Subject: Re: How does IDL calculate the graph axis values?
Posted by mallors on Wed, 02 Feb 2000 08:00:00 GMT
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In article <38986E90.5B2D58C8@ssec.wisc.edu>,
 "Liam E. Gumley" <Liam.Gumley@ssec.wisc.edu> writes:
> Declan Vogt wrote:
>
>> I'd like to find out what IDL will use as the max and min values for a
>> graph axis before it actually plots the axis. I've been doing this by
>> creating a window, drawing the axis, and reading !x.crange, then erasing
>> the window, but it's not very elegant, and it doesn't work for
>> postscript.
>>
>> Does anyone know if there is an IDL routine I can call?
>
> I don't think there's a built-in routine for this purpose. However you can
> always use the Z buffer as a temporary graphics device:
>
> Say your data is defined as follows:
>
> x = findgen(200) * 0.1
> y = sin(x)
>
> First you save the current graphics setup:
>
> entry_device = !d.name
> entry_window = !d.window
> entry_config = {x:!x, y:!y, z:!z, map:!map}
>
> Then you create a temporary plot in the Z buffer:
>
> set_plot, 'Z'
> device, z_buffer=0
> plot, x, y, /nodata, xstyle=4, ystyle=4, /noerase, /ynozero
> xrange = !x.crange
> yrange = !y.crange

There is also the 'NULL' device to suppress
graphics output entirely:

```
dSave = !D.NAME
SET_PLOT, 'NULL'
  .
  .
  .
SET_PLOT, dSave
```

Regards,

-bob mallozzi

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Subject: Re: How does IDL calculate the graph axis values?
Posted by Ben Tupper on Wed, 02 Feb 2000 08:00:00 GMT
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<!doctype html public "-//w3c//dtd html 4.0 transitional//en">
<html>
"Liam E. Gumley" wrote:
<blockquote TYPE=CITE>

This method does not require a graphics window to be open, does not
care

what graphics device is active, does not disturb the contents of the
Z

buffer, and does not disturb the current plot settings.

 </blockquote>
Hello,
<p>I wonder if the IDLgrAxis object might be handy here.   I
haven't thought about it before, but I would guess that

the axis range in Direct and Object graphics are determined in the
same way by IDL (or at least the results will be similar.)

Assuming that your want to use direct graphics, you could temporarily
create an axis specifying your data range. Then use the GetProperty
method to retrieve

CRange. Finally, destroy the object.
<p>Direction = 0 ; or 1 for the yaxis

oAxis = Obj_New('IDLgrAxis', Direction, Range = [YourDataMin,YourDataMax])

oAxis -> GetProperty, CRange = CRange

Obj_Destroy, oAxis
<p>Here's what the help file on CRange states:
<p>CRANGE

Set this keyword to a named variable that will contain the actual full

range of the axis as a vector of the form [minval, maxval]. This range
may not exactly match the requested range provided via the RANGE keyword
in the Init and SetProperty methods. Adjustments may have been made to
round to the nearest even tick interval or to accommodate the EXTEND keyword.
<p>Ben
<pre>--
Ben Tupper

Bigelow Laboratory for Ocean Science
tupper@seadas.bigelow.org

pemaquidriver@tidewater.net</pre>
 </html>

Subject: Re: How does IDL calculate the graph axis values?
Posted by Liam E. Gumley on Wed, 02 Feb 2000 08:00:00 GMT
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Declan Vogt wrote:

> I'd like to find out what IDL will use as the max and min values for a
> graph axis before it actually plots the axis. I've been doing this by
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I don't think there's a built-in routine for this purpose. However you can
always use the Z buffer as a temporary graphics device:

Say your data is defined as follows:

```
x = findgen(200) * 0.1
y = sin(x)
```

First you save the current graphics setup:

```
entry_device = !d.name
entry_window = !d.window
entry_config = {x:!x, y:!y, z:!z, map:!map}
```

Then you create a temporary plot in the Z buffer:

```
set_plot, 'Z'
device, z_buffer=0
plot, x, y, /nodata, xstyle=4, ystyle=4, /noerase, /ynozero
```

```
xrange = !x.crange
yrange = !y.crange
```

Then you restore the entry graphics setup:

```
set_plot, entry_device
if (entry_window ge 0) then wset, entry_window
!x = entry_config.x
!y = entry_config.y
!z = entry_config.z
!map = entry_config.map
```

The x and y axis ranges computed by IDL are then returned:

```
print, xrange, yrange
      0.00000      20.0000
     -1.00000      1.00000
```

This method does not require a graphics window to be open, does not care what graphics device is active, does not disturb the contents of the Z buffer, and does not disturb the current plot settings.

Cheers,
Liam.
http://cimss.ssec.wisc.edu/~gumley
