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

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

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

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

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

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

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
www.michaelgalloy.com
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 [g.nacarts](#) on Fri, 12 Dec 2014 14:54:19 GMT

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

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