WINK

Webapps Innovation Kit

Dojo Foundation - Project proposal

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We would like to propose a new Dojo Foundation project we call "Web app INnovation Kit". WINK is a JavaScript toolkit for the mobile web, targeting highly capable devices (our initial primary targets are iPhone and Android devices). It aims to offer mobile web developers basic tools and innovative components to help them build great mobile web apps.

For a few years, the mobile web browsers have evolved rapidly. Devices like the iPhone and Android offer a wide range of possibilities from HTML5 and CSS3 features to the arrival of multitouch events. However, the mobile web development ecosystem is immature with a lack of great tools for mobile web developers. Such tools would ideally adapt to the mobile environment and take advantage of the features of the new mobile web browsers.

We started the WINK project more than a year ago at Orange Labs under this premise, and the overall ecosystem has not changed much in that time.

The mobile environment is full of constraints: low bandwidth, network latency, limited memory, graphics, and CPU, many screen sizes and resolutions, heterogeneous browser implementations, and more. We strive to take these constraints into account and still "keep it smart and simple".

WINK should be a mix of basic utilities and more complex graphical and non-graphical elements, to provide a stable mobile web development foundation, as well as giving developers a set of components that push the limits of the mobile web.

Here is a sample list of components we already developed:

Non graphical:

The basics:

- CSS3 animations: handle transformations and transitions
- Events: an easy event mechanism
- Platforms: retrieve browser user-agent characteristics
- Touch: handle touch events
- Window: detect screen sizes/resolutions and orientation changes
- ...

More advanced:

- Inertia: calculate the inertia to give to an object according to the movement that was made on the screen
- DnD: Drag and Drop system
- Gesture recognizer: An adaptation of the $1 gesture recognizer (a smart gesture recognition algorithm: http://depts.washington.edu/aimgroup/proj/dollar/).
- ...

HTML5:

- Geolocation: abstraction layer above the Geolocation mechanism

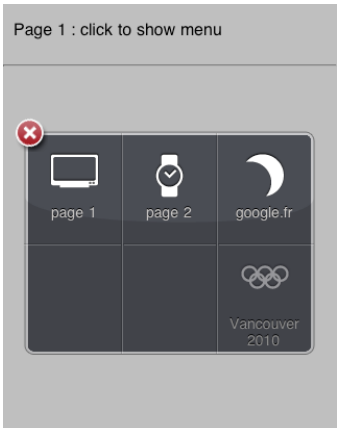
- Local Storage/Database: abstraction layer above the local storage mechanism
- ...

Graphical:

The basics:

- DatePicker
- Menu (icons on screen rather than traditional desktop menus)
- ProgressBar
- ...

DatePicker



Menu

More complex:

- Carousel
- Scroller: based on the inertia manager
- TagCloud: 3-D tag cloud
- 3-D wall: a "cooliris" like wall
- ...

Carousel

3-D TagCloud (CSS3 & JS animations)

A preview page of our existing work exists at: http://vepi-2k3208aja.acs.cnet-caen.fr/WINKJS/. Note that this work currently supports the iPhone and Android, and the more advanced animations work best on more recent phones (iPhone 3GS/4, etc.).

We have performed several iterations to improve our code quality and while some of the components are still beta, they will soon be fully operational.

We also have a dedicated website for the project where people can download the source code, and have access to forums and tutorials: http://WINKtoolkit.org

WINK is not based directly on the Dojo Toolkit because we wanted to rapidly have the most optimized, independent and adapted core for our targeted environment (the smallest amount of data to download and "mobile only" components like touch events handling). Recent work at Uxebu are promising and may eventually converge with this work, but right now, considering the innovative context, we think we should continue to go on quickly. However, things like naming conventions and code style guidelines will converge quickly to simply adoption and collaboration between the Dojo Mobile efforts and WINK.

The efforts done within the Dojo Toolkit and those done by the WINK team could converge at some point, but at the moment the mobile APIs are not stable due to the rate of change. For instance, a 3-D TagCloud could also be a useful desktop feature, and push mechanisms through a cometD client benefit mobile applications.

WINK is already used at Orange to develop all the iPhone/Android web apps and we have had great feedback from developers and users. Because of this

positive feedback, we believe there is interest in this work and we want to share it with the community.

We are proposing the creation of a new Dojo Foundation project. We propose that Jerome Giraud (Orange) lead the project and Guillaume Guimond (Orange) and Sylvain Lalande (Other) are the initial committers. Jerome, Guillaume and Sylvain are the primary developers of WINK to date, and intend to continue to be active contributors. Even though we've completed several iterations on this technology, we are very open to design and implementation changes that will improve the toolkit.

Because of all this, we look forward to the opportunity to work with the Dojo Foundation community on this project!