**BỘ CÔNG THƯƠNG**

**TRƯỜNG ĐẠI HỌC CÔNG NGHIỆP TP. HCM**



**CHUYÊN ĐỀ IOT**

**BÀI BÁO CÁO 7**

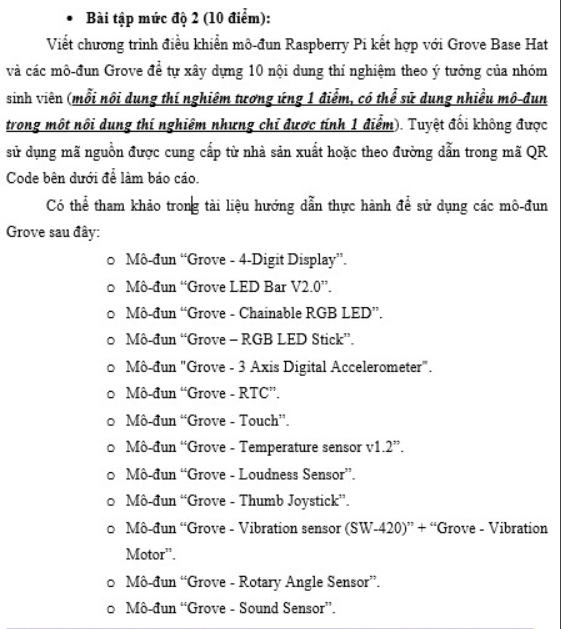
**NHÓM 8**

Giảng viên: **Nguyễn Thế Kỳ Sương**

Sinh viên:

* Bùi Mĩ Trung Hiếu 20097651
* Trần Thanh Tra 20009371

**Thành phố Hồ Chí Minh – 2023**

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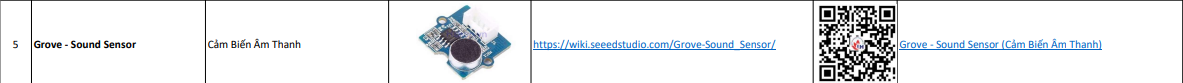
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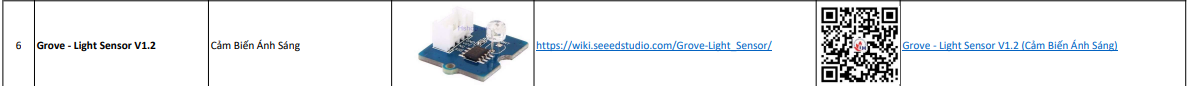
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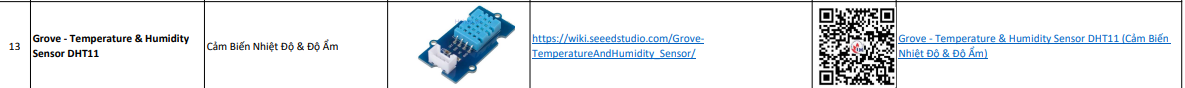
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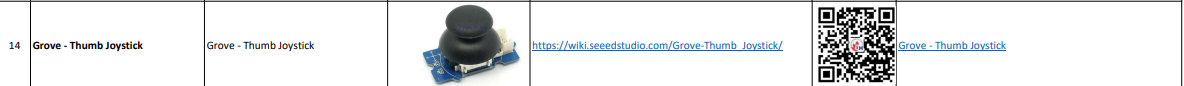
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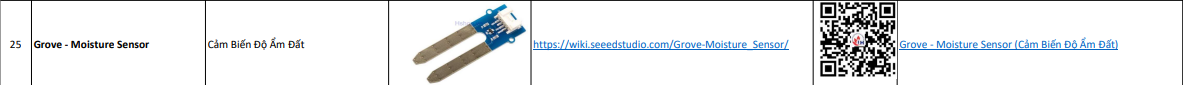
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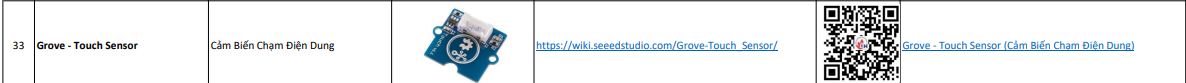
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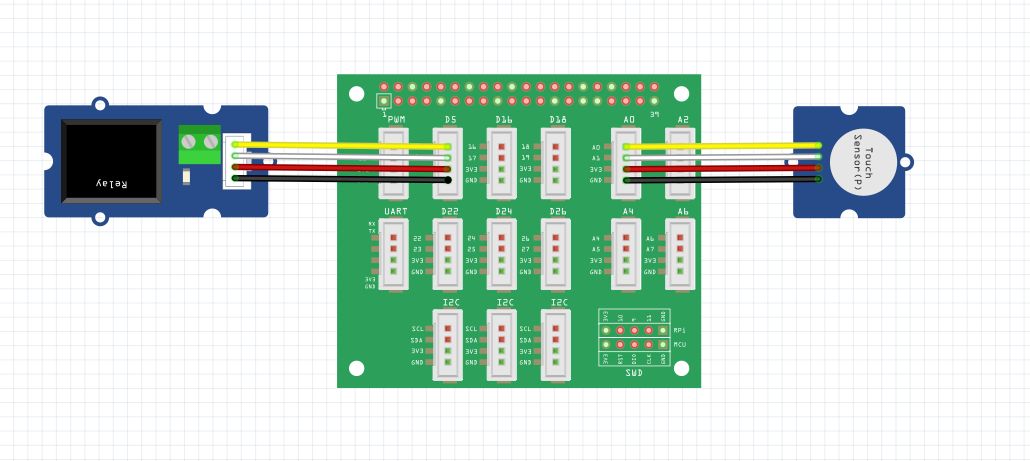
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**Các dự án đều dùng Raspberry Pi 4 Pi kết hợp với Grove Base hat để liên kết phần cứng:**

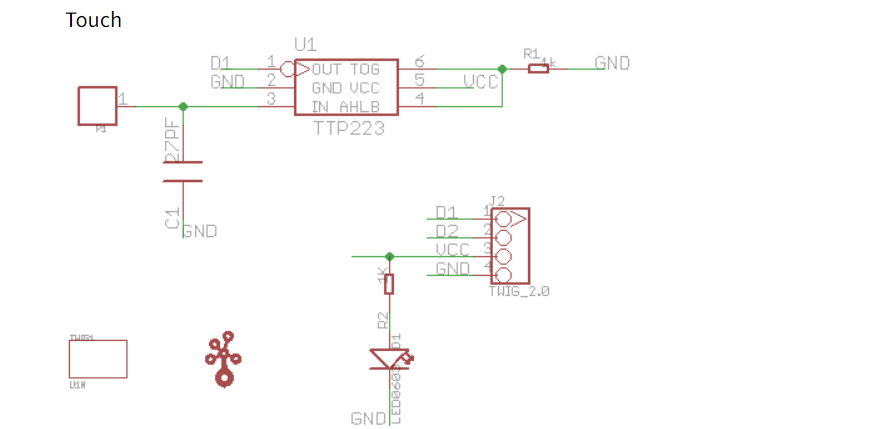
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Lưu ý: Các Schematic đều thực hiện vẽ từ Grove Base hat với Module

**Dự án 1: Touch sensor điều khiển Relay:**

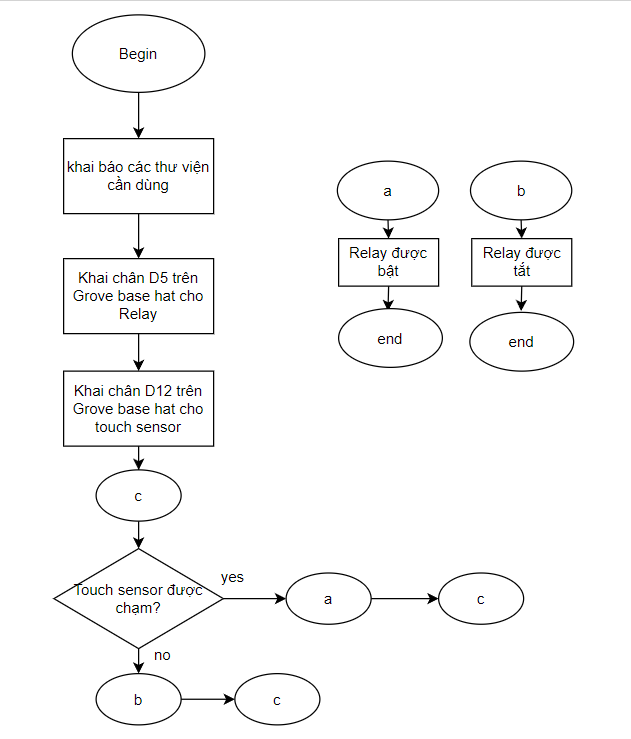
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Grove Touch Sensor

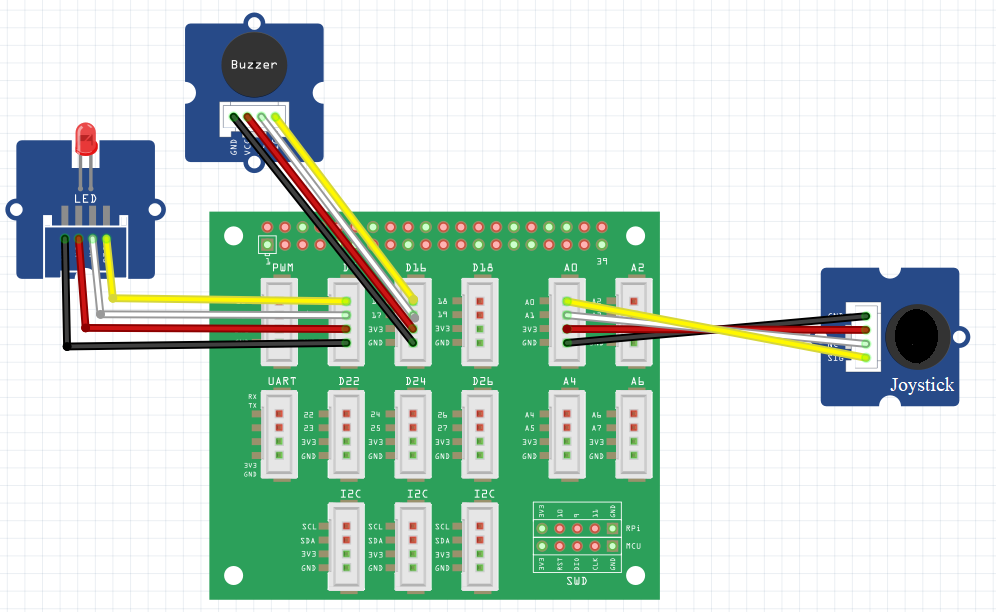
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Grove Relay

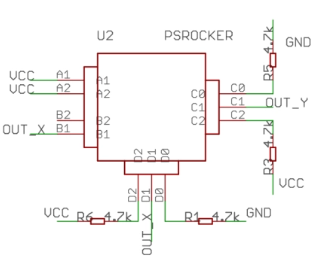
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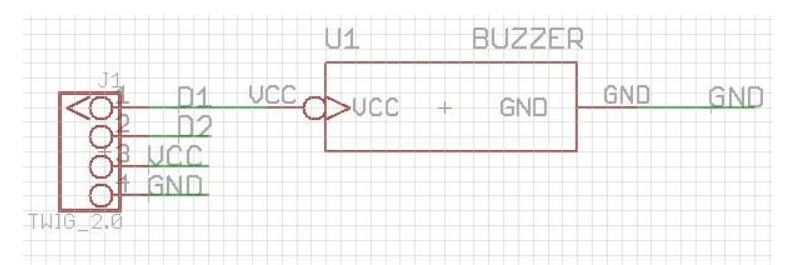
**Dự án 2: Thump Joystick điều khiển Buzzer và Led:**

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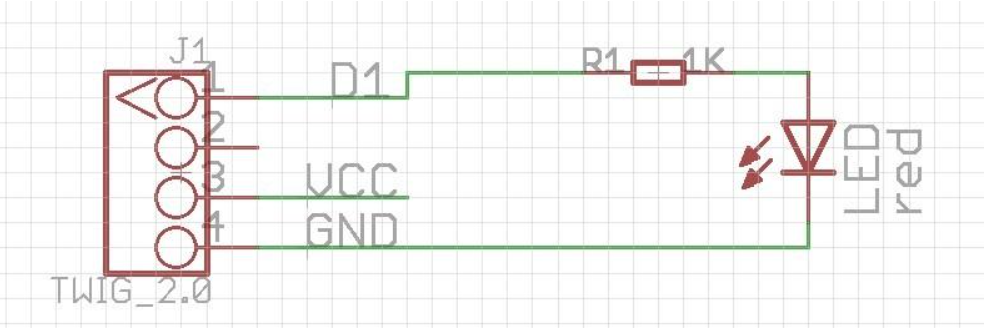
Grove Thump Joystick

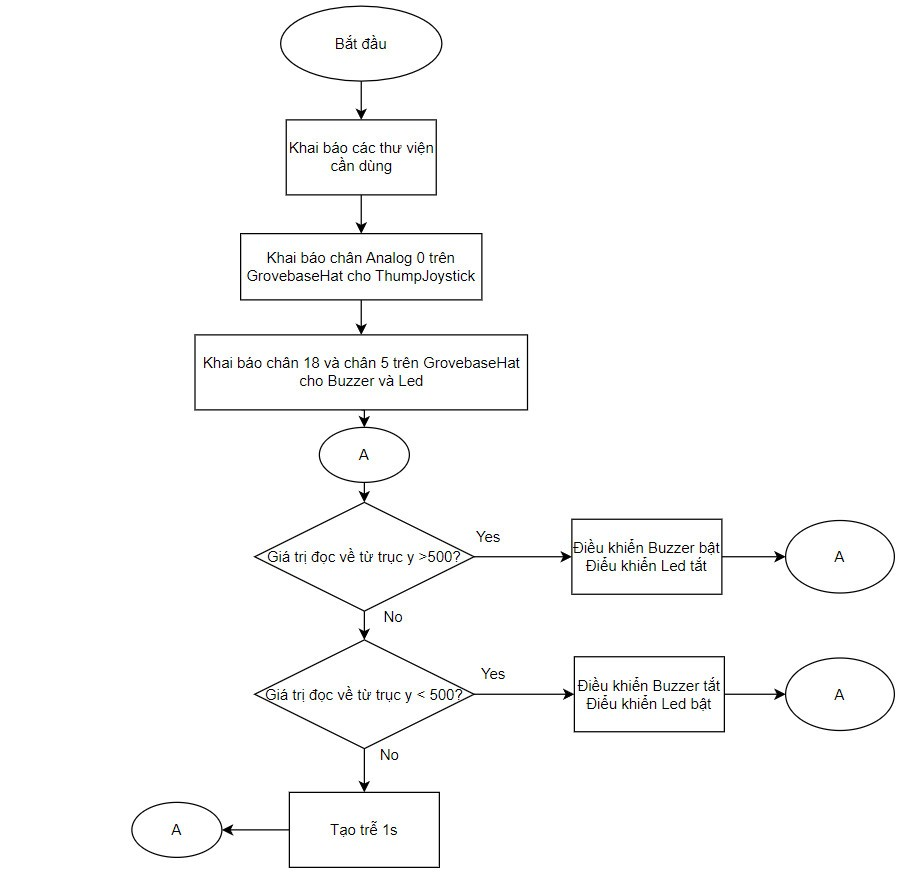
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Grove Buzzer

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Grove Led

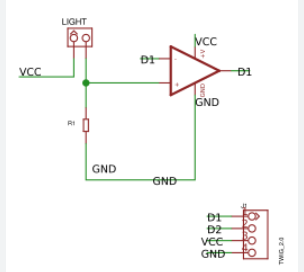
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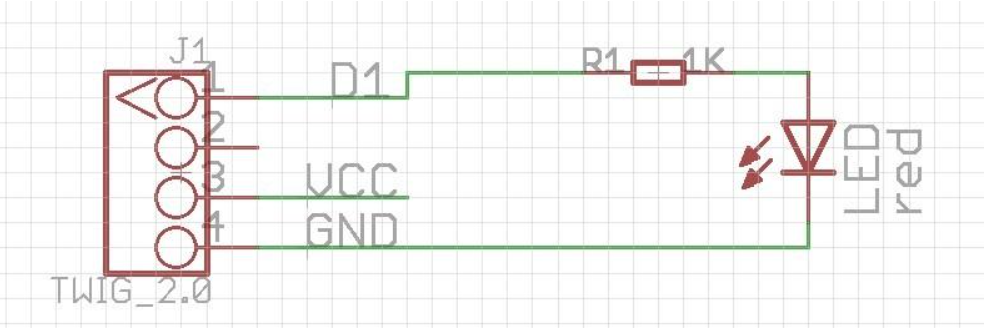
**Dự án 3: Light sensor điều khiển Led:**

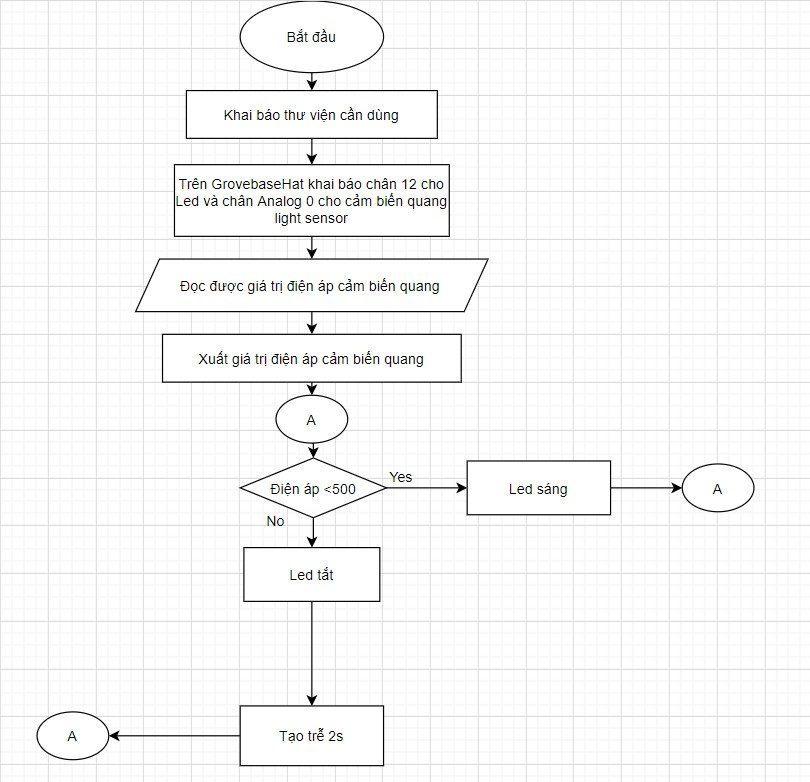
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Grove Light Sensor

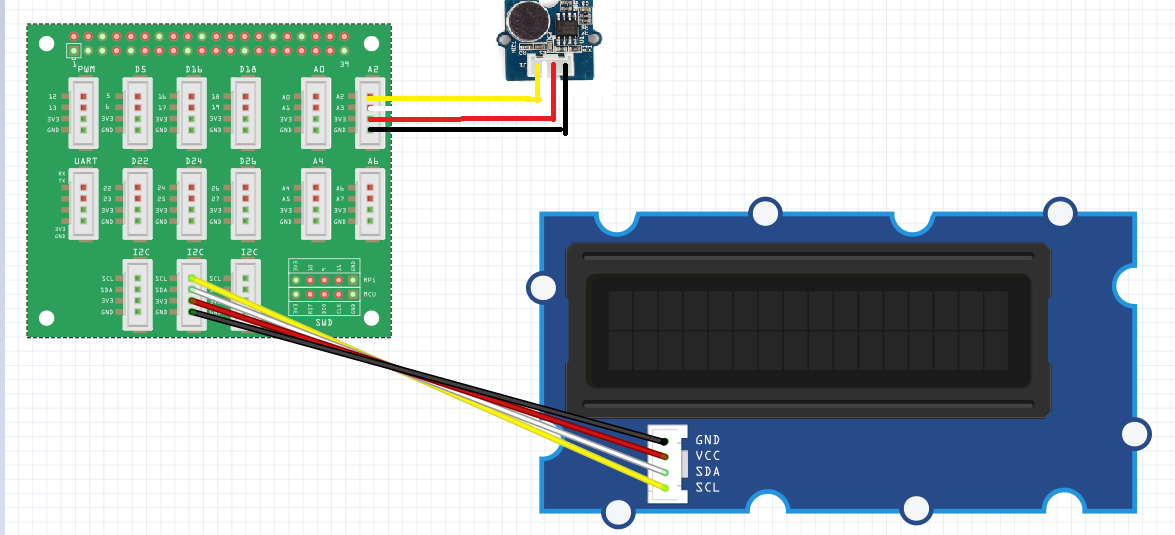
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Grove Led

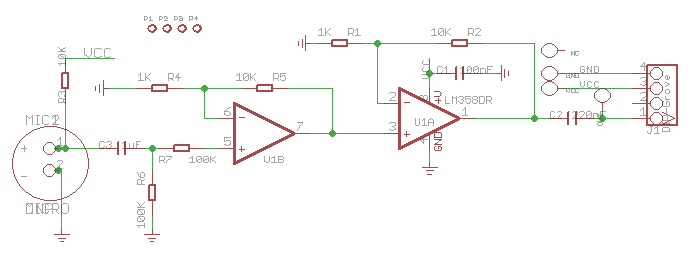
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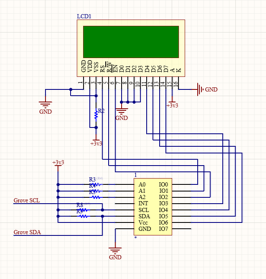
**Dự án 4: Sound Sensor hiển thị LCD:**

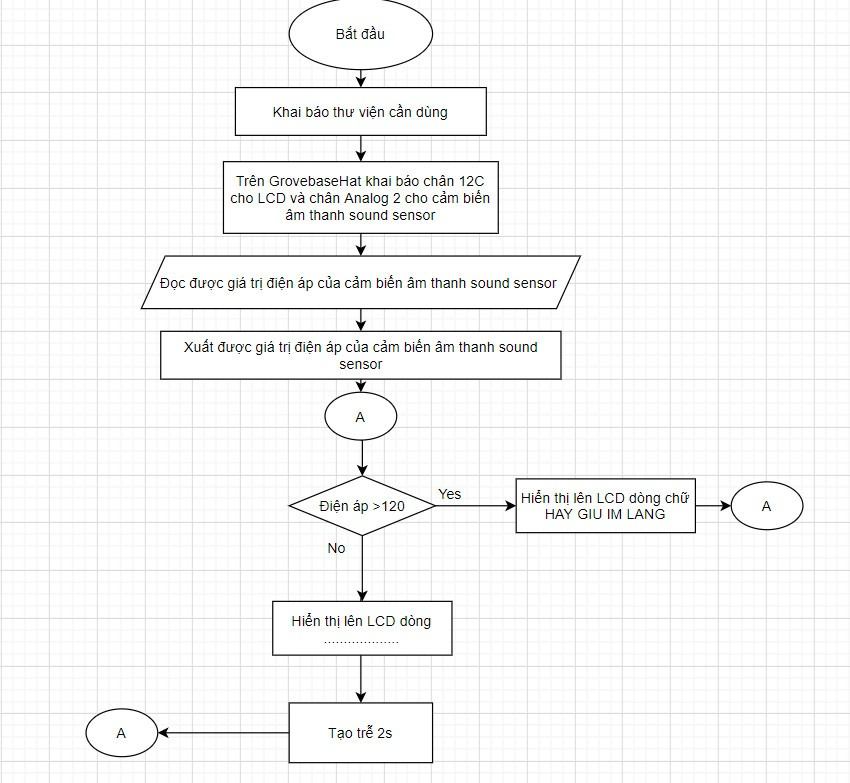
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Grove Sound Sensor

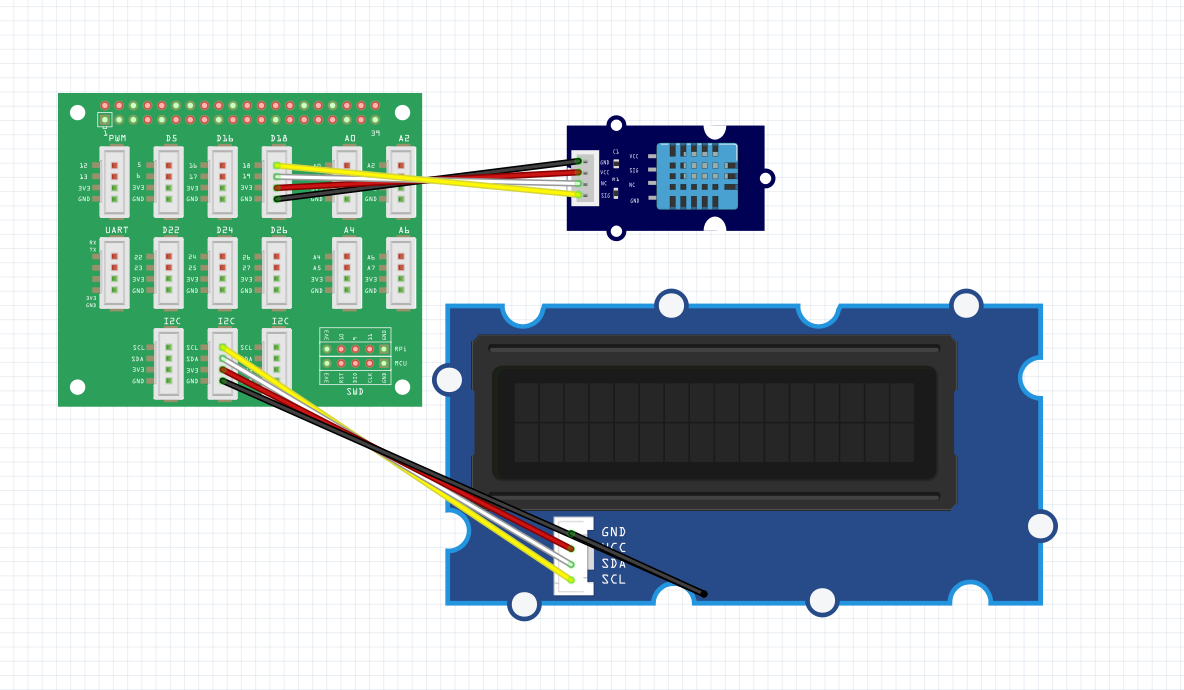


Grove LCD

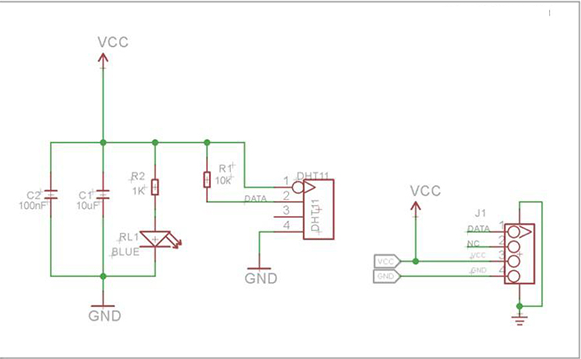
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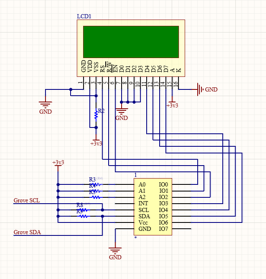
**Dự án 5: đọc nhiệt độ, độ ẩm từ DHT11 hiện thị LCD:**

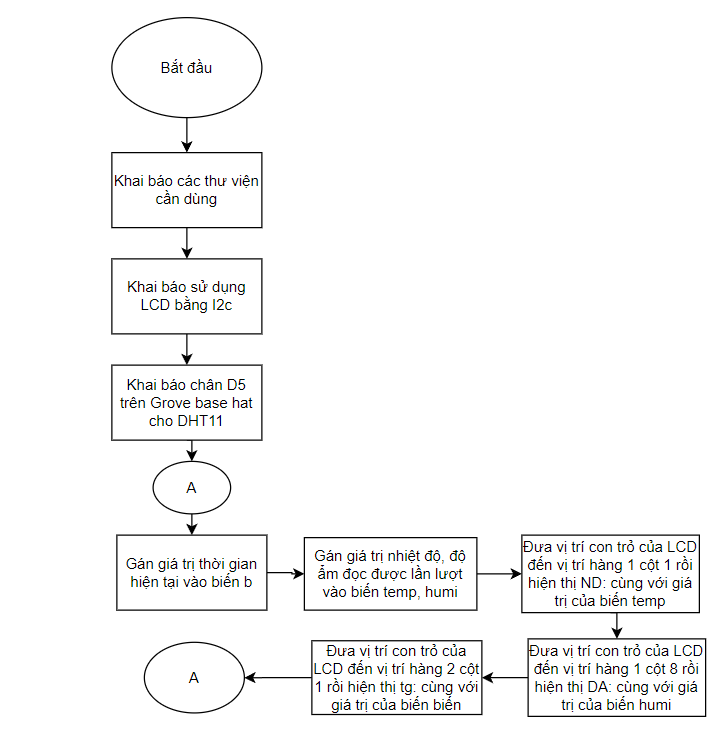
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Grove DHT11 sensor

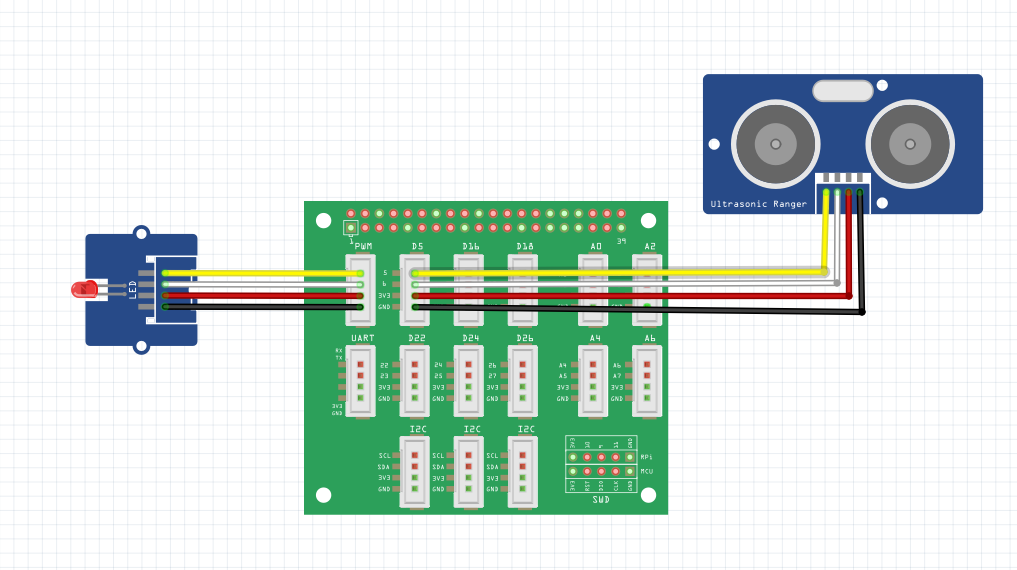
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Grove LCD

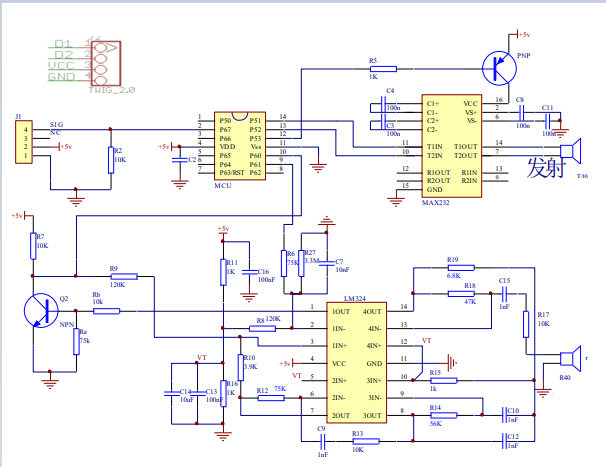
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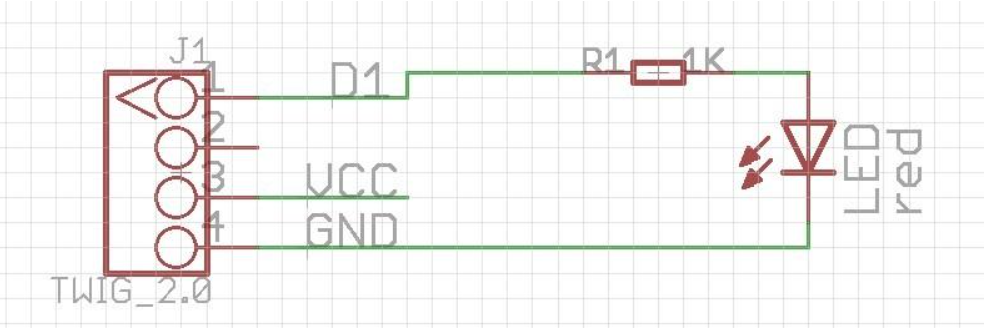
**Dự án 6: đo khoảng cách bằng cảm biến Ultrasonic Ranger để điều khiển Led:**

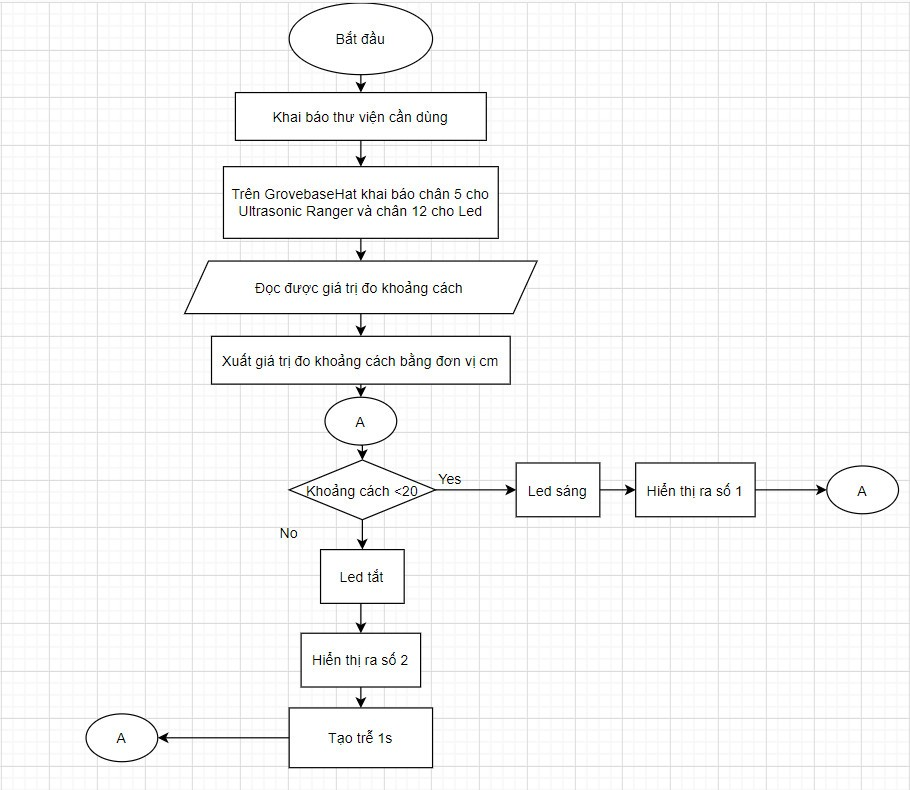
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Grove Ultrasonic Ranger

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Grove Led

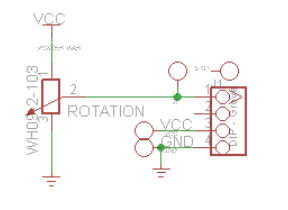
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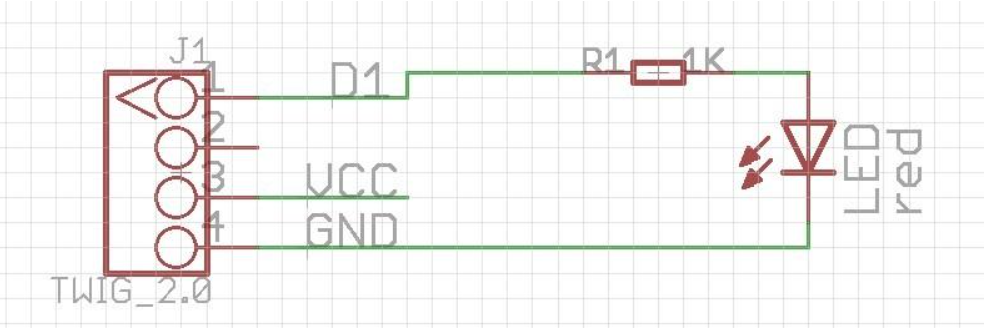
**Dự án 7: điều khiển độ sáng của Led bằng Rotary Angle Sensor:**

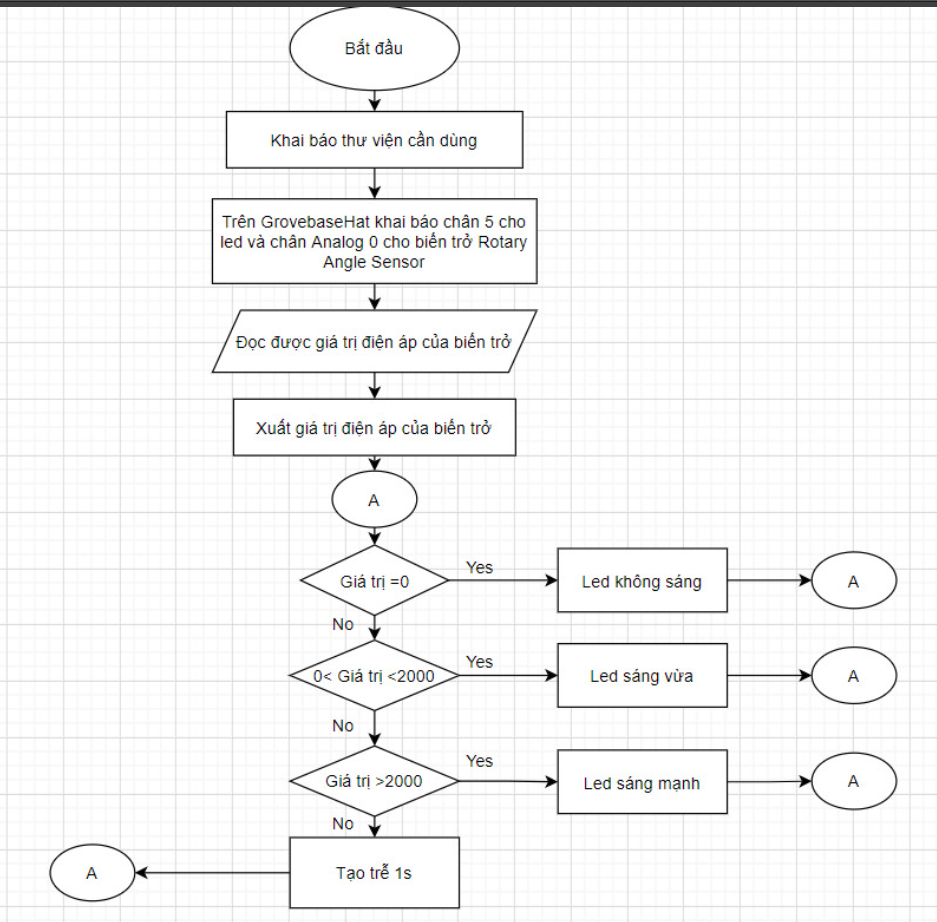
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Grove Rotary Angle Sensor

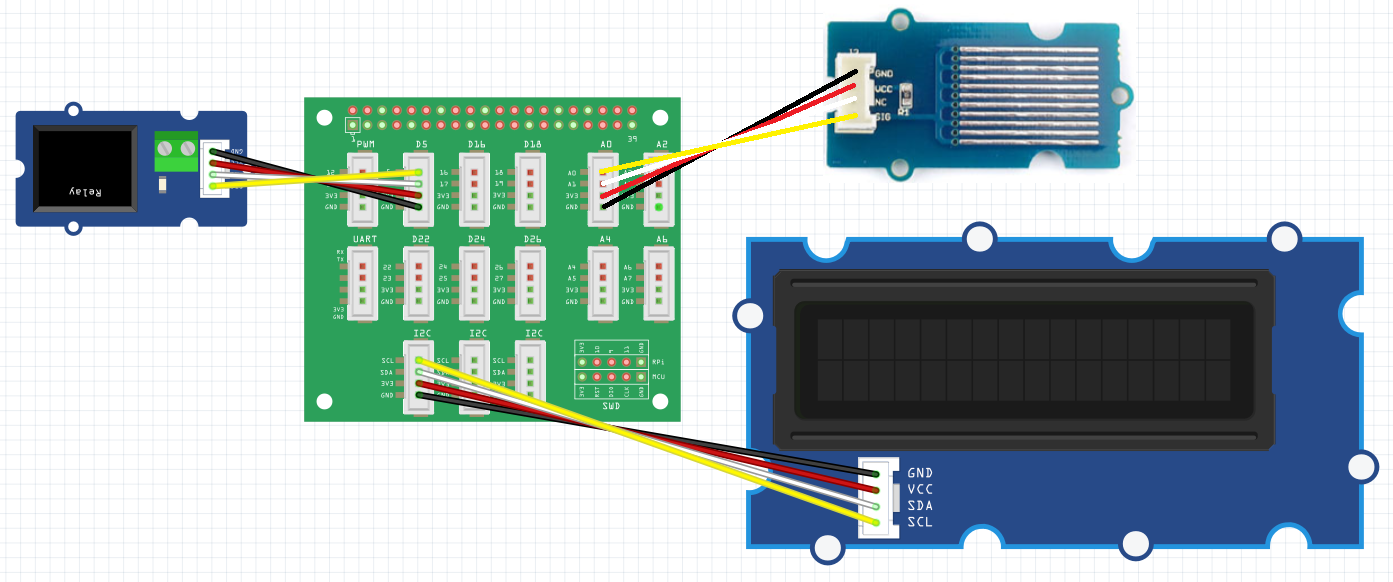
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Grove Led

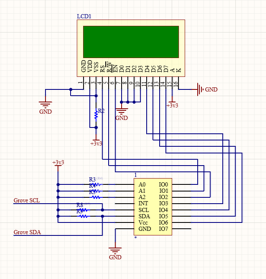
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**Dự án 8: đọc giá trị của Water Sensor để điều khiển Relay và hiển thị LCD:**

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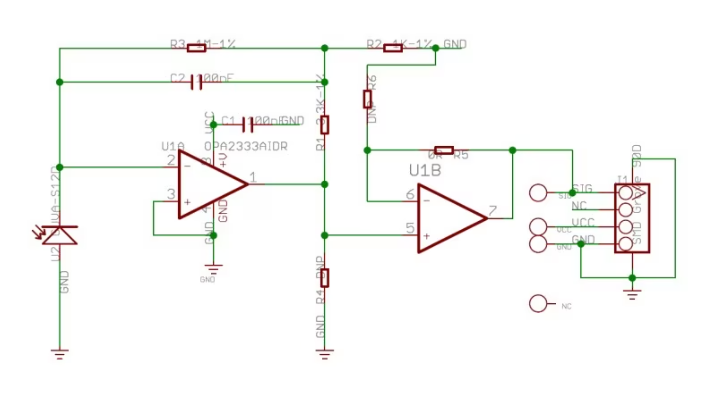
Grove LCD

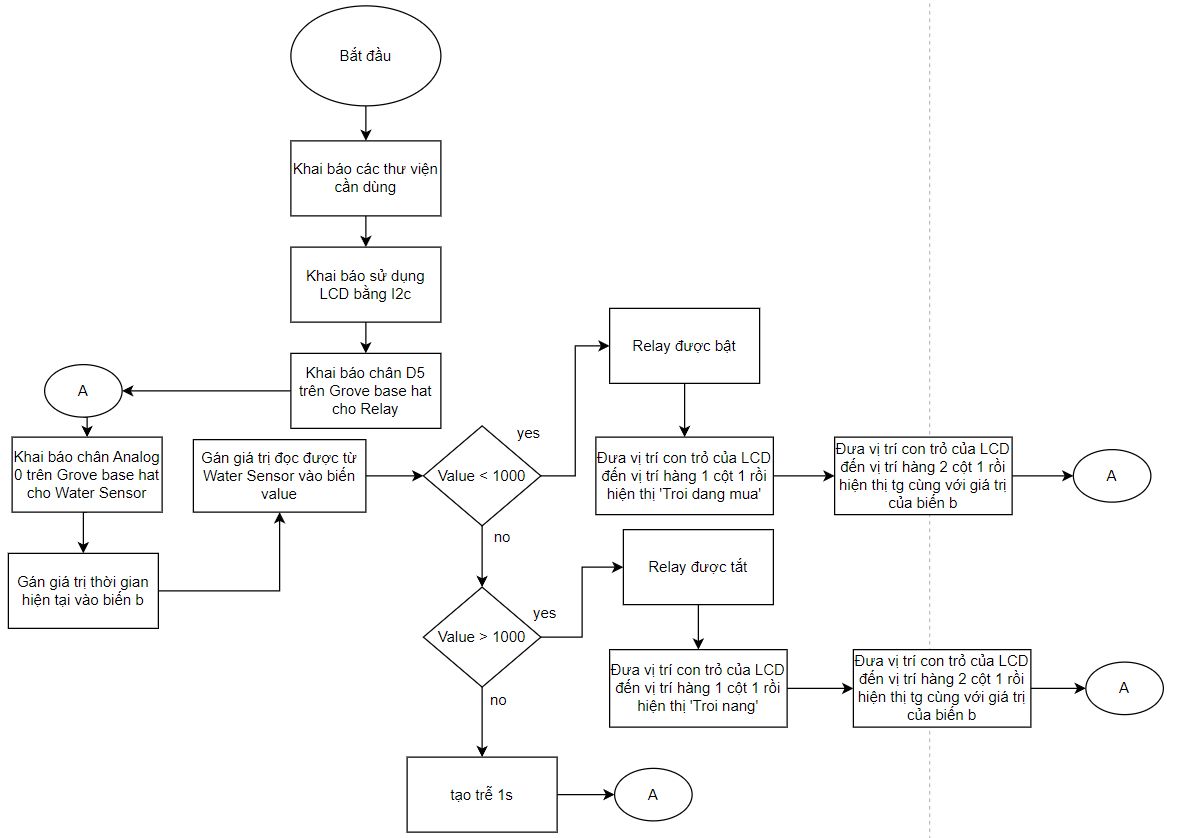
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Grove Relay

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Grove Water Sensor

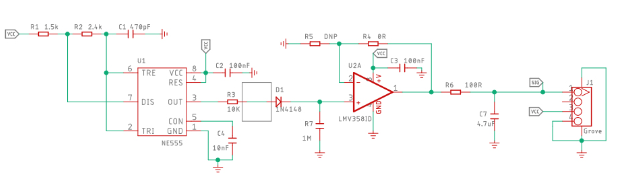
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**Dự án 9: đọc giá trị của Moisture Sensor để điều khiển Relay:**

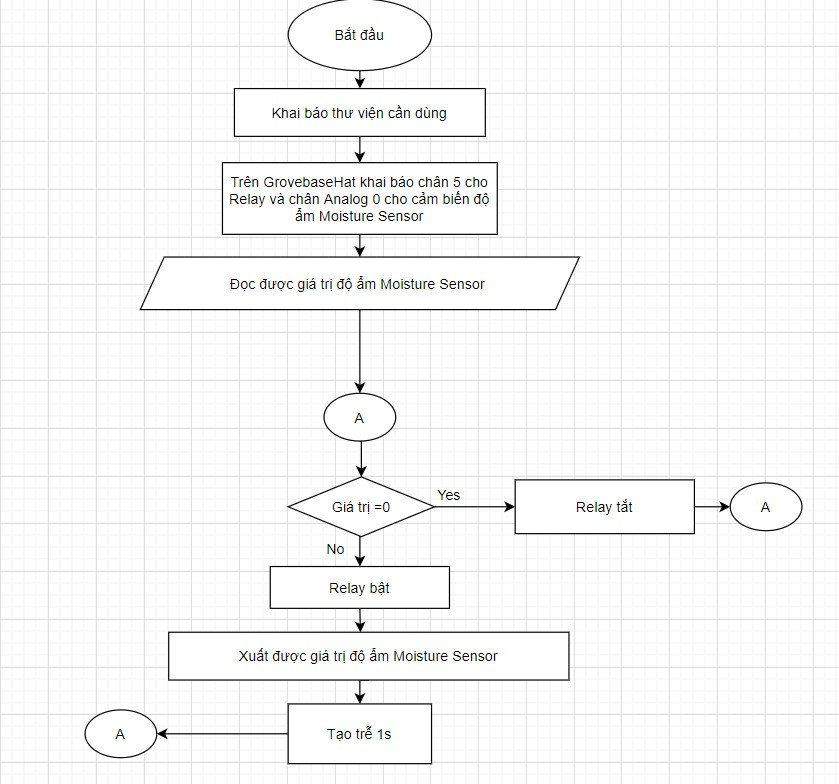
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Grove Moisture Sensor

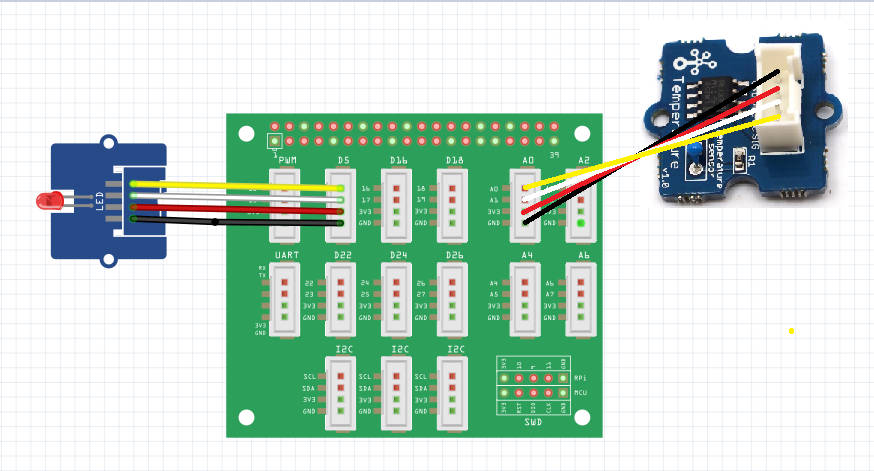
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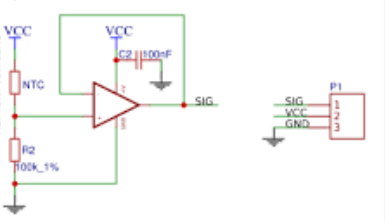
Grove Relay

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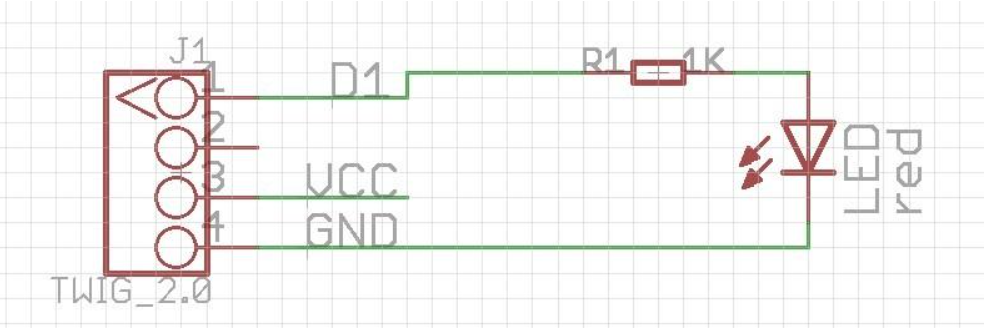
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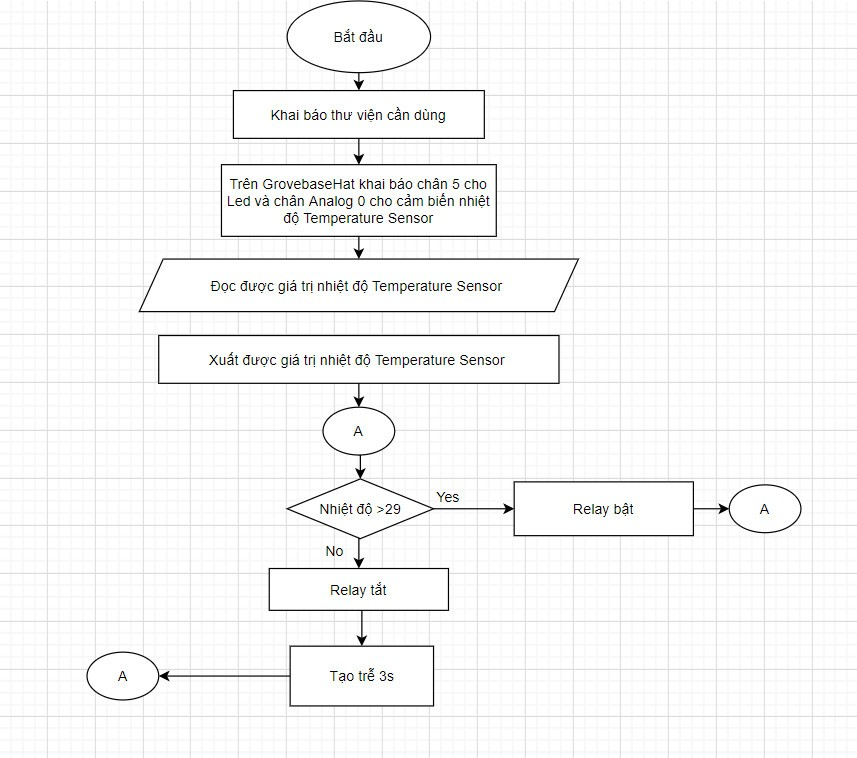
**Dự án 10: đọc giá trị của Temperrature Sensor để điều khiển Led:**

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grove temperature sensor 

Grove Led

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**Video minh chứng kết quả:**

https://youtu.be/A-4PjpU4c6U?si=Vj9d2zld5FHhbvQp