LAMPIRAN

- Bentuk Awal Mekanik Alat
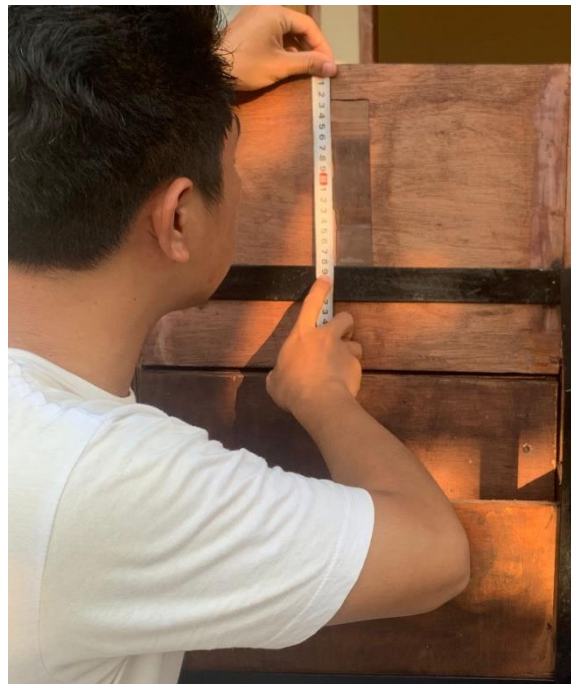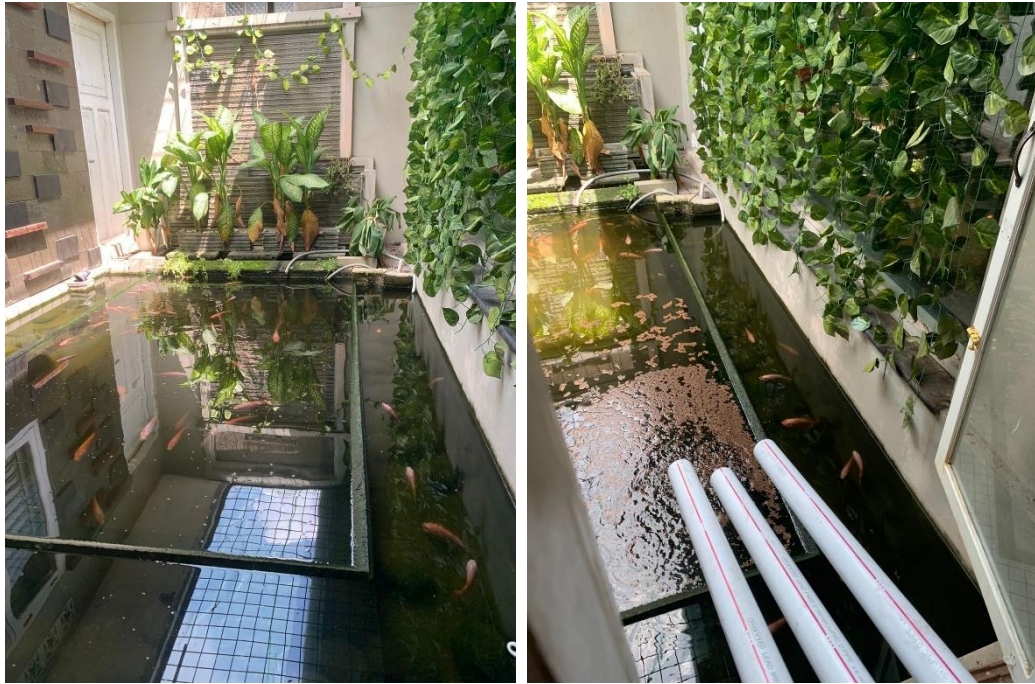

- Bentuk Akhir Mekanik Alat

- Katup Laci Pakan Ikan
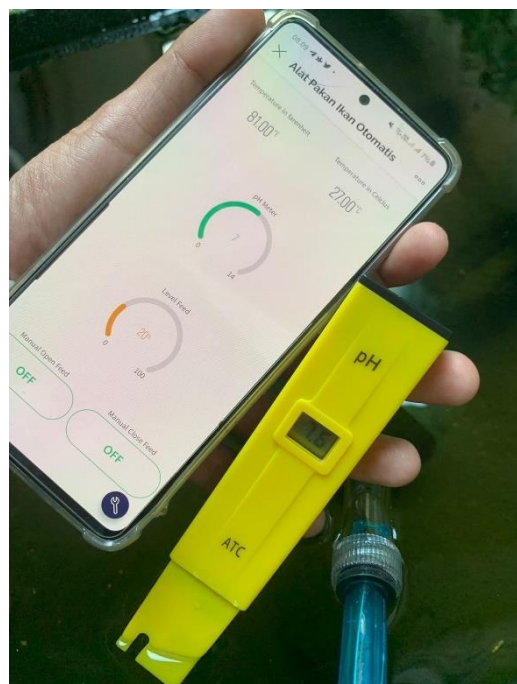

- *Feed tank*
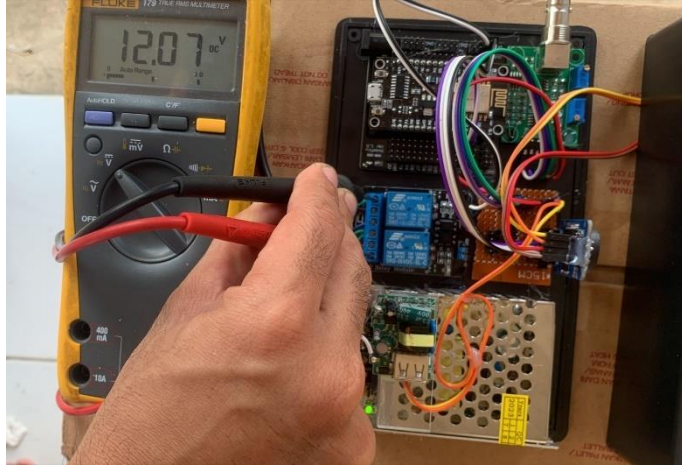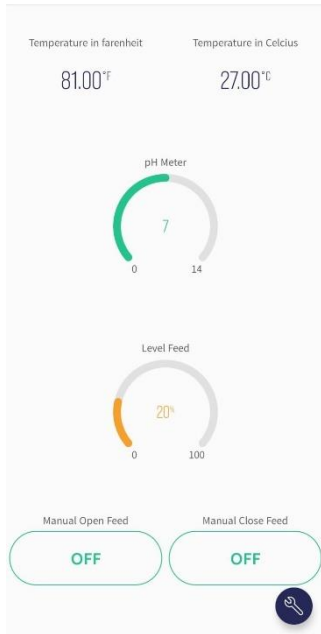
- Lokasi Kolam (Tempat alat dipasang)

- Pengambilan Data

```cpp
//Include the library files
#define BLYNK_PRINT Serial
#include <ESP8266WiFi.h>
#include <BlynkSimpleEsp8266.h>

//Include Sensor Dallas
#include <OneWire.h>
#include <DallasTemperature.h>
#include <Wire.h>

//Sensor Dallas
#define ONE_WIRE_BUS D3
OneWire oneWire(ONE_WIRE_BUS);
DallasTemperature sensors(&oneWire);

//Initialize the LCD display
#include <LiquidCrystal_I2C.h>
LiquidCrystal_I2C lcd(0x27, 16, 2);

// Define UltraSonic
#define trig D7
#define echo D8
//Enter your tank max value(CM)
int MaxLevel = 20;

//Define pH meter
#define SensorpH A0        //Sensor pH pada pin A0
float teganganPh7 = 2.63;   //Nilai kalibrasi
float teganganPh4 = 5.3;    //Nilai kalibrasi
float Po;

//define RTC
//#include "RTClib.h"
//#include<Wire.h>
//RTC_DS3231 rtc;
//char dataHari[7][12] = {"Sun", "Mon", "Tue", "Wed", "Thu", "Fri", "Sat"};
//String hari;
//int tanggal, bulan, tahun, jam, menit, detik;
//float suhu;
//const int relay1 = D3;
//const int relay2 = D4;


//Hotspot & Server Blynk Cloud
```

```cpp
char auth[] = "WF9obICIvaBIav7kyeQXzGpn7rePzgz1";//Enter your Auth
token
char ssid[] = "luotong";//Enter your WIFI name
char pass[] = "12345678";//Enter your WIFI password
#define BLYNK_TEMPLATE_ID "TMPL6lpxJXHo7"
#define BLYNK_TEMPLATE_NAME "Relay Virtual"
#define BLYNK_AUTH_TOKEN "WF9obICIvaBIav7kyeQXzGpn7rePzgz1"
BlynkTimer timer;

//manual tombol blynk
//#define relayA 3
//#define relayB 1
//BLYNK_WRITE(V4){
  //relayA.write(1);
//}
//BLYNK_WRITE(V5){
  //relayB.write(1);
//}


void setup() {
  Serial.begin(9600);

  //manual tombol blynk
  //pinMode(3, OUTPUT);
  //pinMode(1, OUTPUT);

  //lcd.init();
  lcd.init();
  lcd.backlight();
  lcd.begin(16, 2);

  //Ultrasonic
  pinMode(trig, OUTPUT);
  pinMode(echo, INPUT);

  sensors.begin();
  Blynk.begin(auth, ssid, pass, "blynk.cloud", 80);

  //rtc
  //lcd.begin(16, 2);
  //pinMode(relay1,OUTPUT);
  //digitalWrite(relay1,HIGH);
  //pinMode(relay2,OUTPUT);
  //digitalWrite(relay2,HIGH);
```

```arduino
  //if (! rtc.begin()) {
    //Serial.println("RTC Tidak Ditemukan");
    //Serial.flush();
    //abort(); }
  //Atur Waktu
  //rtc.adjust(DateTime(F(__DATE__), F(__TIME__)));
  //rtc.adjust(DateTime(2023, 07, 31, 16, 34, 00));

  //Call the functions
  timer.setInterval(100L, temperature);
  timer.setInterval(100L, ultrasonic);
  timer.setInterval(100L, pHmeter);
//  timer.setInterval(100L, sendrtc);
}

//Get the ultrasonic sensor values
void ultrasonic() {
  digitalWrite(trig, LOW);
  delayMicroseconds(4);
  digitalWrite(trig, HIGH);
  delayMicroseconds(10);
  digitalWrite(trig, LOW);
  long t = pulseIn(echo, HIGH);
  int distance = t / 29 / 2;

  int blynkDistance = (distance - MaxLevel) * -1;
  if (distance <= MaxLevel) {
    Blynk.virtualWrite(V0, blynkDistance);
  } else {
    Blynk.virtualWrite(V0, 0);
  }
  lcd.setCursor(0, 0);
  Serial.print(blynkDistance);
}

//Get the Temperature sensor values
void temperature()
{
  // Request temperature to all devices on the data line
  sensors.requestTemperatures();

  Serial.print("Celsius temperature: ");
  //We can connect more than one IC on the same data wire. 0 refers
to the first IC on the wire
  Serial.print(sensors.getTempCByIndex(0));
```

```arduino
  Serial.print(" - Fahrenheit temperature: ");
  Serial.println(sensors.getTempFByIndex(0));
  int tempC = sensors.getTempCByIndex(0);
  int tempF = sensors.getTempFByIndex(0);
  delay(1000);
  // You can send any value at any time.
  // Please don't send more that 10 values per second.
  Blynk.virtualWrite(V1, tempC);
  Blynk.virtualWrite(V2, tempF);
  delay(500);
}

//Get the pH Meter sensor values
void pHmeter() {
  int sensorValue = analogRead(SensorpH);          //Baca Sensor
  float voltage = sensorValue * (3.3 / 1023.0);    //Konversi menjadi
nilai tegangan
  //Rumus mencari pH
  Po = 7.00 + ((teganganPh7 - voltage) / ((teganganPh4 -
teganganPh7) / 3));
  Serial.print(Po);
  Blynk.virtualWrite(V3, Po);
}

void loop() {
  Blynk.run();//Run the Blynk library
  timer.run();//Run the Blynk timer

  //rtc
  //DateTime now = rtc.now();
  //hari    = dataHari[now.dayOfTheWeek()];
  //tanggal = now.day(), DEC;
  //bulan   = now.month(), DEC;
  //tahun   = now.year(), DEC;
  //jam     = now.hour(), DEC;
  //menit   = now.minute(), DEC;
  //detik   = now.second(), DEC;
  //suhu    = rtc.getTemperature();

  //lcd.backlight();
  //lcd.setCursor(0,0);
  //lcd.print(String() +hari+"," +tanggal+"-"+bulan+"-"+tahun);
  //lcd.setCursor(0,1);
  //lcd.backlight();
  //lcd.print(String() +jam+":" +menit+":"+detik+" " +suhu+".C ");
```

```
  //delay(1000);
  //Serial.println(String() + hari + ", " + tanggal + "-" + bulan +
"-" + tahun);
  //Serial.println(String() + jam + ":" + menit + ":" + detik);
  //Serial.println(String() + "Suhu: " + suhu + " C");
  //Serial.println();
  //logic RTC
//if(jam == 02 & menit == 50 & detik == 5){
  //digitalWrite(relay1,LOW);
  //delay(5000);
  //digitalWrite(relay1,HIGH);
  //delay(3000);
  //digitalWrite(relay2,LOW);
  //delay(6300);
  //digitalWrite(relay2,HIGH);
  //}
//if(jam == 02 & menit == 52 & detik == 10){
  //digitalWrite(relay1,LOW);
  //delay(5000);
  //digitalWrite(relay1,HIGH);
  //delay(3000);
  //digitalWrite(relay2,LOW);
  //delay(6300);
  //digitalWrite(relay2,HIGH);
  //}
//if(jam == 02 & menit == 54  & detik == 15){
  //digitalWrite(relay1,LOW);
  //delay(5000);
  //digitalWrite(relay1,HIGH);
  //delay(3000);
  //digitalWrite(relay2,LOW);
  //delay(6300);
  //digitalWrite(relay2,HIGH);
  //}
  //lcd.clear();
 // lcd.setCursor(0,0);
 // lcd.print("Kasih Pakan");
 // lcd.setCursor(0,1);
 // lcd.print("                  ");
 // delay(1000);
 // }

}
```

```arduino
#include "RTClib.h"
#include<Wire.h>
#include <LiquidCrystal_I2C.h> // libray lcd
LiquidCrystal_I2C lcd(0x27, 16, 2);

RTC_DS3231 rtc;
char dataHari[7][12] = {"Sun", "Mon", "Tue", "Wed", "Thu", "Fri",
"Sat"};
String hari;
int tanggal, bulan, tahun, jam, menit, detik;
float suhu;

const int relay1 = 14;
const int relay2 = 12;

void setup () {
  Serial.begin(9600);
  lcd.init();
  lcd.begin(16, 2);

  pinMode(relay1,OUTPUT);
  digitalWrite(relay1,HIGH);
  pinMode(relay2,OUTPUT);
  digitalWrite(relay2,HIGH);

  if (! rtc.begin()) {
    Serial.println("RTC Tidak Ditemukan");
    Serial.flush();
    abort();
  }

  //Atur Waktu
  //rtc.adjust(DateTime(F(__DATE__), F(__TIME__)));
  rtc.adjust(DateTime(2023, 8, 7, 15, 58, 00));
}

void loop () {
  DateTime now = rtc.now();
  hari    = dataHari[now.dayOfTheWeek()];
  tanggal = now.day(), DEC;
  bulan   = now.month(), DEC;
  tahun   = now.year(), DEC;
  jam     = now.hour(), DEC;
  menit   = now.minute(), DEC;
  detik   = now.second(), DEC;
```

```arduino
  suhu    = rtc.getTemperature();

  lcd.backlight();
  lcd.setCursor(0,0);
  lcd.print(String() +hari+"," +tanggal+"-"+bulan+"-"+tahun);
  lcd.backlight();
  lcd.setCursor(0,1);
  lcd.print(String() +jam+":" +menit+":"+detik+" " +suhu+".C ");
  delay(500);

  Serial.println(String() + hari + ", " + tanggal + "-" + bulan + "-
" + tahun);
  Serial.println(String() + jam + ":" + menit + ":" + detik);
  Serial.println(String() + "Suhu: " + suhu + " C");
  Serial.println();


if(jam == 16 & menit == 00 & detik == 5){
  lcd.clear();
  lcd.setCursor(2, 0);
  lcd.print("Beri Pakan 2");
  digitalWrite(relay1,LOW);
  delay(5000);
  digitalWrite(relay1,HIGH);
  delay(3000);
  digitalWrite(relay2,LOW);
  delay(6300);
  digitalWrite(relay2,HIGH);
  }

if(jam == 14 & menit == 06 & detik == 10){
  lcd.clear();
  lcd.setCursor(2, 0);
  lcd.print("Beri Pakan 2");
  digitalWrite(relay1,LOW);
  delay(5000);
  digitalWrite(relay1,HIGH);
  delay(3000);
  digitalWrite(relay2,LOW);
  delay(6300);
  digitalWrite(relay2,HIGH);
  }

if(jam == 14 & menit == 07  & detik == 15){
  lcd.clear();
```

```
    lcd.setCursor(2, 0);
    lcd.print("Beri Pakan 3");
    digitalWrite(relay1,LOW);
    delay(5000);
    digitalWrite(relay1,HIGH);
    delay(3000);
    digitalWrite(relay2,LOW);
    delay(6300);
    digitalWrite(relay2,HIGH);
    }

}
    //lcd.clear();
    //lcd.setCursor(0,0);
    //lcd.print("Kasih Pakan");
    //lcd.setCursor(0,1);
    //lcd.print("                ");
    //delay(1000);
    //}
```