Assignment - 18 A Job Ready Bootcamp in C++, DSA and IOT MySirG

String and Functions in C Language

1. Write a function to calculate length of the string

#include <stdio.h>

#include <string.h>

int stringLength(char str[])

{

int i = 0;

while (str[i] != '\0')

{

i++;

}

return i;

}

int main()

{

char str[100];

printf("Enter a string:\n");

fgets(str, 100, stdin);

int l = stringLength(str);

printf("The length of the string is %d ", l-1);

printf("\n");

return 0;

}

2. Write a function to reverse a string.

#include <stdio.h>

#include <string.h>

void reverse(char str[100])

{

int i, len;

len = strlen(str);

for (i = 0; i < len / 2; i++)

{

int temp = str[i];

str[i] = str[len - i - 1];

str[len - i - 1] = temp;

}

}

int main()

{

char str[100];

printf("Enter a word:\n");

fgets(str, 100, stdin);

reverse(str);

printf("Reversed string is :%s", str);

printf("\n");

return 0;

}

3. Write a function to compare two strings.

#include <stdio.h>

#include <string.h>

int stringCompare(char str1[], char str2[])

{

int i = 0;

while (str1[i] == str2[i])

{

if (str1[i] == '\0')

{

return 0;

}

i++;

}

return (str1[i] - str2[i]);

}

int main()

{

char string1[50], string2[50];

printf("Enter 1st string:\n");

fgets(string1,50,stdin);

printf("Enter 2nd string:\n");

fgets(string2,50,stdin);

int result = stringCompare(string1, string2);

if (result == 0)

{

printf("The strings are equal.\n");

}

else if (result < 0)

{

printf("String 1 is less than string 2.\n");

}

else

{

printf("String 1 is greater than string 2.\n");

}

return 0;

}

4. Write a function to transform string into uppercase

#include <stdio.h>

#include <string.h>

void upperCase(char str[100])

{

int i;

for (i = 0; str[i]; i++)

{

if (str[i] >= 'a' && str[i] <= 'z')

str[i] = str[i] - 32;

}

}

int main()

{

char str[100];

printf("Enter a word:\n");

fgets(str, 100, stdin);

upperCase(str);

printf("The string turned into all Uppercase letters: %s", str);

printf("\n");

return 0;

}

5. Write a function to transform a string into lowercase

#include<stdio.h>

#include<string.h>

void lowerCase(char str[100])

{

int i;

for(i=0;str[i];i++)

{

if(str[i]>='A'&& str[i]<='Z')

str[i]=str[i]+32;

}

}

int main()

{

char str[100];

printf("Enter a word:\n");

fgets(str,100,stdin);

lowerCase(str);

printf("The string after all the lettrs turned into lowecase:%s",str);

printf("\n");

return 0;

}

6. Write a function to check whether a given string is an alphanumeric string or not.

(Alphanumeric string must contain at least one alphabet and one digit)

#include<stdio.h>

#include<string.h>

void alphanumericString(char str[100])

{

int i,c1=0,c2=0;

for(i=0;str[i];i++)

{

if((str[i]>='A' && str[i]<='Z') || (str[i]>='a' && str[i]<='z'))

c1++;

else if(str[i]>='0' && str[i]<='9')

c2++;

}

if(c1 && c2)

printf("The string is alphanumeric");

else

printf("The String is not alphanumeric\n");

}

int main()

{

char str[100];

printf("Enter a string:\n");

fgets(str,100,stdin);

alphanumericString(str);

printf("\n");

return 0;

}

7. Write a function to check whether a given string is palindrome or not.

#include <stdio.h>

#include <string.h>

void palindrome(char str[])

{

int i, len = strlen(str);

for (i = 0; i < len / 2; i++)

{

if (str[i]!=str[len-2-i])

{

printf("The string is not a palindrome\n");

return;

}

}

printf("The string is a palindrome\n");

}

int main()

{

char str[100];

printf("Enter a string: ");

fgets(str, 100, stdin);

palindrome(str);

return 0;

}

8. Write a function to count words in a given string

#include<stdio.h>

#include<string.h>

int countWord(char str[])

{

int count = 0, i;

for(i=0; str[i] != '\0'; i++) {

if(str[i] == ' ' || str[i] == '\n' || str[i] == '\t') {

count++;

}

}

return count+1;

}

int main()

{

char str[100];

printf("Enter a string:\n");

fgets(str,100,stdin);

printf("The number of word present in the string is %d",countWord(str)-1);

printf("\n");

return 0;

}

9. Write a function to reverse a string word wise. (For example if the given string is

“Mysirg Education Services” then the resulting string should be “Services Education

Mysirg” )

#include <stdio.h>

#include <string.h>

void reverseString(char str[])

{

int i, j, len;

len = strlen(str);

for (i = len - 1; i >= 0; i--)

{

if (str[i] == ' ')

{

str[i] = '\0';

printf("%s ", &str[i] + 1);

}

}

printf("%s", str);

}

int main()

{

char str[100];

printf("Enter a string: ");

fgets(str, 100, stdin);

reverseString(str);

return 0;

}

10. Write a function to find the repeated character in a given string.

#include <stdio.h>

#include <string.h>

#define MAX\_SIZE 100

void find\_Repeat(char str[])

{

int rep[26] = {0}, i, len;

len = strlen(str);

for (i = 0; i < len; i++)

{

if (str[i] >= 'a' && str[i] <= 'z')

{

rep[str[i] - 'a']++;

}

if (str[i] >= 'A' && str[i] <= 'Z')

{

rep[str[i] - 'A']++;

}

}

for (i = 0; i < 26; i++)

{

if (rep[i] >1)

{

printf("%c is repeated %d times\n", i + 'A', rep[i]);

}

}

}

int main()

{

char str[MAX\_SIZE];

printf("Enter the string:\n");

fgets(str, MAX\_SIZE, stdin);

find\_Repeat(str);

printf("\n");

return 0;

}