**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)

Sol – 1.

#include<stdio.h>

#include<conio.h>

int main()

{

int i;

char str[20];

printf("Enter a string : ");

fgets(str,20,stdin);

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

printf("Size of string is : %d",--i);

getch();

return 0;

}

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

Sol – 2.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int i,count=0;

char str[100],n;

printf("Enter a string : ");

fgets(str,100,stdin);

printf("Enter a chracter for occurance : ");

scanf("%c",&n);

str[strlen(str)-1]='\0';

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

{

if(str[i]==n)

count++;

}

printf("Occurance of %c is %d times",n,count);

getch();

return 0;

}

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

Sol – 3.

#include<stdio.h>

#include<conio.h>

int main()

{

int i,count=0;

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

for(i=0;str[i];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("Vowels in string : %d",count);

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

int main()

{

int i,count=0,count1=0,count2=0,count3=0,count4=0;

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

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

{

if((str[i]=='a'||str[i]=='A')&&count==0)

count++;

if((str[i]=='e'||str[i]=='E')&&count1==0)

count1++;

if((str[i]=='i'||str[i]=='I')&&count2==0)

count2++;

if((str[i]=='o'||str[i]=='O')&&count3==0)

count3++;

if((str[i]=='u'||str[i]=='U')&&count4==0)

count4++;

}

printf("Vowels in string : %d",count+count1+count2+count3+count4);

getch();

return 0;

}

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

Sol – 4.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]='\0';

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

{

if(str[i]>=97&&str[i]<123)

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

}

printf("String in upper case\n%s",str);

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

printf("String in upper case : %s",strupr(str));

getch();

return 0;

}

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

Sol – 5.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]='\0';

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

{

if(str[i]>=65&&str[i]<91)

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

}

printf("String in lower case\n%s",str);

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

printf("String in lower case : %s",strlwr(str));

getch();

return 0;

}

1. Write a program to reverse a string.

Sol – 6.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int temp,j;

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

j=strlen(str);

for(int i=0;i<=j/2;i++)

{

temp=str[i];

str[i]=str[j-(i+1)];

str[j-(i+1)]=temp;

}

printf("String in Reverse Order\n%s",str);

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]='\0';

printf("String in Reverse Order\n");

for(int i=strlen(str)-1;i>=0;i--)

{

printf("%c",str[i]);

}

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

printf("Reverse : %s",strrev(str));

getch();

return 0;

}

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

Sol – 7.

#include<stdio.h>

#include<conio.h>

int main()

{

int i,count=0,count1=0,count2=0;

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

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

{

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

count++;

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

count1++;

else

count2++;

}

printf("Alphabets : %d\nDigits : %d\nSpecial Character : %d",count,count1,count2-1);

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int i,count=0,count1=0,count2=0;

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]='\0';

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

{

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

count++;

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

count1++;

else

count2++;

}

printf("Alphabets : %d\nDigits : %d\nSpecial Character : %d",count,count1,count2);

getch();

return 0;

}

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

Sol – 8.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

char str[100],str2[100]={0};

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]='\0';

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

str2[i]=str[i];

printf("Copied string : %s",str2);

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

char str[100],str2[100];

printf("Enter a string : ");

fgets(str,100,stdin);

strcpy(str2,str);

printf("Copied string : %s",str2);

getch();

return 0;

}

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

Sol – 9.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int temp;

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

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

{

for(int j=i+1;str[j];j++)

{

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

{

temp=str[i];

str[i]=str[j];

str[j]=temp;

}

}

}

printf("String in ascending order : %s",str);

getch();

return 0;

}

OR

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int temp;

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

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

{

for(int j=i+1;str[j];j++)

{

if(str[i]>=65&&str[i]<91)

{

if(str[j]>=97||str[j]<str[i])

{

temp=str[i];

str[i]=str[j];

str[j]=temp;

}

}

if(str[i]>=97&&str[i]<123)

{

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

{

temp=str[i];

str[i]=str[j];

str[j]=temp;

}

}

}

}

printf("String in ascending order : %s",str);

getch();

return 0;

}

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

Sol – 10.

#include<stdio.h>

#include<conio.h>

#include<string.h>

int main()

{

int i,a[256]={0};

char str[100];

printf("Enter a string : ");

fgets(str,100,stdin);

str[strlen(str)-1]=0;

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

{

a[str[i]]++;

}

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

{

if(a[i])

printf("Frequency of %c is %d\n",i,a[i]);

}

getch();

return 0;

}