Worksheet: Clap On, Clap Off

Introduction to Mobile Robotics > Clap On, Clap Off

This worksheet is provided for reference only. Be sure that you follow the steps in the online directions, and answer the questions at the appropriate times. Fill out all your answers on a separate sheet of paper.

Construct: Write Your Program

Observations:

1. Record the sound value for “quiet.”
2. Record the sound value for “loud.”
3. Record the threshold value you calculated.

Contemplate

4. Write a brief description of what each block in your program does.

5. Define the “Wait for Clap” behavior you built in the program.

   i. What are the two blocks that make up the behavior?
   ii. Why isn’t a single Wait For Sound block good enough?

6. What does the threshold for the sound sensor do? What would happen if you set the threshold higher? Lower?
7. Why did you use a value from the sound sensor that was halfway between silence and clapping for your threshold value?
8. Does your robot only respond to claps, or do other sounds trigger starting and stopping as well? Why do you think this is?

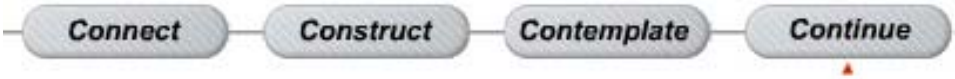
9. Marisa is using the robot as an actor in a class play. She wants the robot to start running across the stage on cue. The cue will be the sound of a door slamming as another (human) actor goes offstage.

i. How should she go about programming her robot to recognize the correct sound and begin its performance at the right time? Be specific.

ii. What possible problems might there be with this plan?

10. The cafeteria staff at LeGou Middle School keeps order in the lunchroom by turning off the lights whenever the room gets too noisy. They're tired of having to sit by the light switch the whole period, though, and have heard that a robot may be able to help them out. Explain briefly how a sound sensor-equipped robot might be able to simplify or automate this task for them.

Continue



Answer the following:

11. How did the loop change the robot's behavior?

12. How many times will the loop run?