Subject: Re: BUG in IDL 4.0a PowerMac
Posted by rivers on Fri, 05 Apr 1996 08:00:00 GMT
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In article <4k3mro$72p@newsreader.wustl.edu>, Paritosh Dhawale <paritosh> writes:
> Hello,
>
> I get this dangerous bug rather randomly running
> IDL 4.0a on a PowerMac 7500. Any one with similar
> problems? IDL fails to return the correct answer
> in statement 4.
>
> IDL> help,yy
> YY FLOAT = 35.0000
> IDL> help,last_row
> LAST_ROW FLOAT = 89.0000
> IDL> print,last_row-yy
> 54.0000
> IDL> print,fix(last_row-yy)
> 53
> IDL> print,fix(last_row)-fix(yy)
> 54

You have really not provided sufficient information. If you created YY and
LAST_ROW by direct assignment, i.e.
YY = 35.0
LAST_ROW = 89.0

then I agree that there is a bug. All machines which I know of represent small floating point integers exactly, and there should be no roundoff error on subtraction. However, if YY or LAST_ROW are computed, then they might be slightly different than the values they appear to have, and you are just seeing normal roundoff problems. Whenever you are trying to convert a float which might have some slight roundoff error to an integer like this you should use a function which returns the nearest integer, not the integer value after discarding fractional parts.

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Subject: Re: BUG in IDL 4.0a PowerMac
Posted by Tim Patterson on Fri, 05 Apr 1996 08:00:00 GMT

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> Would appreciate any insight.
>
> Paritosh

It may be because FIX truncates rather than rounds
to get an integer, so FIX(4.9) returns 4 and not 5.

So, as an example, if yy is actually 35.0000000001 and
last_row is 89.0000000000, when you subtract
them and then FIX you get FIX(53.9999999999) which
is 53. If you FIX them first, you get 89 - 53 which
gives 54.

So the answer may differ depending on how accurately
your machine stores float variables. I think this
is a problem in other languages besides IDL. Try
using ROUND instead of FIX, as this rounds to the nearest
integer, and it should solve the problem.

Tim

Subject: Re: BUG in IDL 4.0a PowerMac
Posted by Andy Loughe on Fri, 05 Apr 1996 08:00:00 GMT

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> IDL> print,fix(last_row)-fix(yy)
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Ouch!
FYI: I *don't* get this error running IDL 4.01b under Solaris.

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