
Multiple LED Blinking Project (Using 3 LEDs, 3 Resistors, and Arduino Uno)

Objective:
Control 3 individual LEDs (e.g., blinking or sequential lighting) using an Arduino Uno.

Components Required:

- Arduino Uno
- 3 LEDs (any color)
- 3 Resistors (220Ω–330Ω, one for each LED)
- Jumper wires
- Breadboard

Circuit Overview:
Each LED is connected to a separate digital I/O pin on the Arduino Uno (e.g., D2, D3, D4). A resistor is placed in series with each LED to limit current and protect the LED. The cathode (short leg) of each LED is connected to the ground (GND) of the Arduino.

Connection Summary:

- D2 → Resistor → LED1 → GND
- D3 → Resistor → LED2 → GND
- D4 → Resistor → LED3 → GND

Working Principle:
The Arduino controls the LEDs by setting the digital pins HIGH or LOW. When a pin is HIGH, current flows through the resistor and LED, lighting it up. When the pin is LOW, the LED is turned off. This allows us to create patterns like blinking, chasing, or fading (with PWM pins).
