

# Principles of Digital Fabrication

## Introductory Report – Group 20

Repository: Github (<https://github.com/AntonitaA/Principles-of-Digital-Fabrication.git>)

Our project idea is to make a refresher gadget that activates a water spray when the temperature is high or when a sensor detects some movement. The functionality of the gadget is to make the user feel refreshed in the hot months of the summer.

We started by thinking of multiple ideas and the other ideas were the following:

One idea was to make the “Partycleaner”, a robot that detects cans and collects them in a basket. We didn’t pick this idea because it turned out to be really challenging. We had to make a functional robotic hand with 3-4 joints and also use artificial intelligence for the detection of the cans. The second idea was to make a medical gadget that measures the heartbeat of a person and if the heartrate is high a box with medicines will open. We preferred the refresher gadget over this one.

For the design of the refresher gadget, it will be composed of a water spray bottle, a mechanical finger that will be pressing the spray bottle button. For sustainability purposes we thought of using a spray bottle that can be reused and not a compressed air spray bottle. And for the mechanical finger we will be making it with components that can be reused.

### List of components needed

From the components given in the box we will need the following:

Arduino	Arduino Uno / Arduino Nano	1
Arduino Cable		1
Breadboard		1
Jumpers cable	M-M / F-M	15/15
LEDs	Transparent/Red/Green	2/2/2
Resistors	10K / 230	1/4
Brushed DC Motor	GEARMOTOR 200 RPM 3-6V DC or STANDARD MOTOR 9100 RPM 6V	1
Micro Servo Motor	SERVOMOTOR RC 4.8V	2
Power MOSFET	IRLZ34N	1
Diode	1N4007	1
H-Bridge	L293D	1
Switch slide SPDT	200MA 30V	1
Potentiometer	10K OHM 1/32W PLASTIC LINEAR	1
Battery holder	4 AAA batteries	1

From additional components we will need a motion detecting sensor and a temperature sensor.

