

Strings in C Language

For Shastri 2nd yr 4th Semester

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Introduction

- Strings characters का समूह होता है ।
- Strings ये One-dimensional array होता है, जिसमे सिर्फ characters होते है ।
- String का आखिरी character 'NULL'(\0) होता है ।
- अगर पूरा string लिखना हो तो उसे double quotes (" ") में लिखा जाता है । अगर एक-एक character को लिखना हो तो उसे single quotes (' ') में लिखा जाता है ।
- String का data type character (char) होता है ।

```
char str1[6] = {'H', 'e', 'l', 'l', 'o', '\0'}; or  
char str2[6] = "Hello"; or  
char str3[ ] = "Hello";
```

```
#include <stdio.h>
int main()
{ char str1[6] = {'H', 'e', 'l', 'l', 'o', '\0'};
  char str2[6] = "Hello";
  char str3[] = "Hello";
  printf("Value of str1 : %s\n", str1);
  printf("Value of str2 : %s\n", str2);
  printf("Value of str3 : %s", str3);
  return 0;
}
```

Output :

```
Value of str1 : Hello
Value of str2 : Hello
Value of str3 : Hello
```

String Representation

- String में एक से अधिक character होते हैं इसीलिए '%s' इस format specifier का इस्तेमाल करते हैं | अगर single character को print करना हो तो '%c' इस format specifier का इस्तेमाल किया जाता है |

- **Print String using '%s' format specifier**

```
char str[6] = {'H', 'e', 'l', 'l', 'o', '\0'};
```

```
printf("Value of str : %s\n", str1);
```

Output :

Value of str : Hello

- **Print String using '%c' format specifier:**

```
char str[6] = {'H', 'e', 'l', 'l', 'o', '\0'};
printf("Value of str[0] : %c\n", str[0]);
printf("Value of str[1] : %c\n", str[1]);
printf("Value of str[2] : %c\n", str[2]);
printf("Value of str[3] : %c\n", str[3]);
printf("Value of str[4] : %c\n", str[4]);
printf("Value of str[5] : %c\n", str[5]);
```

Output :

Value of str[0] : H

Value of str[1] : e

Value of str[2] : l

Value of str[3] : l

Value of str[4] : o

Value of str[5] : NULL Character is not shown

Sizeof() Operator

- Program में हर एक String के initialization में अलग-अलग size है | दिए हुए array के size की memory allocate की जाती है | अगर Array का size नहीं दिया जाता तो जितनी size string की है उतनी size array allocate करता है |
Sizeof() ऑपरेटर के द्वारा हम किसी भी variable का साइज पता कर सकते हैं |

Source Code :

```
#include <stdio.h>
```

```
int main()
```

```
{ char str1[20] = {'H', 'e', 'l', 'l', 'o', '\0'};
```

```
char str2[10] = "Hello"; //using  
array_size
```

```
char str3[] = "Hello"; //without using  
array_size
```

```
printf("Size of str1 : %d\n", sizeof(str1));
```

```
printf("Size of str2 : %d\n", sizeof(str2));
```

```
printf("Size of str3 : %d", sizeof(str3));
```

```
return 0;
```

```
}
```

Output:

Size of str1 : 20

Size of str2 : 10

Size of str3 : 6

Questions

1. What is the use of a '\0' character?
 - Ans. It is referred to as a terminating null character, and is used primarily to show the end of a string value.
2. How do you declare a variable that will hold string values?
 - Ans. The char keyword can only hold 1 character value at a time. By creating an array of characters, you can store string values in it. Example: "char MyName[50];" declares a string variable named MyName that can hold a maximum of 50 characters.
3. Write some functions related to strings in C language.
 - Hint. Strlen(), strcpy(), etc.

References

- <http://www.easyhinditutorials.com/>
- <https://ehindistudy.com/>
- <https://www.hindilearn.in>
- <https://www.w3resource.com/>