

[Home](#)
[Use R](#)

R for Social Network Analysis  
 -> 'Import' Data From UCInet  
**-> Create Network Object**  
 -> Create Basic Visualization  
 -> Create Multiplex Visualization  
 -> Affiliation Data  
 -> More Soon

[GUI SNA Applications](#)
[Network Visualizations](#)
[Other Cool Stuff](#)

# Create Network Objects

This page is designed to introduce basic functions useful for social network analysis in R.

## Download Relevant R Packages

Download R at [the R Project for Statistical Computing website](#). Click on CRAN and select the mirror closest to you. I leave installation for you.

Once installed, it's pretty easy to add the relevant packages, igraph and statnet:

```
install.packages("igraph")
```

```
install.packages("statnet")
```

And now let's get some data.

## Data: Krackhardt's High Tech Employees

The data is from Krackhardt (1992), which I discuss in the previous page on [importing data from UCINET](#). For your convenience, the data is available in tab-delimited format below:

[Krack-High-Tec-ADVICE.tab](#)

[Krack-High-Tec-REPORTS\\_TO.tab](#)

[Krack-High-Tec-FRIENDSHIP.tab](#)

[Krack-High-Tec-attr.tab](#)

## Get the data into R

Move the above files to some directory from which you will work. It's probably best if the path to the directory has no spaces or special characters and is close to the root directory (especially in Windows). Give R the location of that directory:

```
setwd("C:/eclwb/StanWeb")
```

Notice that you use forward slashes, not backslashes as you would in the Windows command prompt. You can use backslashes if you are a Windows user, but you must provide two backslashes because the backslash is an escape character used to specify special characters like tab `\t` and return `\n`.

In general, you can import data files via your operating system explorer with this command:

```
file.choose()
```

But, for this data set we'll want to use some custom syntax so that R deals with the data so that the labels are read correctly. Here's the syntax to import the file directly from your local copy:

```
frnet = read.delim("C:/eclwb/Stanweb/Krack-High-Tec-ADVICE.tab", row.names = 1)
```

Where "C:/eclwb/Stanweb" is whatever directory to which you downloaded the data. This is a tab-delimited data file, which is why we used `read.delim` instead of `read.csv` or `read.table` or `readLines`. We used the `"row.names = 1"` so that R read the first column in as the row names.

When practical, it's easier and better coding practice to just read the data set directly from the web:

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

In general you'll want to use `read.csv` (for comma-separated-values files) or `read.delim` (for tab-delimited files) most of the time. If your data is spaced such that the table looks good to the human eye, but is difficult to read, you'll probably want to try to use the `read.table` function. If that doesn't work, try copying and pasting the data to MS-Excel and selecting Data -> Text to Columns... You may want to use the [foreign package](#) to import data from SPSS, Stata, and/or SAS--though I recommend just exporting whatever data you need from one of those programs to .csv format. And, the `readLines` function really comes in handy when you want to scrape data from the web or perform analysis of text.

I recommend you take a close look at the documentation for reading in data by typing `?read.table` in the R console.

We can print the data just by referencing the name of the dataframe:

```
fradj
```

So far so good, except that the column names have an 'X' in front of them. This is because R thinks we might have made a mistake by telling it that we want our column names to consist of a series of numeric values. We could have avoided this in the first place by putting quotes around our column and row names in our original file, but this is a faster fix, which is useful in many network analyses in R:

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

## 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

We tell R to set the column names to the vector {1, 2, 3 ... 21} with this command.

If we wanted to make any last minute changes to the data, we could use the following command to bring up the R editor:

```
fix(fradj)
```

Now let's visualize the data.

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>

---

[Stanford University](#) | [Contact Information](#) | [Link 1](#) | [Link 2](#) | [Link 3](#)

© Stanford University. 450 Serra Mall, Stanford, California 94305. (650) 723-2300. [Terms of Use](#) | [Copyright Complaints](#)