
Subject: Re: bizarre number transformation
Posted by [wilms](#) on Thu, 25 Jul 2002 12:11:18 GMT
[View Forum Message](#) <> [Reply to Message](#)

In article <b98a2b54.0207250346.381336bf@posting.google.com>, merle <merlecorp@hotmail.com> wrote:

>
> The problem is that the number 443496.984 is being turned into the
> number 443496.969 from basic assignments using Float() or Double(),
> despite the fact that even floats should easily be able to handle a

> or seven decimal places of significance").
>
> Since I knew that I had successfully read in numbers much greater than
> 443496.984 in the past, I created temp.dat with just the number
> 443496.984 in it, and read this into a variable, x3. If x3 is cast as
> a float, it doesn't work, i.e. the number is 443496.969. But, if x3
> is cast as a double, then it contains the correct value. Why isn't a
> float sufficient (443496.984 < 10^38 and contains only 3 decimal
> places)? And, why doesn't x2=Double(443496.984) produce the correct
> result?

There seems to be a misconception on what a "decimal place" is. In your example, your number has 9 decimal places, not three.

x2=double(443496.984) casts a single precision variable to double. If you want to declare your number as a double, write
x2=443496.984D0

Cheers,

Joern

>
> Here's the code & the output:
>
> ; -----
> PRO huh
>
> ; -- print with single precision -> NFG
> X1 = Float(443496.984)
> Print, X1, Format=('"X1 = ", (F10.3))'
>
> ; -- print with double precision -> NFG
> X2 = Double(443496.984)
> Print, X2, Format=('"X2 = ", (F10.3))'
>
>
> ; -- read the number from a file & print it out -> works fine

```
> OpenR, lun, 'temp.dat', /Get_Lun, ERROR = err
>
> ; -- Note: X3 must be cast as a double or else the number becomes
> 443496.969
> X3 = Double(0)
>
> ReadF, lun, X3
> Print, X3, Format=('"X3 = ", (F10.3))'
>
> Free_Lun, lun
>
> END
>
>
> IDL> .COMPILE "D:\IDL\workdir\huh.pro"
> % Compiled module: HUH.
> IDL> huh
> X1 = 443496.969
> X2 = 443496.969
> X3 = 443496.984
>
> ; -----
>
> Could someone please explain this to me? Or at least duplicate this
> error so that I don't think that I'm going crazy?
>
> thanks,
> merle
```

--

Dr. Joern Wilms	Linsenbergr. 33
Univ. Tuebingen, Institute for Astronomy	D-72074 Tuebingen
Sand 1	(phone) +49 7071 29-76128
D-72076 Tuebingen, Germany	wilms@astro.uni-tuebingen.de
