
Subject: Re: Zooming in Object Graphics

Posted by [davidf](#) on Wed, 20 Dec 2000 16:59:22 GMT

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Kellie Brown (mcnaronbrowk@saic.com) writes:

> I'm pretty new to object graphics and have a problem I'm trying to
> figure out. I have a plot object that I allow a simple zooming
> capability. To zoom, I change the value of the viewplane_rect property
> of the IDLgrView. I also track the plot coordinates (translated to data
> space) as I move the mouse within my object graphic window.
>
> The problem: After I zoom in (for example) and change the viewplane_rect
> property, the coordinates that are returned to me are the same values as
> before I zoom. For example, I have a scatter plot of points and I want
> to display the coordinate of a point when I put the cursor over it. If
> the graphic has been zoomed in, then the data range shown in my 400x400
> graphics window has changed, and I'm not getting the same coordinate
> value as before for the same point.
>
> I assume this is because I have not changed the [xyz]coord_conv value of
> the graphic object, but I don't know what to do to change the value. My
> guess is I need to find out the new data range actually displayed in my
> window, but how do I do that based on the new value of viewplane_rect?
> I figure that once I determine this new data range, I can re-calculate
> the [xyz]coord_conv and, therefore, retrieve the same data coordinate
> for a point, even when it's in zoom mode.
>
> Am I on the right track? If so, can anyone help me figure out how to do
> this?

After giving this quite a bit of thought (and after looking again at how my ZPLOT program works), I'm beginning to think you may NOT be on the right track. In fact, I think you may have gotten on the North bound train instead of the South bound. (This happened to my son and I as we were traipsing around Europe together last summer. In our case it didn't matter because wherever we ended up was fine with us, but it might matter to you.)

I say this because it occurs to me that changing the Viewport rectangle is exactly what you would do if you wanted to zoom into a plot and NOT change the data coordinate space. In fact, NOT changing the data coordinate space is what *makes* this technique a zooming technique. In other words, if the data space remains the same, and you map less of it into the window, you have, effectively, zoomed into the data space.

But I would argue that you want just the opposite. You want to leave the viewport rectangle alone, but display less of the data coordinate space in *it*. In other words, you want to change the amount of data space that is shown in the window, thereby zooming into the data space. The latter is simply a matter of calculating the end-points of the relevant axis (perhaps with a rubberband box or something similar), and then rescaling the axis end-points into the viewplane rectangle space. This is a simple COORD_CONV operation.

The advantage of doing this is that data points on the plot will now maintain their real data coordinate values, because they will be scaled appropriately.

This little stream-of-consciousness diatribe would require a couple more passes to make intelligible, probably. But I think this would put you back on the right track if you could decipher it. :-)

Cheers,

David

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