Electric Vehicles

EV3 program description

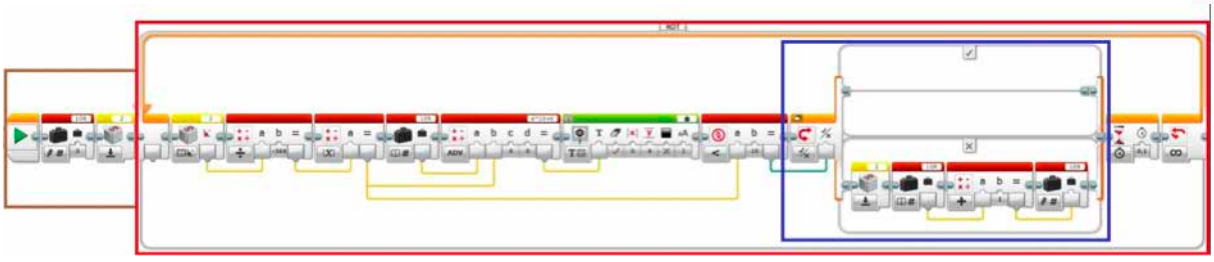
The program “05” counts the number of rotations completed using the Gyro Sensor, and outputs this number on the Brick Display.

Abbreviations used

ROT Loop name/rotation meter
10R Variable indicating 10 completed rotations, at 20 rotations -> 10R is 2

Program summary

A B C



Start program

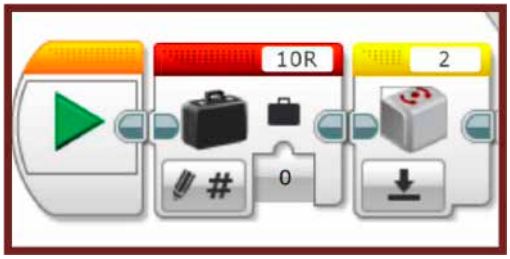
Turn the orange directional switch on the Energy Meter to the left; the solar motor begins to move on the model.

Exit program

The program runs until the battery is depleted; exit the program by pressing the Cancel button on the EV3 Brick.

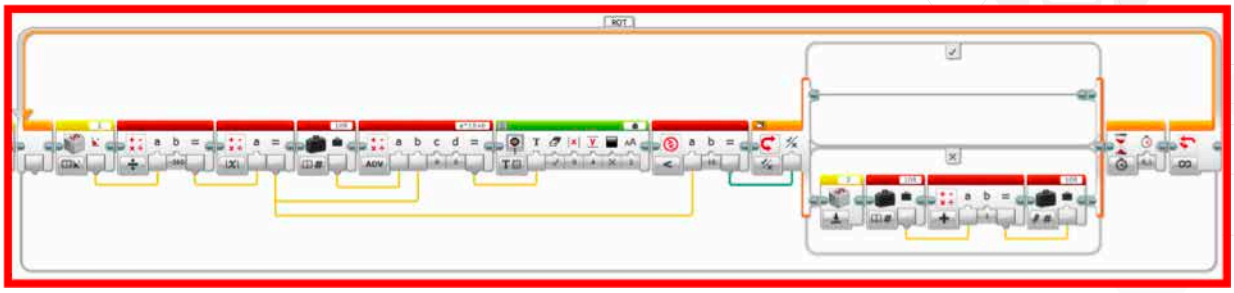
Program parts

Program part A



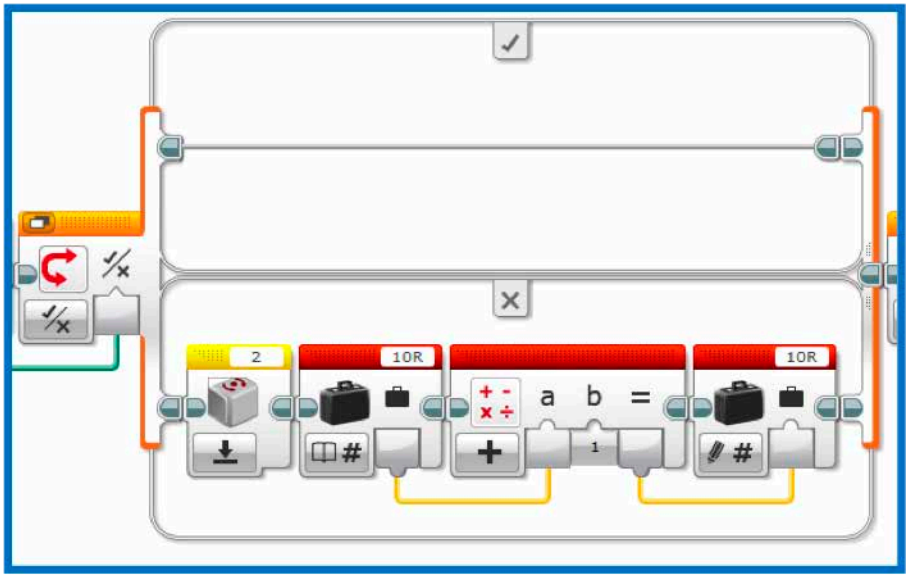
Initialization of variable 10R at 0 and calibration of Gyro Sensor.

Program part B



The ROT loop counts the number of rotations. This number is determined by dividing the angle measured by the Gyro Sensor by -360. The result is the number of rotations completed. In the next step, variable 10R is multiplied by 10, and the previously measured number of rotations is added to the result. This value is now output on the Brick Display. Now it is verified whether the number of rotations determined at the beginning is less than 10. After that, program part C is executed, and the program waits 0.1 seconds in order to give the Gyro Sensor enough time for the reset.

Program part C



The operation executed in program part C depends on whether the number of rotations determined is greater or less than 10. If the number of rotations is less than 10, nothing happens. If the number of rotations is greater than or equal to 10, reset the Gyro Sensor and increase variable 10R by 1.