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CSCI 3302

Odometry Lab

1. "delay(100)" halts program execution for 100 milliseconds. The odometry code should be placed after this, or else the time-keeping implementation will be inaccurate.
2. If position calculation took longer than 100ms, readings of x, y, and theta would be inaccurate. To make sure each look takes 100ms, subtract the calculation time from 100ms and pass that number into delay().
3. The wheel radius is 2.25cm and the axle length is 7.5cm. The speed was calculated by finding the distance (30cm) and dividing it by the time it took to reach that distance by finding the difference in the start time and end time. 30/~10.7 = 2.8 cm/s -> 0.028 m/s
4. 
5. I expect the display to show x=0, y=0, and theta to equal a multiple of 2 pi after each lap. In actuality, x=~0, y=~2, and theta=~6.35.
6. The start line can be detected by observing when all three sensors detect black, as it is the only part of the line that this would occur. This information can be used to reduce measuring error by using the starting line as a checkpoint to reset x and y to zero, and setting theta to a multiple of 2 pi and the number of complete laps.