Open Source Web GUI Toolkits

"A broad and probably far too shallow presentation on stuff that will probably change 180 degrees by the time you hear about it from me"

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Can't get away with knowing one thing

- A Fairly Typical Web App...
  - MySQL – Data storage
  - PHP – Business logic
  - Javascript - Interactivity
  - HTML – Presentation stuff
  - CSS – Presentation formatting stuff
  - Images – They are... Purdy...
  - httpd.conf, php.ini, etc.

Problems are liable to pop up at any stage...
Browser Incompatibilities!

- Follow the rules, still lose
- Which is right?
  - Who cares! You gotta make it work anyways!

Solutions

- More work or less features?
  - Use browser-specific stuff
    - Switch via Javascript
  - Use a subset of HTML that most everyone agrees on
Web sites are... OK, but... Boring...

- Bounce users from page to page
- Stuff gets messed up easily
  - Bookmarks? Scary...
  - Back button
Pros:

- Let something else worry about difficult things
  - Layout issues
  - Session management
  - Browser cross-compatibility
  - Annoying RPC stuff
Neat web stuff has been happening lately...

- AJAX
- “Web 2.0”
- Google maps
- Desktop app characteristics on the web...
Nice, but…

• Lots of flux
  ➔ Technology
  ➔ Expectations of technology

• Communications can get tricky

• Yet another thing to program…
  ➔ (Correctly)
Why A Web Toolkit?

Pros:

- Let something else worry about difficult things
  - Communications management
  - Tested Javascript code
  - Toolkit deals with changes, not the programmer
Bonuses For...

- A familiar programming language
  - Javascript?
- Unit test capability
  - Test early, test often, sleep at night
- Ability to incrementally introduce toolkit
- Compatibility with existing application
- Documentation
- Compelling Examples
Web Toolkits – Common Features

- Widgets
- Layouts
- Manipulation of page elements
  - DOM access, etc.
- Communications
  - XMLHttpRequest
  - JSON
- Animations
GWT – Google Web Toolkit

http://code.google.com/webtoolkit/

License: Apache 2.0
Features:

- Abstracts presentation from logic
  - “Widgets” laid out in “Panels”

- JUnit integration

- Develop using familiar Java tools
  - Eclipse, etc.

- Errors are caught during compile, not later

- Don't necessarily have to use Java to run it

- It's Google
Example:

Desktop App Clone Example Project

http://code.google.com/webtoolkit/documentation/examples/desktopclone/
Dojo

http://www.dojotoolkit.com/

License: Academic Free License & BSD
Features:

- It does a LOT of stuff
  - 2D vector graphics API
- Purely Javascript
- Widgets
  - Buttons, spinner, slider, wizard, mapping, SVG clocks, etc.
- Containers
Features (continued)

* Future Developments...
  - Javascript Linker
    - Manage your Javascript files
    - Package and deploy only what Javascript code you really need

* Big names backing the project
  - IBM, AOL, OpenLaszlo

* DOM? Nah...
  - Good and bad?
Open Laszlo

http://www.openlaszlo.org

License: Common Public License
Features:

- Common source, multiple runtimes
  - Flash  
  - DHTML  

- Many available widgets
  - http://labs.openlaszlo.org/lps-4.0b1/examples/components/style_example.html?lzr=dhtml

- LPS – Laszlo Presentation Server
  - Compiles Laszlo code into target runtime
  - Can deploy on any web server

- Many future plans
  - New runtimes, tighter integration with Java, etc.
Features (continued)

• Many future plans
  ➔ More runtimes
  ➔ Operation with Java ME
Programming Syntax:

- Quasi-XML syntax
- Javascript-ish actions within this quasi-XML format
YUI - Yahoo! User Interface Library

http://developer.yahoo.com/yui/

License: BSD

Used In:

Yahoo! Mail

Yahoo! TV

http://tv.yahoo.com/listings
Yahoo! User Interface Library

Features

- Many available widgets
- Modular Javascript packaging
- High degree of customization via CSS
- Events
  - Timers, mouse clicks, etc.
- Connection Manager
  - XMLHttpRequest
- Great documentation
  - Cheat Sheets! Whoohoo!
  - Training videos
Features (continued)

- Debug window
- Purely Javascript
- Modular design allows for gradual introduction of components
- Emphasis on “Progressive Enhancement”
  - Accessibility for everybody
- Integration with other Yahoo! Services
- Shares similar syntax with Yahoo! Widgets
Programming Syntax

- A slider

yui.ext

http://www.yui-ext.com
Features:

- Extends / Embraces YUI
- Has complex, pre-canned widgets / components
  - Data grids
- Nice themeing – It looks good!
- Can pick only components you need
Example

- Image Chooser
  - Uses JSON to obtain images from a web service

http://www.jackslocum.com/blog/2006/12/17/how-to-create-a-reusable-ajax-driven-web-dialog-a-working-ex:
■ Prototype
  • Ruby on Rails
  • script.aculo.us
  • Rico

■ Jquery
  • http://jquery.com/

■ Zimbra
  • http://www.zimbra.com/

■ wt
  • http://jose.med.kuleuven.ac.be/wt/Home.fcg

■ By tomorrow there will probably be others...
Is this good for Linux?
  • I think so?

Is this good for Mobile Devices?
  • Perhaps not quite yet...

Is this good for the end user?
  • Yes and no...
    → Yes – Better applications
    → No – Confusion over new widgets, where to click, etc.
Thats that.

Try one out.
Thanks!