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Homework 5 Reflection

1. I approached the design process very differently than the last homework assignments, largely due to the fact that this assignment involved editing/adding to source code already present, whereas previous assignments focused on writing assignments from scratch. The main things I had to change were the package names (in order to get the assignment to work), the second railroad which was largely similar to the first (except for the y-coordinates), the second train (also similar to the first with exception to the y-coordinates) and the movements of the second train and cars. I accomplished the extra movements required through writing further “movement” functions such as moveTrainEast(). This function is called for the second train instead of the original move() function to allow the train to move west-to-east. I also changed the logic for the crossing gates, where there update() function now recognizes two different things with regards to whether the train approaching is from the left or the right. I did not like how my code had a lot of `if` statements, as I know that is bad practice. However, I simply didn’t understand how to get the code working any other way.

2. I think adding more roads and trains would scale up very easily, as the program has no issue adding more of those objects to the run-time environment. However, I don’t believe the functionality for the crossing gates would scale up well. They are already “buggy” when it comes to two trains, so I could only imagine that a multitude of traffic signals, cars, and signs would overload the crossing gates logic even more so than it already is. The reason the crossing gates are buggy is that each train sends notifications to the gates individually, thus if one train is leaving, yet one is approaching, the crossing gate will open *if* the train leaving sends its update last.