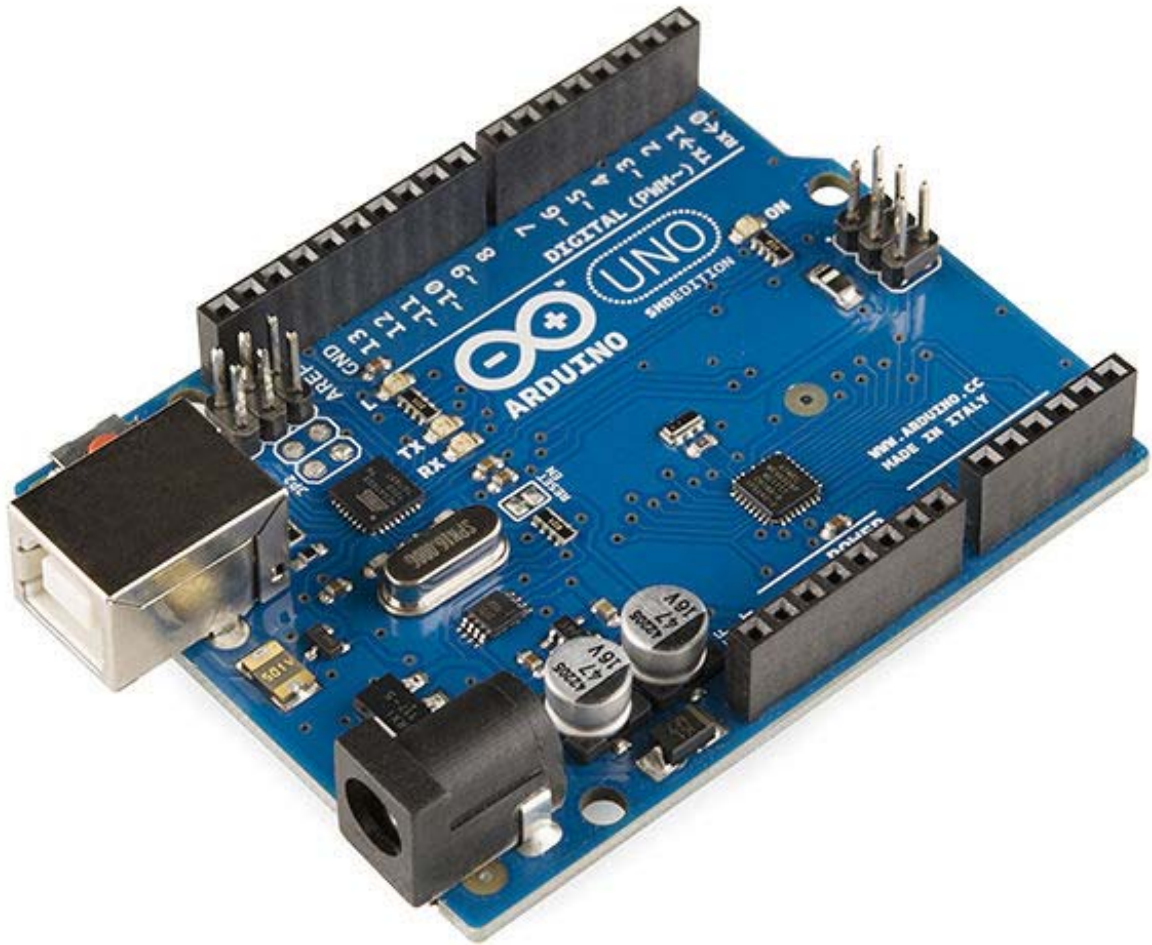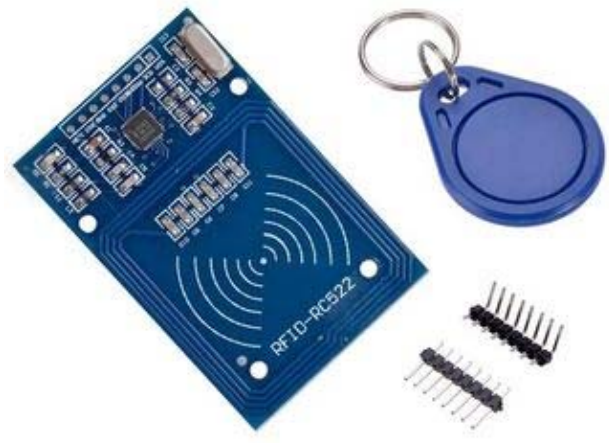**This is an simple tutorial for beginner on how to use a MFRC522 module using Arduino**

Remarks* I apologize for my english's grammar because i am a chinese :)

Step 1: Collecting Parts and Programs

In this project, you needed these parts :

1.Aruduino Uno R3 (you can also use the other version of Arduino)

2.MFRC522 module

3.Arduino IDE (you can download it from here https://www.arduino.cc/en/Main/Software)

4.5V relay (not necessary)

5.TIP31 transistor (not needed if you didn't use the 5V relay)

6.Jumper cables

7.LEDs

Programs :

You will need the RFID library and the programs which you can download from the file that i attached . If you don't know how to add a library , here's the link https://www.arduino.cc/en/Guide/Libraries
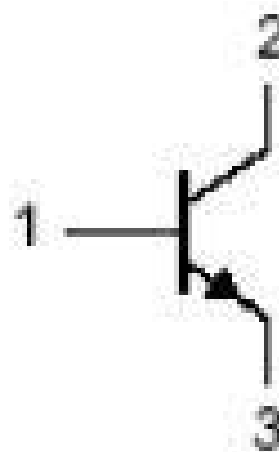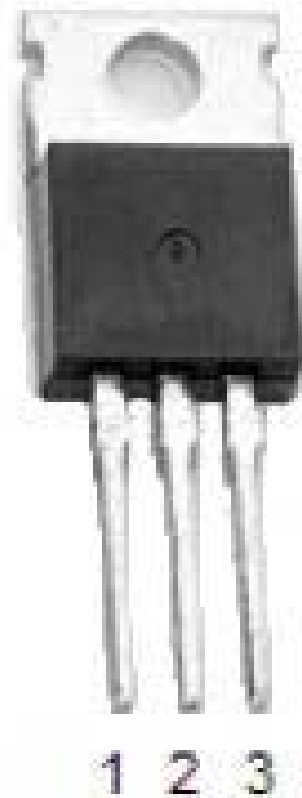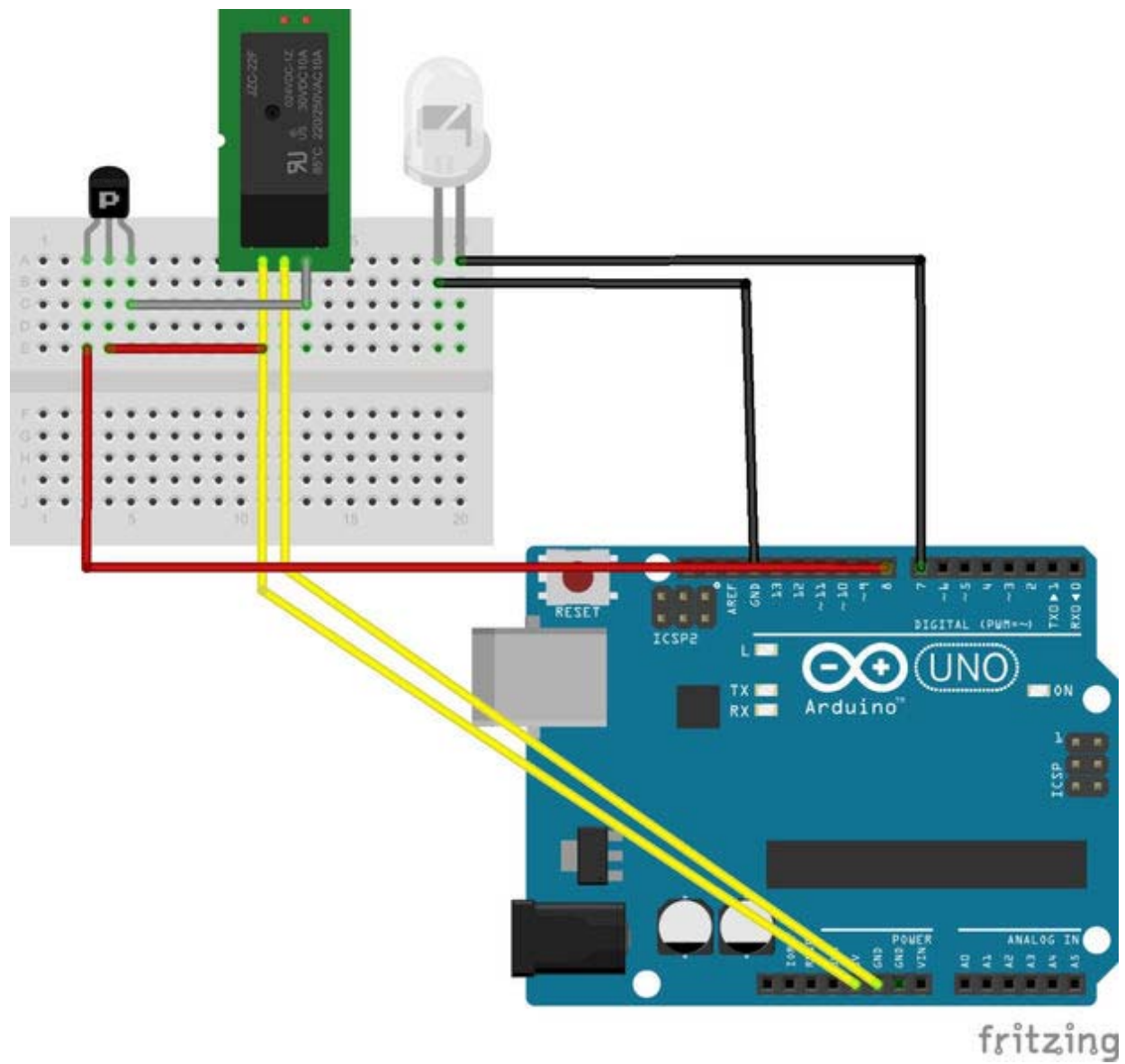
📄 **RFID.zip**		Download
📄 **ArduinoRFIDSystem.ino**		Download

Step 2: Connecting the Component

PIN 1. BASE

2. COLLECTOR

3. EMITTER

TO-220C package

Connect the pins with following :

- **MOSI** ---> PIN 11

- **MISO** ---> PIN 12

- **SCK** ---> PIN 13

- **SS/SDA** ---> PIN 10

- **RST** ---> PIN 9

- **LED** ---> PIN 7 & GND

- **Relay** / Output power ---> VCC connect to 5V pins and the collector pin of the TIP31

- **GND** connect to GND pins,

- **IN** connect to **emitter** pin of TIP31

- **Pin 8** is connected to the **base** pin of the TIP31

*Ways to connect the led and relay is shown on the image above (i didn't connect the arduino with the mfrc522 module because i didn't know how to make it , so just follow the text above to connect them)

*Double check before you connect your arduino with your computer , the wrong connection could damage your arduino

Step 3: Setting Up for Your Card

1423656786 143 45643

0423656786 143 45688


```
#include <RFID.h>

/*
* Read a card using a mfrc522 reader on your SPI interface
* Pin layout should be as follow (on Arduino Uno):
* MOSI: Pin 11 / ICSP-4
* MISO: Pin 12 / ICSP-1
* SCK: Pin 13 / ISCP-3
* SS/SDA: Pin 10
* RST: Pin 9
*/

#include <SPI.h>
#include <RFID.h>

#define SS_PIN 10
#define RST_PIN 9
```

Done compiling.

Global variables use 254 bytes (12%) of dynamic memory, leaving 1,794 bytes for local variables. Maximum is 2,048 bytes.

{5, 117, 21, 219, 190}

Newline   9600 baud

Show All Items

First:

Plug your arduino into your computer and select the correct board and com, then verify and upload your sketch

Second:

Open up serial monitor and **set your baud to 9600 baud**

Third:

Scan your card , your should saw a bunch of numbers pop out

Last:

Copy only the number and paste it to the column after **"int cards[][5] = {** (replace the space with **','** as shown in the image above, in my case, my card is **5 117 21 219 190**)

You're Done !

Pls comment if you spot any mistake of my instructables or any question to ask me

---

We have a be nice comment policy.
Please be positive and constructive.

[I Made it!] [Add Images] [Post Comment]

Ehsan Balouch   2 months ago   [Reply]

Hi,

Please help to provide Arduino card to use more than one RFID cards and tags or at least Master and standard tag provided with the kit.

Thanks.

AbishekK5   2 months ago   [Reply]

Hi,I was wondering if I could change the pin values for all the pins as I have already used up most of the pins for other sensors? Thanks in advance

Sooncheng (author)   AbishekK5   2 months ago   [Reply]

For things i know , you can't. I would recommend you to change the sensor's pin. I'll do futher research. Sorry can't help here.

MasterA12

Is works for HID type cards?

3 months ago
Reply

Soocheng (author)   MasterA12

2 months ago
Reply

not sure about it, sry

Robert 7320

10 months ago
Reply

how can i make this so i can use two or more cards ?

GavinM28   Robert 7320

9 months ago
Reply

Go to the lines where you want to enter your card numbers, and just include more card numbers:

int cards[][5] = {
{5,117,21,219,190}, //Card 1
{181, 2, 398, 810, 193} //Card 2
...
};

Soocheng (author)   GavinM28

2 months ago
Reply

thanks!

Kaenyl

5 months ago
Reply

I saw on the first page that you do not need the relay or the transistor. What is the difference in instructions and outcome if i choose not to use the relay and transistor?

Soocheng (author)   Kaenyl

4 months ago
Reply

Of course you can choose not to use a relay / transistor. I used it because the power output of the Arduino is too small, so i used a relay/transistor to supply a greater power to the things i want to use. Hope this helps !

mithunbabbira

6 months ago
Reply

there is problem in connection between rfid reader and ardunio. ..plz help me i tried with 2 new readers with many other ways ...but still dint figure it out plz help me ..i have to submit my project within few days and i am out of option here

Sooncheng (author) mithunbabbira 4 months ago Reply

I'm Sorry that i couln't help.. i am beginner of Arduino..

gunawan eko 9 months ago Reply

thanks for make this,,,

its very greatful...

Sooncheng (author) gunawan eko 4 months ago Reply

You're Very Welcome !

a1m918 made it! 7 months ago Reply

I made it ^_^

Thanks for a such a nice tutorial !
(Sorry for not posting the images/pictures because I made it to move further so I disassembled it :)
)

his space intentionally left blank.

MuhammadH268 a1m918 7 months ago Reply

(Y)

Sooncheng (author) MuhammadH268 4 months ago Reply

(Y)(Y)(Y)

Sooncheng (author) a1m918 4 months ago Reply

Great ! Good Day !

Boxoffrogs

Excellent, thank you so much!

6 months ago Reply

Soleoncheng (author) Boxoffrogs

4 months ago Reply

You're Welcome

OmkarT3

10 months ago Reply

Pin 9,10 voltage is more than 4v and MFRC522 max working voltage 3.3v so may be it can damage MFRC522 module?

i_sharma OmkarT3

4 months ago Reply

You can use logical level shifter . May be this would help you.

Sooncheng (author) OmkarT3

10 months ago Reply

you can make a circuit to lower down the voltage

GeraldS48

9 months ago Reply

Has anyone tried this with the UNO R3 with WiFi. The application would be to read the card ID and send the transaction via Web/Cloud?

JMorton3

a year ago Reply

I am just starting to learn RFID - specifically using the MFRC522 and 13.56MHz tags. I have a question - is it possible to read a certain block only? The reason I ask is this - I am trying to make a game involving around 8 pieces, with each having an RFID tag embedded in it. I will be making several duplicates of each piece in case they are stolen or dropped and broken. If I could read a specific block, then I could write the playing piece number to that block in each of the duplicates, and have the Arduino read that specific block to confirm which playing piece has been positioned. Is this possible? This way I would only need to keep a list of 8 piece numbers, not 32 numbers (if I made 3 duplicates of each of the original pieces).

Sooncheng (author) JMorton3

10 months ago Reply

hmm.. i am not sure about it , try playing with the code

DrewW14

a year ago Reply

How do I use two cards at once?

Sooncheng (author)   DrewW14   10 months ago   Reply

hmm.. i will try it out

---

curiosity36   a year ago   Reply

Thank you sir for the most simple RFID example. Works for me.

Sooncheng (author)   curiosity36   10 months ago   Reply

welcome good day !

---

pkjær   a year ago   Reply

GREAT INSTRUCTABLES!!
Question....

Is it possible to read NFC chips with this RFID reader? I have hooked it all up and it reads some
RFID chips fine, but others not, thinking there is a difference between NFC and RFID. So is it
possible

Sooncheng (author)   pkjær   10 months ago   Reply

i am not sure about it , you can try it out

BloodyK1   a year ago   Reply

I just Registered to instructables just to thank You for the code and library, and add one line
if(access){

// Serial.println("Welcome!");

digitalWrite(power, LOW);

delay(500);

digitalWrite(power, HIGH);

access = false; // This line

Becouse if access is granted some times unregistered ID card unlocked the relay so after granting
access it disables it to unable unlocking by other cards

Sooncheng (author)   BloodyK1   10 months ago   Reply

ok thanks !

---

gusm3

i want to ask ,if i want to read block 4 ,where i must to add listing program thank's

a year ago   Reply

Alpha 23

Would you know how to use the mgrc522 module to copy the iOS from a tag and write it to another one all in one code

2 years ago   Reply

---

gtoal   Alpha 23

I think what you are looking for is an RFID Emulator. Fairly sure these cards are hard-wired and can't be reprogrammed in software. What's your application that you want to reprogram cards for?
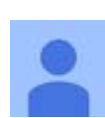
2 years ago   Reply

---

benny_boost   gtoal

4 months and he is still thinking of a legit excuse.... hows i keep losing my work swipe card and would feel like james bond if i made my own copy :-D

a year ago   Reply

BadrA2

thaaaaaaaaaaaaaaaaaaaaaanx a lot

a year ago   Reply

CarloL4

Where should i buy this RFID Reader / MFRC522?

2 years ago   Reply

ZakariyeA   CarloL4

ebay and its cost only 4 $

2 years ago   Reply

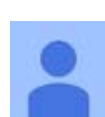**bgsdika**

Thx! Simple and easy to modify :)

2 years ago   Reply

TheKirkwoods

We'll put together! I'll try this, thank you.

2 years ago   Reply

Sooncheng (author)   TheKirkwoods

you are welcome

2 years ago   Reply

Elecrow

Great tutorial

2 years ago

Reply

Sooncheng (author)   Elecrow

Thanks

2 years ago

Reply

PhamA1

hello sir :) i have a problem with scanning my card. i don't know why too but i'm follow exactly what you did

2 years ago

Reply

Sooncheng (author)   PhamA1

hi PhamA1 , try using another rfid reader or try to change the code (eg.changing the baud value) , double check to see wheter the connection is corret or not , it should works well :)

2 years ago

Reply

palah

so easy to understand...tq ;)

2 years ago

Reply

Rob van Staalduinen

After abouth a year on my desk now i know how to use it. Thanks.

2 years ago

Reply