Subject: Re: weird behaviour with cgdemodata
Posted by wlandsman on Tue, 21 Jun 2011 15:19:18 GMT
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The problem is that the "input" parameter to cgdemodata is really an input-output parameter -- it is modified by cgdemodata(). For example,

```
IDL> i = 1 & print,N_elements(cgdemodata(i)) & print,i
       101
         0
```

The offending code in cgdemodata() is below. It should probably be rewritten so that the "number" parameter is left unmodified

```
FUNCTION cgDemoData_ReadData, number

IF N_Params() EQ 1 THEN BEGIN
   type = Size(number)
   type = type( type(0) + 1 )
   IF type EQ 0 THEN Message, 'Supplied argument is undefined.'
   IF type GT 5 THEN Message, 'Supplied argument must be a number.'
   number = number - 1
   number = 0 > number < 24
   data = cgDemoData_ReadData(number)
   RETURN, data
ENDIF
```

Subject: Re: weird behaviour with cgdemodata
Posted by ben.bighair on Tue, 21 Jun 2011 15:27:07 GMT
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Hi,

On 6/21/11 10:26 AM, Jeremy Bailin wrote:
> I'm sure there's a good reason why this happens, but it has me very confused:
>
> IDL> i = 5
> IDL> print, i, n_elements(cgdemodata(i))
> 4 65536
>
> Okay, that looks fine. Now what if I put that in a for loop?
>
>
> IDL> for i=0,5 do print, i, n_elements(cgdemodata(i))
> 0 101
> 0 101

> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> ...repeat ad infinutm, i.e. until you hit Ctrl-C
>
>
> What is going on???
>
> -Jeremy.

It looks like David overwrites the positional argument "number" in his code - which you pass in as "i". "i" keeps getting reset to 0 in the loop. It's the old pass-by-reference thing. I have posted a fix here...

http://dl.dropbox.com/u/8433654/cgdemodata.pro

but I'll send it along to David so he can decide what to do for the long run.

Cheers,
Ben

Subject: Re: weird behaviour with cgdemodata
Posted by Jeremy Bailin on Tue, 21 Jun 2011 15:28:49 GMT
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Aha! Yes, that definitely explains it. I was questioning my sanity there for a minute. The following code, then, does what I was trying to do (which was basically to find random data sets that are the same size so Icould plot them against each other in some example code):

for i=0,25 do begin j=i & print, j, n_elements(cgdemodata(j)) & end

Thanks, Wayne for sleuthing this out...

-Jeremy.

Subject: Re: weird behaviour with cgdemodata
Posted by Jeremy Bailin on Tue, 21 Jun 2011 15:49:21 GMT
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That should of course be print, i not print, j....

Subject: Re: weird behaviour with cgdemodata
Posted by Foldy Lajos on Tue, 21 Jun 2011 16:10:53 GMT
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On Tue, 21 Jun 2011, Jeremy Bailin wrote:

> That should of course be print, i not print, j....
>

That's why I prefer something like this (no extra variable):

for i=0,5 do print, i, n_elements(cgdemodata(i[0]))

regards,
Lajos

Subject: Re: weird behaviour with cgdemodata
Posted by Jeremy Bailin on Tue, 21 Jun 2011 16:28:17 GMT
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Cute - yes, that's a good workaround. :-)=

-Jeremy.

Subject: Re: weird behaviour with cgdemodata
Posted by David Fanning on Tue, 21 Jun 2011 17:53:03 GMT
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Jeremy Bailin writes:

> I'm sure there's a good reason why this happens, but it has me very confused:
>
> IDL> i = 5
> IDL> print, i, n_elements(cgdemodata(i))

> 4 65536
>
> Okay, that looks fine. Now what if I put that in a for loop?
>
>
> IDL> for i=0,5 do print, i, n_elements(cgdemodata(i))
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> 0 101
> ...repeat ad infinutm, i.e. until you hit Ctrl-C
>
>
> What is going on???

This is one of those "pass by reference" things that
drives you crazy every once in awhile. It turns out
I am actually *changing* the value of the variable
number in the code. (It never occurred to me someone
would call this function in a loop, for God's sake!!)

If you pass the value "i" by value, you should get
what you expect:

```
IDL> for i=0,5 do print, i, n_elements(cgdemodata(i[0]))
   0       101
   1       101
   2      1681
   3      1681
   4     65536
   5     65536
```

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thue. ("Perhaps thos speakest truth.")
