String Basics in C Language
Assignment:-17

Name:-Sourav Samanta

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

```c
#include<stdio.h>
int main()
{
    char str[20]="Sourav Samanta";
    int i;
    for(i=0;str[i];i++);
    printf("Length of the string is=%d",i);
    return 0;
}
```

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

```c
#include<stdio.h>
int main()
{
    char str[50],c;
    printf("Enter any string ");
    fgets(str,50,stdin);
    printf("\nEnter a character to count the occurrence in this string\n");
    scanf("%c",&c);
    int i,count=0;
    for(i=0;str[i];i++)
    {
        if(c==str[i])
            count++;
    }
    printf("The total no of time %c occur in given string is=%d",c,count);
    return 0;
}
```

3. Write a program to count vowels in a given string
Ans:-

```c
#include<stdio.h>
int main()
{
    char str[50];
    printf("Enter any string ");
    fgets(str,50,stdin);
    int i,count=0;
    for(i=0;str[i];i++)
    {
```

```c
        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 given string  is=%d",count);
    return 0;
}
```

4. Write a program to convert a given string into uppercase.
Ans:-
```c
 #include<stdio.h>
int main()
{
    char str[50];
    printf("Enter any string with small letters\n");
    fgets(str,50,stdin);
    int i;
    printf("String in upper case:---------\n");
    for(i=0;str[i];i++)
    {
        if(str[i]>='a' && str[i]<='z')
            str[i]-=32;
        printf("%c",str[i]);
    }
    return 0;
}
```

5. Write a program to convert a given string into lowercase
Ans:-
```c
#include<stdio.h>
int main()
{
    char str[50];
    printf("Enter any string with capital letters\n");
    fgets(str,50,stdin);
    int i;
    printf("String in lower case:---------\n");
    for(i=0;str[i];i++)
    {
        if(str[i]>='A' && str[i]<='Z')
            str[i]+=32;
        printf("%c",str[i]);
    }
    return 0;
}
```

6. Write a program to reverse a string.
Ans:-
```c
#include<stdio.h>
int main()
```

```c
{
    char str[10]="abcdefg",ch;
    int i,j;
    for(i=0;str[i];i++);
    if(i%2)
        for(j=0;j<=i/2;j++)
        {
            ch=str[j];
            str[j]=str[i-j-1];
            str[i-j-1]=ch;
        }
    else
        for(j=0;j<=i/2-1;j++)
        {
            ch=str[j];
            str[j]=str[i-j-1];
            str[i-j-1]=ch;
        }
    for(i=0;str[i];i++)
        printf("%c",str[i]);
    return 0;
}/
```

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

Ans:-
```c
#include<stdio.h>
int main()
{
    char str[30]="abcdef1234@$%^&.;",ch;
    int i,counta=0,countd=0,countc=0;
    for(i=0;str[i];i++)
    {
        if((str[i]>='a' && str[i]<='z') ||(str[i]>='A' && str[i]<='Z') )
            counta++;
        else if(str[i]>='0' && str[i]<='9')
            countd++;
        else
            countc++;
    }
    printf("Total no of alphabets=%d\nDigits=%d\nSpecial
character=%d",counta,countd,countc);
    return 0;
}
```

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

Ans:-
```c
#include<stdio.h>
int main()
```

```c
{
    char str[20]="Sourabh Sir",a[20]="\0";
    int i;
    for(i=0;str[i];i++)
        a[i]=str[i];
    printf("%s",a);
    return 0;
}
```

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

Ans:-

```c
#include<stdio.h>
int main()
{
    char str[20]="hgfedcba",x;
    int i,j;
    for(i=0;str[i];i++)
    {
      x=str[i];
      for(j=i;str[j];j++)
        x=x<str[j]?x:str[j];
      for(j=i;str[i];j++)
        if(x==str[j])
        {
            str[j]=str[i];
            str[i]=x;
            break;
        }
    }
    printf("%s",str);
    return 0;
}
```

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

Ans:-

```c
#include<stdio.h>
int main()
{
    char str[20]="Sourav Samanta",x;
    int i,j,count;
    for(i='a';i<='z';i++)
    {
      count=0;
      x=i;
      for(j=0;str[j];j++)
      {
        if(str[j]==x)
          count++;
      }
```

```c
    if(count>0)
        printf("%c appear %d times in given string\n",x,count);
    }
    for(i='A';i<='Z';i++)
    {
     count=0;
     x=i;
     for(j=0;str[j];j++)
     {
        if(str[j]==x)
          count++;
     }
     if(count>0)
        printf("%c appear %d times in given string\n",x,count);
    }
    return 0;
}
```