Subject: Re: HDF SDS array access in IDL
Posted by thompson on Wed, 28 Oct 1998 08:00:00 GMT
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"Dr. G. Scott Lett" <slett@holisticmath.com> writes:

> IDL uses a storage scheme like C, not Fortran. The question of
> column-majority and row-majority was a source of confusion at RSI for some
> time, and this confusion was evident in some of their documentation. Recent
> editions should be better.

I completely disagree!!!! IDL uses a storage system like Fortran. The leftmost index is the one that changes most rapidly in the stored array. For example, if we execute the IDL commands

```
IDL> a = findgen(3,5)
IDL> print,a
     0.00000     1.00000     2.00000
     3.00000     4.00000     5.00000
     6.00000     7.00000     8.00000
     9.00000     10.0000     11.0000
     12.0000     13.0000     14.0000
IDL> print,a[*]
     0.00000     1.00000     2.00000     3.00000     4.00000     5.00000
     6.00000     7.00000     8.00000     9.00000     10.0000     11.0000
     12.0000     13.0000     14.0000
```

One can see immediately that the first index is the one that changes most rapidly. FORTRAN behaves exactly the same way.

In C this is reversed. I quote from "The C Programming Language, Second Edition" by Brian W. Kernighan and Dennis M. Ritchie.

> ... In C, a two dimensional array is really a one-dimensional array, each of whose elements is an array. Hence subscripts are written as
>
> ```
> daytab[i][j] /* [row][col] */
> ```
>
> rather than
>
> ```
> daytab[i,j] /* WRONG */
> ```
>
> Other than this notational distinction, a two-dimensional array can be treated in much the same way as in other languages. Elements are stored by rows, so the rightmost subscript, or column, varies fastest as elements are accessed in storage order.