Subject: Specify the degree of accuracy of a floating point number
Posted by loknath on Thu, 22 Feb 2007 04:48:10 GMT
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Hi
Is there a way to convert a single precision or double precision
floating point number to an accuracy of specified decimal places? In
other words, if I want to write 0.268954 or 233.256 to an accuracy of
2 decimal places, i.e. 0.27 and 233.26, is there a way to do it?
Thanks

Subject: Re: Specify the degree of accuracy of a floating point number
Posted by David Fanning on Sat, 24 Feb 2007 15:12:37 GMT
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Kenneth Bowman writes:

> This is a round-off error issue. The function works by multiplying the
> input by a factor, rounding to a LONG, and then dividing by the same factor
> to convert back to a floating-point type.
>
> When you are trying to preserve a lot of precision (digits), you get round-off
> issues with the LONG. This can be avoided (in most cases), by rounding to
> a LONG64.

Ah, thanks for this. I was using the L64 keyword for ROUND
in NUMBER_FORMATTER, but I was doing some of the other math
with FLOAT and LONG. By changing these to DOUBLE and LONG64
I've managed to make NUMBER_FORMATTER work properly with
all the perverse cases I've tried.

I've put an updated version here:

http://www.dfanning.com/programs/number_formatter.pro

Cheers,

David

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