

Name

Jingyu Li

Group Members

Jingyu Li

Shujing Yang

Siwei Zhang

Yutao Zhou

Yu Zhang

Description

In this HW, we implemented PID controller to follow waypoints along a path on the simulator. The codes file we modified include `pid.py` and `follow_waypoints.py`. We have filled the "TODO" parts. Main tasks done:

- transforming the goal point into the vehicle coordinate frame in function `start_drive`
- define feedback value for PID control in function `start_drive`
- Set own sets of weights for P, I, D terms in `__init__`.

Running results are shown in the provided movie.

Steps

Step 1. Launch track 1 environment in the simulator

```
source devel/setup.bash
roslaunch gem_launch gem_init.launch world_name:="track1.world" x:=0 y:=-2
```

Step 2. Run follow_waypoints file to let the car move in the middle of the road

```
source devel/setup.bash  
roslaunch gem_waypoint_pid follow_waypoints.py
```

Video Link

<https://youtu.be/GPDPIF34pel>