Subject: Re: a newbie question on code efficiency
Posted by David Fanning on Sat, 18 Aug 2001 03:47:47 GMT
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GB Smith (gogosgogos@usa.net) writes:

> i have a little challenge for you which i stumbled into..
> i tried to write a program which takes a 3d array,
> sets a cutoff at a certain level and then creates a mask
> of all values above that level. the mask has to be 1 and 0.
> i came up with this code, but could never get rid of the loop.
>
> any suggestions on how to get rid of the loop?
> i would prefer array operators for speed :)
>
> ;-- ------
>
> PRO MAKE_MASK
>
> a = dialog_pickfile()
> b = READ_BINARY(a, DATA_TYPE=1, DATA_DIMS=[160,256,256])
>
> b_dims = size(b)
> x_dim = b_dims[1]
> y_dim = b_dims[2]
> z_dim = b_dims[3]
>
> cutoff = 180
>
>
> e = b
>
> for i = 0, (x_dim-1) do begin
> for j = 0, (y_dim-1) do begin
> for k = 0, (z_dim-1) do begin
>
> if e[i,j,k] lt cutoff then e[i,j,k]=0
> if e[i,j,k] ge cutoff then e[i,j,k]=1
>
> endfor
> endfor
> endfor
>
> ; and so on to use the mask further in the program
>
>
> END

My goodness, an array operator question even I
can handle! :-)

e = b GE cutoff

Cheers,

David
--

David W. Fanning, Ph.D.
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Subject: Re: a newbie question on code efficiency
Posted by gogosgogos on Sat, 18 Aug 2001 10:13:36 GMT
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> e = b GE cutoff
>
> Cheers,
>
> David

well, i thought of that already and it just kept all the values above cutoff
but did not set them to 1. my array has values between 0 and 255 and i want
to set all the values higher than 180 to 1 and all the rest to 0.

maybe i did not put it that clear in the first post :)

sorry...

Subject: Re: a newbie question on code efficiency
Posted by Dominic R. Scales on Sat, 18 Aug 2001 11:10:08 GMT
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GB Smith wrote:
>
>> e = b GE cutoff
>>
>> Cheers,
>>

>> David
>
> well, i thought of that already and it just kept all the values above cutoff
> but did not set them to 1. my array has values between 0 and 255 and i want
> to set all the values higher than 180 to 1 and all the rest to 0.
>
> maybe i did not put it that clear in the first post :)
>
> sorry...

Hi GB,

is this what you are looking for?

```
e = b
e[where(b le 180)] = 0
e[where(b gt 180)] = 1
```

Cheers,
Dominic

--
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WWW: aerosensing.de | email: Dominic.Scales@aerosensing.de

Subject: Re: a newbie question on code efficiency
Posted by David Fanning on Sat, 18 Aug 2001 12:22:57 GMT
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GB Smith (gogosgogos@usa.net) writes:

>> e = b GE cutoff
>>
>> Cheers,
>>
>> David
>
> well, i thought of that already and it just kept all the values above cutoff
> but did not set them to 1. my array has values between 0 and 255 and i want
> to set all the values higher than 180 to 1 and all the rest to 0.
>
> maybe i did not put it that clear in the first post :)
>
> sorry...

Uh, I think you must have tried this:

  e = b > cutoff

I can assure you that this:

  e = b GT cutoff

gives you a mask of 0s and 1s. :-)

Cheers,

David

--
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Subject: Re: a newbie question on code efficiency
Posted by Dominic R. Scales on Sat, 18 Aug 2001 12:44:32 GMT
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David Fanning wrote:

> Uh, I think you must have tried this:
>
> e = b > cutoff
>
> I can assure you that this:
>
> e = b GT cutoff
>
> gives you a mask of 0s and 1s. :-)
>
> Cheers,
>
> David
>
Hi David,

  this seems to be not true as b = a > cutoff sets the values smaller
  than cutoff to cutoff and keeps the others as they are.

IDL> a=bindgen(10,10)

```
IDL> b = a > 50
IDL> print,a
  0  1  2  3  4  5  6  7  8  9
 10 11 12 13 14 15 16 17 18 19
 20 21 22 23 24 25 26 27 28 29
 30 31 32 33 34 35 36 37 38 39
 40 41 42 43 44 45 46 47 48 49
 50 51 52 53 54 55 56 57 58 59
 60 61 62 63 64 65 66 67 68 69
 70 71 72 73 74 75 76 77 78 79
 80 81 82 83 84 85 86 87 88 89
 90 91 92 93 94 95 96 97 98 99
IDL> b= a > 50
IDL> print,b
    50    50    50    50    50    50    50    50    50    50
    50    50    50    50    50    50    50    50    50    50
    50    50    50    50    50    50    50    50    50    50
    50    50    50    50    50    50    50    50    50    50
    50    50    50    50    50    50    50    50    50    50
    50    51    52    53    54    55    56    57    58    59
    60    61    62    63    64    65    66    67    68    69
    70    71    72    73    74    75    76    77    78    79
    80    81    82    83    84    85    86    87    88    89
    90    91    92    93    94    95    96    97    98    99
IDL>
```

the following does the trick:

```
IDL> b[where(a le 50)] = 0
IDL> b[where(a gt 50)] = 1
IDL> print,b
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     0     0     0     0     0     0     0     0     0
     0     1     1     1     1     1     1     1     1     1
     1     1     1     1     1     1     1     1     1     1
     1     1     1     1     1     1     1     1     1     1
     1     1     1     1     1     1     1     1     1     1
     1     1     1     1     1     1     1     1     1     1
IDL>
```

--
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Subject: Re: a newbie question on code efficiency
Posted by David Fanning on Sat, 18 Aug 2001 13:41:06 GMT
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Dominic R. Scales (dominic.scales@aerosensing.de) writes:

```
>  Hi David,
>
>    this seems to be not true as b = a > cutoff sets the values smaller
>    than cutoff to cutoff and keeps the others as they are.
>
>  IDL> a=bindgen(10,10)
>  IDL> b = a > 50
>  IDL> print,a
>     0   1   2   3   4   5   6   7   8   9
>    10  11  12  13  14  15  16  17  18  19
>    20  21  22  23  24  25  26  27  28  29
>    30  31  32  33  34  35  36  37  38  39
>    40  41  42  43  44  45  46  47  48  49
>    50  51  52  53  54  55  56  57  58  59
>    60  61  62  63  64  65  66  67  68  69
>    70  71  72  73  74  75  76  77  78  79
>    80  81  82  83  84  85  86  87  88  89
>    90  91  92  93  94  95  96  97  98  99
>  IDL> b= a > 50
>  IDL> print,b
>       50      50      50      50      50      50      50      50      50      50
>       50      50      50      50      50      50      50      50      50      50
>       50      50      50      50      50      50      50      50      50      50
>       50      50      50      50      50      50      50      50      50      50
>       50      50      50      50      50      50      50      50      50      50
>       50      51      52      53      54      55      56      57      58      59
>       60      61      62      63      64      65      66      67      68      69
>       70      71      72      73      74      75      76      77      78      79
>       80      81      82      83      84      85      86      87      88      89
>       90      91      92      93      94      95      96      97      98      99
>  IDL>
>
>  the following does the trick:
>
>  IDL> b[where(a le 50)] = 0
>  IDL> b[where(a gt 50)] = 1
>  IDL> print,b
>       0       0       0       0       0       0       0       0       0       0
>       0       0       0       0       0       0       0       0       0       0
```

```
>       0     0     0     0     0     0     0     0     0     0
>       0     0     0     0     0     0     0     0     0     0
>       0     0     0     0     0     0     0     0     0     0
>       0     1     1     1     1     1     1     1     1     1
>       1     1     1     1     1     1     1     1     1     1
>       1     1     1     1     1     1     1     1     1     1
>       1     1     1     1     1     1     1     1     1     1
>       1     1     1     1     1     1     1     1     1     1
```

Folks,

I'm writing "A GE 50" *not* (and I repeat, *not*) "A > 50".

```
IDL> print, a GE 50
  0  0  0  0  0  0  0  0  0  0
  0  0  0  0  0  0  0  0  0  0
  0  0  0  0  0  0  0  0  0  0
  0  0  0  0  0  0  0  0  0  0
  0  0  0  0  0  0  0  0  0  0
  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1
  1  1  1  1  1  1  1  1  1  1
```

Cheers,

David

--
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Coyote's Guide to IDL Programming: http://www.dfanning.com/
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Subject: Re: a newbie question on code efficiency
Posted by gogosgogos on Sat, 18 Aug 2001 18:31:55 GMT
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quote: 'Relational operators apply a relation to two operands and
return a logical value of true or false'

i feel soooo stupid :)
better go back to the books and study the old fashioned way :P

thank you all for this valuble advice, i would have been stuck

here for over a week without ur help.

Subject: Re: a newbie question on code efficiency
Posted by David Fanning on Sat, 18 Aug 2001 19:26:58 GMT
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GB Smith (gogosgogos@usa.net) writes:

> i feel soooo stupid :)
> better go back to the books and study the old fashioned way :P

Yeah, well, it happens to, uh, all of us occasionally.
Although usually it has something to do with a
Histogram function. :-(

Cheers,

David

--
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Subject: Re: a newbie question on code efficiency
Posted by Dominic R. Scales on Mon, 20 Aug 2001 18:06:24 GMT
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David Fanning wrote:

> Folks,
>
> I'm writing "A GE 50" *not* (and I repeat, *not*) "A > 50".
>
> IDL> print, a GE 50
> 0 0 0 0 0 0 0 0 0 0
> 0 0 0 0 0 0 0 0 0 0
> 0 0 0 0 0 0 0 0 0 0
> 0 0 0 0 0 0 0 0 0 0
> 0 0 0 0 0 0 0 0 0 0
> 1 1 1 1 1 1 1 1 1 1
> 1 1 1 1 1 1 1 1 1 1
> 1 1 1 1 1 1 1 1 1 1

> 1 1 1 1 1 1 1 1 1 1
> 1 1 1 1 1 1 1 1 1 1
>
> Cheers,
>
> David

Argh, pardon me, please.
You've pointed it out ever so clear. Seems that people who can
read DO have advatages in life...

Yours humbly,
Dominic

--
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WWW: aerosensing.de | email: Dominic.Scales@aerosensing.de

Subject: Re: a newbie question on code efficiency
Posted by R.Bauer on Sun, 09 Sep 2001 18:48:46 GMT
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David Fanning wrote:
>
> GB Smith (gogosgogos@usa.net) writes:
>
>> i feel soooo stupid :)
>> better go back to the books and study the old fashioned way :P
>
> Yeah, well, it happens to, uh, all of us occasionally.
> Although usually it has something to do with a
> Histogram function. :-(
>
> Cheers,
>
> David
>
> --
> David W. Fanning, Ph.D.
> Fanning Software Consulting
> Phone: 970-221-0438, E-mail: david@dfanning.com
> Coyote's Guide to IDL Programming: http://www.dfanning.com/
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Here is my solution,

```
cut_off=180
x=indgen(255)
v=make_array(/int,255 ,value=cut_off)
x[((x-v) >1 +cut_off)]=1
print,x
```

```
      0      1      2      3      4      5      6      7      8
      9     10     11     12     13     14     15     16     17
     18     19     20     21     22     23     24     25     26
     27     28     29     30     31     32     33     34     35
     36     37     38     39     40     41     42     43     44
     45     46     47     48     49     50     51     52     53
     54     55     56     57     58     59     60     61     62
     63     64     65     66     67     68     69     70     71
     72     73     74     75     76     77     78     79     80
     81     82     83     84     85     86     87     88     89
     90     91     92     93     94     95     96     97     98
     99    100    101    102    103    104    105    106    107
    108    109    110    111    112    113    114    115    116
    117    118    119    120    121    122    123    124    125
    126    127    128    129    130    131    132    133    134
    135    136    137    138    139    140    141    142    143
    144    145    146    147    148    149    150    151    152
    153    154    155    156    157    158    159    160    161
    162    163    164    165    166    167    168    169    170
    171    172    173    174    175    176    177    178    179
    180      1      1      1      1      1      1      1      1
      1      1      1      1      1      1      1      1      1
      1      1      1      1      1      1      1      1      1
      1      1      1      1      1      1      1      1      1
      1      1      1      1      1      1      1      1      1
      1      1      1      1      1      1      1      1      1
      1      1      1      1      1      1      1      1      1
      1      1      1      1      1      1      1      1      1
      1      1      1
```

regards

Reimar

--
Reimar Bauer

Institut fuer Stratosphaerische Chemie (ICG-1)

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email: R.Bauer@fz-juelich.de
http://www.fz-juelich.de/icg/icg1/
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a IDL library at ForschungsZentrum Juelich
 http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.h tml

http://www.fz-juelich.de/zb/text/publikation/juel3786.html
 ========== ======

read something about linux / windows
http://www.suse.de/de/news/hotnews/MS.html