

LIGHTSABER AMADOR



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SENSORES



Acelerómetro- ADXL345



**Leitor de cartão
micro SD**

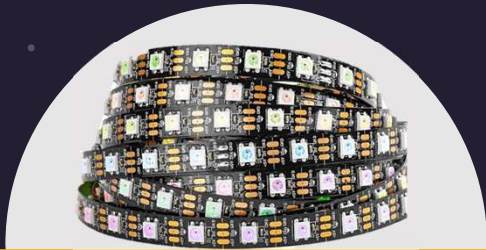


Botão de pressão



Botão comutador

ATUADORES

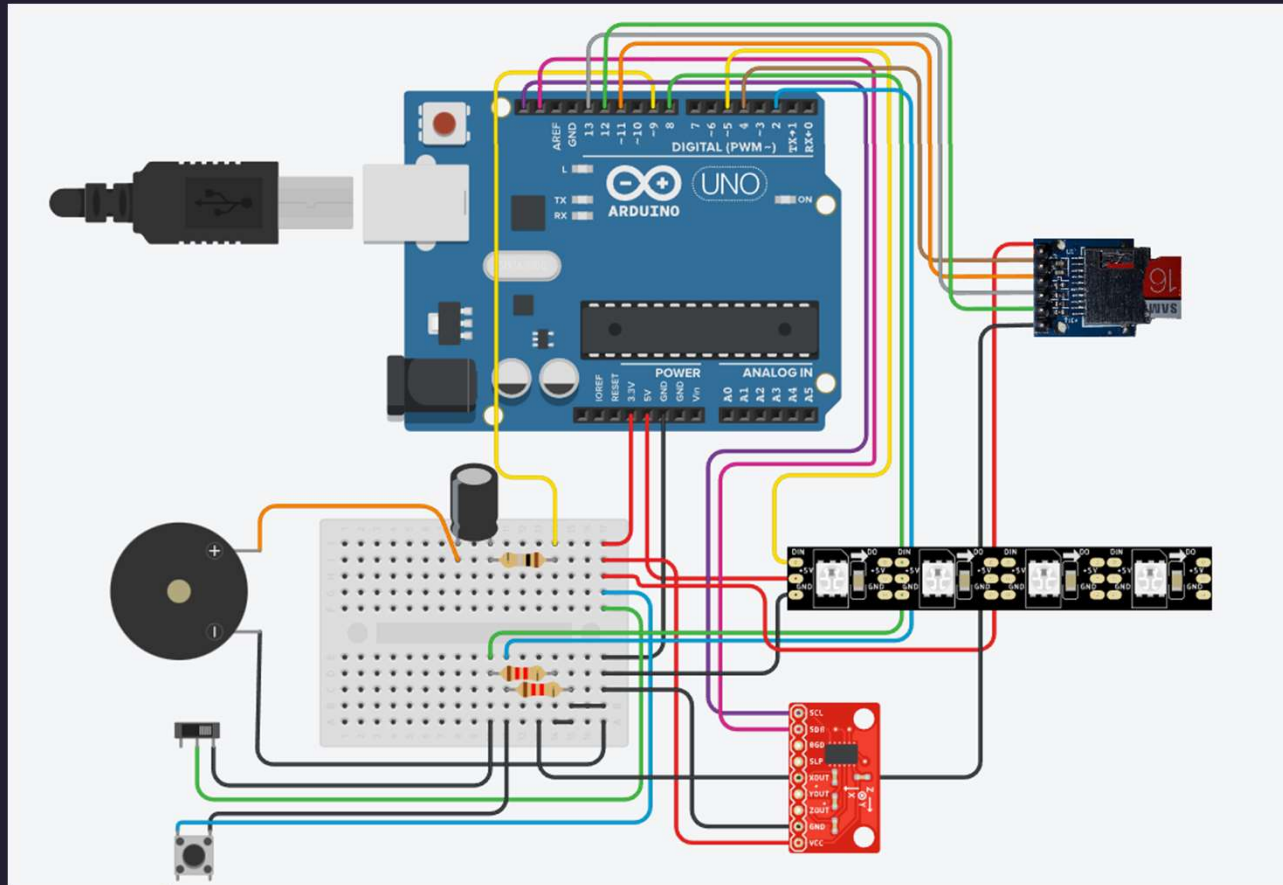


Fita LED



Coluna

CIRCUITO

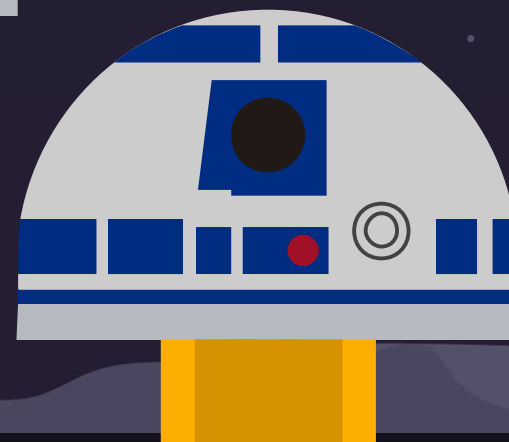
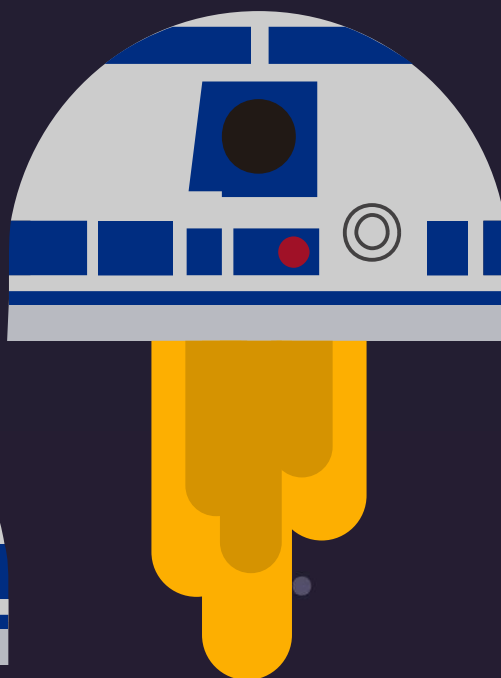
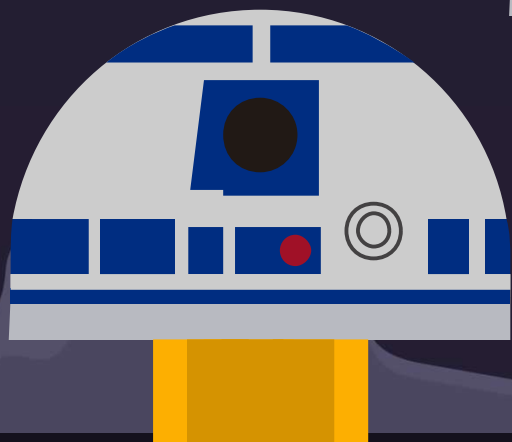


EXECUÇÃO DO PROJETO

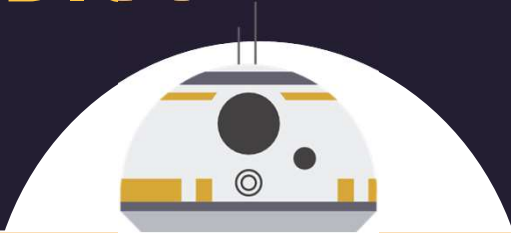
Acelerómetro

LED's

Coluna/ Som



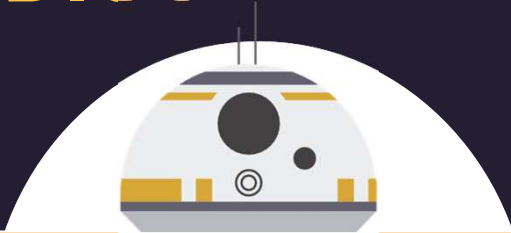
CÓDIGO



Stage 1

```
void setup() {  
  // Set dos pinos a INPUT e OUTPUT  
  FastLED.addLeds<WS2811, DATA_PIN_LEDS>(leds, NUM_LEDS);  
  audio.speakerPin = SPEAKER_PIN;  
  pinMode(BUTTON_PIN, INPUT);  
  pinMode(TOOGLE_BUTTON_PIN, INPUT);  
  pinMode(SPEAKER_PIN, OUTPUT);  
  
  Serial.begin(9600);  
  
  if(!accel.begin()) {  
    Serial.println("No ADXL345 sensor detected.");  
    while(1);  
  }  
  if (!SD.begin(SD_ChipSelectPin)) {  
    Serial.println("SD fail");  
    return;  
  }  
  start = true;  
}
```

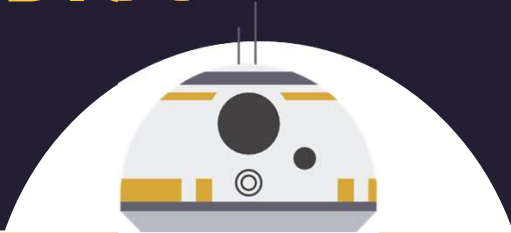
CÓDIGO



Stage 2

```
if(toggle_button == 0) {  
    if(toggle_start == true) {  
        led_on();  
        toggle_start = false;  
    }  
  
    if(button == 1 && button_before == 0 && start == true) {  
        counter++;  
        button_before = 1;  
        color_led(counter); // Chamada da função color_led para configurar a cor do  
Light Saber  
    } else if(button == 0 && button_before == 1) {  
        button_before = 0;  
    }  
}
```

CÓDIGO



Stage 3

```
if(acceleration_abs >= 13 && acceleration_abs < 20) {  
    random_swing();  
    delay(500);  
} else if(acceleration_abs >= 20) {  
    for(int dot = 0; dot <= NUM_LEDS/2; dot++) {  
        if(dot == 12) {  
            leds[dot] = CRGB(0,0,0);  
            leds[NUM_LEDS-dot] = CRGB(255,255,255);  
            FastLED.show();  
        } else {  
            leds[dot] = CRGB(255,255,255);  
            leds[NUM_LEDS-dot] = CRGB(255,255,255);  
            FastLED.show();  
        }  
    }  
    random_hit();  
    delay(500);  
} else if(start == true) {  
    color_led(counter);  
    audio.play("Hum.wav");  
}
```




DEMONSTRAÇÃO

MAY THE FORCE BE WITH YOU

(porque ela certamente esteve contra nós)

