Arduino SD Card Ajax Web Server

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Part 13 of the Arduino Ethernet Shield Web Server Tutorial

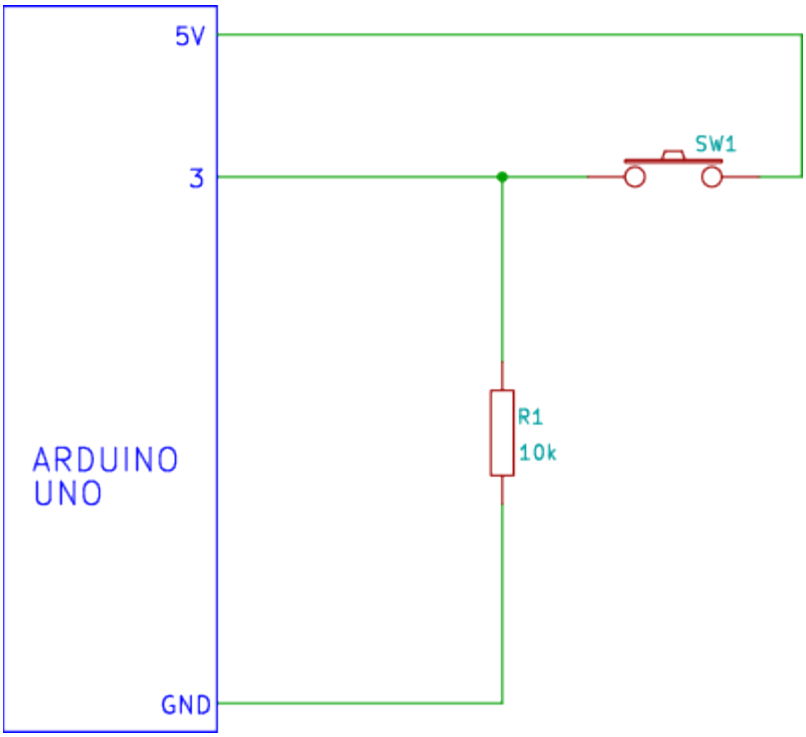
An Arduino Ethernet shield web server that hosts a web page on the SD card. The web page displays the status of a switch and uses Ajax to update the status of the switch.

In previous parts of this tutorial, an SD card hosted web page was never used to display the status of Arduino inputs – all the web pages displaying I/O were part of the Arduino sketch.

This part of the tutorial now displays an Arduino input on an SD card hosted web page.

Circuit Diagram

A switch is interfaced to pin 3 of the Arduino for this example.



Code and Web Page

The code (Arduino sketch) and web page for this part of the tutorial are basically a combination of part 4 (Arduino SD card web server) and part 8 (reading switch status automatically using Ajax) of this tutorial.

No video has been included with this tutorial as the output will look the same as part 8 of this tutorial, but with the title and heading text changed.

Web Page

The web page consisting of HTML and JavaScript (to implement Ajax) is shown below:

```
<!DOCTYPE html>
<html>
    <head>
        <title>Arduino SD Card Web Page using Ajax</title>
        <script>
        function GetSwitchState()
        {
            nocache = "&nocache=" + Math.random() * 1000000;
            var request = new XMLHttpRequest();
            request.onreadystatechange = function()
            {
                if (this.readyState == 4) {
                    if (this.status == 200) {
                        if (this.responseText != null) {
                            document.getElementById("switch_txt").innerHTML = this.responseText;
                        }
                    }
                }
            }
            request.open("GET", "ajax_switch" + nocache, true);
            request.send(null);
            setTimeout('GetSwitchState()', 1000);
        }
    </script>
    </head>
    <body onload="GetSwitchState()">
        <h1>Arduino Switch State from SD Card Web Page using Ajax</h1>
        <p id="switch_txt">Switch state: Not requested...</p>
    </body>
</html>
```

Web Page Hosted on SD Card (index.htm)

This web page is saved to the micro SD card as **index.htm** – it is basically the same HTML/JavaScript that was produced by the Arduino sketch in part 8 (reading switch status automatically using Ajax), but with the title and heading text changed.

Copy and paste the web page from the listing below.

```
<!DOCTYPE html>
<html>
    <head>
        <title>Arduino SD Card Web Page using Ajax</
        <script>
        function GetSwitchState()
        {
            nocache = "&nocache=" + Math.random() *
            var request = new XMLHttpRequest();
            request.onreadystatechange = function()
            {
                if (this.readyState == 4) {
                    if (this.status == 200) {
                        if (this.responseText != nul
                            document.getElementById
                        }
                    }
```

Arduino Sketch

The Arduino sketch for this part of the tutorial is shown below. It requires the above HTML/JavaScript to be available on the micro SD card in the index.htm file.

```
/*-----------------------------------------------
  Program:      eth_websrv_SD_Ajax

  Description:  Arduino web server that serves up a
                that displays the status of a switch
                to pin 3 of the Arduino.
                The web page is stored on the SD car
                The web page contains JavaScript coc
                Ajax to request the state of the swi
                second.

  Hardware:     Arduino Uno and official Arduino Eth
                shield. Should work with other Ardui
                compatible Ethernet shields.
                2Gb micro SD card formatted FAT16
                Push button switch interfaced to pir
                Arduino

  Software:     Developed using Arduino 1.0.5 softwa
                Should be compatible with Arduino 1.
```

How the Sketch Works

This sketch works in the same way as the sketch from part 8 (reading switch status automatically using Ajax), except that instead of sending the web page line by line from the Arduino sketch code, the web page is sent from the index.htm file on the SD card.

Because we are using Ajax, the web page (when loaded in the web browser) sends the same request for the switch status as the sketch in part 8 of this tutorial. If we were not using Ajax, then the Arduino would need to read the index.htm file from the SD card and modify the part that shows the switch status, then send back the whole web page with the modified part – depending on if the switch is on or off.

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