Zine Individual Task

Task 1.3.a

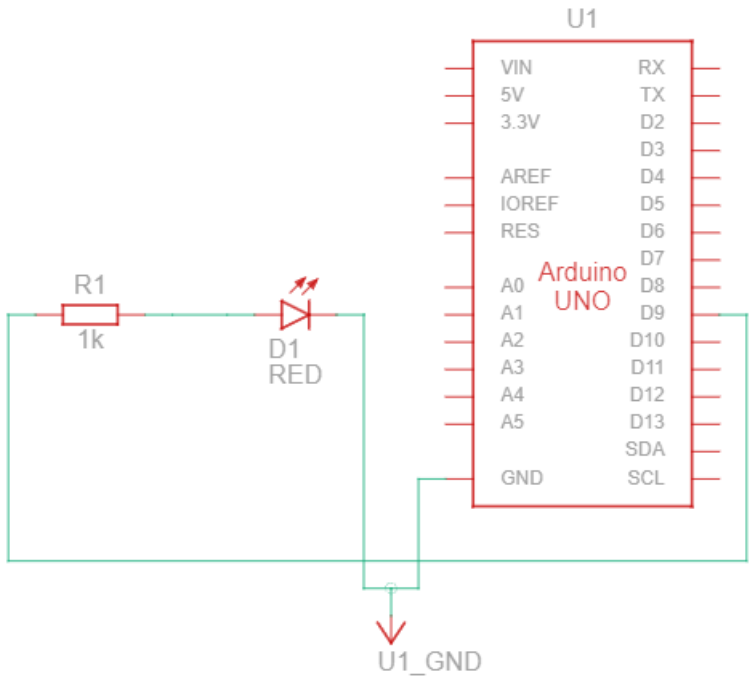
AIM

Controlling LED intensity using PWM registers directly

COMPONENTS REQUIRED

NAME	QUANTITY	COMPONENT
U1	1	Arduino Uno R3
D1	1	Red Led
R1	1	1 KΩ Resistor

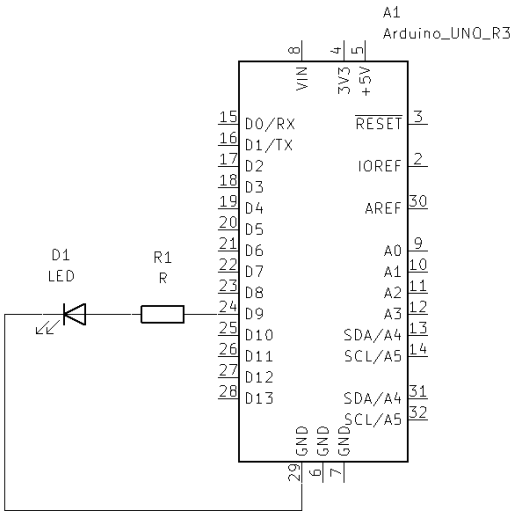
CIRCUIT DIAGRAM



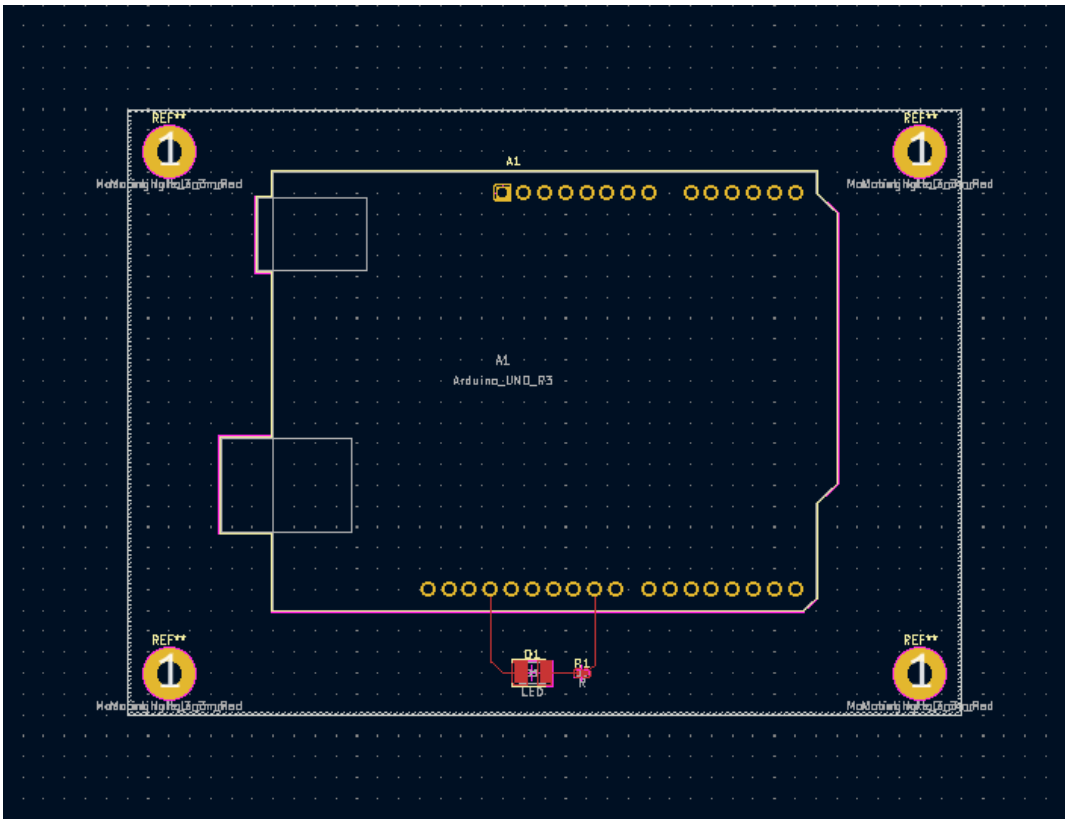
CODE

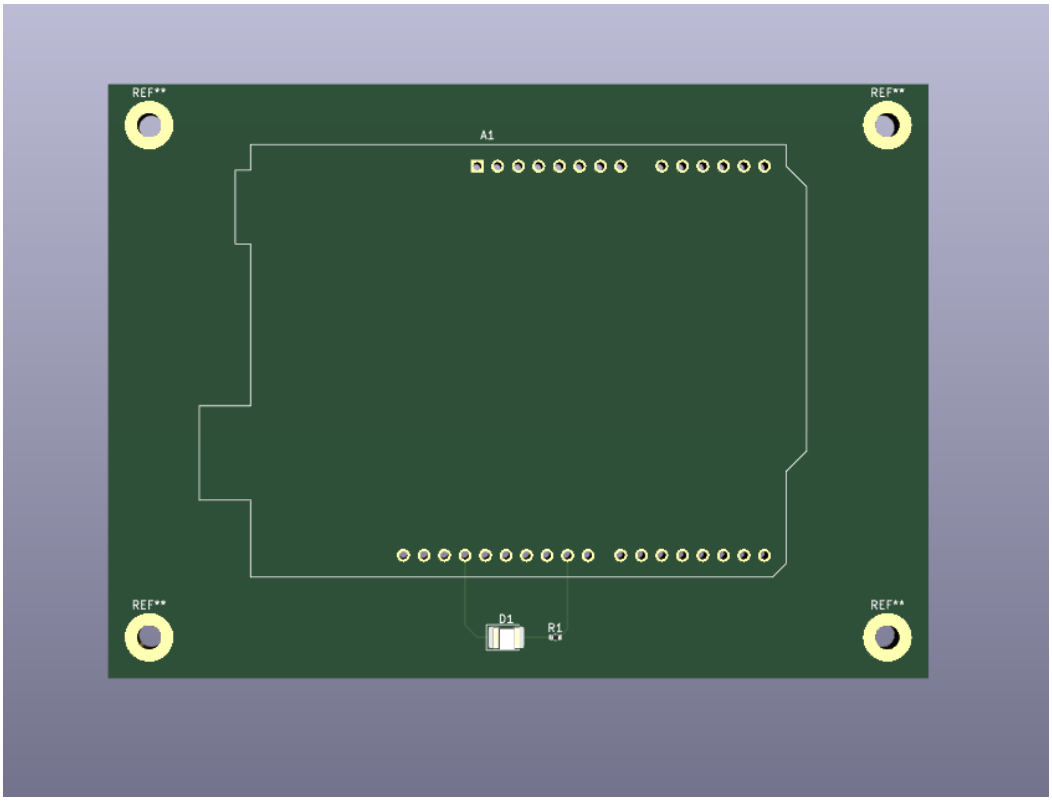
```
// C++ code
//
void setup(){
      DDRB = 0b00000010; //set d9 as output
}

void loop(){

  int d;
  for(d=0;d<=255;d++){


    PORTB = 0b00000010;
    delay(d);
    PORTB = 0b00000000;
    delay(100-d);
  }
}
```

SCHEMATIC

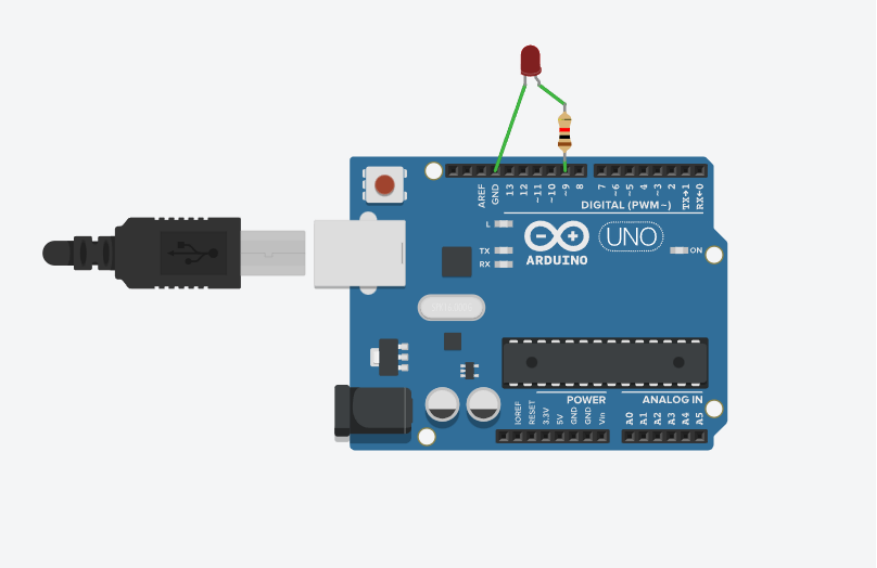


PCB


REF**
REF**
A1
A1
Arduino_UNO_R3
REF**
REF**
D1
R1
LED


REF**
REF**
A1
REF**
REF**
D1
R1

SIMULATION



https://www.tinkercad.com/things/3TRH0tXJWtz-control-light-intesnity-using-pwm-registers/editel

RESULTS

We were able to increase and decrease the intensity of led using custom pwm signals by manipulating port registers.

BIBLIOGRAPHY

1. https://ww1.microchip.com/downloads/en/DeviceDoc/Atmel-7810-Automotive-Microcontrollers-ATmega328P_Datasheet.pdf

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