Subject: Re: Floating Array Shows no numbers after the dot
Posted by R.Bauer on Tue, 19 Feb 2002 17:07:03 GMT
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"Emmler, Oliver" wrote:
>
> Hi,
>
> I tried the following:
>
> Array = FLTARR[15]
> Time = 123456.123456
> Array[0] = Time
> Print, Array[0]
>
> All numbers after the colon are gone.
>
> Can anyone help ?
> Do i have to use DCOMPLEXARR ?
> Is this problem caused by Pre-Formatting due to the system ?
>
> Regards,
> Oliver
>

Dear Oliver,

float has only 6 digits. (6.5 digits)

If you like to have more digits you should use double.
You should then format the output with e.g.

print,array[0],format=('F20.8)'

Reimar

> --
> Oliver Emmler
> University of Heidelberg
> Departement of Radiology
> Phone: +49-6221-7963059 E-Mail: Oliver.Emmler@med.uni-heidelberg.de

--
Reimar Bauer

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http://www.fz-juelich.de/icg/icg1/
 ========== ======
a IDL library at ForschungsZentrum Juelich
 http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.h tml

http://www.fz-juelich.de/zb/text/publikation/juel3786.html
 ========== ======

Subject: Re: Floating Array Shows no numbers after the dot
Posted by David Fanning on Tue, 19 Feb 2002 17:26:58 GMT
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Emmler, Oliver (oemmler@ix.urz.uni-heidelberg.de) writes:

> I tried the following:
>
> Array = FLTARR[15]
> Time = 123456.123456
> Array[0] = Time
> Print, Array[0]
>
> All numbers after the colon are gone.
>
> Can anyone help ?
> Do i have to use DCOMPLEXARR ?
> Is this problem caused by Pre-Formatting due to the system ?

You are running into default formatting problems, for sure.
Try this:

```
  Print, array[0], Format='(F13.6)'
```

And if you really need all those decimal points, you are
probably going to have to make this a double precision array
(DBLARR). Double complex is probably going a bit overboard,
however. :-)

Cheers,

David
--
David W. Fanning, Ph.D.
Fanning Software Consulting
Phone: 970-221-0438, E-mail: david@dfanning.com

Subject: Re: Floating Array Shows no numbers after the dot
Posted by Martin Downing on Wed, 20 Feb 2002 09:32:21 GMT
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"Emmler, Oliver" <oemmler@ix.urz.uni-heidelberg.de> wrote in message
news:a4tre2lgv1@news.urz.uni-heidelberg.de...
> Hi,
>
> I tried the following:
>
> Array = FLTARR[15]
> Time = 123456.123456
> Array[0] = Time
> Print, Array[0]
>
> All numbers after the colon are gone.
>
> Can anyone help ?
> Do i have to use DCOMPLEXARR ?
> Is this problem caused by Pre-Formatting due to the system ?
>
Hi Oliver,

The answer is simple - the FLOAT type which you are using has only 6
significant digits, whereas type DOUBLE has a couple more, and COMPLEX is
for complex numbers :)
[hmm - as an aside, does anyone know why DOUBLE can only store 2 more digits
cf. FLOAT considering it uses 4 extra bytes which is enough for a 10 digit
LONG ?]

Martin

Subject: Re: Floating Array Shows no numbers after the dot
Posted by tam on Wed, 20 Feb 2002 14:19:34 GMT
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Martin Downing wrote:

... Explanation of double versus float elided.

> [hmm - as an aside, does anyone know why DOUBLE can only store 2 more digits
> cf. FLOAT considering it uses 4 extra bytes which is enough for a 10 digit

> LONG ?]
>
> Martin
>

Surely an FAQ...

Try
```
  pi = 4*atan(1.0d0)
  print, pi
```

Next do
```
  print, pi, format='(f25.20)'
```

It is easy to confuse the default display precision with the
internal precision.

Regards,
Tom McGlynn

Subject: Re: Floating Array Shows no numbers after the dot
Posted by Craig Markwardt on Wed, 20 Feb 2002 14:26:47 GMT
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"Martin Downing" <martin.downing@ntlworld.com> writes:
> [hmm - as an aside, does anyone know why DOUBLE can only store 2 more digits
> cf. FLOAT considering it uses 4 extra bytes which is enough for a 10 digit
> LONG ?]

Hi Martin--

Where are you getting your info? I get the following:
```
  float  - mantissa 24 bis  = 7.2 decimal digits
  double - mantissa 53 bits = 16.0 decimal digits
```
DOUBLE can store more than twice as many digits as FLOAT. The
increase in digits in the exponent is fewer. I got these values from
MACHAR().

Craig

--
---------- ----------
Craig B. Markwardt, Ph.D. EMAIL: craigmnet@cow.physics.wisc.edu

Subject: Re: Floating Array Shows no numbers after the dot
Posted by Martin Downing on Wed, 20 Feb 2002 15:09:29 GMT
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"Craig Markwardt" <craigmnet@cow.physics.wisc.edu> wrote in message
news:onsn7wtejc.fsf@cow.physics.wisc.edu...
>
> "Martin Downing" <martin.downing@ntlworld.com> writes:
>> [hmm - as an aside, does anyone know why DOUBLE can only store 2 more
digits
>> cf. FLOAT considering it uses 4 extra bytes which is enough for a 10
digit
>> LONG ?]
>
> Hi Martin--
>
> Where are you getting your info? I get the following:
> float - mantissa 24 bis = 7.2 decimal digits
> double - mantissa 53 bits = 16.0 decimal digits
> DOUBLE can store more than twice as many digits as FLOAT. The
> increase in digits in the exponent is fewer. I got these values from
> MACHAR().
>
Its Ok, I was just advertising how stupid my brain can be before I have
fully woken up/recaffienated. I was of course observing print default
formats.
I think its called doing a "Homer" (-:0) Doh!

Martin