
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
[View Forum Message](#) <> [Reply to Message](#)

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

--

David W. Fanning, Ph.D.

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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
[View Forum Message](#) <> [Reply to Message](#)

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   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

--

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 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
[View Forum Message](#) <> [Reply to Message](#)

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
[View Forum Message](#) <> [Reply to Message](#)

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 advantages in life...

Yours humbly,
Dominic

--

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Fax: +49 (0)8153-908 700 | 82234 Wessling, Germany
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
[View Forum Message](#) <> [Reply to Message](#)

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
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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)

Forschungszentrum Juelich
email: R.Bauer@fz-juelich.de
<http://www.fz-juelich.de/icg/icg1/>

=====

a IDL library at ForschungsZentrum Juelich
http://www.fz-juelich.de/icg/icg1/idl_icglib/idl_lib_intro.html

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

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