

HTML 5

Marinos Bernitsas



What is our favorite
web application in
Internet Technologies?

Mashups



How to make Mashups

better?

Download .html

COMPILED STANDALONE

- Drag and Drop Feeds

- Sort by Date in Real Time

- Smooth Transitions

Rounded Corners

- Shadows

- Run Online

- Save Feeds

- Alternate Row Colors

- Run without Server

Print Feeds

Desktop

Applications

Photoshop

JQuery

JQuery UI



HTML5 = HTML5 + JS API + CSS3





Overview

-  Canvas and Native SVG
-  Native Video and Audio Playback
-  Browser History Management
-  Microdata
-  File API
-  Geolocation
-  Notifications
-  Web Sockets (client messaging)
-  Workers
-  Offline Caching/Web SQL
-  Drag and Drop

<!DOCTYPE html>

Pave the Cowpaths





HTML Tags

```
<header>
  <hgroup>
    <h1>Page Heading</h1>
    <h2>Page Subheading</h2>
  </hgroup>
</header>
```

```
<\header>
  <\hgroup>
```

```
<nav>
  <ul>
    <li>Home</li>
  </ul>
</nav>
```

```
<\nav>
```

```
<footer>2011 Marinos Bernitsas</footer>
```



HTML Tags

```
<section>
  <article>
    <header>
      <h1>Article Title</h1>
    </header>
    <section>Content</section>
  </article>
</section>
```

```
<\section>
  <\article>
```

```
<aside>
  <header><h1>Hours of operation</h1></header>
  <section>11AM-3PM</section>
</aside>
```

```
<\aside>
```



HTML Tags

```
<input id="username" autofocus>
```

```
<input type="text" name="fullname" placeholder="Enter your Name">
```

```
<input type="range"  
      min="0"  
      max="10"  
      step="2"  
      value="6">
```



```
value="0">  
step=5
```



CSS3

```
border-radius:10px;
```

```
background:rgba(255, 0, 0, 0.8);
```

```
text-shadow:2px 2px 2px #000;
```

```
div *:not(p) {color:red;}
```

```
input[type="text"]{color:red;}
```



CSS3

```
#table:nth-child(even){  
    background:gray;  
}
```

```
#table:nth-child(odd){  
    background:white;  
}
```

```
#table:first-child{  
    text-decoration:bold;  
}
```



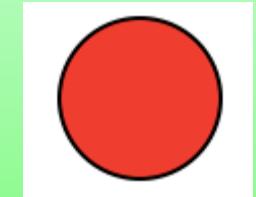
CSS3

```
#button{  
    background:red;  
    -webkit-transition: all 1s ease-in-out;  
}  
#button:hover{  
    background:blue;  
}  
}  
background:blue;  
transition:all 1s ease-in-out;
```



Native SVG

```
<svg>
  <circle cx="100" cy="50" r="40"
    stroke="black" stroke-width="2"
    fill="red"/>
</svg>
```





Canvas

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

```
var canvas = document.getElementById('myCanvas'); var ctx =  
canvas.getContext('2d');  
ctx.beginPath();  
ctx.arc(75, 75, 10, 0, Math.PI*2, true);  
//ctx.arc(x,y,radius,startAngle,endAngle,clockwise);  
ctx.closePath();  
ctx.fill();
```



ctx.beginPath();
ctx.arc(75, 75, 10, 0, Math.PI*2, true);
ctx.closePath();
ctx.fill();

<http://www.xs4all.nl/~peterned/3d/>



Native Video and Audio

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

<\VJq6o>

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

v.play();

<http://craftymind.com/factory/html5video/CanvasVideo.html>



Microdata

```
<div>
  <h1>Carnegie Mellon University</h1>
  <p>5032 Forbes Ave, Pittsburgh, PA</p>
</div>
```

<\qz^>

```
<div itemscope itemtype="http://data-vocabulary.org/Organization">
  <h1 itemprop="name">Carnegie Mellon University</h1>
  <p itemprop="address" itemscope itemtype="http://data-
vocabulary.org/Address">
    <span itemprop="street-address">5032 Forbes Ave</span>,
    <span itemprop="locality">Pittsburgh</span>,
    <span itemprop="region">PA</span>.
  </p>
</div>
```

<\qz^>



Web Sockets

```
var socket = new WebSocket("ws://localhost:8000/socket/server/  
startDaemon.php");
```

```
socket.onmessage = function(msg){  
    alert(msg);  
}
```

```
}
```

```
socket.send("Hi from the client");
```



GeoLocation

```
navigator.geolocation.getCurrentPosition(  
    function(position){  
        var lat=position.coords.latitude;  
        var lon=position.coords.longitude;  
    });  
});  
    alert('You are located at: ' + lat + ' ' + lon);  
});
```



Offline Caching

```
<!DOCTYPE HTML>
<html manifest="/cache.manifest">
</html>
```

<\UFFFF>

CACHE MANIFEST

CACHE:

ajax1.js
index.html
loading.gif

NETWORK:

proxy.php

бюджет

некоммерческое



Web SQL

```
var db = openDatabase('mashupsdb', '1.0', 'The Mashups Database',  
    2 * 1024 * 1024);
```

```
db.transaction(function (tx) {  
    tx.executeSql('CREATE TABLE IF NOT EXISTS articles (id INTEGER  
        PRIMARY KEY, date INTEGER UNIQUE , title TEXT, link TEXT,  
        feedtitle TEXT)');  
    tx.executeSql('INSERT INTO articles  
        (id,date,title,link,feedtitle) VALUES (null,?, ?, ?, ?)',  
        [date,title,link,feedtitle],  
        alert('Insert OK'), alert('Error'));  
});
```

```
});
```

CREATED TABLE articles
CREATE TABLE articles (id integer primary key, date integer unique, title text, link text, feedtitle text)



Web SQL

```
db.transaction(function (tx) {  
    tx.executeSql('SELECT * FROM feeds ORDER BY id ASC', [],  
        function (tx, results) {  
            var len = results.rows.length, i;  
            for (i = 0; i < len; i++) {  
                alert('Feed's URL is:' + results.rows.item(i).url);  
            }  
        }  
    );  
});  
});  
});
```

- Sort
- Paginate



Drag & Drop

```
<div id="toDrag" draggable="true">This is draggableView
```

```
addEvent(drop, 'dragover', function (e) {  
    if (e.preventDefault) e.preventDefault(); // allows us to drop  
    this.className = 'over';  
    e.dataTransfer.dropEffect = 'copy';  
    return false;  
});
```

```
});
```

```
addEvent(drop, 'dragleave', function () {  
    this.className = '';  
});
```

```
});
```



Drag & Drop

```
addEvent(drop, 'drop', function (e) {  
    if (e.preventDefault) e.preventDefault();  
    var li = document.createElement('li');  
  
    //grab the url for images etc  
    var feed=feed=e.dataTransfer.getData('url');  
  
    //grab the pure text  
    if(!feed) feed=e.dataTransfer.getData('Text');  
    drop.className = '';  
  
    li.innerHTML = feed;  
});  
});
```



HTML5Mashups

Demo

bit.ly/html5mashups

iPhone App



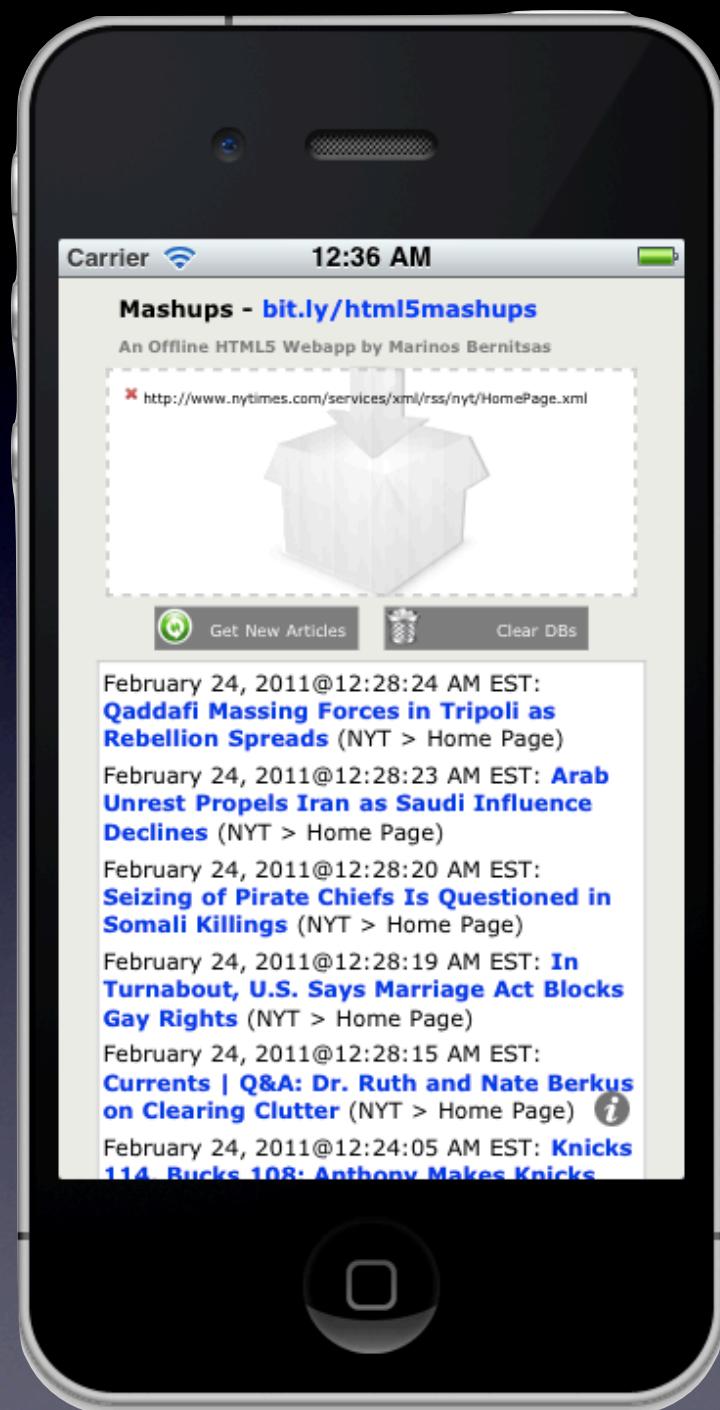
CSS3

- Shadows
- Rounded Corners (border-radius)
- Hover
- first-child
- even/odd formatting
- Smooth transitions
 - On dragover
 - On hover



HTML5

- Just ONE .html file
- Everything is done dynamically
- Asynchronous event-driven
- Drag images and text from anywhere
- Cached Content
- Web SQL
 - Feeds Database
 - Headlines Database
- Sorted by date in real time
- If a feed is missing, use cached copy!



Mobile App

- iOS's WebView interface
- Will use latest cache of the headlines when signal is disrupted
- Will refresh the headlines when back online

Questions?

