This guide provides a quick introduction to UCINET. It assumes that the software has been installed with the data in the folder C:\Program Files\Analytic Technologies\Ucinet 6\DataFiles and this has been left as the default directory.

When UCINET is started the following window appears.



The submenu buttons give access to all of the routines in UCINET and these are grouped into **File**, **Data**, **Transform**, **Tools**, **Network**, **Visualize**, **Options and Help**. Note that the buttons located below these are simply fast ways of calling routines in the submenus. The default directory given at the bottom is where UCINET picks up any data and stores any files (unless otherwise specified) this directory can be changed by clicking on the button to the right.

Running a routine

To run a UCINET routine we usually need to specify a UCINET dataset and give some parameters. Where possible UCINET selects some default parameters which the user can change if required. Note that UCINET comes with a number of standard datasets and these will be located in the default directory. When a routine has been run there is some textual output which appears on the screen and usually a UCINET datafile contain the results that again will be stored in the default directory.

We shall run the degree centrality routine to calculate the centralities of all the actors in a standard UCINET dataset called TARO. First we highlight Network>Centrality>Degree and then click



If you click on the help button then a help screen will open which looks like this. The help file gives a detailed description of the routine, explains the parameters and describes the output that will appear in the log file and on the screen.

💕 UCINET 6 for Windows Online Help		
11년 (구 다) - 🚑 Hide Back Forward Print		
Type in the keyword to find:	NETWORK > CEN	STRALITY > DEGREE
	PURPOSE	Calculates the degree and normalized degree centrality of each vertex and gives the overall network degree centralization.
Affiliations Algebra Binary Operations Procedures Uniary Operations bittics	DESCRIPTION	The number of vertices adjacent to a given vertex in a symmetric graph is the degree of that vertex. For non-symmetric data the in-degree of a vertex u is the number of ties received by u and the out-degree is the number of ties initiated by u. In addition if the data is valued then the degrees (in and out) will consist of the sums of the values of the ties. The normalized degree centrality is the degree divided by the maximum possible degree expressed as a percentage. The normalized values should only be used for binary data.
Algebra Package Anova Attribute data		For a given binary network with vertices v1vs and maximum degree centrality cmms, the network degree centralization measure is $\overline{Z}(cmms - c(v_i))$ divided by the maximum value possible, where $c(v_i)$ is the degree centrality of vertex v1.
Autocorrelation Categorical Quantitative		The routine calculates these measures and some descriptive statistics based on these measures. Directed graphs may be symmetrized and the analysis is performed as above, or an analysis of the in and out degrees can be performed.
Berroull if Andom Networks Becomponents Brinary apples Brinary Operations Bray Departies Block Image Block Image Block Image	PARAMETERS	Input dataset: Name of file containing network to be analyzed. Data type: Valued Graph Treat data as symmetric: (Default = Yes) If Yes directed data is automatically converted to undirected by taking the underlying graph.
brokerage Categorical Celwise transformations Centrality Betweeness Bonacich Power		No gives a separate analysis for in and out-degrees. Count reflexive ties (diagonal values)? (Default = No). No means that self loops are ignored.
Closeness Degree Eigenvector		Output dataset: (Default = 'FreemanDegree'). Name of file which will contain degree and normalized degree centrality of each vertex.
Flow betweeness Hubbel Influence Information Katz Dispues Dispues	LOG FILE	A table which contains a list of the degree and normalized degree (n Degree) centralities expressed as a percentage for each vertex, together with the share. The share is the centrality measure of the actor divided by the sum of all the actor centralities in the network. These have been ordered so that the actor with the highest centrality appears first. Note the stored UCINET output file retains the original order. Descriptive statistics which give the mean, standard deviation, anince, minimum value and maximum value for each list generated. This is followed by the degree network centralization index expressed as a percentage.
Hierarchical Optimisation		For directed data the tables are the same as for undirected except that separate values are calculated for in and out degrees.
Clustering Hierarchical Cobesion	TIMING	Q(\$).
Distance Flow	COMMENTS	Degree centrality measures network activity. For valued data the non-normalized values should be used and the degree centralization should be ignored.
Reachability	REFERENCES	Freeman L C (1979). 'Centrality in Social Networks: Conceptual clanification', Social Networks 1, 215-239.

Close the help file and either by clicking on the pickfile button or by typing the name select the TARO data for analysis as follows.

Degree		
Input dataset:	TARO	 🗸 ок
Treat data as symmetric:	Yes 🔻	🗶 Cancel
Include diagonal values?	No 💌	7 Help
Output dataset:	FreemanDegree	 : Teh

Now click OK to run the routine to obtain the following.

DUTPUT.LOG3	- Notepad				PX
File Edit Format	⊻iew <u>H</u> elp				
FREEMAN'S	DEGREE CENT	RALITY MEASURES	:		^
	1.1.10				
Diagonal	valid?	NU	DIO		
MODEL:		SIMMEI TIDO (RIU Cod Desserver	Piles Analytic Technologies United () Deteriles TADO)	
input dat	aset:	IARO (C: \Program	Files Analytic lechnologies (Ucinet 6 (DataFiles (IARU)	
	1	2	3		
	Dearee	NrmDearee	Share		
17	6.000	28.571	0.077		
7	5.000	23.810	0.064		
5	5.000	23.810	0.064		
12	5.000	23.810	0.064		
11	5.000	23.810	0.064		
4	4.000	19.048	0.051		
3	3.000	14.286	0.038		
8	3.000	14.286	0.038		
2	3.000	14.286	0.038		
10	3.000	14.286	0.038		
9	3.000	14.286	0.038		
1	3.000	14.286	0.038		
13	3.000	14.286	0.038		
14	3.000	14.286	0.038		
15	3.000	14.286	0.038		
16	3.000	14.286	0.038		
6	3.000	14.286	0.038		
18	3.000	14.286	0.038		
19	3.000	14.286	0.038		
20	3.000	14.286	0.038		
21	3.000	14.286	0.038		
22	3.000	14.286	0.038		
		~			
DESCRIPTI	VE STATISTIC	S			~
<					>

This is a text file giving the results of the routine. Note you can scroll down to see more of the file. This file can be saved or copied and pasted into a word processing package. When UCINET is closed this file will be deleted. Close this file.

Note when the program was run we also created a new UCINET file called FreemanDegree. We can look at the new UCINET file using the Display dataset button. This is the D button that appears just below the Tools submenu (see the first diagram). Clicking on the D goes straight to the open file menu and bypasses some of the display options that are available if you used Data>Display. Click on display and select FreemanDegree. You should get the following

🖬 UCINET 6 for Wi	ndows Version 6.239						🔳 🗗 🔀
File Data Transform	Tools Network Visualize Options Help						
	D 👪						
How to cite UCINET:	· <u>····</u>						
Borgatti, S.P., Everett, M.	DUTPUT.LOG6 - Notepad						
A UCINET tutorial by Bob	File Edit Format View Help						
This copy of UCINET is n	DISPLAY						<u>^</u>
	Width of field: # of decimals: Rows to display: Columns to display	r:	MIN MIN all all				
	Column partition: Column partition: Input dataset:		FreemanDegre	e (C:∖Prog	gram Files∖Ana	alytic Technolo	ogies∖Ucine
	1 2 Degree NrmDeg	3 Share					
	$\begin{array}{c} & & & & & & \\ & & & & & \\ 1 & & & & & \\ 2 & & & & & \\ 3 & & & & & \\ 0 & & & & & \\ 4 & & & & & & \\ 4 & & & & &$	$\begin{array}{c} 0.038\\ 0.038\\ 0.038\\ 0.051\\ 0.064\\ 0.038\\ 0.064\\ 0.038\\ 0.064\\ 0.038\\ 0.038\\ 0.038\\ 0.038\\ 0.038\\ 0.0064\\ 0.064\\ 0.064\\ 0.064\\ 0.038\\ \end{array}$					~
			Ш				
C:\Program Files	Analytic Technologies(Ucinet 6(D	atahiles	×				<u> </u>
🛃 start 🛛 🔹	🗿 Guide6.doc (Compati 🛛 🗐 Documen	1 - Microsof 📅 Ucir	et 6 for Windows 🛛 🙀 UC	INET 6 for Window	OUTPUT.LOG3 - Note	OUTPUT.LOG6 - Note	EN < 🖃 📉 12:43

Note that this file has all the measures of centrality (but not sorted as in the text output) but does not have the descriptive statistics produced in the log file.

Using the spreadsheet editor

The spreadsheet editor can be used to amend any data or enter new data. It is also very useful for transferring UCINET data (such as centrality scores) to Microsoft Excel or SPSS. Note that the dl format provides a more sophisticated and flexible way of entering data and this is not covered in this introductory guide. If you click the spreadsheet button or under data run the data editors and click on matrix editor you will open up the spreadsheet editor and obtain the following. Note we have annotated the important buttons and areas of the editor below.



To see what a dataset looks like in the editor click file then open and select PADGETT. This is a non-symmetric binary data set with two relations and labels. Once open it will look like this.

📴 UCINET Spr	eadsheet -	C:\Progra	m Files\An	alytic Tech	nologies \l	lcinet 6\Da	taFiles\PA	DGETT	.##H 🔳 🗖 🔀
<u>File E</u> dit <u>T</u> ransf	orm Fill <u>L</u> a	abels <u>O</u> ption	ns <u>H</u> elp						
D ¢R €) 🔜 👗	Be (Ce Fil	+.00 Re	en					
	ACCIAI	ALBIZZI	BARBA	BISCH	CASTE	GINORI	GUAD	LA 🔼	Current cell:
ACCIAIUOL	0	0	0	0	0	0	0		Row: Col:
ALBIZZI	0	0	0	0	0	1	1		
BARBADORI	0	0	0	0	1	0	0		Dimensions Rows: Cols:
BISCHERI	0	0	0	0	0	0	1		16 16
CASTELLAN	0	0	1	0	0	0	0		Mode
GINORI	0	1	0	0	0	0	0		Normal Symmetric
GUADAGNI	0	1	0	1	0	0	0		
LAMBERTES	0	0	0	0	0	0	1		
MEDICI	1	1	1	0	0	0	0	~	
<	Ш	•						>	
PADGM PADGE	3								

We see the two relations PADGM and PADGB in the bottom left, clicking on the tabs changes sheet and we are viewing different relations. The labels are repeated along the rows and columns and are in the shaded area. We see the data has 16 actors as shown by the dimensions box on the right. This data can be edited and saved from the spreadsheet.

Running Netdraw

Click on the Netdraw button to launch Netdraw. This results in a new window which looks like this. We have annotated the most important buttons.



To use Netdraw it is important to load in a network first. We shall load in a standard UCINET dataset collected by Dave Krackhardt. Click on the load a file button and type or select the file Krack-High-Tec





Then click OK and you should see something like this. Click on the Rels tab indicated here.

You will now see this data has three relations Advice, Friendship and Reports to. If a relation is ticked then the edges relating to it are displayed. We shall now bring in an attribute file associated with this data called High-Tec-Attributes. Click on the load a file button again load the file but also click the radio button for node attributes under Type of Data so you have

🖼 Open Data File			
Name of file to open: C:\Program Files\Analytic Technolo	ogies\Ucinet 6\DataFiles\High-Tec-Attr	ibutes.##h	🗸 ок
File format: © Ucinet (*.##h,*.##d) © VNA (*.vna) © DL (*.d) © Pajek Network (*.net) © Pajek Partition (*.clu) © Pajek Vector (*.vec)	Type of Data: C 1-Mode Network(s) Node Attribute(s) C Network with Attributes C 2-Mode Network	Options Ignore reflexive ties Ignore missing values Ties have values > 0.0 but < 1E36	X Cancel

Note you can also click the button just to the right of the load button (with an A) and this will open up the same box but with the attribute button selected. Click OK and you will see the node attribute editor open up as follows.

🖼 Node Attribute Editor 📃 🗖 🔀									
<u>Eile E</u> dit									
InternalID	ID	AGE	TENURE	LEVEL	DEPT	^			
1	1	33.000	9.333	3.000	4.000				
2	2	42.000	19.583	2.000	4.000				
3	3	40.000	12.750	3.000	2.000				
4	4	33.000	7.500	3.000	4.000				
5	5	32.000	3.333	3.000	2.000				
6	6	59.000	28.000	3.000	1.000				
7	7	55.000	30.000	1.000	0.000				
8	8	34.000	11.333	3.000	1.000				
9	9	62.000	5.417	3.000	2.000				
10	10	37.000	9.250	3.000	3.000				
11	11	46.000	27.000	3.000	3.000				
12	12	34.000	8.917	3.000	1.000				
13	13	48.000	0.250	3.000	2.000				
14	14	43 000	10 417	2 000	2 000	×			
<					>	ļ			
						//			

We are going to size the nodes by age, colour them by department and shape them according to level. Close the attribute editor and click on the colour node button. This will open the color box click the select attribute button and select department as follows



This will give 5 colours for the five departments. Now click on the change shape of nodes button and go through the same process but selecting level and clicking on the tick at the bottom of the box. This will produce three shapes. To size the nodes according to age you need to select

Properties>Nodes>Symbols>Size>Attribute-Based and then select Age leaving the other values as defaults. This should result in the following.



To export the diagram for use in a publication or to read into a word processing package use File>Save Diagram As>Metafile. To save the diagram as a file you can see again in Netdraw you need to use File>Save Data As>Vna.

There are many features of UCINET and Netdraw that we have not mentioned but hopefully this guide will get you started.