
Subject: Structure of arrays or arrays of structures?
Posted by [Brian Larsen](#) on Thu, 22 Jan 2009 20:52:06 GMT
[View Forum Message](#) <> [Reply to Message](#)

All,

this may be philosophy but I have fought with both today and I am wondering if there are pros and cons to the different implementations.

My example is that when I read in text files I build a structure of arrays:

```
IDL> help, data
DATA      STRUCT  = -> <Anonymous> Array[1]
IDL> help, data, /str
** Structure <1a07a08>, 5 tags, length=212480, data length=212480,
refs=1:
  JD      DOUBLE  Array[5312]
  PAS0    DOUBLE  Array[5312]
  PAS90   DOUBLE  Array[5312]
  MEP0E3  DOUBLE  Array[5312]
  MEP90E3 DOUBLE  Array[5312]
```

and when I read cdf data (at least from ACE) I get arrays of structures

```
IDL> help, data
DATA      STRUCT  = -> <Anonymous> Array[36451]
IDL> help, data, /str
** Structure <19cf008>, 45 tags, length=200, data length=196, refs=1:
  DNUM    DOUBLE    0.0000000
  YEAR    LONG      2007
  DAY     LONG      165
  HR      LONG      0
  MIN     LONG      0
  SEC     FLOAT     8.98560
```

Are there memory issues with one way or the other? Other things I haven't thought about?

I prefer the feel of the structure of arrays since I like typing

```
tmp = data.jd[0:10]
more than I like typing
tmp = data[0:10].jd
```

Cheers,

Brian

Brian Larsen
Boston University
Center for Space Physics
<http://people.bu.edu/balarsen/Home/IDL>
