**TITLE 29**

Write a C program to find the reverse of a string recursively and non-recursively

**OBJECTIVE:**

By the end of this program we will be able to use recursions in writing programs involving strings.

**PROBLEM STATEMENT:**

In this problem we write two programs for finding the reverse of a string. One program is written using recursions while the other program is written in non-recursive manner. Input from user:

Enter the string:

Once the input is collected and stored then the output is displayed.

**ALGORITHM:**

START

Define variables:

INPUT: Read from the keyboard.

COMPUTATION: Computing the reverse of a string

DISPLAY: Displaying the reverse of a string

STOP

**PROGRAM:**

**Using recursion:**

#include<stdio.h>

#include<conio.h>

char\* reverse(char\* str);

void main()

{

int i, j, k;

char str[100];

char \*rev;

printf("Enter the string: ");

scanf("%s", str);

printf("The original string is: %s\n", str);

rev = reverse(str);

printf("The reversed string is: %s\n", rev);

getch();

}

char\* reverse(char \*str)

{

static int i = 0;

static char rev[100];

if(\*str)

{

reverse(str+1);

rev[i++] = \*str;

}

return rev;

}

**Non-recursively:**

#include <stdio.h>  
#include <string.h>

int main()  
{  
   char s[100];

   printf("Enter the string: ");  
   gets(s);

   strrev(s);

   printf("Reverse of the string: %s", s);

   return 0;  
}

**CONCLUSION:**

The simulation of the above C program helped me understand how we can use recursion with strings and this knowledge will help me write other programs in C.

**OUTPUT:**

**Using recursion:**

Enter the string: program

The original string is: program

The reversed string is: margorp

**Non-recursively:**

Enter the string: program

Reverse of the string: margorp