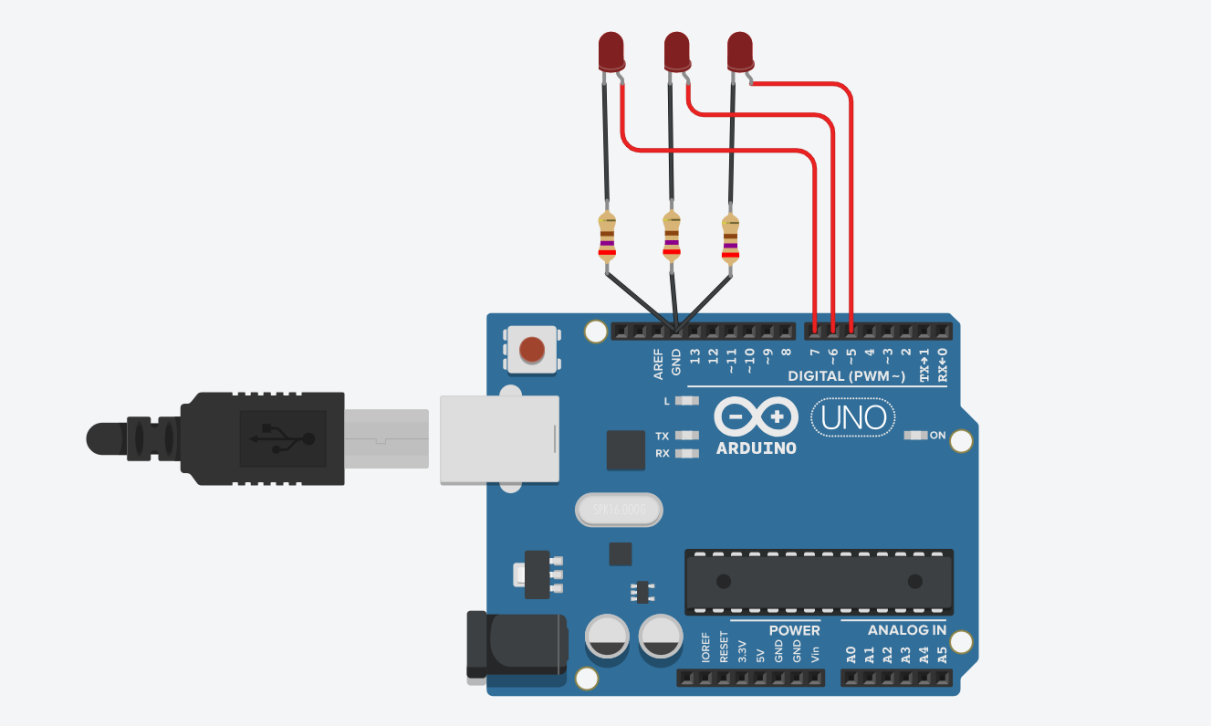
Homework 2



In this code, we define new variables onTime1, offTime1, onTime2, offTime2, onTime3, and offTime3 to specify the varying on and off times for each LED. We also define new variables led1State, led2State, and led3State to keep track of whether each LED is currently on or off.

In the loop() function, we use a series of if statements to control the blinking of each LED based on its current state and the elapsed time since the

```
// Define the pins for the LEDs
int led1 = 5;
int led2 = 6;
int led3 = 7;

// Define the intervals for each LED to blink
const long onTime1 = 1000; // LED 1 on time
const long offTime1 = 750; // LED 1 off time
const long onTime2 = 500; // LED 2 on time
const long offTime2 = 250; // LED 2 off time
```

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const long onTime3 = 1500; // LED 3 on time
const long offTime3 = 1250; // LED 3 off time

// Define variables to track the last time each LED blinked
unsigned long previousMillis1 = 0;
unsigned long previousMillis2 = 0;
unsigned long previousMillis3 = 0;

// Define variables to track whether each LED is currently on or off
bool led1State = false;
bool led2State = false;
bool led3State = false;

void setup() {
  // Set the LED pins as outputs
  pinMode(led1, OUTPUT);
  pinMode(led2, OUTPUT);
  pinMode(led3, OUTPUT);
}

void loop() {
  // Get the current time in milliseconds
  unsigned long currentMillis = millis();

  // Blink LED1 with varying on and off times
  if (led1State == false && currentMillis - previousMillis1 >= offTime1) {
    // Turn LED1 on
    digitalWrite(led1, HIGH);
    previousMillis1 = currentMillis;
    led1State = true;
  }
  else if (led1State == true && currentMillis - previousMillis1 >= onTime1) {
    // Turn LED1 off
    digitalWrite(led1, LOW);
    previousMillis1 = currentMillis;
```

```
    led1State = false;
  }

  // Blink LED2 with varying on and off times
  if (led2State == false && currentMillis - previousMillis2 >= offTime2) {
    // Turn LED2 on
    digitalWrite(led2, HIGH);
    previousMillis2 = currentMillis;
    led2State = true;
  }
  else if (led2State == true && currentMillis - previousMillis2 >= onTime2) {
    // Turn LED2 off
    digitalWrite(led2, LOW);
    previousMillis2 = currentMillis;
    led2State = false;
  }

  // Blink LED3 with varying on and off times
  if (led3State == false && currentMillis - previousMillis3 >= offTime3) {
    // Turn LED3 on
    digitalWrite(led3, HIGH);
    previousMillis3 = currentMillis;
    led3State = true;
  }
  else if (led3State == true && currentMillis - previousMillis3 >= onTime3) {
    // Turn LED3 off
    digitalWrite(led3, LOW);
    previousMillis3 = currentMillis;
    led3State = false;
  }
}
```