Beyond the Mouse – A Short Course on Programming
12. HTML/CSS or: *"I'm on the INTERNET!!!11!1"*

Ronni Grapenthin

Geophysical Institute, University of Alaska Fairbanks

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"Not Enough Work" (panel 3), http://xkcd.com/554

"We are here to help you learn how to learn."

Prof. Dr. Klaus Bothe,

Humboldt-Universität Berlin

"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
```
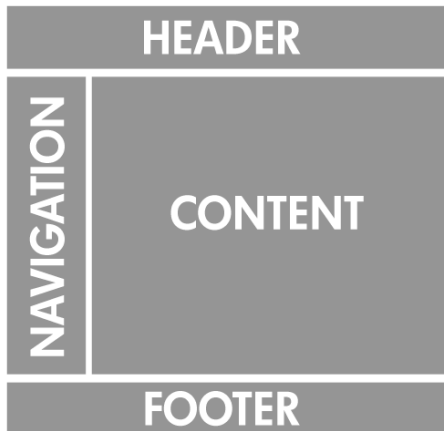
Before anything . . .

- think about the content
- think about a maintenance
- think about a structure
- think about a layout

stolen off the Internet:

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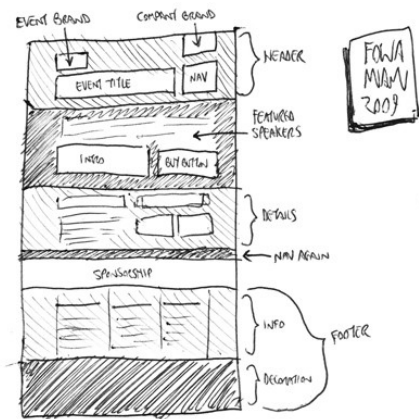- think about a structure
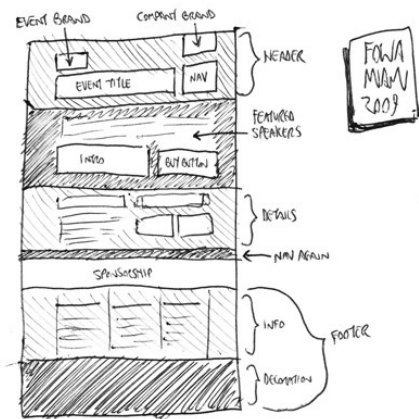- think about a layout

stolen off the Internet:

Before anything …

- think about the content
- think about a maintenance
- think about a structure
- think about a layout

stolen off the Internet:

- nothing's more lame than an outdated website!

(X)HTML

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

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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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  > "A Hypertext Editing System for the /360" (1969)

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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, Opera, Safari, IE, lynx)
- manufacturers implement certain things (differently) – 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!

- **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; }

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" />
...
```

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

Necessities for websites:

- the Internet
- a webserver (check with your advisor, or Paul Delys / Dave Covey) to get access to GI server
- a copy tool: scp, sftp, rsync (Windows: winscp, FileZilla)
- work on a local mirror, though!

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remember?

```
#!/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 --delete --exclude="*~" ~/www/$1 ronni@fairweather.gps.alaska.edu:/export/ftpweb/htdocs
```

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.