NAME

gvmap − find clusters and create a geographical map highlighting clusters.

SYNOPSIS

gvmap [**−ekv?**] [*options*] [**−o** *outfile*] [*files*]

DESCRIPTION

gvmap takes as input a graph in DOT format, finds node clusters and produces a rendering of the graph as a geographic-style map, with clusters highlighted, in xdot format.

The input graph must have node positions and width/height information defined, and nodes must not overlap.

OPTIONS

The following options are supported:

−a *k* The integer k specifies the average number of artificial points added along the bounding box of the labels. Such artificial points are added to avoid a country boundary cutting through the boundary box of the labels. Computing time is proportional to k; hence, for large graphs, a small value of k is suggested. If k = -1, a suitable value of k is automatically selected based on the graph size. By default k = -1.

−b *v* The real number v specifies the line width used to draw the polygon boundaries, with v < 0 for no line. By default v = 0.

−c *k* The integer k specifies color scheme used to color the countries. By default k = 1.

Acceptable values are:

0 : no polygons
1 : pastel
2 : blue to yellow
3 : white to red
4 : light grey to red
5 : primary colors
6 : sequential single hue red
7 : sequential single hue lighter red
8 : light grey

−C *d* The integer d specifies the maximum number of clusters (countries) allowed. By default d = 0, which means that there is no limit.

−d *d* The integer d specifies the random seed used during color assignment optimization that maximize color difference between neighbpring countries.

−e If specified, edges will be included in the final output.

−g *c* Specifies the bounding box color. If not specified, a bounding box is not drawn.

−k If specified, increases the randomesss of outer boundary.

−r *k* The number of random points k (integer) used to define sea and lake boundaries. If 0, auto assigned. By default v = 0

−s *v* The real number v specifies the depth of the sea and lake shores in points. If 0, auto assigned. By default v = 0.

−O Do NOT do color assignment optimization that maximizes color difference between neighboring countries

−o<*file*>
Put output in <file>. Default output is stdout

−v Verbose mode.

−z *c* Specified the polygon line color. Default is black.

EXAMPLES

Given a graph foo.gv, one way to generate a layout and highlight the clusters is to first select a layout engine with a suitable overlap removal method, then feed the output to gvmap, and finally render the map using specific graphics format. For example, the following pipeline creates a map with edges in semi-transparent light gray and nodes laid out using sfdp:

```
sfdp -Goverlap=prism foo.gv | gvmap -e | neato -n2 -Ecolor=#55555522 -Tpng > foo.png
```

The shell script gvmap.sh provides a shorthand for such pipelines. For example, the above pipeline can be achieved using

```
gvmap.sh -Ae -Ecolor=#55555522 -Tpng foo.gv > foo.png
```

AUTHOR

Yifan Hu <yifanhu@research.att.com>

SEE ALSO

gvmap.sh(1), sfdp(1), neato(1), gvpr(1)

E. R. Gansner, Y. Hu, S. G. Kobourov, "GMap: Visualizing graphs and clusters as maps," Proc. Pacific Vis. 2010, pp. 201-208.