

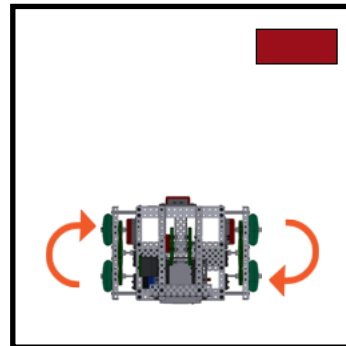
## Programming Challenge

### Sonic Scanner

#### Challenge Description

Program your robot to slowly spin in place (point turn) until it has detected a randomly placed object within 18 inches of its Ultrasonic Rangefinder. Once the robot has detected the object, it should stop spinning and move toward the object. The robot should stop when it is within 3 inches of the object.

Run this program on your robot multiple times, making sure to vary the distance between the robot and the object. Use your observations to answer the questions that follow.



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#### Materials Needed

- A flat, open area for the robot to spin
- 1 Detectable object (books and soda cans work)

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Did your robot ever fail to recognize the object? If so, how far away was the object?

Slow down the initial spinning of your robot and run several more trials. How did this affect the performance of your robot?

Change your program so that the robot will scan for an object up to 48 inches away. Run several more trials. How reliable is the Ultrasonic Rangefinder at further distances?