Subject: Re: Negative array indices
Posted by Michael Galloy on Thu, 02 Dec 2010 22:15:22 GMT
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On 12/2/10 2:54 PM, b_gom wrote:
> I've been stumbling around trying to figure out uses for the negative
> array indexing in IDL 8. As usual, the documentation doesn't fully
> describe the logic behind the syntax rules.
>
> One rule that I've discovered is that negative array indices shouldn't
> be thought of as indices 'rolling over' as you cross zero. For
> example:
> If x=findgen(10), then x[-1] is the same as x[9], and x[-10] is the
> same as x[0], but x[-11] isn't allowed. I can see why this follows
> from not allowing positive indices greater than the number of elements
> in x.
>
> I guess this leads to this behaviour:
> IDL> x=findgen(10)
> IDL> print,x[-4:0]
> % Illegal subscript range: X.
>
> because this gets translated to:
> IDL> print,x[6,0]
> which isn't allowed.
>
> Now, on to the real question. Why does the following not work:
>
> IDL> print,x[1:3]
>   1.00000   2.00000   3.00000
> IDL> print,x[[1,2,3]]
>   1.00000   2.00000   3.00000
> IDL> print,x[-3:-1]
>   7.00000   8.00000   9.00000
> IDL> print,x[[-3,-2,-1]]
>   0.000000   0.000000   0.000000

It's a bit of a strange story, but this last one "print, x[[-3,-2,-1]]"
was actually allowed before IDL 8.0, so the behavior had to match up to
maintain backward compatibility. It had nothing to do with counting back
from the end of the array, instead it just checked bounds of index
arrays and used the closest valid index, in your case 0. It would work
similarly if you did:

IDL> print, x[[10, 10, 10]]
      9.00000   9.00000   9.00000

Mike

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