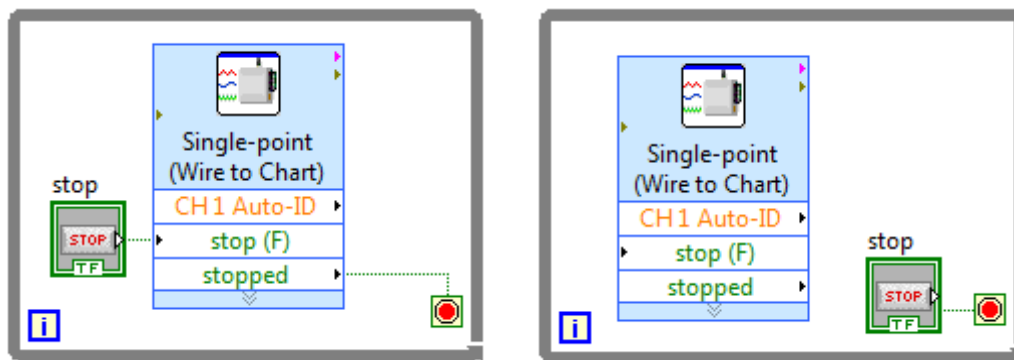# Common Programming Errors

The exercises in this book mostly use the use the Analog Express VI. Below are some common errors to watch for when using this Express VI.
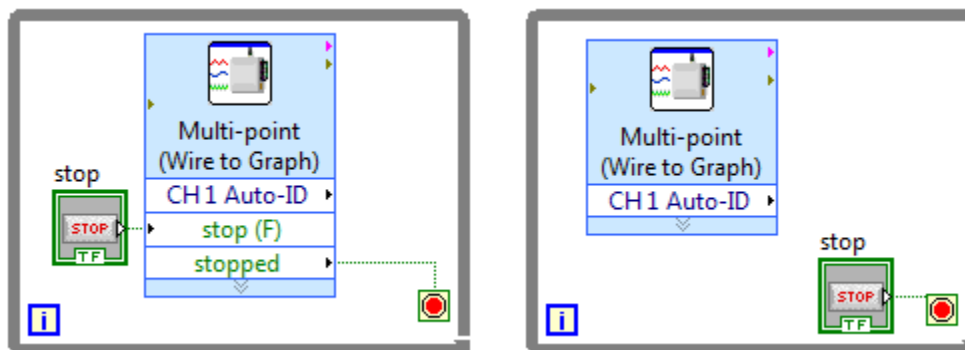
1. The Analog Express VI must be placed within a While Loop if it is configured for point-by-point data collection (sample rates <200 samples/second) or if it is configured for continuous multi-point data collection (sample rates >200 samples/second and Repeat is Active). You will know that the Express VI is configured for placement within a While Loop if the "stop (F)" input terminal and the "stopped" output terminal are visible. The important programming method to follow is to stop the Express VI first, and then the While Loop. The following diagrams show the correct and incorrect wiring diagrams.

Correct (left): Stop the Express VI and then the loop.

Incorrect (right): Stop the loop without stopping the Express VI

2. Continuous, multi-point data collection requires Repeat to be Active. If the Express VI is configured for data-collection rates greater than 200 samples/second, and Repeat is not Active, the Express VI will cause an error if it is placed within a While Loop. The following diagrams show the correct and incorrect wiring diagrams.

Correct (left): Repeat is Active and the stop terminals are visible.

Incorrect (right): Repeat is not Active and therefore this is not configured to be continuous, and the stop terminals are not visible.

3. If you are using a SensorDAQ interface in Exercise 8, you will be using the DAQ Assistant Express VI. Here is a common error made using it.

   The DAQ Assistant Express VI is a great way to quickly program the SensorDAQ screw terminal channels. However, be aware that this Express VI, when configured, is specifically set to run with the SensorDAQ connected to your computer. If you attach a new SensorDAQ, the Express VI will not work. A common error message that occurs for this problem will say something similar to the following:

   "Error -201003 occurred at DAQmx Create Channel (AO-Voltage-Basic).vi:2
   Device cannot be accessed. Possible causes:

   Device is no longer present in the system.
   Device is not powered.
   Device is powered, but was temporarily without power.
   Device is damaged.

   Ensure the device is properly connected and powered. Turn the computer off and on again. If you suspect that the device is damaged, contact National Instruments at ni.com/support.

   Device Specified: Dev4

   Task Name: _unnamedTask<0>"

   This error occurs because your computer gives each SensorDAQ a unique device number. The DAQ Assistant is configured with this device number. If you save a DAQ Assistant VI created with SensorDAQ device 1 (for example), and then attach a second SensorDAQ (device 2), and run the saved VI, an error will occur. There is a way to manage the device number assigned to the SensorDAQ. This is done with Measurement and Automation Explorer (MAX), an application installed in the LabVIEW directory. It may be easier to recreate and reconfigure a new DAQ Assistant. The best option is to keep a single SensorDAQ connected to each computer. Every computer will then have a SensorDAQ that is named device 1, allowing all VIs to be shared between computers.