

HTML5 for Mobile Apps
Lecture at St. Joseph College
31 July 2012, Dar Es Salaam

Into the Mobile Dev Jungle!

Survival kit for web / mobile developers.



HTML



symbian



webOS

Lost!

Where we are on the Web World Map

Server Providers
& Administrators

Web Designers

Social Media & Web
Marketing Strategists

Domain Authorities
& Registrars

UI Designers

Web Developers

Webmasters, Editors,
News Curators

Internet Network
Providers

**Mobile Apps Designers
& Developers**

Analysts

Hardware / Device
Producers

Application
Developers

Project Managers

Browsing Software
Developers

Operative Systems
Developers / Licensors

Usability Experts

The Big Dilemma

Mobile Apps: stuff for developers? or for web designers?



Time of evolution in the IT field is extremely fast. The market panorama can change sensibly even in a few months - because of the launch of a new revolutionary device (as it happened with the iPhone), or because of a new release of a programming language (as it is happening with HTML5)...

THE IDEAL SETTING

Everything would be (too) easy if developers and designers could focus just on their field of competence, becoming hyper-specialized exactly about what they studied and with minimum changes in time...

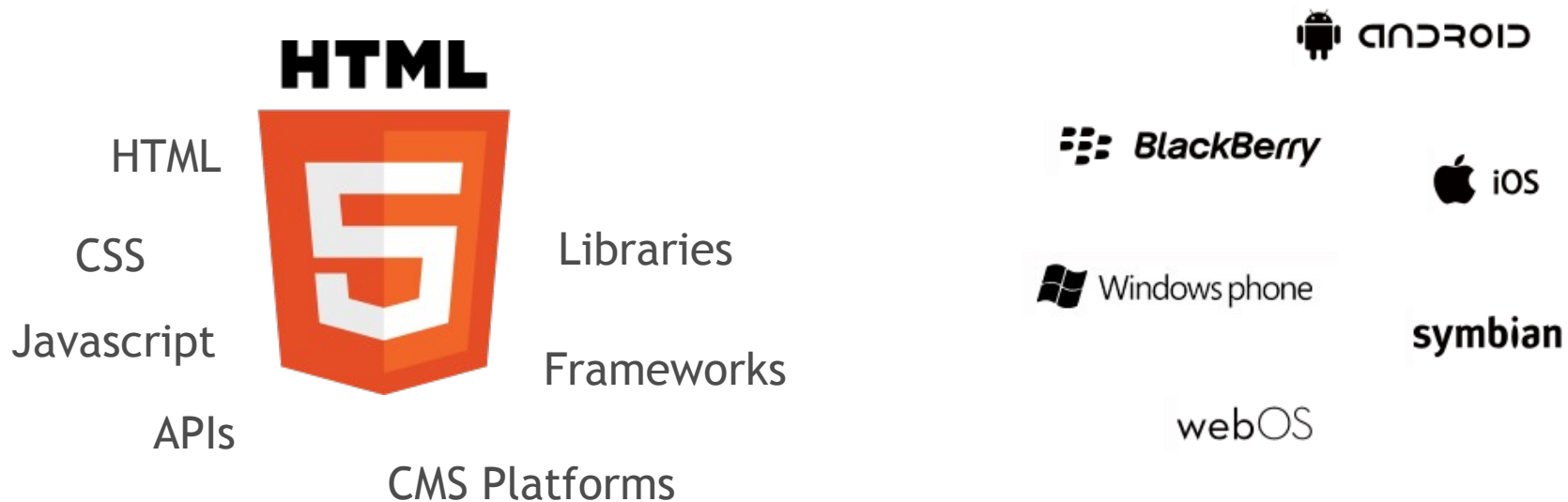
THE REAL WORLD

Companies need professionals covering new positions and gaining new skills in minimum time, every time something is moving on the “technical” side. Often there is not time to wait for long learning process... so the most “flexible” wins, no matter if designer or developer!

The Big Dilemma

Mobile Apps: stuff for developers? or for web designers?

... and this is what is happening now



HTML5 IS A NEW WAY OF CODING FOR WEB

ALL THE MAJOR MOBILE S.O. ARE BECOMING CAPABLE TO UNDERSTAND THE HTML5 WAY OF WORKING

The Big Dilemma

Mobile Apps: stuff for developers? or for web designers?

... and this is what is happening now

DEVELOPERS

have the chance of creating cross-platform apps sharing the same source code, saving time and resources

the deal?

To be more creative



WEB DESIGNERS

have the chance of creating mobile applications using languages that they already know... just changing a bit the way of using them

the deal?

To be more “aware”

Walking to the Mobile Dev Crossroad

Develop “Native” or HTML5?

FEATURE RICHNESS

Native apps can do more: they're better integrated in their environment, with the device's hardware and with other applications.

Operative systems are evolving in a web standard direction. Thanks to the use of frameworks (such as PhoneGap) it is possible to build hybrid apps, filling native components just where needed.

PERFORMANCES

Native apps run faster, because they don't have to deal with web runtime barriers.

In new generation devices, web runtimes are become faster. Besides, many types of apps don't need the highest level of speed possible.

Walking to the Mobile Dev Crossroad

Develop “Native” or HTML5?

DEVELOPER EXPERIENCE

Native apps have less development problems: they use languages such as Java, Objective C and C++, can be reliably tested in emulators and are faster to debug.

HTML5 is easier and faster to develop, but also cross device. In many cases it's more convenient even if workarounds for old Operative Systems are needed.

LOOK & FEEL

Native apps share the same functional elements sets, same ways of interacting with the app and same conventional symbols. The developer can stuck to them, and the UI will be usable for sure.

Also the “web-based” has its own look & feel, as well as conventional symbols and elements that users know well, independently from the device they're using. Web languages allow more graphic creativity.

Walking to the Mobile Dev Crossroad

Develop “Native” or HTML5?

DISCOVERABILITY

Native apps can be easily distributed over official channels (Apple's App Store, Android's Market, etc.), which actually are leader in Mobile App's circulation.

Everything is coded in a web language is discoverable by definition - through search engines, social network, etc... a good meta-tagging can be as good as an official distribution channel.

MONETIZATION

Native apps are easy to monetize. Official distribution channels offer full support to sell mobile apps and generate a direct and regular income.

About “web based” apps, the situation is still a bit confused. Direct income, not yet supported by strong sales channels, could be enhanced by other methods... cases history wanted - who's going to be among the firsts? :)

Walking to the Mobile Dev Crossroad

Develop “Native” or HTML5?

SO... WHEN IS HTML5 THE RIGHT CHOICE FOR MOBILE APPS?

The best choice between Native and HTML5 depends on the nature of the App, its aims and purposes, the resources available... Let's try to make it simple with a checklist.

Important features are based on hardware peculiarities.

Interaction with other native apps is required.

Complicated graphics and/or advanced functions require very short time for response.

Important features' way of use is similar to web navigation.

The app is standalone, no need of advanced interactions with third elements.

Graphics are simple and there is no risk of uncomfortable delays for users.

Walking to the Mobile Dev Crossroad

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You are advanced in all the different programming languages for all the required platforms.

There are time and budget to develop the same app for several different platforms.

You prefer to keep the UI typical of each device.

You are familiar with web programming languages.

You need to develop in a fast and easy way a cross-platform app.

The UI needs to be “web-look-like” or anyway non standard depending on the device.

Walking to the Mobile Dev Crossroad

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You want to distribute the app over the official channels, enjoying their benefits.

You want to monetize the app directly from sale.

Go for a Native App

You want to reach the maximum number of people distributing the app for free.

The app is a complementary or the enhancement of another existing service.

Go for an HTML5 App

You choose the HTML5 way

Do you have the weapons to survive?

“It is not the strongest of the species that survives, nor the most intelligent. It is the one that is the most adaptable to change”.

Charles Darwin

HTML5 Mobile Apps development requires a **developer** to think like a web designer.

HTML5 Mobile Apps development requires a **web designer** to code like a developer.

HOW?

HTML5 way of...

Mobile Developers' Survival Kit

Sorry.

We won't learn how to code, today.

HTML5 way of...

Mobile Developers' Survival Kit

We'll find our way of moving into the
HTML5 for Mobile Apps Jungle

without getting lost
&
enhancing expertise by experience

Maps & Compass

Mobile Developers' HTML5 Survival Kit

To start the right way, switch off your computer.
Take off paper and pencil.
Figure out what you want to do.



PROBLEM / SOLUTION ANALYSIS

Write. What is the purpose of your App, how do you plan to meet it, which contents and functions are you going to set into the App.

MOCK-UP / PROTOTYPE

Draw. Just a fast sketch, to set position and shape of the main elements of the App's UI. Then, finalize the graphic look & feel using Photoshop.

If you need directions about “how to design”, check my previous workshops
<http://designlab.pinkcoffee.it/workshops/slides-exercises>

Maps & Compass

Mobile Developers' HTML5 Survival Kit

How is your HTML5?
It's better to train a bit on normal static webpages, before challenging a Mobile App.
Learn by simple things.



WHAT'S NEW ABOUT HTML5

<!DOCTYPE html>
Fallback scripts
<style> & <script>
Semantic tags
<audio> & <video>
New tagging for forms
Etc.

A complete code reference about HTML5 can be found here:
http://www.w3schools.com/html5/html5_reference.asp

A review of CSS and Javascript is advised:
<http://www.w3schools.com/cssref/default.asp>
<http://www.w3schools.com/jsref/default.asp>

If you need directions about “basics of HTML5”, check my previous workshops <http://designlab.pinkcoffee.it/workshops/slides-exercises>

Knife or Gun?

Mobile Developers' HTML5 Survival Kit

When developing for mobile in HTML5, make your work easier: use a development framework.

WHY TO DEVELOP WITH A FRAMEWORK

A framework is a collection of code libraries and tools that simplifies the work of a developer, providing a solid structure for recurrent elements and functions of an application.

Main advantages are shorter time for development and debugging, shorter learning time and availability of documentation. About mobile apps, also the availability of libraries that allows to use features similar to Native applications (such as the camera functions).

*The following tutorial is based on the popular framework for HTML5 mobile development **Sencha Touch** (<http://www.sencha.com/products/touch/>).*



Meeting Sencha

Mobile Developers' HTML5 Survival Kit

For this tutorial we chose the framework Sencha Touch, because of its ease in using and learning it.



INSTALLATION

To set the environment, as first download Sencha Touch. You can choose the Open Source version.

(<http://www.sencha.com/products/touch/>)

To be sure that emulator and real handsets work properly, it's better to activate a web server. You can install XAMPP on your computer.

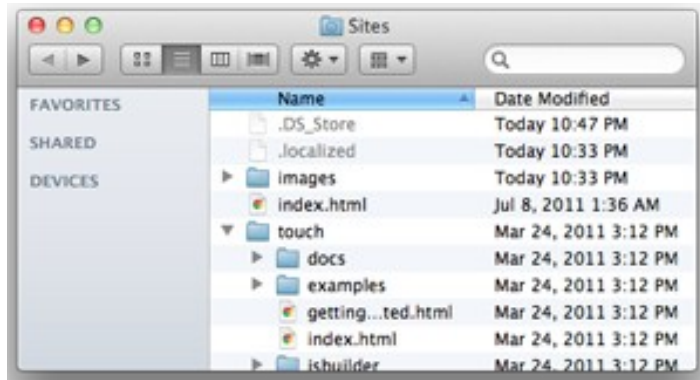
(<http://www.apachefriends.org/it/xampp.html>)



For tests during development, install Firefox or Chrome as web browser.

Meeting Sencha & Android Mobile Developers' HTML5 Survival Kit

Unzip Sencha Touch into a folder on your server.



If you want to get a simulator, download and install the right SDK.

(i.e. developing for Android

<http://developer.android.com/sdk/index.html>)

Eventually, if you're developing for Android environment, you can also add Eclipse.

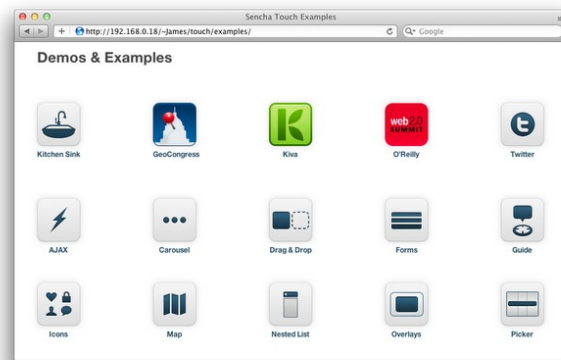
(<http://www.eclipse.org/downloads/>)



Meeting Sencha & Android Mobile Developers' HTML5 Survival Kit



You can find some samples going with your browser to *'namefolder'/examples*



Meeting Sencha & Android Mobile Developers' HTML5 Survival Kit

CREATE A NEW APP



Create a new folder myapp in your web server's folder. In that, create a folder called lib and then copy the SDK folder (called touch) into it.

Create a file called index.html, and place in it the following markup:

```
<!DOCTYPE html>
<html>
  <head>
    <title>Hello World</title>
    <script src="lib/touch/sencha-touch.js" type="text/javascript"></script>
    <script src="app/app.js" type="text/javascript"></script>
    <link href="lib/touch/resources/css/sencha-touch.css" rel="stylesheet"
type="text/css" />
  </head>
  <body></body>
</html>
```

Meeting Sencha & Android

Mobile Developers' HTML5 Survival Kit

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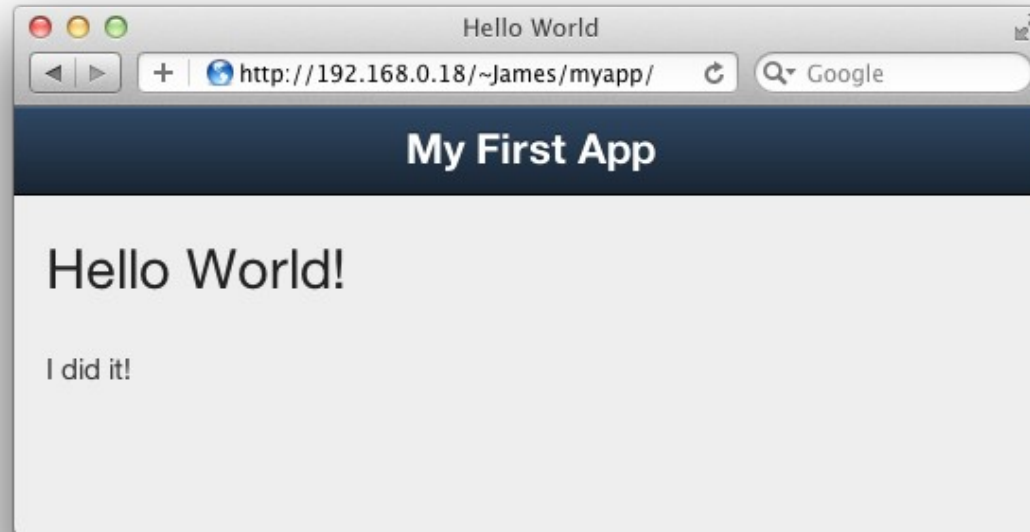
Then create a folder called app and create a file called app.js. Place in it the following code:

```
new Ext.Application({
  launch: function() {
    new Ext.Panel({
      fullscreen: true,
      dockedItems: [{ xtype: 'toolbar', title: 'My First App' }],
      layout: 'fit',
      styleHtmlContent: true,
      html: '<h2>Hello World!</h2>I did it!'
    });
  }
});
```

Meeting Sencha & Android Mobile Developers' HTML5 Survival Kit

CREATE A NEW APP

And when you open `../myapp` in your browser, device, or emulator, you should see this most basic of apps running:



Meeting Sencha & Android Mobile Developers' HTML5 Survival Kit

PLAY WITH LAYOUTS!

Now that it is clear how it works, you can enjoy creating new pages, layouts and functions.

A good start kick can be these tutorials:

<http://www.sencha.com/learn/touch>



PACKAGE YOUR APP FOR ANDROID MARKET

An easy-to-use way to package your apps is PhoneGap:Build

<https://build.phonegap.com>, where you just need to upload the archive of your app and wait for it to be compiled.

Need more Weapons?

Mobile Developers' HTML5 Survival Kit

Here you are other choices that you have to develop HTML5 Mobile Apps!

JQUERY MOBILE

The framework boasts a lightweight code base (weighing in at 20KB when minified and gzipped) and a huge bevy of standard user interface elements that mobile device users are accustomed to, such as switches and sliders.

<http://jquerymobile.com/>

PHONEGAP

A more complete open source framework to develop and deploy HTML5 + CSS + Javascript Mobile Apps, providing a full documentation.

<http://phonegap.com/>

Ooops!
End of the Jungle Jam...

Asante sana
&
see you soon!