**STRING:**

- **String:**

A String is a sequence of characters that is treated as a single data item. String is defined as arrays of characters. Character strings are often used to build meaningful and readable programs. The common operations performed on character strings include:

- Reading and Writing string
- Combining string together
- Copying one string to another
- Comparing string for equality
- Extracting a portion of a string

- **Standard Library String functions**

| Function | Use |
|---|---|
| Strlen | Finds length of a string |
| Strlwr | Converts a string to lowercase |
| Strupr | Converts a string to uppercase |
| Strcat | Appends one string at the end of another |
| Strncat | Appends first n characters of a string at the end of another |
| Strcpy | Copies a string into another |
| Strncpy | Copies first n characters of one string to another |
| Strcmp | Compares two strings |
| Strcmpi | Compares two strings without regard to case("i" denotes that this function ignore case) |
| stricmp | Compares two strings without regard to case(identical to strcmpi) |
| strnicmp | Compares first n characters of two strings without regard case |
| strdup | Duplicates a string |
| strchr | Finds first occurrence of given character in a string |
| strrchr | Finds last occurrence of a given character in a string |
| strstr | Finds all occurrence of a given string in another string |
| strset | Sets all characters of a string to a given character |
| strnset | Sets first n characters of a string to a given character |
| strrev | Reverses a string |

**S1. Write a program to calculate the number of words in a string**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20];
```

```
int b,i;
clrscr();
printf("\n Enter a string---->");
gets(a);
printf("\n          %s",a);
i=0;
while(a[i]!='\0')
{
if(a[i]==' ')
b++;
i++;
}
printf("\n\nThe number of words of the string is----->%d",b+1);
getch();
}
```

**Output**

```
 Enter a string---->Ram Krishna is a great man
         Ram Krishna is a great man
The number of words of the string is----->6
```

**S2. Write a program to find how many times does a character occur in a given string**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20],c;
int b=0,i;
clrscr();
printf("\n Enter a string---->");
gets(a);
 printf("\n          %s",a);
printf("\n Enter a character---->");
scanf("%c",&c);
i=0;
while(a[i]!='\0')
{
if(a[i]==c)
b++;
```

```
i++;
}
printf("\n\nTotal time use of given character in the string is----->%d",b+1);
getch();
}
```

**Output**

```
 Enter a string---->Ram Krishna
        Ram Krishna
 Enter a character----->r
Total time use of given character in the string is----->2
```

**S3. Write a program to replace all occurrences of a character in a given string**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20],c,r;
int i;
clrscr();
printf("\n Enter a string---->");
gets(a);
printf("\n          %s",a);
printf("\n Enter a character which want to replace---->");
scanf("%c",&c);
printf("\nEnter a character which want to use for substitution---->");
fflush(stdin);                          /*clear the buffer*/
scanf("%c",&r);
i=0;
while(a[i]!='\0')
{
if(a[i]==c)
{
a[i]=r;
}
i++;
}
printf("\nAfter the operation\n");
printf("\n        %s",a);
```

```
getch();
}
```

**Output**

```
 Enter a string---->ram krishna
         ram krishna
 Enter a character which want to replace---->r
Enter a character which wants to use for substitution---->s

After the operation
       sam ksishna
```

**S4. Write a C program to delete all occurrences of a character in a given string**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20],c;
int i;
clrscr();
printf("\n Enter a string---->");
gets(a);
printf("\n          %s",a);
printf("\n Enter a character which wants to remove---->");
scanf("%c",&c);
i=0;
while(a[i]!='\0')
{
if(a[i]==c)
{
a[i]=' ';
}
i++;
}
printf("\nAfter the operation\n");
printf("\n        %s",a);
getch();
}
```

**Output**

```
 Enter a string---->book is important
         book is important
 Enter a character which wants to remove---->o
After the operation
       b  k is imp rtant
```

**S5. Write a C program to reverse a string (use of strrev() function).**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20];
int b;
clrscr();
printf("\n Enter a string---->");
gets(a);
printf("\n          %s",a);
strrev(a);
printf("\n\nAfter reversing");
printf(" \n         %s",a);
getch();
}
```

**Output**

```
 Enter a string---->Ram Krishna

         Ram Krishna

After reversing
        anhsirK maR
```

**S6.  Copy a given string into another string (use of strcpy() function).**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20],b[20];
```

```
clrscr();
printf("\n Enter a string---->");
gets(a);
printf("\n          %s",a);
strcpy(b,a);
printf("\n\nAfter copy the string");
printf(" \n         %s",b);
getch();
}
```

**Output**

```
Enter a string---->Ram Krishna
         Ram Krishna
After copy the string
        Ram Krishna
```

**S7. Find Achromatic String into a given string**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20];
int i;
clrscr();
printf("\n Enter a string---->");
gets(a);
printf("\n\n%s",a);
i=0;
printf("\n\n%c.",a[0]);
while(a[i]!='\0')
{
if(a[i]==' ')
{
i++;
printf("%c.",a[i]);
}
i++;
}
```

```
getch();
}
```
**Output**

```
 Enter a string---->Ram Krishna
Ram Krishna
R.K.
```

**S8. Write a program to compare two strings using of strcmp() function.**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20],b[20];
int i;
clrscr();
printf("\n Enter a string1---->");
gets(a);
printf("\n Enter a string2---->");
gets(b);
printf("\n\nString1------>%s",a);
printf("\n\nString2------>%s",b);
i=strcmp(a,b);
if(i==0)
printf("\nThe strings are equal");
else
printf("\nThe strings are not equal");
getch();
}
```

**Output**

```
 Enter a string1---->Ram Krishna
 Enter a string2---->Ram Krishna
String1------>Ram Krishna
String2------>Ram Krishna
The strings are equal
 Enter a string1---->Ram Krishna
 Enter a string2---->Krishna
String1------>Ram Krishna
String2------>Krishna
```

The strings are not equal

**S9. Write a program to Convert the string into a string having all letters in upper case, use of strupr() function.**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20],b[20];
int i;
clrscr();
printf("\n Enter a string1---->");
gets(a);
printf("\n\nString1------>%s",a);
strupr(a);
printf("\n\n After operation");
printf("\n\nString1------>%s",a);
getch();
}
```

Output

```
 Enter a string1---->Ram Krishna
String1------>Ram Krishna
 After operation
String1------>RAM KRISHNA
```

**S10. Write a program to Combining two strings (use of strcat() function).**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20],b[20];
int i;
clrscr();
printf("\n Enter a string1---->");
gets(a);
printf("\n Enter a string2---->");
gets(b);
```

```
printf("\n\nString1------>%s",a);
printf("\n\nString2------>%s",b);
strcat(a,b);
printf("\n\n After operation");
printf("\n\nString1------>%s",a);
getch();
}
```

**Output**

```
 Enter a string1---->Ram
 Enter a string2---->Gopal
String1------>Ram
String2------>Gopal
 After operation
String1------>RamGopal
```

**S11. Write a program to find a sub string in a given string**

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
char a[20],c[10];
int i,j=0,found=0,e1,e2;
clrscr();
printf("\n Enter a string---->");
gets(a);
printf("\n          %s",a);
printf("\n Enter a sub string which you want to search---->");
gets(c);
i=0;
e1=strlen(a);
e2=strlen(c);
if(e2<=e1)
{
while(a[i]!='\0'&&c[j]!='\0')
{
if(a[i]==c[j])
{
i++;
j++;
```

```
found=1;
}
else
{
j=0;
i++;
found=0;
}
if(a[i]=='\0'&&c[j]!='\0')
{
found=0;
break;
}
}
if(found==1)
printf("\nThe sub string is found\n");
else
printf("\nThe sub string is not found");
}
else
printf("\nThe sub string is greater than main string");
getch();}
```

**Output**

```
 Enter a string---->Ram Krishna is great
        Ram Krishna is great
 Enter a sub string which you want to search---->is
The sub string is found.
```

**POINTER**