# CS1412, Spring 2021 Problem Solving & Program Design in C

**Lab 6 - Out of Lab Assignment**

# Due Saturday, March 13, 2021, 11 am

Acknowledge your collaborators or source of solutions, if any. Do all of the following.

1) Write a program in C to check whether a given String is Palindrome or not.

A palindrome is a word, phrase, number, or sequence of words that reads the same backward as forward. For example, mom, refer, wow, etc. The maximum size of the input string can be 25. **The program should take only one input and will print out either “yes” or “no”.** You have to use recursion to accomplish this task.

Please follow the programming guideline for your submission. Example 1:

Input: wow

Output: yes

Example 2: Input: man

Output: no

**CODE:**

/\*to use scanf in Visual studio with our error\*/

#define \_CRT\_SECURE\_NO\_WARNINGS

/\*

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DATE: MARCH 12, 2021

FILENAME: LAB6OUT.C

SPECIFICATION:This code takes input from the user and print yes if the input is palindrome

and no if the input is not palindrome.

FOR: CS-1412-504

\*/

/\*including all the required libraries\*/

#include <stdio.h>

#include <string.h>

/\*defining maximum size for the array\*/

#define SIZE 100

/\*declearing the function prototype for isPalindromeHelper\*/

int isPalindromeHelper(char myStr[], int start, int end);

/\*function prototype for isPallindrome\*/

int isPalindrome(char myStr[]);

int main(void) {

/\*Initializing all the required variables\*/

char myString[SIZE];

int is\_palindrome;

int length;

/\*reading input from the user\*/

printf("Enter the text:");

gets(myString);

/\*finding length of string\*/

length = strlen(myString);

/\*calling is palindrome function\*/

is\_palindrome = isPalindromeHelper(myString, 0,length - 1);

/\*printing out th result\*/

if (is\_palindrome == 1) {

printf("yes\n");

}

else {

printf("no\n");

}

}

/\*

\* NAME: isPalindrome

\* INPUT ARGUMENTS: char[]

\* RETURN TYPE: int

\* SPECIFICATION: This function takes the character array.It return 1 if it is palindrome

\* and return 0 is it is not palindrome.

\*/

int isPalindrome(char myString[]) {

int length = strlen(myString);

if (length == 0) {

return 1;

}

else {

return isPalindromeHelper(myString, 0, length - 1);

}

}

/\*

\* NAME: isPalindromeHelper

\* INPUT ARGUMENTS: char[](myString),int(start index),int(end index)

\* RETURN TYPE: int

\* SPECIFICATION: This function takes the character array,start index and end index.It return 1 if it is palindrome

\* and return 0 is it is not palindrome.

\*/

int isPalindromeHelper(char myString[], int start, int end) {

if (start == end) {

return 1;

}

if (myString[start] != myString[end]) {

return 0;

}

if (start < end) {

return isPalindromeHelper(myString, start + 1, end - 1);

}

return 1;

}

**Output**



