to insert node with value 5 at the last.
So we create a new_node

Now assign the next of new_node as the start node
and prev of new_node as last node

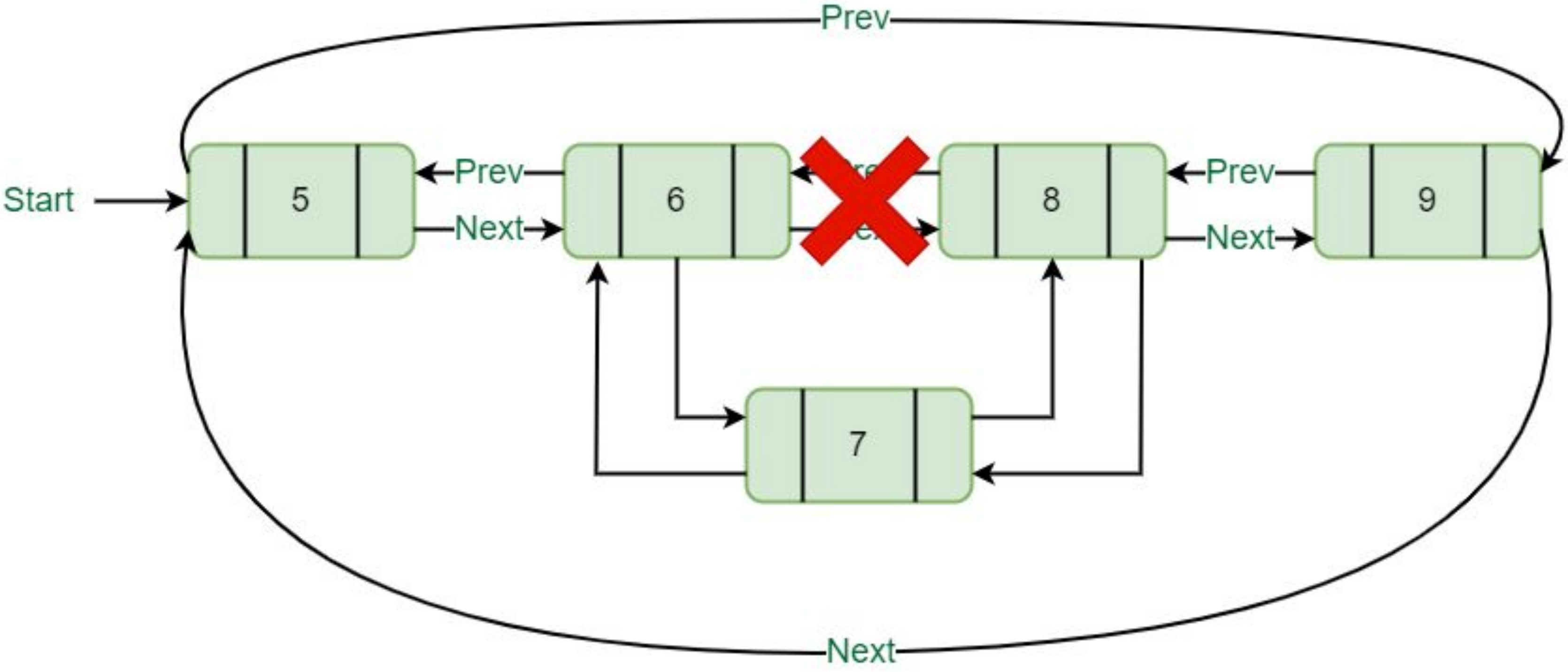
Now update the prev of start node and next of
last node as new_node



At last, we assign last to new_node

Final linked list after insertion at end
will look like

Insertion in specified position



Insertion in specified position

1. Create a new node dynamically.
2. Read the value and position of new node.
3. Set newnode - > info = data and newnode - > prev = NULL, newnode - > next = NULL
4. Check if the list is empty i.e head == NULL.
    a. Set newnode - > next = newnode
    b. Set newnode - > prev = newnode
    c. head = newnode
5. Otherwise
    a. Set ptr1 and ptr2 to head i.e. ptr1 = head, ptr2 = head
    b. Traverse the list to the given position and set ptr1 and ptr2 before and after of the position.

```
for(i=1; i<pos-1; i++) {

        ptr1 = ptr1 - > next;

        ptr2 = ptr1 - > next;

}
```

    c. Connect the links:
        i. Set ptr1 - > next = newnode
        ii. Set newnode - > prev = ptr1
        iii. Set ptr2 - > prev = newnode
        iv. newnode - > next = ptr2

NOTE: In the figure,
node with value 6 = ptr1
node with value 8 = ptr2