
Subject: make all array values equal to zero
Posted by [g.nacarts](#) on Thu, 11 Dec 2014 15:12:51 GMT
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Hi

Can I use the "greater than" operator to make all array values greater than 100 equal to zero?

E.g. A = [[1,2,3],[120,4,200]] to become A = [[1,2,3],[0,4,0]]

Many Thanks

Subject: Re: make all array values equal to zero
Posted by [lecacheux.alain](#) on Thu, 11 Dec 2014 15:20:01 GMT
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On Thursday, December 11, 2014 4:12:53 PM UTC+1, g.na...@gmail.com wrote:

> Hi
>
> Can I use the "greater than" operator to make all array values greater than 100 equal to zero?
>
> E.g. A = [[1,2,3],[120,4,200]] to become A = [[1,2,3],[0,4,0]]
>
> Many Thanks

The IDL way would be:
A[where(A gt 100, /NULL)] = 0

alx.

Subject: Re: make all array values equal to zero
Posted by [Helder Marchetto](#) on Thu, 11 Dec 2014 15:20:19 GMT
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On Thursday, December 11, 2014 4:12:53 PM UTC+1, g.na...@gmail.com wrote:

> Hi
>
> Can I use the "greater than" operator to make all array values greater than 100 equal to zero?
>
> E.g. A = [[1,2,3],[120,4,200]] to become A = [[1,2,3],[0,4,0]]
>
> Many Thanks

Hi,
not with gt operator. You can use the where() function:

```
pos = where(a gt 200, cnt)
if cnt gt 0 then a[pos] = 0
```

Cheers,
Helder

Subject: Re: make all array values equal to zero
Posted by [Michael Galloy](#) on Thu, 11 Dec 2014 15:58:34 GMT
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On 12/11/14, 8:12 am, g.nacarts@gmail.com wrote:

```
> Hi
>
> Can I use the "greater than" operator to make all array values
> greater than 100 equal to zero?
>
> E.g. A = [[1,2,3],[120,4,200]] to become A = [[1,2,3],[0,4,0]]
>
> Many Thanks
>
```

In addition to the other methods mentioned:

```
IDL> print, (A le 100) * A
   1   2   3
   0   4   0
```

And, if you really want to know if there was some way to do it with greater than operator, yes you can:

```
IDL> print, (1B - (A gt 100)) * A
   1   2   3
   0   4   0
```

Mike

--

Michael Galloy
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Modern IDL: A Guide to IDL Programming (<http://modernidl.idldev.com>)
Research Mathematician
Tech-X Corporation

Subject: Re: make all array values equal to zero
Posted by [lecacheux.alain](#) on Thu, 11 Dec 2014 16:59:42 GMT

On Thursday, December 11, 2014 4:58:37 PM UTC+1, Mike Galloy wrote:

> On 12/11/14, 8:12 am, g.nacarts@gmail.com wrote:

>> Hi

>>

>> Can I use the "greater than" operator to make all array values

>> greater than 100 equal to zero?

>>

>> E.g. A = [[1,2,3],[120,4,200]] to become A = [[1,2,3],[0,4,0]]

>>

>> Many Thanks

>>

>

> In addition to the other methods mentioned:

>

> IDL> print, (A le 100) * A

> 1 2 3

> 0 4 0

>

> And, if you really want to know if there was some way to do it with

> greater than operator, yes you can:

>

> IDL> print, (1B - (A gt 100)) * A

> 1 2 3

> 0 4 0

>

> Mike

> --

> Michael Galloy

> www.michaelgalloy.com

> Modern IDL: A Guide to IDL Programming (<http://modernidl.idldev.com>)

> Research Mathematician

> Tech-X Corporation

IDL> A=randomn(rien,10000000)

IDL> tic & A *= (A gt 1) & toc

% Time elapsed: 0.078000069 seconds.

IDL> tic & A[where(A gt 1,/NULL)]=0 & toc

% Time elapsed: 0.047000170 seconds.

The "where" solution appears to be somewhat faster.

alx.

Subject: Re: make all array values equal to zero

Posted by [Michael Galloy](#) on Thu, 11 Dec 2014 17:52:40 GMT

On 12/11/14, 9:59 AM, alx wrote:

```
> IDL> A=randomn(rien,10000000)
> IDL> tic & A *= (A gt 1) & toc
> % Time elapsed: 0.078000069 seconds.
> IDL> tic & A[where(A gt 1,/NULL)]=0 & toc
> % Time elapsed: 0.047000170 seconds.
>
> The "where" solution appears to be somewhat faster.
```

Your solution should scale with the number of elements which match the condition.

So for 50% of the elements matching:

```
IDL> n = 10000000L
IDL> a = 2.0 * randomu(seed, n)
IDL> tic & a *= (A gt 1) & toc
    Elapsed Time: 0.024550
IDL> a = 2.0 * randomu(seed, n)
IDL> tic & A[where(A gt 1,/NULL)]=0 & toc
    Elapsed Time: 0.023005
```

For about 15% of the elements matching:

```
IDL> a = randomn(seed, n)
IDL> tic & A[where(A gt 1,/NULL)]=0 & toc
    Elapsed Time: 0.014616
```

For all of the elements matching:

```
IDL> a = randomu(seed, n) + 1.0
IDL> tic & A[where(A gt 1,/NULL)]=0 & toc
    Elapsed Time: 0.024564
```

But, in any case, the WHERE solution seems equal or faster in all cases.

Mike

--

Michael Galloy
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Research Mathematician
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Subject: Re: make all array values equal to zero

Posted by [g.nacarts](#) on Fri, 12 Dec 2014 14:54:19 GMT

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Thanks everyone for your response. All comments were very helpful :)
