Subject: Re: reading unformatted data into a structure
Posted by Nigel Wade on Wed, 20 Mar 2002 10:20:30 GMT
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David Fanning wrote:

> Rick Towler (tsehai@attbi.com) writes:
>
>> I actually want the ASCII characters that the char array refers to.
>> Interestingly, when I do use the string function I get a blank line. I
>> have tried different format statements to no avail.
>>
>> IDL> print,header.datum
>> 0 0 87 71 83 56 52 0 0 0 0 0 0 0 0 0 0 0
>> 0
>> 0 0 0 0 0 0 0 0 0 0 0 0 0
>> IDL> print,string(header.datum)
>>
>
> It's hard to know what this should be. I agree with
> previous posters that you may have structure alignment
> problems. But, typically, if a string were set to bytes
> then blank characters would have the value 32, not 0.
> (I don't know what the ASCII character is for 0B.)
>
> But, if you do this:
>
> IDL> indices = Where(header.datum EQ 0, count)
> IDL> IF count GT 0 THEN header.datum[indices] = 32B
> IDL> Print, String(header.datum)
> WGS84
>
> I don't know why this works, exactly. :-)
>
> Cheers,
>
> David

I think the problem is to do with the way C handles strings. I presume, from working with DLMs that internally in IDL strings are handled in C.

A string in C is terminated by a null (0) character. So, the above sequence of bytes would be interpreted as an empty string because of the initial 0, regardless of what followed it. I am guessing that the actual string begins in the third element, and the first two bytes are padding. The 8th element, the next 0, is the string terminator put in by C, and the rest are unitialised elements in the char array which just happen to be 0s.

If the padding is removed, so the byte array doesn't begin with a 0, then
the converstion to a string should be ok, eg.

```
IDL> print,a
  0   0  87  71  83  56  52   0   0   0   0   0   0   0   0   0   0   0
0   0
IDL> print,string(a(2:*))
WGS84
```

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