DAFTAR PUSTAKA

[1] H. Setiadi, R. Dwi Astuti, and R. Anggrainingsih, "Implementasi Smart Security Camera Pendukung Sistem Keamanan Lingkungan Mandiri Berbasis Internet Of Thing (IoT)," *Pros. Konf. Nas. Pengabdi. Kpd. Masy. dan Corp. Soc. Responsib.*, vol. 2, pp. 89–94, 2019, doi: 10.37695/pkmcsr.v2i0.470.

[2] J. F. Putri, A. Taqwa, and I. Salamah, "Rancang Bangun Sistem Monitoring Patroli Lingkungan Kampus Menggunakan Near Field Communication Berbasis Android dan Web Application," *Smatika J.*, vol. 11, no. 02, pp. 136–145, 2021, doi: 10.32664/smatika.v11i02.596.

[3] H. Sciences, "Perancangan Sistem Monitoring Security Berbasis Web dan Aplikasi Android Menggunakan NFC dengan Metode V-Model," vol. 4, no. 1, pp. 1–23, 2016.

[4] I. Nawangsih and M. Iko, "IMPLEMENTASI SISTEM PATROLI MENGGUNAKAN QR CODE BERBASIS ANDROID DENGAN METODE ARSITEKTUR ZACHMAN FRAMEWORK," vol. 10, no. vol.1, pp. 27–33, 2019, [Online]. Available: https://ci.nii.ac.jp/ncid/BB27984014.

[5] K. Putri, A. Mahmudi, and N. Vendyansyah, "Sistem Patroli Security Pada Pt Sinar Sosro," *JATI (Jurnal Mhs. Tek. Inform.*, vol. 4, no. 2, pp. 200–206, 2020, doi: 10.36040/jati.v4i2.2673.

[6] H. Shull, "SISTEM PENGAMANAN PNTU RUMAH BERBASIS INTERNET OF THINGS (IoT) DENGAN ESP8266," *Science (80-.).*, vol. 195, no. 4279, p. 639, 1977, doi: 10.1126/science.195.4279.639.

[7] RISMA, "Pengembangan Android Mobile Learning Menggunakan Mit App Inventor Sebagai Media Pembelajaran Matematika Pada Materi Dasar-Dasar Logika," *J. Chem. Inf. Model.*, vol. 53, no. 9, pp. 1689–1699, 2019.

[8] Antares, "Pengenalan MIT APP Inventor," 2020. https://antares.id.id/mitappinventor2.hmtl (accessed Jun. 05, 2022).

[9] "V380 Pro," 2018. https://v380-pro.softonic-id.com/android.

[10] D. Untuk, M. Tugas, T. Dan, and S. U. Memperoleh, "Perancangan dan Pembuatan Sistem Absensi Menggunakan Radio Frequensi Identification yang Terkoneksi ke Google

Spreadsheet Berbasis Arduino," 2021.
[11] G. Y. Saputra, A. D. Afrizal, F. K. R. Mahfud, F. A. Pribadi, and F. J. Pamungkas, "Penerapan Protokol MQTT Pada Teknologi Wan (Studi Kasus Sistem Parkir Univeristas Brawijaya)," *Inform. Mulawarman J. Ilm. Ilmu Komput.*, vol. 12, no. 2, p. 69, 2017, doi: 10.30872/jim.v12i2.653.
[12] A. Amin, "Monitoring Kamera Cctv Melalui Pc Dan Smartphone," *J. EEICT*, vol. 1, no. 2, pp. 11–20, 2018, [Online]. Available: https://ojs.uniska-bjm.ac.id/index.php/eeict.
[13] ade elbani nugroho farhan, muhammad saleh, "C, 1150 rpm untuk suhu diatas 27 - 29," no. PERANCANGAN SISTEM KENDALI KIPAS ANGIN OTOMATIS BERBASIS NodeMCU V3 Farhan, p. 10, 1995.
[14] M. Chamdun, A. F. Rochim, and E. D. Widianto, "Sistem Keamanan Berlapis pada Ruangan Menggunakan RFID (Radio Frequency Identification) dan Keypad untuk Membuka Pintu Secara Otomatis," *J. Teknol. dan Sist. Komput.*, vol. 2, no. 3, pp. 187–194, 2014, doi: 10.14710/jtsiskom.2.3.2014.187-194.
[15] A. Nugroho, K. E. Susilo, S. Winardi, and A. Budijanto, *BUKU PETUNJUK PRAKTIKUM MIKROKONTROLER ARDUINO*. SCOPINDO MEDIA PUSTAKA, 2020.
[16] Sumarno, B. Irawan, and Y. Brianorma, "Sistem PERINGATAN DINI BENCANA BANJIR BERBASIS MIKROKONTROLER ATMEGA 16 DENGAN BUZZER DAN SHORT MESSAGE SERVICE (SMS)," *J. Coding Sist. Komput. Univ. Tanjungpura*, vol. 1, no. 1, 2013, [Online]. Available: http://jurnal.untan.ac.id/index.php/jcskommipa/article/view/2317.
[17] Efrianto, Ridwan, and I. Fahruzi, "Sistem Pengaman Motor Menggunakan Smartcard Politeknik Negeri Batam Electrical Engineering study Program," *Integrasi*, vol. 8, no. 1, pp. 1–5, 2016.
[18] A. Fatkhul Nur, "Timbangan Berbasis Arduino dengan Output LCD dan Suara. *Universitas Negeri Semarang*," 2016.

LAMPIRAN

LAMPIRAN A

```
// --------------set rfid-------------------
#include <SPI.h>
#include <MFRC522.h>
#include <Arduino.h>
#include <ESP8266WiFi.h>
#include <ESP8266HTTPClient.h>
#include <WiFiClient.h>
#include <WiFiClientSecureBearSSL.h>
#include "RTClib.h" // Library rtc
#include <PubSubClient.h>
//-------------set lcd---------------------
#include <LiquidCrystal_I2C.h>
#include <Wire.h>
LiquidCrystal_I2C lcd(0x27, 16, 2);
//---------------- set rtc-----------------
RTC_DS3231 rtc;
char     dataHari[7][12]={"Minggu",     "Senin",
"Selasa", "Rabu", "Kamis", "Jumat", "Sabtu"};
String hari;
```

```
int tanggal, bulan, tahun, jam, menit, detik;
int batas = 59;
int shift1 = 17; //jam 5 pagi
int shift2 = 20; //jam 17 siang
int shift3 = 23; //jam 23 malam
long waktu_sebelumnya = 0;
unsigned long waktu_sekarang;
long waktu_sebelumnya_idle = 0;
unsigned long waktu_sekarang_idle;
//---------------set pir & buzzer---------
const int Status = 16;  // Digital pin D0
const int sensor = 15;  // Digital pin D8
int iya = 0;
//-----------------RFID PIN--------------------
#define RST_PIN  0
#define SS_PIN   2
//-----------------------------------------
MFRC522 mfrc522(SS_PIN, RST_PIN);
MFRC522::MIFARE_Key key;
MFRC522::StatusCode status;
int blockNum = 2;
```

```
volatile int a, b, c, d, e;

// IP address : 192.168.43.44

byte bufferLen = 18;

byte readBlockData[18];

String baca_kartu = "";

String kosong = "";

String card_holder_name;

const         String         sheet_url         =
"https://script.google.com/macros/s/AKfycbz_DFX_
aA2TAV_qJHvq0I-
vV00Vtj14dihllSX0_qeqdmk9YpQRUICO2Y7Xw5OKmRdwfw/
exec?name=";

const uint8_t fingerprint [20] = {0x41, 0x1f,
0xd5, 0x0c, 0xb3, 0xc0, 0x87, 0xbe, 0x97, 0xd4,
0x1f, 0xf1, 0x5d, 0xe2, 0x34, 0x4b, 0x19, 0x9a,
0xe3, 0xde};

#define WIFI_SSID "Samsung"

#define WIFI_PASSWORD "12345678"

// Setting Static IP.

IPAddress local_IP(192, 168, 237, 249);

IPAddress gateway(192, 168, 237, 28);

IPAddress subnet(255, 255, 255, 0);

IPAddress primaryDNS(8, 8, 8, 8); //opcional

IPAddress secondaryDNS(8, 8, 4, 4); //opcional
```

```
String page = "";

String text = "";

bool triggered = false;

void setup() {

  Serial.begin(115200);

  lcd.begin();

  lcd.backlight();

  pinMode(sensor, INPUT);    // deklarasi sensor
pir

  pinMode(Status, OUTPUT);  // deklarasi

  //------------Konektivitas WiFi---------------

  // Setting Static IP.

  if  (!WiFi.config(local_IP,  gateway,  subnet,
primaryDNS, secondaryDNS)) {

    Serial.println("Error in configuration.");

  }

  Serial.println();

  Serial.print("Connecting to AP");

  WiFi.begin(WIFI_SSID, WIFI_PASSWORD);

  while (WiFi.status() != WL_CONNECTED) {

    Serial.print(".");

    lcd.setCursor(3, 0);
```

```
    lcd.print("Connecting");
    delay(200);
  }
  Serial.println("");
  Serial.println("WiFi connected.");
  Serial.println("IP address: ");
  Serial.println(WiFi.localIP());
  Serial.println();
  //  smtp.debug(0);
  //-----------------Set RTC-------------------
  if (! rtc.begin()) {
    Serial.println("RTC Tidak Ditemukan");
    Serial.flush();
    abort();
  }
  //Atur Waktu RTC
  //Note : pertama kali upload pilih salah satu,
kemudian comment upload ulang kembali
//               rtc.adjust(DateTime(F(__DATE__),
F(__TIME__)));
   rtc.adjust(DateTime(2022, 8, 30, 01, 30, 0));
```

```
  SPI.begin();
  lcd.setCursor(1, 0);
  lcd.print("Selamat Datang");
  lcd.setCursor(4, 1);
  lcd.print("Di JTE");
  delay(2000);
  lcd.clear();
  // put your setup code here, to run once:
  mqttSetup();
//  mqttSend();
}
void loop() {
  reconect();
  waktu_a();
  //  server.handleClient();
  //  MDNS.update();
  //------------------SIDANG--------------------
  //################### SHIFT 1 ##################
  if (menit >= 0 && menit < 20 && detik >= 0)
  {
    //    Serial.println("Shift 1");
```

```
    lcd.setCursor(0, 1);
    lcd.print("                                ");
    lcd.setCursor(4, 1);
    lcd.print("Shift 1");
    rfid_a();
    if (baca_kartu == "Wiwi_Caturiani") {
      // ngirim
      if (a == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_1");
        delay(300);
        baca_kartu = "";
        a = 1;
        digitalWrite(Status, LOW);
      }
      else if (a == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
```

```
        //        a = 0;
      }
    }
    else if (baca_kartu == "Anggraeni") {
      // ngirim
      if (b == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_1");
        delay(300);
        baca_kartu = "";
        b = 1;
        digitalWrite(Status, LOW);
      }
      else if (b == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        b = 0;
      }
```

```
    }
    else if (baca_kartu == "Amanda") {
      // ngirim
      if (c == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_1");
        delay(300);
        baca_kartu = "";
        c = 1;
        digitalWrite(Status, LOW);
      }
      else if (c == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        c = 0;
      }
    }
    else if (baca_kartu == "Dinda_Purwani") {
```

```
      // ngirim
      if (d == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_1");
        delay(300);
        d = 1;
        digitalWrite(Status, LOW);
      }
      else if (d == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        d = 0;
      }
    }
    else if (baca_kartu == "Dwita") {
      // ngirim
      if (e == 0) {
```

```
        kirim_spreadsheet(baca_kartu,
"_Shift_1");

        delay(300);

        baca_kartu = "";

        e = 1;

        digitalWrite(Status, LOW);

      }

      else if (e == 1) {

        lcd.setCursor(0, 1);

        lcd.print("                ");

        lcd.setCursor(2, 1);

        lcd.print("Sudah Absen");

        delay(300);

        baca_kartu = "";

        //        e = 0;

      }

    }

    else if ((baca_kartu != "Wiwi_Caturiani" ||
baca_kartu != "Anggraeni" || baca_kartu != "Dwita"
||  baca_kartu  !=  "Amanda"  ||  baca_kartu  !=
"Dinda_Purwani") && baca_kartu != kosong) {

      // kartu tak terdaftar

      lcd.setCursor(0, 1);
```

```
      lcd.print("                                ");
      lcd.setCursor(1, 1);
      lcd.print("Gagal Absen");
      baca_kartu = "";
    }
    digitalWrite(Status, LOW);
  }
  //################## SHIFT 2 ##############
  else if (menit >= 25 && menit < 30 && detik >=
0)
  {
    //    Serial.println("Shift 2");
    lcd.setCursor(0, 1);
    lcd.print("                                ");
    lcd.setCursor(4, 1);
    lcd.print("Shift 2");
    rfid_a();
    if (baca_kartu == "Wiwi_Caturiani") {
      // ngirim
      if (a == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_2");
```

```
        delay(300);
        baca_kartu = "";
        a = 1;
        digitalWrite(Status, LOW);
      }
      else if (a == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        a = 0;
      }
    }
    else if (baca_kartu == "Anggraeni") {
      // ngirim
      if (b == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_2");
        delay(300);
        baca_kartu = "";
```

```
        b = 1;
        digitalWrite(Status, LOW);
      }
      else if (b == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        b = 0;
      }
    }
    else if (baca_kartu == "Amanda") {
      // ngirim
      if (c == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_2");
        delay(300);
        baca_kartu = "";
        c = 1;
        digitalWrite(Status, LOW);
```

```
      }
      else if (c == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        c = 0;
      }
    }
    else if (baca_kartu == "Dinda_Purwani") {
      // ngirim
      if (d == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_2");
        delay(300);
        d = 1;
        digitalWrite(Status, LOW);
      }
      else if (d == 1) {
        lcd.setCursor(0, 1);
```

```
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        d = 0;
      }
    }
    else if (baca_kartu == "Dwita") {
      // ngirim
      if (e == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_2");
        delay(300);
        baca_kartu = "";
        e = 1;
        digitalWrite(Status, LOW);
      }
      else if (e == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
```

```
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        e = 0;
      }
    }
    else if ((baca_kartu != "Wiwi_Caturiani" ||
baca_kartu != "Anggraeni" || baca_kartu != "Dwita"
||  baca_kartu  !=  "Amanda"  ||  baca_kartu  !=
"Dinda_Purwani") && baca_kartu != kosong) {
      // kartu tak terdaftar

      lcd.setCursor(0, 1);
      lcd.print("                                ");
      lcd.setCursor(1, 1);
      lcd.print("Gagal Absen");
      baca_kartu = "";
    }
    digitalWrite(Status, LOW);
  }
  //################ SHIFT 3 ##############
  else if (menit >= 35 && menit < 40 && detik >=
0)
```

```
  {
    //    Serial.println("Shift 3");
    lcd.setCursor(0, 1);
    lcd.print("                                ");
    lcd.setCursor(4, 1);
    lcd.print("Shift 3");
    rfid_a();
    if (baca_kartu == "Wiwi_Caturiani") {
      // ngirim
      if (a == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_3");
        delay(300);
        baca_kartu = "";
        a = 1;
        digitalWrite(Status, LOW);
      }
      else if (a == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
```

```
        delay(300);
        baca_kartu = "";
        //        a = 0;
      }
    }
    else if (baca_kartu == "Anggraeni") {
      // ngirim
      if (b == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_3");
        delay(300);
        baca_kartu = "";
        b = 1;
        digitalWrite(Status, LOW);
      }
      else if (b == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
```

```
        //        b = 0;
      }
    }
    else if (baca_kartu == "Amanda") {
      // ngirim
      if (c == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_3");
        delay(300);
        baca_kartu = "";
        c = 1;
        digitalWrite(Status, LOW);
      }
      else if (c == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        c = 0;
      }
```

```
    }
    else if (baca_kartu == "Dinda_Purwani") {
      // ngirim
      if (d == 0) {
        kirim_spreadsheet(baca_kartu,
"_Shift_3");
        delay(300);
        d = 1;
        digitalWrite(Status, LOW);
      }
      else if (d == 1) {
        lcd.setCursor(0, 1);
        lcd.print("                ");
        lcd.setCursor(2, 1);
        lcd.print("Sudah Absen");
        delay(300);
        baca_kartu = "";
        //        d = 0;
      }
    }
    else if (baca_kartu == "Dwita") {
      // ngirim
```

```
      if (e == 0) {

        kirim_spreadsheet(baca_kartu,
"_Shift_3");

        delay(300);

        baca_kartu = "";

        e = 1;

        digitalWrite(Status, LOW);

      }

      else if (e == 1) {

        lcd.setCursor(0, 1);

        lcd.print("                ");

        lcd.setCursor(2, 1);

        lcd.print("Sudah Absen");

        delay(300);

        baca_kartu = "";

        //        e = 0;

      }

    }

    else if ((baca_kartu != "Wiwi_Caturiani" ||
baca_kartu != "Anggraeni" || baca_kartu != "Dwita"
||  baca_kartu  !=  "Amanda"  ||  baca_kartu  !=
"Dinda_Purwani") && baca_kartu != kosong) {

      // kartu tak terdaftar
```

```
      lcd.setCursor(0, 1);
      lcd.print("                                ");
      lcd.setCursor(4, 1);
      lcd.print("Gagal Absen");
      baca_kartu = "";
    }
    digitalWrite(Status, LOW);
  }
  else if (menit >= 31 && menit < 34 && detik >=
0) {
    pir_a();
    //    Sendpir();
    lcd.setCursor(0, 1);
    lcd.print("                  ");
    lcd.setCursor(1, 1);
    lcd.print("Absen Selesai");
    //    waktu_sekarang = millis();
    //     if (waktu_sekarang - waktu_sebelumnya
>= 2000)
    //    {
    //      lcd.setCursor(0, 1);
    //      lcd.print("               ");
```

```
    //      lcd.setCursor(0, 1);
    //      lcd.print("Absen Lagi Nanti");
    //                  waktu_sebelumnya_idle   =
waktu_sekarang_idle;
    //    }
  }
  else if (menit >= 41 && menit < 58 && detik >=
0) {
    pir_a();
    //    Sendpir();
    lcd.setCursor(0, 1);
    lcd.print("                 ");
    lcd.setCursor(1, 1);
    lcd.print("Absen Selesai");
    //    waktu_sekarang = millis();
    //     if (waktu_sekarang - waktu_sebelumnya
>= 2000)
    //    {
    //      lcd.setCursor(0, 1);
    //      lcd.print("               ");
    //      lcd.setCursor(0, 1);
    //      lcd.print("Absen Lagi Nanti");
    //      waktu_sebelumnya = waktu_sekarang;
```

```
  }
  else
  {
    a = 0;
    b = 0;
    c = 0;
    d = 0;
    e = 0;
    baca_kartu = "";
    lcd.setCursor(0, 1);
    lcd.print("                ");
    lcd.setCursor(1, 1);
    lcd.print("Absen Selesai");
    //    waktu_sekarang_idle = millis();
    //             if   (waktu_sekarang_idle   -
waktu_sebelumnya_idle >= 1000)
    //    {
    //      lcd.setCursor(0, 1);
    //      lcd.print("               ");
    //      lcd.setCursor(0, 1);
    //      lcd.print("Absen Lagi Nanti");
    //    }
```

```
    //                  waktu_sebelumnya_idle    =
waktu_sekarang_idle;

    digitalWrite(Status, LOW);

  }

  //  Serial.println();

  // put your main code here, to run repeatedly:


}
```

LAMPIRAN B

Hasil Alat pada Lokasi A

Hasil Alat pada Lokasi B