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 penaly, 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.
Fanning Software Consulting, Inc.
Phone: 970-221-0438, E-mail: david@dfanning.com
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Toll-Free IDL Book Orders: 1-888-461-0155

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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> 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. ...

I'm not sure why you would assume that.

> ... Not doing
> so is a potential performance penaly, 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:
>
>
>> Today I realized something is amiss in IDL
>> When I do
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>> m = FLTARR(8)
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>> 1.00000 4.00000 5.00000 6.00000 7.00000
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> 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
>

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...
> Today I realized something is amiss in IDL
> When I do
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with
> identical indices. Not doing so is a potential performance penaly, 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/