
Subject: Re: Mapping question...

Posted by [Paul van Delst](#) on Mon, 11 Jun 2001 16:01:54 GMT

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Guillaume Dargaud wrote:

>

> For lack of a better place, I'll ask it here even though it is not IDL

> specific (but I will probably implement it in IDL).

>

> I need to make maps of the world in a special way (I don't even know what

> this is called, so if anybody can provide me with a keyword...)

> Say you have a quantity of rain per sq degrees and you want to enlarge the

> surface area of places where it rains a lot and shrink the surface area of

> dry places... You end up with a tiny sahara, but large tropical zones...

> How would you go to do something like that...?

> I have seen it done before, but don't know what this kind of mapping is

> called.

Bad mapping? :o)

It doesn't sound like it will produce an easy to understand map, but what would I know.

FWIW, I'm always suspicious of maps/graphs that use area as a graphing dimension since

area is a squared quantity and usually the number used to calculate the area is not scaled

for this leading to a biased plot that emphasises the larger values (like when graphs use

different sized circles and/or squares to represent a 3rd dimension in a 2d plot.).

cheers,

paulv

--

Paul van Delst A little learning is a dangerous thing;
CIMSS @ NOAA/NCEP Drink deep, or taste not the Pierian spring;
Ph: (301)763-8000 x7274 There shallow draughts intoxicate the brain,
Fax:(301)763-8545 And drinking largely sobers us again.
 Alexander Pope.

Subject: Re: Mapping question...

Posted by [Dick Jackson](#) on Mon, 11 Jun 2001 19:42:47 GMT

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Hi Guillaume,

"Guillaume Dargaud" <dargaud@sung3.ifs.rm.cnr.it> wrote in message
news:3b24e6b1@news.ColoState.EDU...

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> called.

This caught my interest, so here's what I found:

"A cartogram or Density Equalizing Map Projection is a map whose boundaries have been deformed so that population density is uniform over the entire map." (substitute any measurable quantity for "population density")

A good starting point:

<http://www.geog.ubc.ca/courses/klink/g372/notes/cartogram.html>

An example:

<http://www.statistik.zh.ch/map/bsp/aktuell/map.html>

To show the effect: select Population_abs from left popup, then click Cartogram Iterations a few times.

Another example (circles representing regions):

<http://www.statistik.zh.ch/map/dorling/dorlingexample.html>

I haven't studied this thoroughly, but it looks like existing algorithms are all iterative, starting with the original regions, nudging vertices around until the region areas match the quantities you wish them to reflect. Sounds like fun!

More References:

Dougenik, James. A., Nicholas R. Chrisman and Duane R. Niemeyer (1985): "An Algorithm to Construct Continuous Area Cartograms", Professional Geographer, 37 (1), 75-81.

Dorling, Daniel (1996): Area Cartograms: Their Use and Creation, Concepts and Techniques in Modern Geography (CATMOG), 59

<http://imap.chesapeake.net/~merrill/mdocs/demp/pubs.html>

Cheers,

--

-Dick

Dick Jackson / dick@d-jackson.com
D-Jackson Software Consulting / <http://www.d-jackson.com>

Subject: Re: Mapping question...

Posted by [James B Guthrie](#) on Mon, 11 Jun 2001 19:56:55 GMT

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Guillaume Dargaud wrote in message <3b24e6b1@news.ColoState.EDU>...>

> You end up with a tiny sahara, but large tropical zones...

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> called.

It is called a cartogram. The population based one is called an isodemographic map.

The manual form is accomplished by calculating a unit representation for the smallest mappable entity. (Say 10,000 people). Then you create the shape that encloses the largest number of entities in that unit for the map. (For population in Canada, that would be metro Toronto). You give this the "correct" shape enclosing the total area in units that it approximates. You repeat the process for successively smaller reportable areas. Then you try to fit the new maps in place relative to the first (largest) item. You may find that you have to distort the dimensions of smaller units that abut larger ones. (So for example, Missasauga abuts Toronto in the expected place). If you do that, then you have to reduce the perpendicular dimension so that the area is unchanged, even though the shape is.

Repeat, working outward from the larger objects, and allowing for enclosure in other "superior" shapes (say Ontario Province) which are also proportionally sized and positions.

You might find an automated version of such mapping through a search on "cartogram" or "cartograph".

-

> Guillaume Dargaud

> Colorado State University - Dept of Atmospheric Science

> <http://rome.atmos.colostate.edu/>

Subject: Re: Mapping question...

Posted by [Guillaume Dargaud](#) on Mon, 11 Jun 2001 23:42:39 GMT

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> <http://www.statistik.zh.ch/map/bsp/aktuell/map.html>

> To show the effect: select Population_abs from left popup, then click

> Cartogram Iterations a few times.

This stuff is great, it's a customizable java applet that does it.

I had begun to code my own algorithm when I got your post, so I guess I'll

try to use this applet instead...

--

Guillaume Dargaud

Colorado State University - Dept of Atmospheric Science

<http://rome.atmos.colostate.edu/>

"i¿½ Daddy daddy, there's a man at the door with a bald head.

i¿½ Well, tell him I've already got one."

Subject: Re: Mapping question...

Posted by [Peter Halls](#) on Tue, 12 Jun 2001 06:28:18 GMT

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The keyword you want is 'cartogram' ...

As a starting point, try to get hold of Danny Dorling's little book "Area Cartograms: Their Use and Creation", number 59 in the Concepts and Techniques in Modern Geography series (CATMOG) ISBN 1872464092, published by the Institute of British Geographers and available from Ms Rosie Cullington, School of Environmental Sciences, University of East Anglia, Norwich NR4 7TJ UK at a price of 10 pounds sterling. Rosie's Email is r.callington@uea.ac.uk and I'm sure she'd be pleased to give you further details.

Peter

On Mon, 11 Jun 2001, Guillaume Dargaud wrote:

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- > --
- > Guillaume Dargaud
- > Colorado State University - Dept of Atmospheric Science
- > <http://rome.atmos.colostate.edu/>
- > "My girlfriend told me I should be more affectionate. So I got two
- > girlfriends."
- >
- >
- >

>

PPPPPH H | Peter Halls - University of York Computing Service -
P P H | GIS Advisor
P P H | Email: P.Halls@YORK.AC.UK
PPPPPJHHHHH | Telephone: 01904 433806 FAX: 01904 433740
P J H | Smail: Computing Service,
P J H | University of York,
P J H | Heslington.
J | YORK YO10 5DD
J J | England.
JJJ This message has the status of a private & personal communication
