Taking a Measurement: Step by Step Procedure

1. Connect the USB DAQ device to your PC

2. Connect the signal of interest to the analog input channel 0 (ai0) terminal of your device
   a. You can locate the device pinouts for your DAQ device by searching for your device online at ni.com
   b. The user guide and specifications contain this diagram
   c. Right-click your device in NI Measurement & Automation Explorer (MAX) and select Device Pinouts

3. Create a new VI in LabVIEW
   a. Open LabVIEW and select File >> New VI

4. Place a DAQ Assistant on the block diagram
   a. Right-click on the block diagram and select Express >> Input >> DAQ Assistant
   b. Place the DAQ Assistant on the block diagram by left-clicking

5. Configure DAQ Assistant type
   a. Select Acquire Signals
   b. Select Analog Input
   c. Select Voltage
   d. Select Dev1 (or the name of your device if not Dev1)
   e. Select ai0

6. Configure acquisition settings
   a. Enter 1000 for Number of Samples
   b. Enter 10k for Sample Rate
   c. Click Run to test your settings
   d. Click OK to finish the DAQ Assistant

7. Create the graph indicator to view data
   a. Right-click on the Data output terminal of the DAQ Assistant
   b. Select Create >> Graph Indicator
   c. Run the VI by pressing the Run button and visualize the results
   d. Adjust Graph Indicator appearance as desired

8. Change acquisition mode to Continuous
   a. Double-click the DAQ Assistant
   b. Change Acquisition Mode from N Samples (Finite) to Continuous
   c. Select OK to finish the DAQ Assistant
   d. Select Yes to auto place the While Loop around the DAQ Assistant
9. Create the stop condition to include when the **Stop** button is pressed or an error is detected
   a. Unwire the **Conditional Terminal** from the **Stopped** output terminal of the analog input DAQ Assistant
   b. Right-click the block diagram and select **Programming >> Boolean >> Or**
   c. Wire the output from the **Stop** button control to the bottom input of the Or Boolean function
   d. Right-click the block diagram, select **Programming >> Cluster, Class, & Variant >> Unbundle by Name**, and place this to the right of the analog input DAQ Assistant
   e. Wire the **Error Out** output terminal of the analog input DAQ Assistant to the input of the Unbundle by Name function and ensure **Status** is selected to be **unbundled**
   f. Wire the output of the Unbundle by Name function to the top input of the Or function
   g. Wire the output of the Or function to the input of the **Conditional Terminal**

10. Run the VI to visualize the data on the front panel

You can convert your DAQ Assistant Express VIs into low-level NI-DAQmx functions by right-clicking the DAQ Assistant and selecting **Generate NI-DAQmx Code**. The low-level NI-DAQmx API exposes more functionality and customization options for programming.