Model Predictive Control (MPC)

Compilation

CRITERIA	MEETS SPECIFICATIONS
Your code should compile.	Code must compile without errors with `cmake` and `make`. Yes, complies with no issues

Implementation

CRITERIA	MEETS SPECIFICATIONS
The Model	Model is detail. This includes the state, actuators and update equations.
Timestep Length and Elapsed Duration (N & dt)	Initially I started with n=10 & dt=0.4. This would run well in low speeds but wanted to push it higher Speeds or at least for most CA highway limit of 65MPH. I changed the value to n=20 and dt=0.1. Here I Could achieve speeds upto 55mp. But at 65mph it would go out of the track. Then I went with the exampl https://github.com/udacity/CarND-MPC-Quizzes/blob/master/mpc_to_line/solution/MPC.cpp with N=25 and dt=0.05. This works well at speed 65MPH. Please see video.
Polynomial Fitting and MPC Preprocessing	Yes, a polynomial is fitted to waypoints.

CRITERIA	MEETS SPECIFICATIONS
Model Predictive Control with Latency	Yes, 100 millisecond latency is implemented. Yes thread sleep is implemented which delays signal to actuators. Line# 244 in main.cpp

Simulation

CRITERIA	MEETS SPECIFICATIONS
The vehicle must successfully drive a lap around the track.	Car does use the curbs aggressively but never leaves the track.