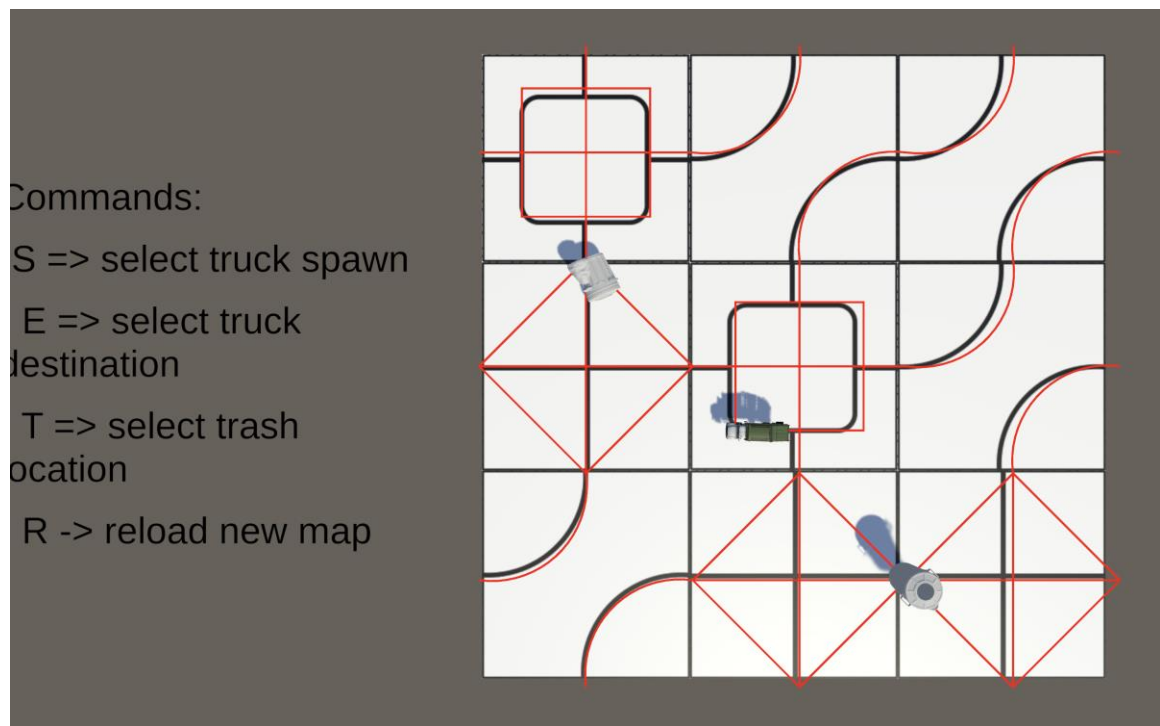# AR – 3D Logic documentation – Kilian Le Calvez

## - Step 1

- Create a Unity environment independent of the AR component to simplify the development of the 3D and logic parts.
- Create different tiles and arrange them to represent the mat.
- Develop a system of gates and positions to facilitate a pathfinding algorithm.
- Establish path points and create a truck that can move along these points, following the path generated by the pathfinding algorithm.
- Implement the logic for trash bins and the truck to automatically collect them.



Commands:

S => select truck spawn

E => select truck destination

T => select trash location

R -> reload new map

- *Problems encountered:*

- Designing pathfinding systems and generating all the points in advance that the truck must pass through.

- **Step 2**

- Use Vuforia image targets, duplicating the targets to match the number of tiles.
- Create the map in relative position to the tiles so that the virtual map overlaps correctly.
- Adjust sizes, speeds, and hitboxes to enhance usability and add GPS mode.
- Add control buttons and a debug text mode.

- *Problems encountered:*

- Determining the order of the detected target tiles to adapt the map so that it exactly matches the real one (unsuccessful).
- Working only with builds, as there is no free hot reload for AR. There is an extension for AR development, but it is paid. Launching the project in play mode with the webcam seemed impossible to implement for the project's requirements.

- **Step 3**

- Connect the AR application to the IOT part.
- The idea was to use websocket in C# and connect to a channel created by the IOT part that gives informations about the trashs status
- **Problems encountered:**
- Not enough time to implement.