Car Class Physics Test Documentation
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Goal: To attempt to find errors within the new Car physics

Plan for testing:

Run various instances of Compile Driver, with different Assembly commands to test the functionality of the physics engine

- Attempt to assign negative acceleration values
- Continuously increase acceleration and see if it caps out
- Accelerate individual wheels
    - Accelerate back left/ back right wheel continuously
    - Accelerate back left/ back right wheel a negative amount
    - Accelerate front left and front right wheel continuously
    - Accelerate front left and front right wheel a negative amount
    - Accelerate front left and back left wheels together
    - Accelerate front right and back right wheels together
- Test what happens when the car drives over grass tiles (should slow down)
- Test the TurnLeft and TurnRight (Note: Not the actual command names) commands in the VM

Testing Documentation:

- Attempted modifying the VM commands to test if they were functional
    - VM commands did not work, as they have not yet been implemented. We discussed this as a group, and concluded that this feature would need to be completed during Cycle 3 (FAIL)
- Attempted to accelerate the car, by holding down the W key
    - Car accelerated until it reached a certain velocity, and then maintained a constant speed (PASS)
- Attempted to assign a negative acceleration value, by holding down the S key
    - Car moved backwards (PASS)
- Attempted to turn the wheels to the left by pressing A
    - Wheels worked as intended (PASS)
- Attempted to turn the wheels to the right by pressing D

- ○ Wheels worked as intended (PASS)
- Attempted to turn the wheels both left and right simultaneously, by holding the A and D keys
  - ○ Wheels turned to the left, and otherwise worked as intended (PASS)
- Attempted to accelerate both forwards and backwards simultaneously, by pressing W and S keys
  - ○ Car accelerates forward, as if S was not being held
- Attempted to drive the car offscreen
  - ○ Car was able to be driven offscreen (FAIL)
- Drove car over grass tiles
  - ○ Car maintained the same speed (FAIL)

Conclusion:

Overall, the Car Physics Rework is a massive improvement over the previous system. Most of the aspects of this feature that were tested worked very well, with the exception of a lack of VM commands, being able to drive offscreen, and grass tiles not slowing the car. We discussed these issues as a group, and decided that it would be best to complete development of this feature in Cycle 3.