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Subject: how to compile a matrix whose some elements are matrixes  
Posted by [haojuanchina@gmail.co](mailto:haojuanchina@gmail.co) on Fri, 14 Jul 2006 07:11:49 GMT  
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Hello,everyone

I want obtain a matrix whose some elements are matrixes, how to compile

the program?

example: I want to obtain the following matrix

```
G I 0 0 0 0 0
I G I 0 0 0 0
0 I G I 0 0 0
0 0 I G I 0 0
0 0 0 I G I 0
0 0 0 0 I G I
0 0 0 0 0 I G
```

in which I is an identity matrix,

```
1 0 0 0 0 0 0
0 1 0 0 0 0 0
0 0 1 0 0 0 0
0 0 0 1 0 0 0
0 0 0 0 1 0 0
0 0 0 0 0 1 0
0 0 0 0 0 0 1
```

and G is a similar diagonal matrix:

```
1 2 0 0 0 0 0
2 1 2 0 0 0 0
0 2 1 2 0 0 0
0 0 2 1 2 0 0
0 0 0 2 1 2 0
0 0 0 0 2 1 2
0 0 0 0 0 2 1
```

I can compile the program of the matrix G and I:

PRO Matrix

```
diag =findgen(7)
sub=findgen(6)
super=findgen(6)
```

```
diag[0:6]=1
sub[0:5]=2
super[0:5]=2
```

```
G = DIAG_MATRIX(diag) + $
DIAG_MATRIX(super, 1) + DIAG_MATRIX(sub, -1)
G[0,1:5]=2
```

```
G[1:5,0]=2
print,G
```

```
I= identity(7)
print,I
```

END

but how to get the first matrix in which include the matrix G and I?  
The difficulty is that I can not compile the diagonal elements (the smaller matrixes) of the larger matrix. How should I do?

Thanks!

Juan Hao

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Subject: Re: how to compile a matrix whose some elements are matrixes

Posted by [Jean H.](#) on Fri, 14 Jul 2006 16:34:50 GMT

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Hello,

well, your array will hold two different things: an int and an array of int.  
If you want to keep your zeroes as individual values, maybe you should consider using a pointer. You create a 7\*7 pointer array, and you assign either the value 0 or the matrix G or I to each cell.

```
mat = ptrarr(7,7)
(*mat)[0,0] = G
(*mat)[0,3] = 0
```

If you don't mind to replicate your zeroes (in a 7,7 array), just create a 49\*49 array and fill it with G,I and the 7\*7 zeroes array!

```
mat[0,0] = G
mat[7,0] = I
```

Jean

haojuanchina@gmail.com wrote:

```
> Hello,everyone
> I want obtain a matric whose some elements are matrixes, how to compile
>
> the program?
> example: I want to obtain the following matrix
```

```
>      G I 0 0 0 0 0
>      I G I 0 0 0 0
>      0 I G I 0 0 0
>      0 0 I G I 0 0
>      0 0 0 I G I 0
```

```

>      0 0 0 0 | G I
>      0 0 0 0 0 | G
> in which I is an identity matrix,
>      1 0 0 0 0 0 0
>      0 1 0 0 0 0 0
>      0 0 1 0 0 0 0
>      0 0 0 1 0 0 0
>      0 0 0 0 1 0 0
>      0 0 0 0 0 1 0
>      0 0 0 0 0 0 1
> and G is a similar diagonal matrix:
>      1 2 0 0 0 0 0
>      2 1 2 0 0 0 0
>      0 2 1 2 0 0 0
>      0 0 2 1 2 0 0
>      0 0 0 2 1 2 0
>      0 0 0 0 2 1 2
>      0 0 0 0 0 2 1
> I can compile the program of the matrix G and I:
> PRO Matrix
>
> diag =findgen(7)
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>
> diag[0:6]=1
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>
> G = DIAG_MATRIX(diag) + $
> DIAG_MATRIX(super, 1) + DIAG_MATRIX(sub, -1)
> G[0,1:5]=2
> G[1:5,0]=2
> print,G
>
> I= identity(7)
> print,I
>
> END
>
>
> but how to get the first matrix in which include the matrix G and I?
> The difficulty is that I can not compile the diagonal elements (the
> smaller matrixes) of the larger matrix. How should I do?
> Thanks!
> Juan Hao

```

