MICROPROCESSADORES E SISTEMAS EMBEBIDOS

LAB. 6

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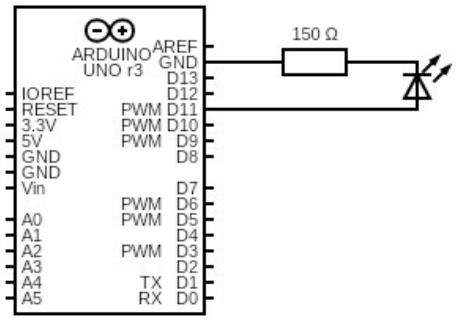
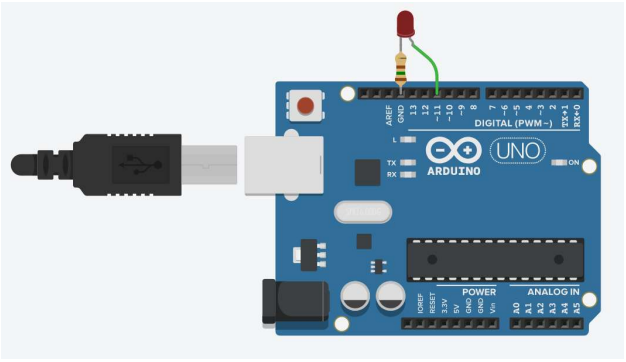
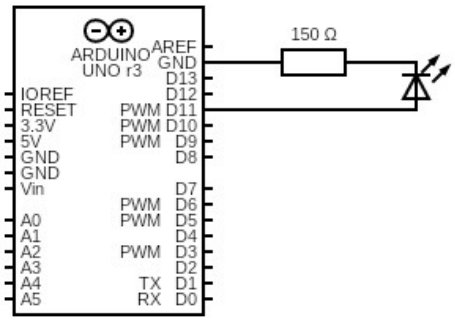
1)

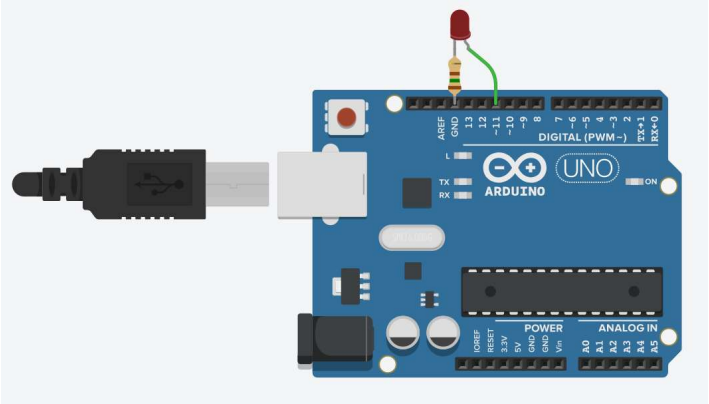





```
#define pinLed 11 //Define o pino do LED
int time = 1024/256; //Calcula o tempo de delay
int bit = 0; //Variável dos bits (0 a 255)

void setup()
{
  pinMode(pinLed, OUTPUT); //Define o pino do LED como OUTPUT
  Serial.begin(9600); //Taxa de comunicação (bits/s)
}

void loop()
{
  Serial.println(bit); //Escreve os bits no monitor serial
  analogWrite(pinLed, bit); //Aplica o valor do bit no LED
  bit +=1; //Incrementa o bit
  delay(time); //Delay em relação à variável tempo

  //Se o bit chegar a 256, o define de volta pra 0
  if(bit==256){
     bit = 0;
  }
}
```

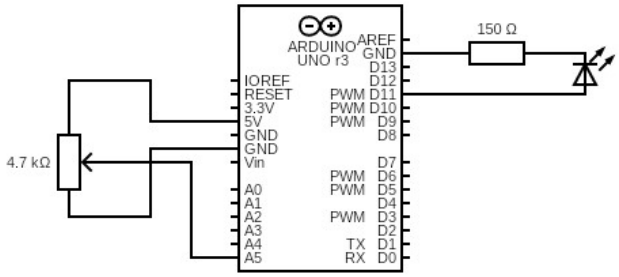
2)

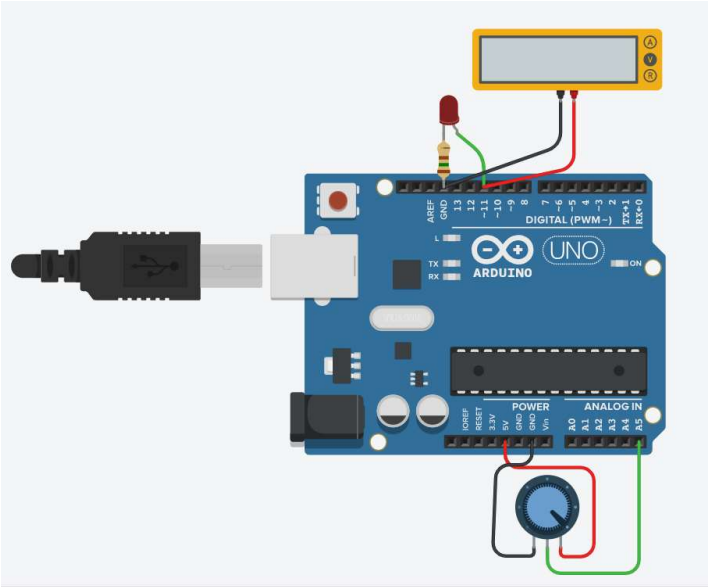





```
#define pinLed 11 //Define o pino do LED
int time = 1024/256; //Calcula o tempo de delay
int bit = 0; //Variável dos bits (0 a 255)
int estado = 1; //Estado de Incrementar e Decrementar

void setup()
{
  pinMode(pinLed, OUTPUT); //Define o pino do LED como OUTPUT
  Serial.begin(9600); //Taxa de comunicação (bits/s)
}

void loop()
{
  Serial.println(bit);

  //Incrementa os bits
  if(estado == 1){
    analogWrite(pinLed, bit);
    bit +=1;
    delay(time);

    //Passa pra condição de Decrementar os bits
    if(bit==256){
      estado = 2;
    }
  }

  //Decrementa os bits
  if(estado == 2){
    analogWrite(pinLed, bit);
    bit -=1;
    delay(time);

    //Passa pra condição de decrementar os bits
    if(bit==0){
      estado = 1;
    }
  }

}
```

3)






```
#define pinLed 11 //Define pino do LED
#define pinPot A5 //Define pino do potenciômetro
int bit = 0; //Variável pros bits do led
int pot = 0; //Variável pros bits do potenciômetro

void setup()
{
  pinMode(pinLed, OUTPUT); //Define pino do LED como OUTPUT
  Serial.begin(9600); //Taxa de comunicação em bits/s
}

void loop()
{
  pot = analogRead(pinPot); //Lê o valor do potenciômetro
  bit = map(pot, 0, 1023, 0, 255); //Converte o valor do potenciômetro numa faixa de 0 a 255
  Serial.println(bit); //Escreve os bits do LED
  analogWrite(pinLed, bit); //Aplica os bits do PWM no LED
  delay(100); //Delay
}
```