

visNetCircle

April 22, 2015

visNetCircle

Function to visualise an igraph object via circle diagram

Description

visNetCircle is supposed to visualise a graph object of class "igraph" via circle diagram. For better visualisation, ordering of vertices is determined according to communities and degrees.

Usage

```
visNetCircle(g, com, circles = c("single", "multiple"), newpage = T,  
ordering = NULL, colormap = c("rainbow", "bwr", "jet", "gbr", "wyr",  
"br",  
"yr", "wb"), vertex.label = V(g)$name,  
vertex.size = log(igraph::degree(g)) + 2, vertex.label.color = "black",  
vertex.label.cex = 0.6, vertex.label.dist = 0.75,  
vertex.shape = "sphere", edge.width = 1, edge.lty = 1,  
edge.color.within = "grey", edge.color.crossing = "black",  
mark.shape = 1, mark.expand = 10, ...)
```

Arguments

g	an object of class "igraph"
com	an object of class "communities" (see http://igraph.org/r/doc/communities.html)
circles	how circles are drawn in the plot. It can be either "single" for all communities being drawn in a single circle (by default) or "multiple" for communities being drawn in the different circles (i.e. one circle per community)
newpage	logical to indicate whether to open a new page. By default, it sets to true for opening a new page
ordering	a numeric vector about the ordering of vertices. It is optional. It is highly recommend to order vertices according to communities and degrees
colormap	short name for the colormap. It can be one of "jet" (jet colormap), "bwr" (blue-white-red colormap), "gbr" (green-black-red colormap), "wyr" (white-yellow-red colormap), "br" (black-red colormap), "yr" (yellow-red colormap), "wb" (white-black colormap), and "rainbow" (rainbow colormap, that is, red-yellow-green-cyan-blue-magenta). Alternatively, any hyphen-separated HTML color

	names, e.g. "blue-black-yellow", "royalblue-white-sandybrown", "darkgreen-white-darkviolet". A list of standard color names can be found in http://html-color-codes.info/color-names
<code>vertex.label</code>	the label of the vertices. The default vertex labels are the name attribute of the nodes
<code>vertex.size</code>	the size of each vertex. By default, it is decided according to node degrees
<code>vertex.label.color</code>	the color of vertex labels
<code>vertex.label.cex</code>	the font size of vertex labels
<code>vertex.label.dist</code>	the distance of the label from the center of the vertex. If it is 0 then the label is centered on the vertex. If it is 1 then the label is displayed beside the vertex.
<code>vertex.shape</code>	the shape of each vertex. It can be one of "circle", "square", "csquare", "rectangle", "crectangle", "vrectangle", "pie" (http://igraph.org/r/doc/vertex.shape.pie.html), "sphere", and "none". If it sets to NULL, these vertices with negative will be "csquare" and the rest "circle".
<code>edge.width</code>	line width for the edges (default 1)
<code>edge.lty</code>	line type for the edges (default 1)
<code>edge.color.within</code>	the color for edges within a community (default "grey")
<code>edge.color.crossing</code>	the color for edges between communities (default "black")
<code>mark.shape</code>	a numeric scalar or vector controlling the smoothness of the vertex group marking polygons. Its possible values are between -1 (fully polygons) and 1 (fully smoothness)
<code>mark.expand</code>	a numeric scalar or vector, the size of the border around the marked vertex groups
<code>...</code>	additional graphic parameters. See http://igraph.org/r/doc/plot.common.html for the complete list.

Value

invisible

Note

none

See Also[visNet](#)**Examples**

```
# 1) generate a random graph according to the ER model
g <- erdos.renyi.game(100, 1/80)

# 2) produce the induced subgraph only based on the nodes in query
g <- dNetInduce(g, V(g), knn=0)
```

```
# 3) color nodes according to communities identified via a spin-glass model and simulated annealing
com <- spinglass.community(g, spins=4)
vgroups <- com$membership
palette.name <- visColormap(colormap="rainbow")
mcolors <- palette.name(length(com))
vcolors <- mcolors[vgroups]

# 4) size nodes according to degrees
vdegrees <- igraph::degree(g)

# 5) sort nodes: first by communities and then degrees
tmp<-data.frame(ind=1:vcount(g), vgroups, vdegrees)
ordering <- tmp[order(vgroups,vdegrees),]$ind

# 6) visualise graph using circle diagram
# 6a) drawn into a single circle
visNetCircle(g=g, colormap="bwr", com=com, ordering=ordering)

# 6b) drawn into multiple circles (one circle per community)
visNetCircle(g=g, colormap="bwr", com=com, circles="multiple",
ordering=ordering)

# 7) as comparison, also visualise graph on 2-dimensional layout
mark.groups <- communities(com)
mark.col <- visColoralpha(mcolors, alpha=0.2)
mark.border <- visColoralpha(mcolors, alpha=0.2)
edge.color <- c("grey", "black")[crossing(com,g)+1]
visNet(g, colormap="bwr", glayout=layout.fruchterman.reingold,
vertex.color=vcolors,
vertex.frame.color=vcolors, vertex.shape="sphere",
mark.groups=mark.groups, mark.col=mark.col,
mark.border=mark.border, mark.shape=1, mark.expand=10,
edge.color=edge.color)
```