Subject: Re: Q: square plots in IDL
Posted by bowman on Mon, 28 Nov 1994 14:46:19 GMT
View Forum Message <> Reply to Message

In article <3bc67s$6em@info.estec.esa.nl>, gvacanti@estsa2.estec.esa.nl
(Giuseppe Vacanti) wrote:

> Hello-
>
> I would like to plot data so that the aspect ratio of the plot is
> equal to 1 (a circle would actually be a circle on paper, and not
> an ellipse, as it is in my IDL documentation). I have played with
> various key-words but I don't seem able to get it right.
>
> Any input is welcome.
> Thanks,

This works for me:

```
PRO SET_ASPECT, aspect, MARGIN = margin

; This program sets the plot position, !P.POSITION
; to ensure the desired aspect ratio for the final
; plot with a margin on each side.

;Find the aspect ratio of the current window
daspect = FLOAT(!D.Y_SIZE)/FLOAT(!D.X_SIZE)
IF NOT KEYWORD_SET(margin) THEN margin = 0.05

IF(aspect LE daspect) THEN BEGIN
   x0 = margin
   y0 = 0.50 - (0.5 - margin)*(aspect/daspect)
   x1 = 1.0 - margin
   y1 = 0.50 + (0.5 - margin)*(aspect/daspect)
ENDIF ELSE BEGIN
   x0 = 0.50 - (0.5 - margin)*(daspect/aspect)
   y0 = margin
   x1 = 0.50 + (0.5 - margin)*(daspect/aspect)
   y1 = 1.0 - margin
ENDELSE
!P.POSITION = [x0, y0, x1, y1]

RETURN
END
```

Call it with aspect = 1.0. You can vary the margin as you wish.

Ken Bowman

P.S. As always, bug reports welcome.

--
Dr. Kenneth P. Bowman 409-862-4060
Associate Professor 409-862-4132 fax
Climate System Research Program bowman@csrp.tamu.edu
Department of Meteorology PP-Glider
Texas A&M University
College Station, TX 77843-3150

Subject: Re: Q: square plots in IDL
Posted by sjt on Mon, 28 Nov 1994 17:57:34 GMT
View Forum Message <> Reply to Message

Giuseppe Vacanti (gvacanti@estsa2.estec.esa.nl) wrote:

: Hello-

: I would like to plot data so that the aspect ratio of the plot is
: equal to 1 (a circle would actually be a circle on paper, and not
: an ellipse, as it is in my IDL documentation). I have played with
: various key-words but I don't seem able to get it right.

: Any input is welcome.
: Thanks,

An initial point:
Unless you have made a square page with the WINDOW procedure or a
DEVICE call (depending on your device) avoid using procedures which set
up data coordinates implicitly (e.g. PLOT, SURFACE etc.).

Instead you will need to create your own plot transform.

1) Determine size of device each way in cm
xcm = !d.x_size/float(!d.x_px_cm)
ycm = !d.y_size/float(!d.y_px_cm)

2) Determine your scaling factor (user unit/cm)(assume xr, yr are the ranges
of x and y that you need).

xscl = xr/xcm
yscl = yr/ycm
scl = xscl > yscl

3) Define your plot transform (assume xm, ym are the minimum x and y you

want to plot)

!x.s = [-xm, 1.]/(scl*xcm)
!y.s = [-ym, 1.]/(scl*ycm)

This seemed to work when I tested it to plot a unit circle in an 800x437
pixel window using PLOTS

: --

: Giuseppe Vacanti
: Astrophysics Division / SERCO
: ESTEC - European Space Agency
: P.O. Box 299 Internet: Giuseppe.Vacanti@astro.estec.esa.nl
: 2200 AG, Noordwijk Phone : +31-71-654175
: The Netherlands FAX : +31-71-654690

--
+----------+---------- --+---------+
James Tappin,	School of Physics & Space Research	O__
sjt@star.sr.bham.ac.uk	University of Birmingham	-- \/`
"If all else fails--read the instructions!"		
+----------+---------- --+---------+