UNIT :→ 3

☆ Strings :→

Strings are generally used to store and manipulate data s in text form like words or sentence. There is no seperate datatype for string in 'C'.

They are created as array of typer char. A Character array is string if it end

with a null character.

String Constant or String literal :-
A String constant is a sequence of character inclose in " " (double cots) It is sometimes called a literal.
The double cots are not a part of the string.
Some examples of String constant are :-

"V"
"New Delhi"
"2345"
"Sentence"

Whenever a string constant is written anywhere in program, It is stored somewhere memory as an array of character terminated by null character ('\0').

The String constant itself becomes a pointer to the first character in the array.
For Ex :-
The String "Taj Mahal" will be stored in the memory as,

1000	1001	1002	1003	1004	1005	1006	1007	1008	1009
T	a	j		m	a	h	a	l	\0

Each character occupy 1 byte and compiler automatically insert the \0 null character at the end.
The String constant "Taj Mahal" is actually a pointer to the character to 'T'.

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If we have a pointer variable of type char* then we can assign the address of the String constant to it as,

```
char *p = "Taj Mahal";
```

① :- W.A.P to print characters of a string and address of each character :-

```
#include<stdio.h>
#include<conio.h>
void main()
{
  clrscr();
 int i;

char str[5] = "India";
 for(i=0; i<5; i++)
{
printf("Character is : %c\n", str[i]);
printf("Address is : %u\n", &str[I]);
}
 getch();
}
```

Output :-

I	——	1000
N	——	1001
D	——	1002
I	——	1003
A	——	1004

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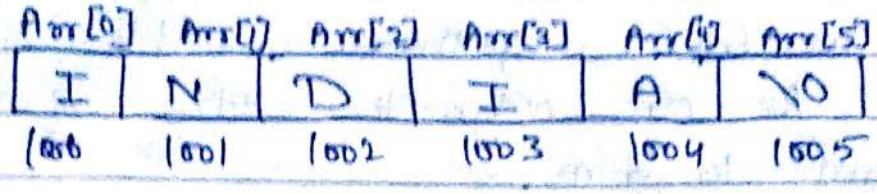

★ String Library functions :→

There are several library functions used to manipulate string. The prototype of these functions are in header file <string.h>. We will discuss some of them below :-

1. Strlen() :→ This function written's the length of the string.
The no. of characters in the string excluding the terminating null character.
For Ex :- Strlen ("India") writtens the value 05. Similarly, if S1 is an array that contain the name "BCA", then Strlen (S1) writtens a value 3.

Q15:- W.A.P to understand the work of Strlen() fun?→

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

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```
int length;
printf("Enter the String:");
scanf("%s", str[length]);
length = strlen(str);

printf("Length = %d", length);

getch();
}
```

Output :-

Enter the String: Mayank
length = 6

2. Strcmp() :-

This function is used for comparison of 2 Strings. If the two string match, strcmp() returns a value 0, otherwise return non-zero value.

This function compare the string character by character.

Q16: W.A.P to Understand the work of strcmp() :→

```
#include<stdio.h>
#include<string.h>
#include<conio.h>
void main()
{
clrscr();
Char Str1[10], Str2[10];

printf("Enter the first String");
```

```
scanf("%s", str1);
printf("Enter the second string");
scanf("%s", str2);

if((strcmp(str1, str2)==0)

printf("String are same");
else
printf("String are not same");

getch();
}
```

Output :→

Enter the first String : Mayank
Enter the second string: rana
String are not same.

Enter the first String : Mayank
Enter the second String : Mayank
String are same.

★ Strcpy( ):-

This function is use for copying another string
Here, Strcpy (Str 1, str2) ,

Here Str 2 is the source String & Str 1 is a destinition string
If Str 2 = "BCA", then this function copies BCA into Str 1, this function take pointer two strings as arguements and writtens the pointer to first String.

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Q1. W.A.P to understand the work of Strcpy():

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
void main()
{
  clrscr();
char Str1[10], Str2[10];

printf("Enter the first String:\n");
scanf("%s", Str1);

printf("Enter the Second String:\n");
scanf("%s", str2);

strcpy(str1, str2);

printf("Str1 = %s \n str2 = %s", str1, str2);

 getch();

}
```

Output:→

```
Enter the first String:
mayank

Enter the second String:
rana
Str1 = rana
Str2 = rana
```

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★ Strcat( ) :→

This function is used for concatenation If first string is "xyz" hence second string is "abc".

After using this function, the first string becomes "xyz abc".

Strcat(Str1, Str2)

The null character from the first string is removed and the second string is added at the end of first string.

The second string remains unaffected.

Q18 :- W.A.P to understand the work of Strcat():

```
#include<stdio.h>
#include<conio.h>
#include<string.h>
  void main()
{
    clrscr();
char str1[10], str2[10];
printf("Enter the first string: \n");
scanf("%s", str1);

printf("Enter the second String:\n");
scanf("%s", str2);

strcat(str1, str2);

printf("str1 = %s\n str2 = %s", str1, str2);
```

```
    printf("\n\n");

    getch();
}
```

Output :→

```
Enter the first String:
mayank
Enter the second String:
rana
Str 1 = mayankrana
Str 2 = rana
```