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.

Subject: Re: An algorithm puzzle
Posted by David Fanning on Mon, 16 Jun 2008 04:29:51 GMT
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Y.T. writes:

> Wow - I'm looking for a clever solution and IDL has a built-in.

Who would have thunk it!?

But, I don't know. It's sort of bogus to steal a T-shirt
from ITTVIS and then turn around and give it back to them.
Any suggestions? :-(

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: An algorithm puzzle
Posted by Jelle on Mon, 16 Jun 2008 10:16:58 GMT
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On Jun 16, 5:29 am, David Fanning <n...@dfanning.com> wrote:
> Y.T. writes:
>> Wow - I'm looking for a clever solution and IDL has a built-in.
>
> Who would have thunk it!?
>
> But, I don't know. It's sort of bogus to steal a T-shirt
> from ITTVIS and then turn around and give it back to them.
> Any suggestions? :-(
>
> Cheers,
>
> David

ehr..
Even though IDL has it built in, it was new to YT, wasn't it? You
asked for a solution that ran in less than 10sec, you didn't specify
that the function had to be coded by that person :|

I find my solution perfectly acceptable! :D

Subject: Re: An algorithm puzzle
Posted by David Fanning on Mon, 16 Jun 2008 13:20:00 GMT
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Jelle writes:

> ehr..
> Even though IDL has it built in, it was new to YT, wasn't it? You
> asked for a solution that ran in less than 10sec, you didn't specify
> that the function had to be coded by that person :|
>
> I find my solution perfectly acceptable! :D

Alright, I learned long ago as a tennis player that if
people won't lose to you, there *are* no victories, so
I'll send the shirt along. (Assuming I can stuff it under
my shirt as I'm walking out of the place.)

Let me know where to send it. You can find my e-mail
address in the usual secret places I use to put the
spammers off my tail.

Cheers,

David

--
David Fanning, Ph.D.
Fanning Software Consulting, Inc.
Coyote's Guide to IDL Programming: http://www.dfanning.com/
Sepore ma de ni thui. ("Perhaps thou speakest truth.")

Subject: Re: An algorithm puzzle
Posted by Jelle on Mon, 16 Jun 2008 17:47:28 GMT
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Hahahaha,

It is not about victories or prices, it is about the everlasting
honour in the great wall of fame, isn't it?

I do not seriously need the T-Shirt. You helped me so many times in
the past with some snippets -and larger projects- that I'll consider
that as my price. :)

Cheers,

J
