**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>

int main() {

char str[220];

printf("enter your string: ");

gets(str);

int i;

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

printf("Length of the string: %d", i);

return 0;

}

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

#include <stdio.h>

int main() {

char str[220], repeat\_chart;

int count = 0;

printf("Enter your string: ");

fgets(str, 220, stdin);

printf("Enter your character: ");

scanf("%c", &repeat\_chart);

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

if (str[i] == repeat\_chart)

count++;

}

printf("Count the occurrence of a given character: %d", count);

return 0;

}

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

#include <stdio.h>

int main() {

char str[220];

int count = 0;

printf("Enter your string: ");

fgets(str, 220, stdin);

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

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

count++;

}

printf("Number of vowels: %d", count);

return 0;

}

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

#include <stdio.h>

#include <string.h>

int main() {

char str[220];

int i;

printf("Enter the string in lower cse: ");

fgets(str, 220, stdin);

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

if(str[i]>=97&&str[i]<=122)

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

}

printf("Uppercase string: %s", str);

return 0;

}

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

#include <stdio.h>

#include <string.h>

int main() {

char str[220];

int i;

printf("Enter the string uppercase: ");

fgets(str, 220, stdin);

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

if(str[i]>=65&&str[i]<=90 )

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

}

printf("Lowercase string: %s", str);

return 0;

}

6. Write a program to reverse a string.

#include <stdio.h>

#include <string.h>

int main() {

char str[220];

int i, len, temp;

printf("Enter the string: ");

fgets(str, 220, stdin);

len = strlen(str) - 1;

for (i = 0; i < len; i++, len--) {

temp = str[i];

str[i] = str[len];

str[len] = temp;

}

str[strlen(str)] = '\0';

printf("%s", str);

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 <ctype.h>

int main() {

char str[100];

int i, alphabets, digits, special;

alphabets = digits = special = 0;

printf("Enter a string: ");

fgets(str, 100, stdin);

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

if (isalpha(str[i])) {

alphabets++;

}

else if (isdigit(str[i])) {

digits++;

}

else {

special++;

}

}

printf("Total Alphabets: %d\n", alphabets);

printf("Total Digits: %d\n", digits);

printf("Total Special Characters: %d\n", special);

return 0;

}

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

#include <stdio.h>

#include <string.h>

int main() {

char source\_string[100];

char destination\_string[100];

int i;

printf("Enter the source string: ");

scanf("%s", source\_string);

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

destination\_string[i] = source\_string[i];

}

destination\_string[i] = '\0';

printf("Copied string is: %s\n", destination\_string);

return 0;

}

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

#include <stdio.h>

#include <string.h>

int main() {

char strings[10][50], temp[50];

int i, j, n;

printf("Enter the number of strings: ");

scanf("%d", &n);

printf("Enter %d strings:\n", n);

for (i = 0; i < n; i++) {

scanf("%s", strings[i]);

}

for (i = 0; i < n - 1; i++) {

for (j = i + 1; j < n; j++) {

if (strcmp(strings[i], strings[j]) > 0) {

strcpy(temp, strings[i]);

strcpy(strings[i], strings[j]);

strcpy(strings[j], temp);

}

}

}

printf("\nStrings in ascending order:\n");

for (i = 0; i < n; i++) {

printf("%s\n", strings[i]);

}

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[256] = {0}, i;

printf("Enter a string: ");

gets(str);

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

{

freq[str[i]]++;

}

printf("\nFrequency of each character in the given string: \n");

for(i = 0; i < 256; i++)

{

if(freq[i] != 0)

{

printf("%c -> %d\n", i, freq[i]);

}

}

return 0;

}