1. Introduction

This is the user guide for the program called Path Detector. The user guide consists of a program overview, installation instructions, and directions on how to use the Path Detector software. The directions detail how the graphical user interface works and explains error handling for the program. Sample input and expected output examples are also included to demonstrate correct execution of the program.

2. Overview of the program

Path Detector was created using the Java Programming Language and includes a graphical user interface which allows the user to interact with the software efficiently. The main purpose of the software is to analyze a network diagram and determine all paths in the network based on user input. The user input consists of multiple occurrences of the activity name, duration, and a list of dependencies. The first activity will have no predecessor, but there is no dependency limit on the activities that follow. Activity name may have multiple characters and duration is an integer value. If the user enters a value different than an integer value, the software requires the user to re-enter a correct value for duration. The final program output displays:

- All paths in the network with duration of each path in descending order.

3. Getting started

The latest version of the Path Detector Software can be found in https://myapps.asu.edu/ under the office tools category.

4. User interface

1. Overview

2. Description of options

Upon opening the program, the user interface will be visible (Figure 1). On the left, there are three text fields labeled: Activity Name, Predecessor, and Duration.

- **Activity Name:** Requires user input to specify the activity name. The name can be a single character or multiple characters.
- **Predecessor:** Specifies the dependency of the current activity. The first activity will have a predecessor of NULL.
- **Duration:** Specifies the lifetime of each activity. This must be an integer value.

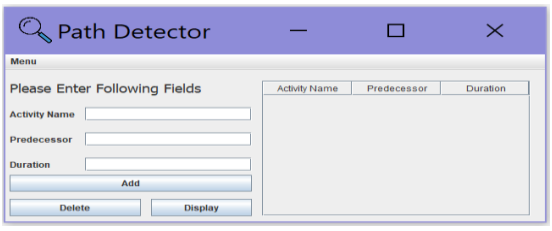

Figure 1: Path Detector User Interface

All fields must be filled in or an error message will be displayed (Figure 2 and Figure 3). For the first activity in the list, the Predecessor input must be NULL (Figure 4). If any other input is entered into the Predecessor field for the first activity, an error message will appear (Figure 5) and the program will automatically fill in NULL as the predecessor value. Also, if the value entered for duration is not an integer, an error message will appear (Figure 6).

Figure 2: Error message displayed if the user does not fill in any of the text fields.

Figure 3: Error message displayed if the user does not fill in all of the text fields.

Figure 4: Input for the first activity requires NULL as the predecessor value.

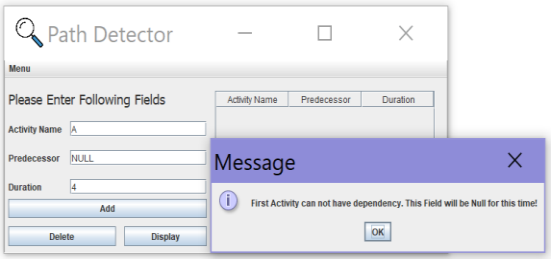

Figure 5: Error message is NULL is not entered as predecessor for the first activity in the list.

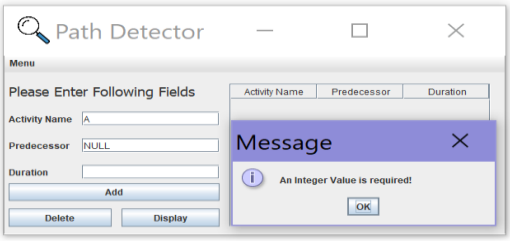

Figure 6: Error message appears if an integer value is not entered into the Duration field.

Once all fields are properly filled, there are several buttons that allow the user to interact with the program: Add, Delete, and Search.

- **Add:** Pressing Add will add the activity and its corresponding information to the table on the right-hand side (Figure 7).
- **Delete:** To delete an item from the list, select the desired row and press Delete (Figure 8). Pressing delete without selecting a row first will generate an error message (Figure 9).
- **Display:** Pressing display will output all the paths in the network in descending order by duration.

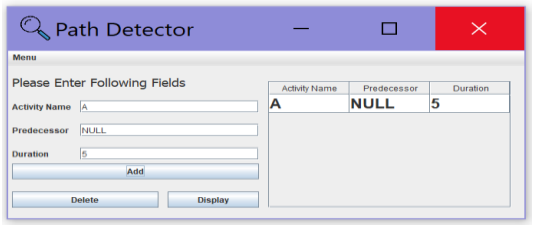

Figure 7: User input on the left added to the table on the right using the Add button.

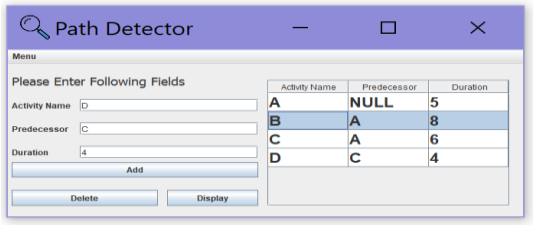

Figure 8: Row is selected when it is highlighted.

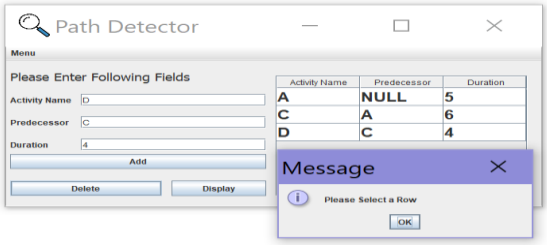

Figure 9: Error message when trying to delete without selecting a row.

Clicking Menu in the upper left-hand corner of the program will drop down About and Help options (Figure 10). About provides a brief description about what the program does and who the contributors are (Figure 11). Help opens a PDF document outlining the features of the program and error conditions.