ERTH 401 / GEOP 501 Computer Tools

– Lecture 12: Websites –

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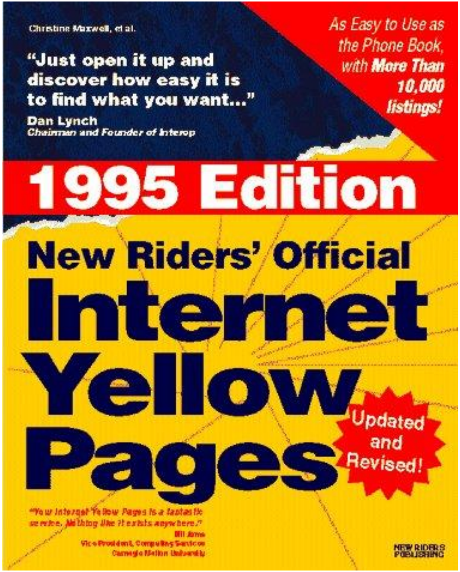
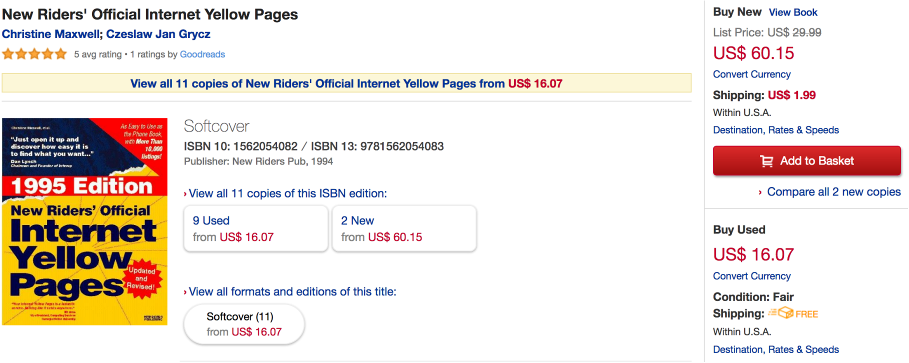
November 13, 2017


Christine Maxwell, et al.
"Just open it up and discover how easy it is to find what you want..."
Dan Lynch
Chairman and Founder of Interop
As Easy to Use as the Phone Book, with More Than 10,000 listings!
1995 Edition
New Riders' Official
Internet
Yellow
Pages
Updated and Revised!
"Your Internet Yellow Pages is a fantastic service. Nothing like it exists anywhere."
Bill James
Vice President, Computing Services
Carnegie Mellon University
NEW RIDERS PUBLISHING

. . . get ’em while they’re fresh



As Easy to Use as the Phone Book, with More Than 10,000 listings!
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1995 Edition
New Riders' Official Internet Yellow Pages
Updated and Revised!

New Riders' Official Internet Yellow Pages

Christine Maxwell; Czeslaw Jan Grycz

★★★★★ 5 avg rating • 1 ratings by Goodreads

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Softcover

ISBN 10: 1562054082 / ISBN 13: 9781562054083

Publisher: New Riders Pub, 1994

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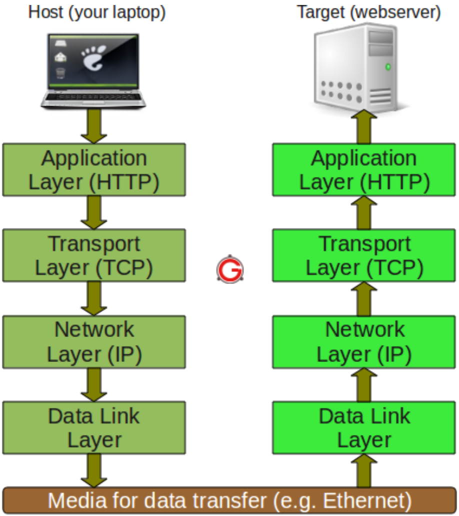
(latest edition I found was for 2010.)

The Internet (pop culture)

Search Google Images for "Internet":

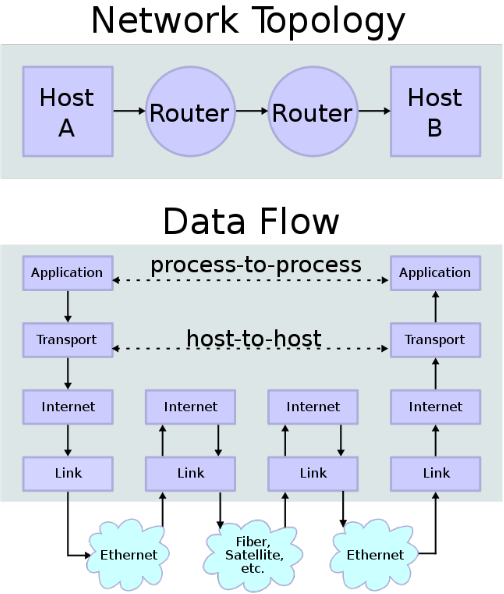
Google Images

Actually (1 client-server pair)



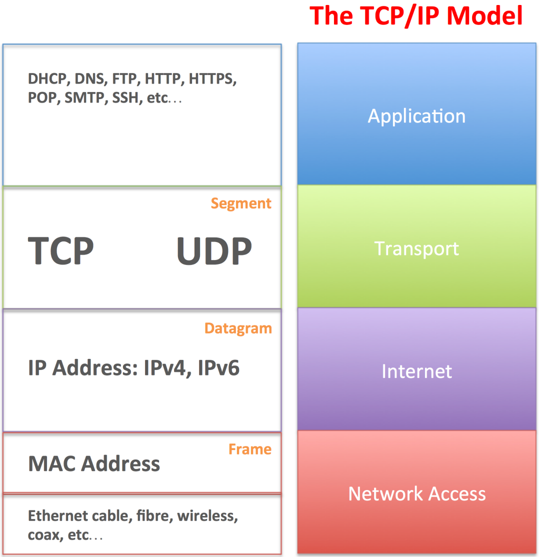
Geek Stuff.com

The Internet (really)



wikipedia

Protocol Stack



The TCP/IP Model

DHCP, DNS, FTP, HTTP, HTTPS, POP, SMTP, SSH, etc…

Application

Segment

TCP UDP

Transport

Datagram

IP Address: IPv4, IPv6

Internet

Frame

MAC Address

Ethernet cable, fibre, wireless, coax, etc…

Network Access

This image is part of the Bioinformatics Web Development tutorial at http://www.cellbiol.com/bioinformatics_web_development/ © cellbiol.com, all rights reserved

cellbiol.com

Introduction

> *"We are here to help you learn how to learn."*
>
> *Prof. Dr. Klaus Bothe,*
>
> *Humboldt-Universität Berlin*

Introduction

> *"We are here to make you appreciate free knowledge after presenting the concepts."*
>
> *me, here*

http://www.google.com/#q=html+tutorial

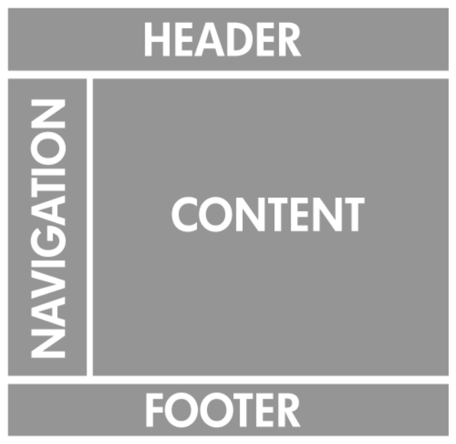
http://www.google.com/#q=css+tutorial

http://www.w3schools.com

Before anything . . .

Think about:

- the content
- a structure
- a layout
- maintenance



stolen off the Internet

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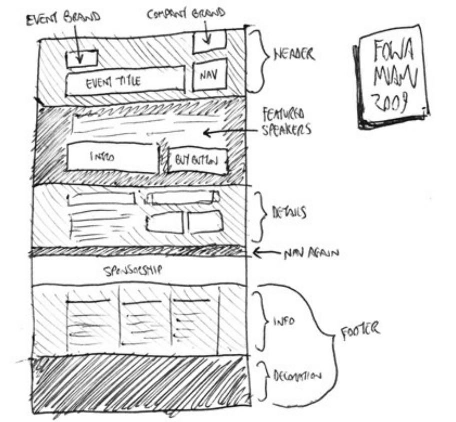
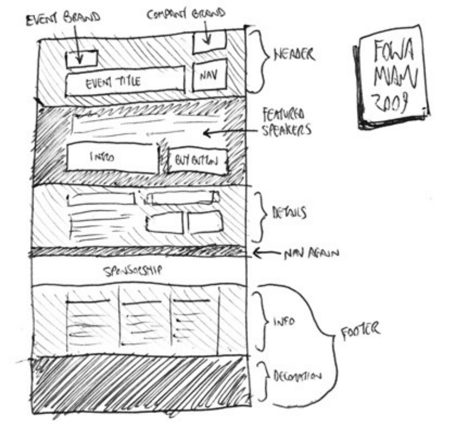


stolen off the Internet

Before anything . . .

Think about:

- the content
- a structure
- a layout
- maintenance
- nothing's more lame than an outdated website!



stolen off the Internet

Basics . . .

$$\begin{aligned}\text{website} &= \text{content} + \text{structure} + \text{layout}\\ &= \text{content} + \textbf{\textsf{HTML}} + \textbf{\textsf{CSS}}\end{aligned}$$

Basics . . .

$$\begin{aligned} \text{website} &= \text{content} + \text{structure} + \text{layout} \\ &= \text{content} + \textbf{HTML} + \textbf{CSS} \end{aligned}$$

- **HTML:** HyperText Markup Language
- **CSS:** Cascading Style Sheets

(X)HTML

- (e**X**tensible) **H**yper**T**ext **M**arkup **L**anguage: The innovate idea were links!

(X)HTML

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- *hyper- + text*; coined by Ted Nelson circa 1965 (source: wiktionary.org):

> *A hypertext system, then, is a memex-like device for creating and manipulating hypertexts, both for on-line browsing, and for reducing selected portions of such texts . . .*
>
> *S. Carmody, W. Gross, T. Nelson, D. Rice, and A. van Dam*
>
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- different versions exist – use XHTML (call it HTML anyway)!
- it's a markup language, **not** a programming language
- **tags** to describe web sites:
  `<TAGNAME attribute="value"> ...</TAGNAME>`

HTML tags

- Websites are interpreted/displayed by browsers (Firefox, Chrome, Opera, Safari, IE, lynx)
- Browser manufacturers have different ideas of standards / functionality – then, there's confusion.

simple (invalid) website

```
<html>
  <head>
    <title> Browser header</title>
  </head>

  <body>
    <h1>Dear Mama, I'm on the Internet!</h1>
    <a href="http://www.gps.alaska.edu/programming">Here's where I learned that stuff!</a>
  </body>
</html>
```

HTML tags

simple (invalid) website

```
<html>          <!— HTML tag opens document (this is a comment!) —>
  <head>        <!— start the header part ( here goes meta information) —>
    <title>Browser header</title>
                <!— e.g. the title of the website, nested in the header —>
  </head>       <!— close ALL tags! —>

  <body>        <!— This is where the good stuff is – the body of the page —>
    <h1>Dear Mama, I'm on the Internet!</h1> <!— a header (includes linebreak) —>
    <a href="http://www.gps.alaska.edu/programming">Here's where I learned that stuff!</a>
                <!— finally, a link! —>
  </body>
</html>         <!— end of the story —>
```

HTML tags

simple valid website

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
  "http://www.w3.org/TR/xhtml1/DTD/xhtml1-transitional.dtd">
   <!-- A DOCTYPE Declaration is mandatory, without one validation of a document is impossible --

<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" lang="en">
   <!-- Document Types based on XML need a mandatory xmlns="" on the root element. That's life -->

  <head>
    <meta http-equiv="Content-Type" content="text/html;charset=utf-8" />
   <!-- Declaring a character encoding helps ... use this line -->
    <title> Browser header</title>
  </head>

  <body>
    <h1>Dear Mama, I'm on the Internet!</h1>
    <a href="http://www.gps.alaska.edu/programming">Here's where I learned that stuff!</a>
  </body>
</html>
```

http://validator.w3.org is your friend!

CSS

- **C**ascading **S**tyle **S**heets
- define how to display HTML elements
- allow to keep data and their representation separate
- can be external (in separate file) – saves a lot of work
- different CSS for different media (screen, print, . . .)
- definition of CSS inside a HTML file contrary to original intention
- Syntax: `TAGNAME[#id] [TAGNAME] { attribute1: value; attribute2: value; }`

CSS

simple CSS example

```
body{
  color: black; background-color: white;
  font-size: 100.01%;
  font-family: Helvetica, Arial, sans-serif;
  margin: 0; padding: 1em 0;
  text-align: center;  /* centering in internet explorer */
}

a{
  color: black; background-color: white;
  font-size: 100.01%;
  font-family: Helvetica, Arial, sans-serif;
  margin: 0; padding: 0em 0;
  text-align: center;  /* centering in internet explorer */
}

h1 {
  font-size: 1.25em;
  color: #666666;
  margin: 0; padding: 0.3em;
  text-align: right;
  background: #fff url(./background.jpg) no-repeat -10% 20%;
  background-width:100%;
  border: 1px solid black;
}
```

CSS for different media

Different CSS for different occasions:

```
...
<link rel="stylesheet" href="/common/shared.css?254z2" type="text/css" media="screen" />
<link rel="stylesheet" href="/common/commonPrint.css?254z2" type="text/css" media="print" />
<link rel="stylesheet" href="/monobook/main.css?254z2" type="text/css" media="screen" />
<link rel="stylesheet" href="/chick/main.css?254z2" type="text/css" media="handheld" />
...
```

From `http://en.wikipedia.org`

It’s a **web**site, right?

Necessities for websites:

- the Internet
- a webserver (check with your advisor, or ITC to find a place for your website; department may have options)
- a copy tool: scp, sftp, rsync (Windows: winscp, FileZilla)
- work on a local mirror, though!

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my `webupdate` script

```
#!/bin/csh
# takes folder in ~/www that's to be updated on fairweather as
# argument

if ($#argv < 1) then
   echo "Usage: $0 <folder in ~/www>"
   exit
endif

rsync –avz ——exclude="*~" ——exclude="flatpress" ~/www/$1 ronni@fairweather.gps.alaska.edu:/export/
```

It's a **web**site, right?

Some useful things

- most webservers per default look for `index.html` as a start site
- use Gimp or other tools that have color palettes to get "webcolor"
- whitespaces in HTML document are ignored by browser – format neatly though!
- work on a local mirror, though!

Then there are Dynamic Websites . . .

Program reacting on input from website, is executed on server, creates HTML code and sends this back to client.