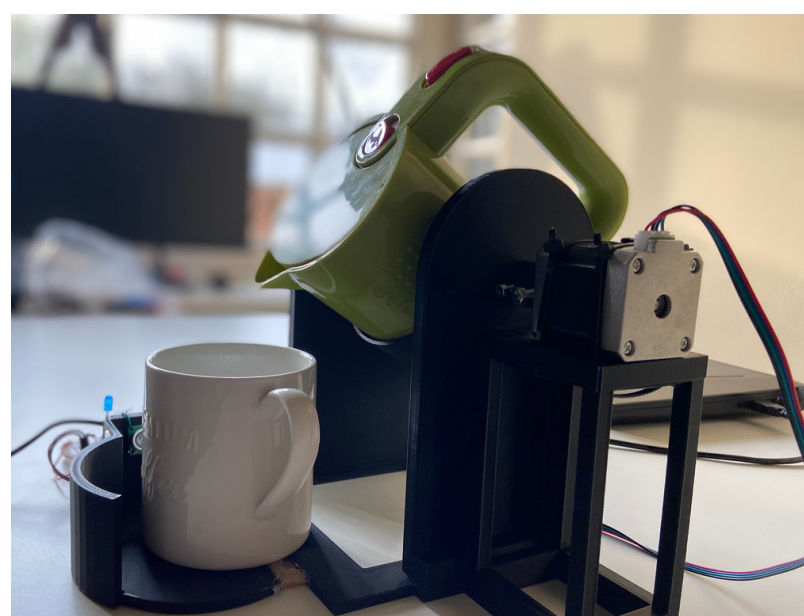




SafeTea

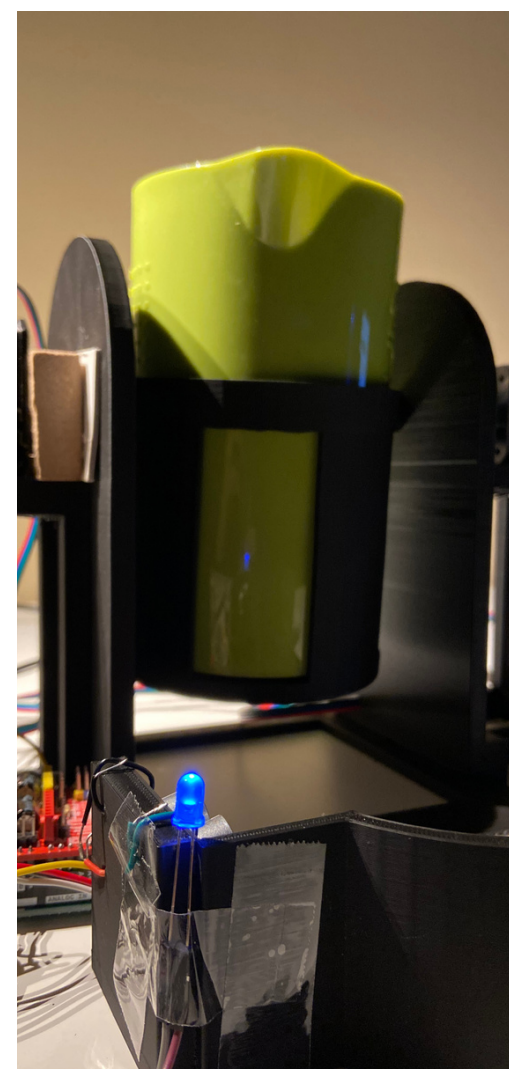
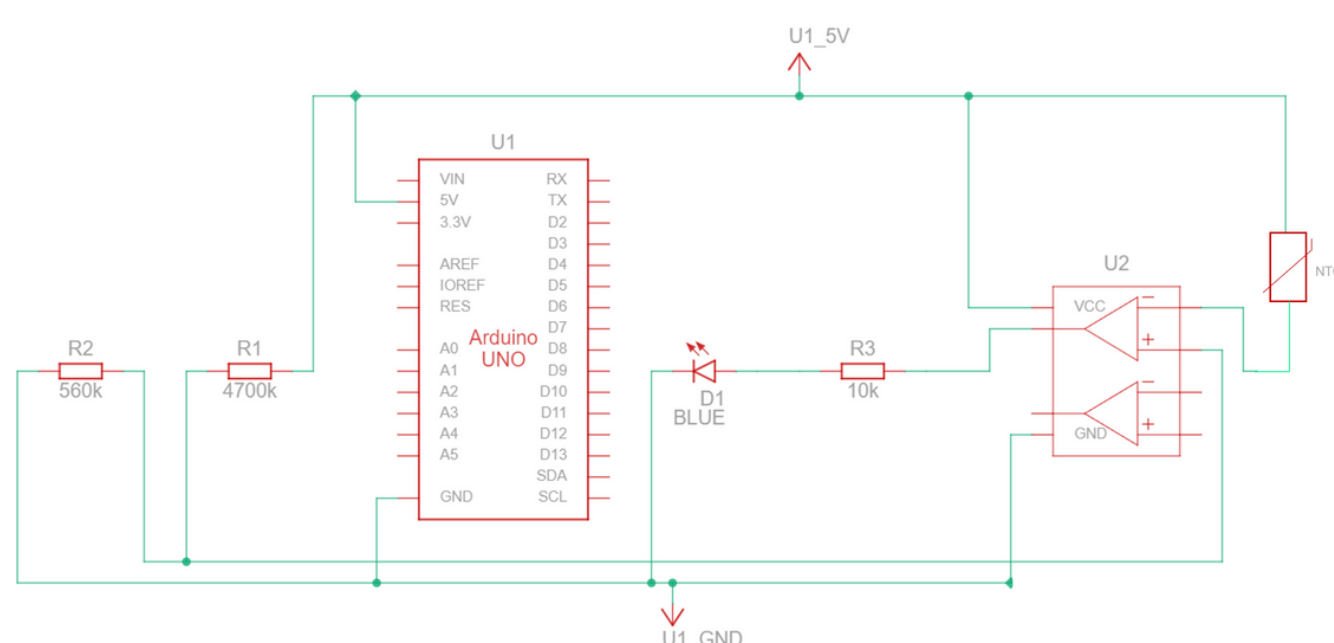
Many old people or people with Parkinson's syndrome have difficulties with shaking hands. This can make it dangerous for them to pour out their hot water from a cooker as it could easily spill and burn them. To help them with this task, we've created a smart device that can automatically pour in the hot water from their cooker to their cups.

Our device is equipped with a distance sensor that sends the distance it measured to the Arduino. When the mug that can be placed at the dedicated holder gets in the range coded in the Arduino (about 2-5cm), the hot water will automatically be poured. Our product also has a warmth sensor that detects when the water in the cooker becomes too cold. The device will indicate this by turning on a blue LED.

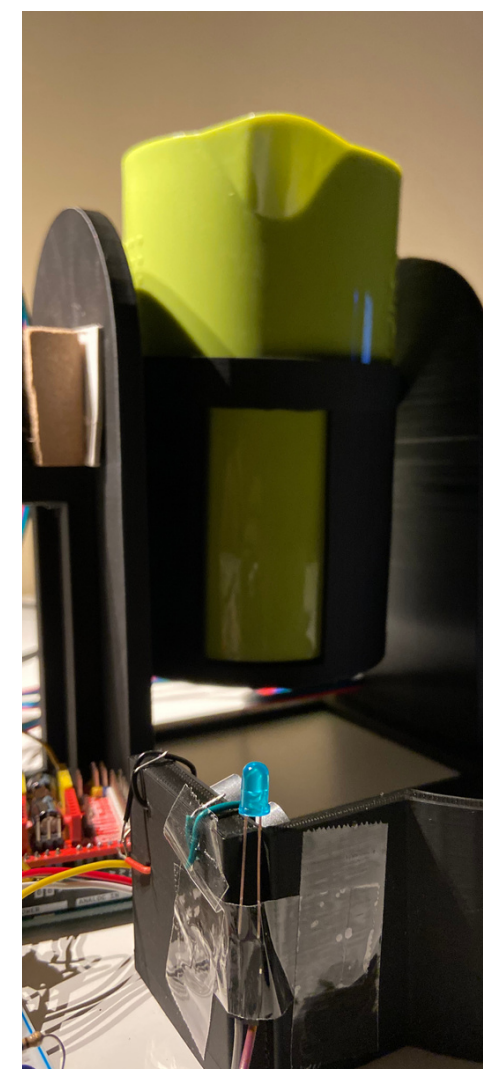


Wiring of temperature sensor

The circuit of turning the LED on or off depending on the temperature consists of a simple temperature sensor (NTC) and opamp which compares the voltage coming out of the sensor and a standard reference voltage. When the temperature becomes too low, the blue LED will turn on indicating that the water should again be heated up.



LED is on meaning the water is cold



LED is off meaning the water is warm

Wiring of motors and distance sensor

We have two different schematics as we used the Arduino together with an Arduino Shield. The two stepper motors are connected to their stepper drivers which are in turn connected to the Arduino CNC shield V3. These integrated circuits make it easier to steer the stepper motors.

