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Subject: Re: fast array comparison

Posted by [Sean Raffuse](#) on Sun, 08 Dec 2002 20:32:07 GMT

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David,

Thanks for this. It works almost perfectly. I am a little confused though. It seems that the indices keyword returns the indices of the requested array and not the available array.

"David Fanning" <david@dfanning.com> wrote in message  
news:MPG.185d3307aad96bee989a51@news.frii.com...

> Sean Raffuse (sean@me.wustl.edu) writes:

>

>> Let's say I have two arrays.

>>

>> requested\_array = [5,6,7,8,9,10]

>> available\_array = [3,7,8,9,12,13,16]

>>

>> What is the absolute fastest way to determine the indices of  
available\_array

>> that contain values in requested\_array? The indices need not match.  
i.e.,

>> if the two arrays above were used, I would like to return index=[1,2,3]

>> because the requested values 7, 8 and 9 are in the available array.

>

> The absolute fastest way MUST involve histograms, so

> I maintain with a great deal of confidence (say, in the 40-50

> percent range) that this is the fastest possible algorithm:

>

> \*\*\*\*\*

> FUNCTION SetIntersection, a, b, Indices=indices

> minab = Min(a, Max=maxa) > Min(b, Max=maxb) ;Only need intersection of  
> ranges

> maxab = maxa < maxb

>

> ; If either set is empty, or ranges don't intersect: result = NULL.

>

> IF maxab LT minab OR maxab LT 0 THEN RETURN, -1

> r = Where((Histogram(a, Min=minab, Max=maxab) NE 0) AND \$

> (Histogram(b, Min=minab, Max=maxab) NE 0), count)

> IF Arg\_Present(indices) THEN \$

> indices = Where((Histogram(a, Min=minab, Max=maxab) NE 0))

> IF count EQ 0 THEN RETURN, -1 ELSE RETURN, r + minab

> END

> \*\*\*\*\*

>

```
> Use it like this:
>
>
> IDL> request_array = [5,6,7,8,9,10]
> IDL> avail_array = [3,7,8,9,12,13,16]
> IDL> int = setintersection(avail_array, request_array, Indices=i)
> IDL> print, int, i
>      7      8      9
>      2      3      4
>
> Cheers,
>
> David
>
> --
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