



PROGRAMMING FOR NON-PROGRAMMERS

Antonio Lulic
@antoniolulic

WIFI Network: GA-Guest
WIFI Password: schooldinner

Install these (if you don't have them already):
Google Chrome <http://www.google.co.uk/chrome>
Sublime Text 2 <http://www.sublimetext.com/2>

Download these:
Day One Slides <http://bit.ly/pfnpd1slides>

Day Two Slides <http://bit.ly/pfnpd2slides>
Day Two Files <http://bit.ly/pfnp2source>

Course Notes <http://www.github.com/theponzi/pfnp>
<http://devnotes.herokuapp.com/>

PROGRAMMING FOR NON-PROGRAMMERS

Antonio Lulic

WELCOME TO GENERAL ASSEMBLY

INSTRUCTOR INTRODUCTION

INTRODUCTION

ANTONIO LULIC FREELANCE WEB DEVELOPER

Clients include:

- Apple
- eBay
- Gumtree
- Last.fm
- Confused.com
- Tesco
- Coca-Cola
- BT
- Barclay's, Halifax, Lloyd's TSB and more...



LEARNING GOALS



Learn the technical vocabulary to communicate your ideas



Translate your ideas to code



Program basic websites in HTML/CSS

WHAT DO YOU WANT TO GET OUT OF THIS EXPERIENCE?

LEARN TO CODE. HTML/CSS. LEARN TECHNICAL VOCABULARY.
TRANSLATE IDEAS TO CODE. CREATE A WEBSITE. BE MORE
TECH SAVVY. BECOME A PROGRAMMER. BECOME A WEB
DEVELOPER. CREATE A WEB APPLICATION. KNOW THE
DIFFERENCE BETWEEN PROGRAMMING LANGUAGES, KNOW
WHAT LANGUAGE TO USE. KNOW THE DIFFERENCE BETWEEN
FRONT-END AND BACK-END. BECOME A CODE MONKEY

NEGATIVE LEARNING EXPERIENCES

LOTS OF DISTRACTIONS. NO ONE PARTICIPATED. IT WASN'T FUN. PEOPLE KEPT SHOWING UP LATE.
PEOPLE DIDN'T RESPECT OTHER PEOPLE'S CONTRIBUTIONS. I DIDN'T FEEL COMFORTABLE MAKING A
MISTAKE. PEOPLE INTERRUPTED EACH OTHER. NO ONE WAS LISTENING. NOT ENOUGH QUESTIONS.

LET'S DO THIS RIGHT.

HOW WE'LL DO THIS

- You're going to learn three new languages
 - Some of it will be very abstract
 - Some of it won't make much sense at first
 - You'll make some mistakes
 - Nearly all of them will be typos!
-
- All of this is okay

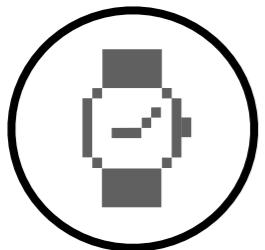
HOW WE'LL DO THIS

- **Do** interrupt me
- **Do** shout out
- **Do** ask me questions
- **Do** ask each other questions

STRUCTURE



PAIRS



**INTROS: 5 MIN
SHARING: 15 MIN**

OBJECTIVES

1. Take five minutes to get to know your neighbour by finding out:
 - a. What their name is
 - b. Where they're from
 - c. What they do
 - d. What they want to do
2. Once you've gotten to know each other, we'll take about 15 minutes to go around the class in order for you to introduce your partner.

DAY 1

- WHAT IS PROGRAMMING?
- HOW THE WEB WORKS
- HTML
- CSS
- START A BASIC SITE

DAY 2

- JQUERY
- JAVASCRIPT
- RUBY

WHAT IS PROGRAMMING?

A SET OF INSTRUCTIONS.
A RECIPE.
A STEP BY STEP PROCESS.



PROGRAMMING LANGUAGES (THERE ARE MANY)



RUBY RUBY ON RAILS PHP JAVA JAVASCRIPT HTML
CSS C++ C# OBJECTIVE C PYTHON C JQUERY NODEJS
BACKBONE ANGULAR EMBER R DJANGO SINATRA
PADRINO SCALA ERLANG HASKELL ASSEMBLY PERL
SQL FORTRAN PASCAL PROCESSING SCRATCH HEROKU
MONGO-DB MYSQL SMALLTALK LISP J2EE XSLT

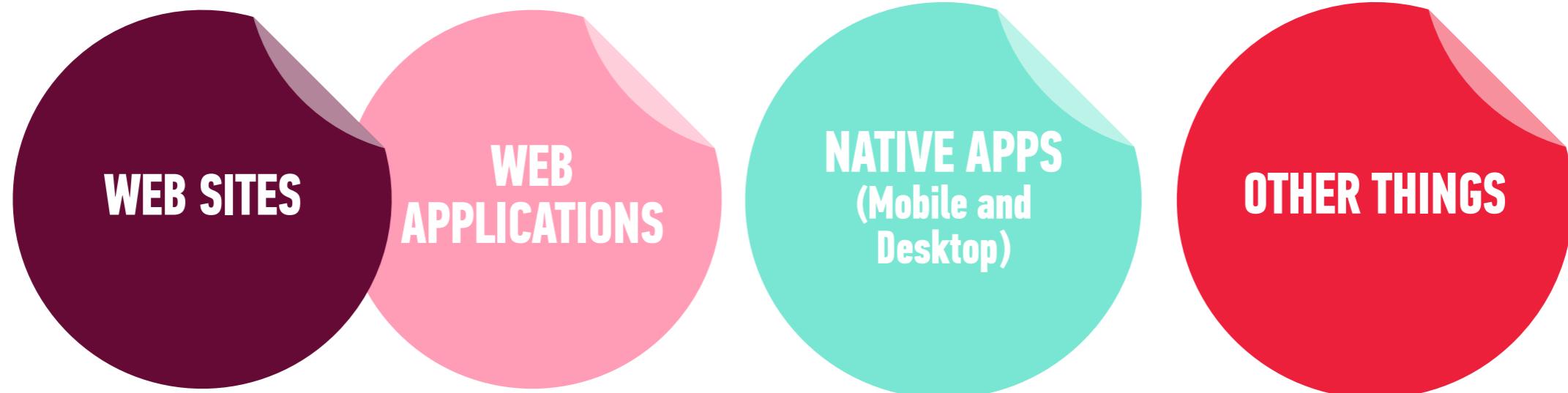
WHAT DO PROGRAMS ACTUALLY DO?

They automate processes to give us less work.

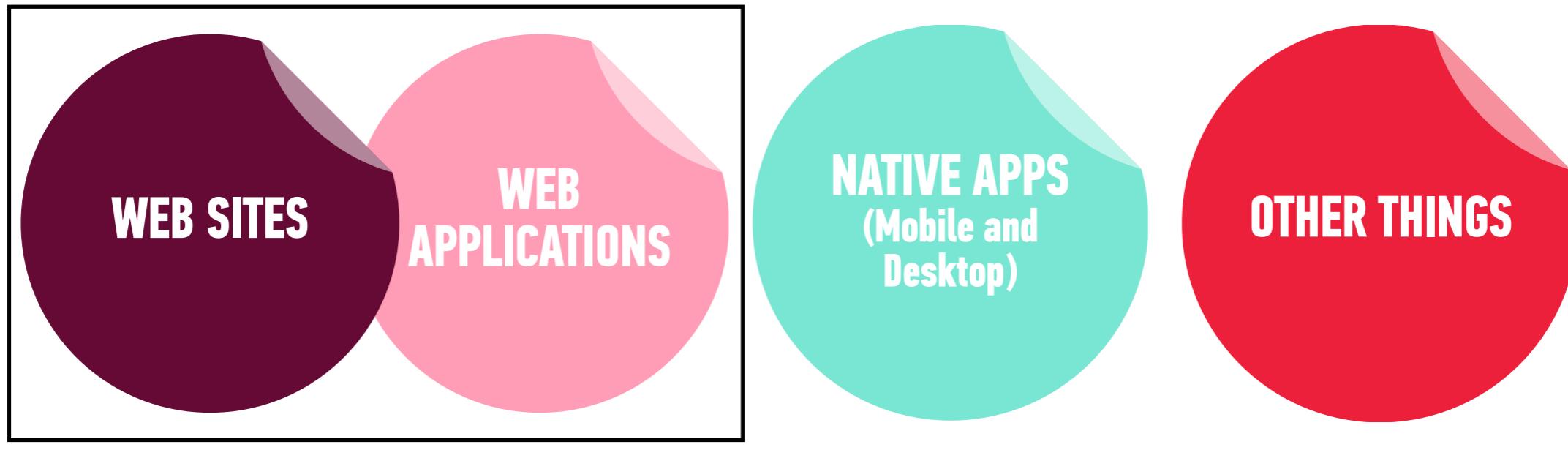
They're good for:

- Making decisions
- Repeating tasks
- Remembering and storing stuff
- Displaying, logging stuff

WHAT CAN I BUILD?



WHAT CAN I BUILD?



WEB DEVELOPMENT

WEB DEVELOPMENT

WEB DEVELOPMENT IS DIFFERENT TO CONVENTIONAL PROGRAMMING

- Web sites don't 'live' on your computer
- There's a 'front end' and a 'back end'
- Traditional software delivery has been closed-box
- This is a good thing

FRONT END

Runs locally, on the client: the user's computer



BACK END

Runs remotely, on the web site's server



FRONT END

The content of the page, visual styling instructions and code describing the interactive parts of the user interface.

BACK END

The preparation of that content, storage of user-submitted data, and any ‘business logic’.

FRONT END LANGUAGES

Front End

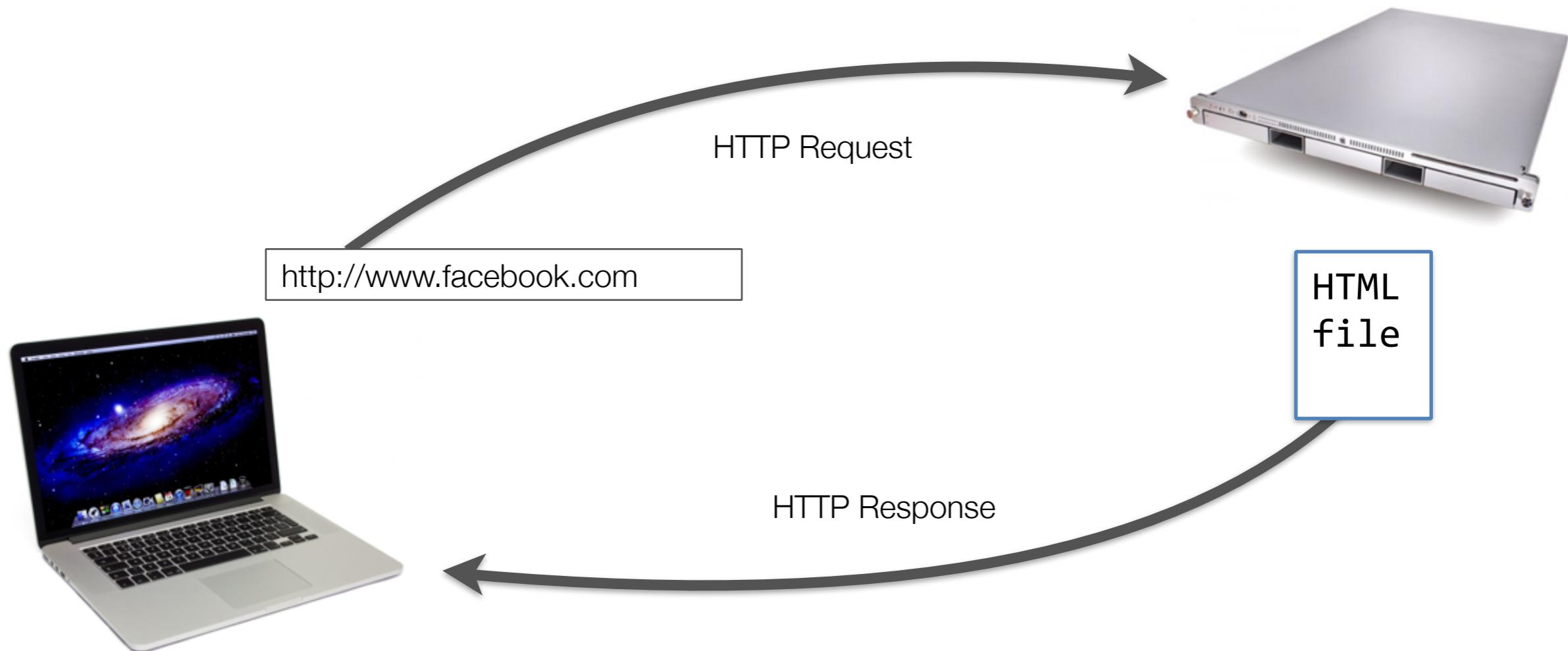
HTML,
CSS and
JavaScript

BACK END LANGUAGES

Back End

Ruby, PHP,
Python, Perl,
Java and more

HOW THE WEB WORKS



SERVER FARM

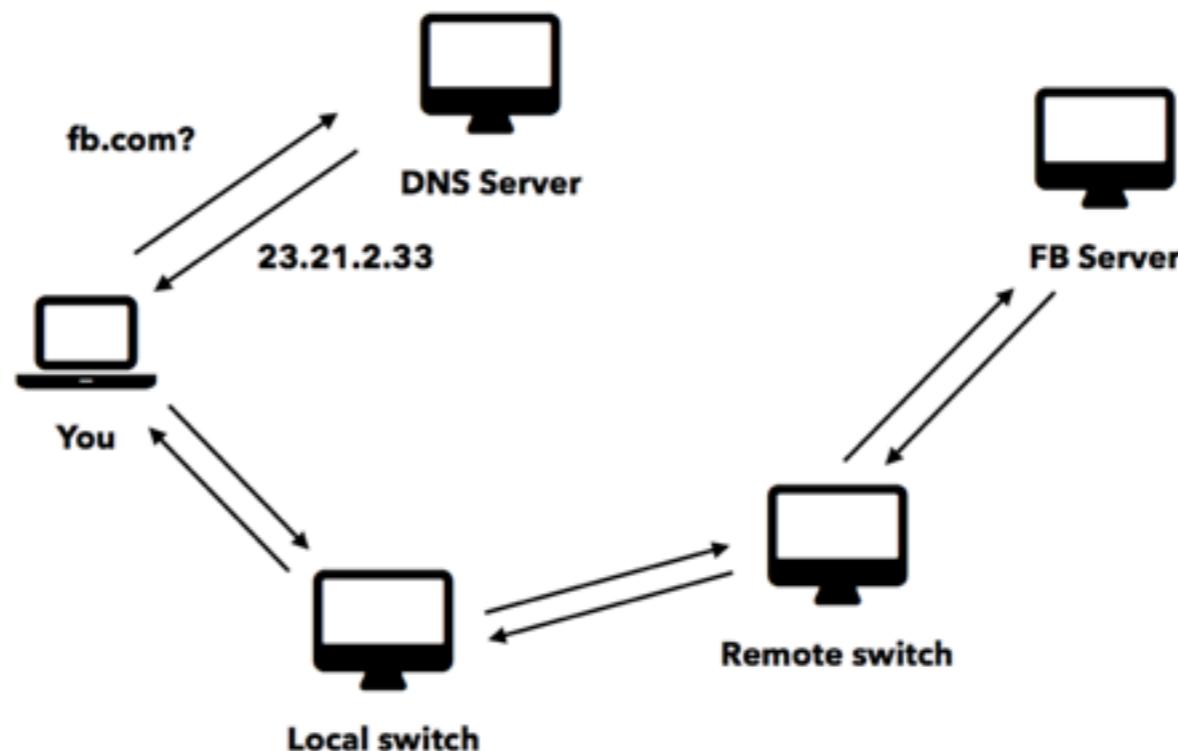


DATA WAREHOUSE

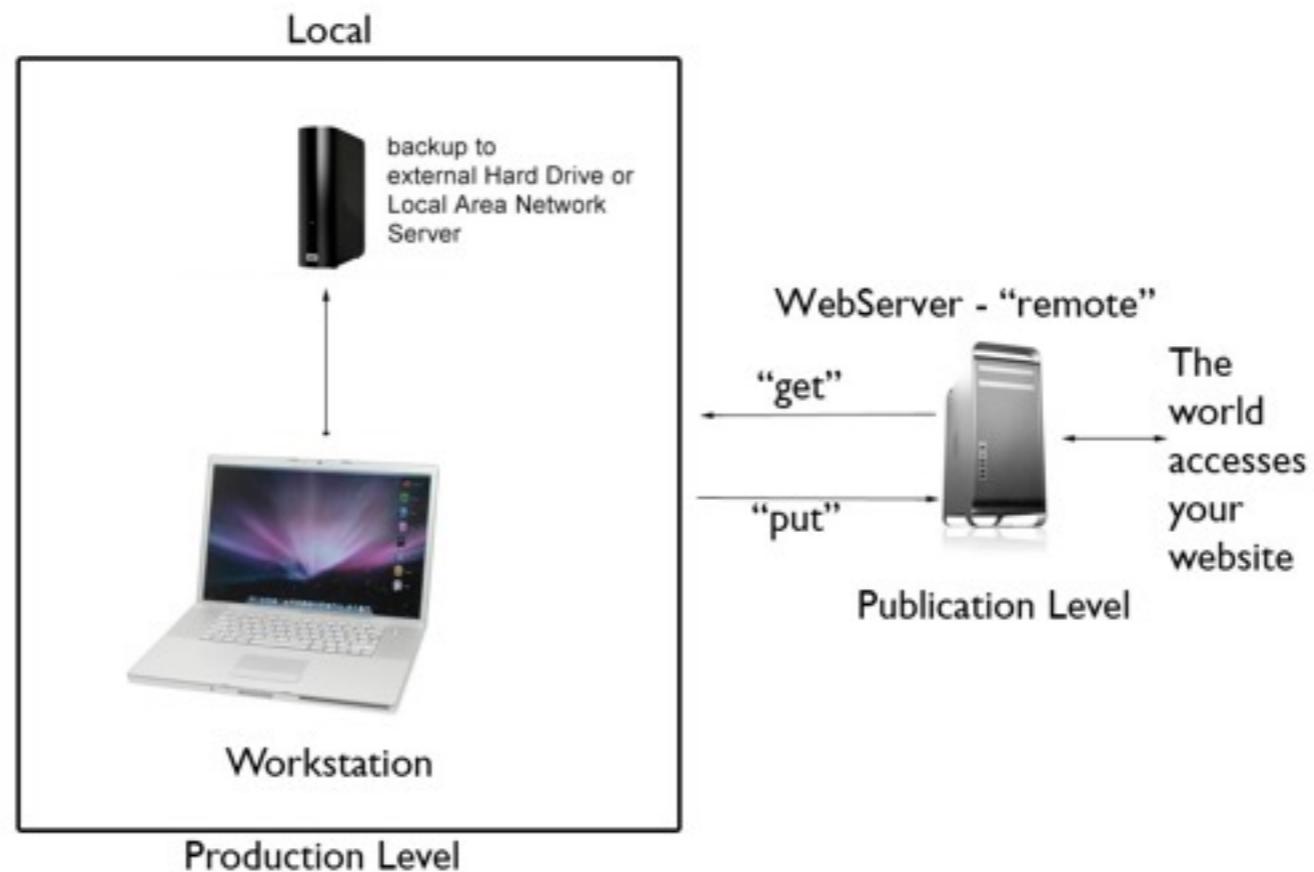


AppleInsider

HOW THE WEB WORKS



LOCAL VS REMOTE



CACHEING



BROWSER PARSING

```
<!DOCTYPE html>
<html lang="en-GB" class="no-js">
<head>
    <script>
        document.documentElement.className = 'js';
    </script>
    <link rel="stylesheet" href="http://fonts.googleapis.com/css?family=Lato:300,400|Open+Sans:700" type="text/css"/>
    <link rel="stylesheet" href="http://www.antoniolulic.com/wordpress/wp-content/themes/antoniolulic.2013.css" type="text/css"/>
    <link rel="alternate" type="application/rss+xml" title="Antonio Lulic RSS Feed" href="http://www.antoniolulic.com/wordpress/feed"/>
    <link rel="pingback" href="https://www.antoniolulic.com/wordpress/xmlrpc.php" />
    <link rel="apple-touch-icon-precomposed" sizes="144x144" href="apple-touch-icon-144.png" />
    <link rel="apple-touch-icon-precomposed" sizes="114x114" href="apple-touch-icon-114.png" />
    <link rel="apple-touch-icon-precomposed" sizes="72x72" href="apple-touch-icon-72.png" />
    <link rel="apple-touch-icon-precomposed" href="apple-touch-icon.png" />
    <link rel="shortcut icon" href="/favicon.ico" type="image/x-icon" />
    <meta http-equiv="content-type" content="text/html; charset=UTF-8" />
    <meta name="apple-mobile-web-app-status-bar-style" content="black" />
    <meta name="viewport" content="initial-scale=1,minimum-scale=1">
    <meta property="og:site_name" content="AntonioLulic.com" />
    <meta property="og:locale" content="en_GB" />
    <meta property="fb:admins" content="558935105" />
    <link rel="alternate" type="application/rss+xml" title="Antonio Lulic &rsaquo; Antonio Lulic Comments Feed" href="http://www.antoniolulic.com/wordpress/comments/feed"/>
    <link rel="EditURI" type="application/rsd+xml" title="RSO" href="http://www.antoniolulic.com/wordpress/xmlrpc.php"/>
    <link rel="wlmanifest" type="application/wlmanifest+xml" href="http://www.antoniolulic.com/wordpress/wp-includes/wlmanifest.xml" />
    <link rel="prev" title="The Sound of the Girl Next Door, Singing (Acoustic) - Lyrics & Chords" href="http://www.antoniolulic.com/the-sound-of-the-girl-next-door-singing-acoustic-lyrics-chords/"/>
    <link rel="next" title="Tour Beta" href="http://www.antoniolulic.com/tour-beta/" />
    <link rel="shortlink" href="http://www.antoniolulic.com/" />
    <link href="http://www.antoniolulic.com/?feed=siemens" rel="alternate" type="application/rss+xml" title="Antonio Lulic - Siemens RSS"/>
    <!--[if lt IE 9]><script src="//html5shim.googlecode.com/svn/trunk/html5.js"></script><!-- All in One SEO Pack 2.1.5 by Michael Torbert of Semper Fi Web Design[! -->
    <meta name="description" content="British indie-folk from England's North-East" />
    <meta name="keywords" content="antonio lulic, antonio jorge lulic, antoniolulic, musician, music, singer, song"/>
    <link rel="canonical" href="http://www.antoniolulic.com/" />
    <!-- /all in one seo pack -->
    <title>Antonio Lulic</title>
    <meta property="og:title" content="Antonio Lulic" />
        <meta property="og:url" content="http://www.antoniolulic.com/" />
            <meta property="og:description" content="British indie-folk from England's North-East" />
        <meta property="og:type" content="musician" />
        <meta property="og:image" content="http://www.antoniolulic.com/wordpress/wp-content/themes/antoniolulic/images/icon-144x144.png" />
    <meta name="thumbnail" content="http://www.antoniolulic.com/wordpress/wp-content/themes/antoniolulic/images/icon-144x144.png" />
</head>
```

BROWSER RENDERING

All browsers are not created equal. Different teams of developers create them. They all have different features, and different bugs.

As web developers, we should decide which browsers our site or application will support.



Mac OS X
Windows PC
iOS
Android
Linux

Windows PC
Windows Phone

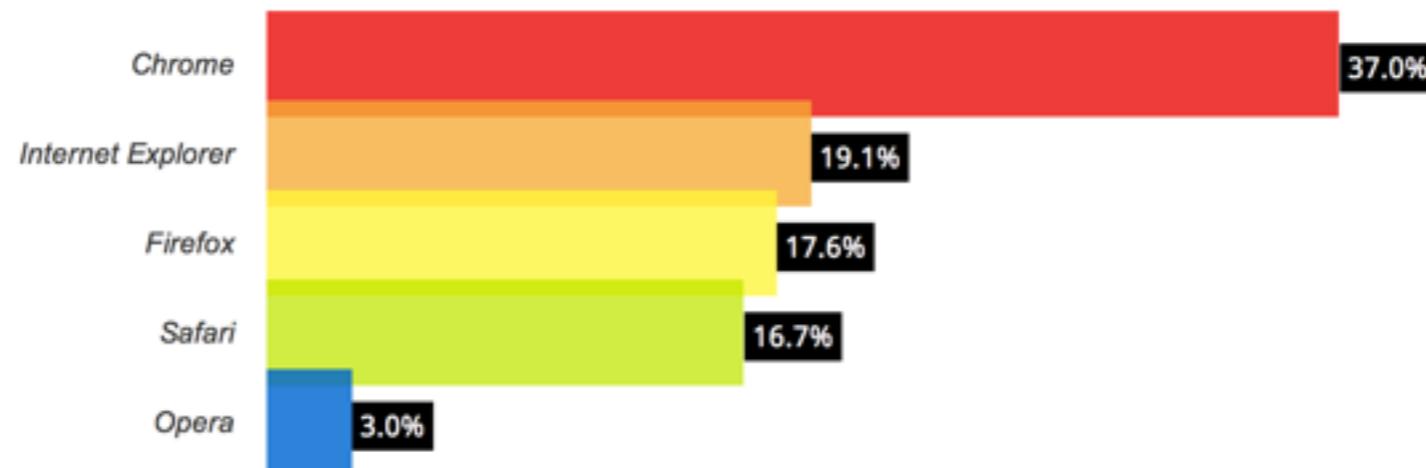
Mac OS X
Windows PC
Android
Linux

Mac OS X
iOS

Mac OS X
Windows PC
iOS
Android
Linux

BROWSER SHARE

Some browsers are more popular than others in certain geographic areas and among certain demographics.



As of May 2014, from W3Counter.com: <http://www.w3counter.com/globalstats.php>
See also: http://en.wikipedia.org/wiki/Usage_share_of_web_browsers

BROWSER TOOLS

Modern browsers come with different suites of tools built in, to make web development much faster and much easier.

There has never been a better time to be a web developer.

STAGES OF WEB DEVELOPMENT

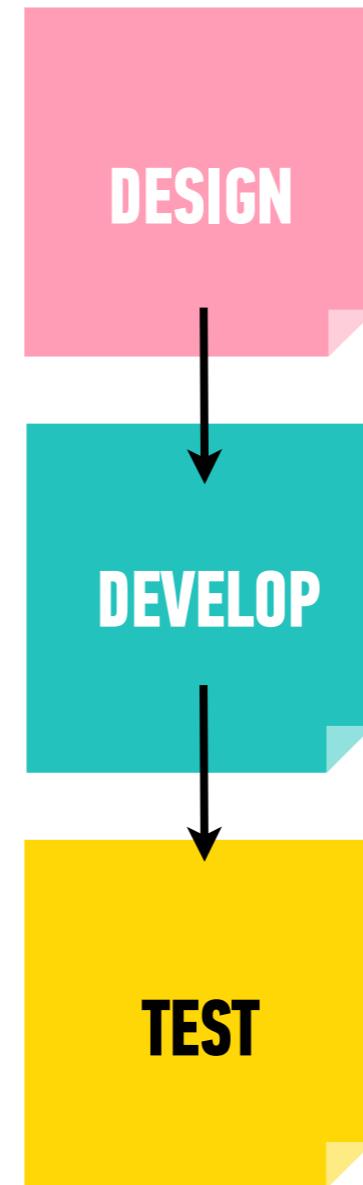


DESIGN

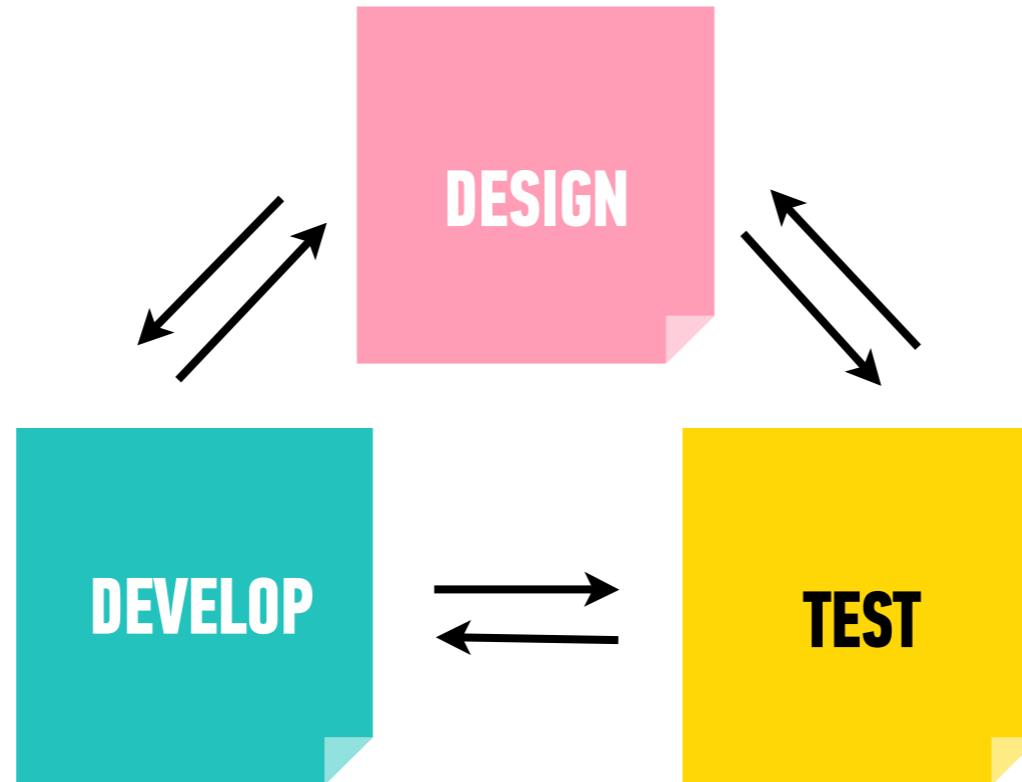
DEVELOP

TEST

WATERFALL

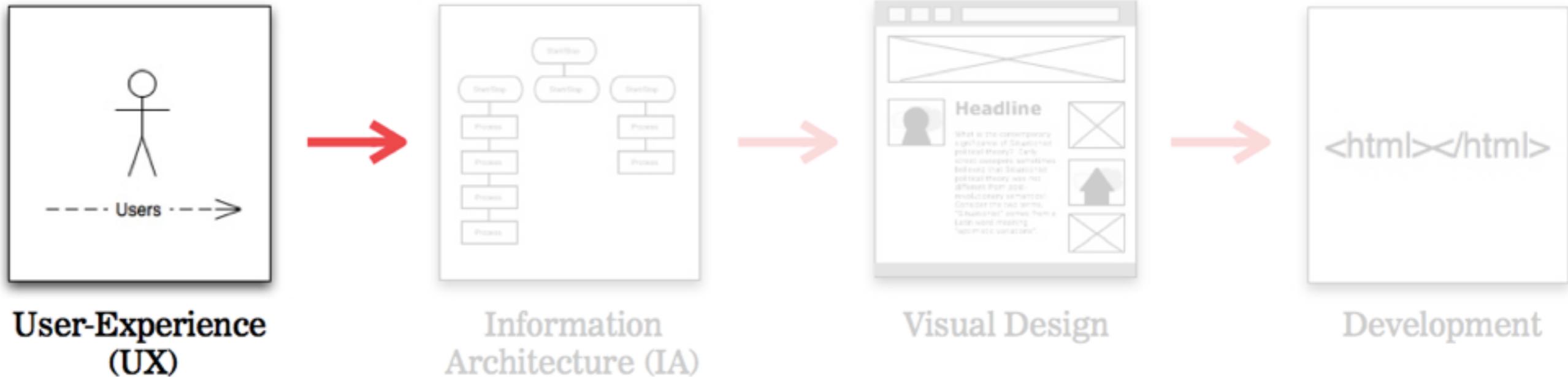


AGILE

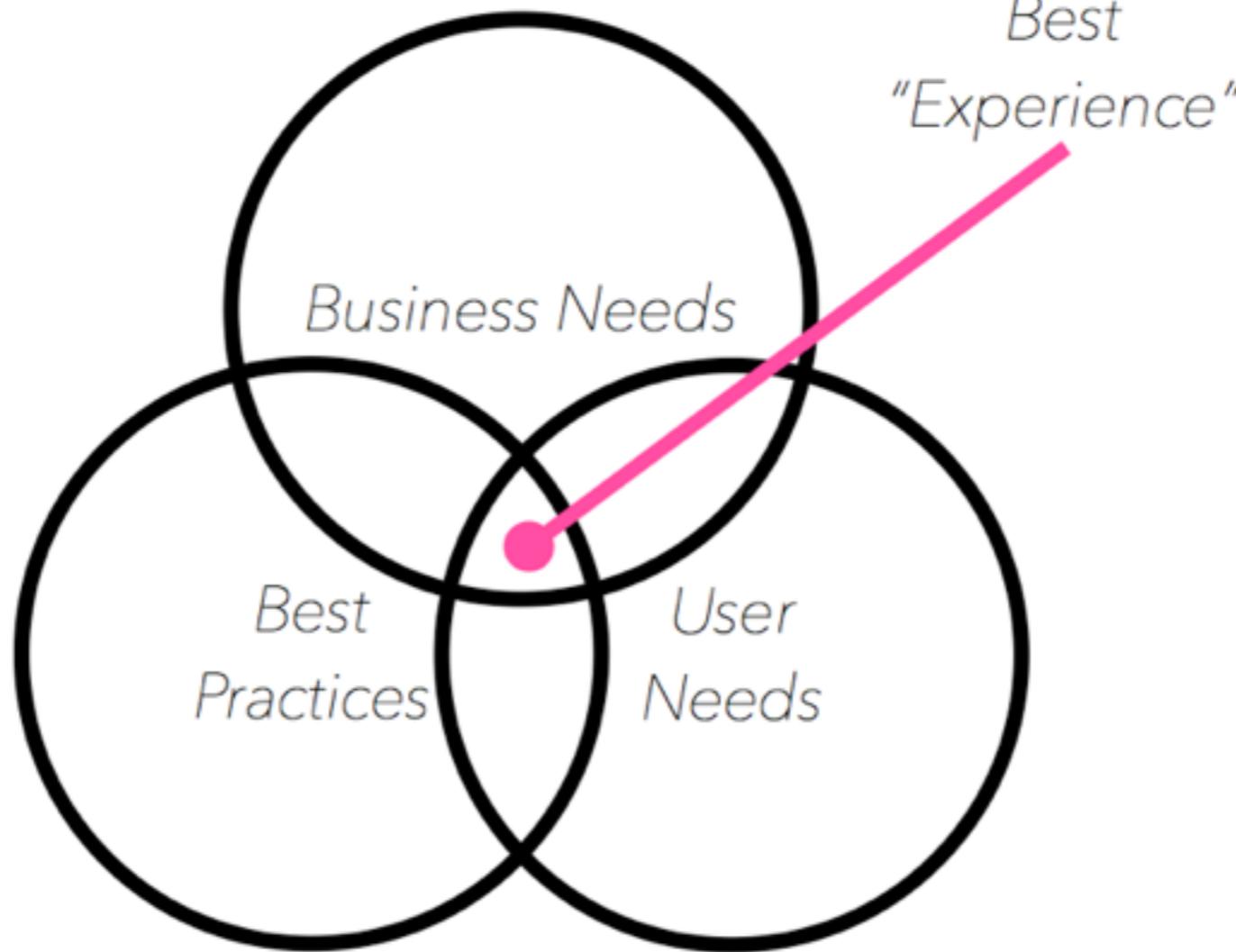


DESIGN

USER EXPERIENCE



UX



WHAT IS USER EXPERIENCE?

“Don’t make me think”

- Steve Krug

<http://www.amazon.co.uk/Dont-Make-Me-Think-Usability/dp/0321344758>

http://theoatmeal.com/comics/restaurant_website

WHO DOES UX?

- User Researcher
 - Identifies user behaviors, goals and needs through interviews, studies and surveys
- Information Architect (IA)
 - Defines the structure of a system, how content is described, organized and discovered
- Interaction Designer (IxD/UX Designer)
 - Defines interactions, user flows, wireframes, and affordances of a system
- UI Developer
 - Builds the system by interpreting the functional specification, sitemaps, wireframes while working within technical constraints

WHAT DO WE NEED TO KNOW TO UNDERSTAND OUR USERS?

- **Why?**
- **Who?**
- **What?**
- **Where?**
- **When?**
- **How?**

Who are our users?

- Businesses or consumers?
- What demographics?
- What background knowledge do they have?
- What terminology do they understand?

Why are they coming to us?

- Goals?
- What are their needs?

Where are they visiting from?

- What language do they speak?
- What currency do they use?
- Is their access limited or restricted?

When are they visiting?

- Day or night?
- First thing in the morning, last thing before bed?
- Regularly, frequently?
- When they're in a crisis?

How are they accessing?

- Desktop, tablet, phone?
- Mouse, touch, keyboard, screenreader?

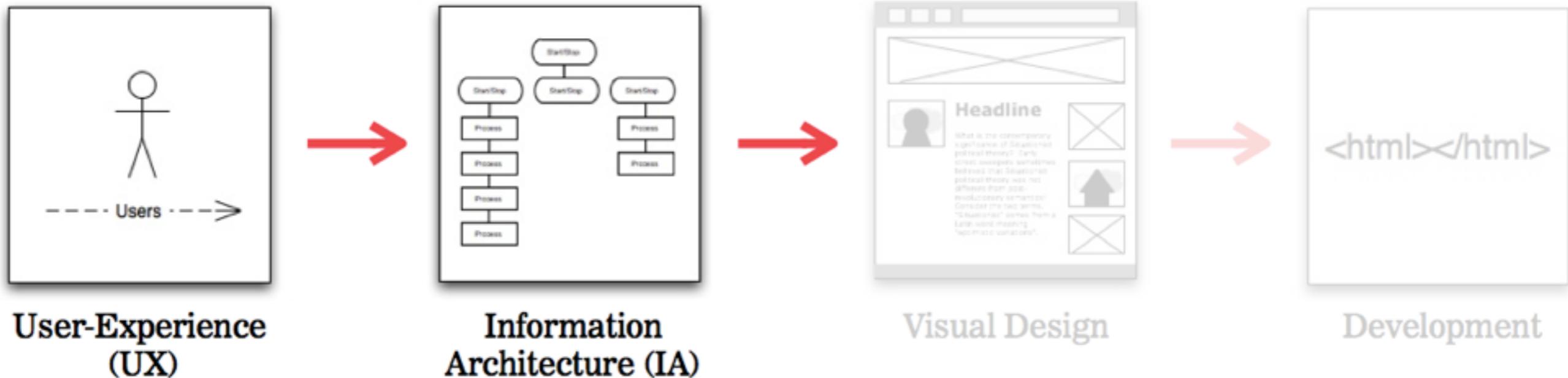
COMPARE AND CONTRAST



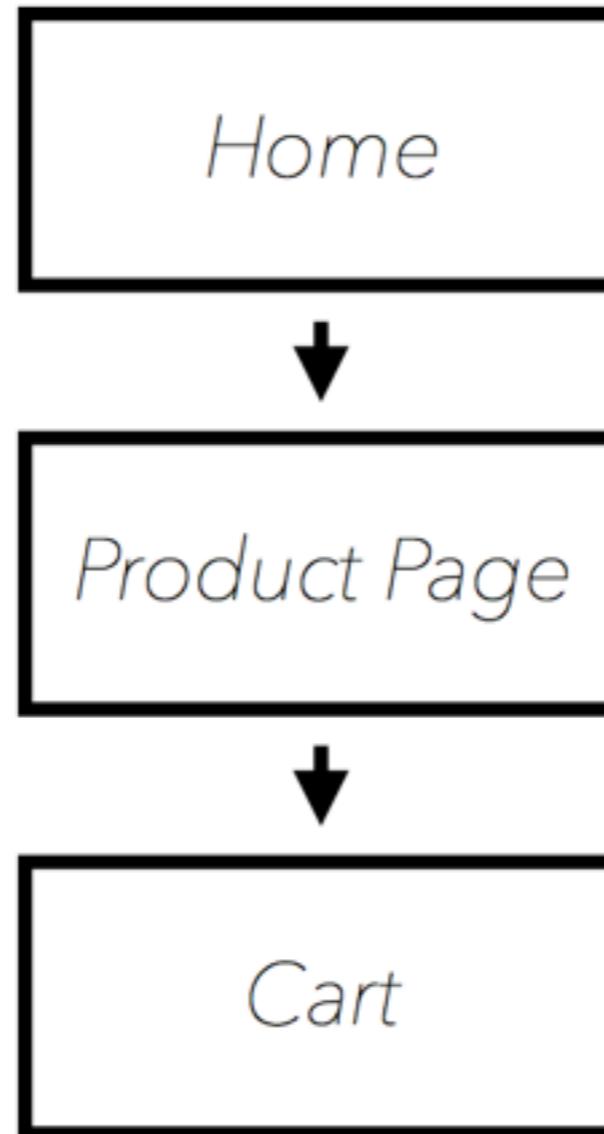
vs.



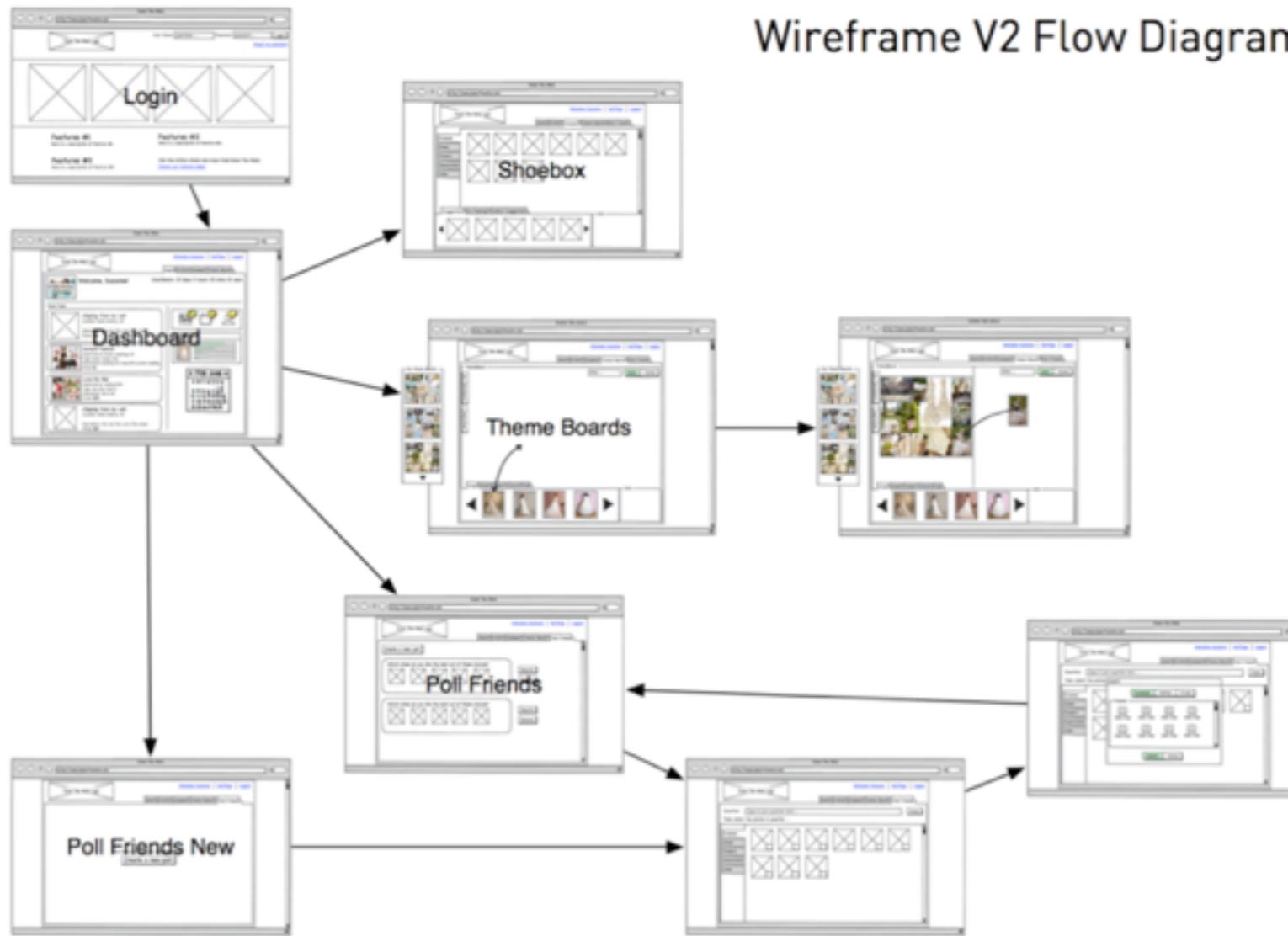
USER EXPERIENCE



IA



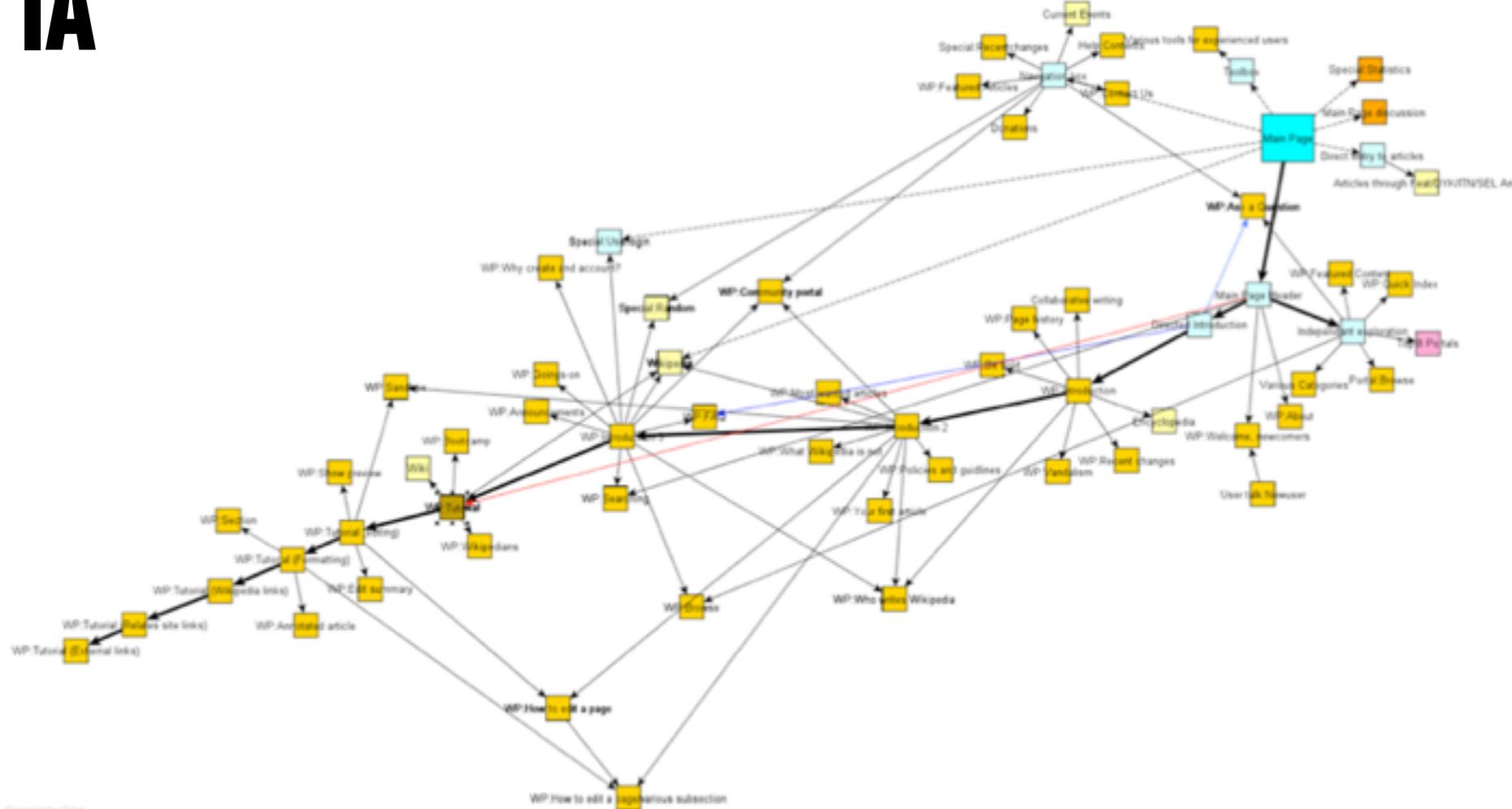
IA



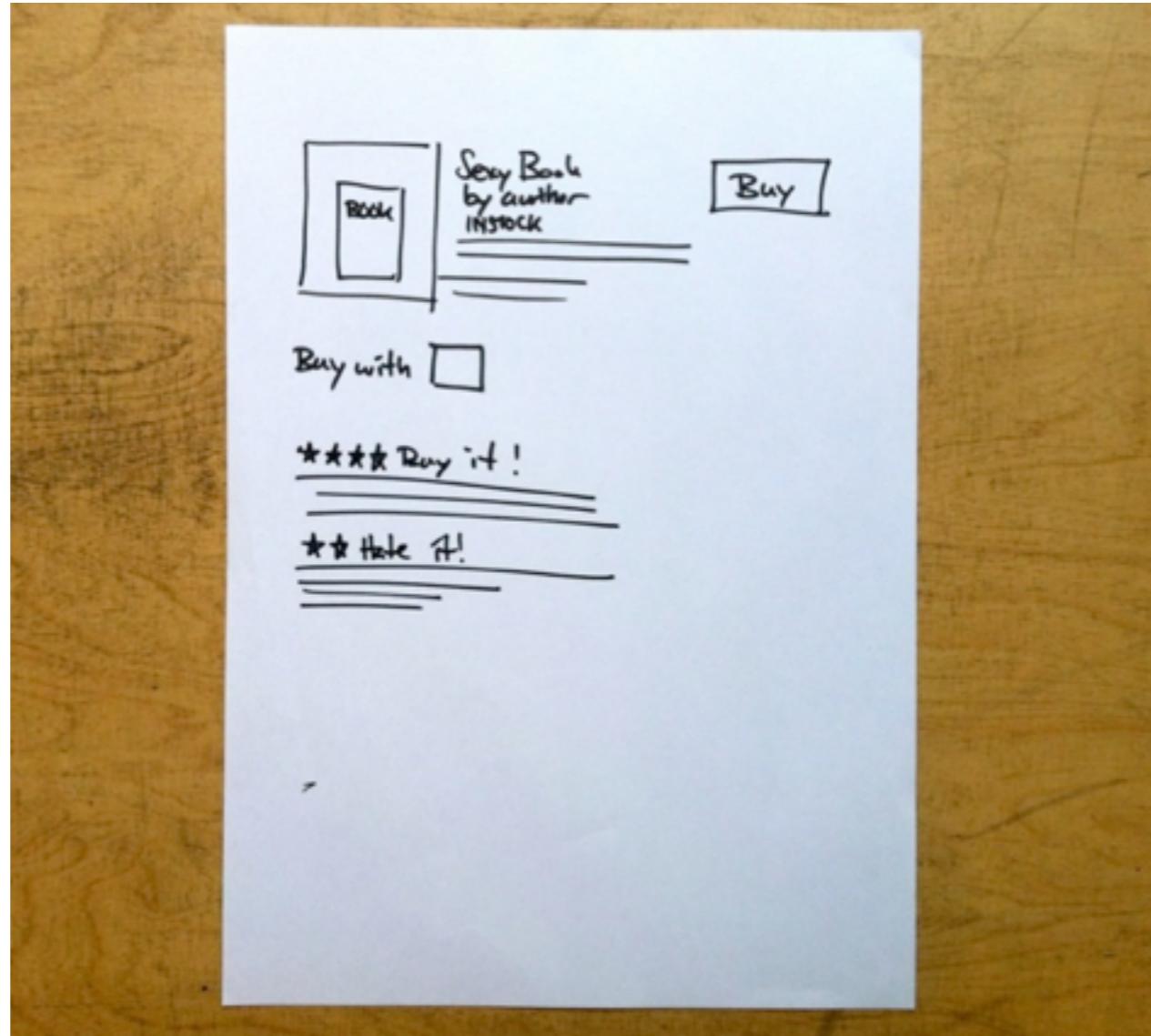
PROGRAMMING FOR NON-PROGRAMMERS

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IA



IA



IA

The wireframe illustrates a 900px wide web application interface. At the top left is the **LOGO** (1). To its right is the **Account Settings** link (2). Below the logo is a login form with fields for **Login:** Enter User Name (3), **Password:** (4), **Submit**, and **Forgot Password?**. A horizontal menu bar follows, featuring **HOME** (5), **BIDDING** (6), **MY ACCOUNT** (7), **NOTIFY ME** (8), **REPORTS** (9), **CUSTOMER LEAD UTILITY** (10), **TRANSPORT** (11), **RESOURCES** (12), and **CONTACT** (13). Below the menu is a footer note: **For assistance, call Dealer Services at 1-877-111-1111.**

The main content area includes an **Ad Promo** section (14) with a **Title for Ad Promo** and a **Media/Flash/Image**. It also contains a **Learn More** button (15).

Press Releases section (16) displays three items, each with a **Read More...** link (17). There is also a **more...** link (18).

Featured Vehicle section (19) shows a placeholder image with **Details**, **Buy Now**, and **Bid Now** buttons.

Upcoming Auctions section (20) lists two auction events with columns for **Date/Time**, **Consignor**, and **Visible Units**.

Date/Time	Consignor	Visible Units
08/18/2008 3 p.m.	HFS	22
08/18/2008 4 p.m.	HFS	53

At the bottom, there is a copyright notice: **© 2009 Copyright Statement. All Rights Reserved.**, links to **Terms and Conditions**, **Advertiser Rules**, and **Privacy Policy**, and a **Powered by LOGO** footer.

1.0 Home Logged Out (non-secure) - Annotated Notes

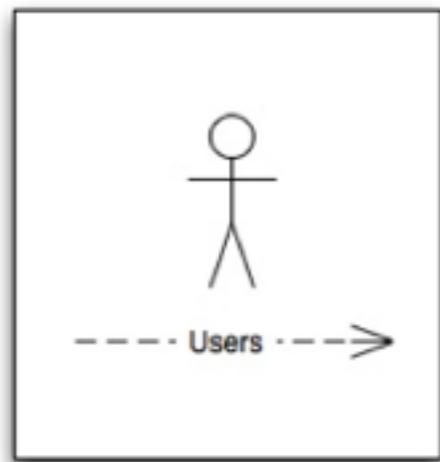
- Branding & Logo links to Home Page
- Account Settings Link - launches login prompt AS.0
- Login Form - provides access to secure site
- Forgot Password Link - goes to scenario FP.0
- Home Link disabled
- Bidding Link - launches login prompt B.1
- My Account Link - launches login prompt MA.2
- Notify Me Link - launches login prompt NM.1
- Reports Link - launches login prompt R.2
- Customer Lead Utility Link - launches login prompt CL.3
- Transport Link - launches login prompt T.1
- Resources Link - launches login prompt R.0
- Contact Link - goes to Company contact information
- Carousel of promotions for auction sales events, no sales days, and payment waiver program
- Learn More Button goes to detail page for promotion
- HFS Button - goes to external site launched on 2nd window
- H. Button - goes to external site launched on 2nd window
- HRP Button - goes to external site launched on 2nd window
- A Button - goes to external site launched on 2nd window
- Read More Links go to expanded versions of content
- Details Button - goes to product information page for item
- Links to Auction Event details
- Global Footer Links

WIREFRAME.CC

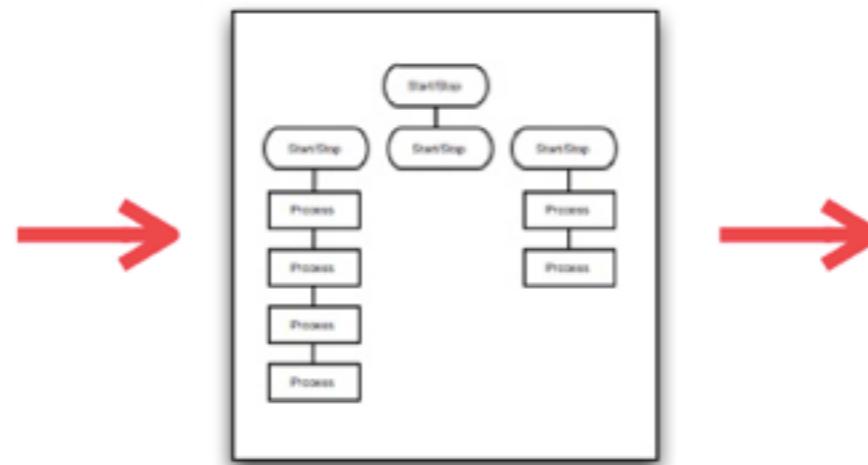
Create your own wireframes for a portfolio site that would showcase your work.

Goal is that you provide enough details that a programmer can code this up later.

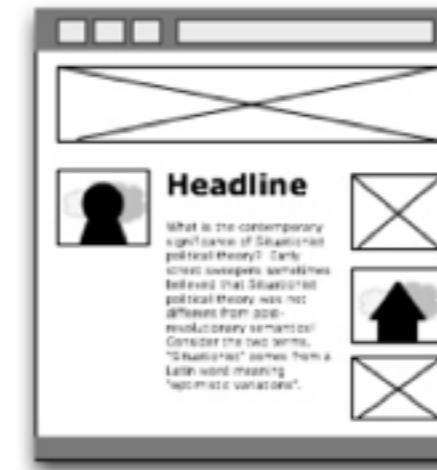
INFORMATION ARCHITECTURE



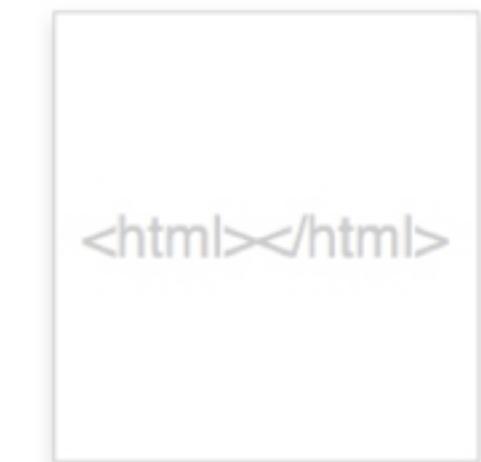
User-Experience
(UX)



Information
Architecture (IA)

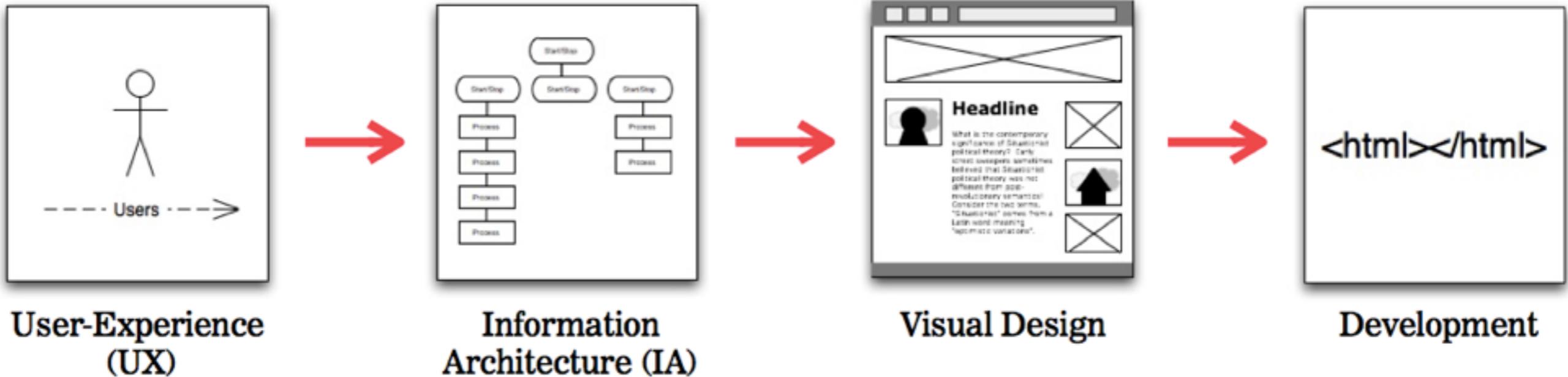


Visual Design



Development

VISUAL DESIGN



DEVELOPMENT

TRANSLATE DESIGN INTO CODE

The diagram illustrates the process of translating design into code. On the left, a code editor shows a portion of an HTML file with the following structure:

```
1 <!DOCTYPE html>
<head>
<link href="demo.css" rel="stylesheet">
<script src="demo.js"></script>
</head>
<body>
```

A large black 'X' is drawn over the entire head section of the code. An arrow points from this 'X' to the right side of the image, indicating that the design component represented by the 'X' has been translated into code.

On the right, a screenshot of a website for "GENERAL ASSEMBLY" is shown. The page features the following text and images:

**TRANSFORMING THINKERS
INTO CREATORS.**

MOVE MAKER
Made the move to the big city and big websites.
[Larry's Story →](#)

CAREER CHANGER
Left the law behind to follow her own path.
[Whitney's Story →](#)

BUSINESS BUILDER
Went from working in news to working for himself.
[Benji's Story →](#)

The website's header includes "Learn", "On Campus", and "Online" options, along with a search icon.

PAGE SOURCE

- Web Inspector
- Firefox 3D-view

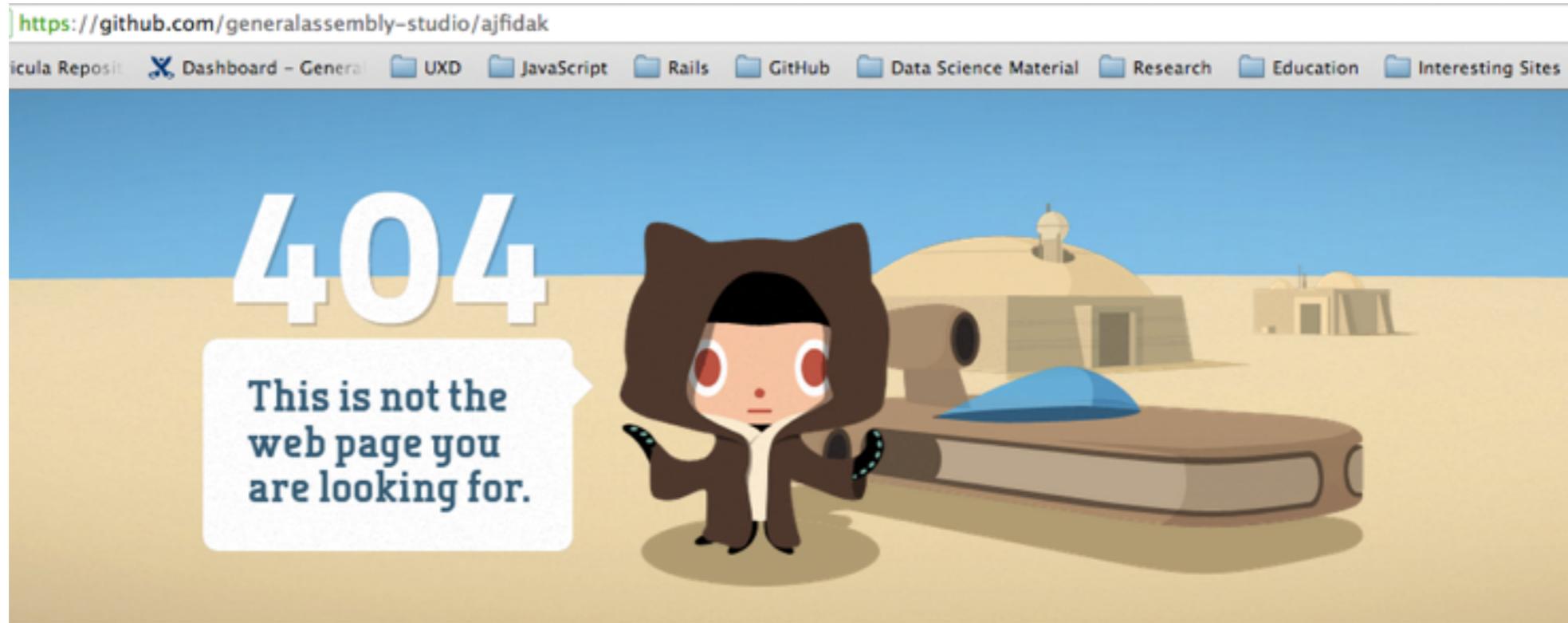
VERSION CONTROL

- Keep track of the version of code.
- Collaborate with others.
- Keep track of who contributed.
- Open-source (release it to the world for free!)
- Popular tools: GitHub, BitBucket



TESTING

MAKE SURE IT WORKS!



LET'S PLAY WITH
SOME LANGUAGES

www.codepen.io

INTRODUCING HTML

STRUCTURED CONTENT

HTML

HyperText

Text that you can
click through: hyperlinks!

Markup

Highlighting parts
of content for
description

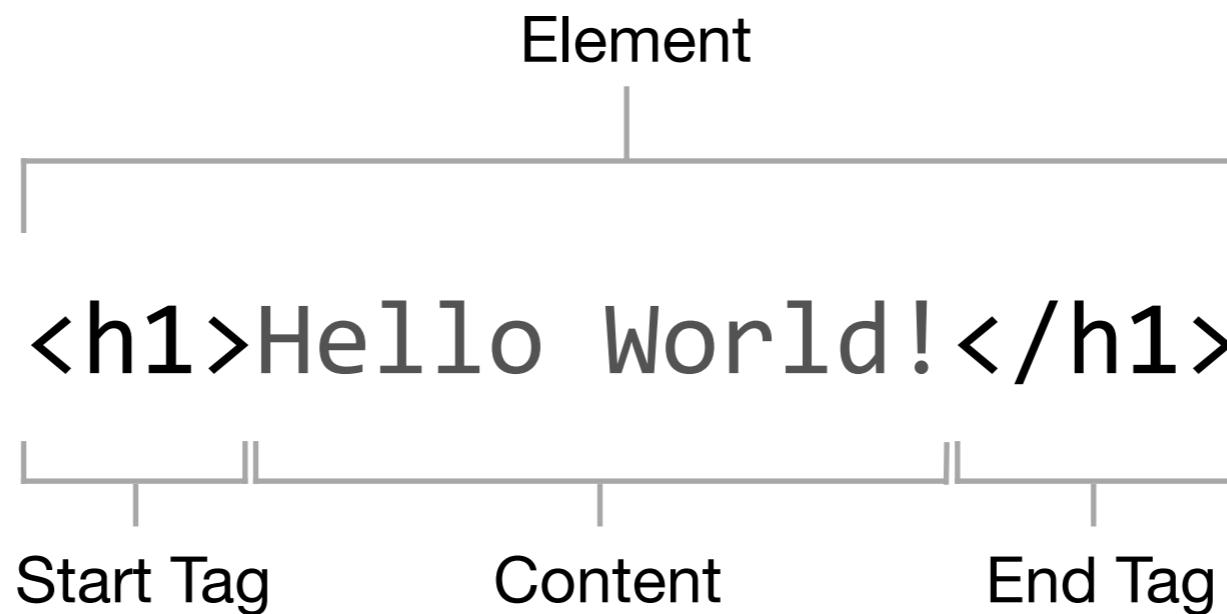
Language

A means of
communicating between
two things (you and the
computer!)

HTML SYNTAX

```
<h1>Hello World!</h1>
```

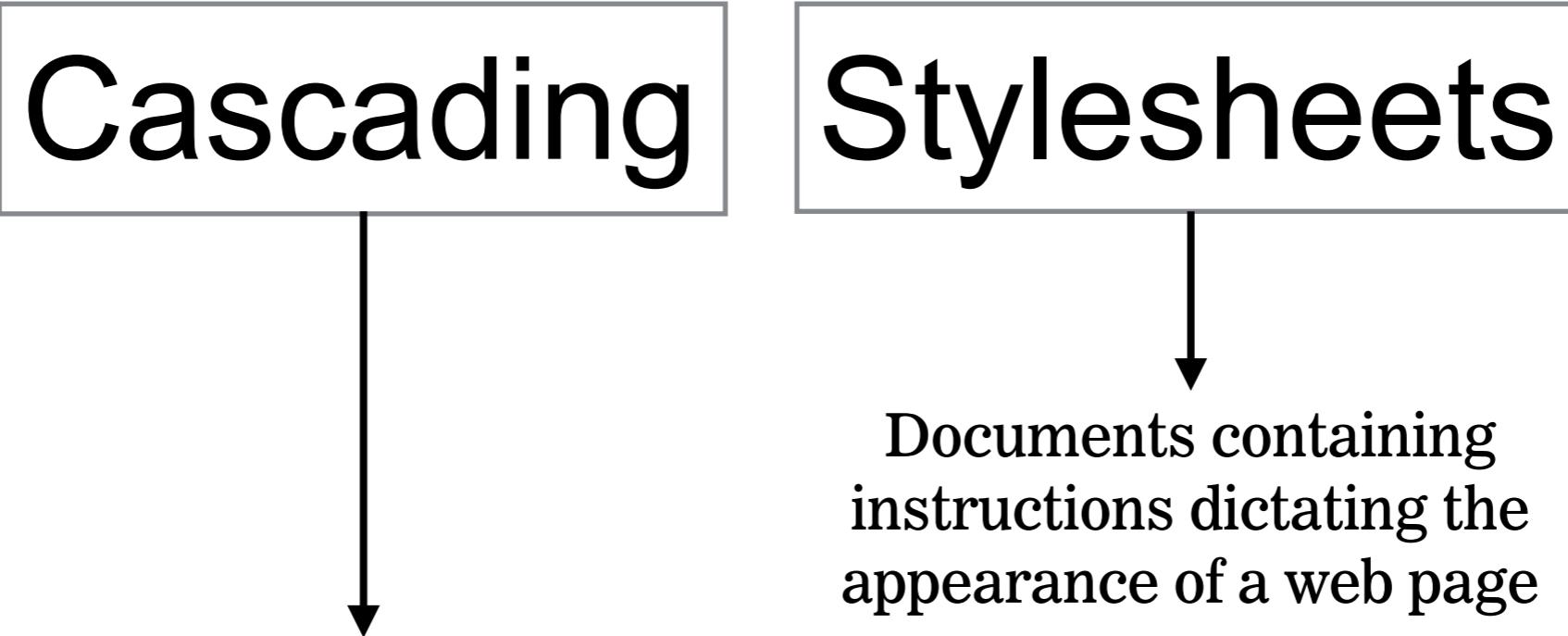
HTML SYNTAX



INTRODUCING CSS

VISUAL STYLE

CSS

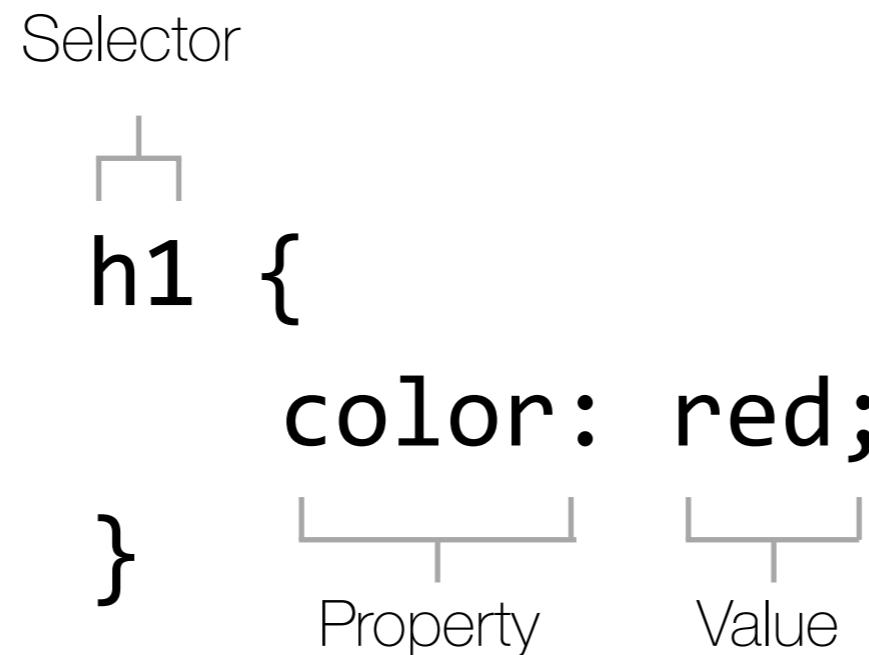


Styling instructions can overlap and overrule one another, to various ends.

CSS SYNTAX

```
h1 {  
    color: red;  
}
```

CSS SYNTAX



INTRODUCING JAVASCRIPT

INTERACTION & BEHAVIOUR

JAVASCRIPT EXAMPLE

```
var name = prompt('What is your name?');

alert('Hello ' + name);
```

LET'S CODE!

A BASIC WEB SITE

SYNTAX HIGHLIGHTING

Modern text editors can recognise the languages we code in, and helpfully colour the text to highlight different parts of that language's syntax, making it easier to read and detect mistakes.

As well as this syntax highlighting, some offer autocomplete for common syntax elements and variable names.

KEYBOARD SHORTCUTS

	Mac OS X	Windows
Save	cmd s	ctrl s
Switch Application	cmd tab	alt tab
Refresh Browser	cmd r	ctrl r
Copy	cmd c	ctrl c
Cut	cmd x	ctrl x
Paste	cmd v	ctrl v
Undo	cmd z	ctrl z
New Tab	cmd t	ctrl t
Close Tab	cmd w	ctrl w
Quit Application	cmd q	ctrl q

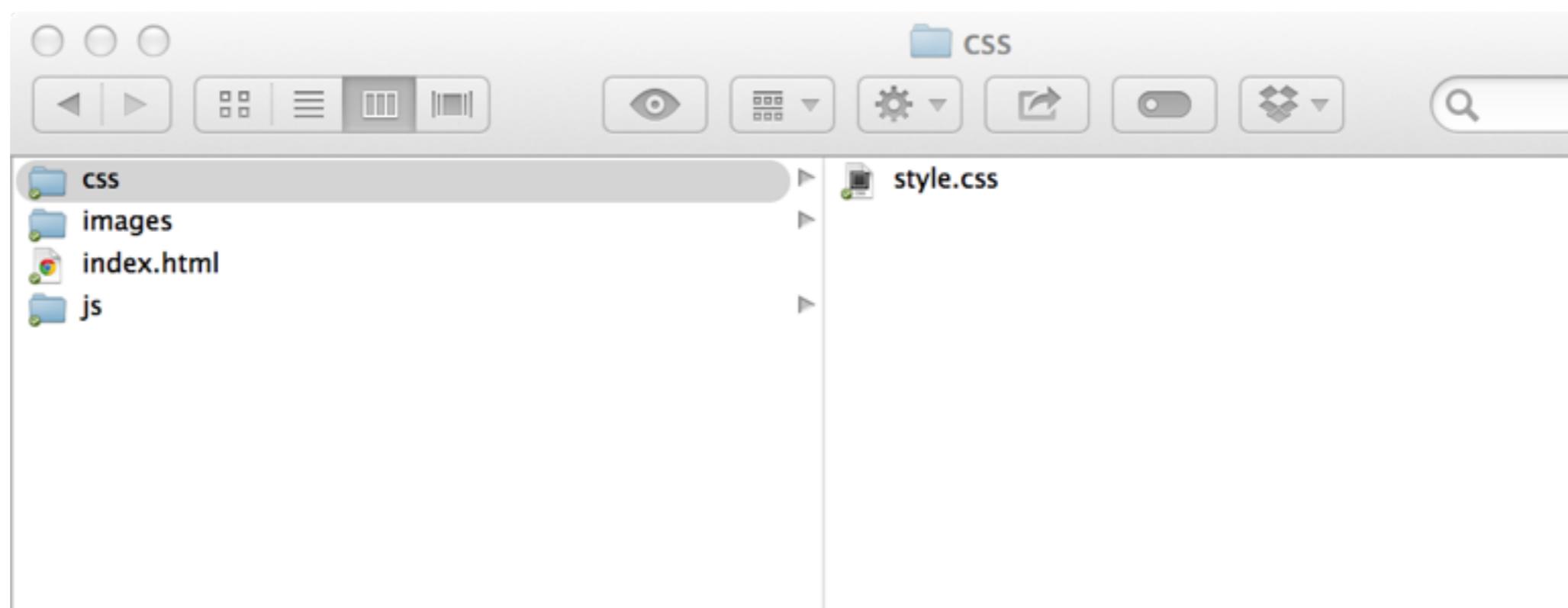
SEPARATION OF CONCERNS

We keep the HTML, CSS, Javascript, images and fonts - in fact all of the assets of a web site - in one place on our computer (or the server).

However, each of these different types of file should be kept in separate subfolders. This means the files we're working on are kept tidily, resulting in a more maintainable codebase.

FILE STRUCTURE

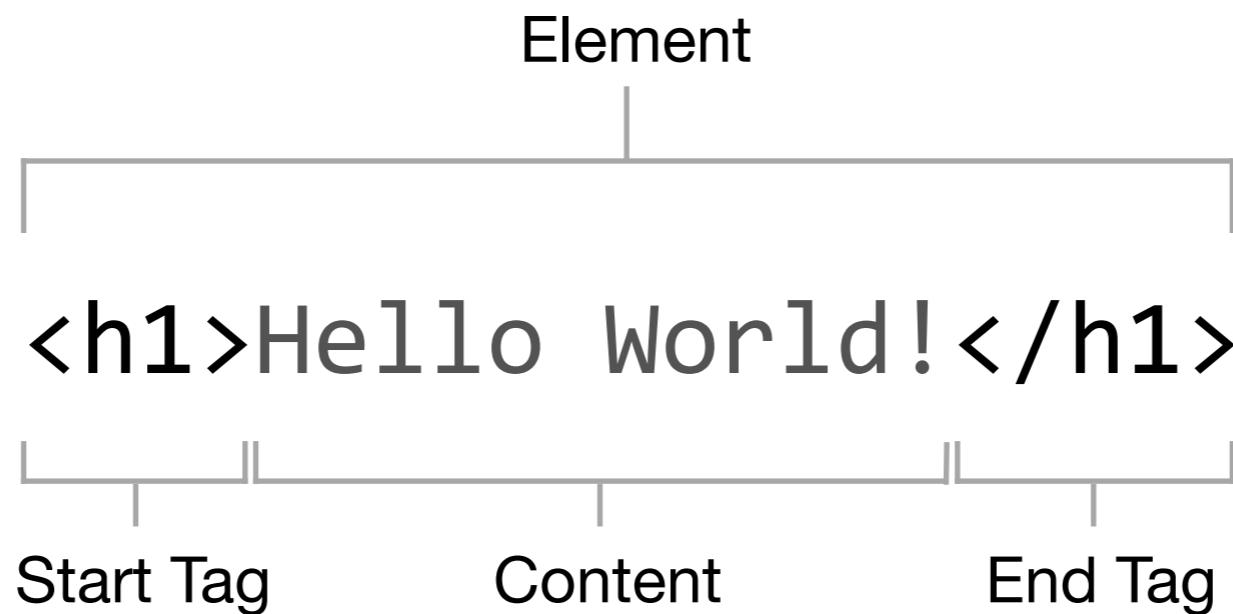
We use lowercase file and folder names with no spaces in them. Hyphens or underscores can be used in place of spaces.



HTML

HYPertext Markup Language

REMEMBER THIS?



HTML NESTING SYNTAX

```
<ul>  
    <li>Hello</li>  
    <li>World</li>  
</ul>
```

HTML DOCUMENT STRUCTURE

```
<!doctype html>
<html>
  <head>
    <!-- Document metadata goes here -->
  </head>
  <body>
    <!-- Document contents goes here -->
  </body>
</html>
```

HTML COMMENTS SYNTAX

<!-- Text after an angle bracket followed by an exclamation mark and two dashes will be ignored by the browser until it finds two hyphens and an angle bracket. But remember, this code can still be read by users viewing your source code. -->

HTML HEADING ELEMENTS

<h1>Top-Level Heading</h1>

<h2>Second-Level Heading</h2>

<h3>Third-Level Heading</h3>

<h4>Fourth-Level Heading</h4>

<h5>Fifth-Level Heading</h5>

<h6>Bottom-Level Heading</h6>

HTML PARAGRAPH ELEMENT

< p > Lorem ipsum dolor sit amet, consectetur
adipisicing elit, sed do eiusmod tempor
incididunt ut labore et dolore magna aliqua.
Ut enim ad minim veniam, quis nostrud
exercitation ullamco laboris nisi ut aliquip
ex ea commodo consequat. </ p >

HTML LIST ELEMENTS

Ordered (numbered) List

```
<ol>
  <li>First item</li>
  <li>Second item</li>
  <li>Third item</li>
  <li>Fourth item</li>
</ol>
```

Un-ordered (bulleted) List

```
<ul>
  <li>List item</li>
  <li>List item</li>
  <li>List item</li>
  <li>List item</li>
</ul>
```

HTML ATTRIBUTES

Attributes allow us to provide more information about an element to the browser.



HTML HYPERLINK ELEMENT

Also known as the ‘anchor’ element. Used to make a clickable link between HTML documents.

```
<a href="http://www.url.to/link/to">Clickable link text</a>
```

HTML IMAGE ELEMENT

Used for content images (not backgrounds). Look! It's self-closing!

```

```

HTML FILE PATHS

Files can be referenced from one file to another a number of ways:

Relative

`src="images/kitten.jpg"`

or `src="../images/kitten.jpg"`

Absolute

`src="/images/background.jpg"`

Full Qualified (aka Hotlinking)

`src="http://www.placekitten.com/400/300"`

WEB IMAGES TYPES

.jpg/.jpeg **Joint Photographic Experts Group**

Best for photographs. Excellent compression algorithm results in very small file sizes for very large images, at the expense of a slight loss of quality.

.png **Portable Network Graphic**

Best for high resolution graphics, or where fading transparencies are required. Larger files than JPEGs, but completely lossless compression.

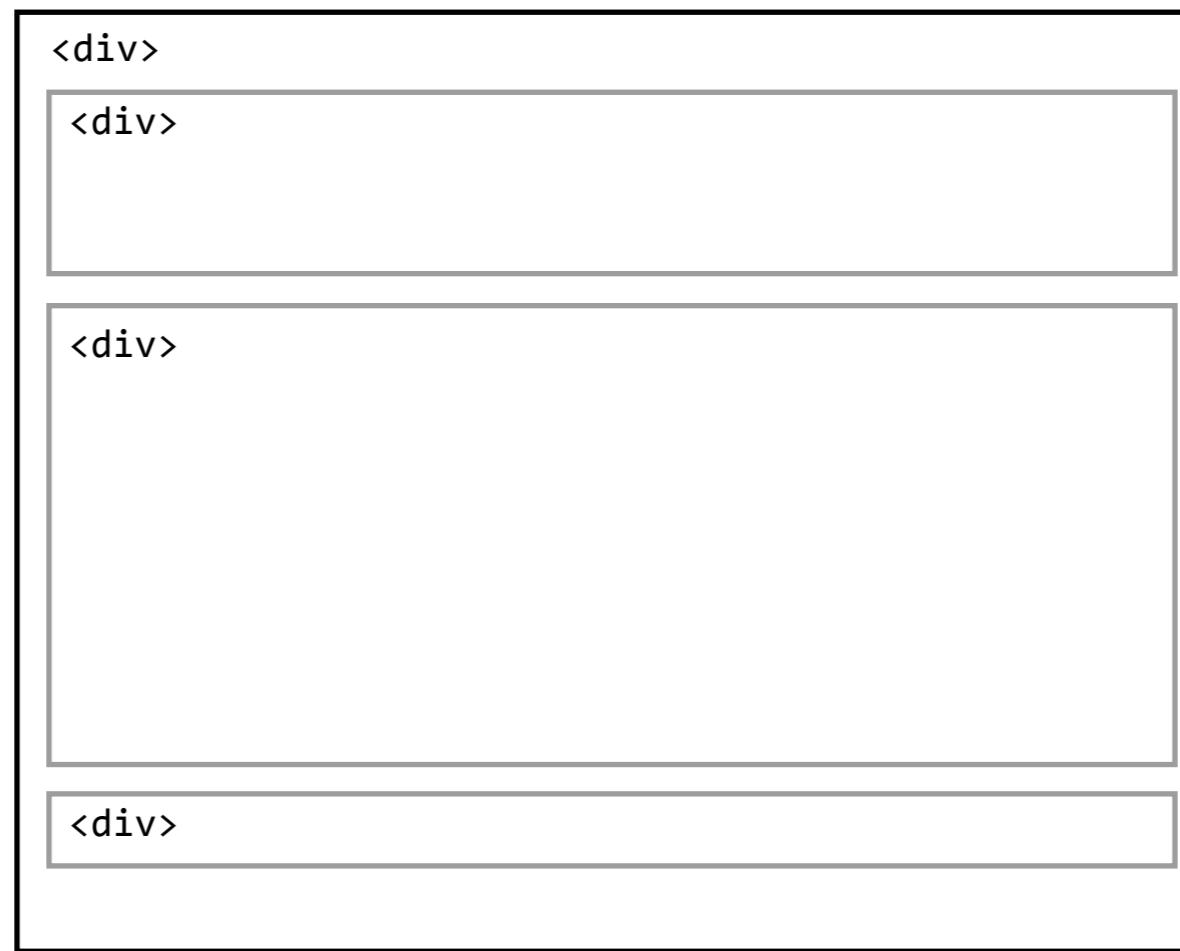
.svg **Scalable Vector Graphic**

Best for line drawings. Rather than specifying the colour of each pixel, these images use lines ('vectors' or 'paths'), and fills of colour inside these to create images that can be resized with no pixellation.

.gif **Graphics Interchange Format**

Best for pictures of cats. Limited to 256 colours, but capable of keyframe animation, and transparency (though not fading transparencies). Famous now for 'animated gifs', as it's their standout feature against the rest.

DIVISION ‘DIV’ ELEMENT



CSS

CASCADING STYLESHEETS

HTML LINK ELEMENT

We need to use a link element to tell the browser to apply CSS to our HTML page.

```
<head>
  ...
  <link rel="stylesheet" href="css/style.css">
  ...
</head>
```

CSS SELECTOR SYNTAX

Element name selectors are used to select that type of element all through the document.

```
<p>Lorem ipsum</p>
```

```
p {  
    font-weight: bold;  
}
```

CSS CHILD SELECTOR SYNTAX

Putting a space between two element names in a CSS selector finds all of the second element type inside the first element type.

```
<ul>  
    <li>Lorem ipsum</li>  
    <li>Dolor sit</li>  
    <li>Amet</li>  
</ul>
```

```
ul li {  
    font-weight: bold;  
}
```

CSS CLASS SELECTOR SYNTAX

Classes are used to style **certain elements**; they could be different types of elements or at different positions in the page.

```
<p class="intro">Lorem ipsum</p>
```

```
.intro {  
    font-weight: bold;  
}
```

CSS ID SELECTOR SYNTAX

Use an ID to style an **individual element**. A unique ID should only be used once, on one element, in an HTML document.

```
<p id="intro">Lorem ipsum</p>
```

```
#intro {  
    font-weight: bold;  
}
```

CSS COMMENTS

```
/* All lines of text between a forward slash and an asterisk, and another asterisk and another forward slash, will be ignored by the browser, but will still be visible in the CSS file to users viewing your source code. */
```

SOME CSS TEXT PROPERTIES

color:

font-family:

font-size:

font-style:

font-weight:

text-align:

text-decoration:

text-shadow:

CSS COLOURS

Name

e.g. red, lightgrey, green, black

RGB

e.g. rgb(255,0,0), rgb(128,128,128), rgb(0,200,50)

RGBa

e.g. rgba(255,0,0,1), rgba(128,128,128,0.5), rgba(0,200,50,0.1)

Hexadecimal

e.g. #33ffcc, #666666, #bada55

CSS HEXADECIMAL SYNTAX

Instead of counting 0-15, computers like to count 00-09 then 0a-0f.

Base 10

0	00
1	01
2	02
3	03
4	04
5	05
6	06
7	07
8	08
9	09
10	0a
11	0b
12	0c
13	0d
14	0e
15	0f

Base 16

16	10
17	11
18	12
19	13
20	14
21	15
22	16
23	17
24	18
25	19
26	1a
27	1b
28	1c
29	1d
30	1e
31	1f
32	

CSS HEXADECIMAL SYNTAX

#	red	green	blue
#	00-ff	00-ff	00-ff

e.g. #000000 = black

#ff0000 = red

#333333 = dark grey

#ccccff = light blue

#ffffff = white

CSS RGB SYNTAX

```
rgb( red , green , blue )  
rgb( 0-255 , 0-255 , 0-255 )
```

e.g. **rgb(0,0,0)** = black

rgb(255,0,0) = red

rgb(50,50,50) = dark grey

rgb(196,196,255) = light blue

rgb(255,255,255) = white

CSS RGBA SYNTAX

```
rgba(    red   ,   green   ,   blue   , alpha )  
rgba( 0-255 , 0-255 , 0-255 , 0.0-1.0)
```

- e.g. `rgba(0,0,0,1)` = solid black
- `rgba(255,0,0,0.5)` = 50% opaque red
- `rgba(50,50,50,0.3)` = 30% opaque dark grey
- `rgba(196,196,255,0.9)` = 90% opaque light blue
- `rgba(255,255,255,0)` = transparent

CSS COLOUR NAMES

aliceblue, antiquewhite, aqua, aquamarine, azure, beige, bisque, black, blanchedalmond, blue, blueviolet, brown, burlywood, cadetblue, chartreuse, chocolate, coral, cornflowerblue, cornsilk, crimson, cyan, darkblue, darkcyan, darkgoldenrod, darkgray, darkgreen, darkkhaki, darkmagenta, darkolivegreen, darkorange, darkorchid, darkred,暗红色, darksalmon, darkseagreen, darkslateblue, darkslategray, darkturquoise, darkviolet, deeppink, deepskyblue, dimgray, dodgerblue, firebrick, floralwhite, forestgreen, fuchsia, gainsboro, ghostwhite, gold, goldenrod, gray, green, greenyellow, honeydew, hotpink, indianred, indigo, ivory, khaki, lavender, lavenderblush, lawngreen, lemonchiffon, lightblue, lightcoral, lightcyan, lightgoldenrodyellow, lightgray, lightgreen, lightpink, lightsalmon, lightseagreen, lightskyblue, lightslategray, lightsteelblue, lightyellow, lime, limegreen, linen, magenta, maroon, mediumaquamarine, mediumblue, mediumorchid, mediumpurple, mediumseagreen, mediumslateblue, mediumspringgreen, mediumturquoise, mediumvioletred, midnightblue, mintcream, mistyrose, moccasin, navajowhite, navy, oldlace, olive, olivedrab, orange, orangered, orchid, palegoldenrod, palegreen, paleturquoise, palevioletred, papayawhip, peachpuff, peru, pink, plum, powderblue, purple, red, rosybrown, royalblue, saddlebrown, salmon, sandybrown, seagreen, seashell, sienna, silver, skyblue, slateblue, slategray, snow, springgreen, steelblue, tan, teal, thistle, tomato, turquoise, violet, wheat, white, whitesmoke, yellow, yellowgreen

e.g. <http://colours.neilorangepeel.com>

CSS BOX PROPERTIES

width: 50%;

height: 150px;

padding: 20px;

border: 1px solid black;

margin: 50px;

CSS BOX PROPERTIES

Margin, padding and border-width accept shortcuts:

```
/* All sides */
```

```
margin: 10px;
```

```
/* Top bottom, left right */
```

```
margin: 10px 50px;
```

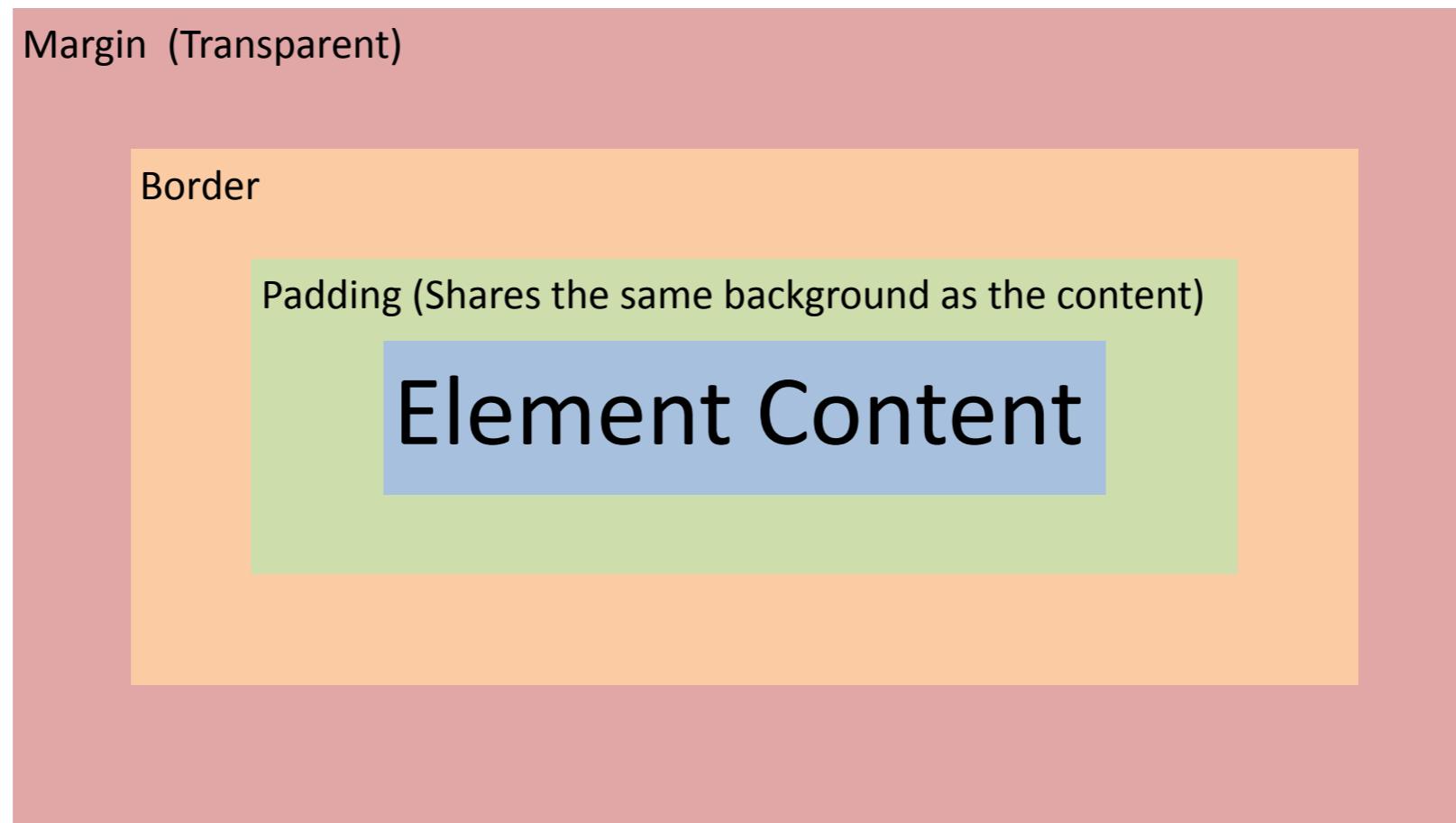
```
/* Top, left right, bottom */
```

```
margin: 10px 50px 100px;
```

```
/* Top, right, bottom, left */
```

```
margin: 10px 50px 100px 20px;
```

CSS BOX MODEL



CSS BOX MODEL EXAMPLE

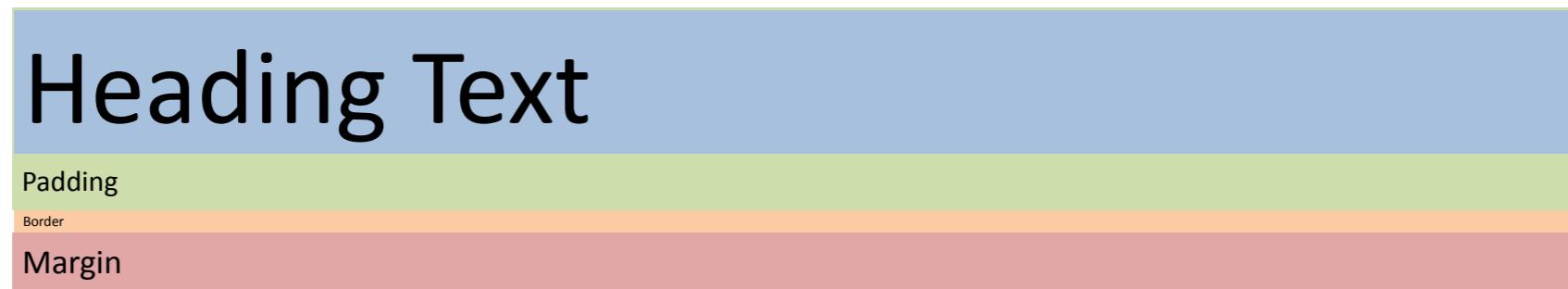
Heading Text

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CSS BOX MODEL EXAMPLE

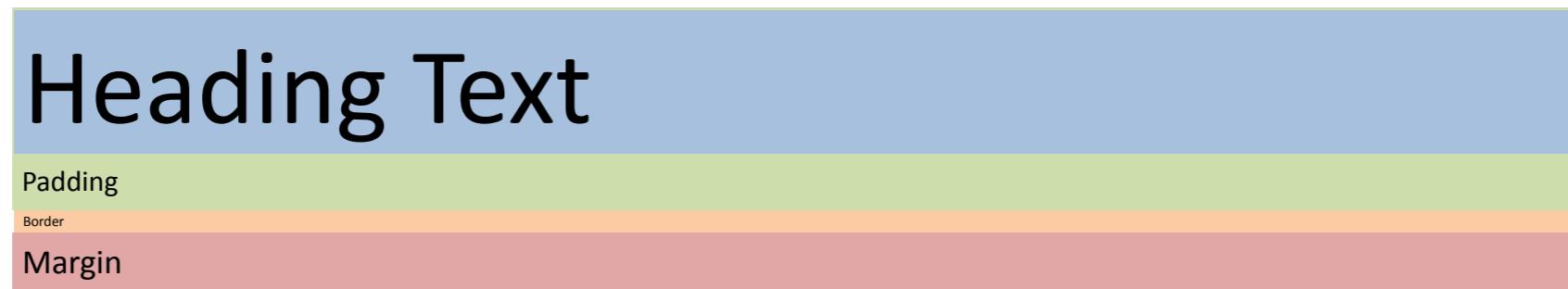


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CSS BOX MODEL EXAMPLE



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CSS BOX MODEL EXAMPLE

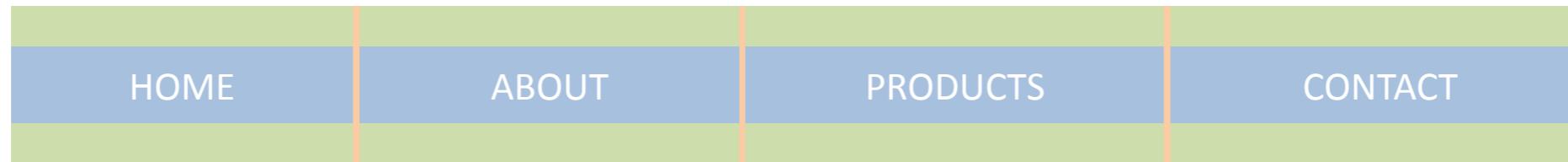
HOME

ABOUT

PRODUCTS

CONTACT

CSS BOX MODEL EXAMPLE



WHAT WE LEARNED:

Vocabulary:

- What is programming?
- What can I build?
- What is Web Development?
- Stages of web development/design
- How to create wireframes

The Basics of Code:

- HTML/CSS

RESOURCES

- <https://developer.mozilla.org/en-US/docs/Web/HTML/Element>
- wireframe.cc
- dash.generalassemb.ly (GA HTML/CSS tutorials)
- <http://www.csszengarden.com/>
- codepen.io
- <http://www.codecademy.com/tracks/apis>