



E-Commerce

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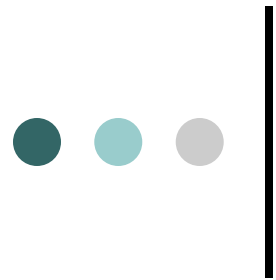
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In last week's episode we...

- Outlined plans for class
- Defined Web page
- Saw how they were built
- Discussed browsers and servers
- Looked at HTML



Today, we will cover...

- A little more HTML
 - Links
- Domains and URLs
- IP Addresses
 - Group exercise
- Server-side coding
 - What kinds and how it works



More HTML

Links – how they work.



Links

- The core of the World Wide Web
- Uses an **anchor** tag
 - `<a />`
- Example
 - `W3C Schools`
 - `More about Bob`
 - ``
 - `Email Me`

So, what's legal?



Domain Names & URLs

Domains, Sub-Domains, and IP
addresses



URLs

- Uniform Resource Locator
- Looks like this...
 - `www.montet.org/wtc/`
- String of characters
- Just used for humans
- Computers need numbers



URL dissected

| | |
|--------------------------------|---------------------------|
| protocol | http://, https://, ftp:// |
| sub-domain or host name | www, video, images |
| domain (second level) | Montet, Google, CNN, MSN |
| top-level domain | .com, .edu, .net |
| third-level (sometimes) | bbc. co .uk |



URL dissected

- 127 possible domain levels
 - `http://this.domain.has.a.lot.of.levels.com`
 - Rarely more than four are used



Anatomy of a URL

<http://www.montet.org/wtc/index.cfm?name=Bob>



Exercise

- In groups
 - Find and dissect a URL
 - Be sure we can find it
 - Don't pick a super long one



IP Addresses

URLs for Machines



IP Addresses & Domains

- Domains resolve into IP addresses
 - Emails use domains too
- Browsers can't resolve domains
 - They need IP addresses



IP Addresses

207.230.217.77

- Four octets
 - Each between 0 - 255
- That is 2^8 numbers in each octet
- 2^{32} possible addresses
- Some IP Addresses are reserved
 - There is no place like 127.0.0.1



Resolving Domains

- Name servers
- Some control entire top-level domains
 - Network Solutions (www.netsol.com)
 - Controls .com domain
 - Maintains Whois database



Resolving Domains

- Name servers use a **distributed database**
 - Most often used database in the world
 - On multiple servers
- Nearly any computer can be a name server



Resolving Domains

- ISPs set default name server
 - `IPCONFIG.EXE` in command window
 - For Macs, go to
Apple Menu > Control Panels >
TCP/IP Control Panel
- Name servers temporarily save (cache) IPs they know
- Root Name Servers
 - Many Root Name Servers
 - Between them all, they know all other name servers



How it works (deep breath)

- Your ISP's name server checks its cache
- Asks root name server
 - If it can't find it, it asks other RNS
 - Continues until domain controller is found (e.g. Network Solutions for .com)
- Name server asks top level domain for domain's IP address
- Top level domain gives it the IP address of the server hosting full domain
- The browser uses the IP to get the site



Let's try it!

1. www.footlocker.com
2. www.cnn.com
3. www.westerntc.edu
4. www.monster.com
5. www.yahoo.com
6. www.google.com
7. www.oneacross.com
8. www.thinkgeek.com