
Subject: Re: Why float is called as 'float', not 'real'?
Posted by [David Fanning](#) on Sat, 24 Mar 2007 05:51:42 GMT
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DirtyHarry writes:

> Is there any particular reason to call 'float' instead of 'real'?

Personal computing didn't really get started until the late 1970s. The IBM PC was released in about 1981. At that time there were still a lot of "hippies" in graduate school, and they were always talking about "getting real." Since computers were not all that accurate at first, decimal point values seemed to "float around" a lot. You couldn't put a lot of faith in a number, even if it was expressed to six or eight decimal places.

So between people getting sick and tired of hearing about getting "real", and the computer values "floating", these numbers came to be called "floats" rather than "reals".

Cheers,

David

P.S. My youngest turned 18 today. It is possible I've had more wine than is probably good for me. :-)

--

David Fanning, Ph.D.
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Coyote's Guide to IDL Programming: <http://www.dfanning.com/>
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: Why float is called as 'float', not 'real'?
Posted by [kim20026](#) on Sat, 24 Mar 2007 08:22:04 GMT
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Thank you David! And... Congratulations for your child's birthday...

Which wine are you drinking...? I worked in France as a Postdoctoral researcher for 1 and a half years. I am missing the smell of Bordeaux, but my favorite were sweet white wines such as Château du rayon, Sauterne, Monbazillac, etc. I was poor postdoc at that time and just enjoyed the (relatively) cheap wines with the price of 5 ~ 15 euros, but still they were Excellent!

Don't drink too much for your health, and have a nice weekend.

Harry

Subject: Re: Why float is called as 'float', not 'real'?

Posted by [James Kuyper](#) on Sat, 24 Mar 2007 11:56:18 GMT

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DirtyHarry wrote:

- > Good day everyone. This sounds like a stupid question, but I became
- > just curious yesterday, and I looked up several textbooks. However, no
- > textbooks on computer language (that I have) mentioned this. So I am
- > asking to you, gurus...
- >
- > We call real numbers as real in mathematics, but we call them as
- > 'floating point' in computer science, especially almost all computer
- > languages.

One of the earliest computer languages was Fortran, and it uses "REAL". I've learned a couple of dozen computer languages in my life time, but right now I'm having trouble remembering what any of them called their floating point type except for Fortran, C, and C++.

- > Is there any particular reason to call 'float' instead of 'real'?

Real numbers are a mathematical concept. Floating point refers to a particular limited way of representing real numbers. It's limited because:

- 1) It can only directly represent rational numbers
- 2) The non-zero numbers it can represent have a minimum size.
- 3) The finite numbers it can represent have a maximum size.
- 4) The numbers it can represent have a maximum number of significant bits.

It's named in contrast with "fixed point", where there's a fixed maximum number of digits before and after the decimal point. There are also several other ways to approximately represent real numbers, including storing separate numerators and denominators.
