**1. Describing the model:**

I used the model from classroom as inspiration.

In mpc.cpp file:

`fg` is a vector containing the cost and constraints.

`vars` is a vector containing the variable values (state & actuators).

at line 43 is the part of the cost based on the reference state.

at line 50 I minimize the use of actuators.

**2. the reasoning behind the chosen N and dt:**

it was a trial and error approach. I started from N= 25 and dt = 0.05 until I reached the final values of N=0 and dt =.1

**3. waypoints preprocessing:**

I convert the waypoints coordinates from global to vehicle coordinates. I do this in main.cpp starting from line 96

**4. dealing with latency**

starting with line 125 in main.cpp I predict future values for cte, psi,v and epsi

5. I added a video that proves the car is safely driving around.