Subject: Re: simple vectorizing problem
Posted by David Fanning on Tue, 09 Sep 2008 02:17:05 GMT
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dpm314 writes:

> Hey - here is a vectorizing question from an experienced programmer
> 'newish' to IDL.
>
> I have a stack of images dimensions (nx,ny, num_images) , a LOT of
> data sometimes, on which I need to preform a whole mathematical
> operation on. For example, one thing I need to do is create an array
> of the mean of each image.
>
> I've done this successfully with something like
> averages = fltarr(num_images)
> for k = 0, NUM_OF_CLICKS-1 do averages[k] = mean(image(*,*,k)
>
> which makes perfect sense to a c/c++/Fortran programmer. But, this
> really hangs up for the size images I am working with (512*512*70000
> or more). Is there a way to vectorize? I've tried several things
> like:
>
> averages = fltarr(num_images)
> a = indgen(num_images)
> averages(a) = mean(image(*,*,a))
>
> I've also tried reforming the image to by 2D, with dimensions [nx*ny,
> num_images] and doing a similar thing, but no luck. That included
> making an array of integers, call it b, where b = 0, nx*ny*1 - 1,
> nx*ny*2 - 1, nx*ny*3 - 1 ... and doing something like
> averages(a) = mean(image(b[a]:b[a+1], a)
> (I know this probably will run out of bounds, I can't remember right
> now what I did, but it still didn't work and I had the series worked
> out right...)
>
> It seems that in a language like IDL there should be a way to do
> something like this without writing a for-loop.

Alright, I'll take a stab at this. There is no tennis or election
coverage on the TV anyway.

```
   theImageMeans = Total(Reform(images, nx*ny, num_images), 1) / (nx*ny)
```

Cheers,

David
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Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")