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Subject: Re: Contour Plot with Handful of Colors  
Posted by [Mark Piper](#) on Thu, 08 Sep 2011 14:42:54 GMT  
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On 9/7/2011 8:45 PM, David Fanning wrote:

> Folks,  
>  
> I am trying to reproduce a filled contour plot with  
> a colorbar with a handful (9, in this case) of colors.  
> Does anyone know how to produce a function graphics  
> color bar with less than 256 colors? Also, I can't  
> get my function graphics filled contour to use the  
> colors I am trying to assign to it. :-(  
>  
> Any ideas?  
>

Hi David,

It's possible, but you have to mess with the color tables.

mp

```
pro ng_discrete_colorbar
  compile_opt idl2
```

```
; Example function to plot with a range of [0,100].
```

```
d = dist(41)
```

```
fmax = 100.0
```

```
f = d / max(d) * fmax
```

```
; Explicitly set 11 contour levels: [0, 10, 20, ... 100].
```

```
n_levels = 11
```

```
levels = findgen(n_levels)/(n_levels-1)*fmax
```

```
; Make a step color table for the contour plot. The color table
```

```
'step_ct'
```

```
; is a [256,3] array, but there are only n_levels=11 distinct colors (to
```

```
; check, load & view the color table in XPALETTE). The indices into  
the color
```

```
; tables (both original and step) are contour levels interpolated to  
the
```

```
; range of color table indices (i.e., the byte range).
```

```
ct_number = 4
```

```
ct_indices = bytscl(levels)
```

```
loadct, ct_number, rgb_table=ct, /silent
```

```
step_ct = congrid(ct[ct_indices, *], 256, 3)
```

```
; Display the example function using the step color table and the
; interpolated indices.
c1 = contour(f, $
    c_value=levels, $
    rgb_table=step_ct, $
    rgb_indices=ct_indices, $
    /fill, $
    margin=[0.15, 0.20, 0.15, 0.15], $ ; leave room for colorbar
    title='Max = ' + strtrim(fmax,2), $
    window_title='Discrete Colorbar Example')

; The colorbar needs n_levels+1 ticks for labels to line up correctly.
tick_labels = [strtrim(fix(levels), 2), ""] ; append empty string
cb = colorbar( $
    target=c1, $
    ticklen=0, $
    major=n_levels+1, $
    tickname=tick_labels, $
    font_size=10, $
    position=[0.2, 0.07, 0.8, 0.1])
end
```

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Subject: Re: Contour Plot with Handful of Colors  
Posted by [David Fanning](#) on Thu, 08 Sep 2011 15:07:45 GMT  
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Mark Piper writes:

> It's possible, but you have to mess with the color tables.

Do I dare run this program!? It is probably a coincidence,  
but I notice that you have written all of my growing list  
of programs that reliably crash my computer! :-)

In other words, it seems to be the work-arounds for doing  
simple things that are doing me in. :-)

OK, I'll try this and see what happens. If you don't  
hear from me in an hour, you will know. ;-)

Cheers,

David

P.S. What version of IDL do you use, and on what machine?

--

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

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Subject: Re: Contour Plot with Handful of Colors  
Posted by [David Fanning](#) on Thu, 08 Sep 2011 15:20:57 GMT  
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David Fanning writes:

> Do I dare run this program!? It is probably a coincidence,  
> but I notice that you have written all of my growing list  
> of programs that reliably crash my computer! :-)

OK, I have another program for the CRASH-IT! list. :-)

The other common denominator in these programs  
(aside from the fact that Mark wrote them!) is that  
they all seem to be crashing at the Colorbar() function  
call. If I were going to investigate this, that's where  
I would start the investigation. :-)

Cheers,

David

P.S. I took the precaution of stepping through this  
program, so I could see where it was crashing my  
machine.

--

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

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Subject: Re: Contour Plot with Handful of Colors  
Posted by [David Fanning](#) on Thu, 08 Sep 2011 18:49:03 GMT  
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David Fanning writes:

- > The other common denominator in these programs
- > (aside from the fact that Mark wrote them!) is that
- > they all seem to be crashing at the Colorbar() function
- > call. If I were going to investigate this, that's where
- > I would start the investigation. :-)

OK, after \*many\* reboots (don't worry, I have a murder mystery on the Kindle!) I have discovered that if I use the TICKNAME keyword on the Colorbar() function and pass in a vector of strings that I will immediately and irrevocably crash my Windows 7, 64-bit OS.

Maybe the ITTVIS guys can pass this along to their technical support people (who have not gotten back to me yet today).

Cheers,

David

--

David Fanning, Ph.D.

Fanning Software Consulting, Inc.

Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

Sepore ma de ni thui. ("Perhaps thou speakest truth.")

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