#include <Servo.h>

const int Moisture = A0;

const int potentiometer = A1;

const int pump = 9;

const int buzzer = 8;

const int led = 7;

const int button = 2;

Servo servoMotor;

void setup() {

  pinMode(Moisture, INPUT);

  pinMode(potentiometer, INPUT);

  pinMode(pump, OUTPUT);

  pinMode(buzzer, OUTPUT);

  pinMode(led, OUTPUT);

  pinMode(button, INPUT\_PULLUP); // internal pull up resistor

  servoMotor.attach(10);

}

void loop() {

  static bool sleepMode = false;

  // Check if the system should wake up

  if (digitalRead(button) == LOW) {

    sleepMode = !sleepMode;

    delay(500); // Debounce delay

  }

  if (sleepMode) {

    digitalWrite(pump, LOW);

    digitalWrite(led, LOW);

    servoMotor.write(0);

    return;

  }

  int soilMoisture = analogRead(Moisture);

  int threshold = analogRead(potentiometer) / 4;

  if (Moisture < threshold) {

    activateWatering();

  } else {

    stopWatering();

  }

delay(1000);

}

void activateWatering() {

  digitalWrite(pump, HIGH);

  digitalWrite(led, HIGH);

  tone(buzzer, 1000, 200);

  servoMotor.write(90);

  delay(5000); // Watering duration

  stopWatering();

}

void stopWatering() {

  digitalWrite(pump, LOW);

  digitalWrite(led, LOW);

  noTone(buzzer);

  servoMotor.write(0);

  tone(buzzer, 1000, 200); // 1000 Hz tone for 200 ms

  delay(200); // Ensure the tone and LED blink are noticeable

}