

LAMPIRAN

1. Bentuk Fisik Alat Presensi Mahasiswa



2. Proses Perancangan Alat Presensi Mahasiswa



3. Pengujian Alat Presensi Mahasiswa



4. Program Arduino UNO R3

```
#include <Wire.h>
#include <LiquidCrystal_I2C.h>
#include <SPI.h>
#include <MFRC522.h>

#define SS_PIN 10 //RX slave select
#define RST_PIN 9

MFRC522 mfrc522(SS_PIN, RST_PIN); // Create MFRC522 instance.
LiquidCrystal_I2C lcd(0x27, 16, 2);

byte card_ID[4]; //card UID size 4byte
byte n1[4]={0x93,0x87,0x78,0x1A}; //first UID card
byte n2[4]={0x40,0x3A,0xA2,0x10}; //second UID card
byte n3[4]={0x13,0x06,0xC4,0x1B}; //second UID card
byte n4[4]={0xE2,0x9C,0x4F,0x0A}; //second UID card
byte n5[4]={0x20,0x6A,0xF1,0x0E}; //second UID card
byte n6[4]={0x40,0xA5,0xB9,0x11}; //second UID card
byte n7[4]={0xD6,0x70,0x99,0xF4}; //second UID card
byte n8[4]={0x2A,0x8D,0xDB,0x01}; //second UID card
byte n9[4]={0x36,0xDE,0xEC,0xF6}; //second UID card
byte n10[4]={0xE2,0xBD,0xAE,0x0A}; //second UID card
byte n11[4]={0x66,0xBA,0xAE,0x0A}; //second UID card
byte n12[4]={0x66,0x6F,0x91,0xF4}; //second UID card
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byte n13[4]={0xD6,0x76,0xEF,0xF6}; //second UID card
byte n14[4]={0xC6,0x94,0x94,0xF4}; //second UID card
byte n15[4]={0x46,0x40,0x98,0xF4}; //second UID card
byte n16[4]={0x66,0xC5,0x9C,0xF4}; //second UID card
byte n17[4]={0xA3,0x4A,0x5D,0x1A}; //second UID card
byte n18[4]={0xC3,0x61,0x37,0x1A}; //second UID card
byte n19[4]={0x40,0xE8,0x17,0x11}; //second UID card
byte n20[4]={0x40,0x6D,0xF4,0x11}; //second UID card

int NumbCard[40]; //the number of cards. in my case i have just two cards.
int j=0;
int statu[40]; //the number of cards. in my case i have just two cards.
int s=0;

int const RedLed=5;
int const GreenLed=6;

String Log;
String Name; //user name
String Number; //user number
int n; //The number of card you want to detect (optional)

//Galih
String in, out;
String totalname ;
int total = 0;
//Galih

void setup() {

  pinMode(2, INPUT);
  pinMode(4, INPUT);

  lcd.begin();
  lcd.setCursor(0,0);
  lcd.print("Scan Kartu Anda");

  Serial.begin(9600); // Initialize serial communications with the PC
  SPI.begin(); // Init SPI bus
  mfrc522.PCD_Init(); // Init MFRC522 card

  Serial.println("CLEAR SHEET"); // clears starting at row 1
  Serial.println("LABEL,Date,Name,Number,Time IN,Time OUT,Jumlah"); //
  make four columns (Date,Time,[Name:"user name"]line 48 &
  52,[Number:"user number"]line 49 & 53)

```

```

pinMode(RedLed,OUTPUT);
pinMode(GreenLed,OUTPUT);

delay(200);
}

void loop (){

rfid();

//Galih
counter();
//Galih
}

void rfid() {
//look for new card
if ( ! mfrc522.PICC_IsNewCardPresent()) {
return;//got to start of loop if there is no card present
}
// Select one of the cards
if ( ! mfrc522.PICC_ReadCardSerial()) {
return;//if read card serial(0) returns 1, the uid struct contains the ID of the
read card.
}

for (byte i = 0; i < mfrc522.uid.size; i++) {
card_ID[i]=mfrc522.uid.uidByte[i];

if(card_ID[i]==n1[i]){
Name="Dhiyaa Yumna Syarif";//user name
Number="16506134020";//user number
j=0;
s=0;
}
else if(card_ID[i]==n2[i]){
Name="Muhammad Galih Watu Lanang";//user name
Number="16506134007";//user number
j=1;
s=1;
}
else if(card_ID[i]==n3[i]){
Name="Hegar Hartarto";//user name
Number="16506134027";//user number
j=2;

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s=2;
}
else if(card_ID[i]==n4[i]){
Name="Tri Gustian";//user name
Number="16506134011";//user number
j=3;
s=3;
}
else if(card_ID[i]==n5[i]){
Name="Ardi Hartanto";//user name
Number="16506134015";//user number
j=4;
s=4;
}
else if(card_ID[i]==n6[i]){
Name="Afrizal H";//user name
Number="16506134022";//user number
j=5;
s=5;
}
else if(card_ID[i]==n7[i]){
Name="M Zahroni";//user name
Number="16506134002";//user number
j=6;
s=6;
}
else if(card_ID[i]==n8[i]){
Name="Apriiana P.P";//user name
Number="16506134001";//user number
j=7;
s=7;
}
else if(card_ID[i]==n9[i]){
Name="Rizki Hermawan";//user name
Number="16506134024";//user number
j=8;
s=8;
}
else if(card_ID[i]==n10[i]){
Name="Laduni Aura.A";//user name
Number="16506134031";//user number
j=9;
s=9;
}
else if(card_ID[i]==n11[i]){
Name="Ludhi Prasetyo";//user name

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Number="16506134009";//user number
j=10;
s=10;
}
else if(card_ID[i]==n12[i]){
Name="Abdul Cholil";//user name
Number="16506134013";//user number
j=11;
s=11;
}
else if(card_ID[i]==n13[i]){
Name="Gito Syahril F";//user name
Number="16506134005";//user number
j=12;
s=12;
}
else if(card_ID[i]==n14[i]){
Name="Amalah";//user name
Number="16506134014";//user number
j=13;
s=13;
}
else if(card_ID[i]==n15[i]){
Name="Jodi Rahmanto";//user name
Number="16506134004";//user number
j=14;
s=14;
}
else if(card_ID[i]==n16[i]){
Name="Ilham Rifqi R.";//user name
Number="16506134003";//user number
j=15;
s=15;
}
else if(card_ID[i]==n17[i]){
Name="Muchlis Abdillah";//user name
Number="16506134010";//user number
j=16;
s=16;
}
else if(card_ID[i]==n18[i]){
Name="Amriani Amelia";//user name
Number="16506134018";//user number
j=17;
s=17;
}
}

```

```

else if(card_ID[i]==n19[i]){
    Name="Jimmy Luthfi";//user name
    Number="16506134016";//user number
    j=18;
    s=18;
}
else if(card_ID[i]==n20[i]){
    Name="Afrian Akbar";//user name
    Number="16506134021";//user number
    j=19;
    s=19;
}

else{
    digitalWrite(GreenLed,LOW);
    digitalWrite(RedLed,HIGH);
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("Belum Terdaftar");
    delay(1000);
    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("Scan Kartu Anda");
    goto cont;//go directly to line 71
}
}

if(NumbCard[j] == 1 && statu[s] == 0){
    statu[s]=1;

    lcd.clear();
    lcd.setCursor(0,0);
    lcd.print("Terima Kasih");
    lcd.setCursor(0,1);
    lcd.print(Name);
    digitalWrite(RedLed,HIGH);
    Serial.print("DATA,DATE," + Name);//send the Name to excel
    Serial.print(",");
    Serial.print(Number); //send the Number to excel
    Serial.print(",");
    Serial.print("");
    Serial.print(",");
    Serial.println("TIME");

}
else if(NumbCard[j] == 0){
    NumbCard[j] = 1;

```

```

n++;

lcd.clear();
lcd.setCursor(0,0);
lcd.print("Selamat Datang ");
lcd.setCursor(0,1);
lcd.print(Name);

Serial.print("DATA,DATE," + Name);//send the Name to excel
Serial.print(",");
Serial.print(Number); //send the Number to excel
Serial.print(",");
Serial.print("TIME");
Serial.print(",");
Serial.println("");
digitalWrite(GreenLed,HIGH);
digitalWrite(RedLed,LOW);
delay(30);
}
else if(status[s] == 1){
//Turn Red LED when the employee Already Left

lcd.clear();
lcd.setCursor(0,0);
lcd.print(Name);
lcd.setCursor(0,1);
lcd.print("Sudah Keluar");

digitalWrite(RedLed,HIGH);
}
delay(1000);
lcd.clear();
lcd.setCursor(0,0);
lcd.print("Scan Kartu Anda");

cont:

delay(1000);
digitalWrite(GreenLed,LOW);
digitalWrite(RedLed,LOW);

}

```

```

//Galih
void tampilcounter() {
    totalname = total;

    if (total >= 0){
        Serial.println("DATA,,,,," + totalname); //kirim data ke excel
    }

    else {
        Serial.println("DATA,,,,," );
    }

}

void counter(){
    if (digitalRead(2) == LOW) {
        while (digitalRead(4) == HIGH) {
        }
        total++;
        tampilcounter();
        delay(1000);
    }
    else if (digitalRead(4) == LOW) {
        while (digitalRead(2) == HIGH) {
        }
        total--;
        tampilcounter();
        delay(1000);
    }
}
//Galih

```