Intro to Programming For the Web

Session 4

PHP
The Internet
Client/Server
1st App

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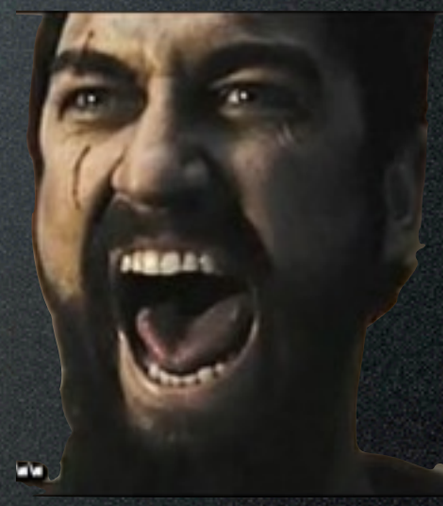
1st App



overview

- guestbook markup
- guestbook code (1st pass)
- the internet + HTTP protocol

simple guestbook

- markup
- app: how will this work?

simple guestbook

- what is a guestbook?
- what would the structure of the page look like?
- what kind of markup might you use?
- what should the behavior of the app be when the user submits a new greeting?
- and how about when there is an error?

guestbook decomposed

- was the guestbook signed?
  - get the entry
  - append it to our datastore
- list all guestbook entries

simple guestbook

simple guestbook

- how to implement?

simple guestbook

- how to implement?
- a way to capture input

simple guestbook

- how to implement?
- a way to capture input
- a way to list multiple entries

simple guestbook

- how to implement?
  - a way to capture input
  - a way to list multiple entries
  - a way to store entries on the server

simple guestbook

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form and $_POST

simple guestbook

- how to implement?
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form and $_POST

foreach and arrays

simple guestbook

- how to implement?
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form and $_POST

foreach and arrays

??????????

simple guestbook

- “data store”
- minimal: file-based store
- (mySQL would be more appropriate)

simple guestbook

- php built-in functions
- file_get_contents
- file_put_contents

simple guestbook

- data format?
- first pass:

  print the markup straight to a file

- (this is a terrible way to do this)

simple guestbook

- decompose problem:
  - get data from form
  - load data file
  - append new entry to file
  - write file back to disk
  - display entries

simple guestbook

- gotchas
  - file permissions on data store file
  - check error log output if something goes wrong

the internet

the most efficient kitten image distribution system the world has ever known

the internet

the internet

client

http://ipw.patternleaf.com/omg-cute-kitten.jpg

the internet

client

173.236.167.147

http://ipw.patternleaf.com/omg-cute-kitten.jpg

the internet

client

http://ipw.patternleaf.com/omg-cute-kitten.jpg

173.236.167.147

http server

the internet

client

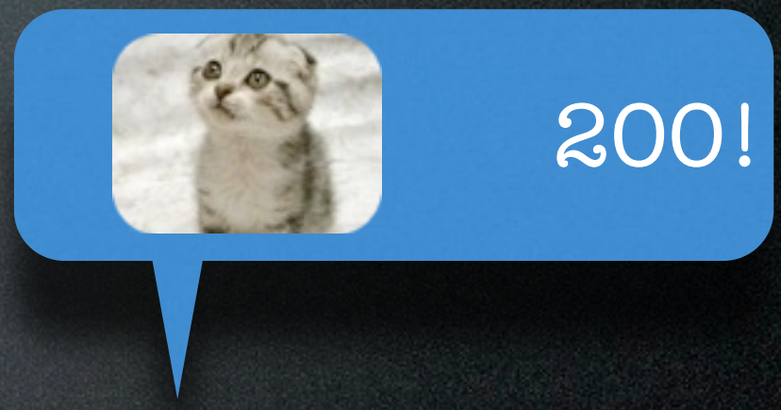
http://ipw.patternleaf.com/omg-cute-kitten.jpg

173.236.167.147

http server

/home/eric/ipw.patternleaf.com/omg-cute-kitten.jpg

the internet



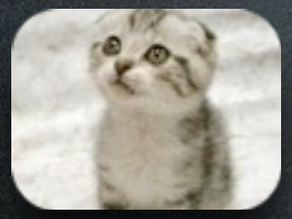
client

http://ipw.patternleaf.com/omg-cute-kitten.jpg

http server

/home/eric/ipw.patternleaf.com/omg-cute-kitten.jpg

the internet



client

http://ipw.patternleaf.com/omg-cute-kitten.jpg

the internet

client

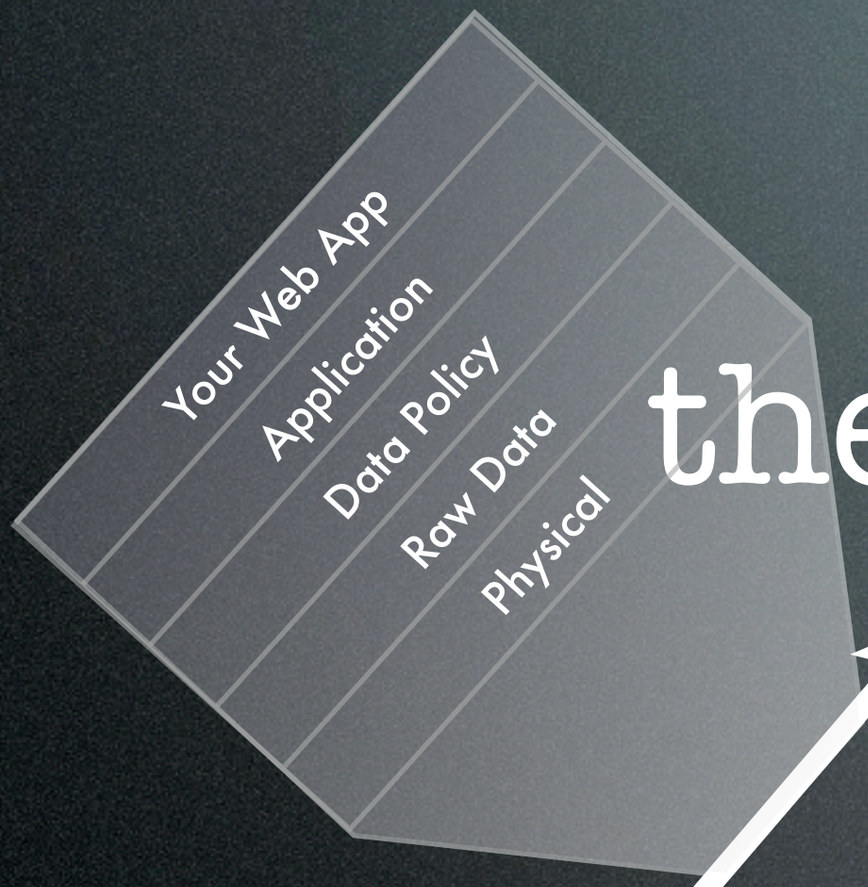
http://ipw.patternleaf.com/omg-cute-kitten.jpg

the internet

the internet

client

server



the internet

client

server

the internet

protocol stack

Your Web App	html, javascript, css, jpg, png …	styling, markup, scripts, images, media
Application	http, ftp, ssh, smtp	web, file transfer, secure shell, email
Data Policy	tcp, udp	is data guaranteed to be complete and in order?
Raw Data	ip	move packets from one place to another; no assurance of integrity
Physical	ethernet, wifi …	device-to-device hardware

client

server

the internet

protocol stack

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client

server

client/server

Protocol	Servers	Clients
HTTP	apache	Safari, Chrome, Firefox, lynx, cURL
	IIS	
	lighttpd	
FTP	Pure-FTPd	Flow, Interarchy, Safari, Chrome, Finder ...
	FileZilla	
	CrushFTP	
SSH	freeSSHD	ssh, scp, svn ...
	CopSSH	

client/server

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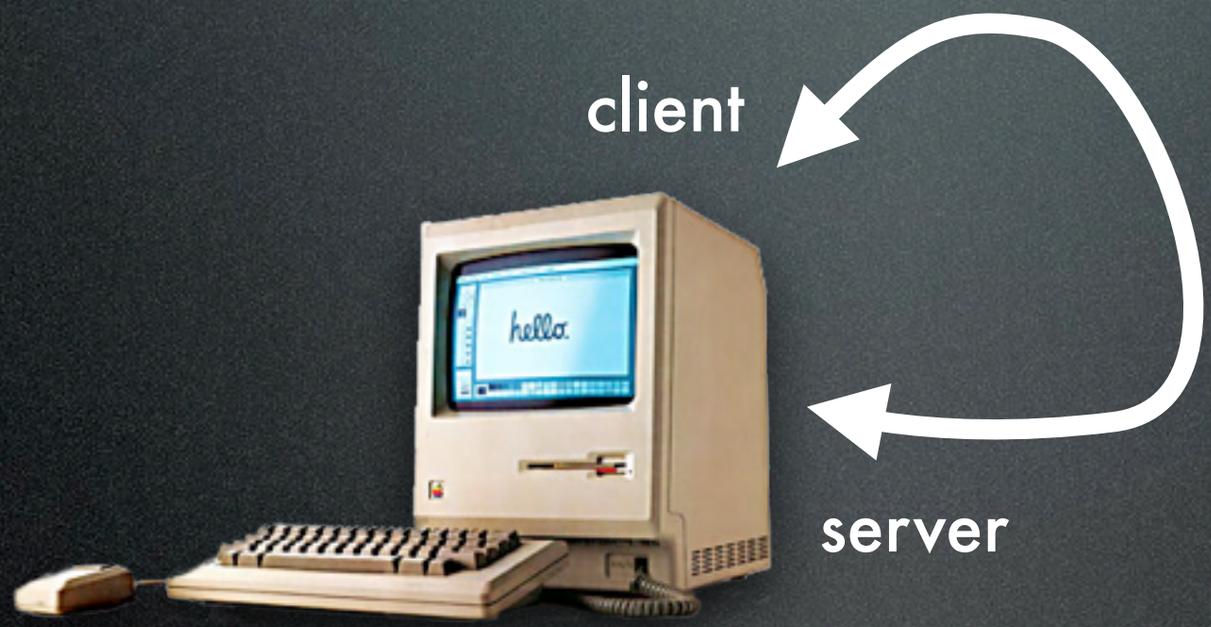
it's all software

client/server



client/server

?

http://intro-web-programming.dev/index.html

Firefox

apache + php

/Users/eric/Development/intro-web-programming.dev/index.html

client/server

Firefox

http://php-course.dev/index.html

```
GET /index.html HTTP/1.1
Host: php-course.dev
```

HTTP request

apache

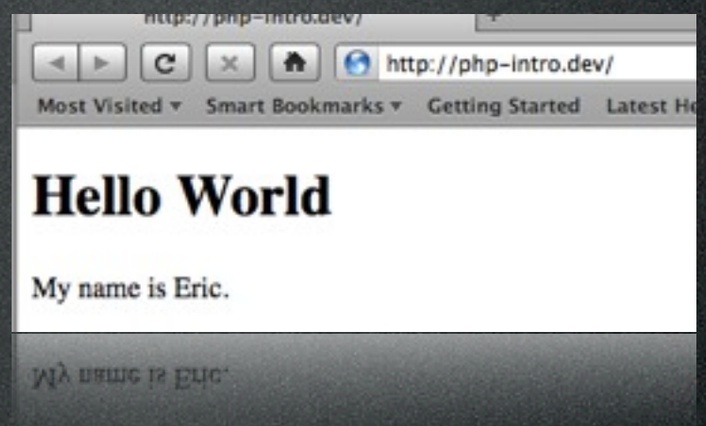
/Users/eric/Sites/php-course.dev/index.html

```
HTTP/1.1 200 OK

<!DOCTYPE html>
<html>
      <head>
      </head>
      <body>
            <h1>Hello World</h1>
            <p>
                  My name is Eric.
            </p>
      </body>
</html>
```

HTTP response

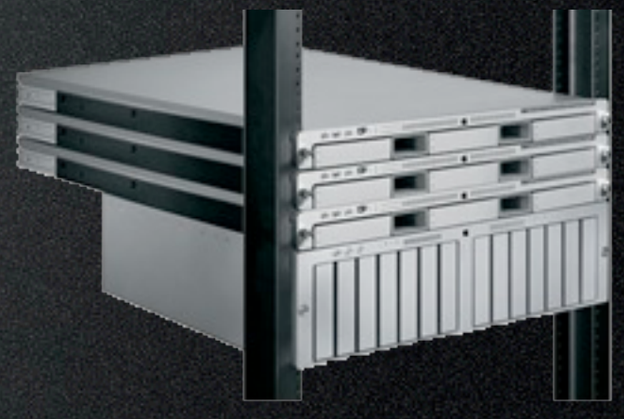
Firefox



http

```
GET / HTTP/1.1
Host: images.google.com

q=cute-cats
```



http

method

resource requested (path)

protocol version

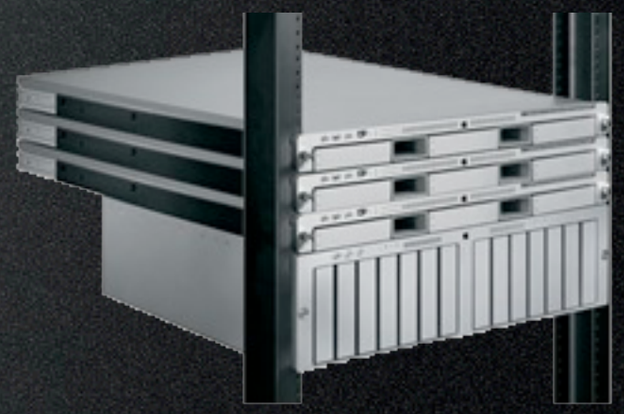
```
GET / HTTP/1.1
Host: images.google.com
```

headers, if any
one per line

```
q=cute-cats
```

a blank line

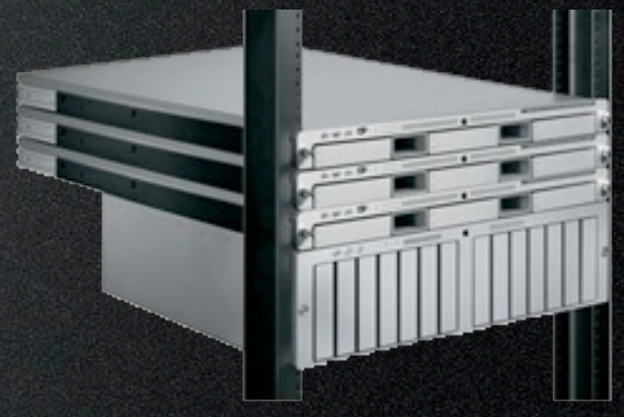
request body



http

```
HTTP/1.1 200 OK
Date: Wed, 06 Feb 2013 22:52:20 GMT

<!doctype html><html ...
```



http

status

protocol version

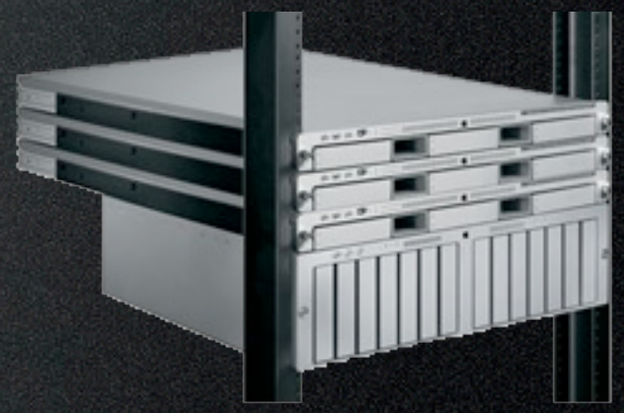
headers, if any
one per line

a blank line

response body

```
HTTP/1.1 200 OK
Date: Wed, 06 Feb 2013 22:52:20 GMT

<!doctype html><html ...
```



http

- netcat tests
- google
- guestbook

implication for security

- web sites need not be accessed via browser
- browser-side security (eg, javascript-based) can't be relied upon
- server code must be secure on its own

php + the internet

php

```
<html>
    <head></head>
    <body>
    <h1>Madness??</h1>
<strong>This is
```

regular HTML

```
<?php echo ‘PHP’; ?>
```

magical PHP

```
!!!</strong>
    </body>
</html>
```

regular HTML

index.php

PHP parser

php

after parsing:

```
<html>
    <head></head>
    <body>
    <h1>Madness??</h1>

<strong>
This is PHP!!!
</strong>

    </body>
</html>
```

regular HTML,
created on demand

apache

php

Firefox sees this

```
<html>
    <head></head>
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    <h1>Madness??</h1>

<strong>
This is PHP!!!
</strong>

    </body>
</html>
```

http response

Firefox

http://php-course.dev/scratch/index.php

HTTP request

```
GET /index.php HTTP/1.1
Host: php-course.dev
```

apache

/Users/eric/Sites/php-course.dev/scratch/index.php

```
HTTP/1.1 200 OK

<!DOCTYPE html>
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      </head>
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                  This is <?php echo 'PHP';?>!!!
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php module

...This is <?php echo 'PHP';?>!!!

...This is PHP!!!

apache

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HTTP response

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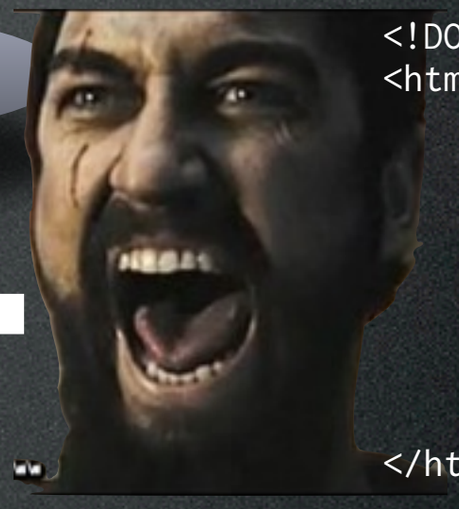

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