

Gears

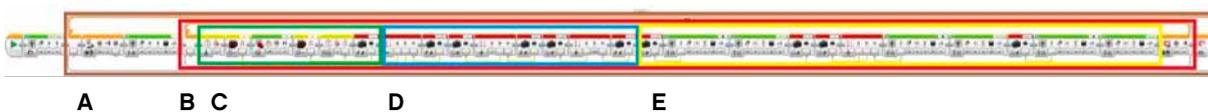
EV3 program description

When program "06" starts, the Ultrasonic Sensor measures the EV3's distance from the wall. After that, the Large Motor is moved by exactly one revolution (360°). After the motor has turned by one revolution, the Ultrasonic Sensor is used to measure the distance of the EV3 from the wall once again.

Abbreviations used

MSR	Measurement - Measurement loop
RPT	Repeat – Loop for repeating the entire program
t	Time traveled in s
d_cm	Distance in cm
d_m	Distance in m
rps	Rounds per sec

Program summary



Start program

Press the EV3 Center Button, and the EV3 starts to move (in program part A).

Exit program

Exit the program using the Cancel button (in program part E).

Program parts

Program part A



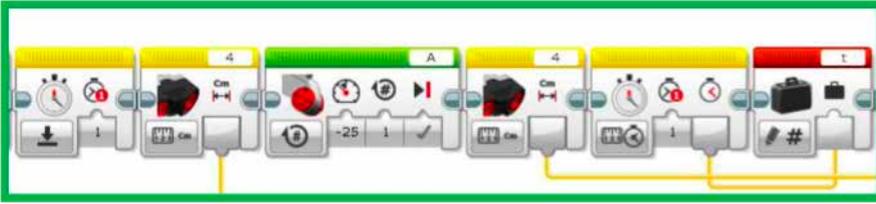
Program part A contains a loop that repeats the entire program until it is terminated by the user.

Program part B



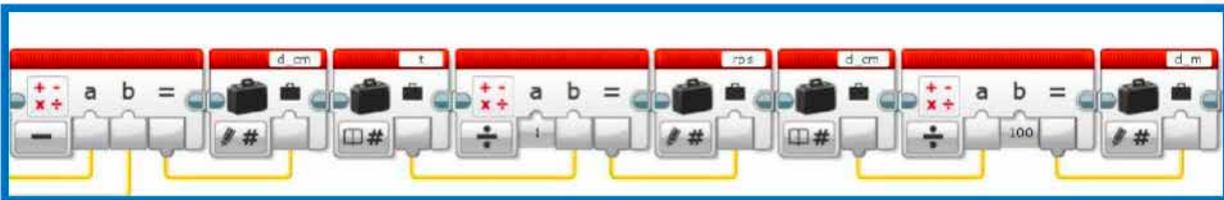
Program part B contains the measurement loop MSR.

Program part C



The timer is reset at the start of program part C. After that, the Ultrasonic Sensor measures the distance from the wall in cm. Subsequently, the Large Motor is moved by 360°. Once the EV3 has stopped, the distance of the EV3 from the wall is read out for a second time using the Ultrasonic Sensor, and the timer is stopped. The time is saved to variable t.

Program part D



At the start of program part D, the distance values from program part C are used to calculate the distance traveled in cm, which is then saved to variable d_cm. In the next step, the time saved to variable t is used to calculate the rotational speed (revolutions per second), the result of which is saved to variable rps. Finally, the distance traveled in cm is converted to units of m. The new value of the distance in m is saved to variable d_m.

Program part E



Program part E is used to output the measured and calculated values. The distance traveled in cm, the velocity in m/s as well as the rotational speed are output on the Brick Display to this end, the one below the other. The velocity in m/s is calculated prior to output.