

# Research and inspirations

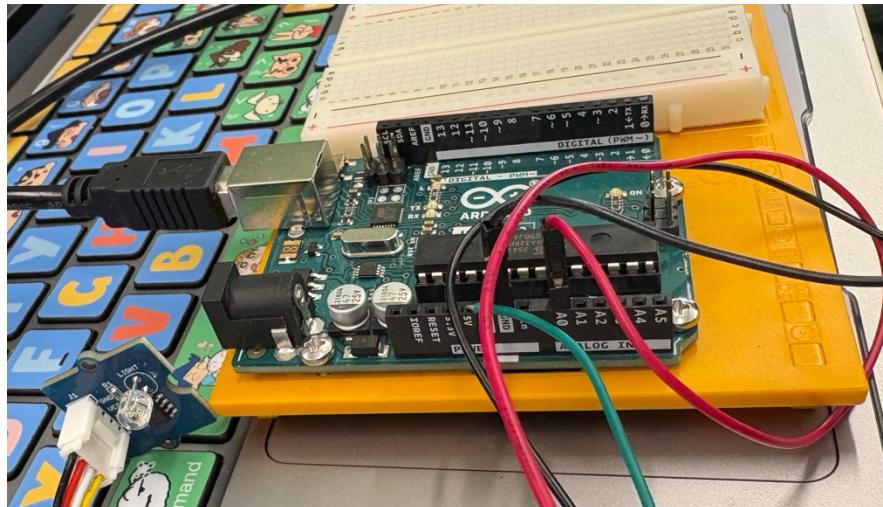
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## Hardware

Our project integrates a variety of hardware components, combining mechanical parts, electronic sensors, and structural materials to bring the interactive flower system to life. The design prioritizes modularity, responsiveness, and ease of physical integration.

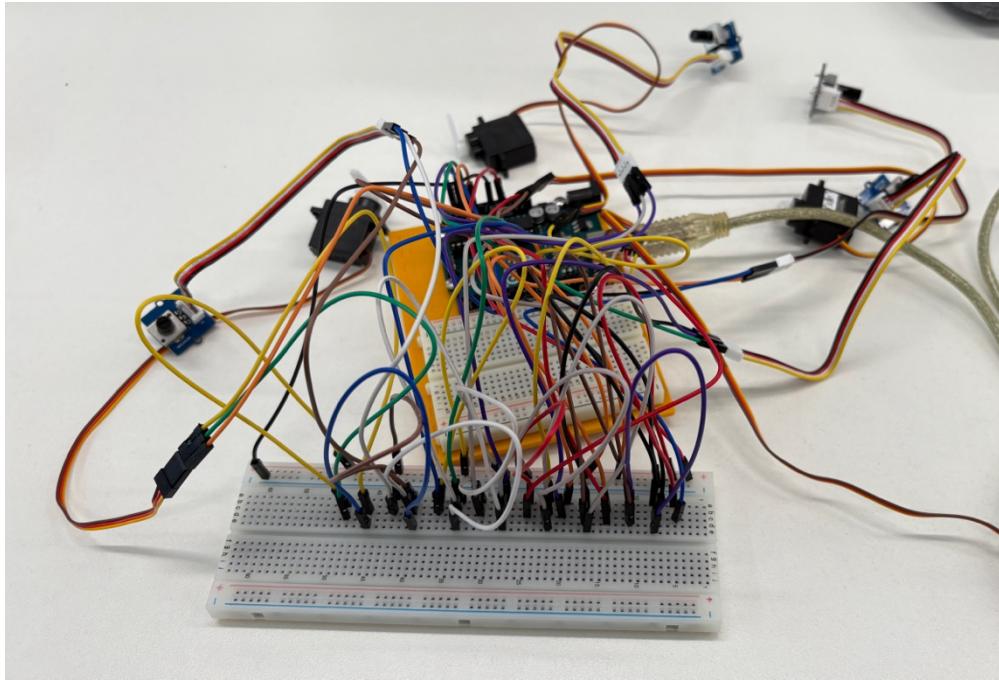
### Core Components

- Arduino Uno



Acts as the central microcontroller, receiving input signals from potentiometers or light sensors and sending control signals to servo motors and LEDs.

- Servo Motors (x5)



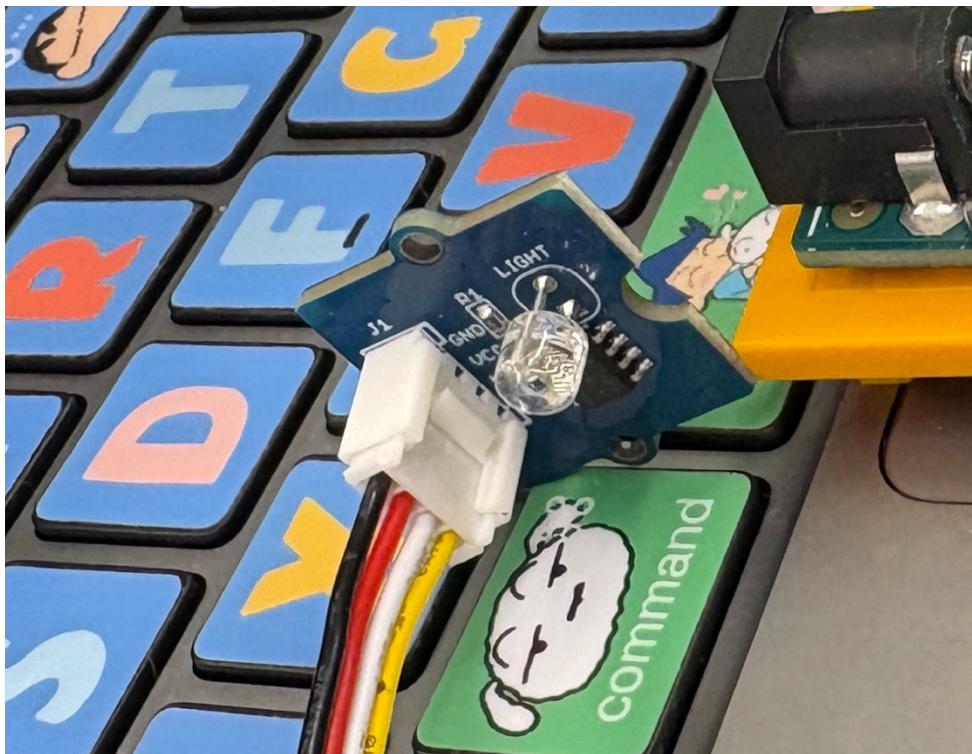
Used to rotate disks that drive the petal movement in each flower. Each motor is individually controlled via PWM pins.

- Potentiometers (x4)



Provide manual analog input to control the opening and closing of each flower, allowing for user-driven interaction.

- Grove Light Sensor<sup>1</sup>



Detects ambient light and controls one flower's servo motor accordingly, enabling environmental responsiveness.

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<sup>1</sup> Grove - light sensor (no date) Seeedstudio.com. Available at: [https://wiki.seeedstudio.com/Grove-Light\\_Sensor/](https://wiki.seeedstudio.com/Grove-Light_Sensor/) (Accessed: May 14, 2025)