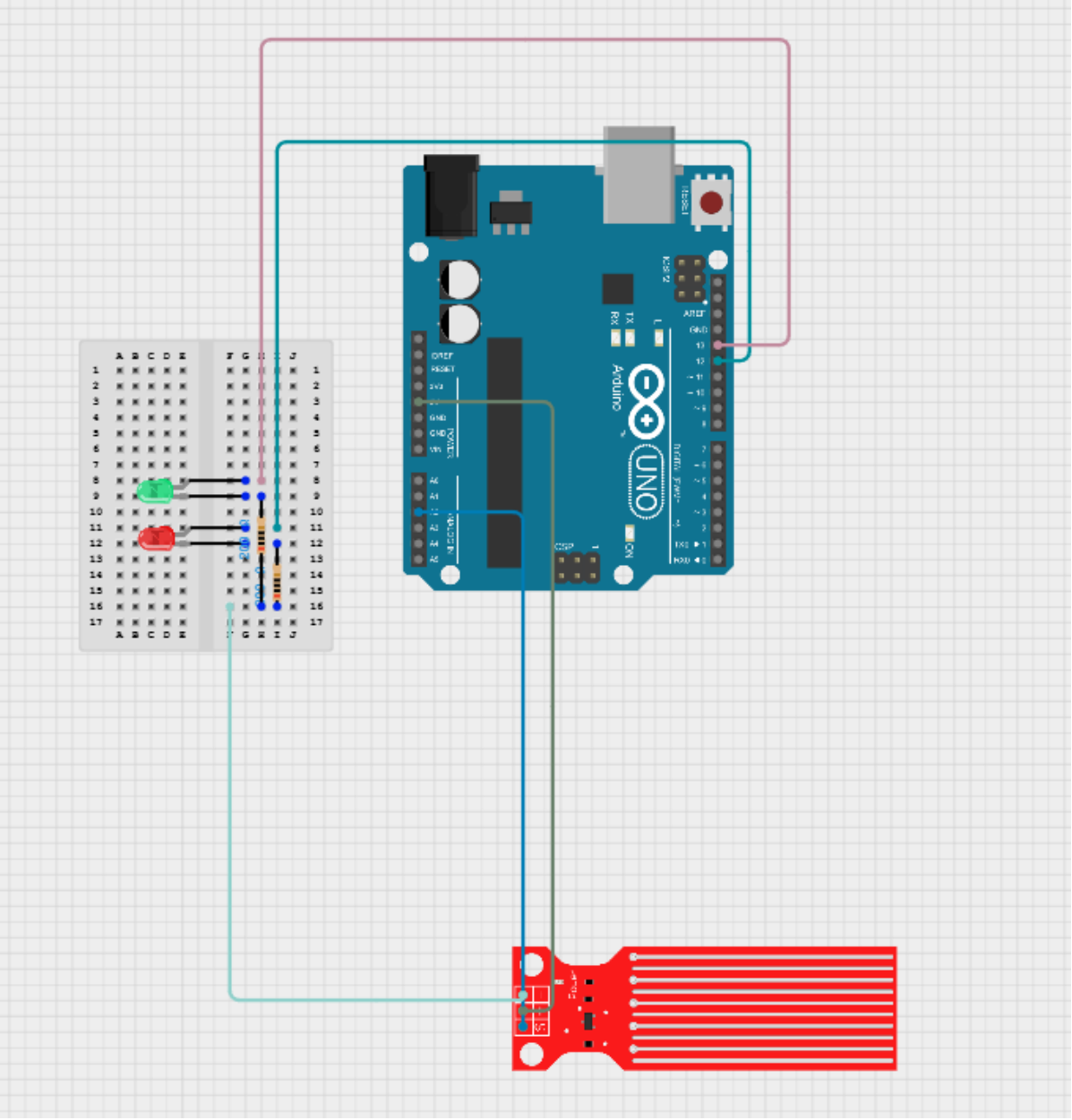
1. Project Description

   For my project I choose to use an Arduino board. I wanted to make a water level sensor that measures the quantity of water in a dog's bowl, and if the water level is too low, it alerts the owners. The sensor is put in the dog's bowl, and if there is sufficient water, a green LED is on, otherwise, a red LED is on.
2. Schematics



3. Pre-requisites:

- Arduino Board: https://www.tutorialspoint.com/arduino/arduino_board_description.htm
- Arduino Breadboard: https://store.arduino.cc/en-ro/products/breadboard-400-contacts?pr_prod_strat=e5_desc&pr_rec_id=7406f15ba&pr_rec_pid=8592395665745&pr_ref_pid=5518121042071&pr_seq=uniform
- Water Level Sensor: https://robu.in/product/water-level-sensor-depth-detection-water-sensor-arduino/
- LEDs: https://www.exploringarduino.com/parts/red-led/
- Female – Male Wires: https://store.arduino.cc/en-ro/products/40-colored-male-female-jumper-wires?
- Male – Male Wires: https://store.arduino.cc/en-ro/products/40-colored-male-male-jumper-wires?pr_prod_strat=jac&pr_rec_id=64eb3cf9d&pr_rec_pid=8602314277201&pr_ref_pid=8602222297425&pr_seq=uniform

I bought this set: https://www.emag.ro/kit-arduino-uno-mediu-3874784221473/pd/DPPX9PYBM/?utm_campaign=share_product&utm_source=mobile_dynamic_share&utm_medium=android that had everything I needed for this project (except female-male wires, I bought them from a physical store) and it was easier.

Software components: I downloaded Arduino IDE from this website: https://www.arduino.cc/en/software and it was very easy to install and use.

4.Setup and Build

I started the setup of my project by connecting the LEDs first. I put them on the breadboard, as shown in the schematic. From the longer leg I connected a cable to the Arduino board on port 13 (red) and 12(green). At the short end of every led I connected a resistor. The resistors had the other ends on the same row, and in that row I put a cable connected to GND on the Arduino board. Now my LEDs are connected and work well.

The next step was to connect the sensor. My water sensor had 3 ports: S, -, +. I connected them on the Arduino board as follow:

- S -> A0
- + -> 5V

And – was connected to the breadboard, on the same row as GND cable, and the resistors.

Now everything is connected, I just need to write and upload the code. I installed Arduino IDE on my laptop, and I connected the Arduino board with an USB cable. I wrote the code that instructed the red LED to light if the water is low, and the green led otherwise.

5.Running

To run the code, I selected the type of board I use and then uploaded it from the IDE.