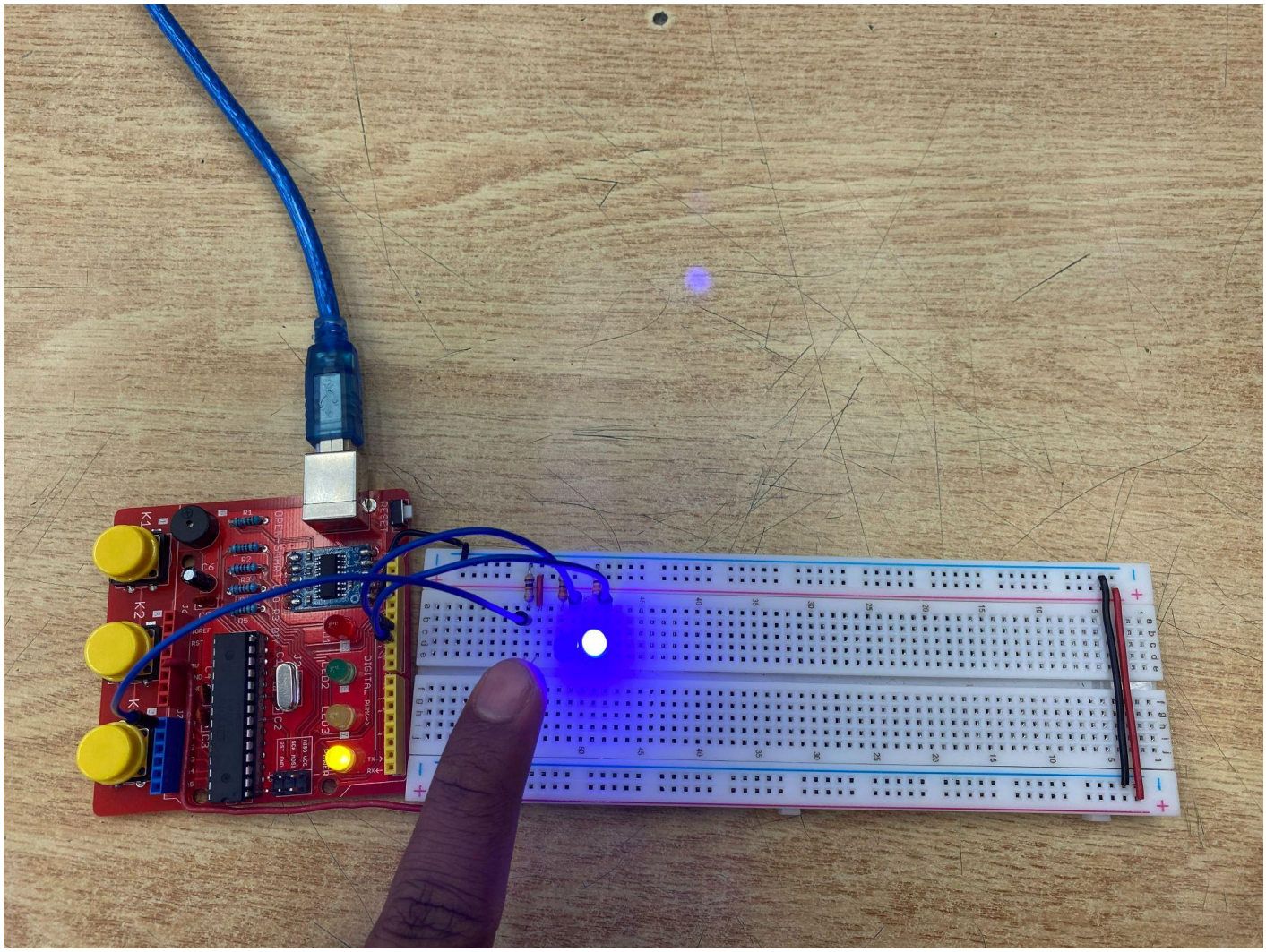
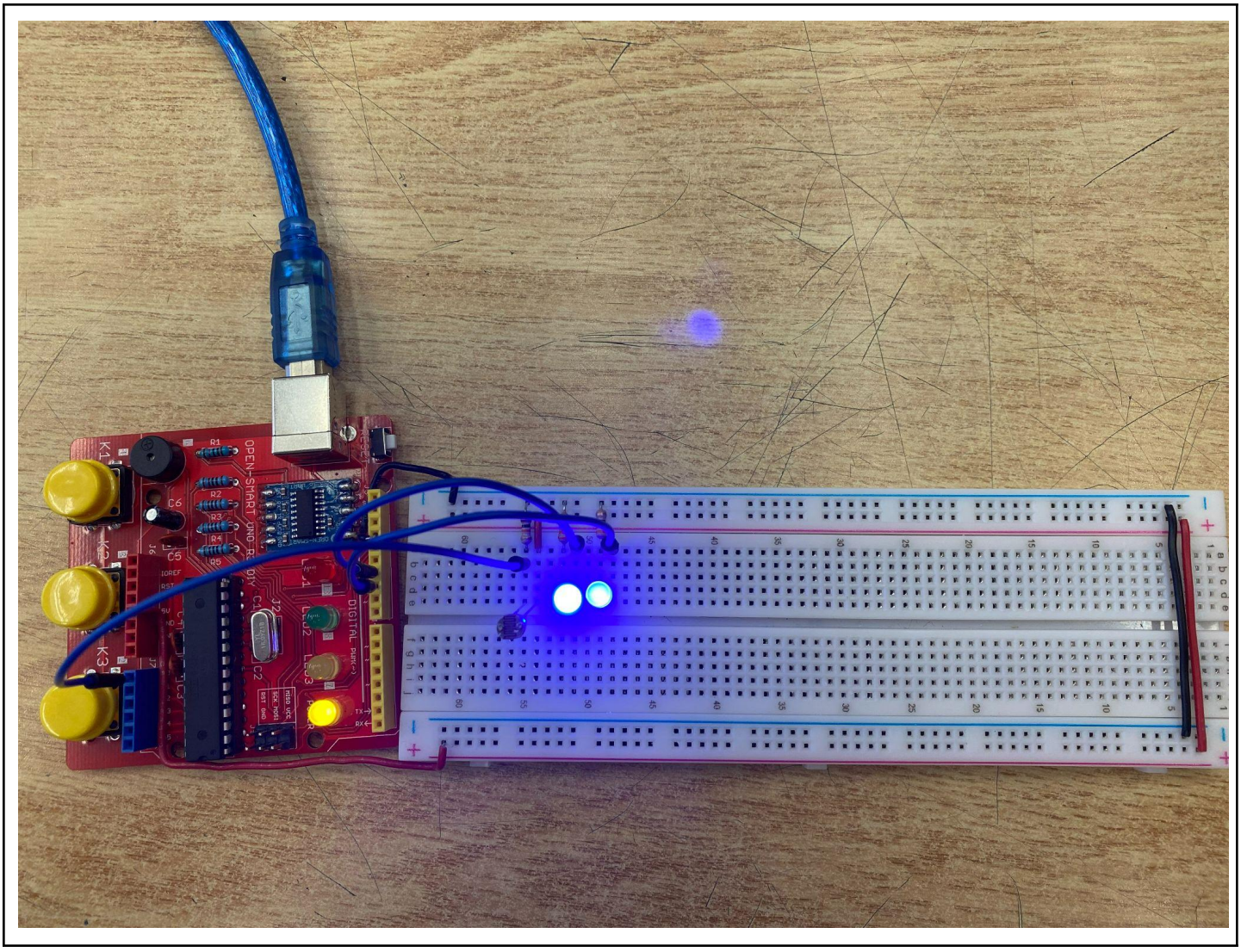
Interfacing Lab 9 ***/10*** ***names:*** ***Siddharth & Mostafa***

LVL	Criteria
R	
1	
2	
3	
4	"build and wire"[3] ☐ circuit is correct, routed cleanly and easy to follow[1½] ☐ all full voltage wire red and all gnd wires black ☐ signal wire colours chosen to allow easier tracing of circuit[½] tinkerCAD[2] ☐ all components mounted on breadboard and do not block view of other components[½] ☐ wires horizontal or vertical only with 90 degree bends[½] ☐ wires do not cross in front or behind other components or component terminals and do not run on top of one another[½] ☐ wires and component do not share the same hole on the breadboard and wires do not cross when possible[½] in person[2] ☐ all full voltage and gnd wires are solid core, flat to breadboard, horizontal or vertical with 90 degree bends ☐ solid core wires stripped 6-8mm[½] ☐ no bare wire visible [½] “programming”[3] ☐ final “test your understanding” complete and working correctly[1½] ☐ code commenting is accurate and complete (including title)[½] ☐ program structure and spacing is logical and demonstrates organization[½] ☐ code text submission is `courier new font` and is coloured to allow easier identification of comments[½] “inspection questions”[1] ☐ demonstrates full understanding of circuit and interfacing concepts in conversation with teacher
4+	“enhancements”[1] ☐ minimized number and length of wires and wire crossings[½] ☐ circuit enhancement complete and working correctly[½]

Build image:




OPEN-SMART UNO R3
DIGITAL PWM~

code:

```
/*
Names: Siddarth & Mostafa
Dates: May 11, 2022
Description: Code for interfacing lab 9 - LDR
*/

int ldrPin = 0; // sets ldr pin
int ldrInput; // initializes variable for the ldr input

int led1 = 11; // sets first led pin
int led2 = 10; // sets second led pin

int ledBrightness; // initializes variable with led brightness
int ledBrightnessConstrained; // initialize variable for constrained led brightness

void setup() {
  pinMode(led1, OUTPUT); // sets first led as output
  pinMode(led2, OUTPUT); // sets second led as output
  pinMode(ldrPin, INPUT); // sets ldr pin as input
}

void loop() {
  ldrInput = analogRead(ldrPin); // receives input from ldr

  ledBrightness = map(ldrInput, 400, 760, 0, 255); // maps input to 0 - 255
                                                   // set between 400 and 760 based on testing
  ledBrightnessConstrained = constrain(ledBrightness, 0, 255); // constraints the
// brightness

  analogWrite(led1, ledBrightnessConstrained); // turns on first led with brightness
  analogWrite(led2, 255 - ledBrightnessConstrained); // second is the opposite
                                                     // of the first led
                                                     // (255 - brightness)
}
```