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Subject: Re: Byte to Real conversion  
Posted by [David Foster](#) on Fri, 19 Feb 1999 08:00:00 GMT  
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Michael A. Wirth wrote:

>  
> Hi,  
>  
> I am reading some data in from an Magnetic Resonance image which stores  
> information about the image in  
> a 14336 byte header. I want to extract some of the data from this header  
> and am having a problem  
> with converting data to integers and reals. The integers are 2-bytes and  
> the reals 4-bytes in length. How does  
> one convert 4 bytes into a real number?  
>  
> many thanks,  
>  
> Michael

Michael -

For some reason our nameserver can't find your host, so my email bounced. If you want the C code for a MR\_HEADER program, you can get it from:

`ftp://bial1.ucsd.edu/pub/mr_header.tar.gz`

Dave

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~~~~~  
David S. Foster      Univ. of California, San Diego  
Programmer/Analyst   Brain Image Analysis Laboratory  
foster@bial1.ucsd.edu   Department of Psychiatry  
(619) 622-5892      8950 Via La Jolla Drive, Suite 2240  
                    La Jolla, CA 92037  
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Michael -

Hmm, that number 14336 sure looks familiar! Are you working with GE Signa images by any chance? I have C code that has routines to pull out integer, byte, and float information from the header. The main routine prints out a listing of important information from the header. There is also a .h file that lists the offsets for every entry in the file.

The conversion of floats does *\*not\** look straightforward!

I'll send you an email with this code attached. I haven't had time to port the code to IDL, so I wrote a short wrapper that spawns the C program and returns the info in a structure. Let me know if you're interested in this.

Hope this helps.

Dave

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~~~~~  
David S. Foster      Univ. of California, San Diego  
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Subject: Re: Byte to Real conversion  
Posted by [Liam Gumley](#) on Fri, 19 Feb 1999 08:00:00 GMT  
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An easy way is to use a structure. For example, let's say the header format is:

Bytes 0:9 are junk

Bytes 10:11 are a signed 16 bit integer

Bytes 12:15 are a 32 bit float

Bytes 16:14335 are junk

To read the header:

```
header = { junk1 : bytarr( 10 ), $ ; array of 10 bytes
          word1 : 0, $ ; short integer
          word2 : 0L, $ ; long integer
          junk2 : bytarr( 14320 ) } ; array of 14320 bytes
openr, lun, 'mri.dat', /free_lun
readu, lun, header
free_lun, lun
help, header.word1, header.word2
```

Cheers,  
Liam.

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Liam E. Gumley  
<http://cimss.ssec.wisc.edu/~gumley>

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