Subject: Re: fix(4.70*100) is... 469
Posted by Christopher Thom on Thu, 19 Apr 2007 15:21:56 GMT
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Quoth b_efremova@yahoo.com:

> Sorry Guys, I should have made myself clearer.
> I'm afraid David this is not actually the question you describe in
> your article.
> and I do not expect better accuracy than I provide.
>
> There is nothing wrong here with the floating point accuracy.
> print,4.700*100.00
> 470.000
>
> It is the conversion to integer (I imagine) which makes no sence.
>
> print,fix(4.700*100.00)
> 469
> also (which is what I really needed)

No. Read the article again...and the one on double precision...it is exactly what is described there. You have provided IDL with a number that has 8 decimal places of precision. 4.7 is really somewhere between 4.6999999 - 4.7000001, but cannot be precisely represented. i.e.

```
IDL> print,4.7
      4.70000
IDL> print,4.7,f='(f18.16)'
4.6999998092651367
```

The important point is that converting the *actual number as represented in the computer* to an integer, is NOT converting the number you *think* is represented in the computer.

So...if you take the number that is actually in IDL...move the decimal place 2 places to the right, you get

```
IDL> print,4.7*100,f='(f18.14)'
469.99996948242188
```

Now chop off every thing after the decimal place (which is what fix() does)...and 469 is a prefectly reasonable answer to the question you asked. If you want a better answer, you need to ask a better question :-)

I can't speak as to exactly how the conversion to integers happens within the string() command you gave, but I imagine it's probably the same.

cheers
chris