Subject: Re: Histogram question
Posted by Michael Wallace on Sun, 08 Aug 2004 18:28:59 GMT
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```
>  I don't know if this is the most "efficient" way,
>  but the idea is that you have to "replicate" the
>  numbers in v1 and v2 by the number of counts in v3.
>
>  For a quick and dirty method, I used this:
>
>   ;************************************************************ ******
>  v1 = [0, 1, 0, 2, 0, 2, 2, 1, 0]
>  v2 = [1, 1, 2, 2, 0, 1, 2, 0, 0]
>  v3 = [3, 0, 2, 0, 1, 1, 4, 2, 1]
>
>  ; Replicate each index by the number of counts.
>
>  v1_expand = Ptr_New(/Allocate_Heap)
>  v2_expand = Ptr_New(/Allocate_Heap)
>
>  *v1_expand = [Replicate(v1[0], v3[0])]
>  *v2_expand = [Replicate(v2[0], v3[0])]
>  FOR j=1,N_Elements(v3)-1 DO BEGIN
>     IF v3[j] NE 0 THEN *v1_expand = [*v1_expand, Replicate(v1[j], v3[j])]
>     IF v3[j] NE 0 THEN *v2_expand = [*v2_expand, Replicate(v2[j], v3[j])]
>  ENDFOR
>
>  final = Hist_2D(*v1_expand, *v2_expand)
>  Ptr_Free, v1_expand, v2_expand
>  Print, final
>   ;************************************************************ ******
>
>  Which gave me the answer:
>
>            2         2         0
>            3         0         1
>            2         0         4
>
```

Thanks, David. While this does work, using replicate could potentially create some monster-sized arrays. I failed to mention before that in a normal case, the values in the v3 vector will be on the order of thousands... and sometimes 10s of thousands. That's going to be a lot of numbers in memory!

I wrote this little snippet which doesn't use HIST_2D at all. It's just a simple FOR loop and adding values. Back in the good ol' days, I would have been satisfied with this, but after having read this newsgroup for

a while I just have a feeling that there's a way to get rid of that FOR loop and do something totally cool with the HISTOGRAM function. So I guess my question is more academic than anything else. Anyway, here's the snippet ...

```
v1 = [0, 1, 0, 2, 0, 2, 2, 1, 0]
v2 = [1, 1, 2, 2, 0, 1, 2, 0, 0]
v3 = [3, 0, 2, 0, 1, 1, 4, 2, 1]


arr = intarr(max(v1) + 1, max(v2) + 1)
n = n_elements(v3)

for i = 0, n - 1 do begin
    arr[v1[i], v2[i]] += v3[i]
endfor


print, arr
```

-Mike
