**IACA 2019: Application of Social Network Analysis**

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**Sample web app;** this website shows an example app that we will build. Try searching for some random person IDs (all numeric) and click Update Chart. <https://bit.ly/2L6fKzh> or <https://george-kikuchi.shinyapps.io/sna_sample_app/>

**Using your own data…**

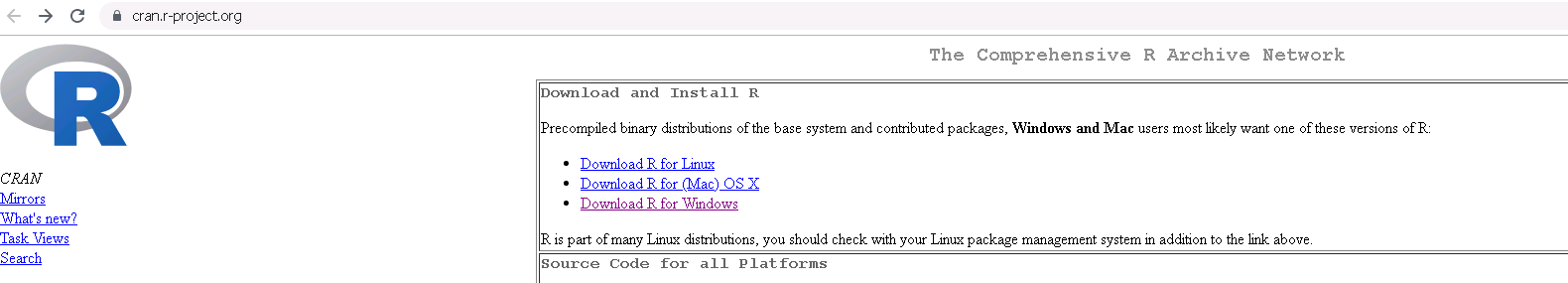
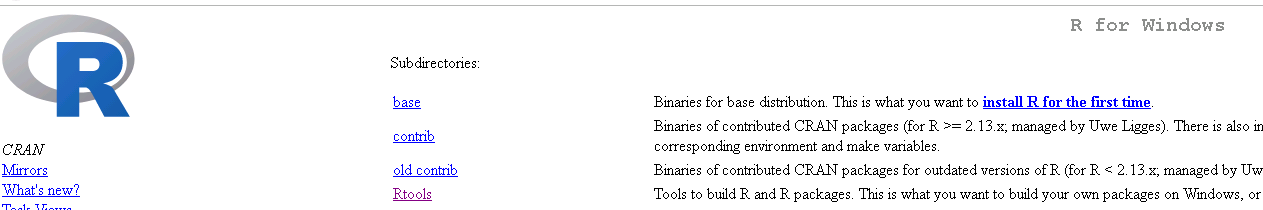
Notably, the app and data stays within your agency’s network (**none of your data go to the Internet**). There are data specs towards the end of the tutorial (Appendix on page 4).

**Using the app**

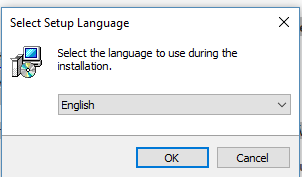
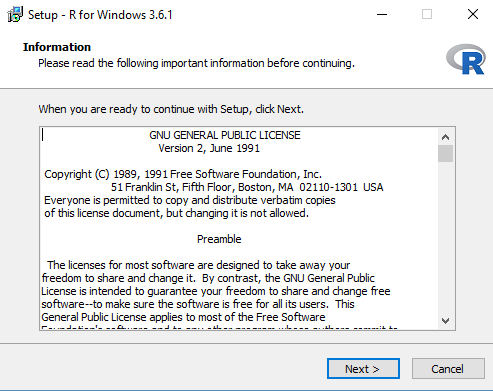
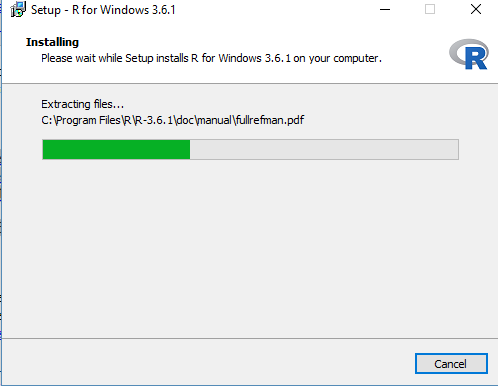
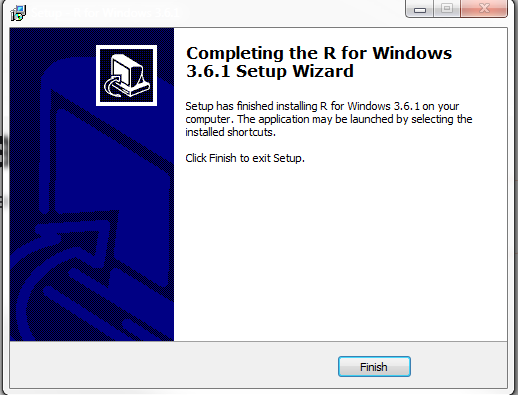
This process will include initial setups of installing R, RStudio, and associated libraries, in addition to running the app. If you already have R 3.6.1 version and RStudio installed, you can skip to Step 3 (page 2).

1. Install R (can be skipped if you already have R 3.6.1)

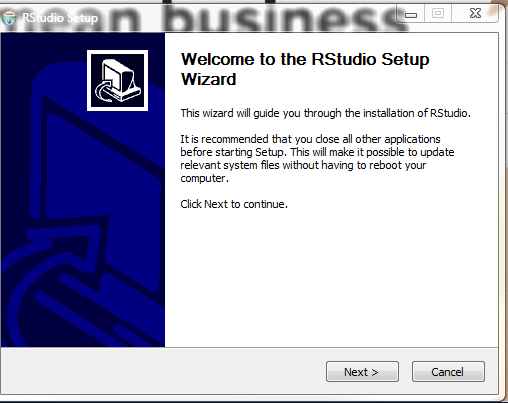
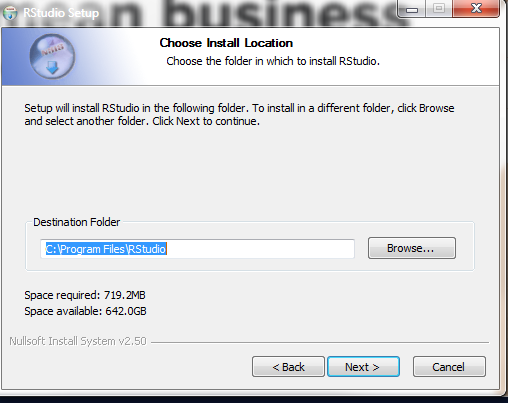
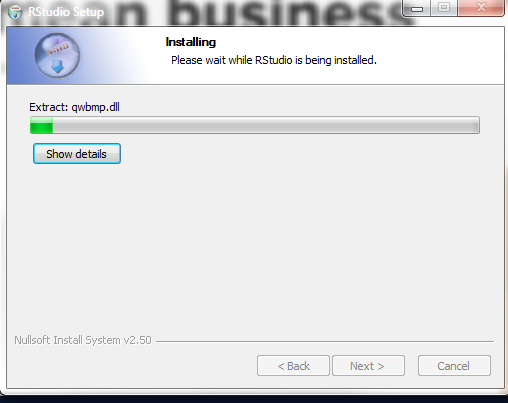
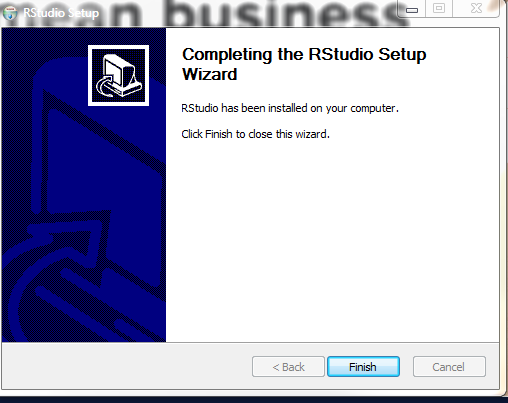
* Go to <https://cran.r-project.org/> , select Download R for Windows (or whatever is your OS), and click “install R for the first time”

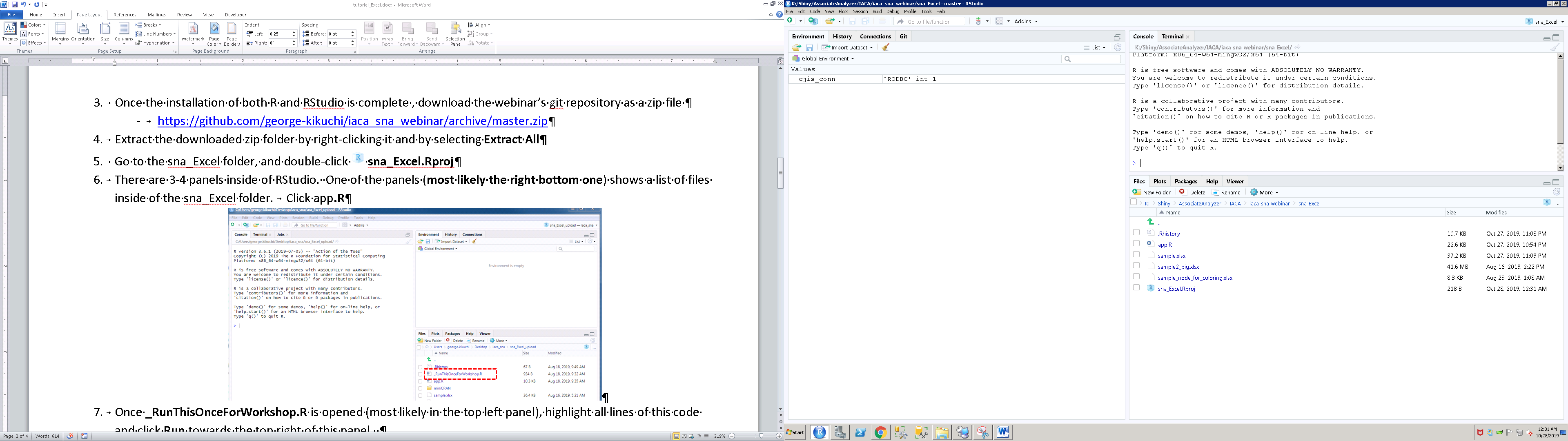
* Accepting all the default settings during the installation process is typically fine

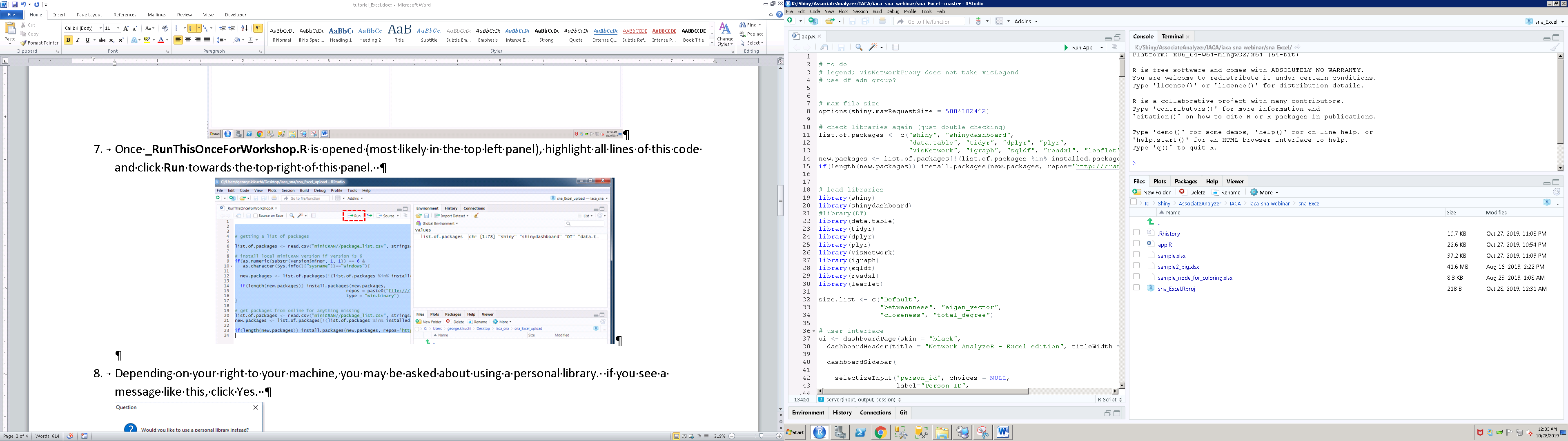
1. Once R finishes installation, install RStudio (can be skipped if you already have RStudio)
   * Go to <https://rstudio.com/products/rstudio/download/#download> and click the latest version of RStudio installer for your OS (e.g., Windows 10/8/7/ 64-bit)
     + if you are on a 32 bit system, you will likely have to use an older version of RStudio (not tested for this app)
   * Accepting all the default settings during the installation process is typically fine

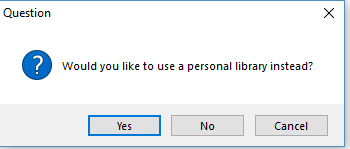
1. Once the installation of both R and RStudio is complete , download the webinar’s git repository as a zip file
   * <https://github.com/george-kikuchi/iaca_sna_webinar/archive/master.zip>
2. Extract the downloaded zip folder by right-clicking it and by selecting **Extract All**
3. Go to the sna\_Excel folder, and double-click  **sna\_Excel.Rproj**
4. There are 3-4 panels inside of RStudio. One of the panels (**most likely the right bottom one**) shows a list of files inside of the sna\_Excel folder. Click **app.R**

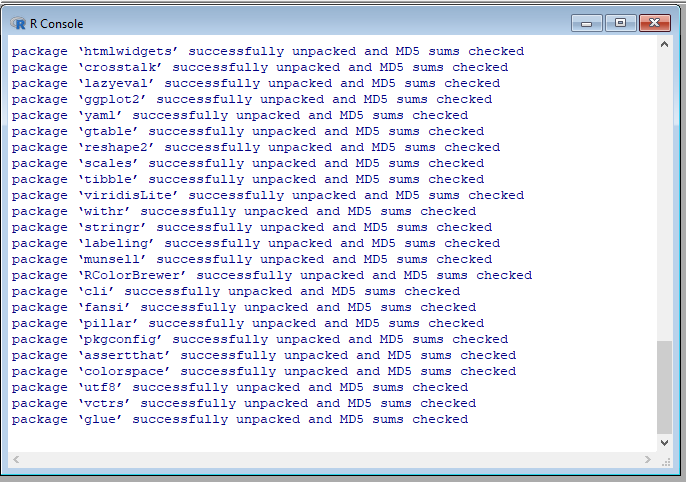


1. Once **app.R** is opened (most likely in the top left panel), click **Run App** towards the top right of this panel.

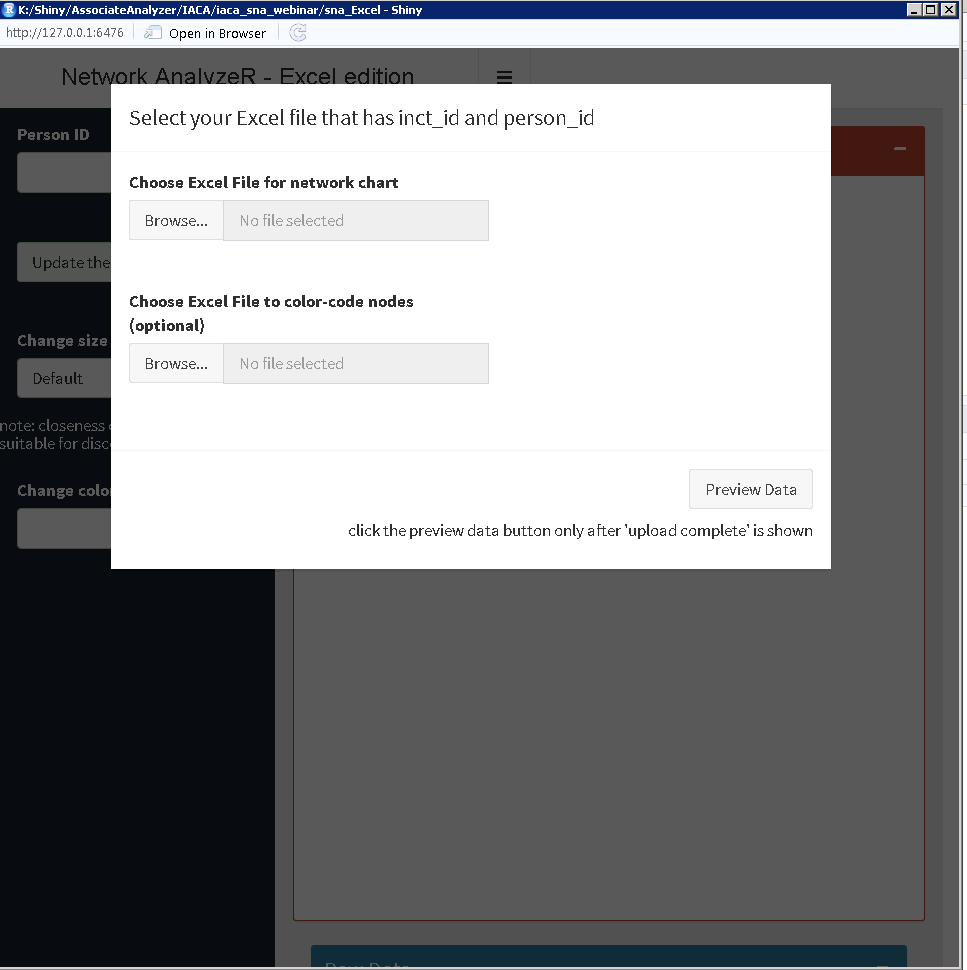


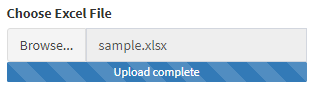
1. Only for the first time running this app, the app installs necessary libraries/packages.
2. Depending on your right to your machine, you may be asked about using a personal library. if you see a message like this, click Yes.

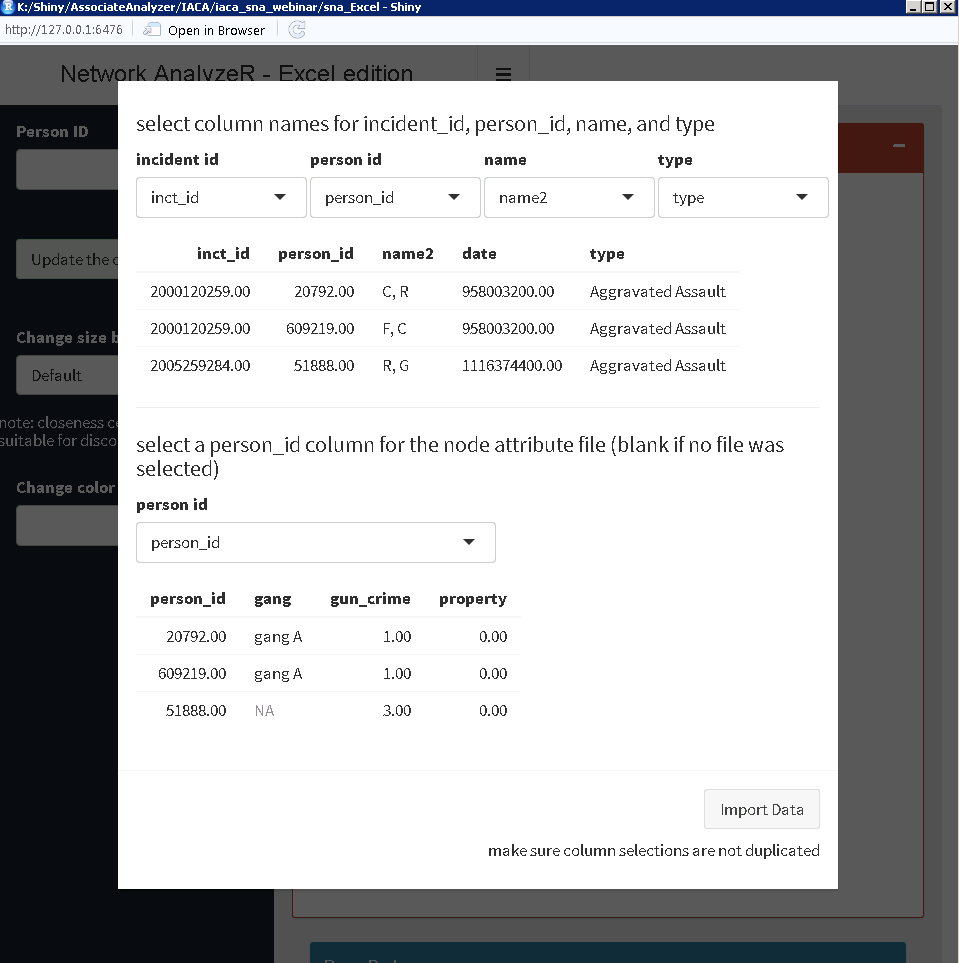


1. Most of the libraries should be fairly quick to install, but depending on the speed of your internet connection, be patient with this process; these libraries just need to be installed once.

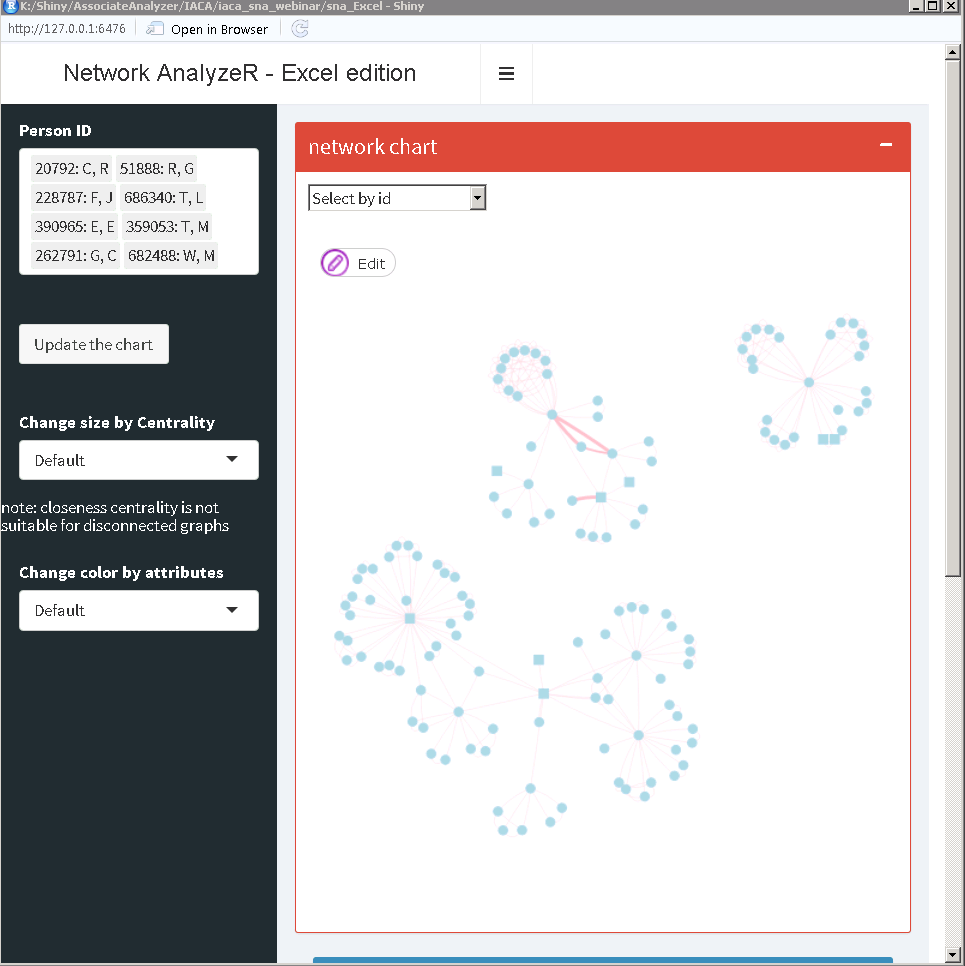
1. A browser such as Chrome (or RStudio browser) should open, with a pop-up menu asking for an Excel file(s). If you see an RStudio browser and wish to change to your default browser, you can click Open in Browser button too.



1. Click “**Browse…**” in the top panel for a network chart and select **sample.xlsx** from the **sna\_Excel** folder.
2. Click the second “**Browse…**” button and select **sample\_node\_for\_coloring.xlsx** in the same **sna\_Excel** folder.
3. Click Preview Data (**wait till** the blue progress bar shows **Upload Complete**)
4. The second pop-up menu appears that shows a preview of the sample data and that asks you to map columns. For the sample data, you should be able to simply click **Import Data** (as the sample data already matches expected column names.
   * For your own agency data with different column names that are in a different order, use the dropdown menu to select appropriate columns)



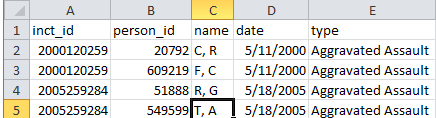
1. Type/select a **person ID** in the search box (this may be a bit slow for big data; be patient). Click **Update the chart**.



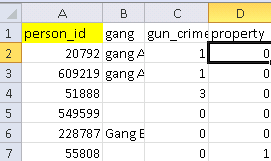
**Appendix 1: Using your own agency data**

When using your own data (e.g., arrest record data dump from your agency’s RMS), it is better to format the Excel table(s) as follows.

* + For network chart data (required file), your file need to include a crime incident number (inct\_id) and offender\_id (person\_id) at minimum. Good column names for this file are **inct\_id, person\_id, name, date, type**. You can include more columns, but these are the required columns.



* + For the optional node-coloring file (sample\_node\_for\_coloring.xlsx), the required field is **person\_id** with at least one more column that will be used for coloring. The additional column can contain either numeric or categorical values.



**Appendix 2: Making the app available to other users**

By changing the first command and options setup in app.R file, you can make the app available to others in your agency network.

Change the first command

options(list(shiny.maxRequestSize = 500\*1024^2,

launch.browser = TRUE)) #, shiny.port = 5155, shiny.host = "0.0.0.0"))

to

options(list(shiny.maxRequestSize = 500\*1024^2,

launch.browser = TRUE, shiny.port = 5155, shiny.host = "0.0.0.0"))

by removing the two parentheses )) and the # sign after TRUE.

Save the app.R file and click Run App.

Other users in your agency network can access the app by typing your computer’s IP address followed by a colon and 5155 (port number). For example, \*\*.\*\*\*.\*\*\*.\*\*\*:5155

Note that they will still need to upload the Excel file that will be the basis of a network chart. A practical use case of this is to let the RStudio run using a server and users access the app through a browser.