
Subject: Re: Strange array division problem
Posted by [cgguido](#) on Mon, 04 May 2009 23:35:06 GMT
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On May 4, 4:42 pm, David Klassen <klas...@rowan.edu> wrote:
> I'm trying to create an array by reading in 2-d data and putting into
> planes in a 3-d array, however, some of the data is redundant---the 2-
> d data would go into the same plane. In these cases, I want to
> average them so I figure I can just add the data to the current plane
> value, keeping track of how many data arrays go into each plane, then
> just divide the final 3-d array by these counts. But I'm stuck on how
> exactly to implement that.
>
> My 3-d array X columns, Y rows, Z planes and the 2-d array is Z
> columns by Y rows (so I'm "rotating" the data and "sliding" each one
> into a column of the 3-d array---I hope that makes sense). I then
> have a vector, xcounts, that is X elements long and as data go into
> the columns, I increment xcounts[X].
>
> So, when I'm done populating the 3-d array I need to divide each row
> in each plane by the vector xcounts. Is there an easy way to do this
> that doesn't involve me looping through all the points?

how about:

```
a3d /= rebin(xcounts,z,y,x)
```

Subject: Re: Strange array division problem
Posted by [cgguido](#) on Mon, 04 May 2009 23:52:22 GMT
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> how about:
>
> a3d /= rebin(xcounts,z,y,x)

oops:

```
a3d /= transpose(rebin(xcounts, x, y, z), [1,2,0])
```

depending on how you do things, you may have to switch the 'y' and 'z'
and the '1' and '2'

```
a=indgen(5)  
help, transpose(rebin(a, 5, 10, 10), [2, 1, 0])  
;<Expression>  INT      = Array[10, 10, 5]
```

now you can divide a3d with a because they have the same dimensions.

Subject: Re: Strange array division problem

Posted by [David Klassen](#) on Tue, 05 May 2009 12:44:09 GMT

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On May 4, 7:52 pm, gianguido.cia...@gmail.com wrote:

>> how about:

>

>> a3d /= rebin(xcounts,z,y,x)

>

> oops:

>

> a3d /= transpose(rebin(xcounts, x, y, z), [1,2,0])

This seems to do it (well, without the transpose---I assume because IDL

thinks of standard vectors as columns...?).

Thanks! And thanks for the tip on /= I never knew about [op]= assignments.

Subject: Re: Strange array division problem

Posted by [David Fanning](#) on Tue, 05 May 2009 13:07:59 GMT

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Dave Klassen writes:

> This seems to do it (well, without the transpose---I assume because
> IDL thinks of standard vectors as columns...?).

No, IDL does not think of standard vectors as columns.

Cheers,

David

P.S. I'd give that result an extra pair of eyeballs
before you turn it in for a final grade. :-)

--

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: Strange array division problem
Posted by [cgguido](#) on Tue, 05 May 2009 21:23:13 GMT
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On May 5, 8:07 am, David Fanning <n...@dfanning.com> wrote:

>
> P.S. I'd give that result an extra pair of eyeballs
> before you turn it in for a final grade. :-)
>

yes yes... especially because I can get dimensions mixed up faster
then I can say...uhmm... transpose.

Subject: Re: Strange array division problem
Posted by [David Klassen](#) on Thu, 07 May 2009 02:03:39 GMT
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On May 5, 9:07 am, David Fanning <n...@dfanning.com> wrote:

> Dave Klassen writes:
>> This seems to do it (well, without the transpose---I assume because
>> IDL thinks of standard vectors as columns...?).
>
> No, IDL does not think of standard vectors as columns.

Hmmm...really?

```
IDL> a=[[2,1],[3,4]]
```

```
IDL> print,a
```

```
 2    1  
 3    4
```

```
IDL> v=[5,6]
```

```
IDL> print,v
```

```
 5    6
```

```
IDL> print,a##v
```

```
 16  
 39
```

Which leads me to my original thought.

But, then again:

```
IDL> print,a#v
```

```
 28    29
```

So I guess IDL figures a vector is whatever it need to be...?

Interestingly:

```
IDL> print,a##transpose(v)
```

```
 16
```

But:

```
IDL> print,a##transpose(v)
% Operands of matrix multiply have incompatible dimensions: A,
<INT
  Array[1, 2]>.
% Execution halted at: $MAIN$
```

So that's confusing.

> P.S. I'd give that result an extra pair of eyeballs
> before you turn it in for a final grade. :-)

Well, I didn't get extra eyes, but I did look long and hard, several times, at the output and it looks like what I expect.

Subject: Re: Strange array division problem

Posted by [David Fanning](#) on Thu, 07 May 2009 03:08:59 GMT

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Dave Klassen writes:

```
> Hmm...really?
> IDL> a=3D[[2,1],[3,4]]
> IDL> print,a
>    2    1
>    3    4
> IDL> v=3D[5,6]
> IDL> print,v
>    5    6
> IDL> print,a##v
>    16
>    39
> Which leads me to my original thought.
>
> But, then again:
> IDL> print,a#v
>    28    29
>
> So I guess IDL figures a vector is whatever it need to be...?
```

I think a thorough reading the the Dimensional Juggling and Array Concatenation tutorials should clear up any confusion:

http://www.dfanning.com/tips/rebin_magic.html
http://www.dfanning.com/tips/array_concatenation.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.")
