Subject: Re: Using MIN on arrays : Exorcising loops?
Posted by Paul van Delst on Fri, 05 Oct 2001 16:56:13 GMT
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"Liam E. Gumley" wrote:
>
> Dick Jackson wrote:
>>
>> "Andrew Cool" <cooladjc@chariot.net.au> wrote in message
>> news:3BBD96E8.B1329549@chariot.net.au...
>>> Hi all,
>>>
>>>   I have three slabs of data [640,500] held as an array [640,500,3].
>>>
>>>   I need to populate another 2D array [640,500] with the minimum
>>>   value for every x,y coordinate found in the first 3 arrays.
>>>
>>> [...]
>>>
>>>   There's gotta be a better way, surely? Some syntax variant on MIN?
>>
>> It sure would be nice if MIN and MAX had a Dimension parameter, just like
>> TOTAL has. It would be even nicer if it were coming in 5.5, to be released
>> Any Day Now, wouldn't it? Too bad that anyone who would know about this
>> would be bound by a non-disclosure agreement. ;-|
>
> In other words, it sure would be nice if IDL could do something like
> this:
>
> IDL> a = indgen(2, 5)
> IDL> print, a
>   0   1
>   2   3
>   4   5
>   6   7
>   8   9
> IDL> print, min(a, dim=2)
>   0   1
> IDL> print, min(a, dim=1)
>   0   2   4   6   8
>
> where the DIM keyword is the dimension number, starting at dimension 1.
> Maybe this will be supported by MIN and MAX in the not too distant
> future ;-)

Here's hoping. Fortran 90/95 has intrinsics MINVAL and MAXVAL that do exactly that and they're
quite handy. I use 'em all the time.

```
program test_minmaxval

  implicit none
  integer, parameter :: n = 2, m = 5
  integer, dimension( n,m ) :: a
  integer :: i

  a = reshape( (/ (i, i = 0, n*m - 1 ) /),(/ n,m /) )

  print *, 'Print a:'
  print *, a

  print *, 'Print minval( a, dim = 2 ):'
  print *, minval( a, dim = 2 )
  print *, 'Print minval( a, dim = 1 ):'
  print *, minval( a, dim = 1 )

end program test_minmaxval
```

```
lnx142:/usr1/pvandelst/tmp/f90_Test : pgf90 test_minmaxval.f90
lnx142:/usr1/pvandelst/tmp/f90_Test : a.out
 Print a:
        0        1        2        3        4        5
        6        7        8        9
 Print minval( a, dim = 2 ):
        0        1
 Print minval( a, dim = 1 ):
        0        2        4        6        8
```

Oh, oops. Sorry, I thought this was comp.lang.fortran.... :o)

ehem...

paulv

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