



HTML5 + CSS3 + Javascript

Aplicaciones web y dispositivos móviles



C/ Rufino, 1, primera planta
avantic@avantic.net
922641051

HTML5

HTML



HTML5

Historia



- * 1991 HTML
- * 1994 HTML 2
- * 1996 CSS 1 + JavaScript
- * 1997 HTML 4
- * 1998 CSS 2
- * 2000 XHTML 1
- * 2005 AJAX
- * 2009 HTML 5

HTML5

Cambios



- * Mejoras en la estructura
- * Mejoras en los formularios
- * Gráficos y multimedia
- * Almacenamiento
- * Trabajar Offline
- * Geolocalización

HTML5: Mejoras en la estructura

Etiquetas semánticas



HTML5: Mejoras en los formularios



HTML



```
<input type="text" required />
```

```
<input type="email" value="some@email.com" />
```

```
<input type="date" min="2010-08-14" max="2011-08-14" value="2010-08-14"/>
```

```
<input type="range" min="0" max="50" value="10" />
```

```
<input type="search" results="10" placeholder="Search..." />
```

```
<input type="tel" placeholder="(555) 555-5555"  
pattern="^\(?\d{3}\)?[-\s]\d{3}[-\s]\d{4}.*?$" />
```

```
<input type="color" placeholder="e.g. #bbbbbb" />
```

```
<input type="number" step="1" min="-5" max="10" value="0" />
```

HTML5: Mejoras en los formularios



type="text"



type="number"



type="email"



type="tel"

HTML5: Gráficos y multimedia <audio> + <video>



HTML



```
<audio id="audio" src="sound.mp3" controls></audio>  
document.getElementById("audio").muted = false;
```



```
<video id="video" src="movie.webm" autoplay controls></video>  
document.getElementById("video").play();
```



HTML5: Gráficos y multimedia

<canvas> 2D



```
<canvas id="canvas" width="838" height="220"></canvas>

<script>
  var canvasContext = document.getElementById("canvas").getContext("2d");
  canvasContext.fillRect(250, 25, 150, 100);

  canvasContext.beginPath();
  canvasContext.arc(450, 110, 100, Math.PI * 1/2, Math.PI * 3/2);
  canvasContext.lineWidth = 15;
  canvasContext.lineCap = 'round';
  canvasContext.strokeStyle = 'rgba(255, 127, 0, 0.5)';
  canvasContext.stroke();
</script>
```



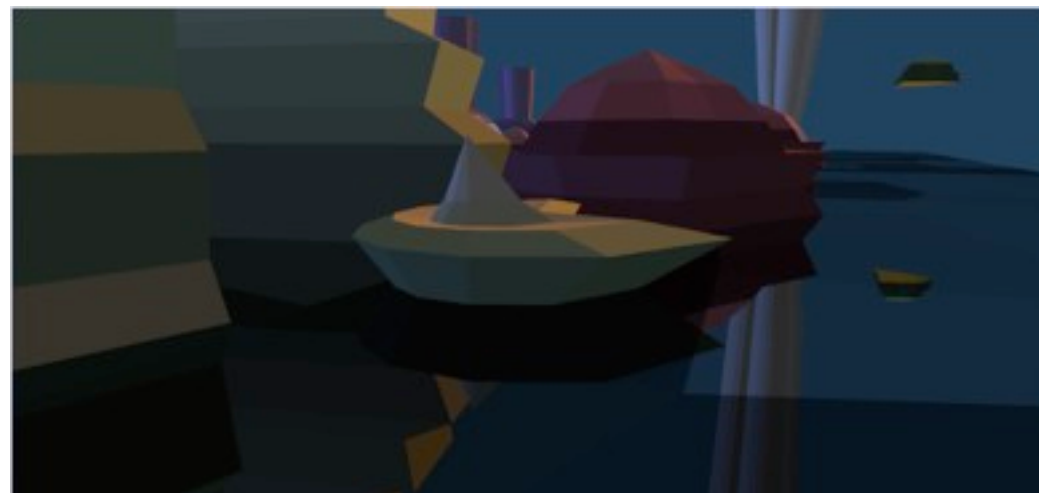
HTML5: Gráficos y multimedia

<canvas> 3D



```
<canvas id="canvas" width="838" height="220"></canvas>

<script>
  var gl = document.getElementById("canvas").getContext("experimental-webgl");
  gl.viewport(0, 0, canvas.width, canvas.height);
  ...
</script>
```



HTML5: Almacenamiento

HTML



Web

```
saveButton.addEventListener('click', function () {  
    window.localStorage.setItem('value', area.value);  
    window.localStorage.setItem('timestamp', (new Date()).getTime());  
}, false);  
textarea.value = window.localStorage.getItem('value');
```

SQL

```
var db = window.openDatabase("DBName", "1.0", "description", 5*1024*1024); //5MB  
db.transaction(function(tx) {  
    tx.executeSql("SELECT * FROM test", [], successCallback, errorCallback);  
});
```

HTML5: Almacenamiento Ficheros



```
window.requestFileSystem(window.TEMPORARY, 1024 * 1024, function(fs) {  
  
    // fs.root is a DirectoryEntry object.  
    fs.root.getFile('log.txt', {create: true}, function(fileEntry) {  
  
        fileEntry.createWriter(function(writer) { // writer is a FileWriter object.  
  
            writer.onwrite = function(e) { ... };  
            writer.onerror = function(e) { ... };  
  
            var bb = new BlobBuilder();  
            bb.append('Hello World!');  
  
            writer.write(bb.getBlob('text/plain'));  
  
        }, opt_errorHandler);  
    }  
}, opt_errorHandler);
```


HTML5: Trabajar Offline

HTML



```
<html manifest="cache.appcache">
```

```
window.applicationCache.addEventListener('updateready', function(e) {  
  if (window.applicationCache.status == window.applicationCache.UPDATEREADY) {  
    window.applicationCache.swapCache();  
    if (confirm('A new version of this site is available. Load it?')) {  
      window.location.reload();  
    }  
  }  
}, false);
```

cache.appcache:

```
CACHE MANIFEST  
# version 1.0.0  
  
CACHE:  
/html5/src/logic.js  
/html5/src/style.css  
/html5/src/background.png  
  
NETWORK:  
*
```

HTML5: Geolocalización



HTML



```
if (navigator.geolocation) {  
  navigator.geolocation.getCurrentPosition(function(position) {  
    var latLng = new google.maps.LatLng(  
      position.coords.latitude, position.coords.longitude);  
    var marker = new google.maps.Marker({position: latLng, map: map});  
    map.setCenter(latLng);  
  }, errorHandler);  
}
```



HTML5: Otras mejoras



- * Notificaciones de escritorio
- * Drag and Drop
- * Arrastrar ficheros
- * Barra de progreso
- * ...

CSS3



CSS3 Cambios



- * Selectores
- * Fuentes
- * Múltiples columnas
- * Gradientes, sombras y reflejos
- * Bordes redondeados
- * Transiciones, transformaciones y animaciones

CSS3: Selectores



```
.row:nth-child(even) {  
  background: #dde;  
}  
.row:nth-child(odd) {  
  background: white;  
}
```

Row 1

Row 2

Row 3

Row 4

CSS3: Fuentes



```
@font-face {  
  font-family: 'LeagueGothic';  
  src: url(LeagueGothic.otf);  
}  
  
@font-face {  
  font-family: 'Droid Sans';  
  src: url(Droid_Sans.ttf);  
}  
  
header {  
  font-family: 'LeagueGothic';  
}
```

CSS3: Múltiples columnas



```
-webkit-column-count: 6;  
-webkit-column-rule: 1px solid #bbb;  
-webkit-column-gap: 2em;
```

In March 1936, an unusual confluence of forces occurred in Santa Clara County.

A long cold winter delayed the blossoming of the millions of cherry, apricot, peach, and prune plum trees covering hundreds of square miles of

the Valley floor. Then, unlike many years, the rains that followed were light and too early to knock the blossoms from their branches.

Instead, by the billions, they all burst open at once. Seemingly overnight, the ocean of green

that was the Valley turned into a low, soft, dizzyingly perfumed cloud of pink and white. Uncounted bees and yellow jackets, newly born, raced out of their hives and holes, overwhelmed by this impossible banquet.

Then came the wind. It roared off the Pacific Ocean, through the nearly uninhabited passes of the Santa Cruz Mountains and then, flattening out, poured down into the great alluvial plains of the Valley. A tidal bore of warm

air, it tore along the columns of trees, ripped the blossoms apart and carried them off in a fluttering flood of petals like foam rolling up a beach.

This perfumed blizzard hit Stevens Creek Boulevard, a two-lane road

with a streetcar line down its center, that was the main road in the West Valley. It froze traffic, as drivers found themselves lost in a soft, muted whiteout. Only the streetcar, its path predetermined, passed on...

CSS3: Gradientes, sombras y reflejos



```
background: -webkit-gradient(radial, 430 50, 0, 430 50, 285, from(red), to(#000))
```



```
text-shadow: rgba(0, 0, 0, 0.5) 0 9px 9px;
```

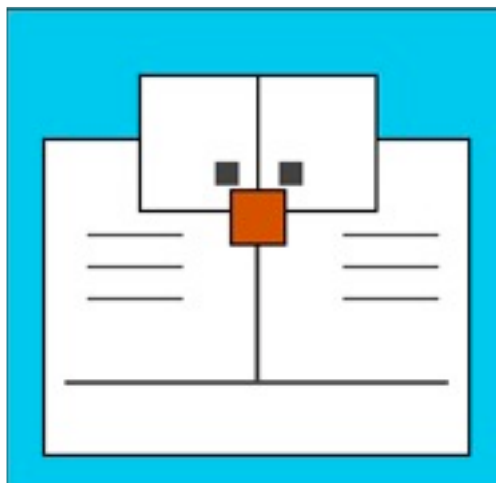
```
-webkit-box-reflect: below 10px  
  -webkit-gradient(linear, left top, left bottom,  
    from(transparent), to(rgba(255, 255, 255, 1)));
```

Web 2.0 Logo Creatr
Web 2.0 Logo Creatr

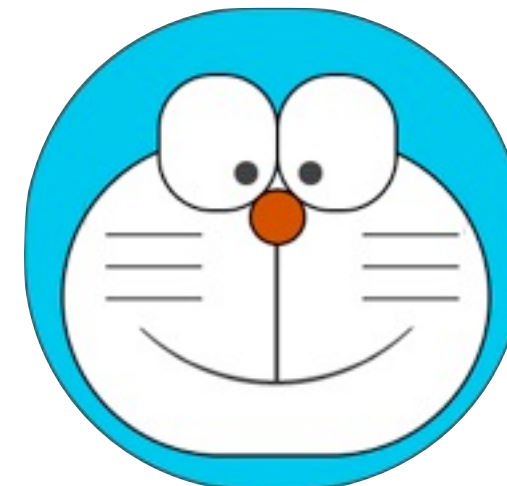
CSS3: Bordes redondeados



```
face: border-radius: 0px;  
left eye: border-radius: 0px;  
right eye: border-radius: 0px;  
base white: border-radius: 0px;  
mouth: border-radius: 0px;  
nose: border-radius: 0px;  
left black eye: border-radius: 0px;  
right black eye: border-radius: 0px;
```



```
face: border-radius: 146px;  
left eye: border-radius: 35px;  
right eye: border-radius: 35px;  
base white: border-radius: 150px;  
mouth: border-radius: 120px;  
nose: border-radius: 50px;  
left black eye: border-radius: 35px;  
right black eye: border-radius: 35px;
```



CSS3: Transiciones, transformaciones y animaciones



```
#box {  
  -webkit-transition: margin-left 1s ease-in-out;  
}  
  
document.getElementById('box').className = 'left';  
document.getElementById('box').className = 'right';
```

```
-webkit-transform: rotateY(45deg);  
-webkit-transform: scaleX(25deg);  
-webkit-transform: translate3d(0, 0, 90deg);  
-webkit-transform: perspective(500px)
```

```
@-webkit-keyframes pulse {  
  from {  
    opacity: 0.0;  
    font-size: 100%;  
  }  
  to {  
    opacity: 1.0;  
    font-size: 200%;  
  }  
}  
  
div {  
  -webkit-animation-name: pulse;  
  -webkit-animation-duration: 2s;  
  -webkit-animation-iteration-count: infinite;  
  -webkit-animation-timing-function: ease-in-out;  
  -webkit-animation-direction: alternate;  
}
```

Javascript



Javascript Cambios



- * Selectores
- * Atributos personalizados
- * Listado de clases
- * Histórico

Javascript: Selectores



Buscando elementos por clase

```
var el = document.getElementById('section1');  
el.focus();  
  
var els = document.getElementsByTagName('div');  
els[0].focus();  
  
var els = document.getElementsByClassName('section');  
els[0].focus();
```

Buscando elementos por sintaxis CSS

```
var els = document.querySelectorAll("ul li:nth-child(odd)");  
var tds = document.querySelectorAll("table.test > tr > td");  
var el = document.querySelector("table.test > tr > td"); // el == tds[0]
```


Javascript: Atributos personalizados



Definir atributos personalizados data-* en html

```
<div id="out" data-id="good" data-name="joe" data-screen-name="user1"></div>
```

Definir atributos personalizados data-* en Javascript

```
var el = document.querySelector('#out');  
el.setAttribute('data-foo', 'bar');
```

Recuperar atributos personalizados

```
var html = [];  
for (var key in el.dataset) {  
    html.push(key, ': ', el.dataset[key], '<br>');  
}  
  
el.innerHTML = html.join('');
```

Salida:

```
id: good  
name: joe  
screenName: user1  
foo: bar
```

Javascript: Listado de clases



```
<div id="main" class="shadow rounded"></div>
```

```
var el = document.querySelector('#main').classList;  
el.add('highlight');  
el.remove('shadow');  
el.toggle('highlight');  
  
console.log(el.contains('highlight')); // false  
console.log(el.contains('shadow')); // false  
console.log(el.classList.toString() == el.className); // true
```

Salida:

```
<div id="main" class="rounded"></div>
```

Javascript: Histórico



Añadir un valor a la pila del histórico

```
link.addEventListener('click', function(event) {  
    history.pushState('Contact Page Form', 'Contact Page', '/contact');  
});
```

Capturar la navegación

```
window.addEventListener('popstate', function(event) {  
    document.querySelector('h1').innerText = event.state; // 'Contact Page Form'  
});
```