A Micro Project Report

on

Problem Solving using C Language

Submitted by
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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET

(AUTONOMOUS)

Accredited by NAAC with A+ Grade and NBA under Tier-1

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2024-2025

NARASARAOPETA ENGINEERING COLLEGE: NARASARAOPET

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CERTIFICATE

This is to certify that K . Bhavya , Roll No: 23471A05FW, a Second Year Student of the Department of Computer Science and Engineering, has completed the Micro Project Satisfactorily in "Problem Solving using C Language" for the Academic Year 2024-2025..

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String Palindrome

1.C program to check String palindrome without using String handling functions

Program:

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

int main()
{
  char str[100];
  int i, len, flag;
  flag = 0;

  printf("\n Please Enter any String :  ");
  gets(str);

  len = strlen(str);

  for(i = 0; i < len; i++)
  {
     if(str[i] != str[len - i - 1])
```

```
        {
                flag = 1;
                break;
        }
    }
    if(flag == 0)
    {
        printf("\n %s is a Palindrome String", str);
    }
    else
    {
        printf("\n %s is Not a Palindrome String", str);
    }

    return 0;
}
```

OUTPUT:

```
 Please Enter any String :  siri

 siri  is Not a Palindrome String

=== Code Execution Successful ===
```

Shortest word

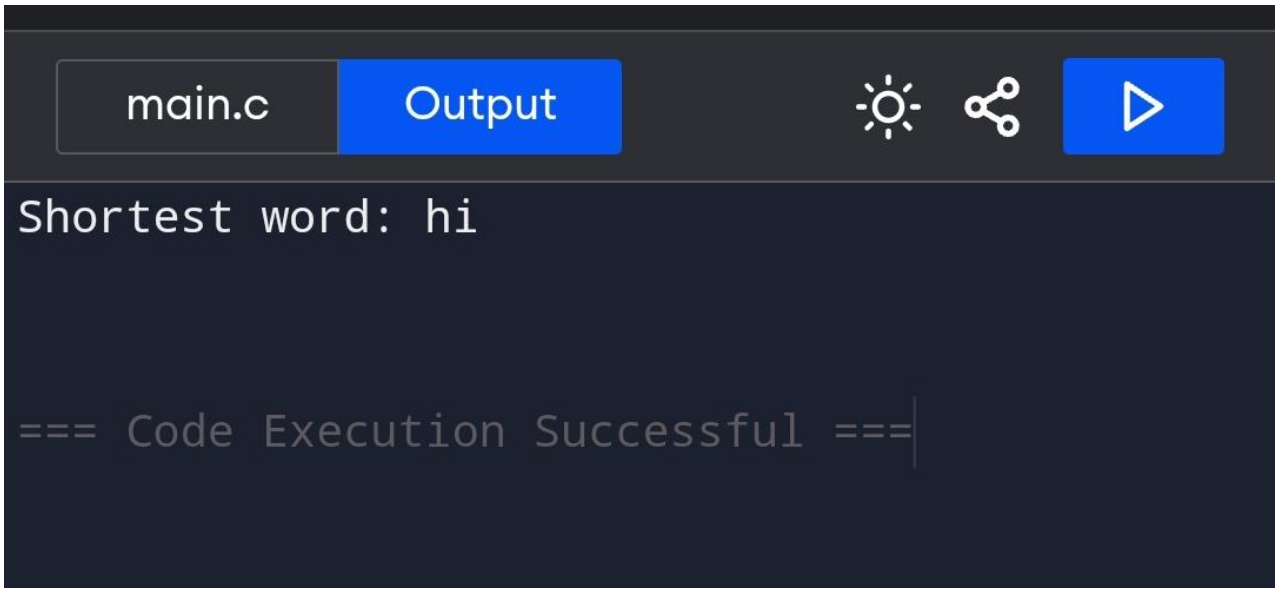
2.Find shortest word from given sentence "hi","hello","Thinava" using c program.

Program:

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

int main() {
   char words[3][10] = {"hi", "hello", "thinava"};
   char shortest[10] = "";
   int min_len = 100; // Initialize with a large value

   for (int i = 0; i < 3; i++) {
      int len = strlen(words[i]);
      if (len < min_len) {
         min_len = len;
         strcpy(shortest, words[i]);
      }
   }
```

```
    printf("Shortest word: %s\n", shortest);

    return 0;
}
```

Output :



String strcpy

3.String copy Without Strcpy()

Program:

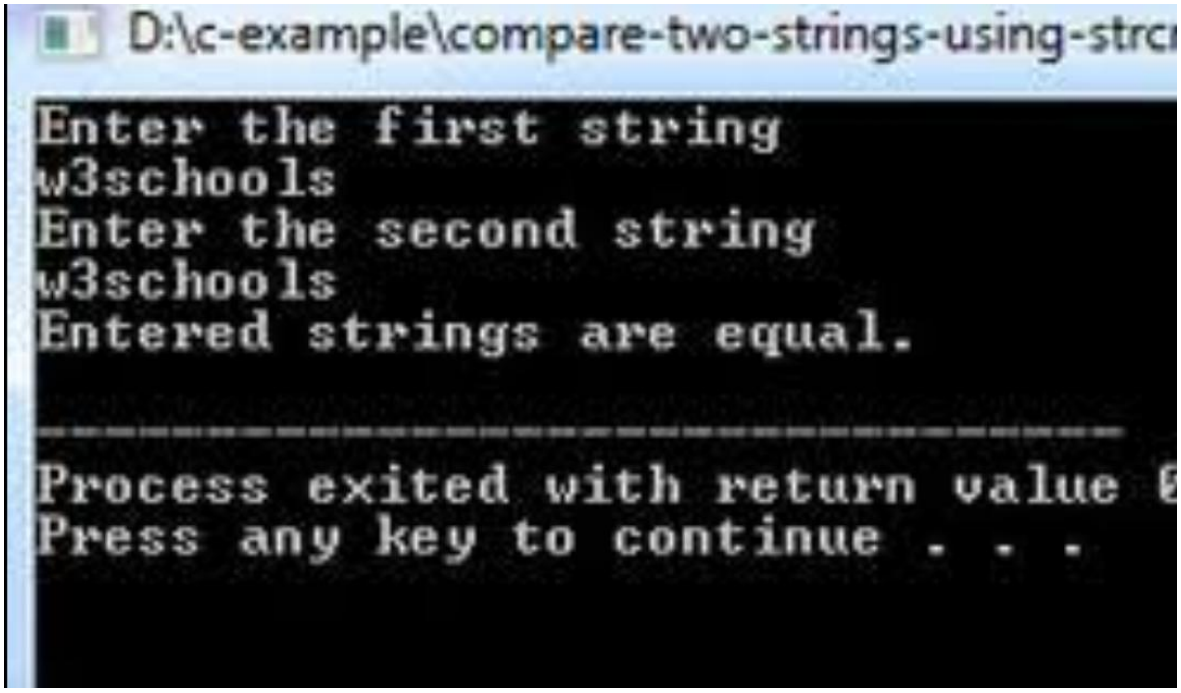
```
#include <stdio.h>
#include <string.h>

int main()
{
	char Str[100], CopyStr[100];
	int i;

	printf("\n Please Enter any String :  ");
	gets(Str);

	for (i = 0; Str[i]!='\0'; i++)
	{
		CopyStr[i] = Str[i];
	}
	CopyStr[i] = '\0';

	printf("\n String that we coped into CopyStr = %s",
CopyStr);
```

```
  printf("\n Total Number of Characters that we copied = %d\n",
  i);

        return 0;
}
```

OUTPUT:

```
Please Enter any String :  prasanna

String that we coped into CopyStr = prasanna
Total Number of Characters that we copied =
    8


=== Code Execution Successful ===
```

OUTPUT:


D:\c-example\compare-two-strings-using-strc
Enter the first string
w3schools
Enter the second string
w3schools
Entered strings are equal.
Process exited with return value
Press any key to continue . . .

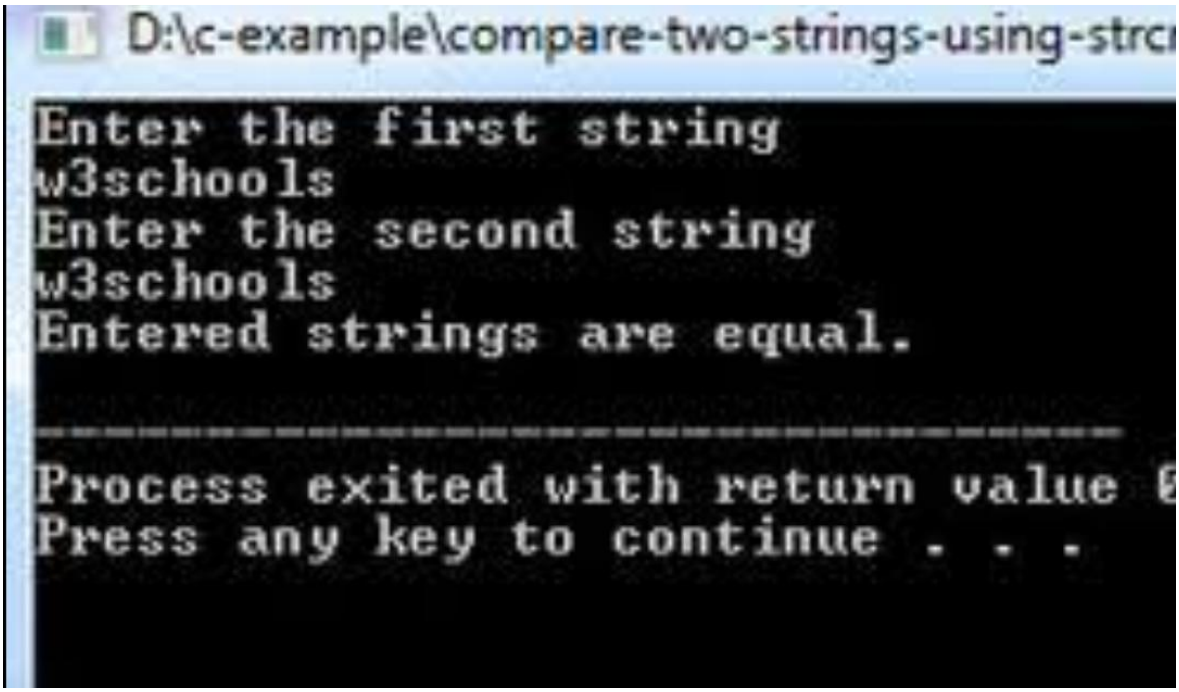
String strcmp

4.Compare String without Strcmp()

Program:

```
int compareStrings(char *str1, char *str2) {
 while (*str1 && (*str1 == *str2)) {
    str1++;
    str2++;
  }
  return *str1 - *str2;
}
```

OUTPUT:


D:\c-example\compare-two-strings-using-strcr
Enter the first string
w3schools
Enter the second string
w3schools
Entered strings are equal.
Process exited with return value 0
Press any key to continue . . .

String strcmp

5.Write a program that uses an array of pointers to strings str[].Recieve two strings str1 and str2 and check if str1 is embedded in any of the strings in str[],if str1 is found,then replace it with string 2
Char*Str[]={"we will teach you how to .....",
"Move a mountain ",Level a building",
"Erase the past",Make a million",
....all through!"}

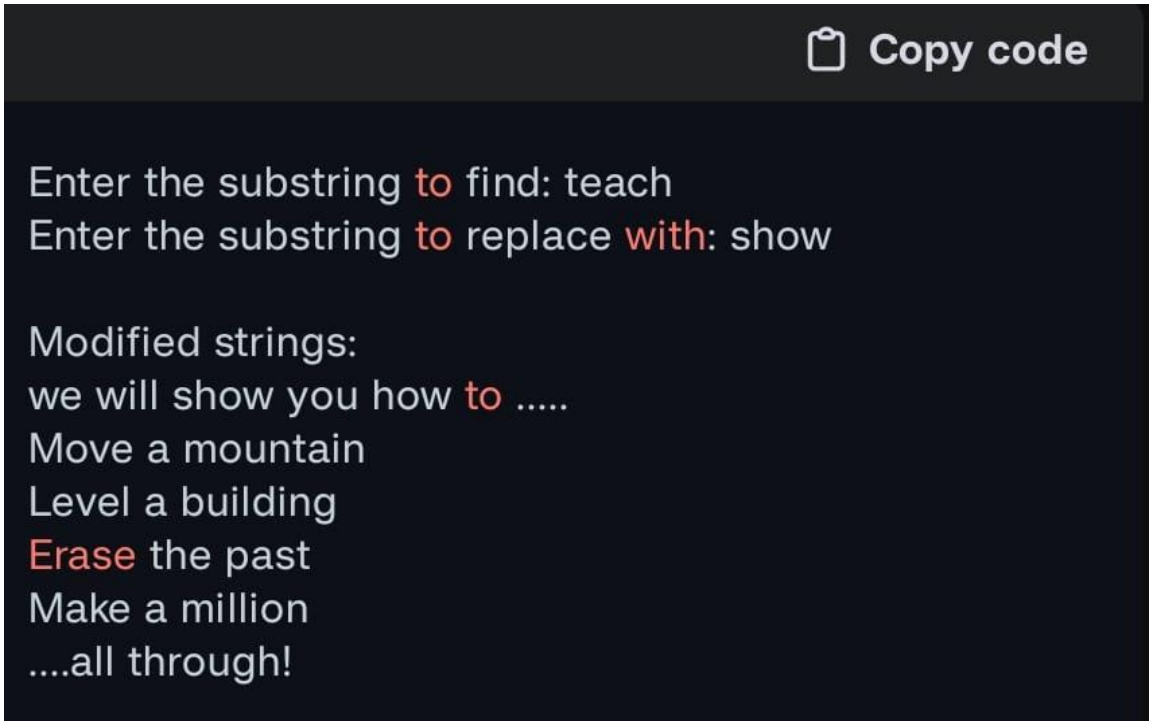
Program:

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

#define MAX_STRINGS 10
#define MAX_LENGTH 100

void replace_string(char* str[], char* str1, char* str2) {
    for (int i = 0; i < MAX_STRINGS; i++) {
        if (str[i] != NULL) {
            char* ptr = strstr(str[i], str1);
```

```
            if (ptr != NULL) {
                printf("Found '%s' in '%s'\n", str1, str[i]);
                // Replace str1 with str2
                char temp[MAX_LENGTH];
                strcpy(temp, str[i]);
                printf("Replacing '%s' with '%s' in '%s'\n", str1, str2,
str[i]);
                char* token = strtok(temp, str1);
                char new_string[MAX_LENGTH];
                sprintf(new_string, "%s%s%s", token, str2, ptr +
strlen(str1));
                strcpy(str[i], new_string);
                printf("Modified string: %s\n", str[i]);
            }
        }
    }
}

int main() {
    char* str[MAX_STRINGS] = {
        "We will teach you how to Move a mountain.",
        "Level a building.",
        "Erase the past.",
        "Make a million.",
        "All through!",
        NULL, NULL, NULL, NULL, NULL
    };

    char str1[] = "a ";
```

```
    char str2[] = "the ";

    replace_string(str, str1, str2);

    return 0;
}
```

Output:


Copy code
Enter the substring to find: teach
Enter the substring to replace with: show
Modified strings:
we will show you how to .....
Move a mountain
Level a building
Erase the past
Make a million
....all through!