O alarme. (codigo simplificado)

```cpp
#include <bibliotecas>

#define PIEZO_PIN 9 // Pin connected to the piezo sensor
const signed int hz = 2500;

const signed int buttonPin = 2;   // Pin connected to the button
const signed int sensorPin = 3;   // Pin connected to the door sensor


signed int buttonState = 0;       // Current state of the button
signed int lastButtonState = 0;   // Previous state of the button
signed bool toggleVariable = 0;   // Variable to toggle the alarm (on or off)
signed int sensorState = 0;       // Verifica se sensor de janela esta aberto ou nao

void setup() {
  pinMode(sensorPin, INPUT_PULLUP);  // Use internal pull-up resistor
  pinMode(buttonPin, INPUT_PULLUP);  // Set button pin as input with pull-up resistor
}

void display_print(String mensagem) {
    display.display(mensagem);
}

void loop() {
  sensorState = digitalRead(sensorPin);
  buttonState = digitalRead(buttonPin);

    // Ligar ou desligar o alarme
  if (buttonState == LOW && lastButtonState == HIGH) {
    toggleVariable = !toggleVariable; // Toggle between 0 and 1
  }

  lastButtonState = buttonState;

  if(toggleVariable){ // Se alarme esta ativado entra no bloco if

      if (sensorState == HIGH) { // Se porta esta aberta entra no bloco if
          tone(PIEZO_PIN, hz); // Liga o alarme
          delay(100);
          noTone(PIEZO_PIN);
          display_print("O INTRUSO\nLigue 112"); // Imprime no ecra
      } else {
          display_print("ALARME\nLIGADO!");
          noTone(PIEZO_PIN);
      }

  } else {
      display_print("ALARME\nDESLIGADO!");
  }

  delay(50);
}
```