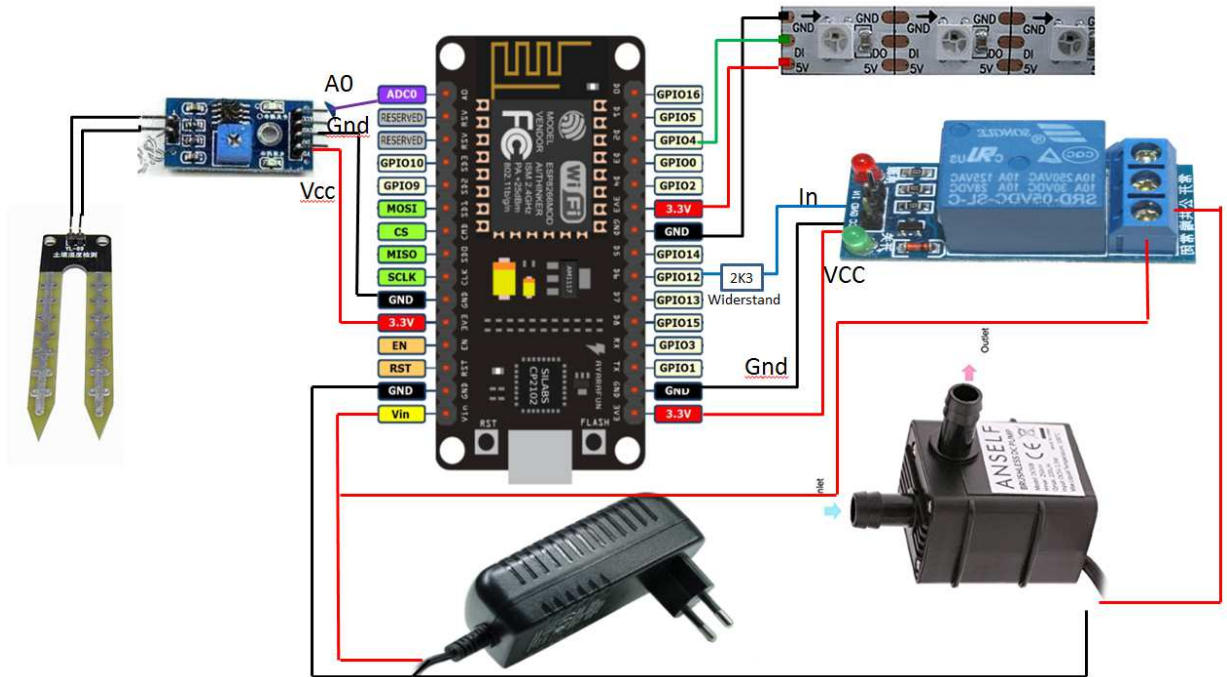


irrigation system



The irrigation system can automatically water your plants. You can setup a time in minutes (MINUTES) when the humidity will be checked and the pump may be started. How long water will be pumped can be setup with the variable WATERING in milliseconds. The humidity threshold when the watering will be started can be set in the variable HUMIDITY. Bases on your soil the value should be adapted.

Do the wiring based on the plan. Cut the plug of the power supply. Cut the USB cable of the pump. Do not forget the resistor for the relays input.

You can see the current humidity and a count down with the serial monitor.

Analog Sensor to measure the humidity

Status LED

Blue = very wet

Green = OK

Yellow = dry

Red = Sensor problem / Super dry

```
#include <Adafruit_NeoPixel.h>
```

```
#define LEDPIN D2
```

```
#define RELAIS D6

#define SERIAL_BAUD 115200

int MINUTES=2;

int SECONDS=60;

int WATERING=6000;

int HUMIDITY=15;

float qual=0;

int countDown=0;

Adafruit_NeoPixel strip = Adafruit_NeoPixel(60, LEDPIN, NEO_GRB + NEO_KHZ800);


void setup() {

  // put your setup code here, to run once:

  pinMode(A0, INPUT);

  pinMode(RELAIS, OUTPUT);

  digitalWrite(RELAIS,LOW);

  Serial.begin(SERIAL_BAUD);

  strip.begin();

  while (!Serial) {} // Wait

  delay(10);

  Serial.println("Hello Setup");

  delay(100);

  Serial.println("Sensor active");

}


void loop() {

  digitalWrite(RELAIS,LOW);

  delay(100);
```

```

// m = 60 = 1 Stunde
for (int m = 0; m < MINUTES; m++) {
    // i = 60 = 1 Minute
    for (int i = 0; i < SECONDS; i++) {
        delay(1000);

        qual = 100 - float(analogRead(A0)) / 10;

        countDown = (MINUTES*SECONDS)-(i+(SECONDS*m));

        Serial.print(countDown);

        Serial.print(" ");

        Serial.println(qual);

        if (qual > 40) {
            strip.setPixelColor(0, strip.Color(0, 0, 100));
        } else if (qual > HUMIDITY) {
            strip.setPixelColor(0, strip.Color(0, 50, 0));
        } else if (qual > 3.5) {
            strip.setPixelColor(0, strip.Color(150, 100, 0));
        } else {
            strip.setPixelColor(0, strip.Color(200, 0, 0));
        }

        strip.show();
    }
}

// wenn Feuchtigkeit kleiner als 10, dann bewässern

// wenn Feuchtigkeit kleiner als 3,5 dann nicht Pumpen weil Sensorfehler
if (qual < HUMIDITY && qual > 4,5) {
    Serial.println("Pumpe ON");

    strip.setPixelColor(1, strip.Color(0, 150, 100));

    strip.show(); // Initialize all pixels to 'off'
}

```

```
digitalWrite(RELAIS,HIGH);

// Pumpen

delay(WATERING);

strip.setPixelColor(1, strip.Color(0, 0, 0));

strip.show(); // Initialize all pixels to 'off'

}

Serial.println("Pumpe OFF");

digitalWrite(RELAIS,LOW);

}
```