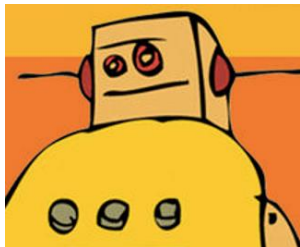


ADVANCED EV3 PROGRAMMING LESSON

NXT Light Sensors on the EV3



By Lego Works



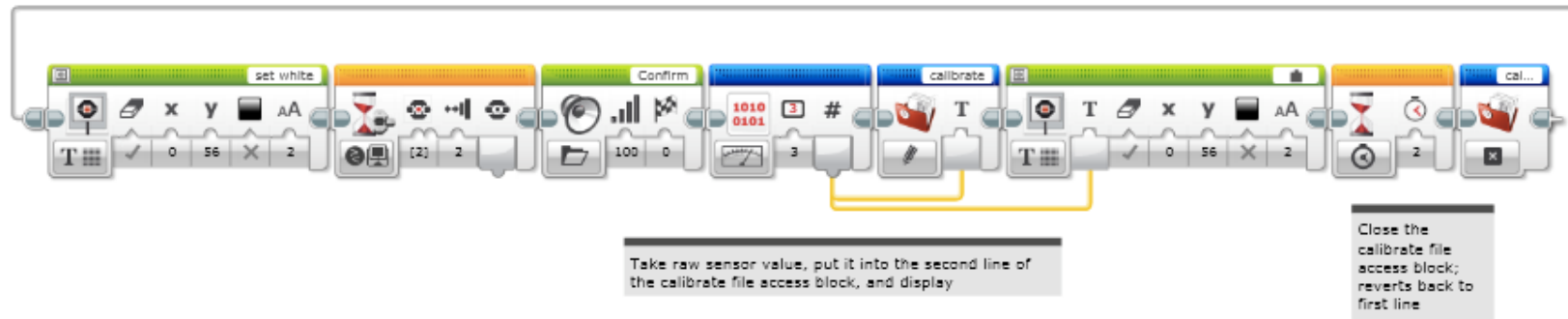
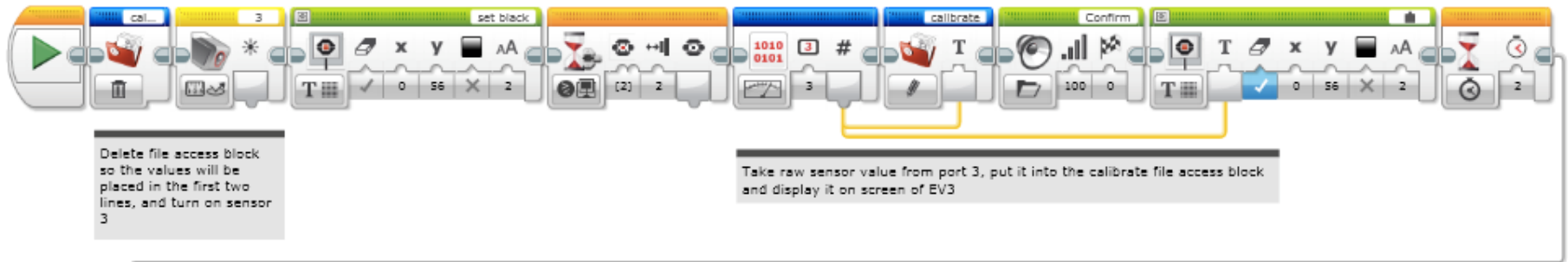
Goal

- 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

Code by: Lego Works

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



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.

Code by: Lego Works

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

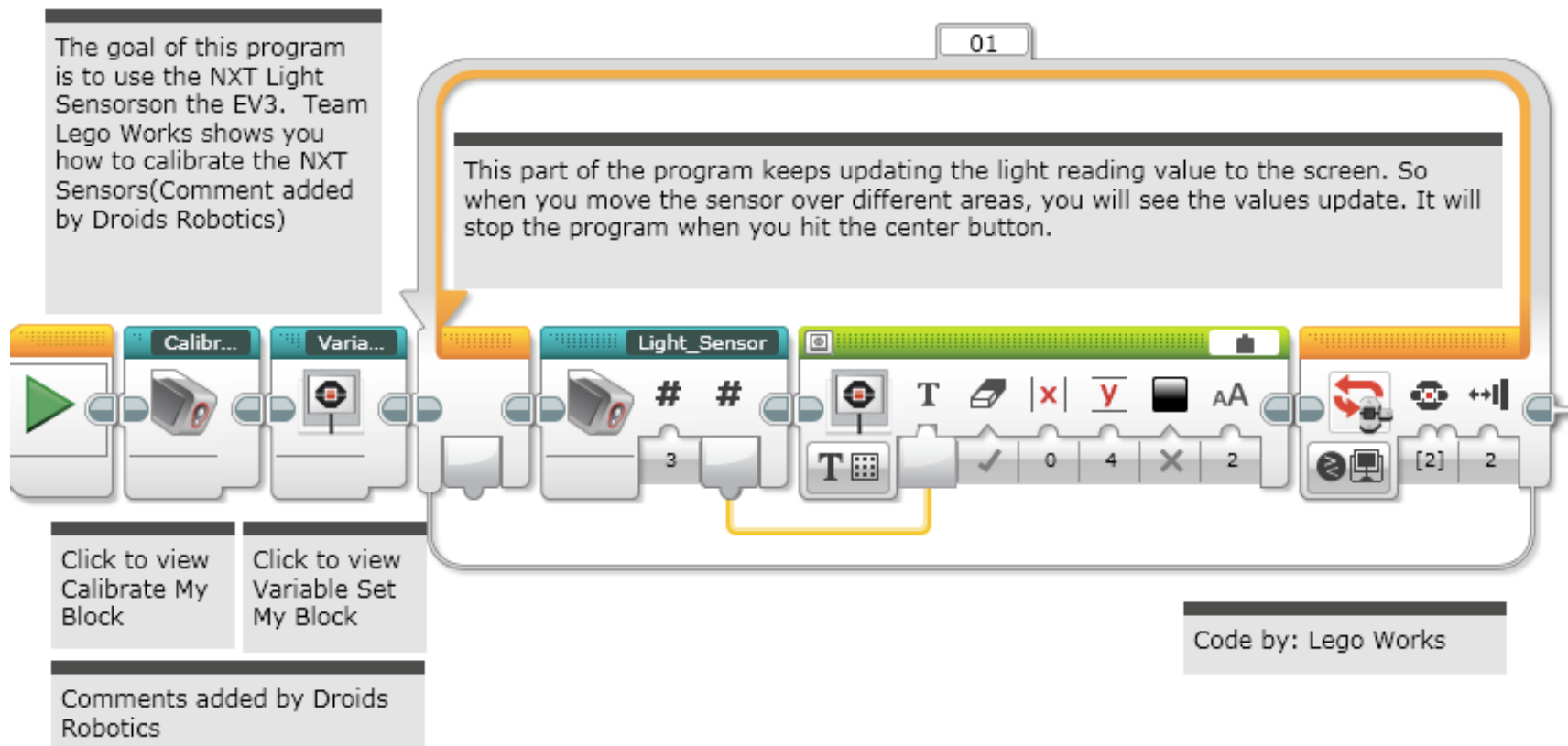


Allows you to choose what port you will be using

Takes the raw value of the designated port, and using the following equation, converts it to a number between 0 and 100
 $(\text{Raw value} - \text{Black}) * 100 / (\text{white} - \text{black})$

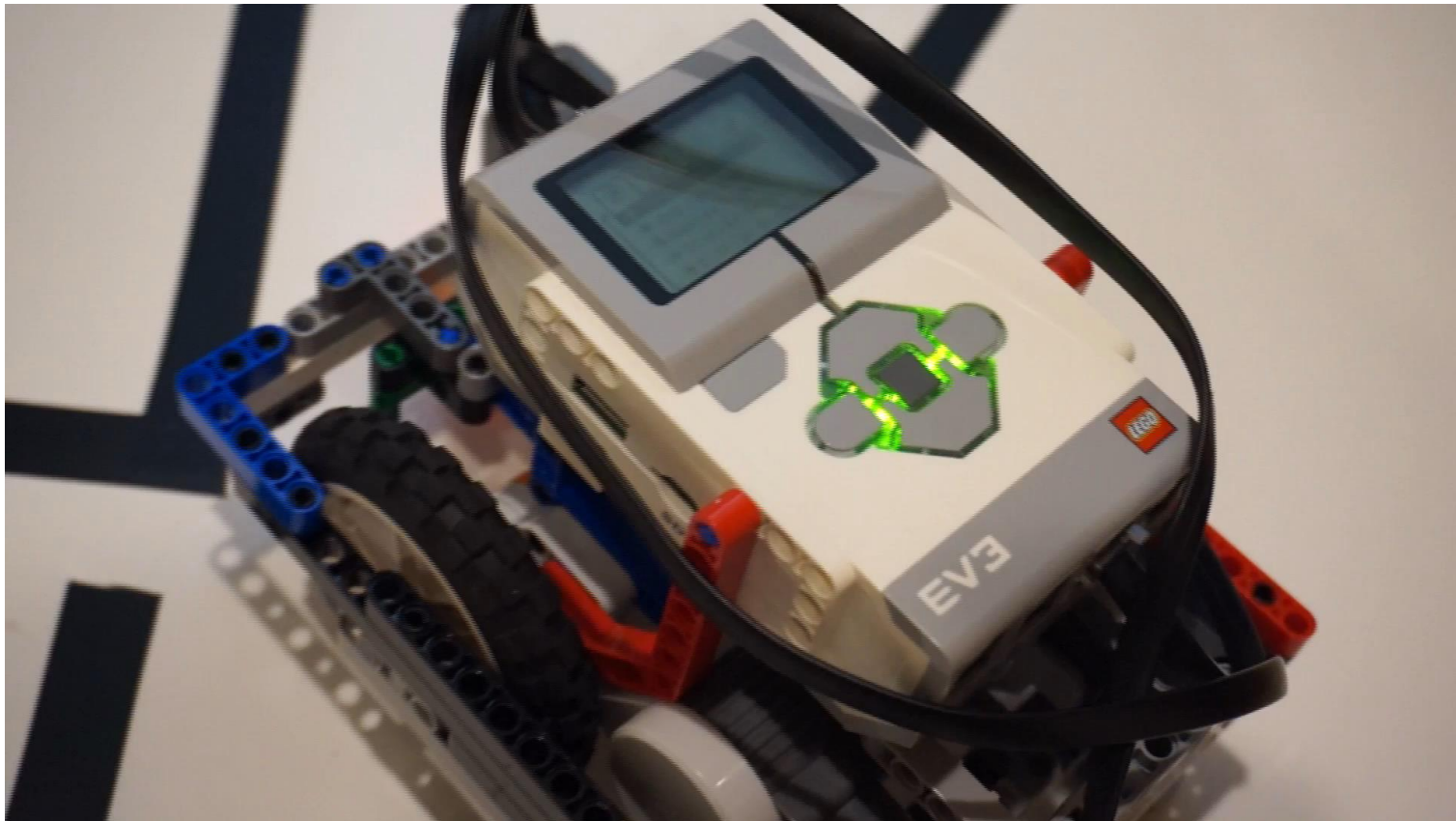
The final value is then accessed through the myblock outbound parameter

STEP 4: TEST Loop: Calibrating and Reading



Video Of Running the PROGRAM

- Watch this video to see how this code works.



YouTube Version of the Same Tutorial

- ➔ For this lesson, we have an added bonus: a YouTube companion lesson...
- ➔ Visit
- ➔ <https://www.youtube.com/watch?v=I7Bqvk-uMLk>



Credits

- This tutorial was compiled by Sanjay Seshan and Arvind Seshan from Droids Robotics using code shared by Lego Works (legoworks2013@gmail.com)
- More lessons at www.ev3lessons.com



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