

Dataflow

Goal

Modify a VI to show the proper use of dataflow.

Scenario

You are given a VI which should read text from a sample file, add an entry to that file, and then read text from the file again.

Without proper dataflow, this VI will not execute as expected. Test the current VI and then modify it to use proper dataflow.

Implementation

The files that you need to complete this exercise are here: <NI eLearning>\LV Core 1\Using Sequential Program\Exercise.

1. Open Dataflow Example.vi from the <Exercise> directory.

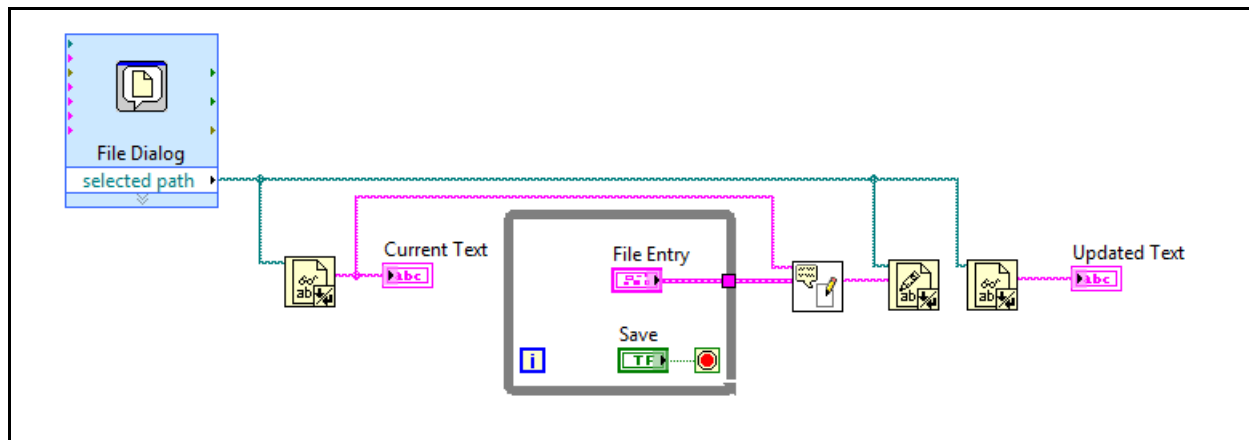


Figure 1. Code With Incorrect Dataflow

2. Test the program.
 - ☐ Run the VI.
 - ☐ In the file dialog window, select the Messages.txt file from the <Exercise> directory.
 - ☐ Enter values into the File Entry cluster and click the Save button to add this data to the file.

When you run the program, the code reads the Current Text and Updated Text at essentially the same time. We want the program to read the Current Text, append the new message, and then display the Updated Text.

There is no data dependency between the two functions, therefore by the rules of dataflow, they will both run when the file path is available to them. To ensure proper dataflow of the code, we can wire error clusters into and out of each function and subVI. This will create a data dependency and change the order of execution.

3. Wire the error clusters as shown in Figure 2.

- ☐ Wire the error out from the first Read from Text File function to the edge of the While Loop.
- ☐ Wire the error tunnel from inside the While Loop into the error in of the Format subVI.
- ☐ Wire the error out of the Format subVI into the error in of the Write to Text File function.
- ☐ Wire the error out of the Write to Text File function into the error in of the second Read from Text File function.

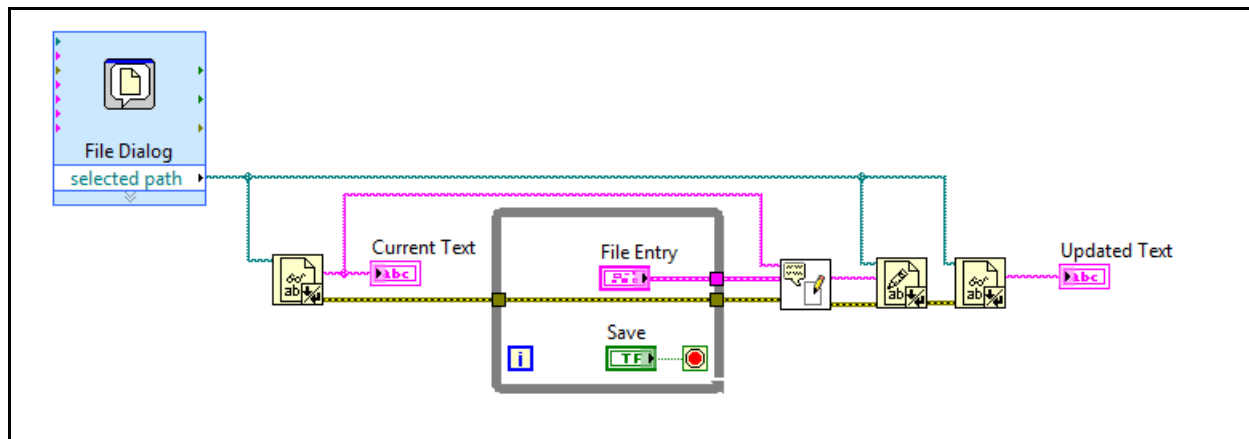


Figure 2. Completed Block Diagram

4. Save the VI.
5. Test the program.
 - ☐ Run the VI.
 - ☐ In the file dialog window, select the `Messages.txt` file from the `<Exercise>` directory.

This time when you run the program, the Current Text will update with the text from the file, the File Entry information will be written to the file when you click the Save button, and the new text will appear in the Updated Text indicator.

End of Exercise

Notes
