

```
#include <Servo.h>

const int soilMoisturePin = A0;
const int potentiometerPin = A1;
const int pumpPin = 9;
Servo servoMotor;

int threshold = 300;
int soilMoisture = 0;
int potValue = 0;

void setup() {
  pinMode(soilMoisturePin, INPUT);
  pinMode(potentiometerPin, INPUT);
  pinMode(pumpPin, OUTPUT);
  servoMotor.attach(10);

  servoMotor.write(0);
  digitalWrite(pumpPin, LOW);
}

void loop() {
  // Read soil moisture and potentiometer values
  soilMoisture = analogRead(soilMoisturePin);
  potValue = analogRead(potentiometerPin);

  threshold = map(potValue, 0, 1023, 100, 700);

  if (soilMoisture < threshold) {
    digitalWrite(pumpPin, HIGH);
    servoMotor.write(90);
    delay(5000);
    digitalWrite(pumpPin, LOW);
    servoMotor.write(0);
  }

  delay(1000);
}
```

Explanations :

Analog Inputs:

`soilMoisturePin (A0)` reads soil moisture levels from a sensor.

`potentiometerPin (A1)` allows users to set a custom watering threshold.

Digital Outputs:

`pumpPin (9)` controls the water pump.

Added :

`map()` scales `potentiometerPin` values in range (0-1023) to set a watering threshold range (100-700).

Logic :

- If `soilMoisture` falls below the adjusted threshold, the system activates:
- `digitalWrite(pumpPin, HIGH)` turns on the water pump.
- `servoMotor.write(90)` adjusts the servo for water flow direction.
- `delay(5000)` sets a 5-second watering duration.
- `digitalWrite(pumpPin, LOW)` and `servoMotor.write(0)` turn off the pump and reset the servo post-watering.