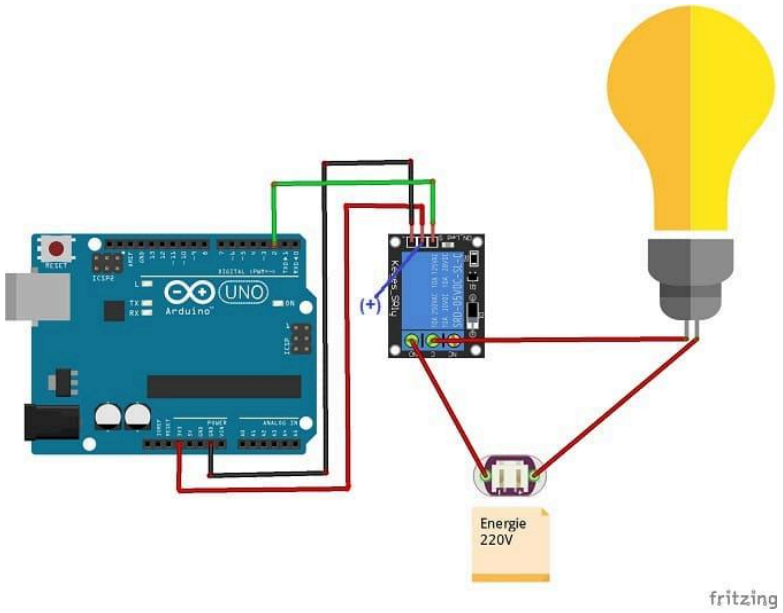
PRACTICE 8: MODERN IoT

1. Controlling AC Light

Let's write a program to control a lamp by Arduino UNO using C/C++



2. Controlling AC Light

Let's write a program to control a lamp by ESp32 using:

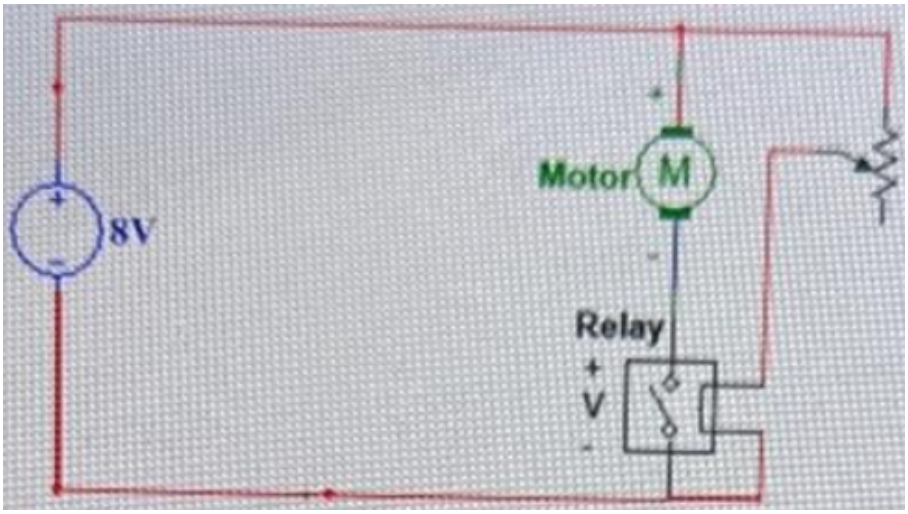
- C/C++
- Python

3. Controlling AC Light

Let's write a program to control a lamp by Raspberry Pi using:

- C/C++
- Python

4. Use the relay to control a DC motor



To use a **relay** to allow a low-current circuit (controlled by a **potentiometer**) to control a high-current circuit (**DC motor**).

Instructionsa) Build the circuit shown in **Figure 3** using the specified **8V** power source.

- Adjust the **potentiometer** until enough current flows through the **relay coil** to activate the switch.
- You should **hear a clicking noise** from the relay and the **motor should start**.

b) Measure voltage across the relay switch

- When the motor is running (switch closed).
- When the motor is not running (switch open).

c) Answer the question:

Why is the voltage drop across the switch so low when it is closed, and nearly equal to the positive supply when it is open?

5. Use the relay to control a DC motor, Lamp

Document Your Experimentations:

Your lab report **must include:**

- ❖ High-level description of your experiment.
- ❖ Step-by-step description so a classmate could repeat it.
- ❖ Data from your experiment.
- ❖ Answers to the lab questions.

- ❖ Interpretation of your results.