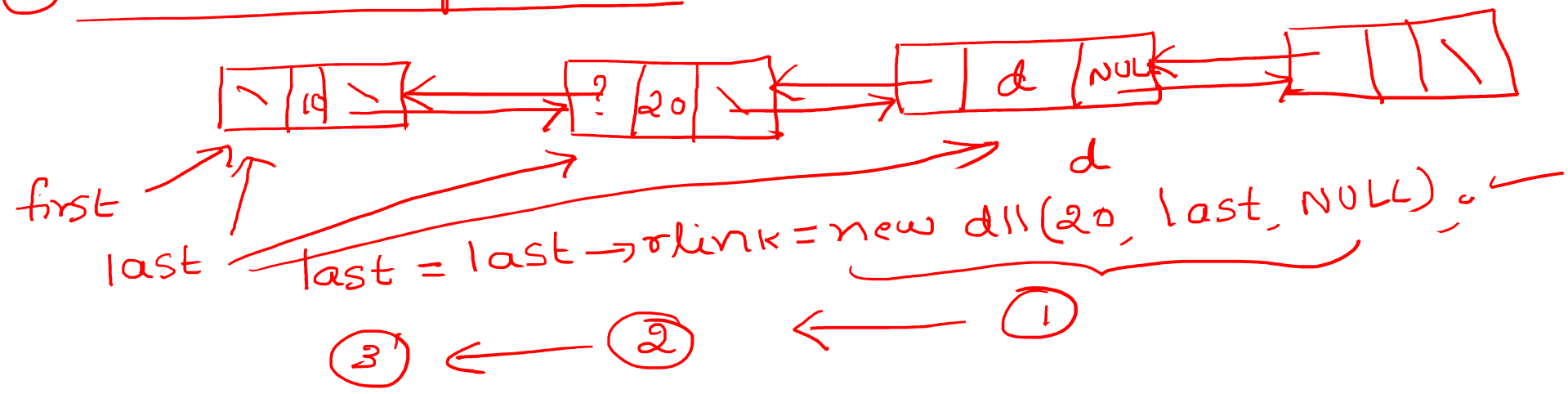
Doubly Linked list

LECTURE 17: Dec. 1st, 2021(4 pm to 6pm)

```
class dll {
        int data;
        dll *llink;
        dll *rlink;
        dll(int d, dll *l, dll *r)
        { data=d; llink=l; rlink=r; }

public:     dll<>{ }
            ___
            ___
            ___
            ⋮
    };
dll *first = NULL; // first node of the dll
```

① Create a list of n nodes n = 4




```
void dll :: create_dll()
{
    int i, d, n;
    dll *last;
    cout<<"enter the no. of nodes : "; cin>>n;
```

```
for(i=1; i<=n; i++)
{       cout<<"enter node data: ";
        cin>>d
        if (first == NULL)
          {     first = last = new dll(d, NULL, NULL); }

       else
            last=last->rlink = new dll (d, last, NULL);
   }
}
```

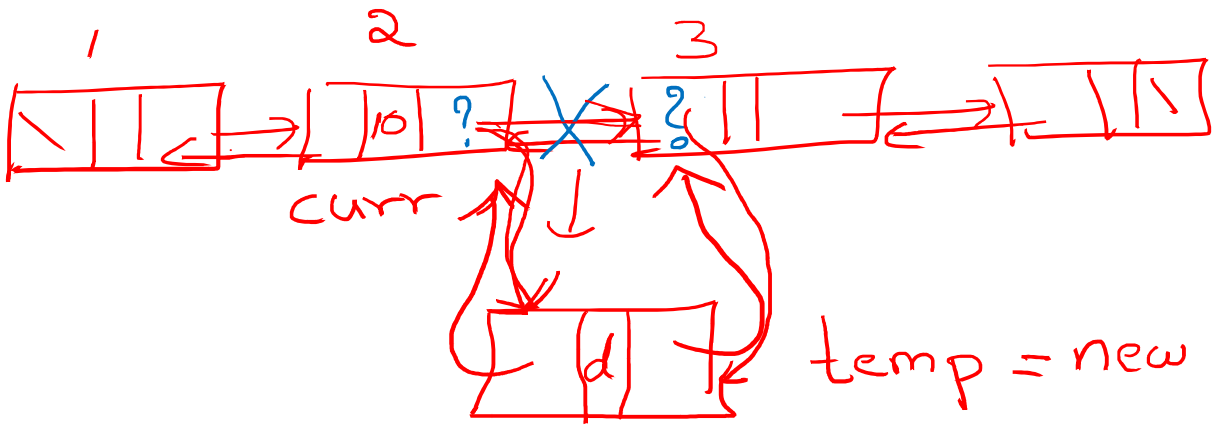
② Insert a node at the beginning

```
void dll::insert_beg(int d)
{
    ____;
    if(first==NULL)
        first = new dll(d, NULL, NULL);
    else
    {
        first=first->llink
        temp =new dll(d, NULL, first);
        first->llink=temp;
        first=temp; // first= first->llink;
    }
```

(3) Insert a node at the end of the dlist:

```
dll *curr;
if (first == NULL)
        first = new dll(d, NULL, NULL);
else
  { for(curr = first; curr->rlink != NULL;
                        curr = curr->rlink);
    curr->rlink = new dll(d, curr, NULL);
  }
```

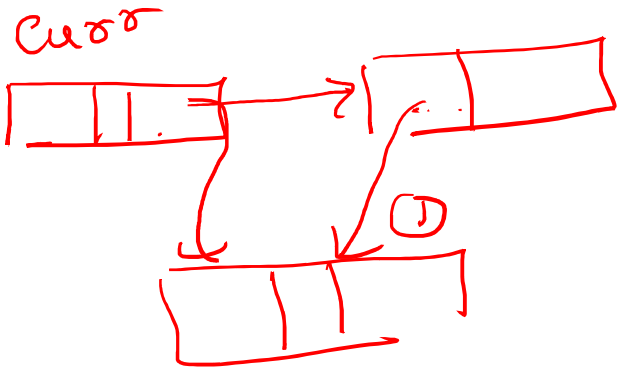
(4)



temp = new dll(d, curr, curr->rlink);

{ curr->rlink = temp;
  temp->rlink->llink = temp;

node 3



① curr->rlink->llink = temp

② curr->rlink = temp;

(5) display dll

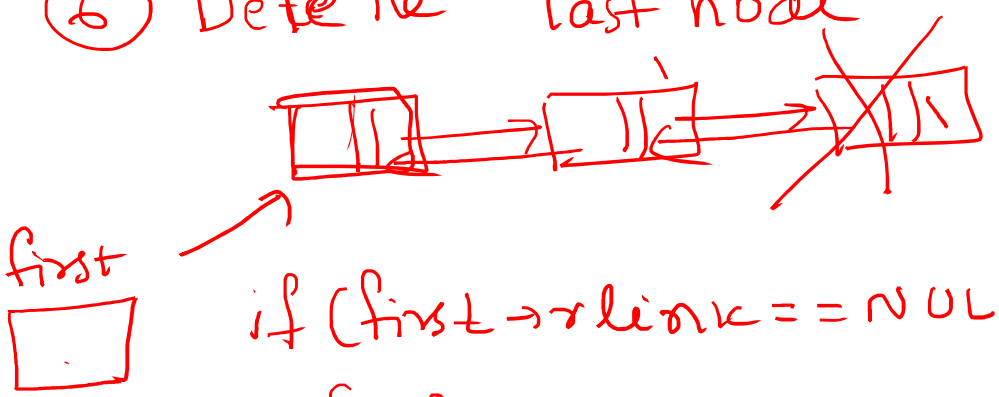
```
if(first!=NULL)
  for(curr=first; curr!=NULL; curr=curr->nlink)
    cout<<curr->data<<" ";
```

(1) (2) (3) (4)

// dll content in reverse order

1 2 3 4

⑥ Delete the last node




```
if (first->rlink==NULL) // only one node
  { first=NULL; delete(first); } -> //

else
  { for(                                ); // to get add. of last node
      curr->llink->rlink=NULL;
      delete(current);
  }
```