OUTPUT!

* Enter string: hello
  Not palindrome!!

* Enter string: abcdcba
  Palindrome!!

* Enter string: malayalam
  Palindrome!!

* Enter string: datastruct
  Not palindrome!!

Q. Write a program to store a string into a doubly linked list, and check whether it is palindrome or not

ALGORITHM   31-Jan-2022

   1. Declare a structure Node, with data, pointer to next and previous node
   2. Declare HEAD, TAIL as NULL

I: loadString()
   1. len = 0
   2. while (c ≠ '\n'):
      1. Create a new Node, newNode
      2. For first node, set ~~sta~~ Head = newNode
      3. For newNode set:
         data = c
         next = NULL
         prev = TAIL
      4. TAIL → next = newNode
      5. TAIL = newNode
      6. len += 1
      7. c = INPUT next character

II. checkPalindrome (head, tail, len):
   1. f = head, r = tail, i = len
   2. while(i < len/2):
      if (data at f ≠ data at r)
         return 0.
      f = f → next
      r = r → prev ; i += 1
   3. return 1

III. main
   1. Start
   2. Call loadString()
   3. Call checkPalindrome() with HEAD, TAIL, len, store result
   4. if (result): DISPLAY "Palindrome"
        else : DISPLAY "Not Palindrome".
   5. End.

RESULT: Program executed successfully and output is obtained.