Arduino Ethernet Shield Web Server Tutorial

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Part 1 of the Arduino Ethernet Shield Web Server Tutorial

This multi-part tutorial shows how to set up an Arduino with Ethernet shield as a web server. The web servers in this tutorial are used to serve up web pages that can be accessed from a web browser running on any computer connected to the same network as the Arduino.

Some of the Arduino web server pages allow access to the Arduino hardware – this allows hardware to be controlled (e.g. switching on and off an LED from the web page) and monitored (e.g. reading the state of a switch and displaying it on a web page).

The tutorial teaches what is required to build a web server including all the technology such as HTTP, HTML, CSS, JavaScript, AJAX, etc. It starts with the very basics of hosting a simple web page on the Arduino and advances step-by-step from there.

Hardware Required

Hardware Components

The hardware required for following this series of tutorials is:

- An Arduino board such as the Arduino Uno
- An Arduino Ethernet shield
- An Ethernet cable, wired straight for connecting to your network router
- A USB cable for powering and programming the Arduino
- A micro SD card, e.g. a 2Gb card that is SPI compatible – only required for some of the servers
- A computer with a micro SD card slot or a card reader with a micro SD card slot – only required for SD card servers

There will be additional components required as listed in each tutorial, such as LEDs, resistors, switches, etc. and a breadboard and wire kit for building the circuits.

Hardware Setup

Before starting:

1. Plug the Ethernet shield into the Arduino, connect it to the network and test it.
2. Test the SD card in the Ethernet shield.

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Go to Part 2 →

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