

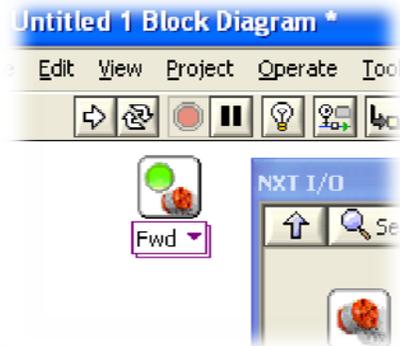
# Getting Started with the NXT Module in LabVIEW Education Edition

Chris Rogers

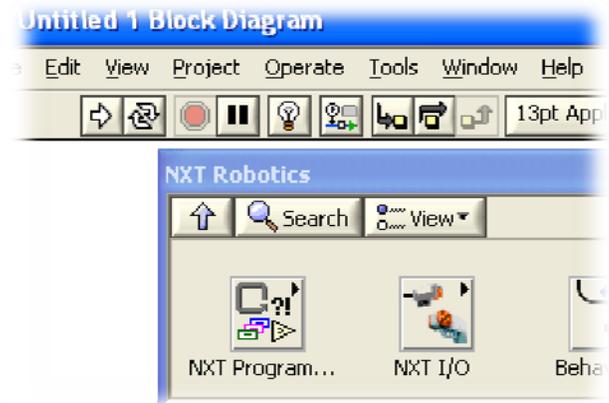
Wednesday, November 25, 2009

## 1. Writing a First Program:

- a. Open LabVIEW.
- b. Select **Blank VI**. (VI stands for Virtual Instrument and is the name for a LabVIEW program.)
- c. Right-click on the diagram to bring up the **Functions** palette.
- d. Select **NXT Robotics** palette.
- e. Pin down the **NXT Robotics** palette by clicking on the pushpin in the upper left hand corner. Your screen should look like:



- f. Select **NXT I/O** palette.
- g. Click and drag the Motor Control VI onto the block diagram:



- h. Add the Wait For VI and another Motor Control VI.
- i. Wire the VIs together by moving the mouse to the upper-right corner of the first VI (note that the cursor changes), click, and then move to the upper-left corner of the next VI and click. Make sure that the word **NXT** is visible and that you are wiring the pink NXT wire:



- j. Then click on your second motor VI and change Fwd to Brake. Your final code should look like:



- k. Now connect up your NXT, turn it on, and then click the run button on the top left corner of the block diagram window and watch your motors run for one second.



## 2. Watching Your Program Execute:

- Select **Highlight Execution** by clicking on the light bulb (circled in blue in above image).
- Click run and watch each VI execute.



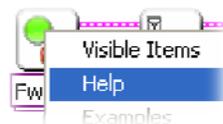
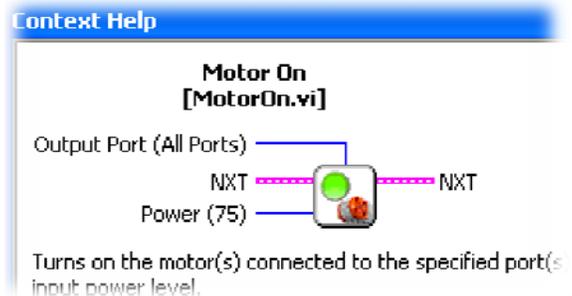
## 3. Targeting the NXT (Autonomous Control):

- You are currently targeted to the computer (the computer does all the thinking). To compile and download the program onto the NXT, you want to change the execution target by going to the **File** menu and selecting **Target NXT**.
- Click run—this will compile the code, download it to the NXT, and run it on the NXT.
- Disconnect your NXT from the computer.
- Click the orange select button on the NXT brick, select the program, and then run. The program will run again on the NXT brick.



## 4. Where to Go from Here:

- Help
  - Every VI has context help that you can see when you mouse-over it. To turn on the context help, select **Show Context Help** from the **Help** menu.
  - Every NXT VI also has extended help. Right-click on the VI and select **Help**, as shown below:



- There are over 100 pages help text and examples within the NXT Module Help located under the **Help** menu and at <http://www.legoengineering.com/nxtmodule>.
- More Hints
    - Go to the **Tools** menu » **NXT Applications**—try out the Data Viewer or the Piano Player. You can find more information about these applications in the NXT Module Help.
    - Go to the **Tools** menu » **NXT Tools** and try out the NXT Terminal.
    - Go to the **Tools** menu » **NXT Preferences**, look under the Targeting NXT tab, and select **Use default name (NXT.rxe)**. Keeping only one program resident on your NXT brick can help you save memory and never get the “out of memory” error.