Network Program User Guide

CSE 360: Intro to Software Engineering
Fall 2018

Wyatt Bradsher
Ryan Burdett
Orlando Cota Ceballos
Andrew Hampton

Table of Contents

Introduction

In this document, we will outline the functionality and operation of our network program. In order to facilitate, a quick reference-based document (an overview of the program) can be found immediately foregoing the introduction. Before operation, the program must first be installed properly to ensure intended functionality. Information regarding this process can be found under the installation section of this manual. After installation, it is recommended to understand the execution of the network program by reading the ‘getting started’ page, and subsequently the ‘options’ reference with GUI examples. If at any time a user may become lost during the operation of this product, they may refer to any of sections regarding the interface or example runs. To maintain this feature of data integrity, please refer to the ‘restarting’ and ‘shut down’ nearing the end of this manual.

Product Overview

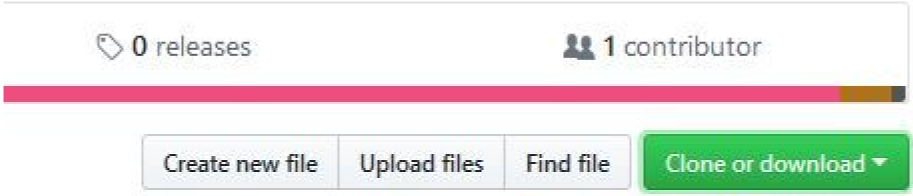
The network program is designed to assist in the analysis of an abstract network. By doing so, it will give the network map as a list of paths, ordered by duration length. This includes all nodes and the given relationship specified by user input. With assistance from this program, the end user can design UML mockups, network diagrams and state diagrams, among many other things. After use the network can be saved and used for later.

Installation

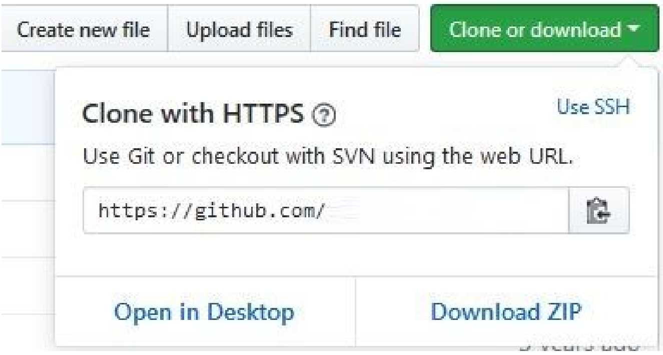
Note: before installing make sure the latest version of Java is installed on your computer (Download latest version here: https://www.java.com/en/download/win10.jsp)

In order to install PROJECT_NAME simply follow these steps:

1. Go to {DOWNLOAD lINK}
2. Click the clone or download button



3. A drop down menu will appear, click the Download Zip button

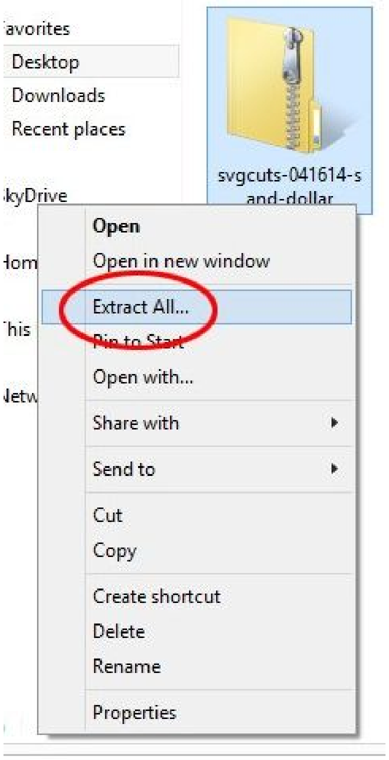


Clone with HTTPS

Use Git or checkout with SVN using the web URL.

```
https://github.com/
```

4. Once its finished downloading find the file location and unzip the file (you can do this on Windows by right clicking the file and selecting Extract All)



5. Then simply open the file to run the application.

Getting Started

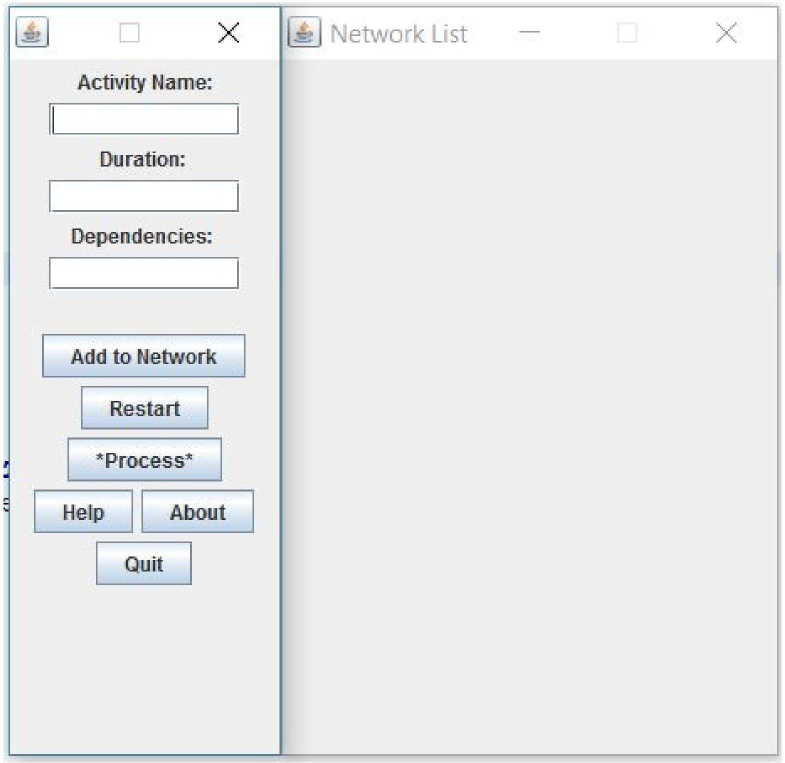
To start the program, find the location in which the application was installed and click the executable file. This will open the application and prompt you to enter information about an occurrence that is in your network. To enter an occurrence, first enter in the activity name. The activity name must be more that one character. Next enter in the duration in which the occurrence will take. After that enter any dependencies that this occurrence relies on. After all field have been entered click the “Add to Network” button to add the occurrence to the rest of your network. Finally, after all occurrences have been added to your network click the “*Process*” button to build your network.

User Interface Overview

The program is designed to be very intuitive for any user, with specially marked fields for each input category. After input is received, then the output will be returned in a separate window marked as the output/network list. It should be noted that the following photos are mock-ups only, and will be subject to change in the coming program versions.

Starting view with Screenshot:

This is the view that you will see upon opening the program:



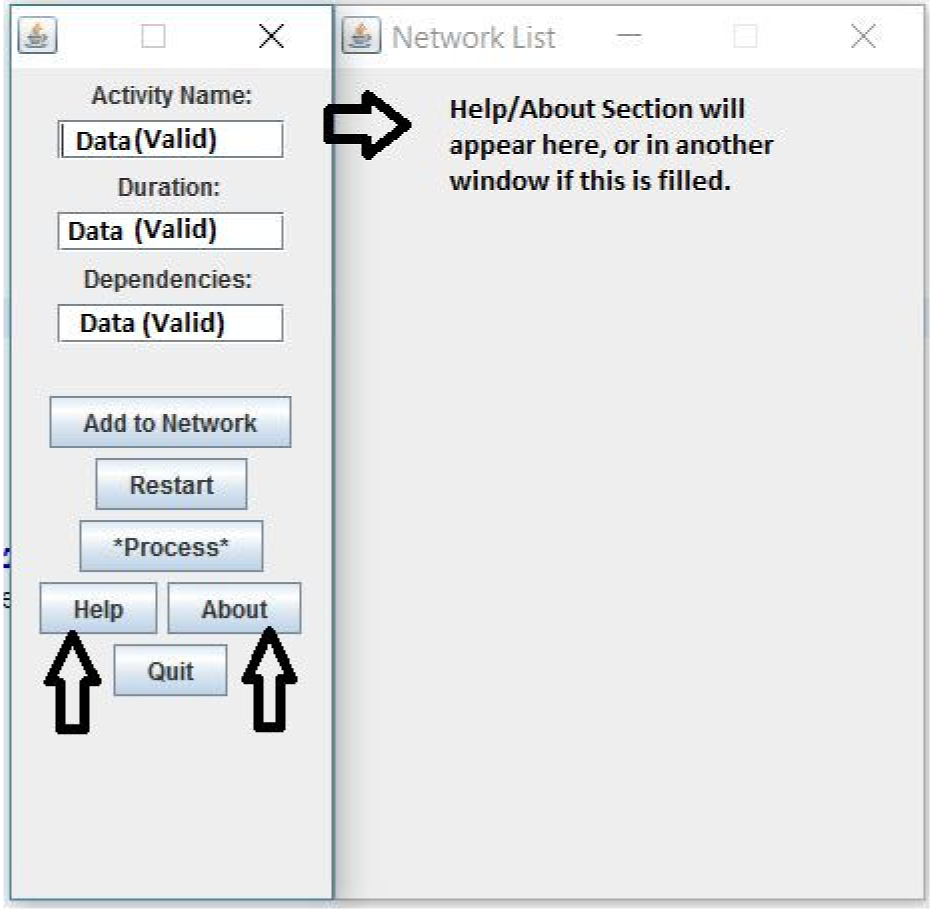
As you can see, there are many options you can take for the program- 6 buttons are present, each with a specified action (described later), along with 3 input fields.

Examples of the Different Options:

Below you will see the occurrences of different options when executed, some containing the need for data in the input fields, others (like Help and About) not requiring it.

The "Help" and "About" Options:

Seen below, Help and About will return data regarding which button was pressed- the right panel will display the help menu if the help button is pressed, and the about menu/data will be shown if about is pressed. It is important to note that if this right section already has data presented within it, then the Help/About sections will display in an new window, which will open on option push.



Activity Name: Data(Valid)

Duration: Data (Valid)

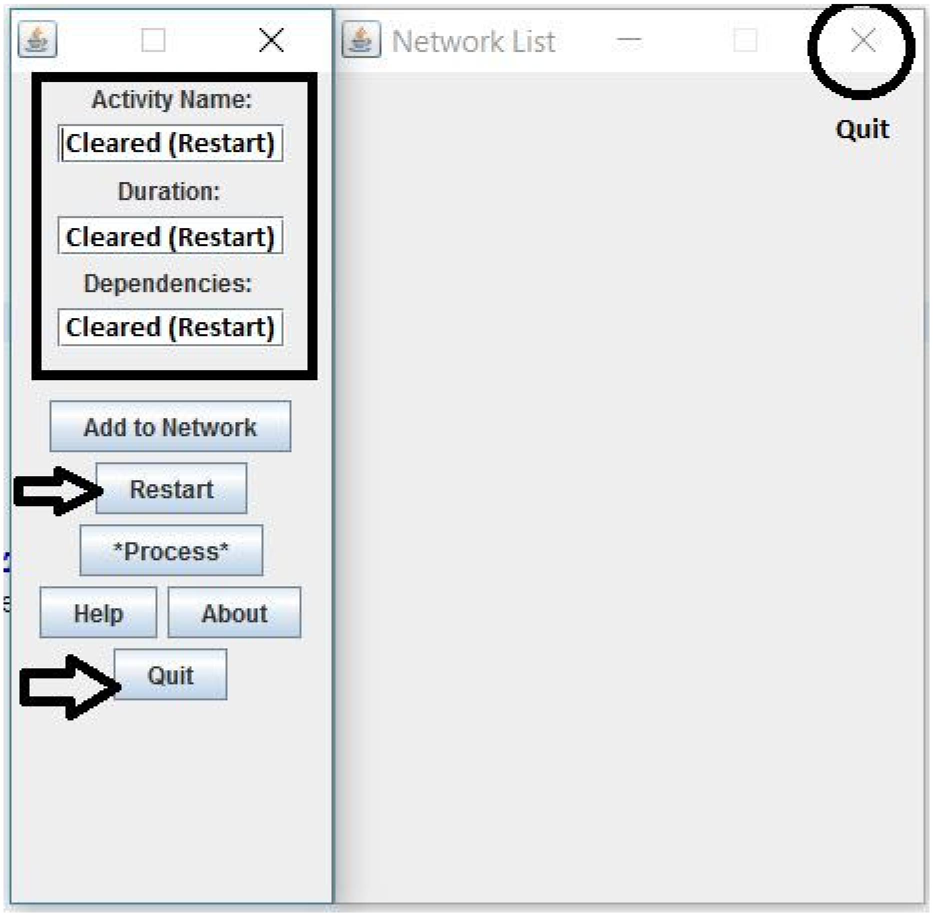
Dependencies: Data (Valid)

Help/About Section will appear here, or in another window if this is filled.

The “Restart” and “Quit” Options:

The restart and quit options perform two different functions: one clears input, one closes the entire program. Below are the functions:

1. The “Reset” option will clear all of the data in the text fields, while keeping previous inputs stored. This will only wipe what you’ve already typed in. NOTE: If the project specifications require it, this Reset option can also wipe all inputted data since it’s beginning (to start over on a new network system). This is a verbose button that is subject to change, and can perform either of these functions.
2. The “Quit” button will close both windows, automatically. This can also be done by hitting the “X” in the top corner of either window, however this strategy is not recommended.



The “Add to Network” and “*Process*” options:

These options deal with the program’s input/output sequence, which will be described (with GUI examples) in the section below.

Example Runs

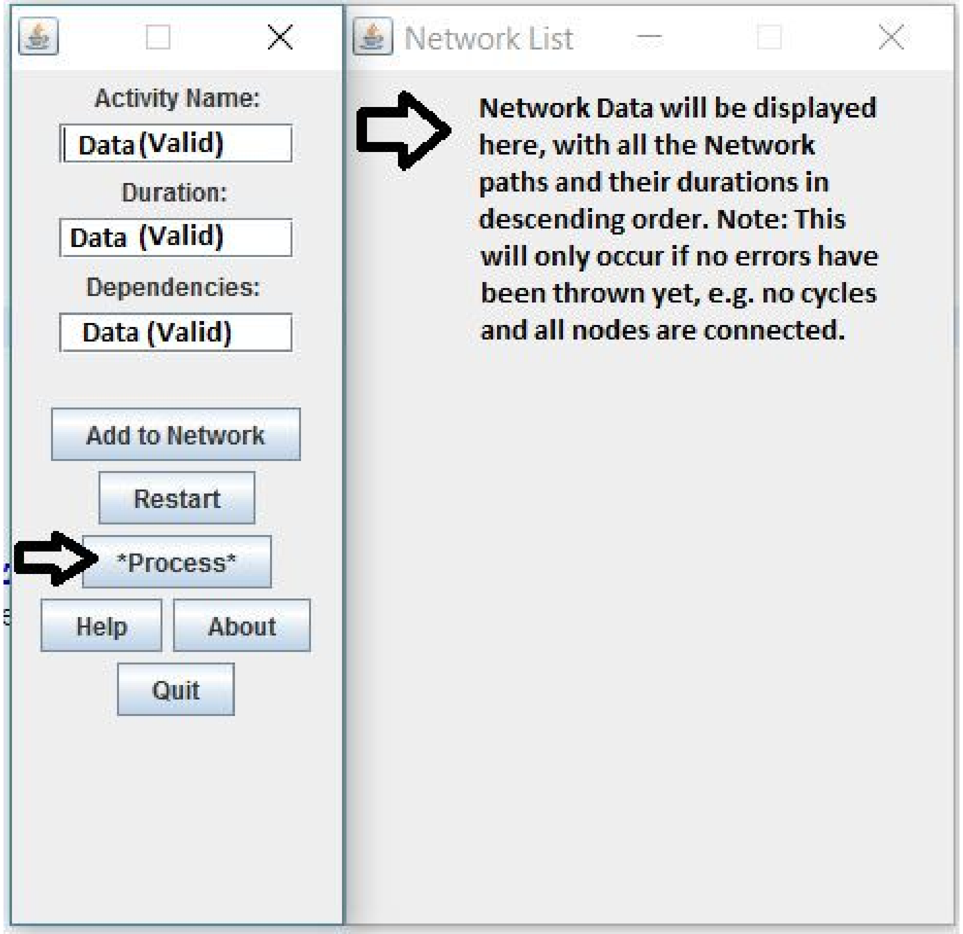
Proper Data Entry:

Data entry for the program consists of two parts: The error-checking upon initial input, and the final processing of the data. Following are the Data Entry steps:

1. Enter the data (one at a time) into the corresponding fields.
2. Press the “Add to Network” button to ensure that the inputted data is NOT cyclic and is properly attached to the network, otherwise an error will be thrown in the right panel of the screen (as shown below).

3. If the data is valid and throws no errors, the “Add to Network” button will return output “Success!” and reset all the input fields, ready for another input.
4. When the “*Process*” button is pushed, any data inside the text fields will NOT be considered, so make sure that the “Add to Network” button has been pressed for each input you wish to be processed.

If data is entered correctly, the “*Process*” button will activate the data processing section of the program, calculating the output described in the photo below.



Activity Name: Data(Valid)

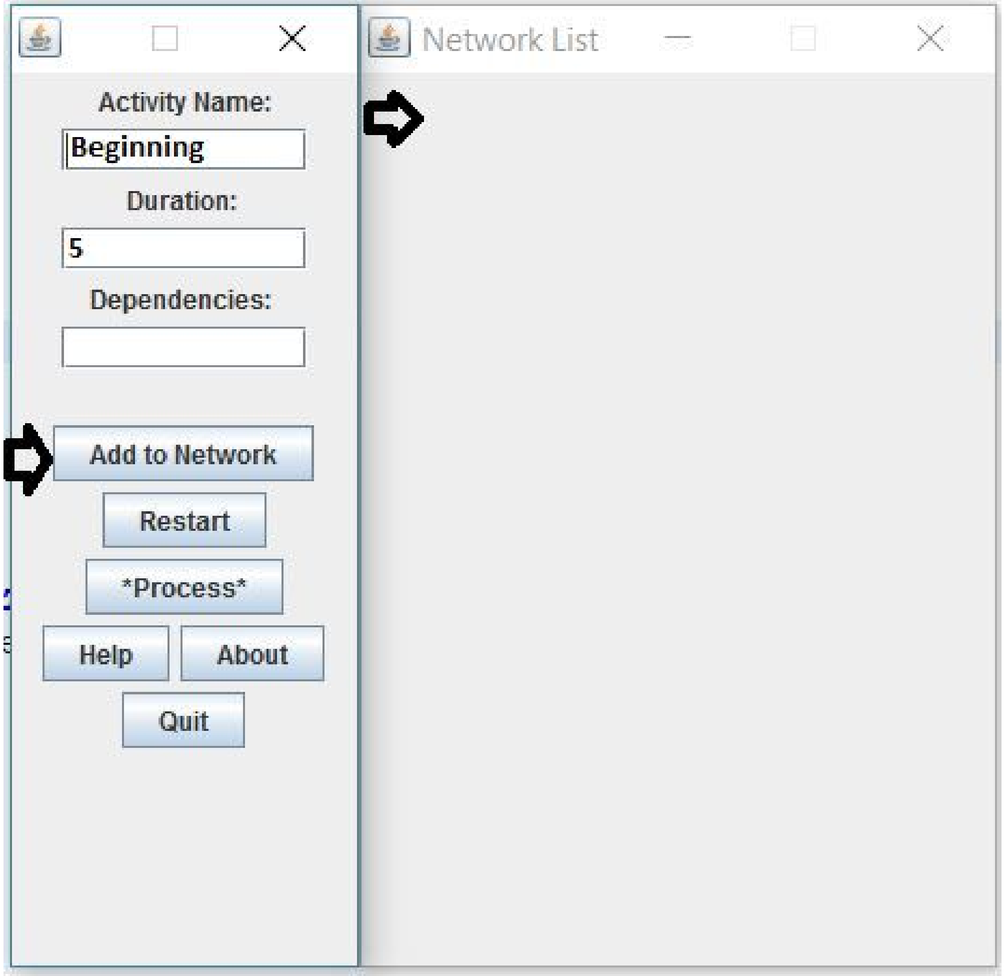
Duration: Data (Valid)

Dependencies: Data (Valid)

Network Data will be displayed here, with all the Network paths and their durations in descending order. Note: This will only occur if no errors have been thrown yet, e.g. no cycles and all nodes are connected.

Valid Entry Examples:

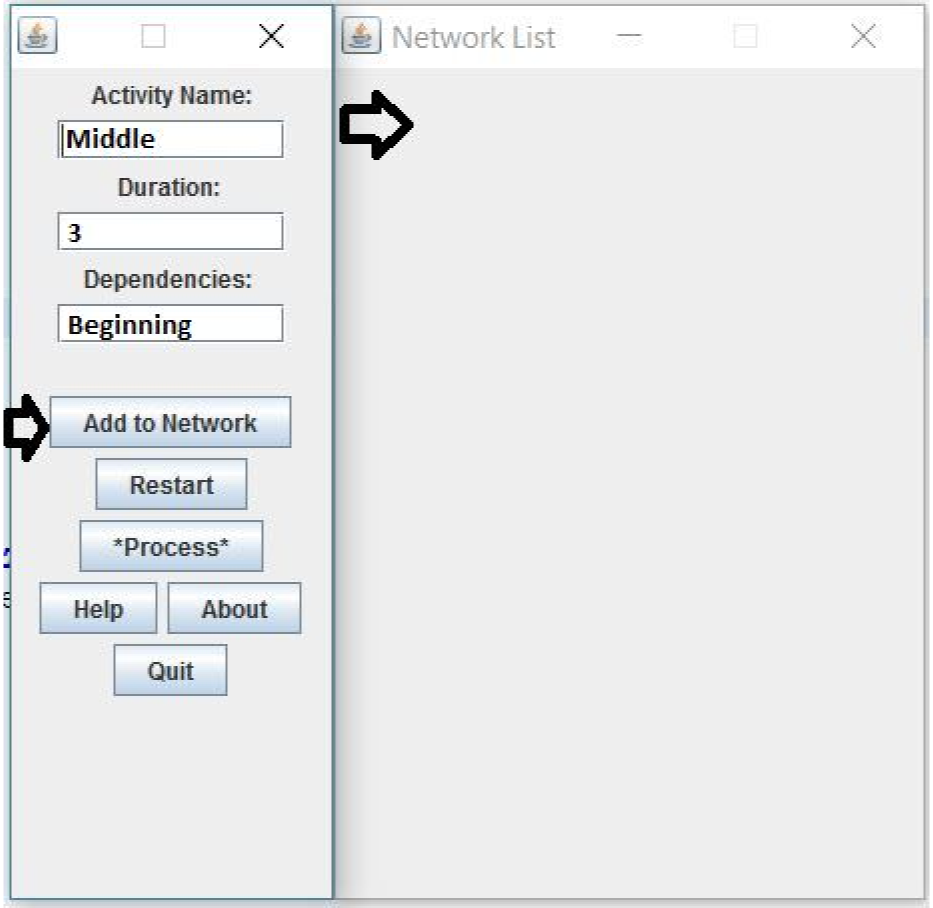
Below is another example of valid entry sequences, with output also given.



Activity Name: Beginning

Duration: 5

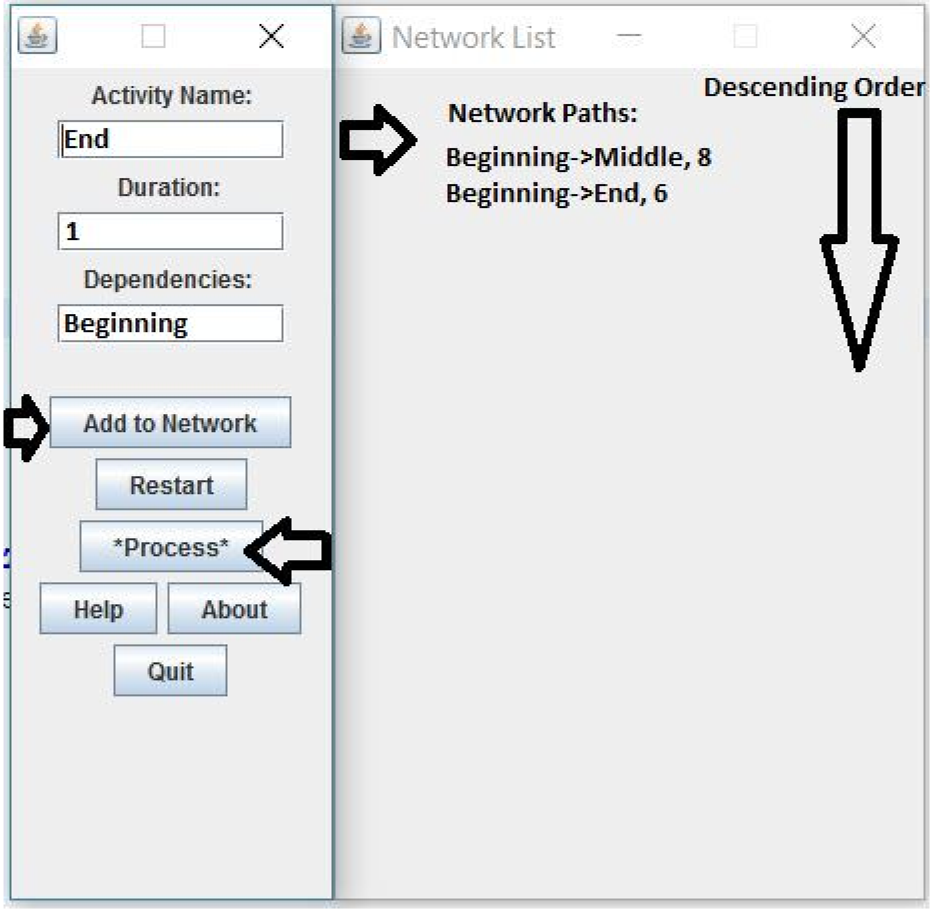
Dependencies:



Activity Name: Middle

Duration: 3

Dependencies: Beginning



Activity Name: End

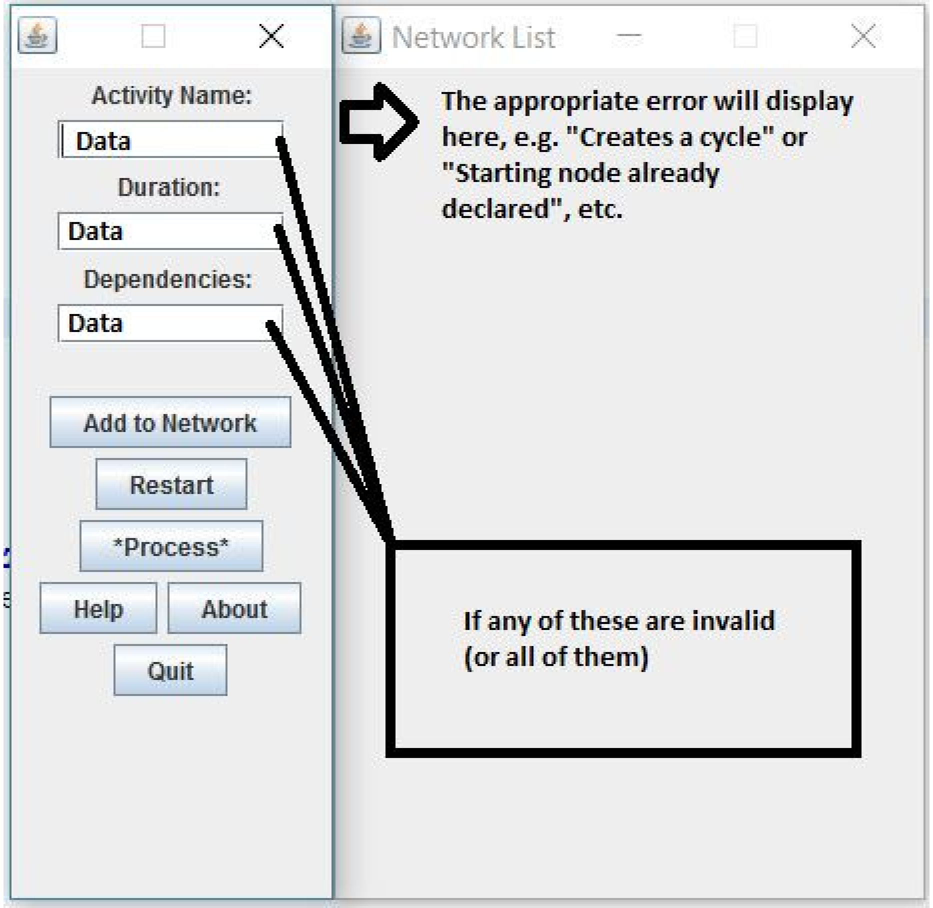
Duration: 1

Dependencies: Beginning

Network Paths:
Beginning->Middle, 8
Beginning->End, 6

Improper Data Entry:

If data is entered in an invalid format (e.g. Duration is not an integer, etc.), then the program's right panel will again return the corresponding error as so. This will happen on the "Add to Network" button press, to ensure that no incorrect data is processed by accident.

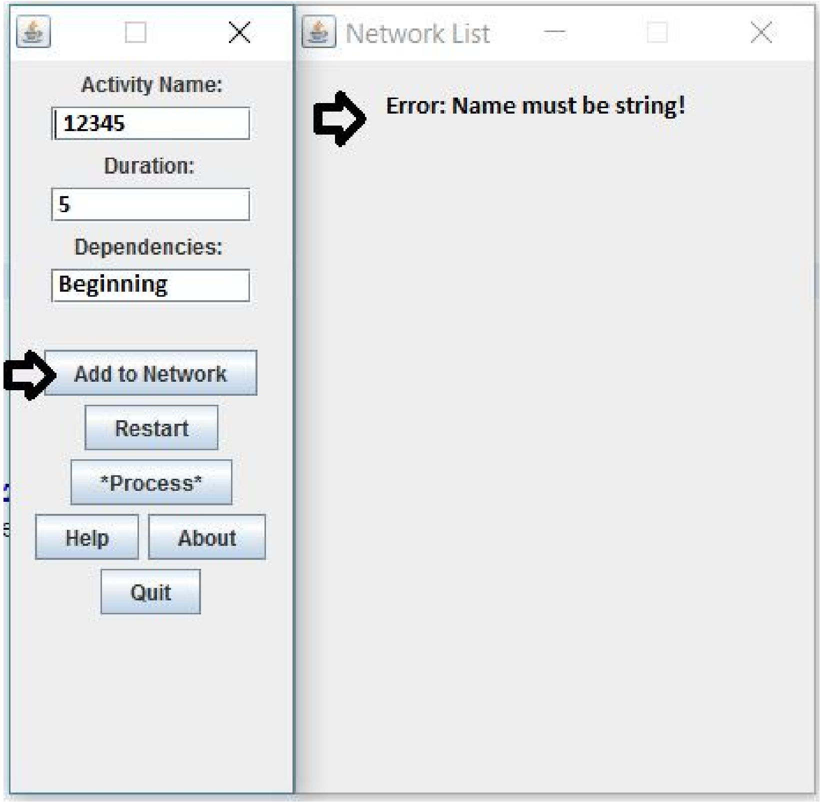


The appropriate error will display here, e.g. "Creates a cycle" or "Starting node already declared", etc.

If any of these are invalid (or all of them)

Improper Entry Examples

Below are some examples of improper data entry, and their returned error messages.

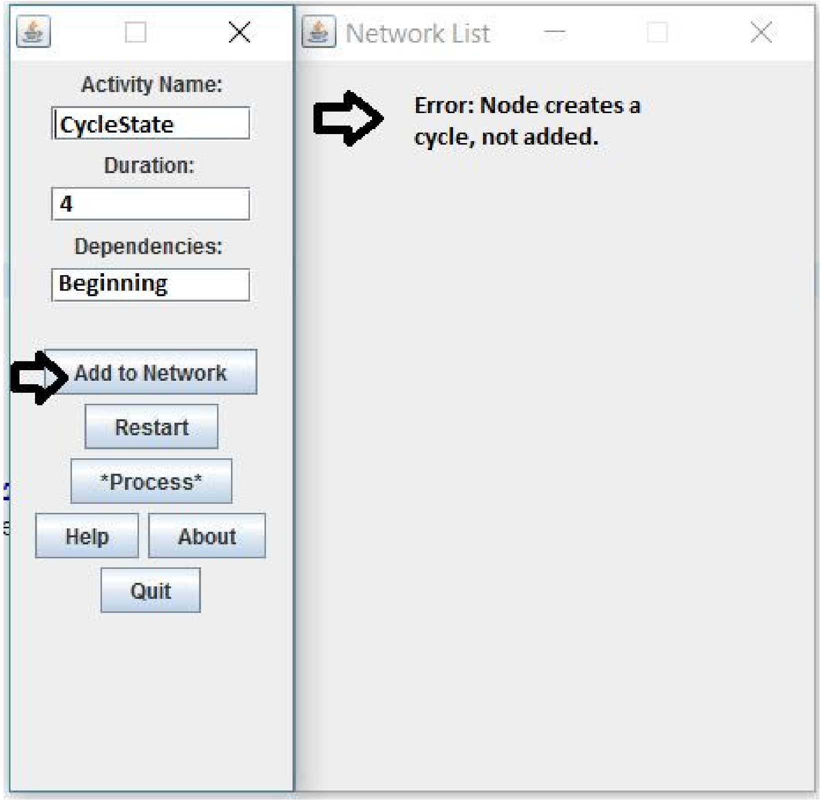


Activity Name: 12345

Duration: 5

Dependencies: Beginning

Error: Name must be string!

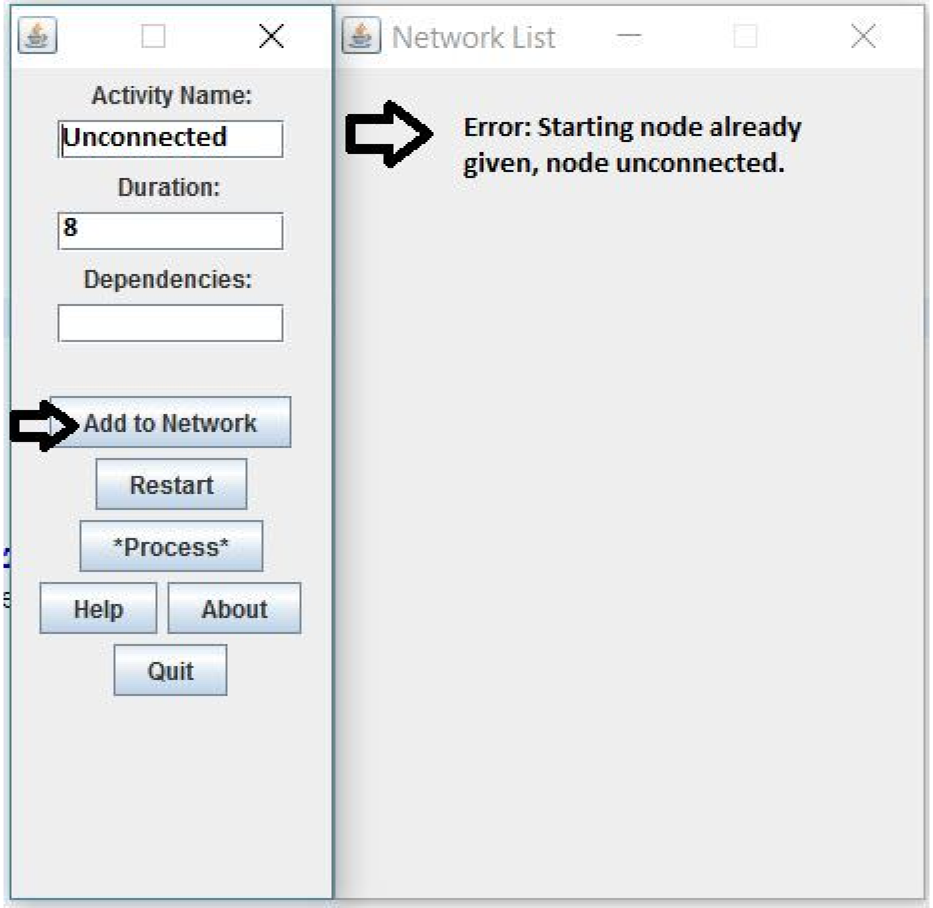


Activity Name: CycleState

Duration: 4

Dependencies: Beginning

Error: Node creates a
cycle, not added.

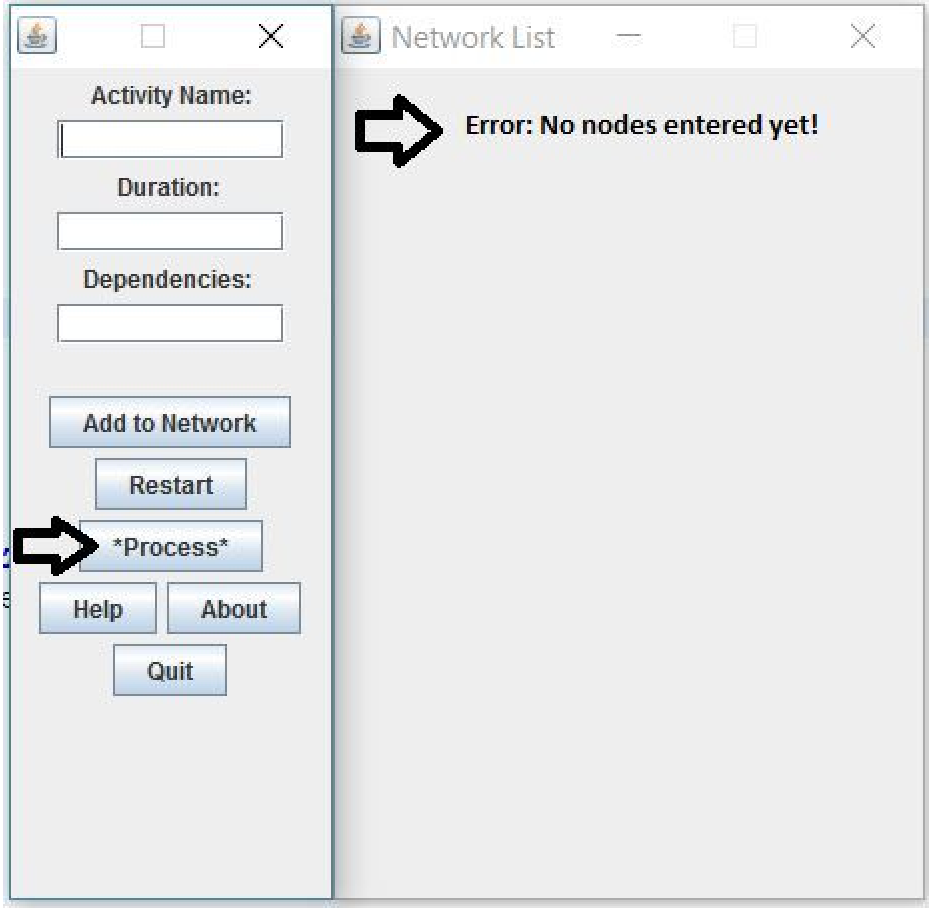


Activity Name: Unconnected

Duration: 8

Dependencies:

Error: Starting node already given, node unconnected.



Error: No nodes entered yet!

Restarting

Restarting will clear all current typed data in text fields, while keeping previous inputs stored. The network being analyzed will keep currently found nodes but text fields will be able to be modified. This is done by selecting the “Restart” button.
*If required: to restart program with all previous saved data cleared to begin analyzing a new network, select “Restart” (This can be changed).

Ending the Program

To quit the program, select the “Quit” button. This will close both windows, automatically. Selecting the “X” on the upper right hand of the GUI window will also close the windows, but this action is not recommended due to the possibility of data loss.