PID CONTROLLER

PROJECT 4

Project was to create a PID controller to control car around a virtual track given the car's cross track error.

Implentation

I followed the twiddle algorithm adjusting the parameters once every cycle of 100 iteration. The best average error was compared with the total error given parameter adjustments.

Initial parameter were set at [.15,0.0,3.0]

Proportional – just using this parameter will result in overshooting the target state

Integral - Sum of errors , represents any biases in the system

Differential – this provides the damping of the oscillation and is sensitive to instantaneous error change

Final parameter were chosen by manual trial and error and augmented with the twiddle algorithm.