TECLADOS CASEROS

PARTE I: ARDUINO

FUNDACIÓN GABRIEL & MARY MUSTAKIS

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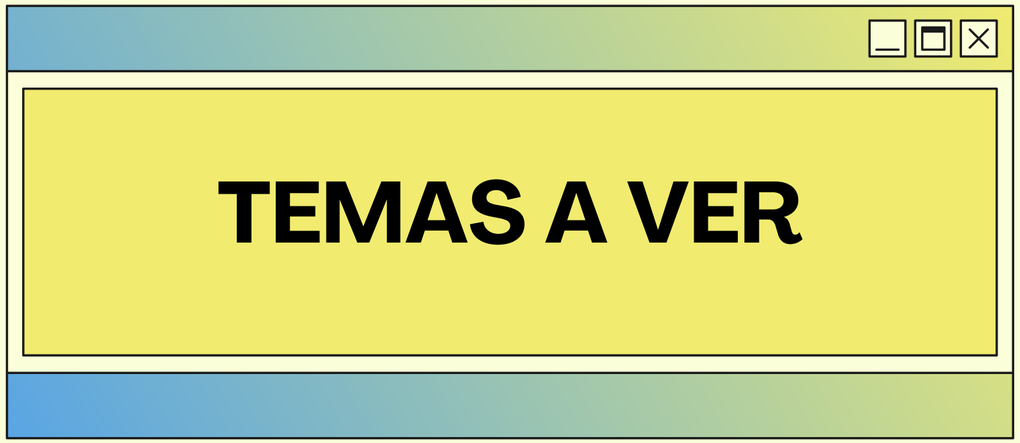
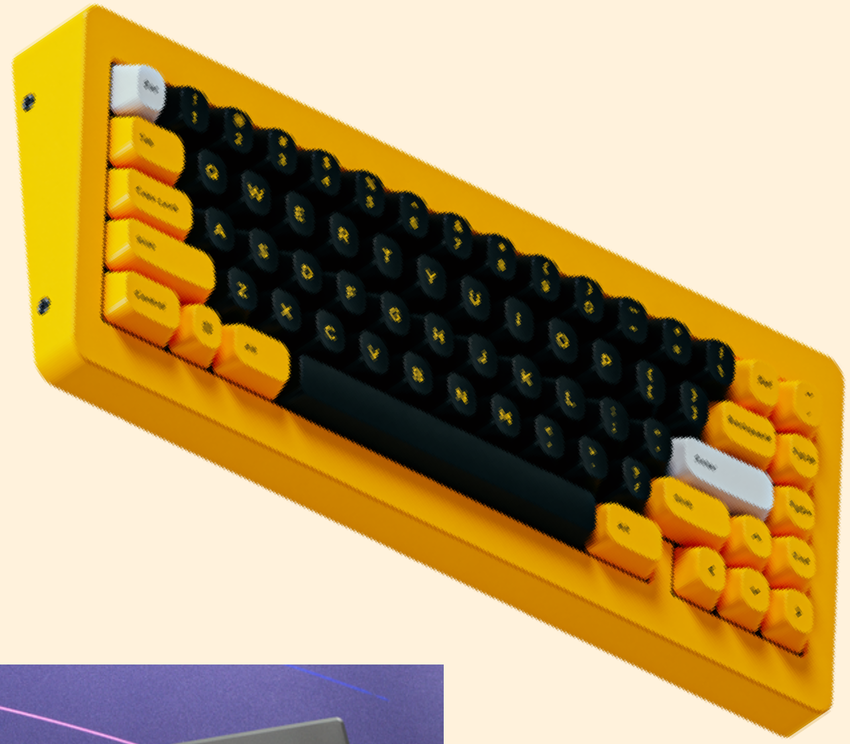
GABRIEL & MARY MUSTAKIS



- Interfaces
- Descubriendo piezas y partes
- Introducción a ARDUINO
- Ejercicios introductorios



TRACKBALL


Esc
F1
F2
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F4
F5
F6
F7
F8
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F10
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Pause
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Insert
Home
PgUp
Z
X
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M
Del
End
PgDn
Ctrl
Alt
Alt
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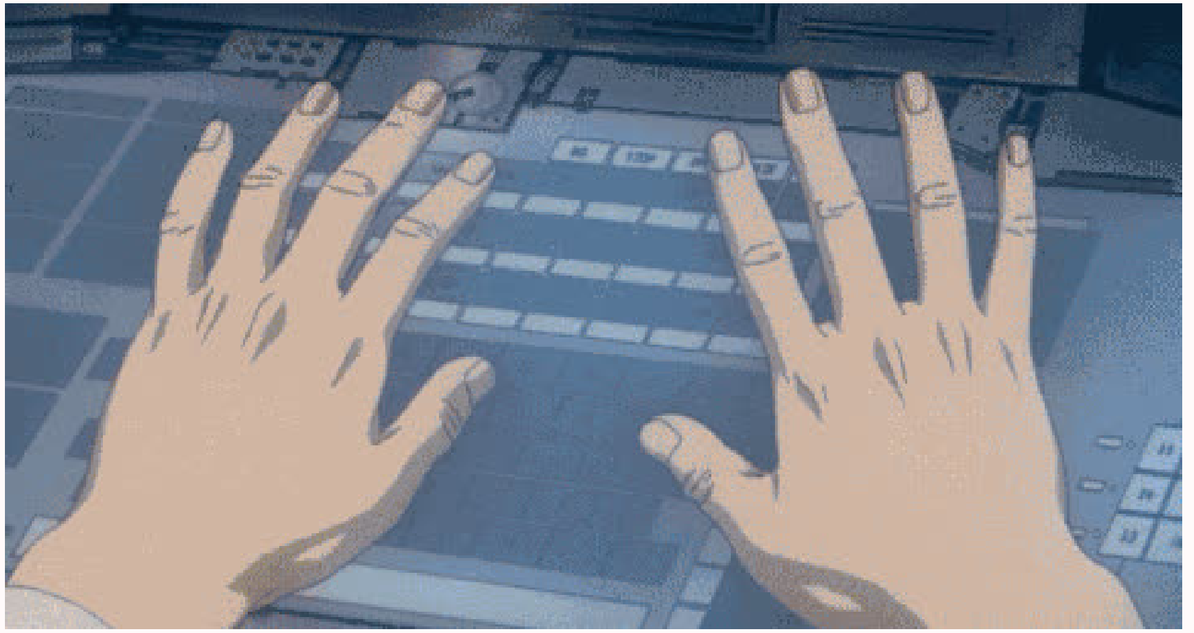
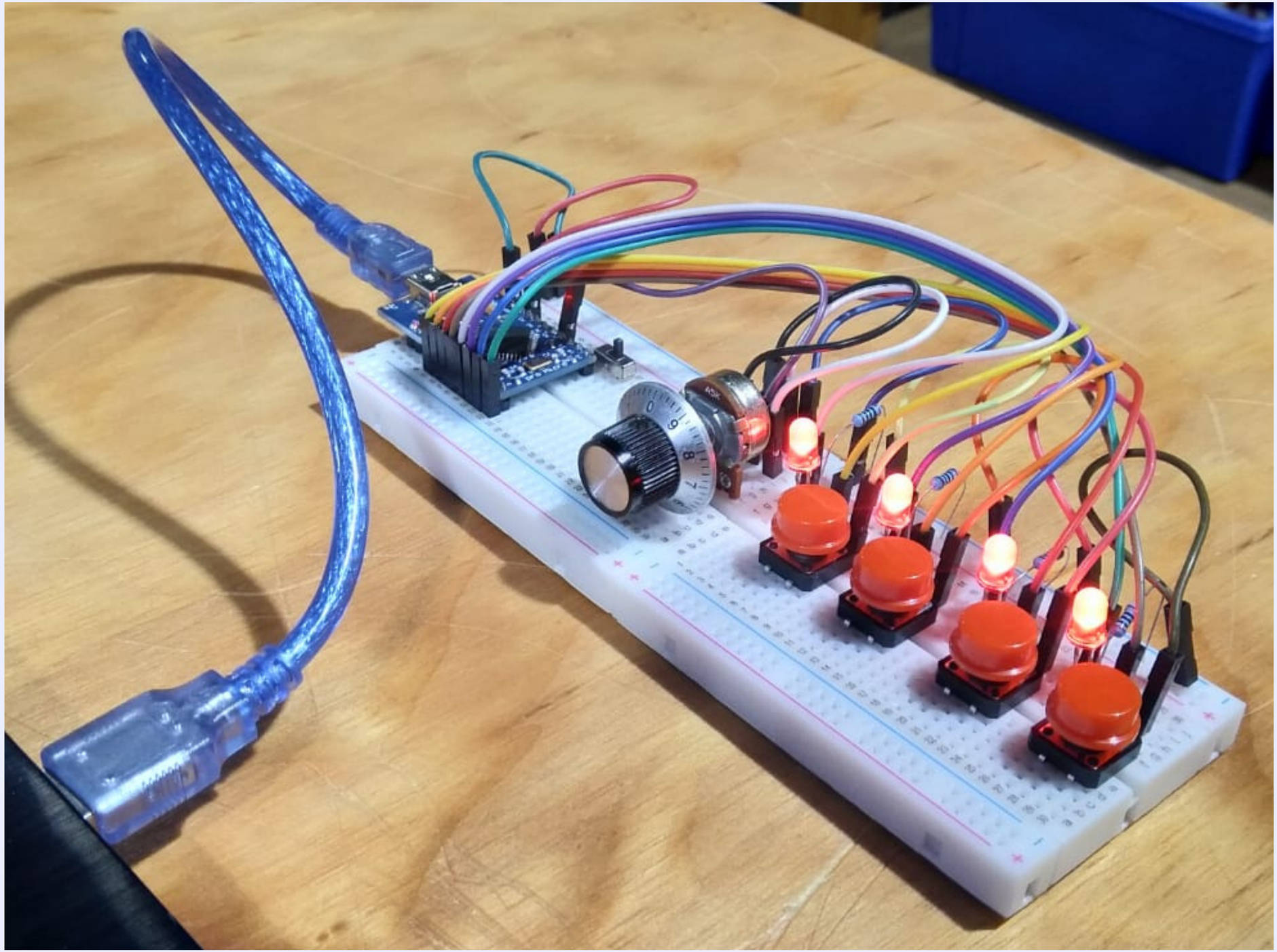
Caps
Ctrl

"the matrix" - 1999

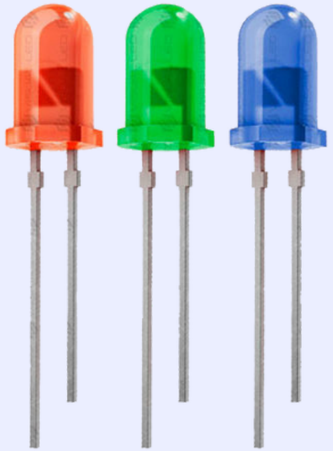


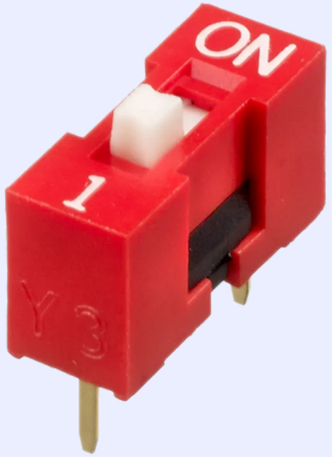
"ghost in the shell" - 1995

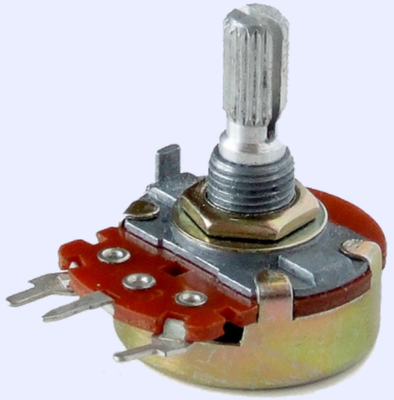


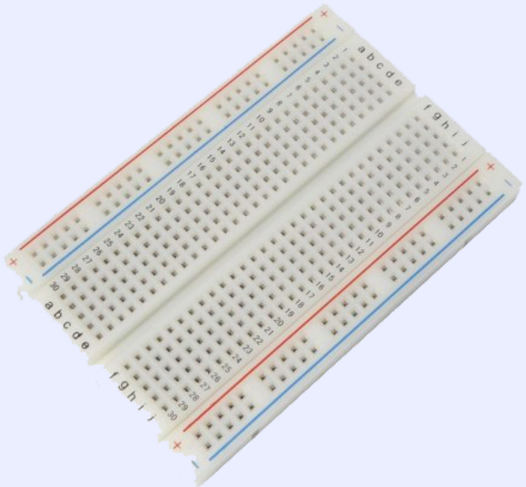
¿POR QUÉ ESTAMOS HACIENDO UN TECLADO CASERO?

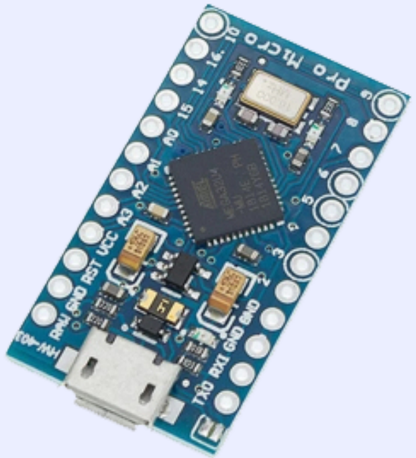
MATERIALES



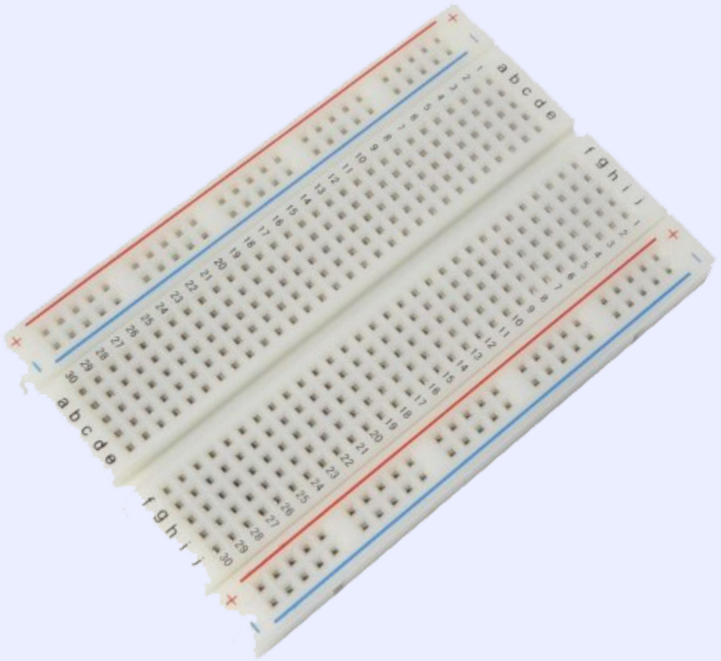

ON
1

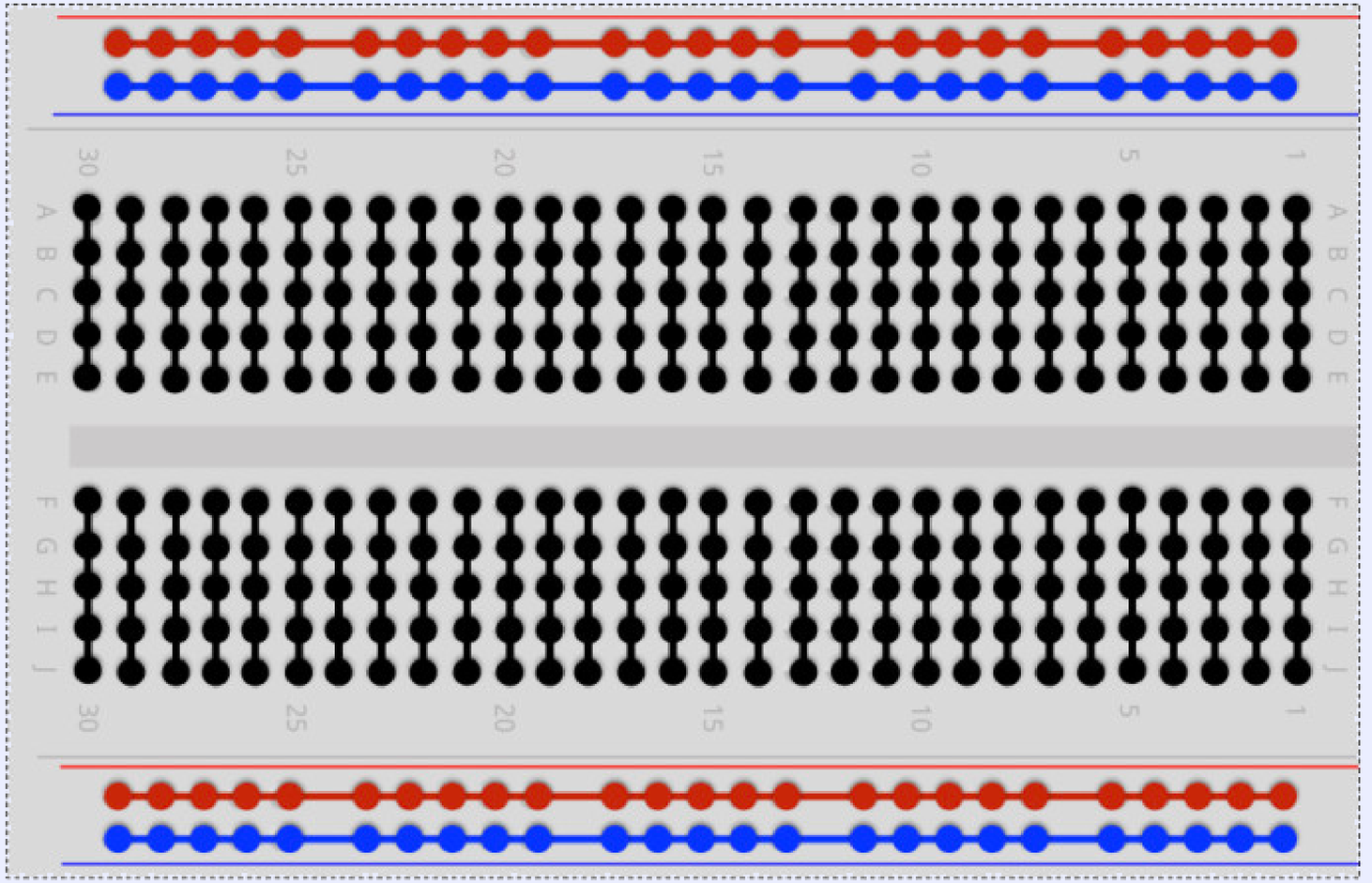





Pro Micro

PROTOBOARD

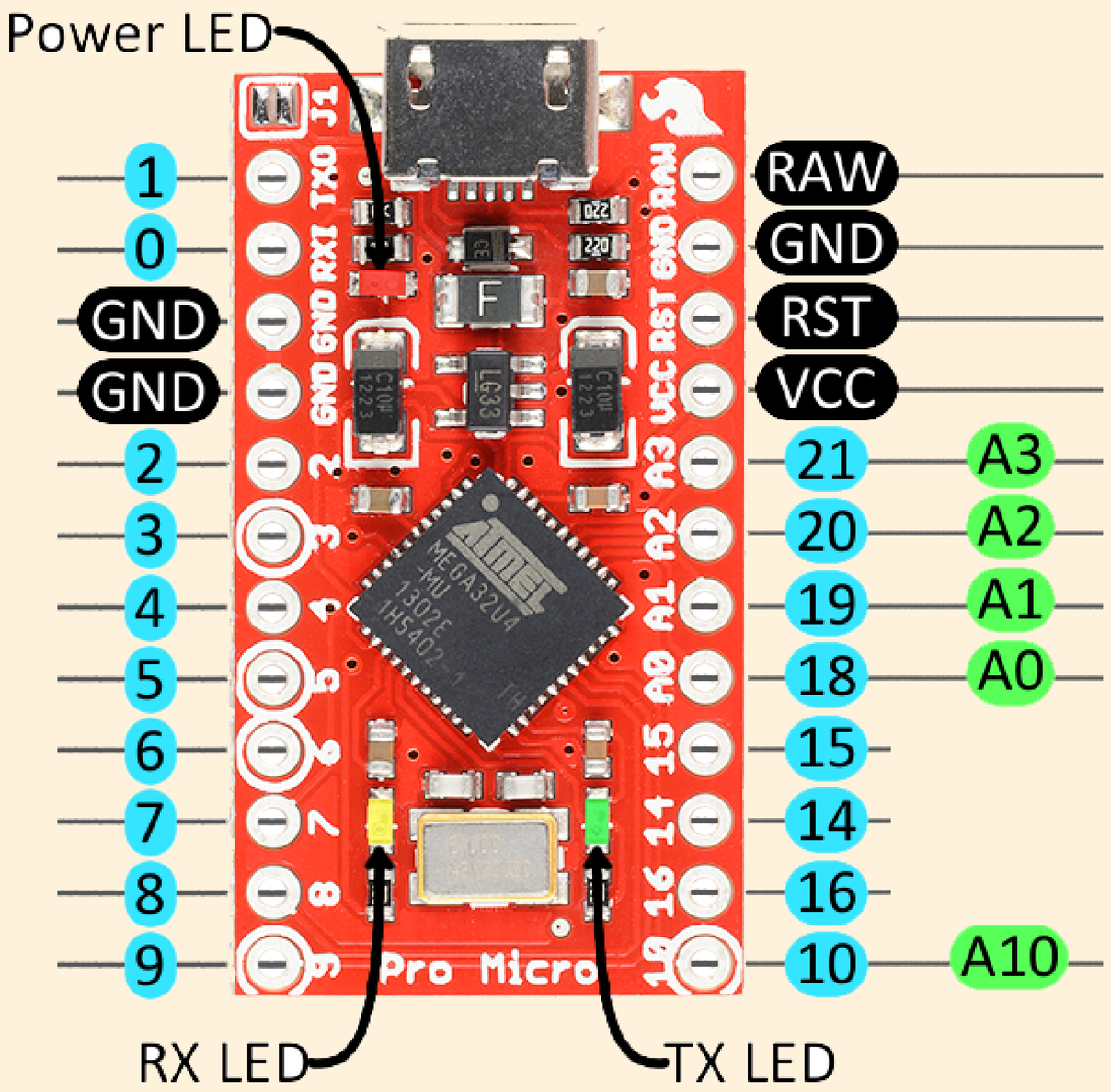




INTRODUCCION A ARDUINO

TIPOS DE ENTRADA

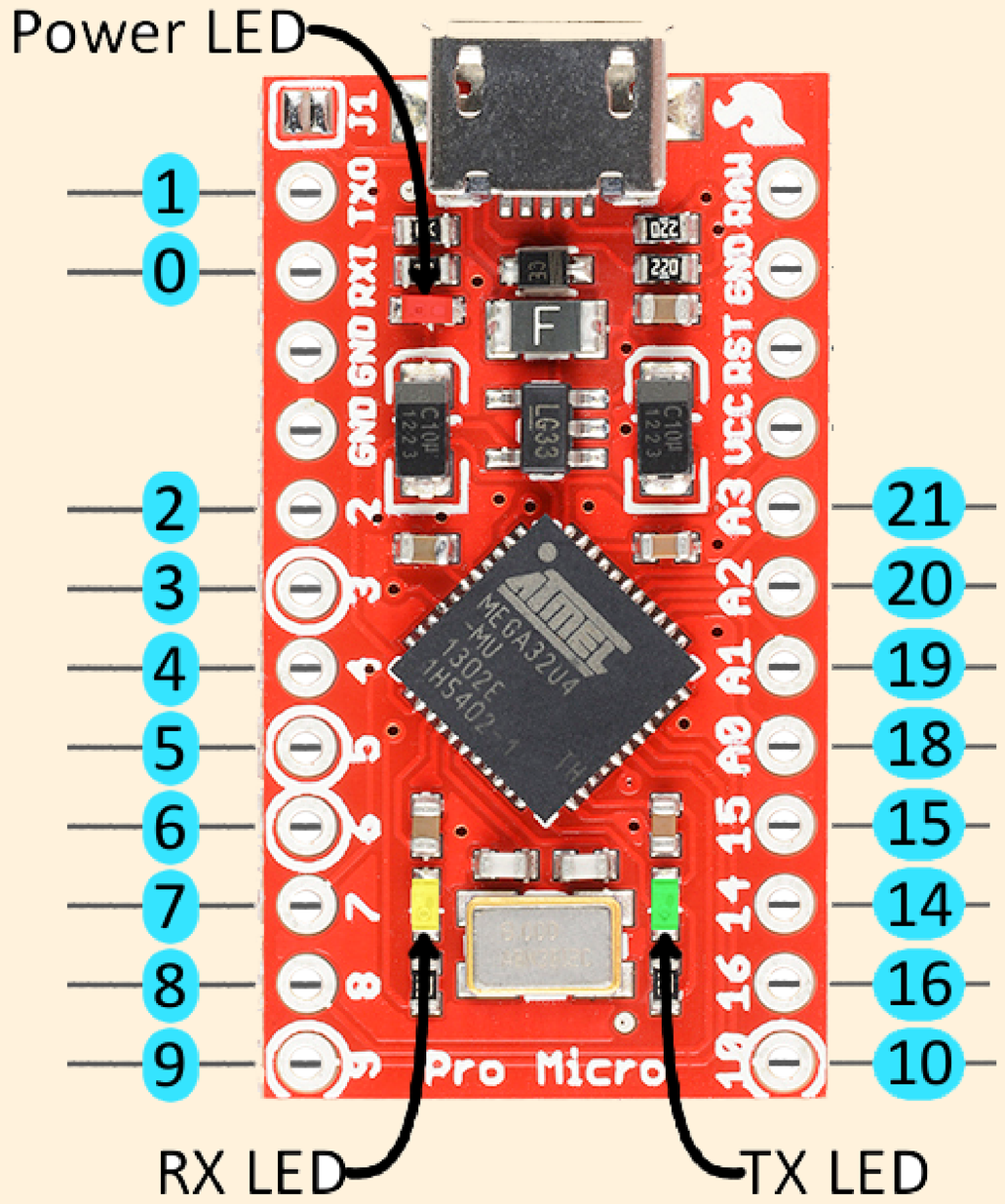
- DIGITALES
- ANALOGAS
- FUENTES DE PODER



ENTRADAS DIGITALES

Entradas que reciben o emiten valores:

- **0 o 1**
- **Apagado o Encendido**
- **Desactivado o Activado**

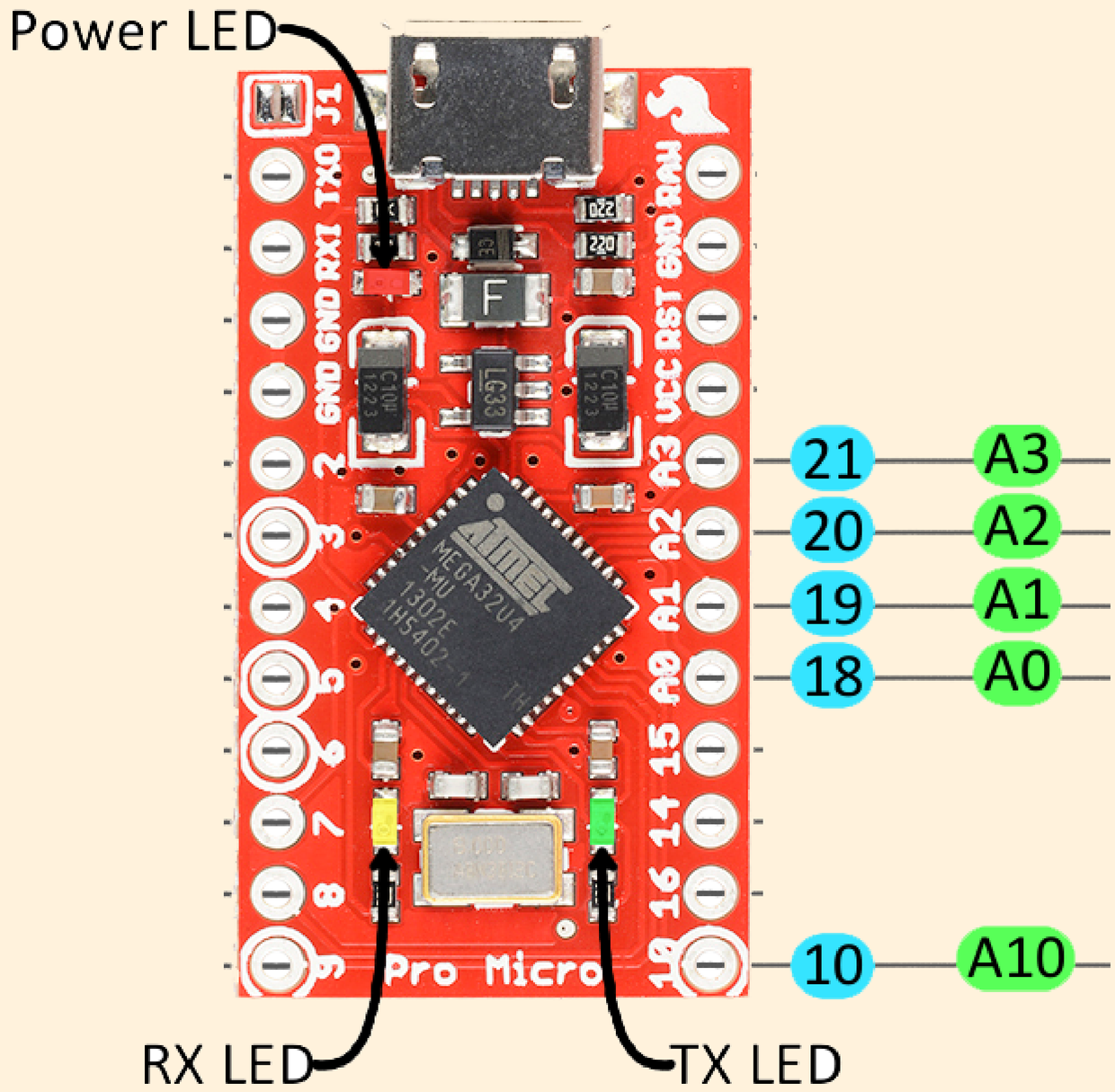


ENTRADAS ANALOGICAS

Lee valores de tension de 0 a 5 v

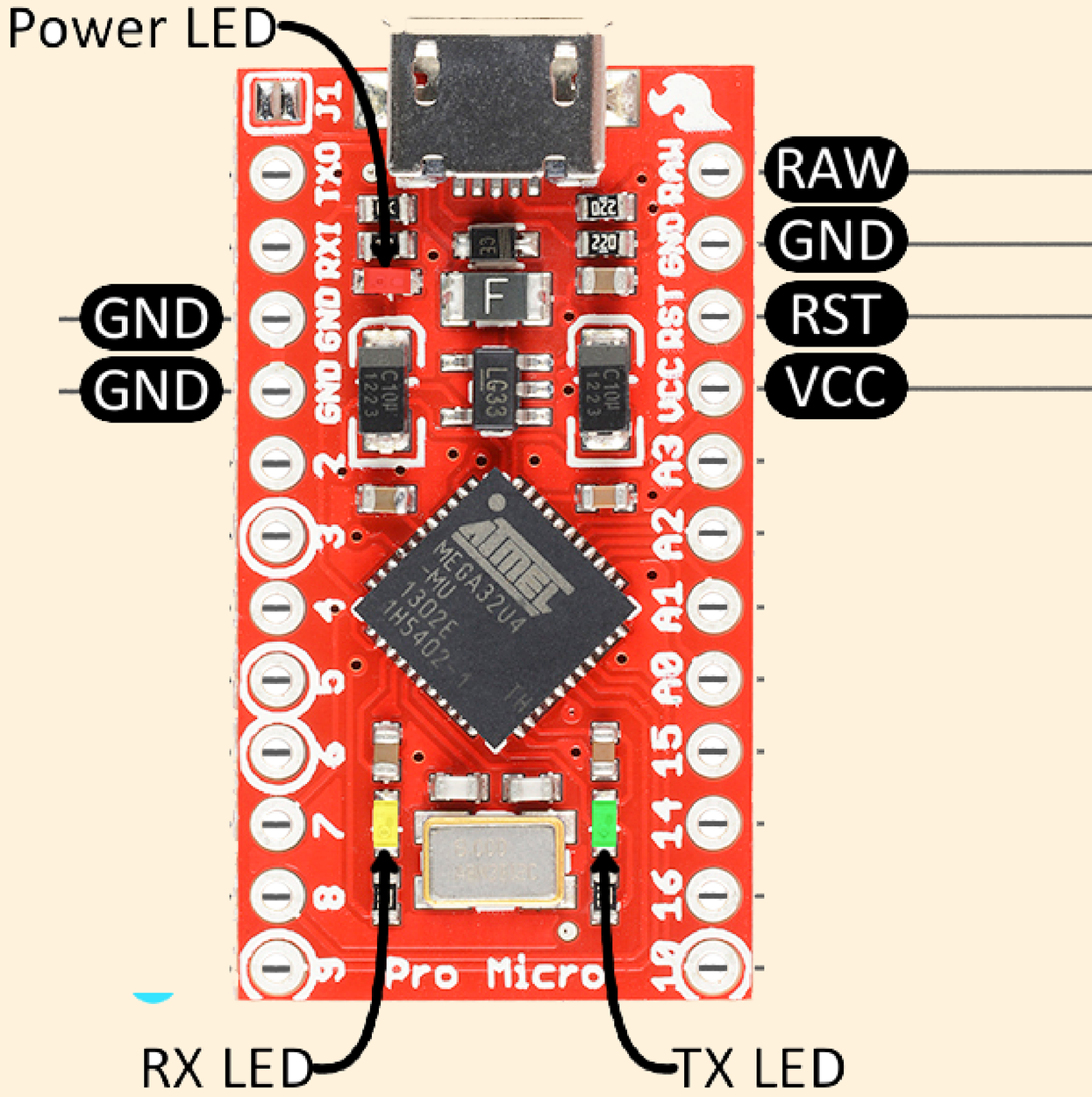
Un conversor análogo-digital transforma la lectura en un valor de 10 bits

0 - 1023



FUENTES DE PODER

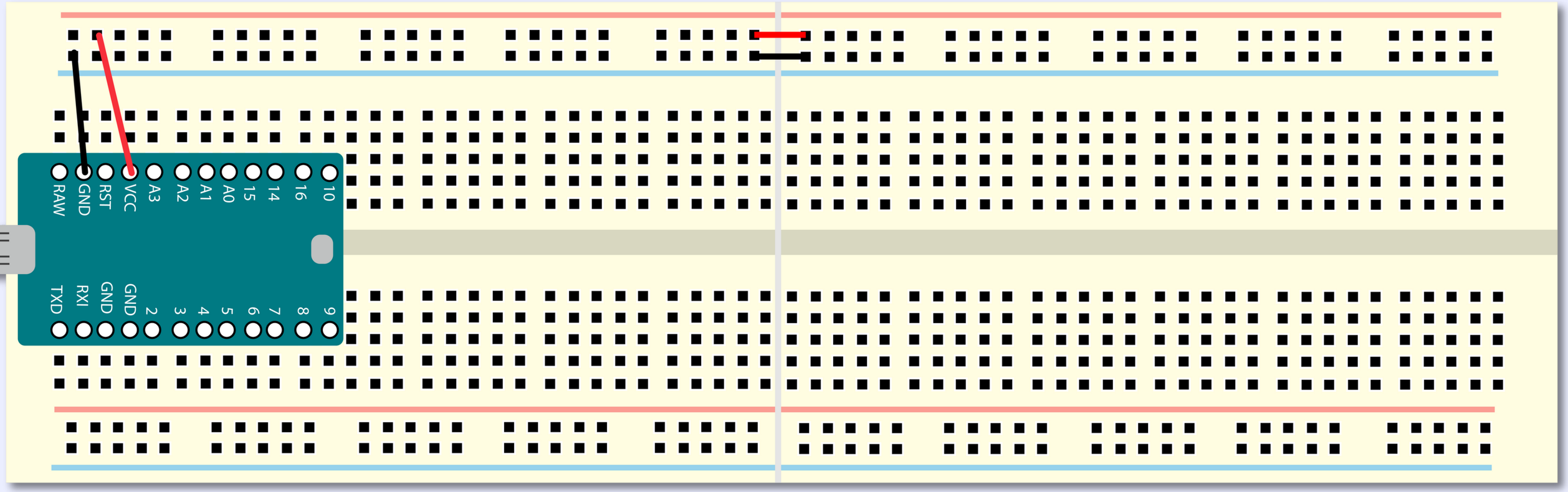
- **GND:** Tierra o corriente negativa
- **VCC:** Fuente de 5v
- **RAW:** Alimentacion independiente
- **RST:** Reinicio del arduino



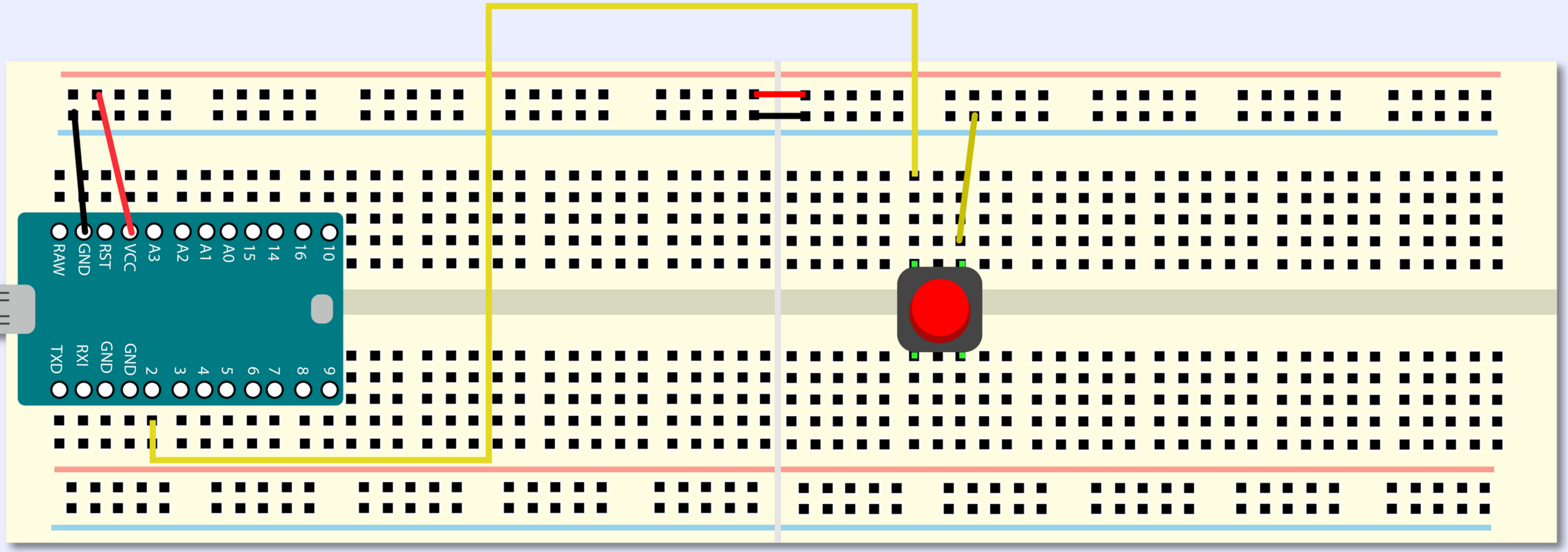
ARMEMOS NUESTRO TECLADO

UTILIZAREMOS NUESTRAS MANOS PARA ENSAMBLAR UN TECLADO CASERO

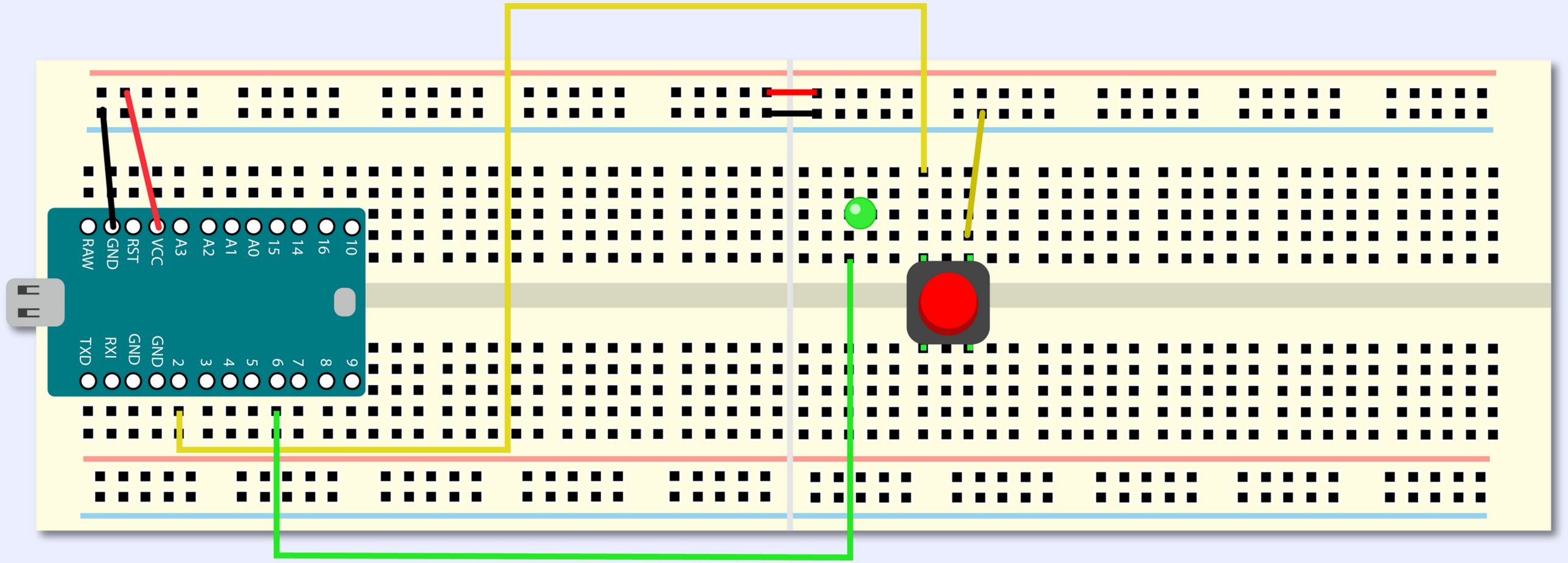
ARMADO



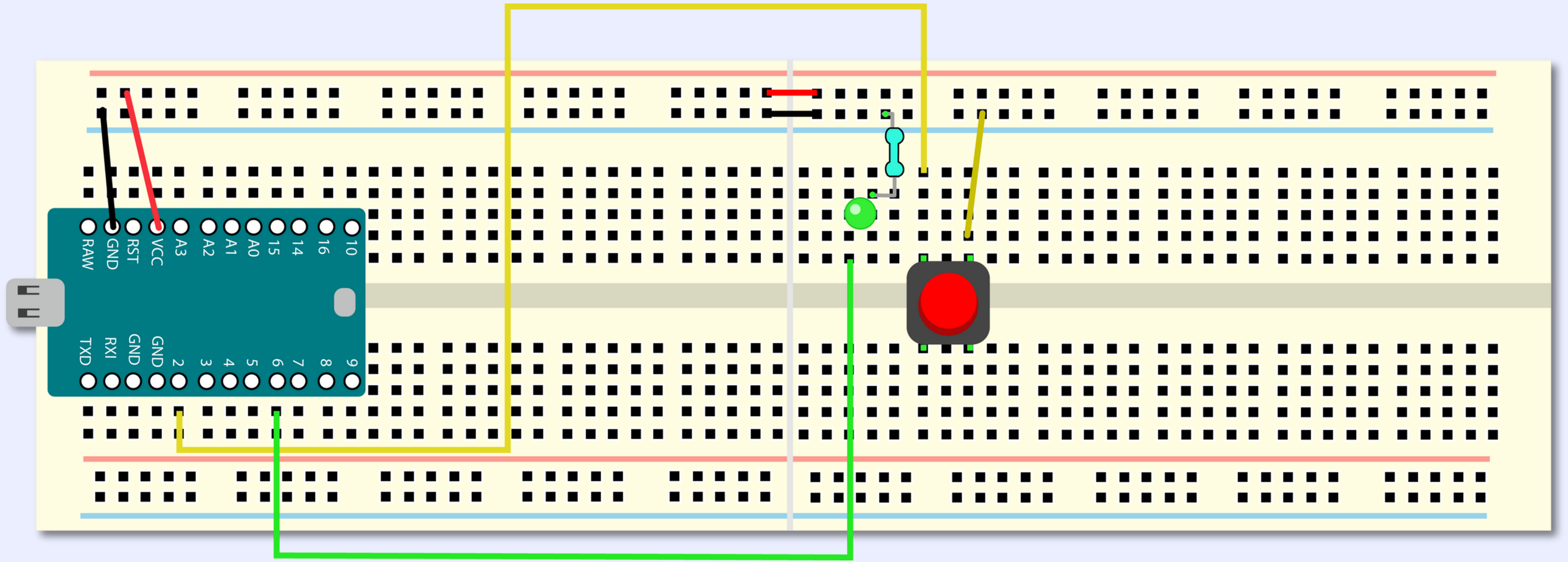
ARMADO



ARMADO



ARMADO

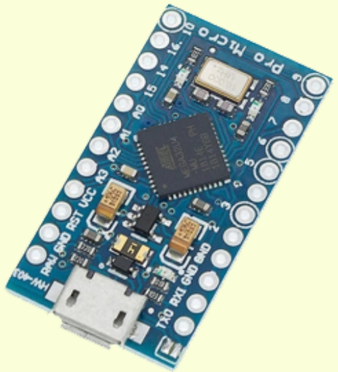


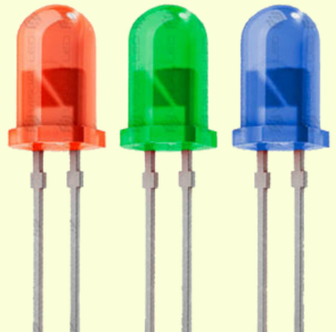

A PROGRAMAR

BOTÓN-LED

OBJETIVO:

CONTROLAR EL ENCENDIDO DE UN DIODO LED UTILIZANDO UN BOTON Y ARDUINO



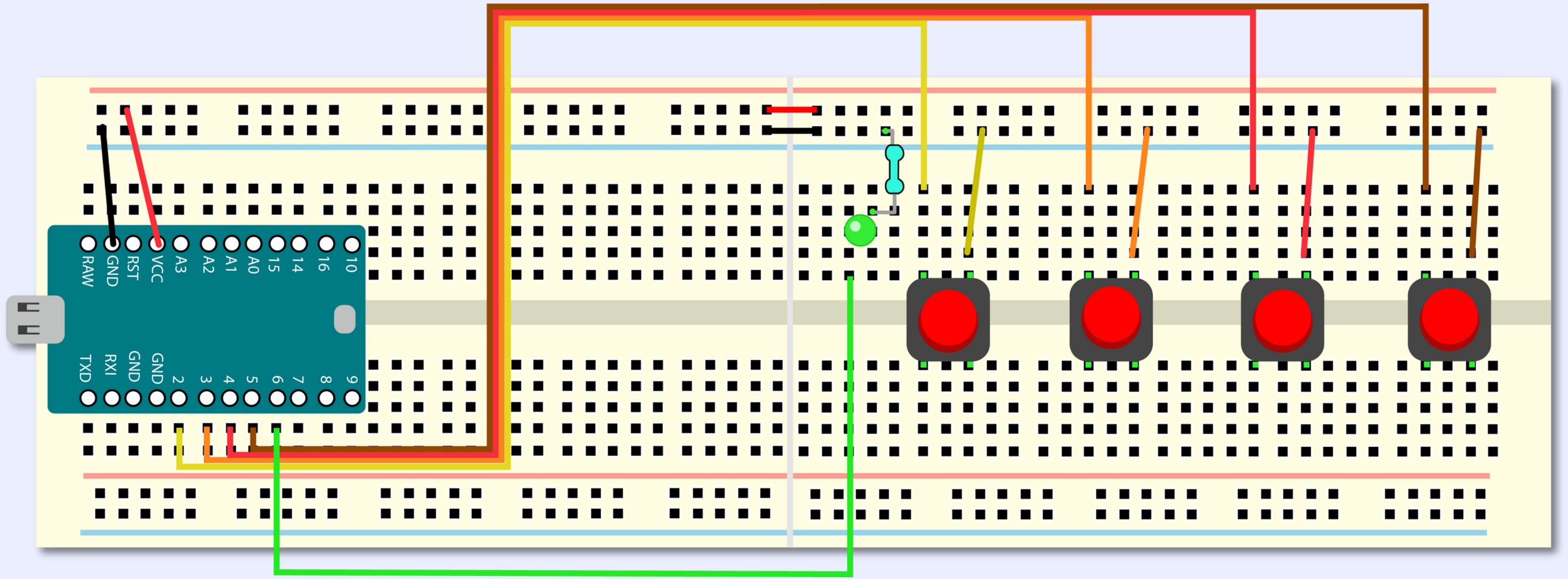


```
// Definir variables

const int pinLed = 6;

const int pinBoton = 2;

int boton = 0;
```

```
// Configuración, corre una vez al inicio

void setup() {

   pinMode(pinLed, OUTPUT); // Definir el modo del led

   pinMode(pinBoton, INPUT_PULLUP);//Definir el modo
del botón

}
```

```
// Programa principal

void loop() {

    boton = digitalRead(pinBoton); //lee el estado del botón

    if(boton==LOW){                    //si el estado es pulsado

        digitalWrite(pinLed,HIGH);   //se enciende el led

    }
    else{                              //si el estado es NO
pulsado

        digitalWrite(pinLed,LOW);   //se apaga el led

    }
}
```

ARMADO



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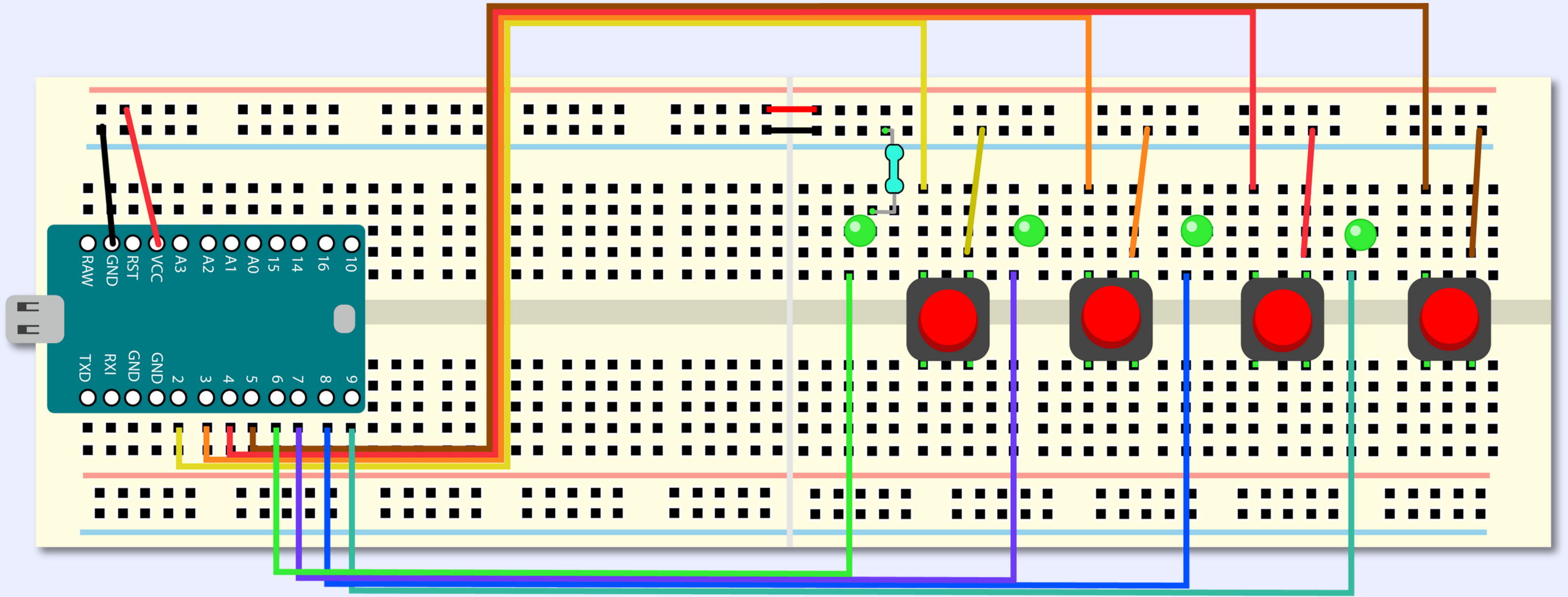

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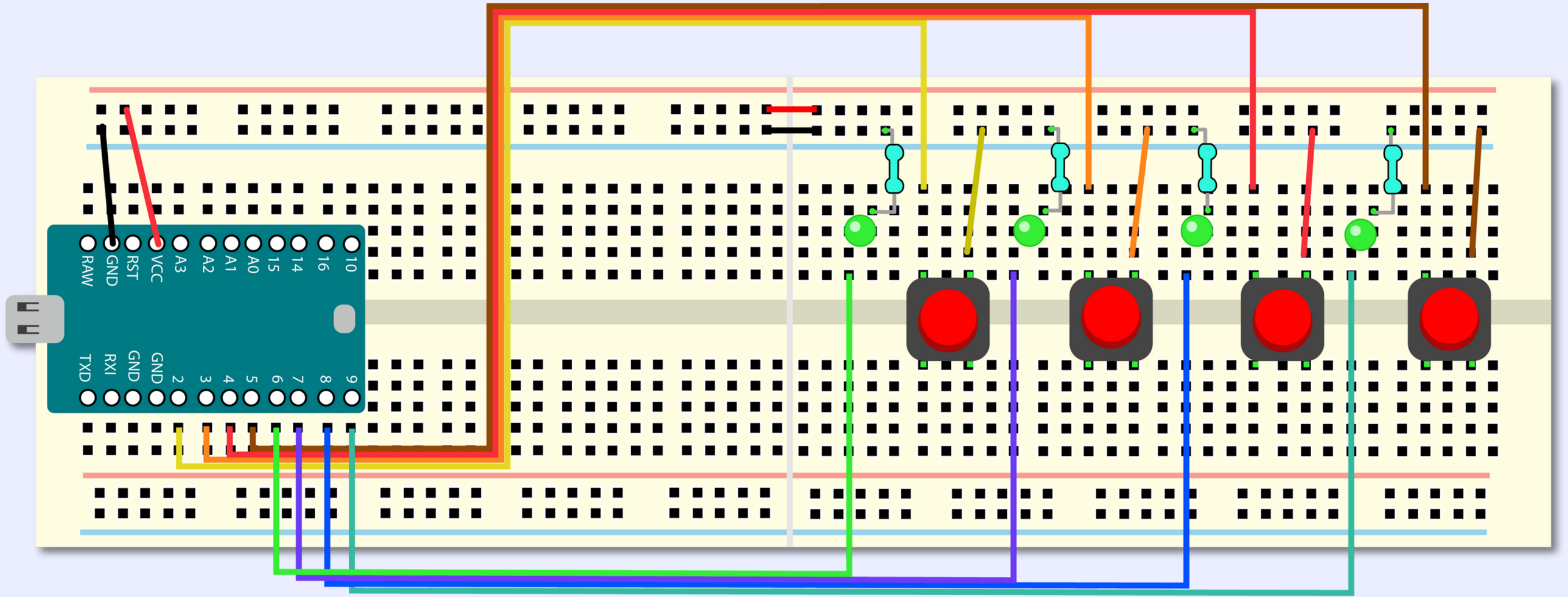
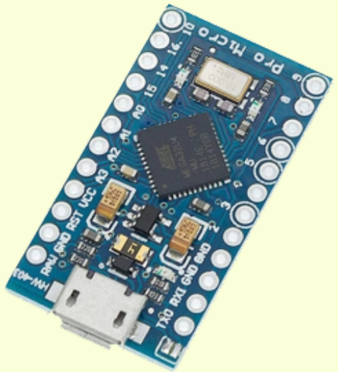


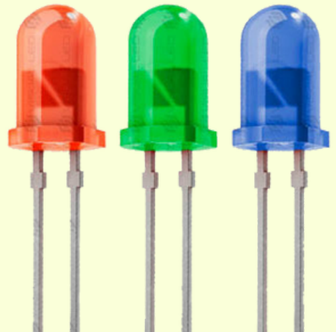

A PROGRAMAR

4BOTONES
4LEDS

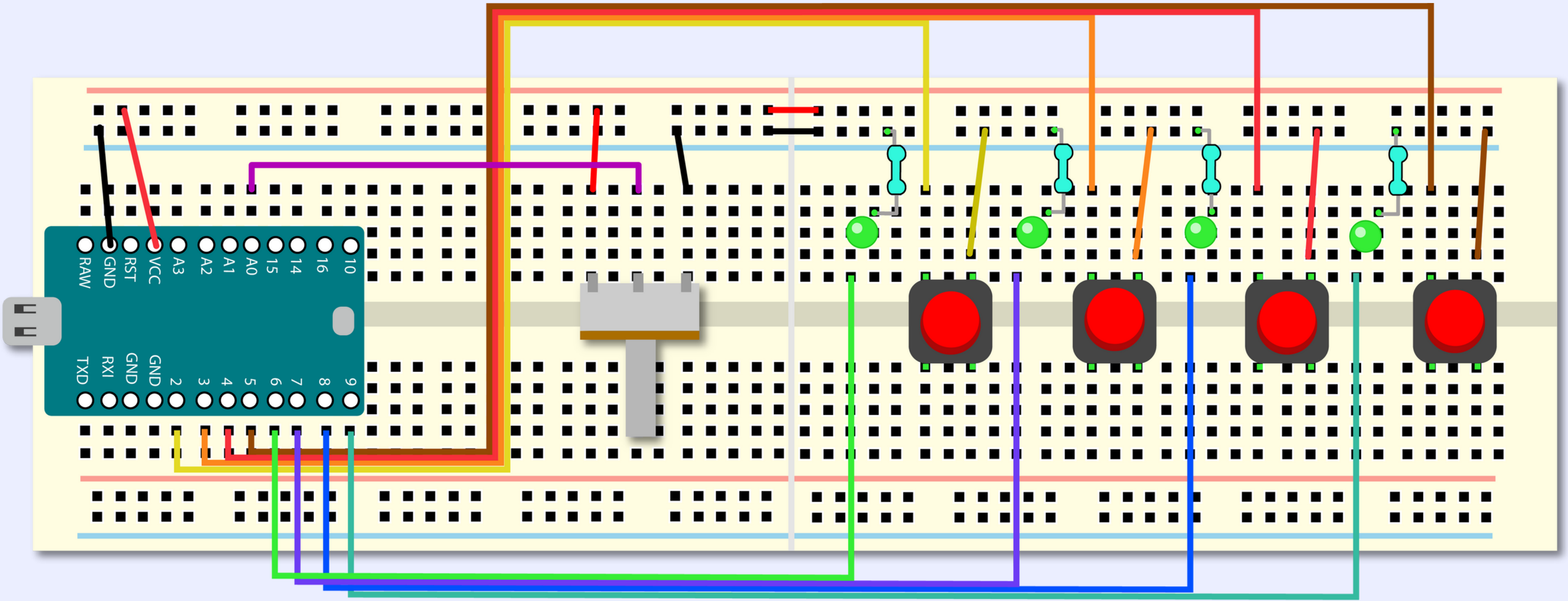
OBJETIVO:

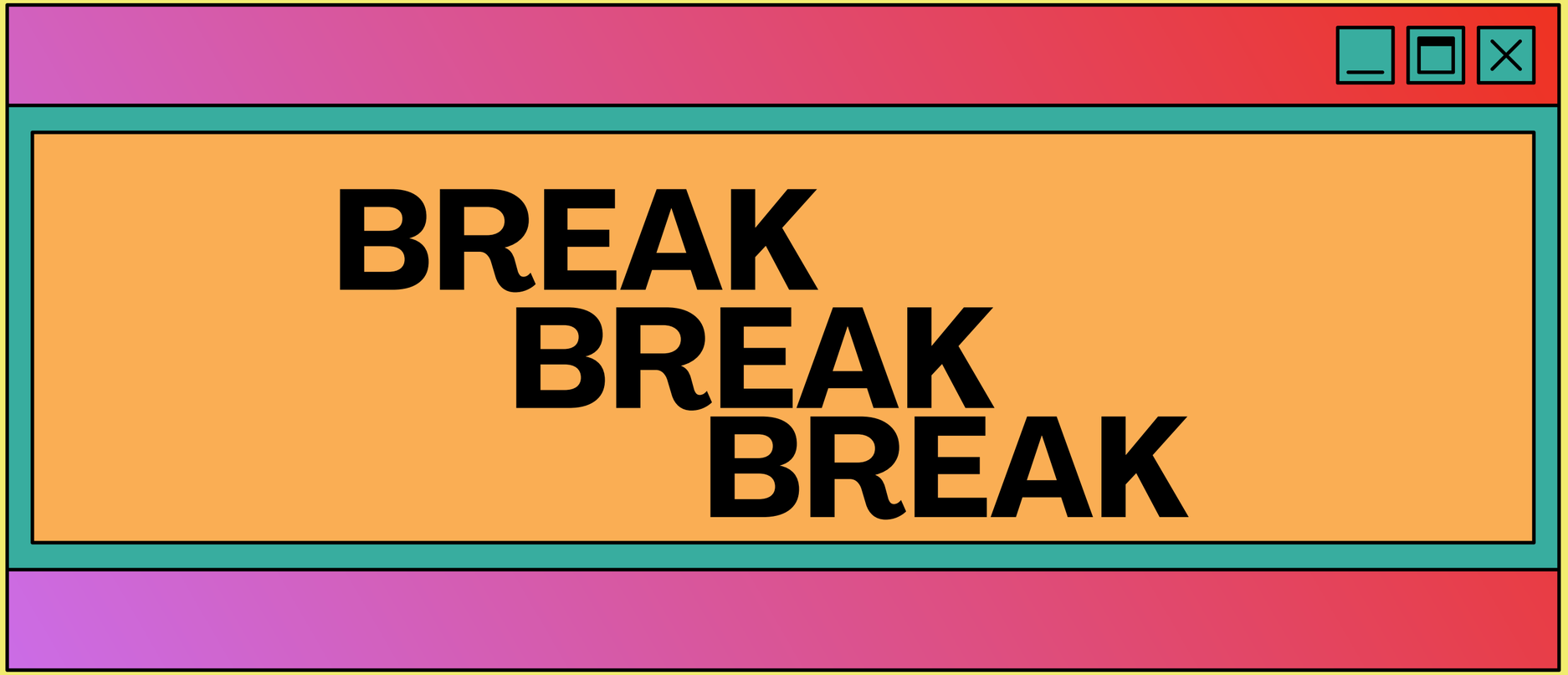
CONTROLAR EL ENCENDIDO DE 4 DIODOS LED UTILIZANDO 4 BOTONES Y ARDUINO





ARMADO



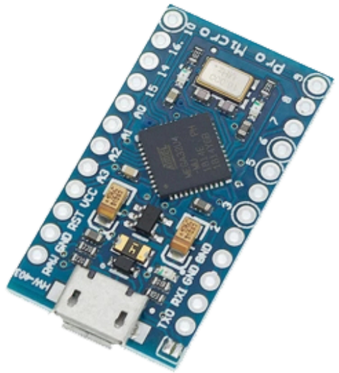

BREAK
BREAK
BREAK

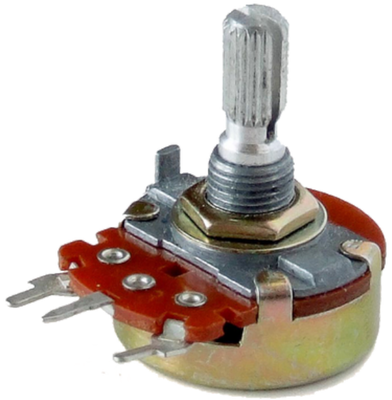
ACTIVACIÓN MOTORA

ANALOG IN-OUT

OBJETIVO:

LEER VALORES ENTREGADOS POR UN POTENCIOMETRO





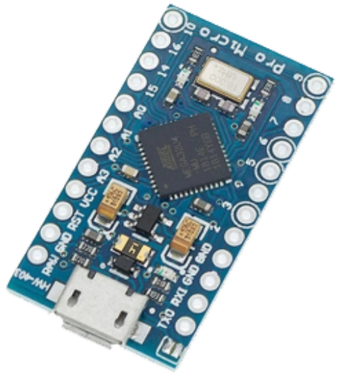
```
// Configuración, corre una vez al inicio
void setup() {

    // Inicio conexión serial
    Serial.begin(9600);

    // Configuración pin análogo
    pinMode(A0, INPUT);

}
```

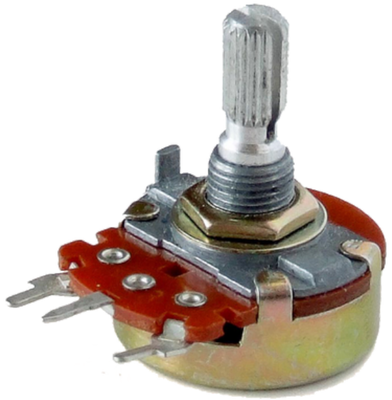
```
void loop() {

    //Lectura del valor
    int var = analogRead(A0);

    //Texto
    String texto = "El valor es = " + String(var);

    //Mostrar texto en monitor serial
    Serial.println(texto);

}
```

POTENCIOMETRO LEDS

OBJETIVO:

CONTROLAR EL ENCENCIDO DE UNA SERIE DE DIODOS LED CON UN POTENCIOMETRO





¿SIENTES QUE CREASTE ALGO NUEVO?