

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 occurring 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:-

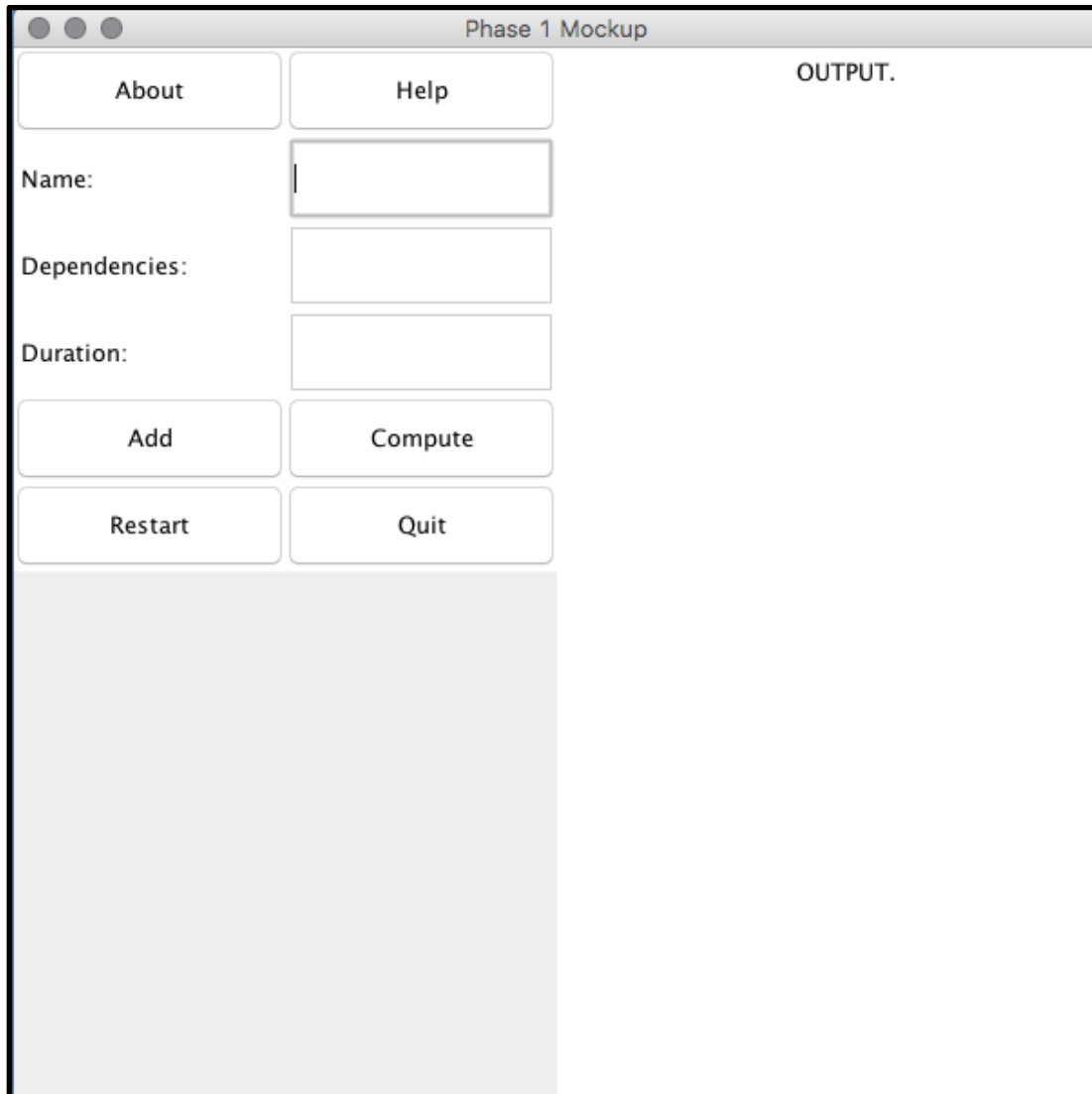
1. Download the .jar file for the project.
2. Upon opening the .jar file, the java program will load in the preferred IDE.
3. Compile the program to ensure that it builds.
4. Run the program to execute it and start the project application.

## 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 image shows a window titled "Phase 1 Mockup". Inside the window, there is a grid of buttons: "About", "Help", "Add", "Compute", "Restart", and "Quit". To the right of the "About" button is a large text area labeled "OUTPUT.". Below the buttons, there are three input fields labeled "Name:", "Dependencies:", and "Duration:". At the bottom of the window, there is a light gray shaded area containing the following text: "CSE 360 Phase 1 Overview", "Version 1.0.0", and "2018-2018. Group 1. All Rights Reserved."

Phase 1 Mockup	
About	Help
Name:	
Dependencies:	
Duration:	
Add	Compute
Restart	Quit
<div>CSE 360 Phase 1 Overview Version 1.0.0 2018-2018. Group 1. All Rights Reserved.</div>	

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

### Help Button

The image shows a software window titled "Phase 1 Mockup". Inside the window, there are two buttons at the top: "About" and "Help". The "Help" button is highlighted with a thicker border. To the right of these buttons is the text "OUTPUT.". Below the buttons, there are three input fields labeled "Name:", "Dependencies:", and "Duration:". Below these fields are four buttons arranged in a 2x2 grid: "Add", "Compute", "Restart", and "Quit". At the bottom of the window, there is a large gray rectangular area containing the text "<User manual in short explaining buttons>".

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

Sample Input and Add Button

A window titled "Phase 1 Mockup" with a standard macOS-style title bar (three red, yellow, and green buttons). The window is divided into two main sections. The left section contains a form with the following elements:

- Two buttons at the top: "About" and "Help".
- Three input fields with labels to their left: "Name:" (containing "D"), "Dependencies:" (containing "B"), and "Duration:" (containing "2").
- Four buttons arranged in a 2x2 grid below the input fields: "Add", "Compute", "Restart", and "Quit".
- A large, empty light gray rectangular area at the bottom of the left section.

The right section of the window is a large white area with the text "OUTPUT." in the top right corner.

The Add Button adds the entered values to the network.

Compute Button and Output

The mockup shows a window titled "Phase 1 Mockup". On the left, there are input fields for "Name:", "Dependencies:", and "Duration:", each with a corresponding text box. Above these are "About" and "Help" buttons. Below the input fields are "Add", "Compute", "Restart", and "Quit" buttons. The "Compute" button is highlighted with a red border. On the right, under the heading "OUTPUT.", is a table with three columns: "Activity", "Dependency", and "Duration". The table contains five rows of data. Below the buttons and the output table is a large gray rectangular area containing the text "Successfully Computed!!!".

Activity	Dependency	Duration
A		5
B	A	4
C	A	3
D	B	2
E	C,D	1

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

The image shows a window titled "Phase 1 Mockup" with a standard macOS-style title bar (three colored buttons). The window is divided into two main sections. The left section contains a vertical stack of elements: two buttons at the top labeled "About" and "Help"; three input fields labeled "Name:", "Dependencies:", and "Duration:"; and three more buttons labeled "Add", "Compute", "Restart", and "Quit" arranged in two rows. The "Restart" button is highlighted with a thicker border. Below these buttons is a large, light gray rectangular area containing the text "Restarting the program...". The right section of the window is a large white area labeled "OUTPUT." at the top.

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

Quit Button

The image shows a window titled "Phase 1 Mockup" with a standard macOS-style title bar (three colored buttons). The window is divided into two main sections. The left section contains a form with the following elements:

- Two buttons at the top: "About" and "Help".
- Three input fields, each preceded by a label: "Name:", "Dependencies:", and "Duration:".
- Two buttons below the input fields: "Add" and "Compute".
- Two buttons at the bottom: "Restart" and "Quit".

The right section of the window is a large, empty white area. At the top right of this section, the text "OUTPUT." is visible. At the bottom left of the window, there is a large gray rectangular area containing the text "Ending the program.".

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

The image shows a window titled "Phase 1 Mockup" with a standard macOS-style title bar (three buttons on the left). The window is divided into two main sections. The left section contains a form with the following elements:

- Two buttons at the top: "About" and "Help".
- A label "Name:" followed by a text input field.
- A label "Dependencies:" followed by a text input field.
- A label "Duration:" followed by a text input field.
- Two buttons in the middle: "Add" and "Compute".
- Two buttons at the bottom: "Restart" and "Quit".
- A large, empty light-gray rectangular area at the bottom of the left section.

The right section of the window is a large white area labeled "OUTPUT." at the top right, intended for displaying program output.

## 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

The image shows a software mockup titled "Phase 1 Mockup". It features a control panel on the left with several buttons and input fields, and a large output area on the right.

Phase 1 Mockup		OUTPUT.
About	Help	
Name:	D	
Dependencies:	B	
Duration:	2	
Add	Compute	
Restart	Quit	

The interface includes a control panel with buttons for "About", "Help", "Add", "Compute", "Restart", and "Quit". It also has input fields for "Name:" (containing "D"), "Dependencies:" (containing "B"), and "Duration:" (containing "2"). A large, empty area on the right is designated for "OUTPUT.".



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

The image shows a software mockup titled "Phase 1 Mockup". It features a control panel on the left with buttons for "About", "Help", "Add", "Compute", "Restart", and "Quit". Below these are input fields for "Name:", "Dependencies:", and "Duration:". The "Add" button is highlighted with a thick border. To the right of the control panel is a large "OUTPUT." window. A light gray rectangular area at the bottom left of the main window contains the text "Successfully Added!!!".

Phase 1 Mockup		OUTPUT.
About	Help	
Name:		
Dependencies:		
Duration:		
Add	Compute	
Restart	Quit	
Successfully Added!!!		

### 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.

The image shows a software mockup titled "Phase 1 Mockup". It features a control panel on the left with buttons for "About", "Help", "Add", "Restart", "Compute", and "Quit". The "Compute" button is highlighted. Below the buttons are input fields for "Name:", "Dependencies:", and "Duration:". A large grey area at the bottom displays the message "Successfully Computed!!!". On the right, an "OUTPUT." section contains a table with three columns: "Activity", "Dependency", and "Duration".

Activity	Dependency	Duration
A		5
B	A	4
C	A	3
D	B	2
E	C,D	1

- 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.

The image shows a software mockup titled "Phase 1 Mockup". It features a sidebar on the left with buttons for "About", "Help", "Add", "Compute", "Restart", and "Quit". The main area contains input fields for "Name:" (containing "F"), "Dependencies:" (containing "A,C"), and "Duration:" (containing "2.43"). To the right of these fields is a large area labeled "OUTPUT.". At the bottom of the sidebar, a grey box displays the error message "INCORRECT INPUT(S)!!".

Phase 1 Mockup		OUTPUT.
About	Help	
Name:	F	
Dependencies:	A,C	
Duration:	2.43	
Add	Compute	
Restart	Quit	
INCORRECT INPUT(S)!!		

## 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.

The image shows a software window titled "Phase 1 Mockup". The window has a standard macOS-style title bar with three colored buttons (red, yellow, green) on the left. The main content area is divided into two sections. On the left, there is a form with several input fields and buttons. On the right, there is a large text area labeled "OUTPUT.". The form on the left contains the following elements: a row with "About" and "Help" buttons; a "Name:" label followed by an empty text input field; a "Dependencies:" label followed by an empty text input field; a "Duration:" label followed by an empty text input field; a row with "Add" and "Compute" buttons; and a row with "Restart" and "Quit" buttons. Below the form, there is a large gray rectangular area that contains the text "Error: Incomplete Connections. Restarting...". The "OUTPUT." section on the right is currently empty.

Phase 1 Mockup		OUTPUT.
About	Help	
Name:	<input type="text"/>	
Dependencies:	<input type="text"/>	
Duration:	<input type="text"/>	
Add	Compute	
Restart	Quit	
Error: Incomplete Connections. Restarting...		

### 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.

The image shows a software window titled "Phase 1 Mockup". The window has a standard macOS-style title bar with three colored buttons (red, yellow, green) on the left. The main content area is divided into two sections. The top section contains a grid of buttons: "About" and "Help" in the first row; "Name:" followed by a text input field in the second row; "Dependencies:" followed by a text input field in the third row; "Duration:" followed by a text input field in the fourth row; "Add" and "Compute" in the fifth row; and "Restart" and "Quit" in the sixth row. The "Compute" button is highlighted with a thick border. To the right of this grid, the word "OUTPUT." is displayed. The bottom section of the window is a large, light gray rectangular area. At the top of this section, the text "Error: Network cycle has occurred. Restarting..." is displayed.

Phase 1 Mockup		OUTPUT.
About	Help	
Name:	<input type="text"/>	
Dependencies:	<input type="text"/>	
Duration:	<input type="text"/>	
Add	Compute	
Restart	Quit	
Error: Network cycle has occurred. Restarting...		

# RESTARTING

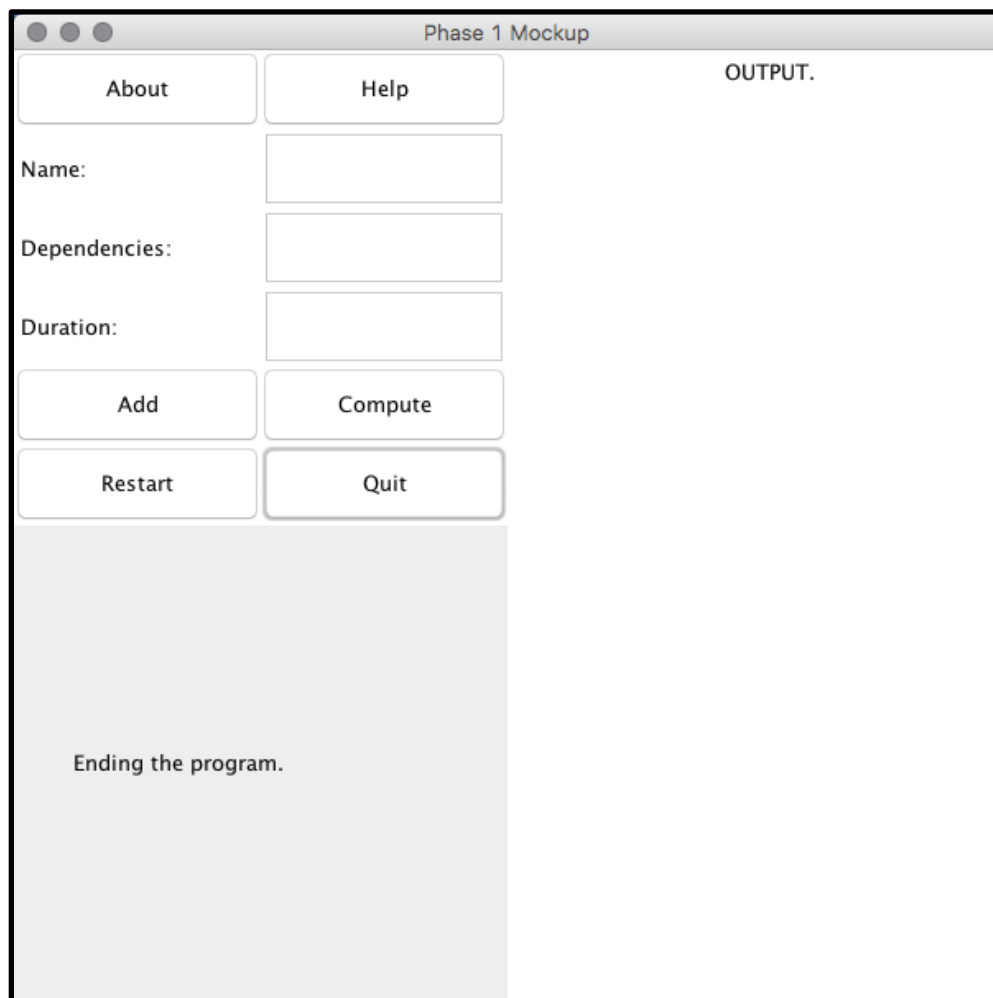
Restart Button being clicked

The image shows a window titled "Phase 1 Mockup" with a standard macOS-style title bar (three red, yellow, and green buttons). The window is divided into two main sections. The left section contains a vertical stack of elements: a row of two buttons labeled "About" and "Help"; a label "Name:" followed by a text input field; a label "Dependencies:" followed by a text input field; a label "Duration:" followed by a text input field; a row of two buttons labeled "Add" and "Compute"; and a row of two buttons labeled "Restart" and "Quit". The "Restart" button is highlighted with a darker border. Below this stack is a large, light gray rectangular area containing the text "Restarting the program...". The right section of the window is a large white area labeled "OUTPUT." at the top right.

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.