

LAMPIRAN

```
#include <SPI.h>

#include <MFRC522.h>

#define SS_PIN 10
#define RST_PIN 9
MFRC522 mfrc522(SS_PIN, RST_PIN); // Create MFRC522 instance.

#include <Adafruit_Fingerprint.h>

#include <LiquidCrystal_I2C.h> //Memanggil i2C LCD Library
LiquidCrystal_I2C lcd(0x27, 16, 2);

// On Leonardo/Micro or others with hardware serial, use those! #0 is green wire, #1
is white

// uncomment this line:
// #define mySerial Serial1

// For UNO and others without hardware serial, we must use software serial...
// pin #2 is IN from sensor (GREEN wire)
// pin #3 is OUT from arduino (WHITE wire)
// comment these two lines if using hardware serial
#include <SoftwareSerial.h>
SoftwareSerial mySerial(2, 3);
SoftwareSerial nodeMCU(4, 5);
```

```
Adafruit_Fingerprint finger = Adafruit_Fingerprint(&mySerial);
int IDFinger;

// pin output
const int buzzer = 7; //Passive buzzer ke Pin D7 dan GND
const int doorLock = 8; //Driver Selenoid Door Lock/Relay input ke pin D8

void setup()
{
  Serial.begin(115200);
  nodeMCU.begin(115200);
  lcd.begin();
  SPI.begin(); // Initiate SPI bus
  mfrc522.PCD_Init(); // Initiate MFRC522
  while (!Serial); // For Yun/Leo/Micro/Zero/...
  delay(100);
  Serial.println("\n\nAdafruit finger detect test");

  // set the data rate for the sensor serial port
  finger.begin(57600);

  if (finger.verifyPassword()) {
    Serial.println("Found fingerprint sensor!");
  } else {
    Serial.println("Did not find fingerprint sensor :(");
  }
}
```

```
    while (1) { delay(1); }
}

finger.getTemplateCount();

Serial.print("Sensor contains "); Serial.print(finger.templateCount); Serial.println("
templates");

Serial.println("Waiting for valid finger...");

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

tone (buzzer,1200);

lcd.clear();

lcd.setCursor (0,0);
lcd.print(F(" Sistem Pintu "));

lcd.setCursor (0,1);
lcd.print(F(" Finger dan RFID"));

delay (2000);

lcd.clear();

noTone (buzzer);
}

void loop()          // run over and over again
{
    //getFingerprintIDez();
```

```
//lcd.begin();  
digitalWrite(doorLock, HIGH);  
getFingerprintID();  
cekRFID();  
delay(50);    //don't ned to run this at full speed.  
}
```

```
uint8_t getFingerprintID() {  
    uint8_t p = finger.getImage();  
    switch (p) {  
        case FINGERPRINT_OK:  
            Serial.println("Image taken");  
            break;  
        case FINGERPRINT_NOFINGER:  
            //Serial.println("No finger detected");  
            lcd.setCursor (0,0);  
            lcd.print(F("Baca Sidik Jari"));  
            lcd.setCursor (0,1);  
            lcd.print(F("Baca Kartu RFID"));  
            return p;  
        case FINGERPRINT_PACKETRECIEVEERR:  
            Serial.println("Communication error");  
            return p;  
        case FINGERPRINT_IMAGEFAIL:  
            Serial.println("Imaging error");
```

```
        return p;
default:
    Serial.println("Unknown error");
    return p;
}

// OK success!
p = finger.image2Tz();
switch (p) {
case FINGERPRINT_OK:
    Serial.println("Image converted");
    break;
case FINGERPRINT_IMAGEMESS:
    Serial.println("Image too messy");
    return p;
case FINGERPRINT_PACKETRECIEVEERR:
    Serial.println("Communication error");
    return p;
case FINGERPRINT_FEATUREFAIL:
    Serial.println("Could not find fingerprint features");
    return p;
case FINGERPRINT_INVALIDIMAGE:
    Serial.println("Could not find fingerprint features");
    return p;
default:
```

```
Serial.println("Unknown error");
return p;
}

// OK converted!
p = finger.fingerFastSearch();
if (p == FINGERPRINT_OK) {
    Serial.println("Found a print match!");
} else if (p == FINGERPRINT_PACKETRECEIVEERR) {
    Serial.println("Communication error");
    return p;
} else if (p == FINGERPRINT_NOTFOUND) {
    Serial.println("Did not find a match");
    lcd.clear();
    tone (buzzer,1200);
    lcd.setCursor (0,0);
    lcd.print(F(" Sidik Jari Anda"));
    lcd.setCursor (0,1);
    lcd.print(F(" Tidak Ditemukan"));
    digitalWrite(doorLock, HIGH);
    delay (2000);
    noTone (buzzer);
    lcd.clear();
    return p;
} else {
```

```
Serial.println("Unknown error");  
return p;  
}  
  
// found a match!  
Serial.print("Found ID #"); Serial.print(finger.fingerID);  
Serial.print(" with confidence of "); Serial.println(finger.confidence);  
  
IDFinger = finger.fingerID;  
if (IDFinger == 1){  
    IDFinger;  
    Finger_Valid();  
    nodeMCU.write("101");  
}  
else if (IDFinger == 2){  
    IDFinger;  
    Finger_Valid();  
    nodeMCU.write("102");  
}  
else if (IDFinger == 3){  
    IDFinger;  
    Finger_Valid();  
    nodeMCU.write("103");  
}  
else if (IDFinger == 4){
```



```
IDFinger;
Finger_Valid();
nodeMCU.write("104");
}
else if (IDFinger == 5){
    IDFinger;
    Finger_Valid();
    nodeMCU.write("105");
}
else if (IDFinger == 6){
    IDFinger;
    Finger_Valid();
    nodeMCU.write("106");
}
else if (IDFinger == 7){
    IDFinger;
    Finger_Valid();
    nodeMCU.write("107");
}
else if (IDFinger == 8){
    IDFinger;
    Finger_Valid();
    nodeMCU.write("108");
}
else if (IDFinger == 9){
```

```

    IDFinger;
    Finger_Valid();
    nodeMCU.write("109");
}
else if (IDFinger == 10){
    IDFinger;
    Finger_Valid();
    nodeMCU.write("110");
}
else if (IDFinger == 11){
    IDFinger;
    Finger_Valid();
    nodeMCU.write("111");
}

return finger.fingerID;
}

// returns -1 if failed, otherwise returns ID #
int getFingerprintIDez() {
    uint8_t p = finger.getImage();
    if (p != FINGERPRINT_OK) return -1;

    p = finger.image2Tz();

```

```

if (p != FINGERPRINT_OK) return -1;

p = finger.fingerFastSearch();
if (p != FINGERPRINT_OK) return -1;

// found a match!
Serial.print("Found ID #"); Serial.print(finger.fingerID);
Serial.print(" with confidence of "); Serial.println(finger.confidence);
return finger.fingerID;
}

void cekRFID(){
  // Look for new cards
  if ( ! mfrc522.PICC_IsNewCardPresent())
  {
    lcd.setCursor (0,0);
    lcd.print(F("Baca Sidik Jari"));
    lcd.setCursor (0,1);
    lcd.print(F("Baca Kartu RFID"));
    return;
  }
  // Select one of the cards
  if ( ! mfrc522.PICC_ReadCardSerial())
  {
    return;
  }
}

```

```
}  
  
//Show UID on serial monitor  
Serial.print("UID tag :");  
String content= "";  
byte letter;  
for (byte i = 0; i < mfrc522.uid.size; i++)  
{  
  Serial.print(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " ");  
  Serial.print(mfrc522.uid.uidByte[i], HEX);  
  content.concat(String(mfrc522.uid.uidByte[i] < 0x10 ? " 0" : " "));  
  content.concat(String(mfrc522.uid.uidByte[i], HEX));  
}  
Serial.println();  
Serial.print("Message : ");  
content.toUpperCase();  
  
if (content.substring(1) == "62 C7 9F 1A") //change here the UID of the card/cards  
that you want to give access  
{  
  Serial.println("Authorized access");  
  nodeMCU.write("1");  
  RFID_Valid();  
  Serial.println();  
  //delay(3000);  
}
```

```
    else if (content.substring(1) == "C2 36 74 1A") //change here the UID of the  
card/cards that you want to give access
```

```
{  
    Serial.println("Authorized access");  
    nodeMCU.write("2");  
    RFID_Valid();  
    Serial.println();  
    //delay(3000);  
}
```

```
    else if (content.substring(1) == "40 A0 81 A6") //change here the UID of the  
card/cards that you want to give access
```

```
{  
    Serial.println("Authorized access");  
    nodeMCU.write("3");  
    RFID_Valid();  
    Serial.println();  
    //delay(3000);  
}
```

```
    else if (content.substring(1) == "A2 03 E2 27") //change here the UID of the  
card/cards that you want to give access
```

```
{  
    Serial.println("Authorized access");  
    nodeMCU.write("4");  
    RFID_Valid();  
    Serial.println();  
    //delay(3000);  
}
```

```
}  
  
  else if (content.substring(1) == "72 01 9E 1A") //change here the UID of the  
card/cards that you want to give access  
  
  {  
  
    Serial.println("Authorized access");  
  
    nodeMCU.write("5");  
  
    RFID_Valid();  
  
    Serial.println();  
  
    //delay(3000);  
  
  }  
  
  else if (content.substring(1) == "53 CB D0 31") //change here the UID of the  
card/cards that you want to give access  
  
  {  
  
    Serial.println("Authorized access");  
  
    nodeMCU.write("6");  
  
    RFID_Valid();  
  
    Serial.println();  
  
    //delay(3000);  
  
  }  
  
  else if (content.substring(1) == "07 75 77 25") //change here the UID of the  
card/cards that you want to give access  
  
  {  
  
    Serial.println("Authorized access");  
  
    nodeMCU.write("7");  
  
    RFID_Valid();  
  
    Serial.println();
```

```
    //delay(3000);
}

    else if (content.substring(1) == "A7 57 60 25") //change here the UID of the
card/cards that you want to give access
{
    Serial.println("Authorized access");
    nodeMCU.write("8");
    RFID_Valid();
    Serial.println();
    //delay(3000);
}

    else if (content.substring(1) == "77 C6 D1 24") //change here the UID of the
card/cards that you want to give access
{
    Serial.println("Authorized access");
    nodeMCU.write("9");
    RFID_Valid();
    Serial.println();
    //delay(3000);
}

    else if (content.substring(1) == "17 A9 5D 25") //change here the UID of the
card/cards that you want to give access
{
    Serial.println("Authorized access");
    nodeMCU.write("10");
    RFID_Valid();
```

```
Serial.println();  
//delay(3000);  
}  
  
else if (content.substring(1) == "47 5E 79 25") //change here the UID of the  
card/cards that you want to give access  
{  
Serial.println("Authorized access");  
nodeMCU.write("11");  
RFID_Valid();  
Serial.println();  
//delay(3000);  
}  
  
else if (content.substring(1) == "39 75 D5 15") //change here the UID of the  
card/cards that you want to give access  
{  
Serial.println("Authorized access");  
nodeMCU.write("12");  
RFID_Valid();  
Serial.println();  
//delay(3000);  
}  
  
else if (content.substring(1) == "29 2F 9A 15") //change here the UID of the  
card/cards that you want to give access  
{  
Serial.println("Authorized access");  
nodeMCU.write("13");
```



```
RFID_Valid();

Serial.println();

//delay(3000);

}

else if (content.substring(1) == "79 42 94 15") //change here the UID of the
card/cards that you want to give access

{

Serial.println("Authorized access");

nodeMCU.write("14");

RFID_Valid();

Serial.println();

//delay(3000);

}

else if (content.substring(1) == "49 2C 90 15") //change here the UID of the
card/cards that you want to give access

{

Serial.println("Authorized access");

nodeMCU.write("15");

RFID_Valid();

Serial.println();

//delay(3000);

}

else if (content.substring(1) == "79 30 0A 16") //change here the UID of the
card/cards that you want to give access

{

Serial.println("Authorized access");
```

```
nodeMCU.write("16");  
RFID_Valid();  
Serial.println();  
//delay(3000);  
}  
  
else if (content.substring(1) == "F7 2A 24 25") //change here the UID of the  
card/cards that you want to give access  
{  
    Serial.println("Authorized access");  
    nodeMCU.write("17");  
    RFID_Valid();  
    Serial.println();  
    //delay(3000);  
}  
  
else if (content.substring(1) == "07 F1 23 25") //change here the UID of the  
card/cards that you want to give access  
{  
    Serial.println("Authorized access");  
    nodeMCU.write("18");  
    RFID_Valid();  
    Serial.println();  
    //delay(3000);  
}  
  
else if (content.substring(1) == "79 32 94 15") //change here the UID of the  
card/cards that you want to give access  
{
```

```
Serial.println("Authorized access");
nodeMCU.write("19");
RFID_Valid();
Serial.println();
//delay(3000);
}

else if (content.substring(1) == "29 1A 93 15") //change here the UID of the
card/cards that you want to give access
{
Serial.println("Authorized access");
nodeMCU.write("20");
RFID_Valid();
Serial.println();
//delay(3000);
}

else if (content.substring(1) == "E7 37 D5 24") //change here the UID of the
card/cards that you want to give access
{
Serial.println("Authorized access");
nodeMCU.write("21");
RFID_Valid();
Serial.println();
//delay(3000);
}

else if (content.substring(1) == "57 34 62 25") //change here the UID of the
card/cards that you want to give access
```

```
{  
  Serial.println("Authorized access");  
  nodeMCU.write("22");  
  RFID_Valid();  
  Serial.println();  
  //delay(3000);  
}  
  
else if (content.substring(1) == "17 8A 63 25") //change here the UID of the  
card/cards that you want to give access  
{  
  Serial.println("Authorized access");  
  nodeMCU.write("23");  
  RFID_Valid();  
  Serial.println();  
  //delay(3000);  
}  
  
else if (content.substring(1) == "27 86 16 24") //change here the UID of the  
card/cards that you want to give access  
{  
  Serial.println("Authorized access");  
  nodeMCU.write("24");  
  RFID_Valid();  
  Serial.println();  
  //delay(3000);  
}
```

```
else if (content.substring(1) == "87 10 D1 24") //change here the UID of the  
card/cards that you want to give access
```

```
{  
  Serial.println("Authorized access");  
  nodeMCU.write("25");  
  RFID_Valid();  
  Serial.println();  
  //delay(3000);  
}
```

```
else if (content.substring(1) == "C9 80 F9 15") //change here the UID of the  
card/cards that you want to give access
```

```
{  
  Serial.println("Authorized access");  
  nodeMCU.write("26");  
  RFID_Valid();  
  Serial.println();  
  //delay(3000);  
}
```

```
else if (content.substring(1) == "B7 9B 59 25") //change here the UID of the  
card/cards that you want to give access
```

```
{  
  Serial.println("Authorized access");  
  nodeMCU.write("27");  
  RFID_Valid();  
  Serial.println();  
  //delay(3000);  
}
```

```
}  
  
  else if (content.substring(1) == "87 AA DF 24") //change here the UID of the  
card/cards that you want to give access  
  
  {  
  
    Serial.println("Authorized access");  
  
    nodeMCU.write("28");  
  
    RFID_Valid();  
  
    Serial.println();  
  
    //delay(3000);  
  
  }  
  
  else if (content.substring(1) == "97 64 6A 25") //change here the UID of the  
card/cards that you want to give access  
  
  {  
  
    Serial.println("Authorized access");  
  
    nodeMCU.write("29");  
  
    RFID_Valid();  
  
    Serial.println();  
  
    //delay(3000);  
  
  }  
  
  else if (content.substring(1) == "A7 F0 0C 24") //change here the UID of the  
card/cards that you want to give access  
  
  {  
  
    Serial.println("Authorized access");  
  
    nodeMCU.write("30");  
  
    RFID_Valid();  
  
    Serial.println();
```

```
    //delay(3000);
}

else {
    Serial.println(" Access denied");
    RFID_NON_Valid();
    //delay(3000);
}
}

void RFID_Valid(){
    lcd.clear();
    digitalWrite(doorLock, LOW);
    tone (buzzer,1200);
    lcd.setCursor (0,0);
    lcd.print(F(" Kartu Pengenal "));
    lcd.setCursor (0,1);
    lcd.print(F(" Anda Ditemukan "));
    delay (500);
    noTone (buzzer);
    delay (4500);
    lcd.clear();

}
```

```
void RFID_NON_Valid(){  
    lcd.clear();  
    tone (buzzer,1200);  
    digitalWrite(doorLock, HIGH);  
    lcd.setCursor (0,0);  
    lcd.print(F(" Kartu Pengenal "));  
    lcd.setCursor (0,1);  
    lcd.print(F(" Tidak Ditemukan"));  
    delay (2000);  
    noTone (buzzer);  
    lcd.clear();  
}
```

```
void Finger_Valid(){  
    lcd.clear();  
    tone (buzzer,1200);  
    digitalWrite(doorLock, LOW);  
    lcd.setCursor (0,0);  
    lcd.print(F(" Sidik Jari Anda"));  
    lcd.setCursor (0,1);  
    lcd.print(F(" Ditemukan ID: "));  
    lcd.setCursor (14,1);  
    lcd.print((IDFinger));  
    delay (500);
```



```
noTone (buzzer);  
delay (4500);  
lcd.clear();  
}
```


