

# Smart Obstacle Avoidance

Time required: 60 minutes

Please read all the directions carefully before beginning the assignment.

1. Comment your code as shown in the tutorials and other code examples.
2. Follow all directions carefully and accurately.
3. Think of the directions as minimum requirements.

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## Understanding

Demonstrate understanding of:

**ultrasonic sensor**

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## Requirements

- Open the **SimpleObstacleAvoidance** sketch and save it as **SmartObstacleAvoidance**.
- Use the shape of the mBlock version of this program to guide your coding.
- Avoid obstacles by looking left, then right, then turning in the direction with the longest distance.
- Use the following obstacle detection functions from the mBlock Obstacle Avoidance with Smart Turns as examples.
  - obstacleAvoidance
  - detectObstacle
  - avoidObstacle
- Create a **boolean** variable **isObstacleDetected** to track whether there is an obstacle or not. Use **isObstacleDetected = true** or **isObstacleDetected = false**
- Include Movement.h

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## Assignment Submission

1. All students: Zip up the sketch folder. Attach the zip file to the assignment in Blackboard.

2. The assignment is demonstrated in class.
3. Online students: A link to a YouTube video recording showing your robot going through its motions is placed in the submission area in BlackBoard.

