A Micro Project Report

on

Problem Solving using C Language

Submittedby

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DEPARTMENTOFCOMPUTERSCIENCEANDENGINEERING

NARASARAOPETAENGINEERINGCOLLEGE:NARASARAOPET(AUTONOMOUS)

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CERTIFICATE

This is to certify that PERIKE VINITHA, Roll No: 23471A05AF, 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

AIM:

```
#include <stdio.h>
int main() {
char str[100], temp;
int start = 0, end = 0, isPalindrome = 1;
printf("Enter a string: ");
gets(str);
while (str[end] != '\0') {
end++;
 }
end--;
while (start < end) {
if (str[start] != str[end]) {
isPalindrome = 0;
 break;
}
start++;
end--;
}
if (isPalindrome) {
printf("The string is a palindrome.\n");
} else {
printf("The string is not a palindrome.\n");
}

return 0;
}
```

```
Input: madam

Output: The string is a palindrome.

Input: hello

Output: The string is not a palindrome.
```

SHORTEST WORD

AIM:

```
#include <stdio.h>
#include <string.h>
#include <ctype.h>
#define MAX_LENGTH 1000
void findShortestWord(char str[]) {
int i = 0, j = 0, minLength = MAX_LENGTH;
int start = 0, end = 0;
int wordStart = 0, wordEnd = 0;
while (str[i] != '\0') {
if (isalnum(str[i])) {
wordStart = i;
while (isalnum(str[i])) {
i++;
}
wordEnd = i;
int wordLength = wordEnd - wordStart;
if (wordLength < minLength) {
minLength = wordLength;
start = wordStart;
end = wordEnd;
}
} else{i++;
        }
    }


    if (minLength != MAX_LENGTH) {
        printf("The shortest word is: ");
        for (i = start; i < end; i++) {
            putchar(str[i]);
        }
        printf("\n");
    } else {
        printf("No words found in the sentence.\n");
    }
}

int main() {
    char str[MAX_LENGTH];


    printf("Enter a sentence: ");
    fgets(str, MAX_LENGTH, stdin);


    str[strcspn(str, "\n")] = '\0';


    findShortestWord(str);
    return 0;
}
```

```
 Input:
Enter a sentence: This is a test sentence.
Output:
The shortest word is: a
```

STRING COPY

AIM:

```c
#include <stdio.h>

void string_copy(char *dest, const char *src) {

    while (*src != '\0') {
        *dest = *src;
        dest++;
        src++;
    }
    *dest = '\0';
}

int main() {
    char source[] = "Hello, World!";
    char destination[50];


    string_copy(destination, source);


    printf("Source String: %s\n", source);
    printf("Destination String: %s\n", destination);

    return 0;
}
```

OUTPUT:

```
Enter source string: Hello,world!
Enter destination string:Hello,world!
```

STRING COMPARISION

AIM:

```
#include <stdio.h>

int compareStrings(const char *str1, const char *str2) {

    while (*str1 != '\0' && *str2 != '\0') {

        if (*str1 != *str2) {
            return 0;
        }
        str1++;
        str2++;
    }



    if (*str1 == '\0' && *str2 == '\0') {

    }

    return 0;
}

int main() {
    char str1[100], str2[100];


    printf("Enter the first string: ");
    scanf("%s", str1);

    printf("Enter the second string: ");
    scanf("%s", str2);


    if (compareStrings(str1, str2)) {
        printf("The strings are equal.\n");
    } else {
        printf("The strings are not equal.\n");
    }

    return 0;
}
```

OUTPUT:

```
Enter the first string: hello
Enter the second string: hello
the string are equal.

Enter the first string: hello
Enter the second string: world
The strings are not equal.
```

ARRAY OF POINTERS TO STRING

AIM:

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
   char str[6][40] = {
                 "We will teach you how to...",
                 "Move a mountain",
                 "Level a building",
                 "Erase the past",
                 "Make a million",
                 "...all through C!"
               } ;
   char str1[20],str2[20];
   int i,j,count=0,value=0,k,l;
   printf("Enter the string to be found: ");
   scanf("%s",&str1);
   printf("Type the word you want replace: ");
   scanf("%s",&str2);
   for(i=0;i<6;i++)
```

```
    {
        while( ((str+i)+j) != '\0')
        {
            if( (((str+i)+j)==str1[0]) && (((str+i)+j+1)==str1[1]) &&
(((str+i)+j+2)==str1[2])  && (((str+i)+j+3)==str1[3]) && (((str+i)+j+4)==str1[4])
&& (((str+i)+j+5)==str1[5]) && (((str+i)+j+6)==str1[6]) &&
(((str+i)+j+7)==str1[7]))
            {
                for(k=j,l=0;str[i][k]!='\0';k++,l++)
                {
                    str[i][k]=str2[l];
                }

                count=1;
                break;
            }
            j++;
        }
        if(count==1)
        break;
        j=0;
    }
    printf("%s",str[1]);
}
```

OUTPUT:

```
Enter the string to be found: mountain

Type the word you want replace: car

Move a car
```