Subject: hexadecimal variables

Posted by Pavel Romashkin on Wed, 21 Apr 1999 07:00:00 GMT

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Hi.

Is there a nice way to convert hexadecimal variables? Here's what I am trying to do:

This is received from the outside.

h_string = '40000FC0DA'

h long = long(h string)

This, obviously, fails to recognize alphabetical hexadecimal part and sets h_long to 40,000.

temp = execute("h_long = long(' "+h_string+" 'x)")

This, naturally, works, setting h_long to the desired 1032410, but looks quite ugly. Besides, it is 3 times slower than without "execute" - not really a concern on fast machines, but inefficient code just bugs me.

I am sure I am missing something here. Can anyone suggest a neater way to do this? Maybe, there is a way to use Z-formatted READ here?

Thank you, Pavel

Subject: Re: hexadecimal variables
Posted by Vapuser on Thu, 22 Apr 1999 07:00:00 GMT
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- > Hi
- > Is there a nice way to convert hexadecimal variables? Here's what I am
- > trying to do:

>

>

- > This is received from the outside.
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. .

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- > sets h long to 40,000.

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- > temp = execute("h_long = long(' "+h_string+" 'x)")
- > This, naturally, works, setting h_long to the desired 1032410,

This is not what h_long equals; 1032410 = 'fc0da'x. You've only gotten

the first 32 bits. See below.

```
> but looks
> quite ugly. Besides, it is 3 times slower than without "execute" - not
> really a concern on fast machines, but inefficient code just bugs me.
> I am sure I am missing something here. Can anyone suggest a neater way
> to do this? Maybe, there is a way to use Z-formatted READ here?
>
> Thank you,
> Pavel
 40000FC0DA is larger than 32 bits. Unless you're using idl 5.2,
having access to 64 bit integers, you're out of luck, without kluging
together something having the same flavor as a 'far' pointer in old
MS-DOS.
The general method, however, is to use reads, which works on scalars
and arrays. Here's an example, using IDL 5.2, and 64 bit integers.
IDL> h='40000FC0DA'
IDL> x=0LL
IDL> help,x
Χ
          LONG64 =
                                     0
IDL> reads,h,x,form='(Z)'
IDL> print,x,form='(z)'
       40000fc0da
IDL> print,x
      274878939354
IDL>
 If you try this in idl<5.2,(with x=0L) you'll only get the right
most 32 bits, i.e. X = 'fc0da'x. Witness...
IDL> x1=0L
IDL> reads,h,x1,form='(Z)'
IDL> print,x1
   1032410
IDL> print,x1,form='(z)'
    fc0da
 If you really need the > 32 bits, you're going to have to use idl
5.2, or read it, split it, and recombine it as a double?
```

William Daffer

Subject: Re: hexadecimal variables
Posted by Pavel Romashkin on Thu, 22 Apr 1999 07:00:00 GMT
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Dick,

I appreciate it! It is certainly what I looked for, and I was looking for READS yesterday before I wrote a question. But, apparently quite dumb by the end of the day, I typed "READ" in the search string, naively thinking that all READ-related functions will be there. READ/READF surely are, but READS happened to be separate. And, after using IGOR and IDL at the same time, I thought I rememberd seeing READS among IGOR's functions. However, after I tried READS, it is even slower than "execute" (by 0.02 s but still)! That is strange. I guess compiling a string takes less time than string conversion. READS might appear more efficient if a string to pass to "execute" was more complicated.

Dick Jackson wrote:

- > You've got it, using ReadS (read from string). It looks like you have five
- > bytes so you need a very long integer to store this, giving me the first
- > chance I've had to use IDL 5.2's new data types:

Well, in fact I have 8 bytes (in the real data) but I am checking only on bits 12 and 13, so even INT will do. If I need to check on higher level bits, I can cut the string apart.

Thanks again,

Pavel

Subject: Re: hexadecimal variables Posted by wmc on Fri, 23 Apr 1999 07:00:00 GMT

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- > This is received from the outside.
- > h_string = '40000FC0DA'
- > h_long = long(h_string)
- > This, obviously, fails to recognize alphabetical hexadecimal part and
- > sets h long to 40,000.
- > temp = execute("h_long = long(' "+h_string+" 'x)")
- > This, naturally, works, setting h_long to the desired 1032410

As others have pointed out, its a 64 bit string.

Looking at your "execute", I thought that

wmc> h_long = long(h_string+"x)
Ought to work, but it produces
wmc> print,h_long
-2556760
(I'd forgotten that its a 64-bit string)

However, wmc> h_long = long64(h_string+"x) Seems to work perfectly well wmc> print,h_long 4398043954346

- William

--

William M Connolley | wmc@bas.ac.uk | http://www.nbs.ac.uk/public/icd/wmc/Climate Modeller, British Antarctic Survey | Disclaimer: I speak for myself

Subject: Re: hexadecimal variables Posted by wmc on Mon, 26 Apr 1999 07:00:00 GMT

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wmc@bas.ac.uk wrote:

- >> h_string = '40000FC0DA'
- > wmc> h_long = long64(h_string+"x)
- > Seems to work perfectly well
- > wmc> print,h_long
- > 4398043954346

Oops, I didn't check this properly. I just looked at the above & thought it was about right, but IDL has been fooling me:

I thought the string+"x syntax ought to work (why doesn't it?) but it doesn't, it just doesn't always generate an error message. Oh dear. In fact:

wmc> h_string='10' & h_long = long(h_string+"x) & print,h_long
-2596734
wmc> h_string='10' & h_long = long(h_string+"xl) & print,h_long

h_string='10' & h_long = long(h_string+'

% Long integer constant must be less than 2147483648.

I'm confused..., but I suspect IDL is too...

-W

btw: { alpha OSF unix 5.2 Oct 30 1998}

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