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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