Subject: Re: Finding the Top Two Most Common Coordinates in a Multi-Dimensional Array Posted by Juggernaut on Wed, 30 Jul 2008 11:54:00 GMT View Forum Message <> Reply to Message

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On Jul 29, 11:50 am, Jeremy Bailin <astroco...@gmail.com> wrote:
> On Jul 29, 2:32 am, Brian Larsen <balar...@gmail.com> wrote:
>
>> We do need some more information but this is just screaming for
>> histogram. Have a read throughhttp://www.dfanning.com/tips/histogram_tutorial.html
>> . Using histogram to see which x's are common you can step through
>> the reverse indices and see which y's are then common. There is
>> probably a more graceful way however.
>
>> Cheers,
>
>> Brian
>> Brian Larsen
>> Boston University
>> Center for Space Physicshttp://people.bu.edu/balarsen/Home/IDL
>
> In particular, if you're dealing with integers that don't span too big
> a range, use HIST_2D and find the maximum element. If you've got
> floats or a wide range, use UNIQ to turn each into an integer on a
> small range first.
> -Jeremy.
I think if I were to be working with small datasets....ie not in the
millions of points I would use something like this
coords = [[10,1],[20,32],[5,7],[6,8],[20,32],[2,14],[20,32],[10,10],
[3,1],[21,14]]
counter = intarr(9)
FOR i = 0, 8 DO BEGIN
 FOR i = 0, 8 DO BEGIN
  IF array_equal(coords[*,i],coords[*,i]) THEN counter[i]++
 ENDFOR
ENDFOR
:- Histogram to find the max bins (no need to measure anything below 2
```

:- because that would just be a single hit and if all of your pairs

;- only occur once then who cares, right? hist = histogram(counter, min=2, reverse_indices=ri) maxHist = max(hist, mxpos) IF maxHist EQ 1 THEN print, 'Each pair occurs no more than once'

- ;- Use the reverse indices given by histogram to find out exactly
- ;- where in your counter these maxes are occurring array_index = (counter[ri[ri[1]:ri[2]-1]])[0]
- ;- Find where counter is equal to the array index determined by
- ;- reverse indices max_index = where(counter EQ array_index)
- ;- Voila with your max pair print, coords[*,max_index[0]]

Which spits out....

20 32

This could be tweaked to find the top two or three or whatever as well.

Hope this helps.