Subject: Re: Easy question?
Posted by colinr on Wed, 14 Jul 1999 07:00:00 GMT
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On 14 Jul 1999 13:55:02 GMT,
Stein Vidar Hagfors Haugan <steinhh@ulrik.uio.no> wrote:
>
> Hi Colin,
>
> How about some in-house advice:
>
> a = rebin(reform(v,1,1,nk),ni,nj,nk)
>
> Although various matrix multiplications always seem to be
> suggested as the answer to such questions, I find the above
> solution a lot easier to grasp intuitively, and it appears
> to be faster on our platforms (results do vary).

You were out of your office when I came to ask ...

--
Colin Rosenthal
Astrophysics Institute
University of Oslo

Subject: Re: Easy question?
Posted by steinhh on Wed, 14 Jul 1999 07:00:00 GMT
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Hi Colin,

How about some in-house advice:

  a = rebin(reform(v,1,1,nk),ni,nj,nk)

Although various matrix multiplications always seem to be
suggested as the answer to such questions, I find the above
solution a lot easier to grasp intuitively, and it appears
to be faster on our platforms (results do vary).

Regards,

Stein Vidar

Subject: Re: Easy question?

Posted by colinr on Wed, 14 Jul 1999 07:00:00 GMT
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On Wed, 14 Jul 1999 07:26:09 -0500,
Kenneth P. Bowman <bowman@null.tamu.edu> wrote:
> In article <7mhjl5bme1@readme.uio.no>, colin.rosenthal@astro.uio.no wrote:
>
>> If I have an i*j*k array and vector of length k and I want to
>> put the vector in every column of the array how do I do it?
>
> FOR k = 0L, nk-1L DO a[*,*,k] = v[k]

Exactly, but I was hoping for a "fast" way of doing it without a loop -
some sort of clever array declaration with ni and nj which would load
the vector up automatically into an array of the appropriate size.

--
Colin Rosenthal
Astrophysics Institute
University of Oslo

Subject: Re: Easy question?
Posted by bowman on Wed, 14 Jul 1999 07:00:00 GMT
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In article <7mhjl5bme1@readme.uio.no>, colin.rosenthal@astro.uio.no wrote:

> If I have an i*j*k array and vector of length k and I want to
> put the vector in every column of the array how do I do it?

FOR k = 0L, nk-1L DO a[*,*,k] = v[k]

> More specifically, I have a 3-d array and wish to compute the average
> value of the array over two of the dimensions and store the result in
> a 3-d array of the same size as the original.

Do you mean "store the result in a *2-D* array"? If so, then

a_mean = TOTAL(a, 3)/nk

If you really mean 3-D, then

a_mean = TOTAL(a, 3)/nk
FOR k = 0L, nk-1L DO a[0L,0L,k] = a_mean

Ken Bowman

Subject: Re: Easy question?
Posted by morisset on Wed, 14 Jul 1999 07:00:00 GMT
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Hello,

To get the vector of the mean over 2 dimensions, use total, like:

```
tab = findgen(3,3,3)
print,total(total(tab,1),1)
```

Play with the indices to mean over the dimension you want
(don't forget to divide by the product of the dimensions ;-).
Perhaps the order influences the speed if your tab doesn't have
the same dimensions?

To transform the 1D into 3D, first go to 2D, using:

```
tab2 = total(total(tab,1),1) # replicate(1,3)
tab2 = replicate(1,3) # total(total(tab,1),1)
```

or:

```
tab2 = replicate(1,3) ## total(total(tab,1),1)
tab2 = total(total(tab,1),1) ## replicate(1,3)
```

I don't know which of both is the quickest.

From 2D to 3D, I don't know without loop:

```
tab3 = fltarr(3,3,3,/nozero)
for i = 0,2 do tab3[*,*,i] = tab2
```

It's important to have the *'s as the first indices.
Hope it's help.

Christophe.