



HTML5 and CSS3 – The Future of the Web Programming



AL-FARABI KAZAKH NATIONAL UNIVERSITY



HTML5

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Content

- What is HTML5?
- HTML5 support
- New tags in HTML5
- Transformation of a document from HTML4 to HTML5
- More information



WHAT IS HTML5?



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What is HTML5?

- In 1998, the W3C decided that they would not continue to evolve HTML
- The future was based on XML: XHTML
 - HTML 4.01 → XHTML 1.0

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What is HTML5?

- XHTML:
 - XML syntax rules such as case-sensitive tags, quoting attributes, closing some tags while self-closing others, and others
 - Three flavors were developed
 - XHTML Strict
 - XHTML Transitional, designed to help people move to XHTML Strict
 - XHTML Frameset



HTML5 & CSS3

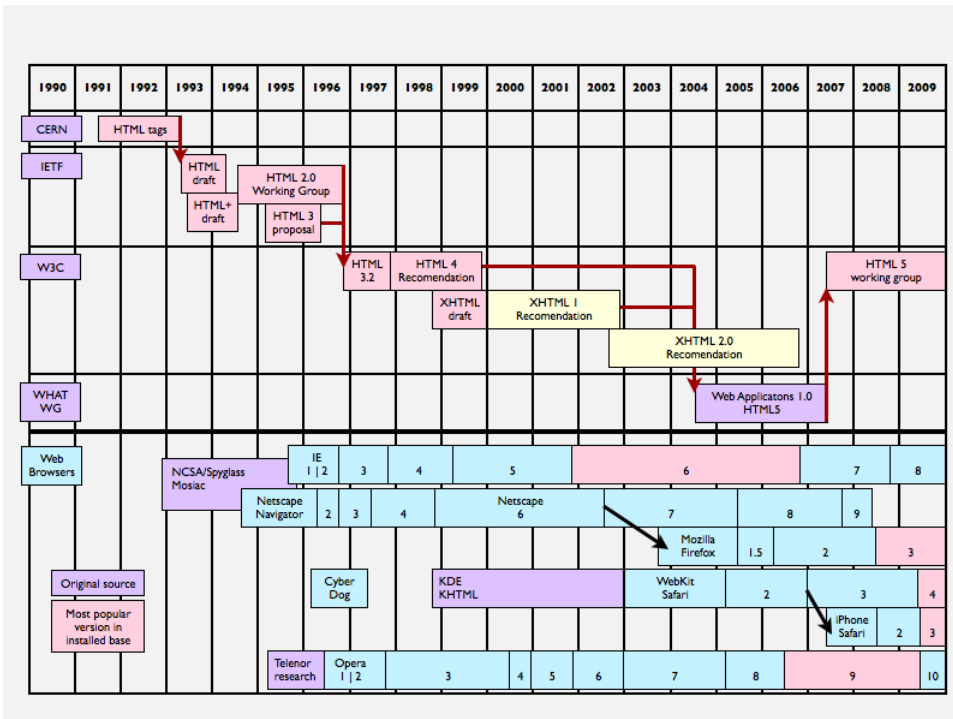


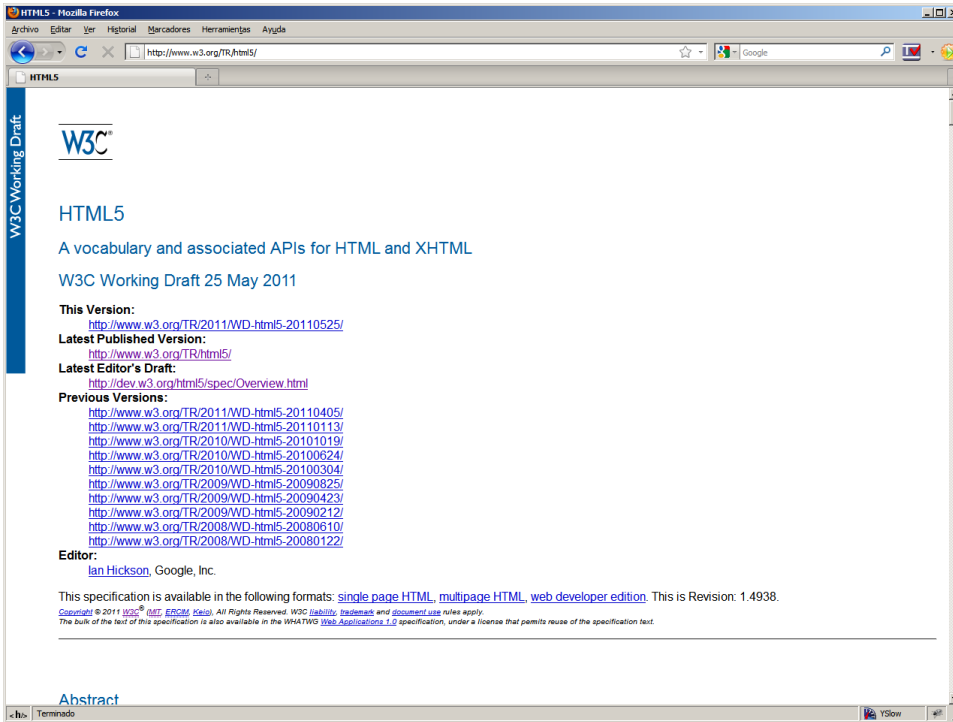
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What is HTML5?

- Opera + Mozilla + Apple formed WHATWG (Web Hypertext Application Technology Working Group) in 2004
 - <http://www.whatwg.org>





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HTML5 SUPPORT



The HTML5 test - How well does your browser support HTML5? - Windows Internet Explorer

http://html5test.com/

THE HTML5 TEST - HOW WELL DOES YOUR BROWSER SUPPORT HTML5?

your browser other browsers

UPDATED!
August 23, 2011

your browser scores

141

AND 5 BONUS POINTS

out of a total of 450 points

Parsing rules 1 bonus point 1/11

<!DOCTYPE html> triggers standards mode Yes ✓
 HTML5 tokenizer No ✗
 HTML5 tree building No ✗

HTML5 defines rules for embedding SVG and MathML inside a regular HTML document. Support for SVG and MathML is not required though, so bonus points are awarded if your browser supports embedding these two technologies.

SVG in text/html Yes ✓
 MathML in text/html No ✗

ABOUT THE TEST

The HTML5 test score is an indication of how well your browser supports the upcoming HTML5 standard and related specifications. Even though the specification isn't finalized yet, all major browser manufacturers are making sure their browser is ready for the future. Find out which parts of HTML5 are already supported by your browser today and compare the results with other browsers.

HTML5

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CREATE GREAT MOBILE GAMES
 USING HTML5
 GET IT HERE

The HTML5 test - How well does your browser support HTML5? - Windows Internet Explorer

http://html5test.com/#

CURRENT

Google Chrome	15.0.874	342	13
Opera	11.60	325	9
Mozilla Firefox	8.0	314	9
Apple Safari	5.1	293	7
Microsoft Internet Explorer	9	141	5

DEVELOPMENT OR BETA

Google Chrome	16.0.891	343	13
Opera	12 alpha	340	9
Microsoft Internet Explorer	10	300	6
Microsoft Internet Explorer	10 PP	299	6

OLDER

Google Chrome	13.0.782	341	13
Google Chrome	14.0.835	340	13
Google Chrome	12.0.742	339	13
Google Chrome	11.0.696	338	13
Mozilla Firefox	7.0	313	9
Mozilla Firefox	6.0	313	9
Opera	11.50	286	7
Opera	11.11	278	7
Mozilla Firefox	5.0	272	9
Mozilla Firefox	4.0.1	272	9
Apple Safari	5.0.5	253	7



NEW! Developer Tools
Send a url and get detailed reports

FindmebyIP.com
User support revealed

dcepluettweets +\$0.02 Flattr 15 Me gusta Tweet 311

HTML5 & CSS3 Support

Top CSS3 Properties CSS3 Selectors Web Applications GFX & Embedded Content Web Forms 2.0

twiDAQ Play the world's biggest stock exchange
Play for free and compete against your friends through 21 levels, with hundreds of challenges, even more badges...and billions of dollars! [Play for free](#)

CSS3 Properties

NEW! Developer Tools
Send a url and get detailed reports

Top CSS3 Properties CSS3 Selectors Web Applications GFX & Embedded Content

HTML5 Forms Inputs

	MAC				WIN					
	SAFARI	FIREFOX	OPERA	CHROME	SAFARI	IE	FIREFOX	CHROME		
	5.1	8 9	11.1	15 17	5.1	6 7 8 9	8	15		
Form: Search	✓	✓	✓	✓	✓	✗	✗	✗	✓	56%
Form: Phone	✓	✓	✓	✓	✓	✗	✗	✗	✓	55%
Form: URL	✓	✓	✓	✓	✓	✗	✗	✗	✓	54%
Form: Email	✓	✓	✓	✓	✓	✗	✗	✗	✓	54%
Form: DateTime	✗	✗	✗	✓	✗	✗	✗	✗	✗	4%
Form: Date	✗	✗	✗	✓	✗	✗	✗	✗	✗	4%
Form: Month	✗	✗	✗	✓	✗	✗	✗	✗	✗	4%
Form: Week	✗	✗	✗	✓	✗	✗	✗	✗	✗	4%
Form: Time	✗	✗	✗	✓	✗	✗	✗	✗	✗	4%



NEW TAGS IN HTML5



HTML5

- New semantic elements:

```
<section>  
<nav>  
<article>  
<aside>  
<hgroup>  
<header>  
<footer>  
<time>  
<mark>
```





TRANSFORMATION OF A DOCUMENT FROM HTML4 TO HTML5



```
<!DOCTYPE html PUBLIC "-//W3C//DTD  
XHTML 1.0 Strict//EN"  
"http://www.w3.org/TR/xhtml1/DTD/xhtml  
11-strict.dtd">
```





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HTML5

```
<!DOCTYPE html>
```

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



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HTML5

```
<html lang="en">
```

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



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HTML5

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

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HTML5

- All of these are equally valid in HTML5:

- <META CHARSET=UTF-8>
- <META CHARSET=UTF-8 />
- <META CHARSET="UTF-8">
- <META CHARSET="UTF-8" />
- <meta charset=utf-8>
- <meta charset=utf-8 />
- <meTa CHARset="utf-8">
- <meTa CHARset="utf-8" />



HTML5

- Just because you can use any of the aforementioned syntaxes doesn't mean you should mix them all up

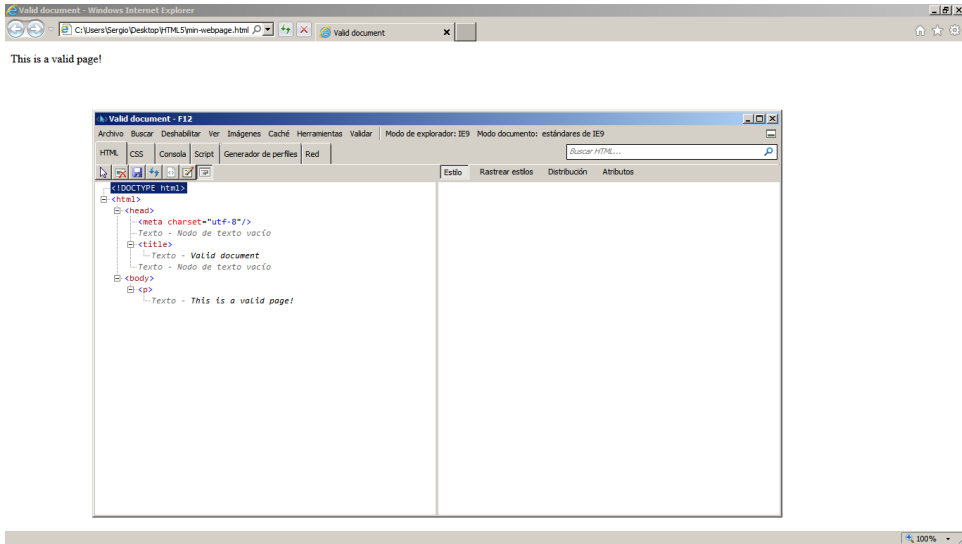


HTML5

- Valid (strange) document:

```
<!DOCTYPE html>  
<meta charset=utf-8>  
<title>Valid document</title>  
<p>This is a valid page!</p>
```





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HTML5

- Browsers add the missing elements
- Omitting these elements from your markup is likely to confuse



HTML5

```
<!DOCTYPE html>
<html lang=en>
<head>
<meta charset=utf-8>
<title>Valid document</title>
</head>
<body>
<p>This is a valid page!</p>
</body>
</html>
```



Compatibility with old browsers

```
/* Helps to show the new elements in
   block mode*/
article, aside, details, figcaption,
figure, footer, header, hgroup, menu,
nav, section
{
  display: block;
}
```



Compatibility with old browsers

- Internet Explorer < 9:

```
<script>
document.createElement("header");
document.createElement("nav");
document.createElement("article");
document.createElement("section");
// And the other new HTML5 elements
// ...
</script>
```

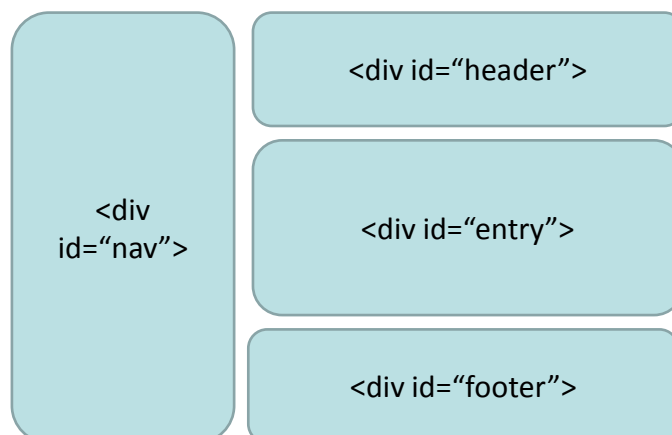


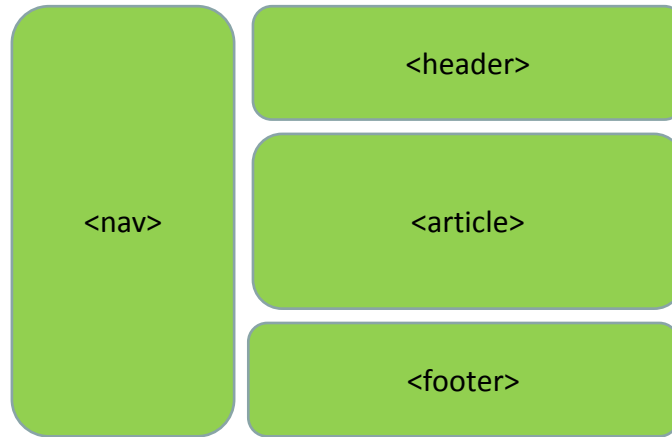
Compatibility with old browsers

```
<!--[if lt IE 9]>
<script>
var e = ("abbr,article,aside,audio,canvas," +
"datalist,details,figure,footer,header,hgroup," +
"mark,menu,meter,nav,output," +
"progress,section,time,video").split(',');
for(var i = 0; i < e.length; i++) {
  document.createElement(e[i]);
}
</script>
<![endif]-->
```




- Let's analyze the typical structure of a nowadays web page (a blog page):
 - How it's written with HTML 4, XHTML 1.0
 - How it can be written now with HTML5





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```
<div id="header">  
<h1>My Weblog</h1>  
<p class="tagline">A lot of effort  
went into making this effortless.</p>  
</div>
```



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HTML5

```
<header>
<h1>My Weblog</h1>
<p class="tagline">A lot of effort
  went into making this effortless.</p>
</header>
```

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HTML5

```
<header>
<hgroup>
<h1>My Weblog</h1>
<h2>A lot of effort went into making
  this effortless.</h2>
</hgroup>
</header>
```



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```
<div class="entry">
<p class="post-date">October 22, 2009</p>
<h2>
<a href="#" rel="bookmark" title="link to this
  post"> Travel day </a>
</h2>
<!-- The content of the entry -->
<p>...</p>
</div>
```

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HTML5

```
<article>
<header>
<p class="post-date">October 22, 2009</p>
<h1>
<a href="#" rel="bookmark" title="link to this
  post"> Travel day </a>
</h1>
</header>
<!-- The content of the entry -->
<p>...</p>
</article>
```



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HTML5

```
<article>
<header>
<time datetime="2009-10-22" pubdate>October
  22, 2009</time>
<h1>
<a href="#" rel="bookmark" title="link to this
  post"> Travel day </a>
</h1>
</header>
<!-- The content of the entry -->
<p>...</p>
</article>
```

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HTML5

```
<article>
<header>
<time datetime="2009-10-22"
  pubdate>22/10/2009</time>
<h1>
<a href="#" rel="bookmark" title="link to this
  post"> Travel day </a>
</h1>
</header>
<!-- The content of the entry -->
<p>...</p>
</article>
```



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HTML5

```
<article>
<header>
<time datetime="2009-10-22"
  pubdate>22.10.2009</time>
<h1>
<a href="#" rel="bookmark" title="link to this
  post"> Travel day </a>
</h1>
</header>
<!-- The content of the entry -->
<p>...</p>
</article>
```

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```
<div id="nav">
<ul>
<li><a href="#">home</a></li>
<li><a href="#">blog</a></li>
<li><a href="#">gallery</a></li>
<li><a href="#">about</a></li>
</ul>
</div>
```



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HTML5

```
<nav>
<ul>
<li><a href="#">home</a></li>
<li><a href="#">blog</a></li>
<li><a href="#">gallery</a></li>
<li><a href="#">about</a></li>
</ul>
</nav>
```

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```
<div id="footer">
<p>¶;</p>
<p>¶; 2001¶;9 <a
  href="#">Mark Pilgrim</a></p>
</div>
```



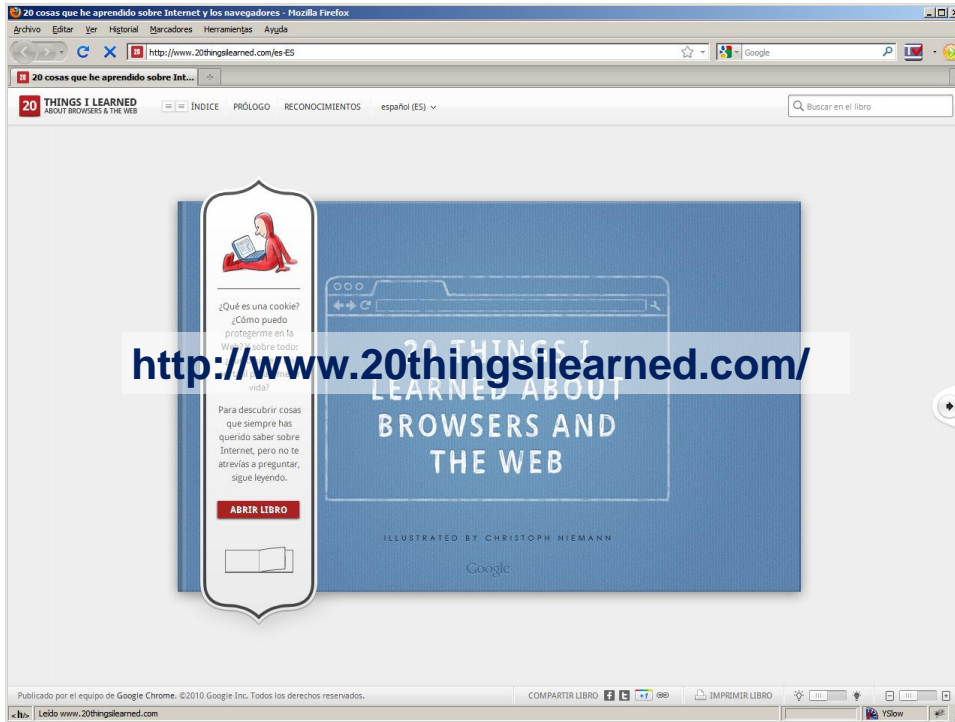
HTML5

```
<footer>  
<p>#167;</p>  
<p>#169; 2001#8211;9 <a  
  href="#">Mark Pilgrim</a></p>  
</footer>
```



MORE INFORMATION







HTML5 ROCKS

Presentation Playground Studio Tutorials Resources

INTERACTIVE PRESENTATION
Watch the slideshow that lets you play with HTML5 features.

CODE PLAYGROUND
Jump headfirst into HTML5 by experimenting with each API.

SAMPLES STUDIO
A showroom of content that you can reuse in your own site.

STEP BY STEP TUTORIALS
Take a guided tour through code that uses HTML5 features.

LEARN BY MAJOR HTML5 FEATURE GROUPS

Multimedia Performance
Presentation Graphics
Storage Mobile

LATEST UPDATES

8/7 Downloading resources in HTML5: a[download] UPDATE
7/25 HTML5 Libraries/polyfills - Mid July UPDATE
7/15 Announcing New Game, the conference for HTML5 gal
7/15 Don't Miss a Frame: Using the Page Visibility API + HT
7/2 Auto-Resizing HTML5 Games TUTORIAL
7/1 Simple Asset Management for HTML5 Games TUTORIAL
6/26 Feature, Browser, and Form Factor Detection: It's Goo
6/2 HTML5 vs Native: The Mobile App Debate TUTORIAL
6/1 An Introduction to Shaders TUTORIAL
6/1 Getting Started with Three.js TUTORIAL

See more =>

CONTRIBUTE

This site, the HTML5 Playground, Studio, and Presentation slides are all open source projects. Tweak the code or contribute new guides!

Ready to develop in HTML5 but worried about supporting older versions of Internet Explorer? Learn how Google Chrome Frame can help. It's easy to include on your site.

`<meta http-equiv="X-UA-Compatible" content="chrome=1">`

HTML 5 Demos and Examples

HTML 5 experimentation and demos I've hacked together. Click on the browser support icon or the technology tag to filter the demos (the filter is an OR filter).

Introducing HTML5 by Bruce Lawson & Remy Sharp is the first full length book dedicated to HTML5. Get it now and kick some HTML5 ass!

Filter demos: canvas classlist dataset dnd events file-api geolocation

Demo	Support	Technology
Simple class manipulation	✓	classlist
Storage events	✓	storage
dataset (data-* attributes)	✗	dataset
History API using pushState	✗	history
Browser based file reading Not part of HTML5	✓	file-api
Drag files directly into your browser Not directly part of HTML5	✓	file-api dnd
Simple chat client	✗	websocket
Two videos playing in sync	✓	video
Interactive canvas gradients	✓	canvas
Canvas & Video	✓	video canvas
Video	✓	video

