Subject: Re: Recognizing double precision?
Posted by David Fanning on Fri, 05 Oct 2007 15:16:39 GMT
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wlandsman writes:

> So it would it be reasonable to request that the IDL compiler
> recognize a number as double precision, if it has too many digits to
> be stored as a floating point number?

Too helpful. My God, if the compiler did this any
kid could come in off the street and do our job!

Cheers,

David

--
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.")

Subject: Re: Recognizing double precision?
Posted by R.G.Stockwell on Fri, 05 Oct 2007 17:26:27 GMT
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"wlandsman" <wlandsman@gmail.com> wrote in message
news:1191597160.614557.153160@50g2000hsm.googlegroups.com...
> About once a year I receive a complaint about my code because someone
> inputs a Julian date like this
>
> IDL> jd = 2441636.1
>
> and then gets mysterious results because the value of jd is
> "truncated"
>
> IDL> print, jd, f='(f10.2)'
> 2441636.00

Well, to play devil's advocate, the programmer should not let the
user input single precision data in such a case.

If type eq Singleprecision then message, 'ERROR'

Cheers,

bob

PS
(Because the above statement does exactly what the user
"intended", inputs a single precision variable.)

Subject: Re: Recognizing double precision?
Posted by Bringfried Stecklum on Sat, 06 Oct 2007 22:21:44 GMT
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wlandsman wrote:
> About once a year I receive a complaint about my code because someone
> inputs a Julian date like this
>
> IDL> jd = 2441636.1
>
> and then gets mysterious results because the value of jd is
> "truncated"
>
> IDL> print, jd, f='(f10.2)'
> 2441636.00
>
> So it would it be reasonable to request that the IDL compiler
> recognize a number as double precision, if it has too many digits to
> be stored as a floating point number? After all, IDL does do
> something like this (in default mode) for short and long integers:
>
> IDL> a = 32767 & help,a
> A INT = 32767
> IDL> a = 32768 & help,a
> A LONG = 32768
>
> I can't imagine how adding this capability would break existing code.
>
> Does anyone know if other interpreted languages can recognize a double
> precision number when they encounter one? Thanks, --Wayne
>
Dear Wayne,

although I think that in principle the compiler could be able to make an
automatic type declaration based on the number of digits of the string
representing the numerical value, for the time being it might be easier
to check whether the input is indeed double precision or not. For
instance, I noticed that an earlier version of DAYCONV had the following
line at the beginning

sz = size(xjd)

However the information on the size of the argument xjd was never used.
Perhaps somebody had in mind the following?

if sz[1] ne 5 then message,'DAYCONV requires double precision!'

It would be hard to overlook a statement like this.

with kind regards,

Bringfried Stecklum

Subject: Re: Recognizing double precision?
Posted by wlandsman on Mon, 08 Oct 2007 13:18:41 GMT
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Bob, Bringfried,

> Well, to play devil's advocate, the programmer should not let the
> user input single precision data in such a case.
>

Except that single precision or even a long integer (e.g. 2441636)
could be valid, if the user was not interested in fractional
days. I agree that it is probably safest to force the user to
input double precision, but this does not feel like the "IDL way".
Thanks, --Wayne
