Subject: Re: IDLgrPoly[line|gon] and cv_coord
Posted by Rick Towler on Wed, 08 Jan 2003 21:04:00 GMT
View Forum Message <> Reply to Message

"David Fanning" <david@dfanning.com> wrote:
> Rick Towler (rtowler@u.washington.edu) writes:
>
>> I think you should be careful how you are phrasing this. Object
graphics
>> uses a right-handed rectangular coordinate system. The units and view
>> volume may be arbitrary but you always have a point [0,0,0] and 3
mutually
>> perpendicular axes with regular intervals passing thru it which define
>> [x,y,z] values.
>
> Humm. I wonder? While it's true that I have never
> used anything *but* a rectangular coordinate system
> for a program, it is not immediately obvious to me
> that this is the only possible coordinate system that
> can be set up. I'm almost certain a (0,0,0) point is
> not required. What makes you think this is the case?

I can't argue that there doesn't exist a graphics library whose coordinate system is not rectangular, but openGL's is. Try defining an IDLgrPolygon with [angle, radius, z] values instead of [x,y,z]. I don't think you'll get what you were expecting.

I didn't mean to imply that you need [0,0,0] in your view. What I meant was that whether you choose to include [0,0,0] in your view volume or not the origin is out there, somewhere. You can ignore this until you start rotating things. Models are rotated about a defined axis which passes through [0,0,0] regardless of your view settings.

-Rick

Exhibit A:

```
orb=obj_new('orb', pos=[20,0,0], radius=0.5, style=1, density=0.5)

oview=obj_new('idlgrview', viewplane_rect=[19,-1,2,2], eye=3, $
   zclip=[1,-1])

oview -> add, orb

owin = obj_new('idlgrwindow')
```

```
owin -> draw, oview

for n=0,500 do begin
   orb->rotate,[0,0,1], 0.01
   owin -> draw, oview
endfor

orb -> reset
orb -> setproperty, pos=[0,0,0], color=[100,200,100]
oview -> setproperty, viewplane_rect=[-1,-1,2,2]

for n=0,500 do begin
   orb->rotate,[0,0,1], 0.01
   owin -> draw, oview
endfor

obj_destroy, [oview, owin]

end
```