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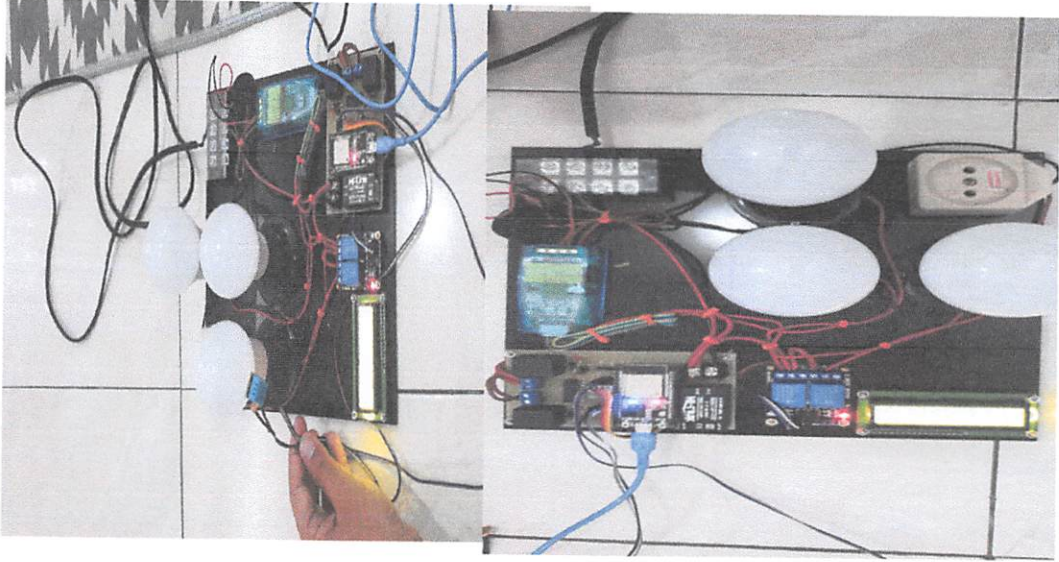
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LAMPIRAN I

Dokumentasi Tampak alat



LAMPIRAN II

Listing Program Arduino Hardware

```
//set up libarry

#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <PZEM004Tv30.h>
#include "WiFi.h"
#include "DHT.h"

//2 5 15

//pin koneksi
#define BUILTIN_LED 2
#define pin_relay1 14 // KONEKSI pin
#define pin_relay2 13
#define pin_relay3 32
#define pin_relay4 33
#define DHTPIN 15 // what pin we're connected to
#define DHTTYPE DHT11

//declaration initial port
#define relay1_on digitalWrite(pin_relay1,LOW)
#define relay1_off digitalWrite(pin_relay1,HIGH)
```

```

#define relay2_on digitalWrite(pin_relay2,LOW)
#define relay2_off digitalWrite(pin_relay2,HIGH)

#define relay3_on digitalWrite(pin_relay3,HIGH)
#define relay3_off digitalWrite(pin_relay3,LOW)

#define relay4_on digitalWrite(pin_relay4,HIGH)
#define relay4_off digitalWrite(pin_relay4,LOW)

// Set the LCD address to 0x27 for a 16 chars and 2 line display
LiquidCrystal_I2C lcd(0x27, 16, 2);
PZEM004Tv30 pzem_r(&Serial2);

#define led_on digitalWrite(BUILTIN_LED,HIGH)
#define led_off digitalWrite(BUILTIN_LED,LOW)

#if !defined(CONFIG_BT_ENABLED) ||
!defined(CONFIG_BLUEDROID_ENABLED)
#error Bluetooth is not enabled! Please run `make menuconfig` to and enable
it
#endif

// GANTI WIFI
const char * ssid = "Airnavsub";

```

```

const char * password = "ttlz59031";

const char* host = "airnav.monitoringonline.net";
const int httpPort = 80;
WiFiClient client;

//declaration variable
long last_millis;
String data_bt;
bool flag_wifi;
int cahaya;
float suhu,kelembaban;
String wifi,last_logic,logic_R2,logic_R1,logic_R3,logic_R4;
float vr = 0;
float ir;
float freq;
float pf_r;
float energy;
float power;
int hour,minute;

DHT dht(DHTPIN, DHTTYPE);

//set up sensor lcd
void setup() {
  lcd.begin();
  dht.begin();

```

```

Serial.begin(9600);
Serial2.begin(9600);
pinMode(pin_relay1,OUTPUT);
pinMode(pin_relay2,OUTPUT);
pinMode(pin_relay3,OUTPUT);
pinMode(pin_relay4,OUTPUT);
relay_off();

pinMode(BUILTIN_LED, OUTPUT);
digitalWrite(BUILTIN_LED, LOW);

Serial.print("Connecting...");

WiFi.mode(WIFI_STA);
WiFi.begin(ssid, password);

led_off;
// relay_on();
// while(1){
//   Serial.println(".");
//   delay(1000);
// }

lcd.setCursor(0,0);
lcd.print("Connecting....");
lcd.setCursor(0,1);
lcd.print(ssid);

```

```

int aa=0;

long last_mil=millis();

//koneksi wifi

while (WiFi.status() != WL_CONNECTED) {
  if ((millis()-last_mil)>20000){
    last_mil=0;
    aa=1;
    break;
  }
  delay(100);
  led_on;
  delay(100);
  led_off;
  delay(100);
}
lcd.clear();
if (aa==0){
  lcd.setCursor(0,0);
  lcd.print("WiFi connected!");
  lcd.setCursor(0,1);
  lcd.print(WiFi.localIP());
}else{
  lcd.setCursor(0,0);
  lcd.print("WiFi Error!");
  lcd.setCursor(0,1);

```



```

    lcd.print("Check Connection !!");

}

delay(3000);

lcd.clear();

digitalWrite(BUILTIN_LED, HIGH);

Serial.println(WiFi.localIP());

lcd.setCursor(0,0);

lcd.print(" SMART RELAY ");

lcd.setCursor(0,1);

lcd.print("  V1  ");

delay(3000);

}

int tampilan;

int koneksi_ulang;

//program utama

void loop() {

    baca_pzem();

    // cek status wifi

    if (WiFi.status() == WL_CONNECTED){

        wifi="Connect";

        delay(100);

```

```

    led_on;
    delay(1000);
    led_off;
    delay(1000);

}else{
    wifi="Disconnect";
    delay(100);
    led_on;
    delay(100);
    led_off;
    delay(100);
}

// reconnecting
if ((millis()-last_millis)>2000){
    tampilan++;
    if (wifi=="Disconnect"){
        koneksi_ulang++;
    }
    last_millis=millis();
}

// konek ulang wifi
if (koneksi_ulang>10){

```

```

WiFi.mode(WIFI_STA);
WiFi.begin(ssid, password);
long last_mil=millis();
while (WiFi.status() != WL_CONNECTED) {
  if ((millis()-last_mil)>10000){
    break;
  }
  delay(100);
  led_on;
  delay(100);
  led_off;
  delay(100);
  koneksi_ulang=0;
}
}

cahaya = analogRead(35);
kelembaban = dht.readHumidity();
suhu = dht.readTemperature();

String logic =
"Ca="+String(cahaya)+"&Hu="+String(kelembaban)+"&Su="+String(suh
u)+"&Dy="+String(power);

// kirim ke server
if (last_logic!=logic){
  Serial.println(logic);

```

```

String respons = send("/php/update.php?" + logic);
Serial.println("Respons Logic =" + respons);
if (respons == "OK"){
    last_logic = logic;
} else {
    last_logic = "";
}
}
}

//tampilan lcd
if (tampilan < 3){
    lcd.setCursor(0,0);

    lcd.print("T:" + String((int)suhu) + " C H:" + String(kelembaban) + "%");

    lcd.setCursor(0,1);

    lcd.print("C:" + String(cahaya) + "|" + String((int)vr) + "|" + String(ir) + " ");
} else if (tampilan >= 3 && tampilan <= 5){
    lcd.setCursor(0,1);

    lcd.print(wifi);

    lcd.print(" ");

    lcd.print(hour);

    lcd.print(":");

    lcd.print(minute);

    lcd.print(" ");

    lcd.setCursor(0,0);

    lcd.print("I:");

    lcd.print(ir);
}

```

```

    lcd.print(" V:");
    lcd.print(vr);
    lcd.print("  ");
}else{
    tampilan=0;
}
// jam on dan off lampu
if (hour>=6 && hour<=23){
    if (cahaya<1000){
        relay4_off;
        relay2_off;
        relay3_off;
    }else if (cahaya<2000){
        relay4_on;
        relay2_off;
        relay3_off;
    }else if (cahaya<3000){
        relay4_on;
        relay2_on;
        relay3_off;
    }else {
        relay4_on;
        relay2_on;
        relay3_on;
    }
}
}else{

```

```

    relay4_off;
    relay2_off;
    relay3_off;
}
if (suhu>=25){
    relay1_on;
}else if (suhu<=22){
    relay1_off;
}
}

```

//Data dari program arduino

// program kirim ke server

String send(String url) {

if (!client.connect(host, httpPort)) {

led_off;

return "Error Request Confirm";

}

led_on;

client.print(String("GET ") + url + " HTTP/1.1\r\n" +

"Host: " + host + "\r\n" +

"User-Agent: BuildFailureDetectorESP8266\r\n" +

"Connection: close\r\n\r\n");

String body = "";

long last_millis_x=millis();

long last_millis_x2=millis();

```

while (client.connected()) {
    if ((millis()-last_millis_x2)>5000){
        break;
    }
    last_millis_x=millis();
while (client.available()) {
    if ((millis()-last_millis_x)>5000){
        break;

    }
    char c = client.read();
    body += String(c);
}
}
client.stop();

int a = body.indexOf("^");
int b = body.indexOf(":");
int c = body.indexOf("~");
body=body.substring(a,c+1);
int ax = body.indexOf("^");
int bx = body.indexOf(":");
int cx = body.indexOf("~");

//^jam:menit~
if (b>0&&cx>0){

```

```
hour = body.substring(ax+1,bx).toInt();
minute = body.substring(bx+1,cx).toInt();
Serial.print(body);
Serial.print(" ");
Serial.print(hour);
Serial.print(":");
Serial.println(minute);
    body="OK";
}else{
    body="Error Send";
}
client.stop();
return body;
}
```

//io program arduino

```
void relay_on(){
    relay1_on;
    relay2_on;
    relay3_on;
    relay4_on;
}
void relay_off(){
    relay1_off;
    relay2_off;
    relay3_off;
```



```

    relay4_off;
}

void baca_pzem() {
    Serial.println("CEK SENSOR");
    vr = pzem_r.voltage();
    ir = pzem_r.current();
    power = pzem_r.power();
    if (!isnan(vr)) {
        vr = (int)vr;
    } else {
        vr = 0;
    }
    if (!isnan(ir)) {
        ir = (double)ir;
    } else {
        ir = 0;
    }
    if (!isnan(power)) {
        power = (double)power;
    } else {
        power = 0;
    }
}
}

```

LAMPIRAN III

Listing Program Software database

```
-- phpMyAdmin SQL Dump
-- version 4.9.5
-- https://www.phpmyadmin.net/
--
-- Host: localhost:3306
-- Generation Time: Dec 21, 2020 at 11:16 AM
-- Server version: 10.2.33-MariaDB-ell-lve
-- PHP Version: 7.3.6

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET AUTOCOMMIT = 0;
START TRANSACTION;
SET time_zone = "+00:00";

/*!40101 SET
@OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT
*/;

/*!40101 SET
@OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESUL
TS */;

/*!40101 SET
@OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION
*/;

/*!40101 SET NAMES utf8mb4 */;
```

```
--  
-- Database: `mong6384_airnav`  
--  
-----  
  
--  
-- Table structure for table `data`  
--  
  
CREATE TABLE `data` (  
  `id` int(11) NOT NULL,  
  `tipe` text NOT NULL,  
  `data` text NOT NULL,  
  `waktu` datetime NOT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;  
  
--  
-- Dumping data for table `data`  
--  
  
INSERT INTO `data` (`id`, `tipe`, `data`, `waktu`) VALUES  
(7929, 'arus', '0.00', '2019-07-11 11:32:00'),  
(7930, 'tegangan', '0', '2019-07-11 11:32:00'),  
(7931, 'arus', '0.00', '2019-07-11 11:32:00'),
```

(39494, 'cahaya', '4095', '2020-12-21 11:14:26'),
(39495, 'suhu', '29.00', '2020-12-21 11:14:26'),
(39496, 'hummidity', '68.00', '2020-12-21 11:14:26'),
(39497, 'daya', '2.40', '2020-12-21 11:14:26'),
(39498, 'cahaya', '4095', '2020-12-21 11:14:35'),
(39499, 'suhu', '29.00', '2020-12-21 11:14:35'),
(39500, 'hummidity', '68.00', '2020-12-21 11:14:35'),
(39501, 'daya', '2.30', '2020-12-21 11:14:35'),
(39502, 'cahaya', '4095', '2020-12-21 11:15:00'),
(39503, 'suhu', '29.00', '2020-12-21 11:15:00'),
(39504, 'hummidity', '68.00', '2020-12-21 11:15:00'),
(39505, 'daya', '2.40', '2020-12-21 11:15:00'),
(39506, 'cahaya', '4095', '2020-12-21 11:15:03'),
(39507, 'suhu', '29.00', '2020-12-21 11:15:03'),
(39508, 'hummidity', '68.00', '2020-12-21 11:15:03'),
(39509, 'daya', '2.30', '2020-12-21 11:15:03'),
(39510, 'cahaya', '4095', '2020-12-21 11:15:08'),
(39511, 'suhu', '29.00', '2020-12-21 11:15:08'),
(39512, 'hummidity', '68.00', '2020-12-21 11:15:08'),
(39513, 'daya', '2.40', '2020-12-21 11:15:08'),
(39514, 'cahaya', '4095', '2020-12-21 11:15:16'),
(39515, 'suhu', '29.00', '2020-12-21 11:15:16'),
(39516, 'hummidity', '68.00', '2020-12-21 11:15:16'),
(39517, 'daya', '2.30', '2020-12-21 11:15:16'),
(39518, 'cahaya', '4095', '2020-12-21 11:15:19'),
(39519, 'suhu', '29.00', '2020-12-21 11:15:19'),

(39520, 'hummidity', '68.00', '2020-12-21 11:15:19'),
(39521, 'daya', '2.40', '2020-12-21 11:15:19'),
(39522, 'cahaya', '4095', '2020-12-21 11:15:22'),
(39523, 'suhu', '29.00', '2020-12-21 11:15:22'),
(39524, 'hummidity', '67.00', '2020-12-21 11:15:22'),
(39525, 'daya', '2.30', '2020-12-21 11:15:22'),
(39526, 'cahaya', '4095', '2020-12-21 11:15:32'),
(39527, 'suhu', '29.00', '2020-12-21 11:15:32'),
(39528, 'hummidity', '67.00', '2020-12-21 11:15:32'),
(39529, 'daya', '2.40', '2020-12-21 11:15:32'),
(39530, 'cahaya', '4095', '2020-12-21 11:15:35'),
(39531, 'suhu', '29.00', '2020-12-21 11:15:35'),
(39532, 'hummidity', '67.00', '2020-12-21 11:15:35'),
(39533, 'daya', '2.30', '2020-12-21 11:15:35'),
(39534, 'cahaya', '4095', '2020-12-21 11:15:45'),
(39535, 'suhu', '29.00', '2020-12-21 11:15:45'),
(39536, 'hummidity', '67.00', '2020-12-21 11:15:45'),
(39537, 'daya', '2.40', '2020-12-21 11:15:45'),
(39538, 'cahaya', '4095', '2020-12-21 11:15:56'),
(39539, 'suhu', '29.00', '2020-12-21 11:15:56'),
(39540, 'hummidity', '67.00', '2020-12-21 11:15:56'),
(39541, 'daya', '2.40', '2020-12-21 11:15:56'),
(39542, 'cahaya', '4095', '2020-12-21 11:16:04'),
(39543, 'suhu', '29.00', '2020-12-21 11:16:04'),
(39544, 'hummidity', '67.00', '2020-12-21 11:16:04'),
(39545, 'daya', '2.30', '2020-12-21 11:16:04'),

```
(39546, 'cahaya', '4095', '2020-12-21 11:16:09'),  
(39547, 'suhu', '29.00', '2020-12-21 11:16:09'),  
(39548, 'hummidity', '67.00', '2020-12-21 11:16:09'),  
(39549, 'daya', '2.40', '2020-12-21 11:16:09');
```

```
--  
-- Table structure for table `user`
```

```
--
```

```
CREATE TABLE `user` (  
  `id` int(11) NOT NULL,  
  `username` text NOT NULL,  
  `password` text NOT NULL,  
  `nama` text NOT NULL  
) ENGINE=InnoDB DEFAULT CHARSET=latin1;
```

```
--  
-- Dumping data for table `user`
```

```
--
```

```
INSERT INTO `user` (`id`, `username`, `password`, `nama`) VALUES  
(3, 'admin', 'admin123', 'Admin');
```

```
--
```

```
-- Indexes for dumped tables
--
--
-- Indexes for table `data`
--
ALTER TABLE `data`
  ADD UNIQUE KEY `id` (`id`);
--
-- Indexes for table `user`
--
ALTER TABLE `user`
  ADD UNIQUE KEY `id` (`id`);
--
-- AUTO_INCREMENT for dumped tables
--
--
-- AUTO_INCREMENT for table `data`
--
ALTER TABLE `data`
  MODIFY `id` int(11) NOT NULL AUTO_INCREMENT,
  AUTO_INCREMENT=39550;
```

```
--  
-- AUTO_INCREMENT for table `user`  
--  
ALTER TABLE `user`  
  MODIFY `id` int(11) NOT NULL AUTO_INCREMENT,  
  AUTO_INCREMENT=4;  
COMMIT;  
  
/!*40101 SET  
CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;  
  
/!*40101 SET  
CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS  
*/;  
  
/!*40101 SET  
COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
```




UNIVERSITAS PGRI ADI BUANA SURABAYA

FAKULTAS TEKNIK

Program Studi : Teknik Lingkungan – Perencanaan Wilayah Kota
Teknik Industri – Teknik Elektro - PVKK

KAMPUS II: Jl. Dukuh Menanggal XII/4 ☎ (031)8281181 Surabaya 60234

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BERITA ACARA BIMBINGAN SKRIPSI

Form Skripsi-03



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Program Studi	: TEKNIK ELEKTRO
Pembimbing	: ATMIASRI, ST.,MT
Periode Bimbingan	: Gasal/ Genap *) Tahun 2020 / 2021
Judul Skripsi	MONITORING AC DAN PENERANGAN BERBASIS WEB DI AIRNAV INDONESIA BANDARA JUANDA SURABAYA

KEGIATAN KONSULTASI / BIMBINGAN

No	Tanggal	Materi pembimbingan	Keterangan	Paraf
1	14 OKTOBER 2020	Perbaikan Materi Penulisa di Bab I	Ace	
2	21 OKTOBER 2020	Perbaikan Latar Belakang	Ace	
3	15 NOVEMBER 2020	Pemilihan referensi Kajian Pustaka	Ace	
4	17 NOVEMBER 2020	Pembahasan desain Perancangan	Ace	
5	9 DESEMBER 2020	Penulisan Bab I. Bab II. Bab III	Ace	
6	18 DESEMBER 2020	Penulisan Bab IV	Ace	
7	22 DESEMBER 2020	Penulisan V dan Daftar Pustaka	Ace	
8	05 JANUARI 2021	Penambahan daftar pustaka	Ace	
9	13 JANUARI 2021	Perbaikan Abstrak	Revisi	
10	18 JANUARI 2021	Perbaikan Sampul Cover Sesuai SOP	Ace	

Dinyatakan selesai tanggal 2021

Surabaya, 21 Januari 2021
Mahasiswa,

Mengetahui
Ketua Program Studi,

AKBAR SUJIWA, S.SI., M.SI

Pembimbing,

ATMIASRI, ST.,MT

FRISZA VRADANA



UNIVERSITAS PGRI ADI BUANA SURABAYA

FAKULTAS TEKNIK

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FORM REVISI SKRIPSI

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Ujian Tanggal : 01 Februari 2021

No Bab.	Tanggal	Materi Konsultasi	Keterangan Catatan	Tanda Tangan Penguji
I	03 Februari 2021	Latar belakang	Acc	
II	05 Februari 2021	Rumusan, Tujuan, Ruang lingkup	Acc	
III	08 Februari 2021	Manfaat penelitian	Acc	
IV	10 Februari 2021	Bab II dan Daftar Pustaka	Acc	
V	12 Februari 2021	Penulisan Skripsi	Acc	

Disetujui Dosen Penguji
Pada Tanggal, Februari 2021
Penguji I,

(Dwi Hastuti, S.KOM., MT)

Penguji II,

(Ir. Winarno FB, M. Eng.)

- Penyelesaian Revisi paling lambat 2 minggu dari pelaksanaan Ujian Skripsi.
 - Pengetikan, penjilidan, penandatanganan Skripsi dan mengumpulkan Skripsi paling lambat 2 minggu dari revisi.
- Apabila sampai batas waktu tersebut (point 1,a dan b) mahasiswa belum menyelesaikan revisi dan tanda tangan, maka **Ujian dinyatakan Gugur**.
- Foto copy Form Revisi diserahkan ke Program Studi.
 - Skripsi yang sudah direvisi diserahkan ke Fakultas tiga eksemplar untuk dijilid.