Subject: More Function Graphics Confusion
Posted by David Fanning on Tue, 13 Sep 2011 18:57:59 GMT
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Folks,

Am I the only one who finds function graphics confusing? :-(

Here is some code that produces a filled contour plot correctly.

```
;************************************************************ **
PRO contour_experiments
  data = RandomU(-3L, 9, 9)
  LoadCT, 0
  TVLCT, 255, 0, 0, 0   ; Red
  TVLCT, 0, 0, 255, 1   ; Blue
  TVLCT, 0, 255, 0, 2   ; Green
  TVLCT, 255, 255, 0, 3 ; Yellow
  TVLCT, rgb, /GET
  rgb = Congrid(rgb[0:3, *], 256, 3)
  w = Window(DIMENSIONS=[750, 400])
  w.Refresh, /DISABLE
  levels = [0.00, 0.25, 0.50, 0.75, 1.00]
  over = Contour(data, /CURRENT, C_VALUE=levels, AXIS_STYLE=0, $
     C_COLOR='black', FONT_SIZE=10, C_LABEL_SHOW=Replicate(1,4), $
     C_USE_LABEL_ORIENTATION=1, POSITION=[0.1, 0.1, 0.9, 0.8], $
     C_LABEL_INTERVAL=0.6)
  c = Contour(data, /CURRENT, C_VALUE=levels, /FILL, $
     POSITION=[0.1, 0.1, 0.9, 0.8], AXIS_STYLE=2, $
     RGB_TABLE=rgb, RGB_INDICES=BytScl(Indgen(4)))
  over.Order, /BRING_FORWARD
  c.GetData, z, x, y
  z[0] = 0.0 & z[1] = 1.0
  fakeContourPlot = Contour(z, /CURRENT, C_VALUE=levels, /FILL, $
     POSITION=[0.1, 0.1, 0.9, 0.8], AXIS_STYLE=2, $
     RGB_TABLE=rgb, RGB_INDICES=Indgen(256))
;   fakeContourPlot = Image(cgdemodata(7), RGB_TABLE=rgb, /current)
  cb = Colorbar(TARGET=fakeContourPlot , $
     POSITION=[0.1, 0.90, 0.9, 0.95], MAJOR=5)
  fakeContourPlot.Delete
  w.Refresh
END
;************************************************************ **
```

On lines 23-25 you find code for a fake contour plot. This is
required (on my machine) to produce a color bar with correctly
labeled tick marks.

If you comment these three lines out, and uncomment line 26, which uses a fake image plot, rather than a fake contour plot, for this purpose, the color bar just doesn't show up at all!

Can anyone think of a reason for this?

It appears the fakeContourPlot.Delete line is the culprit. When I use the contour plot, this line deletes only the contour plot, but the color bar stays. When I use the image plot, this line deletes BOTH the image and the color bar. Is this another feature I should be aware of?

I realize this is a bit of a contrived example, but I am working on an article and this inconsistency is driving me crazy!

I am beginning to understand why there is no documentation for function graphics. People think you have switched over to writing fiction. And, bad fiction at that. No one will believe it actually works this way. :-(

On another note:

I have updated my Teaching an Elephant to Dance article this morning to reflect Mark Piper's better way of doing things, although Mark didn't get back to me to answer any of my questions. I think he is probably still researching them (knowing how slowly this goes!), but Coyote, ever the paranoid, thinks something more sinister has happened and he has been silenced. We are both waiting anxiously for a word from him.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.idlcoyote.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: More Function Graphics Confusion
Posted by David Fanning on Tue, 13 Sep 2011 22:34:37 GMT
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David Fanning writes:

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> I should be aware of?

This turns out to be the case because when you delete
a contour plot object, it leaves a set of axes behind,
thus there is "something" there to which the colorbar
can be attached, so it stays.

When you delete an image, the image is gone, nothing
stays behind, so the color bar attached to that image
is also destroyed.

At least I *think* this is the explanation. I've
pretty much given up looking for rationality and
am willing to believe almost anything at the moment. :-(

Here is a program to play with, if you are interested.
Switch the "anImageObj" lines to see what happens with
a contour plot.

```
  loadct, 33
  TVLCT, rgb, /Get
  thisImage = cgDemoData(7)
  w = Window(DIMENSIONS=[500, 350])

  anImageObj = Image(thisImage, RGB_TABLE=rgb, /CURRENT)
  ;anImageObj = Contour(thisImage, RGB_TABLE=rgb, /CURRENT)
  cb = Colorbar(TARGET=anImageObj , $
     POSITION=[0.1, 0.90, 0.9, 0.95], MAJOR=5)
  anImageObj.Delete
  END
```

Cheers,

David

--
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