

# What is HTML5?



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<https://github.com/swacademy/HTML5>

# Computing Paradigm

THEN...

(Desktops / Notebooks)



NOW...

(Tablets / Smartphones)

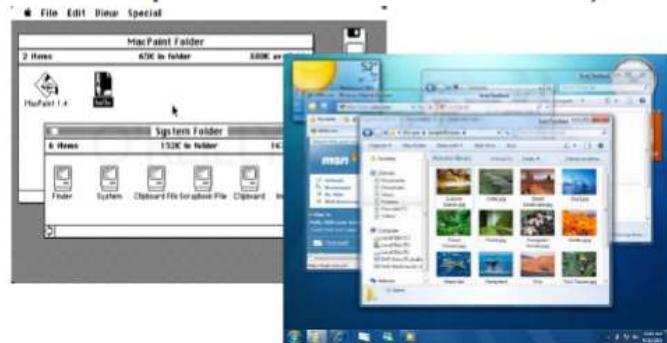


Source : Mary Meeker, INTERNET TRENDS, 2012/12

# Computing Paradigm (Cont.)

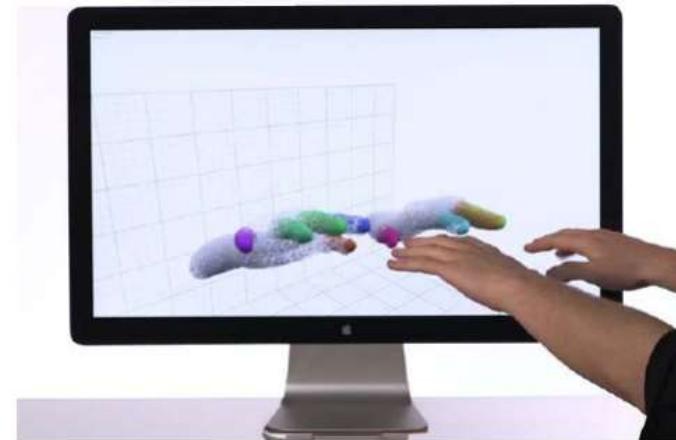
**THEN...**

(Keyboard + Mice =  
Graphical User Interface)



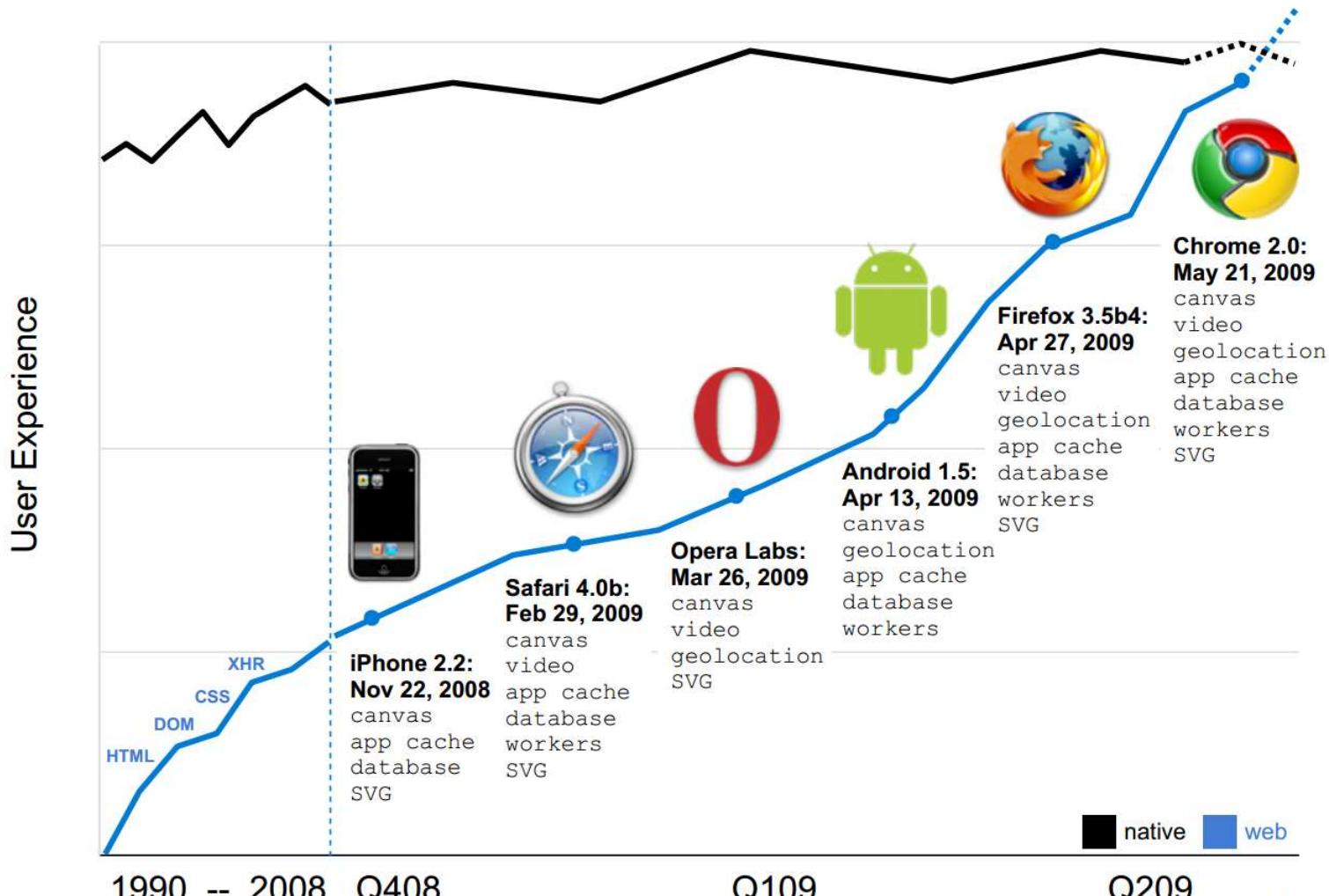
**NOW...**

(Touch + Voice + Gesture =  
Natural User Interface)



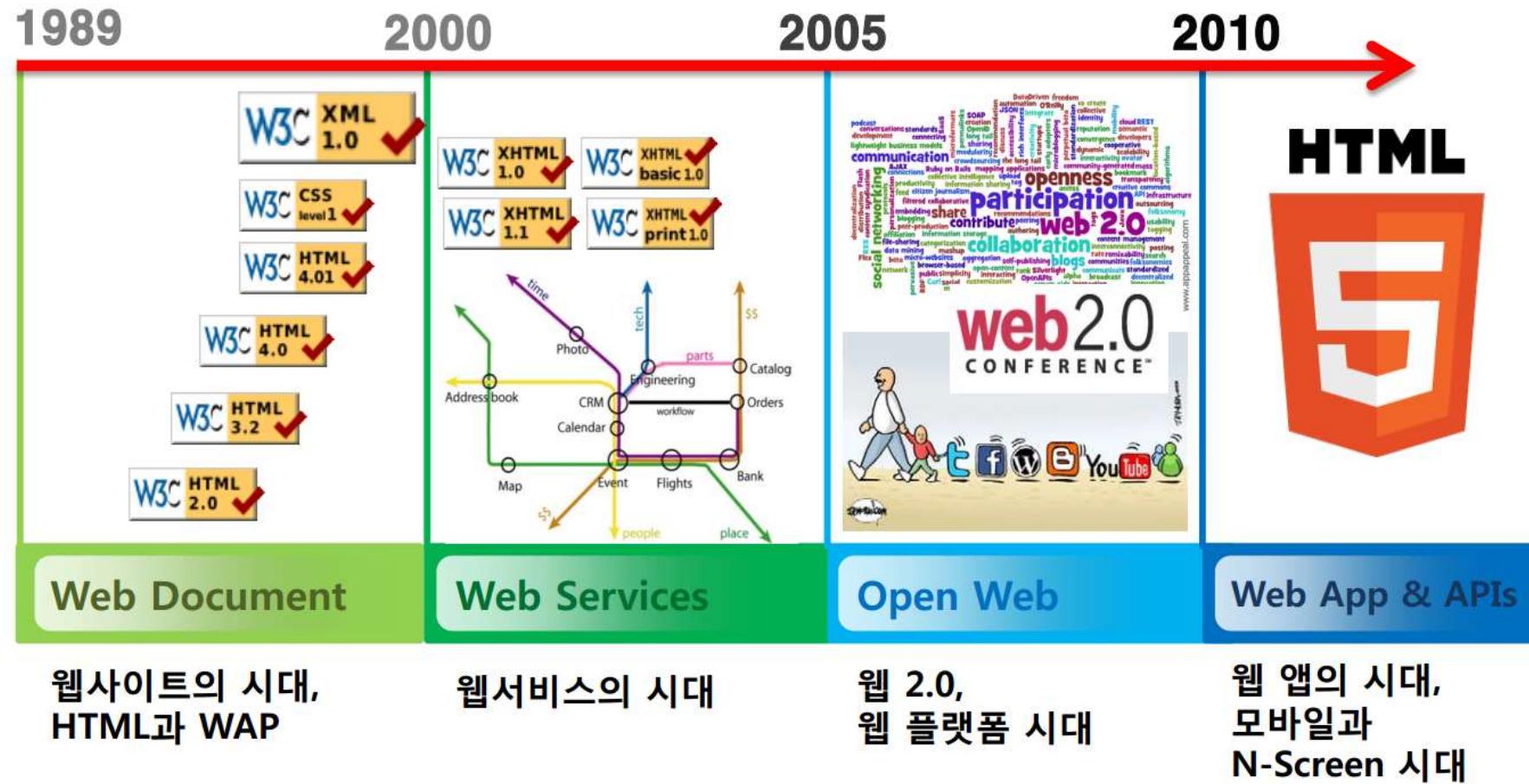
Source : Mary Meeker, INTERNET TRENDS, 2012/12

# The Web Platform is Accelerating



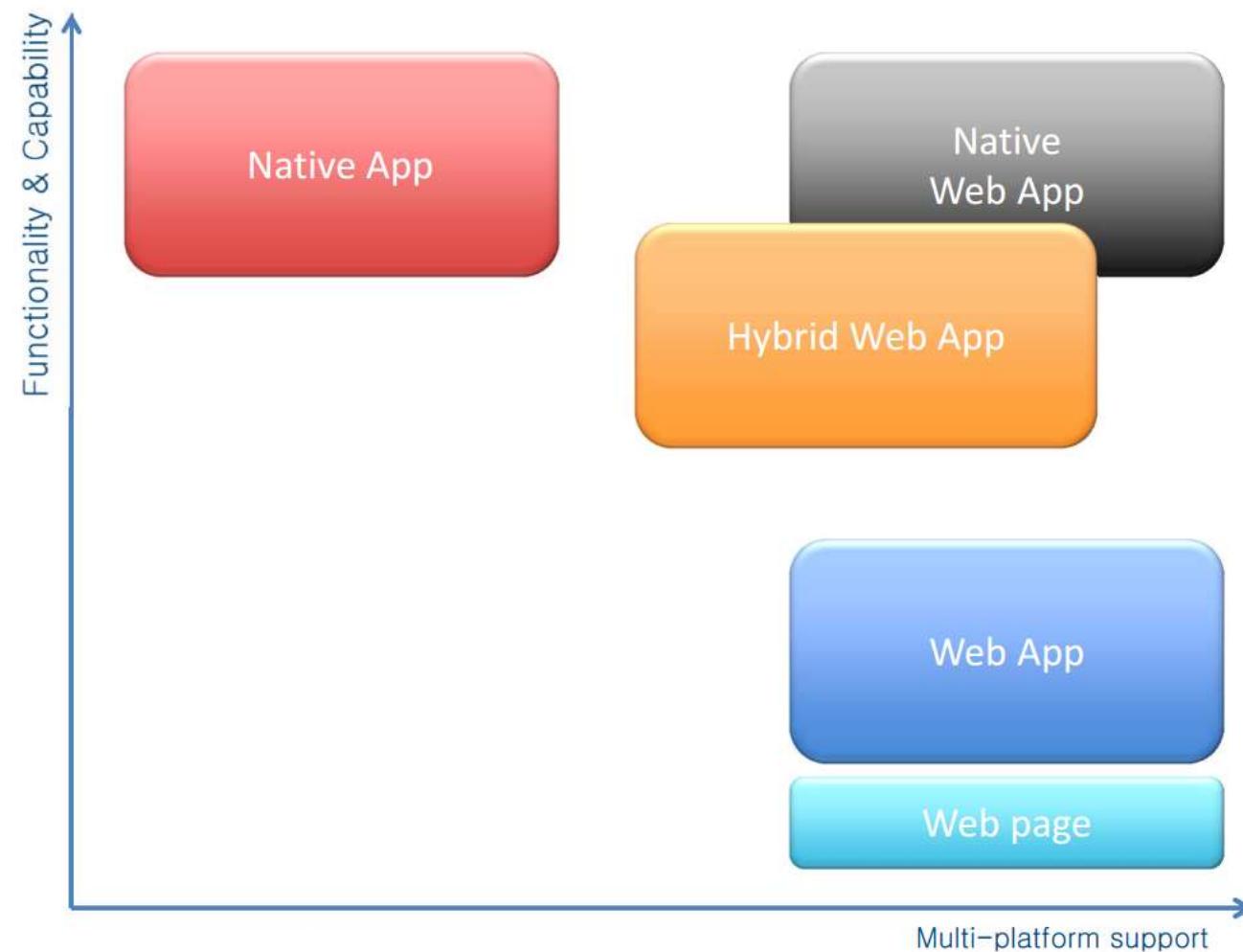
Source : Google, Introduction to HTML5, Oct. 7, 2009

# Evolution of World Wide Web



Source : TOBESoft 2013 Seminar

# Native App vs. Web App



Source : Jonathan Jeon, 2013, Web & HTML5, 2012/12

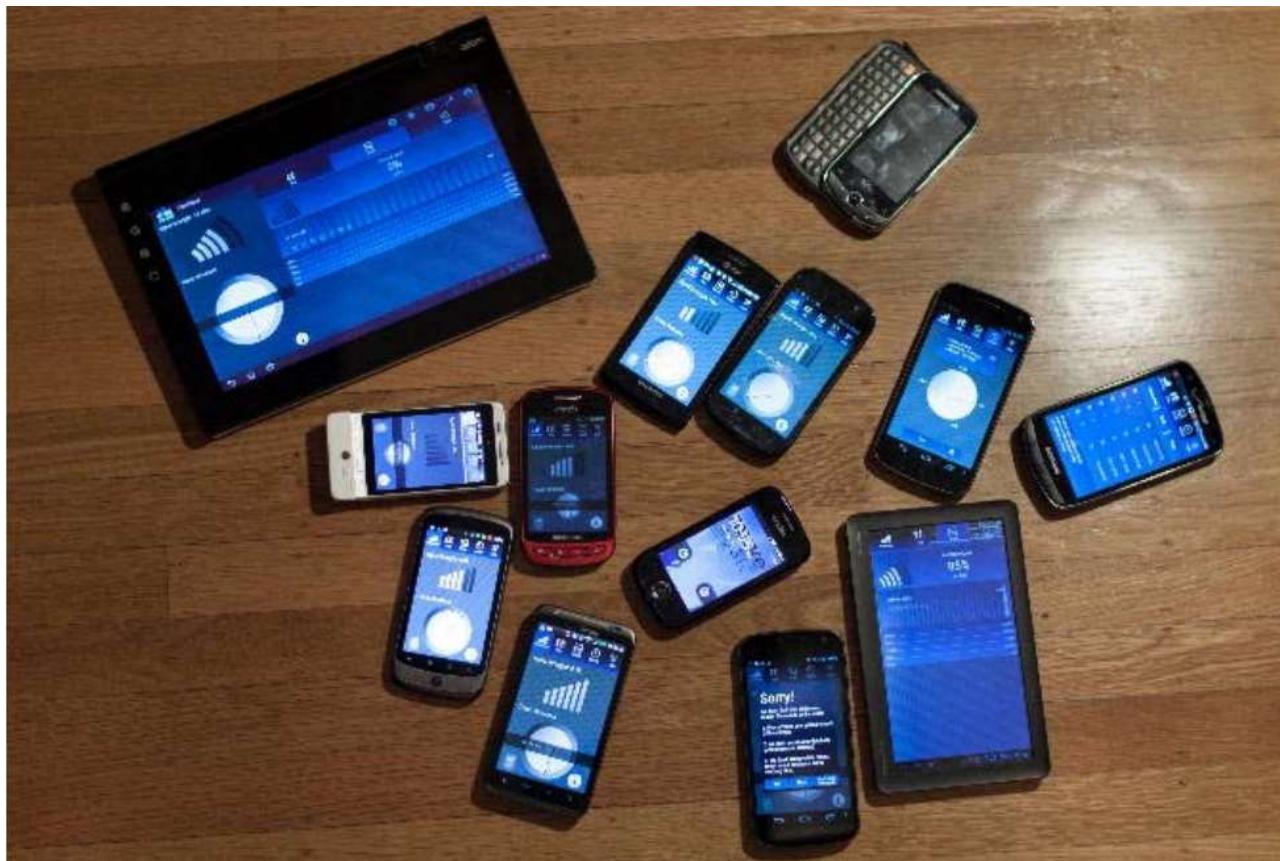
# Overcome the Obstructions of Web App

<b>Performance</b> <ul style="list-style-type: none"><li>- Engine enhance <i>(Script, Rendering)</i></li><li>- H/W Acceleration</li><li>- Web OS</li></ul>	<b>Offline</b> <ul style="list-style-type: none"><li>- HTML5 offline feature <i>(application cache, local storage, online/offline events)</i></li></ul>	<b>Device Capability</b> <ul style="list-style-type: none"><li>- Device APIs</li><li>- System Application APIs</li><li>- Web APIs <i>(Web Intents, Web Push...)</i></li><li>- Web OS</li></ul>
<b>Monetization</b> <ul style="list-style-type: none"><li>- Web Application Store &amp; Native Web App</li></ul>	<b>Developer Environment</b> <ul style="list-style-type: none"><li>- Developer Tools</li><li>- JavaScript Frameworks</li></ul>	<b>UI</b> <ul style="list-style-type: none"><li>- WebGL, Web Audio API</li><li>- CSS4, DOM4</li><li>- Touch Events, Game Pad API ...</li></ul>

Source : 전종홍, HTML5 현재와 미래 전망, 2013

# Response Web

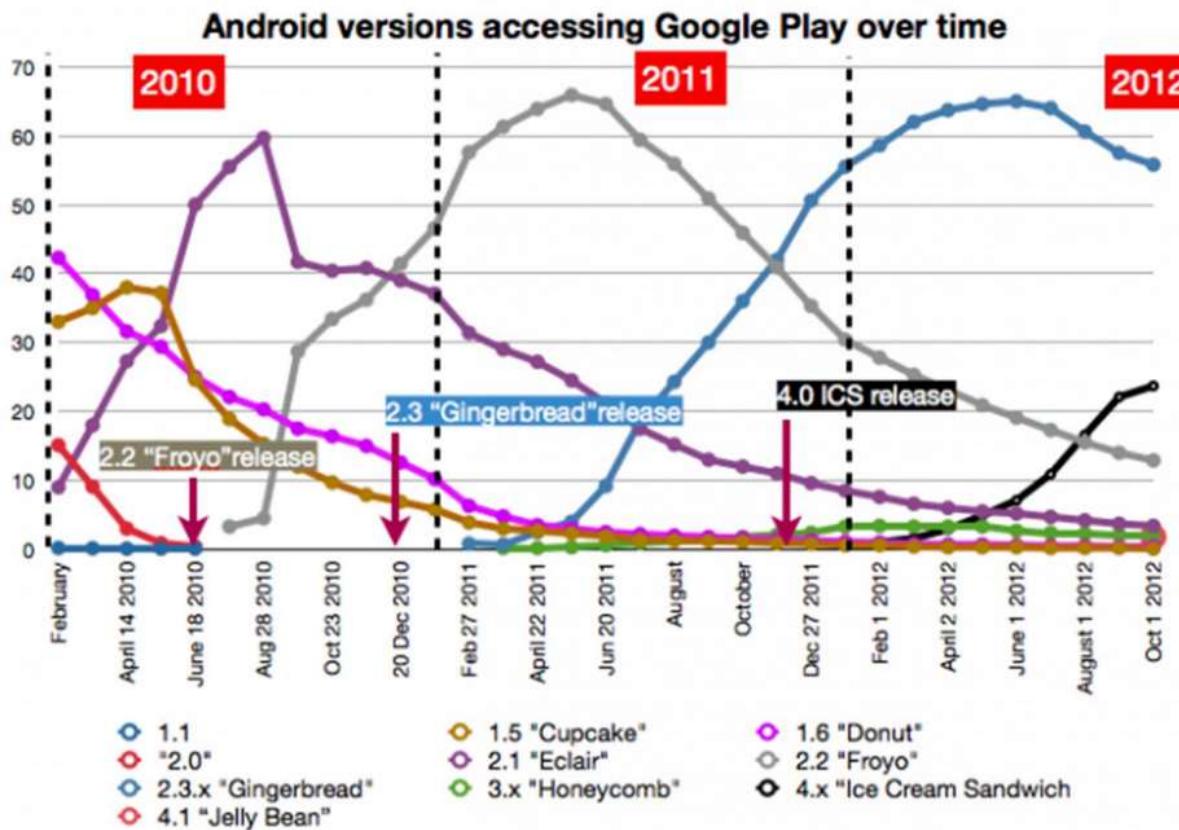
- Fragmentation is a big problem



Source : Jonathan Jeon, 2013, Web & HTML5, 2012/12

# Response Web (Cont.)

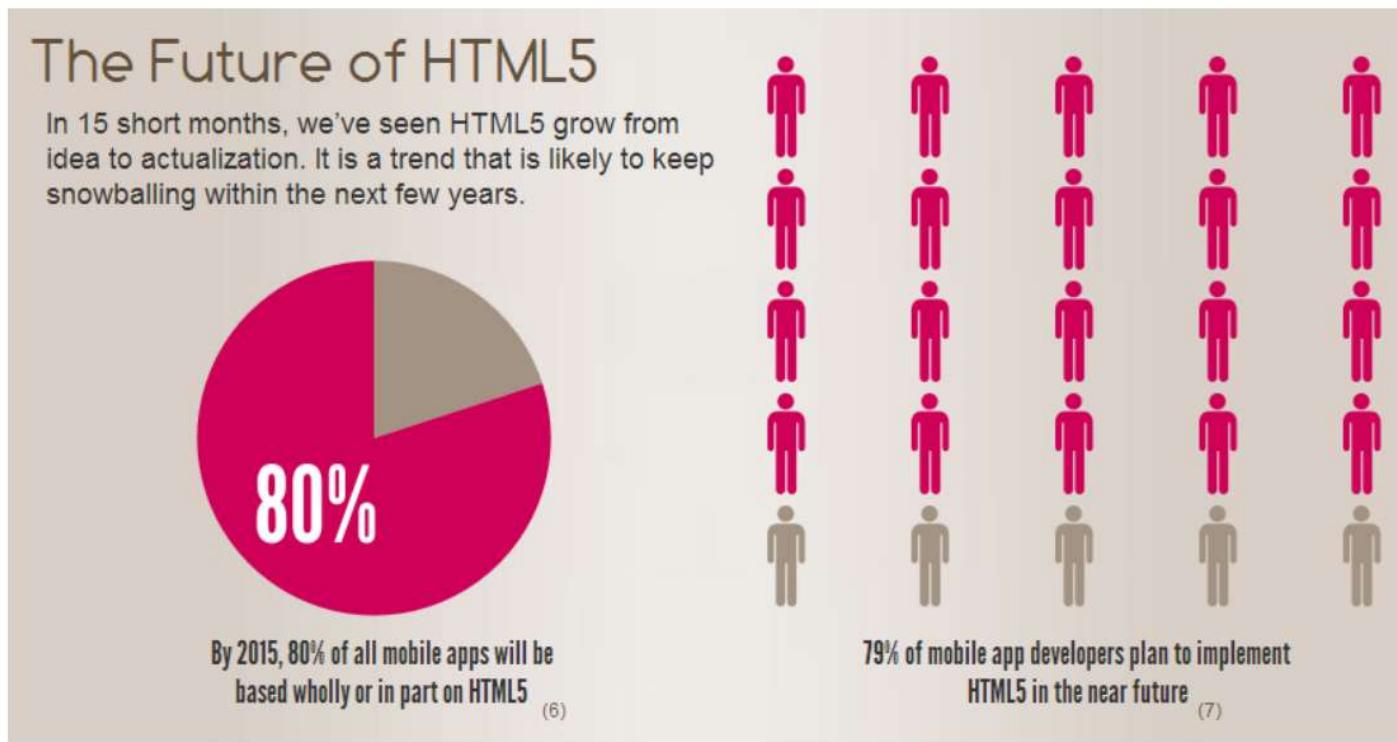
- Fragmentation is a big problem



Source : Jonathan Jeon, 2013, Web & HTML5, 2012/12

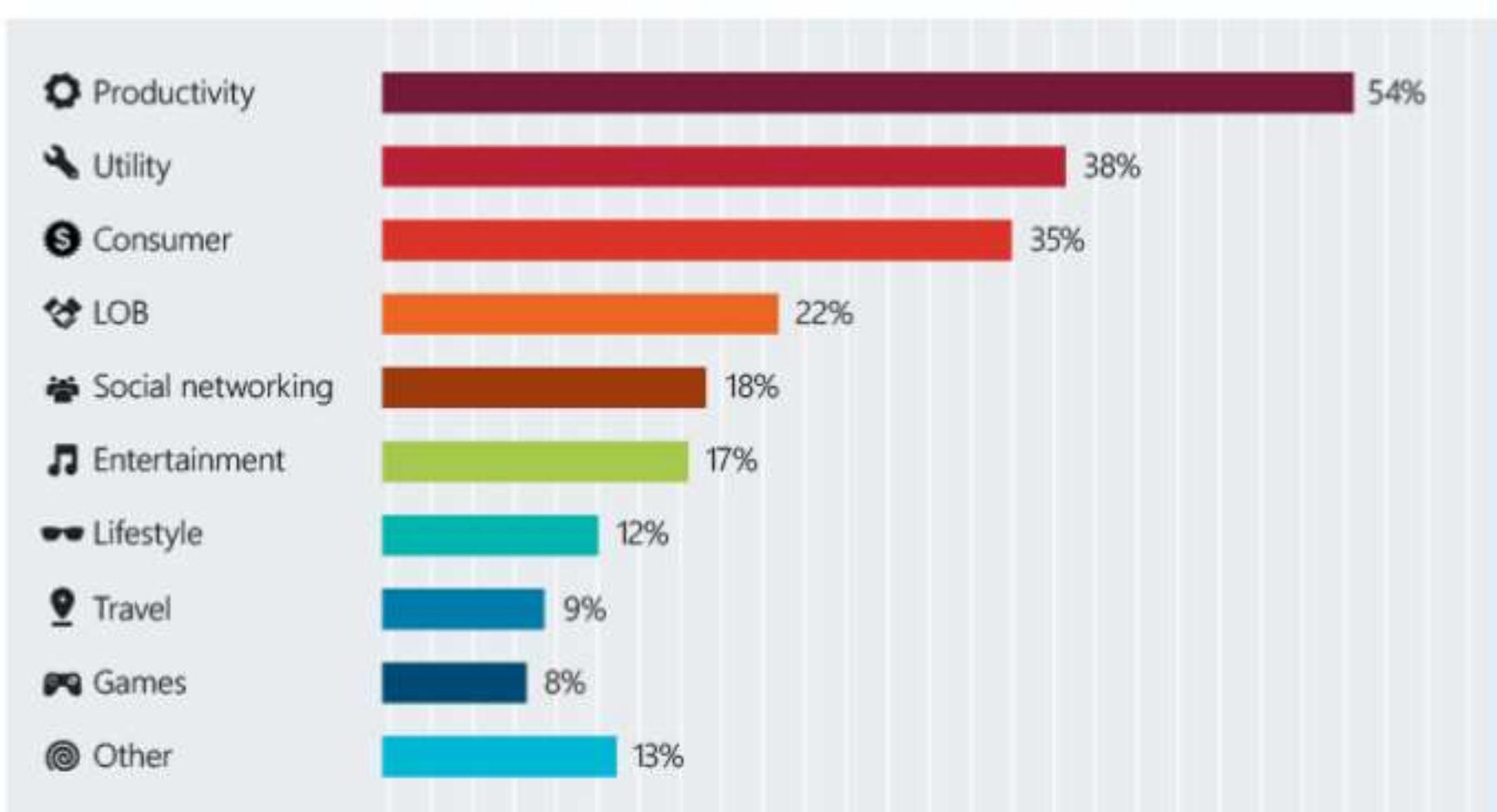
# HTML5 Expectation & Prediction

- ❖ 2014년 모바일에서 HTML5 성장률은 Flash나 Silverlight의 10배
- ❖ 2014년 유명 사이트 100개 중 30개는 HTML5 offline 기능 적용
- ❖ HTML5는 Mobile Enterprise Application을 위한 핵심 요소



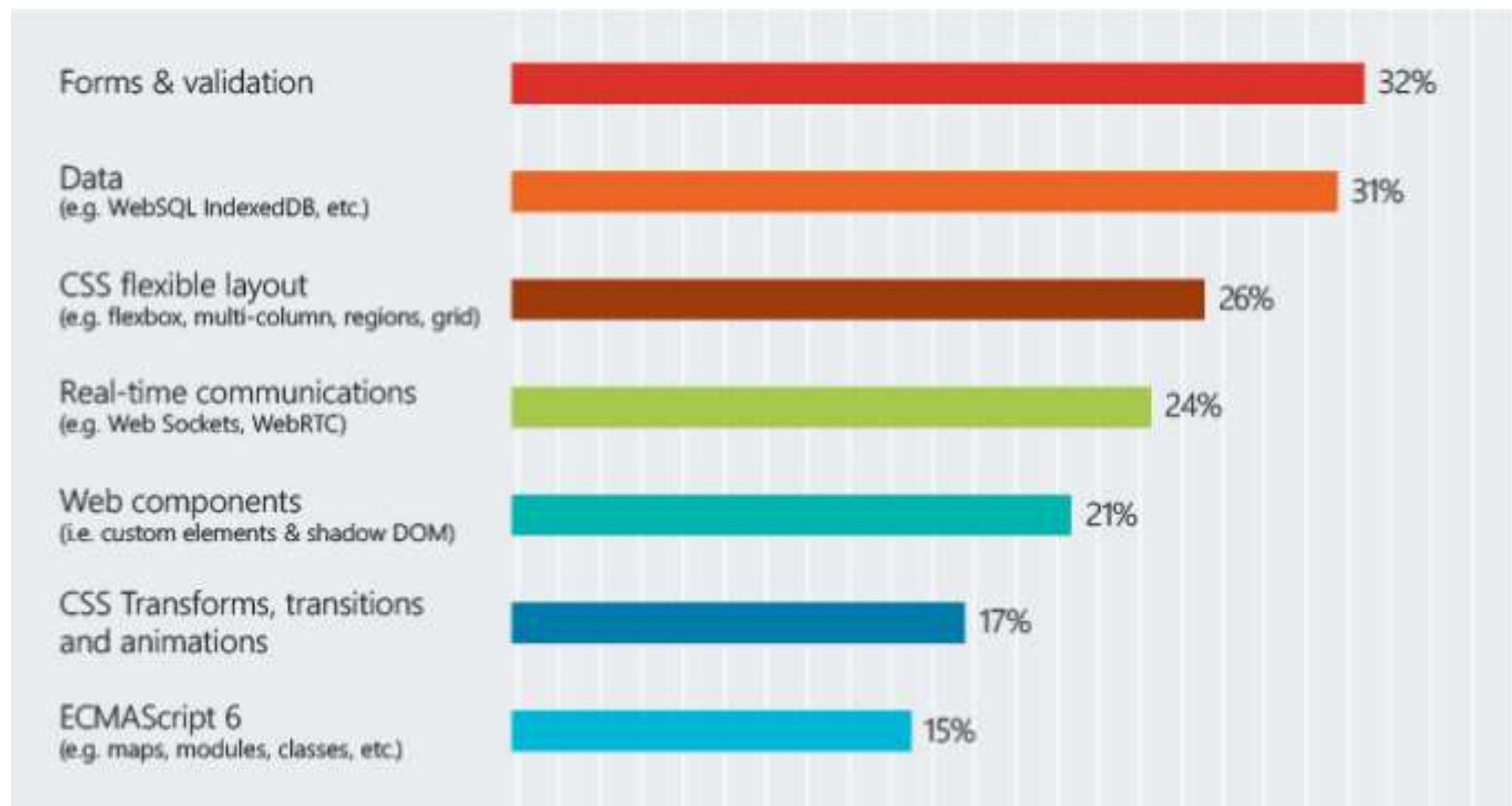
Source : 전종홍, HTML5 현재와 미래 전망, 2013

# Types of Apps Built With HTML5



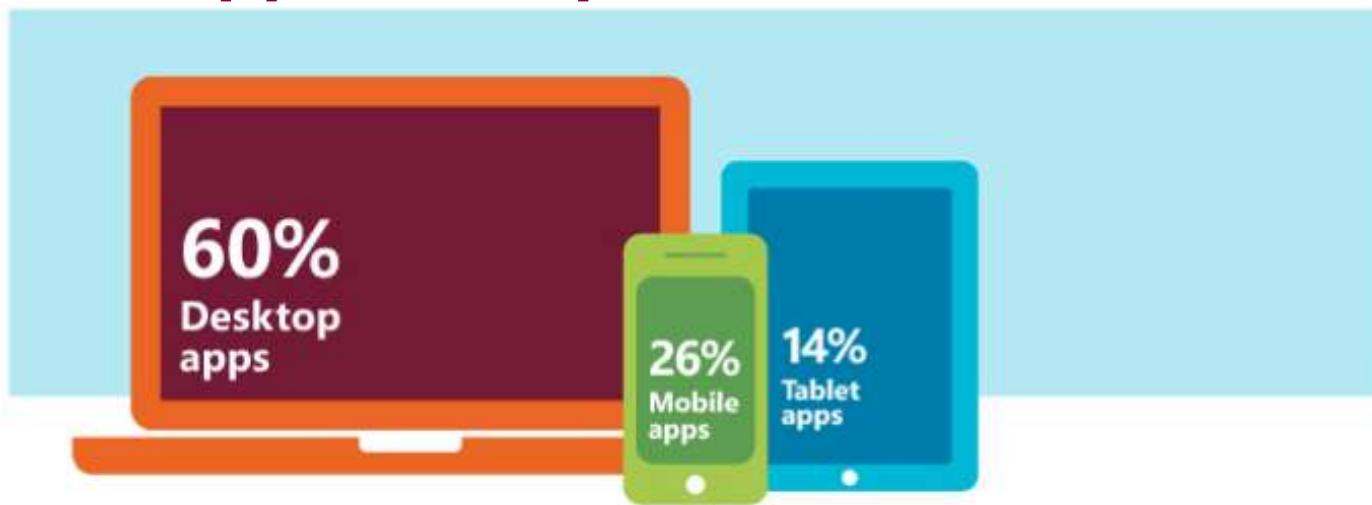
Source : <http://venturebeat.com/2013/02/26/what-developers-do-with-html5-infographic/>

# The Most Important Modern Web Technologies

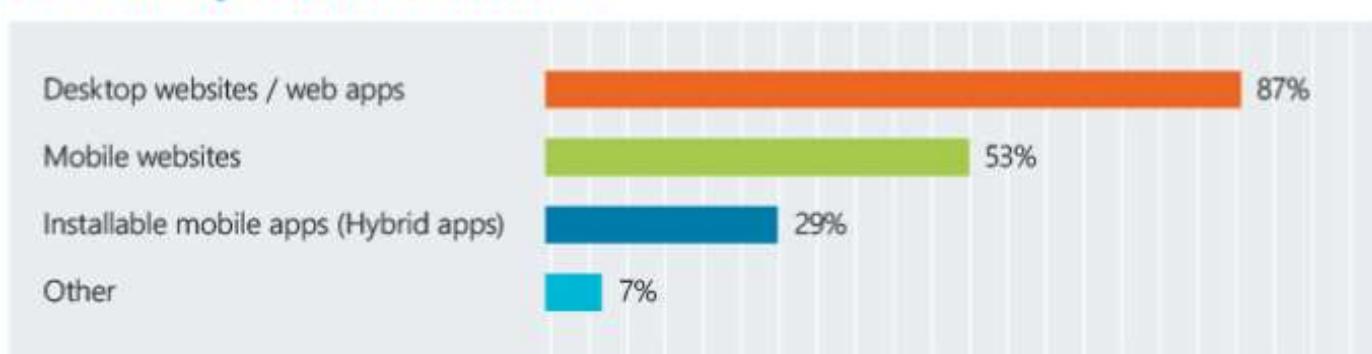


Source : <http://venturebeat.com/2013/02/26/what-developers-do-with-html5-infographic/>

# The Focus the App Development Efforts



What kind of software are you building (or planning to build this year) with HTML5?



Source : <http://venturebeat.com/2013/02/26/what-developers-do-with-html5-infographic/>

## HTML 5 Support Web Browsers (Cont.)

- Modern browsers already support a lot of features, including mobile browsers:
  - <http://html5test.com>
- Support varies widely for different features
  - IE 6,7 and 8: minimal support
  - Use support matrices:
    - <http://caniuse.com>
    - <http://mobilehtml5.org>



# HTML 5 Support Web Browsers (Cont.)

HTML5 TEST how well does your browser support html5?

your browser other browsers compare news device lab about the test

YOUR BROWSER SCORES **510** OUT OF 555 POINTS

You are using Chrome Dev 60.0.3112.113 on Windows 10 Correct? ✓ ✕

Save results Compare to... Share Donate

**semantics**

**Parsing rules** 5

<!DOCTYPE html> triggers standards mode Yes ✓  
HTML5 tokenizer Vac ✓

**multimedia**

**Video** 29/33

video element Yes ✓  
Subtitles Vac ✓

Host 10+ Websites? Get CLOUD SITES.  
Liquid Web™

Source from : <http://html5test.com>

# HTML 5 Support Web Browsers (Cont.)

HTML5 TEST how well does your browser support html5?

your browser other browsers compare news device lab about the test

desktop browsers tablets mobiles other latest search

## OVERVIEW

	Chrome	Opera	Firefox	Edge	Safari
Upcoming				16 ➔ 478	10.2 ➔ 419
Current		45 ➔ 518	53 ➔ 474	15 ➔ 473	10.1 ➔ 406
Older	58 ➔ 518	37 ➔ 489	52 ➔ 474	14 ➔ 460	10.0 ➔ 383
	57 ➔ 519	30 ➔ 479	51 ➔ 471	13 ➔ 433	9.1 ➔ 370
	56 ➔ 519	12.10 ➔ 309	50 ➔ 466	12 ➔ 377	9.0 ➔ 360
	55 ➔ 507		49 ➔ 465	Internet Explorer	8.0 ➔ 354
	54 ➔ 499		48 ➔ 461	11 ➔ 312	
	53 ➔ 499		47 ➔ 456	10 ➔ 265	

Source from : <http://html5test.com>

# HTML 5 Support Web Browsers (Cont.)

→ You can hire me

JavaScript archives

Compatibility

QuirksBlog

Donations

Politics

Mobile

About

COH

Mobile Web

Handbook

[quirksmode]

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show page contents

Last major update on 12 June 2009.

## HTML5 compatibility

These compatibility tables detail support for the new HTML5 functionalities in all modern browsers.

### Overview

Contents of this table

▼ See also the [key](#) to my compatibility tables.

Selector	IE 5.5	IE 6	IE 7	IE8 as IE7	IE8 as IE8	FF 2	FF 3.0	FF 3.5b4	Saf 3.0 Win	Saf 4.0 Win	Chrome 2	Opera 9.62	Opera 10b	Konqueror 3.5.7
localStorage and sessionStorage	no	yes	no	yes	no	yes	no	no	no	no	no	no	no	to be tested
<a href="#">Details</a>														
Selector	IE 5.5	IE 6	IE 7	IE8 as IE7	IE8 as IE8	FF 2	FF 3.0	FF 3.5b4	Saf 3.0 Win	Saf 4.0 Win	Chrome 2	Opera 9.62	Opera 10b	Konqueror 3.5.7

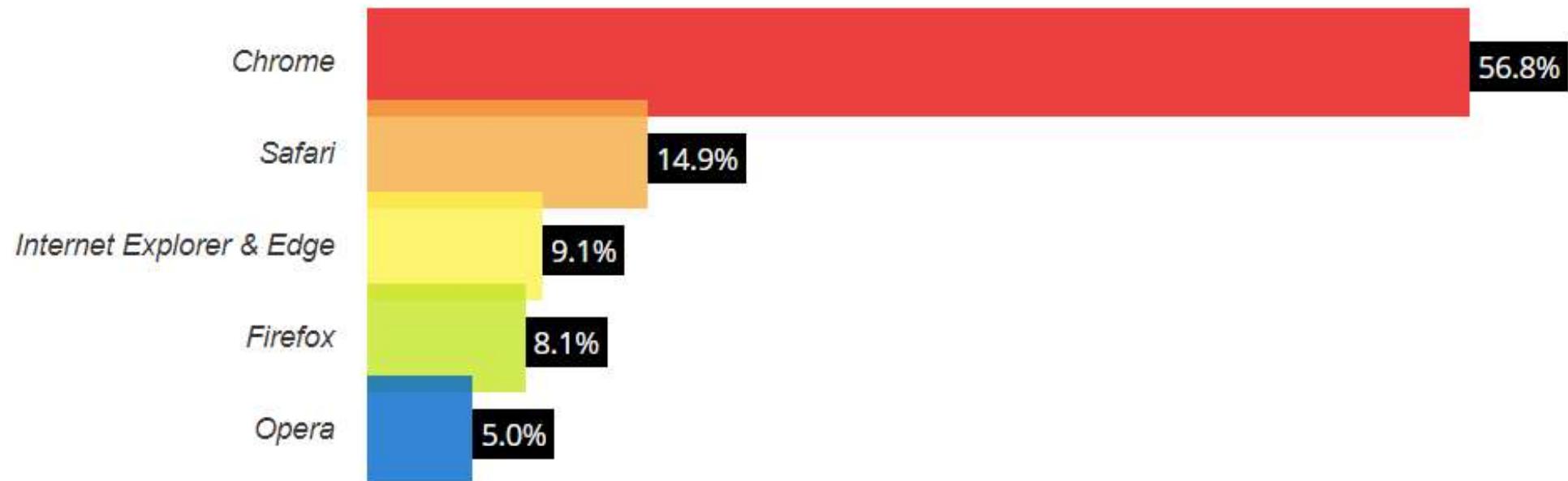
Details @ <http://quirksmode.org/dom/html5.html>

# Present Web Browser Market Share

## August, 2017

Web Browser Market Share

[View Monthly Trends](#)



Source: <http://www.w3counter.com/globalstats.php>

# 10 Things Every Web Developer, Designer (and Manager) Should Know about HTML5

- 1 HTML5 Markup isn't that big of a deal
- 2 The power of HTML5 is JavaScript
- 3 How to know if you should embrace HTML5 now ?
- 4 Care about which browsers implement an API, not which specification it belongs to
- 5 The <video> tag is the easy part
- 6 JSON now preferred over XML
- 7 Make it easy on yourself with graceful degradation and feature detection
- 8 The <canvas> is for more than drawing
- 9 Many common JavaScript-based idioms for animation and effects are now supported by CSS3
- 10 XHTML is dead, long live XHTML

Source : <http://www.youtube.com/watch?v=9hcyniwLQZU>

## Word on the Street...

*"The world is moving to HTML5"*

—Steve Jobs, Apple

*"The Web has not seen this level of transformation, this level of acceleration, in the past ten years... we're betting big on HTML5"*

—Vic Gundotra, VP of Engineering, Google

*"If you want to do something universal, there is no question, the world is going HTML5. That is clear... The world is just pushing down this HTML5 path and so are we."*

—Steve Ballmer, CEO Microsoft

*"I had no idea there was so much HTML5 already in play"*

—Tim O'Reilly



# Word on the Street...(Cont.)

Start Working

Working Draft

Last Call

Candidate Recommendation

Proposed Recommendation

W3C Recommendation

“HTML5 Recommendation will be in 2022”

**Ian Hickson**

“We've moved to a more incremental model without macro-level milestones”

**WHATWG**

“We take the next step, announcing 2014 as the target for Recommendation”

**Jeff Jaffe**

“Right now, You can start using HTML5 stuff ”

**Ian Hickson**

**HTML5** —————→ **HTML**

We moved to a new development model

where the technology is not versioned

and instead we just have a living that defines the technology as it evolves

# Why HTML5 & CSS3? Why Now?

- Microsoft, Apple, Mozilla, Google, Facebook, YouTube, Vimeo, etc. – all fully committed to HTML5 as the future of the web.
- HTML5 represents a more practical, more semantic, more functional web.
- CSS3 makes common visual elements easy, programmatic, not image-based.
- Browser support for HTML5+CSS3 today:
  - Excellent for Safari, Firefox, Chrome, Opera, IE9
  - Practical strategies exist for older browsers.

# Can We Uses HTML5 Today?

# HTML5 DOCTYPE



## Can We Use HTML5 Today? (Cont.)

The screenshot shows the Twitter homepage with the tagline "The best way to discover what's new in your world." A red arrow points from the text "HTML5 DOCTYPE" to the first line of the source code, which is highlighted with a red box. The source code is as follows:

```
<!DOCTYPE html>


HTML5 DOCTYPE



```
Source of: http://twitter.com/ - N
```



File Edit View Help



```
See who's here
```



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



```
<head>
  <meta http-equiv="X-UA-Compatible" content="IE=8">
  <meta http-equiv="Content-Type" content="text/html; charset=utf-8">
```


```

# Can We Use HTML5 Today? (Cont.)

This is an opt-in trial of HTML5 video on YouTube. If you have comments, they will help us improve and perfect the mixturl.

### Supported Browsers

We support browsers that support both the video tag:

- Firefox 4 (WebM, [Release candidate available here](#))
- Google Chrome (WebM)
- Opera 10.6+ (WebM, [Available here](#))
- Apple Safari (h.264, version 4+)
- Microsoft Internet Explorer 9 (h.264, [Available here](#))
- Microsoft Internet Explorer 6, 7, or 8 with Google Flash

### Notes

- Fullscreen support is partially implemented. Press F11 to use that to truly fill the screen
- If you want to find videos with WebM formats available
- Video annotations are not supported in the HTML5 player

### Additional Restrictions (we are working on this)

- Videos with ads are not supported (they will play in a separate window)
- On Firefox and Opera, only videos with WebM tracks will play
- If you've opted in to other testtube experiments, you may see them

You are not currently in the HTML5 trial.

[Join the HTML5 Trial](#)

```
<!DOCTYPE html>
<html lang="en" dir="ltr" >
<!-- machid:
sWkFSZzctYUFHdmlEMmMyQWRrU2lSZHRNQmc2ZFQ2YWJnTGR1Nk5QQzZFLUNLOHVHMTVBV2p3 -
-->
<head>

<title>
YouTube
    - Broadcast Yourself.
</title>

<link id="www-core-css" rel="stylesheet"
href="http://s.ytimg.com/yt/cssbin/www-core-vfl_0JqFG.css">

<link rel="stylesheet" href="http://s.ytimg.com/yt/cssbin/www-the-
rest-vflZri8xy.css">
```

## What is HTML?

- Stands for Hyper Text Markup Language.
- Is a kind of markup languages.
- Is used for structuring and presenting content for the World Wide Web and a core technology of the Internet.
- Is the most widely used language to write Web Pages.
- Located in Web Server, delivered by TCP/IP into client computer, rendered in client's web browsers.

# What is HTML5?

- Is the next major revision of the HTML.
- Is the fifth revision of the HTML standard.
- This term represents two different concepts:
  - It is a new version of the *language* HTML, with new elements, attributes, and behaviors
  - A larger set of technologies that allows more diverse and powerful Web sites and applications.

“HTML 5 is really the second coming of this Web stuff -- of the Web”

- Dion Almaer

(co-founder of the Ajaxian Web site and co-director of developer tools at Mozilla)

# What is HTML 5 ? (Cont.)



## ■ HTML5 ← HTML5 + CSS3 + JavaScript API

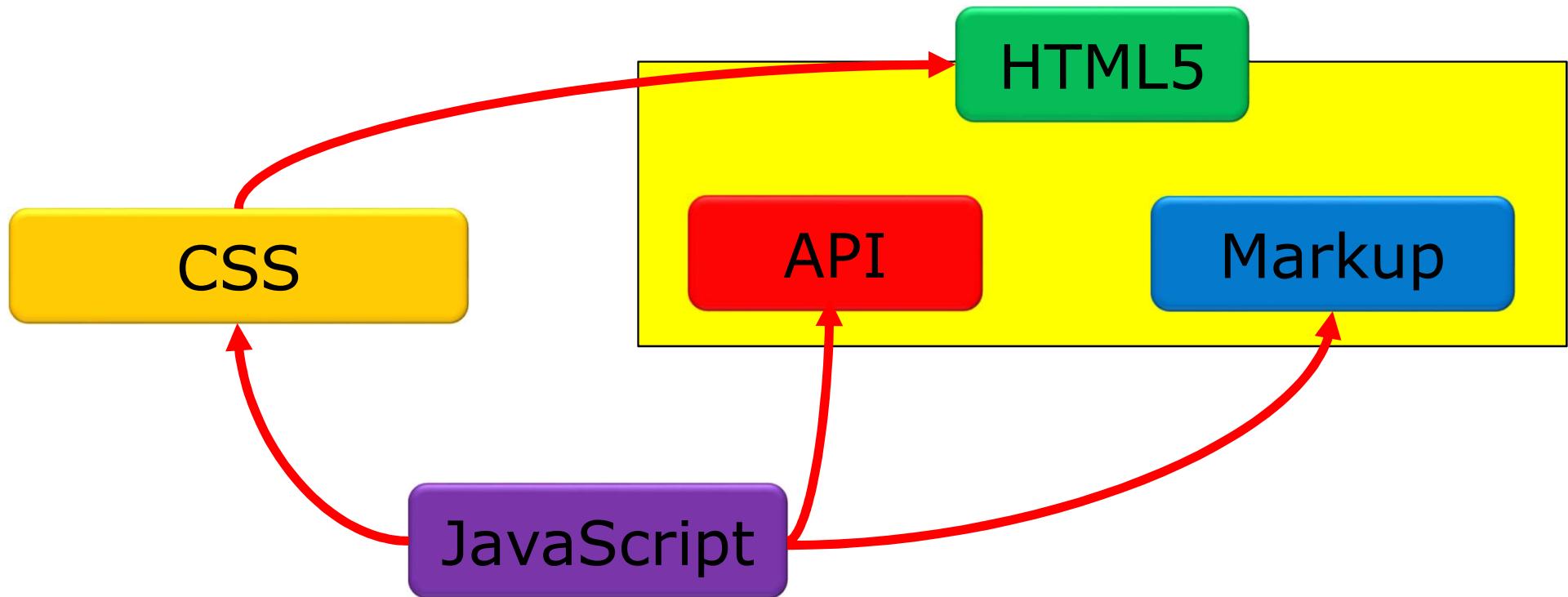


Source : <http://www.slideshare.net/hollobit/javascript-and-web-performance>

## What is HTML 5 ? (Cont.)



- HTML5 ← HTML5 + CSS3 + JavaScript API



Source : HTML5 API 프로그래밍, 조용준, 가메출판사, 2017, p.20

## What is HTML 5? (Cont.)

- New features should be based on HTML, CSS, DOM, and JavaScript.
- Reduce the need for external plugins (like Flash)
- Better error handling.
- More markup to replace scripting.
- HTML5 should be device independent.
- The development process should be visible to the public.

# What is HTML 5 ? (Cont.)

HTML5 기술의 주요 특징		시사점
	<b>Semantics:</b> 보다 구조화되고 다양한 기능의 HTML 태그를 제공	보다 지능화되고 다양한 형태의 풍부한 웹 문서 표현 가능
	<b>Multimedia:</b> 비디오, 오디오 지원 기능의 자체 지원을 통한 강력한 멀티미디어 기능 제공	액티브X와 플래쉬 같은 별도 외부 플러그 필요성 제거
	<b>Offline &amp; Storage:</b> 네트워크가 지원되지 않는 환경에서도 웹 이용을 가능케 하는 오프라인 처리 기능과 로컬 스토리지, DB, File 액세스 처리 기능	웹의 한계로 여겨졌던 네트워크 단절 시 처리 방법과 데이터 저장 기능 문제 해결
	<b>3D, Graphics &amp; Effects:</b> SVG, 캔버스, WebGL 등을 통한 다양한 2차원/3차원 그래픽 기능의 제공	외부 플러그인 기능 없이 다양한 2D/3D 그래픽 처리 가능
	<b>Device Access:</b> GPS, 카메라, 동작센서 등 디바이스의 하드웨어 기능을 웹에서 직접 제어할 수 있도록 하는 기능	웹 기반 디바이스 제어 기능을 통해 본격적인 웹 애플리케이션 개발 가능
	<b>Performance &amp; Integration:</b> 비동기 통신, 다중 쓰레드 기능 등을 통한 웹에서의 처리 성능을 향상	웹의 가장 큰 문제 중 하나였던 성능 문제를 대폭 개선
	<b>Connectivity:</b> 클라이언트와 서버간의 효율적인 통신 기능 제공을 통한 웹 기반 커뮤니케이션 효율 대폭 강화	웹에서의 다양한 통신기능(메시징, 응용간 통신 등) 제공을 통한 응용 개발 범위 확대
	<b>CSS3 Styling Effect:</b> 기존 웹 문서의 변경과 성능저하 없이 웹 애플리케이션의 UI(스타일과 효과 등) 기능을 대폭 강화	UI 측면에서 N-스크린 서비스 제공 가능

Source : TOBESoft 2013 Seminar

# HTML5 Relevant Business Area



Source : TOBESoft 2013 Seminar

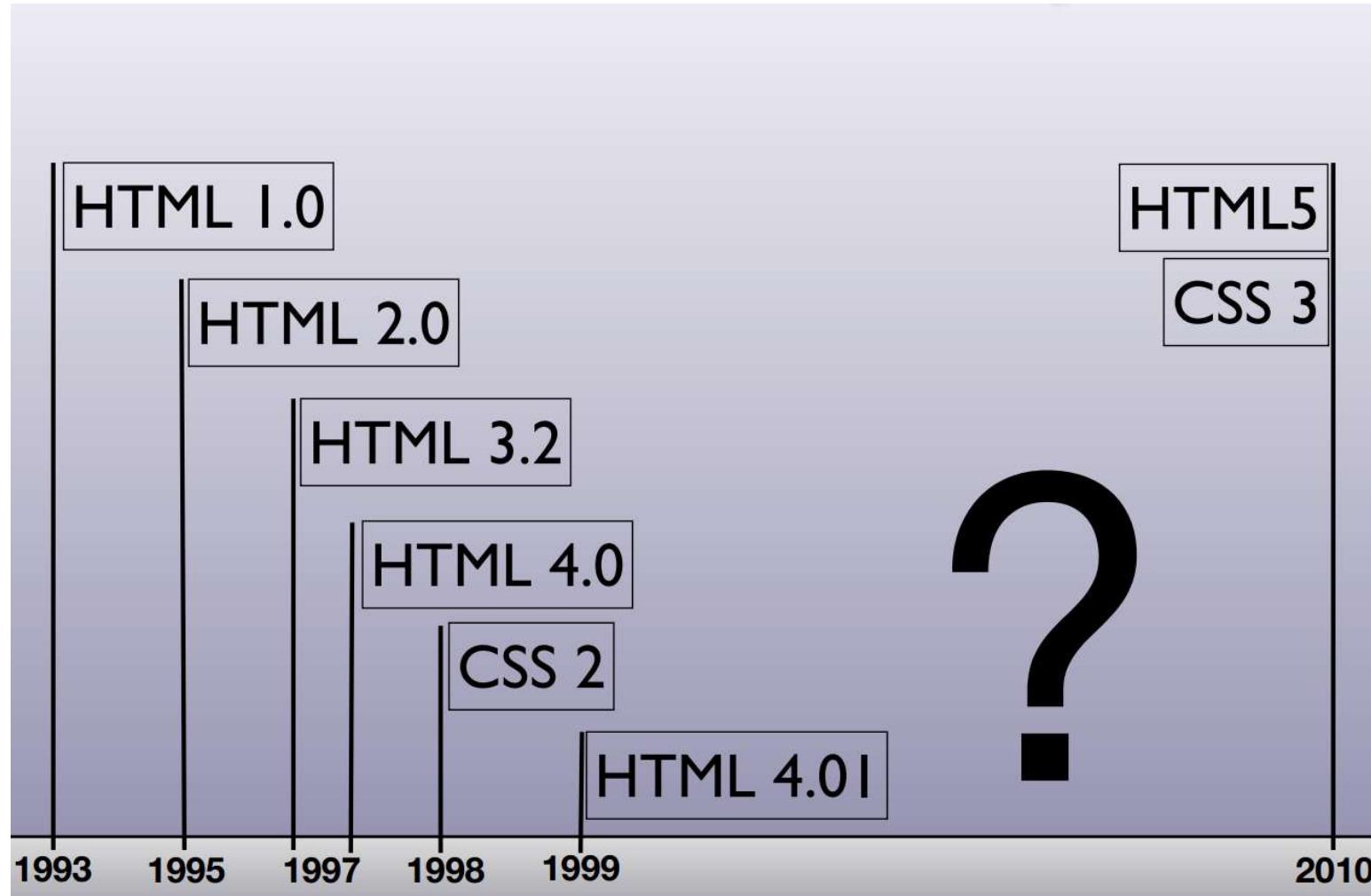
# History

1989	Tim Berners-Lee invents the Web with HTML
1991	First Web Browser Released
	HTML Tags Specification Released
1994	First World Wide Web Conference
	HTML2 Specification Released
	W3C Established
	Netscape Navigator 1.0 Released
1995	Internet Explorer 1.0 Released
	HTML2 Recommendation Released
1997	HTML3.2 Recommendation Released
	HTML4 Recommendation Released
2000	XHTML 1.0 Specification Released
2008	HTML5 Draft Published

[Tim Berners-Lee](#), [CERN](#), [W3C](#), [HTML Specifications](#), [HTML5](#)

Source : 2011.09.28 Open Community Technical Seminar @NIA

## History (Cont.)



## History (Cont.)

- Tim Berners-Lee.
- NCSA's Mosaic developed by Marc Andreessen in December 1992.
- W3C & HTML up to v4.01
  - Browser wars – vendors trying to one-up each other on features
  - Standards process at the W3C – debate, committees, specifications
  - “Shipping code wins”



NCSA : National Center for Supercomputing Applications

Marc Andreessen : [http://en.wikipedia.org/wiki/Marc\\_Andreessen](http://en.wikipedia.org/wiki/Marc_Andreessen)

Mosaic : [http://en.wikipedia.org/wiki/Mosaic\\_\(web\\_browser\)](http://en.wikipedia.org/wiki/Mosaic_(web_browser))

## History (Cont.)

- XML was seen as the future of the web
- XHTML was intended to function as a ‘transition’ on the path to XML
- No backwards compatibility
- Fussy XML interpretation
- Strict adherence to MIME types
  - `text/html` vs. `application/xhtml+xml`
  - Browsers all allow `text/html`
  - `application/xhtml+xml` broke IE

## History (Cont.)

- WHATWG : Web Hypertext Application Technology Working Group
- Apple, Mozilla, Opera, Google
- Started in 2004.
- Formed to continue work outside W3C.
- In 2007, W3C creates HTML working group with HTML5 as the foundation.
- In 2009, The W3C discontinued the XHTML 2.0 working group in favor of HTML5.

# HTML Milestone

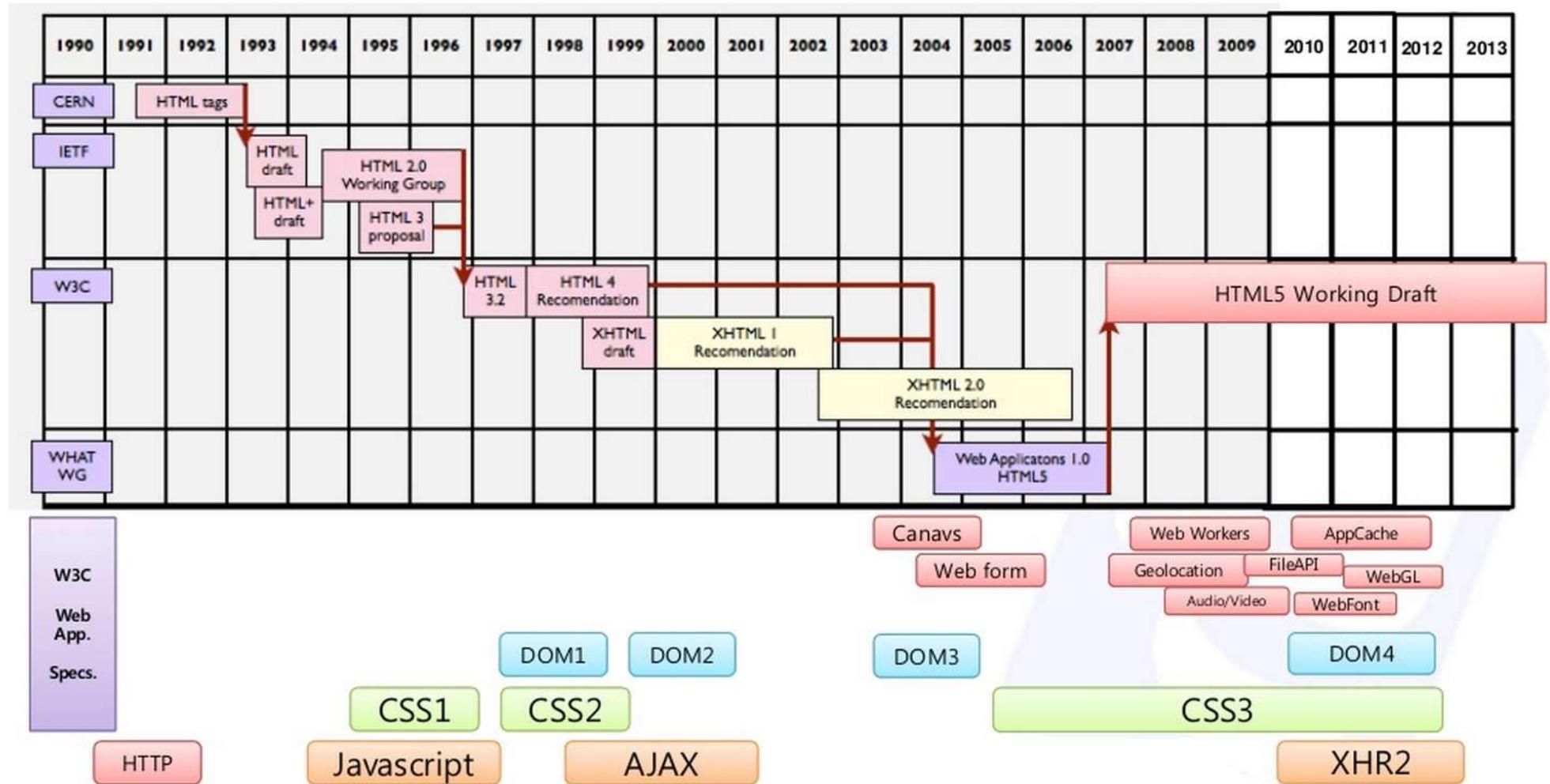
	2012	2013	2014	2015	2016	2017	2018	2019	2020
<b>HTML5.0</b>	CR start	...CR, LC	REC	...	...				
<b>HTML5.1</b>	FPWD	---	LC + CR	... CR	REC				
<b>HTML5.x</b>			FPWD	---	LC + CR	... CR	REC		
<b>HTML6.x</b>					FPWD	---	LC + CR	... CR	REC

**FPWD:** First Public Working Draft  
**WD:** Working Draft

**LCWD:** Last Call Working Draft  
**CR :** Candidate Recommendation

**PR:** Proposed Recommendation  
**REC:** Recommendation

# HTML5 & Web App Technology Timeline

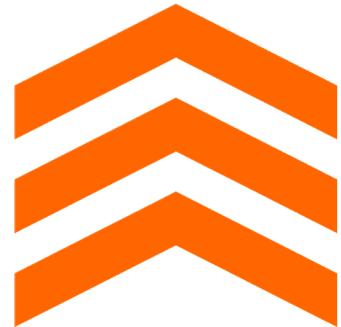


Source : <http://www.slideshare.net/hollobit/javascript-and-web-performance>

# HTML5 Specification Reference

- <https://html.spec.whatwg.org/>
- <https://www.w3.org/TR/html/>
- <https://developer.mozilla.org/en-US/docs/Web/Guide/HTML/HTML5>

# HTML5 Feature Areas



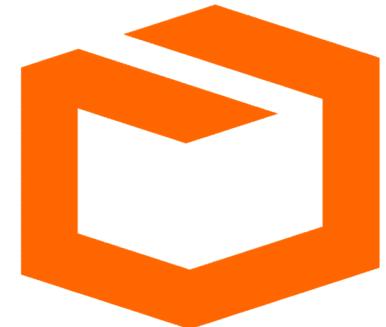
Semantics



CSS3



Multimedia



Graphics & 3D



Device Access



Performance

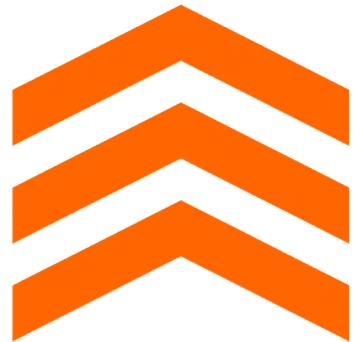


Offline & Storage



Connectivity

## HTML5 Feature Areas (Cont.)



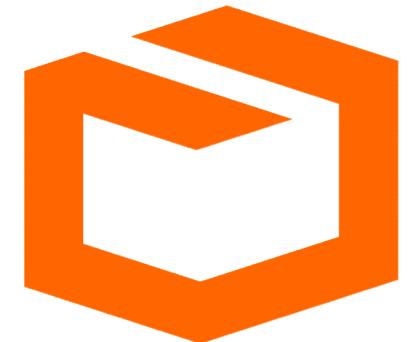
Semantics



CSS3



Multimedia



Graphics & 3D

**Semantics:** Markup describes purpose of content  
(e.g. `<header>` vs. `<div class="header">`)

**CSS3:** New selectors, more visual options

**Multimedia:** `<audio>` and `<video>`

**Graphics:** `<canvas>` and in-line SVG

## HTML5 Feature Areas (Cont.)



Device Access



Performance



Offline & Storage



Connectivity

**Device Access:** Geolocation, accelerometer, etc.

**Performance:** Run JS in background

**Offline/Storage:** Use web apps on/off line

**Connectivity:** Improved XHR, SSE, WebSockets

# Semantic Markup & Microdata



## Valid HTML vs. Valid XHTML

- Use HTML5 and create valid HTML
  - <http://html5.validator.nu/>
  - <http://validator.w3.org>
- HTML5 allows XML syntax from XHTML 1.0 for backward compatibility
  - For example: <br />
- HTML5 has well-defined processing rules
- Simple is better
  - New **doctype**
  - Character set



# Simplified doctype

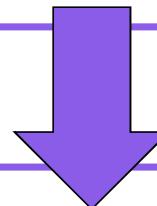
## HTML4/XHTML

- HTML 4.01 Strict
- HTML 4.01 Transitional
- HTML 4.01 Frameset
- XHTML 1.0 Strict
- XHTML 1.0 Transitional
- XHTML 1.0 Frameset
- XHTML 1.1



```
<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML  
4.01 Transitional//EN"  
"http://www.w3.org/TR/html4/loose.dtd">
```

## HTML5

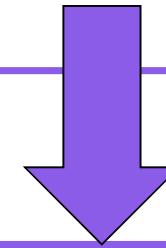


```
<!DOCTYPE html>
```

# Simplified Character Set

HTML4

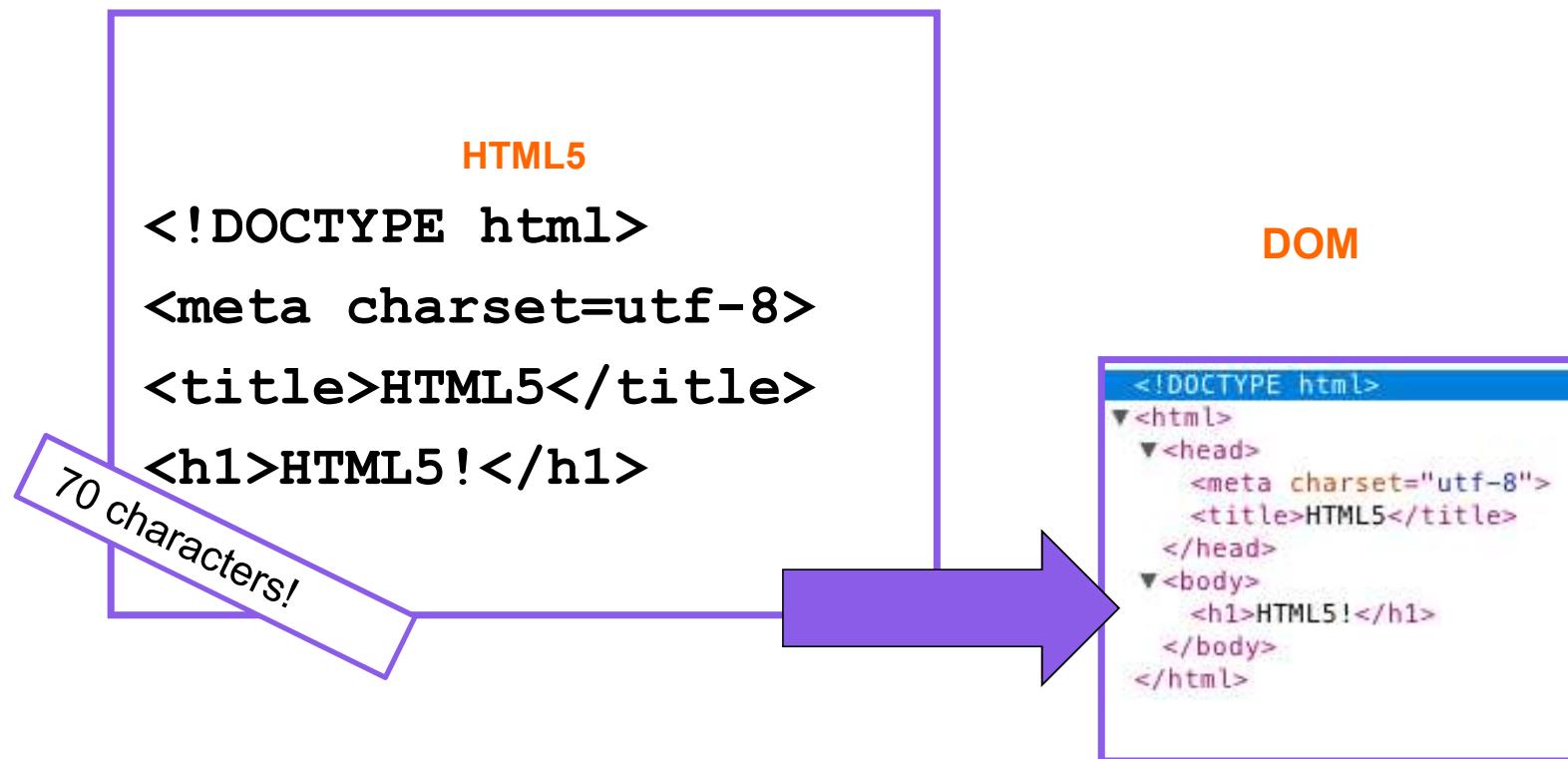
```
<meta http-equiv="Content-Type"  
content="text/html; charset=utf-8">
```



HTML5

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

# Minimal HTML5 Page



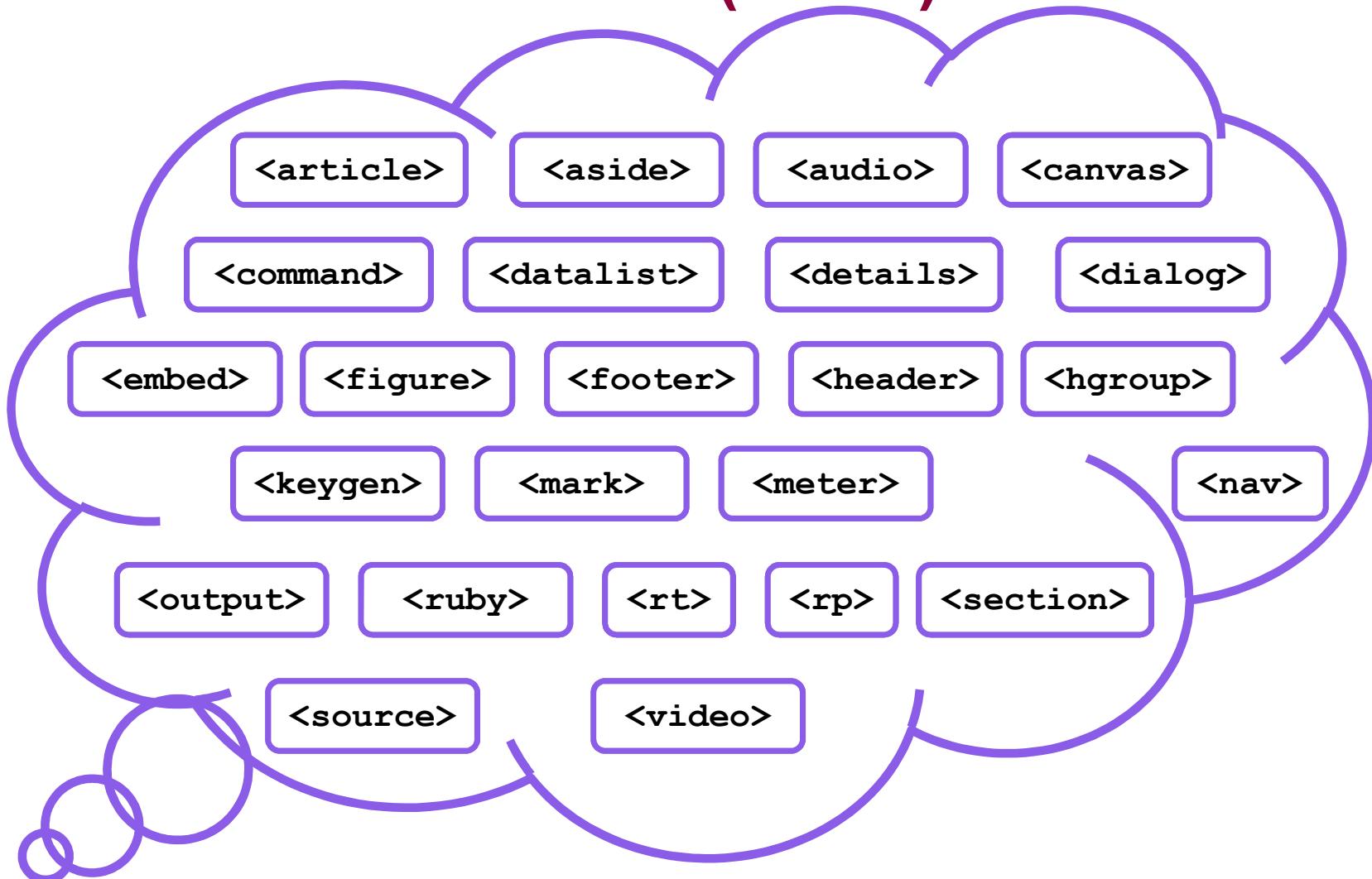
# The New HTML5 Elements

- **datalist**
- **keygen**
- **output**
- **ruby, rt, and rp**
- **wbr**
- **embed**
- **command**
- **details**
- **article**
- **aside**
- **figure**
- **footer**
- **header**
- **hgroup**
- **nav**
- **section**
- **mark**
- **meter**
- **progress**
- **time**
- **canvas**
- **video**

New Elements : <http://www.w3.org/TR/2010/WD-html5-diff-20100304/#new-elements>

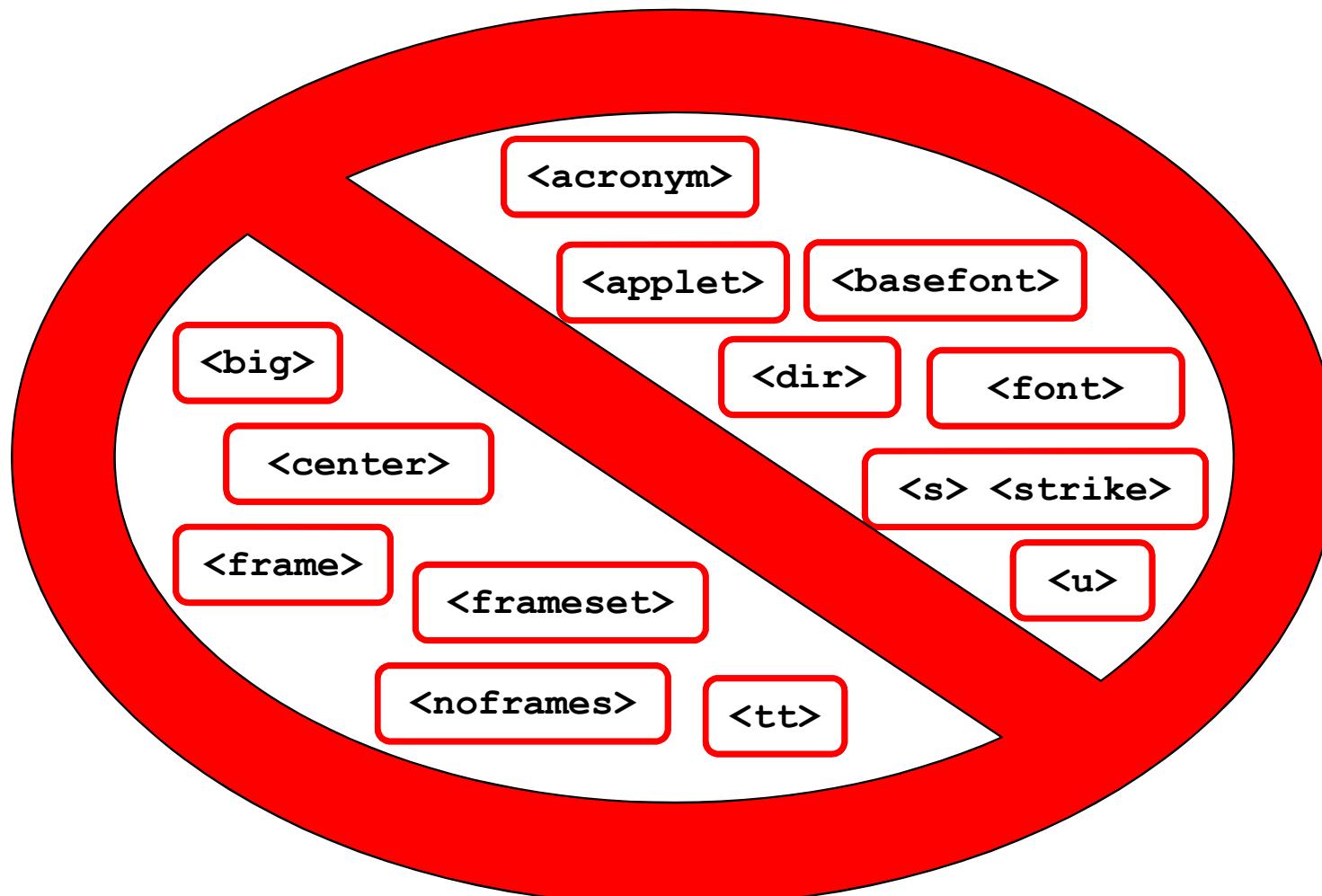
New Attributes : <http://www.w3.org/TR/2010/WD-html5-diff-20100304/#new-attributes>

# The New HTML5 Elements (Cont.)



Refer to <http://dev.w3.org/html5/markup/elements.html#elements>

# Removed Elements



Removed Elements : <http://www.w3.org/TR/2010/WD-html5-diff-20100304/#absent-elements>

Removed Attributes : <http://www.w3.org/TR/2010/WD-html5-diff-20100304/#absent-attributes>

# Changed HTML5 elements

- **<a>** can now wrap around block elements
- **<b>** and **<i>** are back.
- **<cite>** defined to be the title of a work\*
- **<hr>** is now a “paragraph-level thematic break”
- **<small>** is for small print, i.e. legal boilerplate

Changed Elements : <http://www.w3.org/TR/2010/WD-html5-diff-20100304/#changed-elements>

Changed Attributes : <http://www.w3.org/TR/2010/WD-html5-diff-20100304/#changed-attributes>

# Anatomy of an HTML5 Page

# Header

## Subtitle

**Nav**

- Link 1
- Link 2
- Link 3
- Link 4
- Link 5

**Article Header**

HTML5: "Lorem ipsum dolor nunc aut nunquam sit amet, consectetur adipiscing elit. Vivamus at est eros, vel fringilla urna. Pellentesque odio diam, rhoncus nec congue in, Class aptent taciti sociosqu ad litora torquent per conubia nostra. Per inceptos himenaeos. Quisque feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc..."

**Article Footer**

**Article Header**

figure and figcaption



**Article Footer**

**Aside**

HTML5: "Lorem ipsum dolor nunc aut nunquam sit amet, consectetur adipiscing elit. Vivamus at est eros, vel fringilla urna. Pellentesque odio diam, rhoncus nec congue in, pellentesque sed tortor. Class aptent taciti sociosqu ad litora torquent per conubia nostra, per inceptos himenaeos. Quisque feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc."

**Footer**

# Microdata

- Emphasis on machine readability (SEO\*)
- Easy-to-write syntax (add attributes to any element)
- Use microdata vocabularies:
  - <http://data-vocabulary.org>



# HTML5 Microdata

HTML

```
<section itemscope>
  <article id="html5-fast-track"
    itemtype="http://data-vocabulary.org/Product">
    <header>
      <h1 itemprop="name">HTML5 Fast Track</h1>
    </header>
    <p itemprop="description">The HTML5 Fast Track
      training course is a two day experience...
    </p>
  </article>
</section>
```

# Address

Written by Mary Lee  
574-520-0989

<address>

Written by <a href=mary@mary.com>Mary Lee</a>  
<br>

574-520-0989<br>

</address>

# Mark

Do not forget to buy **milk** today.

```
<p>Do not forget to buy <mark>milk</mark> today.</p>
```

# Details Element

HTML

```
<!-- Progressive Information Disclosure -->
<details>
  <summary>What are my download options?</summary>
  <ul>
    <li><strong>Base:</strong> Contains a minimal
       download...</li>
    <li><strong>Full:</strong> Contains the Base
       download plus documentation and demos.</li>
  </ul>
</details>
http://code.google.com/p/html5shiv/
```

# Details Element (Cont.)

To set up the Gateway on your local computer, perform the following steps:

1. Ensure your system meets the system requirements. See the [README.txt](#) file for specific environment and operating system information.
2. Download the full Kaazing WebSocket Gateway - HTML5 Edition from the [Kaazing download page](#).
  - ▶ [What are my download options?](#)
3. Unpack the Kaazing WebSocket Gateway distribution into a directory of your choice (for example, `C:\kaazing` or `D:\kaazing`).



To set up the Gateway on your local computer, perform the following steps:

1. Ensure your system meets the system requirements. See the [README.txt](#) file for specific environment and operating system information.
2. Download the full Kaazing WebSocket Gateway - HTML5 Edition from the [Kaazing download page](#).

▼ [What are my download options?](#)

- ▶ **Base:** Contains a minimal download of the Gateway for experienced users who are ready to use the Gateway in production.
- ▶ **Full:** Contains the Base download plus the Gateway documentation and the services needed to run the Gateway demos.

3. Unpack the Kaazing WebSocket Gateway distribution into a directory of your choice (for example, `C:\kaazing` or `D:\kaazing`).

# Ruby

hàn zì  
... 汉字 ...

とう きょう  
東 京

```
<p lang="zh-CN">...  
<ruby>  
    汉 <rt> hèn </rt>  
    字 <rt> zì </rt>  
</ruby>  
...</p>
```

# Web Form 2.0

The screenshot shows a web browser window for the LaunchCycle website. The title bar says "Firefox" and the address bar shows "LaunchCycle". The main content area features a large white rounded rectangle containing a sign-up form. At the top of this form is the heading "Start your FREE Account today!" followed by a sub-instruction "Fill out the form, verify your email, and you're ready to go.". Below this are four input fields: "Username" (with a "More info" link), "Email address", "Password", and "Confirm Password". After the password fields is a "Create a Subdomain" section with a "More info" link and a sub-instruction ".launchcycle.com". At the bottom of the form is a green "Create My Account" button. A note below the button states "By clicking Create My Account you agree to the [Terms of Service](#) and [Privacy Policy](#)". At the very bottom of the browser window, there are two status bars: one from Mozilla about data collection and another from Firefox asking if the user wants to "Choose What I Share".

**Start your FREE Account today!**  
Fill out the form, verify your email, and you're ready to go.

Username: [More info →](#)

Email address:

Password:

Confirm Password:

Create a Subdomain: [More info →](#) .launchcycle.com

**Create My Account**

By clicking Create My Account you agree to the [Terms of Service](#) and [Privacy Policy](#).

Firefox automatically sends some data to Mozilla so that we can improve your experience.

Choose What I Share

# Web Form 2.0 (Cont.)

Runner: @peterlubbers

Tel #: 1-877-KAAZING

E-mail: peter

DOB: 1944-06-06 Please enter a valid email address

T-shirt Size:

Small

Medium

Large

Shirt style:

Shirt Color:

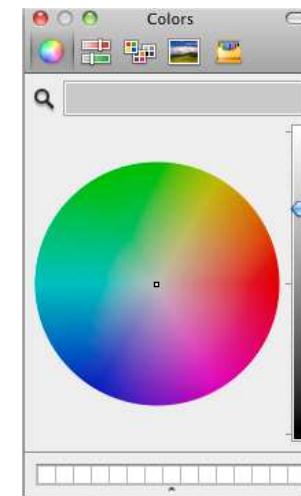
Expectations:

Confidence:  0%

Notes:



Date picker



Color picker

# Web Form 2.0 (Cont.)

AT&T M-Cell 12:43 PM 67%

\*Name:  Type in your first and last name

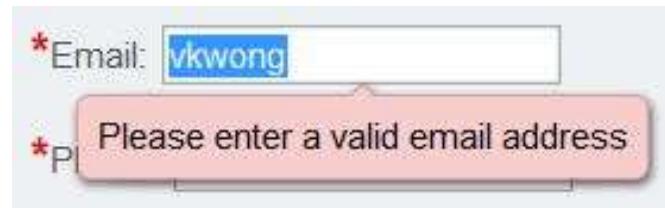
\*Email:

\*Phone:  XXX-XXX-XXXX

**Reservation Information**

Previous Next Done

Q W E R T Y U I O P  
A S D F G H J K L  
Z X C V B N M   
    Go



## Email

Email: <INPUT type="email"  
NAME="Email"  
SIZE="20" required>

## Web Address

Organization/Club URL: <INPUT type="url"  
NAME= " URL" SIZE="30">

AT&T M-Cell 12:43 PM 67%

Time:

Number of User(s):  1

Conference Room Preference:  L 301  L 4

Organization/Club URL:

Send Request Clear Form

Previous Next Done

Q W E R T Y U I O P  
A S D F G H J K L  
Z X C V B N M

## Web Form 2.0 (Cont.)

Number of User(s):

HTML 4

Number of User(s): <input name="nouser" size="5">

Number of User(s):



HTML5

Number of User(s): <input type="number" name="nouser" size="5" min="1" value="1" max="10">

## Web Form 2.0 (Cont.)

\*Name: Type in your first and last name

HTML 4

```
<input type='text' name='name' id='name' onBlur="if(this.value=='')  
    this.value='Type in your first and last name';" onClick="if(this.value=='Type in  
    your first and last name') this.value='';"  
    value="Type in your first and last name" />
```

HTML5

```
<INPUT type="text" NAME="Name" SIZE="30" placeholder="Type in your first  
and last name">
```

# Web Form 2.0 (Cont.)

HTML 4

\*Date:

```
<font color='red' size='+1"><b>*</b></font>Date:  
<SELECT NAME='Month'>  
<OPTION VALUE='mm'>mm</OPTION>  
<OPTION VALUE='1'>Jan</OPTION><OPTION VALUE='2'>Feb</OPTION><OPTION  
VALUE='3'>Mar</OPTION><OPTION VALUE='4'>Apr</OPTION><OPTION  
VALUE='5'>May</OPTION><OPTION VALUE='6'>Jun</OPTION><OPTION  
VALUE='7'>Jul</OPTION><OPTION VALUE='8'>Aug</OPTION><OPTION  
VALUE='9'>Sep</OPTION><OPTION VALUE='10'>Oct</OPTION><OPTION  
VALUE='11'>Nov</OPTION><OPTION VALUE='12'>Dec</OPTION>  
</SELECT>&nbsp;  
  
<SELECT NAME='Day'><OPTION VALUE='dd'>dd</OPTION><OPTION  
VALUE='1'>1</OPTION><OPTION VALUE='2'>2</OPTION><OPTION  
VALUE='3'>3</OPTION><OPTION VALUE='4'>4</OPTION><OPTION  
VALUE='5'>5</OPTION><OPTION VALUE='6'>6</OPTION><OPTION  
VALUE='7'>7</OPTION><OPTION VALUE='8'>8</OPTION><OPTION  
VALUE='9'>9</OPTION><OPTION VALUE='10'>10</OPTION>  
<OPTION VALUE='11'>11</OPTION><OPTION VALUE='12'>12</OPTION><OPTION  
VALUE='13'>13</OPTION><OPTION VALUE='14'>14</OPTION><OPTION  
VALUE='15'>15</OPTION><OPTION VALUE='16'>16</OPTION><OPTION  
VALUE='17'>17</OPTION><OPTION VALUE='18'>18</OPTION><OPTION  
VALUE='19'>19</OPTION><OPTION VALUE='20'>20</OPTION><OPTION  
VALUE='21'>21</OPTION><OPTION VALUE='22'>22</OPTION><OPTION  
VALUE='23'>23</OPTION><OPTION VALUE='24'>24</OPTION><OPTION  
VALUE='25'>25</OPTION><OPTION VALUE='26'>26</OPTION><OPTION  
VALUE='27'>27</OPTION><OPTION VALUE='28'>28</OPTION><OPTION  
VALUE='29'>29</OPTION><OPTION VALUE='30'>30</OPTION>  
<OPTION VALUE='31'>31</OPTION><SELECT>&nbsp;  
<SELECT NAME='Year'><OPTION VALUE='yyyy'>yyyy</OPTION><OPTION  
VALUE='2006'>2006</OPTION><OPTION VALUE='2007'>2007</OPTION>  
</SELECT>
```



HTML5

```
<font color='red' size="+1"><b>*</b></font>Date:  
<input type="date" name="date">
```

# Web Form 2.0 (Cont.)

Opera

\*Name:

\*Email:  This is a required field

Chrome

\*Name:

\*Email:  Please fill out this field.

## HTML 4

```
<FORM METHOD="POST" ACTION="conferencerm.php" name="conferenceroom" onSubmit="return (checkform())">
```

```
function checkform(){
    if (document.conferenceroom.Name.value == ""){
        alert("Name is required.");
        return false;
    }
    if (document.conferenceroom.Phone.value == ""){
        alert("Phone is required.");
        return false;
    }
}
```

## HTML5

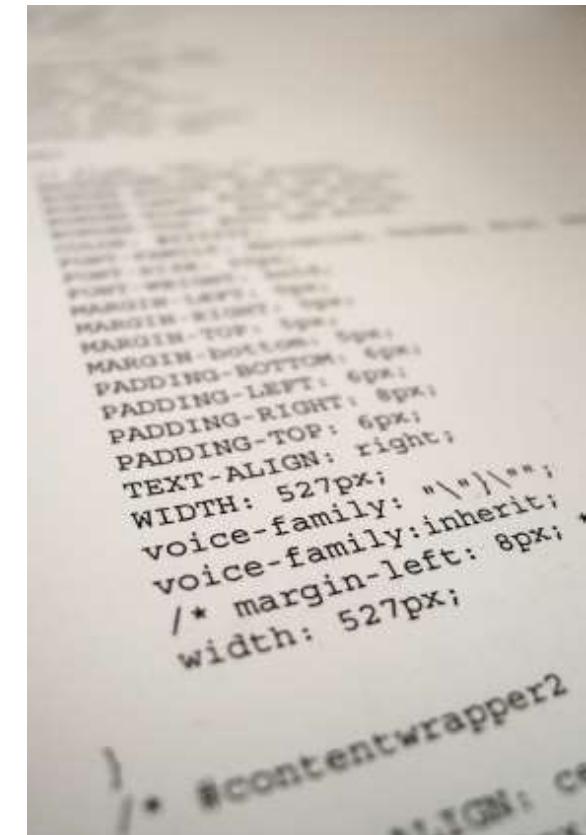
```
Name: <INPUT type="text" NAME="Name" SIZE="30" placeholder="Type in your first and last name" required>
```

# CSS3



# CSS Level 3

- Modularized for easier browser uptake
- Almost 50 modules (readiness varies)
- Use browser-specific prefixes until finalized
- Dramatically improves performance
- Examples:
  - Border radius (rounded corners without images)
  - Gradients
  - Multi-column layout
  - Reflection
  - Etc.

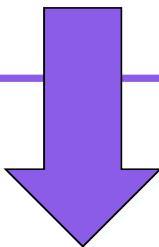


<http://css3please.com/>

# Rounded corners

CSS

```
a:hover img {  
    border-radius: 10px;  
    border: 2px solid #F47D31;  
    -webkit-transform: scale(1.05);  
}
```



Cloud



HTTP

# Example: Linear Gradient

CSS

```
/* Linear Gradient for WebKit and Mozilla in CSS3 */
background-image: -moz-linear-gradient(top, #F47D31,
#888);
background-image: -webkit-gradient(
    linear, left top, left bottom, color-stop
(0,#F47D31), color-stop(1, #888));
```



# Linear Gradient Fallback

CSS

```
/* Define a fallback color and image */
background-color: #f47d31;
background: #888888 url("gradient-bg.png") repeat-x top;

/** In Opera, you can also use SVG:
background: #f47d31 url("gradient-bg.svg");
**/


/* IE(6&7, 8) Fallback, specify 6-digit colors here */
filter: progid:DXImageTransform.Microsoft.gradient(
    startColorStr='#FFF47D31', EndColorStr='#FF888888');
-ms-filter: "progid:DXImageTransform.Microsoft.gradient(
    startColorStr='#FFF47D31', EndColorStr='#FF888888')";
```

# Multi-Column Layout

CSS

```
/* Column layout*/
body {
    -webkit-column-count: 3;
    -webkit-column-width: 100px;
    -webkit-column-gap: 10px;
    -webkit-column-rule: 1px solid;

    -moz-column-count: 3;
    -moz-column-width: 100px;
    -moz-column-gap: 10px;
    -moz-column-rule: 1px solid;
}
```

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus at est eros, vel fringilla urna. Pellentesque odio diam, rhoncus nec congue in, Class aptent taciti sociosqu ad litora torquent per conubia nostra. Per inceptos himenaeos. Quisque feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc...

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus at est eros, vel fringilla urna. Pellentesque odio diam, rhoncus nec congue in, Class aptent taciti sociosqu ad litora torquent per conubia nostra. Per inceptos himenaeos. Quisque feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc...

feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc...

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus at est eros, vel fringilla urna. Pellentesque odio diam, rhoncus nec congue in, Class aptent taciti sociosqu ad litora torquent per conubia nostra. Per inceptos himenaeos. Quisque feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc...

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus at est eros, vel fringilla urna. Pellentesque odio diam, rhoncus nec congue in, Class aptent taciti sociosqu ad litora torquent per conubia nostra. Per inceptos himenaeos. Quisque feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc...

rhoncus nec congue in, Class aptent taciti sociosqu ad litora torquent per conubia nostra. Per inceptos himenaeos. Quisque feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc...

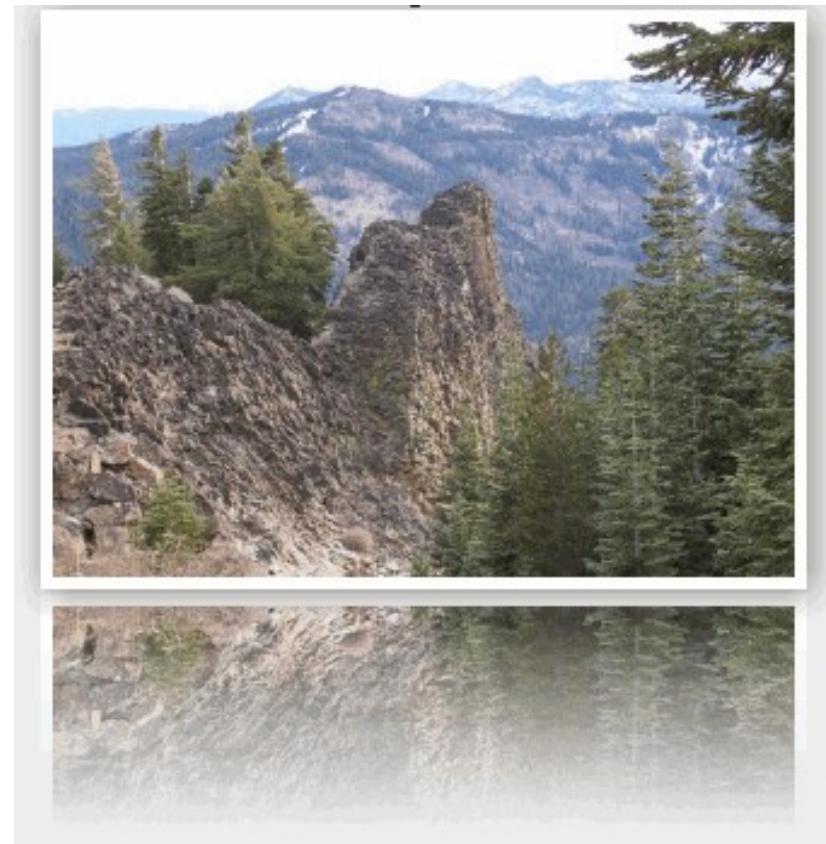
Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus at est eros, vel fringilla urna. Pellentesque odio diam, rhoncus nec congue in, Class aptent taciti sociosqu ad litora torquent per conubia nostra. Per inceptos himenaeos. Quisque feugiat, justo at vehicula pellentesque, turpis lorem dictum nunc...

# Reflection

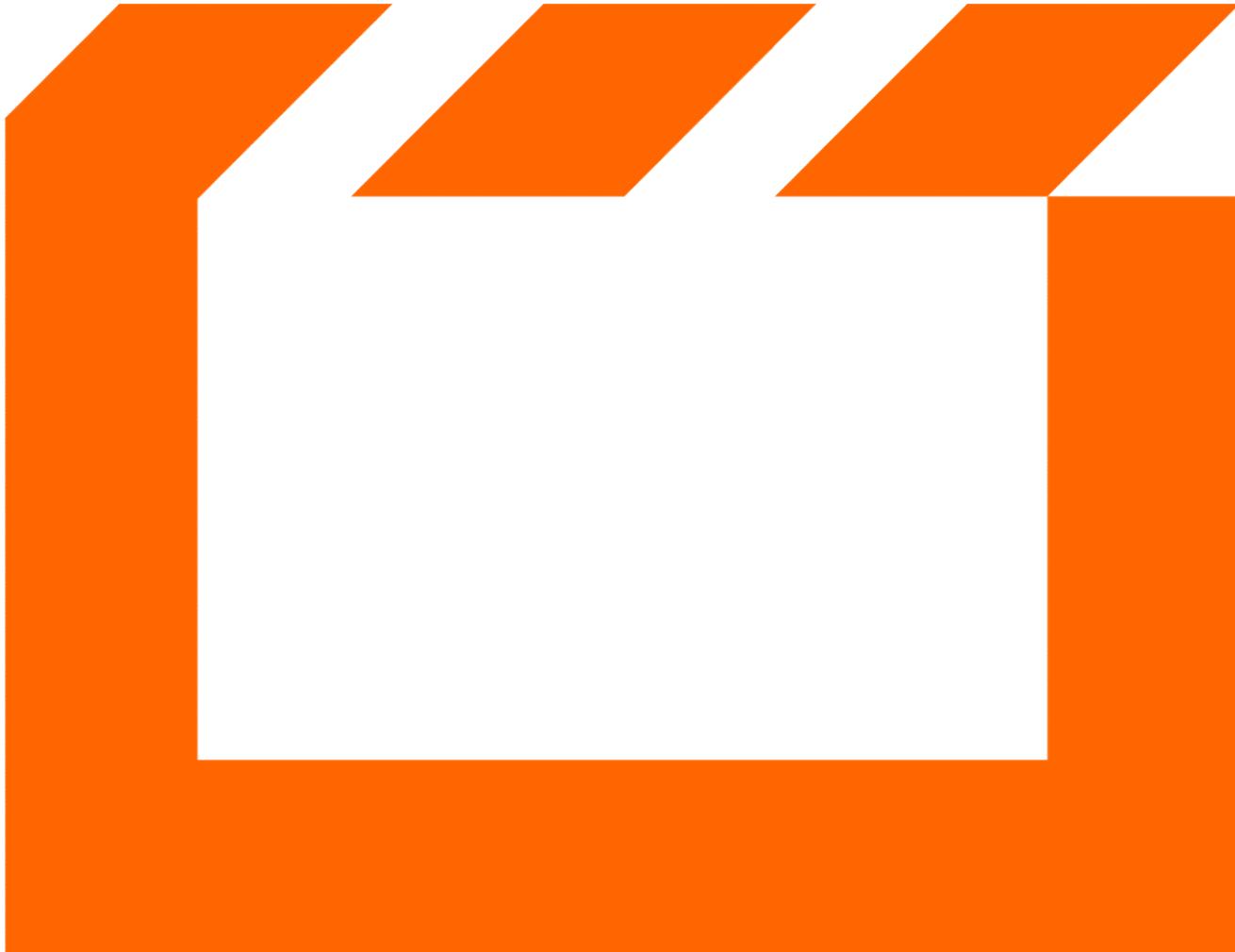
- For images, videos, etc.

css

```
-webkit-box-reflect:  
    below 2px -webkit-gradient(  
        linear, left top, left bottom,  
        from(transparent), color-stop(  
            0.6, transparent), to(white));
```



# Multimedia



# Multimedia (Cont.)

## Video Compression



Flash

Source : Google, Introduction to HTML5, Oct. 7, 2009

# Multimedia (Cont.)

## Before HTML5

```
10 <object id="FlashID" classid="clsid:D27CDB6E-AE6D-11cf-96B8-444553540000" width="550" height="400">
11   <param name="movie" value="sample.swf">
12   <param name="quality" value="high">
13   <param name="wmode" value="opaque">
14   <param name="swfversion" value="11.0.0.0">
15   <!-- 이 param 태그는 Flash Player 6.0 r65 이후 버전 사용자에게 최신 버전의 Flash Player를 다운로드하라는 메시지를
        표시합니다. 사용자에게 이러한 메시지를 표시하지 않으려면 이 태그를 삭제하십시오. -->
16   <param name="expressinstall" value="Scripts/expressInstall.swf">
17   <!-- 다음 객체 태그는 IE 이외의 브라우저에 사용됩니다. IECC를 사용하여 IE에서 이 태그를 숨기십시오. -->
18   <!--[if !IE]>-->
19   <object type="application/x-shockwave-flash" data="sample.swf" width="550" height="400">
20     <!--<![endif]-->
21     <param name="quality" value="high">
22     <param name="wmode" value="opaque">
23     <param name="swfversion" value="11.0.0.0">
24     <param name="expressinstall" value="Scripts/expressInstall.swf">
25     <!-- Flash Player 6.0 이전 버전 사용자의 브라우저에는 다음과 같은 대체 내용이 표시됩니다. -->
26     <div>
27       <h4>이 페이지의 내용을 보려면 최신 버전의 Adobe Flash Player가 필요합니다.</h4>
28       <p><a href="http://www.adobe.com/go/getflashplayer"></a></p>
29     </div>
30     <!--[if !IE]>-->
31   </object>
32   <!--<![endif]-->
33 </object>
34 <script type="text/javascript">
35 swfobject.registerObject("FlashID");
36 </script>
```

# Multimedia (Cont.)

## Now HTML5

```
1  <!DOCTYPE HTML>
2  <html>
3  <head>
4  <meta charset="utf-8">
5  <title>embed sample</title>
6  </head>
7  <body>
8  <embed src="sample.swf" width="550" height="400" > </embed>
9  </body>
10 </html>
```

# Multimedia (Cont.)

```
<!-- flash movie & bullets -->
<div id="flashholder">
    <div id="flash">
        <script language="javascript">
            if (AC_FL_RunContent == 0) {
                alert("This page requires AC_RunActiveContent.js.");
            } else {
                AC_FL_RunContent(
                    'codebase', 'http://download.macromedia.com/pub/shockwave/cabs/flash/
swflash.cab#version=9,0,0,0',
                    'width', '320',
                    'height', '310',
                    'src', '../FLV_Player',
                    'quality', 'high',
                    'pluginspage', 'http://www.macromedia.com/go/getflashplayer',
                    'align', 'middle',
                    'play', 'true',
                    'loop', 'true',
                    'scale', 'showall',
                    'wmode', 'window',
                    'devicefont', 'false',
                    'id', 'FLV_Player',
                    'bgcolor', '#ffffff',
                    'name', 'FLV_Player',
                    'menu', 'true',
                    'allowFullScreen', 'false',
                    'allowScriptAccess','always',
                    'movie', '../FLV_Player',
                    'salign', ''
                ); //end AC code
            }
        </script>
    <noscript>
```

Source : Google,Introduction to HTML5, Oct. 7, 2009

## Multimedia (Cont.)

**Video is Complicated, and Outside Your Control**



Source : Google, Introduction to HTML5, Oct. 7, 2009

# HTML5 Audio and Video



- New HTML5 media elements
  - <audio> and <video>
- Native audio and video (no plugins required)
  - Programmable with JavaScript
  - Style with CSS
- Add videos and audio as if it was an image
- Codec support varies, but multiple source elements and fallback content can be used

# HTML5 Video Example

HTML

```
//Basic Video
<video controls src="goldrush.mp4">
    A movie about HTML5
</video>

// Video with additional attributes
<video id="movies"
    controls preload="metadata"
    width="400px" height="300px"
    poster="html5.png" >
    <source src="goldrush.webm">
    <source src="goldrush.mp4">
    <track label="English" kind="subtitles"
        srclang="en" src="subtitles_en.vtt">
    A movie by Rocky Lubbers
</video>
```

## Multimedia (Cont.)

// HTML 5 makes  
**<video>** as easy  
as **<img>**

Source : Google, Introduction to HTML5, Oct. 7, 2009

# Multimedia (Cont.)

## Video Compression HTML 5 Options



Flash



H264



MPEG 4

Ogg Theora

WebM



Source : Google, Introduction to HTML5, Oct. 7, 2009

# HTML5 Video Example (Cont.)

## Embedding Video

```
<video src="http://example.com/myMovie.ogv" controls>  
    Your browser does not support the video element.  
</video>
```

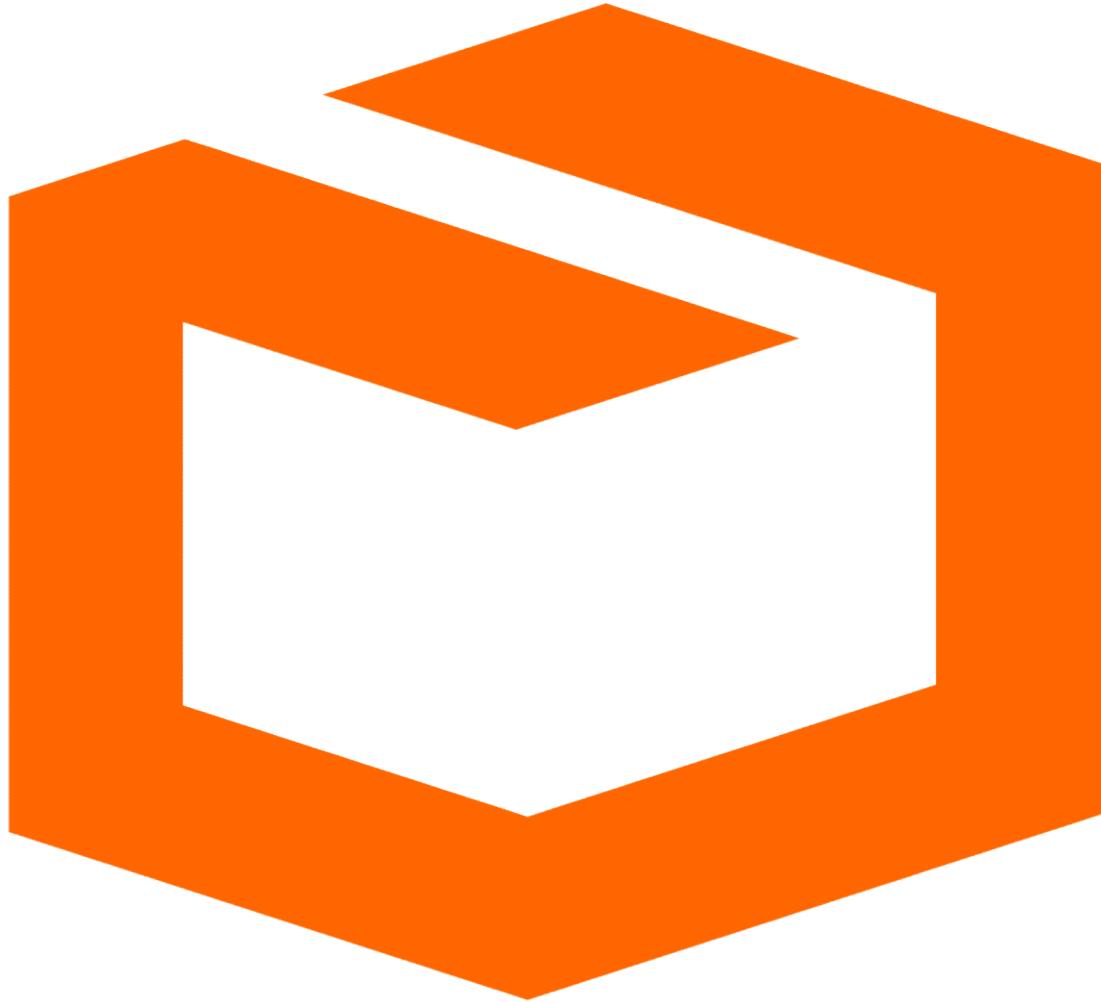
# HTML5 Video Example (Cont.)

## Multiple Files & Scripting

```
<video controls>
  <source src="foo.ogg" type="video/ogg">
  <source src="foo.mp4">
    Your browser does not support the video element.
</video>
```

```
var v = document.getElementsByTagName("video")[0];
v.play();
```

# Graphics and 3D



# Canvas

## ■ Operations on Canvas

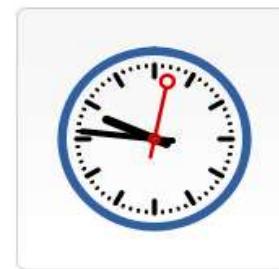
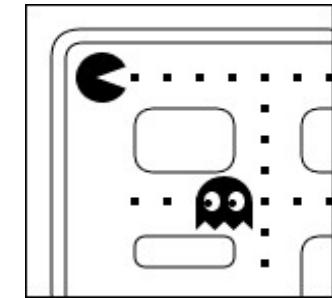
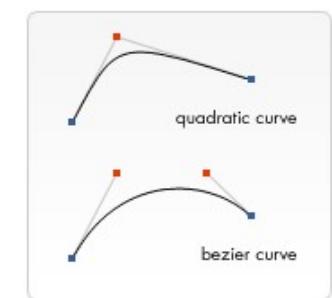
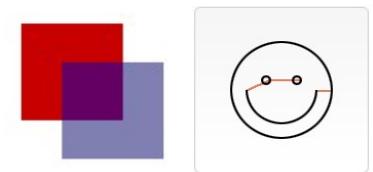
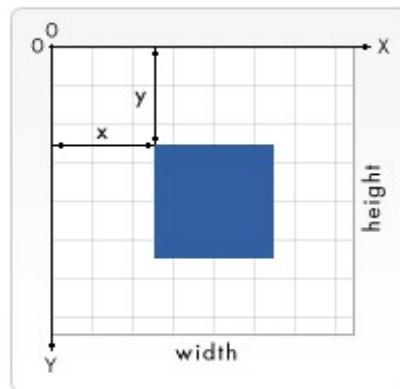
- Draw lines / shapes
- Apply styles/color/transparency
- Add Images
- Transformations, Compositing
- Animations

## ■ Demos:

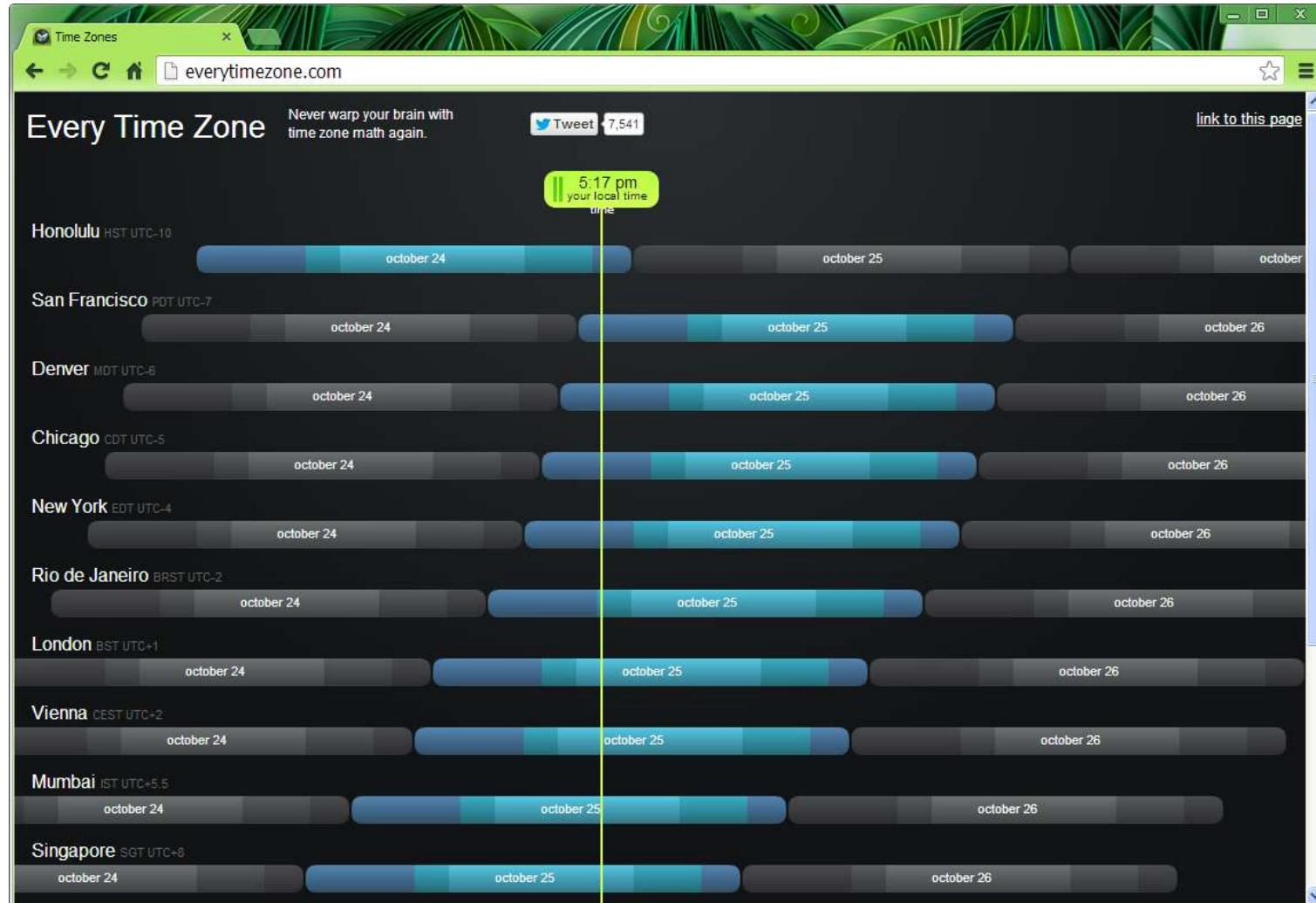
- <http://html5demos.com/canvas>
- MSPaint on the web using canvas: <http://colorillo.com>

## ■ Ref:

- [https://developer.mozilla.org/en-US/docs/Web/API/Canvas\\_Tutorial](https://developer.mozilla.org/en-US/docs/Web/API/Canvas_Tutorial)
- [https://developer.mozilla.org/en-US/docs/Web/Guide/Drawing\\_Graphics\\_with\\_Canvas](https://developer.mozilla.org/en-US/docs/Web/Guide/Drawing_Graphics_with_Canvas)

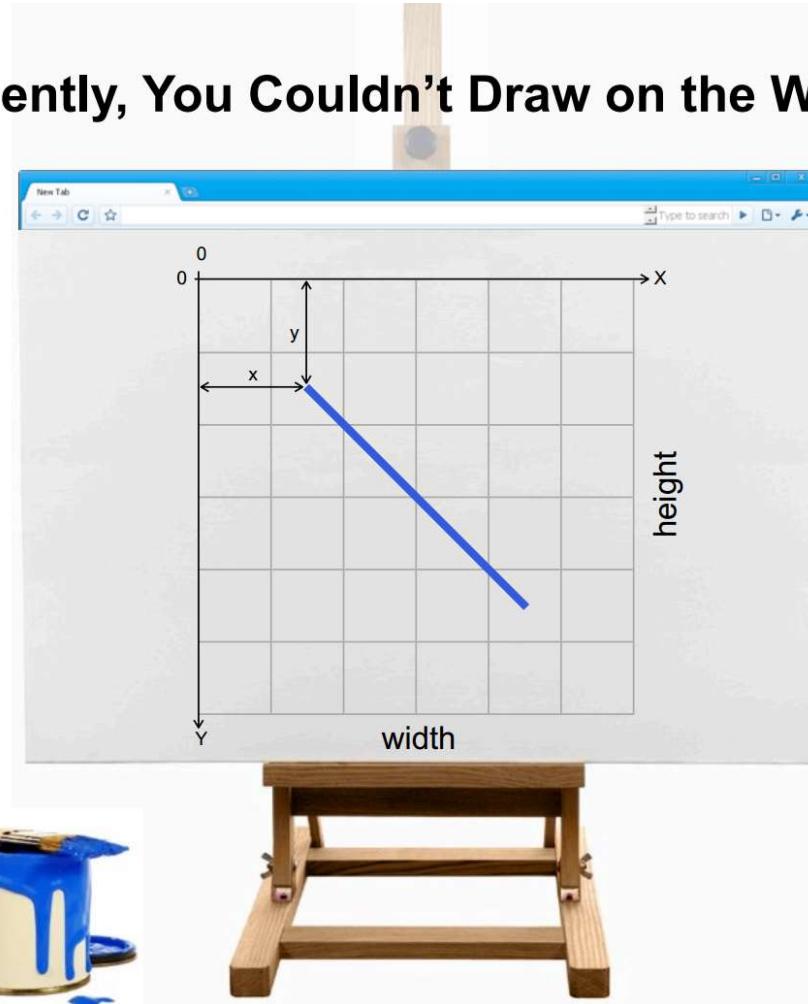


# Canvas (Cont.)



# Graphics and 3D (Cont.)

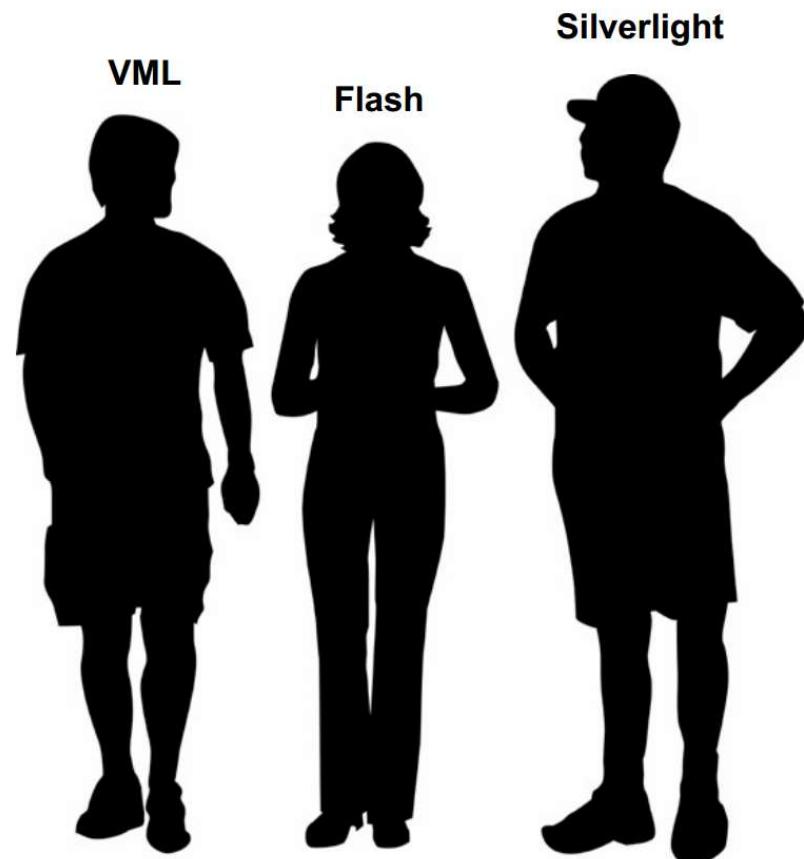
Until Recently, You Couldn't Draw on the Web



Source : Google, Introduction to HTML5, Oct. 7, 2009

# Graphics and 3D (Cont.)

The Usual Options Do This...



Source : Google, Introduction to HTML5, Oct. 7, 2009

# Graphics and 3D (Cont.)

... But canvas and SVG Are Intrinsic to the Web



## Document Object Model (DOM) Specification

*Original:* <http://www.w3.org/TR/REC-DOM-Level-1/>

*Latest:* <http://www.w3.org/TR/DOM-Level-3-Core/>

*Contributors:* Netscape, Sun, Microsoft, W3C, IBM, Novell, JavaSoft, SoftQuad Inc., Inso EPS, Texcel Research, Arbortext

## Hypertext Markup Language (HTML)

*Original:* <http://tools.ietf.org/html/rfc1866>

*Latest:* <http://www.w3.org/TR/html5/>

*Contributors:* T. Berners-Lee, D. Connolly, L. Masinter, MIT, W3C, AT&T, IBM, Microsoft, Netscape, Novell, SoftQuad, Spyglass, Adobe, Lotus, CWI, Reuters, JavaSoft, HP, GRIF, Sun, Opera, Mozilla, Google, Apple

## Hypertext Transfer Protocol (HTTP)

*Original:* <http://tools.ietf.org/html/rfc1945>

*Latest:* <http://tools.ietf.org/html/rfc2616>

*Contributors:* UC Urvine, Compaq, MIT, Xerox, Microsoft, W3C, T. Berners-Lee, R. Fielding, J. Gettys, J. Mogul, H. Frystyk, L. Masinter, P. Leach

Source : Google, Introduction to HTML5, Oct. 7, 2009

# Graphics and 3D (Cont.)

## Scalable Vector Graphics (SVG)

- HTML-like tags for drawing

```
<!DOCTYPE html>
<html>
<body>
<svg width="200" height="200">
  <rect
    x="0" y="0"
    width="100" height="100"
    fill="blue" stroke="red"
    stroke-width="5px"
    rx="8" ry="8"
    id="myRect" class="chart" />
</svg>
</body>
</html>
```



# Graphics and 3D (Cont.)

## Scalable Vector Graphics (SVG)



```
var rect = document.getElementById('myRect');
rect.style.fill = 'green';
rect.onclick = function() { alert('hello'); }
```

# Graphics and 3D (Cont.)

## Canvas API

- JavaScript API ("Scriptable Image Tag")

```
<canvas id="myCanvas" width="150" height="150">  
</canvas>
```

```
var canvas = document.getElementById('myCanvas');  
var ctx = canvas.getContext('2d');
```

```
ctx.fillStyle = "rgb(200,0,0)";  
ctx.fillRect (10, 10, 55, 50);
```



```
ctx.fillStyle = "rgba(0, 0, 200, 0.5)";  
ctx.fillRect (30, 30, 55, 50);
```

Source : Google, Introduction to HTML5, Oct. 7, 2009

# Graphics and 3D (Cont.)

## When Canvas or SVG?

SVG -> High level

- Import/Export
- Easy UIs
- Interactive
- Medium Animation
- Tree of objects

Canvas -> Low level

- No mouse interaction
- High Animation
- JS Centric
- More Bookkeeping
- Pixels

Source : Google, Introduction to HTML5, Oct. 7, 2009

## Demos



- [First Person Gifter \(FF\)](#)
- [Population Demo \(FF\)](#)
- [http://colorillo.com/](#)
- [http://www.canvasdemos.com/](#)
- [http://www.zygotebody.com](#)
- [http://aniworx.com/](#)

## Demos



- [Quake II Demo \(YouTube\)](#)
- [1 Minute Intro to SVG Web + Demos](#)

# Device Access



# Device Access Features

- Lots of features, varying levels of support:
- Geolocation
  - Allows users to share their location for location-aware services
  - Implemented in all browsers
- Drag and Drop
- Filesystem API
- Speech Input
- Device orientation (accelerometer)
- Webcam (bar code, QR code scanning)



# Geolocation with Map APIs



# Geolocations

**LIBRARY FINDER**  
Because Libraries Are Awesome!



What Tweeters near are you saying about libraries:

-  **cookymonsterXD1**  
Sittin in the library. Just bored. I tried reading the news paper..but that got boring.  
Wed, 09 Nov 2011 16:44:16
-  **iRun\_o4FUN**  
@ErnestBClark\_ , in class. she said friday is in the library!  
Wed, 09 Nov 2011 16:08:49
-  **Consumer4rights**  
@KOMUNews @komuMegan Daniel Boone Regional Library settled a discrimination with me before they remodeled, The Maintence only hire black ppl

Libraries near: Lat: 41.683381 & Lng: -86.250006

**St Joseph County Public Library**  
304 South Main Street (574) 282-4600  
[Directions](#) [Place Page](#)

**St Joseph Law Library**  
101 South Main Street (574) 235-9657  
[Directions](#) [Place Page](#)

**Court Library**  
204 S Main St # 316 (574) 246-8050  
[Directions](#) [Place Page](#)

**University of Notre Dame Library**  
221 Hesburgh Library (574) 631-5252  
[Directions](#) [Place Page](#)

**South Bend Collections**  
103 West Wayne Street (574) 289-2770  
[Directions](#) [Place Page](#)

**Friends of the St Joseph County Public Library**  
333 South Michigan St., South Bend, IN, 46601 (574) 282-4670  
[Directions](#) [Place Page](#)

**Architecture Library**  
117 Bond Hall (574) 631-6654  
[Directions](#) [Place Page](#)

<http://10k.aneventapart.com/Entry/Details/548>

## Geolocations (Cont.)

**...And Browsers Are Now Location-Enabled**



Source : Google, Introduction to HTML5, Oct. 7, 2009

## Geolocations (Cont.)

// the  
**geolocation api**  
brings browser-  
based location  
to your apps

# Geolocations (Cont.)

## Geolocation Sample



```
navigator.geolocation.getCurrentPosition(  
    function(position) {  
        var lat = position.coords.latitude;  
        var lon = position.coords.longitude;  
        showLocation(lat, lon);  
    }  
);
```

# Demos



- <http://html5demos.com/geo>

# Device Orientation

Demo: <http://slides.html5rocks.com/#slide-orientation>



Image: <http://idisk.mac.com/han.solo-Public/Canvas/SteelSeries/Radial.html>

# Speech Input

HTML

```
<input type=text x-webkit-speech>
```

Google

Translate

From: English ▾



To: Dutch ▾

Translate

HTML5 is the best thing I've ever seen!



HTML5 het beste is wat ik ooit heb gezien!



# Performance



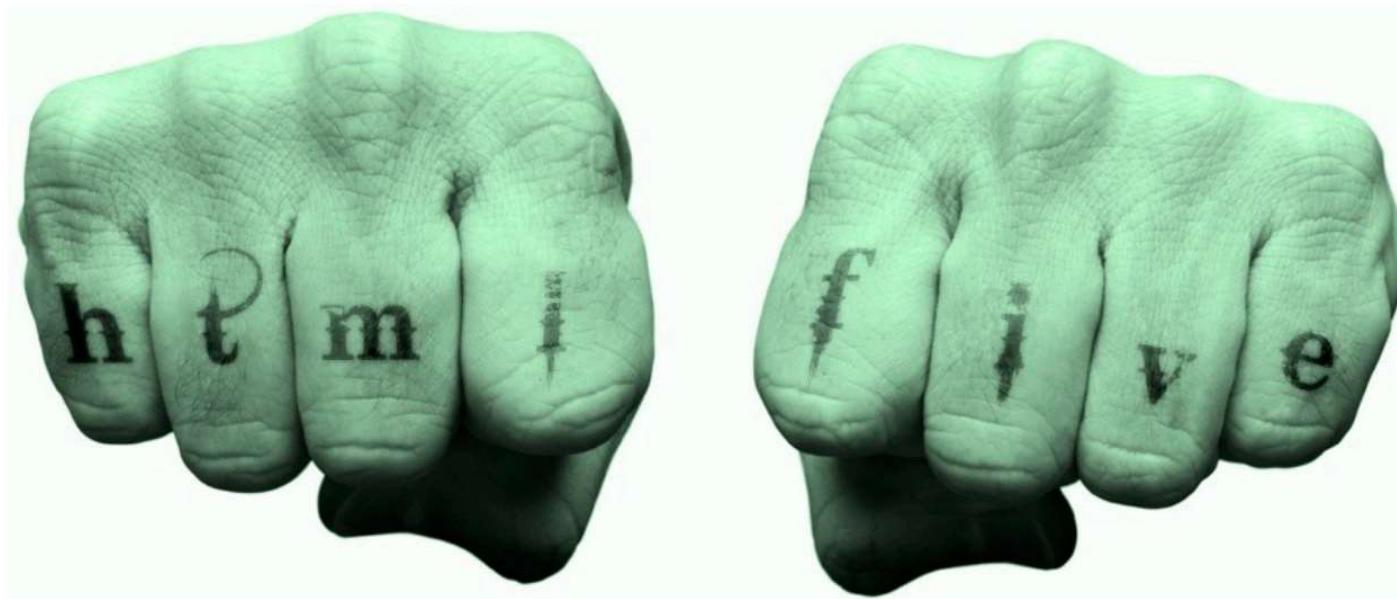
# Web Workers

- JavaScript is single-threaded
- HTML5 Web Workers provide background processing capabilities to web applications
  - Run background JavaScript (like a thread)
  - Avoid blocking the UI thread



## Web Workers (Cont.)

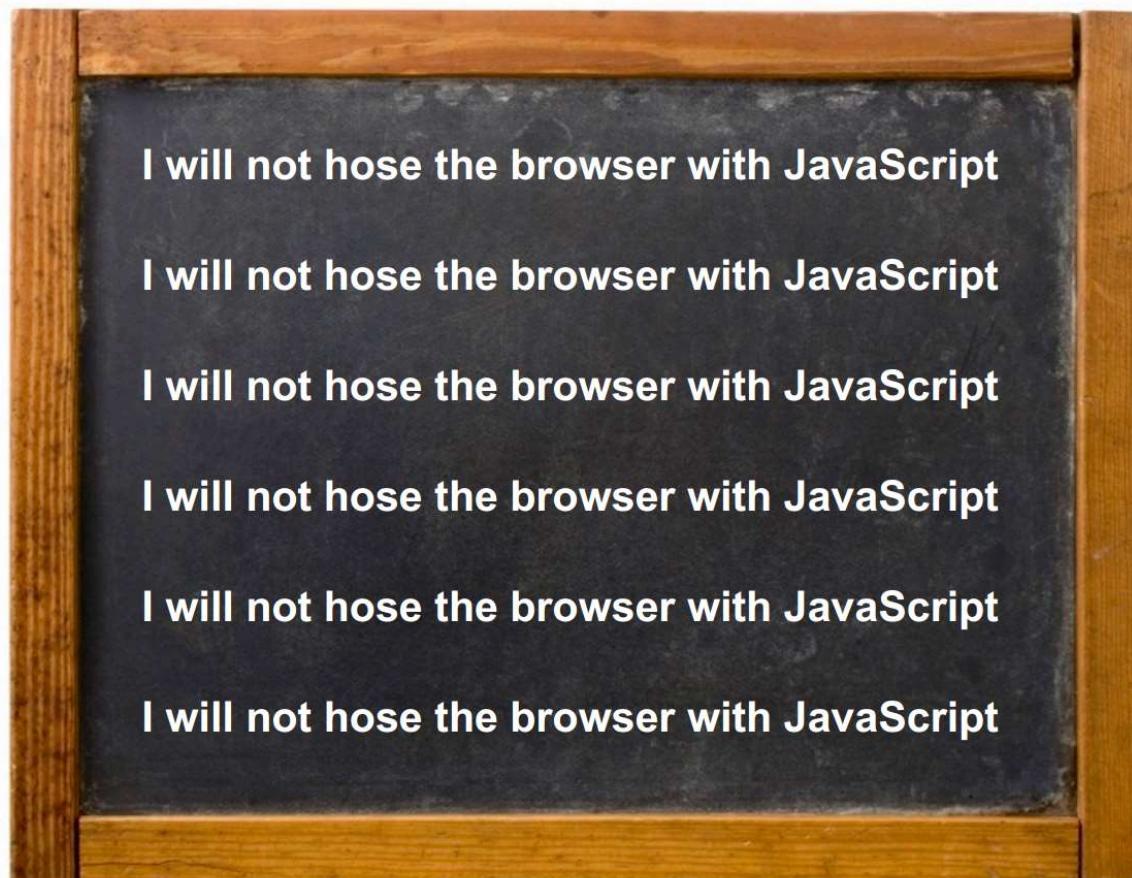
**A More Powerful Web == More Powerful Apps**



Source : Google, Introduction to HTML5, Oct. 7, 2009

# Web Workers (Cont.)

**But More Power == More Responsibility**



Source : Google, Introduction to HTML5, Oct. 7, 2009

## Web Workers (Cont.)

```
// web workers  
defines an API  
for running  
background  
scripts
```

# Web Workers (Cont.)

## Web Workers



```
<script>
    var worker = new Worker('worker.js');
    worker.onmessage = function (event) {
        console.log('Results: ' + event.data);
    };
</script>
```

# Web Workers (Cont.)

worker.js



```
function findPrimes() {  
    // ... prime algorithm here  
    postMessage(nextPrime);  
}  
  
findPrimes();
```

Source : Google, Introduction to HTML5, Oct. 7, 2009

# Demos



- Bad Primes (FF)
- Good Primes (FF)
- Motion Tracker (FF)

## Offline and Storage



# Offline and Storage (Cont.)

**Web Apps Need to Work Everywhere**



Source : Google, Introduction to HTML5, Oct. 7, 2009

# Offline Web Applications

- Use complete web sites (documentation sets) in offline mode.
- Cache pages that have not been visited yet.
- Browsers cache data in an Application Cache.
- HTML5 allows online and offline detection.
- Allows prefetching of site resources.  
(can speed up pages)
- Simple manifest mechanism.



# Example appcache File

## appcache File

```
CACHE MANIFEST
# manifest version 1.0.1
# Files to cache
index.html
cache.html
html5.css
image1.jpg
img/foo.gif
http://www.example.com/styles.css

# Use from network if available
NETWORK:
network.html

# Fallback content
FALLBACK:
/ fallback.html
```

# Example manifest Attribute

## ■ Reference the manifest file:

- Use **.appcache** extension (\*.manifest also allowed)
- Add as attribute to HTML element

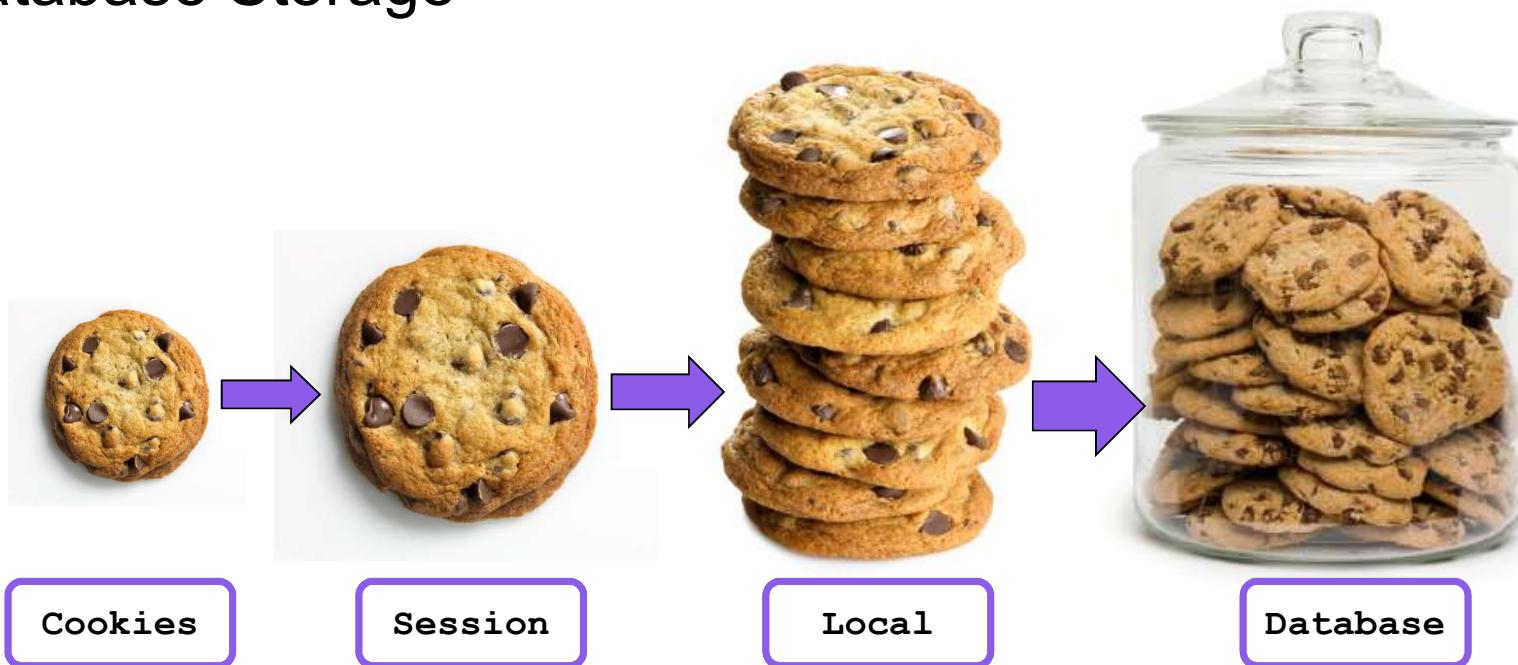
HTML

```
<!DOCTYPE html>
<html manifest="offline.appcache">
  <head>
    <title>HTML5 Application Cache Rocks!</title>
```

<http://appcachefacts.info/>

# Web and DB Storage

- Many powerful new client-side storage options
- Web and Web Database storage a.k.a. "cookies on steroids"
- Web Storage (Session and Local Storage)
- Web Database Storage



## Offline and Storage (Cont.)

```
// database and  
app cache store  
user data and  
app resources  
locally
```

## Offline and Storage (Cont.)



Source : Google, Introduction to HTML5, Oct. 7, 2009

# Offline and Storage (Cont.)

## Database



```
var db = window.openDatabase("NoteTest", "1.0",
                            "Example DB",
                            200000);

function saveMe(id, text, timestamp, left, top, zIndex) {
    db.transaction(
        function (tx) {
            tx.executeSql(
                "INSERT INTO WebKitStickyNotes "
                + "(id, note, timestamp, left, top, zindex) "
                + "VALUES (?, ?, ?, ?, ?, ?)",
                [id, text, timestamp, left, top, zIndex]);
        }
    );
}
```

Source : Google, Introduction to HTML5, Oct. 7, 2009

## Etc ...

- Drag-Drop
- Document Editing
- Cross-Domain Messaging
- 3D APIs
  - Mozilla Canvas 3D
  - Google O3D

## Two homes for HTML5

- W3C spec: <https://www.w3.org/TR/html51/>
  - W3C Editor's Draft: <http://w3c.github.io/html/>
- WHATWG version: <https://html.spec.whatwg.org/multipage/>

## 한글 레퍼런스

- [http://www.jopenbusiness.com/mediawiki/index.php/HTML5#HTML5\\_.ED.91.9C.EC.A4.80.ED.99.94\\_.EC.9D.BC.EC.A0.95](http://www.jopenbusiness.com/mediawiki/index.php/HTML5#HTML5_.ED.91.9C.EC.A4.80.ED.99.94_.EC.9D.BC.EC.A0.95)
- [https://docs.google.com/file/d/0BwKGpbna5w4\\_ZTIyYWViYzctOTJiMC00MzE4LWEyNmQtMmM5NGI3OGI3ZGE4/edit?pli=1](https://docs.google.com/file/d/0BwKGpbna5w4_ZTIyYWViYzctOTJiMC00MzE4LWEyNmQtMmM5NGI3OGI3ZGE4/edit?pli=1)
- <http://fromyou.tistory.com/411>
- <http://www.sqler.com/374157>
- <tp://hacks.mozilla.or.kr>

# Resources

- <http://www.w3.org/TR/html5/>
- <http://en.wikipedia.org/wiki/Html5>
- <https://rawgithub.com/whatwg/html-differences/master/Overview.html>
- <http://www.alistapart.com/articles/previewofhtml5>
- <http://diveintohtml5.info/>
- [http://www.w3schools.com/html/html5\\_intro.asp](http://www.w3schools.com/html/html5_intro.asp)
- <http://html5doctor.com>
- <http://html5gallery.com>
- <http://www.html5rocks.com/en>

## Resources (Cont.)

- <http://blog.whatwg.org/>
- <http://www.whatwg.org/specs/web-apps/current-work/multipage/>
- <http://diveintohtml5.info/>
- <http://caniuse.com/>
- <http://html5demos.com/>
- <http://www.sencha.com/>
- <http://uxmag.com/>
- <http://www.kesiev.com/akihabara/>

## Resources (Cont.)

- <http://www.smashingmagazine.com/>
- [http://camendesign.com/code/video\\_for\\_everybody](http://camendesign.com/code/video_for_everybody)
- <http://www.canvasdemos.com/>
- <http://dev.w3.org/geo/api/spec-source.html>
- <http://kaazing.com/services/training/>
- HTML5 and CSS3 Beginner Tutorials
  - <http://www.youtube.com/user/QuentinWatt?feature=watch>



## Question 1

1. HTML은 Hyper Text [REDACTED] Language의 약자이다.
2. 웹 표준을 개발하고 논의하며 제정하는 조직의 약자는 [REDACTED] 이다.
3. 1999년 HTML 4.01이후 2000년에 발표된 권고안으로 XML 의 엄격함을 주요 내용으로 하는 웹 표준은 [REDACTED] 이다.
4. WHATWG 는 웹 산업 발전으로 인한 시장 요구를 분석하여 2004년 독자적인 [REDACTED] 명세서 작업을 진행했다.