
Subject: Re: advise for saving a for-loop
Posted by [Jean H.](#) on Mon, 14 Sep 2009 16:50:18 GMT
[View Forum Message](#) <> [Reply to Message](#)

Bernhard Reinhardt wrote:

> Hi,
>
> I don't know if there's a special term for what I'm trying to do:
>
> I have two 2D arrays of the same size (msg_x and msg_y) which contain x-
> and y-values. So msg_x consists of rows which contain mainly the same
> values and msg_y consists of columns which contain mainly the same
> values. But it has to be mentioned that values are slightly changing in a
> row or column. That's what makes things nasty.
> For msg_y it means, it may look like:
> 1000 1000 1000 1000 [...] 1001 1001 1001 1001 [...] 1002 1002
> 1001 1001 1001 1001 [...] 1002 1002 1002 1002 [...] 1003 1003
> 1002 1002 1002 [...] 1003 1003 1003 1003 [...] 1004 1004 1004
>
> I also have two linear arrays li_x and li_y of the same size. I now want
> to make a map with the same dimensions of msg_x with a 1 where the
> points in the linear arrays match into the pseudo-grid and 0 elsewhere.
>
> Here's how I do it at the moment:
>
> for i=0, N_ELEMENTS(li_x)-1 do begin
> ind=WHERE(msg_x eq li_x[i] AND msg_y eq li_y[i])
> if ind[0] ne -1 then ligrid[ind] = 1
> endfor
>
> The 2-D arrays have sizes of 600x600 or 1800x1800 and the linear arrays
> are of size 10000.
>
> This means we have to search 10000 over the two 2D-arrays which takes
> some time.
>
> I guess there must be a smarter way to do. I thought about some
> solutions involving sort and histogram but so far I couldn't come up
> with a solution without for-loops.
>
> I'd be pleased if someone of you could enlighten me.
>
> Regards,
>
> Bernhard

Hi Bernhard,

yes, histogram is the way to go. You will want to 1) intersect msg_x and li_x, then 2) msg_y and li_y and 3) the output of 1 and 2 (index based)

Have a look at

http://www.dfanning.com/tips/set_operations.html

you can get ri from the 1st histogram and return the following, to get the index:

```
r = Where((Histogram(a, Min=mina, Max=maxa, reverse_indices=ri) NE 0)
AND (Histogram(b, Min=mina, Max=maxa) NE 0), count)
```

```
IF count eq 0 THEN RETURN, -1
toReturn = ri[ri[r[0]]:ri[r[0]+1]-1]
```

```
for Rcount = 1, count-1 do begin
  toReturn = [toReturn,ri[ri[r[Rcount]]:ri[r[Rcount]+1]-1]]
endfor
```

Jean
