Subject: reading unformatted data into a structure
Posted by Rick Towler on Tue, 19 Mar 2002 01:40:39 GMT
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I have an unformatted data file which I am trying to read and I am having only limited success. The data file was created on a Sun machine and it is being read on a win32 machine (I have set the swap_if_little_endian keyword on the open statement). As for the file format, all I have to go on is the C header file that describes the records in the file.

Early on in the header I find this:

```
//  Variable types:
//     int   is 32 bit integer.
//     short is 16 bit integer.
```

Here are the first few lines of the header (all of the data types found in the header are in these lines):

```
typedef struct
{
   int fileFormatVersion;     /* The file format version number. */
   int points;                /* Number of xyz points on the file. */
   int time;                  /* UNIX time of file generation,
                              seconds since 1/1 1970. */
   unsigned short coordSys;   /* The coordinate system used:
     0 = Geographical lat/long.
     1 = Projection */
   char projection[32];       /* Projection name (see above)   */
   int projParam1;            /* 1. projection parameter (see above). */
   int projParam2;            /* 2. projection parameter (see above). */
   int projParam3;            /* 3. projection parameter (see above). */
   int projParam4;            /* 4. projection parameter (see above). */
   int projParam5;            /* 5. projection parameter (see above). */
   char datum[32];            /* Name of the datum (see above).   */
   char ellLargeHalfAxis[16]; /* Large half axis of the ellipsoide. */
   ....
```

From the comments about variable types and the structure definition I created an IDL structure that I think matches the C struct (again, I'll list the first few lines):

```
header = {  fileFormatVersion:0L, $
          points:0L, $
          time:0L, $
          coordSys:0, $
```

```
projection:bytarr(32), $
projParam1:0L, $
projParam2:0L, $
projParam3:0L, $
projParam4:0L, $
projParam5:0L, $
datum:bytarr(32), $
ellLargeHalfAxis:bytarr(16), $
....
```

I open the data file and read the header like so:

```
openr, lun, 'J:\hydrographic\1.xyz', /get_lun, $
   /swap_if_little_endian
readu, lun, header
```

Am I doing this correctly? I know I am close because I get what seems like a valid time and I know I get a valid datum. But my data doesn't seem right. I just want to check that I am using the correct types in my IDL struct and that I am reading in the data correctly.

Also, I know I have seen this but how do I convert the decimal ASCII chars in my bytarr's to a string?

Thanks.

-Rick
