Day 19 :- Linked List

SLL :- Operation

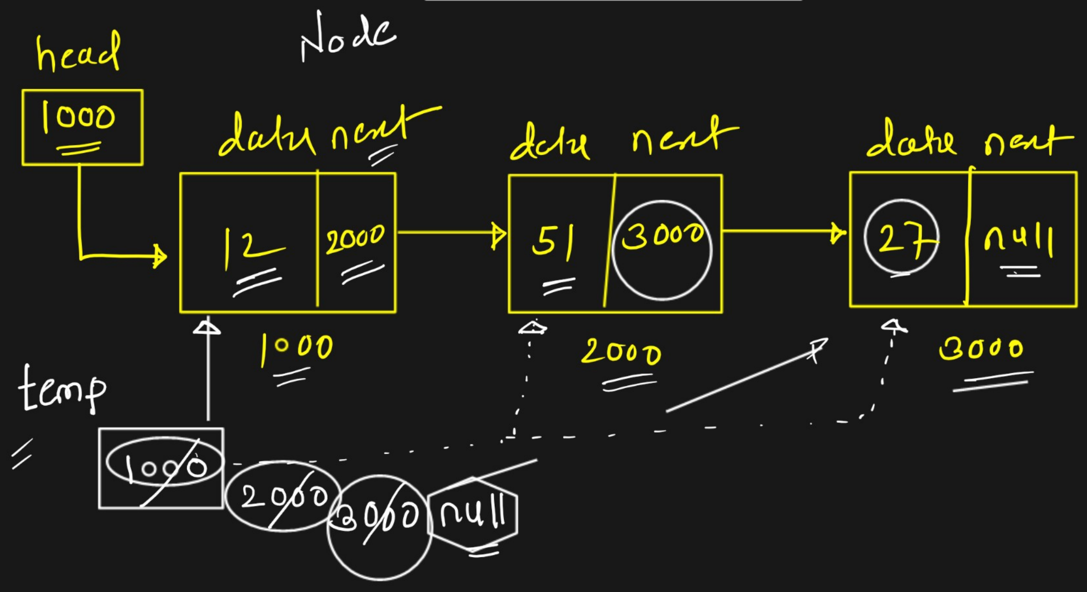
A) Insert $\Rightarrow$ 1) Insert At first
2) Inser At last
3) Insert in betⁿ two nodes

B) Delete $\Rightarrow$ 1) Delete first node
2) Delete last ~~to~~ node
3) Delete Specific node

c) Display

d) Search

c) Display :- O/p :- 12 → 51 → 27



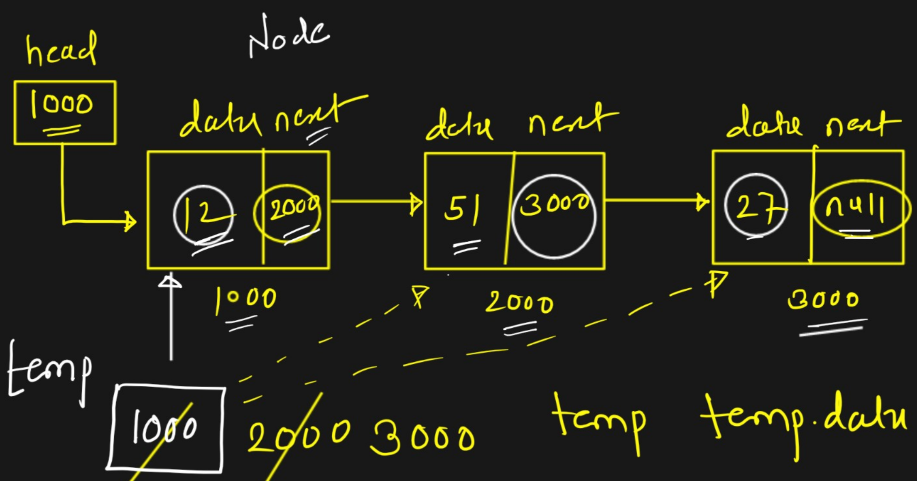
12 → 51 → 27

```
void display ( )
{
   if ( head == null)
   { s.o.p. (" Linked list is empty");
      return;
   }
   Node temp = head;

while ( temp ! = null)
{
    if ( temp.next ! = null) ✓
    {
        s.o.p ( temp.data + " →");
    }  temp = temp.next;

    else
    {  s.o.p. ( temp.data);
    }    temp = temp.next;
}
```

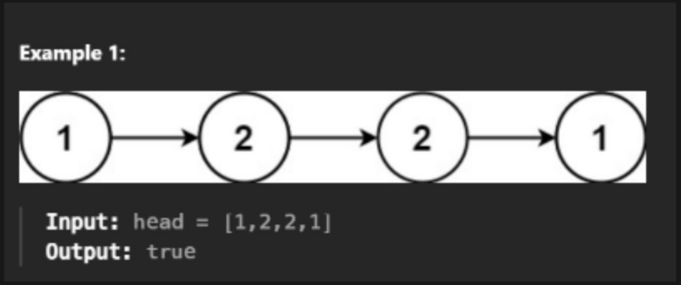
D) Search :-



temp	temp.data	num
1000	12	= x = 43
2000	51	= ~~x~~ ✓ = 43
3000	27	= x = 43
null		

```
void Search ( int num)      43
{
    if ( head == null)
    {
        s.o.p. (" Linked list is empty");
        return ;
    }
    Node temp = head;
    while ( temp.data != num &&
                temp != null)
    {
        temp = temp. next;
    }
    if ( temp = = null)
    {
        s.o.p. (" Not present");
        return;
    }
    else
    {
        s.o.p. (" present");
    }
}
```

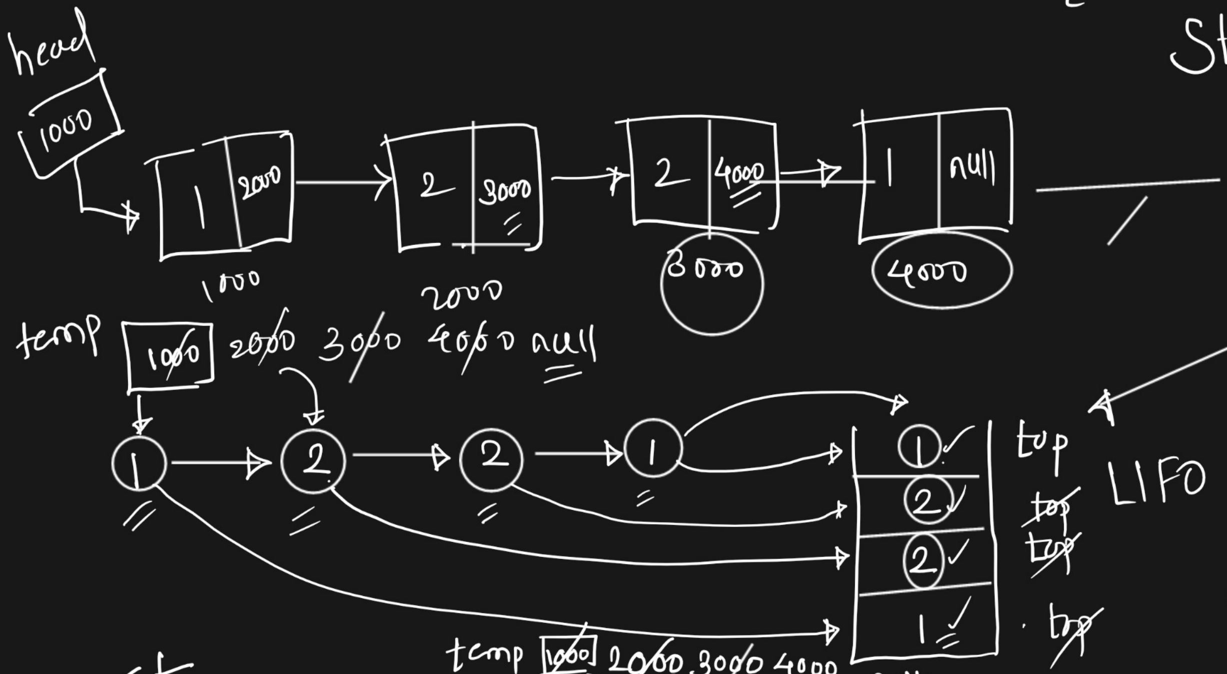
Leetcode Pbm No :- 234   Check that given LL is palindrome / not

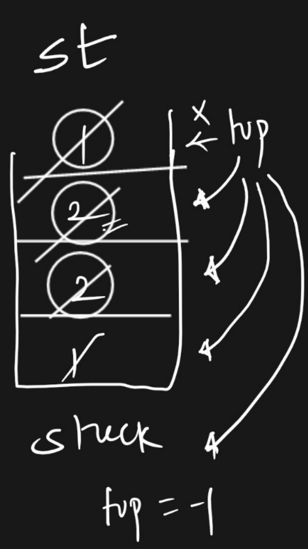


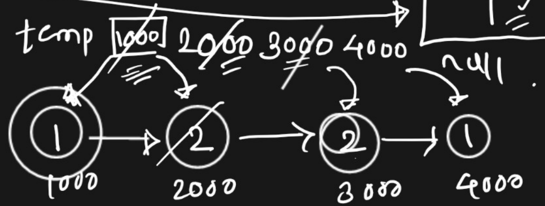
Example 1:

Input: head = [1,2,2,1]
Output: true

```
class Solution
{
  public boolean isPalindrome (Node head)
  {
      Stack <int> st = new Stack<int();
      Node temp = head;
      while ( temp != null)
      {
        st.push ( temp.data);
      }  temp = temp.next;
      temp = head;
      while( temp != null)
      {
        if( st.top = = temp.data)
        {   1 2 2 1     1 2 2 1
            st.pop();   top ↓
            temp = temp.next; }
        }
      ⇒ else
        { return false; }
```







temp null

```
if( st.top = = temp.data) ✓
{      1 2 2 1     1 2 2 1
   st.pop();   top ↓
   temp = temp.next; }
```

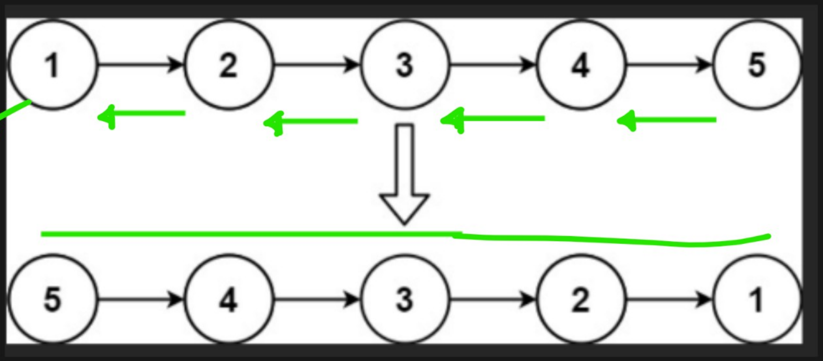
}

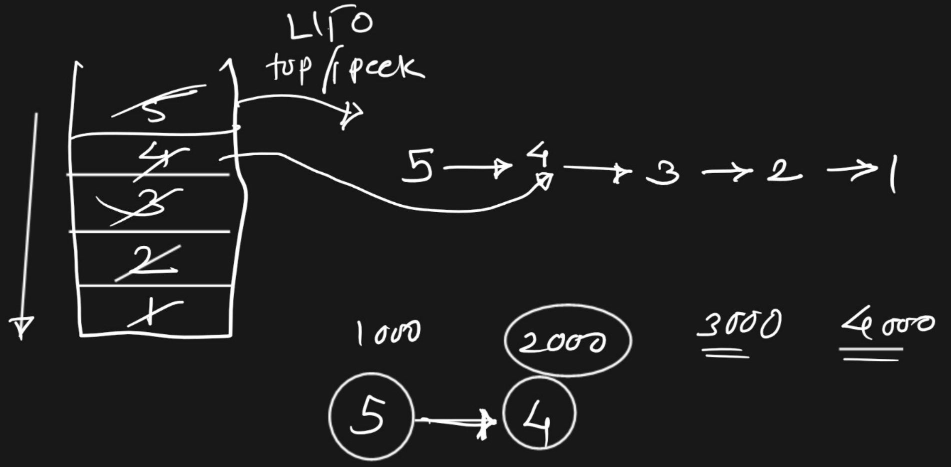
while loop end }

}

return true;

* Reverse the Linked List :- Leetcode Pbm No 206


null
1
2
3
4
5
5
4
3
2
1


LIFO
top / peek
~~5~~
~~4~~
~~3~~
~~2~~
~~1~~
5 → 4 → 3 → 2 → 1
1000
2000
3000
4000
5
4