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Subject: Re: Byte to Real conversion

Posted by [davidf](#) on Thu, 18 Feb 1999 08:00:00 GMT

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Michael A. Wirth (s9601460@131.170.8.11) writes:

> 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?

If the variable number is a four-element byte array holding  
the floating point number, you convert it back to a float  
like this:

```
real_num = Float(number, 0)
```

Cheers,

David

--

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Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

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Subject: Byte to Real conversion

Posted by [Michael A. Wirth](#) on Fri, 19 Feb 1999 08:00:00 GMT

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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

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Subject: Re: Byte to Real conversion  
Posted by [Larry Busse](#) on Tue, 23 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

This is less elegant than structures, but it works...

If you've read the header into a byte array, then you can convert as follows assuming you know the location (offsets) of the bytes of interest:

```
var1 = fix(header,10)
var2 = long(header,12)
var3 = float(header,16)
```

var1 will be a short integer consisting of the 2 bytes header(10) and header(11).

var2 will be a long integer consisting of the 4 bytes header(12:15).  
var3 will be a float consisting of the 4 bytes header(16:19).

Depending on the architecture of your machine and the MRI scanner you might also need to use `swap_endian`; e.g.,  
`var3 = swap_endian(float(header,16))`  
will be needed if you are using a PC version of IDL (Linux or Win) to analyze data from a GE or Bruker imager.

Good Luck

--

Larry Busse

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