Educational Robots for Absolute Beginners

Robot Project 4

Assignment:

Create a new program called **`Project4`**. Your program should cause your robot to do the following for 10 seconds:

- Whenever there is an object that is less than 20 cm from the robot's ultrasonic sensor, the robot should move backwards, away from the object.
- Otherwise, the robot should move forwards

After 10 seconds have elapsed, your robot should stop moving.

You can view a video of a working example of this program at http://youtu.be/TQycE0lbSIw

Notes and hints:

- If there is nothing in front of the robot, your robot should just drive forward smoothly for 10 seconds. If your robot does not drive smoothly in this situation, that's probably because you have set a fixed duration (in terms of either time or motor rotations) on your move blocks. Consider whether that is really necessary.
- If there is a wall more than 20 cm in front of your robot, your robot should drive forward smoothly until it is roughly 20 cm away from the wall, and then move jerkily forward and backward – when it recognizes the distance is less than 20 cm it moves forward, but as soon as that is no longer the case it retreats.
- The ultrasonic sensor works best with large flat objects that have a matt surface like a piece of cardboard or a pad of paper.
- You may find it easier to do this task if you reduce the power to the motors on your move blocks.
- During the 10 second period, the robot should never stop moving. It should always be moving either forwards or backwards.