Assignment - 17 A Job Ready Bootcamp in C++, DSA and IOT MySirG

String Basics in C Language

1. Write a program to calculate the length of the string. (without using built-in method)

#include <stdio.h>

#include <string.h>

int main()

{

int i, count = 0;

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

char arr[20];

fgets(arr, 20, stdin);

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

count++;

printf("%d\n", count - 1);

return 0;

}

2. Write a program to count the occurrence of a given character in a given string.

#include <stdio.h>

#include <string.h>

int countChar(char str[], char ch)

{

int i ,len, count = 0;

len = strlen(str);

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

{

if (str[i] == ch)

{

count++;

}

}

return count;

}

int main()

{

char str[100], ch;

int count;

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

fgets(str, 100, stdin);

printf("Enter a character to count: ");

scanf("%c", &ch);

count = countChar(str, ch);

printf("The character %c occurs %d times in the string.\n", ch, count);

return 0;

}

3. Write a program to count vowels in a given string

#include <stdio.h>

#include <string.h>

void countVowel(char str[])

{

int i, len, count = 0;

len = strlen(str);

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

{

if (str[i] == 'A' || str[i] == 'E' || str[i] == 'I' || str[i] == 'O' || str[i] == 'U' || str[i] == 'a' || str[i] == 'e' || str[i] == 'i' || str[i] == 'o' || str[i] == 'u')

count++;

}

printf("Number of vowels in the word is %d\n", count);

}

int main()

{

char str[100];

printf("Enter a word: ");

fgets(str, 100, stdin);

countVowel(str);

printf("\n");

return 0;

}

4. Write a program to convert a given string into uppercase

#include<stdio.h>

#include<string.h>

void Uppercase(char str[100])

{

int i,len;

len=strlen(str);

for(i=0;i<len;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("All the letters are turn into uppercase : %s",str);

printf("\n");

return 0;

}

5. Write a program to convert a given string into lowercase

#include <stdio.h>

#include <string.h>

void Lowercase(char str[100])

{

int i, len;

len = strlen(str);

for (i = 0; i < len; 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("All the letter turned into lowercase: %s", str);

printf("\n");

return 0;

}

6. Write a program 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;

}

7. Write a program in C to count the total number of alphabets, digits and special

characters in a string.

#include <stdio.h>

#include <string.h>

void countChars(char str[])

{

int i, len, alphaCount = 0, digitCount = 0, specialCount = 0;

len = strlen(str);

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

{

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

{

alphaCount++;

}

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

{

digitCount++;

}

else

{

specialCount++;

}

}

printf("Total number of alphabets: %d\n", alphaCount);

printf("Total number of digits: %d\n", digitCount);

printf("Total number of special characters: %d\n", specialCount - 1);

}

int main()

{

char str[100];

printf("Enter a string: ");

fgets(str, 100, stdin);

countChars(str);

return 0;

}

8. Write a program in C to copy one string to another string.

#include<stdio.h>

#include<string.h>

void copy(char str[100],char cstr[100])

{

int i,len;

len=strlen(str);

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

cstr[i]=str[i];

}

int main()

{

char str[100];

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

fgets(str,100,stdin);

char cstr[100];

copy(str,cstr);

printf("The copied string is %s",cstr);

printf("\n");

return 0;

}

9. Write a C program to sort a string array in ascending order.

#include <stdio.h>

#include <string.h>

int main()

{

char str[100];

int len, i, j, temp;

printf("Enter a string: ");

fgets(str, 100, stdin);

len = strlen(str);

for (i = 0; i < len - 1; i++)

{

for (j = i + 1; j < len; j++)

{

if (str[i] > str[j])

{

temp = str[i];

str[i] = str[j];

str[j] = temp;

}

}

}

printf("Sorted string in ascending order: %s\n", str);

return 0;

}

10. Write a program in C to Find the Frequency of Characters.

#include <stdio.h>

#include <string.h>

#define MAX\_SIZE 100

int main()

{

char str[MAX\_SIZE];

int freq[26] = {0}, i, length;

printf("Enter a string: ");

fgets(str, MAX\_SIZE, stdin);

length = strlen(str);

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

{

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

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

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

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

}

printf("Frequency of characters in the given string: \n");

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

{

if (freq[i] != 0)

printf("%c occurs %d times in the string.\n", i + 'a', freq[i]);

}

return 0;

}