

Program Descriptions

Remote Control



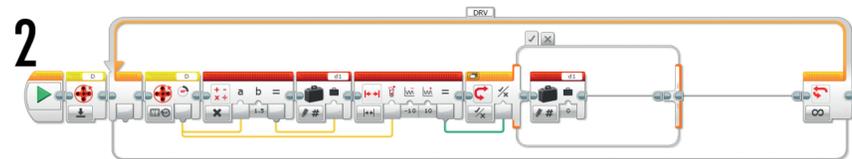
Overview

The Remote Control program actually requires two programs: one for the controller itself to send Bluetooth messages, and the other for the robot. The Controller Program is made up of five sequences. Four relate to receiving information from the sensors and the other two send information. The Bluetooth messaging is handled much better in a series and it makes sense to have as many of them in sequence as possible.

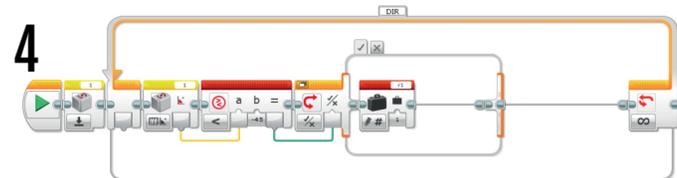
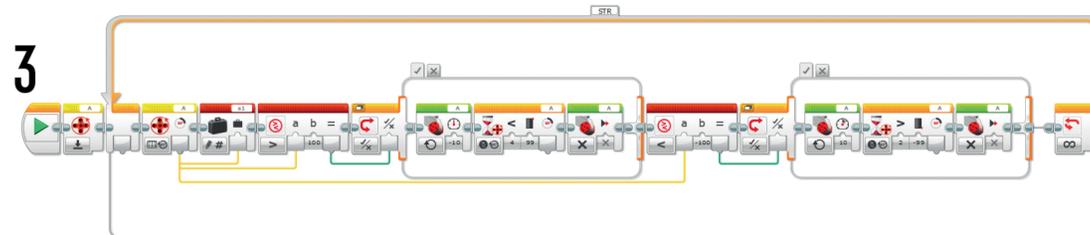
3 Loop STR controls steering through Motor A. The value is wired to Variable s1. It is then compared to a maximum and minimum value. If the values are reached, the A Motor is reversed at a low power until it is back in between limits. This makes sure the steering motor is not over turned.



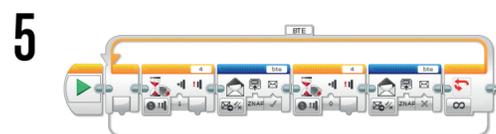
1 This first sequence sets up the Bluetooth connection. It first turns the connection on and uses the Brick Status Light in Yellow Mode along with sound to show the user what is happening. If and when the robots are connected, a Wait For Message Block is used to confirm the connection. Once that is activated, the Status Light is changed to green and another sound is played. The final loop, BTE, sends the messages from variables collected from other loops to the robot.



2 Loop DRV controls the drive of the robot. A Motor Sensor Block is used in degrees mode and the output is wired to a Math Block with a multiplier of 1.5, then finally to Variable d1. Because of the limited motion of the trigger, a multiplier is needed. The Final value is checked with a Compare Block if the value is between -10 and 10. In that range, Variable d1 is set to zero. This compensates for the inefficiency in the mechanics of the trigger and makes sure the robot stops when the trigger is no longer activated.



4 Loop DIR controls the direction of the robot. Using a Gyro Sensor Block wired to a Compare Block, the value is checked against a reading of -45 degrees.



5 Loop BTE sends the bite command. When the touch sensor is pressed, a True Message is sent. When it is released, the False Message is sent.

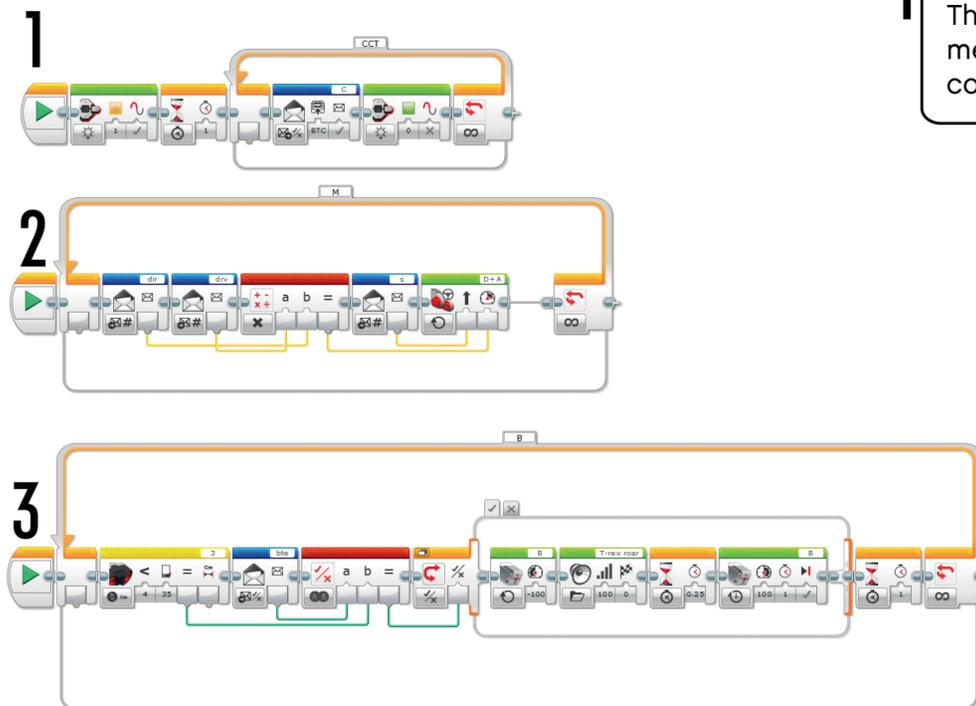
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Overview

The Receiving Program converts the Bluetooth signals from the controller program and outputs them to the motors for movement.



1 This sequence continuously sends a message back to the controller to confirm the connection.

2 Loop M takes all of the messages, dir, drv and s and wires them to a Move Blockin Steering Mode. Messages Dir and Drv are multiplied together for the power. And Message s is wired directly to steering.

3 Loop B contains the bite command. If the Ultrasonic Sensor is triggered or the Message bte is true, the switch will activate the series of movements to bite. The robot will wait 1 second before it can be activated again.

