Subject: Re: [Q]IDL: Using WHERE.
Posted by Andy Loughe on Tue, 19 Mar 1996 08:00:00 GMT
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Joe Fitzgerald wrote:
>
> Where finds the non-zero elements of an array; e.g.

Huh?
If array=[30, 40, 10, 0]? Then B=[0,1]
If array=dist(10)-50., then B=-1

> array = FINDGEN(100)
> B = Where(array GT 20., count)
> B is an array containing the subscripts of ARRAY for values greater than
> 20.

Yes. If there are any (see above example)!

> Is there a way to use B to get the complementary values; i.e., the array
> of subscripts for which ARRAY is less than 20?

Uh! This is a set-up, isn't it?
Is my boss watching?
How about LESS THAN OR EQUAL TO? That would be complementary.

Why use B? Why not use...
C = Where(array LE 20., count)
if (count gt 0) then print, 'Hurray!'

If you must use B, then try using the uniq function.

--
Andrew F. Loughe (afl@cdc.noaa.gov)
University of Colorado, CIRES * Campus Box 449 * Boulder, CO 80309
phone: (303) 492-0707 fax: (303) 497-7013

Subject: Re: [Q]IDL: Using WHERE.
Posted by Mirko Vukovic on Wed, 20 Mar 1996 08:00:00 GMT
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Mark Rivers wrote:

> I think this will cut the computation time:
>

> t = (array gt 20) ; t(i) will be 0 or 1 depending upon comparison
> b = where(t) ; b is the indices of the > 20 elements
> c = where(t-1) ; c is the indices of the <= 20 elements
>
> This method avoids doing the floating point comparison twice.
> Yesss!! good thinking and thanks a lot. I was wondering how one might be able to accomplish this
--
Mirko Vukovic, Ph.D. mirko.vukovic@grc.varian.com
Varian Research Center Phone: (415) 424-4969
3075 Hansen Way, M/S K-109 Fax: (415) 424-6988
Palo Alto, CA 94304-1025

Subject: Re: [Q]IDL: Using WHERE.
Posted by rivers on Wed, 20 Mar 1996 08:00:00 GMT
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In article <314F31C4.2C6B@cdc.noaa.gov>, Andy Loughe <afl@cdc.noaa.gov> writes:
> Joe Fitzgerald wrote:

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> C = Where(array LE 20., count)
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I think the idea was to use B to avoid the potentially expensive operation of comparing the entire array again to find the complementary elements.

I think this will cut the computation time:

t = (array gt 20) ; t(i) will be 0 or 1 depending upon comparison
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c = where(t-1) ; c is the indices of the <= 20 elements

This method avoids doing the floating point comparison twice.

Mark Rivers (312) 702-2279 (office)
CARS (312) 702-9951 (secretary)
Univ. of Chicago (312) 702-5454 (FAX)
5640 S. Ellis Ave. (708) 922-0499 (home)

Chicago, IL 60637 rivers@cars3.uchicago.edu (Internet)

Subject: Re: [Q]IDL: Using WHERE.
Posted by Paul Schopf on Thu, 21 Mar 1996 08:00:00 GMT
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Thomas A. McGlynn wrote:

[snip, snip, snip]

> This is something that I've always wanted to be able to do efficiently
> but seem always to need to go through large arrays twice.
> I frequently run into the situation that I want to do one thing for

> with some bad pixels set to <0 and I want to display a logarithmic
> image of the data, I might want to do something like:
>
> w=where(image le 0)
> ww = where(image gt 0)
> qmin = min(image(ww))
> image(w) = .5*qmin
> tvscl,alog(image)
>

I know that this is not exactly what we are discussing here, but how about

tvscl, alog(image > 0.5*min(image(where(image gt 0))))

BTW, For Andy Loughe, note that we only ever need 1 line of code, for maximum obfuscation. In this case if the where statement fails, you are screwed anyway.

For Tom, I won't guarantee that this takes any less time.

--
Paul Schopf mailto://schopf@gsfc.nasa.gov
Coupled Climate Dynamics Group/971 http://ccdg.gsfc.nasa.gov/~paul
NASA Goddard Space Flight Center
Greenbelt, MD 20771

Subject: Re: [Q]IDL: Using WHERE.
Posted by Thomas A. McGlynn on Thu, 21 Mar 1996 08:00:00 GMT
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Mark Rivers wrote:
>
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> _____
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This is something that I've always wanted to be able to do efficiently
but seem always to need to go through large arrays twice.
I frequently run into the situation that I want to do one thing for
one set of pixels and another for all of the rest, e.g., if I have an image
with some bad pixels set to <0 and I want to display a logarithmic
image of the data, I might want to do something like:

```
w=where(image le 0)
ww = where(image gt 0)
qmin = min(image(ww))
image(w) = .5*qmin
tvscl,alog(image)
```

It would be extremely useful if there were an optional, perhaps keyword,
parameter in where which gave the complement of the array-elements retrieved
so that one needn't call where twice, i.e.,

w=where(image le 0, complement=ww)

would replace the first two lines above. I imagine this could be substantially
faster than running where twice or using '<' or '>' operators to
replace one of the where's.

Tom McGlynn
Goddard Space Flight Center

Subject: Re: [Q]IDL: Using WHERE.
Posted by steinhh on Fri, 22 Mar 1996 08:00:00 GMT
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In article <31519B73.167E@silk.gsfc.nasa.gov>, "Thomas A. McGlynn"
<tam@silk.gsfc.nasa.gov> writes:
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|> parameter in where which gave the complement of the array-elements retrieved
|> so that one needn't call where twice, i.e.,
|>
|> w=where(image le 0, complement=ww)
|>

Yes please! I'd like that!

Too bad I'm stuck with programming for IDL 3.6 ....

Stein Vidar
