## Cross Platform Development with HTML5

## Building Applications for Multiple Platforms

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Created Using reveal.js





## Heads Up

#### **Key Areas**

- What
- Why
- When
- How

#### What is it?

Let's lay (or re-lay) a foundation



#### What is a platform?

A platform: hardware architecture and a software framework

#### **Examples**

#### Hardware:

- PCs
- Macintosh
- Video Game Consoles
- Mobile Devices
- Mainframe

#### **Examples**

#### Software Framework

- Adobe Air
- Java Platform (Micro, Standard,...)
- Mono
- .Net
- Silverlight
- Qt

#### **Platforms**

#### Examples

- Android
- Bada OS
- Blackberry OS
- Chrome OS
- Firefox OS
- iOS
- Maemo
- Tizen
- Linux | Ubuntu
- WebOS
- Windows 8
- Windows Mobile
- Windows Phone

#### **Mobile Platforms**

Operating system running on a smartphone, tablet, PDA, or other digital mobile devices.

#### **Mobile Platforms - Brief History**

```
1999 - Symbian Launched
2002 - Windows CE Smartphones
2002 - BlackBerry OS.
2005 - Maemo OS
2007 - Apple iOS
2007/2008 - Android 1.0
2009 - Palm WebOS
2009 - Samsung Bada OS
2010 - Windows Phone OS
2011 - MeeGo
2012 - Tizen - Samsung,Intel,Linux Foundation
2012 - Firefox OS
2013 - Ubuntu Touch
2013 - BB10 OS
2014 - ?
```

#### **Foundation Laid**

Next Slide to the Right

# Types of Applications (Platform-Wise)

Native | Non-Native

## Native Applications

What are they?

## Native Applications

Applications coded in a specific programming language

## Programming Language

Language designed for programming computers

#### Programming Language

Thousands of them Examples, anyone?

#### Programming Language

Thousands of them

Examples: PHP, C++, Java, VisualBasic, C#, Python, Perl, Fortran, QBasic

#### **Native Applications**

A native app is an application written purely in platform-specific programming language

Single-Platform-Based Development

#### Native App Development

Warning: This is not exhaustive

Platform	Languages Supported	IDEs
Android	Java, C, C++	Android Studio, Eclipse, NetBeans
Blackberry	Java	Blackberry JDE, Eclipse
iOS	Objective-C	XCode, AppCode
Symbian	C++	Qt, Carbide, Borland
Windows	C#, Visual Basic, C, C++	Visual Studio

## Non-Native

#### Non-Native

!='Native Application'

i.e Not Platform Specific Programming

## Non-Native App

Better called "Cross Platform App"

#### **Cross Platform Apps**

#### One Code Base. Multiple Platforms

Well, mostly from one code base

#### **Cross Platform Apps**

A cross platform app is an application written or compiled in a way that allows it to run on multiple platforms.

With or Without Special Preparation

# Cross Platform Apps Languages include

- C++
- C# (Mono)
- HTML
- Java
- Qt
- Realbasic
- Ruby
- Others?

## Cross Platform Apps Tools & IDEs

Phonegap (Cordova)\* | Blackberry Webworks \* | Ripple Emulator \* |
Titanium Appcelerator\* | MoSync (C)| MoSync Reload (C+H)|
Rhomobile (H+R)| Xamarin (C#) | CodeNameOne (J)| Oracle ADF
Mobile(J+H) | DragonRad (\$\$\$\*\$) | Platform SDKs | & much more

\* - HTML & Javascript based

#### **Space for Examples**

#### Pros of CPD

- Faster Deployment
- Lower Dev & Maintenance Cost
  - Easier Learning Curve
    - Easier Integration

#### **Cons of CPD**

- Non-Native Look
- Limited Feature Support
  - Slower Graphics API
  - Less Secure Storage

#### **Quick Comparisons**

Capability Metric	Winner
Rich User Experience	Native Wins
Performance	Native Wins
Cross Platform Development \$	CPD
Fragmentation	Similar Challenges
Update & Distribution Control	CPD
Device Hardware	Native
Bleeding Edge Features	Native
Security	Native
Learning Curve	CPD

# Introducing Player 3! { Hybrid Apps }

## Hybrid Apps The best of both worlds

This type of application has cross-platform compatibility but can still access a phone's hardware.

#### **Hybrid Apps**

Built by combining a Cross Platform Language (e.g HTML5) and the Platform-Specific Language (Android Java)

#### **Hybrid Apps**

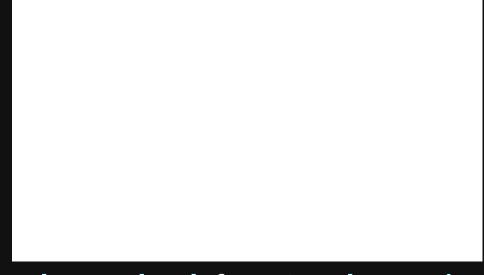
Use a regular IDE for HTML5 and Use the Platform SDK/IDE to build the rest

#### More on the HTML5 Parts

**Tools & Libraries** 

#### **More on the HTML5 Parts**

Mark Zuckerberg: Facebook & Fastbook



Sencha Fastbook from Sencha on Vimeo.

#### Personal Case Studies -

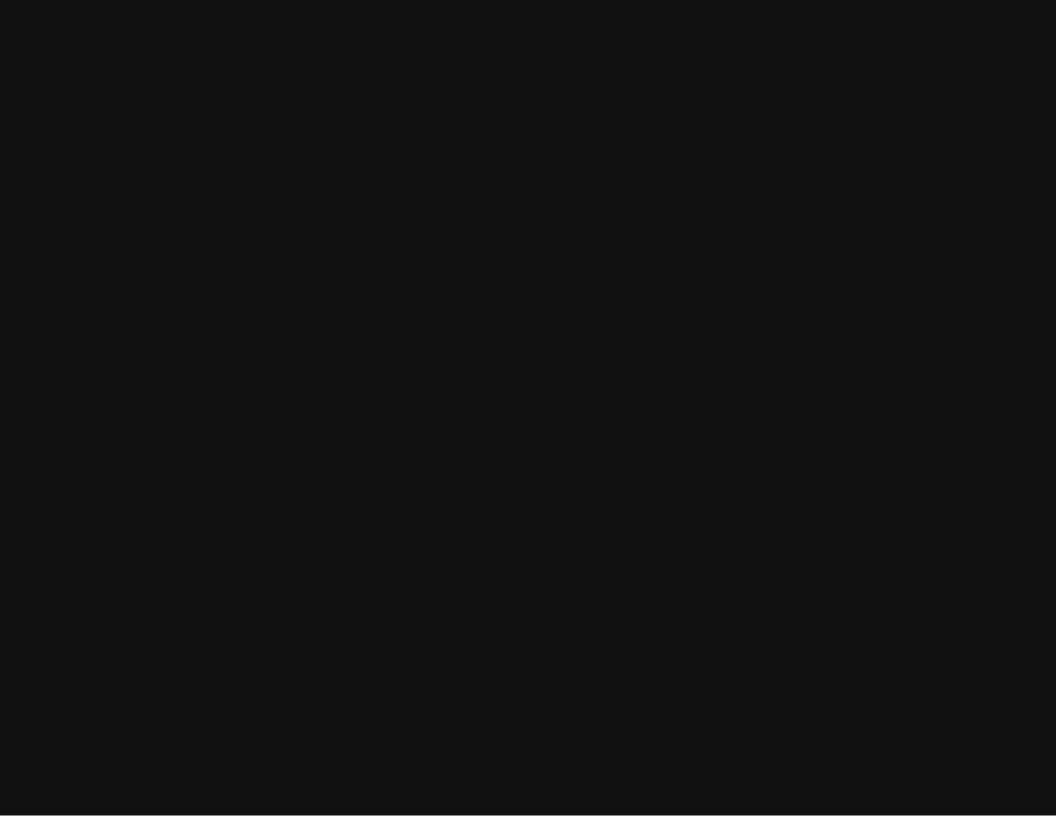
Cinemaz - on Android, Windows 8, BB6, BB10 NewsBasket - on Android, BB10 NewsMix

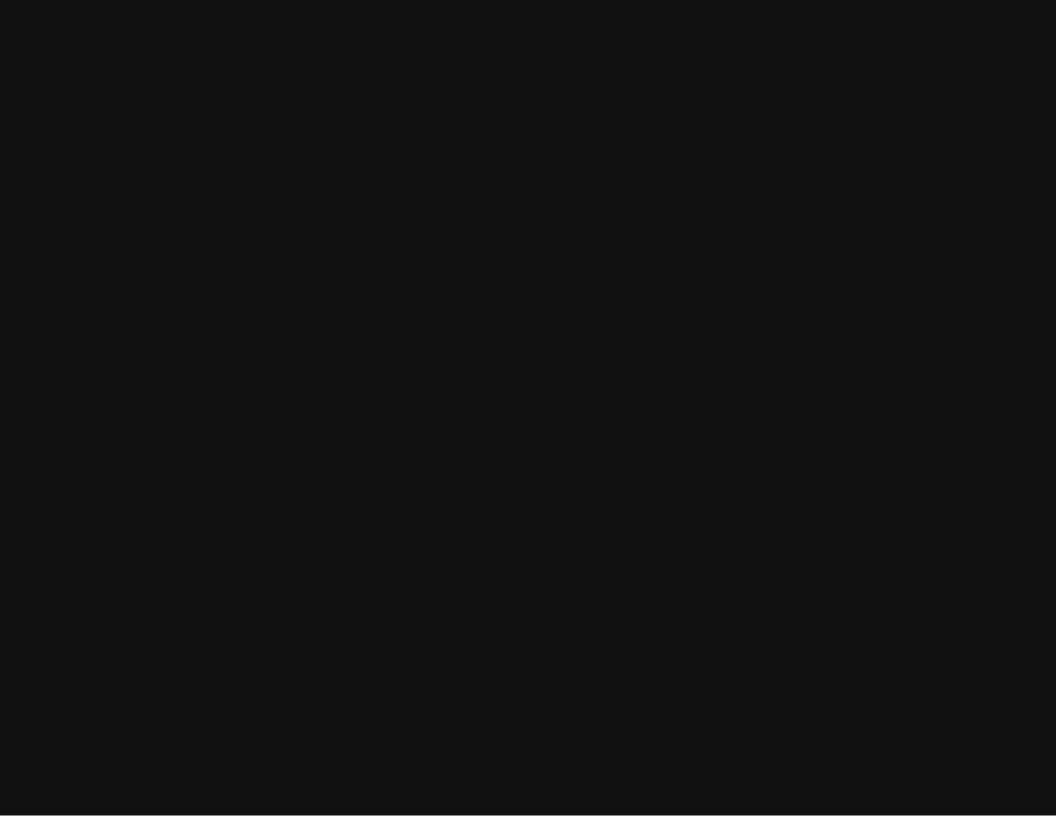


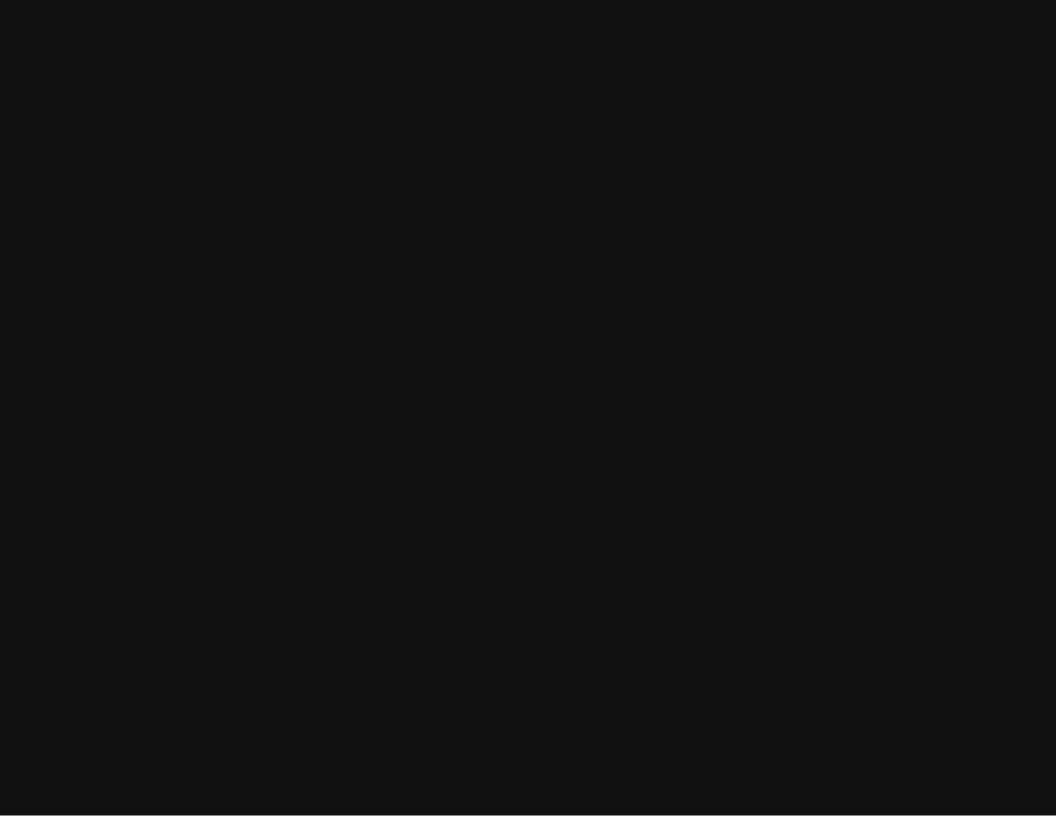
#### Cinemaz

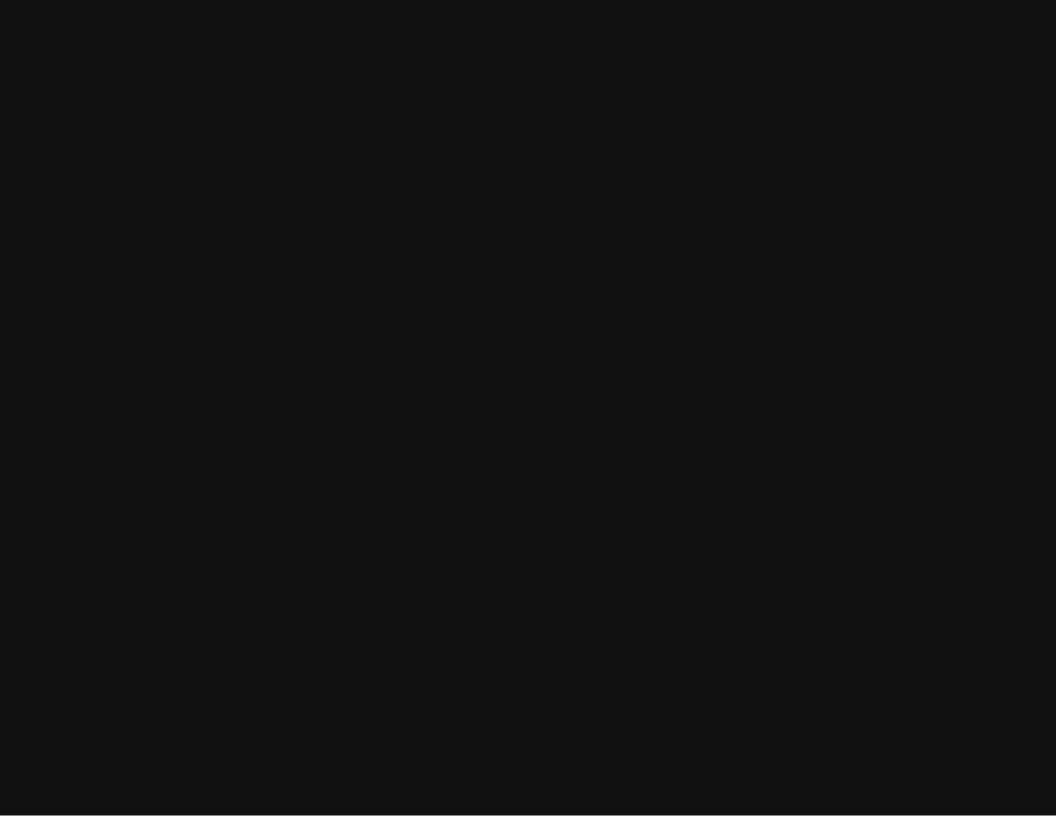
Displays the latest movies in theatres in Nigeria Same Code Base for -

- Blackberry (versions 6,7,10)
- Android
- Symbian
- iOS\*









# Ok.. enough of the talk. How do I start?

#### Setup

- Install Apache
- Install an IDE NetBeans | | Eclipse | | IntelliJ | | Sublime Text
- \*Setup npm from nodejs.org
- \*Install Android SDK (ADT)
- \*Install Blackberry Webworks
- \*Install Nokia WebTools
- \*Install Visual Studio Express for WP8
- \*Install XCode
- Install Emulators

\* - Optional Steps

#### **Best Practices**

- Minimalistic Approach to EVERYTHING - Libraries, DOM and CPU-consumers
- Optimize Images
- Use PageSpeed Insights
- Minify resources all HTML, CSS & JAvascript files
- Enable Offline Mode
- Degrade Nicely
- Design Guidelines
- Screensizes
- T.E.S.T.
- Be touch-friendly E.g Associate Labels with Fields
- 0<- External Files
- No TABLES
- Class Selectors not Descendant Selectors

#### **Stellar Links**

- HTML5Rocks
   http://html5rocks.com
- My Sample Projects On GitHub http://github.com/dftaiwo
- NewsMix
   http://github.com/dftaiwo/newsmix
- Comparison Charts
  http://www.markus-falk.com/mobile-frameworks-comparison-chart

## Summary

HTML5 is great

Not Swedish Bitters

Project Dependent

It's young but powerful and growing

## THE END