#include <SPI.h>

#include <MFRC522.h>

#include <Wire.h>

#include <LiquidCrystal\_I2C.h>

#include <Servo.h>

#define SS\_PIN 10

#define RST\_PIN 9

MFRC522 mfrc522(SS\_PIN, RST\_PIN); // Create MFRC522 instance

LiquidCrystal\_I2C lcd(0x27, 16, 2); // Set the LCD address to 0x27 for a 16x2 display

Servo servo;

String UID = "YOUR\_AUTHORIZED\_CARD\_UID"; // Replace with the UID of the authorized card

int lock = 0;

void setup() {

Serial.begin(9600); // Initialize serial communication

SPI.begin(); // Initialize SPI bus

mfrc522.PCD\_Init(); // Initialize MFRC522 RFID module

lcd.begin(16, 2); // Initialize LCD

lcd.backlight();

servo.attach(6); // Attach servo to pin 6

servo.write(0); // Set initial servo position to locked

lcd.print("Welcome!");

lcd.setCursor(0, 1);

lcd.print("Put your card");

}

void loop() {

// Check for new RFID cards

if (mfrc522.PICC\_IsNewCardPresent() && mfrc522.PICC\_ReadCardSerial()) {

// Get the UID of the card

String ID = "";

for (byte i = 0; i < mfrc522.uid.size; i++) {

ID.concat(String(mfrc522.uid.uidByte[i] < 0x10 ? "0" : ""));

ID.concat(String(mfrc522.uid.uidByte[i], HEX));

}

// Compare the UID with the authorized card UID

if (ID.substring(1) == UID && lock == 0) {

servo.write(70);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Door is locked");

delay(1500);

lcd.clear();

lock = 1;

} else if (ID.substring(1) == UID && lock == 1) {

servo.write(160);

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Door is open");

delay(1500);

lcd.clear();

lock = 0;

} else {

lcd.clear();

lcd.setCursor(0, 0);

lcd.print("Wrong card!");

delay(1500);

lcd.clear();

}

mfrc522.PICC\_HaltA(); // Halt PICC

}

}