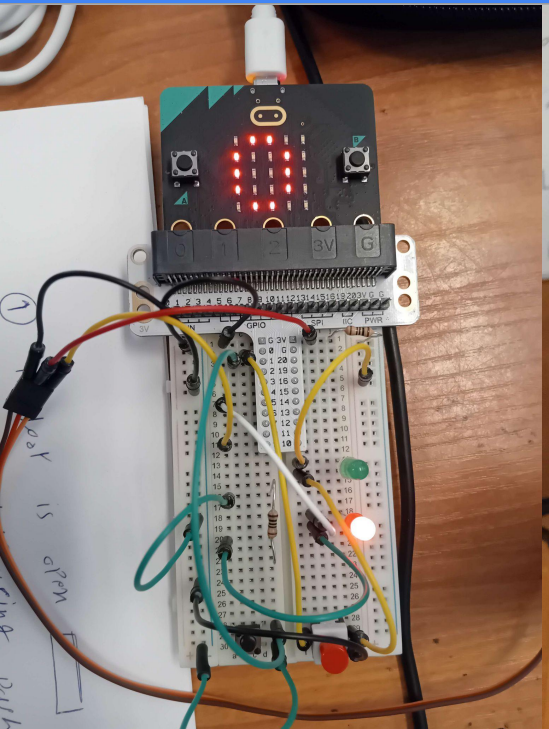
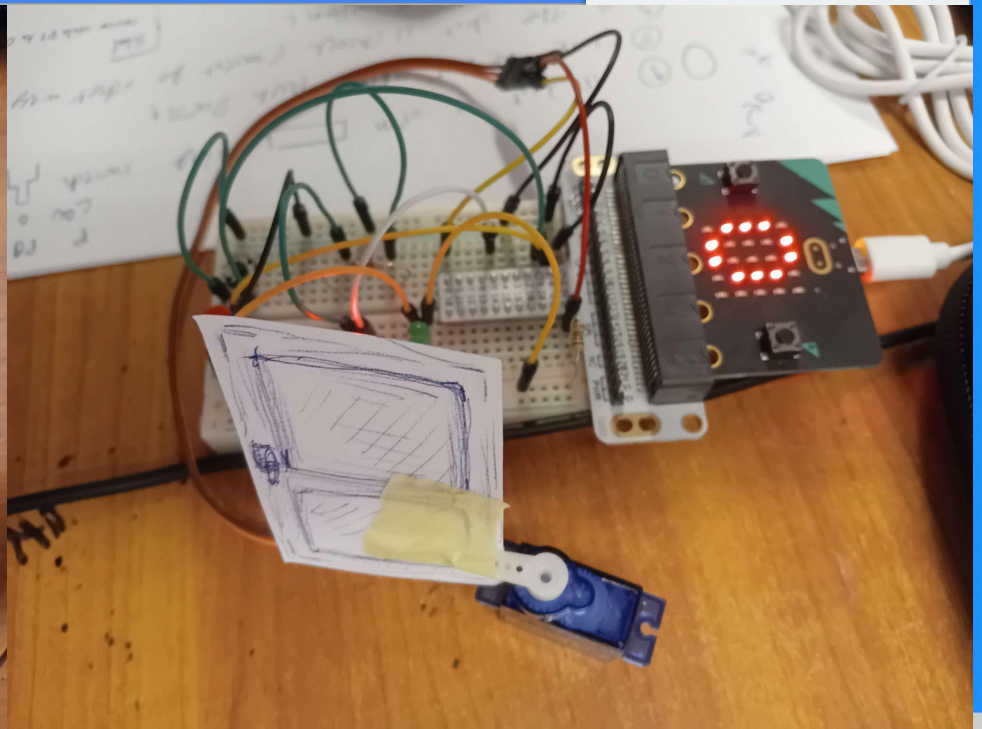
Door control project

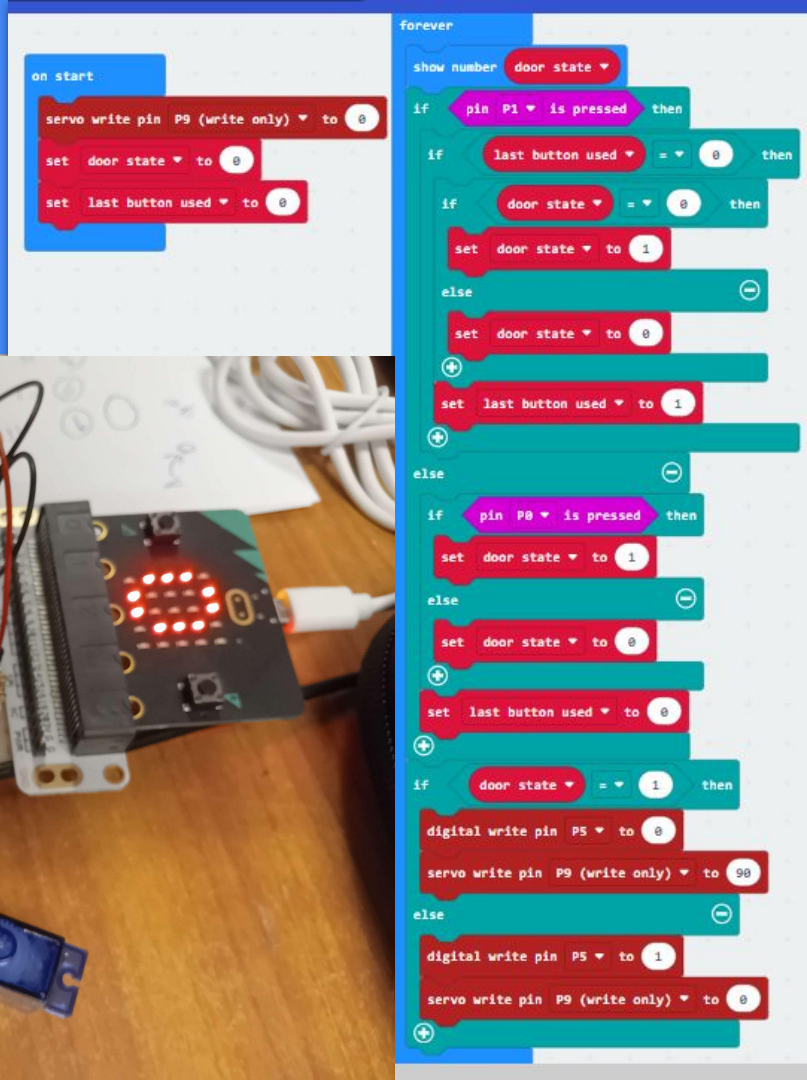
Team: Andre, Cosmin, Elena, Milan

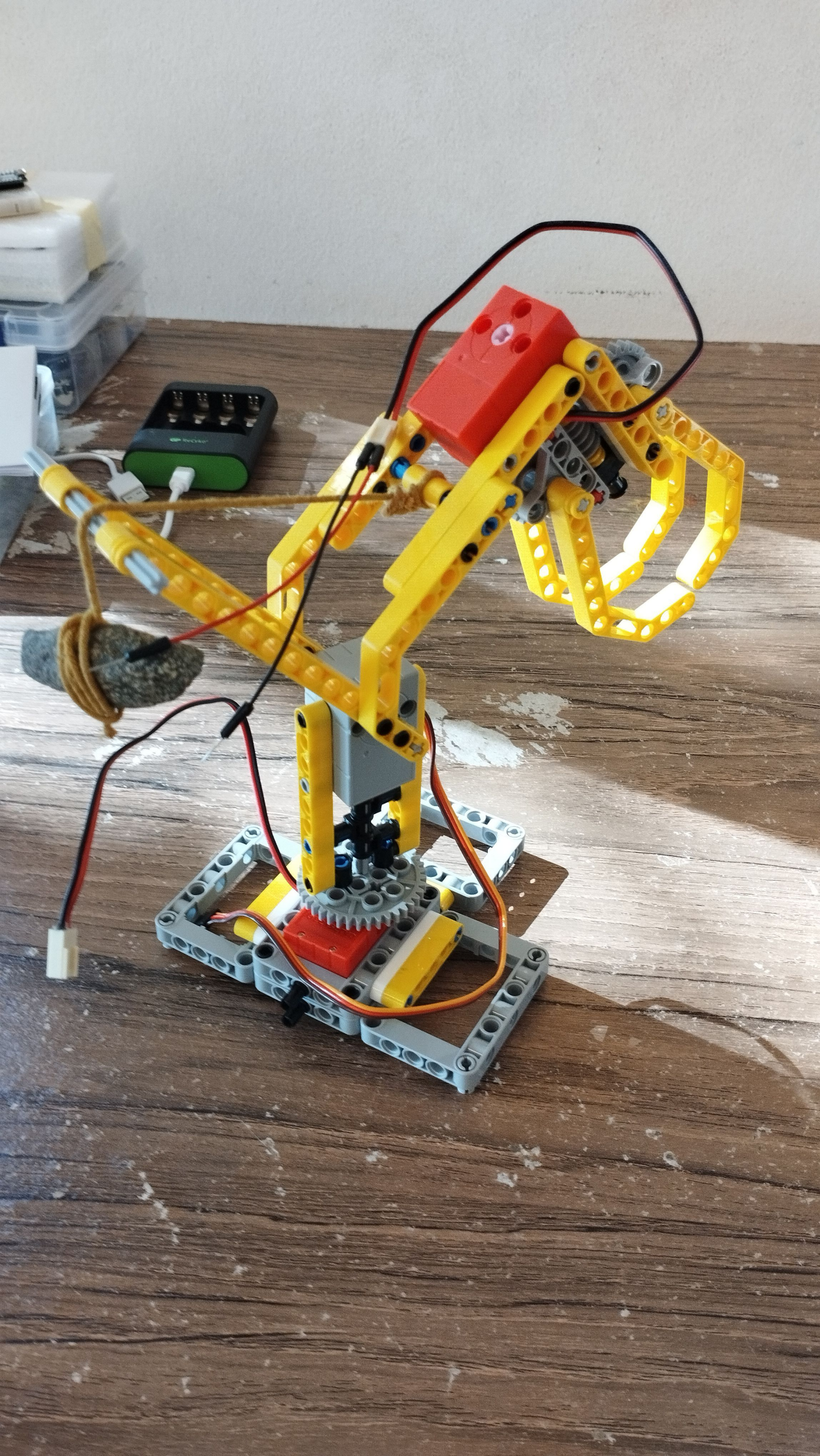
We created a circuit that opens or closes doors, the red led lights if the door is closed and green led if it is open, you can change the state of the door with a switch or a button

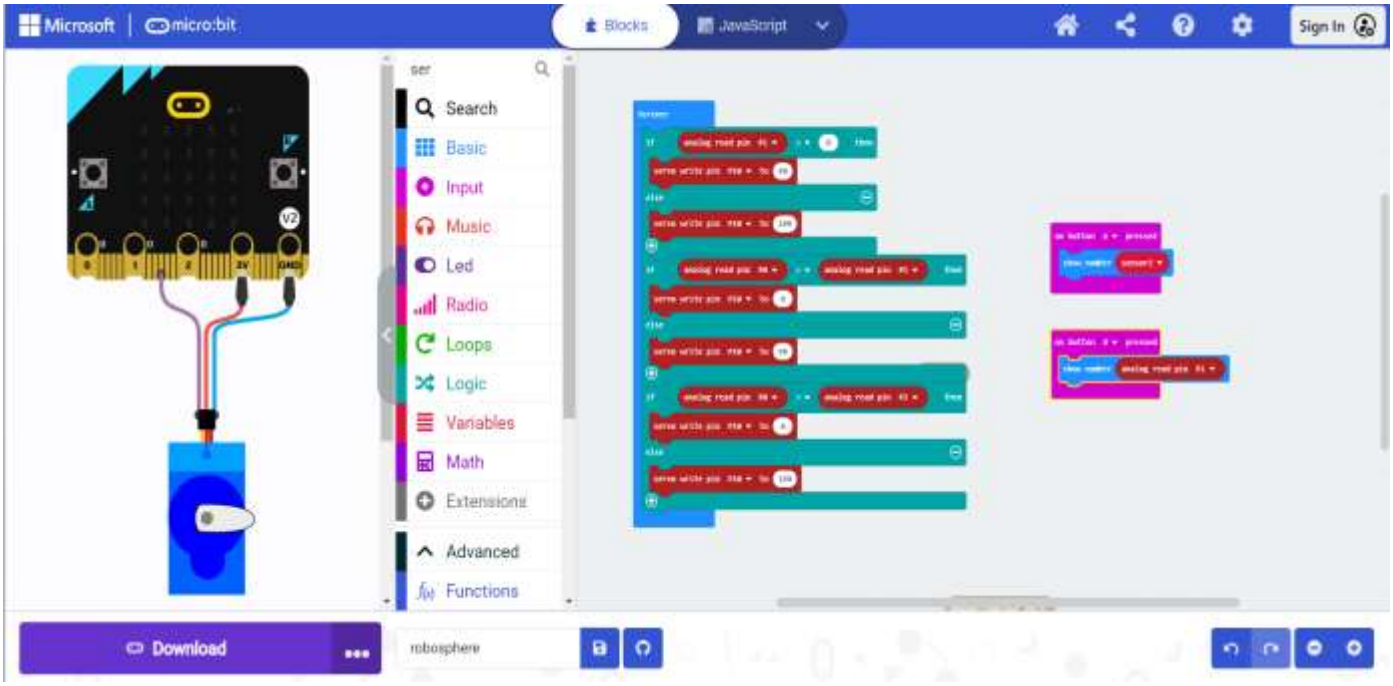
Our project hardware and software







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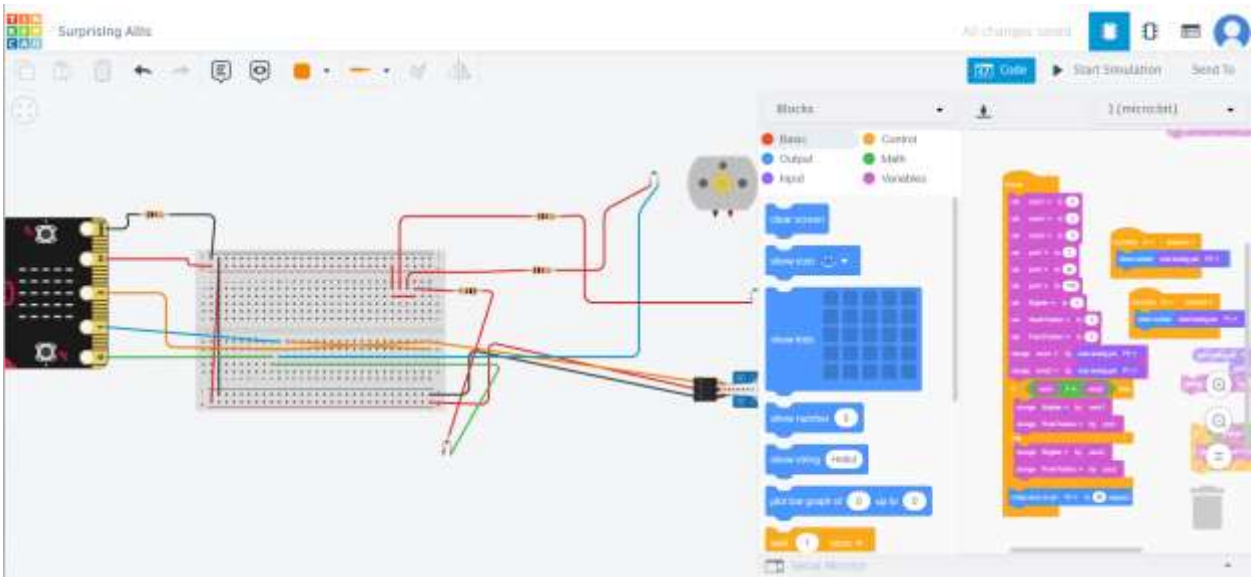
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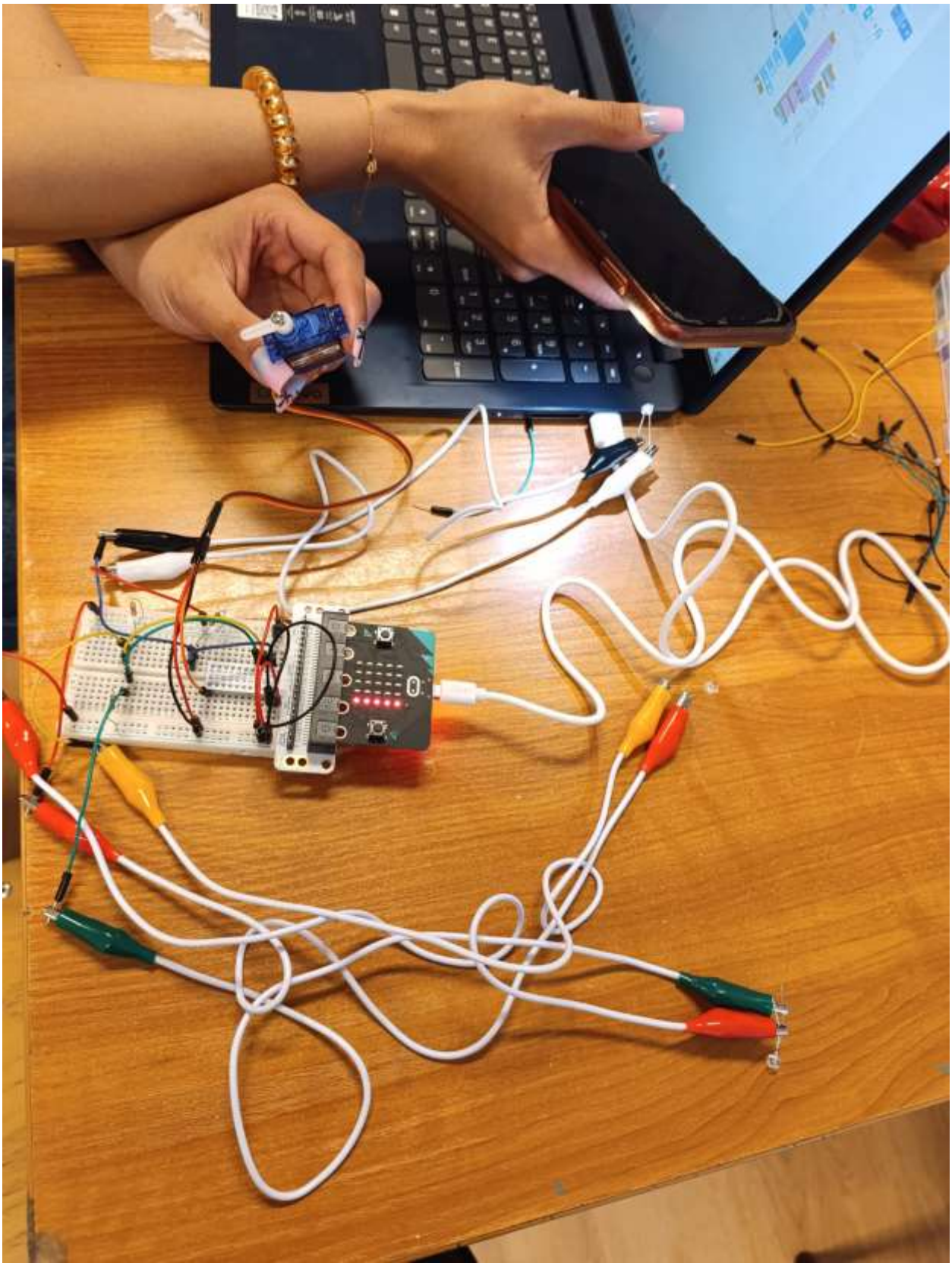


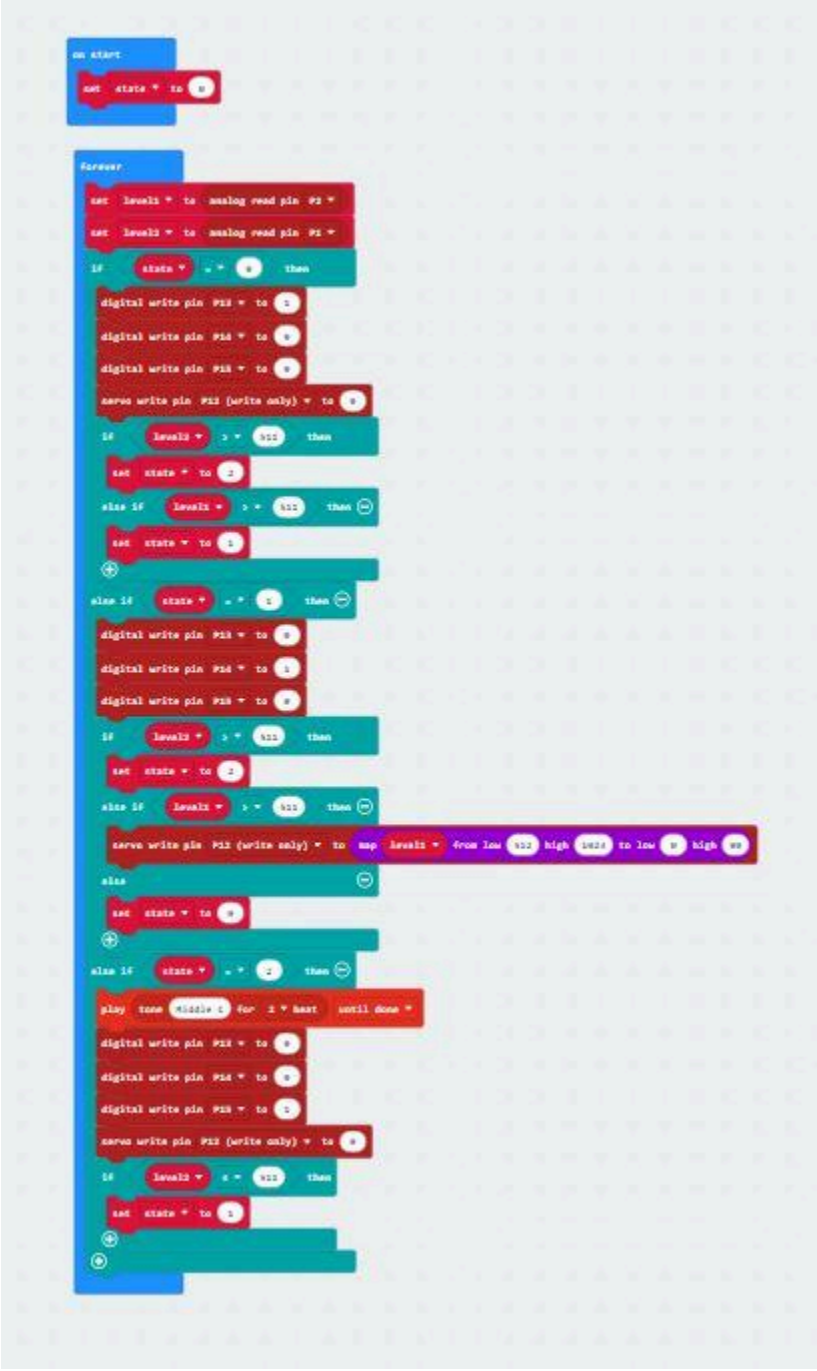
Water level control - Robosphere mini-project

Participants:

- Vincze Tamas
- Zagyva Aron
- Reka Simsik
- Andjelija Stambolovic
- Bogdana Stambolovic

The aim of the project is to measure the water level in two containers. After reaching 50% of the first container, the servo motor opens the valve that opens proportionally to the range of 50-100% of the first container. After reaching 50% in the second container, an alarm is sounded and the valve is closed until the level returns to the range below 50%.

Scratch code



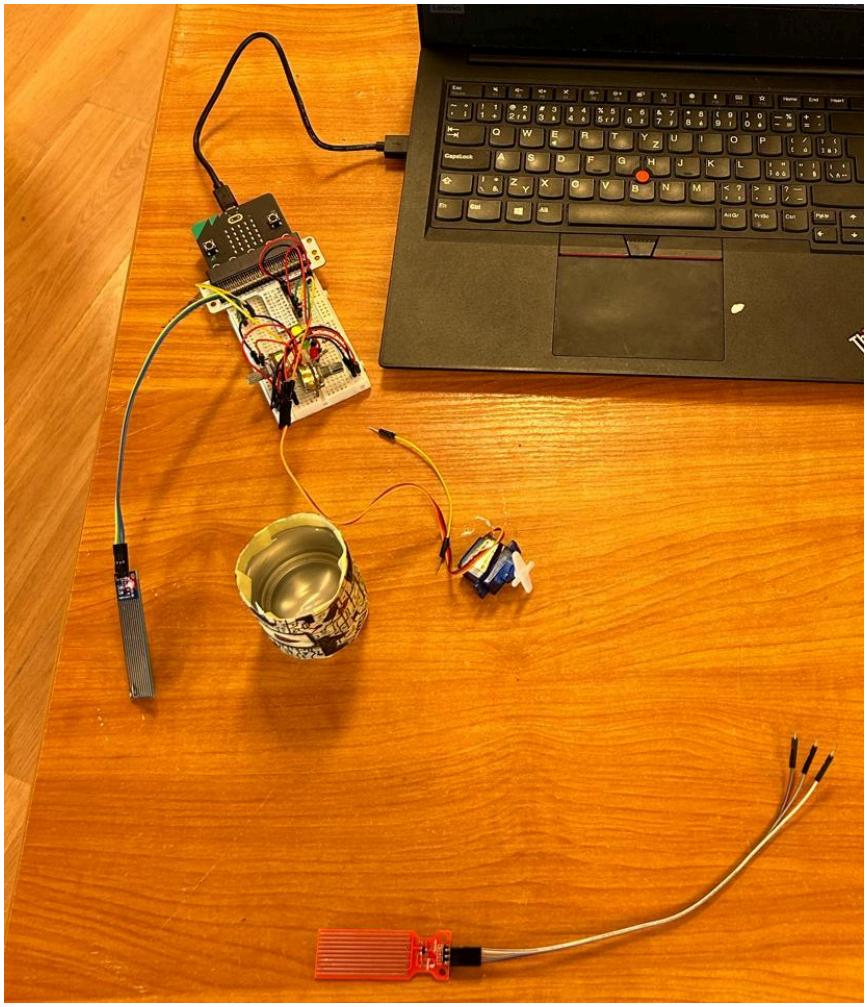
Converted Python code

```
level2 = 0
level1 = 0
state = 0

def on_forever():
    global level1, level2, state
    level1 = pins.analog_read_pin(AnalogPin.P2)
    level2 = pins.analog_read_pin(AnalogPin.P1)
    if state == 0:
        pins.digital_write_pin(DigitalPin.P13, 1)
        pins.digital_write_pin(DigitalPin.P14, 0)
        pins.digital_write_pin(DigitalPin.P15, 0)
        pins.servo_write_pin(AnalogPin.P12, 0)
        if level2 > 511:
            state = 2
        elif level1 > 511:
            state = 1
    elif state == 1:
        pins.digital_write_pin(DigitalPin.P13, 0)
        pins.digital_write_pin(DigitalPin.P14, 1)
        pins.digital_write_pin(DigitalPin.P15, 0)
        if level2 > 511:
            state = 2
        elif level1 > 511:
            pins.servo_write_pin(AnalogPin.P12,
Math.map(level1, 512, 1023, 0, 90))
        else:
            state = 0
    elif state == 2:
        music.play(music.tone_playable(262,
music.beat(BeatFraction.DOUBLE)),
            music.PlaybackMode.UNTIL_DONE)
        pins.digital_write_pin(DigitalPin.P13, 0)
        pins.digital_write_pin(DigitalPin.P14, 0)
        pins.digital_write_pin(DigitalPin.P15, 1)
        pins.servo_write_pin(AnalogPin.P12, 0)
```

```
        if level2 <= 511:
            state = 1
basic.forever(on_forever)
```

Connected Circuit



- Dunking the sensor is used to emulate changing water levels
- Wiper resistors also used to emulate sensor output
- LEDs showing three states: idle, flowing water and alert
- Servo motor controls opening a valve depending on the level in the two tanks

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