

Concept: Undefined Data and Errors

Goal

Use error functions to determine where an error has occurred within a VI.

Description

During this exercise, you will create a VI which will generate and handle an error. You will use the Simulate Signal Express VI with an unexpected input to cause an error.

Implementation

The folder that you need to save this exercise is here: <NI eLearning>\LV Core 1\Undefined Data and Errors\Exercise.

1. Open a blank VI.

- ☐ Open LabVIEW.
- ☐ From the Getting Started window select **File»New VI**.

2. Save the VI.

- ☐ Select **File»Save**.
- ☐ Save the VI as `Error Output.vi` in the <Exercise> directory.

3. Create a waveform graph.

- ☐ Add a Waveform Graph to the front panel.

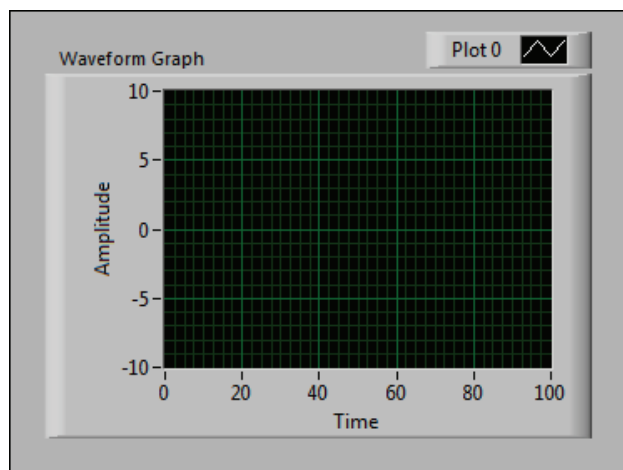


Figure 1. Waveform Graph

4. Press <Ctrl-E> to switch to the block diagram.
5. Place a Simulate Signal Express VI on the block diagram.



- ☐ Add a Simulate Signal Express VI on the block diagram.
 - ☐ When the dialog window appears, leave all selections as default and click the **OK** button.
6. Add a control and an indicator to the Simulate Signal Express VI.
 - ☐ Right-click the Frequency input on the Simulate Signal Express VI and select **Create»Control**.
 - ☐ Right-click the error output on the Simulate Signal Express VI and select **Create»Indicator**.
 7. Wire the Sine output of the Simulate Signal Express VI to the Waveform Graph.

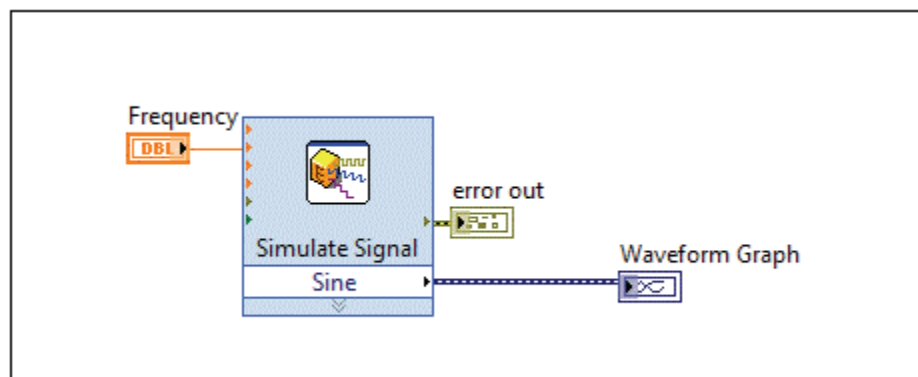


Figure 2. Sine Output to the Wave Graph

8. Press <Ctrl-E> to switch to the front panel.
9. Change the frequency to 10 and run the VI. Notice that a sine wave appears in the graph and no error occurs.

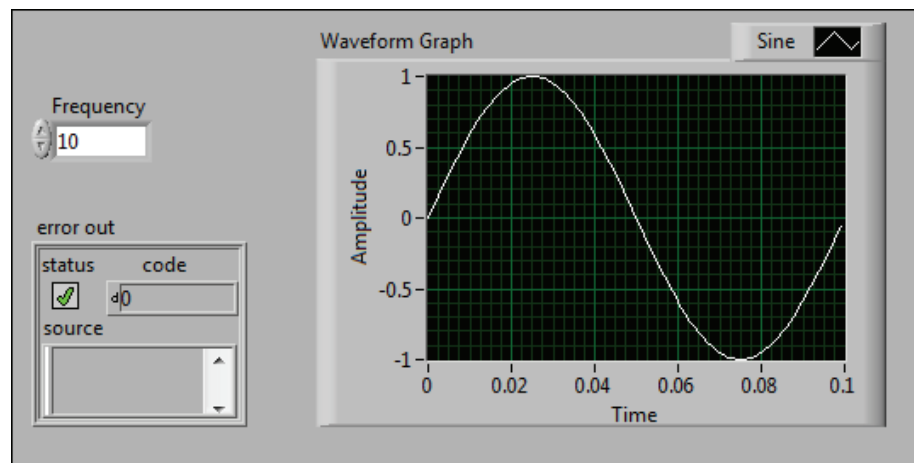


Figure 3. Waveform Graph Without Errors

10. Change the frequency to NaN. This represents the value of not a number.
11. Run the program again. Notice that the program returns an error from the Simulate Signal Express VI.

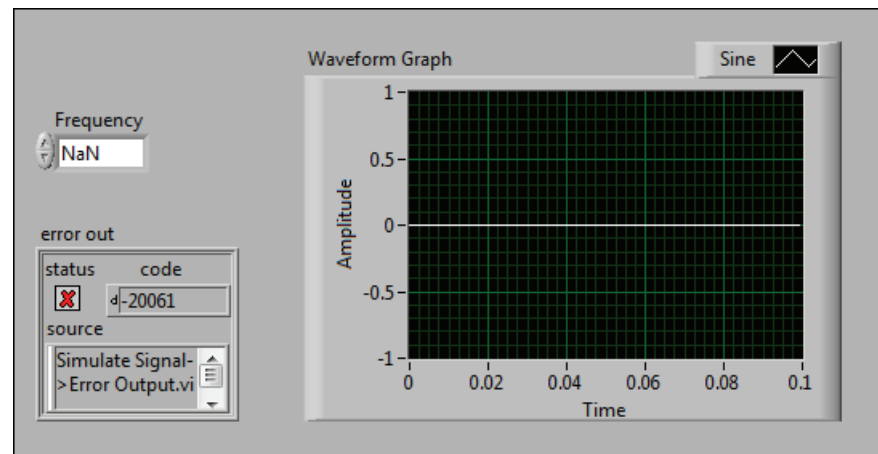


Figure 4. Waveform Graph With Error

12. Press <Ctrl-E> to switch back to the block diagram.
13. Add a General Error Handler VI.



- ☐ Delete the error out indicator.
- ☐ Place a General Error Handler VI on the block diagram.
- ☐ Wire the error out from the Simulate Signal Express VI into the error in of the General Error Handler VI.

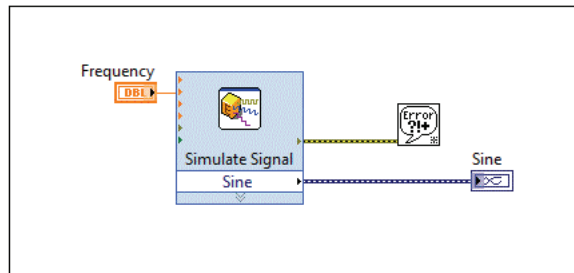


Figure 5. Simulate Signal Error Out

14. Run the VI again and view the result. A pop-up will appear outlining the details of the error that has occurred.

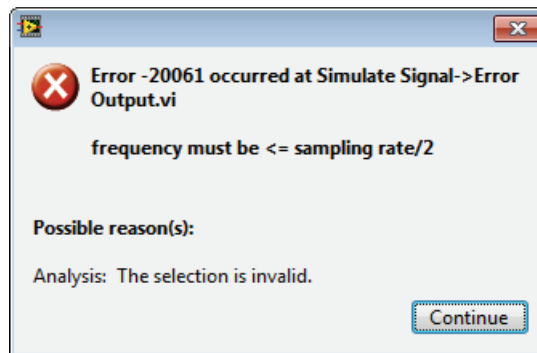


Figure 6. Error Message

15. Compare your VI to the provided solution VI.
16. Close the VI when you are finished.

End of Exercise

Notes
