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Extreme Google Web Toolkit: Exploring Advanced Aspects of GWT

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David Geary

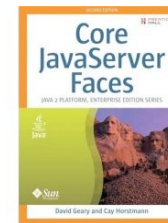
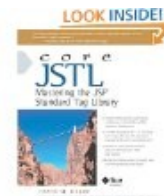
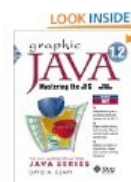
Struts



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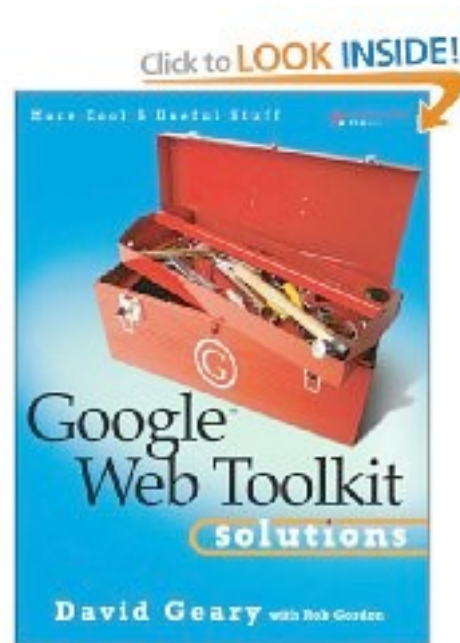
Shale
APACHE PROJECT



JAOO
conference
- for Developers by Developers

TheServerSide.COM
Your Enterprise Java Community

Based on the book



Today you'll learn how to:

- > Implement custom components
- > Implement drag and drop in < 50 LOPJC
- > Implement RPCs and access a database
- > Use 3rd party libraries to create professional apps

Next...

- > Custom components
- > Drag and drop
- > RPCs and database access
- > Finale

Three types of custom components

- > Composites
- > Low-level
- > Widget subclasses

A composite

```
public class AutoCompleteTextBox extends Composite {  
    private TextBox textBox = new TextBox();  
    private PopupPanel popup = new PopupPanel();  
    private ListBox completionItems = new ListBox();  
    ...  
    public String getText() { // pass-through method  
        return textBox.getText();  
    }  
    ...  
}
```

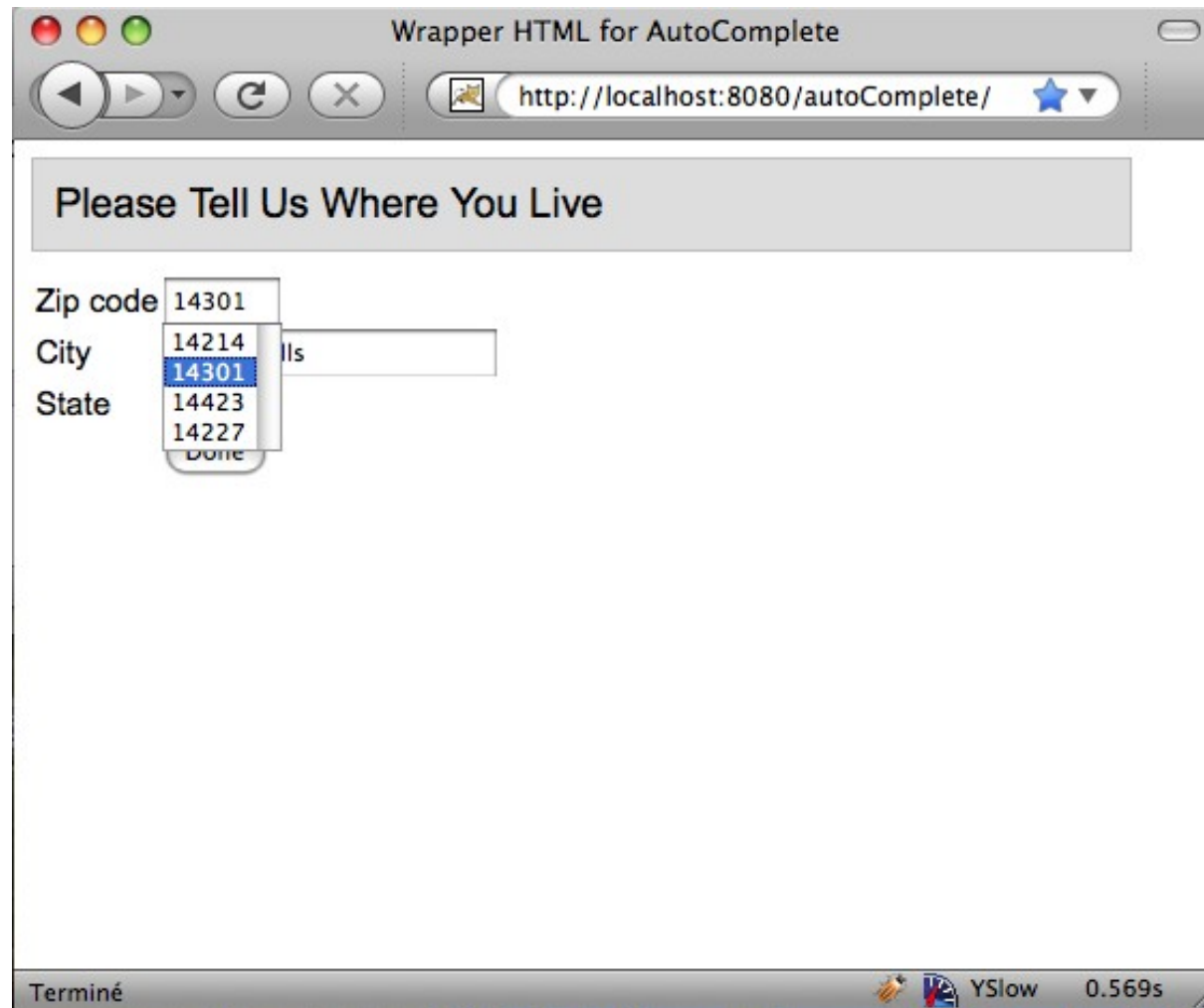
A low-level component

```
public class Message extends Widget {  
    public Message() {  
        setElement(DOM.createDIV());  
    }  
    public void setText(String text) {  
        DOM.setInnerText(getElement(), text);  
    }  
    ...  
}
```


A widget subclass

```
public class Viewport extends AbsolutePanel {  
    ...  
}
```

Demonstration



Next...

- > Custom components
- > Drag and drop
- > Integrating JavaScript
- > RPCs and database access
- > Finale

A drag panel

```
public class DragPanel extends AbsolutePanel {  
    public void add(Widget widget) {  
        super.add(wrapWidget(widget));  
    }  
  
    protected Panel wrapWidget(Widget widget) {  
        FocusPanel fp = new FocusPanel();  
        fp.add(widget);  
        fp.addMouseListener(new DndMouseListener());  
        return fp;  
    }  
}
```

On mouse down

```
public void onMouseDown(Widget draggable, int x, int y) {  
    xoffset = x;  
    yoffset = y;  
    dragging = true;  
  
    DOM.setCapture(draggable.getElement());  
}
```

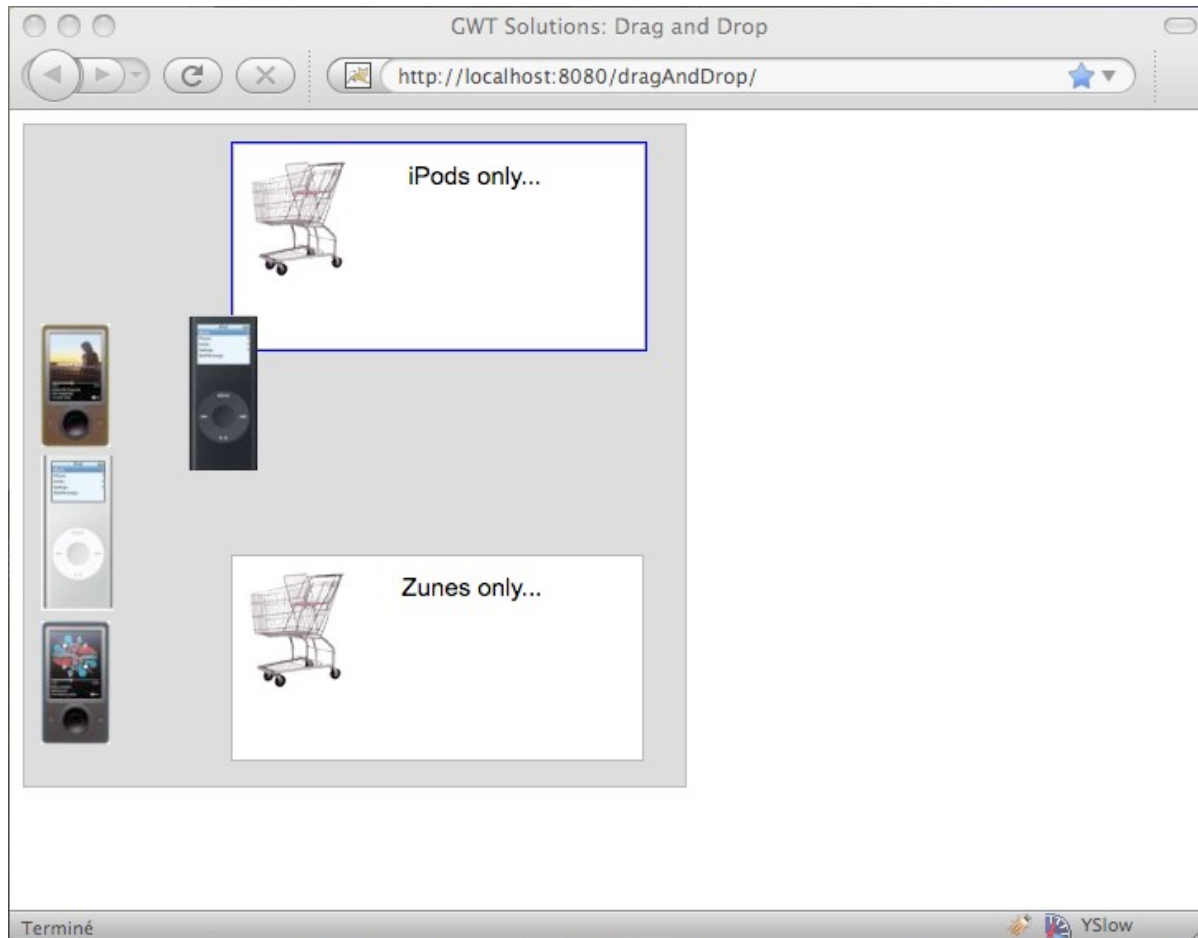
On mouse move

```
public void onMouseMove(Widget draggable, int x, int y) {  
    if (dragging) {  
        AbsolutePanel p = (AbsolutePanel)draggable.getParent();  
  
        p.setWidgetPosition(draggable,  
            x + p.getWidgetLeft(draggable) - xoffset,  
            y + p.getWidgetTop(draggable) - yoffset);  
    }  
}
```

On mouse up

```
public void onMouseUp(Widget draggable, int x, int y) {  
    dragging = false;  
    DOM.releaseCapture(draggable.getElement());  
}
```

Demonstration



Next...

- > Custom components
- > Drag and drop
- > **RPCs and database access**
- > Finale

Define two interfaces

```
public interface AddressService extends RemoteService {
    public List<Address> getAddresses();
    public void deleteAddress(Address saveMe);
    public void saveAddress(Address saveMe);
    public void updateAddress(Address updateMe);
}
```

-

```
public interface AddressServiceAsync {
    public void getAddresses(AsyncCallback<List<Address>> callback);
    public void deleteAddress(Address saveMe,
    public void saveAddress(Address saveMe,
    public void updateAddress(Address updateMe,
}
```

```
:AsyncCallback<List<Address>> callback);
```

-

- AsyncCallback<List<Address>> callback);
- AsyncCallback<List<Address>> callback);

Implement a servlet

```
public class AddressServiceImpl
    extends RemoteServiceServlet implements AddressService {

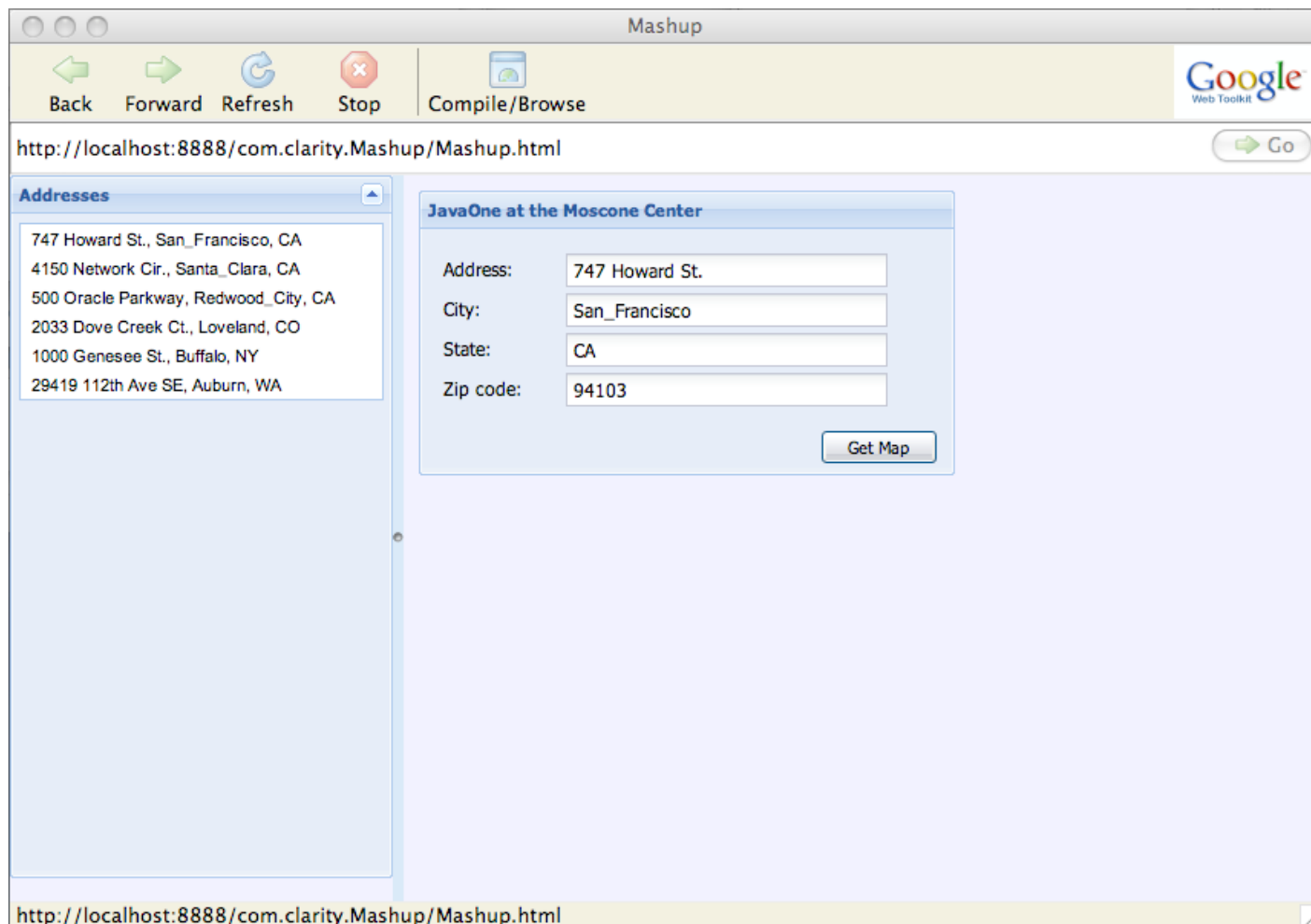
    public void saveAddress(Address saveMe) {
        try {
            Session session = HibernateUtil.getSessionFactory()
                .getCurrentSession();
            session.beginTransaction();
            session.save(saveMe);
            session.getTransaction().commit();
        } catch (HibernateException e) {
            e.printStackTrace();
        }
    }

    // More Hibernate CRUD code
}
```

Use the service

```
addressService.getAddresses(  
    new AsyncCallback<List<Address>>() {  
        public void onSuccess(List<Address> addresses) {  
            createUI(addresses);  
        }  
  
        public void onFailure(Throwable throwable) {  
            System.out.println(throwable.getMessage());  
        }  
    }  
);
```

Demonstration



Next...

- > Custom components
- > Drag and drop
- > Integrating JavaScript
- > RPCs and database access
- > **Finale**

Third party libraries

gwt-dnd
Drag-and-Drop Library for Google-Web-Toolkit (GWT)

Project Home | Downloads | Wiki | Issues | Source

Summary

Library providing easy to use drag-and-drop capabilities to Google Web Toolkit (GWT).

Questions?

If you have questions, please post them on <http://groups.google.com/gwt-dnd> or answer them as best as possible. Using the forum means that others can get. It is always the fastest way to get an answer to a new question.

Is your project using drag and drop?

I'd like to know if you're using gwt-dnd on your project, and how useful email at fred@allen-sauer.com.

Getting started with your own drag-and-drop

Read the wiki here: <http://code.google.com/p/gwt-dnd/wiki/GettingStarted>

Working examples

If a picture is worth a thousand words, then maybe a [working demo](#) is worth a thousand words.

GWT-Ext

Home | License | Wiki | Forum | Download

GWT-Ext is a powerful widget library that provides rich widgets like Grid with Drag and Drop support, highly customizable ComboBoxes, Tab Panels, Menus & Toolbars, box with a powerful and easy to use API. It uses GWT and Ext.

GWT-Ext 2.0.5 has been released. Grab the distribution from the Downloads (1.5.2), Firefox3 and Chrome.

Note that GWT-Ext only supports Ext 2.0.2 that has a LGPL license option. Check out the [wiki](#) for setup and install instructions.

Showcase Explorer

- Tree
- Editable Tree
- Checkbox Tree
- Sort & Multi-Select
- Tree to Tree Drag & Drop
- Grid - Tree Drag & Drop
- Buttons
- Layouts
- Panels
- Windows
- Combobox
- Toolbar & Menu Examples
- Grids
- Forms
- Tab Panels
- Combination Samples
- Drag & Drop
- Miscellaneous
- Data View
- Progress Bar
- Color Picker
- Date Picker
- Tooltips
- Mask Demo
- User Contributions

Welcome to GWT-Ext 2.0

Complex Layout

Linked ComboBox

Basic Array

Property Grid

Editable Grid

Grid with Lo...

Grid with Re...

Field

GWT Widget Library

Dev Forum | GWT-SL Forum | GWT Home | SourceForge

Navigation

- Download
- GWT-SL Docs
- GWT-SL Forum
- GWT-SL JavaDocs
- GWT-WL JavaDocs
- GWT-WL Source Ref
- Request Tracker
- Subversion
- Polls

Articles

- Calculator Widgets
- Coding SVG with GWT
- GWT-AJAX Jump Start
- Packaging Components
- Pagination Tools
- RPC Example
- Using the GWTHandler
- Using the GWTSpringController

Demonstrations

- Drawing Demo
- SVG Example
- Calculator Panels

GWT Server Library (GWT-SL) 0.1.5b Released

Submitted by george on Mon, 2008-12-29 14:55.

Dear All,

I am happy to announce release 0.1.5b of the SL which is a maintenance release. The comprehensive change-log:

- further work on stream protocol
- further fix for 2035066 - thanks to Daniel Spangler
- hibernate4gwt replaced with gilead
- added transaction support to hb4gwt example
- upgraded dependencies:
 - gwt 1.5.3
 - spring 2.5.6
 - hibernate 3.3.1
 - junit 4.4
 - log4j 1.2.15
 - hibernate4gwt replaced with gilead 1.2.029
 - commons logging 1.1.1
 - aspectj 1.6.2
 - commons collections 3.2
 - added javassist 3.4GA, new dependency for hibernate
 - added slf4j 1.5.0, new dependency for hibernate
- new ant target "all" - alias of "package"
- eased dependencies in tests to work with SL interfaces

GWT Server Library (GWT-SL) 0.1.5a Released

Submitted by george on Mon, 2008-09-08 21:36.

Dear All,

I am happy to announce release 0.1.5a of the SL which is mainly a compatibility and maintenance release. The comprehensive change-log:

- Fixed example of GWTRPCServiceExporter in documentation, thanks to Martin Konzett for spotting
- Updated dependencies to Hibernate4gwt 1.1b, thanks to Bruno Marchesson for hints on the HB4GWTServiceExporter

Syndicate

Poll

What is your favorite part of the GWT-WL/SL?

HTML element wrappers 7%

JavaScript library wrappers 7%

SVG support (currently in hiatus) 14%

UI Components (Calendar, Lightbox, etc) 30%

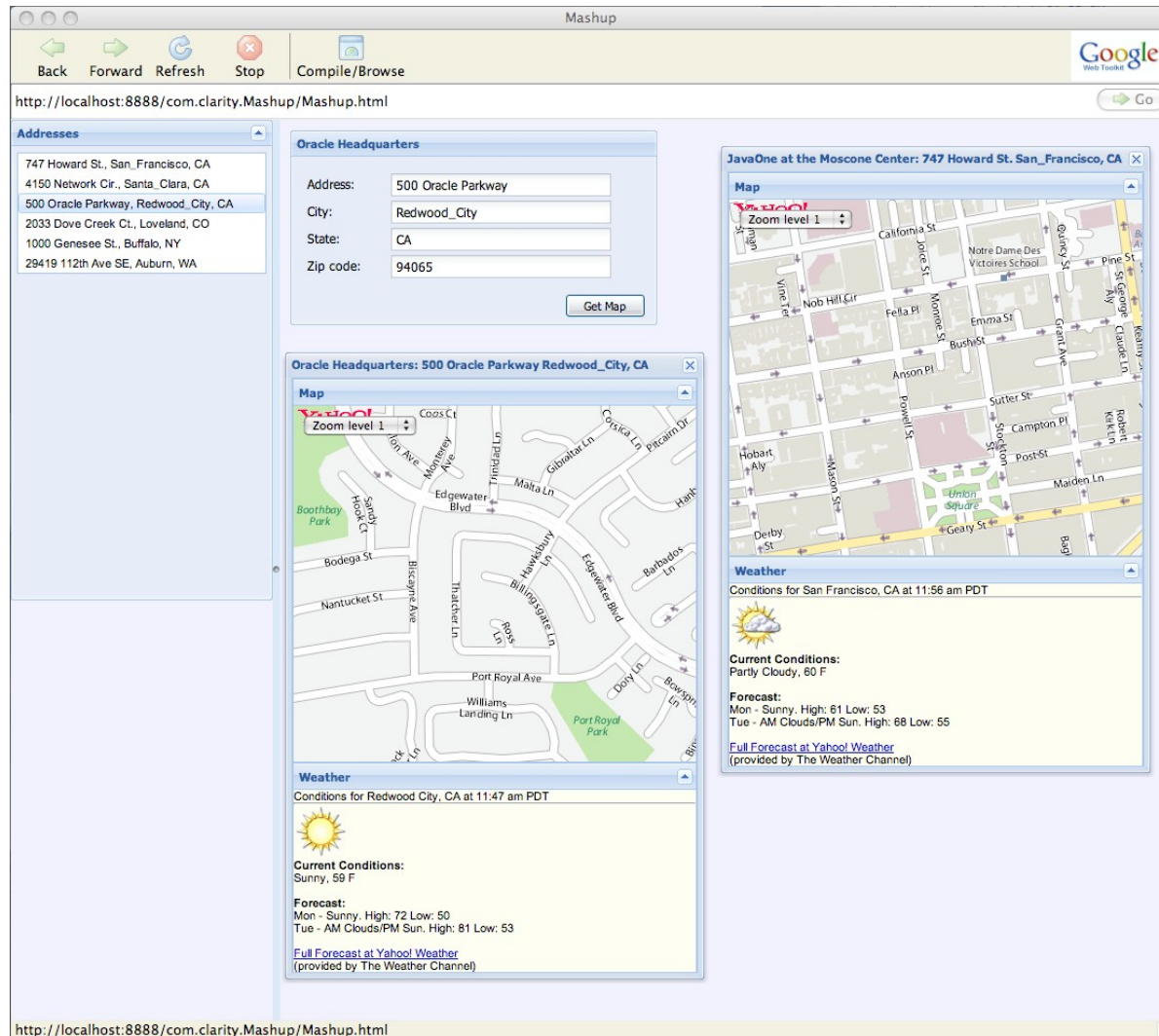
Utilities (WindowUtils, NumberFormat, etc) 3%

Server Library (Spring support) 39%

Total votes: 464

[older polls](#)

Demonstration



Mashup

Back Forward Refresh Stop Compile/Browse

http://localhost:8888/com.clarity.Mashup/Mashup.html

Google

Go

Addresses

- 747 Howard St., San Francisco, CA
- 4150 Network Cir., Santa Clara, CA
- 500 Oracle Parkway, Redwood City, CA
- 2033 Dove Creek Ct., Loveland, CO
- 1000 Genesee St., Buffalo, NY
- 29419 112th Ave SE, Auburn, WA

Oracle Headquarters

Address: 500 Oracle Parkway

City: Redwood_City

State: CA

Zip code: 94065

Get Map

Oracle Headquarters: 500 Oracle Parkway Redwood_City, CA

Map

Zoom level 1

Boothbay Park

Edgewater Blvd

Port Royal Ave

Williams Landing Ln

Port Royal Park

Weather

Conditions for Redwood City, CA at 11:47 am PDT

Sunny, 59 F

Forecast:

Mon - Sunny, High: 72 Low: 50

Tue - AM Clouds/PM Sun. High: 81 Low: 53

[Full Forecast at Yahoo! Weather](#)
(provided by The Weather Channel)

JavaOne at the Moscone Center: 747 Howard St. San Francisco, CA

Map

Zoom level 1

California St

Notre Dame Des Victoires School

Union Square

Weather

Conditions for San Francisco, CA at 11:56 am PDT

Partly Cloudy, 60 F

Forecast:

Mon - Sunny, High: 61 Low: 53

Tue - AM Clouds/PM Sun. High: 68 Low: 55

[Full Forecast at Yahoo! Weather](#)
(provided by The Weather Channel)

http://localhost:8888/com.clarity.Mashup/Mashup.html



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Thank You

David Geary
corewebdevelopment.com