
Subject: Re: Odd behaviour in array indexing ?

Posted by [David Fanning](#) on Fri, 21 Feb 2003 15:40:26 GMT

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mwvogel (mvogel@rdiag.fgg.eur.nl) writes:

```
> Today I realized something is amiss in IDL
> When I do
> index = [1,0,2,3,1,2,3,4]
> m = FLTARR(8)
> d = FINDGEN(8)
> m[index] = d
> print, m
>    1.00000    4.00000    5.00000    6.00000    7.00000
> 0.000000    0.000000    0.000000
>
> Now I would have assumed that IDL would automatically *add* the numbers with
> identical indices. Not doing
> so is a potential performance penalty, right ? Or am I mistaken....
```

I find it hard to say what exactly you are trying to do here, but IDL seems to be working exactly as I would expect it to. Variables on the left hand side of the expression are having things assigned to them. I'm not sure why you think the assignments should *add*. If I do this:

```
a = intarr(2)
a[1] = 5
```

And later,

```
a[1] = 6
```

I sure don't want a[1] to equal 11. That is exactly what you seem to be asking for above.

Cheers,

David

--

David W. Fanning, Ph.D.

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Coyote's Guide to IDL Programming: <http://www.dfanning.com/>

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Subject: Re: Odd behaviour in array indexing ?
Posted by [James Kuyper](#) on Fri, 21 Feb 2003 15:48:47 GMT
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mwvogel wrote:

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> 0.000000 0.000000 0.000000  
>  
> Now I would have assumed that IDL would automatically *add* the numbers with  
> identical indices. ...
```

I'm not sure why you would assume that.

```
> ... Not doing  
> so is a potential performance penalty, right ?
```

Actually, doing it would incur a performance penalty. The way it's actually implemented internally is equivalent to the following:

```
for i=0,7 do m[index[i]] = d[i]
```

except, of course, that it's far faster as "m[index] = d" than as an explicit loop. That's a pretty efficient loop. I can't see anyway to implement the behavior you want, that isn't a whole lot slower. The closest I can get is equivalent to:

```
initialized = intarr(8)  
FOR i=0,7 DO BEGIN  
  IF initialized[index[i]] THEN m[index[i]] = d[i];  
  ELSE m[index[i]] = m[index[i]] + d[i];  
  
  initialized[index[i]] = 1;  
ENDIF
```

Subject: Re: Odd behaviour in array indexing ?
Posted by [tam](#) on Fri, 21 Feb 2003 15:53:10 GMT
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David Fanning wrote:

```

> mwvogel (mvogel@rdiag.fgg.eur.nl) writes:
>
>
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> this:
>
>   a = intarr(2)
>   a[1] = 5
>
> And later,
>
>   a[1] = 6
>
> I sure don't want a[1] to equal 11. That is exactly
> what you seem to be asking for above.
>
> Cheers,
>
> David
>

```

Just to amplify a little. Even if you had written this as

$$m[index] = m[index] + d$$

where you might have a more realistic hope that the m's would accumulate values, it wouldn't work. It's best to think of IDL array operations as fully parallelized operations, where there is a separate little CPU handling the operation for each index. If you need dependencies on prior iterations, then you need to do things in some different

fashion.

Beware, I think you are about to enter the 'Histogram Zone'.
Dee da dee da

Regards,
Tom McGlynn

Subject: Re: Odd behaviour in array indexing ?
Posted by [Liam E. Gumley](#) on Fri, 21 Feb 2003 17:29:02 GMT
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"mwvogel" <mvogel@rdiag.fgg.eur.nl> wrote in message
news:b35fla\$Q50\$2@mrelay2.eur.nl...
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> identical indices. Not doing so is a potential performance penalty, right ?
Or am I mistaken....

This subject is discussed in the "Vectorization question" thread associated
with my name at Google Groups:

<http://groups.google.com/groups?group=comp.lang.idl-pvwave>

Cheers,
Liam Gumley.
Practical IDL Programming
<http://www.gumley.com/>
