Subject: Re: Sum along diagonals
Posted by jph on Sat, 26 Aug 2000 02:28:10 GMT
View Forum Message <> Reply to Message

I hope you folks realize you are using the wrong
language for this sort of thing. :-) To see what a *real*
array language does with this, look at the "J" solution
(J's a sort of APL in ASCII: http://www.jsoftware.com/)

```
NB. define a 4x4 matrix:
   M=. i. 4 4
NB. display it:
   M
 0  1  2  3
 4  5  6  7
 8  9 10 11
12 13 14 15

NB. sum the diagonals:

   +//. M
0 5 15 30 30 25 15

NB. Yes, that's it: +//. is the code!
NB. It doesn't have to be square:

   M=. i. 4 6
   M
 0  1  2  3  4  5
 6  7  8  9 10 11
 12 13 14 15 16 17
 18 19 20 21 22 23
   +//. M
0 7 21 42 46 50 48 39 23
```

I know, it's got nothing to do with IDL, but I couldn't
resist. Actually, I use J to compute things & IDL to
display the results....

J. Patrick Harrington

In article <mole6e23-2508001450050001@checont6.ucsd.edu>, mole6e23@hotmail.com (Todd Clements)
|>
|> Every once in a while (not often enough to make me worry about optimizing
|> too much), I want to take a not necessarily square matrix and get the sum
|> along the diagonals, such as the following, with the theoretical function

|> sum_diag:
|>
|> IDL> blah = indgen(4, 4)
|> IDL> print, blah
|> 0 1 2 3
|> 4 5 6 7
|> 8 9 10 11
|> 12 13 14 15
|> IDL> print, sum_diag(blah)
|> 0 5 15 30 30 25 15
|>
|> which is the series [0, 4+1, 8+5+2, 12+9+6+3, ...]
|>
|> Of course, to be difficult, I'd like it to work for non-square matrices as well:
|>
|> IDL> blah = indgen(5, 3)
|> IDL> print,blah
|> 0 1 2 3 4
|> 5 6 7 8 9
|> 10 11 12 13 14
|>
|> and the result would be the series [0, 5+1, 10+6+2, 11+7+3, ...]
|>
