Subject: An algorithm puzzle
Posted by Y.T. on Sat, 14 Jun 2008 03:43:09 GMT
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Imagine there's a byte-array named "P" that contains only zeros and
ones:

```
IDL> help,p
P            BYTE    = Array[5000, 4250]
IDL> print,n_elements(where(p eq 0 or p eq 1))
   21250000
IDL> print,5000L*4250
   21250000
```

I am trying to construct a new (lon)array "D" with the same dimensions
as "P" with the following properties:

If P[x,y] eq 0 then D[x,y] = 0 (this part is easy)
If P[x,y] eq 1 then D[x,y] = the smallest distance between {x,y} and a
point in P that is equal to 0

In essence I'd like to know how far each non-zero "pixel" in p is from
a place that is zero (so that I can do statistics on the frequency of
certain distances and such).

I'm currently brute-forcing it with two for-loops where I calculate
the distance between every single element and every single "other"
element and then finding the minimum. Needless to say this takes about
a metric forever and I figured you folks usually have really clever
ideas so I'm throwing this out here to see whether there isn't some
obscure usage of histogram that does exactly what I want...

cordially

Y.T.