Subject: Re: Help with matrix operations
Posted by thompson on Thu, 29 Apr 1993 14:48:33 GMT
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pln@egret0.Stanford.EDU (Patrick L. Nolan) writes:

> I have a little matrix problem that I'm trying to do without using
> loops. So far I'm not clever enough to figure out how to do it.
> Suppose we have
>   A = fltarr(N,N)
>   B = fltarr(N)
>   C = fltarr(N,N,N)
> I want to have C(i,j,k) = A(i,j) + B(k)
> for all i,j,k < N. Is there a way to do this without writing
> ugly loops? I'm sure it's trivial, and I'll feel like a dope
> when the first person points it out. Fire away.

I don't think it's trivial. Here's how I would solve it.

```
;  First expand A and B out to NxNxN arrays.
;
AA = A(*) # REPLICATE(1,N) ;AA is now (N*N, N) array
AA = REFORM(AA,N,N,N)  ;Make it (N, N, N)
BB = REPLICATE(N*N) # B  ;Do the same for B
BB = REFORM(BB,N,N,N)
C = AA + BB
```

I don't know if this is any more or less "ugly" than doing it in a loop, but it should be much quicker. Of course you can combine all this into one command if you want.

Bill Thompson