CS 452 Project Proposal

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In Which the Trains are Entrained

Also known as, "Entrain Tracking" or perhaps "N-Train Tracking" if you're so inclined.

Overview

For our final project, we propose to track more than two trains. We plan to track at least 3 trains on the track simultaneously. N trains will be travelling on the track, either in loops, or to and from destinations, or both. The trains will throttle their speeds or stop to avoid collisions.

Technical Challenges

- Tracking multiple trains requires tight calibration.

- We need to finish the better lost-train algorithm as described in our T2 documentation. We have to be careful when trying to find ourselves because we wish to avoid teleportation.

- We will need to have better deadlock dedication and resolution (when possible) strategies.

Technical Solutions

- For better calibration we will need to spend more time calibrating trains instead of our current data (which was derived from one train and tweaked as needed.)

- The lost algorithm is partially written but has some bugs that need to be ironed out.

- With three trains the possible combinations for deadlocking are more severe. There now exist impossible cases such as one train being trapped in between two stopped trains. We need to be able to detect this and display a friendly message.

- It may help our reservation code if we reduce the size of segments (i.e. subdivide the track.) This has limited utility in tight sections of the track (subdivided lines may not have a sensor) but on longer portions of the track it may be necessary so as to prevent deadlocks.