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:
>
> In article <314F31C4.2C6B@cdc.noaa.gov>, Andy Loughe <afl@cdc.noaa.gov> writes:
>> Joe Fitzgerald wrote:
>
>>> 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!'
>
> 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
> 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.
>
> _____
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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.

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