Subject: Re: about color table
Posted by David Fanning on Thu, 18 Jun 2009 22:01:15 GMT
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Hu writes:

> I want to do something like this: I got an 2-D array with values range
> from 0.0 to 1.0. and I want to display the array using different
> colors. for example, if the value is greater than 0.8, the elements
> will be displayed as red, if the values is between 0.5 and 0.8, the
> color will be blue, and the relationship can be listed as follows:
>
>> 0.8 red
> 0.5-0.8 blue
> 0.3-0.5 yellow
> 0.2-0.3 green
> <0.2 white
>
> I know I need to set up a color table, and the book 'IDL Programming
> techniques' demostrate how to set up a color table, and I set up the
> table including those above colors.
>
> The question is , How can I set up the relationship between the color
> table and the different ranges? I mean how to 'tell' the computer
> display the array using this relationship?

```
TVLCT, FSC_Color(['white','green','yellow','blue','red'], /TRIPLE), 1
s = Size(array, /DIMENSIONS)
scaledData = BytArr(s[0], s[1])
I = Where(array LT 0.2, count)
IF count GT 0 THEN scaledData[I] = 1
I = Where(array GE 0.2 AND array LT 0.3, count)
IF count GT 0 THEN scaledData[I] = 2
I = Where(array GE 0.3 AND array LT 0.5, count)
IF count GT 0 THEN scaledData[I] = 3
I = Where(array GE 0.5 AND array LT 0.8, count)
IF count GT 0 THEN scaledData[I] = 4
I = Where(array GT 0.8, count)
IF count GT 0 THEN scaledData[I] = 5
TVImage, scaledData, /KEEP, /NOINTERP
```

Cheers,

David
--
David Fanning, Ph.D.
Coyote's Guide to IDL Programming (www.dfanning.com)
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: about color table
Posted by Hu on Fri, 19 Jun 2009 04:12:06 GMT
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On Jun 18, 6:01 pm, David Fanning <n...@dfanning.com> wrote:
> Hu writes:
>> I want to do something like this: I got an 2-D array with values range
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> IF count GT 0 THEN scaledData[I] = 5
> TVImage, scaledData, /KEEP, /NOINTERP
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> Cheers,
>
> David
> --
> David Fanning, Ph.D.
> Coyote's Guide to IDL Programming (www.dfanning.com)
> Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Great, Thanks David

Subject: Re: about color table
Posted by Jeremy Bailin on Fri, 19 Jun 2009 04:30:27 GMT
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On Jun 18, 6:01 pm, David Fanning <n...@dfanning.com> wrote:
> Hu writes:
>> I want to do something like this: I got an 2-D array with values range
>> from 0.0 to 1.0. and I want to display the array using different
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> TVImage, scaledData, /KEEP, /NOINTERP
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> Cheers,
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> David
> --

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

Another way of going from array to scaledData (i.e. everything in
between TVLCT and TVImage in David's code), that's probably easier to
deal with if you want to change the values (or number) of the cutoffs,
is:

cutoffs = [0.2, 0.3, 0.5, 0.8]
scaledData = byte(value_locate(cutoffs, array) + 2)

-Jeremy.

Subject: Re: about color table
Posted by David Fanning on Fri, 19 Jun 2009 04:39:13 GMT
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Jeremy Bailin writes:

> Another way of going from array to scaledData (i.e. everything in
> between TVLCT and TVImage in David's code), that's probably easier to
> deal with if you want to change the values (or number) of the cutoffs,
> is:
>
> cutoffs = [0.2, 0.3, 0.5, 0.8]
> scaledData = byte(value_locate(cutoffs, array) + 2)

Oh, my goodness! Now try to explain it to him. ;-)

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.")

Subject: Re: about color table
Posted by David Fanning on Fri, 19 Jun 2009 14:18:12 GMT
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Jeremy Bailin writes:

> Another way of going from array to scaledData (i.e. everything in
> between TVLCT and TVImage in David's code), that's probably easier to
> deal with if you want to change the values (or number) of the cutoffs,
> is:
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> cutoffs = [0.2, 0.3, 0.5, 0.8]
> scaledData = byte(value_locate(cutoffs, array) + 2)

Thanks, Jeremy, for pointing this out. Even as jaded an IDL
programmer has me had raised eyebrows when I read this. :-)

I've written an article about this so others can learn about it.

  http://www.dfanning.com/code_tips/partition.html

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.")

Subject: Re: about color table
Posted by Jeremy Bailin on Sat, 20 Jun 2009 03:55:27 GMT
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On Jun 19, 10:18 am, David Fanning <n...@dfanning.com> wrote:
> Jeremy Bailin writes:
>> Another way of going from array to scaledData (i.e. everything in
>> between TVLCT and TVImage in David's code), that's probably easier to
>> deal with if you want to change the values (or number) of the cutoffs,
>> is:
>
>> cutoffs = [0.2, 0.3, 0.5, 0.8]
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> http://www.dfanning.com/code_tips/partition.html

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> Cheers,
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> David
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> --
> 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.")

Yeah, value_locate is very handy for problems like this! I particularly like using it as a precursor to histogram - i.e. if you want to do something fancy using reverse_indices but don't have uniformly-spaced bins, first use value_locate to get integer indices and then use histogram to do the heavy lifting.

-Jeremy.
