LAMPIRAN

```
//Memasukkan Library
#include <EEPROM.h>
#include <Wire.h>                          // i2C Conection Library
#include <LiquidCrystal_I2C.h>             //Memanggil i2C LCD Library
#include <SPI.h>
#include <RFID.h>                          //Library RFID

#define SS_PIN 10                          //Pin SS pada RFID
#define RST_PIN 9                          //Pin RST pada RFID

RFID rfid(SS_PIN,RST_PIN);
intserNum[5];                             //Variable buffer Scan Card
intcards[][5] = {
  {183,255,212,36,184},                    //ID Number pada tag kartu
  {215,214,81,37,117},
  {151,137,95,37,100},
  {233,14,77,23,189},
  {137,236,82,23,32},
  {74,9,79,2,14},
  {57,90,148,89,174},
  {253,236,81,211,147}
};
bool access = false;
LiquidCrystal_I2C lcd(0x27, 16, 2);        //Alamat I2C pada LCD
constint buzzer = 7;                       // buzzer ke Pin D7 dan GND
constintdoorLock = 8;                      //Driver Selenoid Door Lock

int alarm = 0;
uint8_t alarmStat = 0;
uint8_t maxError = 3;                      //Alarm aktifjika error 3
kali
```

```arduino
unsigned long previousMillis = 0;
const long interval = 1000;

void setup(){
Serial.begin(9600);
lcd.begin();
SPI.begin();
rfid.init();
pinMode(doorLock, OUTPUT);
digitalWrite(doorLock, HIGH);

//Menampilkantampilanawalpadasaatsistemdihidupkan
  tone (buzzer,1200);
lcd.setCursor (0,0);
lcd.print(F(" RFID & KEYPAD "));
lcd.setCursor (0,1);
lcd.print(F(" Control Access "));
  delay (2000);
lcd.clear();
noTone (buzzer);
}

void loop(){
   if (alarm >= maxError){
alarmStat = 1;      }

//Menampilkantampilanutamapadasaatsistemdihidupkan
  if (alarmStat == 0 &&pwMode == 0){
lcd.setCursor (0,0);
lcd.print(F("  RUANG KAJUR   "));
   unsigned long currentMillis = millis();
```

```
//Membuatperubahantulisanpada LCD tanpamenggunakan delay
  if (currentMillis - previousMillis>= interval) {
      //previousMillis = currentMillis;
lcd.setCursor (0,1);
lcd.print(F(" Scan Your Card "));
  }


//Pendataan ID setiapkartu
    if(rfid.isCard()){
        if(rfid.readCardSerial()){
Serial.print(rfid.serNum[0]);
Serial.print(" ");
Serial.print(rfid.serNum[1]);
Serial.print(" ");
Serial.print(rfid.serNum[2]);
Serial.print(" ");
Serial.print(rfid.serNum[3]);
Serial.print(" ");
Serial.print(rfid.serNum[4]);
Serial.println("");


for(int x = 0; x <sizeof(cards); x++){
for(inti = 0; i<sizeof(rfid.serNum); i++ ){
                if(rfid.serNum[i] != cards[x][i]) {
                    access = false;
                    break;
                } else {
                    access = true;
                }
            }
```

```
            if(access) break;
        }
    }


    //Jika ID Card diidentifikasioleh RFID reader
 if(access){
Serial.println("Welcome!");
lcd.setCursor (0,0);
lcd.print(F(" Aksesditerima "));
lcd.setCursor (0,1);
lcd.print("ID:");
lcd.print(rfid.serNum[0]); lcd.print(rfid.serNum[1]);
lcd.print(rfid.serNum[2]); lcd.print(rfid.serNum[3]);
lcd.print(rfid.serNum[4]);
        ACCEPT ();
        }
    else {
    //Jika ID Card tidakdiidentifikasioleh RFID reader
        alarm = alarm+1;
Serial.println("Not allowed!");
lcd.setCursor (0,0);
lcd.print(F(" Aksesditolak  "));
lcd.setCursor (0,1);
lcd.print("ID:");
lcd.print(rfid.serNum[0]); lcd.print(rfid.serNum[1]);
lcd.print(rfid.serNum[2]); lcd.print(rfid.serNum[3]);
lcd.print(rfid.serNum[4]);
        RIJECT ();
    }
    }
rfid.halt();}
```

```
//SistemTerkuncijika ID Kartusalahsebanyak 3 kali
if (alarmStat == 1) {
lcd.setCursor (0,0);
lcd.print(F(" System LOCKED! "));
lcd.setCursor (0,1);
lcd.print(F(" Please Wait : "));
for(inti=60; i>0; i--)                          //Sistemterkunciselama 60s
{
tone (buzzer,1800);
lcd.setCursor (13,1); lcd.print(i);
lcd.print(F("  "));delay (1000);}
noTone (buzzer);
alarmStat = 0;
alarm = 0;
  }
}

//JikaKartudiidentifikasidan Solenoid terbuka
void ACCEPT () {
digitalWrite(doorLock, LOW);
         tone (buzzer,900);
delay(100);
         tone (buzzer,1200);
delay(100);
         tone (buzzer,1800);
delay(200);
noTone(buzzer);
delay(600);
lcd.setCursor (0,0);
lcd.print(F(" SilahkanMasuk "));
lcd.setCursor (0,1);
```

```
lcd.print(F(" AutoLock :  s  "));
for(inti=5; i>0; i--)                        //Terkunciautomatisselama 5s
        {
lcd.setCursor (12,1); lcd.print(i);
            delay (1000);
          }
digitalWrite(doorLock, HIGH);
lcd.clear();}

//JikaKartutidakdiidentifikasidan Solenoid terbuka
void RIJECT () {
          tone (buzzer,900);
delay(200);
noTone(buzzer);
delay(200);
          tone (buzzer,900);
delay(200);
noTone (buzzer);
delay(500);
lcd.clear();
}
```