Subject: array index, data coordinates, rotate direction, ...
Posted by mmiller3 on Wed, 24 Aug 2005 17:56:53 GMT
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Dear IDL gang,

I deal with medical images and display with direct graphics using
tv. These image are stored in arrays that are N x M pixels, and
each pixel is A mm x B mm in size. I'm trying to figure out how
to set up the display so that "cursor, /data" returns positions
in mm on this image. I do this with plot:

```
 A = 0.5
 B = 0.5
 N = 256
 M = 336

 image = REPLICATE(1, N) # FINDGEN(M)

 window, xsize=N, ysize=M, /free
 TV, bytscl(image)

 xs = A*indgen(N)
 ys = B*indgen(M)
 plot, A*indgen(N), B*indgen(M), $
     /noerase, $
     /nodata, $
     xstyle=5, $
     ystyle=5, $
     position=[0,0,1,1], $
     xrange=[min(xs),max(xs)], $
     yrange=[min(ys),max(ys)]


 cursor, x, y, /device
 print, x, y

 cursor, x, y, /normal
 print, x, y

 cursor, x, y, /data
 print, x, y
```

But now I want to rotate my image and display it:

```
 window, xsize=M, ysize=N, /free
 TV, bytscl(rotate(image,1))
```

It would be simple enough to use the same scheme with plot, swaping the axes, but it gets cumbersome if I want to make something flexible that works with any value of the direction parameter for rotate. So my question is, does anyone have a handy way to convert an array index in a rotated array back to the pre-rotated index, for all values of the direction parameter. I suppose it really boils down to "has anyone done this for me already?" :-)

My second question is, is there a handy way to mix rotate directions with calls to plot and cursor (or anything else that will set up the data coordinates) that will allow me to get the position and coordinates back for any point in an array while automagically taking the rotate direction parameter into account?

Mike