
Subject: Re: fast array comparison

Posted by [Sean Raffuse](#) on Sun, 08 Dec 2002 20:35:57 GMT

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Sorry, sent that last post before I wanted to.

> 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.

> 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

>

How do I switch it so that indices returns the indices of the available array. I am apparently not understanding the code.

Thanks yet again,

Sean

>

>

> "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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>

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