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Reading Switch State using an Arduino Web Server

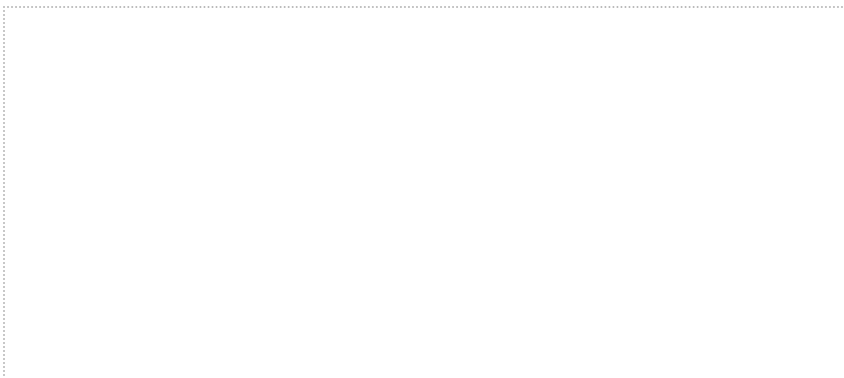
Created on: 2 February 2013

Part 6 of the Arduino Ethernet Shield Web Server Tutorial

A push button switch interfaced to the Arduino is read to see whether it is on or off. The state of the switch is displayed on a web page. The Arduino with Ethernet shield is set up as a web server and accessed from a web

browser.

This video shows the web server operating and the state of the switch being displayed in the web browser.



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Arduino Ethernet Shield Tutorial

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Part 1: Ethernet Shield Tutorial Introduction and Hardware

Part 2: Basic Arduino Web Server

Part 3: HTML Web Page Structure

Switch State on Web Page Using Arduino...



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The browser refreshes the web page every second, so it can take up to a second for the new state of the switch to be displayed after pressing or releasing the button.

Arduino Web Server Hardware for Reading the Switch

The switch is interfaced to the Arduino / Ethernet shield as done in the circuit diagram from this article: [Project 4: Switch a LED on when Switch is Closed \(Button\)](#) except that **the switch is connected to pin 3 and not pin 2 of the Arduino** (the article actually uses the circuit diagram from one of the Arduino examples on the Arduino website).

Switch Web Server Sketch

The source code for the switch status Arduino web server is shown below.

Part 4:
Arduino SD
Card Web
Server

Part 5:
Arduino Web
Server LED
Control

Part 6:
Reading a
Switch

Part 7:
Reading a
Switch using
AJAX

Part 8:
Reading a
Switch
Automatically
using AJAX

Part 9:
Reading an
Analog Input
and Switches
using AJAX

Part 10:
Linking Web
Pages

Part 11: Web
Page Images

Part 12: CSS
Introduction



```

/*-----
Program:      eth_websrv_switch

Description:  Arduino web server shows the state of the switch
              on a web page. Does not use the SD card.

Hardware:     Arduino Uno and official Arduino Ethernet
              shield. Should work with other Arduino
              compatible Ethernet shields.

Software:     Developed using Arduino 1.0.3 software.
              Should be compatible with Arduino 1.0.

References:   - WebServer example by David A. Mellis
  
```

Part 13:
Reading a
Switch with
SD Card Web
Server and
Ajax

Part 14:
Reading
Inputs with
Ajax and XML

Part 15:
Analog Value
Displayed on
Gauge

Part 16: Inputs
and Outputs
(I/O)

Part 17:
Accessing
HTML Tags
with CSS and
JavaScript

Part 18: CSS
for
Positioning,
Sizing and
Spacing

**Summary and
Conclusion**

Modification to Sketch

Again, this sketch is a modified version of the **eth_websrv_page** sketch from the [basic Arduino web server](#).

Reading the Switch

The web page is created as usual, except that the function **GetSwitchState()** is called when the text for the switch is to be displayed.

In the **GetSwitchState()** function, the state of the switch is read. The text that is sent to the browser will be a HTML paragraph that contains either "ON" or "OFF", depending of the state of the switch.

Refreshing the Browser

A line of HTML in the <head> part of the HTML page sent to the browser is used to tell the browser to refresh the page every second. This allows the new state of the switch to be displayed if it has changed.

The line of code in the sketch that does this is shown here:

```

client.println("<meta http-equiv=\"refresh\" content=
  
```

This will be sent to the browser as the following HTML code:

```
<meta http-equiv="refresh" content="1">
```

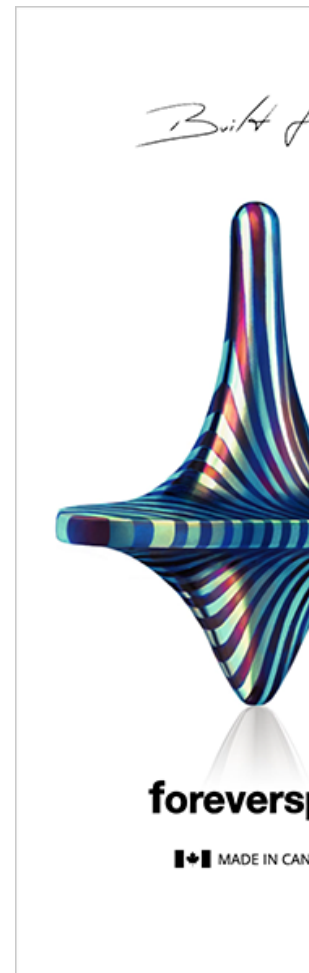
Remember that you can right-click on the web page in your browser and then select **View Page Source** on the pop-up menu (or similar menu item depending on the browser you are using).

The "1" in the code tells the browser to refresh every 1 second.

This is the same method used to read the analog inputs of the Arduino in the **WebServer** example that is built into the Arduino software (found in the Arduino IDE under **File** → **Examples** → **Ethernet** → **WebServer**).

Improving this Example

The annoying thing about this method of refreshing the page is that the browser flashes every second as it updates the page. In the next part of this tutorial we will use a method called AJAX that will refresh only part of the web page that displays the switch state.



[← Go back to Part 5](#)

[Go to Part 7 →](#)

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anuja · 32 weeks ago

0

Hello, I am trying the code given by you and not able to get the output as an HTML page. I ma using ENC28J60 ethernet sheild with arduino nano. I do get the on seral monitor below output but i don't get anything on browser

IP Address: 192.168.0.101

-> New Connection

GET / HTTP/1.1

Host: 192.168.0.101

Connection: keep-alive

Cache-Control: max-age=0

Upgrade-Insecure-Requests: 1
 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
 AppleWebKit/537.36 (KHTML, like Gecko) Chrome/84.0.4147.105
 Safari/537.36
 Accept:
 text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,image
 exchange;v=b3;q=0.9
 Accept-Encoding: gzip, deflate
 Accept-Language: en-US,en;q=0.9

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here.*

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