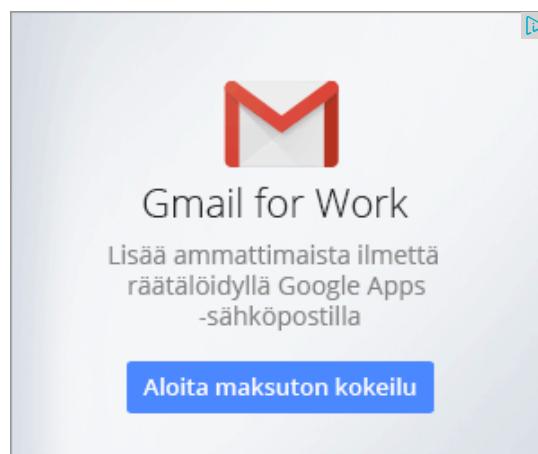


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Arduino – Webserver with an Arduino + Ethernet Shield

Written by [Rui Santos](#) - *Like Electronics? Click [here](#)*

This project is all about using an Arduino with an Ethernet shield. I'll be controlling one LED and a servo, but you can apply this method to control any electronic device you want. (such as DC motors, buzzers, relays, stepper motors, etc..)

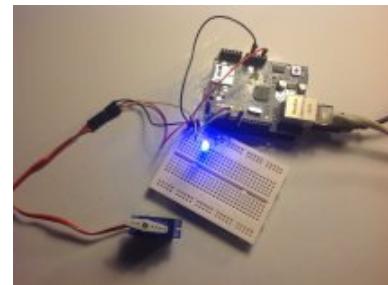


And I'll be using a brand new arduino board that my friend at BJTechNews Sent me! Check his youtube channel [here](#) for some cool tech tips.

Introduction

The code provided when uploaded and connected to the internet it creates a webserver in

your LAN and you simply use the IP to access that webserver through your browser. After that it shows a webpage similar to that one below. When you press the button "Turn On LED" your url will change to: "<http://192.168.1.178/?button1on>" the arduino will read that information and It turns the LED On.



Related Content: Like ESP8266? Check out Home Automation Using ESP8266

By default the IP is "192.168.1.178". That also can be found on the arduino code provided.



Random Nerd Tutorials Project

Arduino with Ethernet Shield

[Turn On LED](#) [Turn Off LED](#)

[Rotate Left](#) [Rotate Right](#)

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Parts Required

- 1x Arduino Uno
- 1x Ethernet Shield
- 1x 220 Ohm Resistor
- 1x LED

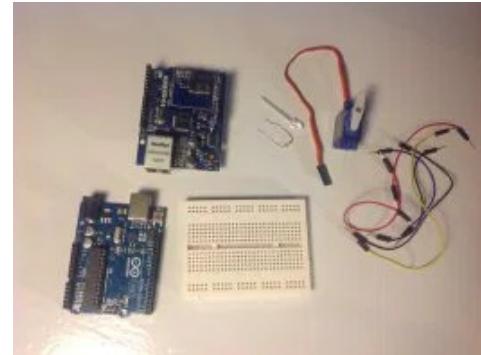
797
Shares

- 1x Micro Servo Motor
- 1x Breadboard
- Jumper Cables

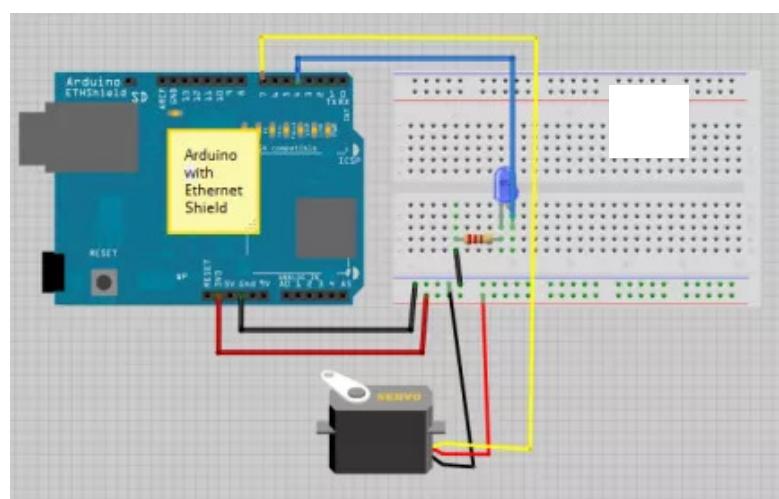
454

249

87



Schematics



Upload the code below

```
/*
Created by Rui Santos
Visit: http://randomnerdtutorials.com for more arduino projects

Arduino with Ethernet Shield
*/
#include <SPI.h>
#include <Ethernet.h>
#include <Servo.h>

int led = 4;
Servo microservo;
int pos = 0;

byte mac[] = { 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED }; //physical mac address
byte ip[] = { 192, 168, 1, 178 }; // ip in LAN (that
byte gateway[] = { 192, 168, 1, 1 }; // internet access
byte subnet[] = { 255, 255, 255, 0 }; //subnet mask
```

```

EthernetServer server(80); //server port
String readString;

void setup() {
    // Open serial communications and wait for port to open:
    Serial.begin(9600);
    while (!Serial) {
        ; // wait for serial port to connect. Needed for Leonardo only
    }
    pinMode(led, OUTPUT);
    microservo.attach(7);
    // start the Ethernet connection and the server:
    Ethernet.begin(mac, ip, gateway, subnet);
    server.begin();
    Serial.print("server is at ");
    Serial.println(Ethernet.localIP());
}

void loop() {
    // Create a client connection
    EthernetClient client = server.available();
    if (client) {
        while (client.connected()) {
            if (client.available()) {
                char c = client.read();

                //read char by char HTTP request
                if (readString.length() < 100) {
                    //store characters to string
                    readString += c;
                    //Serial.print(c);
                }

                //if HTTP request has ended
                if (c == '\n') {
                    Serial.println(readString); //print to serial monitor for debu

                    client.println("HTTP/1.1 200 OK"); //send new page
                    client.println("Content-Type: text/html");
                    client.println();
                    client.println("<HTML>");
                    client.println("<HEAD>");

```

```

client.println("<meta name='apple-mobile-web-app-capable' content='yes'>");
client.println("<meta name='apple-mobile-web-app-status-bar-style' content='black-translucent'>");
client.println("<link rel='stylesheet' type='text/css' href='http://randomnerdtutorials.com/assets/style.css'>");
client.println("<TITLE>Random Nerd Tutorials Project</TITLE>");
client.println("</HEAD>");
client.println("<BODY>");
client.println("<H1>Random Nerd Tutorials Project</H1>");
client.println("<hr />");
client.println("<br />");
client.println("<H2>Arduino with Ethernet Shield</H2>");
client.println("<br />");
client.println("<a href=\"/?button1on\">Turn On LED</a>");
client.println("<a href=\"/?button1off\">Turn Off LED</a><br />");
client.println("<br />");
client.println("<br />");
client.println("<a href=\"/?button2on\">Rotate Left</a>");
client.println("<a href=\"/?button2off\">Rotate Right</a><br />");
client.println("<p>Created by Rui Santos. Visit http://randomnerdtutorials.com</p>");
client.println("<br />");
client.println("</BODY>");
client.println("</HTML>");

delay(1);
//stopping client
client.stop();
//controls the Arduino if you press the buttons
if (readString.indexOf("?button1on") >0){
    digitalWrite(led, HIGH);
}
if (readString.indexOf("?button1off") >0){
    digitalWrite(led, LOW);
}
if (readString.indexOf("?button2on") >0){
    for(pos = 0; pos < 180; pos += 3) // goes from 0 degrees
    {
        microservo.write(pos); // tell servo to go
        delay(15); // waits 15ms for the
    }
}
if (readString.indexOf("?button2off") >0){
    for(pos = 180; pos>=1; pos-=3) // goes from 180 degrees
    {
        microservo.write(pos); // tell servo to go
    }
}

```

```
        delay(15); // waits 15ms for the
    }
}

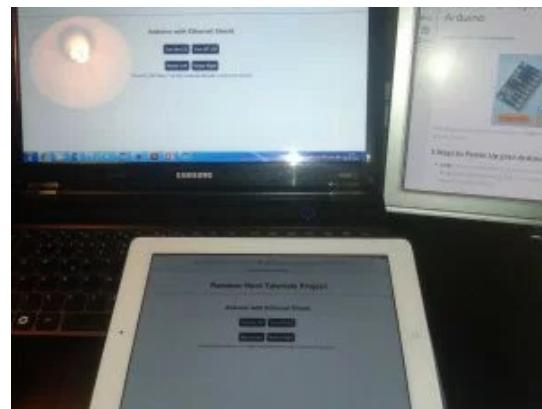
//clearing string for next read
readString="";

}
}

}
}

}
}
```

Note: If you try this project. You can only access that IP address from your home. This means you must be connected to the same router that you're ethernet shield is connected to. That picture below is from me accessing my webserver with my iPad.

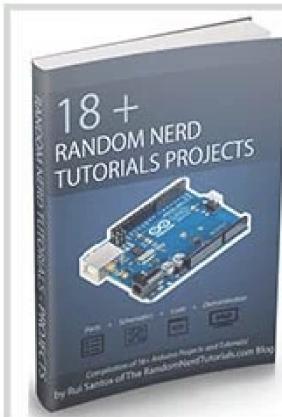


Thanks for reading, you can contact me by leaving a comment. If you like this post probably you might like my next ones, so please support me by subscribing my blog and my [Facebook Page](#).



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Comments



alain frenois says

[November 8, 2013 at 2:55 pm](#)

great achievement and very useful for achieving a home automation with relay
perifairique comander of the 220 v or 110 v

[Reply](#)



Rui says

[November 9, 2013 at 12:43 pm](#)

Thanks for your feedback!

yes that's exactly what I want to show.

you can use this code to apply to your own projects for home automation

[Reply](#)



Er Ajinkya Dixit says

November 9, 2013 at 3:46 pm

Wow.... really awesome project dude. You can use HTML also to create attractive and powerful web application i.e. webpage. I will give you link about that.

This is the link here : <http://internetofthings-pune.blogspot.in/2013/07/this-is-open-source-home-automation.html>

[Reply](#)



Rui says

November 11, 2013 at 11:33 pm

Hi!!

Thanks for the feedback Er Ajinkya Dixit!

Yes we can customize the CSS file and the HTML to create a better webpage. But I'm not very experienced in that programming languages yet. So I've just made a basic webpage with my knowledge 😊

Thanks for the resource!

My next webpage will be more customized.

[Reply](#)



Rui says

November 11, 2013 at 11:33 pm

Hi!!

Thanks for the feedback Er Ajinkya Dixit!

Yes we can customize the CSS file and the HTML to create a better webpage. But I'm not very experienced in that programming languages yet. So I've just made a basic webpage with my knowledge 😊

Thanks for the resource!

My next webpage will be more customized.

[Reply](#)



Con says

November 17, 2013 at 10:33 pm

Hi do you have the source code for webpage?

[Reply](#)



Rui Santos says

November 17, 2013 at 10:59 pm

Hi,

yes Con. You can download the source code for the webpage here:

<http://randomnerdtutorials.com/download>

Or simply click the like or tweet button and the download link will unlock.

the best way is by entering your email and you'll have access to a secret page where you can
download all my projects every time I release a new one.

thanks for stopping by,

Rui Santos

[Reply](#)



Con says

November 17, 2013 at 11:07 pm

hmm I pressed like but only got the source code for the arduino not the browser

[Reply](#)



Con says

November 17, 2013 at 11:22 pm

ignore my previous comments, thanks for the code

[Reply](#)



Khaled says

[January 8, 2014 at 8:38 am](#)

would u please send me the android webpage source code

[Reply](#)



Rui Santos says

[January 8, 2014 at 11:50 pm](#)

what you mean by the android webpage?

That webpage can be accessed through your tablet/smartphone browser...

and all the code used can be download on this page if you click like.

Thanks for leaving a comment,

Rui

[Reply](#)



Decka says

[January 14, 2014 at 4:12 pm](#)

what a nice project rui, but it's the first time i saw arduino ethernet shield, can you make a tutorial about how to configure ip address or something like that on ethernet shield, or how to configure that on router using dhpc?

[Reply](#)



Rui Santos says

[January 15, 2014 at 9:07 pm](#)

Thanks Decka.

Right now I'm working on a different project related to the Ethernet shield.

So stay tuned, because that project will be released soon...

I might do what you're looking for later though.

All the best,

Rui

[Reply](#)



Decka says

January 17, 2014 at 1:07 am

okay, good luck on your project bro.
keep it up...

[Reply](#)



Decka says

January 17, 2014 at 1:09 am

btw it's dhcp not dhpc, sorry for typo...

[Reply](#)



Rui Santos says

January 18, 2014 at 4:02 pm

Yeah I know, I got it!
Unfortunelety I don't have time right now to do that. as i said... maybe
later

Have a nice day,

Rui

[Reply](#)



nataraj says

January 18, 2014 at 5:36 pm

hi sir,

Thank you very much for your reply and i need some more details like i want to get the sensor value through html ..and.i want to know what is going on home through sensor..suppose if any human is enter into the home .it has to inform to web page

through HTML using PIR sensor so this kind of application i need...i hope you will understand very well..please do the needful to complete my project as soon as possible.....

[Reply](#)



Rui Santos says

January 22, 2014 at 1:25 pm

Hi Nataraj,
sorry for taking a few days to answer..
I've been really busy.
What you're looking for is an Arduino data webserver...
<http://g33k.blogspot.pt/2010/09/arduino-data-webserver-sample-web.html>
You can combine that project with mine if you want to customize the look of the hmtl page!

[Reply](#)



Jaap says

February 2, 2014 at 11:17 am

Hi,
Really great projects here! I learned a lot.
A question:
I see when clicking the buttons on the page they work oke for a while bit after some time the site seems to hang. Sometimes texts messed up and nothing works anymore. Do you recognize this? Is there a solution?
I see it happens running IE on my PC but also running Chrome browser and Safari on my iPad.

[Reply](#)



Rui Santos says

February 2, 2014 at 11:26 am

Thanks jaap.
I'm glad you're enjoying my projects!

That never happened to me.

It might be a problem with your network/ethernet shield.

In another project I've made recently I noticed that sometimes if the ethernet shield is connected for too long, It gets disconnected and no longer works until you reset manually the arduino.

With this webserver project I've tested to run for 17hours, 8 hours, 32hours and It worked just fine.

Now what I recommend you to do,

is to comment the project with Serial.print() commands and see where the problem is coming from and how long it takes until it stops...

Just one more question which ethernet shield are you using?
(the one with the Wiznet 5100 chip?)

[Reply](#)



Jaap says

February 2, 2014 at 1:54 pm

Hello Rui,

Thanks for your help!

Yes, it's a shield with the Wiznet 5100 chip. I ordered it from BangGood.

Worked fine in other projects.

You wrote: "17hours, 8 hours, 32hours..." but have you also done some testing by using all buttons one after another multiple times? Let's say 10 time.

[Reply](#)



Jaap says

February 3, 2014 at 9:27 pm

Hello Rui,

I think the problem is fixed.

Changed the delay time from 1 to 100 in this part of the sketch:

```
client.println("");
delay(100);
```

And now my page keeps running...



[Reply](#)



Rui Santos says
February 5, 2014 at 9:12 pm

I'm glad to hear that ! 😊
Thanks for trying my project Jaap.

Have a nice day,
Rui



seva says
February 23, 2014 at 6:49 am

I can't open the link 😞

[Reply](#)



Rui Santos says
February 25, 2014 at 3:51 pm

Which link Seva?

[Reply](#)



seva says
March 9, 2014 at 11:50 pm

if you can help me control the lights via the web, control light intensity,

[Reply](#)



Rui Santos says
March 12, 2014 at 1:36 pm

Search on the web for a PWM project to control the lights intensity.

Then change my code for this project.
so instead of controlling an led to turn on/off you're going to increase or decrease the light.

Thanks for asking,
Rui

[Reply](#)



Constantinos Lambrou says
[March 12, 2014 at 5:41 am](#)

I notice the code references a CSS file. Is it possible to have the code be stand alone?
Meaning one would not have to host a CSS file?

[Reply](#)



Rui Santos says
[March 12, 2014 at 1:24 pm](#)

yes, you can customize the html without the CSS file.
The CSS just makes it easy to customize the html without repeating the same styling options again and again.

Thanks for asking,
Rui

[Reply](#)



Murp says
[April 16, 2014 at 9:21 pm](#)

Hi Rui, I'm trying to adapt your code to control 8 LEDs through internet but I have one problem...With 4 leds, works ok, but if I configure a 5th led, don't work.....

Can I send you the code to some email to see if you see any faults?? (Ide recognizes the code without errors..)

Thanks and regards 😊

[Reply](#)



Rui Santos says

April 18, 2014 at 4:18 pm

Hi Murp,

I don't have the time to debug your code I'm sorry...

I don't know how experienced you are with Electronics, so just a few questions
are you defining the right LED's pins properly as inputs? are your LED's in the right
way?

[Reply](#)



Murp says

April 18, 2014 at 7:55 pm

Hi Rui, no problem 😊

To your questions, no and yes..Leds are configured as "int" -> outputs and all is
connected ok (It works ok with 4 but not with 5..With 5, the buttons are on
screen but don't work if I press any...)

The code, I think that works right (No error on IDE, less than 20000 bytes), but I
don't understand what's the matter...

With 4, I configured twice:

Pins 2,3,4 and 5

Pins 6,7,8 and 9

And all works ok (Arduino,leds,proto connetions,code...), and for that, I
discarded all parts of the system like bad or broken components..

Thanks for all..

Regards 😊

(About my experience with electronics, let's say my level is medium jeje)

[Reply](#)



Rui Santos says

April 25, 2014 at 11:31 am

That might be a problem with your html then...

You're probably doing some sort of mistake that makes an error on the html page (in your ip/webserver page)
and breaks the pages so any button works...

That's my guess..

[Reply](#)



Murp says

April 25, 2014 at 7:27 pm

Hi 😊

I only add the neccesary code, any more line, any less line, and because I don't understand what is the problem...

Thanks anyway..

Regards



Dimitris says

May 2, 2014 at 8:20 pm

first of all i would like to say thanks for sharing all those super cool projects.

i was wondering if it is possible to access the web page this arduino serves through internet when you are not in home if you open a port at your router and set it to forward the packages to arduino (im talking about a simple port forward)
would that work in order to access arduinos web page and controll a device in home from thousand kilometers away through internet?

[Reply](#)



Rui Santos says
May 3, 2014 at 2:12 pm

Hi Dimitris,

You're 100% right this project could work exactly as you described.

There's just one problem, anyone with your ip can control your home.

(And that's really easy to find if someone leaves near you...)

The best way to do that is to encrypt that data and also create some sort of authentication but that requires a more powerful device such as a Raspberry Pi for example.

I've made a project that allows you to control your home from anywhere in the world with an arduino and an ethernet shield.

please take a look:

<http://homeautomationserver.com/>

[Reply](#)



dany says
May 21, 2014 at 10:57 pm

Hei, it's awesome project dude. I have a question for you.

After I read this project, can I assume that the LED and servo was controlled over IP? or it's something different?

[Reply](#)



Rui Santos says
May 26, 2014 at 8:52 pm

You're right dany.

With this method you can only control the LED and servo if you're connected to the same router.

Then you open the browser with the arduino webserver ip

[Reply](#)



dany says

July 12, 2014 at 1:51 pm

Thanks for your response, so just like what I thought. I'm a bit curious, can it works on a linux router? Do you think it can work?

[Reply](#)



Frankarduino says

June 8, 2014 at 11:31 pm

Hi, this is amazing project. But I got a problem when i try to access the webserver through my browser. I typed the address: 192.168.1.178 on my browser, it shown a blank page. Is it because of my router? Thanks

[Reply](#)



Rui Santos says

June 24, 2014 at 1:20 pm

I'm not sure, It should be working just fine... there's might be an incompatibility with your router.

[Reply](#)



Hallow says

June 12, 2014 at 10:36 am

Hello Rui,
How i can add more pages to this
say Home Page : Control two relays
First Floor : Control two relays and sensors
Like that

Pls Help

[Reply](#)

Hallow says

June 12, 2014 at 10:39 am

Hello Rui,

How i can add more pages to this project

Say Home Page : Control Two relays

First Floor : Control relays and sensors

Master Bed Room : etc.....

Pls Help

Regards

[Reply](#)

Rui Santos says

June 24, 2014 at 1:19 pm

Hi Hallow,

Simply insert those buttons on my arduino code,

take a look at my code and see how i add the other buttons.

[Reply](#)

Dimitris says

June 17, 2014 at 7:42 pm

Hello Rui you said earlier that arduino is not powerfull enough for encryption and so anyone might be able to controll your house using this web server.

i thought about it and i modified your code in order to create a simple pin-password that is needed in order to activate the relays.

it is done by declaring a new variable that needs to get a certain value in order to let the relays activate.

in order to give values to this variable i added 12 new buttons for 0-9, * and #

what i am doing is simple or advanced mathematic operations in order to give a specific

value in the variable by pressing the correct pin on the buttons i added.

this is the link of the sketch i made.

it may be usefull to someone.

https://www.dropbox.com/s/1w1nolo7i6ufb0p/web_server_modified_pc_control.ino

relays password: 4321

so in this sketch i set the correct variable value to be number 9

when you arrive at the web site the pin variable value is 0 and the relays wont work

so in order to activate the relays you will have to press the button 4 in order to add 4 to the pin variable

followed by 3 in order to multiply the current pin value $(4)*3$

followed by 2 in order to substruct 2 from the current pin value

and finally 1 in order to substruct 1 from the current pin value

after this the final pin variable value is 9 and now you can activate the relays.

so in conclusion you can select what mathematic operation does every single button, you can use as many digits as you want for the pin (4-5-8-10 buttons) and you can also select the value of every single button, which means you can do pretty much anything with the password.

now another interesting thing i done, is that i set every single button that is not used in the password to reset the pin value.

so if someone just tries to put random passwords he will keep reseting the pin value and wont be able to activate the relays.

you can also use this function if you mistakenly pressed twice a button which will mean that the pin value will be wrong and you will have to reset the pin value in order to re enter the password.

just press any of the unused buttons and the pin is reseted.

you can add big passwords like 8 12 digits and so on to make brute force attacks difficult or you can add buttons with letters too.

i added some pin value reports over serial connection for debugging and also i added 2 outputs in order to connect 2 leds with a resistor on each one of them.

one led is off when the pin value is not yet correct and lights up only when the pin value is correct (password correct)

the second one is kept off when the pin value is lower than the correct one

and is turned on if the pin value is over the correct one.

those 2 leds is just for visual indication of pin-password status (for debuggind purposes again. if you dont want it just delete the line with the comments)

finally the last modification i made is that i removed the servo buttons

and i made the other 2 buttons to activate and deactivate after 1 second in order to controll my computer's power and reset buttons.

thats it, the project finally is heavilly modifies in order to match my needs but i thought i should post it here because someone may want to use simple password protected relays

in this web server project.

i hope you and everyone else likes it.

[Reply](#)



Rui Santos says

June 25, 2014 at 4:11 pm

Hi Dimitris,

Thank you so much for sharing your work!

It's a really clever idea what you did there.

The data is still not encrypted by SSH for example, so if someone performs a man in the middle attack they can get the raw data and can use to access your webserver.
(If you have your router ports open)

Again, thanks for sharing!

I might do a tutorial/project with your idea in mind.

Have a nice day,

Rui Santos

[Reply](#)



fathul says

April 19, 2015 at 5:57 am

hey dmitri can u please give some step to me for this project i think this project very cool,i try to understand but not really help, tq

[Reply](#)



Dimitris says

April 20, 2015 at 12:46 pm

Firstly let me inform you that i am no arduino expert.

i am just a beginner who has almost no knowledge on programming.

after all i didnt used this project because while at first it was working ok after a few hours arduino was crashing.

i thought it must had to do with its memory getting full and i tried removing all the unnecessary stuff from the code which did help but still arduino was crashing after a few days and the project was unsuable.

because of the lack of programming knowledge i didnt manage to stop it from

crashing or to locate the problem but having said that if you still need more info and want to get the latest sketch i made that works for a few days i can email it to you so you can try to fix it.

the basic idea is pretty simple actually.

in the original project made by rui you could just press a button to activate a relay.

i wanted to dial a password before being able to activate the relays.

in order to do it you need to

1) declare a new variable at the setup part of the sketch which will be set at 0 at the beginning (this variable will have to get a specific number in order to allow the use of the relays)

2) add more buttons on the web page in order to have a numeric keypad

3) make these new buttons to add a number to the variable you declared to step 1 , you can also subtract a number from the variable , multiply a number or make any mathematical operation and store the new value to the variable

4) add an if command in order to operate the relays) if the variable declared in a has a certain value then activate the relay, if not reset the variable value (so a new pin can be entered)

[Reply](#)



Tristan says

September 21, 2014 at 6:17 am

hello i was thinking can this be done by using a arduino yun and not using the ethernet sheild

[Reply](#)



Rui Santos says

October 9, 2014 at 11:15 am

Hi Tristan,

Definitely the Arduino Yun is really powerful.

In the Arduino IDE examples code tab you will find similar projects that provide you a web interface for your project

[Reply](#)



Tahir says

September 26, 2014 at 3:51 pm

hi ! Rui

thanks for the post ...

I just want to know why we use arduino uno with arduino ethernet sheild , i want to make a project like yours ,

my question is why arduino uno is necessary with arduino ethernet sheild , and how to connect uno with pc (Which port) ?

and , can arduino ethernet sheild work without arduino uno ?

[Reply](#)



Rui Santos says

October 9, 2014 at 11:19 am

You can connect your arduino to any pc port you want.

Then in your Arduino IDE you just need to select the right COM port for your project (Usually the Arduino IDE selects the right COM port by default)

You need an Ethernet shield, because the Arduino uno by himself can't serve a webpage.

[Reply](#)



Dimitris says

October 3, 2014 at 12:43 pm

Hello rui, im having some trouble with this project and i suspect that somewhere in your code you have made a mistake. since i dont really know to code i thought i should give you some information and maybe you have a clue on whats going on or the possible reason.

the only modifications i have done in your code that is running right now on my arduino is that i completely removed everything that has to do with the servo button-library and instead the button that used to controll the servo now is just an on off switch like the led switch.

the problem is that if you keep your arduino running this code after some days maybe a week or maybe more it stops responding. it stops serving the page and when you try to access the page, the page isn't found.

if you try to ping the arduino ip address it responds to the pings but doesn't serve the page.

in order to fix this all you have to do is to open the arduino sdk and just enable the serial monitor. nothing more! just that!

once the window of the serial monitor opens and the arduino reports that the web server runs on the ip address you set it, then the web page immediately starts to be served again.

i was trying some heavy modifications and found out that the bigger the sketch is the sooner it stops responding and if it is big enough it starts messing the program and stops responding so i thought that maybe there is a memory overflow issue or something like that.

then again i don't know if it's router related, maybe after some days of no use the router stops to forward the port to the arduino and you have to set the arduino to send packages to the router from time to time so the router always knows that the arduino is still connected-working and needs to receive the packages on the port 80.

i hope you can review your code and find out what is causing this malfunction, because this is a really nice project but this malfunction makes it unusable.

[Reply](#)



majdi says

[November 16, 2014 at 2:40 pm](#)

Hello and good day Rui, can i connect hanrun Wiznet 5100 chip ethernet module to TP-Link MR-3020 and use broadband 3g modem to make it run online and capability to access from internet?

[Reply](#)



Christodoulos says

[November 25, 2014 at 4:12 pm](#)

What if we use arduino WIFI SHIELD ? Is the source code the same ?

[Reply](#)



João says

December 7, 2014 at 12:14 pm

Rui antes de mais deixa-me felicitar-te por partilhares os teus excelentes projetos. O meu nível em programação é muito baixo então gostaria de te fazer uma pergunta. É possível correr o CSS a partir do SDcard?

Renomeei o ficheiro para respeitar o formato 8.3

Consigo iniciar o sdcard e listar os ficheiros, mas não sei como referir o ficheiro no código do arduino.

Já experimentei isto:

```
client.println("");
```

mas a página aparece sem a formatação.

Agradeço desde já toda a ajuda que me puderdes dar ou se não tiveres tempo que me apontasses na direção certa

[Reply](#)



João says

December 8, 2014 at 9:38 pm

Já resolvi o problema meti o código CSS dentro do HTML caso contrário teria de chamar um segundo ficheiro no arduino para alem do index.htm(style.css por ex) para responder ao pedido HTTP e apresentar a página com a formatação pretendida.

[Reply](#)



midor says

January 19, 2015 at 2:00 pm

hello I can not seem to control my arduino because the web page is not displayed help me

[Reply](#)



Sneha pawar says

February 16, 2015 at 2:29 pm

Rui sir your projects are really awesum n it's helps we student whoes new for this arduino!!!! thanks rui sir

[Reply](#)



Rui Santos says

February 20, 2015 at 10:22 am

Thank you Sneha!

Rui

[Reply](#)



devendra says

March 11, 2015 at 10:33 am

Hey..

Send me webpage coding and detailed process for this project

Ty...

[Reply](#)



Rui Santos says

March 15, 2015 at 11:57 am

You can download the code right here on this blog post.

Thanks!

[Reply](#)



fathul says

March 22, 2015 at 8:01 am

hey rui santos...can this command input in my arduino uno and using ethernet shield hlk-rm04 to create some web server.tq...

[Reply](#)



Rui Santos says

March 26, 2015 at 7:11 pm

You might have to do some changes.

This code was written for the Wiznet chips on the ethernet shield.

-Rui

[Reply](#)



Hélio Baldutti says

March 23, 2015 at 6:15 pm

Dear Rui,

My name is Hélio and I am from Brazil.

Firstly I wanna thank you to share your knowledge with us.

This is really important to people are beginning to use Arduino as I.

I have based in your project to implement my one. I wanna turn on / turn off several lights (but I need to monitor the real status of these lights), control TVs, radio and etc. I know how to do this in Arduino, but I have difficulty in php.

In this program below, I am using just one button to turn on / turn off a light and I am using a LDR sensor to check the light's status.

How I wanna use the Arduino in pararel with a switch in the wall, the status of light just update when I refresh the webpage. This isn't happening automatically.

My doubt is: how can I change this program to update the status always this changed without need to refresh the page?

Please check the program:

/*

Referenced by Rui Santos

Visit: <http://randomnerdtutorials.com> for more arduino projects

Arduino with Ethernet Shield

```
*/
```

```
#include // Biblioteca da Ethernet Shield
#include // Biblioteca da Ethernet Shield

int Rele_1 = 2; // Iluminação Entrada
byte Estado_rele_1 = 0; // Estado bobina do relé
int sensor = 0; // Pino analógico em que o sensor LDR está conectado.
int valorSensor = 0; // Variável usada para ler o valor do sensor em tempo real.

byte mac[] = { 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED }; //physical mac address
byte ip[] = { 192, 168, 25, 105 }; // ip in lan (that's what you need to use in your browser.
("192.168.1.178")
byte gateway[] = { 192, 168, 25, 1 }; // internet access via router
byte subnet[] = { 255, 255, 255, 0 }; //subnet mask
EthernetServer server(80); //server port
String readString;

void setup() {
// Open serial communications and wait for port to open:
Serial.begin(9600); // velocidade da conexão
while (!Serial) {
// wait for serial port to connect. Needed for Leonardo only
}
// após ter setado o pino, colocando qual sua função
pinMode(Rele_1, OUTPUT);

// start the Ethernet connection and the server:
// iniciando a placa shield ethernet
Ethernet.begin(mac, ip, gateway, subnet);
server.begin();
Serial.print("server is at ");
Serial.println(Ethernet.localIP());
}

void loop() {
// Create a client connection
EthernetClient client = server.available();
if (client) {
while (client.connected()) {
if (client.available()) {
char c = client.read();

// read char by char HTTP request
if (readString.length() < 100) {
```

```
//store characters to string
readString += c;
//Serial.print(c);
}

//if HTTP request has ended
if (c == '\n'){
Serial.println(readString); //print to serial monitor for debugging

client.println("HTTP/1.1 200 OK"); //send new page
client.println("Content-Type: text/html");
client.println();
client.println("");
client.println(" ");
client.println(" ");
client.println(" ");
client.println(" ");
client.println(" ");
client.println(" ");
client.println("Projeto Casa e Automacao Residencial");
client.println("");
client.println("");
client.println("Projeto Casa e Automacao Residencial");
client.println("");
client.println(" ");
client.println(" ");
client.println(" ");
client.println("Arduino em Ethernet Shield");
client.println(" ");
client.println("Quarto");
client.println("");
client.println("Lampada");
client.println("");
client.println("");
client.println("");

int valorSensor = analogRead(sensor);
if (valorSensor < 750)
{
    client.println("Status = Lampada Apagada");
}
else {
    client.println("Status = Lampada Acesa");
}
client.println("");
client.println("");
client.println("");

delay(1);
```

Once more thank you for your help.

Best Regards,

Hélio

Reply



Mario says

March 26, 2015 at 12:06 am

Nice project.

Will this project work anywhere and anywhere as long as the arduino and the device controlling it are connected in the same router? Can I connect it to different routers and it will work on each of them? Do the router needs to be connected to internet?

thanks for sharing it!

Reply



Rui Santos says

March 26, 2015 at 7:08 pm

You can only access the web server when you're connected with device that is

connected to the same router.

[Reply](#)



fathul says

March 29, 2015 at 1:42 pm

hye rui, why after i input this command into arduino uno and then i input the ip address at the browser,the browser can't detect that ip,what the problem rui??

[Reply](#)



PhuPhi says

April 19, 2015 at 4:05 pm

Hi 😊

I do not have access control websites (ip 192 168 178)

I tried to change it but failed.

I've followed all the way and read the comments, but not positive

pls reply for me .. sorry for bad english proficiency. tks

reply or mail: phuphi,cool@gmail.com

[Reply](#)



CM says

May 18, 2015 at 3:22 pm

Do you need to put in your own IP address or does it not matter?

Thanks

[Reply](#)



Rui Santos says

May 18, 2015 at 5:00 pm

You just need to set an IP address that is available in your network. That IP address

that I've set will work in most cases

[Reply](#)



maheshkumar says

June 12, 2015 at 6:56 am

please get output for the following program
this about obstacle finder using pir and print on the webpage
i dont know why it occur more than one time

```
#include
#include
byte mac[] =
{
  0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED
};
IPAddress ip(172, 16, 20, 157);
IPAddress gateway(172, 16, 16, 1);
IPAddress subnet(255, 255, 224, 0);

EthernetServer server(80);

int e1=9;
int in1=3;
int in2=4;

int e2=10;
int in3=11;
int in4=12;
int count=0;
void setup()
{
  Serial.begin(9600);
  while (!Serial) {
    // wait for serial port to connect. Needed for Leonardo only
  }
  Ethernet.begin(mac, ip);
  server.begin();
  Serial.print("server is at ");
  Serial.println(Ethernet.localIP());
```

```
Serial.println("configure the input and output");
pinMode(8,INPUT);
pinMode(2,OUTPUT);
pinMode(e1, OUTPUT);
pinMode(e2, OUTPUT);
pinMode(in1, OUTPUT);
pinMode(in2, OUTPUT);
pinMode(in3, OUTPUT);
pinMode(in4, OUTPUT);

}

void loop()
{
{
while(1)
{
ethernet();

}
}

// c

void ethernet()
{
EthernetClient client = server.available();
if (client) {
Serial.println("new client");
// an http request ends with a blank line
boolean currentLineIsBlank = true;
while (client.connected()) {
if (client.available()) {
char c = client.read();
Serial.write(c);
// if you've gotten to the end of the line (received a newline
// character) and the line is blank, the http request has ended,
// so you can send a reply
if (c == '\n' && currentLineIsBlank) {
// send a standard http response header

client.println("HTTP/1.1 200 OK");
client.println("Content-Type: text/html");
client.println("Connection: close"); // the connection will be closed after completion of
}
}
}
}
```

the response

```
client.println("Refresh: 5"); // refresh the page automatically every 5 sec
client.println();
client.println("");
client.println("");
client.println("");
client.println("OBSTACLE FINDER ");
Serial.print("heading");
int sensorvalue=digitalRead(8);
if(sensorvalue==HIGH)
  client.println("MOTION DETECTED!");
else
  client.println("CHECKING FOR ANY MOVEMENT!");

client.println("");
break;
}

if (c == '\n') {
// you're starting a new line
currentLineIsBlank = true;
}
else if (c != '\r') {
// you've gotten a character on the current line
currentLineIsBlank = false;
}
}
}

// give the web browser time to receive the data
delay(1);
// close the connection:
client.stop();
Serial.println("client disconnected");
demo();
}

}

void demo()
{
  int sensorvalue=digitalRead(8);
  // digitalWrite(in1, HIGH);
  //digitalWrite(in2, LOW);
  analogWrite(e1,200);
```

```
//digitalWrite(in3, HIGH);
//digitalWrite(in4, LOW);
analogWrite(e2,200);

Serial.print("read the sensor value");
if(sensorvalue==HIGH)
{
    digitalWrite(2,HIGH);
    Serial.print("motion detected");

    digitalWrite(in1, LOW);
    digitalWrite(in2, LOW);
    digitalWrite(in3, LOW);
    digitalWrite(in4, LOW);
    delay(200);
}
digitalWrite(2,LOW);
Serial.print("checking for any movement");
digitalWrite(in1, HIGH);
digitalWrite(in2, LOW);
digitalWrite(in3, HIGH);
digitalWrite(in4, LOW);
delay(200);
Serial.print("Over");

}
```

[Reply](#)



Gabriel Feller says

August 25, 2015 at 10:23 pm

Hey man, great project, i'm from Brazil and i'm still learning about arduino, i'd like to know if you have a similar project, but with the possibility of using the arduino remotely, i mean, like, if you are not connected in the same router as the arduino.

Anyway, your project helped me a lot, but if you could help me with this another problem, i'd sure like it :X

[Reply](#)



Rui Santos says

September 13, 2015 at 9:27 am

Hi Gabrial,

I have this project using Arduino: <http://homeautomationserver.com/>

With the ESP8266: <http://app.homeautomationserver.com/>

[Reply](#)



Sílvio da Gama says

August 29, 2015 at 6:23 pm

Hello, I'm trying to drive a stepper motor, but it is not rotating. I do not have a shield motor, so I insist on this sketch.

Please tell me what to do?

```
//+++++  
#include  
#include  
#include  
#include //Inclui a biblioteca Thermistor.h  
  
int ac = 7;  
int lamp_A1 = 8;  
int lamp_A2 = 9;  
  
const int stepsPerRevolution = 200;  
Stepper motor(stepsPerRevolution, 2,3,4,5);  
//int statusBotao1 = 0;  
//int statusBotao2 = 0;  
//int botaoHorario,botaoAntihorario; //gira motor sentido horario & gira motor sentido  
antihorario  
int steps = 0;  
  
byte mac[] = { 0xDE, 0xAD, 0xBE, 0xEF, 0xFE, 0xED }; //physical mac address  
byte ip[] = { 192, 168, 0, 178 }; // ip in lan (that's what you need to use in your browser.  
("192.168.1.178")  
byte gateway[] = { 192, 168, 0, 1 }; // internet access via router  
byte subnet[] = { 255, 255, 255, 0 }; //subnet mask  
EthernetServer server(80); //server port  
String readString;
```

```
void setup() {
    // Open serial communications and wait for port to open:
    Serial.begin(9600);
    while (!Serial) {
        ; // wait for serial port to connect. Needed for Leonardo only
    }
    pinMode(ac, OUTPUT);
    pinMode(lamp_A1, OUTPUT);
    //pinMode(lamp_A2, OUTPUT);

    // start the Ethernet connection and the server:
    Ethernet.begin(mac, ip, gateway, subnet);
    server.begin();
    Serial.print("server is at ");
    Serial.println(Ethernet.localIP());
}

void loop() {
    Thermistor temp(5); //Instâncie a biblioteca Thermistor.h para ser utilizado o pino A5
    int temperature = temp.getTemp(); //Pega a temperatura ambiente já convertida em graus celcius e armazena na variável temperature
    // Create a client connection
    EthernetClient client = server.available();
    if (client) {
        while (client.connected()) {
            if (client.available()) {
                char c = client.read();

                //read char by char HTTP request
                if (readString.length() < 100) {
                    //store characters to string
                    readString += c;
                    //Serial.print(c);
                }
            }

            //if HTTP request has ended
            if (c == '\n') {
                Serial.println(readString); //print to serial monitor for debugging

                client.println("HTTP/1.1 200 OK"); //send new page
                client.println("Content-Type: text/html");
                client.println();
                client.println("");
                client.println("");
            }
        }
    }
}
```

```
client.println("");
client.println("");
client.println("");
client.println("REMOTUS");
client.println("");
client.println("");
client.println("Internet das Coisas – IoT");
client.println("");
client.println("");
client.println("Casa com Remotus");
client.println("");
client.println("Temperatura da Casa: ");
client.println("\t");
client.println(temperature);
client.println(" *C");
client.println("");
client.println("");
client.println("Ligar AC");
client.println("");
client.println("Desligar AC");
client.println("");

client.println("");
client.println("Ligar Lampada_1");
client.println("");
client.println("DesligarLampada_1");
client.println("");
client.println("");
/*
client.println("Ligar Lampada_2");
client.println("");
client.println("DesligarLampada_2");
client.println("");
*/
client.println("Abrir");
client.println("");
client.println("Fechar");
client.println("Created by Geraldo Albano & Silvio da Gama. Getting Pro for life!");
client.println("");
client.println("");
client.println("");
delay(1);
//stopping client
```

```
client.stop();
//controls the Arduino if you press the buttons
if (readString.indexOf("?button1on") >0){
digitalWrite(ac, HIGH);
}
if (readString.indexOf("?button1off") >0){
digitalWrite(ac, LOW);
}
if (readString.indexOf("?button1on") >0){
digitalWrite(lamp_A1, HIGH);
}
if (readString.indexOf("?button1off") >0){
digitalWrite(lamp_A1, LOW);
}
/* if (readString.indexOf("?button4on") >0){
digitalWrite(lamp_A2, HIGH);
}
if (readString.indexOf("?button4off") >0){
digitalWrite(lamp_A2, LOW);
}*/
if (readString.indexOf("?button2on") >0){
// if(statusBotao1 == HIGH){
motor.step(1);
motor.setSpeed(13);
//}
}
if (readString.indexOf("?button2off") >0){
// if(statusBotao2 == HIGH){
motor.step(-1);
motor.setSpeed(13);
//}
}
//clearing string for next read
readString="";
}
}
}
}
}
}
```

[Reply](#)



Rui Santos says

September 13, 2015 at 9:25 am

I can't test your code right now. But before you try to create a web server and control your motor at the same time. Can you please try to control the motor in a simple sketch?

Maybe you should use the library that came with your motor shield...

[Reply](#)



Silvio da Gama says

September 13, 2015 at 9:34 am

Thanks for your help!

I did all of these steps, and had no success.

Maybe one day when you work with something similar project...

I love your work, Keep it up.

[Reply](#)



Rui Santos says

September 13, 2015 at 9:39 am

But try to use the default library that came with your motor shield to control them...

Thank you for your kind words!

[Reply](#)



yepieyo says

September 16, 2015 at 8:21 am

hello sir Rui Santos, can you make an android apps would control on same device.?

[Reply](#)



Rui Santos says

September 16, 2015 at 6:13 pm

Yes, I have a tutorial on that subject here: <http://randomnerdtutorials.com/arduino-control-2-dc-motors-via-bluetooth/>

[Reply](#)



yepieyo says

September 17, 2015 at 3:08 am

thanks man, how about using arduino ethernet control by android apps?
or voice command?

[Reply](#)



Rui Santos says

September 19, 2015 at 9:48 am

I have a tutorial on how to create an android app
<http://randomnerdtutorials.com/arduino-control-2-dc-motors-via-bluetooth/>

[Reply](#)



yepieyo says

September 22, 2015 at 12:02 pm

thanks bro, my project is success, arduino ethernet with android apps voice command..

[Reply](#)



Khoirul Iman says

October 9, 2015 at 10:11 am

hello Rui santos Thanks For source code . i use this code for my project " Green House Monitoring and ControlSystem for Cactus Growing " and it work very well .

now i will make something different from this . and i have i question .
can i make a field for input a number from web to processed by arduino ?

thanks

sorry for my english

[Reply](#)



Rui Santos says

October 10, 2015 at 11:35 am

Yes, you should be able to do that! Simply create an input html field.

[Reply](#)



sendaljepits says

November 1, 2015 at 7:10 am

thank a lot,,work to me,,im using 4 led,,
very nice,,

[Reply](#)



sendaljepits says

November 1, 2015 at 7:16 am

what app android for this project sir?thank
sorry to my language english is bad..

[Reply](#)



Rui Santos says

November 2, 2015 at 8:51 pm

There's no android app for this project...
It's a web server generated by your Arduino

[Reply](#)



Rui Santos says
November 2, 2015 at 8:50 pm

You're welcome!

[Reply](#)



Rui Santos says
November 2, 2015 at 8:51 pm

You're welcome!

Thank you for reading

[Reply](#)



Fotis says
November 1, 2015 at 3:23 pm

Thanks very helpfull project!!
Easy to access from everywere with ddns for home automatation...

[Reply](#)



Rui Santos says
November 2, 2015 at 8:50 pm

You're welcome!

[Reply](#)



rockyrazz says

November 29, 2015 at 11:30 am

Hi – been running an Arduino fine with no shields attached. When I attached the Ethernet Shield and try to upload a sketch I get the output below.

I can upload the sketch without the shield attached and it's fine.

I'm using windows 7. Tried searching and I think the Ethernet shield might be using the serial ports differently. I'm very new to networking.

Help!!

Binary sketch size: 6958 bytes (of a 30720 byte maximum)

```
processing.app.SerialException: Serial port '/dev/tty.usbserial-A6008jGi' not found. Did
you select the right one from the Tools > Serial Port menu?
at processing.app.Serial.(Serial.java:153)
at processing.app.Serial.(Serial.java:76)
at processing.app.debug.Uploader.flushSerialBuffer(Uploader.java:71)
at
processing.app.debug.AvrdukeUploader.uploadViaBootloader(AvrdukeUploader.java:78)
at
processing.app.debug.AvrdukeUploader.uploadUsingPreferences(AvrdukeUploader.java:53)
at processing.app.Sketch.upload(Sketch.java:1460)
at processing.app.Sketch.exportApplet(Sketch.java:1427)
at processing.app.Sketch.exportApplet(Sketch.java:1382)
at processing.app.Editor$45.run(Editor.java:2165)
at java.lang.Thread.run(Thread.java:613)
processing.app.debug.RunnerException: Serial port '/dev/tty.usbserial-A6008jGi' not
found. Did you select the right one from the Tools > Serial Port menu?
at processing.app.debug.Uploader.flushSerialBuffer(Uploader.java:91)
at
processing.app.debug.AvrdukeUploader.uploadViaBootloader(AvrdukeUploader.java:78)
at
processing.app.debug.AvrdukeUploader.uploadUsingPreferences(AvrdukeUploader.java:53)
at processing.app.Sketch.upload(Sketch.java:1460)
at processing.app.Sketch.exportApplet(Sketch.java:1427)
at processing.app.Sketch.exportApplet(Sketch.java:1382)
at processing.app.Editor$45.run(Editor.java:2165)
at java.lang.Thread.run(Thread.java:613)
processing.app.debug.RunnerException: Serial port '/dev/tty.usbserial-A6008jGi' not
```

found. Did you select the right one from the Tools > Serial Port menu?
at processing.app.debug.Uploader.flushSerialBuffer(Uploader.java:91)
at
processing.app.debug.ArvrdudeUploader.uploadViaBootloader(ArvrdudeUploader.java:78)
at
processing.app.debug.ArvrdudeUploader.uploadUsingPreferences(ArvrdudeUploader.java:53)
at processing.app.Sketch.upload(Sketch.java:1460)
at processing.app.Sketch.exportApplet(Sketch.java:1427)
at processing.app.Sketch.exportApplet(Sketch.java:1382)
at processing.app.Editor\$45.run(Editor.java:2165)
at java.lang.Thread.run(Thread.java:613)

[Reply](#)



Rui Santos says

November 30, 2015 at 6:47 pm

But it works if you upload your code and then attach the shield?

[Reply](#)

Trackbacks

[WIZnet 11月新闻报](#) says:

December 4, 2013 at 7:14 am

[...] 更多信息 >> [...]

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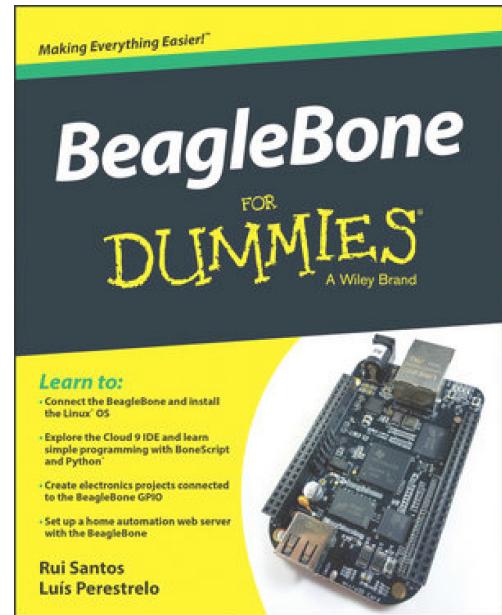
About Blog's Author



Rui is the Author of
BeagleBone For
Dummies and
founder of Random

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