NXT Light Sensors on the EV3

By Lego Works

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The goal of this lesson is to help you use your NXT Light Sensors with your EV3.

The main purpose of the code is to calibrate your NXT sensors.

Thank you to FLL Team Lego Works from PA for sharing this lesson with us.

Please note that you will need to understand FILES to use this code. We will add a lesson on this topic soon.
STEP 1: CALIBRATE_LS: Store Black/White Readings to FILES

This myblock sets the raw values of black and white into a file access block for later use.

Delete file access block so the values will be placed in the first two lines, and turn on sensor 3.

Take raw sensor value from port 3, put it into the calibrate file access block and display it on screen of EV3.

Take raw sensor value, put it into the second line of the calibrate file access block, and display.

Close the calibrate file access block; reverts back to first line.

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STEP 2: VARIABLE_SET: READING THE VALUES into Variables

This uses Files. We will have a separate lesson on files. Files are like variables (which store data across the same project) except files store the data even after you stop the program. (Comment added by Droids Robotics)

 Writes line one of the calibrate file access block into the variable named black. Same with white, except it reads line 2 of the calibrate file access block. Closes the file access block.

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STEP 3: Light_sensor: Normalize the Light Sensor Readings to 0-100

This myblock converts the raw value to a value between 0 and 100.

Takes the raw value of the designated port, and using the following equation, converts it to a number between 0 and 100:

(Raw value - Black) * 100 / (White - Black)

The final value is then accessed through the myblock outbound parameter.
The goal of this program is to use the NXT Light Sensor on the EV3. Team Lego Works shows you how to calibrate the NXT Sensors (Comment added by Droids Robotics).

This part of the program keeps updating the light reading value to the screen. So when you move the sensor over different areas, you will see the values update. It will stop the program when you hit the center button.

Code by: Lego Works
Video Of Running the PROGRAM

• Watch this video to see how this code works.
For this lesson, we have an added bonus: a YouTube companion lesson...

Visit

https://www.youtube.com/watch?v=I7Bqvk-uMLk
This tutorial was compiled by Sanjay Seshan and Arvind Seshan from Droids Robotics using code shared by Lego Works (legoworks2013@gmail.com)

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