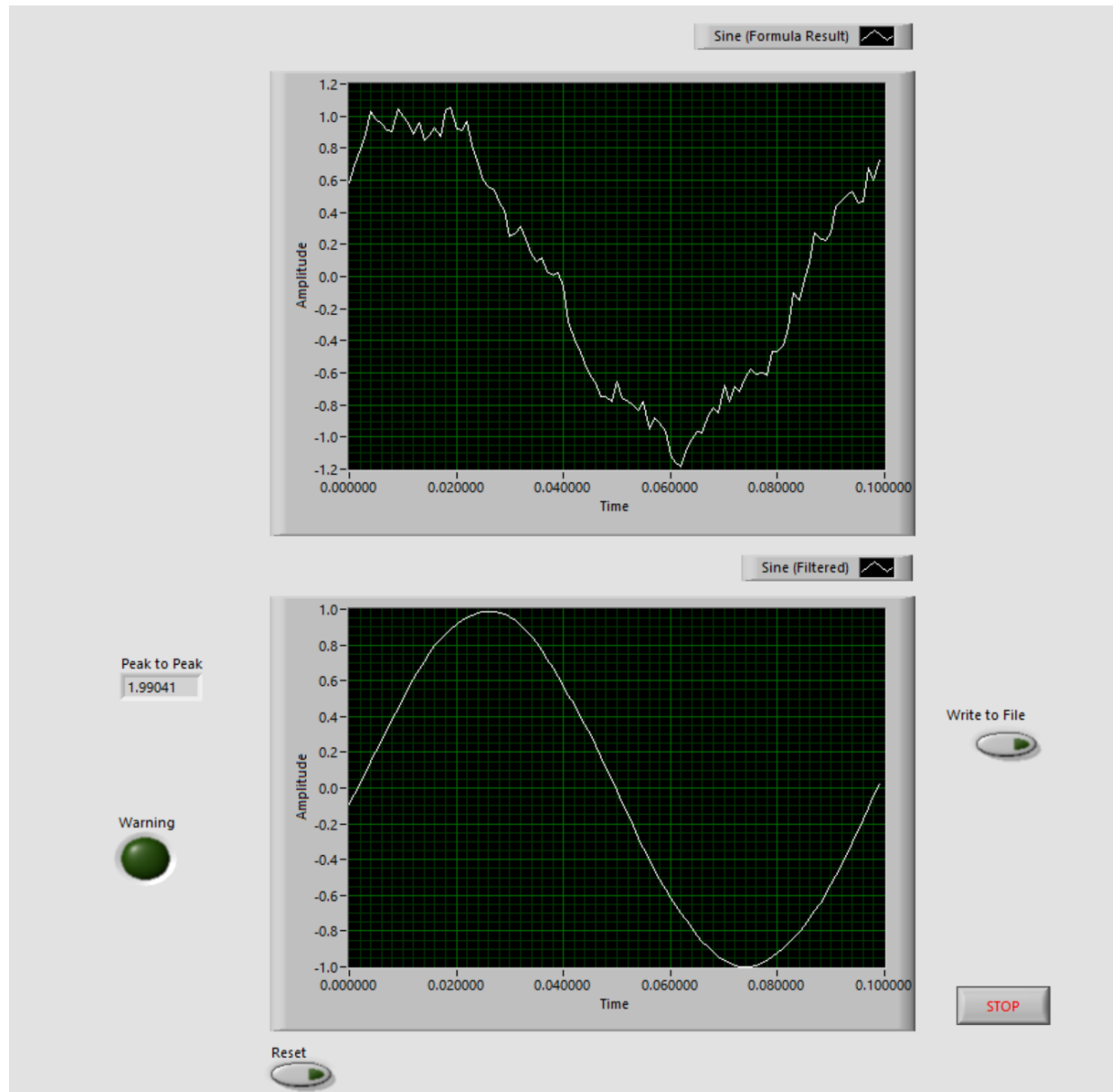


ET 460 Activity 03 Customizing a VI

Final version of the exercise:



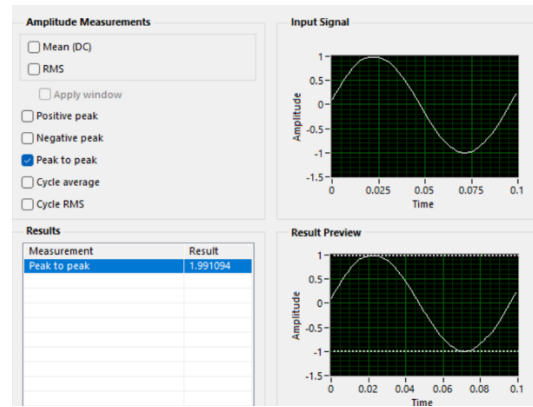
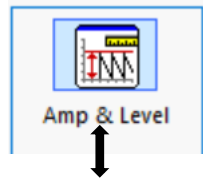
Right click

Express

Signal Analysis

Amp & Level

Make it larger with a double arrow

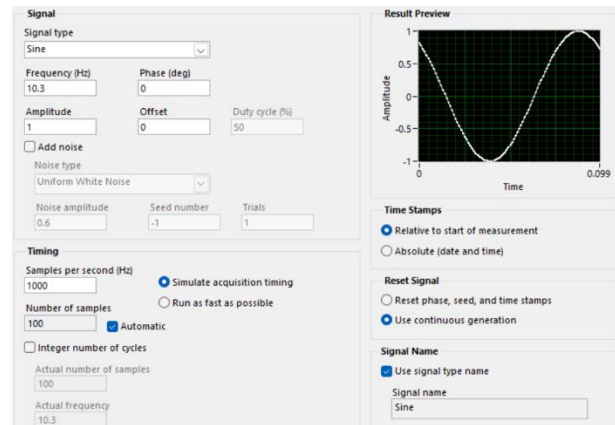
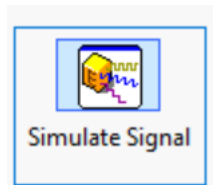


Right click

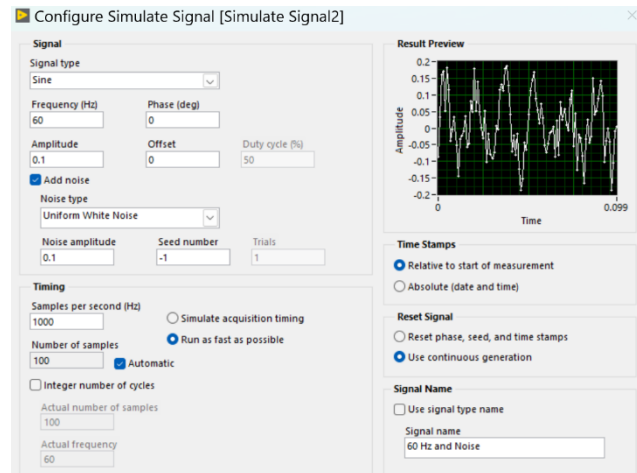
Express

Signal Analysis

Simulate Signal



Add a second Signal



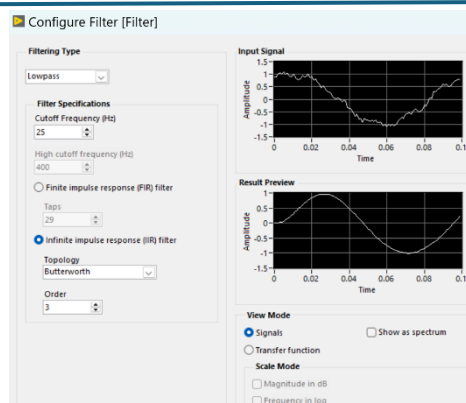
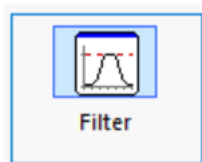
Filtering a Signal

Right click

Express

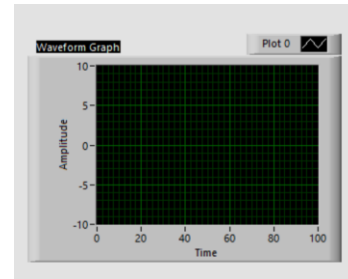
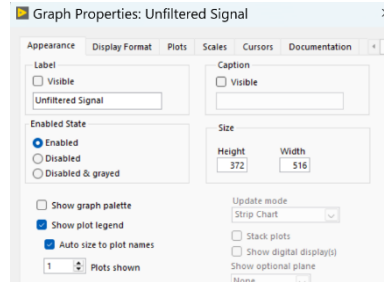
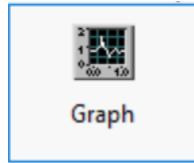
Signal Analysis

Filter



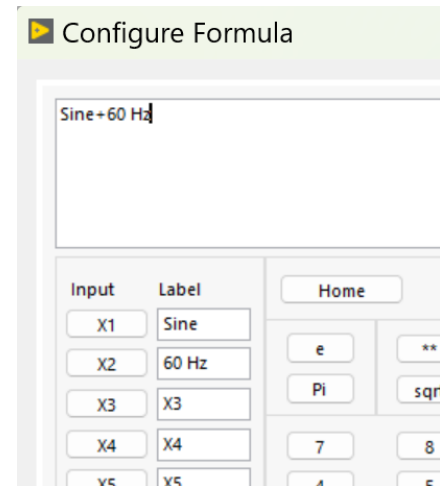
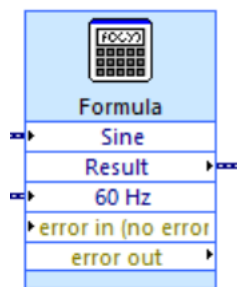
On the Front Panel

Right click
Express
Graph Indicator
Graph

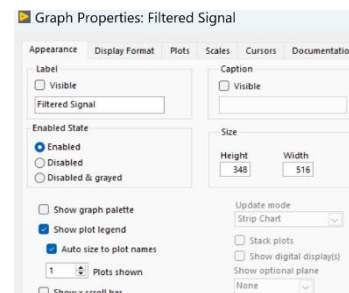


On Block Diagram

Right click
Express
Arith and Compar
Formula

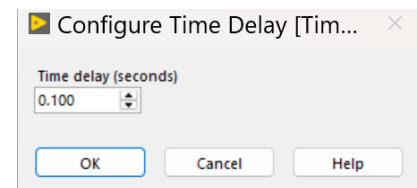
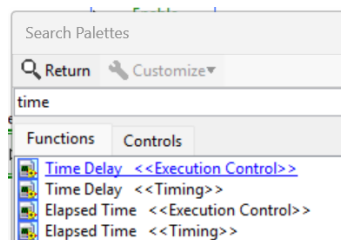
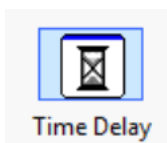


Add a second graph for the filtered signal



On the Block Diagram

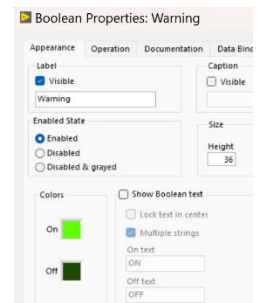
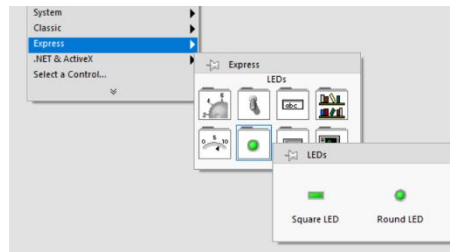
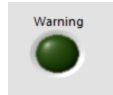
Using Quick Drop, find Time Delay Control
And configure it to 0.100 seconds.



On the Front Panel

Adding a Warning Light

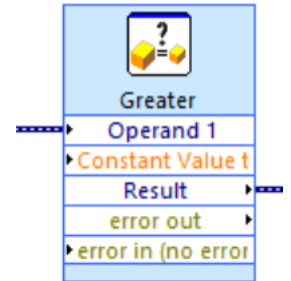
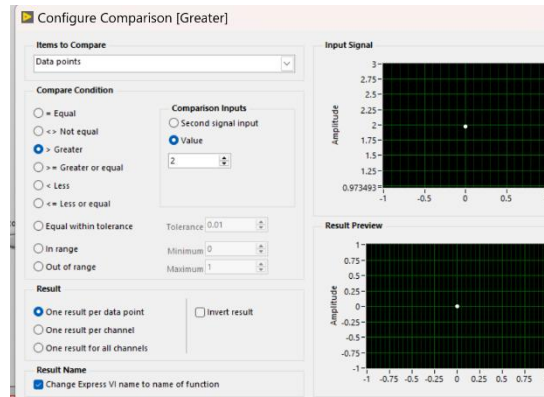
If you want a visual cue to indicate when a value exceeds a specified limit, you can use a warning light.



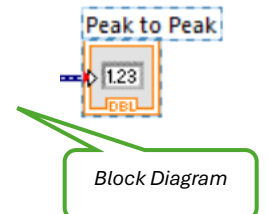
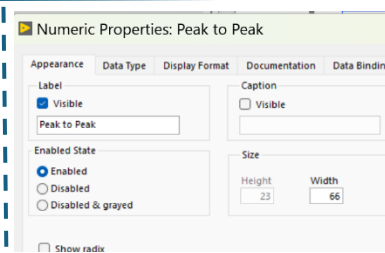
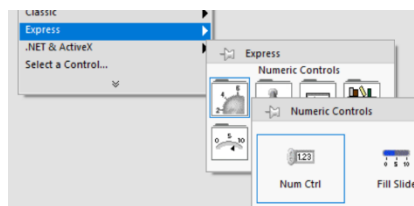
Setting a Warning Level Limit

To specify the value at which you want the LED to light, use the Comparison Express VI

Quick search → *Comparison*



On the Front Panel

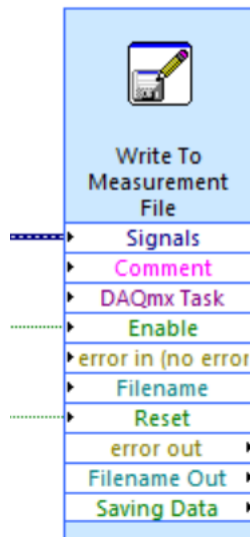
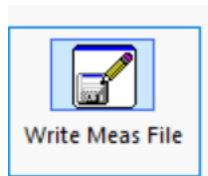


Configuring a VI to Save Data to a File (on block diagram)

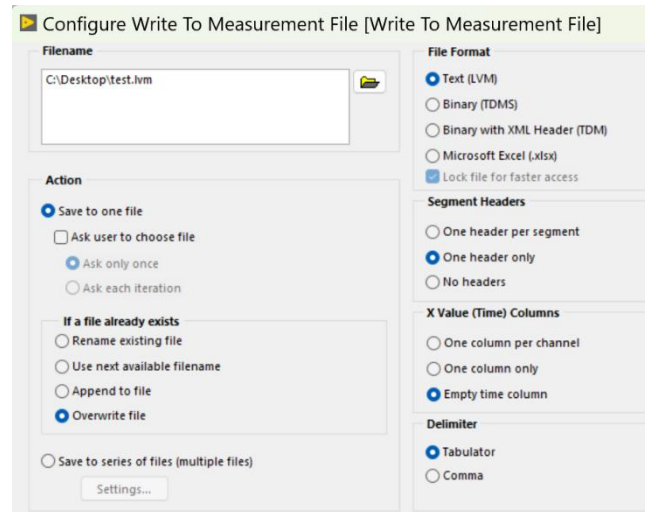
To store information about the data a VI generates, use the *Write To Measurement File Express VI*, Search for the *Write To Measurement File Express VI* and place it on the block diagram.

The File Name text box displays the full path to the output file, *test.lvm*. A *.lvm* file is a tab-delimited text measurement file you can open with a spreadsheet application or a text-editing application.

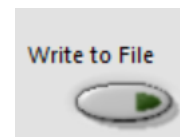
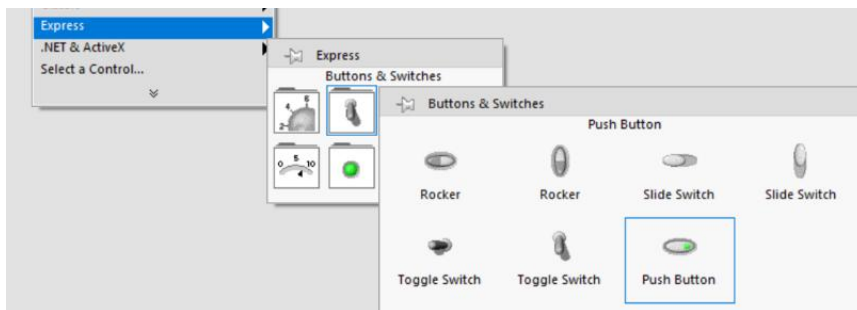
Right Click
Express
Output
Write Meas File



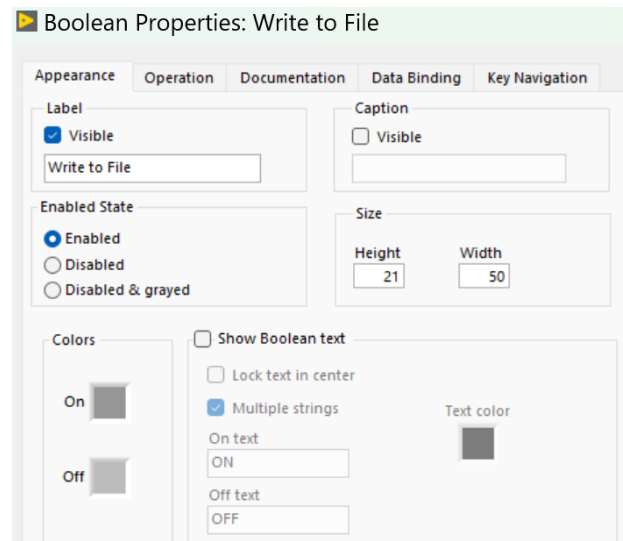
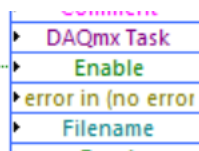
You can also try the *append to file option*



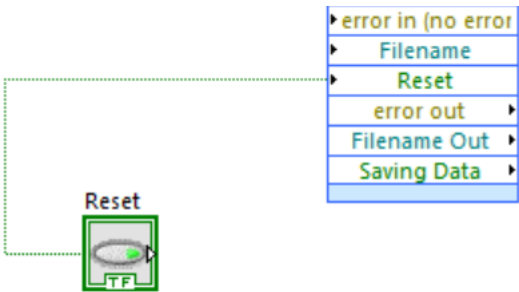
Adding a Button That Stores Data When Clicked (make it enable or disable saving data)



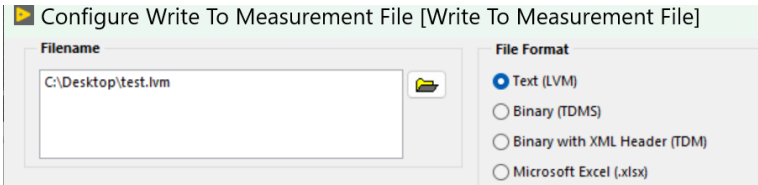
Write to File



As part of the experiment, Professor Lopez wants to “reset” or clear the file. You are welcome to experiment.



Check for data stored in the file
Open the carpet to locate the saved file.



Name	Date modified	Type	Size
test.lvm	9/14/2026 12:...	LVM File	2 KB

```
LabVIEW Measurement
Writer_Version 2
Reader_Version 2
Separator Tab
Decimal_Separator .
Multi_Headings No
X_Columns No
Time_Pref Relative
Operator edwin
Date 2026/09/14
Time 12:52:58.3376321792602539062
***End_of_Header***

Channels 1
Samples 1
Date 2026/09/14
Time 12:53:01.9376321792602539951
X_Dimension Time
X0 3.7000000000000002E+0
Delta_X 0.001000
***End_of_Header***
X_Value Sine (Peak to Peak) Comment
2.012506
2.018560
1.964934
1.998292
1.982301
1.971039
1.989755
1.984981
2.009963
2.020574
1.992901
1.973205
2.021895
1.985909
1.986364
2.016337
2.007590
1.975518
2.002323
1.983404
1.986067
1.998160
1.964262
```

Summary

In this chapter, you learned how to use controls and indicators in LabVIEW. They can display information, show warnings, and allow users to control when a VI runs. You also learned how to use the Filter Express VI to reduce signal noise.

The Write to Measurement File Express VI saves’ data in .lvm, .tdm, or .tdms files. LVM files are text files that are easy to open but have less precision. TDM and TDMS files are binary files that save data more accurately and quickly. LabVIEW stores these files in the LabVIEW Data folder to keep them organized.