

# DES 421 Professional Practice Project II

## Mobile App Development

- Professor Philip Burton
- Associate Professor Daria Tsoupikova

Electronic Visualization Laboratory EVL - Cyber-Commons  
Mondays 1:00 PM - 6:40PM

# Week1 - Lecture Topics

Course Intro/Review (syllabus, website, books, schedule)

Native, Hybrid and web apps

Quick recap of technologies – development environments and SDK

The Internet, World Wide Web, and Markup

Markup - XHTML, HTML, HTML5

# Goals

- Mobile app and web development
- Development tools, technologies, and standards
- Coding, debugging, and programming
- Production process of new mobile apps
- Bring it together in a final project
- Strong foundation for further work

# The Course

Markup (XHTML, HTML, HTML5)

Style (CSS)

Functionality (JavaScript CSS3 / HTML5)

Functionality (JavaScript frameworks)

Mobile Functions (jQuery and jQuery Mobile)

Geolocation

Native wrapping (PhoneGap)

Optimizing app performance

Packaging app for release in app stores

# Projects

## Assignments

- Markup HTML
- Style (CSS)
- Function (JavaScript)

## Midterm

- Mobile Functions (Frameworks)

## Final Project

# Readings

In addition to the texts, there will be online readings assigned and online references cited.

[Website](#)

# Expectations

- Attend all lectures and labs
- Submit all projects
- Complete assigned readings

# Milestones

- Midterm - March 3
- Final - April 28



The Web is no longer  
limited to our desktops and laptop PCs  
2013

[Business Insider Slides](#)

# HTML5 Vs. Native Apps

NATIVE vs HTML5

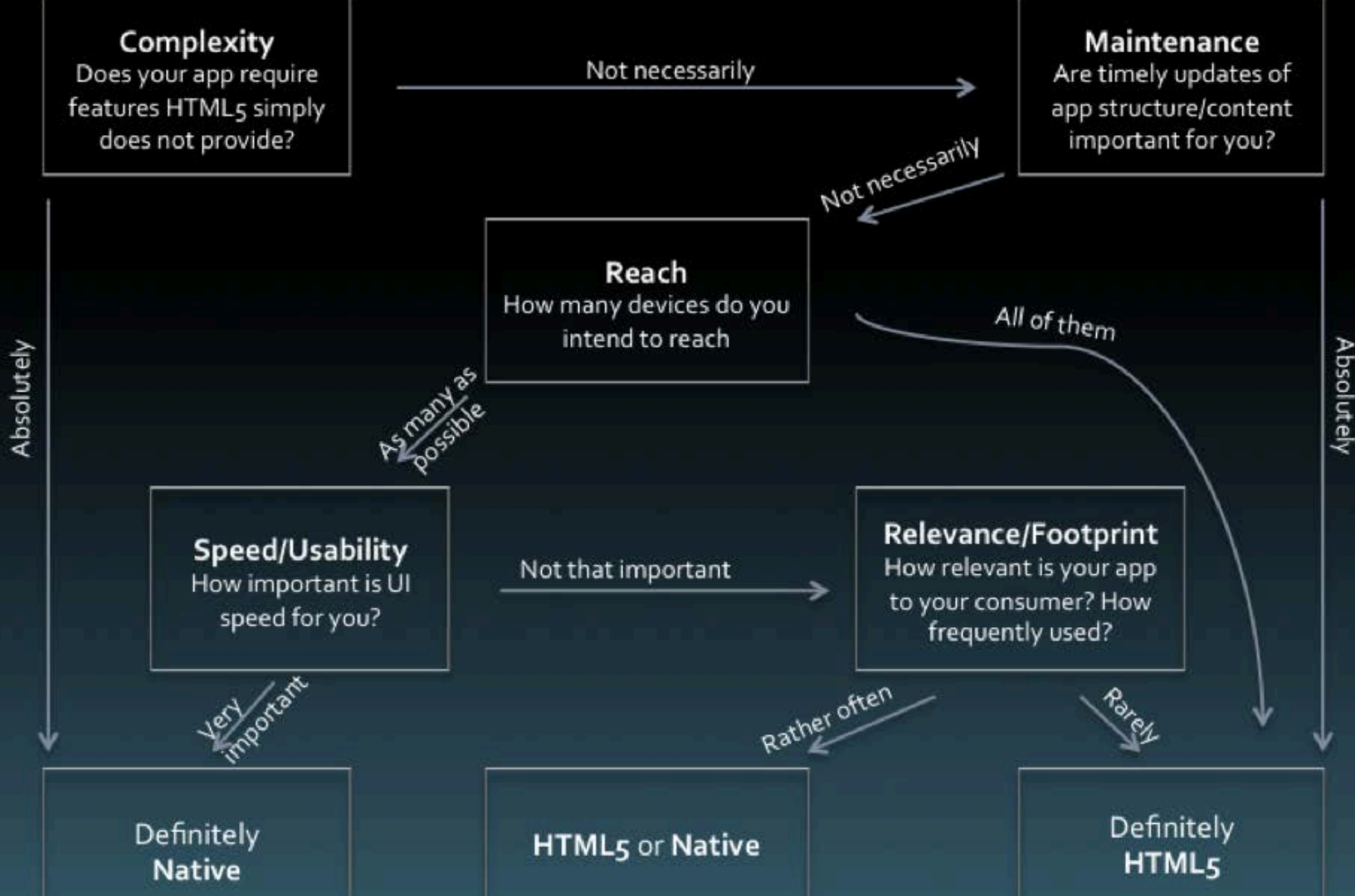
By Jeroen Trappers

## Native Aps

vs

## Web Apps

- Takes advantage of smart phone functionality / hardware (camera, GPS, scan feature, etc.)
  - Personalization is important
  - Complex/unique/tailored design and UI
  - Monetized content / potential purchases
  - Massive data transfer
- Limited budget (quicker to develop and deploy)
  - Search Engines Optimization (visibility and traffic increase)
  - App store approval
  - No frequent painful updates
  - Universal accessibility (cross platform/device distribution)
  - Requires very little device knowledge



# Web vs Native

## App:

How many platforms do you want to support?

How important is performance?

How important is the user experience?

Which hardware APIs do you need access to?

## Team:

How many codebases do you want to have?

What languages/technologies do you know?

How much money do you want to spend?

Web + Native = Hybrid Apps

# Quick Recap of Technologies

iOS

Objective-C

Xcode Tools

- Xcode

- Interface Builder

- Instruments

- Frameworks –Address Book UI F., Map Kit F., Message UI F.,  
UIKit F., Even Kit UI F...

iPhone Simulator

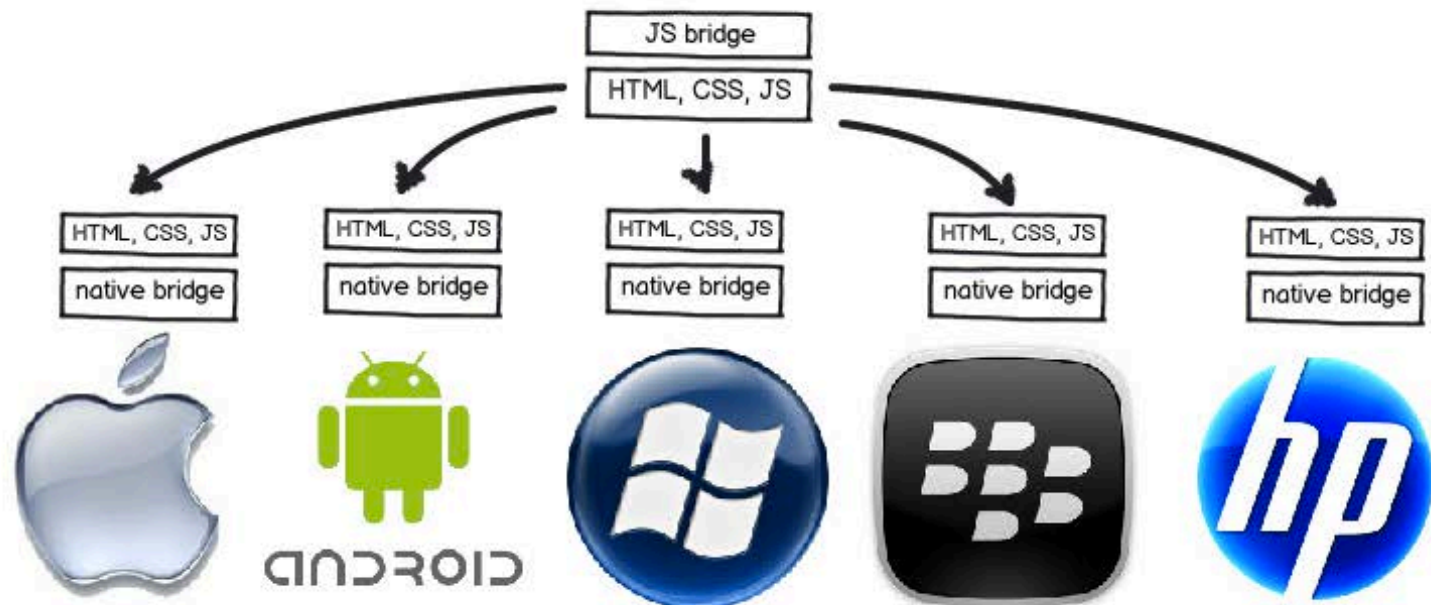
iOS Reference Library

# Quick Recap of Technologies

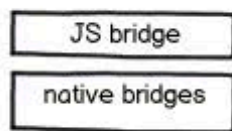


Platform	Language	IDE
iOS	Objective C	XCode
Android	Java	Eclipse
Windows	.NET	Visual Studio
Blackberry	Java	BB JDE
hpWebOS	C/C++/HTML5	?



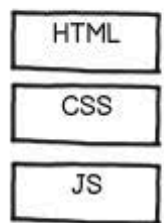


Bridge SDK



+

Web Framework



= Hybrid App

# Hybrid Apps

Bridge SDK and Web using Wrappers

PhoneGap

Titanium

Xamarin

appMobi

Trigger.io...

# Hybrid Apps – Web Frameworks

Jquery Mobile

Ajax

jQTouch

Wink

Sencha Touch

Lungojs

GWT Mobile...

# What is the best way?

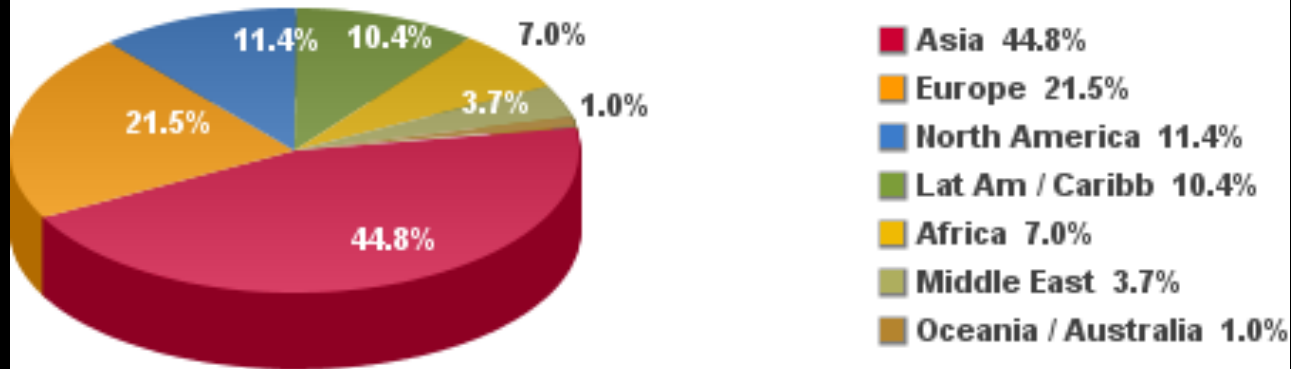
Web + Native = Hybrid Apps

HTML5 /CSS3/JavaScript...+ iOS (Objective-C) = Hybrid Apps

# The Internet

2.4 billion Internet users world-wide (34% of world population)

## Internet Users in the World Distribution by World Regions - 2012 Q2



Source: Internet World Stats - [www.internetworldstats.com/stats.htm](http://www.internetworldstats.com/stats.htm)

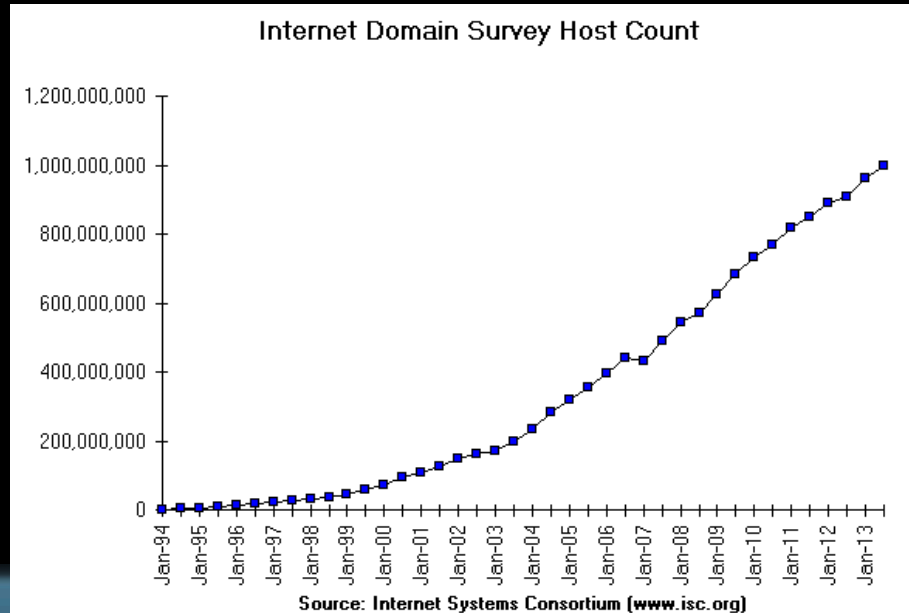
Basis: 2,405,518,376 Internet users on June 30, 2012

Copyright © 2012, Miniwatts Marketing Group

# The Internet

66% of American adults have broadband at home.

82% of American adults use the Internet Over 1000 million Internet hosts as of Jan 2013, [ISC Internet Domain Survey](#)



# The Internet Traffic Types

## Web

- HTTP

## Video

- RTMP
- RTSP

## Email

- SMTP
- POP
- IMAP

## File Transfer

- FTP
- SFTP
- FTP over SSH

## Login

- Telnet
- SSH

# World Wide Web Features

- HyperText Information System
- Cross-Platform and Cross-Device
- Distributed Around 187 million active sites as of January 2013.
- Open Standards Internet, TCP/IP, HTTP, (X)HTML, CSS, Javascript
- Open Source Apache HTTP Server, Mosaic, Netscape, Firefox, JavaScript, Perl, PHP, etc.
- Web Browser: provides a single interface to many services  
Information, Communication, Shopping, Banking, ...
- Dynamic, Interactive, Evolving



# URL- Uniform Resource Locator

<http://www.evl.uic.edu/datsoupi/421/index.html>

|        |        |                                |        |        |

Protocol

world wide web

domain name

directory (folder)

subdirectory

webpage (file)

# URL- Uniform Resource Locator

<http://www.evl.uic.edu/datsoupi/421/index.html>

|        |        |                    |        |        |

Protocols

http- hyper text transfer protocol

https - Hypertext Transfer Protocol Secure

FTP – File Transfer Protocol

TCP - Transmission Control Protocol

UDP - User Datagram Protocol

# URL- Uniform Resource Locator

<http://www.evl.uic.edu/datsoupi/421/index.html>

|            |            |            |            |            |

domain name

DNS connection

.edu – educational

.com – commercial

.net – network

.org – non profit organization

.gov – government

.mil - military

# HTTP Client – a webpage

Structure  
(Content)

+

Style

+

Function

Markup (XHTML, HTML)

- Structure
- Content
  - text
  - images
  - media

CSS

- Style
- Presentation
- Appearance
  - page layout

Javascript  
frameworks

- Actions
- Events
  - scripts
  - database inter.

# School of Design – Markup (XHTML)

[Skip to main content](#)

- [Schools](#)  
[School of Architecture](#) [School of Art & Art History](#) [School of Design](#) [School of Theatre & Music](#)
- [Partners](#)  
[Gallery 400](#) [Jane Addams Hull-  
House Museum](#) [UIC Innovation  
Center Programs](#)
- [About](#)  
[Dean's Message](#) [History](#) [Facilities/Resources](#) [Publications](#)
- [Calendar](#)
- [News](#)
- [Admissions](#)  
[Undergraduate](#)  
[Admissions](#) [Graduate](#)  
[Admissions](#)
- [Giving](#)  
[Make a Difference](#) [Meet the  
Advancement Team](#) [Ways to Give](#) [Make Your Gift](#)
- [Directory](#)
- [Information for V](#)  
[Current Students](#) [Faculty/Staff](#)
- [Schools](#)
- [About](#)
- [News](#)
- [Support](#)
- [Partners](#)
- [Calendar](#)
- [Admissions](#)
- [Directory](#)

# School of Design – Markup +Style

ArchDesigArts  
at Chicago

Schools  
Partners  
About

Calendar  
News

Admissions  
Giving  
Directory

Information for V

[Home](#) > [Schools](#) > [School of Design](#)

## School of Design

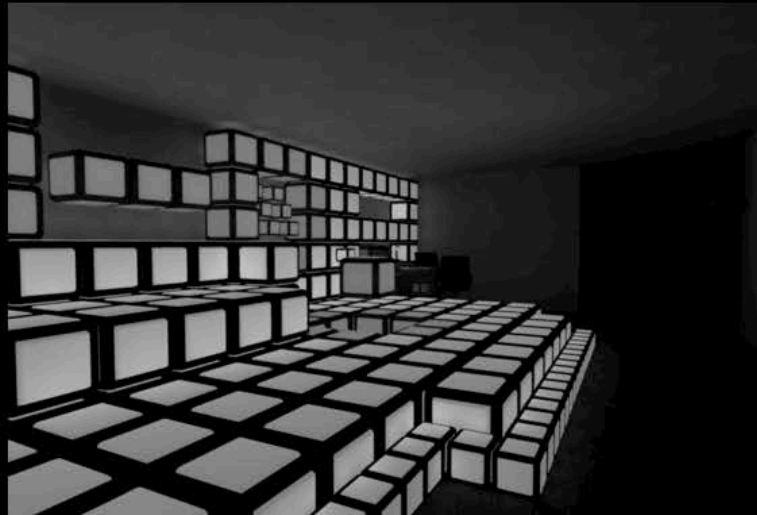


School of  
Architecture

School of Art & Art  
History

School of Design

School of Theatre  
& Music



The practice of design is a responsibility and a privilege. It is an independent pursuit that precipitates collective action. Design

# School of Design – Markup +Style+ Function

ArchDesigArts  
at Chicago

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Partners  
About

Calendar  
News

Admissions  
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Information for V

[Home](#) > [Schools](#) > [School of Design](#)

## School of Design

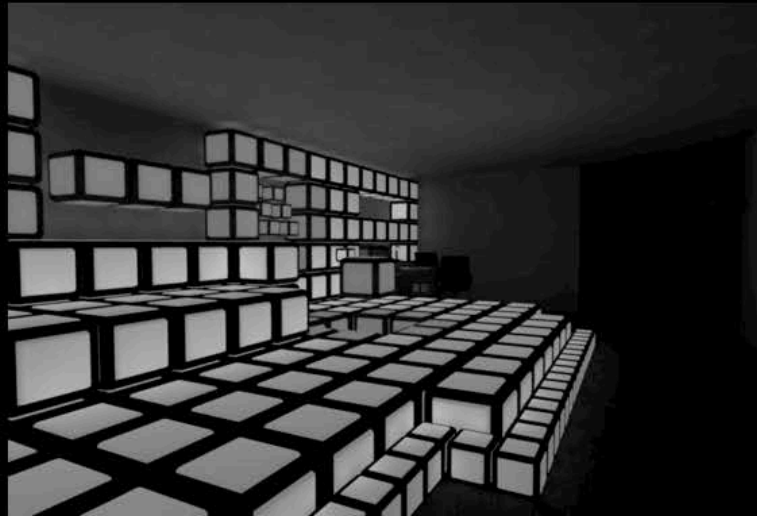


School of  
Architecture

School of Art & Art  
History

School of Design

School of Theatre  
& Music



The practice of design is a responsibility and a privilege. It is an independent pursuit that precipitates collective action. Design

# XHTML 1.1

XHTML (Extensible Hyper Text Markup Language) is a family of XML markup languages that extend the widely used Hypertext Markup Language (HTML), the language in which web pages are written.



# XHTML– Extensible Hyper Text Markup Language

```
1 <!DOCTYPE html PUBLIC "-//W3C//DTD XHTML+RDFa 1.0//EN"
2 "http://www.w3.org/MarkUp/DTD/xhtml-rdfa-1.dtd">
3 <html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en" version="XHTML+RDFa 1.0" dir="ltr"
4 xmlns:content="http://purl.org/rss/1.0/modules/content/"
5 xmlns:dc="http://purl.org/dc/terms/"
6 xmlns:foaf="http://xmlns.com/foaf/0.1/"
7 xmlns:og="http://ogp.me/ns#"
8 xmlns:rdfs="http://www.w3.org/2000/01/rdf-schema#"
9 xmlns:sioc="http://rdfs.org/sioc/ns#"
10 xmlns:sioc_t="http://rdfs.org/sioc/types#"
11 xmlns:skos="http://www.w3.org/2004/02/skos/core#"
12 xmlns:xsd="http://www.w3.org/2001/XMLSchema#">
13
14 <head profile="http://www.w3.org/1999/xhtml/vocab">
15   <meta http-equiv="Content-Type" content="text/html; charset=utf-8" />
16   <link rel="shortcut icon" href="http://cada.uic.edu/sites/default/files/favicon.png" type="image/png" />
17   <link rel="shortlink" href="/node/36" />
18   <link rel="canonical" href="/design" />
19   <meta name="Generator" content="Drupal 7 (http://drupal.org)" />
20   <title>School of Design | cada.uic.edu | </title>
21   <style type="text/css" media="all">@import url("http://cada.uic.edu/modules/system/system.base.css?mw7ig5");
22 @import url("http://cada.uic.edu/modules/system/system.messages.css?mw7ig5");
23 @import url("http://cada.uic.edu/modules/system/system.messages.css?mw7ig5");
24 @import url("http://cada.uic.edu/modules/system/system.theme.css?mw7ig5");</style>
25 <style type="text/css" media="all">@import url("http://cada.uic.edu/modules/comment/comment.css?mw7ig5");
26 @import url("http://cada.uic.edu/modules/field/theme/field.css?mw7ig5");
27 @import url("http://cada.uic.edu/modules/node/node.css?mw7ig5");
28 @import url("http://cada.uic.edu/modules/search/search.css?mw7ig5");
29 @import url("http://cada.uic.edu/modules/user/user.css?mw7ig5");
30 @import url("http://cada.uic.edu/sites/all/modules/views/css/views.css?mw7ig5");</style>
31 <style type="text/css" media="all">@import url("http://cada.uic.edu/sites/all/modules/ctools/css/ctools.css?mw7ig5");
32 @import url("http://cada.uic.edu/sites/all/modules/eventwork/css/custom.css?mw7ig5");</style>
33 <style type="text/css" media="all">@import url("http://cada.uic.edu/sites/all/themes/cadaweb/assets/css/style.css?mw7ig5");
34 @import url("http://cada.uic.edu/sites/all/themes/cadaweb/assets/css/typography.css?mw7ig5");
35 @import url("http://cada.uic.edu/sites/all/themes/cadaweb/assets/css/layout.css?mw7ig5");
36 @import url("http://cada.uic.edu/sites/all/themes/cadaweb/assets/css/component.css?mw7ig5");</style>
37 <style type="text/css" media="print">@import url("http://cada.uic.edu/sites/all/themes/cadaweb/assets/css/print.css?mw7ig5");</style>
38
39 <!--[if lt IE 7]>
40 <link type="text/css" rel="stylesheet" href="http://cada.uic.edu/sites/all/themes/cadaweb/fix-ie.css?mw7ig5" media="all" />
41 <![endif]-->
42
43 <!-- dropdown menu -->
44
45 <script type="text/javascript" src="http://cada.uic.edu/sites/all/themes/cadaweb/assets/js/modernizr.custom.js"></script>
46 <script type="text/javascript">
47
48 var timeout = 10;
49 var closetimer = 0;
```

# XHTML– Document Structure

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML+RDFa 1.0//EN"
  "http://www.w3.org/MarkUp/DTD/xhtml-rdfa-1.dtd">
<html>
  <head>
    <title>School of Design | cada.uic.edu | </title>
  </head>
  <body>
    <!-- content goes here -->
  </body>
</html>
```

# XHTML vs HTML

## Document Structure

XHTML `<!DOCTYPE ....>` is mandatory

The XML namespace attribute in `<html>` is mandatory

`<html>`, `<head>`, `<title>`, and `<body>` is mandatory

## XHTML Elements

XHTML elements must be properly nested

XHTML elements must always be closed

XHTML elements must be in lowercase

XHTML documents must have one root element

## XHTML Attributes

Attribute names must be in lower case

Attribute values must be quoted

Attribute minimization is forbidden

# History of HTML

Tim Berners-Lee developed html in 1992 while at CERN, the European Laboratory for Particle Physics in Geneva in Switzerland.

He is currently the Director of the World Wide Web Consortium, the group that sets technical standards for the Web.





# HTML5 : Past, Present & Future

Web and Mobile Applications

## Timeline of Web Technologies

1991

HTML

1994

HTML 2

1996

CSS 1

+

1997

HTML 4

1998

CSS 2

2000

XHTML 1

2002

Tableless  
Web

2005

AJAX

2009

HTML5



# HTML5 Game Example



# HTML

a collection of platform-independent markup tags that define the various components of a World Wide Web document

allows you to format text, add rules, graphics, sound, and video and save it all in a text only file that any computer can read and view this file in the Browser

Any HTML file is called document and it has an extension .html  
HTML documents can contain links to other HTML documents or to practically any information on the Internet

# HTML

HTML uses tags are commands ( keywords ) enclosed in less than < and greater than > signs.

Example:

```
<table>
```

Many tags have special attributes hat offer a variety of options for the contained text.

Example:

```
<table border >
```



# HTML

Attributes often have values:

Example:

```
<table border = "1" >
```

HTML browsers ignore any extra space that exist between the tags in your document.

Tags are usually come in pairs: opening and closing tag.

Example:

```
<table > opening tag
```

```
</table> closing tag
```

# Link Element `<a href="http://www.uic.edu/">UIC</a>`

Opening Tag

```
<a href="http://www.uic.edu/">UIC</a>
```

Element

```
<a href="http://www.uic.edu/">UIC</a>
```

Attribute

```
<a href="http://www.uic.edu/">UIC</a>
```

Attribute Value

```
<a href="http://www.uic.edu/">UIC</a>
```

Content

```
<a href="http://www.uic.edu/">UIC</a>
```

Closing Tag

```
<a href="http://www.uic.edu/">UIC</a>
```

# HTML Nesting

CORRECT

```
<li> <a href="http://www.uic.edu/"> UIC </a> </li>
```

INCORRECT

```
<li> <a href="http://www.uic.edu/"> UIC </li> </a>
```

# XHTML– Document Structure - School of Design

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML+RDFa 1.0//EN"
  "http://www.w3.org/MarkUp/DTD/xhtml-rdfa-1.dtd">
<html>
  <head>
    <title>School of Design | cada.uic.edu | </title>
  </head>
  <body>
    <!-- content goes here -->
  </body>
</html>
```

# HTML– Document Structure

```
<!DOCTYPE html >  
<html>  
  <head>  
    <title> Document Title </title>  
  </head>  
  <body>  
    <!-- content goes here -->  
  </body>  
</html>
```

# HTML5– Page Setup Requirements

```
<!DOCTYPE html >
```

XHTML5 DTD for the <!doctype> tag.

```
<?xml version="1.0" encoding="UTF-8" ?>
```

XML declaration

# HTML5– Page Setup Requirements

The next line of code should be the opening `<html>` tag.

The `<html>` tag in every document should always be

```
<html xmlns="http://www.w3.org/1999/xhtml" xml:lang="en"
lang="en">
```

- `xmlns` specifies the XML namespace for a document.
- `xml:lang` specifies the contents and attributes as English and is a required accessibility standard.
- `lang` specifies the content of a tag as English and is a required accessibility standard.

# HTML5– Page Setup Requirements

```
<meta charset="utf-8" />
```

between the <head> and </head> tags, placed <meta> tag

The encoding type (UTF-8) should match the encoding in the XML declaration above.



# HTML5– Validators

Validation is a good way to make sure that u writing correct HTML5 code  
Some portion of HTML5 have some new semantics available which require validation

The Total Validator tool is pretty handing for validating HTML5

<http://www.totalvalidator.com/tools/index.html>

W3C Markup validation service

<http://validator.w3.org/>

Validator.nu

<http://html5.validator.nu/>

# HTML5– Validators

There are a few validator add-ons to the browsers, some do HTML5 well, others do not. Firefox install add-ons:

Firebug

<https://getfirebug.com/>

HTML Validator

<https://addons.mozilla.org/en-US/firefox/addon/html-validator/>

HTTPFox

JavaScript Debugger

Web Developer

# HTML- Document Structure - tabbing

```
<!DOCTYPE html >
```

```
<html>
```

```
  <head>
```

```
    <title> Document Title </title>
```

```
  </head>
```

```
  <body>
```

```
    <!-- content goes here -->
```

```
  </body>
```

```
</html>
```

# HTML- Headings

`<h1> This is a Main Heading </h1>`

`<h2> This is a Level 2 Heading </h2>`

`<h3> This is a Level 3 Heading </h3>`

`<h4> This is a Level 4 Heading </h4>`

`<h5> This is a Level 5 Heading </h5>`

`<h6> This is a Level 6 Heading </h6>`

# HTML- Paragraph and Line Break

`<p> This is a paragraph </p>`

`<br /> This is a new line of text`

# HTML- Bold & Italic & Underlined

`<b> This is bold text</b>`

`<i> This is italic text </i>`

`<u> This is underlined text </u>`

# HTML- Horizontal Rule

```
<hr />
```

---

horizontal rule- can be used to separate text

# HTML- Strong & Emphasis

```
<p> This is <strong> strong text </strong> inside a paragraph  
</p>
```

```
<em> This is emphasized word </em>
```



# HTML- Ordered List

```
<ol> Ordered List opening tag  
  <li> List item </li>  
  <li> List item </li>  
  <li> List item </li  
  <li> List item </li>  
</ol> Ordered List closing tag
```

# HTML- Unordered List

`<ul>` Ordered List opening tag

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

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

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

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

`</ul>` Ordered List closing tag

# HTML- Definition List

<dl> Definition List opening tag

    <dt> Definition Term </dt>

        <dd> Definition </dd>

<dt> HTML</dt>

    <dd> Hyper Text Markup Language </dd>

</dl> Definition List closing tag

HTML

Hyper Text Markup Language

# HTML- Lists

Ordered - numbers

Unordered – bullets

Definition – used to define terminology

# HTML- Links

```
<a href="http://www.uic.edu"> UIC </a>
```



opening tag



closing tag

# HTML- Links

```
<a href="http://www.uic.edu"> UIC </a>
```



opening tag



closing tag

<a> - link tag

href – attribute = hyper text reference

“http://www.uic.edu” – value

UIC – content – user clicks on it

# HTML- Relative Links

```
<a href="index.html"> link to home page </a>
```

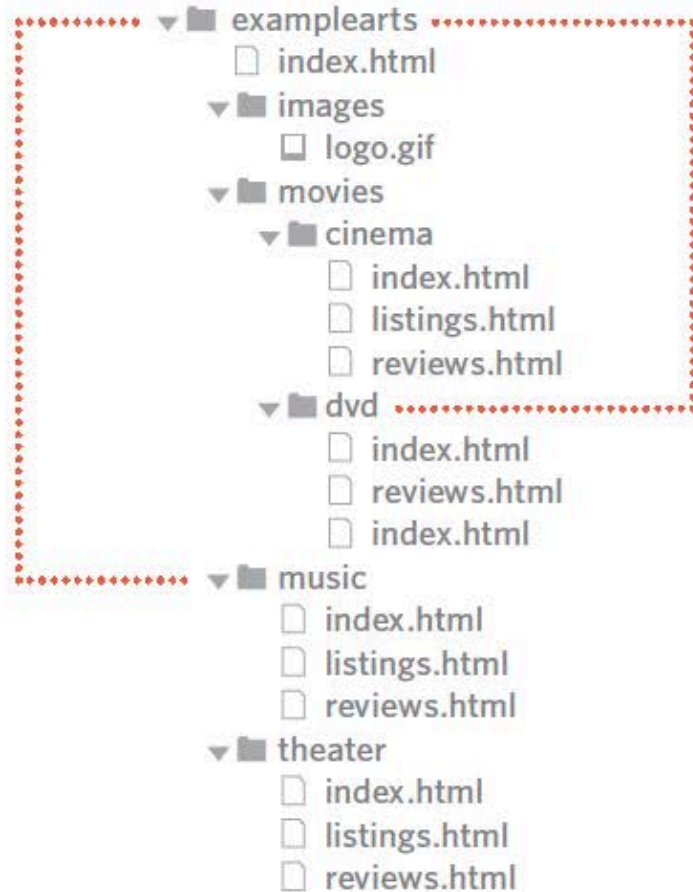
Links to other webpages on the same website

Provide a shortcut for the browser to find your webpage

- No protocol specified
- No domain name specified
- No www specified

## PARENT

The *examplearts* folder is a parent of the *music* folder.



## CHILD

The *music* folder is a child of the *examplearts* folder.

## GRANDPARENT

The *examplearts* folder is a grandparent of the *dvd* folder.

## GRANDCHILD

The *dvd* folder is a grandchild of the *examplearts* folder.



# HTML- Relative Links

## Relative Link Type

### Same Folder

To link to a file in the same folder, just use the file name. (Nothing else is needed.)

## Example

To link to music reviews from the music homepage:

```
<a href="reviews.html">Reviews</a>
```

### Child Folder

For a child folder, use the name of the child folder, followed by a forward slash, then the file name.

To link to music listings from the homepage:

```
<a href="music/listings.html">Listings</a>
```

### Grandchild Folder

Use the name of the child folder, followed by a forward slash, then the name of the grandchild folder, followed by another forward slash, then the file name.

To link to DVD reviews from the homepage:

```
<a href="movies/dvd/reviews.html">
```

# HTML- Relative Links

## Relative Link Type

### Parent Folder

Use ../ to indicate the folder above the current one, then follow it with the file name.

### Grandparent Folder

Repeat the ../ to indicate that you want to go up two folders (rather than one), then follow it with the file name.

## Example

To link to the homepage from the music reviews:

```
<a href="../index.html">Home</a>
```

To link to the homepage from the DVD reviews:

```
<a href="../../index.html">Home</a>
```

# HTML- Email Links

```
<a href="mailto:tsoupi@uic.edu"> tsoupi@uic.edu email</a>
```

mailto: - email link keyword

tsoupi@uic.edu - email address

# HTML- Opening Links in a New Window

```
<a href="index.html" target="_blank"> link to home page </a>
```

Target - browser window

\_blank

\_new

\_parent

\_self

\_top

# HTML- Anchors

`<ol id="mylist">` Ordered List opening tag

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

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

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

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

`</ol>` Ordered List closing tag

...

`<a href="#list">` link to specific list on the same page `</a>`

# HTML- Anchors

Index.html

`<ol id="mylist">` Ordered List opening tag

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

`</ol>` Ordered List closing tag

references.html

`<a href="index/#list">` link to specific list on another page `</a>`

# HTML- Links

- Links are created using the `<a>` element.
- The `<a>` element uses the `href` attribute to indicate the page you are linking to.
- If you are linking to a page within your own site, it is best to use relative links rather than qualified URLs.
- You can create links to open email programs with an email address in the "to" field.
- You can use the `id` attribute to target elements within a page that can be linked to.

# HTML- Images

```

```

Img –image tag

Src- source (file)

“photo.jpg” – Image file name



# HTML- Images

```

```

Height - attribute

"300" - height value

alt -text description

# HTML- Image alignment (not supported in HTML5)

```

```

align - align horizontally

top          vertical alignment value

middle      vertical alignment value

bottom      vertical alignment value

# HTML- Images

- Save images in the right format (.jpg .png .gif ...)
- Save images in the right size
- Use the correct resolution (72 ppi)

# HTML5- Images

```
<figure>  
      
    <br />  
    <figcaption>  
        A caption of this image  
    </figcaption>  
</figure>
```

# HTML- Tables

Information in a grid format

- Financial Reports
- Schedules
- Sport Results

# HTML- Tables

```
<table border="1">
  <tr>
    <th>Heading</th>
    <td>row 1, cell 2</td>
  </tr>
  <tr>
    <td>row 2, cell 1</td>
    <td>row 2, cell 2</td>
  </tr>
</table>
```

How it looks in a browser:

Heading	row 1, cell 2
row 2, cell 1	row 2, cell 2

<table> - table tag  
<tr> - table row  
<td> - table data  
<th> - table heading

# HTML- Tables

```
<table border="1" width="300" height="500" border="2"  
bgcolor="red">
```

width – old attribute replaces by CSS

height - old attribute replaces by CSS

border - old attribute replaces by CSS

bgcolor – background color old attribute

```

<table>
  <tr>
    <th></th>
    <th>9am</th>
    <th>10am</th>
    <th>11am</th>
    <th>12am</th>
  </tr>
  <tr>
    <th>Monday</th>
    <td colspan="2">Geography</td>
    <td>Math</td>
    <td>Art</td>
  </tr>
  <tr>
    <th>Tuesday</th>
    <td colspan="3">Gym</td>
    <td>Home Ec</td>
  </tr>
</table>

```

```

<table>
  <tr>
    <th></th>
    <th>ABC</th>
    <th>BBC</th>
    <th>CNN</th>
  </tr>
  <tr>
    <th>6pm - 7pm</th>
    <td rowspan="2">Movie</td>
    <td>Comedy</td>
    <td>News</td>
  </tr>
  <tr>
    <th>7pm - 8pm</th>
    <td>Sport</td>
    <td>Current Affairs</td>
  </tr>
</table>

```

RESULT

	9am	10am	11am	12am
Monday	Geography		Math	Art
Tuesday	Gym			Home Ec

RESULT

	ABC	BBC	CNN
6pm - 7pm	Movie	Comedy	News
7pm - 8pm		Sport	Current Affairs



# HTML- Tables

- The `<table>` element is used to add tables to a web page.
- A table is drawn out row by row. Each row is created with the `<tr>` element.
- Inside each row there are a number of cells represented by the `<td>` element (or `<th>` if it is a header).
- You can make cells of a table span more than one row or column using the `rowspan` and `colspan` attributes.

# HTML- Comments

```
<!-- This is a comment -->
```

# HTML5- Document

`<section>`

is a set of content that you could store as an individual record in a database

`<section>`

`<h1>Any level of heading</h1>` The rest of the content

`</section>`

It is still advisable to use a `<div>` to perform styling

# HTML5- Document

`<header>`

It is the head of a new section

Do not confuse with the `<head>` element

`<header>` is a group of introductory or navigational aids

Use the `<header>` at the start of your page or inside an `<article>`, as examples.

# HTML5- Document

`<footer>`

represents the footer for the section it applies to

Where you have a header, you may often find a footer that goes with it, again for the main page, or in a section or article, etc.

`<section>`

Section content appears here.

`<footer>`

Footer information for section.

`</footer>`

`</section>`

# HTML5- Document

```
<article>
```

Use `<article>` when you have a page that is laid out like syndication. For example, course announcements, forum post, magazine article, etc.

```
<article>
```

```
    <h1>Title</h1>
```

```
    <p>paragraph information about the topic</p>
```

```
</article>
```

# HTML5- Document

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