Gephi Cheatsheet

Installation

Download Gephi from https://gephi.github.io - currently Gephi is on version 0.9.2 and runs on Mac OS X, Windows, and Linux.

For Mac users, Java comes bundled with the Gephi install - if you don't have it, Gephi will install it for you. Windows and Linux users who don't already have it will also need to install Java 7 or Java 8 from https://java.com/en/download/help/index_installing.xml?j=8

Install the packages in the stated order from the download readme

If Windows users have installed Java and get a Java not found error, there is likely a problem with a configuration file. This can be fixed by following the instructions in the following video: https://www.youtube.com/watch?v=iWQWjx6Ot1E

Getting started

Open Gephi.

We can add data to Gephi through *File < import spreadsheet.* Begin with the nodes: Navigate to where you've saved the SDFB_people.csv file and select it. Make sure the *separator* is "Comma" and the *as table* is "Nodes table." The *Charset* is "UTF-8." Then click through the next/finish buttons.

Now repeat this but choose the file SDFB_relationships.csv and select the *as table* "Edge table."

There are three main views in Gephi, which are shown with three buttons near the top of the window - the *Overview*, the *Data Laboratory*, and the *Preview*. Click on the *Data Laboratory* to navigate to that. There are two small buttons on the left side of the screen labeled *Nodes* and *Edges* - click on either of those to toggle between a view of the nodes and a view of the edges. Check out the data and notice that there is an empty column - right now our nodes have no *Label*.

Use the *Merge columns* button to join the First Name and Last Name columns. When prompted to choose a separator, choose a space (" ") and give it a new column name of Full Name.

Use the *Copy data to other column* button to copy the Full Name to the Label column. Now we can label our nodes with people's full names.

Now click on the Overview button to move to the network visualization. It will look sort of like a Borg cube. On the lower left side of the screen, there is a button that says "Choose a layout." Choose "Force Atlas 2" and tell it to *Run*. After a few minutes, hit *Stop* so it won't keep trying to perfect the layout and use all your computer resources. Now it should look sort of like the Eye of Sauron (yes, I'm a SFF geek).

There are a number of buttons on the right side of your screen - these are network metrics that we can calculate. Go ahead and click *Average Weighted Degree* , *Connected Components*, *Network Diameter*, and *Eigenvector Centrality.*

Once Gephi has finished calculating everything, let's start by removing all the nodes that aren't in the *giant connected component* - you've been using the *Statistics* window, but there's a button right next to the word statistics that is *Filters*. Click *Filters* < *Topology* then find the "Giant Component" - click on it and drag it down to the *Queries* window. Drop it where it says *"Drag filter here"* then click the *Filter* button.

The last of the important windows in this view is on the left top - the *Appearance* window will let you customize how the nodes look. Select *Nodes* then the icon that looks like a painter's color palette to change the node colors. You will have three options to choose for nodes - *Unique, Partition*, and *Ranking*. Choose *Ranking* then in the dropdown choose *Weighted Degree* (a value we just calculated!) Change the colors as you like, then click *Apply*.

While you can do some customization of the graph appearance in the *Overview*, you can do more in the *Preview* windows. Select that now and select the box in *Node Labels* < *Show Labels*. Then hit *Refresh* to update the visualization. It isn't ideal yet, but you can continue to play with the choices in the *Preview Settings* sidebar to optimize the view. When you like what you've found, you can export the image in SVG, PDF, or PNG using the button at the bottom left of the screen.

Lastly, go back to the *Data Laboratory* and notice that the statistics we calculated in the *Overview* are now displayed there. Click the *Export tables* button to export the updated node and edge lists to a CSV that you can use in other programs.

More Resources

- Programming Historian: https://programminghistorian.org/en/lessons/?topic=network-analysis
- Gephi documentation: https://gephi.org/users/