

**Course
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Introduction to 'C' Language

Arrays and Strings in C Language

Module 05 - String Functions in C Language

 **CBSE**

What Are String Functions in C?

String functions in C are special functions provided by the standard library to perform various operations on strings. A string in C is essentially an array of characters terminated by a null character (\0). These functions help manipulate and process strings efficiently.

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COMMON FUNCTIONS IN STRING		
<i>Type</i>	<i>Method</i>	<i>Description</i>
<i>char</i>	<i>strcpy(s1, s2)</i>	Copy string
<i>char</i>	<i>strcat(s1, s2)</i>	Append string
<i>int</i>	<i>strcmp(s1, s2)</i>	Compare 2 strings
<i>int</i>	<i>strlen(s)</i>	Return string length
<i>char</i>	<i>strchr(s, int c)</i>	Find a character in string
<i>char</i>	<i>strstr(s1, s2)</i>	Find string s2 in string s1

1. String Copy: strcpy():

It is used to copy one string to another string. The content of the second string is copied to the content of the first string.

Syntax: strcpy (string 1, string 2);

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Example:

```
c Copy code  
  
char s1[20], s2[20] = "Hello";  
strcpy(s1, s2);  
printf("s1: %s", s1); // Output: s1: Hello
```

Explanation:

strcpy takes two arguments:

- s1 : Destination string (where to copy).
 - s2 : Source string (what to copy).
- The content of s2 is copied into s1.

2. String Concatenate: strcat(s1, s2):

It is used to concatenate i.e, combine the content of two strings.

Syntax: strcat(string 1, string 2);

Example:

```
c Copy code  
  
char s1[30] = "Hello, ", s2[] = "World!";  
strcat(s1, s2);  
printf("%s", s1); // Output: Hello, World!
```

Explanation:

strcat joins s2 at the end of s1. Ensure s1 has enough space to hold both strings.

3. String Length: strlen():

Returns the number of characters in the string s (excluding the null character \0).

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Example:

4.

```
c Copy code
char s[] = "Programming";
int len = strlen(s);
printf("Length of string: %d", len); // Output: 11
```

Explanation:

strlen counts how many characters are in s.

4. String Compare: strcmp():

It is used to compare the contents of the two strings. If any mismatch occurs then it results the difference of ASCII values between the first occurrence of 2 different characters.

Example:

```
c Copy code
char s1[] = "Apple", s2[] = "Banana";
int result = strcmp(s1, s2);
if(result == 0)
    printf("Strings are equal");
else if(result < 0)
    printf("s1 is less than s2");
else
    printf("s1 is greater than s2");
```

Explanation:

- Returns 0 if both strings are equal.
- Returns < 0 if s1 is lexicographically less than s2.
- Returns > 0 if s1 is greater than s2.



5. String Character: strchr():

It is used to find a character in the string and returns the index of occurrence of the character for the first time in the string.

Example:

```
c Copy code  
  
char s[] = "Hello, World!";  
char *ptr = strchr(s, 'W');  
if(ptr)  
    printf("Found at position: %ld", ptr - s); // Output: Found at position: 7
```

6. Find Substring: strstr(s1, s2):

It is used to return the existence of one string inside another string and it results the starting index of the string.

Syntax: strstr(cstr1, cstr2);

Example:

```
c Copy code  
  
char s1[] = "This is a sample string", s2[] = "sample";  
char *ptr = strstr(s1, s2);  
if(ptr)  
    printf("Found substring: %s", ptr); // Output: sample string
```

Explanation:

Returns a pointer to the first occurrence of s2 in s1. If s2 is not found, it returns NULL.

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Assignment

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Ques 1: Write a program to concatenate three strings to form a single sentence.
Input:
• First String: "Welcome"
• Second String: "to"
• Third String: "C Programming"
Expected Output: "Welcome to C Programming"

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Ques 2: Write a program to find the first occurrence of a character in a string using strchr.

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Input:
• String: "Programming"
• Character to find: 'r'
Expected Output: Display the position of 'r' in the string.

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Ques 3: Write a program to find the first occurrence of a character in a string using strchr.

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Input:
• String: "Education"
• Character to find: 'c'
Expected Output: Display the position of 'c' in the string.

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Ques 4: Write a program to calculate the length of a given string using strlen.
Input: "Programming"

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Ques 5: Write a program to compare two strings using strcmp and display whether they are equal or which one is greater.

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Input:
• First String: "Apple"
• Second String: "apple"

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