Laboratório 44

1. Descrição

Display de 7 Segmentos – Catodo comum.

2. Material

Quantidade	Descrição
01	Arduino UNO
01	Protoboard
	Jumpers coloridos
01	Display de 7 Segmentos – Catodo comum
01	Resistor de 150 Ω

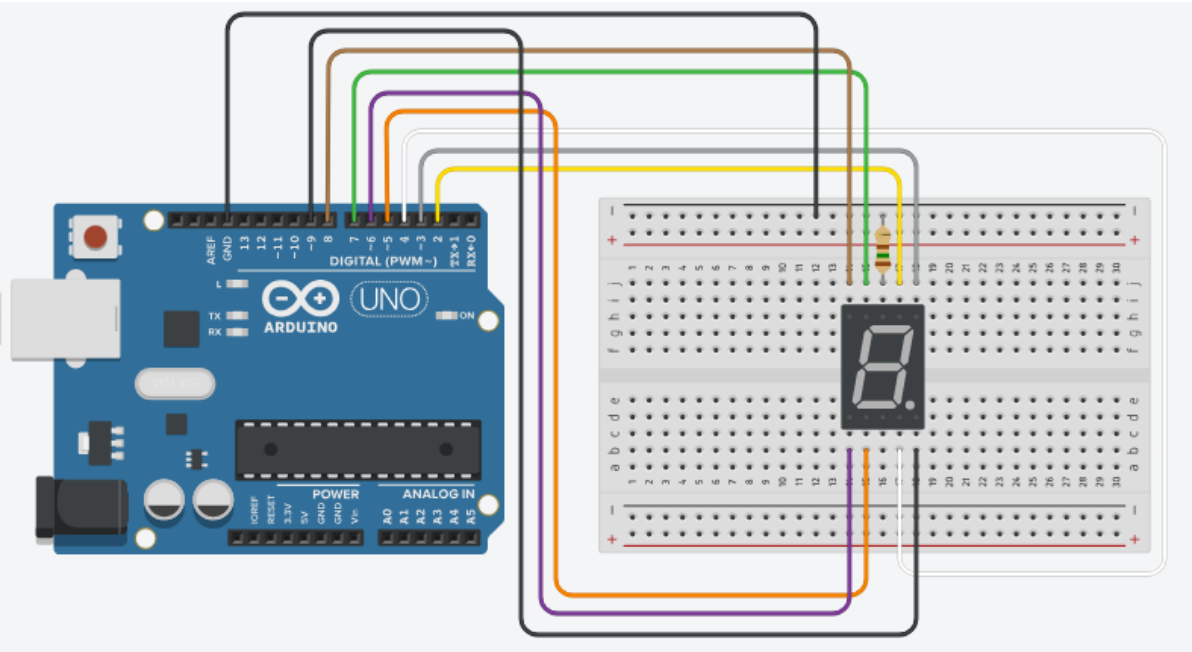
3. Referencial (código)

- Observar aula 43.

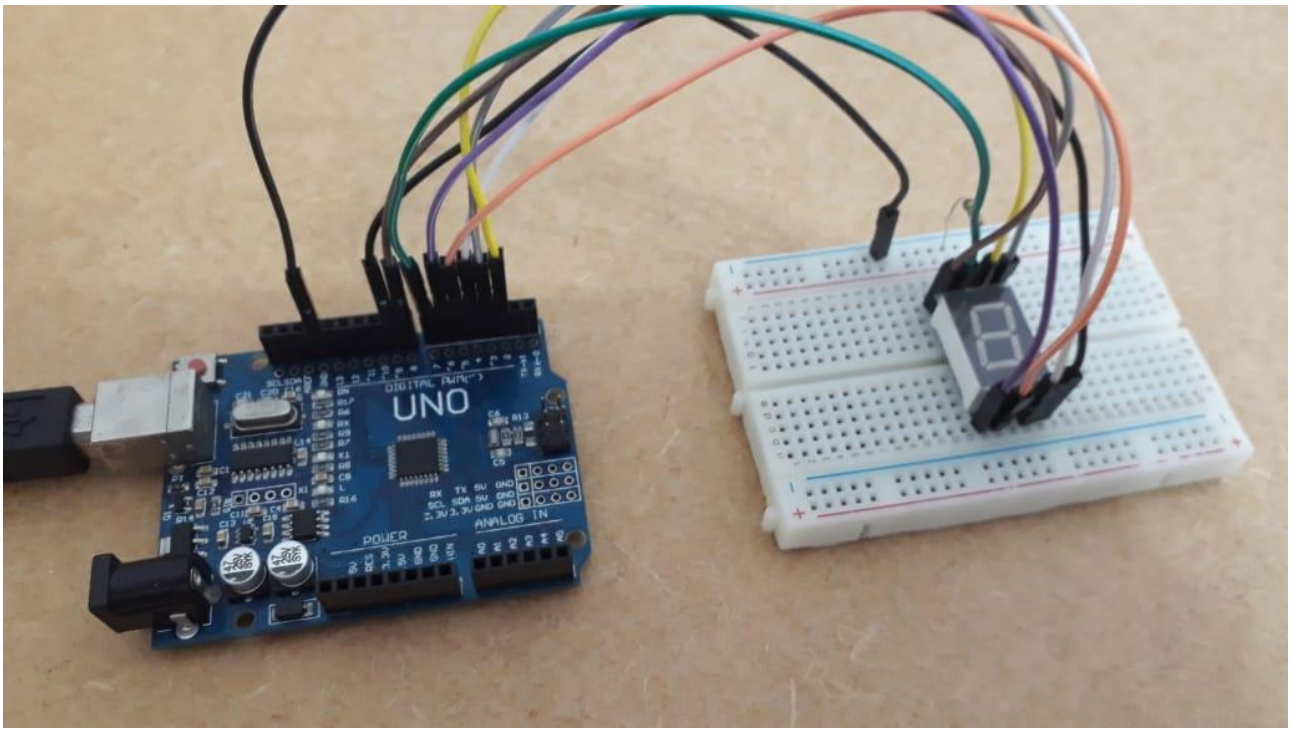
4. Importante

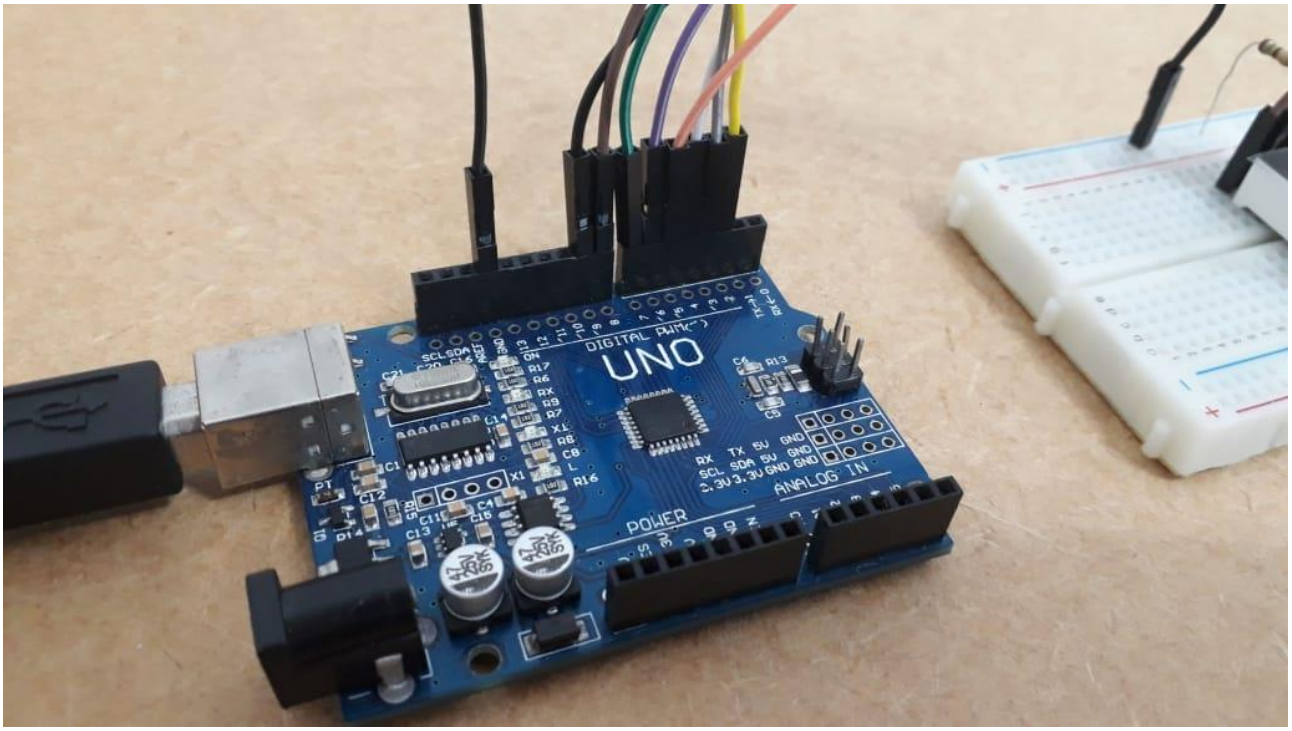
- Observar a ligação do resistor.

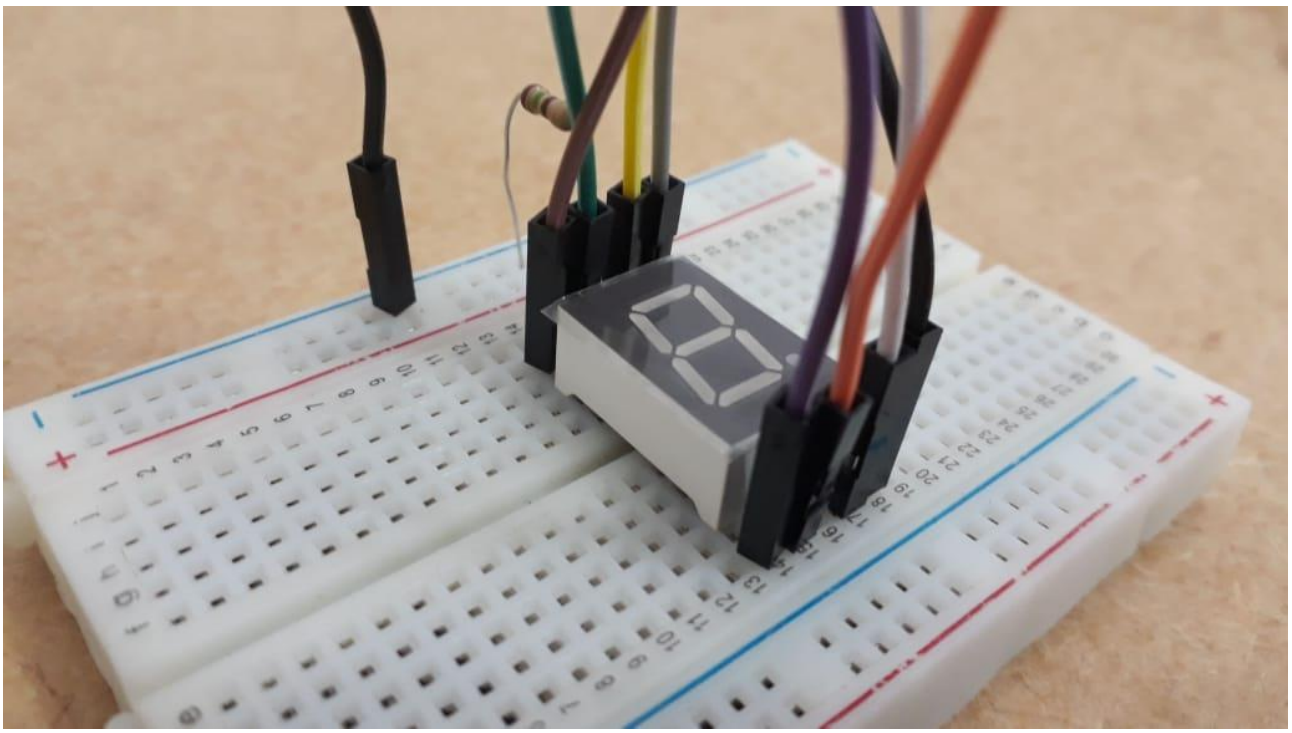
5. Modelo Eletrônico

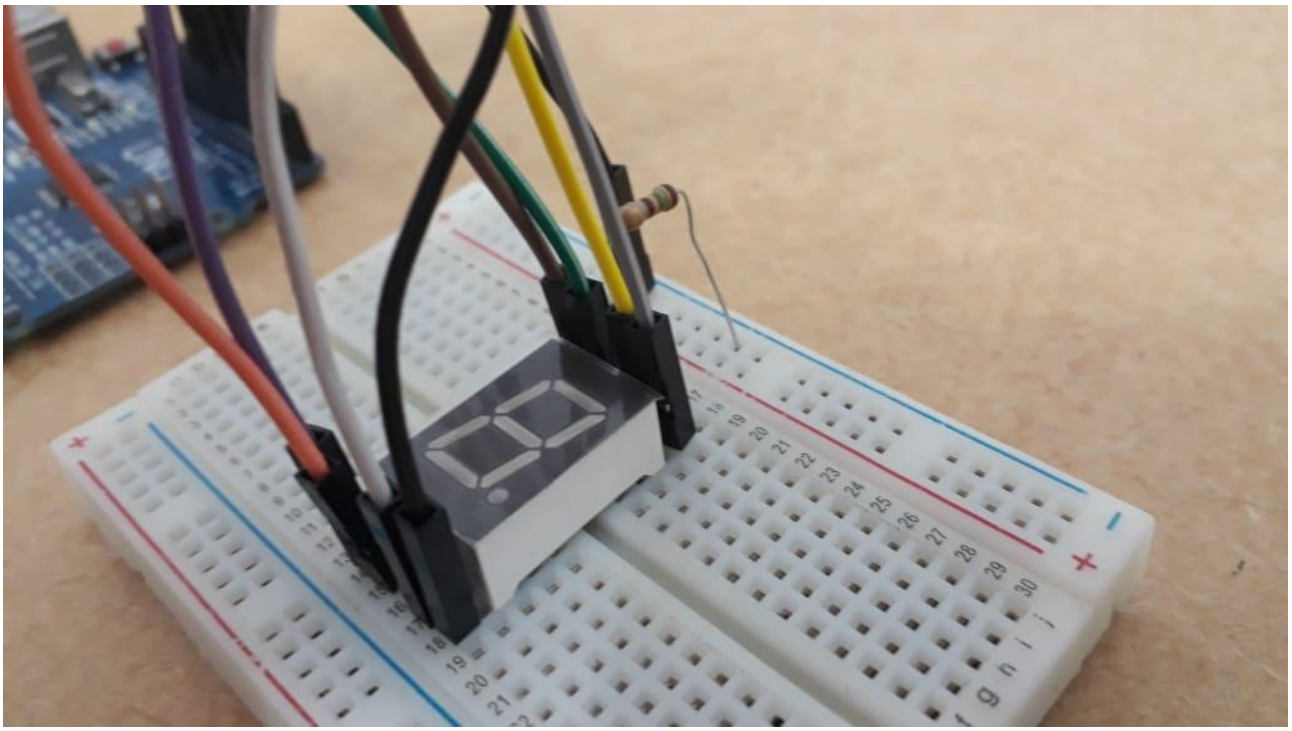


6. Imagens do Projeto









7. Código

Acionando apenas um número.

```
int pino, numero;

byte mat_num[16][7] = {
{ 1,1,1,1,1,1,0 },  //Digito 0
{ 0,1,1,0,0,0,0 },  //Digito 1
{ 1,1,0,1,1,0,1 },  //Digito 2
{ 1,1,1,1,0,0,1 },  //Digito 3
{ 0,1,1,0,0,1,1 },  //Digito 4
{ 1,0,1,1,0,1,1 },  //Digito 5
{ 1,0,1,1,1,1,1 },  //Digito 6
{ 1,1,1,0,0,0,0 },  //Digito 7
{ 1,1,1,1,1,1,1 },  //Digito 8
{ 1,1,1,0,0,1,1 },  //Digito 9
};
void setup(){
  pinMode(2, OUTPUT); //PINO 2 -> segmento A
  pinMode(3, OUTPUT); //PINO 3 -> segmento B
  pinMode(4, OUTPUT); //PINO 4 -> segmento C
  pinMode(5, OUTPUT); //PINO 5 -> segmento D
  pinMode(6, OUTPUT); //PINO 6 -> segmento E
  pinMode(7, OUTPUT); //PINO 7 -> segmento F
  pinMode(8, OUTPUT); //PINO 8 -> segmento G
  pinMode(9, OUTPUT); //PINO 9 -> segmento PONTO
}

void loop() {
  pino = 2; // iniciando no pino 2 o sinal
  numero = 3; // número que será visualizado
  for (byte segmentos = 0; segmentos < 7; ++segmentos){
    digitalWrite(pino, mat_num[numero][segmentos]);
    ++pino;
  }
}
```

Criando um pisca-pisca com o ponto.

```
int pino, numero;
```

```
byte mat_num[16][7] = {
{ 1,1,1,1,1,1,0 },  //Digito 0
{ 0,1,1,0,0,0,0 },  //Digito 1
{ 1,1,0,1,1,0,1 },  //Digito 2
{ 1,1,1,1,0,0,1 },  //Digito 3
{ 0,1,1,0,0,1,1 },  //Digito 4
{ 1,0,1,1,0,1,1 },  //Digito 5
{ 1,0,1,1,1,1,1 },  //Digito 6
{ 1,1,1,0,0,0,0 },  //Digito 7
{ 1,1,1,1,1,1,1 },  //Digito 8
{ 1,1,1,0,0,1,1 },  //Digito 9
};
void setup(){
  pinMode(2, OUTPUT); //PINO 2 -> segmento A
  pinMode(3, OUTPUT); //PINO 3 -> segmento B
  pinMode(4, OUTPUT); //PINO 4 -> segmento C
  pinMode(5, OUTPUT); //PINO 5 -> segmento D
  pinMode(6, OUTPUT); //PINO 6 -> segmento E
  pinMode(7, OUTPUT); //PINO 7 -> segmento F
  pinMode(8, OUTPUT); //PINO 8 -> segmento G
  pinMode(9, OUTPUT); //PINO 9 -> segmento PONTO
}

void loop() {
    piscapisca();
}

void piscapisca(){
  digitalWrite(9,LOW);
  delay(1000);
  digitalWrite(9,HIGH);
  delay(1000);
}
```

Mostra todos os números alternando com o ponto.

```
int pino;

byte mat_num[16][7] = {
{ 1,1,1,1,1,1,0 },  //Digito 0
{ 0,1,1,0,0,0,0 },  //Digito 1
{ 1,1,0,1,1,0,1 },  //Digito 2
{ 1,1,1,1,0,0,1 },  //Digito 3
{ 0,1,1,0,0,1,1 },  //Digito 4
```

```
{ 1,0,1,1,0,1,1 },  //Digito 5
{ 1,0,1,1,1,1,1 },  //Digito 6
{ 1,1,1,0,0,0,0 },  //Digito 7
{ 1,1,1,1,1,1,1 },  //Digito 8
{ 1,1,1,0,0,1,1 },  //Digito 9
{ 0,0,0,0,0,0,0 },  //Digito Branco
};
void setup(){
  pinMode(2, OUTPUT); //PINO 2 -> segmento A
  pinMode(3, OUTPUT); //PINO 3 -> segmento B
  pinMode(4, OUTPUT); //PINO 4 -> segmento C
  pinMode(5, OUTPUT); //PINO 5 -> segmento D
  pinMode(6, OUTPUT); //PINO 6 -> segmento E
  pinMode(7, OUTPUT); //PINO 7 -> segmento F
  pinMode(8, OUTPUT); //PINO 8 -> segmento G
  pinMode(9, OUTPUT); //PINO 9 -> segmento PONTO
}

void loop() {
  for(int num = 0; num <=9; num++){
     digitalWrite(9,LOW);
     mostra(num);
     delay(1000);
     digitalWrite(9,HIGH);
     mostra(10); // apaga display
     delay(1000);
  }
}

void mostra(int numero){
  pino = 2;
  for (byte segmentos = 0; segmentos < 7; ++segmentos){
    digitalWrite(pino, mat_num[numero][segmentos]);
    ++pino;
  }
}
```