

Line Tracing Truck

by

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Main concept:

The main concept of our project is to build a miniature truck that would be able to carry items on its tray. The items would be secured with fences.

The truck would be able to drive following a line on the floor using IR sensors (placed under the chassis) and would stop when there is no road anymore (or if an obstacle is sensed with an ultrasonic sensor placed at the front of the truck).

In such cases the truck would honk using a speaker and an amplifier, waiting for the obstacle to be removed (or for a new road).

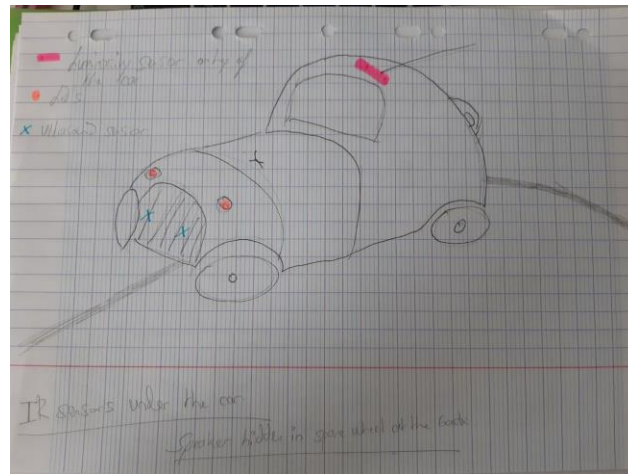
Finally, an ambient light sensor would be placed on top of the truck. This would allow the headlights of the truck to be turned on at night (LED's).

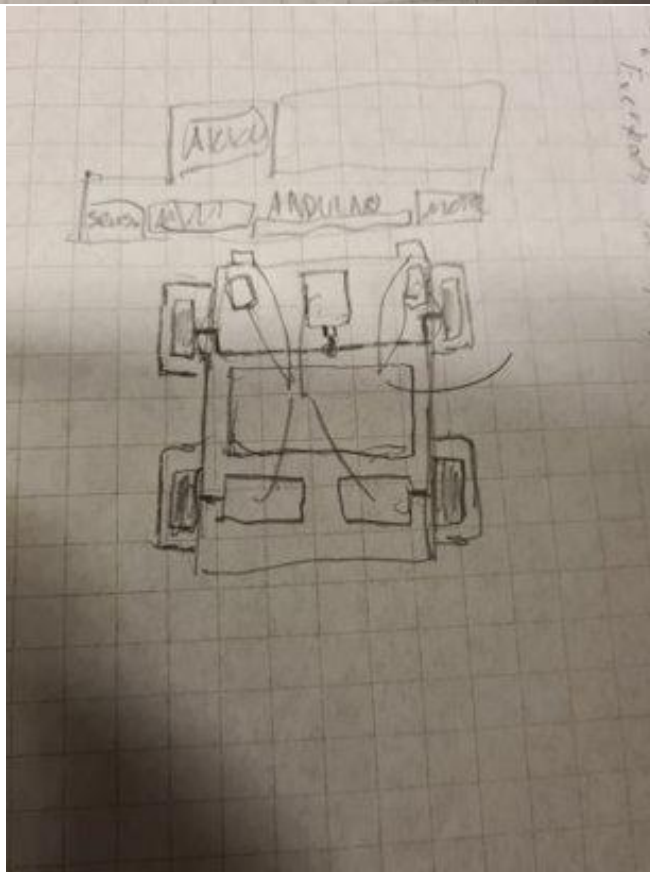
Design ideas:

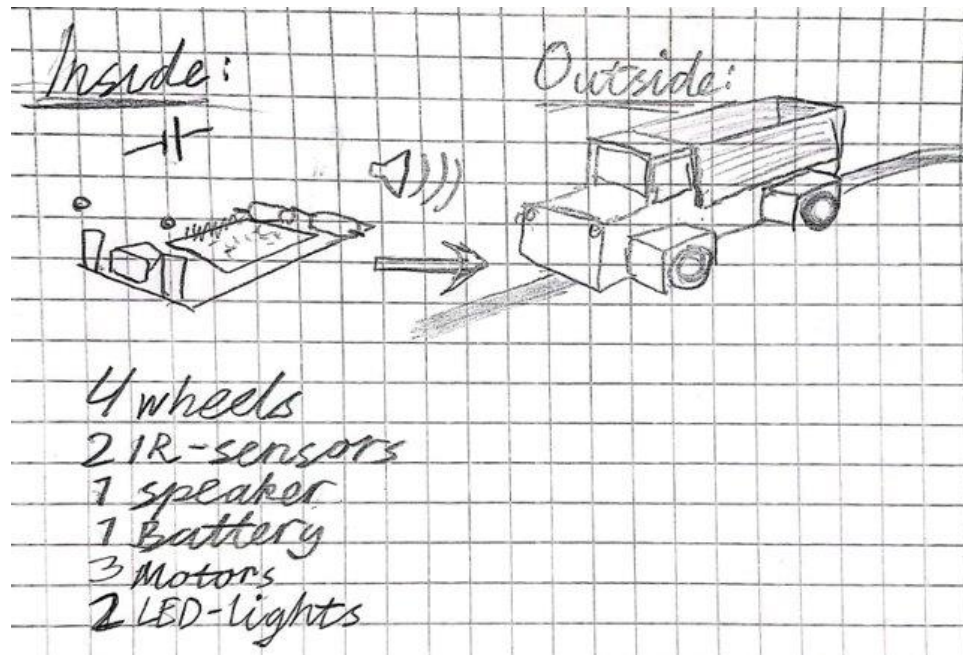
We needed the car to be quite big to fit everything inside (sensors, Arduino, breadboard, batteries and so forth). We also wanted the car to be able to carry things around, so we ended up in truck.

- First we thought that we make the car more American style with longer nose, but that would have resulted in smaller transport capacity. Therefore we ended up with a truck with a short nose.
- For environmental reasons chose the body of the car to be wooden.
- Volkswagen Beetle -style of car. We wanted the car to be able to transport stuff, so we discarded the idea.
- Plastic car, but it didn't sound sustainable enough.

Sketches:







Bill of Materials:

We would need:

- 4 [wheels](#)
- 1 speaker
- 1 amplifier
- 1 line tracking sensor
- 1 ultrasonic sensor
- 1 ambient light sensor

Sustainability:

In order to satisfy the condition of sustainability we would mostly use wood. This material is natural and it's quite easy to work with in the Fablab.

We are also going to use modelling software to design our truck and to avoid at the same time to waste material by doing lots of prototypes.