//Viral Science

//RFID Card Reader Pat McMahon 26/8/2020

//A044

#include <SPI.h>

#include <MFRC522.h>

#include <Servo.h>

#define SS\_PIN 10

#define RST\_PIN 9

#define LED\_G 4 //define green LED pin

#define LED\_R 5 //define red LED

#define BUZZER 2 //buzzer pin

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

Servo myServo; //define servo name

void setup()

{

Serial.begin(9600); // Initiate a serial communication

SPI.begin(); // Initiate SPI bus

mfrc522.PCD\_Init(); // Initiate MFRC522

myServo.attach(3); //servo pin

myServo.write(0); //servo start position

pinMode(LED\_G, OUTPUT);

pinMode(LED\_R, OUTPUT);

pinMode(BUZZER, OUTPUT);

noTone(BUZZER);

Serial.println("Put your card to the reader...");

Serial.println();

}

void loop()

{

// Look for new cards

if ( ! mfrc522.PICC\_IsNewCardPresent())

{

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) == "83 23 38 BB") //change here the UID of the card/cards that you want to give access

{

Serial.println("Authorized access");

Serial.println();

delay(500);

digitalWrite(LED\_G, HIGH);

tone(BUZZER, 500);

delay(300);

noTone(BUZZER);

myServo.write(180);

delay(5000);

myServo.write(0);

digitalWrite(LED\_G, LOW);

}

else {

Serial.println(" Access denied");

digitalWrite(LED\_R, HIGH);

tone(BUZZER, 300);

delay(1000);

digitalWrite(LED\_R, LOW);

noTone(BUZZER);

}

}