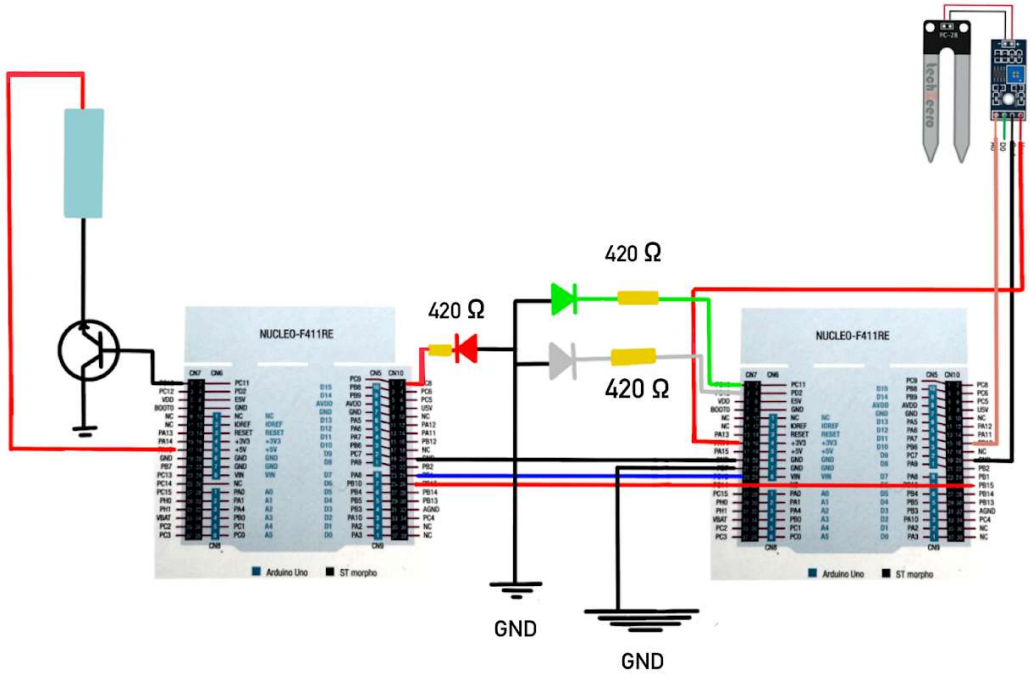
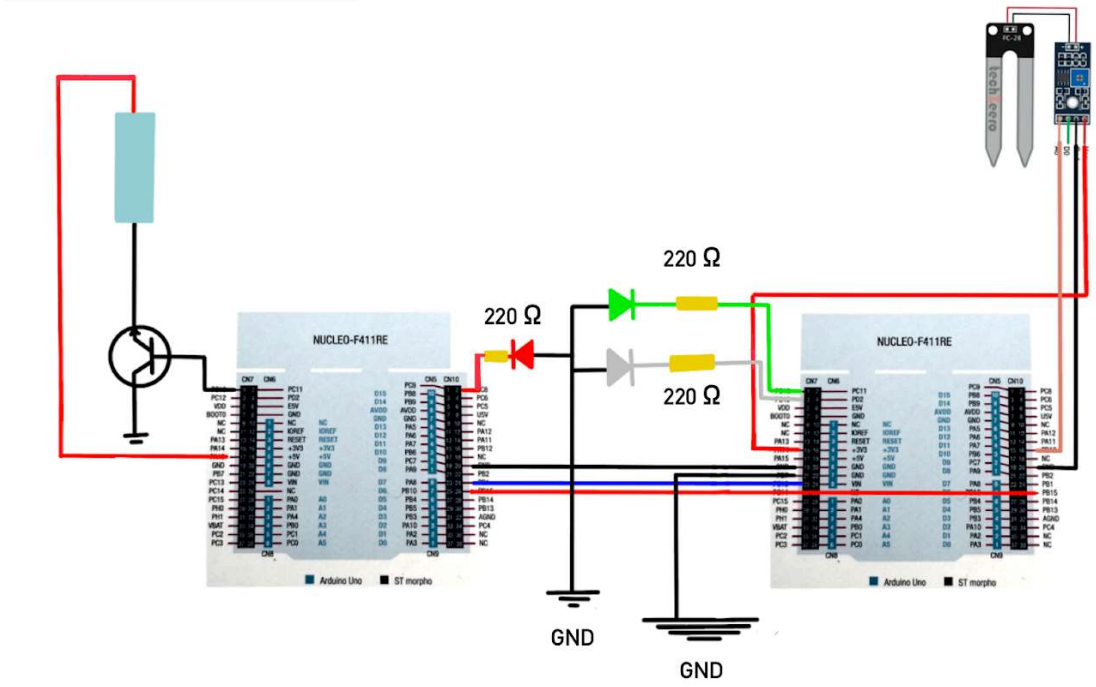
Electrical Schematics

Revision #1: November 14 2024
Description: The initial design used **420-ohm resistors** to limit current through the LEDs and other components. This value was chosen to provide a conservative current, prioritizing the protection of LEDs and maintaining energy efficiency. However, during testing, it was observed that the brightness of the LEDs was not optimal, potentially impacting visibility in low-light conditions.



Revision #2: November 15 2024
Description: The resistor value was adjusted to **240 ohms** in the second iteration. This change allowed a higher current to flow through the LEDs, resulting in brighter illumination. While this resolved the brightness issue, it increased the power dissipation slightly. This revision ensured a better trade-off between efficiency and functionality but left room for further improvement in circuit protection.



Revision #3: November 18 2024
Description: This version incorporates the **240-ohm resistors** from the second revision and adds a **D1 diode** for improved circuit protection**.** The diode acts as a safeguard against reverse current or voltage spikes, particularly from the motor or sensor components connected to the circuit**.** This revision enhances the reliability and durability of the system, addressing potential issues that could compromise the integrity of the connected microcontroller and components**.**