

## Week 8 Lab – HTTP Headers

### Aims:

- Inspect and understand HTTP headers.

## Task 1 - HTTP headers

In this task we will examine the HTTP headers of the request-response interactions as an HTML page loads along with its styles and images to a Browser.

### 1. View the Web Developer | Network

The built-in Web Developer tools enables us to view the HTML/CSS/JavaScript source files as they are loaded into Firefox through the network.

We will examine the page we created in Lab 4, Task 1.

Load the page into Firefox from mercury.

Under the Tools menu, click select Web Developer | Network. Reload the webpage. Notice the sequence of HTTP requests that the browser has sent to the server.

The screenshot shows the Firefox Web Developer Tools interface. The top pane displays the HTML content of a page titled "HTML 5 Basic Content Elements with CSS Layout". The content includes sections for "HTML5 Basic Elements", "Headings and Paragraphs", "Special Characters", "Lists", and "Tables". The "Tables" section contains a table titled "Table of Monthly Savings" with columns for Month, Salary, Interest, and Total. The bottom pane shows the Network tab, which lists several requests: lab04task1.html (5.07 KB), lab03.css (838 B), layout.css (1.00 KB), dl.css (315 B), mycat\_small.jpg (5.45 KB), and fade.jpg (322 B). A callout box points to the "Toggle request details" icon in the Network tab.

### 2. Viewing Headers

Refresh / reload the Web page. Toggle the request details icon. This should now show the Headers and other tabs. Select the Header tab, and this should now show Request and Response headers similar to below.

Headers	Cookies	Params	Response	Timings	Security	Preview
Request URL: https://mercury.swin.edu.au/cos10011/kmcinnes/lab04/lab04task1.html						
Request method: GET						
Remote address: 136.186.123.54:443						
Status code: 304 Not Modified						
Version: HTTP/1.1						
Filter headers						
Response headers (0.266 KB)						
Connection: "Keep-Alive"						
Date: "Mon, 10 Apr 2017 01:35:41 GMT"						
Etag: "144c-54aaf4af73340"						
Keep-Alive: "timeout=5, max=100"						
Server: "Apache/2.4.6 (Red Hat Enterprise Linux) OpenSSL/1.0.1e-fips mod_fcgid/2.3.9 PHP/5.4.16 mod_wsgi/3.4 Python/2.7.5"						
Request headers (0.835 KB)						
Host: "mercury.swin.edu.au"						
User-Agent: "Mozilla/5.0 (Windows NT 6.1; WOW64; rv:52.0) Gecko/20100101 Firefox/52.0"						
Accept: "text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8"						
Accept-Language: "en-US,en;q=0.5"						
Accept-Encoding: "gzip, deflate, br"						

### 3. Request Header

1. What version of HTTP is listed in the header? .....
2. What HTTP request method is being used? .....
3. What type of user-agent sent the request?  
.....
4. What MIME types will this user-agent **accept**?  
.....
5. What do you think the entry "Connection: keep alive" means?  
.....

### 4. Response Headers

1. What HTTP response status code was first returned? .....
2. What does this code mean? .....
3. What HTTP response status code is now returned? .....
4. What does this code mean? .....
5. What type of server generated the response? .....
6. What protocol describes the Remote address? (e.g. 136.xxx.xxx.xxx)  
.....
7. What does the port number mean? (e.g. :143)  
.....

### 5. Try other websites

Load <http://swin.edu.au> and follow the 'trail' as the page is redirected to [www.swin.edu.au](http://www.swin.edu.au) and then [www.swinburne.edu.au](http://www.swinburne.edu.au)

Type in a misspelled URL. What code is returned by the response header? .....

### 6. What else can you do with the Network tabs?

Open the 'Timings' tab and you can see more details about the time for the DNS resolution, connecting, sending, waiting, and receiving. Also see the 'Cookies' tab. Toggling the details icon, you can similarly, view the headers, timings, and so on, for other resources that make up this web page.