

# **Web Applications using Express**

Client-Server Model, HTTP,  
Node.js, Express

show lesson schedule

**so far:**

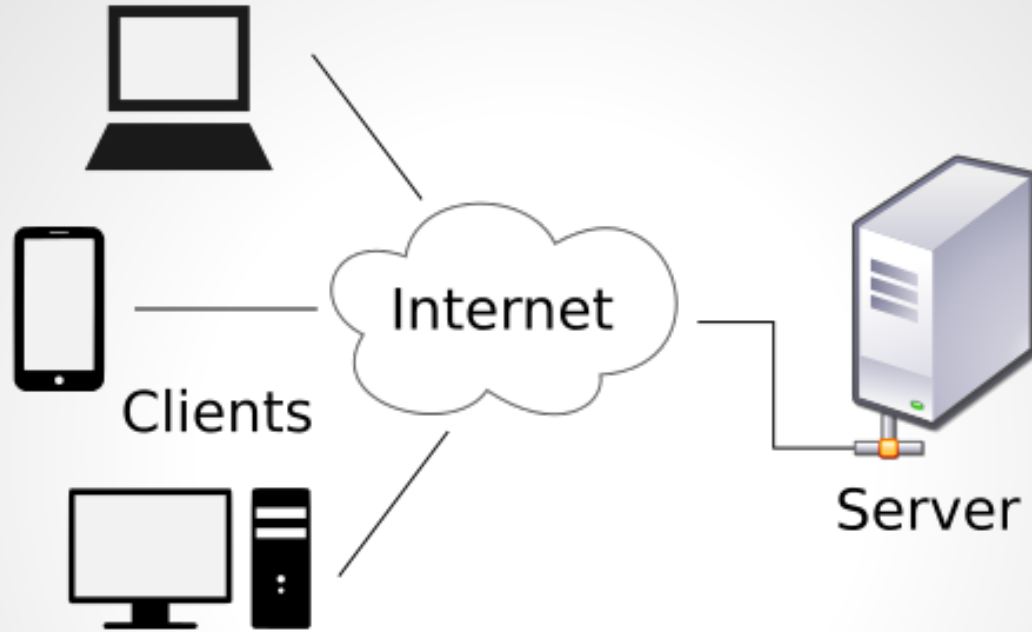
browser/client - local, transient  
(ex. client-side form validation)

**now:**

server - distributed, persistent  
(ex. go to google.com)

# Why Servers?

- code modularity
- protect/share information
- scale



**USER** - Browser - Server - Database - **DATA**

# Clients and Server communicate

Client and server only communicate with messages (HTTP requests/responses)

- stateless
- no shared memory

# How do we identify clients/servers?

**URI** (Uniform Resource Indicator) - basically, the URL

- **URL** (uniform resource locator): location of resource, "web address"
- versus **URN** (uniform resource name): name of resource

# HTTP (Hypertext Transfer Protocol)

- Request: request a method on a URI
  - headers, body
- Response: respond with a status
  - headers, body



# HTTP Request Methods

- GET – fetch indicated resource
- POST – insert/add/create a new indicated resource
- PUT – update existing indicated resource
- DELETE – remove indicated resource

# HTTP Response Status Codes

- 200 OK - successful request
- 403 Forbidden - server refuses to fulfill request
- 404 Not Found - don't know where resource is
- 303 See Other - it has moved, try this place
- 500 Internal Server Error - server unexpectedly failed

# cURL

Curl is a command line tool for transferring data, including using HTTP

```
curl www.google.com
```

```
curl www.google.com --verbose
```

# Google Chrome Extension: Postman

Install Postman Chrome Extension

GET [www.google.com](http://www.google.com)

# Web Server with Node.js

<http://nodejs.org/>

- Node.js is an environment/platform
- Node.js can be used as a web HTTP server

# Express: Web Framework on Node.js

<http://expressjs.com/>

- Express is a web framework built on top of Node.js
- Web frameworks provide support (code structure, features/methods) for web applications

# Resources

Node

<http://www.nodebeginner.org/>

Express

<http://code.tutsplus.com/tutorials/introduction-to-express--net-33367>