Competitive Programming C (programming language) Software Engineering

Programming Languages Computer Programming

How can I pass a string as an argument to a function and return a string in C?

8 Answers

Soumik Ranjan Dasgupta, An advanced beginner, C is what I see now
Updated Apr 2, 2017 · Author has **54** answers and **307k** answer views

Simplest Solution

The simplest solution to whatever problem you're encountering is to declare that string as a global variable, but I'm guessing you won't be satisfied with that answer, so here goes!

In C, a string is declared as a character array. So if you want to declare a string globally (as stated above) you can do so in the following manner:

```
#define SIZE 200
char s[SIZE];
/* you can also define it as a character pointer i.e. as char *s, they behave i
```

Passing a string to a method

But in order to pass the string a.k.a the character array to a function, you need to specify the array name in the parameter list (and maybe a few additional parameters as well). Take note that you should only mention the name of the array without the square brackets, in the parameter list of the function calling statement. However, you must keep the square brackets in the function signature, so that the compiler can understand an array will be passed. Typically, a sample code would look somewhat like this:

```
#define SIZE 200

void pass_string(char s[])  //keep square brackets in signature
{
    printf("%s",s);
}

int main()
{
    char a[SIZE];
    pass_string(a); //specify only function name in calling statement
    return 0;
}
```

Returning a string from a method

In order to return a string from a function, you'd need to declare the function return type as a character pointer. Note that in the comment in the first code sample I've mentioned that the character pointer and a character array behaves identically in C.

Related Questions

- How do I pass a string as an argument to a function?
- How do I write a function that will take a string as a parameter and return an array such that each element of the array rep 1 line from the s...
- How would you write a function that will return the middle letter in given string pass string as parameters to the function?
- How do I create a function that passes a string by reference (C Programming)?
- What is the 10 characters' string that will make that function return true?
- How do you initialize a dynamic string (string which size is not fixed) to NULL in C?
- How do strings pass by functions?
- How can I split a string in C?
- In C language, can a string variable be passed as an argument to switch() statement?
- How can I check whether one string is a sub-string of another string in C program?

as

```
char s_check[SIZE];
```

The compiler associates a base address to the variable s_check. From this address, any index in the entire array can be accessed. It almost behaves as if it is a pointer variable.

Judging from what I said above, I think you've got the reason to specify the return type of the function as a character pointer. A sample code is given below.

```
#define SIZE 200
#include <stdio.h>
char* return_string()
{
    static char s[SIZE]="My name is X";
    return s;
}

int main()
{
    printf("%s", return_string());
    return 0;
}
```

I am accessing the string returned in the printf statement and printing it. That is how you can return a string to a function.

Passing and returning a string together

Of course, you can have multiple combinations of the techniques, and the one most frequently required is that you need to pass a string to a function and return a string as well. In that case, you'd need to specify the return type as character pointer and put a character pointer in the parameter list of the function declaration prototype as well, somewhat like this:

```
char *return_and_pass(char s[]) // OR char return_and_pass(char *s)
{
    s[0]='A'; //modify passed string
    return s;   //return it
}

int main()
{
    char a[]="Hello!";
    printf("%s",return_and_pass(a));
    return 0;
}
```

So that is it. Hope this helps. For any residual doubts, feel free to drop a message or a comment.

Good luck!

131.9k views · View 95 Upvoters

Your feedback is private.

Is this answer still relevant and up to date? Yes No

Related Questions More Answers Below

- How do I pass a string as an argument to a function?
- How do I write a function that will take a string as a parameter and return an array such that each element of the array rep 1 line from the s...
- How would you write a function that will return the middle letter in given string pass string as parameters to the function?
- How do I create a function that passes a string by reference (C Programming)?
- What is the 10 characters' string that will make that function return true?

Abhilash Bhoi, Electronics and TeleCommunication Graduated
Answered Apr 16, 2018 · Author has **472** answers and **588.8k** answer views

- **Passing Strings to Functions**

Strings are just **char** arrays. So, they can be passed to a function in a similar manner as arrays.

Learn more about passing array to a function .

```
#include <stdio.h>
void displayString(char str[]);

int main()
{
    char str[50];
    printf("Enter string: ");
    gets(str);
    displayString(str);     // Passing string c to function.
    return 0;
}
void displayString(char str[]){
    printf("String Output: ");
    puts(str);
}
```

Here, string c is passed from `main()` function to user-defined function `displayString()`. In function declaration, `str[]` is the formal argument.

- If you are looking to **return a string from a function(other than main)**, you should do something like this.

```
#include <stdio.h>
const char * getString();
int main()
{
 printf("hello world\n");
 printf("%s\n", getString());
 return 0;
}

const char * getString()
{
 const char *x = "abcstring";
 return x;
}
```

- **You could do this in a way simplar to `scanf`. in other words:**

```
  strcpy( value_to_return, "deposited string" );
}

int main() {
  char *deposit;
  foo(&deposit);
  printf("%s", deposit);
  return 0;
}
```

28.1k views · View 6 Upvoters · Answer requested by Tamra Tamara

Mick Stute, Programming for 35+ years

Answered Aug 12, 2015 · Author has **879** answers and **3.9m** answer views

A string is defined as a character array.

Defining a string thus:
char str[100];

causes the character to create space for the string by str is a pointer to this location. It might be more obvious when defining a literal:

char *str="Hello world!\n";

And if it's dynamically allocated:

char *str;
str=malloc(100*sizeof(char));

In all cases you simple use the variable name.

```
// Outputs a string to stdout and returns a substring starting
// at the second word
#include <stdlib.h>
char *
myputs(char *str) {
   char *s=NULL;
   while(*str) {
      if(!s && *str==' ')
         s=str+1;
      putchar(*str++);
   }
   return(s);
}
main(int argc, char *argvc[])
{
   char s[100] = {"This is my string to output on stdout\n"};
   char *firstSpace=s;
  firstSpace=myputs(s);  // Passed string in first call, return char *
   while(firstSpace) {
      firstSpace=myputs(firstSpace);
   };
}
```

28.6k views · View 11 Upvoters

Your feedback is private.

Is this answer still relevant and up to date? Yes No

Related Questions

- How do I pass a string as an argument to a function?
- How do I write a function that will take a string as a parameter and return an array such that each element of the array rep 1 line from the s...
- How would you write a function that will return the middle letter in given string pass string as parameters to the function?
- How do I create a function that passes a string by reference (C Programming)?
- What is the 10 characters' string that will make that function return true?
- How do you initialize a dynamic string (string which size is not fixed) to NULL in C?
- How do strings pass by functions?
- How can I split a string in C?
- In C language, can a string variable be passed as an argument to switch() statement?
- How can I check whether one string is a sub-string of another string in C program?
- How do you initialize char* to an empty string in C?
- How do I return an empty string if a string value is null?
- How is it possible to use string functions without string header file in c?
- How can I validate string in C?
- How can I alter a string in c program?

About · Careers · Privacy · Terms · Contact