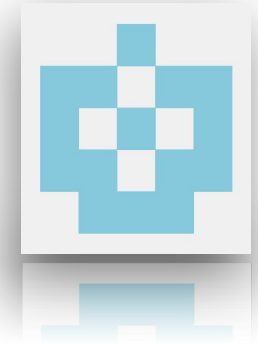
Team/ Instructor VLOG #3

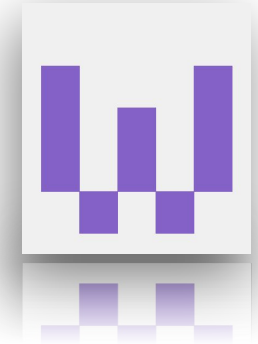
Team Apollo - Dec 4th
Kecheng Yu
Yilin Ren
Zhuo Zhou
Ziwen Tan

Team member introductions



Kecheng Yu
AI vehicle counter algorithm

Zhuo Chen
AI vehicle counter algorithm



Ziwen Tan
backend development

Yilin Ren
Front-end developers
Team Scrum management

Project Activities

Meet with mentor at Oct 13th: Kecheng, Ziwen and Zhuo (discussed about assumption)

Group meeting at Oct 14th: Yilin (Frontend) Ziwen(Backend) Kecheng (research for AI alternative) Zhuo(research for hardware alternative)

Group meeting at Oct 21st: All member attended (made decision)

Met with mentor at Nov 24th: Kecheng, Ziwen, Zhuo and Yilin (discussed about vehicle detection)

Status description

Green

Milestone 1.5 in progress:

Done

- System design
- Parking lot management frontend
- Parking lot management backend
- Project roadmap
- RACI chart

In Process

- Parking lot vehicle detection feasibility test

Project issues

Met with mentor and discovered our AI vehicle detection.

YOLO may quired a large demand of computing power on a single board computer.

Working on minimum processor requirements for YOLO

AI - YOLO investigation

YOLOv5: No specific minimum hardware requirements

Plans:

- Limit the features (only accounting vehicle numbers is needed)
- Downgrade from v5 to a lightweight version: v3 or v2
- Back up plan: VGG16

Project changes

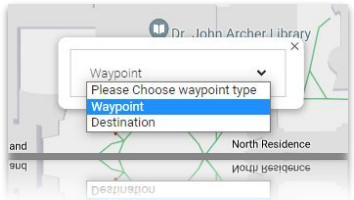
Current solution: YOLOv5 with limit features

Potential changes: Downgrading, VGG 16

Project/technology update

Frontend

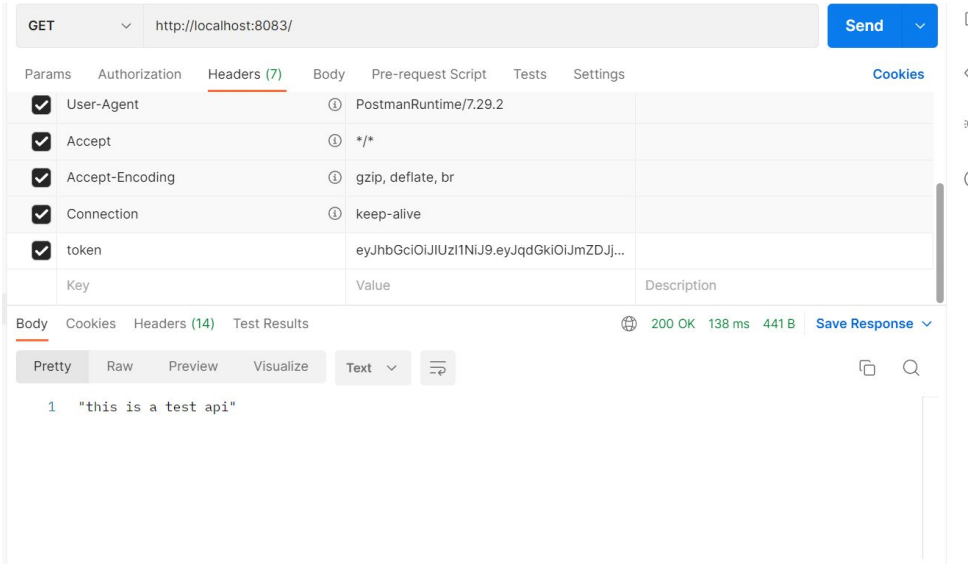
- Design and implemented new data structure to store waypoints.
- Implemented a dialog to require the user to set the waypoint properties each time the waypoint is created.
- Preview



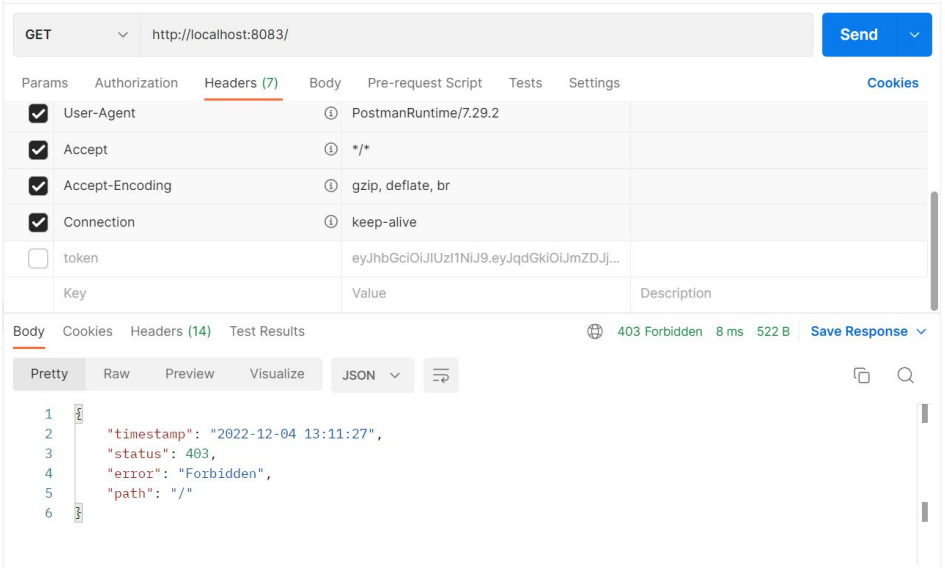
Backend

- Create pointWay
- Delete pointWay
- Update ponitway
- Authorization

Backend demo



Backend demo



Next up

We will:

- Accomplish milestone 1.5 before the end of December.
- Start working on milestone 2.0
- Front-end interface optimization and back-end structure optimization
- YOLOv5 deploy

Team reflection/retrospective

In good status

- Everything is working fine, and the frontend is pretty much done at this stage.
- The backend is looking for ways to implement an A* algorithm.
- The AI part now needs to consider whether the performance of the application can be supported with the equipment we currently have, and how to reduce the performance requirements.