1. The robot continues its last movement command for the specified time. For example:

sparki.moveForward();  
delay(100);

will move the robot forward for .1 seconds then continue code execution.

1. If the loop call takes longer than 100 ms, then the calculated distance will drift over time. We are using a precalculated speed to determine Sparki’s position over time. If the time is not perfectly accurate then the calculated location will not be accurate.
2. We calculated an average speed of 0.027845 m/s during the 30cm test.
3. Ideally, the calculated pose should be (0,0,0). This would indicate that Sparki has perfectly calculated its displacement from the datum.
4. Note: Our Axis are different with the positive x axis pointing forward from the start and the positive y axis points to the left of the start line.

First lap; x: 0m y: 0m theta: 351

Second Lap; x: 0m y: 0m theta: 705

Third Lap; x: 0m y: 0m theta: 1058

1. Detecting the start line and resetting the x,y, and theta back to their original values of 0
2. Austin Albert  
   Ian Brobin  
   Connor Thompson  
   Chandler Garthwaite
3. We took around 3 hours of lab time programming
4. Yes it does we did run into problems resetting the odometry at the start line and had a 15 degrees error. But resolved the problem in the end.