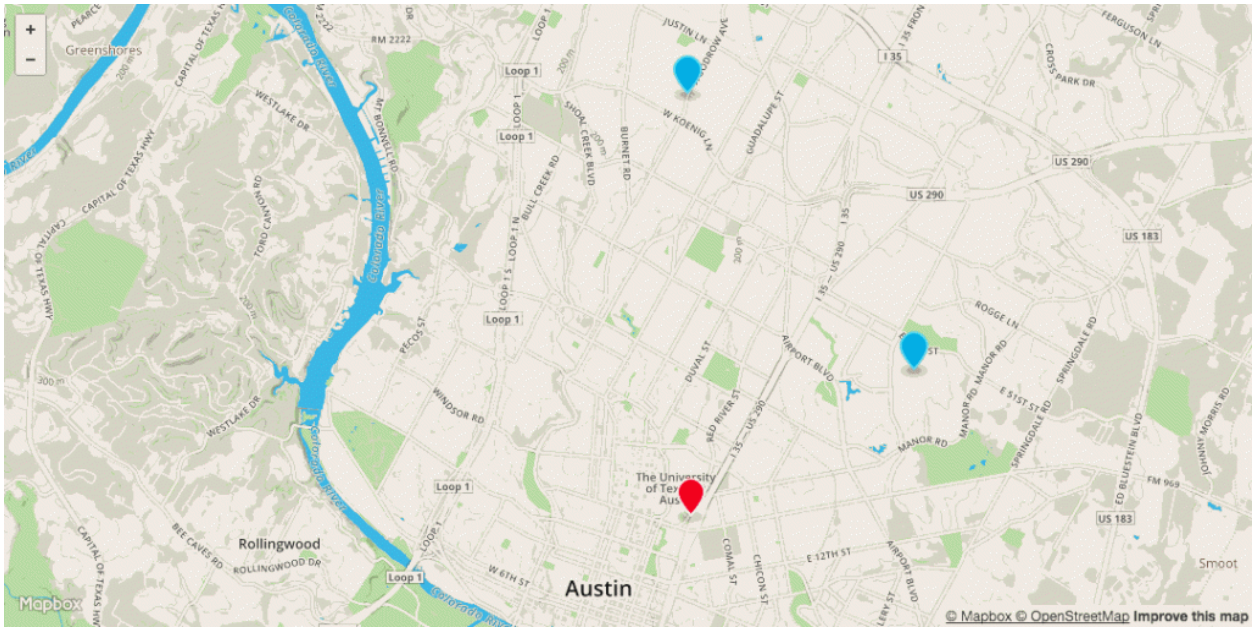
App: GPS: Phase #1

Date: Feb 27th, 2023
Domain: https://gps.brickmmo.com
GitHub: https://github.com/codeadamca/brickmmo-gps

Application Purpose:

This application will use the Pixy2 AI camera to track coordinates of seven LEGO™ robots.

The end result will allow for a data visualization app using the LEGO™ map and locations of robots:

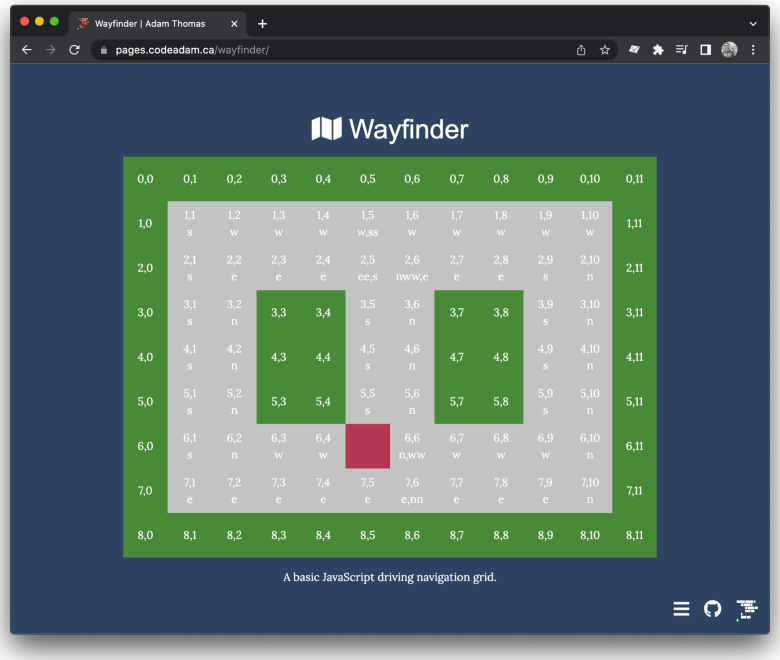


Front-End:

Front end facing application will include the following features:

- A real-time map indicating the current location of each of the seven robots
- Possibly a slider to pan through recent history
- Other features determined by group

Frontend design may look something like this:



Back-End:

Application will include a control panel to achieve the following:

- Login to control panel
- Manage the seven robots
- View position history

This application will also require a Python codeset residing on a Pixy2/EV3 to update robot positions. Updates will happen once per second. Update will use the /api/position/{id} endpoint.

API:

Application API will include the following API calls:

Method	**Endpoint**	**Description**
GET	/api/robots	Return a list of the seven robots including ID, current position, last movement date/dime, colour, and profile data.
GET	/api/position/{id}	A quick call to retrieve ONLY the current coordinates of the specified robot. **Parameters:**

		id (required): a method of identifying a robot using colour or record ID.
GET	/api/history/{id}	A detailed report of a single robot profile, location, and last 100 positions. **Parameters:** id (required): a method of identifying a robot using colour or record ID. from_date and to_date (optional): if both are specified, the API will return all tracking between the two dates.
POST	/api/position/{id}	A quick API endpoint that will primarily be called by the Python application to update a robot's location. **Parameters:** id (required): a method of identifying a robot using colour or record ID.