
Subject: Re: Problem with FLOAT in CW_FORM
Posted by [Martin Schultz](#) on Tue, 22 Jun 1999 07:00:00 GMT
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Axel vom Endt wrote:

>
> Steffen Keitel wrote:
>>
>> Hello!
>> Building a widget based fit program (IDL 5.1 / Linux) I encountered the
>> following problem: I use the CW_FORM widget to enter my initial values
>> of the fit parameter. If I type e.g. "0.350" in a FLOAT field, IDL will
>> work with "0.3499999940" or something like that. How can I teach IDL to
>> use the `_exact_` value?
>>
>> Thanks in advance, Steffen
>
> Hi steffen,
>
> that's a more general problem: How do you tell a computer to work with
> 0.350 ?
>
> short answer: .35 cannot be represented by a finite binary fraction.

true, but at least the program should be able to identify 0.35 as 0.35 whenever it needs to. The kind of roundoff error you describe is very common when you change the data type from float to double or vice versa. What would be needed to make you happy is a DOUBLE type in CW_FORM. Then again, who really needs this?

Martin

|||||\\\-----//////////////// //|||||
Martin Schultz, DEAS, Harvard University, 29 Oxford St., Pierce 109,
Cambridge, MA 02138 phone (617) 496 8318 fax (617) 495 4551
e-mail mgs@io.harvard.edu web <http://www-as/people/staff/mgs/>

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> Thanks in advance, Steffen

Hi steffen,

that's a more general problem: How do you tell a computer to work with
0.350 ?

short answer: .35 cannot be represented by a finite binary fraction.

Try the same in c:

```
#include <stdio.h>
int main(){
    float x = 0.35;
    printf("x = %12.10f\n",x);
    return 0;
}
```

For a more detailed answer, refer to any textbook on numerical methods.

Axel
