

C Strings

The C-Style Character String

The C-style character string originated within the C language and continues to be supported within C++. This string is actually a one-dimensional array of characters which is terminated by a **null** character '\0'. Thus a null-terminated string contains the characters that comprise the string followed by a **null**.

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

```
char greeting[] = "Hello";
```

Index	0	1	2	3	4	5
Variable	H	e	l	l	o	\0
Address	0x23451	0x23452	0x23453	0x23454	0x23455	0x23456

Sample Program

```
#include <iostream>

using namespace std;

int main() {
    char greeting[6] = { 'H', 'e', 'l', 'l', 'o', '\0' };
    cout << "Greeting message: ";
    cout << greeting << endl;
    return 0;
}
```

strcpy_s

```
#include <iostream>
```

```
using namespace std;
```

```
int main() {
```

```
char s1[] = "abc";
```

```
char s2[5] = "";
```

```
strcpy_s(s2, s1);
```

```
cout << s1 << " , " << s2;
```

```
return 0;
```

```
}
```

strcpy(s1, s2);

Copies string s2 into string s1.

strcmp

```
#include <iostream>
```

```
#include <cstring>
```

```
using namespace std;
```

```
int main()
```

```
{
```

```
    char key[] = "mango";
```

```
    char buffer[50];
```

```
    do {
```

```
        cout << "What is my favourite fruit? ";
```

```
        cin >> buffer;
```

```
    } while (strcmp(key, buffer) == 0);
```

```
    cout << "Answer is correct!!" << endl;
```

```
    return 0;
```

```
}
```

strcmp(s1, s2);

Returns 0 if s1 and s2 are the same; less than 0 if s1<s2; greater than 0 if s1>s2

C++ String to read a line of text

```
#include <iostream>

using namespace std;

int main()
{
    char str[100];
    cout << "Enter a string: ";
    cin.get(str, 100);
    cout << "You entered: " << str << endl;
    return 0;
}
```

strlen

```
#include <iostream>
using namespace std;
int main()
{
    char str[100];
    cout << "Enter a string: ";
    cin.get(str, 100);
    cout << "You entered: " << str << endl;
    cout<<strlen(str);
    return 0;
}
```

Passing String to a Function

```
#include <iostream>
#include <string>
using namespace std;
void display(char s[])
{
    cout << "Entered char array is: " << s << endl;
}
void display(string s)
{
    cout << "Entered string is: " << s << endl;
}
int main()
{
    string str1;
    char str[100];
    cout << "Enter a string: ";
    getline(cin, str1);
    cout << "Enter another string: ";
    cin.get(str, 100, '\n');
    display(str1);
    display(str);
    return 0;
}
```



```

#include <iostream>
#include <string.h>
using namespace std;
int main()
{
    char str1[100];
    char newString[10][10];
    int i, j, ctr;
    cout<<"\n\n Split string by space into words :\n";
    cout<<"-----\n";

    cout<<" Input a string : ";
    cin.getline(str1,100);

    j = 0; ctr = 0;
    for (i = 0; i <= (strlen(str1)); i++)
    {
        // if space or NULL found, assign NULL into newString[ctr]
        if (str1[i] == ' ' || str1[i] == '\0')
        {
            newString[ctr][j] = '\0';
            ctr++; //for next word
            j = 0; //for next word, init index to 0
        }
        else
        {
            newString[ctr][j] = str1[i];
            j++;
        }
    }
    cout<<"\n Strings or words after split by space are :\n";
    for (i = 0; i < ctr; i++)
        cout << newString[i] << endl;
    return 0;
}

```

Tokenize a String