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~Halaman ini sengaja dikosongkan~

LAMPIRAN A

Program Arduino

```
#include <LiquidCrystal_I2C.h>

#define pin_dht 2
#define pin_servo_window 3
#define pin_servo_feed 9
#define pin_relay_pump 26
#define pin_relay_fan 27
#define pin_relay_conveyor 28
#define pin_relay_mist 29
#define pin_relay_lamp 32
#define pin_sensor_feed A5
#define pin_sensor_water 4
#define pin_ir 6
#define pin_buzzer 53

LiquidCrystal_I2C lcd(0x27, 16, 2);

void setup() {
  Serial.begin(9600);
  Serial1.begin(9600);
  lcd.init();
  lcd.backlight();
  lcd.clear();
  setupServo();
  setupRelay();
  setupLoadcell();
  setupFeed();
  setupWater();
  setupProxy();
  delay(1000);
  setupBuzzer();
  buzzerBeep();
}
```

```
long lastSend = 0;
int display = 0;

boolean isAutoFan = false;
boolean isAutoLamp = false;
boolean isAutoFeed = false;
boolean isAutoWater = false;
boolean isAutoMist = false;

String lastCommandFeed = "";
String lastCommandWater = "";

boolean isFeed = false;
boolean isWater = false;

void loop() {
  float t = dhtGetTemperature();
  float h = dhtGetHumidity();
  bool feed = feedRead();
  bool water = waterRead();
  float weight = loadcellGet();
  if (millis() > lastSend + 3000) {
    String values = "sensor,";
    values += t;
    values += ',';
    values += h;
    values += ',';
    values += feed;
    values += ',';
    values += water;
    values += ',';
    values += weight;
    values += ',';
    Serial.println(values);
    Serial1.println(values);
    if (display < 2) {
      display++;
    } else {
      display = 0;
```

```
  }
  lcd.clear();
  lastSend = millis();
}

switch (display) {
 case 0:
   lcd.setCursor(0, 0);
   lcd.print("Temp    : ");
   lcd.print(t);
   lcd.setCursor(0, 1);
   lcd.print("Humidity: ");
   lcd.print(h);
   break;
 case 1:
   lcd.setCursor(0, 0);
   lcd.print("Pakan : ");
   lcd.print(feed);
   lcd.setCursor(0, 1);
   lcd.print("Minum : ");
   lcd.print(water);
   break;
 case 2:
   lcd.setCursor(0, 0);
   lcd.print("Berat kotoran");
   lcd.setCursor(0, 1);
   lcd.print("            ");
   lcd.setCursor(0, 1);
   lcd.print(weight);
   lcd.setCursor(14, 1);
   lcd.print("gr");
   break;
}

if (isAutoFan) {
 if (t > 30) {
   relayFanOn();
 } else {
   relayFanOff();
```

```
    }
  }
  if (isAutoLamp) {
   if (t < 25) {
     relayLampOn();
   } else {
     relayLampOff();
   }
  }
  if (isAutoFeed || isFeed) {
   if (feed) {
     servofeedClose();
     isFeed = false;
   } else {
     servofeedOpen();
   }
  }
  if (isAutoWater || isWater) {
   if (water) {
     relayPumpOff();
     isWater = false;
   } else {
     relayPumpOn();
   }
  }
  if (isAutoMist) {
   if (h < 65) {
     relayMistOn();
   } else {
     relayMistOff();
   }
  }

  if (weight > 500) {
   buzzerBeep();
  }
}
//sensor,27.80,79.20,1,0,275.00,
```

```
void serialEvent1() {
  String data = Serial1.readStringUntil('\n');
  Serial.println(data);
  // window
  if (data.indexOf("command_window_on") != -1) {
    servoWindowOpen();
  } else if (data.indexOf("command_window_off") != -1) {
    servoWindowClose();
  }
  // fan
  else if (data.indexOf("command_fan_on") != -1) {
    isAutoFan = false;
    relayFanOn();
  } else if (data.indexOf("command_fan_off") != -1) {
    isAutoFan = false;
    relayFanOff();
  } else if (data.indexOf("command_fan_auto") != -1) {
    isAutoFan = true;
  }
  // lamp
  else if (data.indexOf("command_lamp_on") != -1) {
    isAutoLamp = false;
    relayLampOn();
  } else if (data.indexOf("command_lamp_off") != -1) {
    isAutoLamp = false;
    relayLampOff();
  } else if (data.indexOf("command_lamp_auto") != -1) {
    isAutoLamp = true;
  }
  // feed
  else if (data.indexOf("command_feed_auto") != -1) {
    isAutoFeed = true;
  } else if (data.indexOf("command_feed") != -1) {
    isAutoFeed = false;
    if (lastCommandFeed != "") {
      isFeed = true;
    }
    lastCommandFeed = data;
  }
```

```
 // water
 else if (data.indexOf("command_water_auto") != -1) {
  isAutoWater = true;
 } else if (data.indexOf("command_water") != -1) {
  isAutoWater = false;
  if (lastCommandWater != "") {
   isWater = true;
  }
  lastCommandWater = data;
 }
 // mist
 else if (data.indexOf("command_mist_on") != -1) {
  isAutoMist = false;
  relayMistOn();
 } else if (data.indexOf("command_mist_off") != -1) {
  isAutoMist = false;
  relayMistOff();
 } else if (data.indexOf("command_mist_auto") != -1) {
  isAutoMist = true;
 }
 // conveyor
 else if (data.indexOf("command_conveyor_on") != -1) {
  relayConveyorOn();
 } else if (data.indexOf("command_conveyor_off") != -1) {
  relayConveyorOff();
 } else if (data.indexOf("command_conveyor_auto") != -1) {
  relayConveyorOn();
  delay(3000);
  while (!read_proximity()) { delay(100); }
  relayConveyorOff();
 }
}
```

LAMPIRAN B

Dokumentasi Pengujian
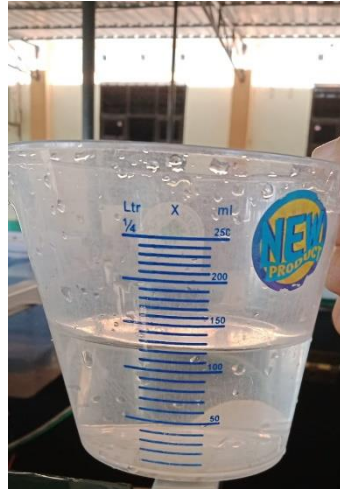
a. Tampilan pada LCD

b. Tampilan pada Aplikasi
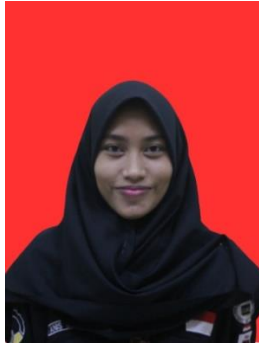
c. Tampilan pada HTC

d. Berat pakan

e. Air minum

BIODATA PENULIS

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Telepon/Hp	:	0858-4640-5061
Hobi	:	Travelling
Motto	:	Jalani, Nikmati, Syukuri

Riwayat Pendidikan :
- SD Negeri Sidanegara 03 — Tahun 2008-2014
- SMP Negeri 4 Cilacap — Tahun 2014-2017
- SMA Negeri 03 Cilacap — Tahun 2017-2020
- Politeknik Negeri Cilacap — Tahun 2020-2023

Penulis telah mengikuti sidang Tugas Akhir pada tanggal 18 Agustus 2023 sebagai salah satu persyaratan untuk memperoleh gelar Ahli Madya (A.Md).