Subject: Re: bits from bytes
Posted by davidf on Fri, 19 Dec 1997 08:00:00 GMT
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Kelly Dean (krdean@lamar.colostate.edu) writes:

> I need to extract the first 3 bits from a byte.
> Any suggestions?

If I am sure of anything, I am sure this is NOT the way
to do this. :-)

But you reminded me I had this program lying around here
waiting for a reason to use it. One night not too long ago
I couldn't sleep and for some reason (this is really *weird*)
I began to wonder what the binary representation of a certain
number was. Don't ask me why, I couldn't tell you. It seemed
important in that strange twilight time between when you begin
to lose consciousness and really fall asleep. Do you know what
I mean?

Anyway, I wanted to know. So I wrote this IDL program the
next morning. I guess you could figure out how to use
it to extract the first three bits from a byte, if you
wanted to. Or, you could wait for Kevin Ivory to send you
the *real* answer. :-)

If I have the byte value 5, I would use it like this:

```
  Print, Binary(5B)
```

It prints out: 0 0 0 0 0 1 0 1.

Happy Holidays!

David

```
**********************************************************
FUNCTION BINARY, number

  ; This function returns the binary representation
  ; of a number. Numbers are converted to LONG integers
  ; if necessary.

On_Error, 1
s = SIZE(number)
type = s[s[0] + 1]
IF type EQ 0 THEN Message, 'Number parameter must be defined.'
```

```
IF type EQ 1 OR type EQ 2 THEN BEGIN
   bin = STRARR(8*type)
   FOR j=0,(type*8)-1 DO BEGIN
      powerOfTwo = 2L^j
      IF (LONG(number) AND powerOfTwo) EQ powerOfTwo THEN $
         bin(j) = '1' ELSE bin(j) = '0'
   ENDFOR
ENDIF ELSE BEGIN
   Print, 'Converting "number" to LONG...'
   number = LONG(number)
   bin = STRARR(32)
   FOR j=0,31 DO BEGIN
      powerOfTwo = 2L^j
      IF (LONG(number) AND powerOfTwo) EQ powerOfTwo THEN $
         bin(j) = '1' ELSE bin(j) = '0'
   ENDFOR
ENDELSE

RETURN, REVERSE(bin)
END
```

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