



## Arduino RFID Door Lock

by [pcmofo](#) on November 13, 2009

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Author: [pcmofo](#) [author's website](#)

I like to take things apart, sometimes they go back together sometimes they end up as something entirely different then where they started.

## Intro: Arduino RFID Door Lock

\*\*\*Updated 8/9/2010\*\*\*

I wanted to make an easy and secure way to enter my garage. RFID was the best way to unlock my door, even with my hands full I can unlock the door and push it open! I built a simple circuit with a basic ATmega 168 arduino chip and a ID-20 RFID reader to control an electronic door lock.

The circuit consists of 3 separate parts, a Reader to read RFID tags, a Controller to accept data from the reader and control the output of the RGB LED and the Electric door lock. The door lock is first installed in a door and tested with a 9v battery to ensure correct installation. In most cases you want a Normally Open circuit on the door lock, or Fail Secure. This means the door stays locked when no current passes through it. When 12vDC is passed through the electromagnet in the door lock, a plate in the lock gives way and allows the door to be pushed open freely.

The reader is placed on the outside of the door and is separate from the controller on the inside so that no one can circumvent the security by breaking open the Reader and trying to short circuit the reader. The controller receives serial data from the Reader and controls the RGB led and the Door lock. In this case I have put both on separate bread boards for testing. Here is a video overview of the system in action Read on to see how to build one for your self!

\*\*Update\*\*

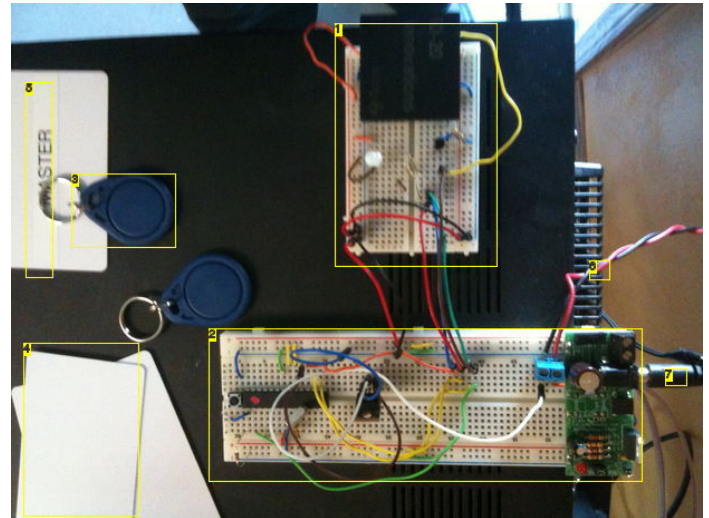
All of the code, schematics, and PCB designs have been tested and refined. They are all posted here as of 8/9/2010

Updated video of the final system installed and working.



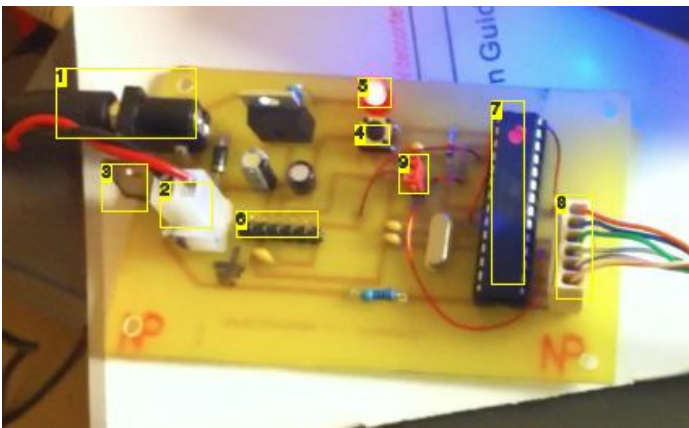
### Image Notes

1. Reader mounted outside door, RGB LED is blue showing its on and ready.



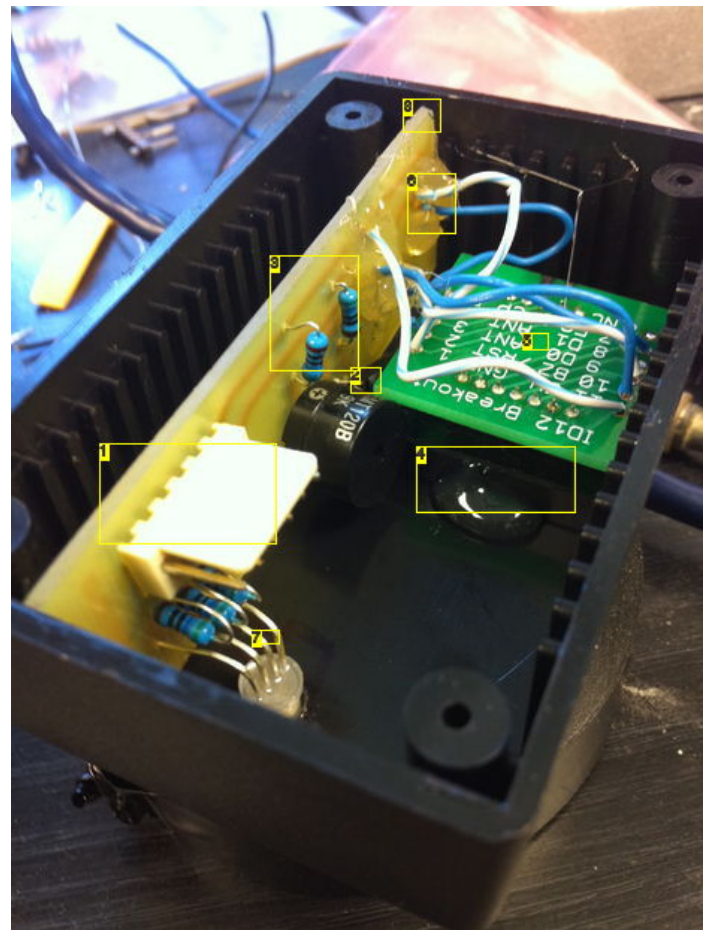
### Image Notes

1. Reader portion of the circuit
2. Controller portion of circuit
3. RFID keychain tag
4. RFID card tag
5. Master programming card
6. 12vDC connection to Door Lock
7. 12vDC power input



#### Image Notes

1. 12v DC power
2. 12v output to door lock
3. TIP31A transistor to trigger door lock
4. Reset button for micro controller
5. Power on LED
6. Programing Header
7. ATmega168
8. 6 pin header going to reader
9. Jumper to switch between programing and reading serial data from the RFID module



#### Image Notes

1. 6 Pin header to Controller
2. 2N2222 transistor for buzzer
3. Resistors for Buzzer
4. ID-12 RFID reader glued to front inside of project box
5. Spark Fun break out board
6. Jumper wires used to mount RFID reader 90deg away from the main board. Can also be mounted on the PCB without the SF break out board shown (green)
7. RGB LED with hole cut in front
8. PCB cut to slot into groves on project box

## Step 1: Parts Needed

Here are a list of parts and links to SparkFun.com where I bought them. This is the basic set of parts you need to build and arduino and a circuit to read RFID tags into the arduino. I am assuming you have a breadboard, power supply and hookup wires already.

### Arduino Stuff

ATmega168 with Arduino Bootloader \$4.95

Crystal 16MHz \$1.50

Capacitor Ceramic 22pF \$0.25 (x2)

Resistor 10k Ohm 1/6th Watt PTH \$0.25

Mini Push Button Switch \$0.35

Triple Output LED RGB - Diffused \$1.95

### RFID stuff

Either one of these, 20 has better range, 12 is smaller

RFID Reader ID-12 \$29.95

RFID Reader ID-20 \$34.95

RFID Reader Breakout \$0.95

Break Away Headers - Straight \$2.50

RFID Tag - 125kHz \$1.95

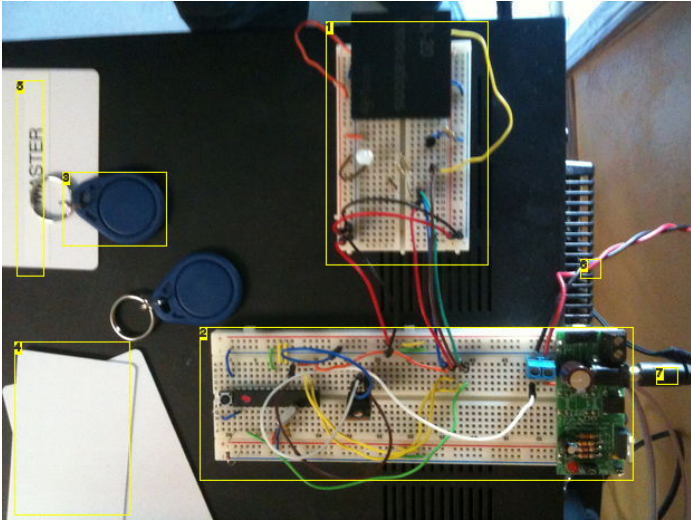
### Other

<http://www.instructables.com/id/Arduino-RFID-Door-Lock/>

TIP31A transistor (radio shack/local electronics store \$1.50)

Door Lock is from ebay.

Door Fail Secure access control Electric Strike v5 NO \$17.50 (kawamall, bay)



#### Image Notes

1. Reader portion of the circuit
2. Controller portion of circuit
3. RFID keychain tag
4. RFID card tag
5. Master programming card
6. 12VDC connection to Door Lock
7. 12VDC power input

## Step 2: Build the Arduino controller

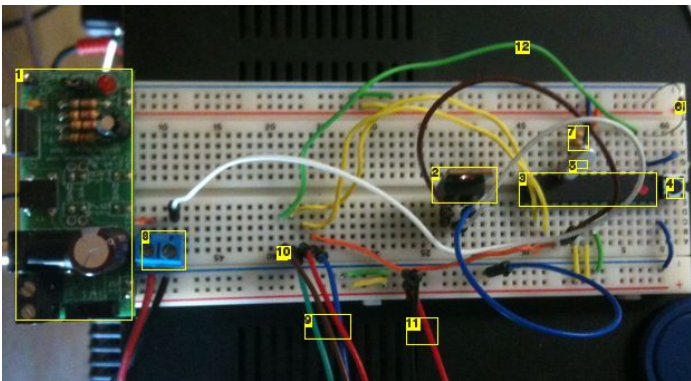
The first step to building a RFID door lock with a basic Arduino is to bread board out a basic working arduino. Most Arduino pre-flashed ATmega 168 chips come with the default blink program pre installed. Connect a LED to digital output 13 and verify that everything is working.

The hardware portion of this RFID reader would be too simple if we used a regular arduino with built in USB programmer. Since I plan on putting this into the wall and not touching it again I dont want to use a big bulky \$30 arduino board when I can buy a \$5 ATmega 168 and make a much smaller custom PCB.

Because I chose to make a basic Arduino circuit myself I need an external USB->Serial FDIIT programmer. I have included Eagle schematics of the controller with a power supply built from a 7805 voltage regulator. In testing I used a bread board power supply.

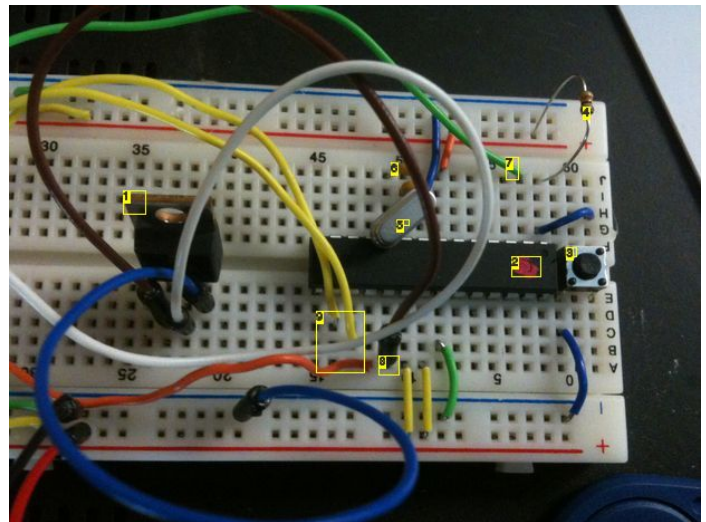
To get an arduino up and running all you really need is the ATmega168 with the arduino software flashed on it, 2x 22pF capacitors, 16mhz crystal, 10k ohm resistor, push button and a breadboard. The hookup for this is well known but I have included the entire schematic for the circuit.

The arduino is going to trigger 4 outputs, 1 each for Red/Green/Blue LEDs, and 1 to trigger the TIP31A to send 12VDC to the door lock. The arduino receives serial data in on its Rx line from the ID-20 RFID reader.



#### Image Notes

1. Breadboard Powersupply
2. TIP31A Transistor
3. ATmega168 Arduino
4. Reset Button
5. 16mhz Crystal
6. 10ohm Resistor
7. 22pF Capacitors
8. Connection to Door Lock
9. RGB outputs to reader
10. Serial input to arduino
11. 5v/ground to reader



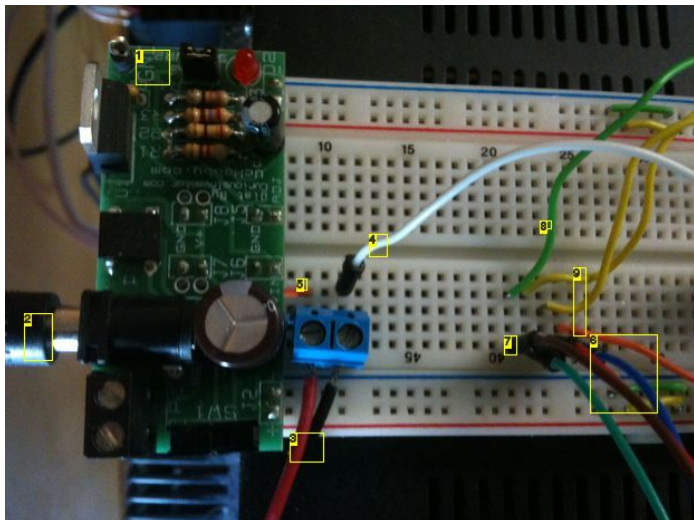
#### Image Notes

1. TIP31A Transistor
2. ATmega168 Arduino
3. Reset Button
4. 10k ohm Resistor (for reset)
5. 16mhz Crystal



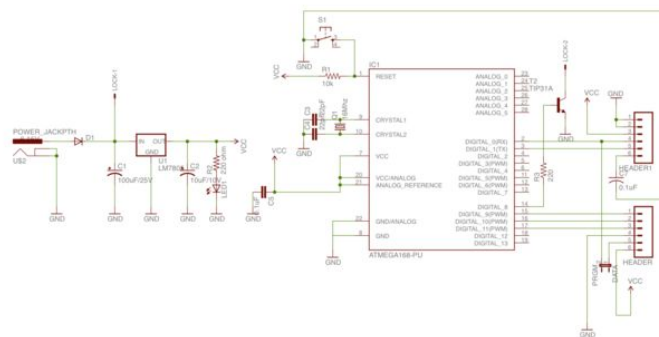
## 12. Serial input

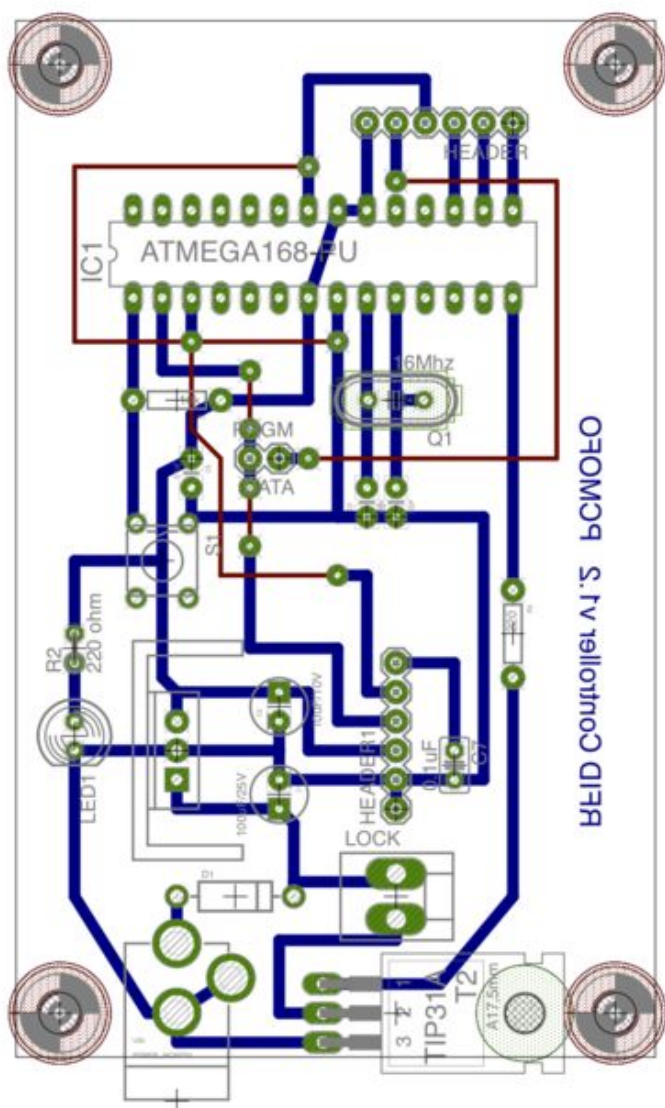
6. 22pF capacitors
7. Serial Data in from ID-20
8. Output to open door lock via TIP31A
9. RGB LED outputs



### Image Notes

1. Breadboard Powersupply
2. 12vDC
3. 12vDC to door lock
4. Ground output from TIP31A
5. 12vDC from power supply
6. RGB LED outputs
7. Serial data input
8. Serial input to arduino
9. RGB outputs from arduino





## File Downloads



**Controller\_PCB.pdf** ((612x792) 12 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'Controller\_PCB.pdf']

### Step 3: Build the RFID Reader

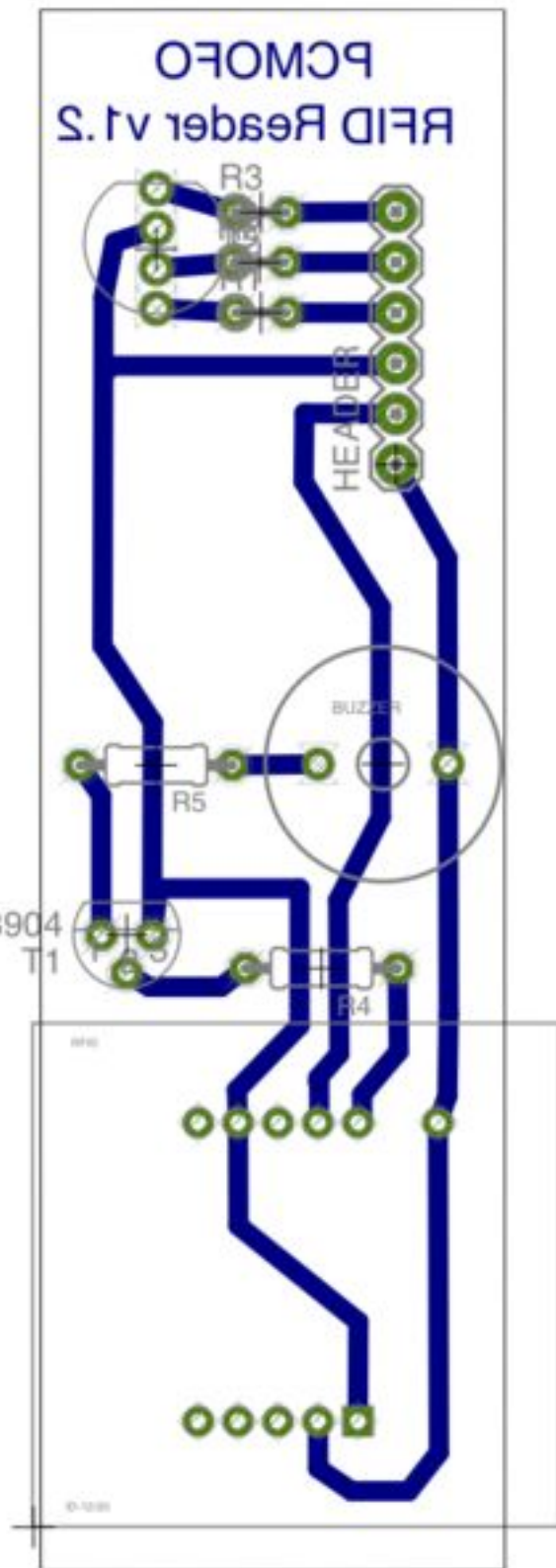
Now that you have your arduino bread boarded and working you can put together the RFID reader portion of the circuit that will contain the ID-10 or ID-20 and RGB LED to indicate the status of the circuit. Remember that the reader will be outside and separate from the controller inside so that someone cannot easily break in.

To build this, we are going to send 5v/Ground over from the primary bread board to a secondary bread board we are building the Reader on. Also send over 3 wires from 3 of the arduino output pins to control the RGB LED, one for each color. One more wire, Brown in the pictures, will be a serial connection for the ID-20 to talk to the arduino's Rx serial input. This is a very simple circuit to connect. LED's get resistors and a few points on the ID-20 are tied to ground/5v to set the correct status.

To make it easier to breadboard the ID-10/ID-20 Sparkfun sells a Breakout board that allows you to attach longer pin headers that are spaced to fit a bread board. This part and the pinheaders are listed in the parts list.

The schematic should be strait forward and easy to follow.





## File Downloads



reader\_PCB.pdf ((612x792) 8 KB)  
[NOTE: When saving, if you see .tmp as the file ext, rename it to 'reader\_PCB.pdf']



## Step 4: Program!

Time to program your arduino. This can be a bit tricky using a basic arduino, you may have to press the reset button multiple times before and during the first part of the upload. A very important thing to remember, you WILL get an upload error if you do not temporarily disconnect the ID-20 serial line to the arduino's Rx line. The ATmega168 only has 1 Rx input and it uses it to upload code to talk to the programmer. Disconnect the ID-20 while programming then plug it back in when your done. I used a FTDI programmer which allows you to program the arduino via USB with only 4 wires. The Controller schematic shows a pin header connection to allow you to plug one in directly. Sparkfun also sells this part but many may already have it.

You can easily upload my code to your arduino and never look back but what's the fun in that? Let me explain the basic idea of how it works.

First of all, I did not want any external buttons/switches/etc and I did not want to reprogram the arduino every time I wanted to add a new card. Therefore I wanted to use only RFID to control the operation of the circuit as well as control over the door lock.

The program turns on the Blue LED to indicate it is ready to read a new card. When the card is read it decides if it is a valid card or not by comparing what it read in to a list of valid cards. If the user is valid, the arduino turns OFF the Blue LED and turns on the Green LED for 5 seconds. It also turns on another output high for 5 seconds. This output is connected to the TIP31A transistor and allows the tiny arduino to control a much larger 12v 300mA door lock without being damaged. After 5 seconds the door lock re-locks and the LED turns back to blue to wait for another card to be read. If the card is invalid then the LED changes to RED for a few seconds and back to Blue to wait for another card.

It is important that the door lock still work even if the arduino loses power overnight or is reset. Therefore all valid card ID's are stored in EEPROM memory. The ATmega168 has 512 Bytes of EEPROM memory. Each RFID card has a 5 Hex Byte serial number and a 1 Hex Byte Check sum that we can use to verify there were no errors in the transmission between the ID-20 and the arduino.

Valid cards are stored in the EEPROM by using the first Byte as a counter. For example, if there are 3 valid cards stored the first Byte in the EEPROM would be 3. `EEPROM.read(0); = 3`. Knowing this, and the fact that each ID is 5 Bytes long we know that 1-5 is card one, 6-10 is card 2 and 11-15 is card 3. We can make a loop that looks through the EEPROM 5 bytes at a time and tries to find the card that was read in by the reader.

But how can we add new cards to the EEPROM after the circuit is installed?? I have read in one of the RFID cards I have and hard coded it to be the Master RFID card. So even if the entire EEPROM is wiped the master card will still function. Whenever a card is read, it checks first to see if it is the Master card, if not, then it continues to see if it is a valid card or not. If the card is the master card we have the arduino go into a "programming mode" where it flashes RGB and waits for another valid tag to be read. The next tag that is read is added to the next free spot in the EEPROM and the counter is incremented 1 if the card does not already exist in the EEPROM memory. The reader then returns to normal mode and waits for a new card to be read.

Currently I have not programmed a way to delete a card as the reasons for deleting a card would most likely be it was lost or stolen. As this would most likely be used with 1-10 people the easiest thing to do would be to hard program a Master Erase card that will wipe all cards from the EEPROM then re add them all, which only takes a few seconds. I have added code to wipe the EEPROM but I have not implemented this feature yet. .

The code is attached in a text file along with a copy of the parts list.

## File Downloads



**RFIDLock.txt** (16 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'RFIDLock.txt']



**Updated\_Code.txt** (22 KB)

[NOTE: When saving, if you see .tmp as the file ext, rename it to 'Updated\_Code.txt']

## Step 5: Expand

This is only some of the cool stuff you can do with RFID. You could expand this much further with a LCD output, logging of who enters and when, network/twitter connection etc. I plan on making a finished PCB version of this circuit. I have never made a PCB before so I am still working on the design and layout of the parts. Once I have them complete I will post them as well. I encourage anyone to take the code I have written and modify it to do even more cool things!

## Related Instructables



**RFID Car Lock/Unlock v1.0** by thematthewknot



**RFID Computer Lock** by alecnotalex



**RFID cat door** by landmanr



**RFIDuino - Using an Arduino & RFID Reader to make a puzzle GeoCache** by Wojciechowski



**Control a Schlage electronic deadbolt with an arduino!** by quadmasta



**A Universal RFID Key** by drj113

## Comments

50 comments

[Add Comment](#)

[view all 268 comments](#)



**pingywon** says:

May 23, 2010. 8:52 PM [REPLY](#)

I own a pizzeria and the delivery drivers come in and out of the back door all the time. I have taken your schematic and the modified version of your code (including the eraser card) and modded it myself a little further. I am currently installing this as a system on my back door. I have currently finished all the wiring and am just waiting for a few more parts from spark fun. I have made some changes to fit my actual wants and needs of the location, but overall it is the same lay-out. The whole project has proven REALLY fun so far and I hope to have it all wrapped up with in a week or so.



**pcmofo** says:

May 24, 2010. 8:52 AM [REPLY](#)

Thats awesome! Glad to see you are getting some practical use out of my project. I am etching some prototype boards this week and hope to permanently install it on my garage brewery this week.



**pingywon** says:

May 30, 2010. 10:05 PM [REPLY](#)

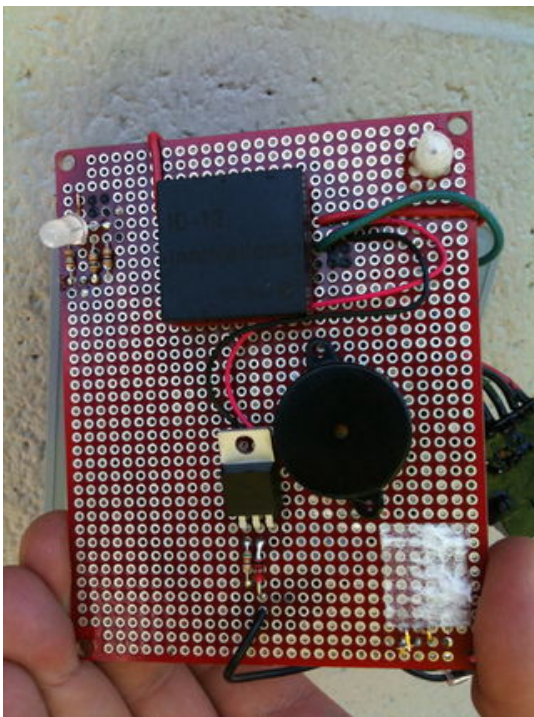
So like I said it should be a week later and my project is all done. I have some pics and am uploading a "demo" video to you tube right now. I used RJ45 to run everything and with the 8pins there was one short coming of my version of the project. I will let all of you be the judge to see if you can figure it out. The whole system performs flawlessly.....so far anyway.

If there is anyone who decides to do anything else with this code I would really love to see it or even help you test it.

The vid link doesnt show up as a reply. I'll make another post with it.







**pcmofo** says:

May 31, 2010. 7:04 AM [REPLY](#)

Wow, I am impressed. You did a really nice job of throwing that together without using a PCB. I like the eraser card code as well. I cant wait to get mine up and running as well. I hope you had fun building this. It looks like it turned out really nice.



**pingywon** says:

Jun 1, 2010. 5:48 AM [REPLY](#)

Thanks man. I really appreciate that. I havent soldered anything this "complicated" in about 2 years, so my soldering started out terrible and by the time I was done it was looking great. I wanted to go back and resolder the whole thing, but I decided to leave good enough alone.

The "outside board" with the rfid reader... I enclosed it in a water proof box, but I also took the time to "paint" all the connection with "Liquid Electrical tape" to help water/moisture proof the whole thing.

Like I had said before if anyone had an additions to the code or design, I would love to see it. Maybe even impliment some of it.



**pcmofo** says:

Jun 1, 2010. 7:32 AM [REPLY](#)

Nice! someone here made a PCB design to get the boards printed... I am going to print and etch my own reader board to fit a small electronic enclosure and mount it outside like you have done. It's under a patto so it should not be too exposed. For now I am going to leave the breadboard inside so I can play with the code more.

I designed the circuit diagram so you can still connect a programmer and reprogram it. I really like the idea of a master erase card. One idea I thought of is to have a "programming" master card... then a function card, like... "Add" "Erase" "Erase All" etc. which would allow more customized programming. I'm thinking stuff like one-time-access, access at a specific time of day or span of days.... say someone is coming to do electrical work.. they can go in and out all day but the card wont work the next day etc....

Also planning on using a networked RFID system to track and identify customers/beers we are brewing in the brewery.... so planning on using the same readers and tags for everything.... such that anyone carrying a empty keg into the brewery gets access via the keg because clearly they are helping carry heavy things and dont have time to mess with keys.... or the same tag for a friend may allow them to pour as much beer as they want and pay later but not access into the brewery unless I authorize it etc....

So basically I have lots of plans for RFID and this door reader is only the beginning.

Working on an arduino remote car starter next... may or may not have RFID... but I expect to be playing around with both sets of code regardless soon.



**pingywon** says:

Jun 1, 2010. 8:07 PM [REPLY](#)

I like the idea of one time use cards or "day pass" cards. In order for this system to meet my needs perfectly it would need to have an hours of operation type feature. So that my workers would not be able to enter the door in the middle of the night (11pm-7am) but at the same time I would like my card to work.

That is a feature I would like.

I also think im going to put a simple switch push button on the Arduino RX line so that I can push the button and break the connection between the arduino and the ID-12 so that I can just jack in to the black box inside housing the arduino to change the code. instead of having to curently open the box and disconnect the wire.

I was going to use software serial, but I just wanted to get the project done.

Please let me know as you make any new code. I would love you review it and possibly even help test it.



**pcmofo** says:

Aug 9, 2010. 11:05 AM [REPLY](#)

After a couple prototypes and attempts I have worked out all of the bugs and published the updated PCB designs and schematics. I also embeded a video on the main page showing the new boards and the system working in action. Im looking into getting boards made somewhere incase others would like to order them.



**shamrock124** says:

Feb 2, 2013. 3:07 PM [REPLY](#)

I am currently looking to replicate your system which I must say is beautifully done. I was going through your parts list and when I went to look at the ATmega168 with Arduino Bootloader it is no longer being sold by SparkFun Electronics. I am wondering if there is an alternate unit that I could use in the place of this piece.

Thank You for the instructable.



**Aust1983** says:

Jan 6, 2013. 12:13 PM [REPLY](#)

Amazing. I'm not an electronics advocate but this project looks very interesting to try. Thank you for sharing the components as well as the price. The next weekend I'm going to try this with help of some friends just for fun. I was impressed to see the guy who applied this to his pizzeria, it's really cool.

Thanks for the guide :)



**unknownusername2702** says:

Oct 13, 2012. 8:41 PM [REPLY](#)

HI, PLease answer this question the Mini Push Button Switch \$0.35 was for turning the machine on and off right? also the Door Fail Secure access control Electric Strike v5 NO \$17.50 is out of stock on ebay could you reccomend any other place to order it online? TThanks awaiting your answer :D



**pcmofo** says:

Oct 16, 2012. 11:14 AM [REPLY](#)

The switch is to reset the micro controller. Many companies make electronic strikes. I would check ebay or amazon for a similar model. Your guess is as good as mine.



**bunanaa** says:

Oct 7, 2012. 9:39 AM [REPLY](#)

Hello sir. Do you have any updates on your RFID Door Lock time-access system?



**Naters** says:

Sep 22, 2012. 10:29 PM [REPLY](#)

I would love be able to build something like this :(, well it look amazing anyways! congrats



**jpersons1** says:

Sep 11, 2012. 1:45 PM [REPLY](#)

I have got almost this whole circuit figured out. I am about to start ordering the parts and start to build. However, I want to make sure I understand how to complete this project before I dive head first into it.

SO,

The only problem I am having trouble understanding is what I need to program the chip?

Can anyone give me links or suggestions as to where I can find a programmer/chip that will work with the provided code (Not really interested in typing own



code even though I probably could).

I am an electrical engineer at school and this is my first project on my own. I am open to stand alone chips or a arduino board with the programmer built in.

Any help at all would be appreciated, thanks!



**jwalk3** says:

Hi

I cannot buy the ATmega168 because it is outdated but there is a ATmega328 will this work?

Also if the power is turned off will it have memory loss or not

Thank You

Aug 20, 2012. 1:00 AM [REPLY](#)



**dtechusa** says:

if it will not compile and you get an EEPROM error:  
change #include to this

#include

its the first line of the code

May 14, 2012. 5:29 PM [REPLY](#)



**dtechusa** says:

LOL, well it doesnt show up when I use the actual characters

#include alligator eats EEPROM.h alligator leaves

alligator eats is <  
alligator leaves is >

May 14, 2012. 6:07 PM [REPLY](#)



**redfox05** says:

Whats R3, as its not mentioned in the "parts needed" section. Are there any other things that are needed in addition to the initial parts list? Not a complaint, I know you cant specify 'every' single thing, but I want to make sure I can order everything in one go, as the electronics store is not particularly close to me.

Many thanks!  
Russ

May 13, 2012. 11:30 AM [REPLY](#)



**redfox05** says:

Hi, great instructable, its my first arduino project! One question though:

For the FTDI Programmer, do I need a 3.3v or 5v? I have bought the ATmega328 as this is newer than the 168 which appears to be outdated now. Is this correct/still compatible?

Ftdi choices (i hope its one of these :)

3.3v - <http://uk.rs-online.com/web/p/communication/0429307/>

5v - <http://uk.rs-online.com/web/p/communication/6877770/>

There are many other choices on the site, what are the differences???

[http://uk.rs-online.com/web/c/?searchTerm=Usb+to+ttl&sort-by=P\\_breakPrice1&sort-order=asc&view-type=List&sort-option=Price](http://uk.rs-online.com/web/c/?searchTerm=Usb+to+ttl&sort-by=P_breakPrice1&sort-order=asc&view-type=List&sort-option=Price)

P.s. im UK based in case of tips for other shops.

Thanks,  
Russell

May 9, 2012. 3:43 AM [REPLY](#)



**pcmof** says:

FTDI programmers have both 5v and 3v lines on them. Most arduino stuff is 5v. Almost any FTDI cable will work with any FTDI port on an arduino.

May 9, 2012. 10:30 AM [REPLY](#)



**redfox05** says:

Thanks for the quick reply pcmof. I'll go with 5v then. One more question, is there any difference/preference between a cable ftdi and a breadboard one?

May 9, 2012. 3:32 PM [REPLY](#)




**redfox05** says:

Im buying the parts right now from RS Components, and they dont have any 0.167w resistors. The lowest ones they do are 0.25w would that work? How does the wattage affect it, as even the arduino.cc site just says a 10k ohm resistor, without stating wattage.


Sorry for all the questions, but i want to go out and buy these today so I can start on the project tonight.

Thanks in advance!  
Russell


May 10, 2012. 5:30 AM [REPLY](#)

 **yadoo86** says: Mar 2, 2012. 6:06 AM [REPLY](#)  
I just want to inform you that your lovely tutorial has been published on our facebook page ( <http://www.facebook.com/faceuino> ). Please feel free to join us and add your future tutorials.  
  
Thnx for your effort  
Faceuino team


---

 **weekendtech** says: Nov 8, 2011. 5:01 PM [REPLY](#)  
How do i fix the "eeprom was not declared in this scope" error  
I am doing this for a college project and have never used arduino before we are building it to interface it with computer help would really be appreciated is there part of the code i am missing?


---

 **loizosgroutas** says: Feb 29, 2012. 6:02 AM [REPLY](#)  
I had the same problem. To fixed is easy. paste at the firt line  
#include // Needed to write to EEPROM storage  
this .  
Now look like this.  
#include // Needed to write to EEPROM storage.  
  
Sorry for my english.


---

 **electfire** says: Dec 7, 2011. 4:59 PM [REPLY](#)  
On the second video @ 3:24 when you are showing the power supply socket.... Is that a modified wall plate for connecting built-in speakers in a home theater? It looks like it... so instead of connecting it for left and right audio channels you used it for positive and negative power connections... This is a neat idea... though it would really only be worth it if you intend on using many things that run on 12 volts...  
Also I hope you have this hooked up to back up power!


---

 **Jsmxbox** says: Oct 30, 2011. 3:27 PM [REPLY](#)  
Hey im getting a problem i have 4 RFID keyrings they all work and i can read them all fine but the problem is 2 of them start with 00 00 and will not work as master, delete or wipe but the other 2 start with 00 01 and work without problems any reason why this would happen?  
  
many thanks  
Jamie!


---

 **Jsmxbox** says: Oct 30, 2011. 3:34 PM [REPLY](#)  
Also found a floor in it too being that if you scan a key that ain't stored in the EEprom more than 3 times it still unlocks the "door"


---

 **Stomp** says: Sep 22, 2011. 11:03 AM [REPLY](#)  
Can someone pls. tell me all the components I need to the PCB Techno Dancer have maked for this excelent project? Referering to his Eagle files...  
  
Regards  
Mikkel


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 **agsking** says: Jul 10, 2011. 9:03 AM [REPLY](#)  
could you use this project to lock/unlock a deadbolt lock instead? if so, what deadbolt would work with this?  
  
thanks


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 **pcmof** says: Sep 20, 2011. 6:44 AM [REPLY](#)  
Home depot has a electronic deadbolt made by quick set i believe. That could work.

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 **LegoGuy23** says: Aug 2, 2011. 11:58 AM [REPLY](#)  
I would Imagine so. If you connect the Arduino to a servo attached to the deadbolt, I think it could work. Just a theory though.


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 **AlfaZulu** says: Sep 19, 2011. 6:13 PM [REPLY](#)  
hey, i'm just a little confused with how you programmed the eeprom. I was planning on using an arduino uno with an ATmega 328p, mainly because i don't believe they make the 168 anymore..  
  
would this code work just fine straight in the arduino software?


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 **pcmof** says: Sep 20, 2011. 6:42 AM [REPLY](#)  
Yes, it will work.


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 **Silent99** says: Sep 19, 2011. 12:50 PM [REPLY](#)  
Willing to pay someone with experience to build me one of these or provide all instructions I would need to build one myself. Msg me

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 **kgee** says: Sep 12, 2011. 12:15 AM [REPLY](#)  
i also had a question about the RFID cards that you programmed to work for the door... that wasn't for the door. like you made a copy. but can you erase it?


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 **nmstar56** says: Jul 28, 2011. 8:04 AM [REPLY](#)  
I'm getting "error: 'EEPROM' was not declared in this scope" for "EEPROM.write(i, 0);"  
Please help.


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 **TrueHybridX** says: Aug 14, 2011. 4:17 PM [REPLY](#)  
did you include the eeprom header files?


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 **jlim10** says: Aug 7, 2011. 10:55 AM [REPLY](#)  
would it be possible to program your fingerprint with a biometric reader as the mastercard?  
if so can you guys teach me how, im really bad at programming


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 **natsud1** says: Jun 16, 2011. 2:32 AM [REPLY](#)  
Hi i have an Arduino328 and a parallax rfid reader but i dont really know how to write code although im trying to learn my first problem is that when i load the code and run it the blue led is not on but the other 2 are so i looked at your "normalModeOn" part and it looks to me that it is exactly backward of what i thought it should be since you have the "powerpin" high and the rest low and the tricolor led has one + and three - electrodes this seemed backward .all i have hooked up is the reader and the tricolor led if i reverse the normalModeOn from high to low and the lows to high i get the blue led so i then swiped a card and nothing happens i cant seem to figure out what to do or what to change is it because of the different arduino and reader or am i just supposed to figure out where the code needs to be changed for theses Pleas Help i dont know much about code


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 **natsud1** says: Jun 16, 2011. 3:32 AM [REPLY](#)  
OK so its been another 3 hrs but i made some progress i had a different rfid code that would read the card and display it in the serial monitor and i found this "if((val = Serial.read()) ==10)" was different than your code yours was: "if((val = Serial.read()) ==2)" so i changed all instances to the number 10 and i got it to make the led blink odd color purpleish .. like i asked before about the led out highs and lows being reversed in the void sections well i reversed all of them and now when i swipe my non master/non saved card it turns red and when i swipe my master it goes to the program blinky sequence and it grants access to the former card when i reswipe it so i think i got some of it working but im not sure about the door lock part i have an led stood in place of the lock but it doesnt light up yet ill let you know if i get anywhere else on it sorry about the long comments this is a great 'ible im sure all my problems stem from lack of knowledge of code and other stuff hope what i said made since and maybe helps someone else


---

 **kidmosey** says: Jun 3, 2011. 10:50 PM [REPLY](#)  
That enclosure seems to have enough space to add a keypad as an alternative means of entrance, in case you lose your rfid tag. Might also be good to disable the tumbler lock, since any Joe Smith can pick a lock, nowadays.  
  
Also, if you put your rfid tag in a retractable thumbdrive (lined with aluminum), would that prevent people from passively thieving your rfid?


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 **tinker234** says: Jun 1, 2011. 9:05 AM [REPLY](#)  
wow use the star trex door with this


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 **joshnosh** says: May 11, 2011. 3:58 AM [REPLY](#)  
iv got quite far on this project now  
iv got it working on a bread board and iv made a PCB i just need to drill and assemble. I cant get the newer code to work but oh well ill live  
  
anyway iv been in discussion with someone and realised it would be a good idea to include a high voltage diode across the door lock pins. when the door lock is closed the magnetic feald collapses in the door strike and this can cause quite high voltages to be produced as it collapses. these voltages will try and discharge through your tip31a transistor and can damage it over time  
putting a diode there will allow the the door strike to loop back through itself and discharge. its not needed but it might help improve the reliability of the system

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 **insignia96** says: May 8, 2011. 9:36 PM [REPLY](#)  
What's Hilarious is that I, at this point in time, have an arduino, i am custom etching a shield, I have an outlet box, 2 RGB status leds, and to shorten this list up almost an identical project/Instructable I am working on and This is the first time I have read through this. Pretty funny, I guess great minds think alike!

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 **boudreau-inventor2** says: Apr 30, 2011. 7:41 AM [REPLY](#)  
I have couple questions. Where did you find the breadboard power supply for 12 volts? And, what size is the breadboard you are using?

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**PrivatHost** says:

Which Values has the Resistors R1, R2, R3, R4, R5?

Apr 7, 2011. 10:57 AM [REPLY](#)



**PrivatHost** says:

What diode (D1) did you used?

Is it the 1N4007 ?

Apr 7, 2011. 10:36 AM [REPLY](#)



**usamasiraj** says:

Hi i am a bit confused about the connections of header, header1 and the tip31a transistor. Do we have to connect Header from the rfid reader schematic to the controlling schematic. And what about the header1.??? Please help me out

Apr 29, 2010. 11:06 PM [REPLY](#)

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