Phase 1 User Guide

CSE 360

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INTRODUCTION

Phase 1 of the team project is a program which analyzes a network diagram and determines all paths in the network. This document describes the installation process to successfully run the program. The downloadable version of Phase 1 will be a .jar file. To get started your computer will need to have the latest version of Java, and a compatible operating system. The program implements a GUI (Graphical User Interface) and upon execution, the GUI displays a window. The top left panel contains buttons and fields for user input, the right panel contains the output window, and the bottom left panel contains an 'instructions and comments' window. The GUI contains About, Help, Add, Compute, Restart, and Quit buttons along with Text Fields for Name, Dependencies, and Duration. This document contains examples of successful runs, possible errors, and screenshots of every functionality in the project. The Restart Button allows the user to start from the beginning and re-enter the data. The Quit Button immediately ends the program.

OVERVIEW OF THE PROGRAM

The program requires Java to run. The Preferred IDE (Integrated Development Environment) is Eclipse. The program inputs activities and lists out all possible paths in the network in descending order of duration. It has GUI functionalities throughout and uses frames, panels, buttons, and text fields to activate and construct the user interface.

When the program starts up, the user interface displays empty text fields where the user enters the corresponding data, and then clicks on the Add Button to enter the data. The Compute Button performs the computations and displays the Output. Any errors occuring in the input will display an error message and require the user to start over. Error checking looks for faulty user inputs, incomplete node connections, and dependency cycles. The About and Help buttons display program information to the user. The Restart Button prompts the user to start over with the program, while the Quit Button ends the program.

The Output Window is a part of the GUI and it does not allow for user input or manipulation and serves to only display all of the paths in the network in descending order of duration.

INSTALLATION

System Requirements:-

- A computer running Windows 7 or higher, MAC OS X, or Linux.
- A version of Java installed (Version 5 or higher) (https://www.java.com/download/).
- An IDE (Integrated Development Environment) to execute the program (recommended: Eclipse - Version 4.0 or higher - https://www.eclipse.org/downloads/packages/).

Installation and setup:-

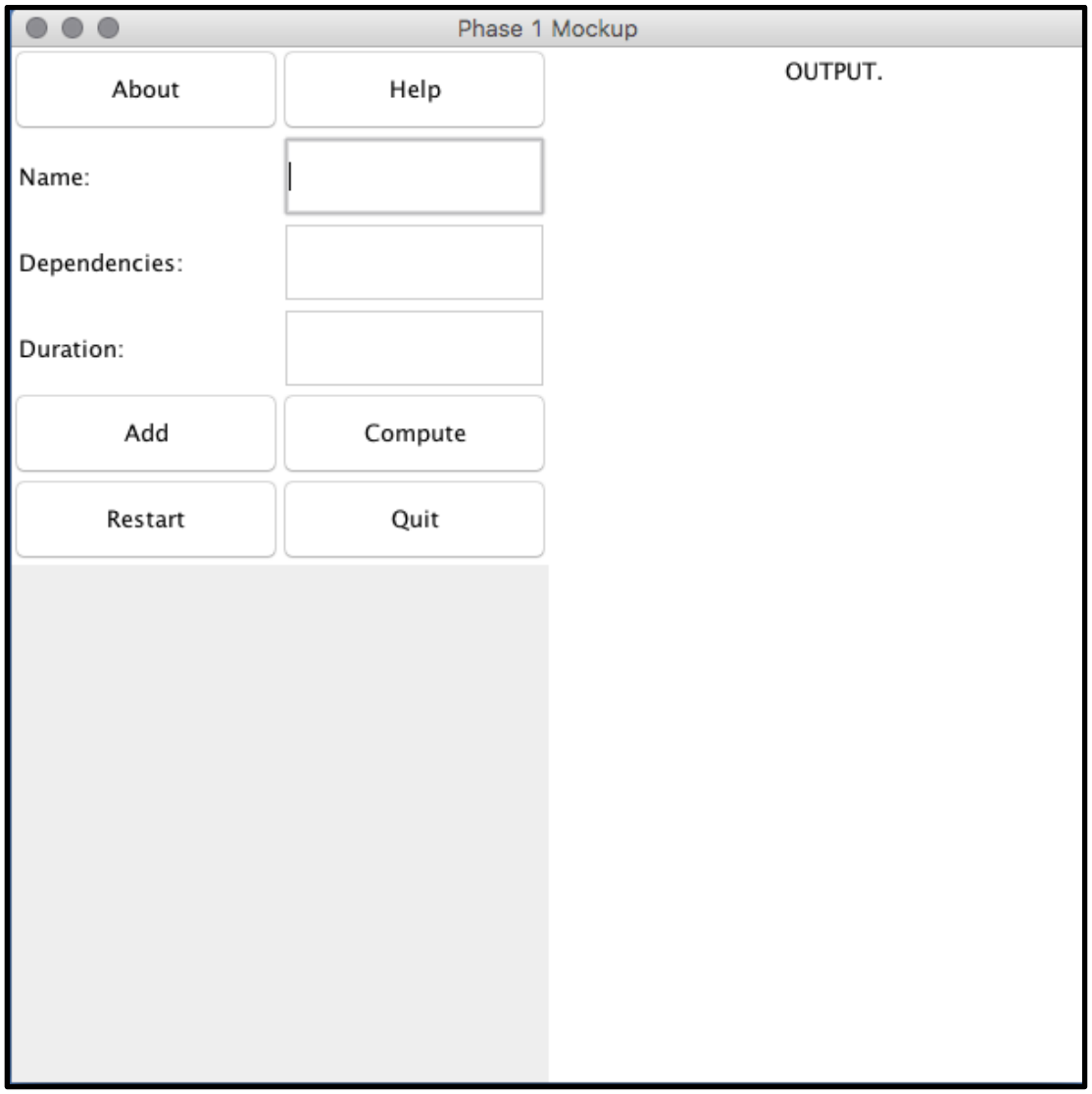
1. Download the .jar file for the project.
2. Upon opening the .jar file, the java program will load in the preferred IDE.
3. Compile the program to ensure that it builds.
4. Run the program to execute it and start the project application.

GETTING STARTED

1. Once the program is loaded in the IDE, run the program to execute it.
2. A GUI window will appear displaying the entire User Interface.
3. The Help Button can be pressed anytime to access program information, and instructions.
4. To enter data, look at the three text fields and enter the corresponding data (name, dependencies, and duration) for an activity.
5. Click on the Add Button to enter the activity into the network.
    a. The duration must be an integer.
    b. Failing to enter the name or duration will result in the activity not being added and an error message being displayed. In this instance, re-enter the data with correct and complete information.
6. To generate the network paths click on the Compute Button. All the paths in the network will be displayed in the Output window in descending order of duration.
7. If any of the entered activities were not completed or accurately linked, an error message will be displayed, and the program will restart.

USER INTERFACE OVERVIEW

Starting View Screenshot

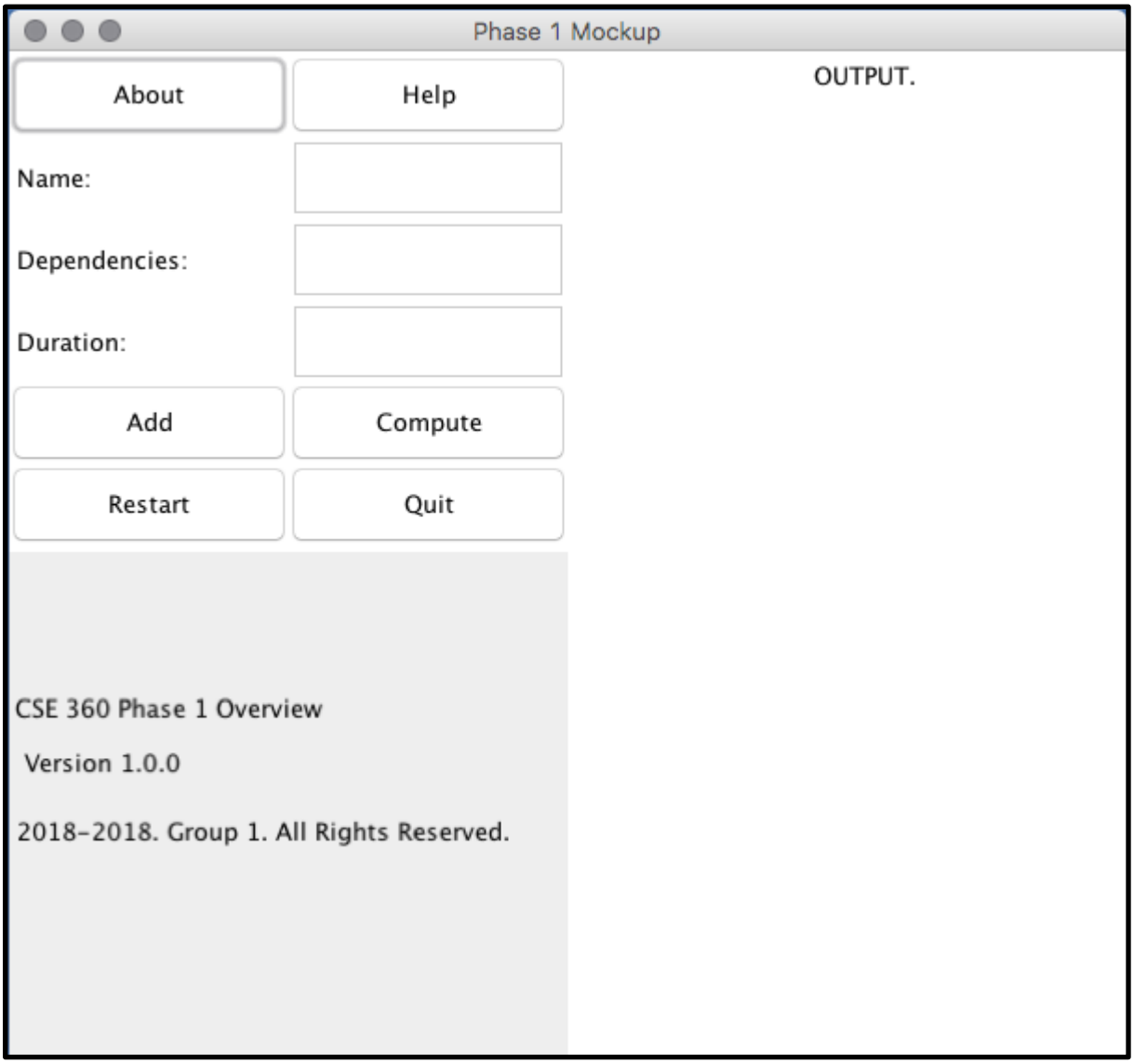


The GUI displayed consists of a frame with three panels. The first panel is located at the top left and consists of all the buttons, labels, and text fields in the program. The About and Help buttons are located at the top. The text fields for Name, Dependencies, and Duration are empty. The Add and Compute buttons are right below the labels and text fields, while the Restart and Quit buttons are below the Add and Compute buttons.

The second panel is the output window located on the right side of the GUI. It is solely a text area which does not allow for user input.

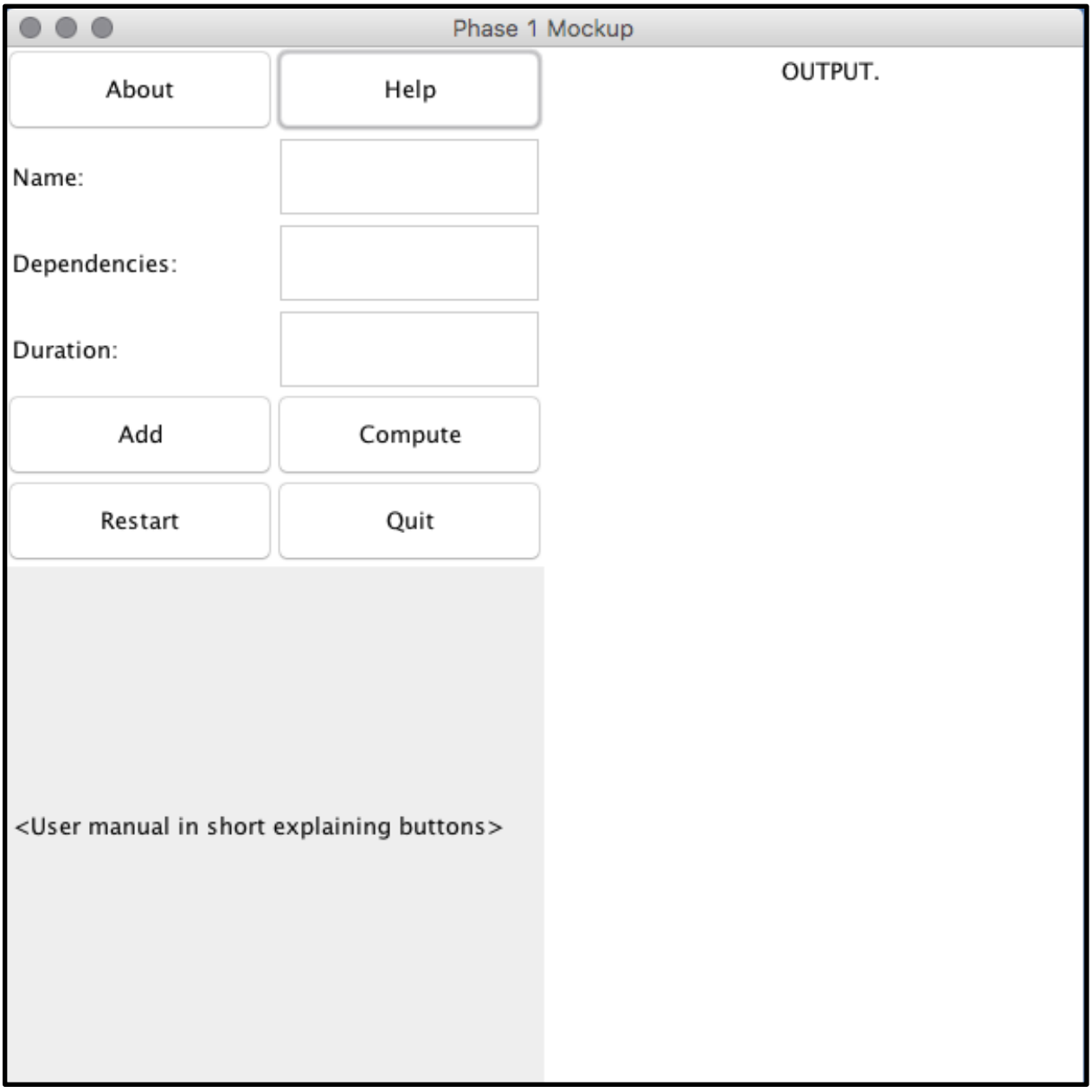
The third panel consists of the first panel as well as the text area below the first panel. The text area is used to display information and error messages to the user.

About Button



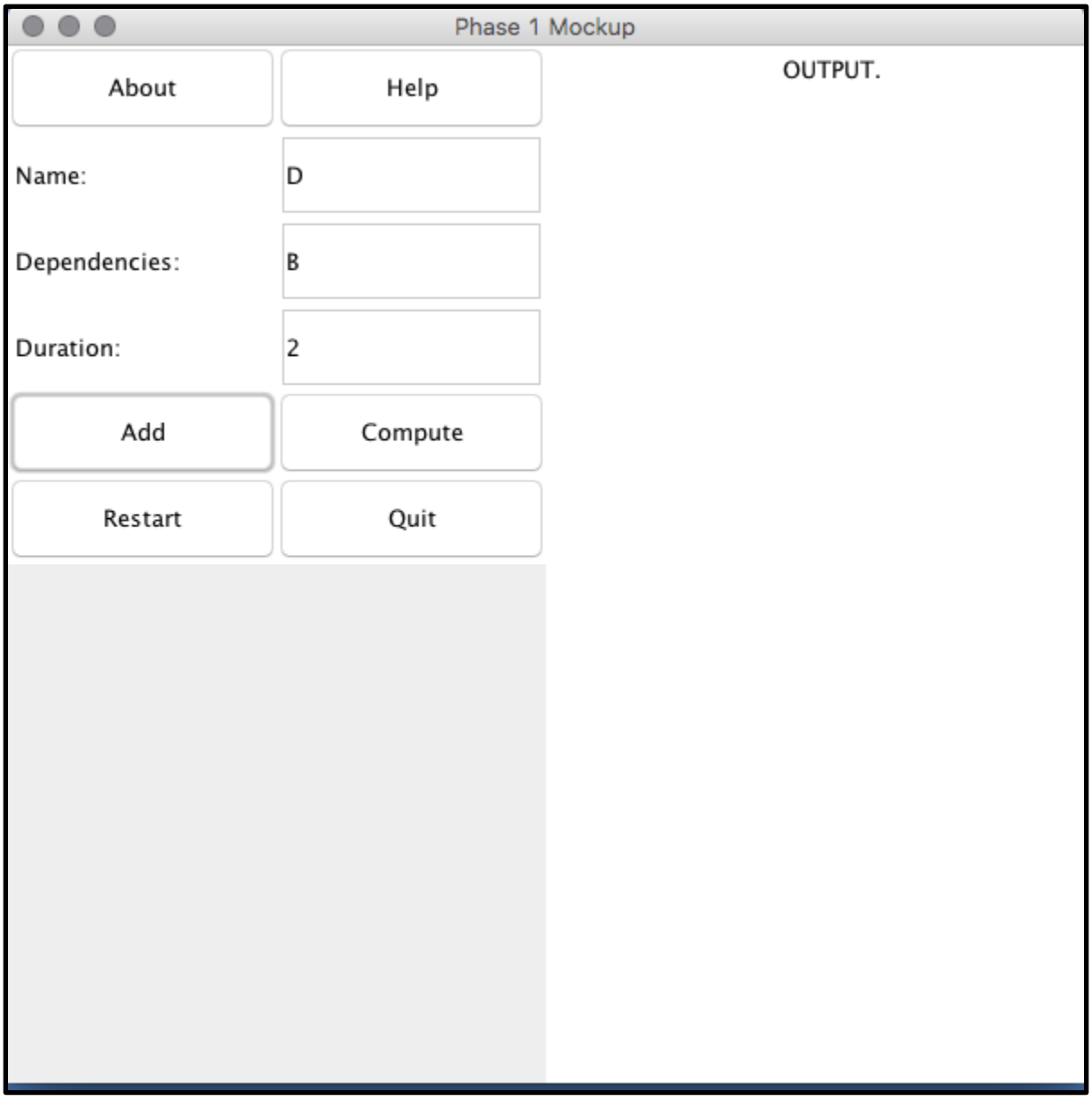
The About Button displays project information such as version number, copyright information.

Help Button



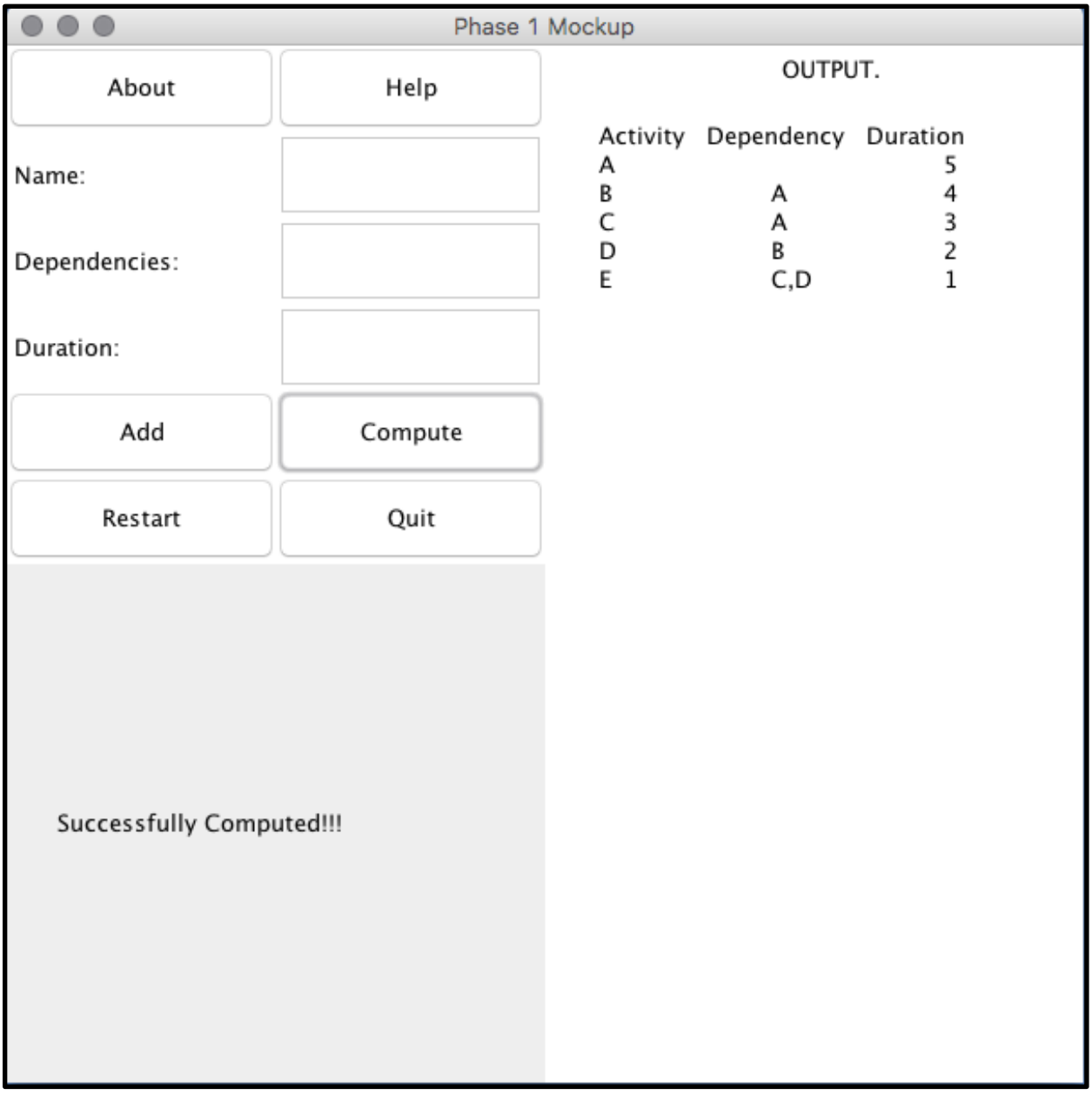
The Help Button displays a condensed version of the user manual describing all buttons, errors, and functionalities.

Sample Input and Add Button



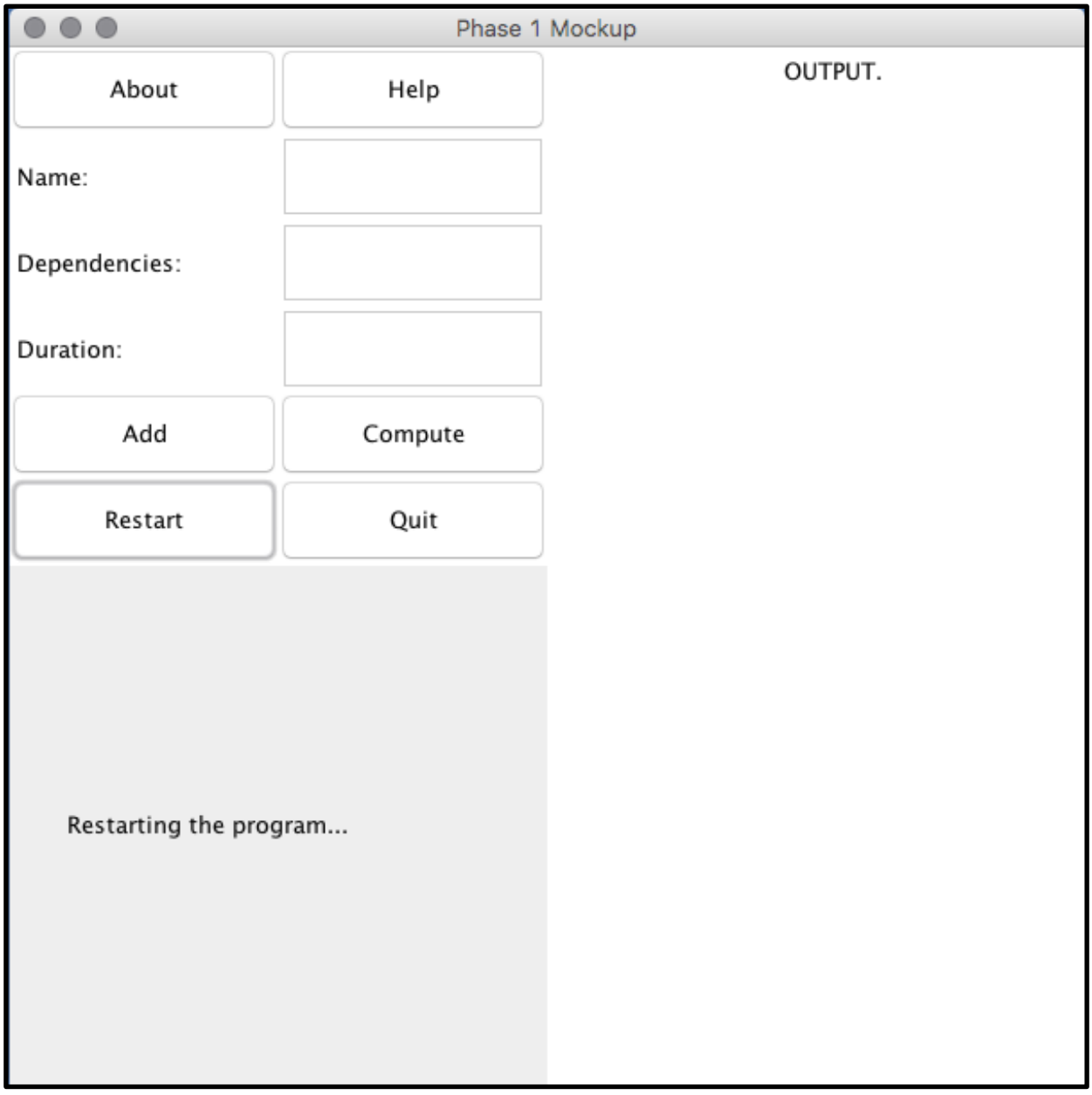
The Add Button adds the entered values to the network.

Compute Button and Output



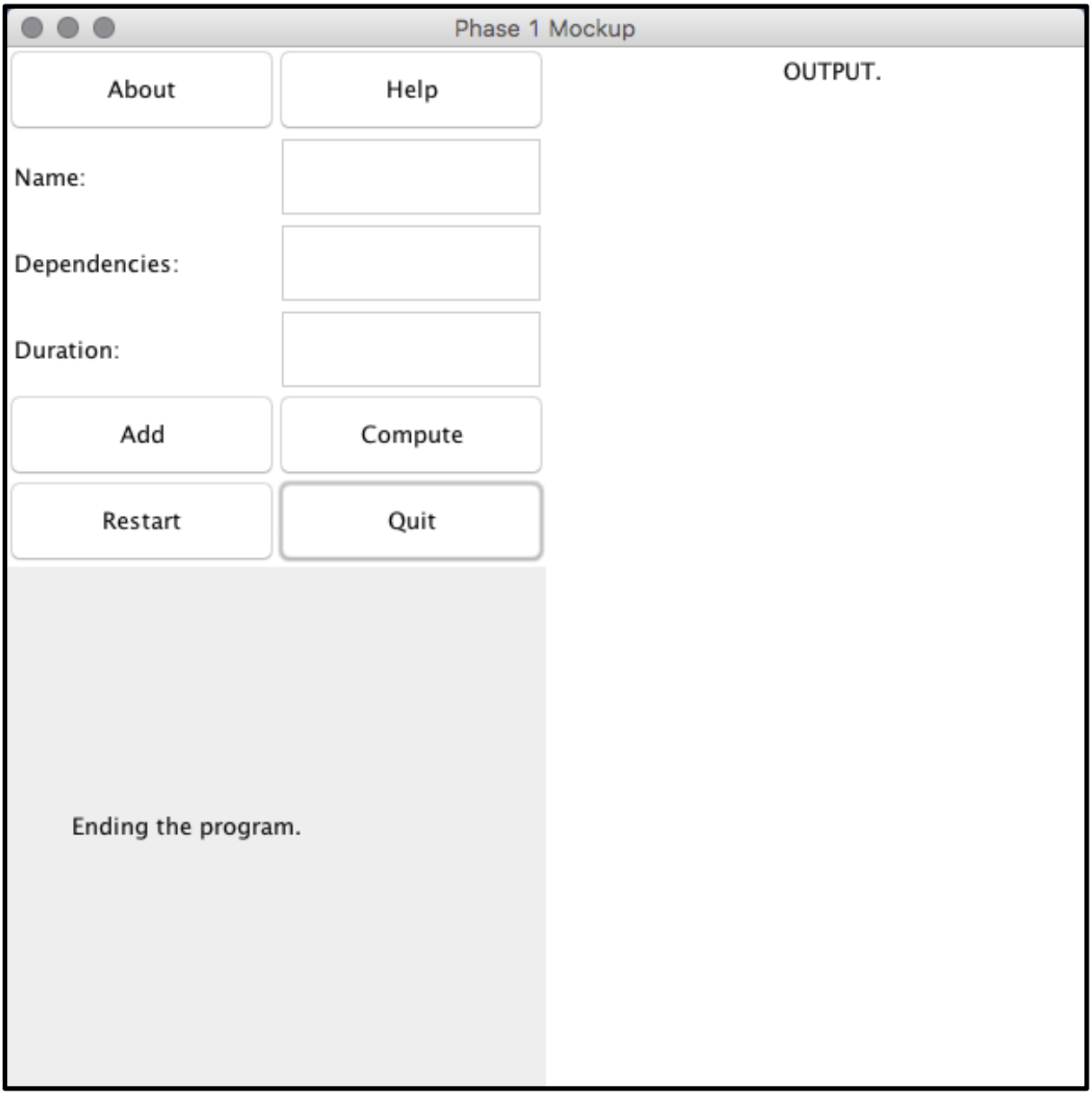
Clicking the Compute Button will generate a list of all paths in the network diagram and display it in the Output Window, along with a message in the Comments Window.

Restart Button



Clicking on the Restart Button resets the program so the user can start over.

Quit Button



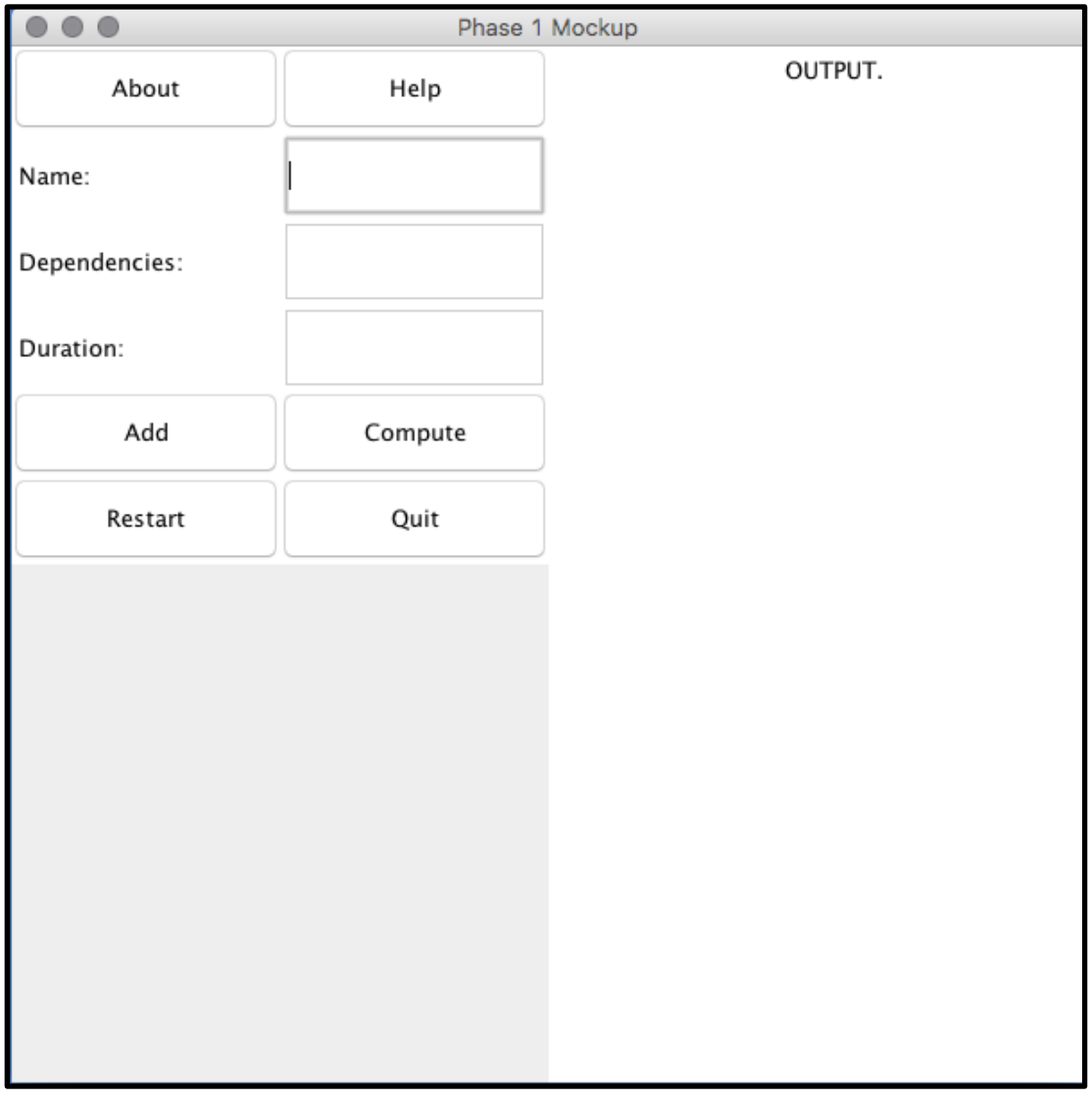
Clicking on the Quit Button exits the program.

EXAMPLE RUNS

- Successful execution example

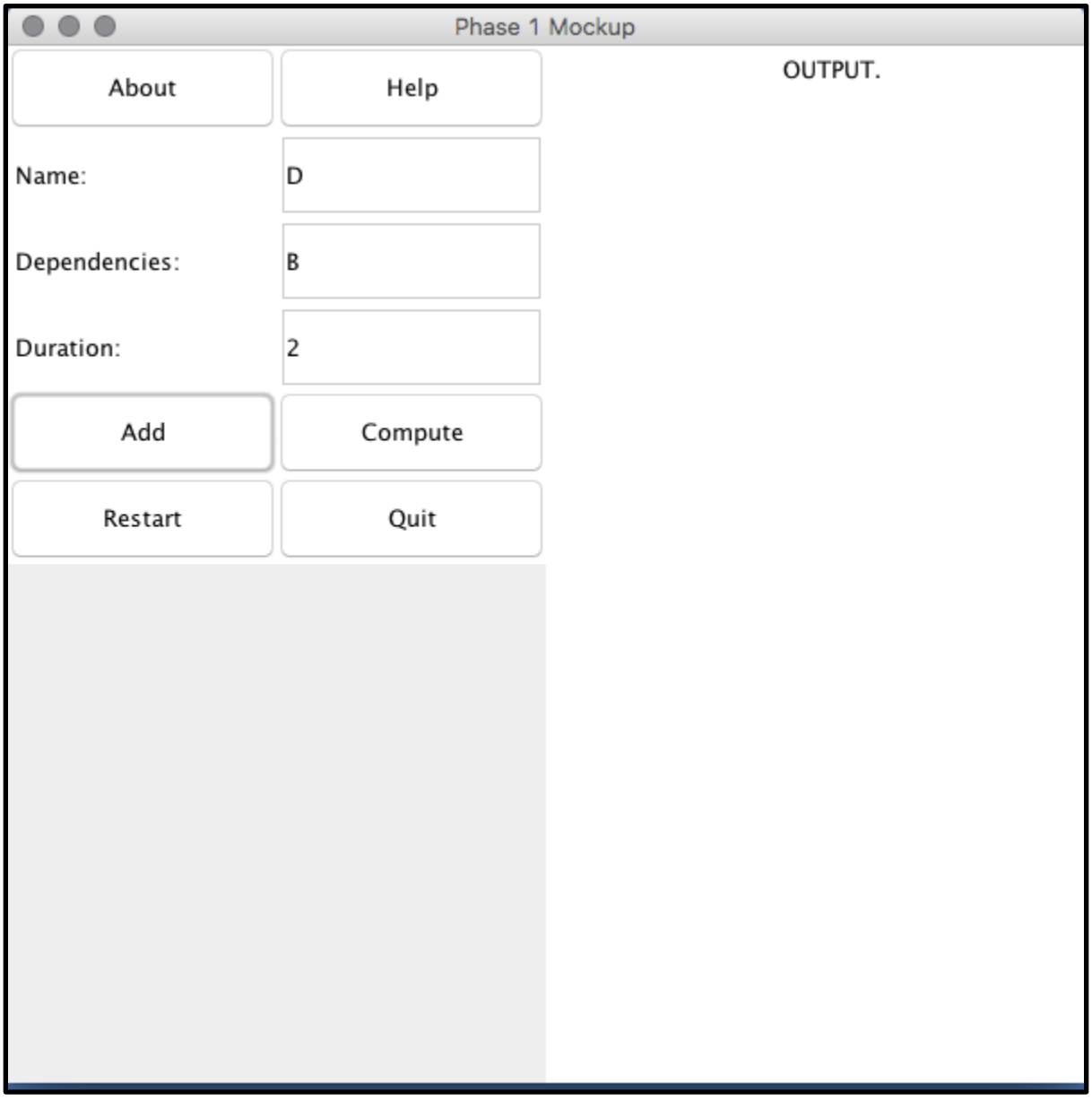
    1. Starting the application

        - ❖ When the program is executed the starting view is displayed

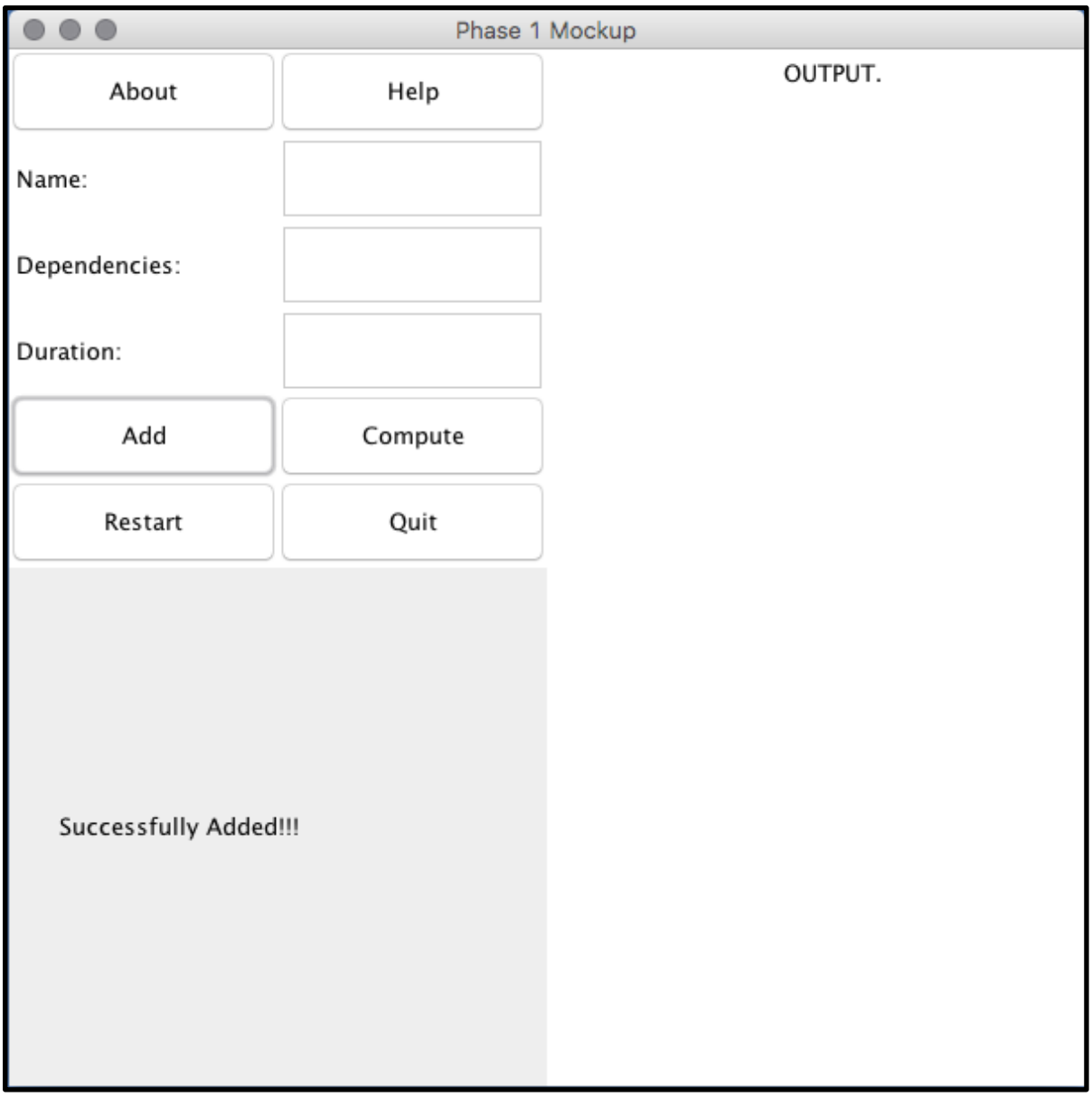


2. Example for correct input

   - ❖ The correct input requires an integer value for duration, and a character or set of characters for Name
   - ❖ Clicking the Add Button after entering the corresponding values in the text fields will add the data into the network

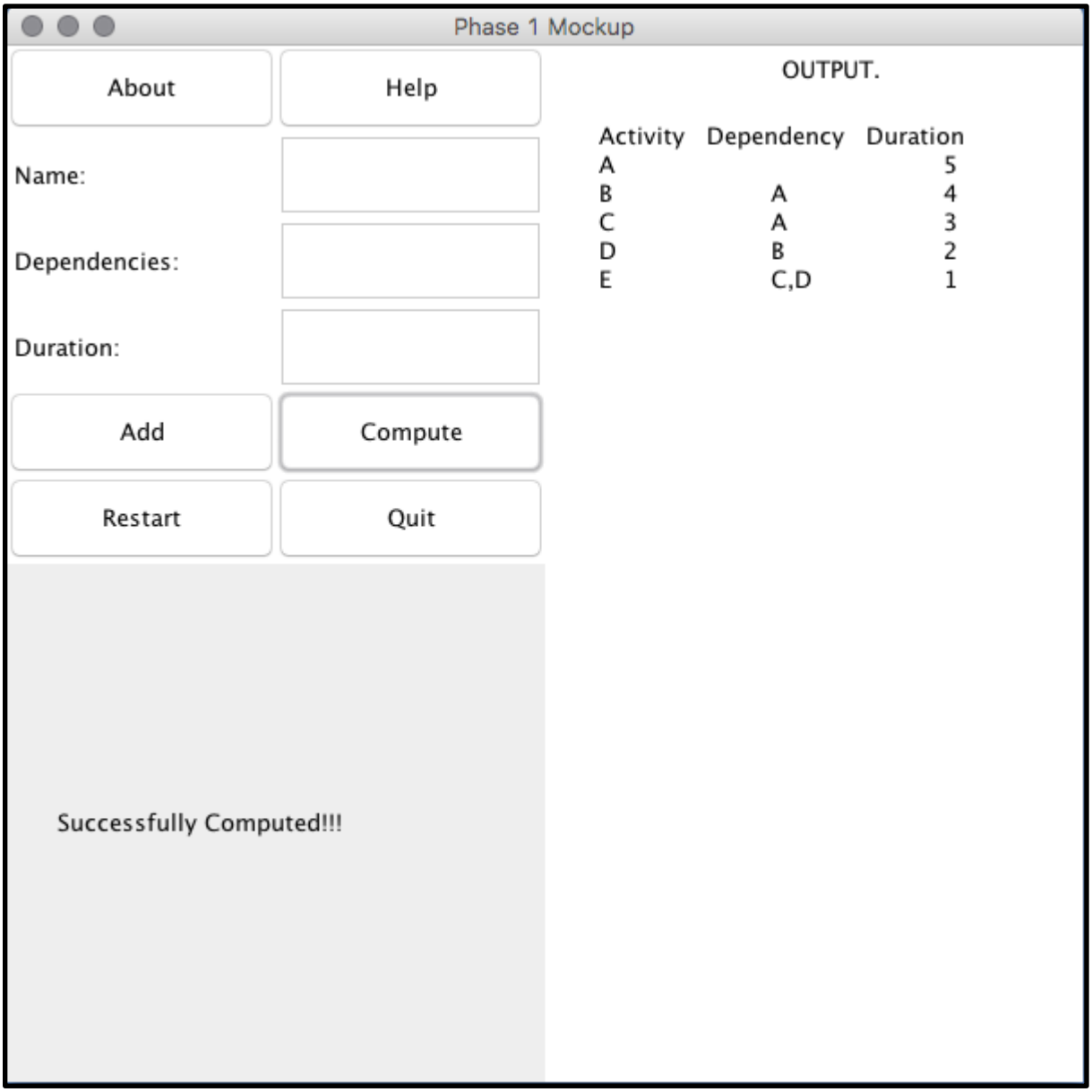


- After the Add Button is clicked, if the entered values have no errors, a "Successfully Added" message is displayed in the comments window.



3. The Compute Button and output

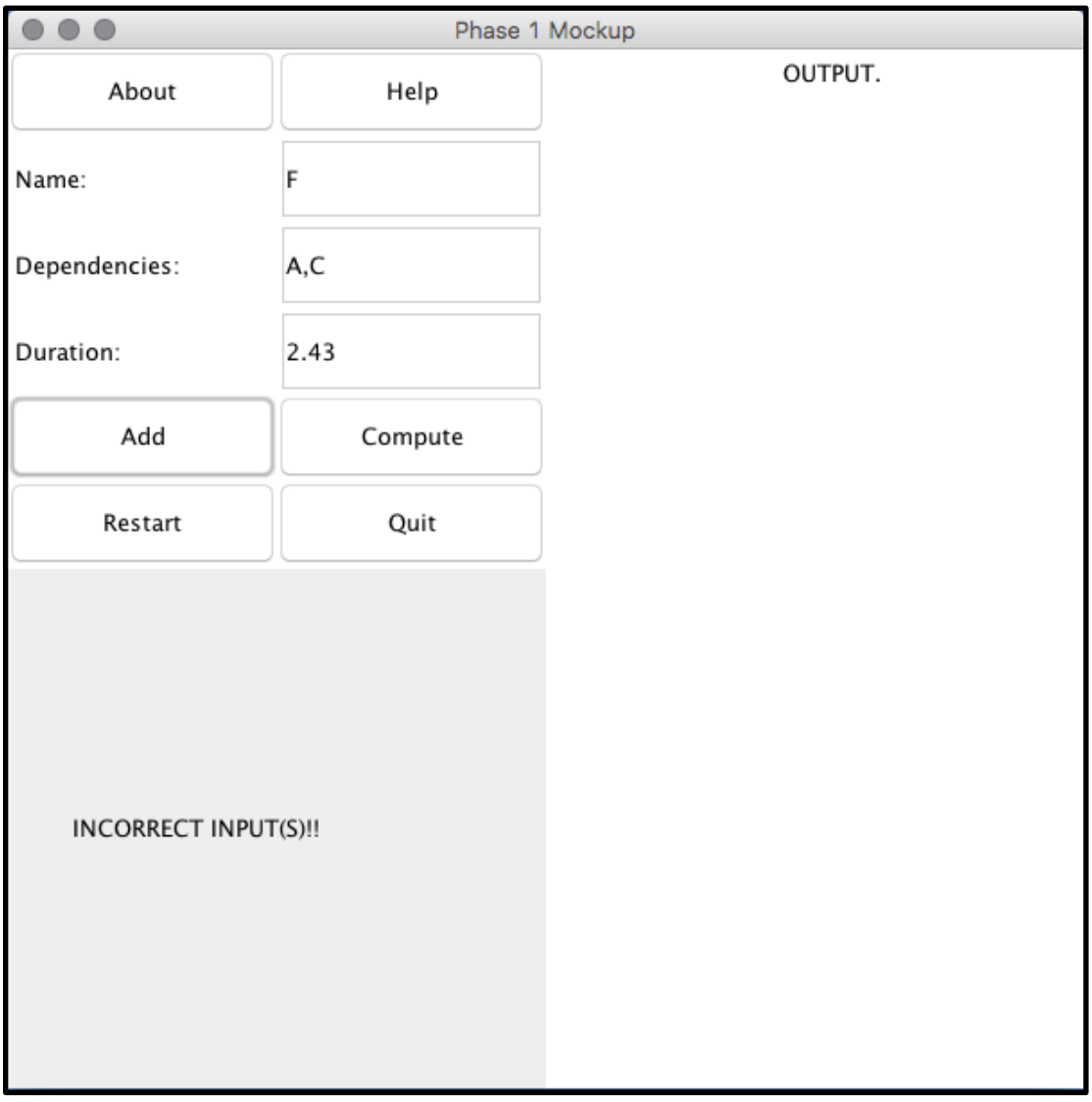
- ❖ After adding all the data in the network, the Compute Button should be clicked.
- ❖ If all the entered data was accurate and error-free, a list of all the paths in the network diagram will be displayed in the Output Window in descending order of duration.



- Examples of error conditions and error messages

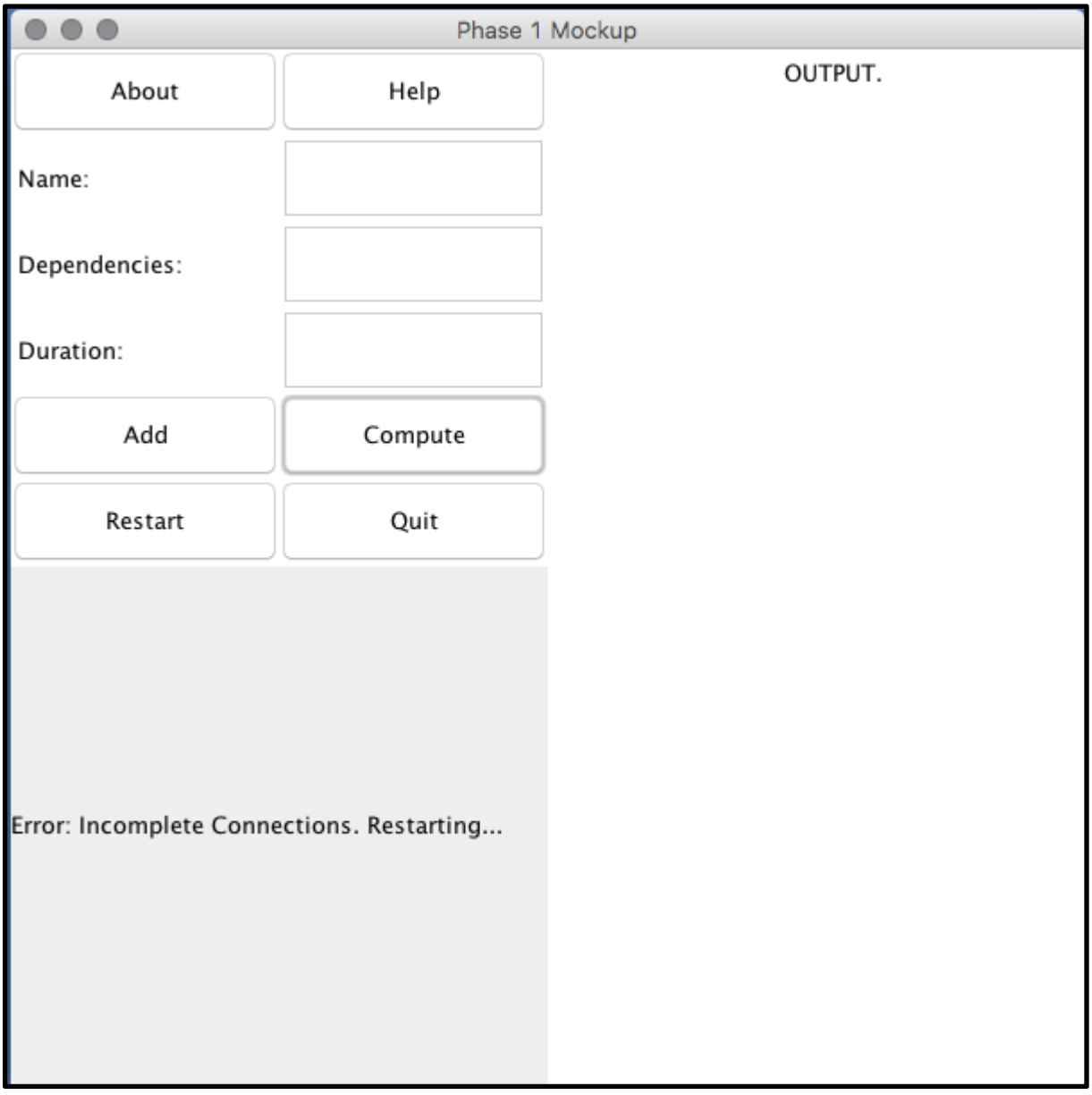
    1. Example for incorrect input for a particular text field

        - ❖ If a non-integer value or an empty Name field or an empty Duration field is added with the Add Button, the data is not added and an error message is displayed.



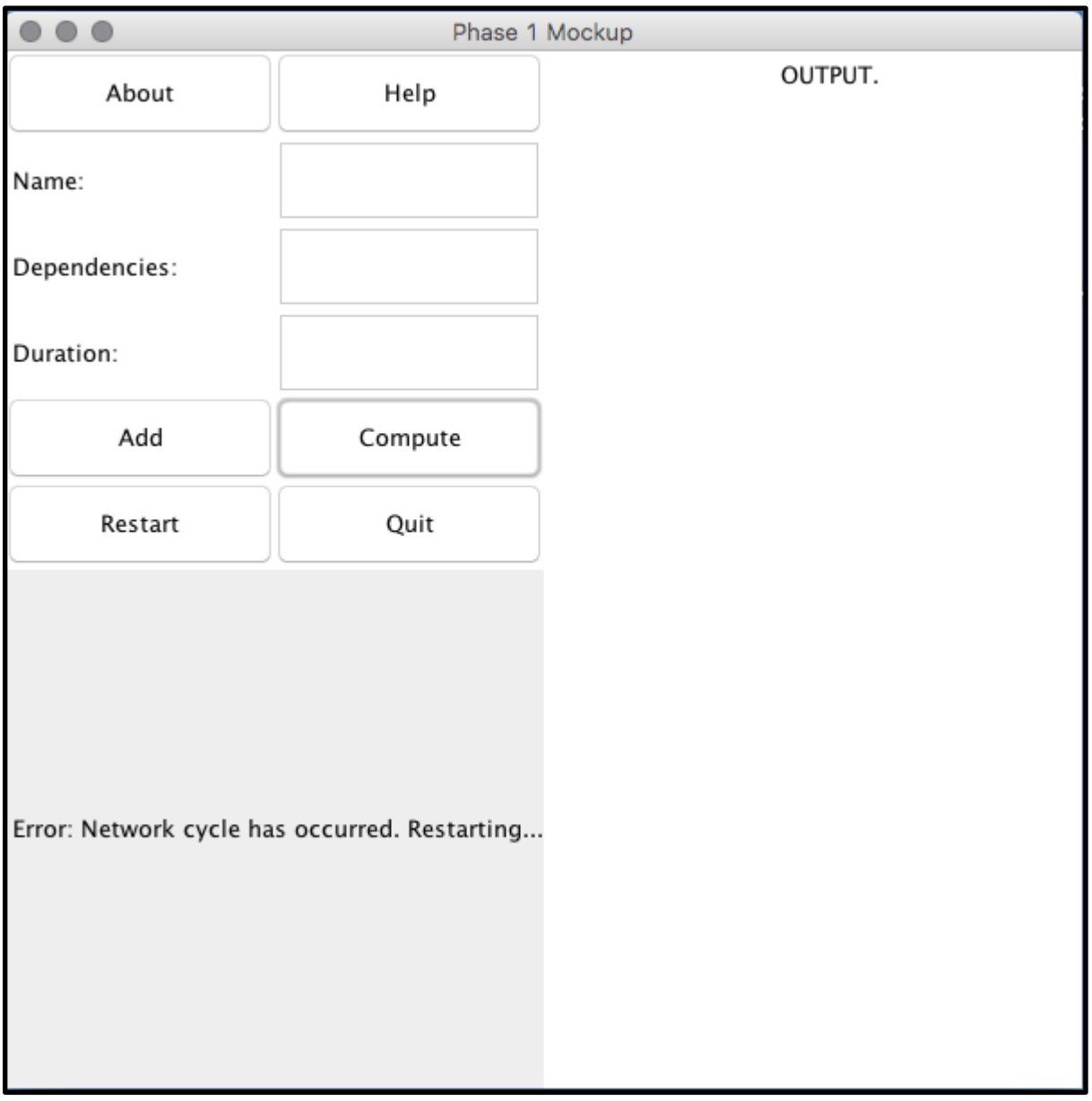
2. Example for error in the case of incomplete connections

    - ❖ If there is an incomplete connection or connections in the network diagram, an error will be displayed and the program will restart.



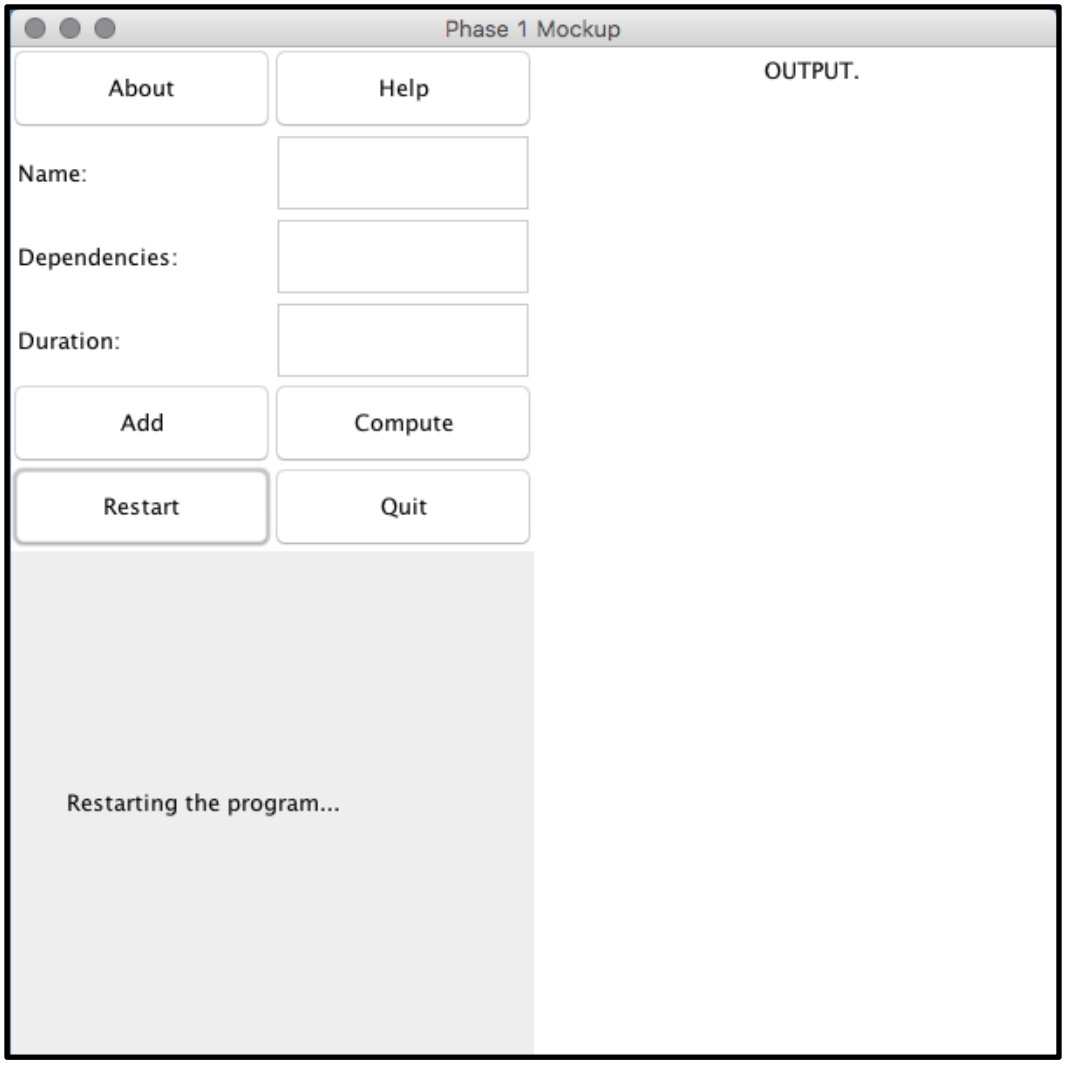
3. Example for error in the case of a cycle

    - ❖ If the activities are linking to form a cycle, an error message is displayed, and the program will restart.



RESTARTING

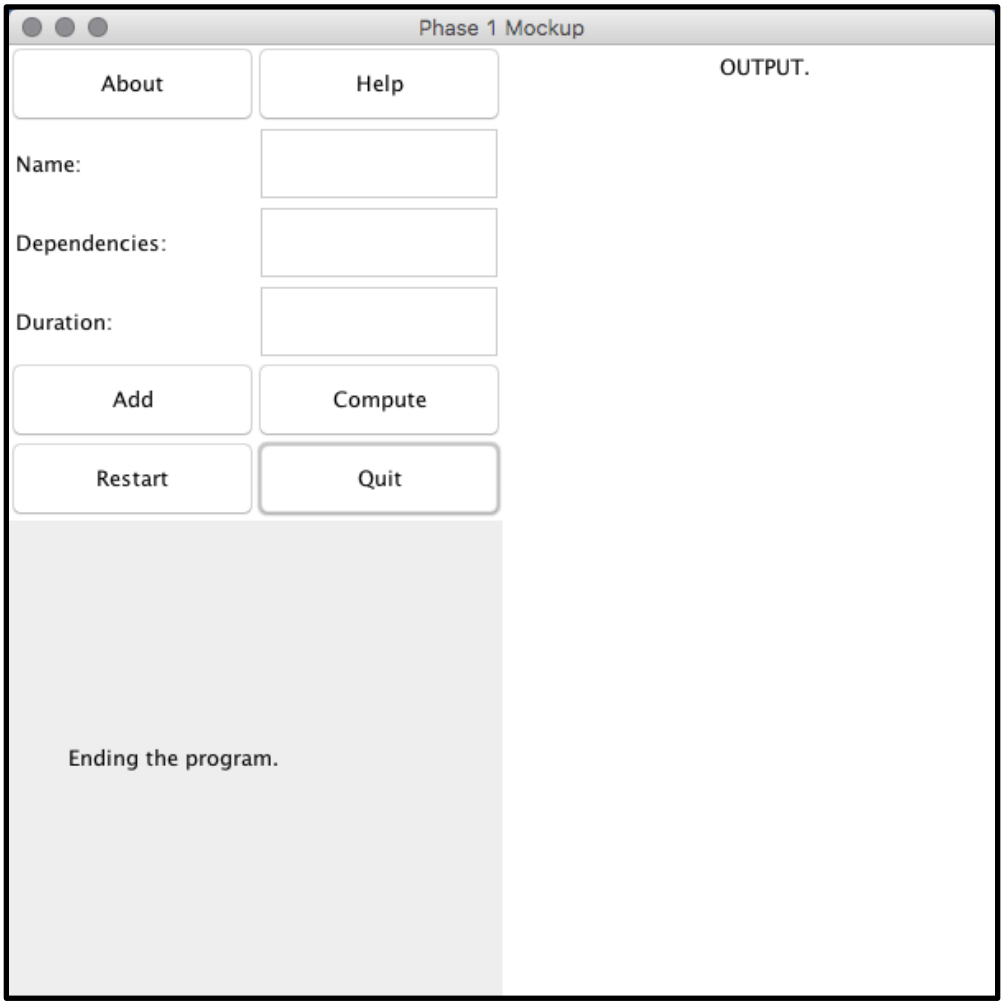
Restart Button being clicked



Clicking the Restart Button will restart the program. All previously entered data is deleted, and the starting view is loaded.

ENDING THE PROGRAM

Quit Button being clicked



Clicking on the Quit Button ends the program and after a 10 second delay, the GUI Window also closes.