



**SUPER
GEEKS**



OFICINA

Poder Jedi

QUE A FORÇA ESTEJA COM VOCÊ

AGENDA

TÓPICOS DA OFICINA

INTRODUÇÃO

COMO FICARÁ O
PROTÓTIPO FINAL

PROGRAMAÇÃO

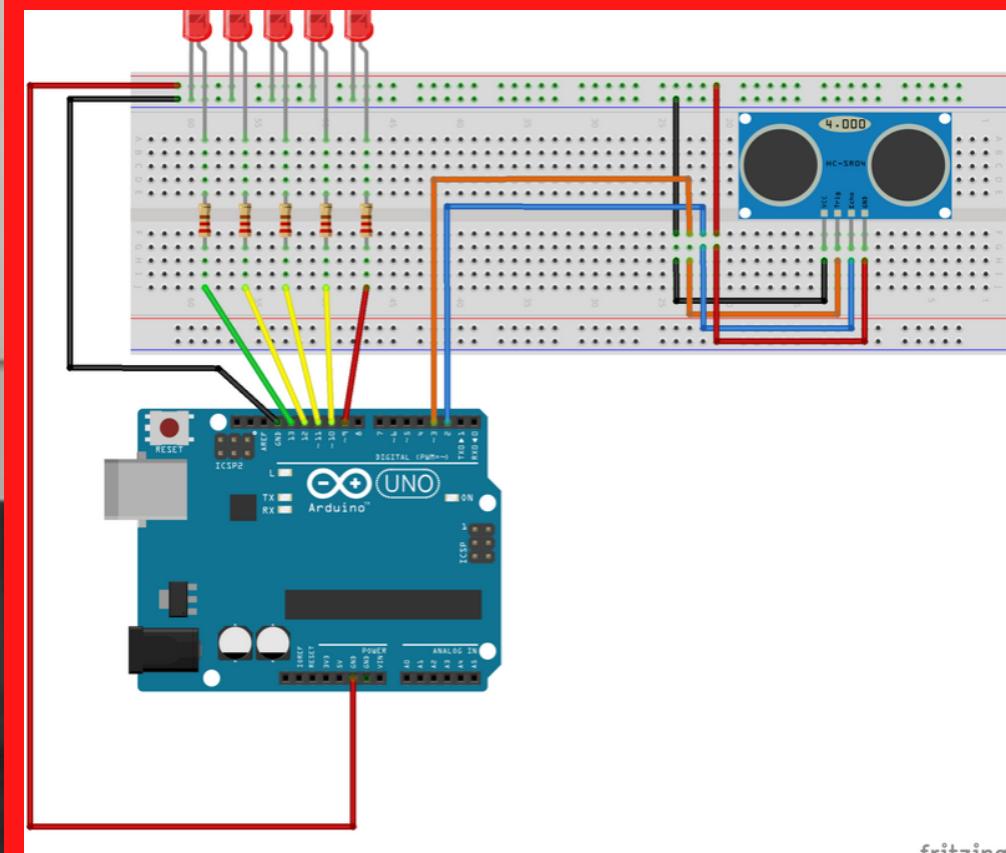
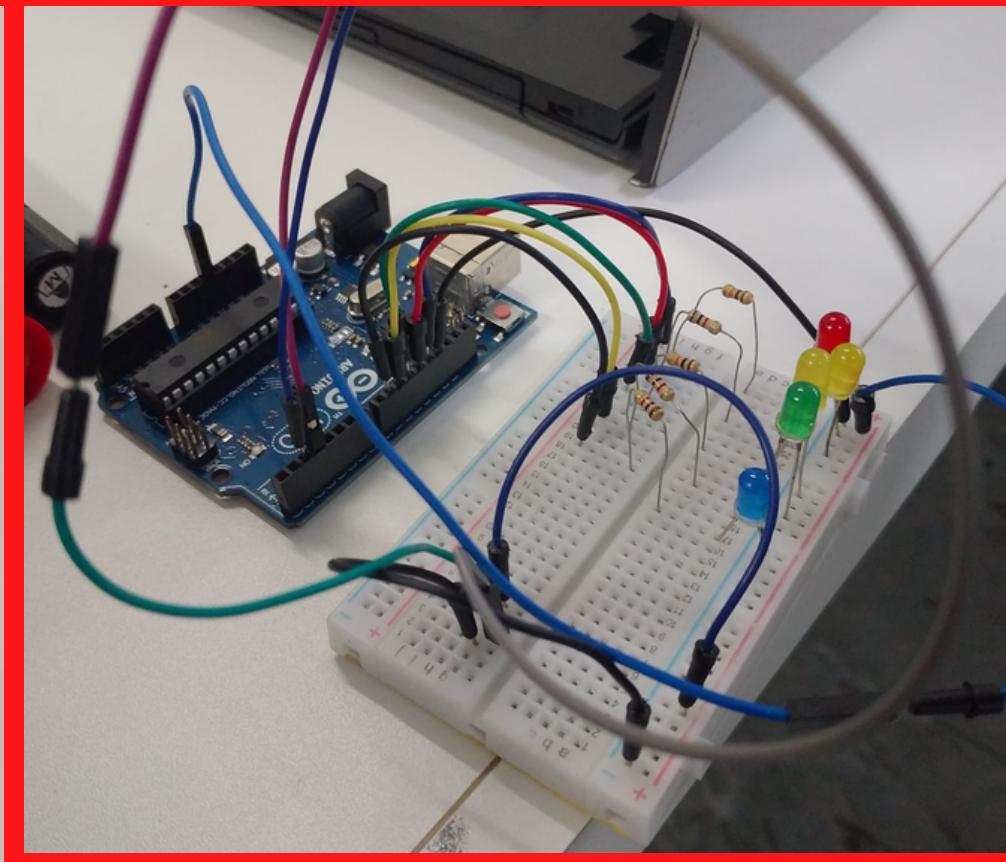
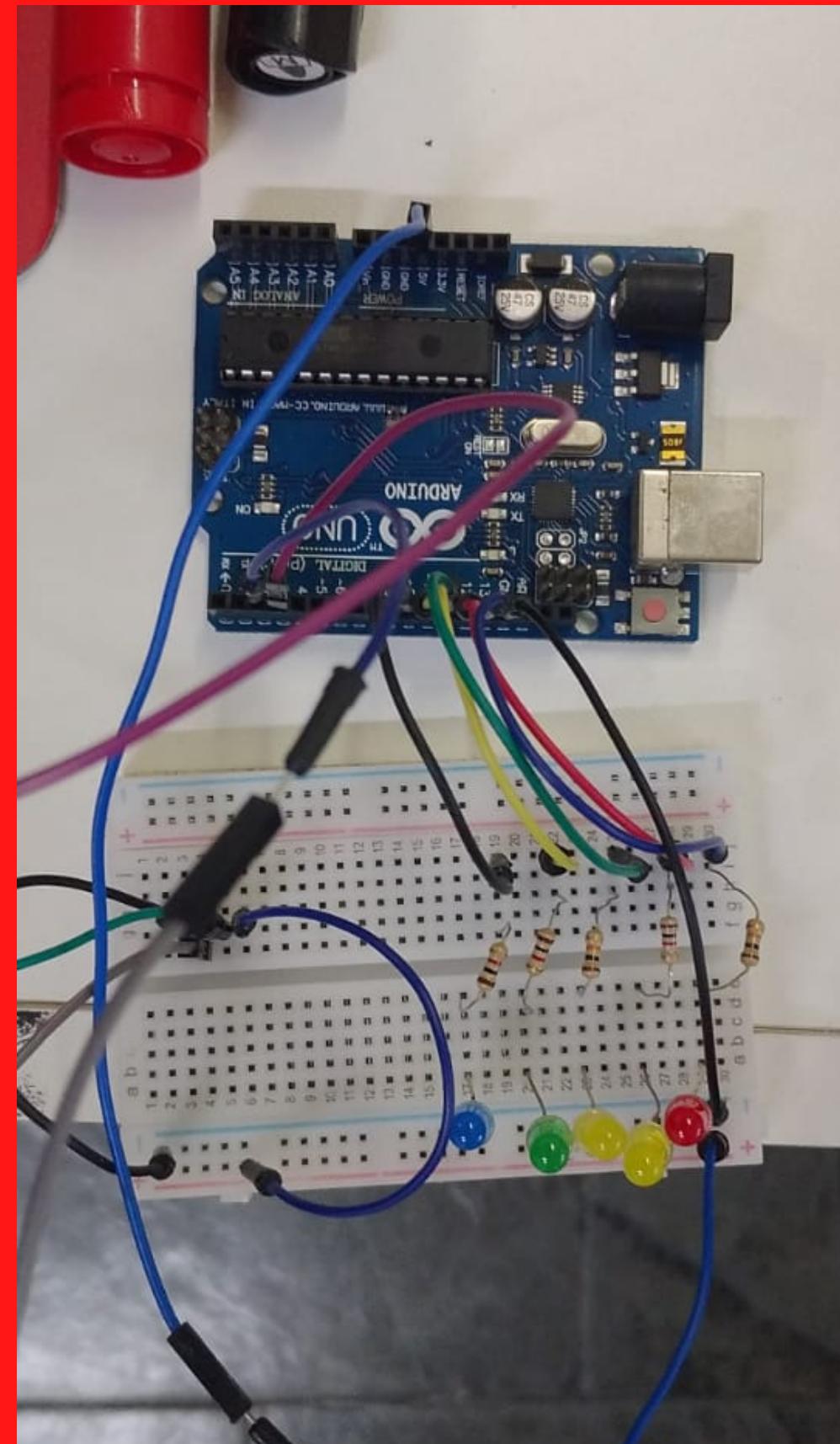
ARDUINO

MONTAGEM

COMPONENTES



PROJEÇÃO FINAL COM ARDUINO



PROGRAMAÇÃO PARTE 1

DECLARANDO VARIÁVEIS

```
int led1 = 13;  
int led2 = 12;  
int led3 = 11;  
int led4 = 10;  
int led5 = 9;  
const int trigPin = 3;  
const int echoPin = 2;  
int dist = 0;
```



PROGRAMAÇÃO PARTE 2

DEFININDO AS PORTAS

```
void setup() {  
  
Serial.begin(9600);  
pinMode(trigPin, OUTPUT);  
pinMode(echoPin, INPUT);  
pinMode(led1, OUTPUT);  
pinMode(led2, OUTPUT);  
pinMode(led3, OUTPUT);  
pinMode(led4, OUTPUT);  
pinMode(led5, OUTPUT);  
  
}  
}
```



PROGRAMAÇÃO PARTE 3

FUNÇÃO MEDE

```
int mede() {  
  
    digitalWrite(trigPin,LOW);  
    delayMicroseconds(2);  
    digitalWrite(trigPin,HIGH);  
    delayMicroseconds(10);  
    digitalWrite(trigPin, LOW);  
    unsigned long duracao = pulseIn(echoPin, HIGH);  
    int distancia = duracao / 58;  
    Serial.print("Calculado cm: ");  
    Serial.println(distancia);  
    return distancia;  
}
```



PROGRAMAÇÃO PARTE 4

REPETIÇÕES (LOOPS)

```
void loop(){  
  
    dist = mede();  
    Serial.print("Distancia = ");  
    Serial.print(dist);  
  
    if (dist <= 50 && dist >= 41 {  
        digitalWrite(led1,LOW);  
        digitalWrite(led2,LOW);  
        digitalWrite(led3,LOW);  
        digitalWrite(led4,LOW);  
        digitalWrite(led5,HIGH);  
  
    }  
}
```



PROGRAMAÇÃO PARTE 4

REPETIÇÕES (LOOPS)

```
else if(dist <=40 && dist >=31 {
```

```
    digitalWrite(led1,LOW);  
    digitalWrite(led2,LOW);  
    digitalWrite(led3,LOW);  
    digitalWrite(led4,HIGH);  
    digitalWrite(led5,HIGH);
```

```
}
```



PROGRAMAÇÃO PARTE 5

REPETIÇÕES (LOOPS)

```
else if (dist <=30 && dist >=21) {  
    digitalWrite(led1,LOW);  
    digitalWrite(led2,LOW);  
    digitalWrite(led3,HIGH);  
    digitalWrite(led4,HIGH);  
    digitalWrite(led5,HIGH);  
}  
}
```



PROGRAMAÇÃO PARTE 6

REPETIÇÕES (LOOPS)

```
else if (dist <=20 && dist >=11) {  
  
digitalWrite(led1,LOW);  
digitalWrite(led2,HIGH);  
digitalWrite(led3,HIGH);  
digitalWrite(led4,HIGH);  
digitalWrite(led5,HIGH);  
  
}
```



PROGRAMAÇÃO PARTE 7

REPETIÇÕES (LOOPS)

```
else if (dist <=10) {  
  
    digitalWrite(led1,HIGH);  
    digitalWrite(led2,HIGH);  
    digitalWrite(led3,HIGH);  
    digitalWrite(led4,HIGH);  
    digitalWrite(led5,HIGH);  
  
}
```



PROGRAMAÇÃO PARTE 8

REPETIÇÕES (LOOPS)

```
else {
```

```
    digitalWrite(led1,LOW);  
    digitalWrite(led2,LOW);  
    digitalWrite(led3,LOW);  
    digitalWrite(led4,LOW);  
    digitalWrite(led5,LOW);
```

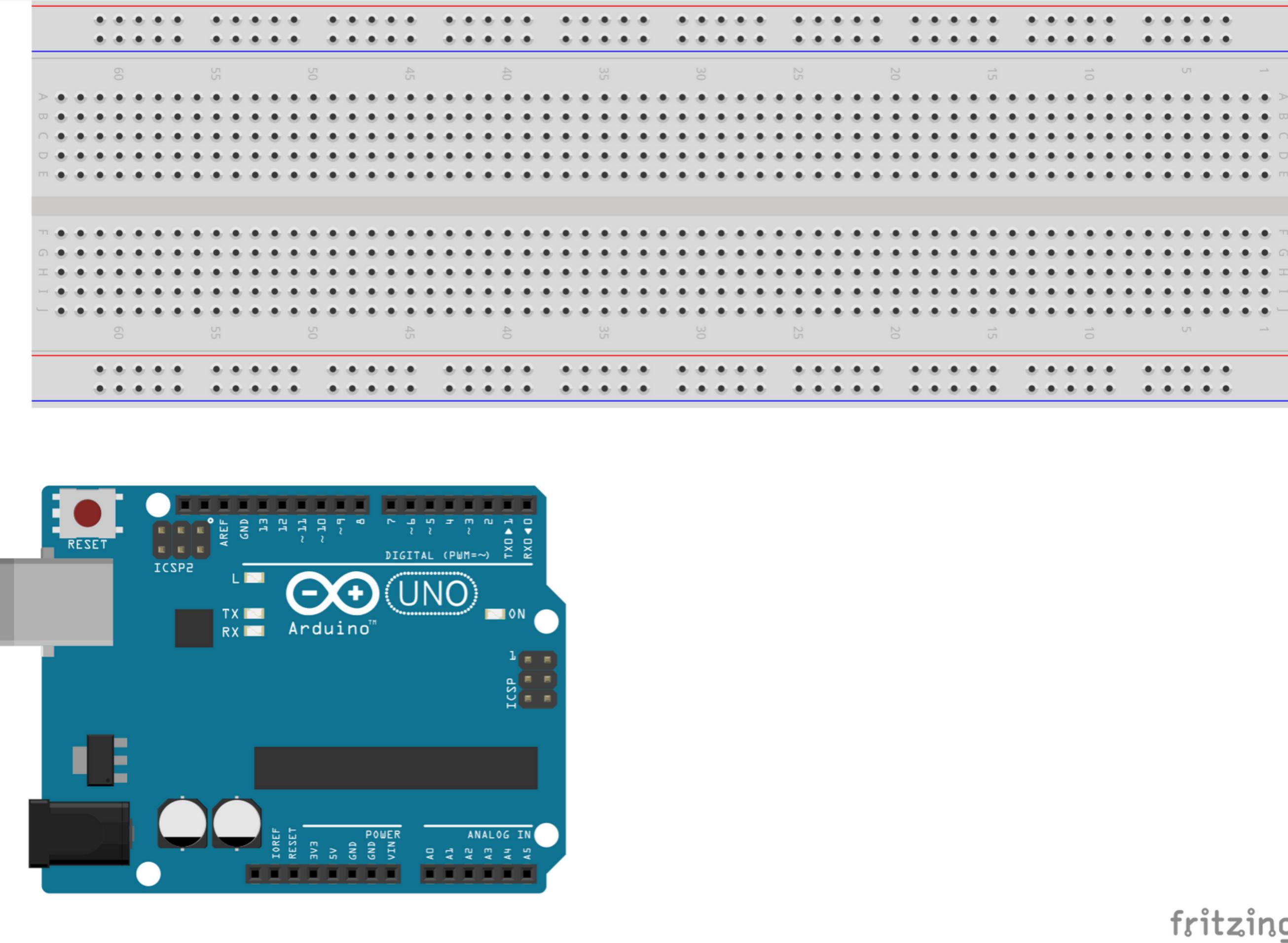
```
}
```

```
}
```

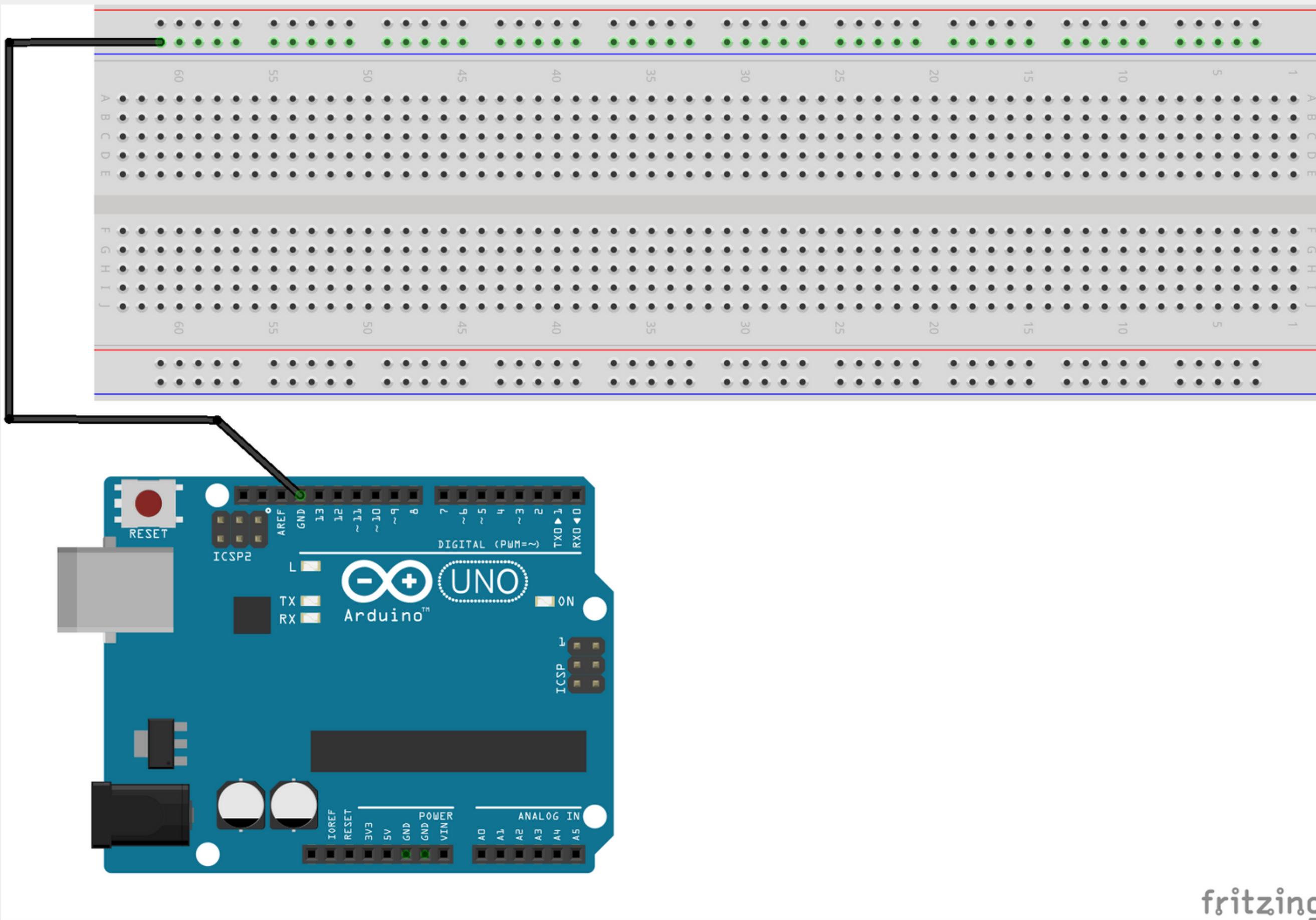


MONTAGEM - COMPONENTES

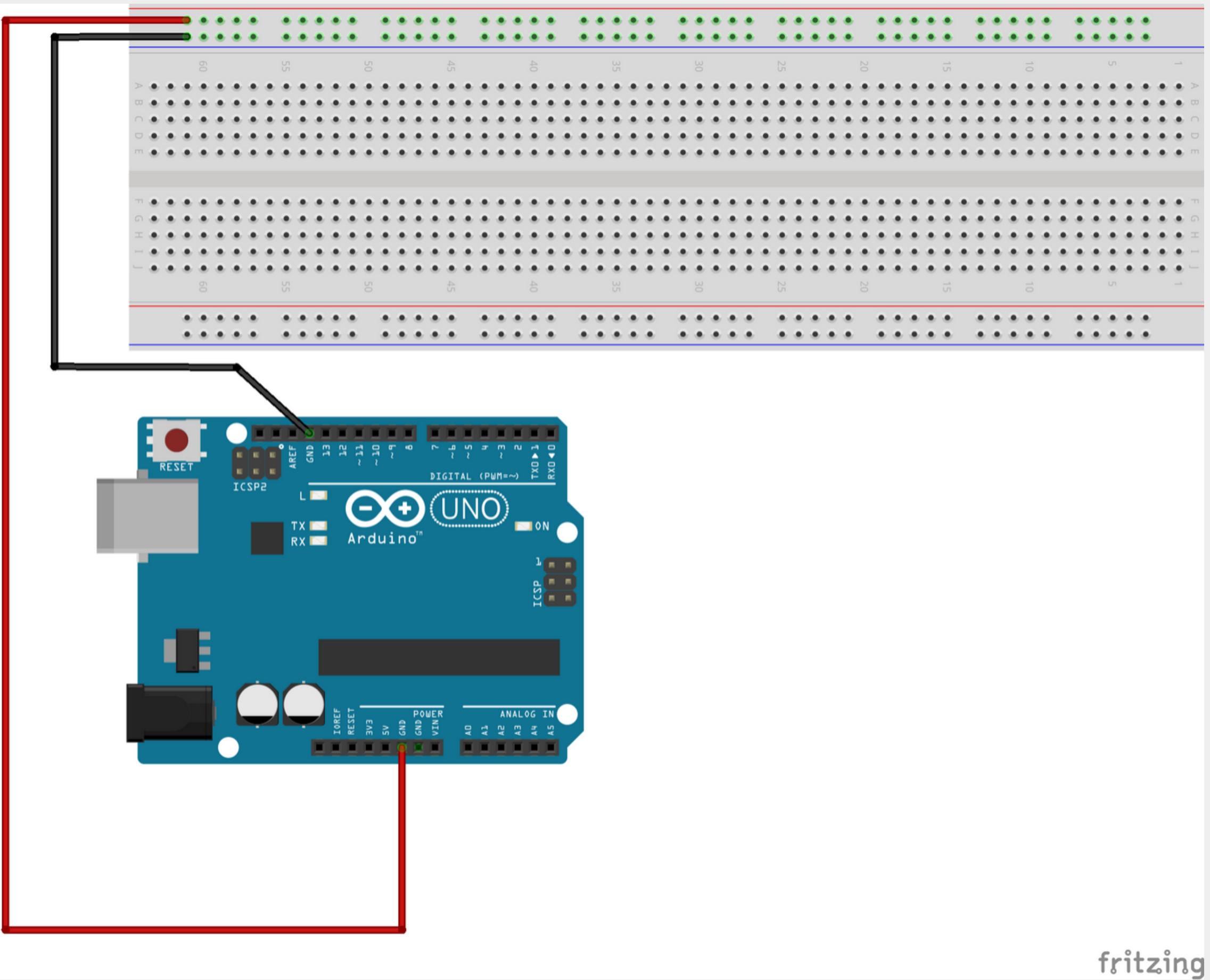
- **05 LEDS** 01 AZUL, 01 VERDE, 2 AMARELOS E 1 VERMELHO
- **01 PROTOBOARD**
- **01 SENSOR ULTRASSÔNICO**
- **15 JUMPERS**
- **05 REGISTORES**



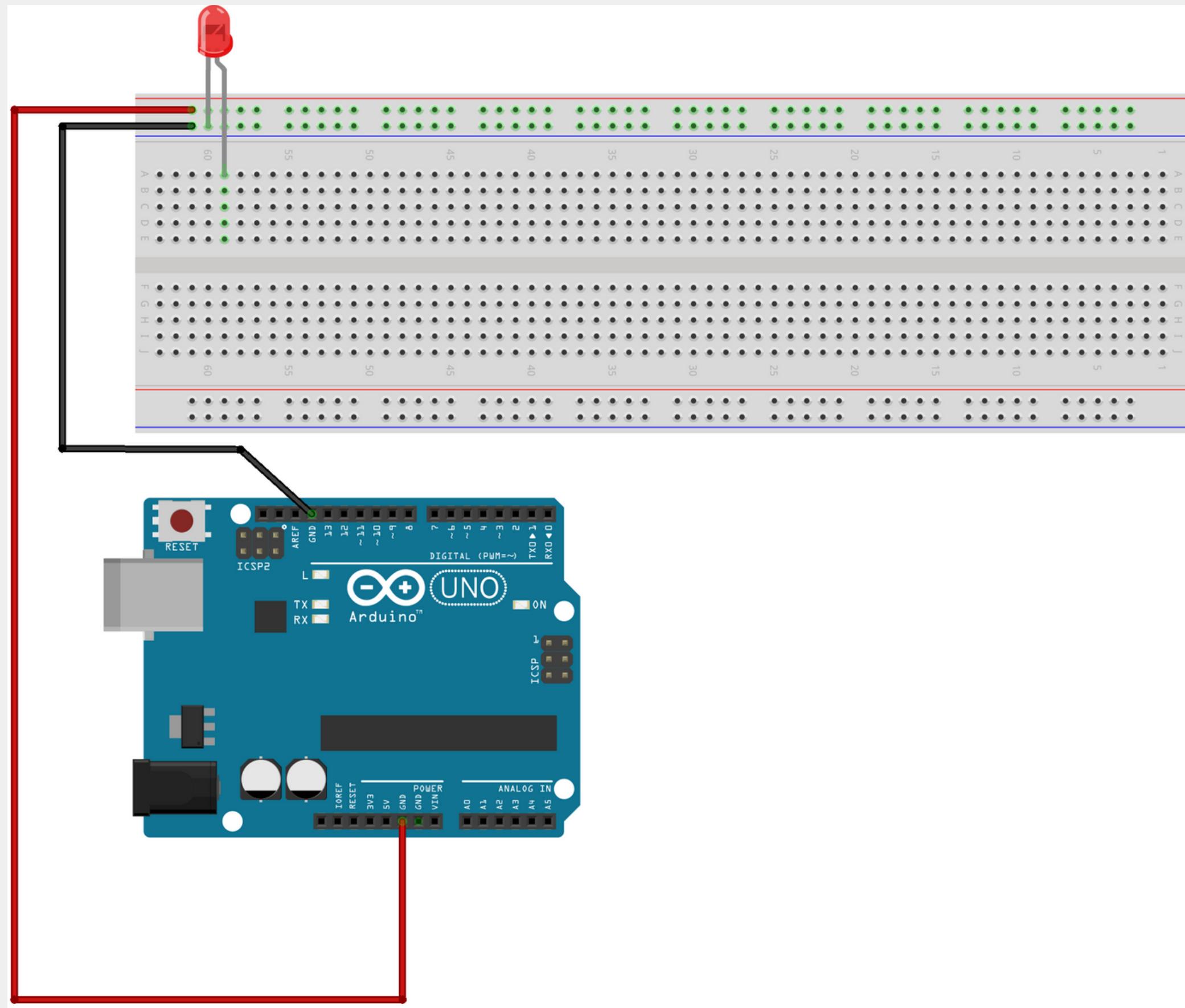
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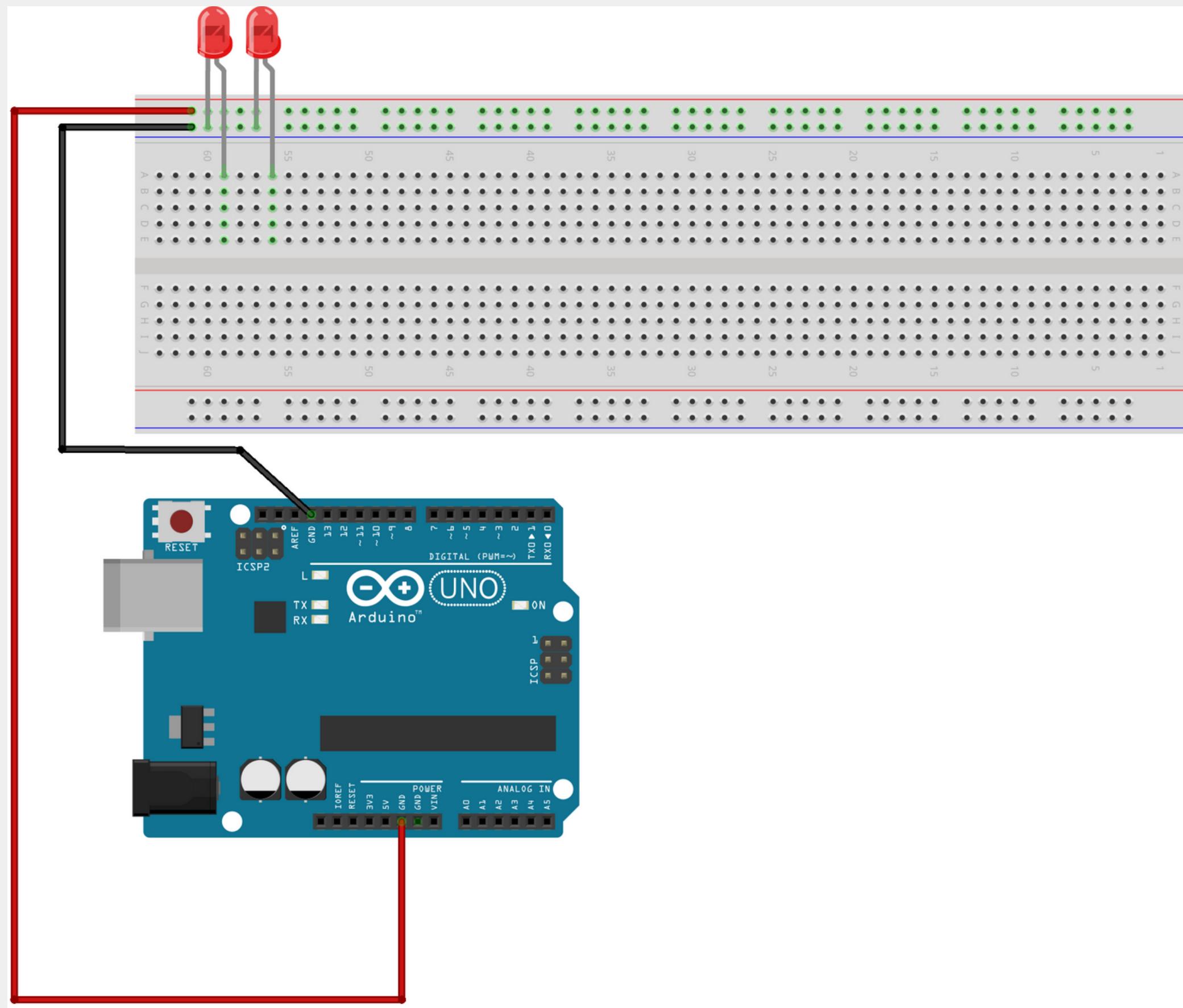
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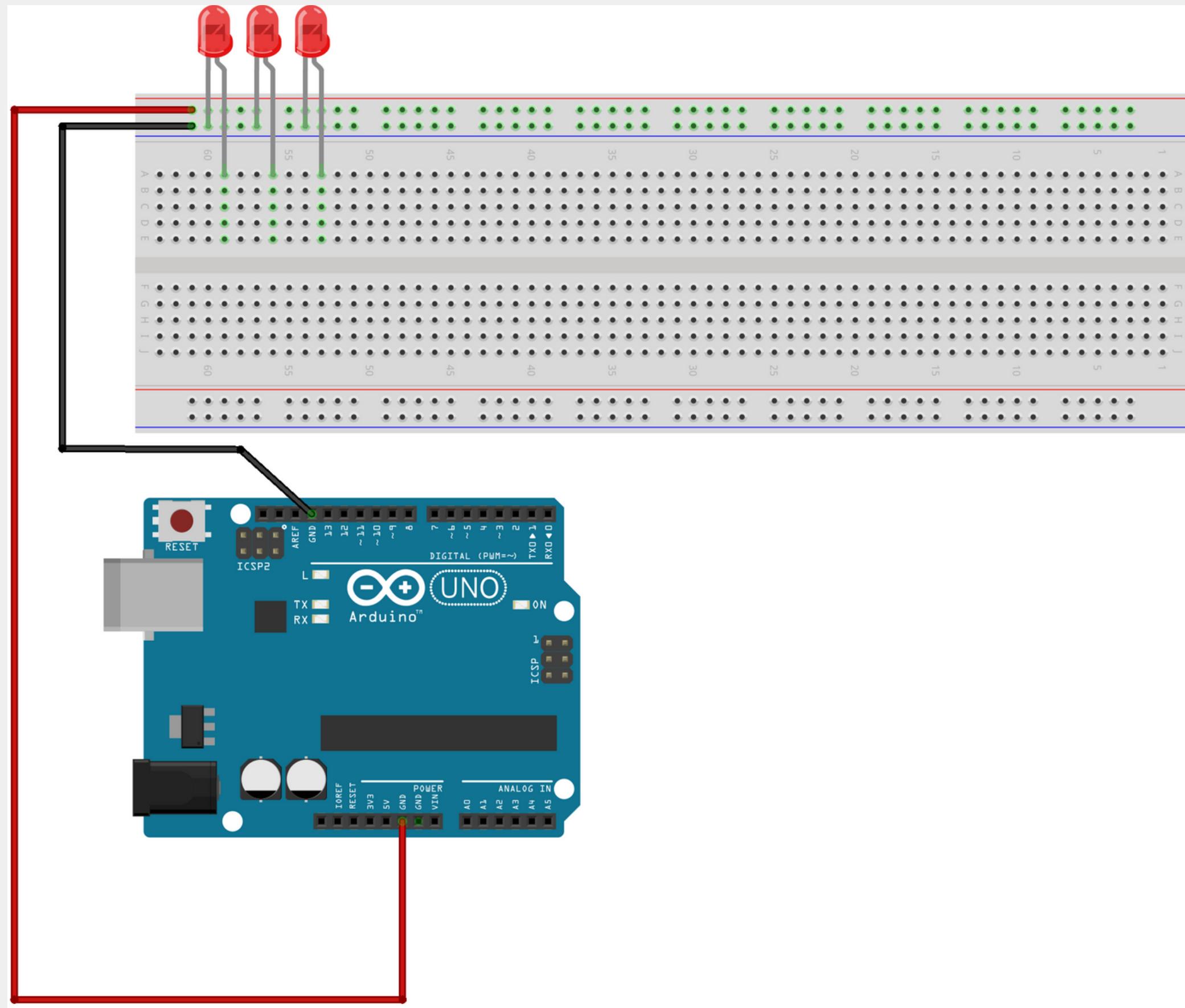
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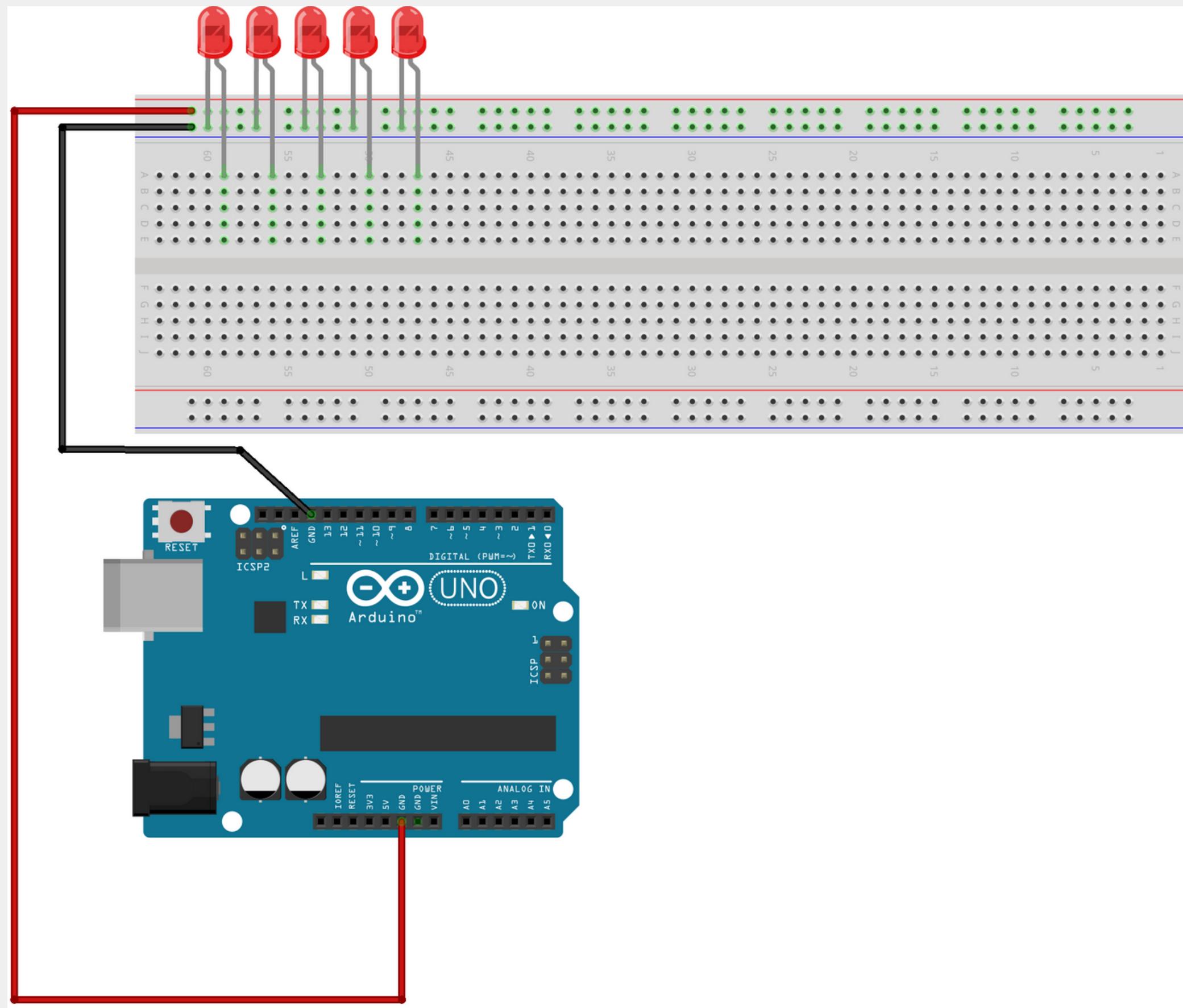
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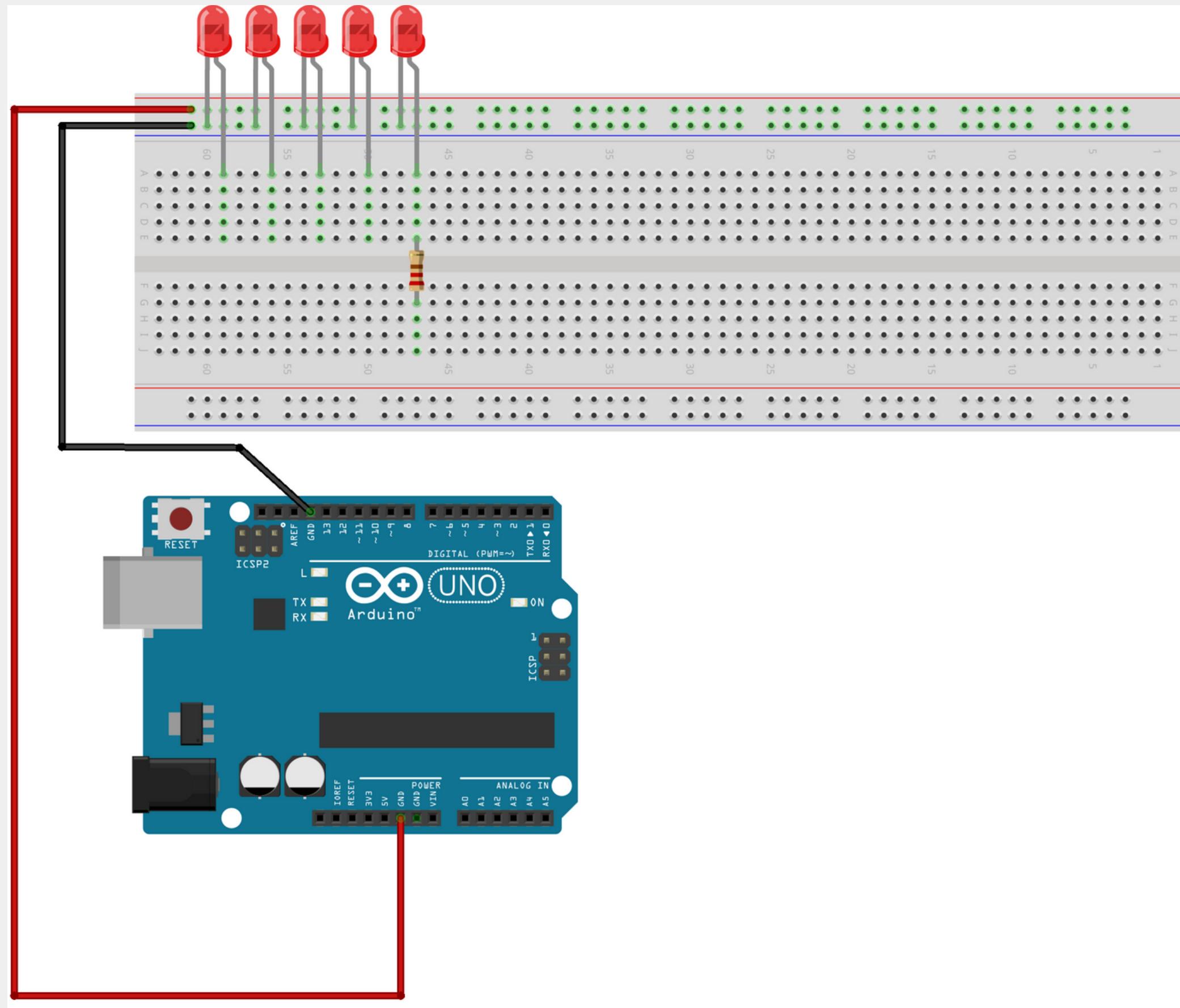
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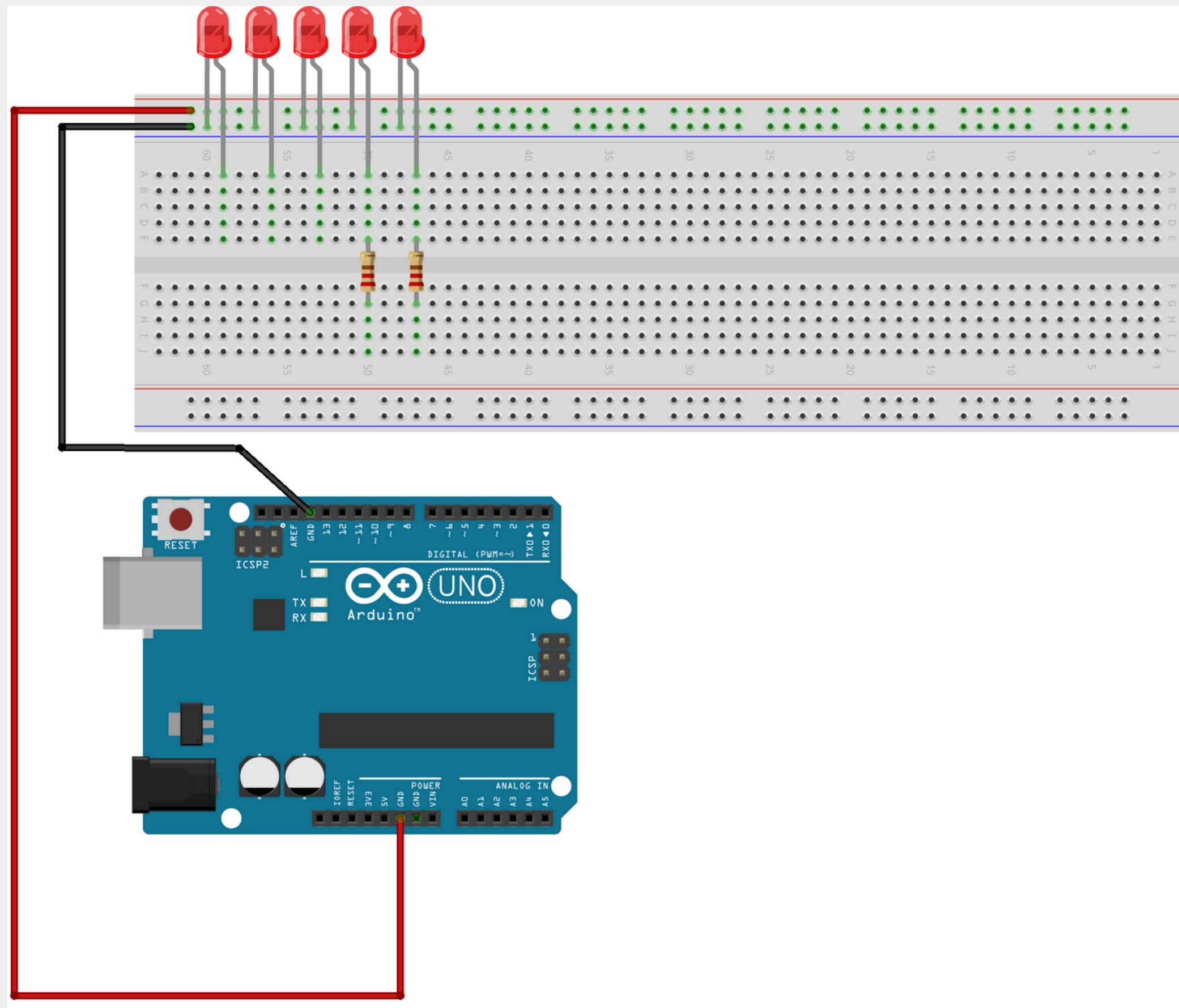
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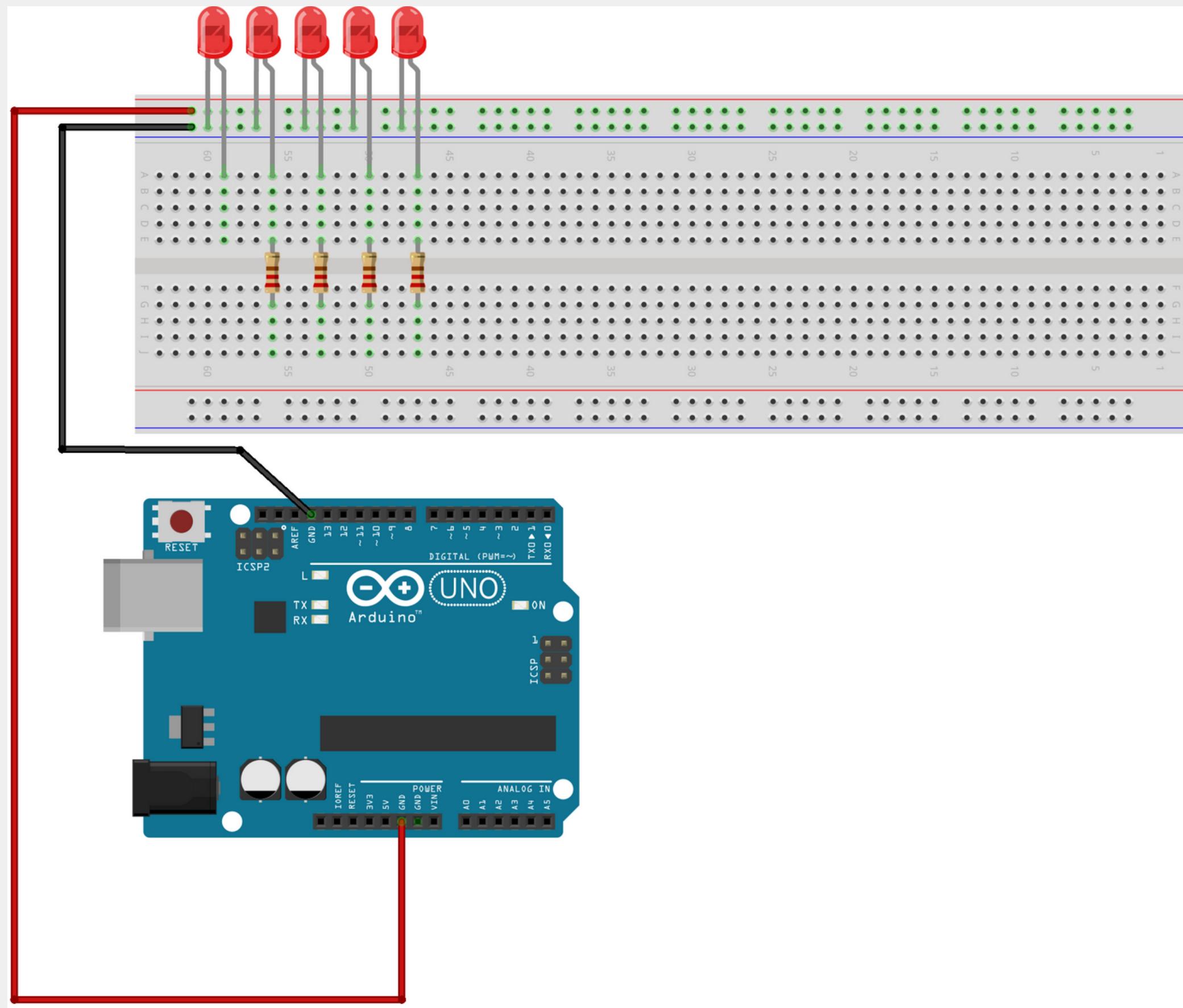
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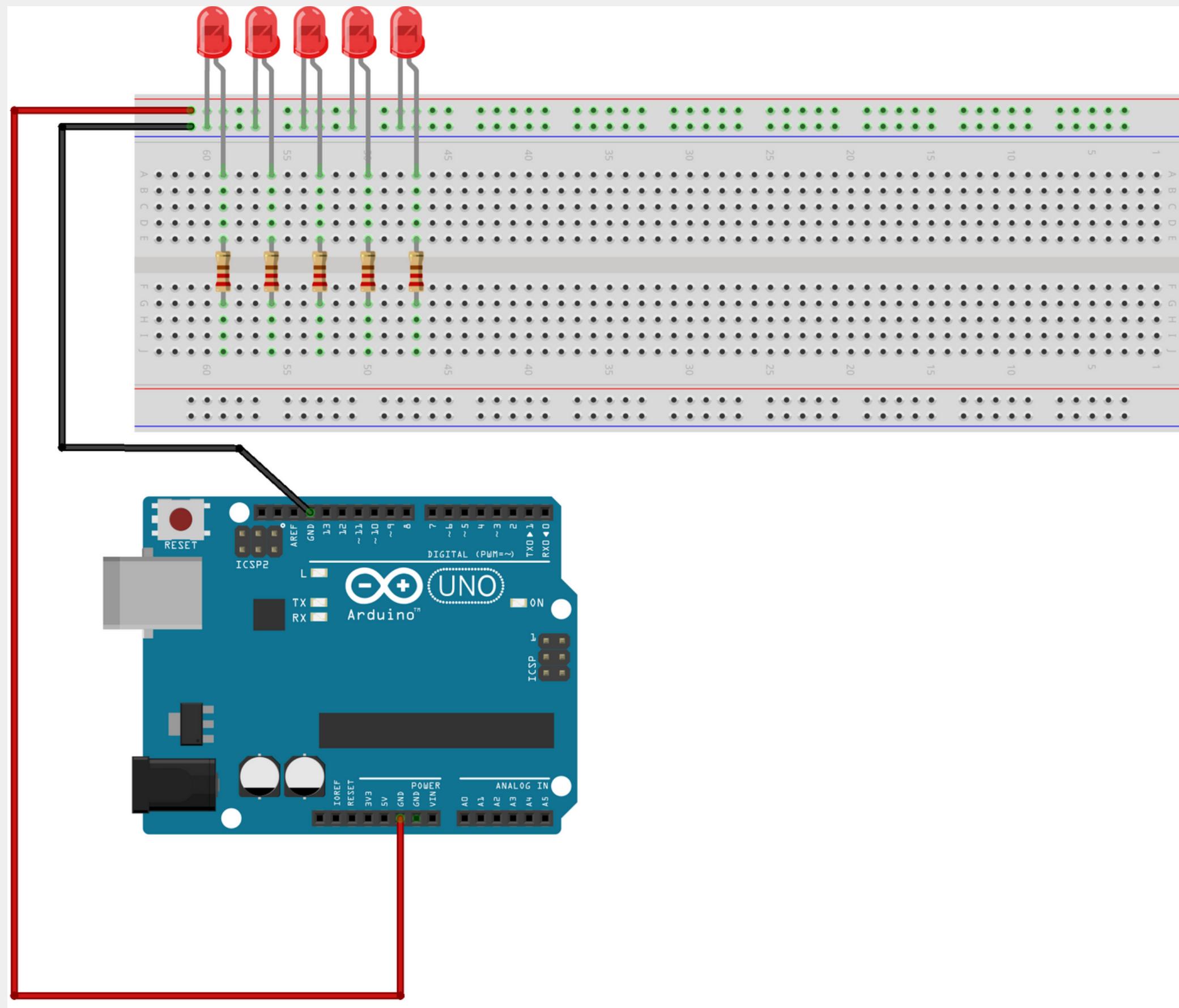
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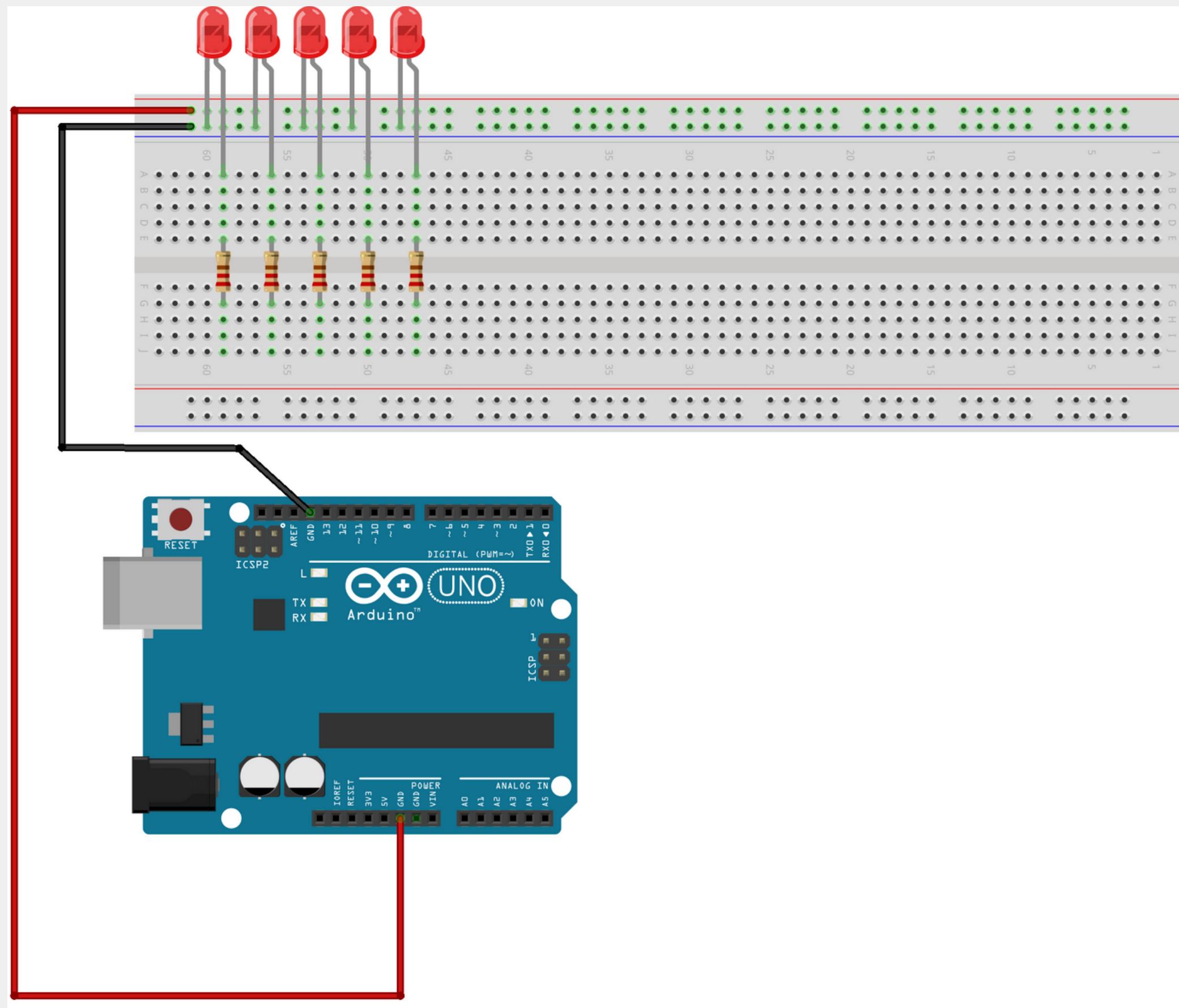
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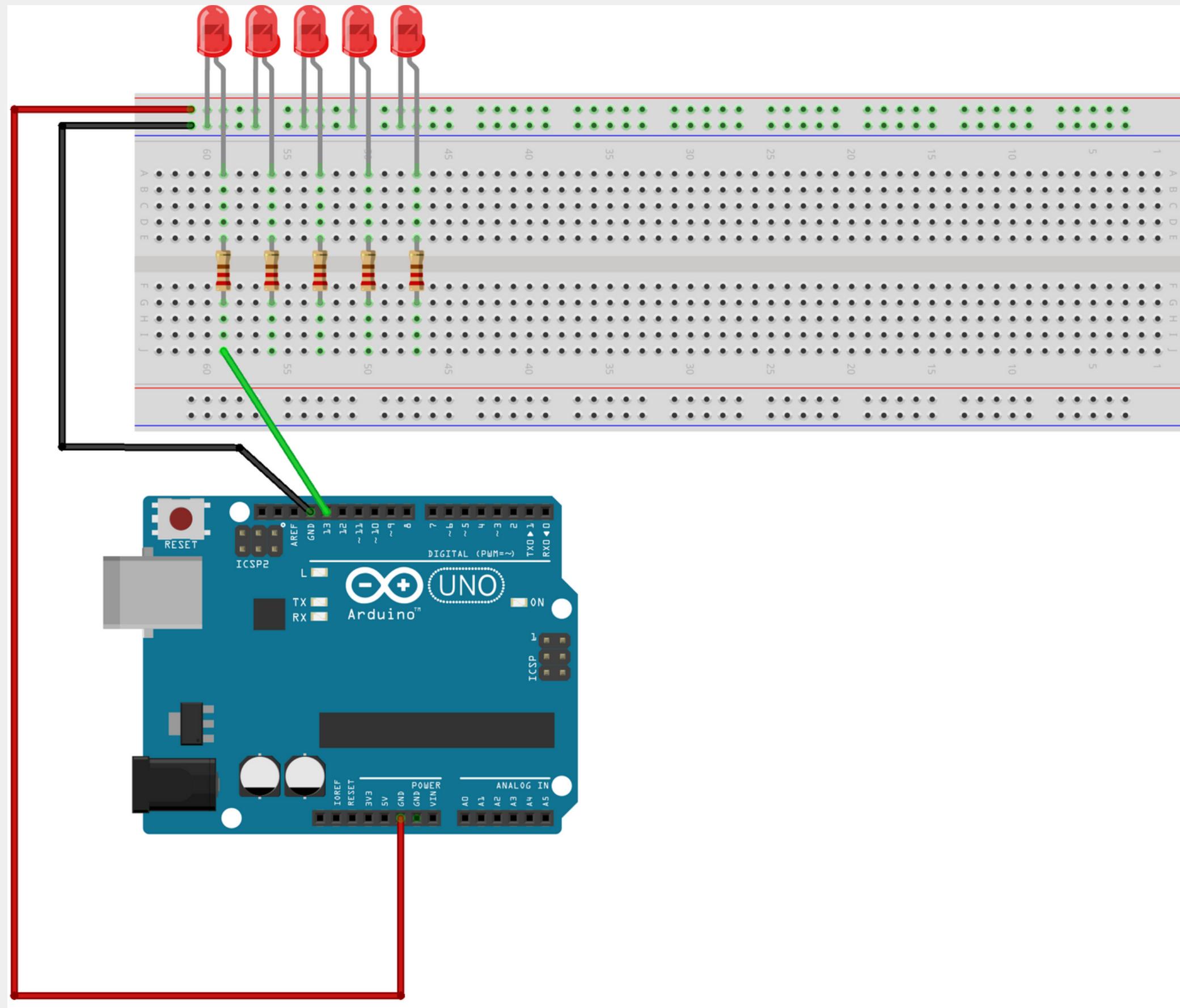
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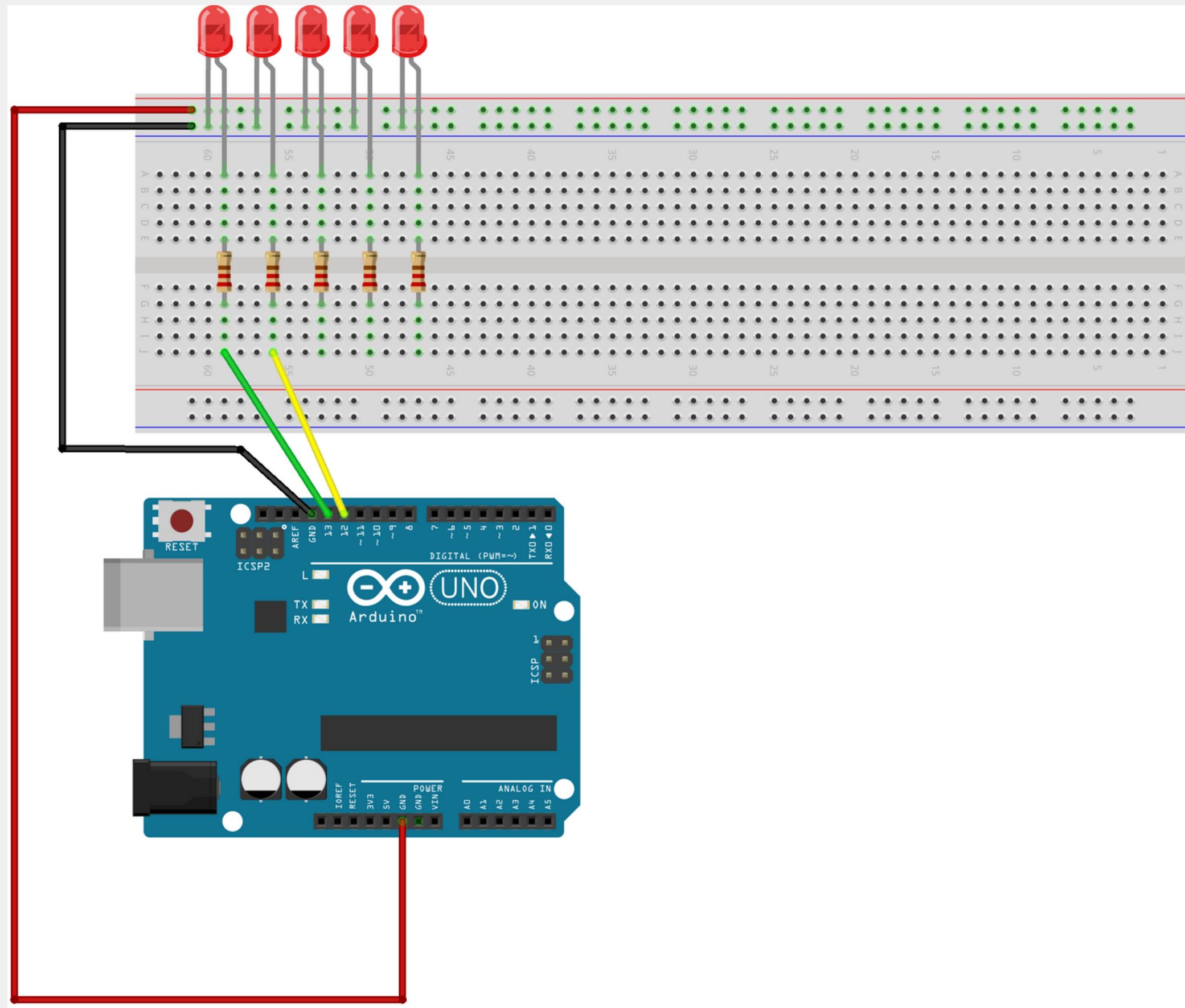
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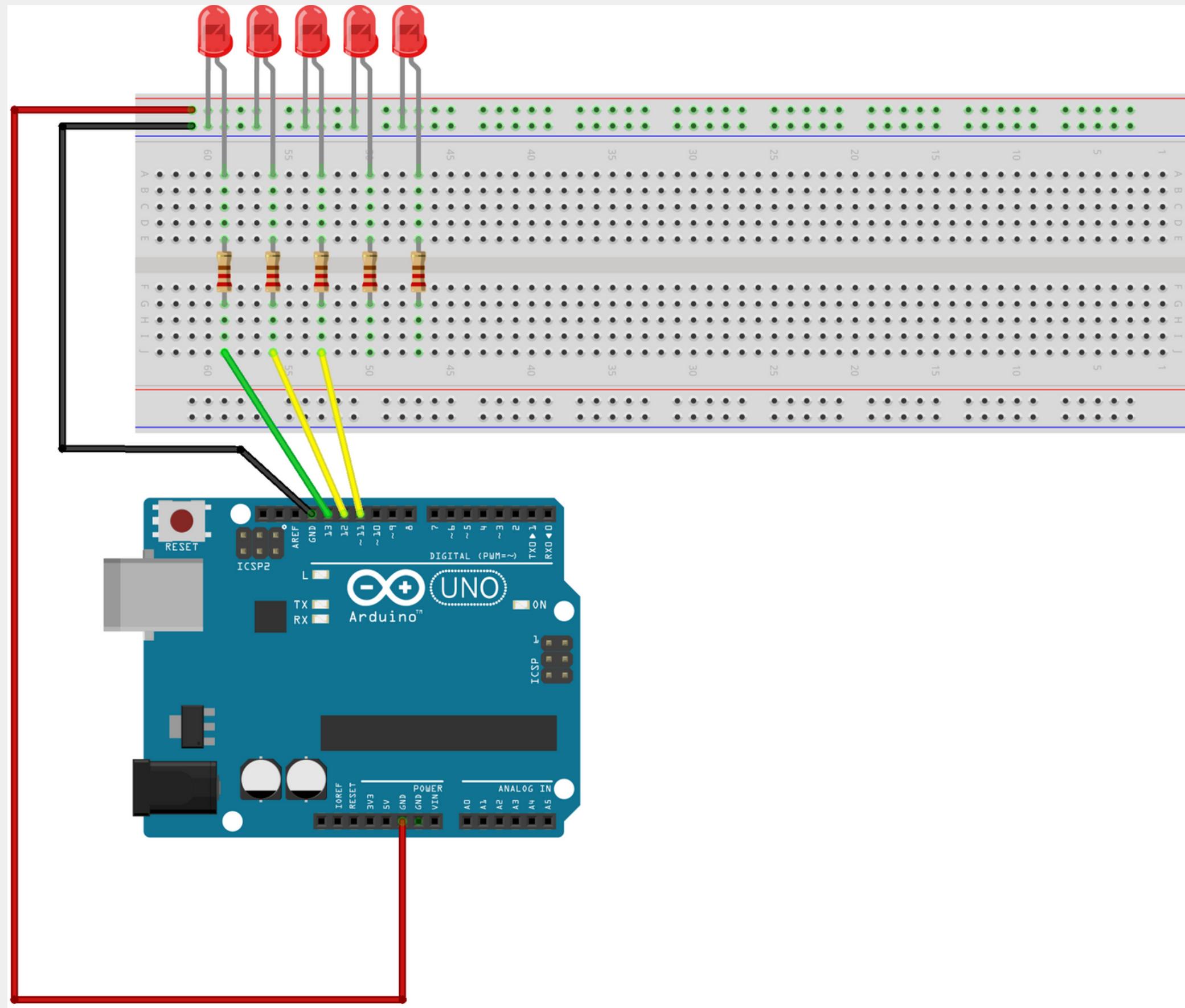
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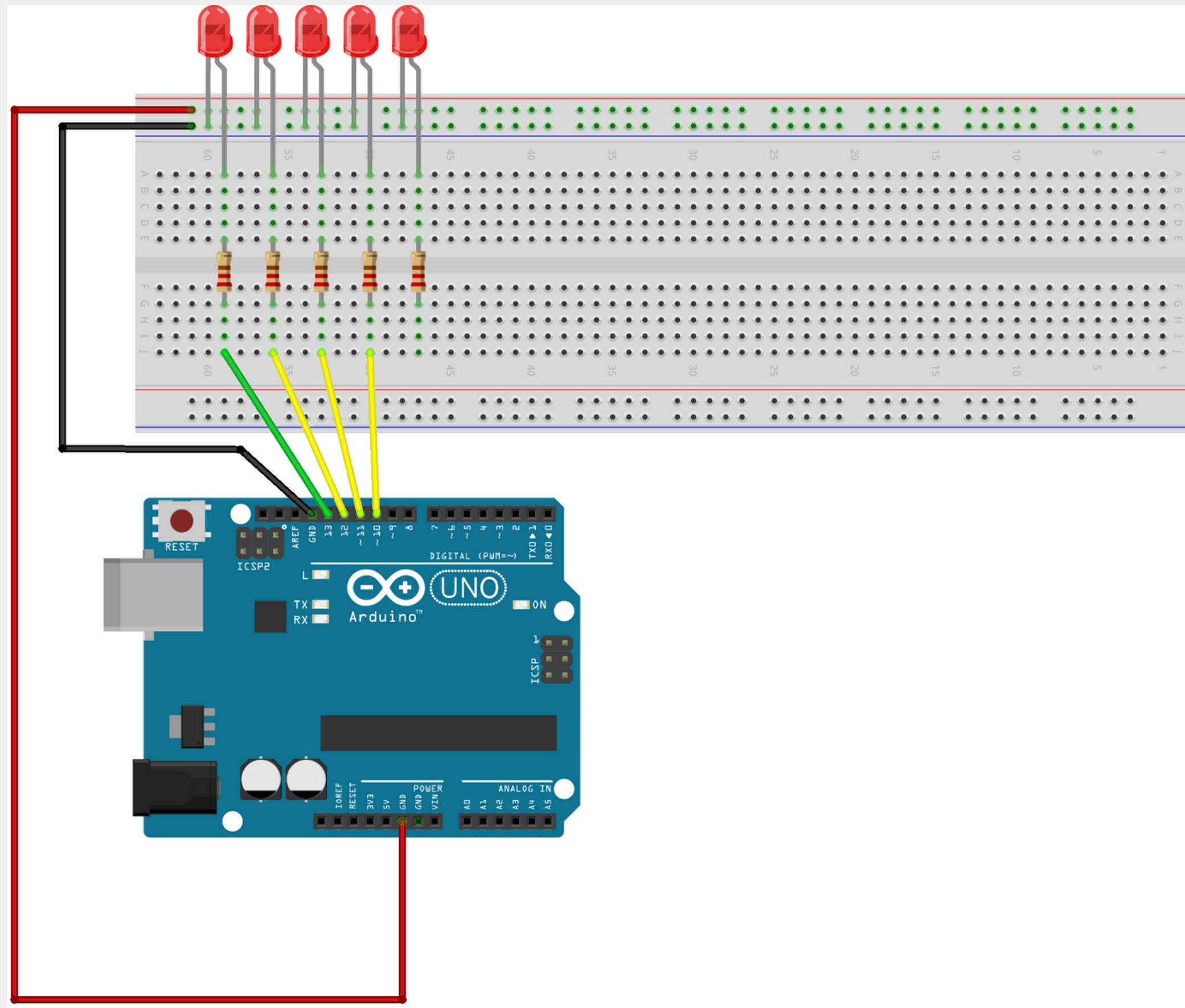
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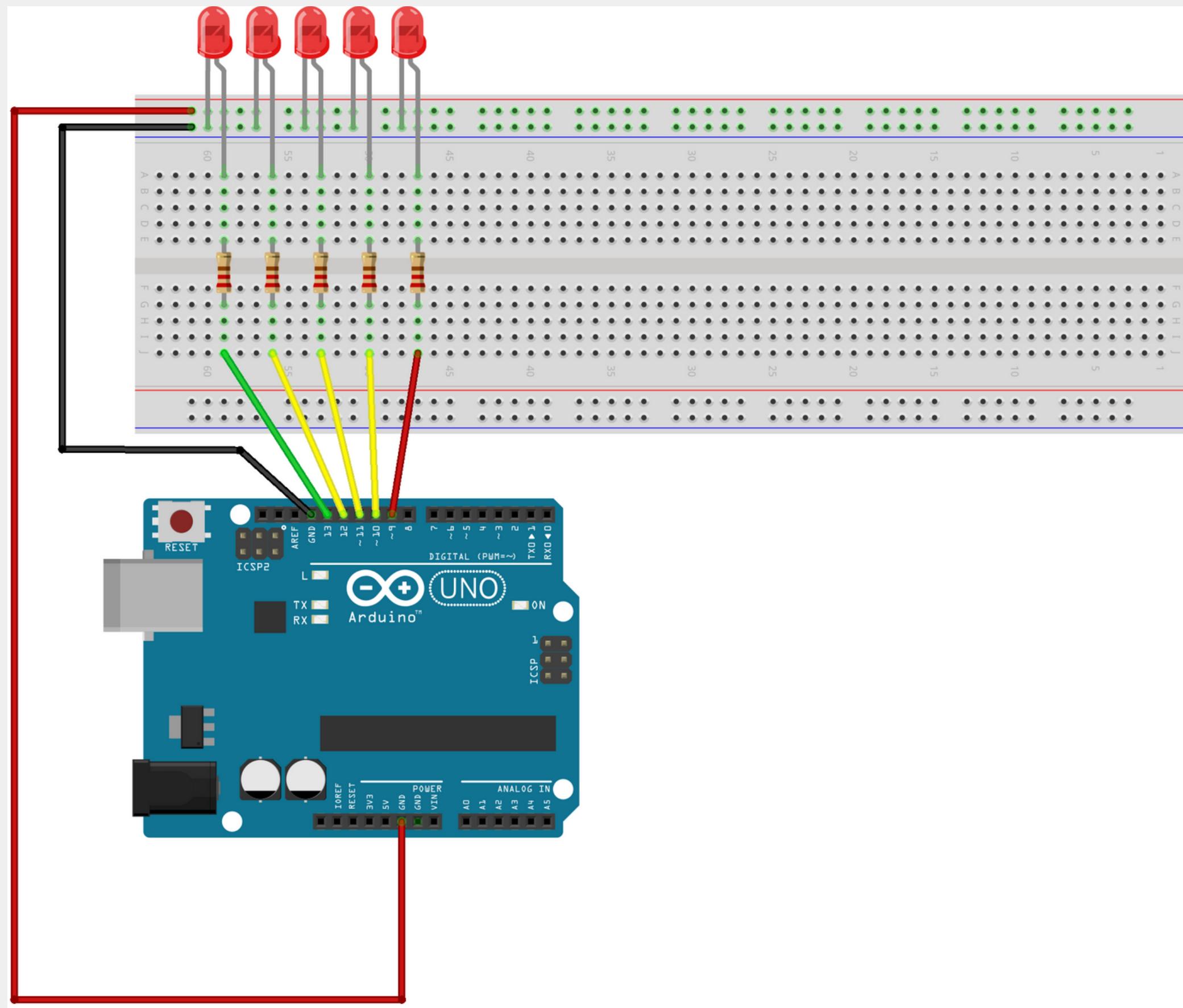
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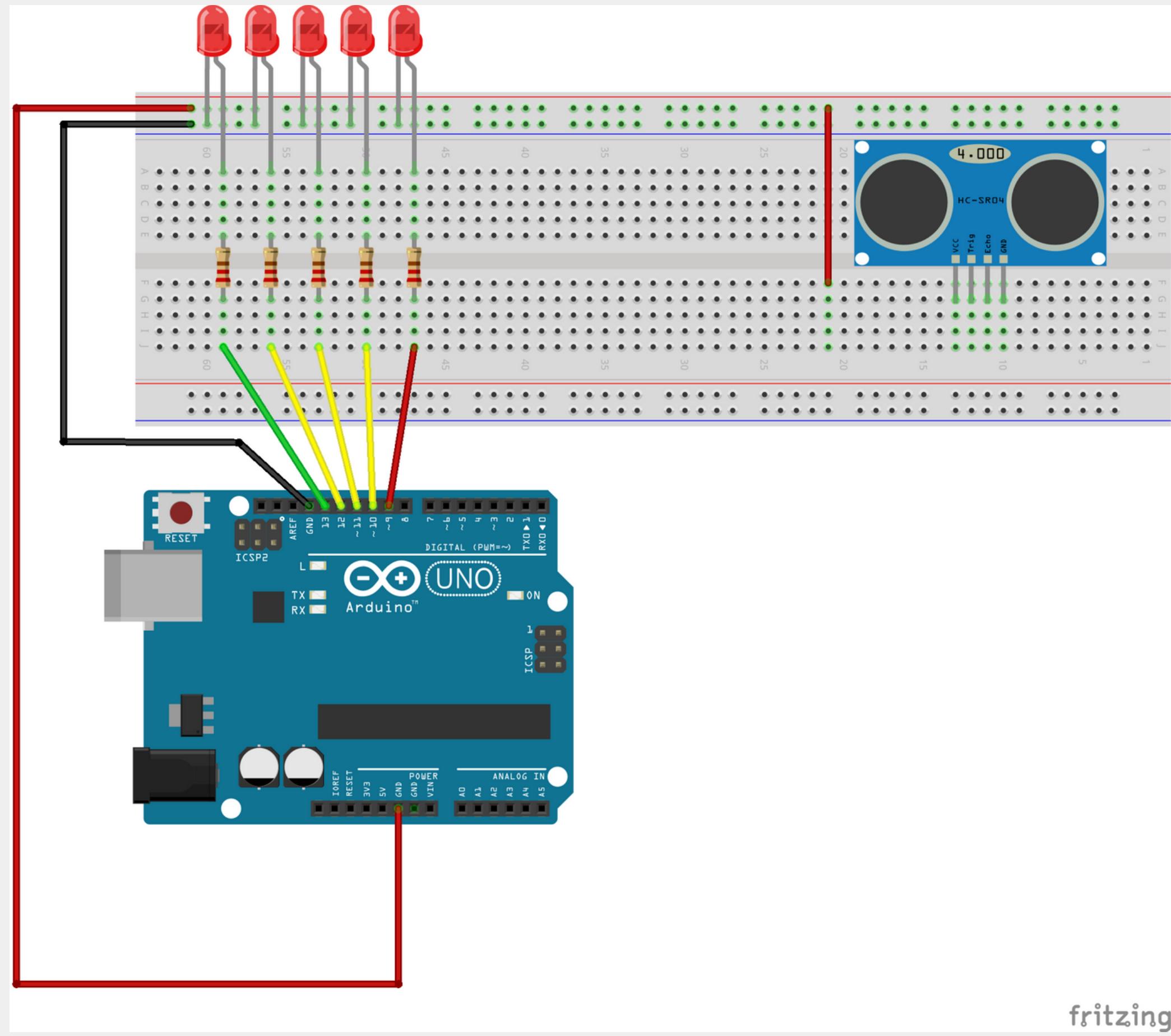
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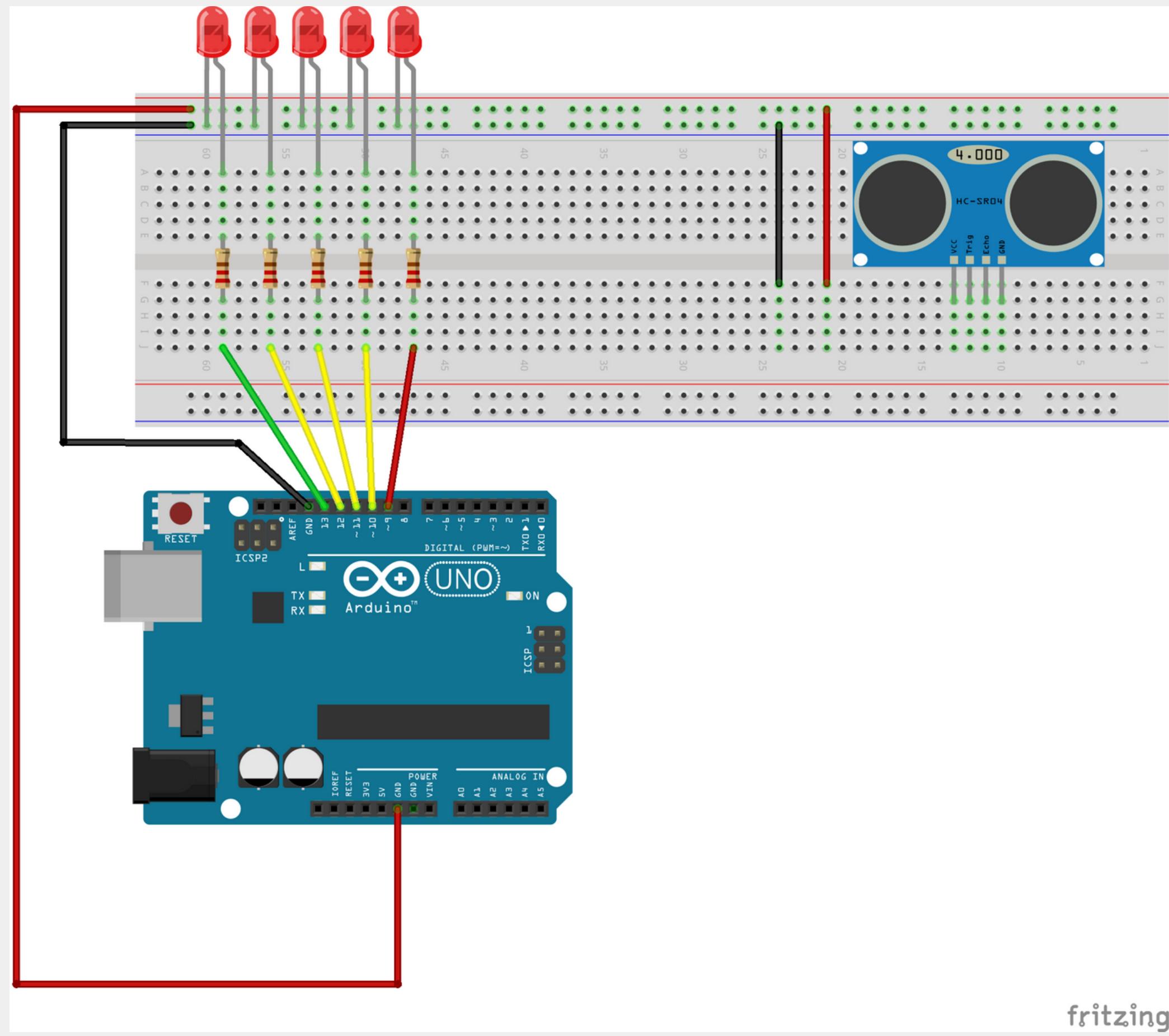
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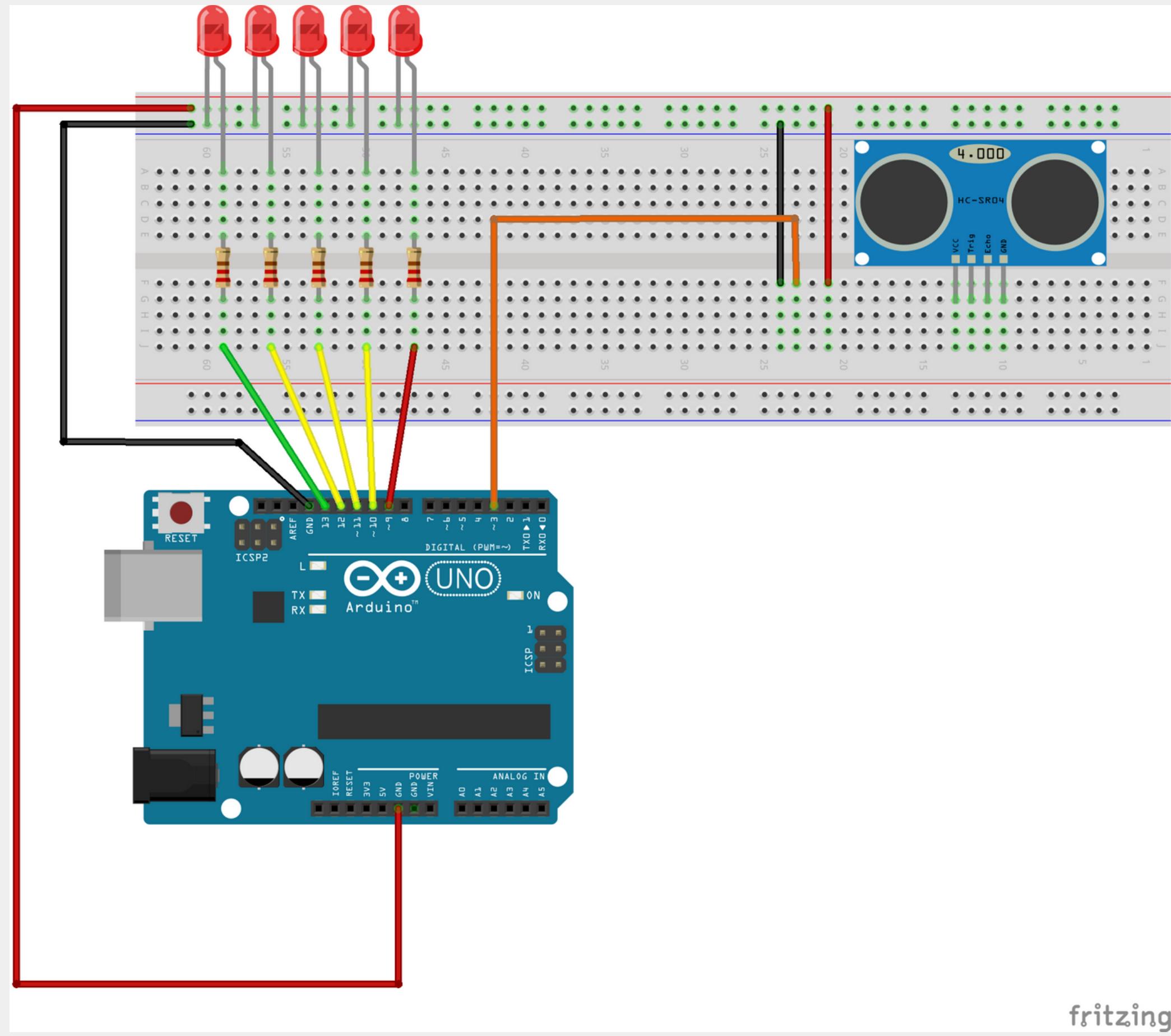
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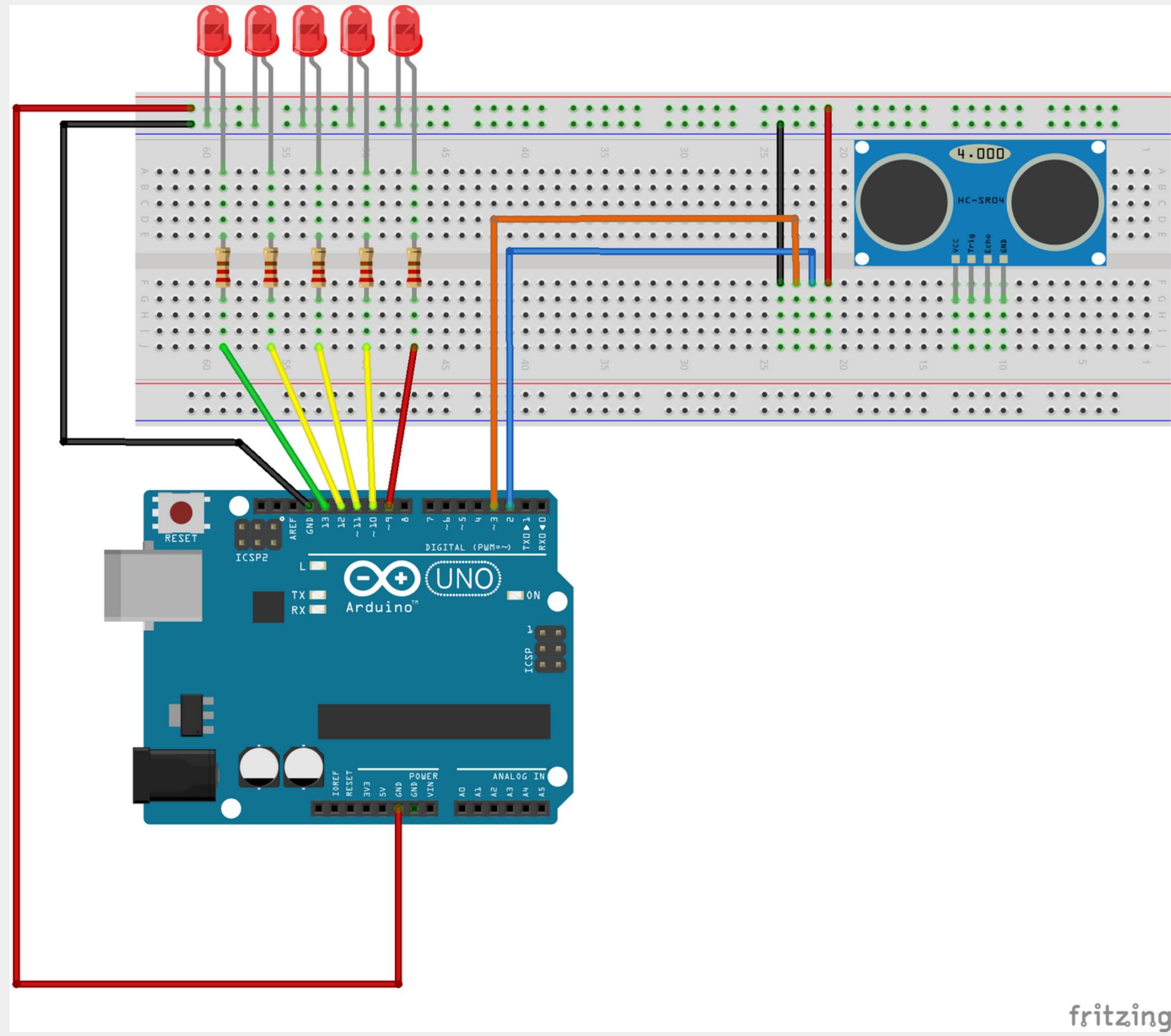
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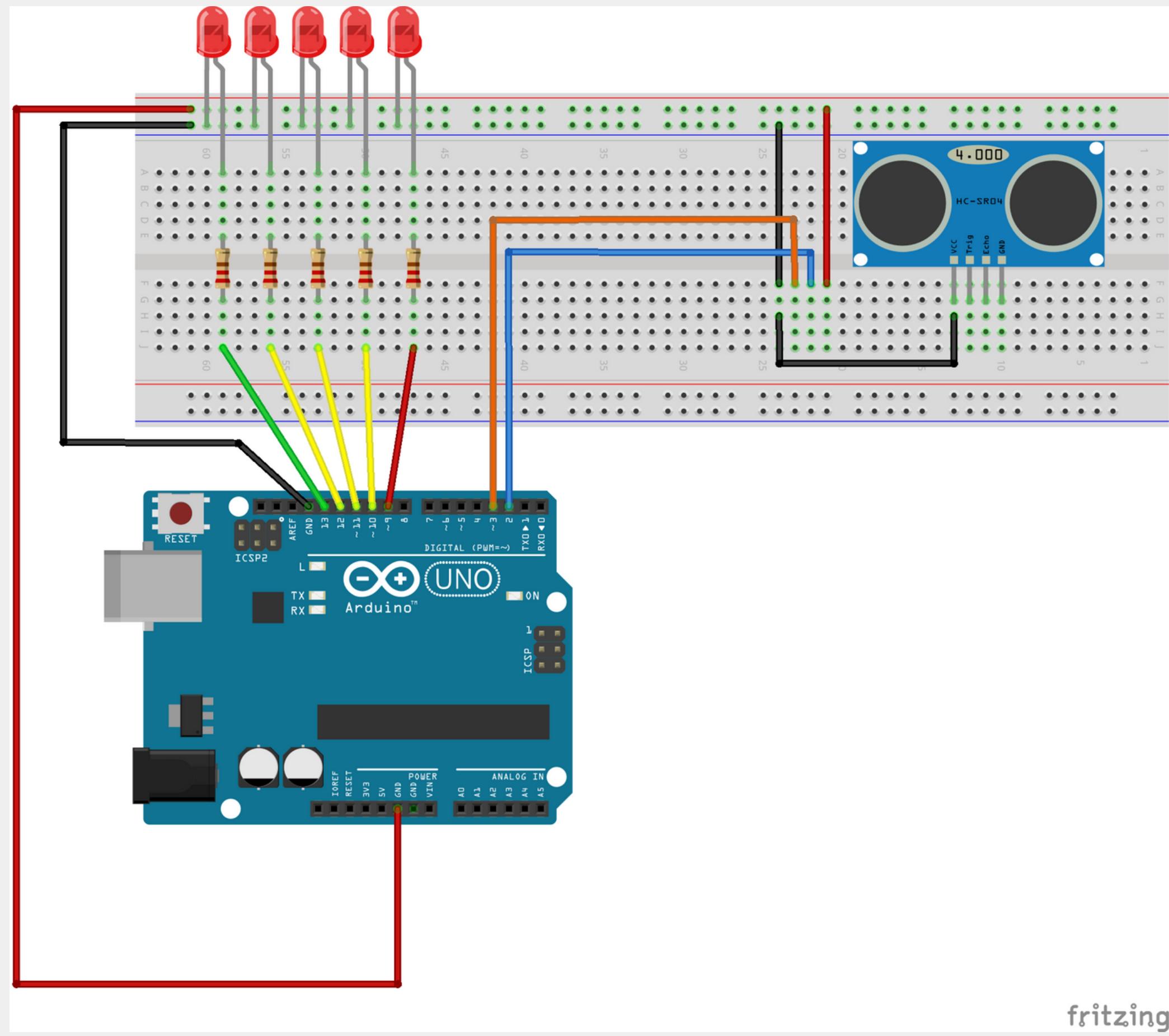
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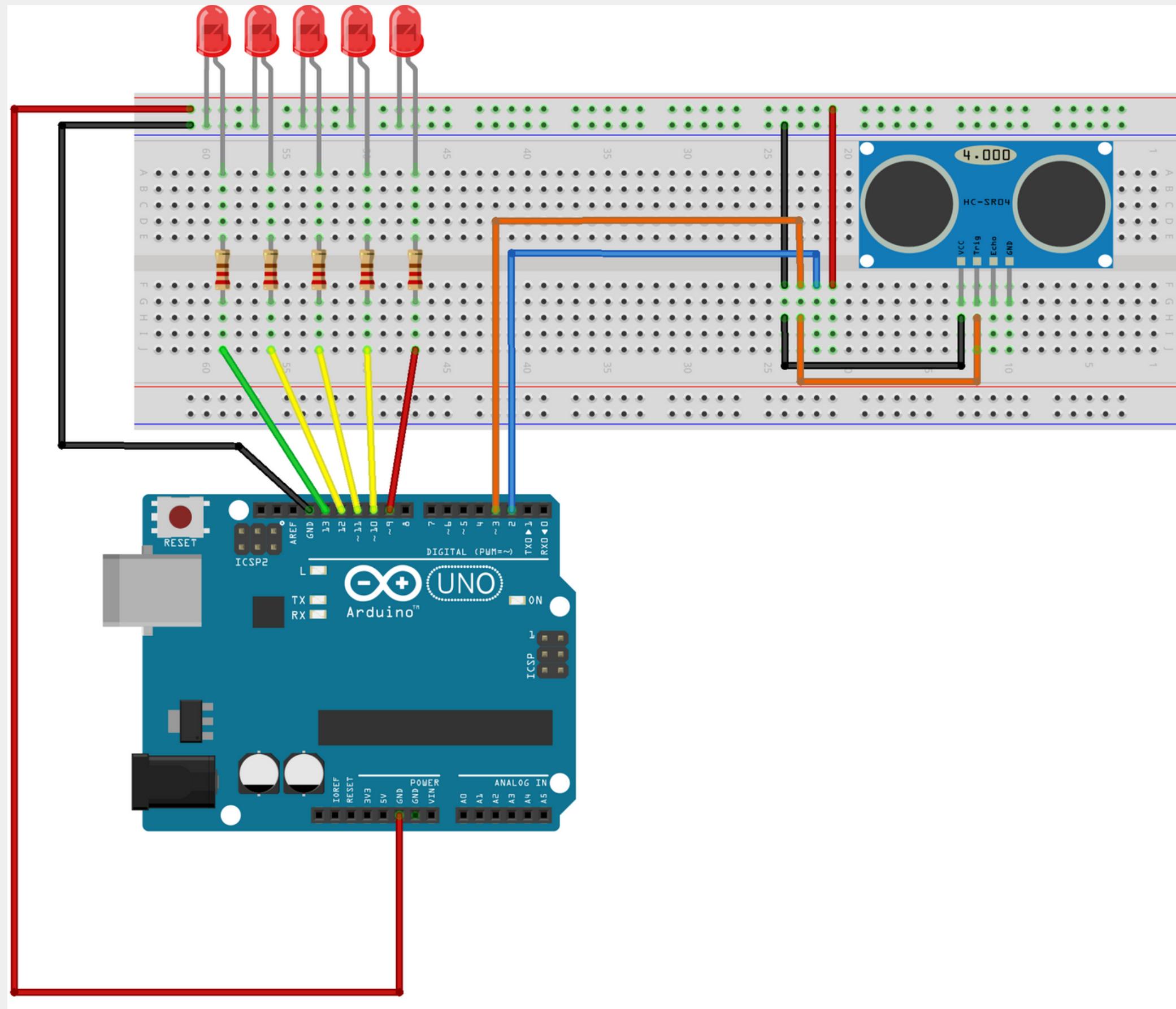
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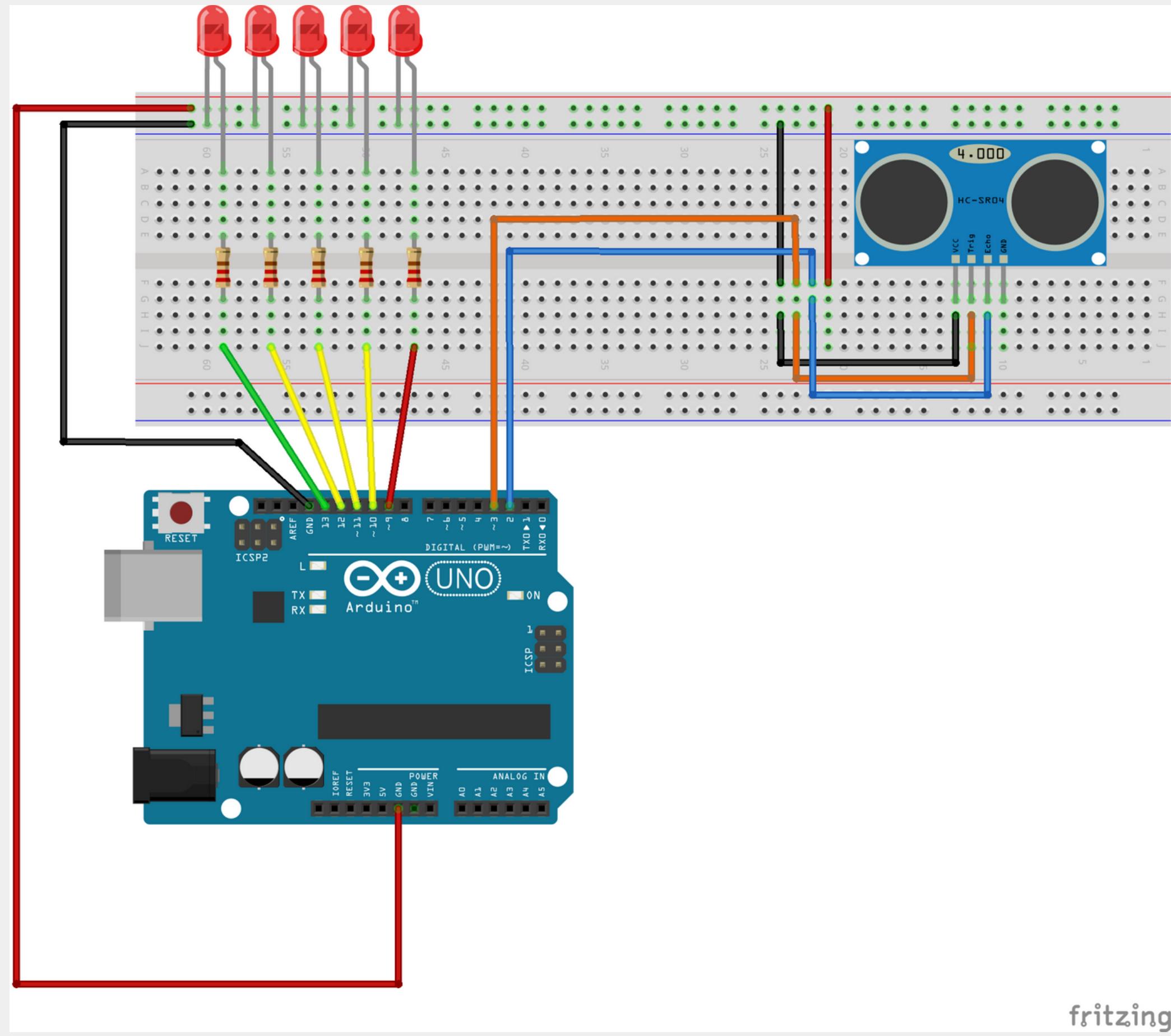
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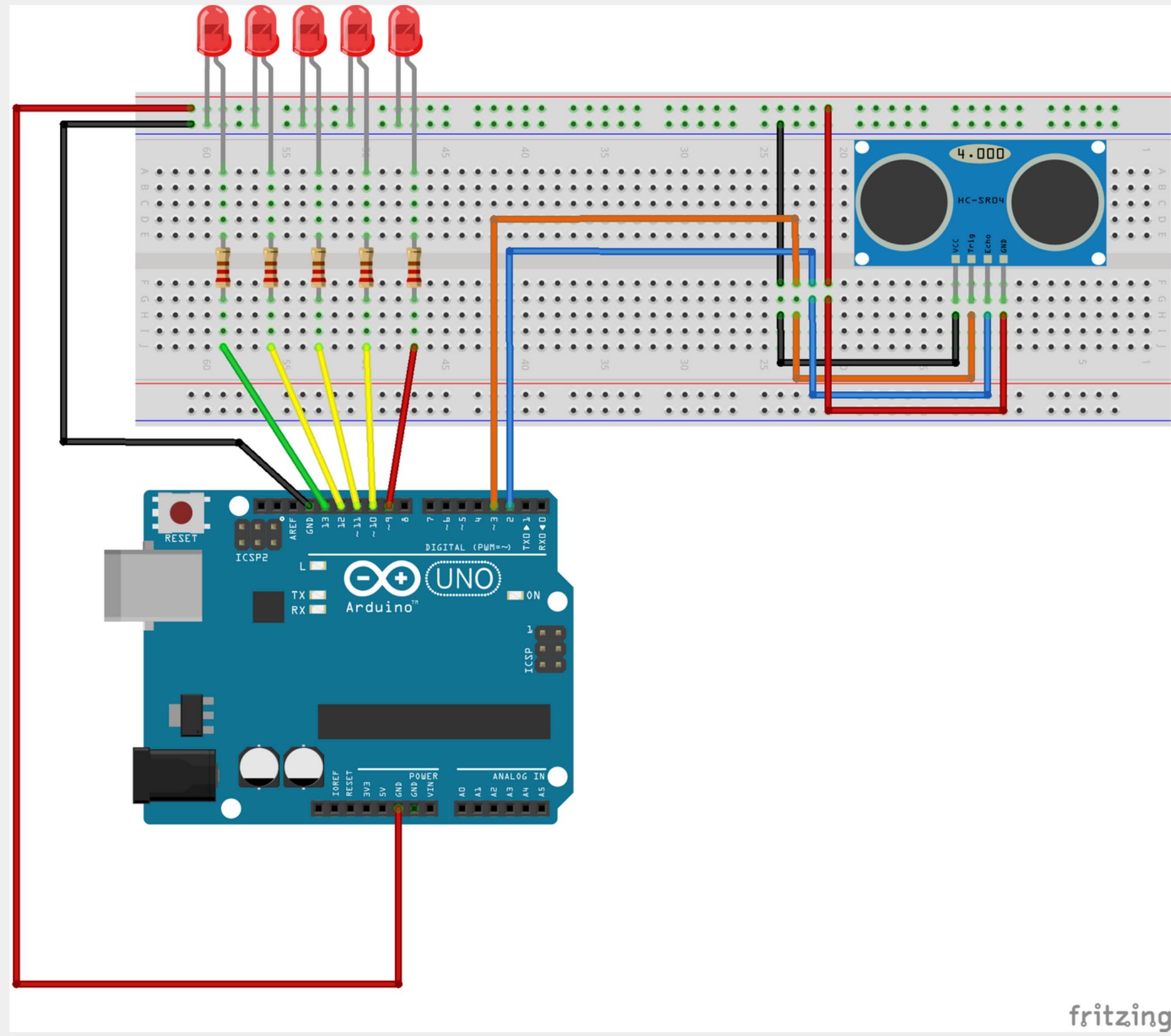


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PRONTO!

AGORA VOCÊ TEM A FORÇA.

APROXIME SUA MÃO DO SENSOR E VEJA O
PODER JEDI QUE HÁ EM VOCÊ,

