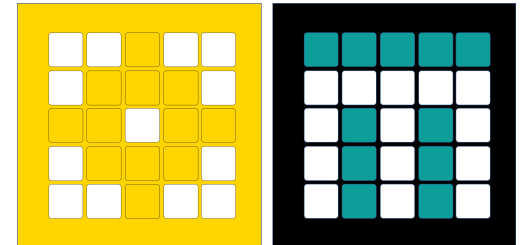


PRIME LESSONS

By the Makers of EV3Lessons



INTRODUCTION TO DISTANCE SENSOR

BY SANJAY AND ARVIND SESHAN

LESSON OBJECTIVES

- Learn how to use the Distance Sensor
- Learn how to use the Wait Until Block
- Note: Although images in this lessons may show a SPIKE Prime, the code blocks are the same for Robot Inventor



WHAT IS A DISTANCE SENSOR?

- Measures the distance to an object or surface using ultrasonic technology
- There are also lights around the ultrasonic sensor (4 segments) that can be programmed individually (see Lights Lesson)
- The sensor can sense distances from 50-2000mm
- There is a fast sensing capability from 50-300mm



HOW DO YOU PROGRAM WITH A DISTANCE SENSOR

- The Distance Sensor can measure the distance to an object or surface using ultrasonic
- You can also program the lights around the sensor. This is covered in a different lesson.
- Units can be measured in Percent, Centimeters or Inches



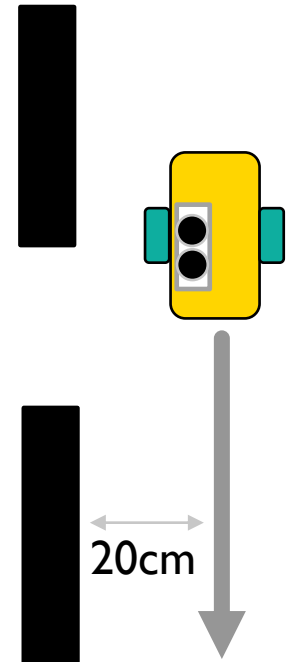
CHALLENGE: AWAY FROM THE WALL

- You want to find the opening. Use your Distance Sensor (mounted on the side of the robot like Droid Bot IV) to locate the gap
- Program your robot to move straight until it is less than 20cm from the wall
- You will need to use the Wait For block and the Boolean block of the Distance Center

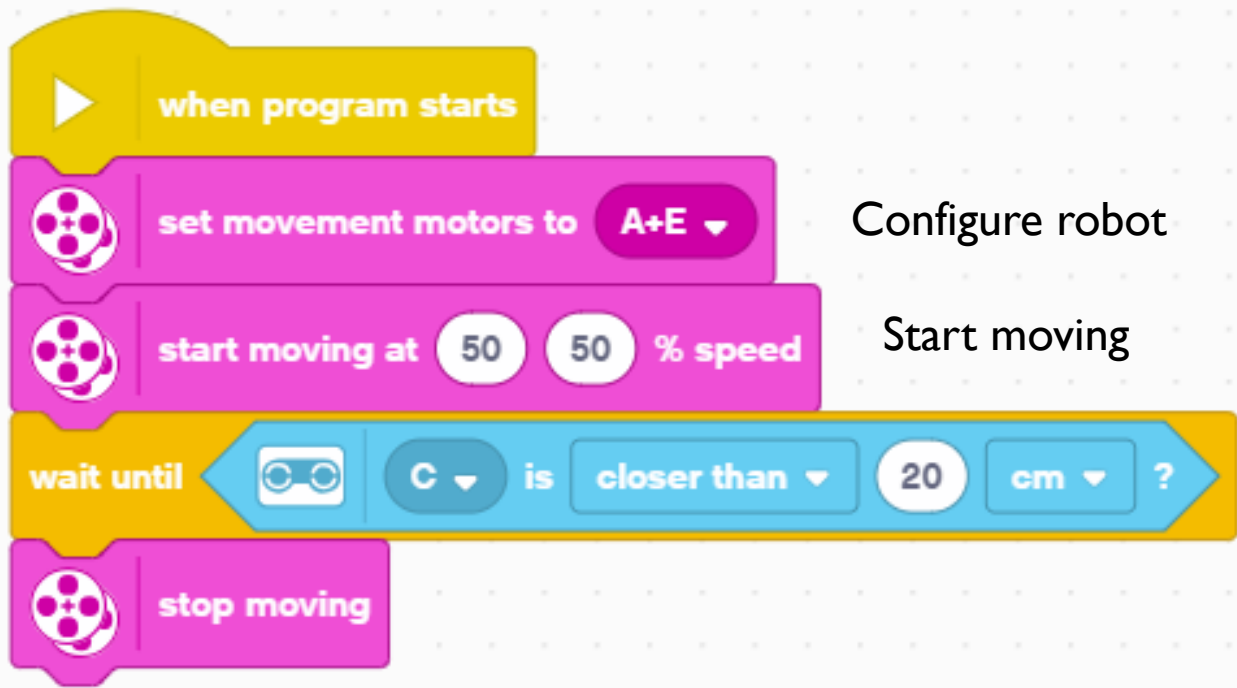


■ Pseudocode:

- Set the **movement motors** for your robot (A and E for ADB robot)
- Set the % **speed** for your robot
- Start **moving straight**
- Use the **wait for** block to detect that it is less than 20cm from the wall
- **Stop moving**



CHALLENGE I: SOLUTION



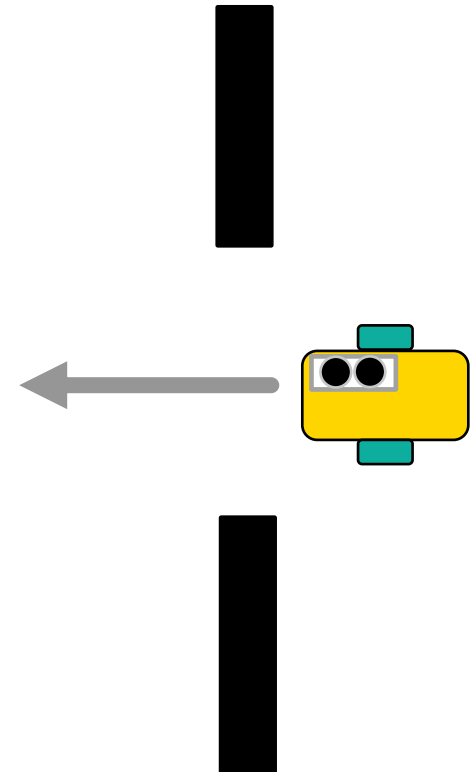
Configure robot

Start moving

Wait until the Distance sensor is less than 20cm

EXTENSION

- Once you find the wall, move the robot backwards and go through the hole



CREDITS

- This lesson was created by Sanjay Seshan and Arvind Seshan for Prime Lessons
- More lessons are available at www.primelessons.org



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