Subject: Re: extracting bits from bytes
Posted by chase on Tue, 30 Nov 1993 18:16:57 GMT
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>>>> > "dean" == dean <dean@phobos.cira.colostate.edu> writes:
In article <Nov29.232946.48256@yuma.ACNS.ColoState.EDU> dean@phobos.cira.colostate.edu writes:

dean> I have a (graphic) file that is an 8-bit byte. Each of the 8
dean> bits in each byte indicates the graphic position is on or off.

dean> Is there a way with IDL to determine which of the 8 bits is
dean> on (1) or off (0)? Like it can be done in FORTRAN or C.

dean> Kelly Dean

You can do it just like in C, using a mask and the AND operator.
The IDL Boolean operators operate bitwise for any size integer
operands (byte, integer, long).

Example:

Suppose A is a byte variable containing data from your file. Then the
following will print 1 if bit 3 (numbering bits from 0 in least
significant order) is set and 0 if not set ('n'XB notation is a
hexidecimal byte constant for IDL):

print, (A and '08'XB) ne 0

or the following will print all the bits in succession:

for i=0,7 do print, ((2^i) and A) ne 0

Try it.

If you are checking a lot of data, you should store the masks in an
array:

mask = bytarr(8)
for i=0,7 do mask(i)=2^i

for i=0,7 do print, 'Bit',i,' = ', (mask(i) and A) ne 0

I hope this helps,

Chris

P.S.
Anyone using idl.el or idl-shell.el? Any comments, suggestions,
additional bug reports? Send them my way.
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