Subject: Re: Array comparison part 2
Posted by Dick Jackson on Thu, 03 Oct 2002 16:33:24 GMT
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"Sean Raffuse" <sean@me.wustl.edu> wrote in message
news:anhkqbipf1@newsreader.wustl.edu...
> Thanks for all the help on my first question. I now have a related
> question.
>
> What is the best (read: fastest) way to do the following:
>
> I have an array of coordinates, A = intarr(2,25)
> and I have another array of a specific location,   B = [125,1043]
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> Is it possible to do this without splitting A?

Oh, sure. Using the "replicate data rather than loop" principle, we
stretch B to be the same shape as A, then compare. Try this:

nCoords=25
a=indgen(2,nCoords)
b=[4,5]
print,Total(Total(a EQ (Rebin(b, 2, nCoords)), 1) EQ 2) GT 0

(result is 1, there is a match)

b=[4,6]
print,Total(Total(a EQ (Rebin(b, 2, nCoords)), 1) EQ 2) GT 0

(result is 0, there is no match)

To find *which* one(s) it matches, look at the inner part:
Total(a EQ (Rebin(b, 2, nCoords)), 1) EQ 2

This will be 1 where 'a' matches a pair of 'b' entries, use Where to
find which one (or more) it matches.

Cheers,
--
-Dick

Dick Jackson   /   dick@d-jackson.com
D-Jackson Software Consulting /   http://www.d-jackson.com
Calgary, Alberta, Canada   / +1-403-242-7398 / Fax: 241-7392

Subject: Re: Array comparison part 2
Posted by chia on Fri, 04 Oct 2002 00:27:18 GMT
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"Dick Jackson" <dick@d-jackson.com> wrote in message
news:<oj_m9.473388$f05.21183164@news1.calgary.shaw.ca>...
> "Sean Raffuse" <sean@me.wustl.edu> wrote in message
> news:anhkqbipf1@newsreader.wustl.edu...
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> This will be 1 where 'a' matches a pair of 'b' entries, use Where to
> find which one (or more) it matches.
>
> Cheers,

I like the 'where' function, below is how I would
implement it to solve your particular problem:

------------------start test.pro-------------------

```
pro test

time0 = systime(1)

a = indgen(2,25)
b = [4,5]

;#########################################
; PERFORM COMPARISON
;#########################################
xloc = where (a(0,*) EQ b[0])
yloc = where (a(1,*) EQ b[1])

;#########################################
; RETURN RESULTS
;#########################################
if xloc EQ yloc then begin
  print, 2, xloc
endif else begin
  print, "No Match"
endelse

print, 'Execution Time = ', systime(1)-time0, ' secs'

end
```
-----------------end test.pro-------------------

Subject: Re: Array comparison part 2
Posted by tam on Fri, 04 Oct 2002 13:58:35 GMT
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Sean Raffuse wrote:
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> Is it possible to do this without splitting A?
>
> Thanks,
>

> Sean
>
>

Just try

   w = where(b[0] eq a[0,*] and b[1] eq a[1,*])

No need for anything complex here.
Or perhaps it's too early in the morning and I'm missing something...

   Regards,
   Tom McGlynn

Subject: Re: Array comparison part 2
Posted by James Kuyper on Fri, 04 Oct 2002 14:20:35 GMT
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Chia Chang wrote:
>
> "Dick Jackson" <dick@d-jackson.com> wrote in message
news:<oj_m9.473388$f05.21183164@news1.calgary.shaw.ca>...
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> I like the 'where' function, below is how I would
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> ------------------start test.pro-------------------
> pro test
>
> time0 = systime(1)
>
> a = indgen(2,25)
> b = [4,5]
>
> ;#######################################
> ; PERFORM COMPARISON
> ;#######################################
> xloc = where (a(0,*) EQ b[0])
> yloc = where (a(1,*) EQ b[1])
>
> ;#######################################
> ; RETURN RESULTS
> ;#######################################
> if xloc EQ yloc then begin
>   print, 2, xloc
> endif else begin
>   print, "No Match"

> endelse

Unless I'm missing something, that doesn't handle correctly the
possibility that there might be multiple matches, much less the
possibility that there might be a different set of matches for xloc than
for yloc. Of course, that possibility doesn't arise in your test data,
but it doesn't seem to be ruled out by the original problem description.

Subject: Re: Array comparison part 2
Posted by Dick Jackson on Fri, 04 Oct 2002 15:46:55 GMT
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"Tom McGlynn" <tam@lheapop.gsfc.nasa.gov> wrote in message
news:3D9D9E8B.8060401@lheapop.gsfc.nasa.gov...
>
>
> Sean Raffuse wrote:
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> No need for anything complex here.
> Or perhaps it's too early in the morning and I'm missing something...

Of course, I was just solving the puzzle as given "without splitting A".
Yours is certainly a better solution overall.

Cheers,
--
-Dick

Dick Jackson   /   dick@d-jackson.com
D-Jackson Software Consulting /   http://www.d-jackson.com

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Subject: Re: Array comparison part 2
Posted by tam on Fri, 04 Oct 2002 17:21:07 GMT
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Dick Jackson wrote:
> "Tom McGlynn" <tam@lheapop.gsfc.nasa.gov> wrote in message
> news:3D9D9E8B.8060401@lheapop.gsfc.nasa.gov...
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>> Sean Raffuse wrote:
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>
> Of course, I was just solving the puzzle as given "without splitting A".
> Yours is certainly a better solution overall.
>

I guess I just assumed that "without splitting A" meant
without divvying things up in some kind of for loop.
Perhaps the original poster could be more explicit...
Always good to know the rules of the game!

    Tom McGlynn

Subject: Re: Array comparison part 2
Posted by JD Smith on Fri, 04 Oct 2002 20:04:56 GMT
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On Thu, 03 Oct 2002 09:33:24 -0700, Dick Jackson wrote:

> "Sean Raffuse" <sean@me.wustl.edu> wrote in message
> news:anhkqbipf1@newsreader.wustl.edu...
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> This will be 1 where 'a' matches a pair of 'b' entries, use Where to
> find which one (or more) it matches.

A faster way to do this, if you don't care about the locations where
equality occurs, is to use array_equal(), which halts as soon as it find
an equal value:

print, array_equal(a[0,*] ne b[0] OR a[1,*] ne b[1],1b) eq 0b

JD