Portals, Portlets & Liferay Platform

- **Repetition:**
- Web Applications and Model View Controller (MVC) Design Pattern
- Web Applications Frameworks in J2EE world
  - Struts
  - Spring
  - Hibernate
  - Data Service
- Java Server Pages (JSF) and AJAX further reduce code and improve interaction

- **Starting Liferay Theory and Practice:**
- Liferay SOA Platform
  - Plugins SDK and Extension Environment
  - Portal and Portlets, JSR 168 & 286, Portlet Life Cycle
Current Enterprise Web Applications with Struts and other Frameworks

Client Request:
Service= “mail”
Action= “get”
Type= “wml”

ASCX or Servlet Controller

ASP/JSP View
Multiple Layers:
wml html vxml etc.

Model Components: Service Beans or Actions

EJBs

DataService Frameworks

Struts

Spring

Hibernate

AJAX

MVC Design Pattern (J2EE/ASP.Net)
Multiple Presentation Factories
(HTML/WML/etc.)

APP Server

Persistent Data
Services

- Facility management with Geo Info System
- Instant Share Voice and Video Service
- Distributed Knowledge Framework
- Partner Integration Framework
- Document Handling Services
- Business Data Integrator
- Remote Control Service

Integration with other systems

Service Registry Centers

XML

Data and Service Valuation

Natural Language Interpreter

Knowledge Engine

XML Rules Descriptor

VoiceXML/SALT/SRS Clients
WinCE/TabletPC/J2SE/J2ME/Applets/Apps/JWS

Wireless or PDA Clients: 802.11; Bluetooth; WiFi; etc

Enterprises Services and Presentation Layers
Common Gateway Interface (CGI)
A Mix of Presentation and Business Logics
With Generous Use of Resources

Client(s)
Web Browser
Http Post/Get

Submit Form
Request
Display Page
Response

Web Server
IIS
Apache
Etc.

Database

On the server side
VB/Perl/Java/exe Program that performs business logics, works with data, and generates HTML

Print “<html>”

Each client request fires up a program (process) on the server side that performs business logic and sends a dynamic HTML page back to the client.
Interrelated JSP pages provide presentation, control, and business processing with scriplets and embedded Java beans encouraging “spaghetti” code in JSP.
MVC Model 2 - Better Separation of Business and Presentation Layers with Struts Action

Servlet and JSP work together. Servlet and related classes, like Struts Action, control application logic and interact with services while JSP forms the presentation...
Struts Frameworks

- Extends Servlet-Controller in a function-specific *Action*

- Uses *struts-config.xml file* to define all function-actions

- Collects the data from the web forms into specific *ActionForm* classes that keep data state between requests

- Maps each *Action* to its *ActionForm* in the *struts-config.xml*

- Introduces a powerful set of tag libraries

- Adds processing layers and reduces coding
**Struts/Portal – DataService**

**Struts**
- MVC
- Action
- ActionForm
- Custom Tags

**DataService**
- DataAction extends StrutsAction
- PortletDataAction extends StrutsPortlet
- Takes care of connections, and data types
- No ORM, You master SQL and store statements in files in the WEB-INF/sql - folder

**Persistence Layer**
- Easy, no configuration files

**Self-Testing & Diagnostics Layer**
- Service descriptions, rules & scenarios

**Portal/Portlets**
- JSR 168
- JSR 286
- Render
- ProcessAction

**DB**
Web Applications with Data Service Frameworks

Data Service Frameworks as complementary for Struts and Portlets:

Struts: DataAction extends StrutsAction

Portlets: PortletDataAction extends StrutsPortlet

Along with DataService provide data access, diagnostics and common semantics
Java Server Faces (JSF): a New Standard for Java-based Web Applications

1. Java APIs to represent UI components, manage state, handle events, and validate input (3 types of actions)

2. Two JSP custom tag libraries:
   - For (UI) components within a JSP page, and
   - For wiring components to server-side objects.
JSF is an Official Standard in Java-based Web Applications

• A single, standard, and productive way to use Java to build HTML-based Web applications
• Designed not just for coding gurus, but also for other roles:
  • - Web page authors,
  • - Application developers,
  • - Component writers, and tools vendors
• Examples of vendor offerings:
  • JBoss Portal with JSF and AJAX (free)
  • LifeRay Portal with JSF and AJAX (free)
  • WebLogic Portal with JSF and AJAX (~ $50k per server)
  • IBM Sphere Portal with JSF and AJAX (~ $50k per server)
Web Portal

User Management  Content Management  Search

Portal and Portlet Management

Portal

Portlet Container
Portlet Page  Portlet Page

Portlet Container
Portlet Page  Portlet Page

Portlets

Benefits:
- Pre-built container and components
- The standard way to integrate new services

http://javaschool.com/about/publications.html
Liferay Portal – SOA platform

Service Descriptions
Rules Repository
Data Access & Reconsiliation

Complementary Semantics (DataService) Frameworks: Data, Services, Rules & Scenarios
Basic Components

- Liferay Platform Source & Library
- Tomcat 6 Application Server
- MySQL DB
- Development Environment: Eclipse & Ant
Plugins SDK and Extension Environment

Plugins SDK

EXT Environment
EXT Environment
Portal and Portlets
JSR 286
(Java Specification Request)

A Portlet is an application that presents a fragment of a portal page.

A Portlet Container assembles the portlets into a portal page.
Portlet Life-Cycle
Portlet Life Details

1: Action
1.1: processAction
2: processAction
3: processAction
4: render
5: render
6: render

processAction must be finished before the render phase starts.
render requests are fired in no specific order. They may be fired one after the other or in parallel.
Summary/Repetition
Web Application Frameworks

• 1 No MVC = CGI
  Common Gateway Interface (CGI)
  A Mix of Presentation and Business Logics
  With Generous Use of Resources

• 2 ?

• 3 ?

• 4 ?

• 5 ?

Each client request fires up a program (process) on the server side that performs business logic and sends a dynamic HTML page back to the client.

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Summary/Repetition

Web Application Frameworks

- 1 No MVC = CGI

- 2 MVC Model 1 – Page-Centric Architecture

- 3 Page-Centric Architecture

- 4

- 5

Interrelated JSP pages provide presentation, control, and business processing with scriptlets and embedded Java beans encouraging "spaghetti" code in JSP.
Summary/Repetition

Web Application Frameworks

• 1 No MVC = CGI

• 2 MVC Model 1 – Page-Centric Architecture

• 3 MVC Model 2 - Better Separation of Business and Presentation Layers

• 4 ?

• 5 ?
Portals, Portlets & Liferay Platform

Summary

• The main Features of the Liferay SOA Platform?

• What is the difference between Plugins SDK and Extension Environment

• What is JSR?

• Portal and Portlets
  – The commonalities and the difference between Portlet and Servlet
  – Portlet Life Cycle