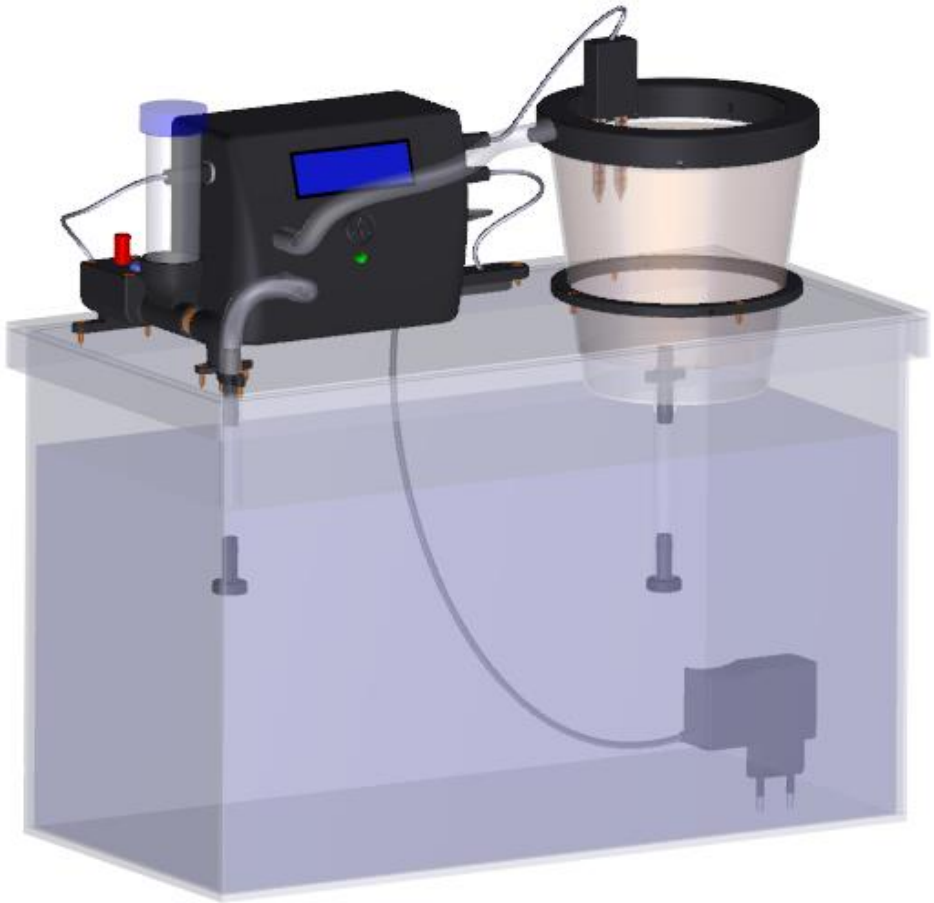
MINI AQUAPONIC SYSTEM

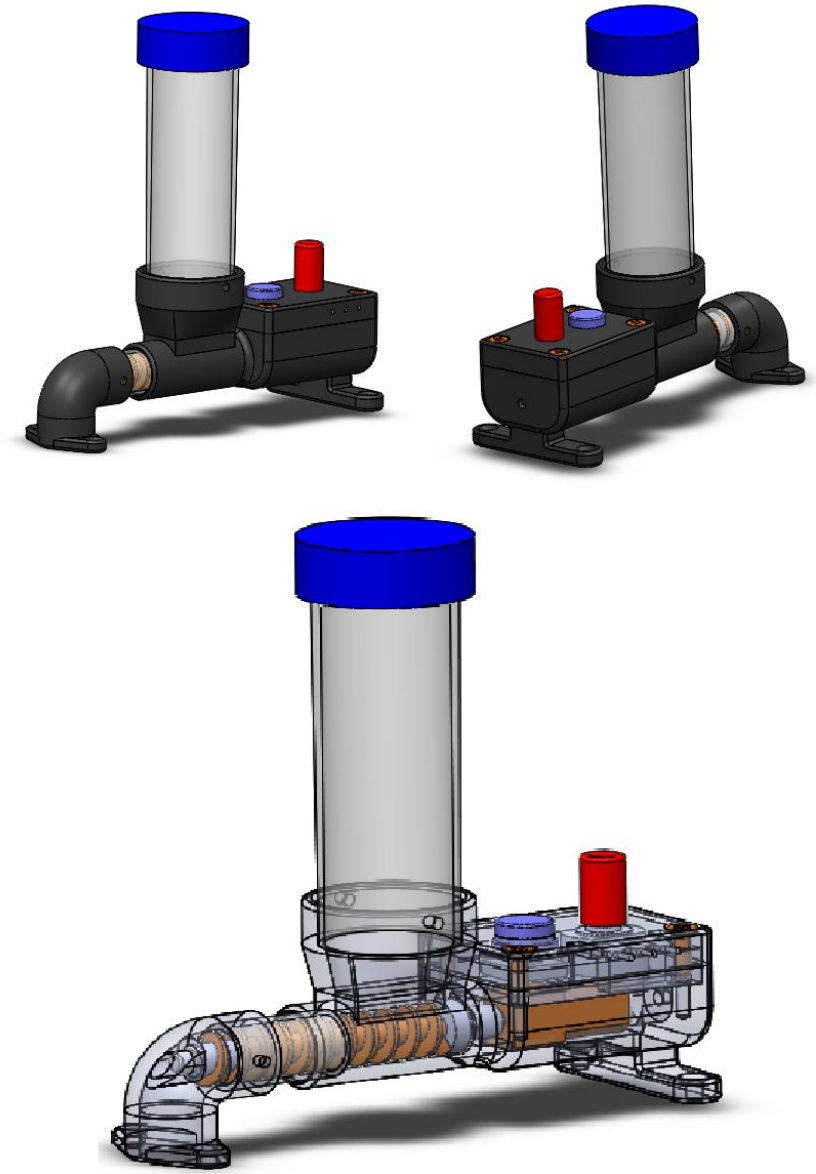


Automatic device

- LCD I2C 1602.
- Switch button.
- LED.
- DC pump.
- 2 channel relay module .
- 1 channel relay module.
- DHT11 temp. and humidity sensor.
- Resistor 330 Ω.
- IR tracker sensor module.
- ESP 32.
- MCU PCB.

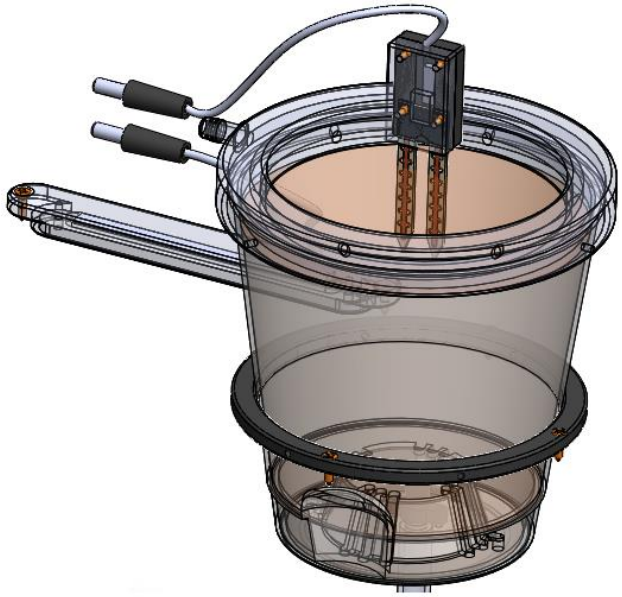
Fish feeder

- *DC motor with gear box.*
- *Push button.*
- *Potentiometer.*

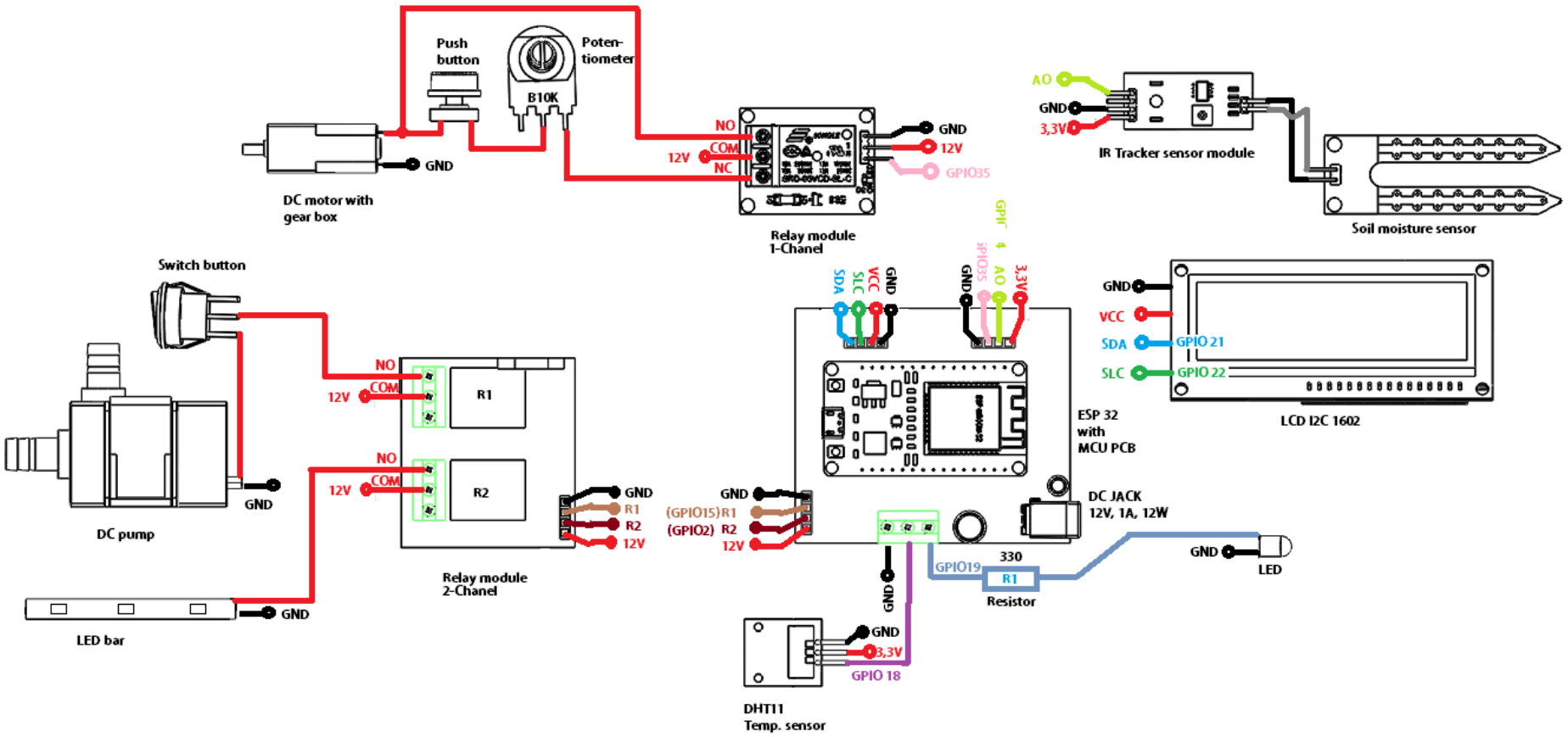


Peripheral devices and sensor

- *Soil moisture sensor.*
- *LED bar.*



Circuit Diagram



Source code

DIY

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <DHT.h>

int lcdColumns = 16;
int lcdRows = 2;
LiquidCrystal_I2C lcd(0x27, lcdColumns, lcdRows);

#define DHTPIN 18
#define DHTTYPE DHT11
DHT dht(DHTPIN, DHTTYPE);

void setup() {
  // put your setup code here, to run once:
pinMode (15, OUTPUT);
digitalWrite(15, LOW);
pinMode (2, OUTPUT);
digitalWrite(2, LOW);
pinMode (35, OUTPUT);
digitalWrite(35, LOW);
pinMode (19, OUTPUT);
digitalWrite(19, HIGH);
```

DIY

```
adcAttachPin (34);
Serial.begin(9600);
lcd.init();
lcd.backlight();
Serial.println(("DIY Home Automation-Yoto Yotov!"));
Serial.print(("LED:"));
Serial.println(digitalRead(19));
dht.begin();
}

void loop() {
  // put your main code here, to run repeatedly:

  delay(500);
  float h = dht.readHumidity();
  float t = dht.readTemperature();
  float f = dht.readTemperature(true);
  if (isnan(h) || isnan(t) || isnan(f)) {
    lcd.setCursor(0, 0);
    lcd.println (F("Failed sensor!"));
    Serial.println (F("Failed sensor!"));
    delay(10000);
    lcd.clear();
```

DIY

```
    return;
    }
  lcd.setCursor(0, 0);
  lcd.print(F("Humidity: "));
  Serial.print(F("Humidity: "));
  lcd.print(h);
  Serial.print(h);
  lcd.print(F("%"));
  Serial.print(F(" %"));
  lcd.setCursor(0,1);
  lcd.print (F("Temp.: "));
  Serial.print(F(" Temp.: "));
  lcd.print(t);
  Serial.print(t);
  lcd.print(F(" C "));
  Serial.print(F(" C "));
  delay(10000);
  lcd.clear();
  Serial.println();
int moisture = analogRead(34);
Serial.print(("moisture= "));
Serial.println(moisture);
delay(5000);
```

DIY

```
if(moisture>3800 && moisture <=4095)
digitalWrite(15,HIGH);
else
digitalWrite(15,LOW);
Serial.print(("Relay1= "));
Serial.println(digitalRead(15));
delay(1000);
if(moisture>3800 && moisture <=4095)
digitalWrite(2,HIGH);
else
digitalWrite(2,LOW);
Serial.print(("Relay2= "));
Serial.println(digitalRead(2));


int i = digitalRead(35);
Serial.print(("i= "));
Serial.println(i);
delay(5000);
for (int i=0; i<=400; i++)
if(i>350 && i <=400)
digitalWrite(35,HIGH);
else
digitalWrite(35,LOW);
Serial.print(("Relay3= "));
Serial.println(digitalRead(35));
}
```

Result

COM4

Send

```
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 a h□$ c□ □` □DIY Home Automation-Yoto Yotov!
LED:1
Humidity: 21.00 % Temp.: 29.20 C
moisture= 4095
Relay1= 1
Relay2= 1
i= 0
Relay3= 0
Humidity: 21.00 % Temp.: 29.30 C
moisture= 0
Relay1= 0
Relay2= 0
i= 0
Relay3= 0
Humidity: 21.00 % Temp.: 29.30 C
```

Autoscroll | Show timestamp | Newline | 9600 baud | Clear output

Thank you for your attention!

- 3D Models
- https://grabcad.com/library/mini-aquaponic-system-and-fish-feeder-1
- Source code

https://github.com/Yoto7/MiniAquaponicSystem