

# iPhone Web Application Development

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Saturday, May 23, 2009

# Wasssssssup

- Why Bother?
- Things to Consider
- Tools and 3rd Party Libraries
- Built in Stuff (thar be hackers here)
- Tips and Tricks

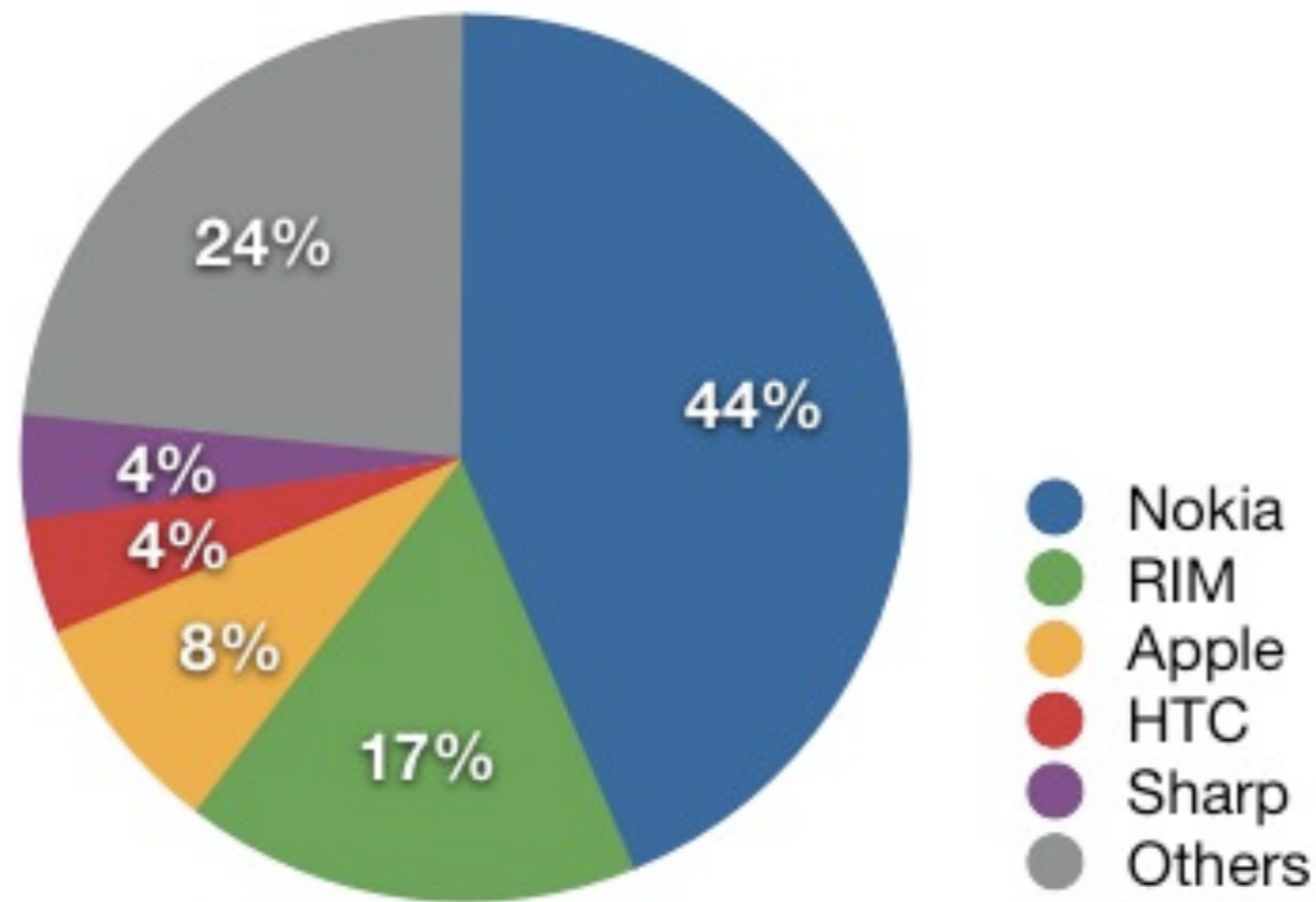


# Why Bother?



# Damn Lies and Stats

Worldwide smartphone market share 2008



12 MARCH, 2009 - CNNMoney.com



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<http://apple20.blogs.fortune.cnn.com/2009/03/12/iphone-sales-grew-245-in-2008-gartner/>

iPhone sales grew 245% in 2008

# Web vs. Native

- WebKit supports more platforms
- Full control of project with web apps
- Doesn't work when not on the net (kind of)
- Video Games



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why bother...

1) iPhone, Android, Air, Chrome, Safari, Midori, etc

[http://www.twotoasts.de/index.php?/pages/midori\\_summary.html](http://www.twotoasts.de/index.php?/pages/midori_summary.html)

2) AppStore rejection, learn Objective-C, etc

3) talk about database integration in a bit

4) Dimitry, make a 3d engine using CSS transforms ;)

# Should You Make A Special UI?

- Most sites look just fine on the iPhone
- If it works in desktop Safari it will probably work on iPhone
- Test if you care about supporting the iPhone



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- 1) as long as they hold to standards.
- 2) But not the other way around
- 3) Seen backgrounds do funky things  
old school hacks can do odd things

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# Do's and Don'ts

- Concise or limited display of data
- Wrap areas with DIVs (or whatever)
- Sprite maps / Doom Tiles
- Limit file requests
- Don't force areas  $> 320\text{px} > 480\text{px}$



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\* informing the iPhone of the viewport size of the overall page; having columns no wider than either

the 320px width (for upright view)

480px (for sideways views);

\* breaking columns up into more appropriately sized blocks;

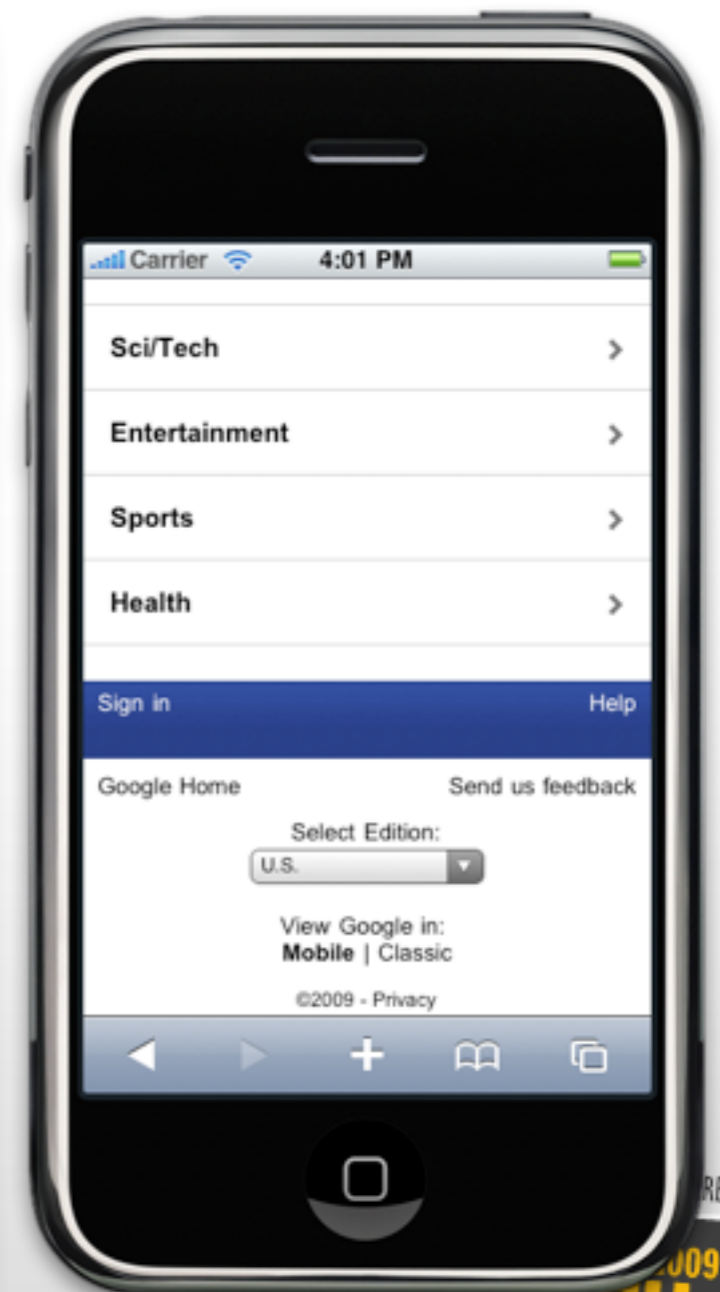
\* offering the iPhone some style tips on font size handling;

\* using the appropriate links that the iPhone supports;

\* optimizing Quicktime files.



# Allow a Way Out



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Things To Consider...

Simplify the display = good

I love the normal news layout, the iphone app ruins it and there is no way to say "stop showing me this crap UI"



Google News

http://news.google.com/

Google

Daemon Resize Amazon Bug Jump Translate Google Account Ping / Post Apple Media git CSS Edit QQ

Web Images Maps News Video Gmail more

robrohan@gmail.com | Web History | My Account | Sign out

Google News

Search News Search the Web

Search and browse 25,000 news sources updated continuously.

News archive search | Advanced news search | Blog search

Auto-generated 6 minutes ago

**Top Stories** Personalized News Go

**Guantanamo inmates no longer "enemy combatants"**  
Reuters - 3 hours ago  
By Randall Mikkelsen WASHINGTON (Reuters) - The Obama administration stopped calling Guantanamo inmates "enemy combatants" on Friday and incorporated international law as its basis for holding the prisoners while it works to close the facility.  
[No more 'enemy combatants' at Guantanamo Bay](#) Los Angeles Times  
[Obama administration dropping 'enemy combatant' term](#) MiamiHerald.com  
[New York Times](#) - [Washington Post](#) - [CNN](#) - [Kansas City Star](#)  
[all 687 news articles »](#)

**Government reviews ban on Nawaz Sharif**  
guardian.co.uk - 37 minutes ago  
AP The Pakistani government said it would seek a review of a Supreme Court ruling last month that barred opposition leader Nawaz Sharif and his brother from elected office and triggered a political crisis.  
[Pakistan Arrests Protesters; Army Prepares to Deploy](#)  
Bloomberg  
[Pakistan's crackdown on protests creates fissures in ruling party](#)  
Christian Science Monitor  
[New York Times](#) - [Times Online](#) - [Daily Times](#) - [Voice of America](#)  
[all 3,557 news articles »](#)

**Obama Walks a Fine Line on Recession Talk**  
FOXNews - 3 hours ago  
Mar. 12: President Obama greets attendees prior to addressing the White House Recovery and Reinvestment Act Implementation Conference.  
[Republicans say Obama's budget plan too costly](#) The Associated Press  
[Obama: Economy causing many 'incredible pain'](#) MSNBC  
[Baltimore Sun](#) - [Chicago Tribune](#) - [United Press International](#) - [Washington Post](#)

**Southern Cal swarms Arizona State, runs off with Pac-10 title**  
USA Today - 8 minutes ago

**AIG to Pay \$100 Million in Bonuses After Huge Bailout**  
New York Times - 20 minutes ago

**Nine bodies found are found in a common grave near Ciudad Juarez ...**  
CNN - 23 minutes ago

**IMF Bailout Pool May Be More Than Doubled, G-20 Officials Say**  
Bloomberg - 7 hours ago - [all 387 articles »](#)

**NASA hopeful repairs will permit Sunday launch**  
The Associated Press - 3 hours ago - [all 227 articles »](#)

**Obama vows to improve food safety**  
Minneapolis Star Tribune - 42 minutes ago - [all 1073 articles »](#)

**Aid groups in Darfur weigh future after kidnapping**  
The Associated Press - 58 minutes ago - [all 1779 articles »](#)

**In The News**

<a href="#">Lindsay Lohan</a>	<a href="#">Cory Redding</a>
<a href="#">Julian Peterson</a>	<a href="#">Nick Watney</a>
<a href="#">Phil Mickelson</a>	<a href="#">Facebook Connect</a>
<a href="#">Bill Davidson</a>	<a href="#">Jon Stewart</a>
<a href="#">Beverly Hills</a>	<a href="#">Margaret Hamburg</a>

Standard Version

[Image Version](#)

[RSS](#) | [Atom](#)  
[About Feeds](#)

[Mobile News](#)

[News Alerts](#)

[Text Version](#)

Loading "http://news.google.com/", completed 32 of 34 items

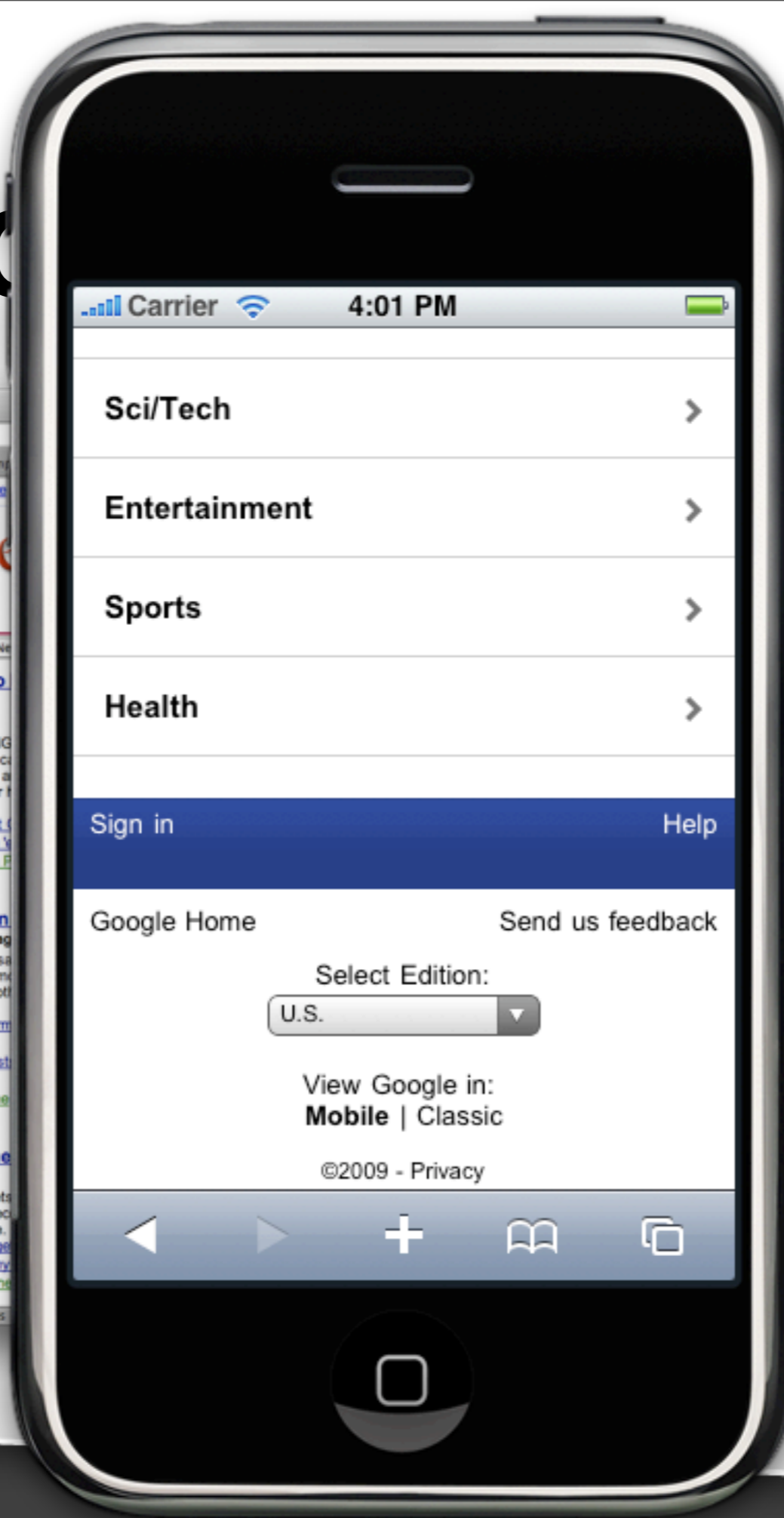
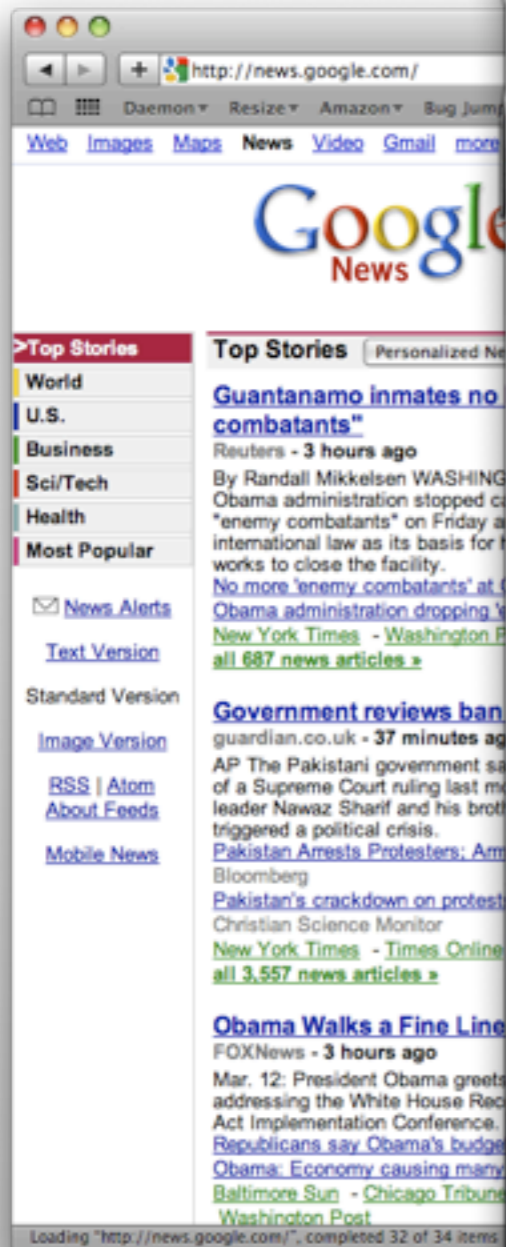
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# Allo Out



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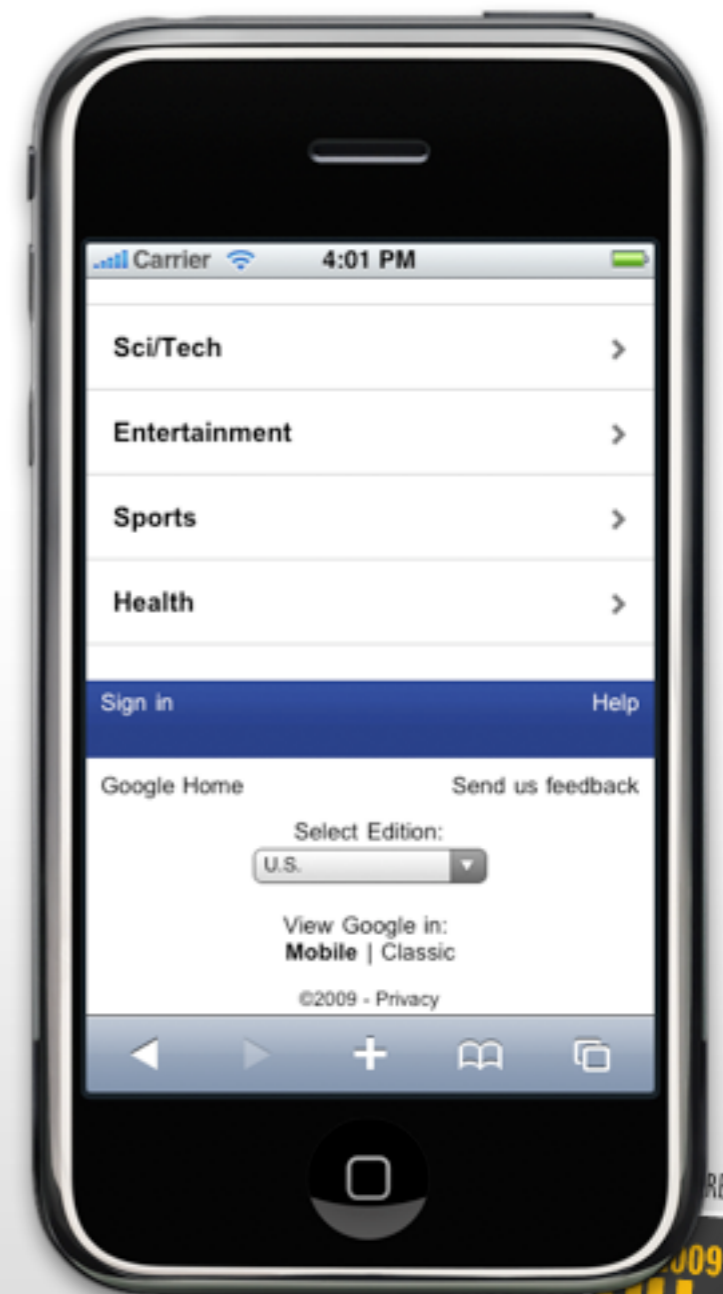
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# Allow a Way Out



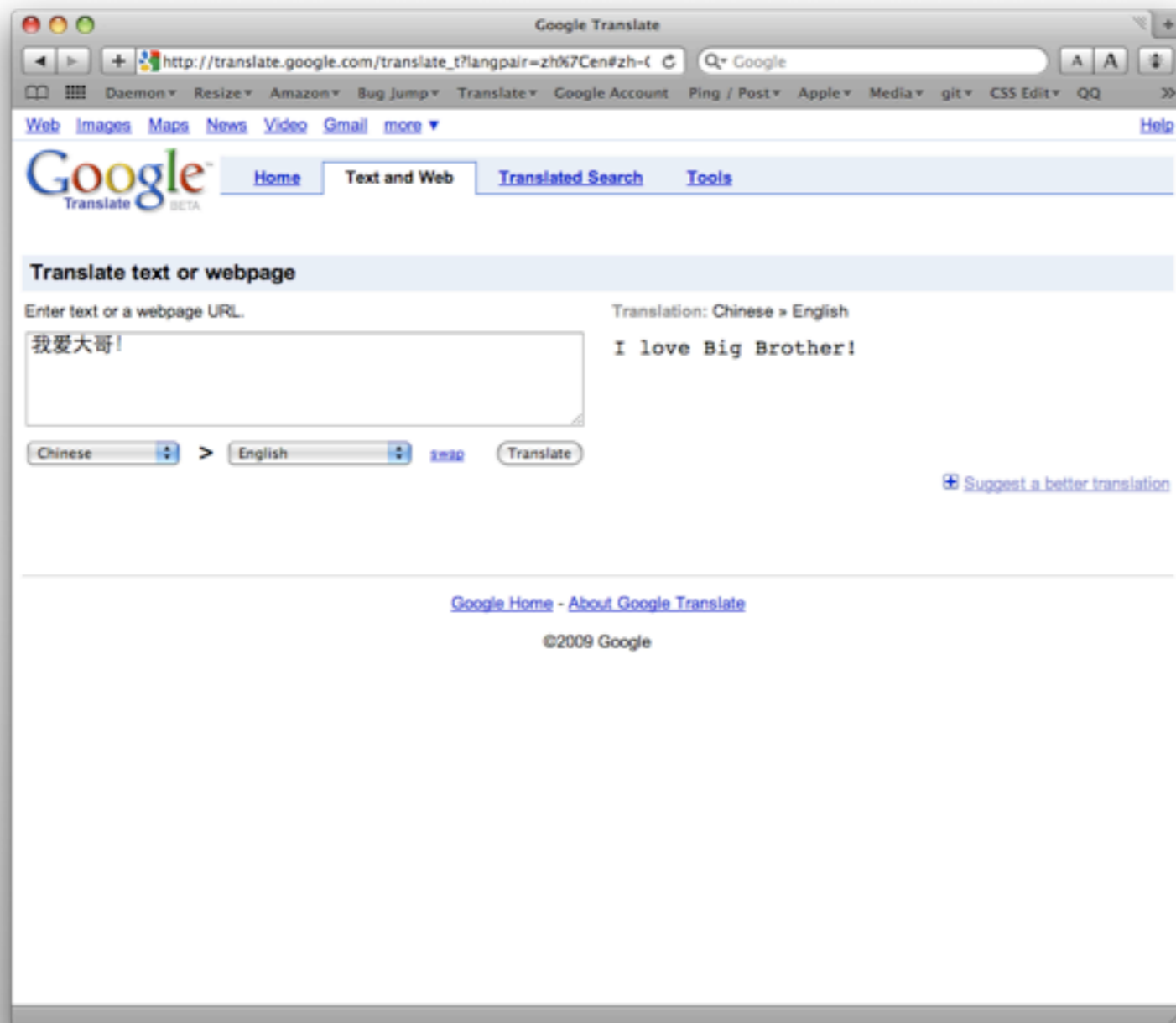
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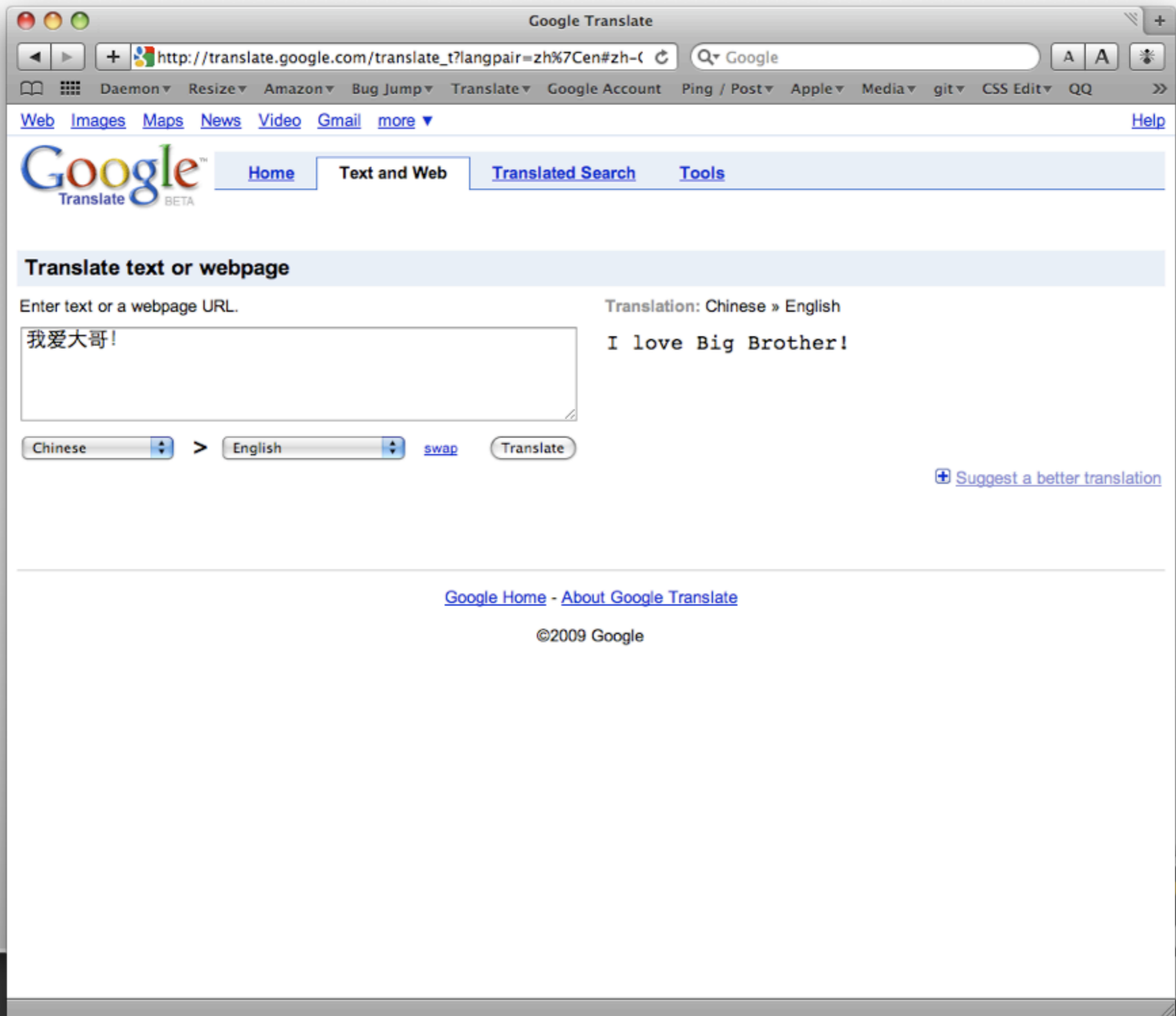
# Know Your Audience's Needs



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Things To Consider...

Chinese support missing from the iphone – makes the app useless to me.



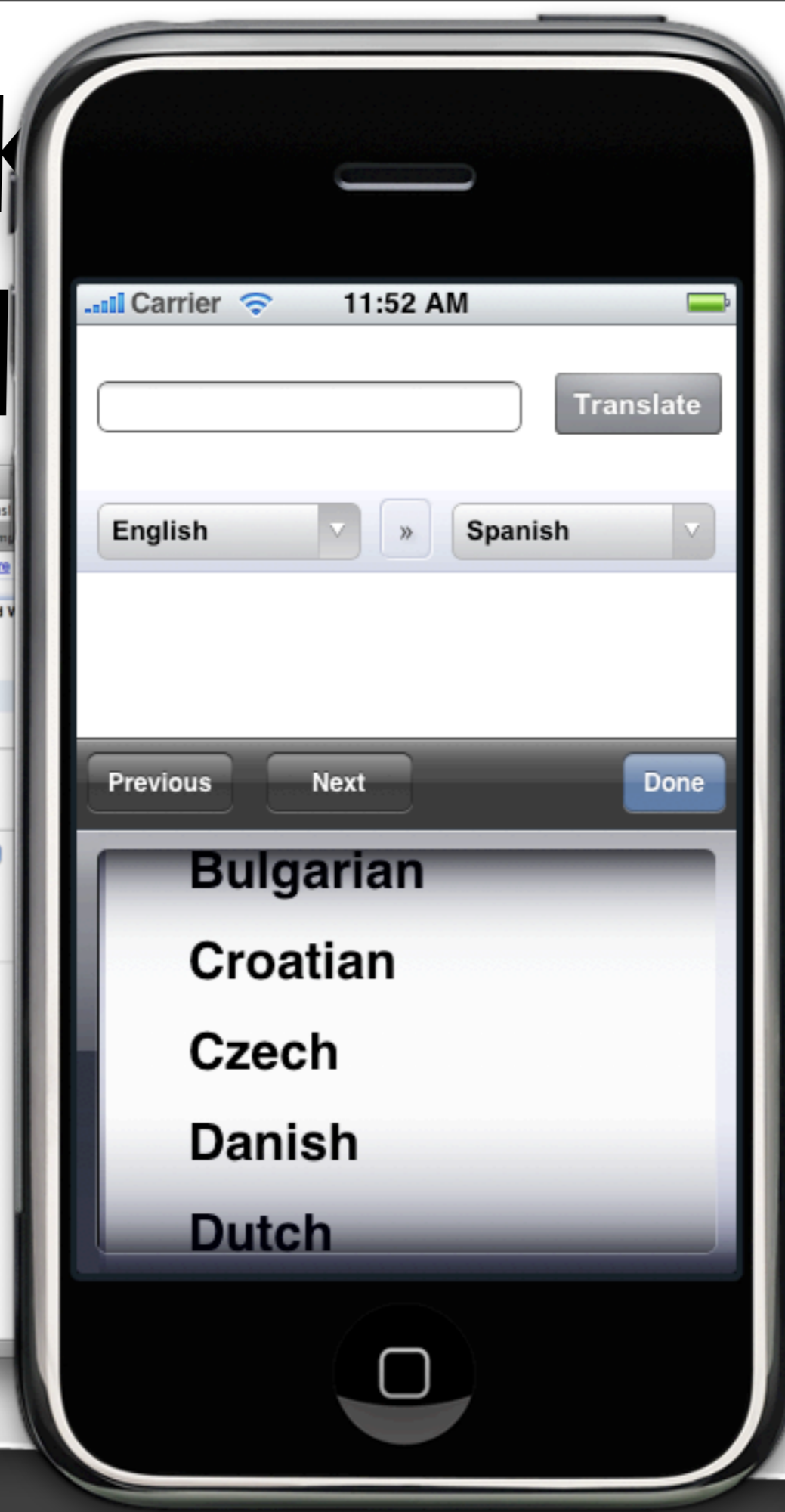
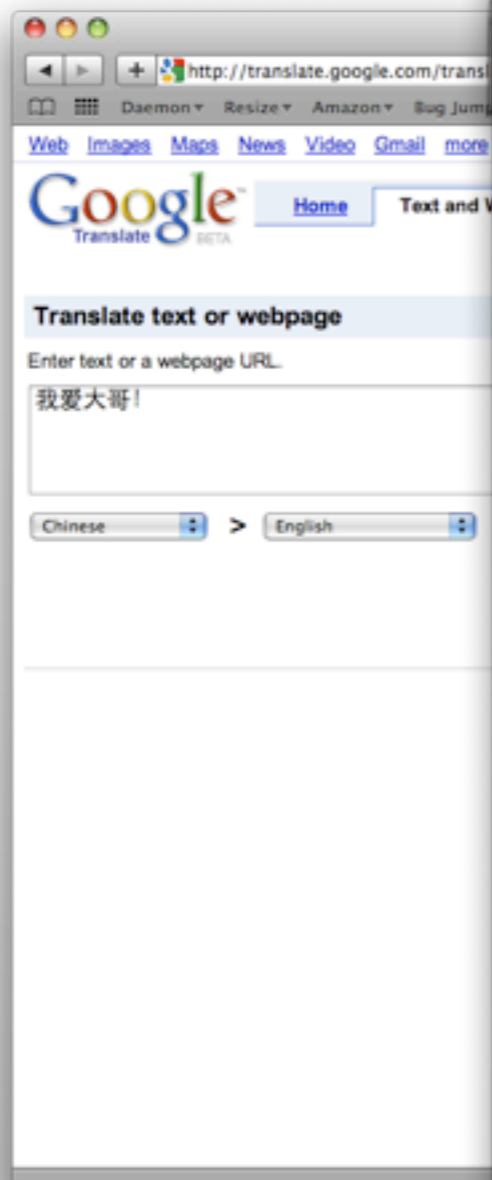
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Audience

Needs



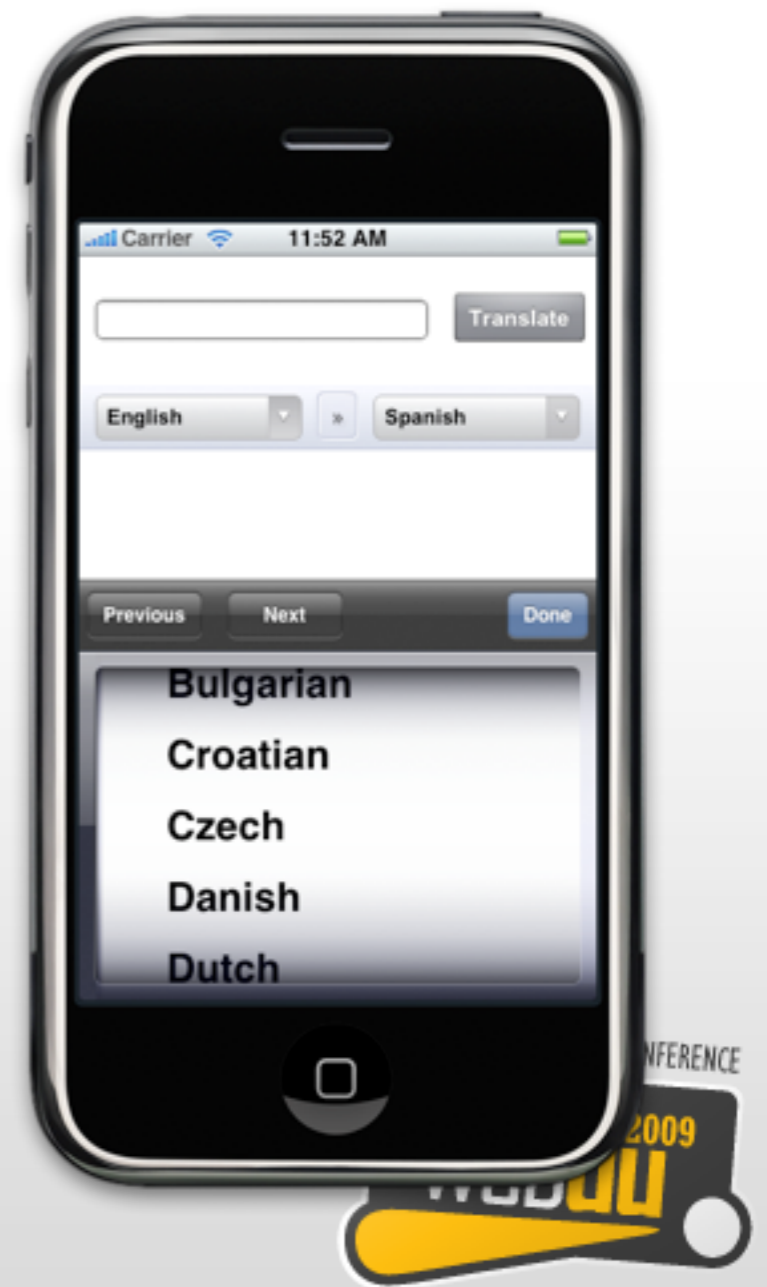
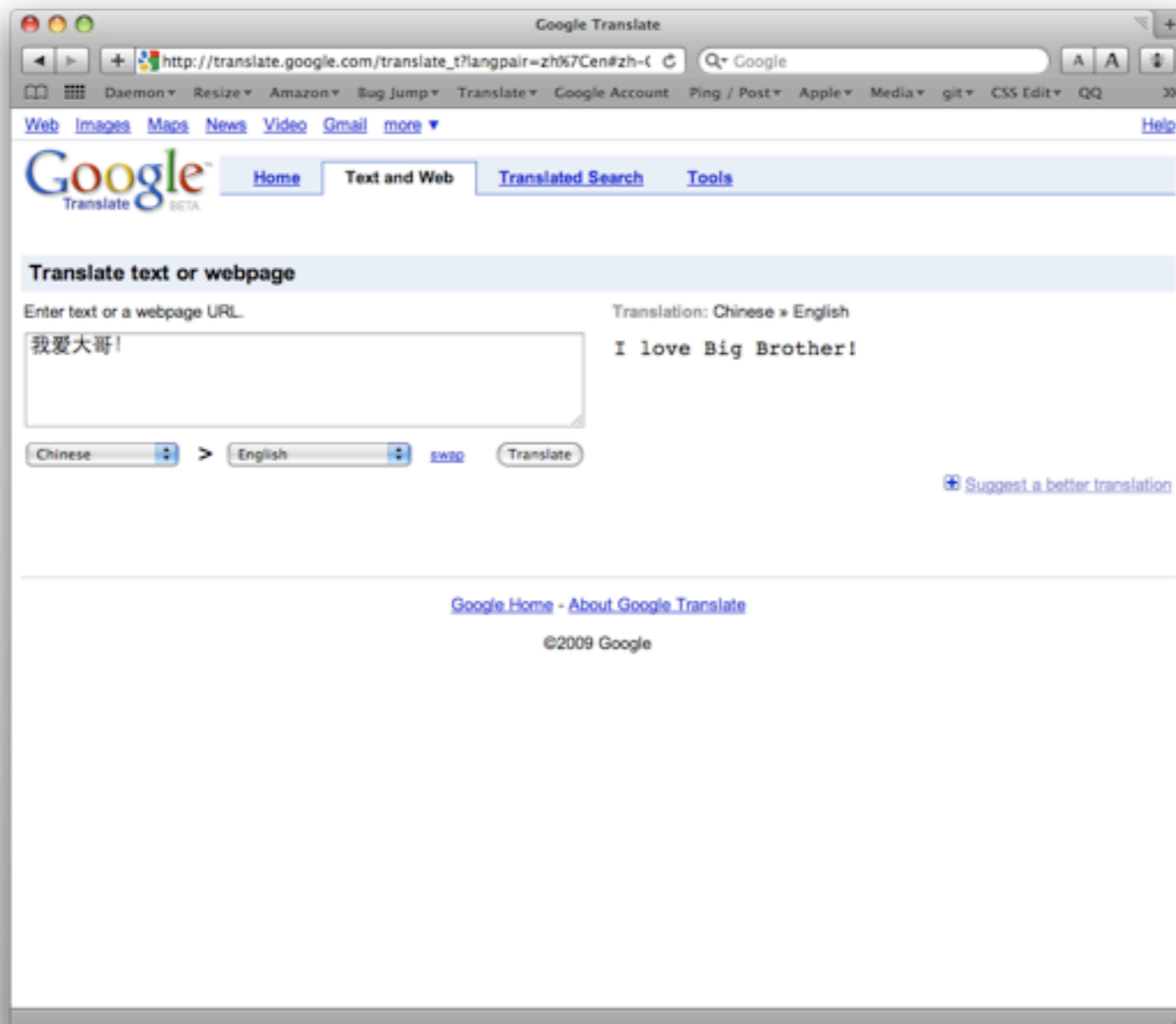
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# Tools - Dashcode

- Comes with Developer Tools
- Really good for quick and dirty apps
- Emulator
  - `/Developer/Platforms/iPhoneSimulator.platform/Developer/Applications/iPhone Simulator.app`
- Example: <http://cn.robrohan.com>



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On to tools and libraries...

Great with quick and dirty apps (and widgets), but also has great things like a debugger and a console.

# Dashcode Demo





# Tools - iWebKit

- <http://iwebkit.net/> LGPL
- Supports fullscreen and Popup Menus
- Standard HTML with class styles for UI
- Example: <http://webdu.com.au/iphone>



# iWebKit Demo



# Tools - iUI

- <http://code.google.com/p/iui/> MIT-Like
- More Ajaxy than iWebkit
- Example: GlueyNotes.com



# iUI Demo





# Tools - Others

- Google Web Toolkit
- jQuery
- Saffire
- SproutCore (MobileMe; "Cocoa for the Web")



# iPhone GUI PSD

<http://www.teehanlax.com/blog/?p=447>



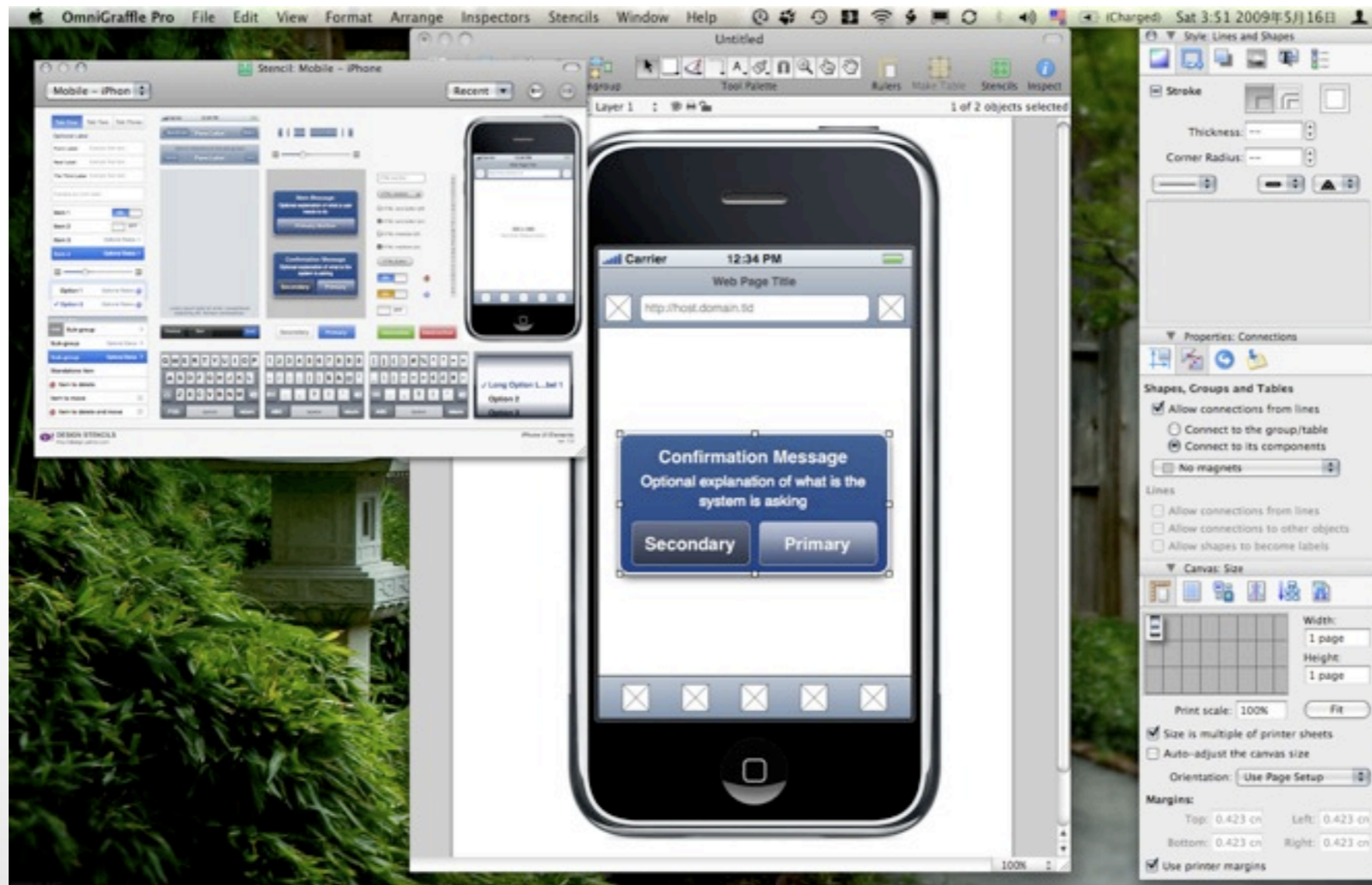
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Tools - Design

Good for photo shop people, mockup people

# Yahoo Stencil Kit

<http://developer.yahoo.com/ypatterns/wireframes/>



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Tools - Design

Yahoo Stencil Kit is awesome - OmniGraffle, Visio (XML), PDF, PNG, SVG

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# Built-in Stuff

- Just HTML, CSS and JS
- Supports Touch Events
- New DOM Events / Javascript APIs
- Included in draft proposals for CSS3 w3c
- Prefixed with -webkit
- Hardware Accelerated





# Built-in Stuff

- `ontouchstart`, `ontouchmove`, `ontouchend`, `ontouchcancel`
- `function touchStart(event)`  
`{ event.targetTouches[0].pageX; ... }`
- `event.touches` (all on the page)
- `event.changedTouches`



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A tap would be `ontouchstart` then `ontouchend`

Important touch properties: `Target`, `Identifier`, `(pageX pageY)`, `clientX/Y`, `screenX/Y`

“TouchEvents” example code

# Built-in Stuff

# CSS Transforms

- -webkit-transform
  - translate(x,y)
  - rotate(angle)
  - scale(mX,mY)
  - skew(angleX, angleY)
- -webkit-transform-origin



# Built-in Stuff

# CSS Transforms

- `.box { -webkit-transform: translate(400px, 200px); }`
- `-webkit-transform: rotate(135deg) scale(2);`
- `element.style.webkitTransform = "translate(" + xpos + "px, " + ypos + "px)";`





# Demo Card Flip



# Built-in Stuff

## CSS Transitions

```
.box {
```

```
-webkit-transition-property: -webkit-transform;
```

```
-webkit-transition-duration: 2s;
```

```
-webkit-transform: translateX(600px);
```

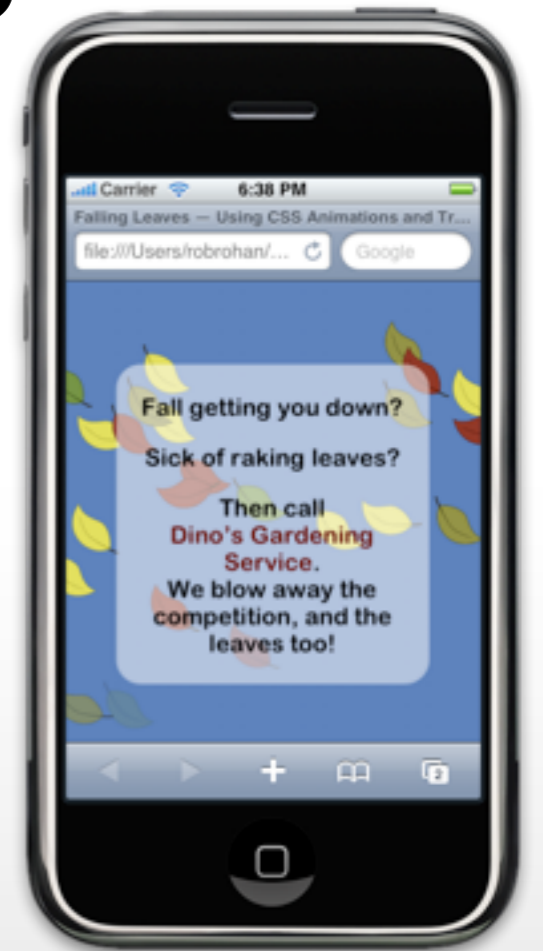
```
}
```



# Built-in Stuff

## CSS Transitions

- `@-webkit-keyframes fade {`
  - `0% { opacity: 1; }`
  - `95% { opacity: 1; }`
  - `100% { opacity: 0; }``}`
- `leafDiv.style.webkitAnimationName = 'fade, drop';`



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3D Transformations as well  
rotateZ, backface hiding, 3d matrix

“Leaves” is an example

# Demo Finger Tips



# Built-in Stuff

# Database

- Was part of HTML5
- Only on Safari
- Safari debug mode to view databases
- SQLite
- Asynchronous transactions



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5MB per Database (per domain)

Mention WSG

# Built-in Stuff

## Database

```
var database = openDatabase("MyDB", "1.0");
database.transaction(createDB);
function createDB(tx) {
    tx.executeSql("CREATE TABLE things (name TEXT)", [],
        populateDB);
}
function populateDB(tx) {
    tx.executeSql('INSERT INTO things (name) VALUES
        "iPhone"', [], null);
}
```



# Built-in Stuff

# Database

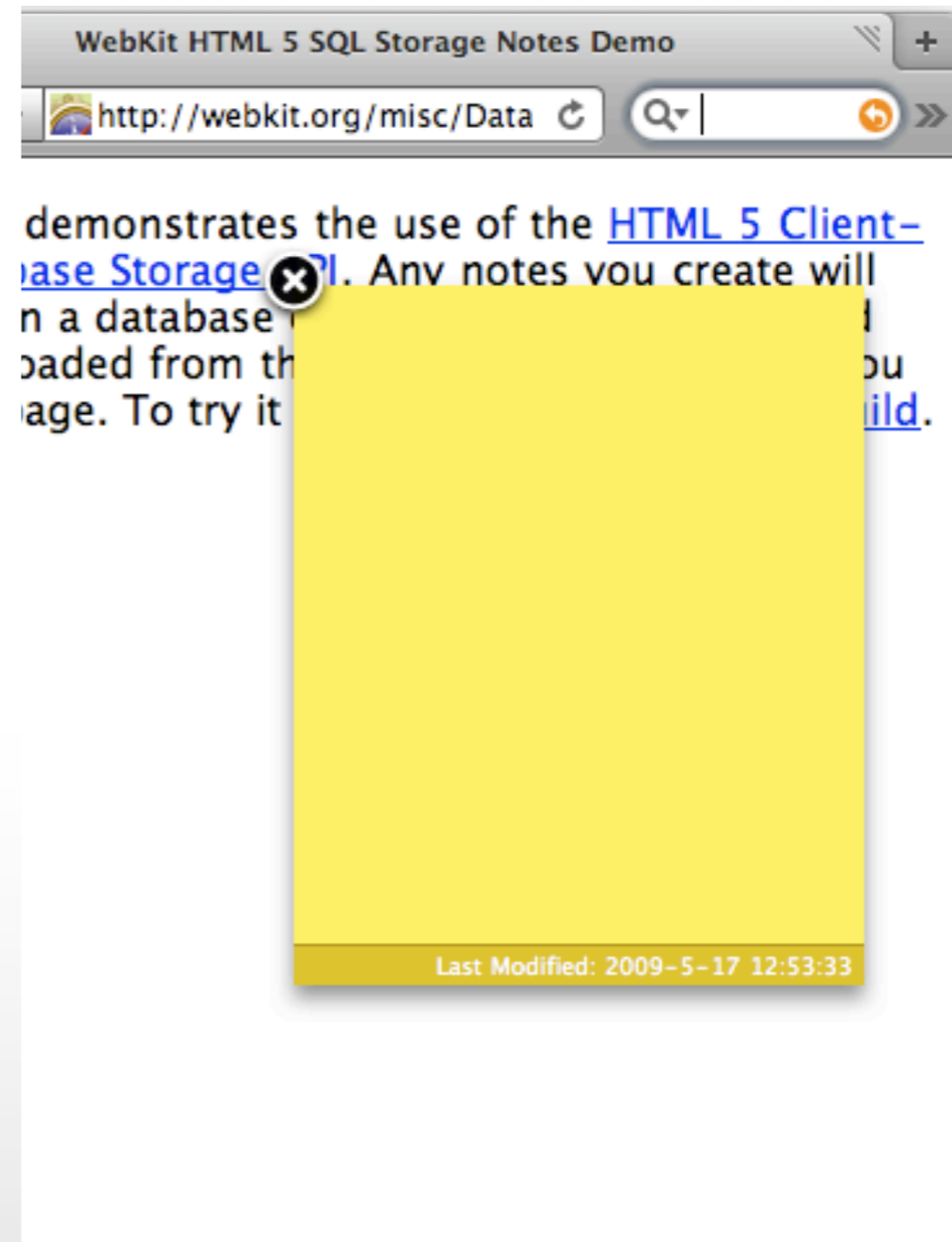
```
tx.executeSql("SELECT name FROM things", [],  
showThings);
```

```
function showThings(results) {  
    for(var i=0; i<results.rows.length; i++) {  
        alert(results.rows[i]['name']);  
    }  
}
```



# Built-in Database

[http://webkit.org/misc/  
DatabaseExample.html](http://webkit.org/misc/DatabaseExample.html)





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# Tips and Tricks

- Don't use `document.write` or `innerHTML` - very inefficient
- `<meta name="viewport" content="initial-scale=1.0, minimum-scale=1.0, maximum-scale=1.0, width=device-width">`
- `<link media="only screen and (max-device-width: 480px)" type="text/css" rel="stylesheet" href="/View/Style/Default-Small.css" />`



# Tips and Tricks

- `<body onorientationchange="callback_orientationChange();" >`
- `function callback_orientationChange() { ... window.orientation ... }`
- `<input autocorrect="off" >`



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0 Portrait  
90 Landscape – counter clockwise  
–90 Landscape clockwise  
180 upsidedown



# Tips and Tricks

- `<body`  
`ontouchstart="event.preventDefault();"`  
`ontouchmove="event.preventDefault();"`  
`ontouchend="event.preventDefault();">`
- `window.openDatabase`



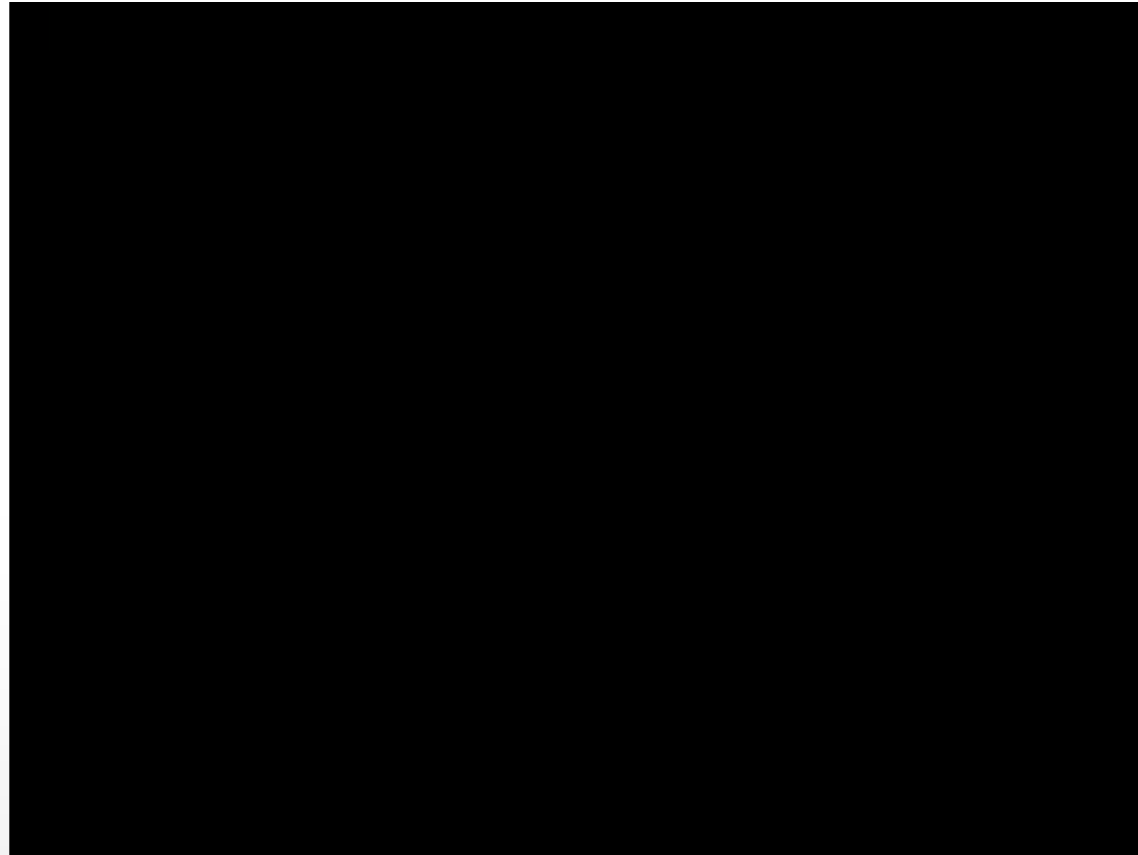


# Tips and Tricks

```
if ( preg_match('/iPhone/', $_SERVER['HTTP_USER_AGENT'])  
    || preg_match('/iPod/', $_SERVER['HTTP_USER_AGENT'])  
    || preg_match('/Android/', $_SERVER['HTTP_USER_AGENT']) )  
{  
    $browser_style = 'iphone';  
} else {  
    $browser_style = 'browser';  
}
```



<http://developer.apple.com/iphone/>



<http://robrohan.com/webdu09/>

Password: daemon

