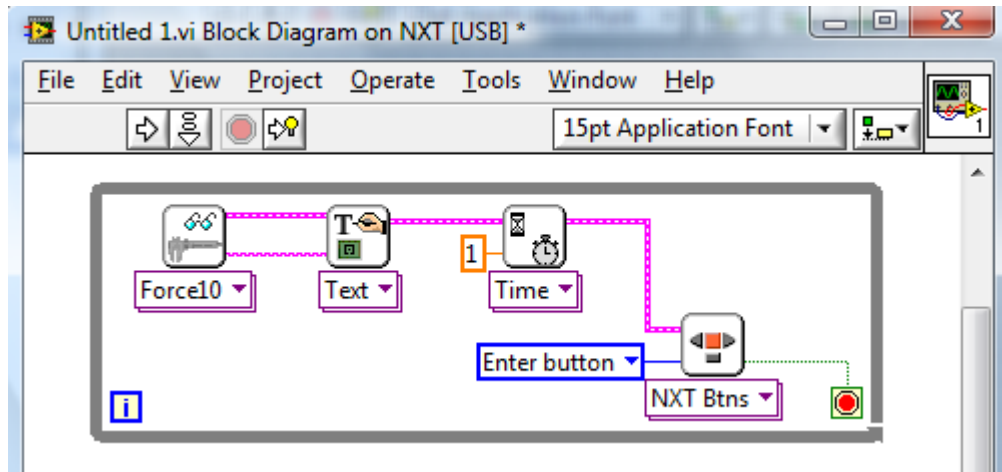


Programming: Read Vernier Sensor on NXT

Overview



(Completed block diagram)

In the following steps you will use the Vernier Read Block to create a simple program that reads the value of a Vernier sensor on the NXT screen. The program will be targeted to the NXT and readings will continue until the user presses the Enter button.

Connect Equipment

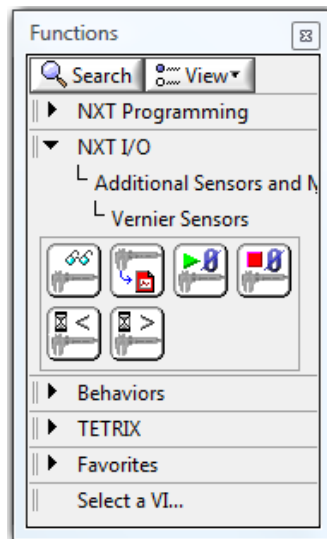
1. Connect your Vernier sensor to the Vernier NXT Sensor Adapter.
2. Connect the Adapter to Port 1 on the NXT using a LEGO NXT cable.
3. Make sure the NXT is connected to the computer (USB or Bluetooth) and turned on.

Launch LabVIEW and Collect Data with NXT

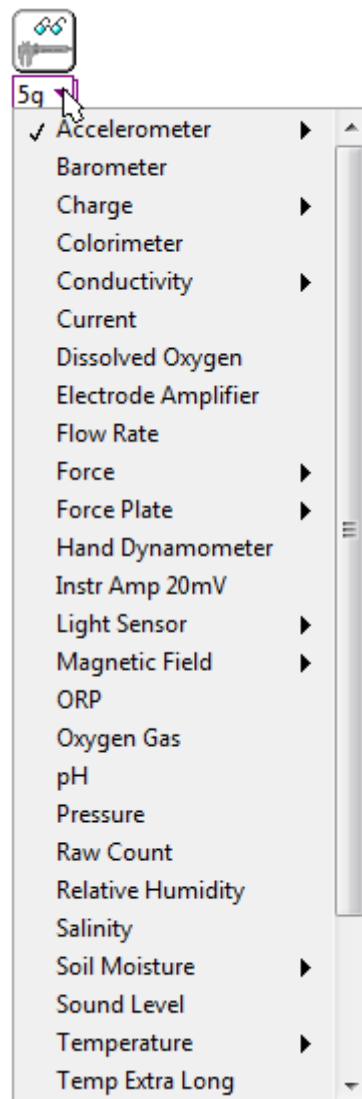
1. Launch LabVIEW.
2. Open a new blank VI and go to the block diagram.
3. Select File>>Target to NXT.
4. Click-on and drag the Vernier Read block to the block diagram workspace.



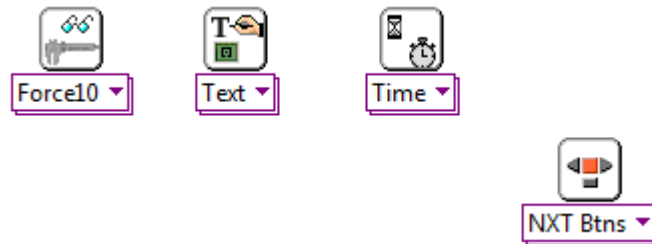
Tip: The figure below shows where to find the Vernier palette within the LabVIEW Functions palette. The LabVIEW Functions palette can be accessed by right-clicking the block diagram workspace or by selecting View>>Functions Palette. Note that the Functions palette has a different look if your program is set to Target Computer.



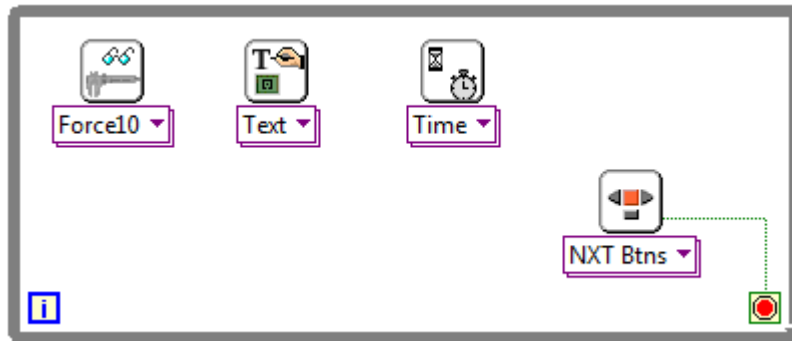
5. The Vernier Read block is a Polymorphic VI, allowing you to select the appropriate sensor from a drop-down list. Simply click on the down arrow next to 5g to see a list of all of the Vernier Sensors.



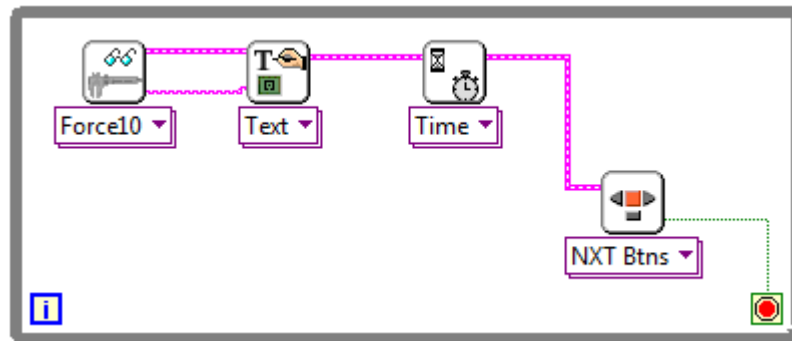
- Click on and drag the Display Control, Wait For, and Read Sensor blocks to the block diagram workspace. These are also polymorphic VIs found in the NXT I/O palette. Press on the down arrow to configure them to write text, wait for seconds, and read NXT buttons.



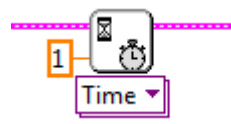
- Place the four blocks within a While Loop.
- Wire the NXT Buttons' "Yes/No" output terminal to the While Loop's conditional terminal.



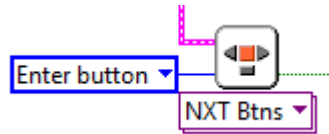
- Wire the Vernier Read's output terminal called Value Text to the Display Text's input terminal called Text.
- Wire the Vernier Read's output terminal called NXT to the Display Text's input terminal called NXT. Wire the Display Text's output terminal called NXT to the Wait For Time's input terminal called NXT. And, wire the Wait For Time's NXT output terminal to the Read NXT Buttons' NXT input terminal.



- Bring your cursor to the Time (sec) input terminal of the Wait For Time block. Right click on this terminal and select Create>Constant. Input a value of 1 second (this should be the default).



12. Bring your cursor to the Button (Enter Button) input terminal of the Read NXT Buttons block. Right click on this terminal and select Create>Constant. Select Enter button from the list (this should be the default).



13. Run the VI by pressing the white Run arrow in the upper left corner of the LabVIEW window. Remember that this is set to Target the NXT and must first compile and download.
14. When the NXT beeps look at the NXT screen for sensor readings.
15. Press and hold the Enter button until the program stops.