웹 프로그래밍 소개 HTML5 새로운 기능

류관희

충북대학교

New Elements in HTML5

◈ Semantic Tags (시맨틱 : 사람뿐만 아니라 기계가 이해할 수 있는 정보)
 – Well-defined Document Structure

```
<html>
<body>
  <div class="header">..</div>
  <div class="content">..</div>
  <div class="footer">..</div>
</body>
</html>
```
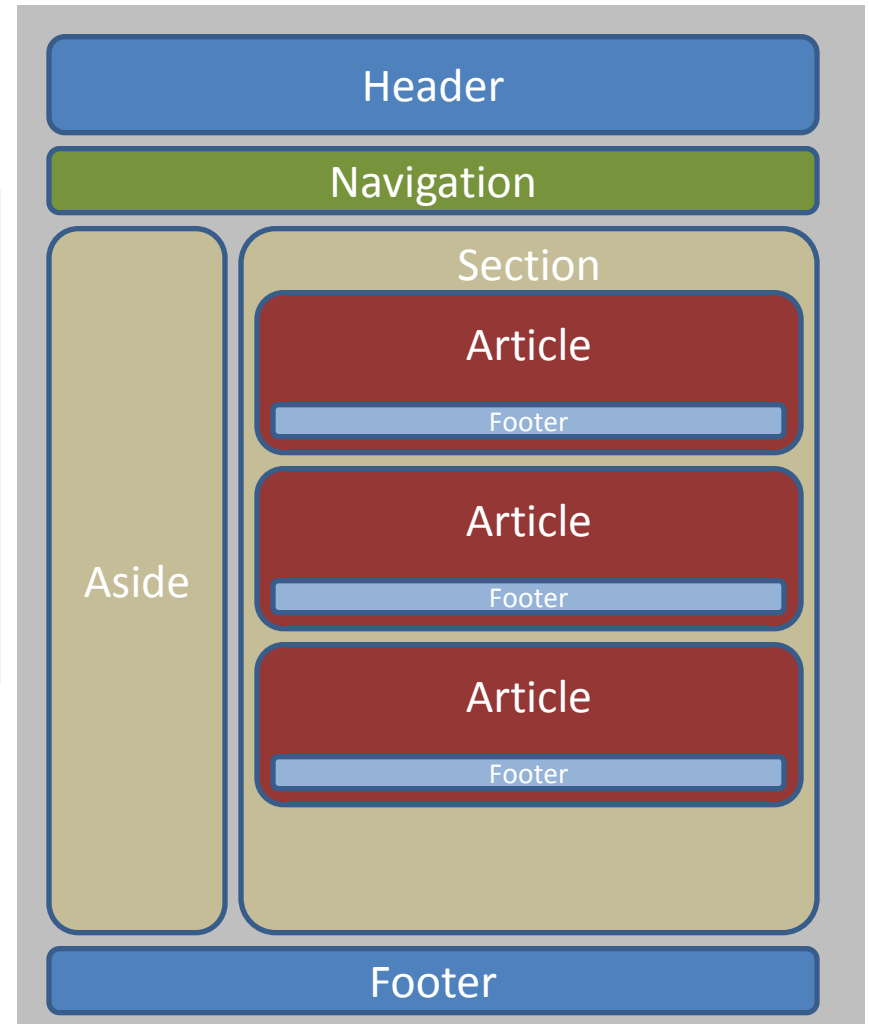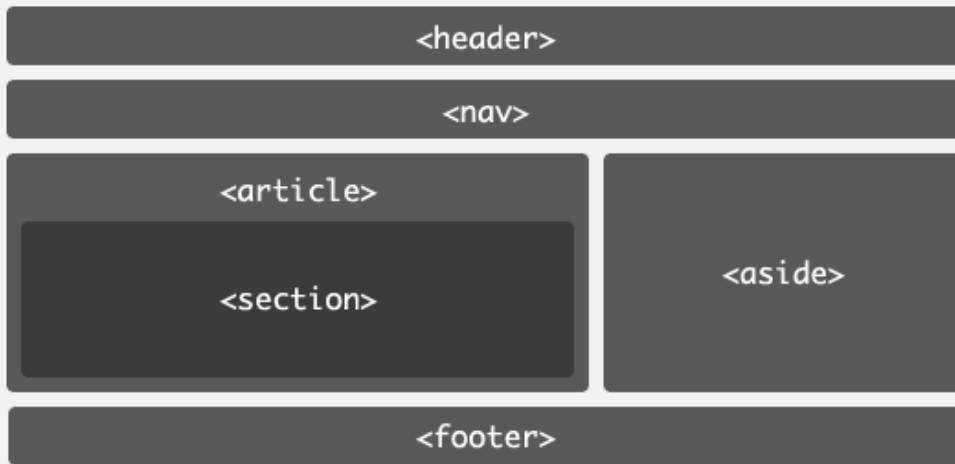
```
<html>
<body>
  <header>..</header>
  <section class="content">

  ..
  </section>
  <footer>..</footer>
</body>
</html>
```


Cat Lovr
Home About Contact   Search
Italics Kittehs
Posted 29 May 2008

<div id="header">
<div id="nav">
<div id="article">
<div id="aside">
<div id="footer">

Archives
May 2008
April 2008
March 2008
February 2008
January 2008
December 2007
November 2007
October 2007
September 2007
August 2007

Hungry kittens

42 Comments | Permalink   Rating:

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New Elements in HTML5

◈ Semantic Tags
  – Well-defined Document Structure

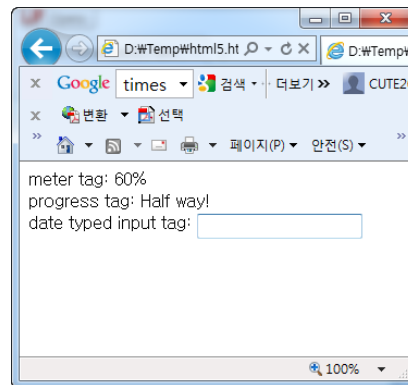# New Elements in HTML5

◈ Semantic Tags
  – Various content-specific tags (which browsers support with various appearance)
  – Common appearance can be styled with CSS

```
<!DOCTYPE html>
<html>
<body>
meter tag: <meter value="0.6">60%</meter> <br/>
progress tag: <progress value="0.5">Half way!</progress> <br/>
datetime input tag: <input type="datetime"/> <br/>
</body>
</html>
```
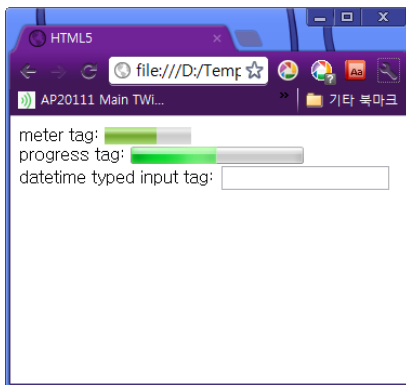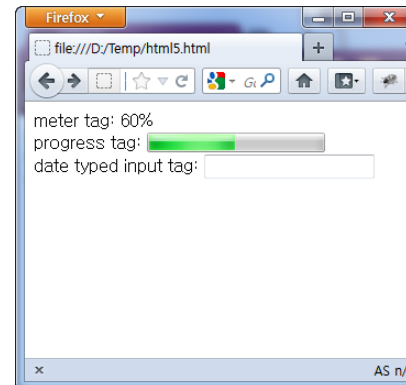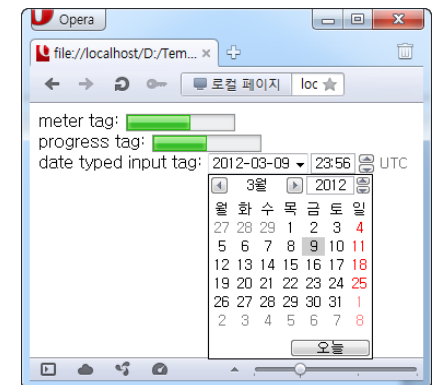

Chrome 17.0

IE 9.0

Firefox 10.0

Opera 11.61

New Elements in HTML5

◈ Semantic Tags

New Elements in HTML5

◈ Semantic Tags - Primary layout engines
- Webkit (Apple Safari/iOS, Chrome/Android, Symbian, Blackberry, Amazon Kindle)
  - Open-source engine
  - Supports the most common features of HTML5 & a large amount of CSS3
  - Desktop Chrome supports 33% of HTML5

- GecKo (Firefox, Netscape)
  - Open-source engine
  - Desktop Firefox supports 50% of HTML5

- Trident (Internet Explorer/IE Mobile)
  - Desktop IE 9 supports 25% of HTML5
  - Windows 7 Mobile - New! Improved! But is it selling?

- Presto (Opera, Opera Mini)
  - Leading HTML5 Browsers

New Elements in HTML5

Tag	Description
\<section\>	For a section in a document. Such as chapters, headers, footers, or any other sections of the document
\<article\>	Independent, self-contained content. An article should be possible to distribute it independently from the rest of the site (e.g., Forum post, newspaper article, blog entry user comment)
\<aside\>	For content aside from the content it is placed in. The aside content should be related to the surrounding content
\<command\>	A button, or a radiobutton, or a checkbox
\<details\>	For describing details about a document, or parts of a document
\<summary\>	A caption, or summary, inside the details element
\<figure\>	self-contained content like images, diagrams, photos, code, etc.
\<figcaption\>	The caption of the figure section

New Elements in HTML5

```
<section>
  <h1>WWF</h1>
  <p>The World Wildlife Foundation was born in 1961...</p>
</section>
```

```
<article>
<a href="http://blog.netscape.com/2007/12/28/end-of-support-for-
netscape-web-browsers">Netscape is dead</a><br />
AOL has a long history on the internet, being one of the first companies
to really get people online.....
</article>
```

```
<details>
<summary>Copyright 1999-2011.</summary>
<p>All pages and graphics on this web site are the property of the
company Refsnes Data.</p>
</details>
```

```
<figure>
  <figcaption>A view of the pulpit rock in Norway</figcaption>
  <img src="img_pulpit.jpg" width="304" height="228" />
</figure>
```

New Elements in HTML5

Tag	Description
<footer>	For a footer of a document or section, could include the name of the author, the date of the document, contact information, or copyright information
<header>	For an introduction of a document or section, could include navigation
<hgroup>	For a section of headings, using <h1> to <h6>, where the largest is the main heading of the section, and the others are sub-headings
<mark>	For text that should be highlighted
<meter>	For a measurement, used only if the maximum and minimum values are known
<nav>	For a section of navigation
<progress>	The state of a work in progress
<time>	For defining a time or a date, or both
<wbr>	Word break. For defining a line-break opportunity.
<nobr>	No line Break.

New Elements in HTML5

```
<header>
<h1>Welcome to my homepage</h1>
<p>My name is Donald Duck</p>
</header>
```

```
<footer>This document was written in 2009.</footer>
```

```
<hgroup>
<h1>Welcome to my WWF</h1>
<h2>For a living planet</h2>
</hgroup>
```

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

```
<meter value="2" min="0" max="10">2 out of 10</meter><br />
<meter value="0.6">60%</meter>
```

```
<nav>
<a href="default.asp">Home</a>
<a href="tag_meter.asp">Previous</a>
<a href="tag_noscript.asp">Next</a>
</nav>
```

New Elements in HTML5

◆ HTML5 Example

```
<!DOCTYPE html>
<html lang="en">
<head>
<title>Favorite Sites </title>
<meta charset="UTF-8">
<style>
header {
        font-family:Georgia,"Times New Roman",serif;
        text-align:center;
        font-size:30px;
        display:block;
}
article {

        text-align:left;
        font-size:20px;
        margin:20px;
        display:block;
        font-family:"Century","Tahoma", sans-serif;
}
```

New Elements in HTML5

```
footer {
          font-family:Georgia,"Times New Roman",serif;
          text-align:center;
          font-size:15px;
          display:block;
}
</style>
</head>
<body>
<header>Favorite Sites </header>
<article>
My Academic website, <a
href="http://faculty.purchase.edu/jeanine.meyer">http://faculty.purchase.edu/jeanine
.meyer</a> is where I put information about my courses, along with publications
and other activities.
</article>
<article>
My daughter, Aviva, is active in the <a href="http://stolenchair.org">Stolen Chair
Theater company.</a> The next production involves Victorian photo-collage.
</article>
<footer>This is my first html5 webpage</footer>
<body>
</html>
```

New Elements in HTML5

- Using Meter (계량의 사용)

Rating:★★★☆☆

- <meter>60%</meter>
- <meter>3/5</meter>
- <meter>6 blocks used
        (out of 10 total)</meter>
- <meter value="0.6">Medium</meter>

New Elements in HTML5

- Using Progress (진행상태의 사용)

- – `<progress>Step 3 of 6</progress>`
- – `<progress>50% Complete</progress>`
- – `<progress value="0.5">`
     `Half way!`
  `</progress>`

New Elements in HTML5

The object's downloading progress:
<progress value="22" max="100">
</progress>

<p>We open at <time>10:00</time> every morning.</p>

<p>I have a date on <time datetime="2008-02-14">Valentines day</time>.</p>

<nobr>
일반적으로 브라우저의 폭보다 긴 문장의 내용을 입력하면 어떻게 될까요?
기본적으로 브라우저 창에 모든 문장을 나타낼 수 없으면 화면에 자동으로
스크롤바가 나타납니다. 그런데 이 태그를 이용하면 줄이 바뀌지 않아 브라
우저보다 긴 부분은 화면에 보이지 않습니다. 이 태그가 적용된 부분에서 줄
을 바꾸려면 <wbr> 태그를 이용합니다.
</nobr>

New Advanced Elements in HTML5

media

Tag	Description
<audio>	For multimedia content, sounds, music or other audio streams
<video>	For video content, such as a movie clip or other video streams
<source>	For media resources for media elements, defined inside video or audio elements

canvas

Tag	Description
<canvas>	For making graphics with a script

HTML5 Audio & Video

◈ Audio/Video
  – Play audio/video in the browser
  – Do not need a plugin
  – Accessible through JavaScript

```
<!DOCTYPE html>
<html>
<body>
<video width="320" height="240" controls="controls">
  <source src="movie.mp4" type="video/mp4" />
  <source src="movie.ogg" type="video/ogg" />
  Your browser does not support the video tag.
</video>
<audio controls="controls">
  <source src="song.ogg" type="audio/ogg" />
  <source src="song.mp3" type="audio/mpeg" />
  Your browser does not support the audio element.
</audio>
</body>
</html>
```
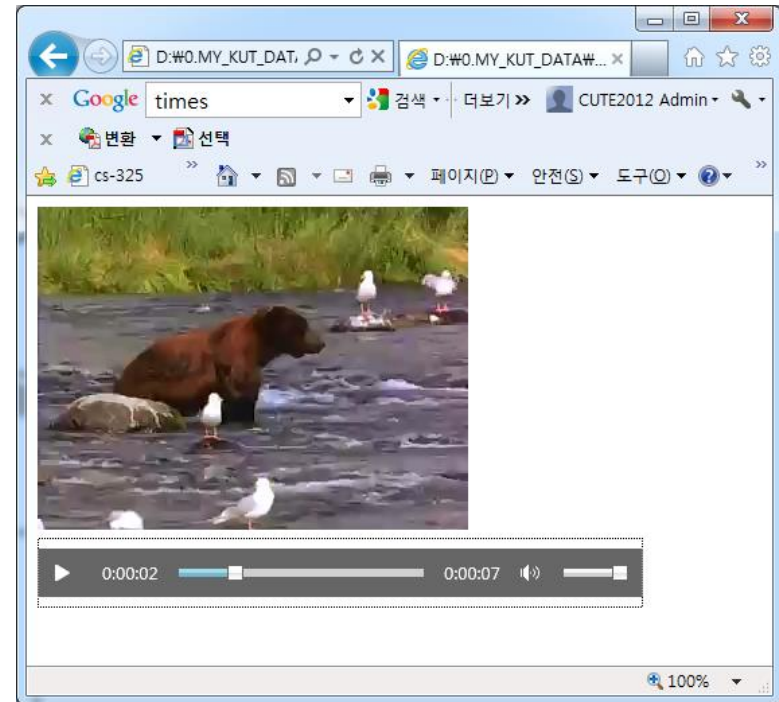
HTML5 Audio

◆ Supported Audio Format

Format	IE 9	Firefox 3.5	Opera 10.5	Chrome 3.0	Safari 3.0
Ogg Vorbis	No	Yes	Yes	Yes	No
MP3	Yes	No	No	Yes	Yes
Wav	No	Yes	Yes	Yes	Yes

◆ Example

```
<!DOCTYPE html>
<html>
<body>
<audio controls="controls">
  <source src="song.ogg" type="audio/ogg" />
  <source src="song.mp3" type="audio/mpeg" />
  Your browser does not support the audio element.
</audio>
</body>
</html>
```

HTML5 Video

◆ Supported Video Format

Currently, there are 3 supported video formats for the video element:

Format	IE	Firefox	Opera	Chrome	Safari
Ogg	No	3.5+	10.5+	5.0+	No
MPEG 4	9.0+	No	No	5.0+	3.0+
WebM	No	4.0+	10.6+	6.0+	No

- Ogg = Ogg files with Theora video codec and Vorbis audio codec
- MPEG4 = MPEG 4 files with H.264 video codec and AAC audio codec
- WebM = WebM files with VP8 video codec and Vorbis audio codec

◆ Example

```
<!DOCTYPE html>
<html>
<body>
<video width="320" height="240" controls="controls">
  <source src="movie.mp4" type="video/mp4" />
  <source src="movie.ogg" type="video/ogg" />
  Your browser does not support the video tag.
</video>
</body>
</html>
```

HTML5 Canvas

◆ What is HTML5 Canvas

- The HTML5 canvas element uses JavaScript to draw graphics on a web page.

- A canvas is a rectangular area, and you control every pixel of it.

- The canvas element has several methods for drawing paths, boxes, circles, characters, and adding images.

◆ Create a Canvas Element

```
<canvas id="myCanvas" width="200" height="100"></canvas>
```

HTML5 Canvas

◈ Canvas
- – Dynamic and scriptable rendering of 2D/3D images
- – Uses JavaScript to draw

```html
<!DOCTYPE html>
<html>
<head>
<script type="text/javascript">
function draw() {
  var c=document.getElementById("myCanvas");
  var cxt=c.getContext("2d");
  cxt.moveTo(10,10);
  cxt.lineTo(150,50);
  cxt.lineTo(10,50);
  cxt.stroke();
}
</script>
</head>
<body onload="draw();">
<canvas id="myCanvas" width="200" height="100" style="border:1px solid">
Your browser does not support the canvas element.
</canvas>
</body>
</html>
```
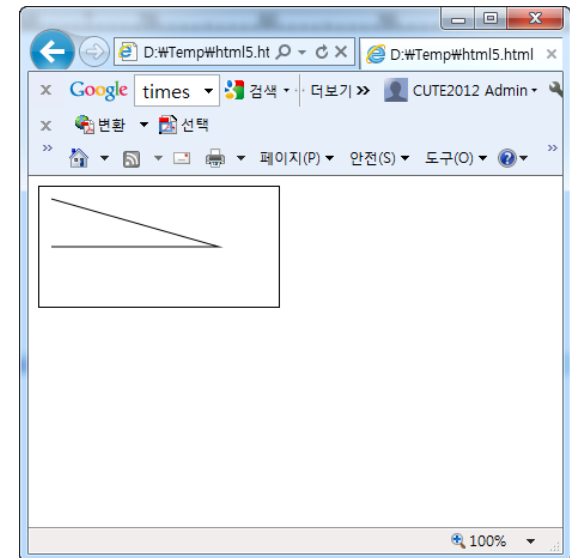
HTML5 Canvas

◆ Example 1

```
<!DOCTYPE html>
<html>
<head>
<script type="text/javascript">
function draw() {
  var c=document.getElementById("myCanvas");
  var cxt=c.getContext("2d");
  cxt.fillStyle="#FF0000";
  cxt.fillRect(0,0,150,75);
}
</script>
</head>
<body onload="draw();">
<canvas id="myCanvas" width="200" height="100" style="border:1px solid
#c3c3c3;">
Your browser does not support the canvas element.
</canvas>
</body>
</html>
```

HTML5 Canvas

◈ Example 2

```
<!DOCTYPE html>
<html>
<head>
<script type="text/javascript">
function draw() {
  var c=document.getElementById("myCanvas");
  var cxt=c.getContext("2d");
  cxt.moveTo(10,10);
  cxt.lineTo(150,50);
  cxt.lineTo(10,50);
  cxt.stroke();
}
</script>
</head>
<body onload="draw();">
<canvas id="myCanvas" width="200" height="100" style="border:1px solid
#c3c3c3;">
Your browser does not support the canvas element.
</canvas>
</body>
</html>
```

HTML5 Canvas

◆ Example 3

```
<!DOCTYPE html>
<html>
<head>
<script type="text/javascript">
function draw() {
  var c=document.getElementById("myCanvas");
  var cxt=c.getContext("2d");
  var img=new Image();
  img.src="img_flwr.png";
  cxt.drawImage(img,0,0);
}
</script>
</head>
<body onload="draw();">
<canvas id="myCanvas" width="200" height="100" style="border:1px solid
#c3c3c3;">
Your browser does not support the canvas element.
</canvas>
</body>
</html>
```

HTML5 Canvas

◈ Canvas

- Example 1. 게임 http://www.gamesforthebrain.com/game/oooze/

- Example 2. 페인터 http://bomomo.com/
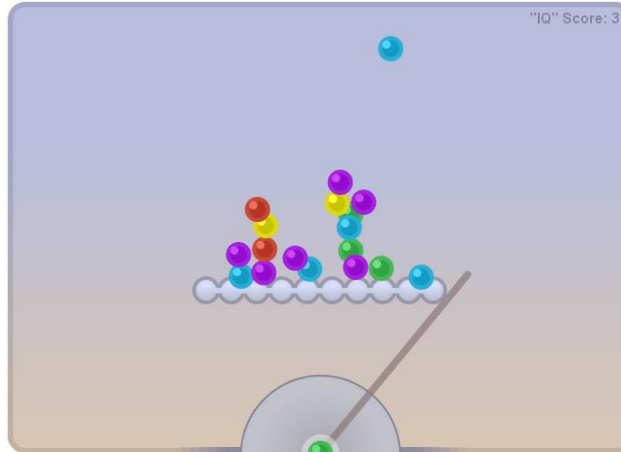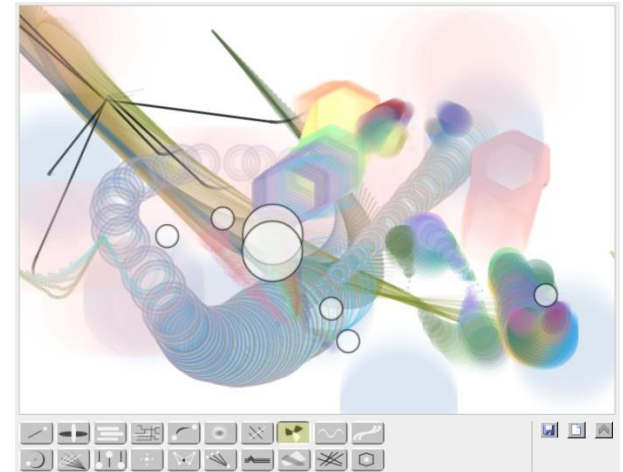
HTML5 Canvas

◈ Canvas

– Example 3. 사진 Slideshow (Dynamic!)
http://www.lo2k.net/experiments/flickr/28791827@N00

– Example 4. Photo effect
http://www.p01.org/releases/Tilt-shift_photo_effect_in_Canvas/
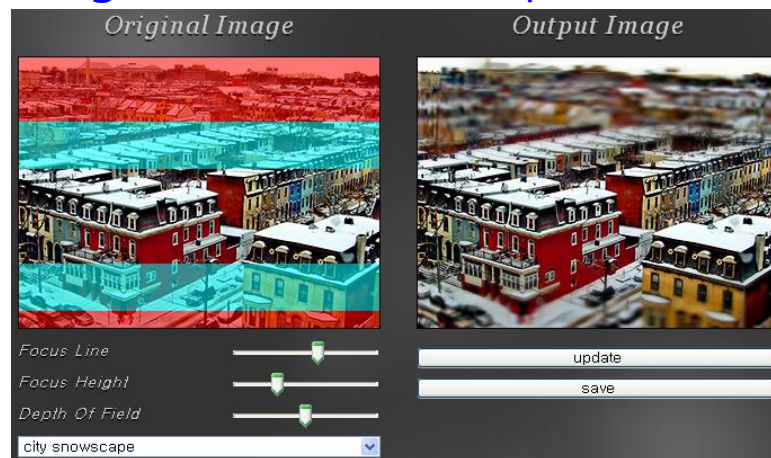
New Input Type Elements in HTML5

New Input Type

Tag	Description
tel	The input value is of type telephone number
search	The input field is a search field
url	The input value is a URL
email	The input value is one or more email addresses
datetime	The input value is a date and/or time
date	The input value is a date
month	The input value is a month
week	The input value is a week
time	The input value is of type time
datetime-local	The input value is a local date/time
number	The input value is a number
range	The input value is a number in a given range
color	The input value is a hexadecimal color, like #FF8800

New Input Type Elements in HTML5

◆ Example

```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.jsp" method="get">
Homepage: <input type="url" name="user_url" /><br />
E-mail: <input type="email" name="user_email" /><br />
Number 1: <input type="number" name="points" min="1" max="10" /><br />
Number 2: <input type="range" name="points" min="1" max="10" /><br />
Date: <input type="date" name="user_date" /><br />
Color: <input type="color" name="user_color" />
<input type="submit" />
</form>
</body>
</html>
```

New From Elements in HTML5

form

Tag	Description
<datalist>	A list of options for input values (like keyword suggestion/autocomplete)
<keygen>	Generate keys to authenticate users
<output>	For different types of output, such as output written by a script

New From Elements in HTML5

◆ Example (works well with Firefox, not chrome)

```
<!DOCTYPE html>
<html>
<body>
<form action="demo_form.asp" method="get">
Webpage: <input type="url" list="url_list" name="link" />
<datalist id="url_list">
  <option label="W3Schools" value="http://www.w3schools.com" />
  <option label="Google" value="http://www.google.com" />
  <option label="Microsoft" value="http://www.microsoft.com" />
</datalist>
<input type="submit" />
</form>
</body>
</html>
```

New From Attribute in HTML5

◆ New Attributes in Form

Attribute	IE	Firefox	Opera	Chrome	Safari
autocomplete	8.0	3.5	9.5	3.0	4.0
autofocus	No	4.0	10.0	3.0	4.0
form	No	4.0	9.5	10.0	No
form overrides	No	4.0	10.5	10.0	No
height and width	8.0	3.5	9.5	3.0	4.0
list	No	4.0	9.5	No	No
min, max and step	No	No	9.5	3.0	No
multiple	No	3.5	11.0	3.0	4.0
novalidate	No	4.0	11.0	10.0	No
pattern	No	4.0	9.5	3.0	No
placeholder	No	4.0	11.0	3.0	3.0
required	No	4.0	9.5	3.0	No

New From Attribute in HTML5

◈ Example - autocomplete

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.jsp" method="get" autocomplete="on">
First name:<input type="text" name="fname" /><br />
Last name: <input type="text" name="lname" /><br />
E-mail: <input type="email" name="email" autocomplete="off" /><br />
<input type="submit" />
</form>

<p>Fill in and submit the form, then reload the page to see how autocomplete
works.</p>
<p>Notice that autocomplete is "on" for the form, but "off" for the e-mail field.</p>
</body>
</html>
```

New From Attribute in HTML5

◆ Example - autofocus

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.jsp" method="get">
User name: <input type="text" name="user_name" autofocus="autofocus" />
<input type="submit" />
</form>

</body>
</html>
```

New From Attribute in HTML5

◆ Example - pattern

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.asp" method="get">
Country code: <input type="text" name="country_code" pattern="[A-z]{3}"
title="Three letter country code" />
<input type="submit" />
</form>

</body>
</html>
```

New From Attribute in HTML5

◆ Example - placeholder

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.asp" method="get">
<input type="search" name="user_search" placeholder="Search W3Schools" />
<input type="submit" />
</form>

</body>
</html>
```

New From Attribute in HTML5

◆ Example - required

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.asp" method="get">
Name: <input type="text" name="usr_name" required="required" />
<input type="submit" />
</form>

</body>
</html>
```

New From Attribute in HTML5

◆ Example - form

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.jsp" method="get" id="user_form">
First name:<input type="text" name="fname" />
<input type="submit" />
</form>

<p>The input field below is outside the form element, but still part of the form.</p>

Last name: <input type="text" name="lname" form="user_form" />

</body>
</html>
```

New From Attribute in HTML5

◆ Example – formaction, formmethod, formnovalidate

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.jsp" method="get" id="user_form">
E-mail: <input type="email" name="userid" /><br />
<input type="submit" value="Submit" /><br />
<input type="submit" formaction="demo_admin.asp" value="Submit as admin" /><br
/>
<input type="submit" formmethod="post" value="Submit as admin" /><br />
<input type="submit" formnovalidate="true" value="Submit without validation" /><br
/>
</form>

</body>
</html>
```

New From Attribute in HTML5

◆ Example – multiple

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.jsp" method="get">
Select images: <input type="file" name="img" multiple="multiple" />
<input type="submit" />
</form>
<p>Try selecting more than one file when browsing for files.</p>

</body>
</html>
```

New From Attribute in HTML5

◆ Example – novalidate

```
<!DOCTYPE html>
<html>
<body>

<form action="demo_form.jsp" novalidate="novalidate">
E-mail: <input type="email" name="user_email" />
<input type="submit" />
</form>

</body>
</html>
```

HTML5 Global Attributes

◈ Global Attributes

- draggable

```
<!DOCTYPE html>
<html>
<body>
<p draggable="true">This is a paragraph. It is draggable. Try to drag this
element.</p>
</body>
</html>
```

- accesskey

```
<!DOCTYPE html>
<html>
<body>
<a href="http://www.w3schools.com/" accesskey="w">W3Schools</a><br />
<a href="http://www.google.com/" accesskey="g">Google</a>
<p><b>Note:</b> Use Alt + <i>accessKey</i> to access the element with
the specified access key.</p>
</body>
</html>
```

HTML5 Global Attributes

Global Attributes

- **contenteditable / spellcheck**

```
<!DOCTYPE html>
<html>
<body>
<p contenteditable="true" spellcheck="true">This is a praggagraph. It is
editable. Try to change this text.</p>
</body>
</html>
```

- **tabindex**

```
<!DOCTYPE html>
<html>
<body>
<a href="http://www.w3schools.com/" tabindex="2">W3Schools</a><br />
<a href="http://www.google.com/" tabindex="1">Google</a><br />
<a href="http://www.microsoft.com/" tabindex="3">Microsoft</a>
<p><b>Note:</b> Try navigating the links by using the "Tab" button on
you keyboard.</p>
</body>
</html>
```

HTML5 Global Attributes

◆ **Global Attributes**

- title

```
<!DOCTYPE html>
<html>
<body>
<p><abbr title="World Health Organization">WHO</abbr> was founded
in 1948.</p>
<p title="Free Web tutorials">W3Schools.com</p>
</body>
</html>
```

HTML5 LocalStorage

◈ Storing Data on the Client

- HTML5 uses JavaScript to store and access the data.
- HTML5 offers two new objects for storing data on the client:
  - ➢ window.localStorage - stores data with no time limit
  - ➢ window.sessionStorage - stores data for one session
- Earlier, this was done with cookies.
  - ➢ Cookies are not suitable for large amounts of data, because they are passed on by EVERY request to the server, making it very slow and in-effective.
- In HTML5, the local stored data is NOT passed on by every server request, but used ONLY when asked for.
- It is possible to store large amounts of data without affecting the website's performance.

HTML5 LocalStorage

◈ Example 1

```
<!DOCTYPE html>
<html>
<body>
<script type="text/javascript">
if (localStorage.pagecount){
  localStorage.pagecount=Number(localStorage.pagecount) +1;
} else {
  localStorage.pagecount=1;
}
document.write("Visits: " + localStorage.pagecount + " time(s).");
</script>

<p>Refresh the page to see the counter increase.</p>
<p>Close the browser window, and try again, and the counter will continue.</p>
</body>
</html>
```

HTML5 LocalStorage

◈ Example 2

```
<!DOCTYPE html>
<html>
<body>
<script type="text/javascript">
if (sessionStorage.pagecount){
  sessionStorage.pagecount=Number(localStorage.pagecount) +1;
} else {
  sessionStorage.pagecount=1;
}
document.write("Visits: " + sessionStorage.pagecount + " time(s).");
</script>

<p>Refresh the page to see the counter increase.</p>
<p>Close the browser window, and try again, and the counter has been reset.</p>
</body>
</html>
```
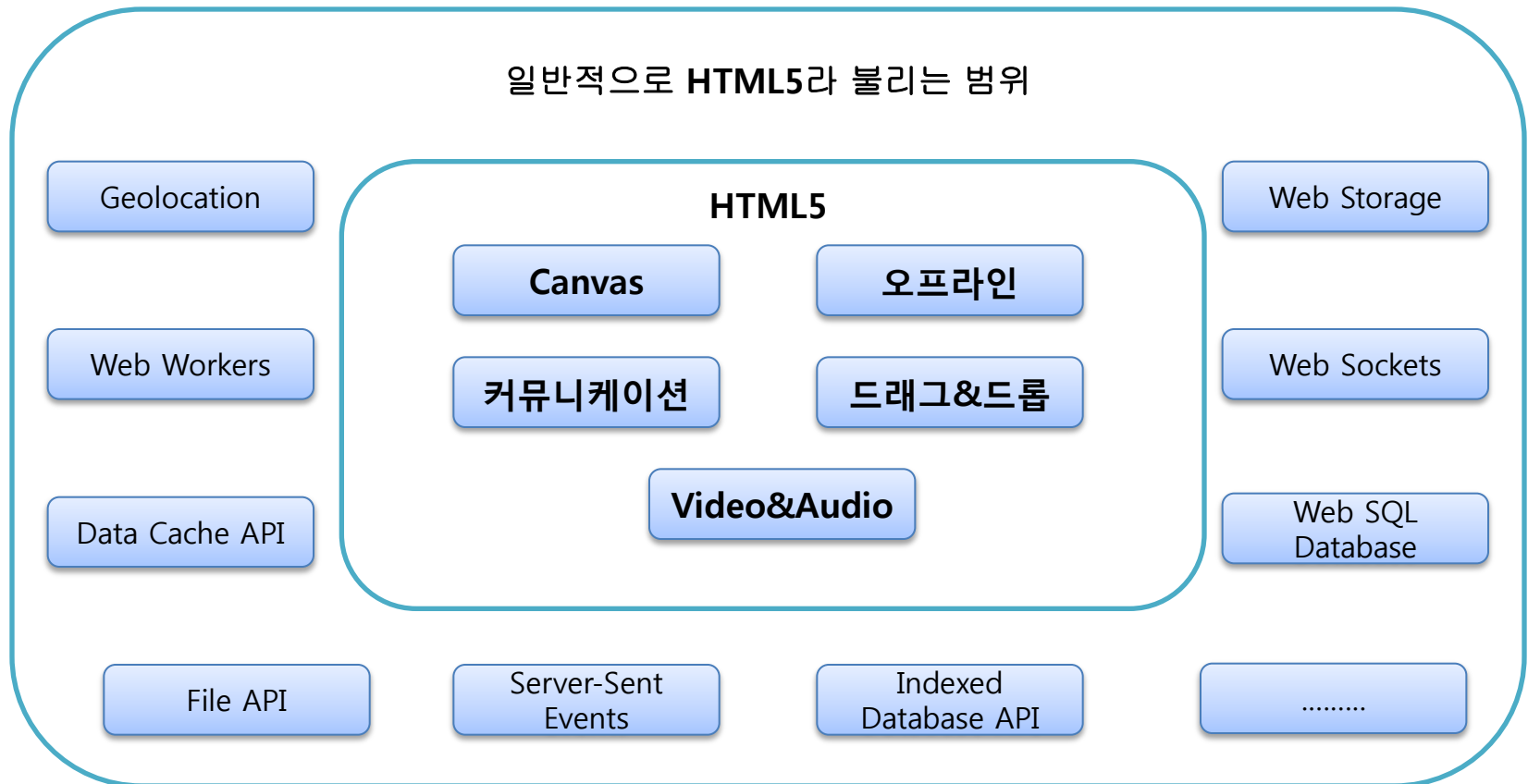
What's New in HTML5?

◈ More Functions in HTML5

일반적으로 **HTML5**라 불리는 범위

HTML5

Geolocation

Web Workers

Data Cache API

File API

Canvas

커뮤니케이션

Video&Audio

오프라인

드래그&드롭

Server-Sent
Events

Indexed
Database API

Web Storage

Web Sockets

Web SQL
Database

....

HTML5 Features

◈ 더 풍부한 웹 애플리케이션
  - 동영상이나 음성 재생(video&audio 요소)
  - 자유로운 2D/3D 그래픽(canvas 요소)
  - 오프라인에서도 작동하는 애플리케이션
  - 도메인 간의 통신 구현
  - Client측 데이터 저장(Web Storage, Web SQL DB 등)
  - 백그라운드 처리 수행(Web Workers)
  - 서버로부터의 데이터 푸시 & 쌍방향 통신(Web Sockets 등)
  - 로컬 파일의 내용을 읽어들임(File API)

◈ 의미성있는 마크업
  - Symantic: 사람뿐만 아니라 기계가 이해할 수 있는 정보
  - 문서구조나 문서 안의 데이터의 의미를 나타내는 사양 포함

HTML5 Features

◈ 높은 접근성 (Accessibility)
  – 높은 접근성이란… 장애가 있는 사람들에게까지도 웹을 쉽게 이용할 수 있도록 돕는것
    • 예) 시각장애자의 경우 음성브라우저 이용 웹 컨텐츠 이용.
  – header, footer, section 등 프로그램이 문서구조 이해
  – HTML5는 WAI-ARIA(Web Accessibility Initiative – Accessible Rich Internet Application)라는 접근성 향상을 목표로 한 사양 포함.

◈ 외부 플러그인 (Plugin) 사용을 최소화
  – 목표 – Plug-in의 완전 제거
    • E.g., flash!
  – 대신 각 Browser들이 관련 Tags 들에 대한 완벽한 구현 및 표현

◈ Device 독립적
  – "Web app"의 등장에 기여

모바일 어플리케이션에 대한 구분

- HTML, CSS, JavaScript 등 웹 표준 기술을 이용하여 제작된 순수 Browser 기반의 어플리케이션

- 크로스 디바이스/OS/ 브라우징이 강점

모바일 Web 앱

- C, Java, C#, C++, Objective C 등 언어로 개발된 Binary 어플리케이션

- 모바일 OS에 종속적

모바일 Native 앱

- 모바일 Native 앱으로 제작된 Client를 배포하고 앱에서 보여지는 컨텐츠는 모바일 Web 앱으로 제작된 어플리케이션
- 혼합형 어플리케이션

모바일 Hybrid 앱

모바일 어플리케이션에 대한 구분

◈ Native App.

    – Written in a programming language for a targeted operating system
- Apple iOS Devices: iOS SDK, using Objective-C
- Android Devices: Android SDK, using Java

    – Have access to all features of the hardware
- Camera, GPS, Accelerometer, Microphone, etc.

    – distributed via the respective app "marketplace"
- iTunes App Store, Android Marketplace

    – iOS apps are subjected to rigorous testing/acceptance process; Android apps are submitted to the Marketplace with little oversight

    – Development fees:
- Apple: SDK is free (registration required), $99 to submit apps to App Store
- Android: SDK is free, $25 to submit apps to Android Marketplace

모바일 어플리케이션에 대한 구분

◈ Web App.
  – Web-based applications written with traditional web programming languages
    • HTML, CSS, Javascript, Ajax
    • Flash

  – Have limited access to device hardware (depends on platform)

  – Can be used cross-platform (some restrictions apply)

  – Most are intended to be used when the device is online; some have capabilities for offline use

  – No centralized marketplace. It's Free!
    • 하지만, 최근 Desktop Web App의 Marketplace로서 Chrome Web Store의 등장 주목

Native App. vs. Web App. vs. Hybrid App.

◈ 개발자 관점의 재활용 측면
  - Native App
    - 디바이스/OS 별로 "디자인 + 프로그램 코드"을 새롭게 개발
    - 서버의 통신모듈 및 데이터 정도만 재활용 가능
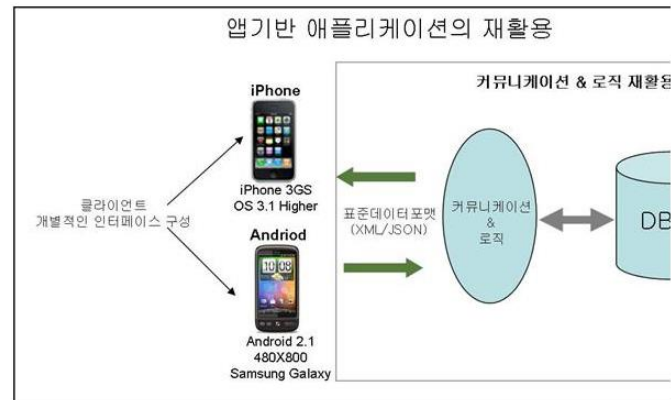
  - Web App
    - 여러 스마트폰 플랫폼에서 "디자인 + 프로그램 코드"를 모두 재활용
    - 서버의 통신 모듈 및 데이터도 당연히 재활용
    - 단점: Device hardware 이용 제한

  - Hybrid App
    - Web App과 거의 비슷한 재활용성

Native App. vs. Web App. vs. Hybrid App.

◈ 이용률
- – Native App
  - 다운로드 후 다음날 실행 비율은 30%
  - 한달 후에도 활발히 이용하는 사용자 5%미만
  - 사용비율 : 게임 ↑, 정보성 어플 ↓

- – Web App
  - App 구입 및 설치에 대한 비용 無
  - 배포 이슈에의 자유로움

- – Hybrid App
  - …

Native App. vs. Web App. vs. Hybrid App.
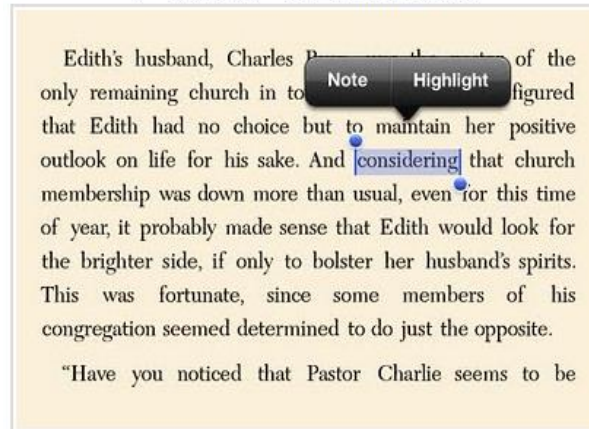
❖ 사용자 인터페이스(이벤트처리)
- Native App
  - App 직접컨트롤 (멀티터치, swipe...)
- Web App
  - HTML 링크를 클릭하는 것과 동일
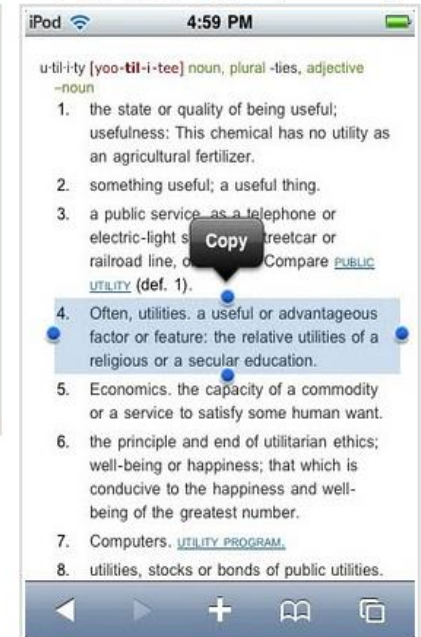
- Hybrid App
  - 기본적으로는 HTML 링크 클릭과 동일
  - 필요하면 App 직접컨트롤 기능 구현 가능

Native App. vs. Web App. vs. Hybrid App.

◈ 수정 및 배포
  – Native App/Hybrid App
    • 프로그램 수정, 스토어 업로드, 이용자 업데이트하는 일련을 과정을 거쳐야 함으로 수정에 따른 배포 지연

  – Web App
    • 서버 프로그램을 업데이트하면 바로 반영되므로 수정 및 배포가 용이

Native App. vs. Web App. vs. Hybrid App.

◈ 향후 전망
 – Web App은 OS에 비종속적인 높은 호환성과 효율적인 플랫폼
 – 인터넷 관련 Device에 브라우저는 기본적으로 탑재
 – Web이 Native App의 대부분 기능을 흡수하여 OS로서 Brower 플랫폼으로 진화 중
   • HTML5, Device API, Web GL
 – 여러 가지 제약은 시간이 지나면 해결될 것임
 – 그러나, 그 시간이 얼마나 걸릴지...

Is Really "Web App + HTML5" Winner?

◈ 문제 2. 화려한 그래픽이 요구되는 App에 대해서 Flash 보다
　　　　뒤쳐지는 그래픽 처리 능력과 복잡한 코드 구성
   – Flash: 1998년 시장에 공개, 발전을 거듭하여 시장에 뿌리를 내린 상황
   – HTML5: 2004년에 처음 등장하여 이제 막 업계에서 관심을 받음

| Table 1. HTML5와 Flash 비교 (게임 콘텐츠 기준)			
구분	HTML5	Flash	우세
총 게임 수	100여 개	10만 개 이상	Flash
웹사이트 호환	40%	99%	Flash
이용자 기반	8억 명 이상	20억 명 이상	Flash
콘텐츠 제공 방식	다수의 웹 파일	.swf 파일 한 개	Flash
기술 구현도	– 브라우저 의존적 – 음성 지원 제한 – 3D 지원 심각한 제한	– 플러그인 의존적 – 3D 지원 제한	Flash
애니메이션 구현 기술	– 별도로 CSS3 및 Javascript 요구됨	– Flash 단독으로 구현	Flash
보안	전혀 없음	프로그램 내 최소한의 보안 기능	Flash
Facebook 게임 지원	상위 10종 중 3종	상위 10종 중 8종	Flash
CPU 자원 소비율	– Mac Safari, Firefox서 HTML5가 Flash보다 우세 – HTML5의 기술 구현 한계 탓에 보편적인 비교는 현재로서는 무리		불확실 (HTML5 약간 우세)

자료: OneMoreLevel.com, 스트라베이스 재구성

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모바일 기반 포탈 앱

◈ 모바일 기반 포탈 앱

– 하이브리드웹 기반으로 모바일 디바이스, 운영체제 상관없이 동일한 화면 제공

Web/Hybrid App App 기반의 게임

◈ Web/Hybrid App App 기반의 게임
- http://www.html5games.net/
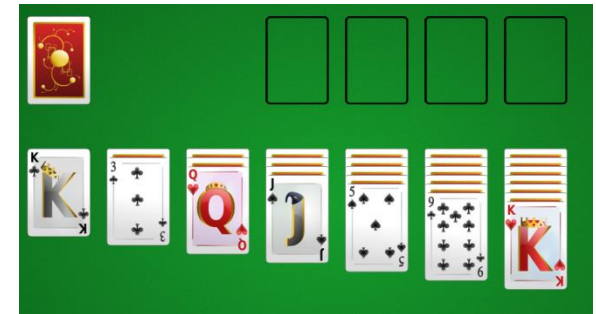
- 대 히트작 앵그리버드는 대표적인 HTML5기반게임으로
  모바일 디바이스, 크롬 브라우저 등으로 다양하게 이식되어 제공
- HTML5 기반의 Web/Hybrid App게임들은 아직은 Native Web에 비해
  간단한 조작성과 게임성을 지님

Prospects for HTML5

◈ HTML5를 견인하는 계기들…

Microsoft는 곧 출시될 Windows 8 신규 버전에서 구동될 'Metro 스타일 브라우저[4]'를 "플러그인 없는(plug-in free)" 브라우저로 만들 계획이다. 자연히 Flash 기반의 콘텐츠는 새로운 브라우저에서는 구동되지 못하게 되며, Microsoft는 이를 대체할 수단으로 HTML5에 주목하고 있다[5].

아직 모바일 OS 시장 점유율이 미비한 Microsoft가 HTML5를 앞세워 애플리케이션 확충에 나설 가능성도 높다. iOS 및 Android 애플리케이션을 HTML5로 이식하는 프로세스가 확립되면 방대한 경쟁사의 애플리케이션 풀을 Microsoft가 그대로 활용할 수 있기 때문이다.

IBM은 HTML5 기반 모바일 앱 개발업체 WorkLight의 인수를 통해 보다 공격적으로 HTML5 시대를 준비하고 있다. 1월 31일 공개된 IBM의 WorkLight 인수 소식은 대형 IT 기업이 HTML5를 얼마나 진지하게 생각하고 있는지 보여주는 사례로 꼽힌다.

2011년 6월경 비밀 프로젝트 'Project Spartan[6]' 관련 루머로 업계의 주목을 받은 바 있는 Facebook은 지난 2011년 10월부터 HTML5 기반 모바일 애플리케이션 플랫폼을 개발자에게 제공 중이다.

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◈ Hickson, I. (Eds.). (2011). HTML Living Standard Retrieved from http://www.whatwg.org/specs/web-apps/current-work/multipage/

◈ HTML5 Tag Reference
  – http://www.w3schools.com/html5/html5_reference.asp

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  – 웹 브라우저 개발자를 위한 Spec.

  - ## HTML5 differences from HTML4
  – http://www.w3.org/TR/2010/WD-html5-diff-20100624/
  – http://channy.creation.net/project/html5/html4-differences/
  – HTML5 입문자가 읽기에 적당

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  – 크롬-219, IE8-27, Firefox-139, Safari-165, Opera-129(만점:300)

- ## http://html5demos.com
  – HTML5 Demos and Examples

- ## http://www.canvasdemos.com
  – HTML5 Canvas Demos

- ## http://www.html5rocks.com/
  – 구글이 만든 HTML5 guides

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- http://html5doctor.com/
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- http://hacks.mozilla.or.kr/
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- http://webstandards.or.kr
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- http://channy.creation.net/
  – 윤석찬님 블로그 (한국 모질라 커뮤니티 리더)