
Subject: Re: Array subscript question

Posted by [Steve Hartmann](#) on Thu, 02 Mar 2000 08:00:00 GMT

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"Kenneth P. Bowman" wrote:

> Can someone explain this behavior to me? I can't find anything in the
> documentation that states that repeated subscripts are handled
> differently.

>

> IDL> a = FINDGEN(5)

> IDL> i = [1, 2, 3]

> IDL> a[i] = a[i] + 10.0

> IDL> PRINT, a

> 0.00000 11.0000 12.0000 13.0000 4.00000

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> This is the behavior I expect.

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> Why does it only do the operation *once* when

> IDL> HELP, a[i]

> <Expression> FLOAT = Array[3]

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>

> Even this doesn't help.

>

> Ken

>

>

The expression on the right is evaluated first. So your last example,

$a[i] = a[i] + [10.0, 10.0, 10.0]$

could be written as,

$[a[2], a[2], a[2]] = [a[2], a[2], a[2]] + [10.0, 10.0, 10.0]$

or,

```
[ a[2], a[2], a[2] ] = [ 12.0, 12.0, 12.0 ]
```

which is the same as,

```
a[2] = 12.0  
a[2] = 12.0  
a[2] = 12.0
```

So the operation does occur more than once, but it's just the same operation. If you try `a[i] = a[i] + [x, y, z]`, `a[2]` will equal 'z', since that expression was executed last.

I hope this helps,
Steve Hartmann

Subject: Re: Array subscript question
Posted by [davidf](#) on Thu, 02 Mar 2000 08:00:00 GMT
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Kenneth P. Bowman (bowman@null.edu) writes:

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```

Uh, I'm sure it's doing the operation three times, Ken.

But always to the same value. :-)

Sounds what you want is a loop. I'm not too fond of them in IDL, but certainly it's appropriate here. I think the answer to your question really is this: array subscripting operations are NOT loops!

```
FOR I=0,2 DO a[2] = a[2] + 10.0
```

Cheers,

David

--

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

Toll-Free IDL Book Orders: 1-888-461-0155

Subject: Re: Array subscript question

Posted by [John-David T. Smith](#) on Fri, 03 Mar 2000 08:00:00 GMT

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"J.D. Smith" wrote:

>

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> A fast solution (better than loops in many cases), is listed in the manual using
> the histogram function (everyone's favorite), though it works for integer (long
> or otherwise) types only.
```

Actually, that's not really true. The sun is out and temporarily incapacitated by reasoning abilities.

As long as your i vector is >=0 and <n_elements(A), you can do:

```
a=a+histogram(i,MIN=0,MAX=n_elements(a)-1)*10.
```

JD

--

```
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Cornell University Dept. of Astronomy [*]   (607) 255-6263
304 Space Sciences Bldg.      [*]   FAX: (607) 255-5875
Ithaca, NY 14853          [*]
```

Subject: Re: Array subscript question

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A fast solution (better than loops in many cases), is listed in the manual using the histogram function (everyone's favorite), though it works for integer (long or otherwise) types only.

I'll simply regurgitate:

The HISTOGRAM function can also be used to increment the elements of one vector whose subscripts are contained in another vector. To increment those elements of vector A indicated by vector B, use the command:

```
A = HISTOGRAM(B, INPUT=A, MIN=0, MAX=N_ELEMENTS(A)-1)
```

This method works for duplicate subscripts, whereas the following statement never adds more than 1 to any element, even if that element is duplicated in vector B:

```
A[B] = A[B]+1
```

JD

--

```

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```
