Subject: Re: histogram & reverse_indices
Posted by Wayne Landsman on Tue, 09 Apr 2002 20:47:45 GMT
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Ken Mankoff wrote:

>
> I have a 2D array made up of n quadruplets. Ex:
> array =[[1,1,1,2], $
>   [1,1,1,1], $
>   [3,4,3,2], $
>   [3,3,0,0], $
>   [5,5,0,5]]
>
> I want my algorithm to do the following: Return the index of all the
> quadruplets that have at least 3 out of 4 numbers equal to each other
> (i.e. for the above array, it should return [0,1,4]

Here's a non-loop solution for the specific case, although it is a
solution that is difficult to generalize, and which may be less
understandable and slower than simply using a loop.

The idea is that if 3 out of 4 numbers are equal to each other, then that
number is either the minimum or the maximum of the quadruplet.   So we
first get the min and max of each quadruplet.

```
   amin = min(array,dimen=1,max=amax)      ;V5.5 needed
```

Now reform/rebin the min and max vectors into a 2d arrays

```
amax = rebin(reform(amax,1,5),4,5)
amin = rebin(reform(amin,1,5),4,5)
```

Now find which values in the array are equal to either the minimum or the
maximum.   Total along rows
to determine if 3 or more values in a quadruplet meet this condition:

```
print,where( (total((array EQ amin),1) GE 3) or $
               (total((array EQ amax),1) GE 3))
```

---> [0,1,4]

--Wayne
landsman@mpb.gsfc.nasa.gov