

CSE 264

Web Systems Programming

J. Femister

What is a web application?

- ✓ What is a web site?
- ✓ What is the difference between the two?


Web Site

- ✓ Built on a foundation of HTML
- ✓ Client uses HTTP to communicate with a web server.

Web Sites vs. Applications

- ✓ Difference not always clear cut, generally...
- ✓ Web Site
 - Generally static
 - Delivers information to the user
- ✓ Web Application
 - Dynamic
 - Lots of user interaction
 - Purpose is to provide some functionality to user

Clearly a web site



LEHIGH UNIVERSITY

INSIDE LEHIGH

HOMEABOUT LEHIGHACADEMICSMORE...RESEARCHADMISSIONSSTUDENT LIFESPORTSALUMNIGIVING

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COMPUTING & LIBRARIES

Computing

Libraries

LTS Helpdesk

Banner/LEWIS

Manage Email Account

LTS ALERTS

All Systems Go

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DIVERSITY & INCLUSION

Diversity & Inclusion:

Commitment & Engagement

RESOURCES

Registrar

Summer Sessions

Academic Departments

Course Materials

NEWS FOR FACULTY, STAFF, AND STUDENTS

Friday, August 3, 2012

[more in News Center >](#)

[Researchers seek to optimize fuel production from algae](#)

Their goal is to use wastewater, and CO₂ from power plants, to grow an oil-producing microalgae called *Nannochloropsis*.

[M.B.A. students gain international insights](#)

A partnership with the University of Nottingham provides intensive international opportunities for Lehigh M.B.A. students.

[Centennial School's George testifies before Congress](#)


Michael George shared how the school has successfully limited the seclusion and restraint of students in the classroom.

[China partnership provides valuable experience to Lehigh students](#)


Four Lehigh seniors had the opportunity to teach English to Chinese students before graduation.

LEHIGH ON LOCATION


[GLOBAL INTERNSHIPS 2012](#)

Lehigh undergraduates explored their interests and prepared for their careers through internships and co-ops that took place around the world. [more geoblogs >](#)

[QUEER & ALLY SERVICE TRIP TO ICELAND](#)

Students active in LGBTQIA organizations traded in the typical spring break beaches for a weeklong service and learning experience in Iceland. [more geoblogs >](#)

[more stories >](#)



CLUSTER INITIATIVE

FACULTY CLUSTERS CROSS DISCIPLINES TO IMPACT IMPORTANT NEW AREAS OF KNOWLEDGE. [More >](#)

STRATEGIC PLAN > | IMPLEMENTATION >

EVENTS CALENDAR

Alumni: Long Island NY Class of 2016 Incoming Student Sendoff (08/05/12)

Alumni: Missouri Class of 2016 Incoming Student Sendoff (08/05/12)

Alumni: Northern New Jersey Class of 2016 Incoming Student Sendoff (08/06/12)

Alumni: Lehigh Club of Boston Annual Red Sox Outing (08/06/12)


Alumni: NYNY/GOCO Class of 2016 Incoming Student Sendoff (08/08/12)

Alumni: CENJ Class of 2016 Incoming Student Sendoffs (08/08/12)

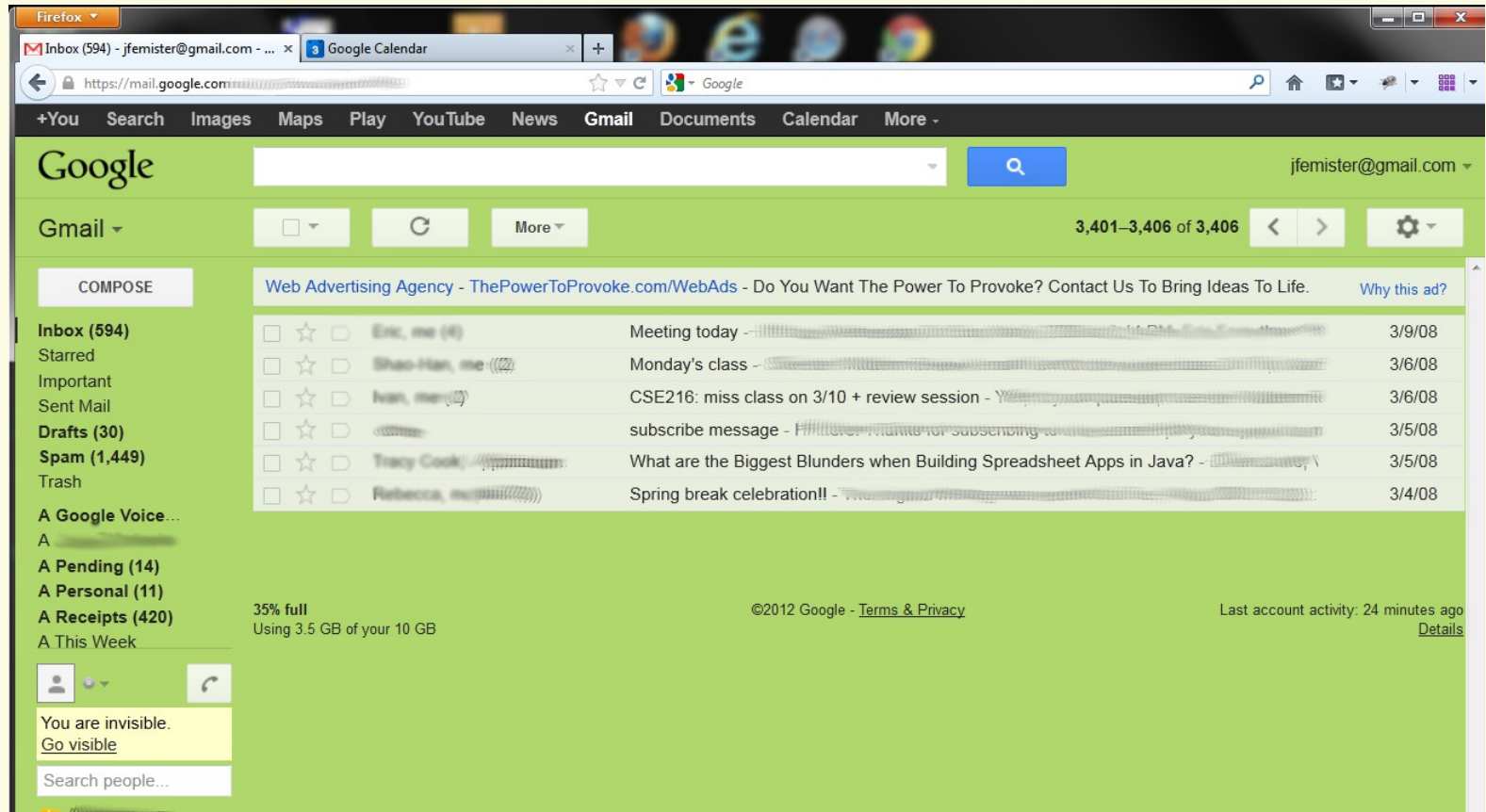
University Business Services: Bethlehem Farmers' Market (08/09/12)

Alumni: Southeastern PA Class of 2016 Incoming Student Sendoff (08/09/12)

CONNECT



Clearly a web application



In between...

The screenshot displays the Amazon.com homepage. On the left, a 'Shop by Department' sidebar lists various categories including Unlimited Instant Videos, MP3s & Cloud Player, Amazon Cloud Drive, Kindle, Appstore for Android, Digital Games & Software, Audible Audiobooks, Books, Movies, Music & Games, Electronics & Computers, Home, Garden & Tools, Grocery, Health & Beauty, Toys, Kids & Baby, Clothing, Shoes & Jewelry, Sports & Outdoors, Automotive & Industrial, and a Full Store Directory link. The main header includes the Amazon logo, navigation links for 'Your Amazon.com', 'Today's Deals', 'Gift Cards', and 'Help', and a search bar. Below the header, a row of links promotes 'Instant Video', 'MP3 Store', 'Cloud Player', 'Kindle', 'Cloud Drive', 'Appstore for Android', 'Digital Games & Software', and 'Audible Audiobooks'. A large banner titled 'The Kindle Family' features three devices: the Kindle at \$79, the Kindle Touch at \$99, and the Kindle Fire at \$199. Below this, another row of links includes 'Helping Kids Love Books', 'Clothing Trends', and 'Amazon Prime'. The bottom section is a promotional banner for 'THE AMAZON CLOTHING STORE' titled 'Fall's New Shape', featuring hourglass silhouettes from designers like McGinn, Vivienne Westwood, and Tracy Reese, with links to 'View Looks' and 'Shop All Clothing'. At the very bottom, a link reads 'What Other Customers Are Looking At Right Now'.

amazon

Your Amazon.com | Today's Deals | Gift Cards | Help

Shop by Department

Search All

Unlimited Instant Videos
MP3s & Cloud Player
20 million songs, play anywhere
Amazon Cloud Drive
5 GB of free storage
Kindle
Appstore for Android
Get Fairy Mahjong 3D free today
Digital Games & Software
Audible Audiobooks

Books
Movies, Music & Games
Electronics & Computers
Home, Garden & Tools
Grocery, Health & Beauty
Toys, Kids & Baby
Clothing, Shoes & Jewelry
Sports & Outdoors
Automotive & Industrial

Full Store Directory

Instant Video | MP3 Store | Cloud Player | **Kindle** | Cloud Drive | Appstore for Android | Digital Games & Software | Audible Audiobooks

The Kindle Family

Kindle \$79 | Kindle Touch \$99 | Kindle Fire \$199

Helping Kids Love Books | **Clothing Trends** | Amazon Prime

THE AMAZON CLOTHING STORE

Fall's New Shape

Hourglass silhouettes from McGinn, Vivienne Westwood, Tracy Reese, and more.

> View Looks
> Shop All Clothing

What Other Customers Are Looking At Right Now



Topics

Networking and Protocols

- ✓ Looking under the hood
 - Overview of the Internet Protocol Suite - TCP/IP
 - UR(L | N | I)
 - DNS
 - HTTP

Design

- ✓ Aesthetics
 - Visual attractiveness
- ✓ Functionality
 - Features
 - Usability

Graphic Design - Aesthetics

✓ Basic Graphic Design Principles:

- Contrast
- Alignment
- Repetition
- Proximity

✓ Color Theory

✓ Typography

Client Side Technologies

- ✓ HTML (5)
- ✓ CSS (3)
- ✓ JavaScript ++
- ✓ DOM
- ✓ AJAX
 - XML and JSON
- ✓ JQuery
- ✓ Other Client Side Frameworks

Implementation Languages

There is an unacknowledged war that goes on every day in the world of programming. It is a war between the humans and the computer scientists. It is a war between those who want simple, sloppy, flexible, human ways to write code and those who want clean, crisp, clear, correct ways to write code. It is the war between PHP and C++/Java.

—Adam Bosworth, Google

(Quoted in Programming PHP, 2nd Edition by Kevin Tatroe; Rasmus Lerdorf; Peter MacIntyre, O'Reilly Media, Inc.)

Server Side Technologies

- ✓ HTTP Server
- ✓ PHP
- ✓ Java Servlets and JSP
- ✓ **NodeJS**
- ✓ MySQL Database
- ✓ Ajax

Other Topics

- ✓ Web Services
- ✓ Mobile Clients

Tools

- ✓ Chrome + Web Developer Tools
- ✓ Firefox + Firebug + Web Developer Toolbar
- ✓ NetBeans 8.2
- ✓ GIMP
- ✓ Inkscape
- ✓ XAMPP = Apache + MySQL w/ PHP

Syllabus Highlights

- ✓ Collaboration
- ✓ Other Conduct

Collaboration

- ✓ For all homework assignments and project work:
 - You are welcome to discuss the work and assist each other.
 - You MAY NOT...
 - Show your code/work/answers to any of your classmates.
 - Look at or copy anyone else's work either classmate's or material found on the Internet.
 - Work together on an assignment

Other Conduct Issues

- Feel free to bring your laptop to class.
- You are responsible for all material presented in class whether present or not.
- No electronic audio or visual recording devices may be used in class.