RFID AUTO DOOR SYSTEM

IOT Y1

Muaz Ata Ur Rehman
muazthemaster@gmail.com

RFID Auto Door System

Description:

- In this project we will be using RFID CAT 1 type cards to mark user and allow the user to enter the house if the person is not recognized the door won't open.

  Note: We don't need a big database for now otherwise we can create a database in MYSQL or ORACLE.

Software:

- Arduino IDE

Components Required:

- RFID CAT1 card (1 or 2)
- RFID- RC522 (RFID card reader)
- Arduino UNO
- Servo motor

Wiring Schematics:

Arduino UNO	RFID-RC522
Pin10	SDA
Pin13	SCK
Pin11	MOSI
Pin12	MISO
---	IRQ
GND	GND
Pin9	RST
3.3V	3.3V

Arduino UNO	Servo Motor
• Pin 3	Yellow wire
• 5V	Red wire
• GND	Black wire

CODE:

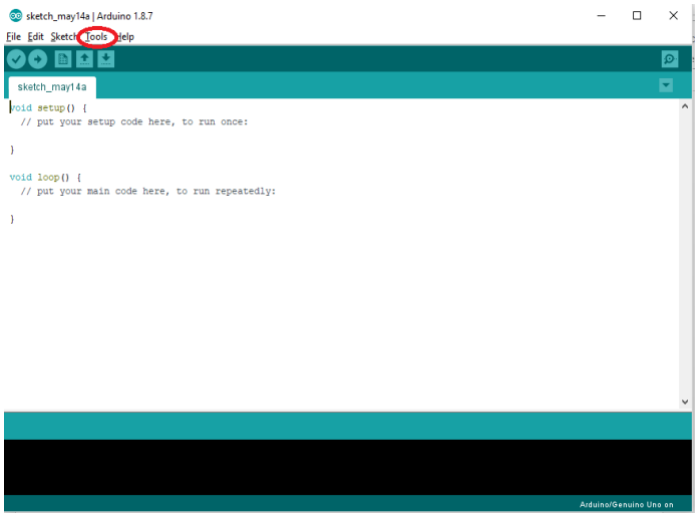
```
#include <SPI.h>
#include <MFRC522.h>
#include <Servo.h>

#define SS_PIN 10
#define RST_PIN 9
#define LED_G 5 //define green LED pin
#define LED_R 4 //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();
```

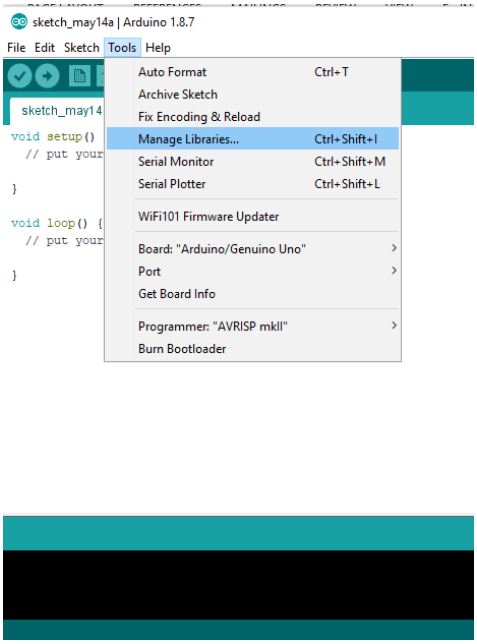
```
  if ((content.substring(1) == "99 35 72 A9")||(content.substring(1) == "99 35 72 A9") ) //change
here the UID of the card/cards that you want to give access
  {
    Serial.println("Authorized access");
    Serial.println();
    delay(500);
    digitalWrite(LED_G, HIGH);
    tone(BUZZER, 500);
    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);
  }
}
```

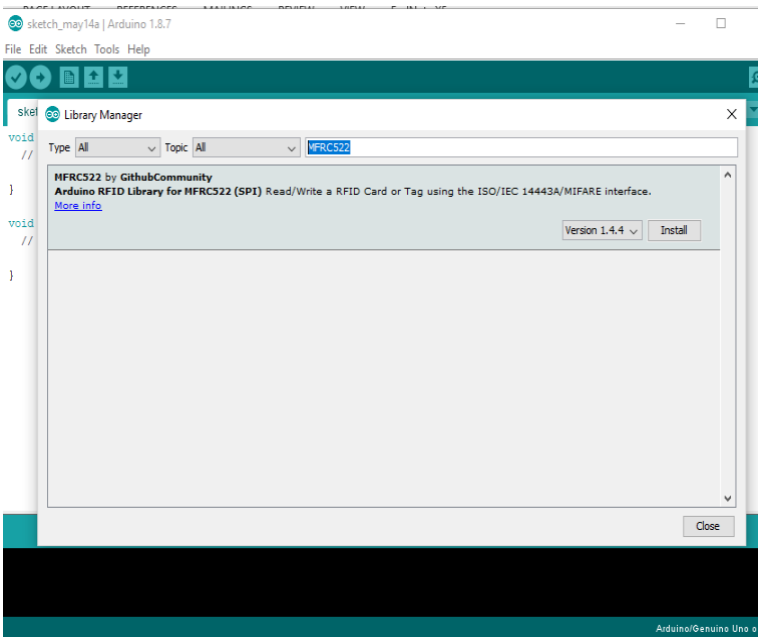
Procedure:

1. First thing first after setting up the hardware according to the above schematics open Arduino IDE, go to Tools

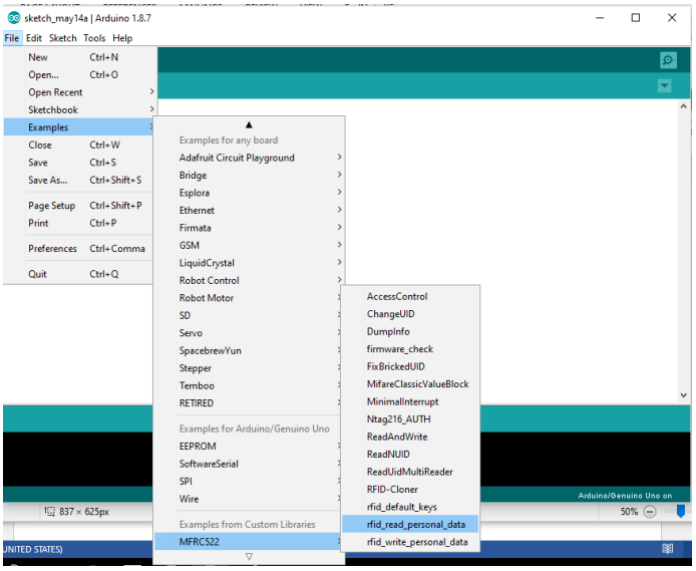


2. Then Manage Libraries and search MFRC522 and click on Install

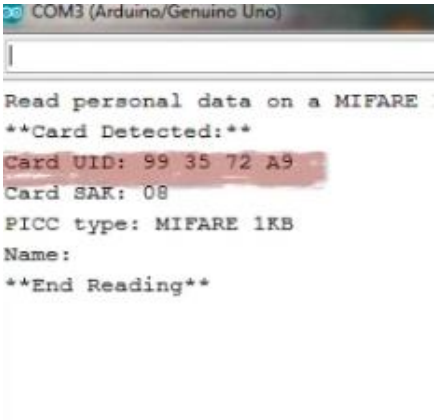




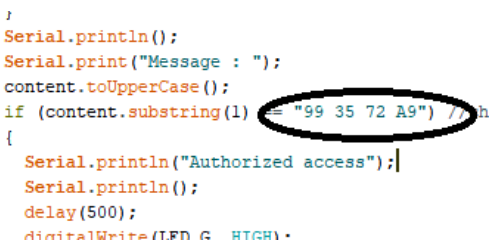
3. Now go to File, Examples , MFRC522 , rfid_read_personal_data



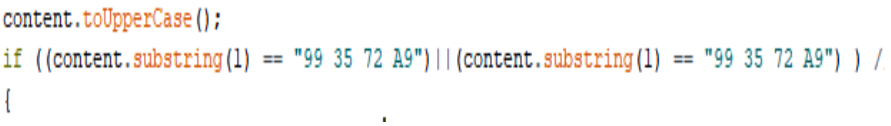
4. Upload this code to your Arduino and open serial Monitor from tools and scan the card. The reason we are doing this because we need the Hexa code id of the card because we need to use it in our attendance system code to register it.



5. Now as we have the hexa code open your auto door code (Arduino file) and enter the hexa code in the following way as shown below. If you want to add more card do as follows by adding or operator



```
}
Serial.println();
Serial.print("Message : ");
content.toUpperCase();
if (content.substring(1) == "99 35 72 A9") //h
{
  Serial.println("Authorized access");
  Serial.println();
  delay(500);
  digitalWrite(LED_G, HIGH);
```



```
content.toUpperCase();
if ((content.substring(1) == "99 35 72 A9")||(content.substring(1) == "99 35 72 A9") ) /
{
```

6. Upload the code to Arduino and run it.