Mobile HTML5:
Implementing a Responsive Cross-Platform Application

Thesis seminar Friday May 11 2012

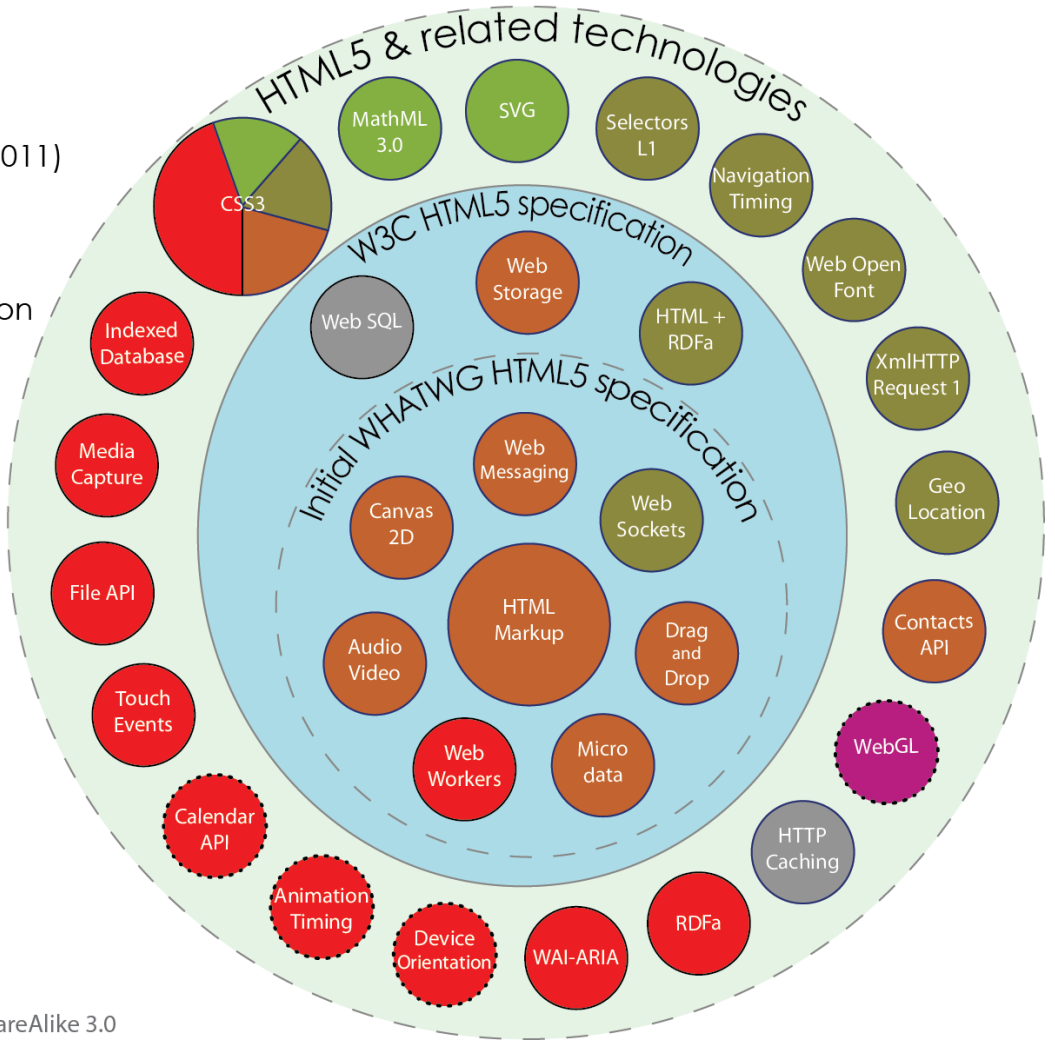
Kimmo Puputti

HTML5

HTML5

Taxonomy & Status (December 2011)

- W3C Recommendation
- Candidate Recommendation
- Last Call
- Working Draft
- Non-W3C Specifications
- Deprecated W3C APIs



http://en.wikipedia.org/wiki/File:HTML5-APIs-and-related-technologies-by-Sergey-Mavrody.png

Motivation


THIS IS NOT
THE WEB.
CROSFIELD
Sun
SPARCstation 10

THIS IS THE WEB.

THIS WILL BE THE WEB.

Cross-platform

Required skill sets for nine mobile OSs.

Mobile OS Type	Skill Set Required
Apple iOS	C, Objective C
Google Android	Java (Harmony flavored, Dalvik VM)
RIM BlackBerry	Java (J2ME flavored)
Symbian	C, C++, Python, HTML/CSS/JS
Windows Mobile	.NET
Window 7 Phone	.NET
HP Palm webOS	HTML/CSS/JS
MeeGo	C, C++, HTML/CSS/JS
Samsung bada	C++

Charland, A., and Leroux, B. *Mobile Application Development: Web vs. Native.* Communications of the ACM 54, 5 (2011), 49-53.

Thesis

Mobile applications

- Performance matters
- Rich interaction and great UX expected
- Network usage optimization and offline support

- Myths vs. realities
  - Quantitative analysis needed

RQ1:

What are the main problem areas in mobile web development?

What are the main problem areas in mobile web development?

- Handling different screens and form-factors
- Managing unreliable networks with interruptions and offline modes
- User interface performance
  - Animations
  - Gestures
- (Device sensor access)

RQ2:

Do HTML5 and related specifications solve these problems?

Do HTML5 and related specifications solve these problems?

- Media queries
  - Responsive Web Design a.k.a. RWD
  - Mobile-first progressive enhancement
- Offline support possible
  - Not without its problems, though
  - Needs to be tailored in the architecture
- Browser quirks
  - Performance problems in the implementations
- (Device APIs)

RQ3:

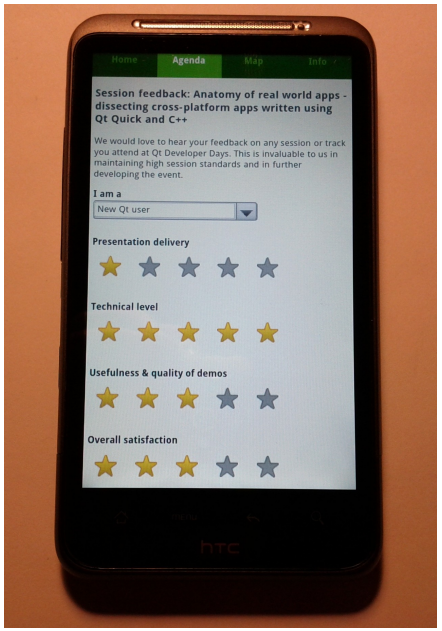
What other practical means do we have to solve these problems?

What other practical means do we have to solve these problems?

- Custom meta-tags
- Best practices
- Tools
  - JSLint, JSHint, YSlow, Page Speed

Practical implementation

- Conference schedule application for the Qt Developer Days 2011
  - Munich and San Francisco
- JSONCache library
  - localStorage caching
  - Fetching multiple times
- Quantitative performance best practices analysis
  - YSlow: 93/100
  - Page Speed 92/100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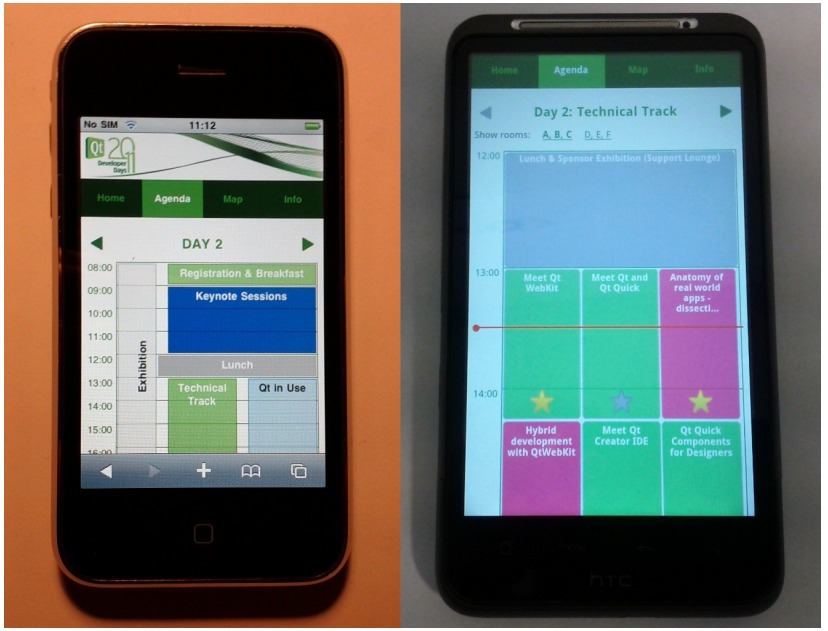
Session feedback: Anatomy of real world apps - dissecting cross-platform apps written using Qt Quick and C++
We would love to hear your feedback on any session or track you attend at Qt Developer Days. This is invaluable to us in maintaining high session standards and in further developing the event.
I am a
New Qt user
Presentation delivery
Technical level
Usefulness & quality of demos
Overall satisfaction
htc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DAY 2
08:00
09:00
10:00
11:00
12:00
13:00
14:00
15:00
Exhibition
Registration & Breakfast
Keynote Sessions
Lunch
Technical Track
Qt in Use
Day 2: Technical Track
Show rooms: A, B, C D, E, F
12:00
13:00
14:00
Lunch & Sponsor Exhibition (Support Lounge)
Meet Qt WebKit
Meet Qt and Qt Quick
Anatomy of real world apps - dissecti...
Hybrid development with QtWebKit
Meet Qt Creator IDE
Qt Quick Components for Designers
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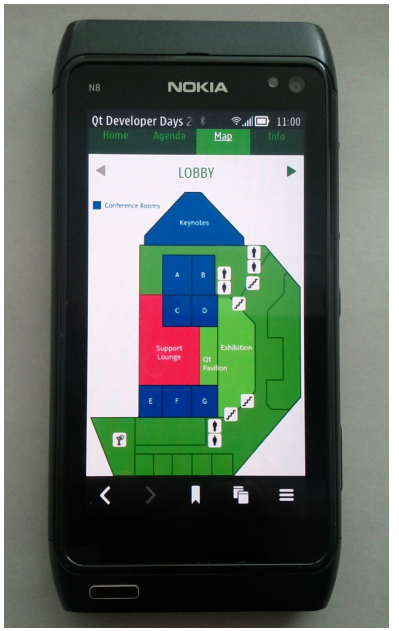
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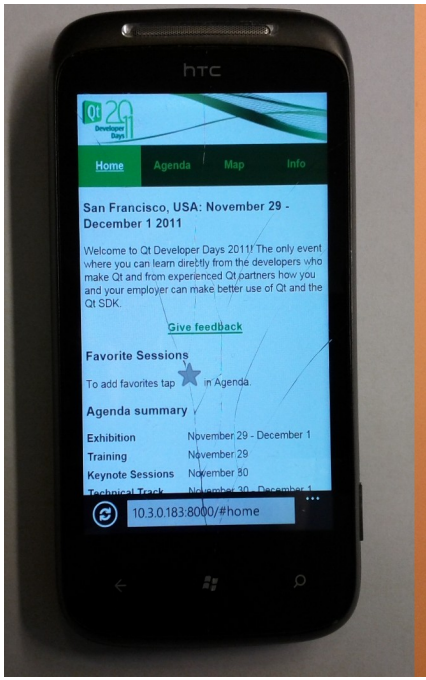
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San Francisco, USA: November 29 - December 1 2011
Welcome to Qt Developer Days 2011! The only event where you can learn directly from the developers who make Qt and from experienced Qt partners how you and your employer can make better use of Qt and the Qt SDK.
Give feedback
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Agenda summary
Exhibition November 29 - December 1
Training November 29
Keynote Sessions November 30
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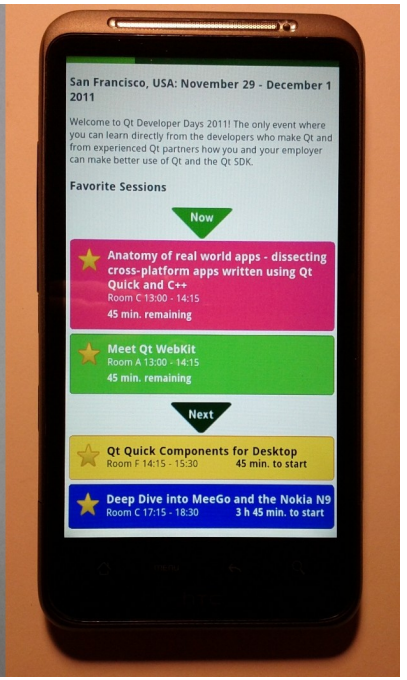
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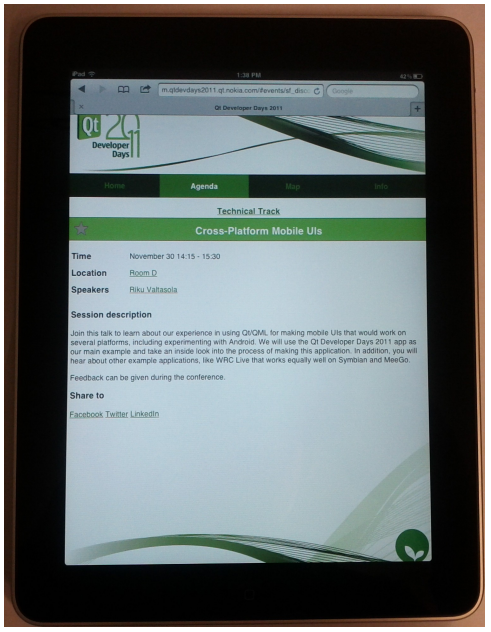
Favorite Sessions
Now
Anatomy of real world apps - dissecting cross-platform apps written using Qt Quick and C++
Room C 13:00 - 14:15
45 min. remaining
Meet Qt WebKit
Room A 13:00 - 14:15
45 min. remaining
Next
Qt Quick Components for Desktop
Room F 14:15 - 15:30
45 min. to start
Deep Dive into MeeGo and the Nokia N9
Room C 17:15 - 18:30
3 h 45 min. to start


Qt Developer Days 2011
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Technical Track
Cross-Platform Mobile UIs
Time November 30 14:15 - 15:30
Location Room D
Speakers Riku Valtasola
Session description
Join this talk to learn about our experience in using Qt/QML for making mobile UIs that would work on several platforms, including experimenting with Android. We will use the Qt Developer Days 2011 app as our main example and take an inside look into the process of making this application. In addition, you will hear about other example applications, like WRC Live that works equally well on Symbian and MeeGo.
Feedback can be given during the conference.
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Thanks!

Thesis and slides available at:
http://kpuputti.github.com/thesis/

Devdays conference application at:
http://m.qtdevdays2011.qt.nokia.com/

JSONCache library at:
http://kpuputti.github.com/JSONCache/

kpuputti@gmail.com
http://kpuputti.fi
@kpuputti