

6.009: Fundamentals of Programming

Week 5 Lecture:

Interlude: Python Web Programming (kind of)

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6.009: Quiz Logistics

Quiz 1 is this Wednesday.

Rooms:

- Last (Family) Name starts with A-D: 10-250
- Last (Family) Name starts with E-P: 50-340
- Last (Family) Name starts with Q-S: 34-501
- Last (Family) Name starts with T-Z: 34-101

No office hours Wednesday night (9 March)

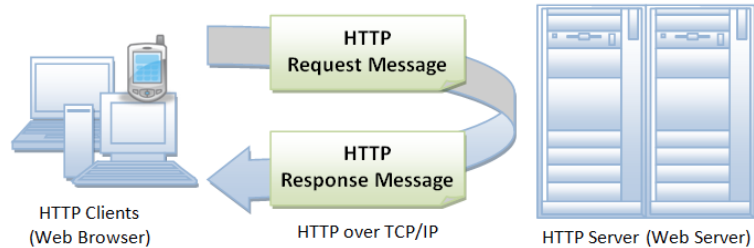
No office hours Thursday morning (10 March)

What Is a Web Application?

What does a web application do?

- **Receive request from user**
(show me a page, submit this answer, etc)
- **Find relevant information**
(page content, user info, history of submissions, etc)
- **Log new information if necessary**, and
- **Send response**
(typically, HTML to be displayed in the browser)

The World Wide Web



Sockets

Sockets allow communication across processes (on the same machine or different machines).

Typically, a *server* will wait for a *client* to make a connection on a designated *port* (a virtual endpoint for a connection).

Once the client connects, the socket allows for communication between the server and the client.

Client and server can each send/receive data via the socket.

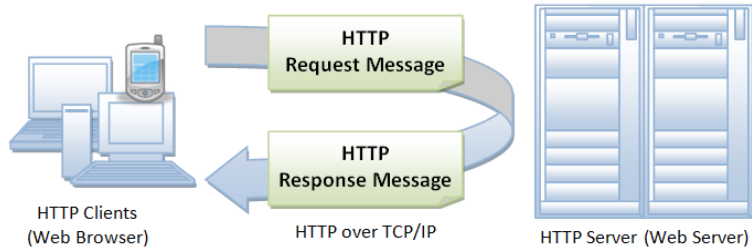
Example: yelling echo server.

The Rest of Today

Designing a:

- Web Server
- Web Application Framework
- Web Application

The World Wide Web



HTTP Request and Response

```
GET /doc/test.html HTTP/1.1
```

```
Host: www.test101.com
```

```
Accept: image/gif, image/jpeg, */*
```

```
Accept-Language: en-us
```

```
Accept-Encoding: gzip, deflate
```

```
User-Agent: Mozilla/4.0
```

```
Content-Length: 35
```

```
bookId=12345&author=Tan+Ah+Teck
```

Request Line

Request Headers

Request
Message
Header

A blank line separates header & body

Request Message Body

```
HTTP/1.1 200 OK
```

```
Date: Sun, 08 Feb xxxx 01:11:12 GMT
```

```
Server: Apache/1.3.29 (Win32)
```

```
Last-Modified: Sat, 07 Feb xxxx
```

```
ETag: "0-23-4024c3a5"
```

```
Accept-Ranges: bytes
```

```
Content-Length: 35
```

```
Connection: close
```

```
Content-Type: text/html
```

```
<h1>My Home page</h1>
```

Status Line

Response Headers

Response
Message
Header

A blank line separates header & body

Response Message Body