part3-intrographanalytics

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Note that the echo = FALSE parameter was added to the code chunk to prevent printing of the R code that generated the plot.

##   
## Attaching package: 'igraph'

## The following objects are masked from 'package:stats':  
##   
## decompose, spectrum

## The following object is masked from 'package:base':  
##   
## union

## Loading required package: statnet.common

##   
## Attaching package: 'statnet.common'

## The following objects are masked from 'package:base':  
##   
## attr, order

## Loading required package: network

##   
## 'network' 1.17.2 (2022-05-20), part of the Statnet Project  
## \* 'news(package="network")' for changes since last version  
## \* 'citation("network")' for citation information  
## \* 'https://statnet.org' for help, support, and other information

##   
## Attaching package: 'network'

## The following objects are masked from 'package:igraph':  
##   
## %c%, %s%, add.edges, add.vertices, delete.edges, delete.vertices,  
## get.edge.attribute, get.edges, get.vertex.attribute, is.bipartite,  
## is.directed, list.edge.attributes, list.vertex.attributes,  
## set.edge.attribute, set.vertex.attribute

## sna: Tools for Social Network Analysis  
## Version 2.7 created on 2022-05-09.  
## copyright (c) 2005, Carter T. Butts, University of California-Irvine  
## For citation information, type citation("sna").  
## Type help(package="sna") to get started.

##   
## Attaching package: 'sna'

## The following objects are masked from 'package:igraph':  
##   
## betweenness, bonpow, closeness, components, degree, dyad.census,  
## evcent, hierarchy, is.connected, neighborhood, triad.census

nodes <- as.matrix(read.table('data\_subelj\_jdk/ent\_subelj\_jdk\_jdk\_class\_name.txt'))  
edges <- as.matrix(read.table('data\_subelj\_jdk/out\_subelj\_jdk\_jdk.txt', sep = "", header = F, skip = 2))

g <- graph\_from\_edgelist(edges, directed = TRUE)  
V(g)$name <- nodes  
net <- induced\_subgraph(g, igraph::V(g)[igraph::degree(g)>500])

# get the vertices of a graph  
V(net)

## + 44/44 vertices, named, from bb6c9b1:  
## [1] java.awt.Dimension java.lang.String   
## [3] java.util.Locale java.awt.Image   
## [5] java.awt.Component java.lang.Object   
## [7] java.io.PrintWriter java.io.PrintStream   
## [9] java.awt.Graphics java.beans.PropertyChangeListener   
## [11] java.awt.Font java.lang.Class   
## [13] java.awt.Point java.awt.Event   
## [15] java.util.Set java.awt.Container   
## [17] java.awt.ComponentOrientation java.awt.Insets   
## [19] java.awt.Color java.awt.Cursor   
## + ... omitted several vertices

# get the edges of a graph  
E(net)

## + 1228/1228 edges from bb6c9b1 (vertex names):  
## [1] java.awt.Dimension->java.lang.String   
## [2] java.awt.Dimension->java.lang.Object   
## [3] java.awt.Dimension->java.lang.Object   
## [4] java.awt.Dimension->java.lang.Class   
## [5] java.awt.Dimension->java.io.Serializable  
## [6] java.lang.String ->java.util.Locale   
## [7] java.lang.String ->java.util.Locale   
## [8] java.lang.String ->java.util.Locale   
## [9] java.lang.String ->java.lang.Object   
## [10] java.lang.String ->java.lang.Object   
## + ... omitted several edges

# get the adjacency matrix  
net.adj <- as\_adjacency\_matrix(net)  
net.adj

## 44 x 44 sparse Matrix of class "dgCMatrix"

## [[ suppressing 44 column names 'java.awt.Dimension', 'java.lang.String', 'java.util.Locale' ... ]]

##   
## java.awt.Dimension . 1 . . . 2 . . . . . 1 . . . . . .  
## java.lang.String . . 3 . . 4 . . . . . 1 . . . . . .  
## java.util.Locale . 20 . . . 3 . . . . . 1 . . . . . .  
## java.awt.Image . 2 . . . 4 . . 1 . . 1 . . . . . .  
## java.awt.Component 14 12 2 7 . 6 2 2 6 4 3 2 9 14 2 3 3 .  
## java.lang.Object . 1 . . . . . . . . . 1 . . . . . .  
## java.io.PrintWriter . 13 2 . . 3 . . . . . 1 . . . . . .  
## java.io.PrintStream . 12 2 . . 3 . . . . . 1 . . . . . .  
## java.awt.Graphics . 2 . 6 . 2 . . . . 3 1 . . . . . .  
....

## Analytic Functions

**gden {sna}** gden(dat, g=NULL, diag=FALSE, mode="digraph", ignore.eval=FALSE) gden computes the density of the graphs indicated by g in collection dat, adjusting for the type of graph in question.

An error that we encountered

is.igraph(net)

## [1] TRUE