

Rich Internet Applications using NetBeans 6.0

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Agenda

- Introduction
- RIA Technologies
- Using Ajax for RIA
 - jMaki
 - Wicket
 - Google Web Toolkit (GWT)
 - JavaServer Faces and Dynafaces
- Using JavaFX for RIA
- Questions and maybe some answers

- Lead Software Engineer for Finance
- UK Software Practice
- 11 years at Sun Microsystems
 - Too many roles to mention!
- Java since 1996 (and before)
- Java Certified Enterprise Architect

Introduction

- Haven't we been here before?
 - Browser interface is a dumb terminal
 - RIA is X11
- What's new this time?
 - The browser paradigm – Simplicity
 - World Wide Web
- Pushing the web to the next level
 - Web 2.0? Read Write Web

Introduction



Some RIA Examples

- Google Maps
- Google Documents
- BBCi Beta (The new site)
- Facebook
- Youtube
- Flickr
- Linerider

Introduction

- Why Rich Internet Applications
 - Better user experience
 - The UI is more responsive
 - The UI is easier to work with
 - No round-trip page refresh
 - Processing off-loaded to the client
 - Less network load (?)
 - Read/Write applications

Introduction

- The Issues with Rich Internet Applications
 - The affects on the client system
 - Security models (sandboxes, permissions)
 - Search engine optimization (or lack of)
 - Simplicity made complex
 - Difficult to develop
 - How many frameworks do I need?

RIA Technologies

- There are currently two main types of RIA:
 - Browser centric
 - Browser launched

Browser Centric RIA

- Runs within (lives) the browser
 - Generally standards based
 - HTML
 - JavaScript
 - XML
 - CSS
 - Developers use current skill-set
 - Limited by the browser's capabilities

Browser Launched RIA

- Container based
 - JavaFX
 - Flash, Flex, etc.
 - Silverlight
- Typically proprietary development
- Typically requires a specialised skill-set
- Not limited by browser capabilities

Browser Based RIA

- ActiveX Controls
- Internet Explorer centric
- Security Issues
- Provides seamless rich applications
- Microsoft provide good development tools (for Microsoft)

Browser Centric RIA

- Asynchronous JavaScript and XML (Ajax)
- New use of existing technologies
- HTML, CSS, Javascript and XMLHttpRequests
- Many client-side frameworks available:
 - jMaki
 - Dojo
 - Prototype
 - Script.aculo.us
 - Etc.

Browser Centric RIA

- Ajax requires a server-side component
- Client communicates via XML
- Many server-side frameworks
 - Direct Web Remoting (DWR)
 - OpenLaszo
 - Google Web Toolkit (GWT)

Browser Centric RIA

- Ajax supported in many existing frameworks
- Enables developers to use what they know
- Extensions to existing frameworks
 - JavaServer Faces
 - Wicket
 - (J)Ruby on Rails
 - Etc.

Browser Launched RIA

- Abode Flash and Flex
- Flash Player is the runtime container
- Flex is a RIA framework
- Proprietary Development
- ActionScript and MXML (Magic XML)

Browser Launched RIA

- Do you remember Java Applets?
- Original vision was RIA
- Java Programming Language
- Delivered via the Java Plugin
- Too big for initial download (vs Flash, etc.)
- Now superseded by Java Web Start and JavaFX

Browser Launched SIA

- Silverlight from Microsoft
- Silverlight browser plug-in run-time
- Microsoft Visual Studio
- Developed using a compact CLR
- Mixture of XAML, JavaScript and VB
- Ruby and Python to come

Using jMaki for Ajax RIA

- jMaki provides a single framework
- Makes use of many other frameworks
 - Google, Yahoo, Script.aculo.us, etc.
- “Ajax in a tag” development
- Widget Model – leverage existing widgets
- Layouts – provides standard layouts
- Server model – access to DBs/WSs/etc.
- Great support in NetBeans

jMaki Example in NetBeans

Using Wicket for Ajax RIA

- Wicket is an Apache project
- Makes Ajax easy for Java developers
- Automatic server-side state management
- Separations of Concerns
 - Java and HTML linked by Wicket IDs
- Simple Swing type OO model
- Back button state management

Wicket Example in NetBeans

Using GWT for Ajax RIA

- The Google Web Toolkit (GWT)
- Takes the “J” out of Ajax
- Manages back button history
- Based on a Swing-type programming model
 - Only supports JDK 1.4.2. currently
- Compiles to JavaScript
- Support for other APIs (Google Gears)

GWT Example in NetBeans

Using JSF for RIA

- JavaServer Faces
- Nice MVC model for web development
- Woodstock components for RIA
- Ajax details completely hidden
- Dynamic Faces (Dynafaces)
- Part of the Java EE 5 standard
- Support in NetBeans 6.0
 - Including The Visual Editor

Using DynaFaces for RIA

- Incremental improvement of JSF 1.2
- Extends the JSF Lifecycle
 - Uses Shale Remoting
 - All details hidden, only require entry points
- Developer Entry Points
 - Page – Ajax Components, AjaxZones and JavaScript libraries.
 - Components – Ajaxzones and JavaScript

JSF Examples in NetBeans

Using JavaFX for RIA

- What is JavaFX?
 - JavaFX is a programming language
 - JavaFX has a run-time container (FXPlayer)
 - JavaFX Mobile for device development
- Statically typed
- Dynamic and flexible
- Very easy to learn and extended
- Can make full use of Java APIs

Using JavaFX for RIA

- JavaFX Script
 - Ideal for creating GUI applications
 - Java2D, Swing and Java3D
- Declarative GUI development
- Simple for Animations
 - Filters, fades, movement and animations.
- Support in NetBeans 6.0

Using JavaFX for RIA

- The Weather View sample:



Using JavaFX for RIA

- Deployment
 - Java Web Start
 - Java Applets
- Consumer run-time support (JavaSE 6uN)
 - Deployment Toolkit
 - Faster startup time
 - Java Kernel (smaller download)
 - Graphics Acceleration
 - More of a 'Flash Like' experience

JavaFX Example in NetBeans

Conclusion

- Microsoft – Great Tooling, proprietary & new
- Adobe – Good Tooling, proprietary & established
- JavaFX – Great Potential (tooling), Java & new
- Ajax – Greatest momentum
 - Utilises existing browser technologies
 - Good tool support
 - Many existing frameworks

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NetBeans Wiki: NetBeansWorldTour2008

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Was a topic of interest to you not covered at your local NetBeans Day? Add it here! This is your opportunity to shape the future of the NetBeans World Tour.

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References

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 - <http://code.google.com/webtoolkit/>

Rich Internet Applications

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