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/* Robot Can Pusher Thingy
 * Modified to work with Lance and Darrell's board *
 * This code operates a robot that pushes cans around.
 * Imagine that.  In the future, even bums are going to lose their jobs.
 */

// 180 degrees = 2.35 s
// 90 degrees = 1.27 s

#define FRONT_SENSOR (analog(6) >= 200)
#define BACK_SENSOR (analog(3) >= 200)

int speed = 100;

/* This function calls the functions to begin making the robot do stuff */
int main()
{   int x;
    while(!start_button());
    x =  start_process(begin());
    sleep(120.0);
    kill_process(x);
    beep();
    motor(0, 0);
    motor(1, 0);

    return 0;
}

/**
 * Starts up the robot.  It goes forward until it sees a line,
 * then turns 90 degrees to the left.
 */
void begin()
{
    goForward();
    while(!stop_button()){
        if(FRONT_SENSOR){
            stop();
            goBackward();
            sleep(1.0);
            stop();
            turn90Left();
            goForward();
        }
    }
    stop();
}

/**
 * Makes the robot turn ~90 degrees left
 * Please note: 90 degrees is only an estimate.  Actual rotation angles
 * may vary widely.
 */
void turn90Left()
{
    turnLeft();
    sleep(0.9);
    stop();
```

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    stop();
}

/**
 * Makes the robot turn ~90 degrees right
 * Please note: 90 degrees is only an estimate.  Actual rotation angles
 * may vary widely.
 */
void turn90Right()
{
    turnRight();
    sleep(0.75);
    stop();
}

/* Makes the robot turn right */
void turnRight()
{
    motor(0, speed);
    motor(1, -speed);
    printf("\n%d RIGHT", speed);
}

/* Makes the robot turn right */
void turnLeft()
{
    motor(0, speed);
    motor(1, -speed);
    printf("\n%d LEFT", speed);
}

/* Makes the robot go forward */
void goForward()
{
    motor(0, speed);
    motor(1, speed);
    printf("\n%d FWD", speed);
}

/* Makes the robot go backward */
void goBackward()
{
    motor(0, -speed);
    motor(1, -speed);
    printf("\n%d BACK", speed);
}

/* Stops the robot */
void stop()
{
    motor(0, 0);
    motor(1, 0);
    printf("\n%d STOP", speed);
}
```