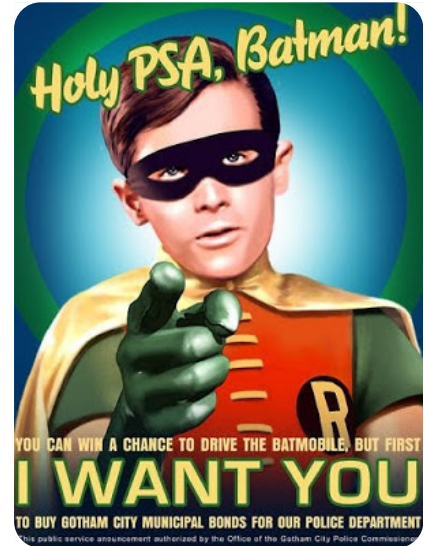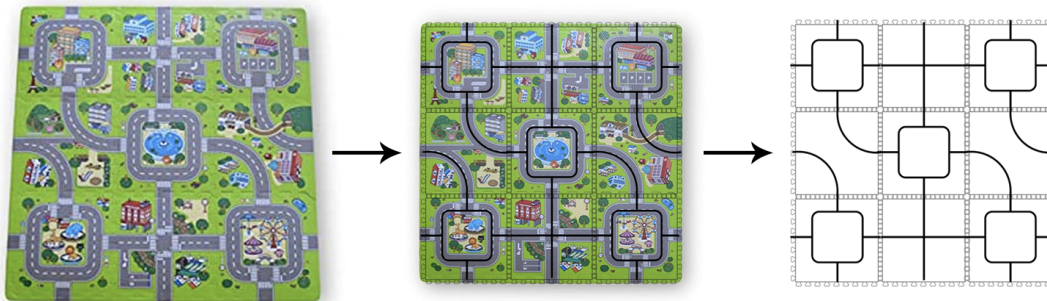# SMART TRASH CANS

CLEANING GOTHAM

SMART TRASH CANS

The Mayor of Gotham City wants to start with a huge project for the city:
Upgrade the city waste system, true pain point for its inhabitants.

She/he is building a team of cutting edge experts to help them on this gigantic task: You !

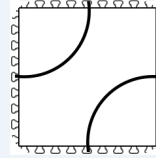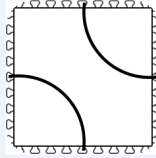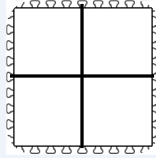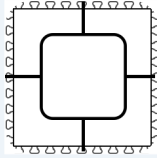
For the final defense, you'll have to present a city map with roads (3x3 squares)
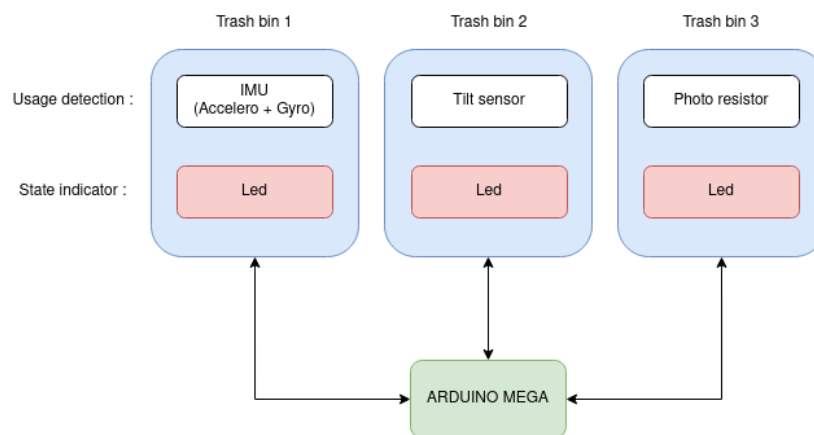

💡 Duct tape may help you to symbolise the roads.

{ EPITECH }

You must have 3 (or more) trashcans (paper, 3D printing, plasticine: **be creative!**).
Each trashcan is able to send data to the *Arduino*, and display info from the *Arduino*.

Overall, the following must be integrated:

- ✓ At least 3 sensors (such as IMU, Tilt, Light, …)
- ✓ At least 1 actuator (such as LED, LCD screen, buzzer, …)

Depending on how you use it, a sensor can give you different information about the trashcan : Is it open or closed? Is it tilted? Did someone touch it, meaning it would be full? Again, be creative!

At all times, the *Arduino* must know the state of the trashcans, depending on the integrated sensor, which must be one of the following: Empty (default), Full, Tipped.

When all trashcans are in a different state than the default state, you must signal the AR App to send the garbage truck.

You must communicate between the arduino and the unity app, this is where the API comes in.

Double-check support of HTTPS on the Wifi module, you may be limited to HTTP.

{ EPITECH }

You must build an AR App on your smartphone, overlaying informations on the camera feed. You **must** at least display:

- ✓ The garbage truck's path to gather all the garbage cans (it doesn't have to be dynamic)

- ✓ A 3D model over the trashcans so they stand out on the map (use image and/or object tracking). The real-life status of the trashcan must be reflected in AR.

- ✓ A 3D model symbolizing the garbage truck. When signaled by the Arduino, the truck must start moving on its path to gather the trashcans.

For the final defense, the following will be mandatory by video-conference :

- ✓ IOT installation

- ✓ Display virtuality by a smartphone

Try out your setup before the defense. Since we are using AR, the lighting conditions can change the experience, be sure to master every aspect of your live demo.
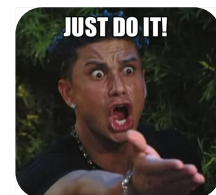
BONUS

The Provided API as a lot of weakness:

- ✓ it is not scalable ;

- ✓ it is not well secured ;

- ✓ it is implemented with a *no-code* tool.

If you can do better, just do it!

🔊 Only once the other parts of your project are 100% functional.

{ EPITECH }

v 1.4

{EPITECH}
LEARN DIFFERENT*

* apprendre autrement