Create Basic Visualizations

This page is designed to intorduce basic visualization for social network analysis in R.

First make sure you have network data loaded in R (see Create Network Object)

Visualize the data

First we need to load a library with visualization capabilities. I'll start with 'igraph', which is its own package.

```
library(igraph)
```

Note that igraph's excellent documentation is accessible via the command `?igraph`.

Read in the data with the following command:

```
fradj = read.delim("http://stanford.edu/~messing/Krack-High-Tec-ADVICE.tab",
header = TRUE, row.names = 1)
```

```
colnames(fradj) = 1:21
```

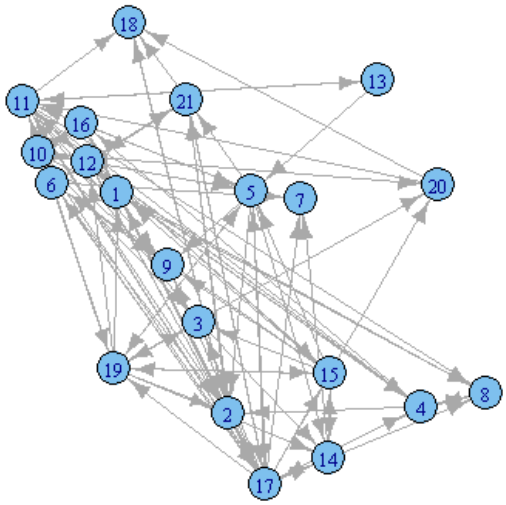
Now, create an igraph object out of the friendship data:

```
frnet = graph.adjacency(fradj)
```

```
frnet
```

This last command will show a summary of the frnet igraph object in directed edgelist format. Let's see the network!

```
plot.igraph(frnet)
```



But the nodes are placed randomly on the graph. We can see more with a better layout. At least in igraph, the best layout algorithm seems to be Fruchterman-Reingold (1991). Let's draw the graph again using this algorithm:

```
plot.igraph(frnet, layout=layout.fruchterman.reingold)
```

RELEVANT ONLINE RESOURCES

R project website

get R and relevant sna packages here, plus many other resources

R - getting started

list of online books, short guides, and reference cards to get started using R

Intro to Social Network Methods

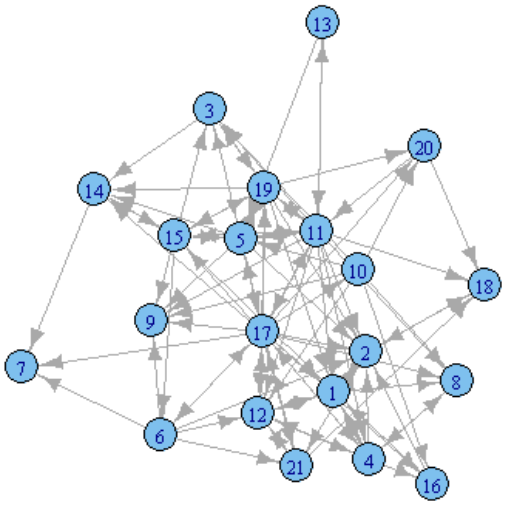
an excellent and free online book on social network analysis

statnet website

a series of R packages for network analysis, ideal for network/regression models

igraph website

an excellent package for working with network data and network visualization



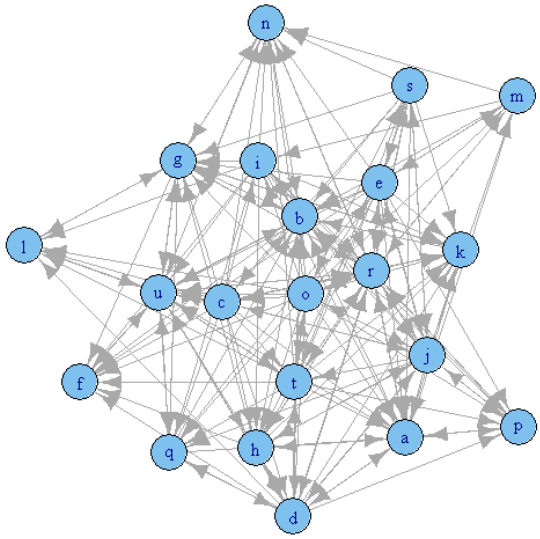
Much better. But the labels are blank, let's assign the vertex (node) names as the labels. First take a look at the names and then assign them to the label:

```
V(frnet)$name
```

Isn't it nice how we can access vertex (nodal) data as a vector via this syntax? This will come in handy for more complex visualizations.

For this network, we'll set the labels to letters in the alphabet:

```
V(frnet)$label = letters[as.numeric(V(frnet)$name)]
plot.igraph(frnet, layout=layout.fruchterman.reingold)
```



Now this graph looks ok, but there's a lot more we can do with R's visualization capabilities. You can learn more about how to get R to do some really good stuff at the page on affiliation data and visualization.

Works Cited:

Krackhardt, David (1992). “The Strength of Strong Ties: The Importance of Philos in Organizations.” In chapter 8 of Networks and Organizations: Structure, Form, and Action. Eds. Nitin Nohria and Robert Eccles. Boston: Harvard Business School Press.

Borgatti, S. P., Everett, M. G., and Freeman, L. C. (2002). Ucinet 6 for windows: Software for social network analysis.

Fruchterman, T.M.J. and Reingold, E.M. (1991). Graph Drawing by Force-directed Placement. Software - Practice and Experience, 21(11):1129-1164.

Csardi G, Nepusz T: The igraph software package for complex network research, InterJournal, Complex Systems 1695. 2006. http://igraph.sf.net