PID Controller

Meets Specifications

Awesome work Udacian ⭐!

Congratulations on **passing the PID controller project by meeting all the required specifications very well** . 🎉🎉

On ***compiling and executing the code this time, car performed great on the track without going off the track or popping over ledges.*** ✌️
Great work in ***implementing the base algorithm well and then tuning using Twiddle. Your write-up document talks about understanding and effect of P, I, D coefficients along with the process of choosing final hyperparameter values.*** 👍

The ego car stays within the drivable portion of the track surface throughout the lap, well done!

I wish you good luck for future and hope to see similar great work from you in upcoming project as well!

Please find some reference links below for your further reading:

- Twiddle
- Tuning tip
- PID Controller loops

Compilation

Code must compile without errors with `cmake` and `make`.

Given that we've made CMakeLists.txt as general as possible, it's recommend that you do not change it unless you can guarantee that your changes will still compile on any platform.

Excellent, no compile time errors.

```
[100%] Linking CXX executable pid
[100%] Built target pid
```

Implementation

It's encouraged to be creative, particularly around hyperparameter tuning/optimization. However, the base algorithm should follow what's presented in the lessons.

Nice work here, the algorithm implementation is being done well and the hyperparameters are being tuned nicely to get a good performance of car on the track!

Reflection

Student describes the effect of the P, I, D component of the PID algorithm in their implementation. Is it what you expected?

Visual aids are encouraged, i.e. record of a small video of the car in the simulator and describe what each component is set to.

Write-up is clearly written and each of the P, I , D component effect and understanding is shared as well. ✌️

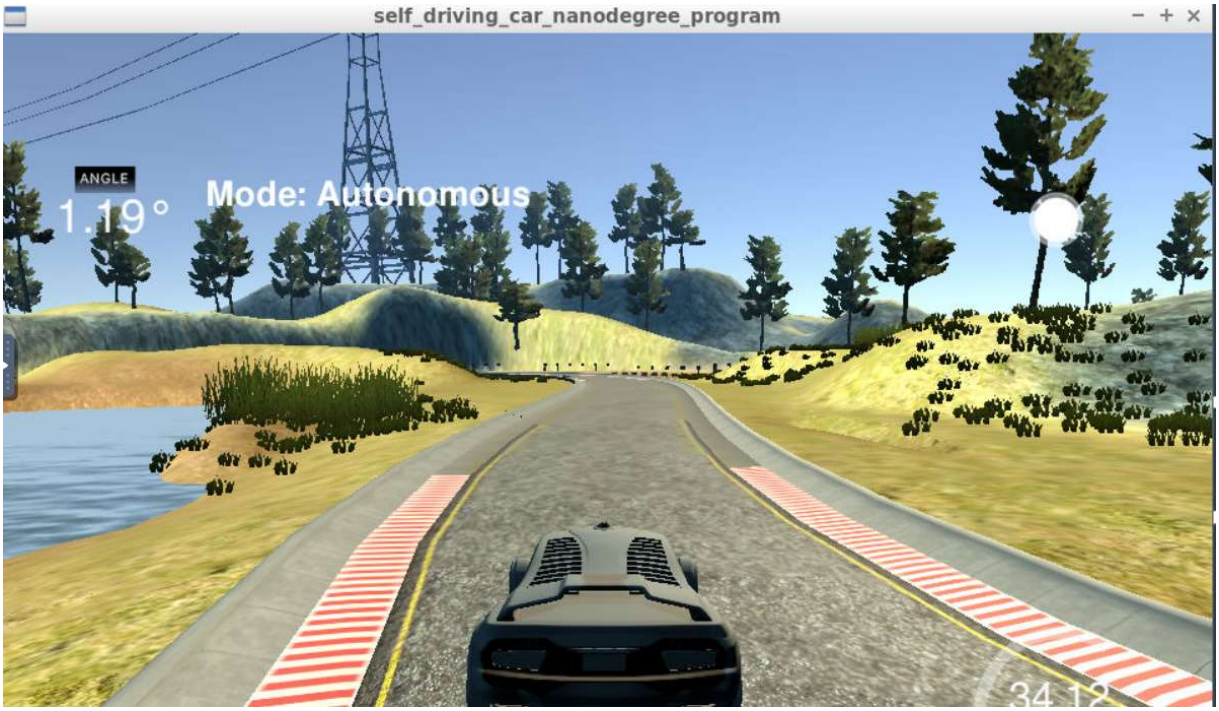
Student discusses how they chose the final hyperparameters (P, I, D coefficients). This could be have been done through manual tuning, twiddle, SGD, or something else, or a combination!

Good work in mentioning about the process of deriving final coefficient values in the write-up. The idea of using separate controllers for throttle and steering gives impressive final output on the track. ✌️

Simulation

No tire may leave the drivable portion of the track surface. The car may not pop up onto ledges or roll over any surfaces that would otherwise be considered unsafe (if humans were in the vehicle).

Nice work, the tires stay within the drivable portion of the track. You have ensured through Twiddle tuning that car never pops up onto ledges or rolls over undesired surfaces. 👌



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