This is CS50

Section, Week 7
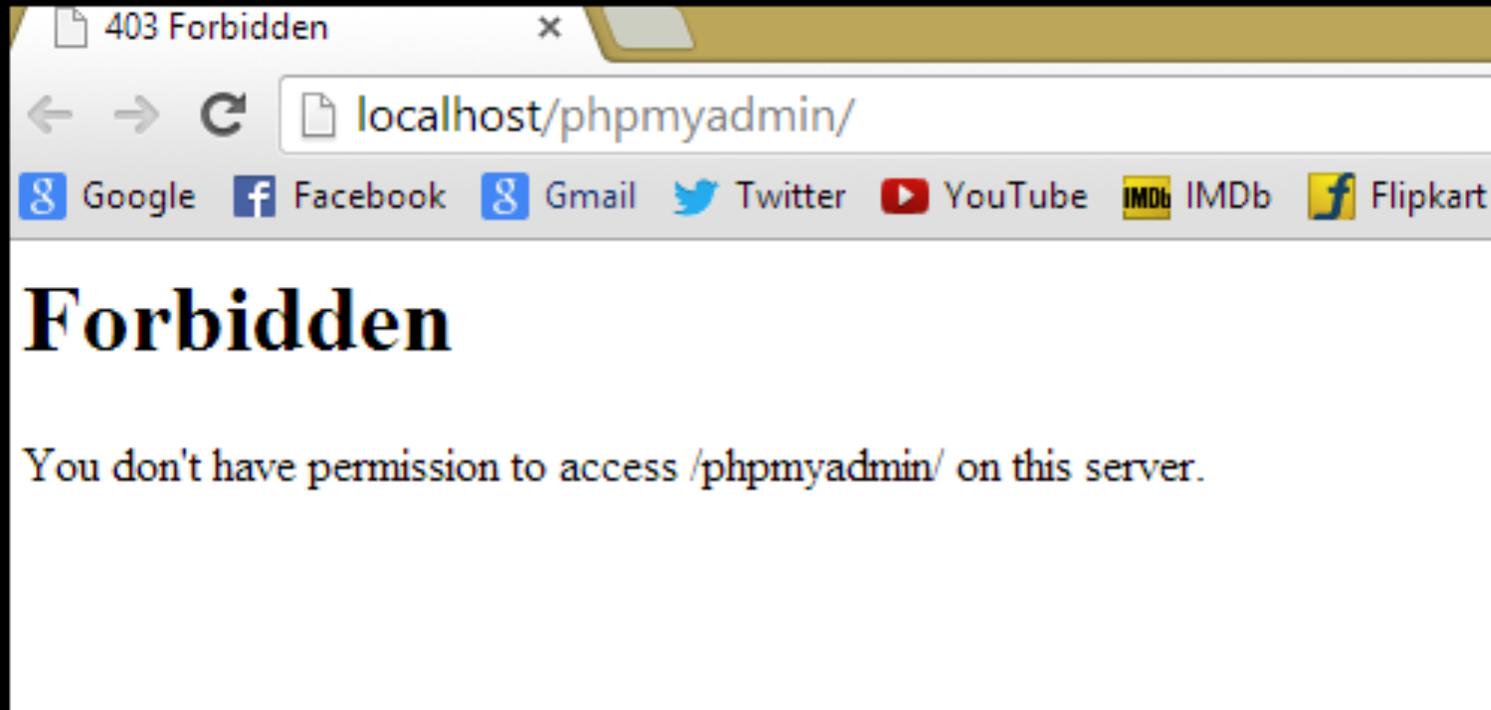
TA: Andi Peng

Agenda

- Announcements
- chmod
- TCP/IP/HTTP
- HTML/CSS
- pset6

Announcements

- Welcome back from break!
  - Come get quizzes at the end of section
- Final Project Pre-Proposal
  - Due Mon 11/2 at noon
- pset6
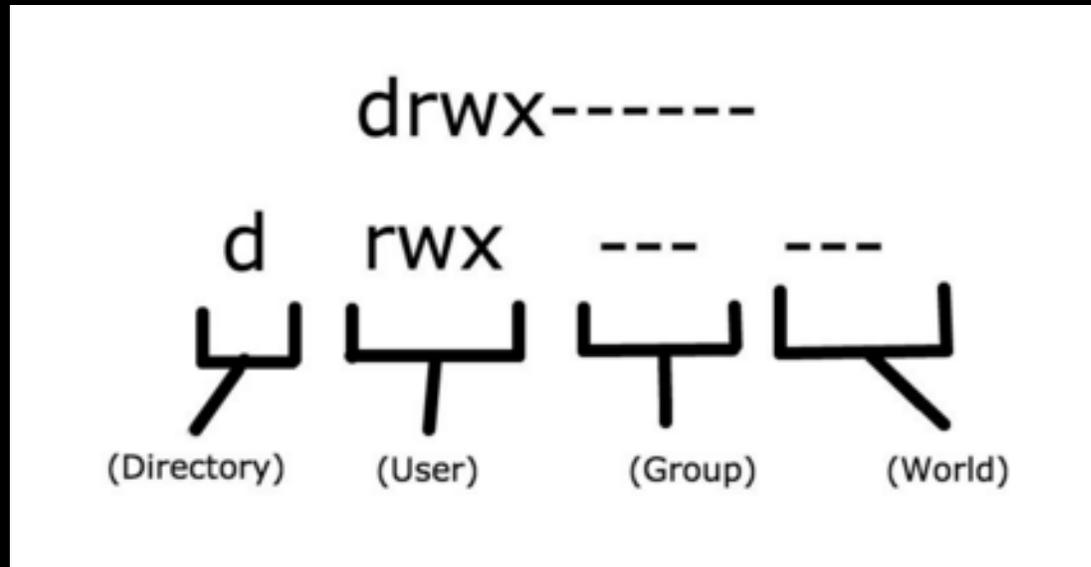 - Due Friday at noon
  - Office Hours Monday – Thursday

chmod

- Unix system call to change file permissions
- Can be called on directories, files, images, etc.

chmod

- `ls -l` : see file permissions
- In addition to the file names, can see permissions of
  - files, their owner name, group name, date last modified, etc.
- Treat each triad (excluding the first character) as 3 bits

chmod

Focus on is the part to the far left, where for directory `CS50` we see `drwx------`

- `r` : readable : 4

- `w` : writable: 2

- `x` : executable: 1

- `chmod group+permissions`

  - + adds permissions, - takes away permissions

    - Groups (a for all, u for user, g for group, o for others)

chmod

`rwx------` can also be represented as 700

`chmod 111` would give which permissions?

chmod

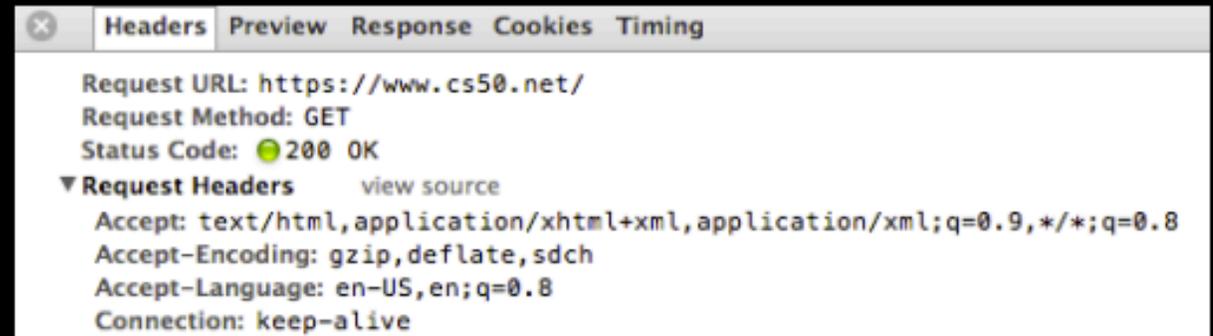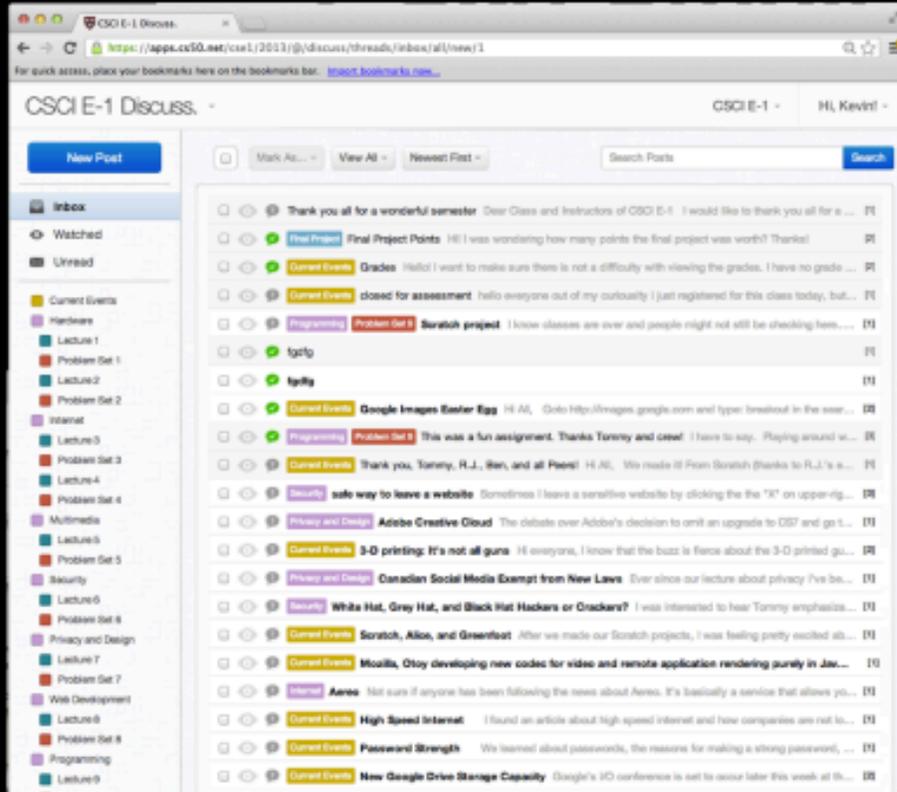`rwx------` can also be represented as 700

`chmod 111` would give which permissions?
Executable to everyone!

Can also do `chmod a+x`

TCP/IP

- Transmission Control Protocol/Internet Protocol
- A means of ensuring data delivery
- Specifies a framework where lost data packets can be resent & received.

HTTP

HyperText Transfer Protocol

HTTP

- Whenever any page or file is accessed on your site
  - server returns an HTTP status code in response to the request
  - provides information about the status

An Example Request

```
GET / HTTP/1.1
User-Agent: curl/7.24.0
Host: www.apple.com
<name>: <value>
```

Key:

```
MethodRequest URI
Protocol Version
field name
field value
```

An Example Response

```
HTTP/1.1 200 OK
Server: Apache
Content-Type: text/html; charset=UTF-8
Server: Apache
Content-Length: 16286
Connection: keep-alive
```

Key:

Status Code
Protocol Version
field name
field value

An Example Response

```
HTTP/1.1 200 OK
Server: Apache
Content-Type: text/html; charset=UTF-8
Server: Apache
Content-Length: 16286
Connection: keep-alive
```

Key:

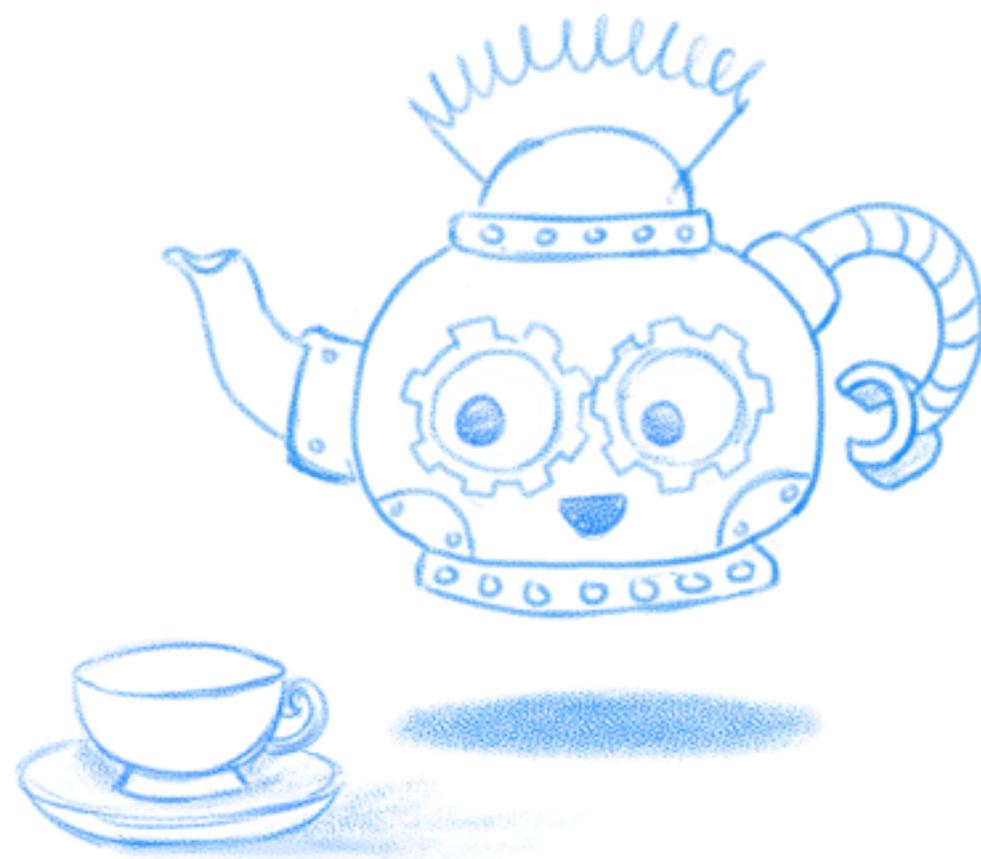Status Code
Protocol Version
field name
field value

Google

418. I'm a teapot.

The requested entity body is short and stout.

Tip me over and pour me out.

HTML

HyperText Markup Language

• Standard language used to create all web pages

• Everything you ever need to learn you can probably Google

Best Practices:

• Make sure to always close tags!

• Check that your page validates by using W3 Validator

• Separate markup (HTML) from style (CSS)

HTML

To run CS50's server, enter the following command:

```
apache50 start .
```

HTML

Try creating your own webpage!

To run CS50's server, enter the following command:

```
apache50 start .
```

Pset6: Web Server

- `lookup()`
- `parse()`
- `load()`
- `indexes()`

Pset6: Web Server

Some useful functions (hint hint)

`string.h`
- `strtok`
- `strchr`
- `strrchr`
- `strstr`
- `strcasecmp`
- `strcpy`

Pset6: Web Server

- `char* strtok (char* str, const char* delim)`
- Breaks string `str` into a series of tokens separated by `delim`
- Returns a pointer to the last token found in the string, or NULL if no tokens left to retrieve

Pset6: Web Server

- `char* strchr (const char *str, char c)`
- Searches for the FIRST occurrence of the character c in the string `str`
- Returns a pointer to the first occurrence, or NULL if the character is not found

Pset6: Web Server

Write a function

```
bool sentence(char* s)
```

That returns true if true if s is a sentence, false otherwise

Pset6: Web Server

- `char* strstr (const char* haystack, const char* needle)`
- Searches for the first occurrence of the string `needle` in the string `haystack`
- Returns a pointer to the first occurrence, or NULL if the string is not found

Pset6: Web Server

- `char* strrchr (const char* str, char c)`
- Searches for the LAST occurrence of the character *c* in the string `str`
- Returns a pointer to the last occurrence, or NULL if the character is not found

Pset6: Web Server

Write a function

```
void extension(const char* filename)
```

That takes in the name of a file and prints out the extension of that filename

Ex) `pset6.zip -> .zip`