Subject: Efficient IDL programming
Posted by dean on Thu, 02 Dec 1993 23:08:18 GMT
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I would like to thank everbody who responded to my request for help in "extracting bits from bytes". Below is a test PRO that I made to read in the graphic file. It reads, converts, expands, enhances, and reverses my file (from (512,64) to (512,512)) in about 30 seconds.

I started with DEC2BIN.PRO posted by Bill Thompson. This worked, but it took awhile to go thru 32,768 calculations. Both Chris Chase and Dr. Marty Ryba suggested "masks" which speed things up considerably.

I just wanted to check to see if anyone would know if I can illiminated the FOR DO BEGIN loops to make this PRO a little more efficient.

Thanks again guys,

Kelly Dean

```
==========================================================
==================
pro test
        head = bytarr(56)
        premature_EOF = 1
        ON_IOERROR, SHORT_GRF
;
;       Read "in house" graphic file.
;
        OPENR, unit, 'dtopo:gms512.grf', /GET_LUN
        READU, unit, head
        chead = STRING(head)
        ck_imx = STRMID(chead,0,6)
;
;       Verify that it is an IMX graphic file before proceeding
;
        IF ( ck_imx EQ '%IMAGE' ) THEN BEGIN $
                head_lgth = STRMID(chead,28,7)
                IF ( head_lgth GT 56 ) THEN BEGIN $
                        rem_head = bytarr(head_lgth-56)
                        READU, unit, rem_head
                ENDIF
                xsize = strmid(chead,36,6)
                ysize = strmid(chead,43,6)
                imxgrf = bytarr(xsize,ysize/8)
                graphic = bytarr(xsize,ysize)
                readu, unit, imxgrf
                premature_EOF = 0
```

```
        SHORT_GRF: IF premature_EOF THEN PRINT, 'Short graphic'
        close, unit
;
;       Create mask.
;
        tmp = lindgen(8)
        mask = 2L^tmp
;
;       Expand array(xsize,ysize/8) to array(xsize,ysize).
;
        yyy = 0
        FOR y = 0,(ysize/8)-1 DO BEGIN
        xxx = 0
        FOR x = 0,xsize-1 DO BEGIN
          IF ( xxx EQ xsize ) THEN BEGIN $
              xxx = 0
              yyy = yyy + 1
          ENDIF
;       Perform the conversion ( Dr. Marty Ryba (MIT) suggestion).
            graphic(xxx,yyy) = (imxgrf(x,y) and mask) ne 0
            xxx = xxx + 8
        ENDFOR
        yyy = yyy + 1
        ENDFOR
;
;       Enhance value so you can see it and reverse image, then display.
;
        graphic(Where(graphic EQ 001b )) = 244b
        graphic = rotate(graphic,7) ; Transpose 270 deg, (Xo,-Yo)
        tv, graphic
    ENDIF
END
```