**String**

A String in C programming is a sequence of characters terminated with a null character ‘\0’.

Strings are used for storing text/characters.

For example, "Hello World" is a string of characters.

 C does not have a **String type** to easily create string variables. Instead, you must use the char type and create an [array](https://www.w3schools.com/c/c_arrays.php) of characters to make a string in C:

char greetings[] = "Hello World!";

#include <stdio.h>

int main() {

char greetings[] = "Hello World!";

printf("%s", greetings);

return 0;

}

**Access Strings**

Since strings are actually [arrays](https://www.w3schools.com/c/c_arrays.php) in C, you can access a string by referring to its index number inside square brackets [].

This example prints the first character (0) in greetings:

char greetings[] = "Hello World!";  
printf("%c", greetings[0]);

**Loop Through a String**

You can also loop through the characters of a string, using a for loop:

#include <stdio.h>

int main() {

char carName[] = "Volvo";

int i;

for (i = 0; i < 5; ++i) {

printf("%c\n", carName[i]);

}

return 0;

}

**String Functions**

C also has many useful string functions, which can be used to perform certain operations on strings.

To use them, you must include the <string.h> header file in your program:

**To find string length**

#include <stdio.h>

#include <string.h>

int main() {

char alphabet[] = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";

printf("%d", strlen(alphabet));

printf("%d", sizeof(alphabet));

return 0;

}

It is also important that you know that sizeof will always return the memory size (in bytes), and not the actual string length:

char alphabet[50] = "ABCDEFGHIJKLMNOPQRSTUVWXYZ";  
printf("%d", strlen(alphabet));   // 26  
printf("%d", sizeof(alphabet));   // 50

**Concatenate Strings**

#include <stdio.h>

#include <string.h>

int main() {

char str1[20] = "Hello ";

char str2[] = "World!";

// Concatenate str2 to str1 (the result is stored in str1)

strcat(str1, str2);

// Print str1

printf("%s", str1);

return 0;

}

**Copy Strings**

To copy the value of one string to another, you can use the strcpy() function:

char str1[20] = "Hello World!";  
char str2[20];  
  
// Copy str1 to str2  
strcpy(str2, str1);  
  
// Print str2  
printf("%s", str2);

**Compare Strings**

To compare two strings, you can use the strcmp() function.

It returns 0 if the two strings are equal, otherwise a value that is not 0:

#include <stdio.h>

#include <string.h>

int main() {

char str1[] = "Hello";

char str2[] = "Hello";

char str3[] = "Hi";

// Compare str1 and str2, and print the result

printf("%d\n", strcmp(str1, str2));

// Compare str1 and str3, and print the result

printf("%d\n", strcmp(str1, str3));

return 0;

}