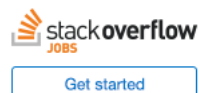


Static keyword in function parameter

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I've just found this function definition in some embedded code:

```
float round_float_to_4(static float inputval);
```

I'm familiar with other uses for **static** (global variables, functions and local variables), but this is the first time I see it as specifier for function parameter. I assume that this forces compiler to use fixed memory location for **inputval** instead of stack?

c static function parameter-passing

asked Feb 15 '10 at 10:20

Josip
2,501 ● 4 ● 17 ● 22

In gcc I get error: storage class specified for parameter x. – [kennytm](#) Feb 15 '10 at 10:33

4 Answers

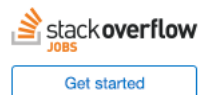
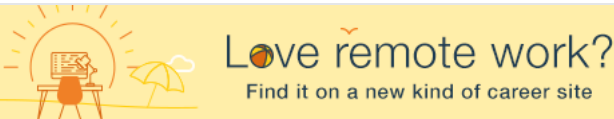
This is non standard. I'd guess the same thing as you, and I'm not surprised of such extension in compilers having an embedded target.

answered Feb 15 '10 at 10:31

AProgrammer
37.9k ● 5 ● 58 ● 115

3 You are right. I checked the compiler's (Microchip C18) manual and found this: "Function parameters can have storage class auto or static. An auto parameter is placed on the software stack, enabling reentrancy. A static parameter is allocated globally, enabling direct access for generally smaller code." – [Josip](#) Feb 15 '10 at 11:14

Nice. +1 for the correct answer :) – [Johannes Schaub - litb](#) Feb 15 '10 at 11:17



That's not valid. The only valid place where `static` may be used in a function parameter I'm aware of is in an array dimension

```
float round_float_to_4(float inputval[static 4]);
```

Saying that `inputval` will, in all calls to this function, point to memory providing at least 4 floats (this is a C99 addition, it doesn't appear in C89).

answered Feb 15 '10 at 10:47

Johannes Schaub - litb
345k ● 78 ● 678 ● 1053

1 @KennyTM, yes it means that the parameter declaration is equivalent to `int * const y`: So it changes the toplevel qualification. The 4 in absence of `static`, however, has no real meaning this time. – [Johannes Schaub - litb](#) Feb 15 '10 at 11:07

Many embedded devices have a seriously limited stack, such a feature would be of great benefit in reducing the chances of stack overflow, while still giving you the opportunity for re-entrant code.

Smaller chips don't have any opportunity to put variables on the stack, so all parameters are implicitly memory locations.

answered Feb 15 '10 at 13:40

David Sykes
15k ● 12 ● 51 ● 72

As per C standard,

The only storage-class specifier that shall occur in a parameter declaration is register.

answered Oct 27 at 18:32



rootTraveller

742 ● 5 ● 23
