

Social Networks

Step #1 Data Collection

Students will track the interactions between people they know. This will help students determine where information can most efficiently be distributed, what kind of group role each of their friends have in their relationships, and to develop a better understanding of their social group. Students will look closely at either a social network they are subscribed to (facebook, twitter, myspace...) or their daily interactions throughout the day.

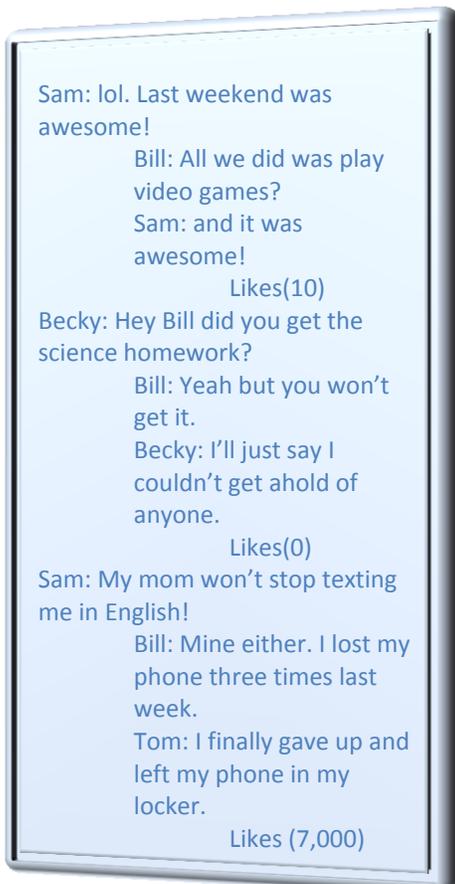
If looking at a Facebook group look at roughly three pages of interactions. Go to the people who you interact with on those three pages and see who they have interacting with them on the first page of their wall. If you have timeline do not go farther back than 30 threads on your wall and 10 threads on others walls.

If a person comments on your wall and you respond give the numerical value of 2 to that interaction. If the conversation continues count the number of posts in the thread between the two people for the interaction. If someone comes into the post later count the first post and their later post as the interaction. The first post in a thread is the conversation starter. Assume this is targeted only at the people who participate in that conversation.

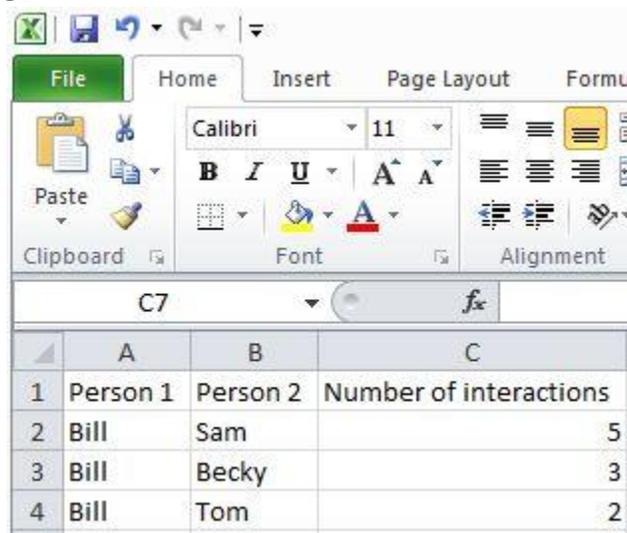
Not all interactions will be between just two people. Sometimes a student must decide if a person is speaking to one other person or a group of people. If a person is speaking to a group and only one person responds students are to only record one interaction between the first person and the group and two between the first person and the second who responded.

Likes should be counted as an interaction. If the number of likes exceeds 10 only do the first 10.

Example:



Sam: lol. Last weekend was awesome!
Bill: All we did was play video games?
Sam: and it was awesome!
Likes(10)
Becky: Hey Bill did you get the science homework?
Bill: Yeah but you won't get it.
Becky: I'll just say I couldn't get ahold of anyone.
Likes(0)
Sam: My mom won't stop texting me in English!
Bill: Mine either. I lost my phone three times last week.
Tom: I finally gave up and left my phone in my locker.
Likes (7,000)



The image shows the Microsoft Excel ribbon with the 'Home' tab selected. The font is set to Calibri, size 11. Below the ribbon, the spreadsheet shows a table with the following data:

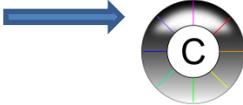
	A	B	C
1	Person 1	Person 2	Number of interactions
2	Bill	Sam	5
3	Bill	Becky	3
4	Bill	Tom	2

+ Likes

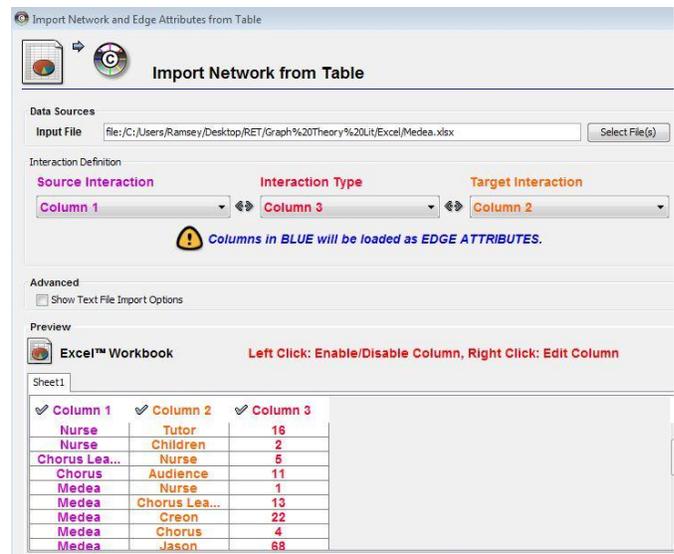
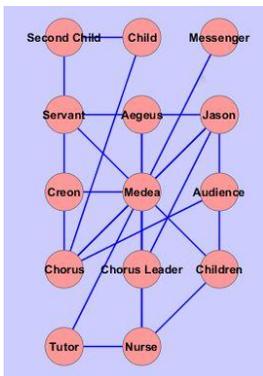
Note: Do not repeat interactions. If Bill and Sam are interacting do not make a new column for them to interact in later or reverse the order and count again.

Step #2 Data Application

Students will use the open source program cytoscape to look closer at the networks they have created.

- If the computers do not have the program it can be obtained at the web address <http://www.cytoscape.org/>
 - Click “Download Cytoscape now” and follow the directions to download.
- The icon looks like 

- 1) Open Cytoscape.
- 2) Click “File” “Import” “Network from table (Text/MS Excel)”
- 3) Students will next click on the “Select File(s)” button and then select the excel file they created from wherever they have saved it on their computer.
- 4) Students will now select the interaction relationship. “Source Interaction” should be set to the column containing the first person. “Interaction Type” should be set to the column containing the number of interactions between person #1 and person #2 and “Target Interaction” should be set to the column containing person #2.
- 5) Lastly click “Import”
- 6) Cytoscape will now render a rough Version of the network that looks Somewhat like this...



- 7) In order to make the data useful students will click on the “Plugins” menu at the top of the page. Select “Network Analysis” and click on “Analyze Network.”
- 8) Select the “Treat Network as Undirected” bubble and click “OK”.
- 9) Students will next select “Visualize Parameters” (this alters the nodes and connections)
- 10) Set the “Map node size” to “degree”. This will make the larger nodes represent the characters that do the most communicating.
- 11) Set the “Map node color” to “BetweennessCentrality” this will change the characters who do the most communicating with great numbers of other characters to warmer colors.
- 12) Students should spread their nodes out so that they do not block each other.

Now students have a visual representation of a their relationships showing which people have the greatest influence with other characters. This same principle can be applied to many other things.

