

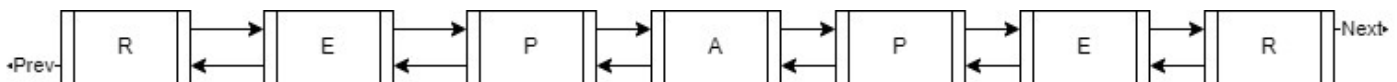
### Problem Statement:

What is a palindrome, and what does it mean?

A palindrome is a word, sentence, verse, or even number that reads the same backward or forward. It derives from Greek roots that mean “running back” (Palin is “again, back,” and dromos, “running.”) The word appears to have been created in English based on these roots in the early 1600s.

Doubly Linked Lists provide bidirectional traverse between nodes that are connected. The difference from a standard linked list is that they have two nodes. Another crucial difference in this data structure is each node in a sequence connects to its predecessor and successor nodes through their links.

When dealing with doubly linked lists, this concept extends to checking whether the list remains unchanged when traversed in both directions, forming a palindrome-like structure.



**Inputs:** There are several inputs to check such as civic, radar, level, and repaper as shown above

**Outputs:** Palindrome

### Approach:

You can create two pointers to the same list. One pointer is pointing to the start of the word, the other is pointing to the end of the word. Both pointer values are checked. If they are the same, both pointers are updated to their neighbor nodes while approaching the end of their direction. If the values are different, the input is not a palindrome. If both pointers reached their termination and there was no difference so far, then it is proven that the input is a palindrome.

Template:

```
public class PalindDoublyList
{
```

```
// Structure of node
static class Node
{
    //implement
};
static Node push(Node head_ref, char new_data)
{
    //implement
}
static boolean isPalindrome(Node left)
{
    //implement
}
public static void main(String[] args)
{
    Node head = null;
    //implement below
    //take the string input from the user
    //push the characters into the _head_ in order

    if (isPalindrome(head))
        System.out.printf("Palindrome");
    else
        System.out.printf("Nope");
    }
}
```