P9: Capstone

Introduction

This document is the model documentation for the capstone project. I detail the code changes that happened w.r.t provided starter code.
I ran the code on the project workspace: Sometimes the waypoints tail the car in which case I switch to manual mode and reposition the car on the track.
Email: **azzouz.marouen@gmail.com**

Waypoint_updater:

- *LOOKAHEAD_WPS=30* Affects smooth driving
- *MAX_DECEL*=0.1 Shorten stop distance
- Rate=30 hz Affects smooth drive

Tl_detector:

- Rate=7 hz: I introduce a *loop* function to control publishing rate. A publishing rate of 50 hz heavily affects driving smoothness
- diff=30 wps: Maximum distance to start classifying red light. For my classifier, a bigger distance doesn't yield better performance + introduces heavier computations

Tl_classifier:

- I differentiate red light from others.
- I use CV2 to detect red color. Each red light should have around 20 red pixels so in total at least 50 pixels should be present to confirm presence of red light.

Improvement areas

- Reduce lag using a stronger laptop
- Classify lights using a ML approach