
Subject: Matrix Multiplication in IDL

Posted by [K Banerjee](#) on Mon, 04 Aug 2003 20:31:07 GMT

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Folks,

In IDL:

```
VB> a = indgen(2, 4) - 2
```

```
VB> print, a      ; Actually prints transpose(a)
```

```
  -2  -1
```

```
   0   1
```

```
   2   3
```

```
   4   5
```

```
VB> help, a      ; a is a (2 x 4) matrix.
```

```
A          INT    = Array[2, 4]
```

```
VB> b = indgen(4, 2) + 2
```

```
VB> print, b      ; Actually prints transpose(b)
```

```
   2   3   4   5
```

```
   6   7   8   9
```

```
VB> help, b      ; b is a (4 x 2) matrix.
```

```
B          INT    = Array[4, 2]
```

```
VB> c = a ## b
```

```
VB> print, c      ; Actually prints transpose(c)
```

```
  -10  -13  -16  -19
```

```
    6    7    8    9
```

```
   22   27   32   37
```

```
   38   47   56   65
```

Since the matrix C is 4 by 4, the IDL operator "##" performs the matrix computation:

```
transpose(a) * transpose(b)
```

Keeping the above points in mind, I am trying to understand the IDL command:

```
transpose(G)##G
```

(In my case, G is (296 x 4).)

In IDL, the above matrix product turns out to be (4 x 4). However, I was expecting the matrix product to be (296 x 296) since I interpret the above IDL command as carrying out the matrix multiplication:

$G * \text{transpose}(G)$

Clearly, I am not understanding something correctly. Where am I erring? Thanks.

K. Banerjee
