



# 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

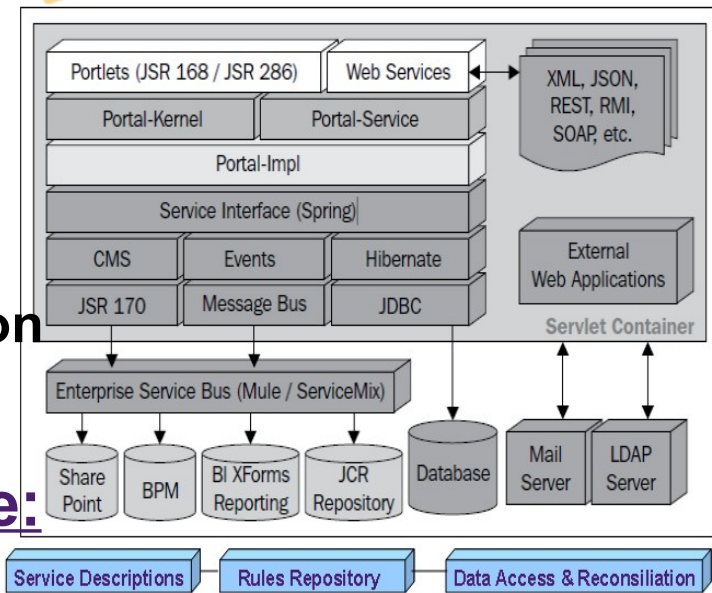
- Java Server Pages (JSP) and AJAX further reduce code and improve interaction

## Starting Liferay Theory and Practice:

### Liferay SOA Platform

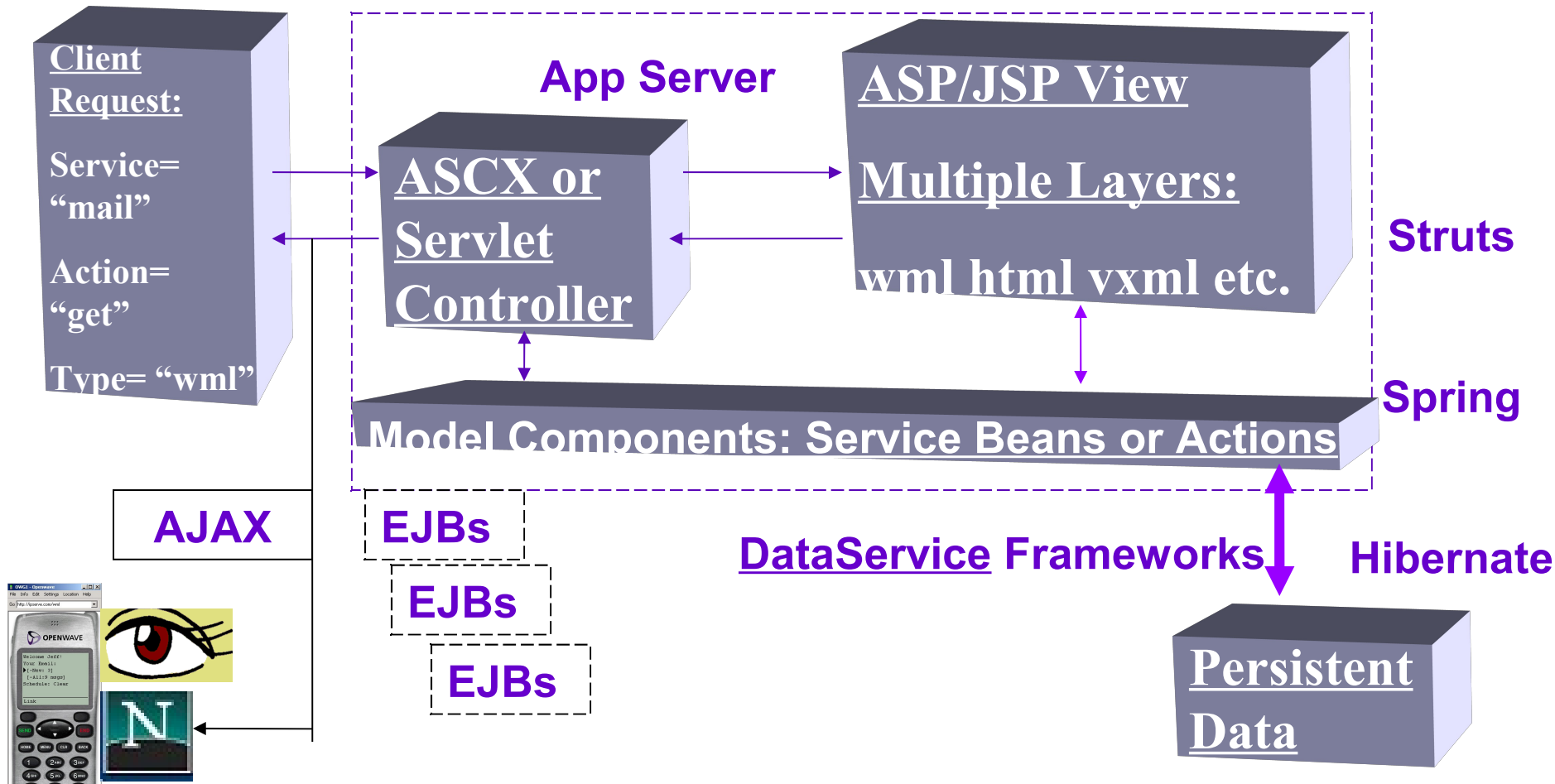
- Plugins SDK and Extension Environment
- Portal and Portlets, JSR 168 & 286, Portlet Life Cycle

## Liferay Portal – SOA platform



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

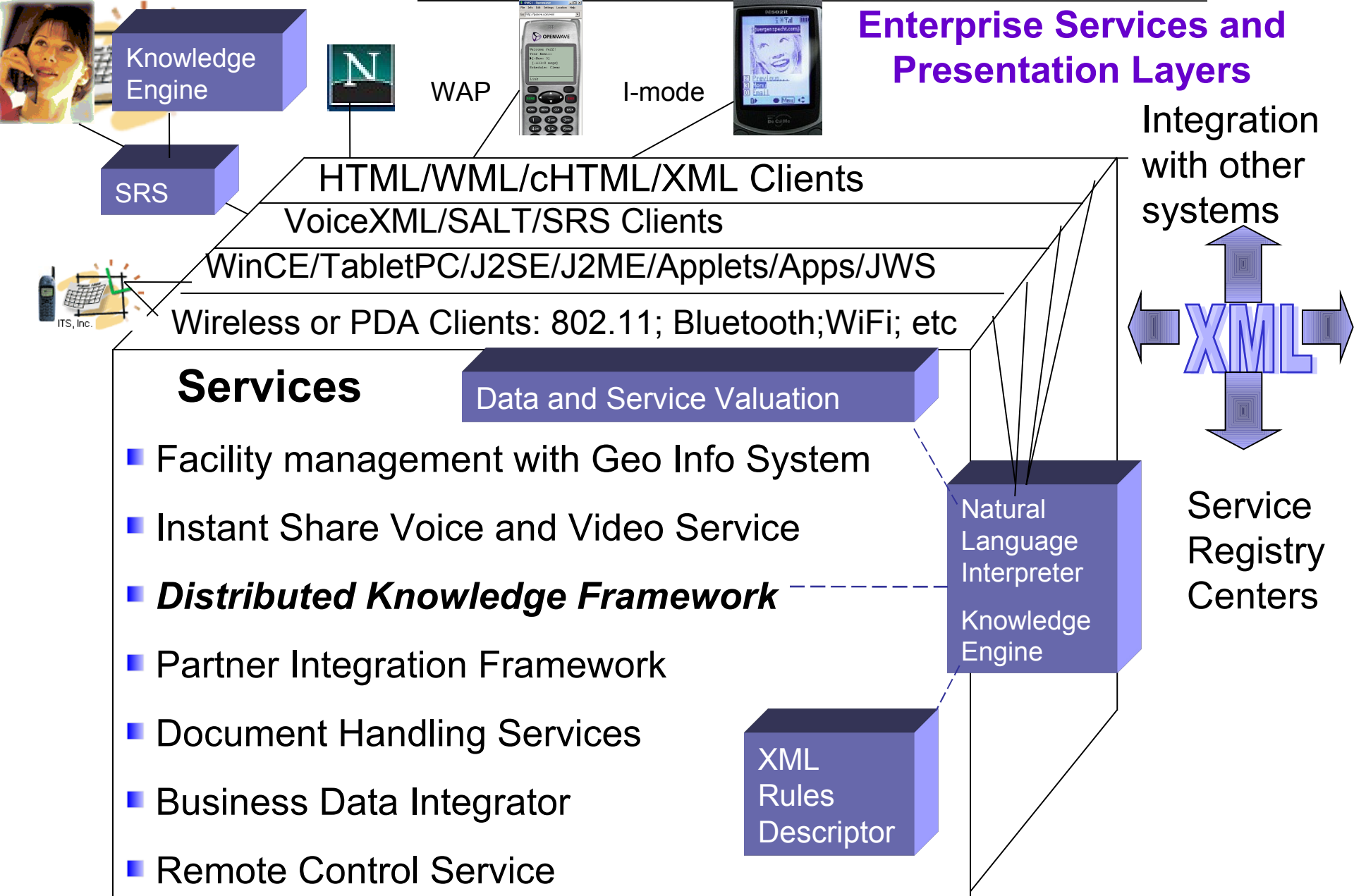
# Current Enterprise Web Applications with Struts and other Frameworks



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



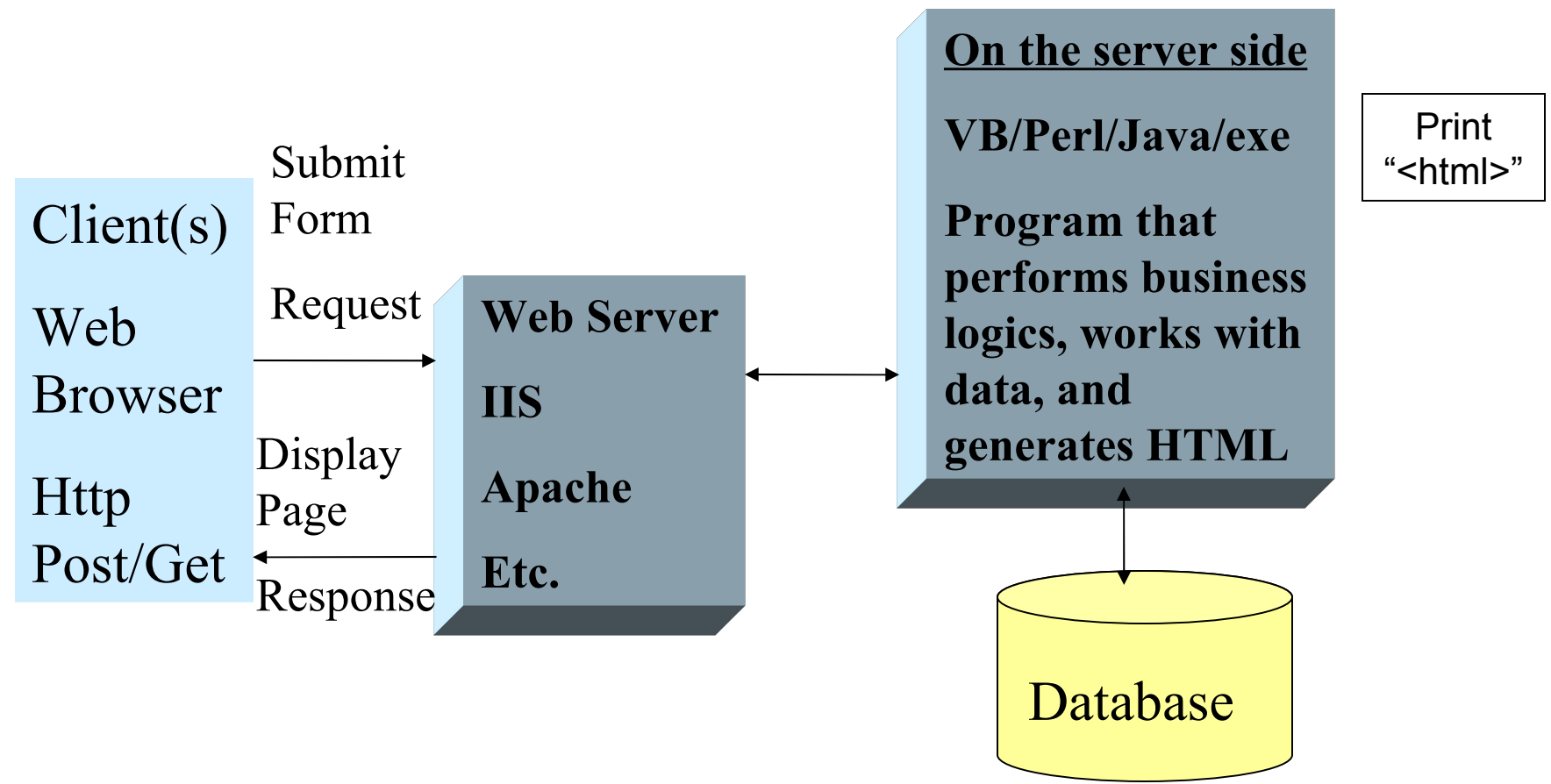
# Enterprise Services and Presentation Layers



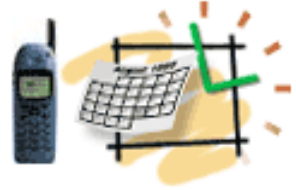


# Common Gateway Interface (CGI)

A Mix of Presentation and Business Logics  
With Generous Use of Resources

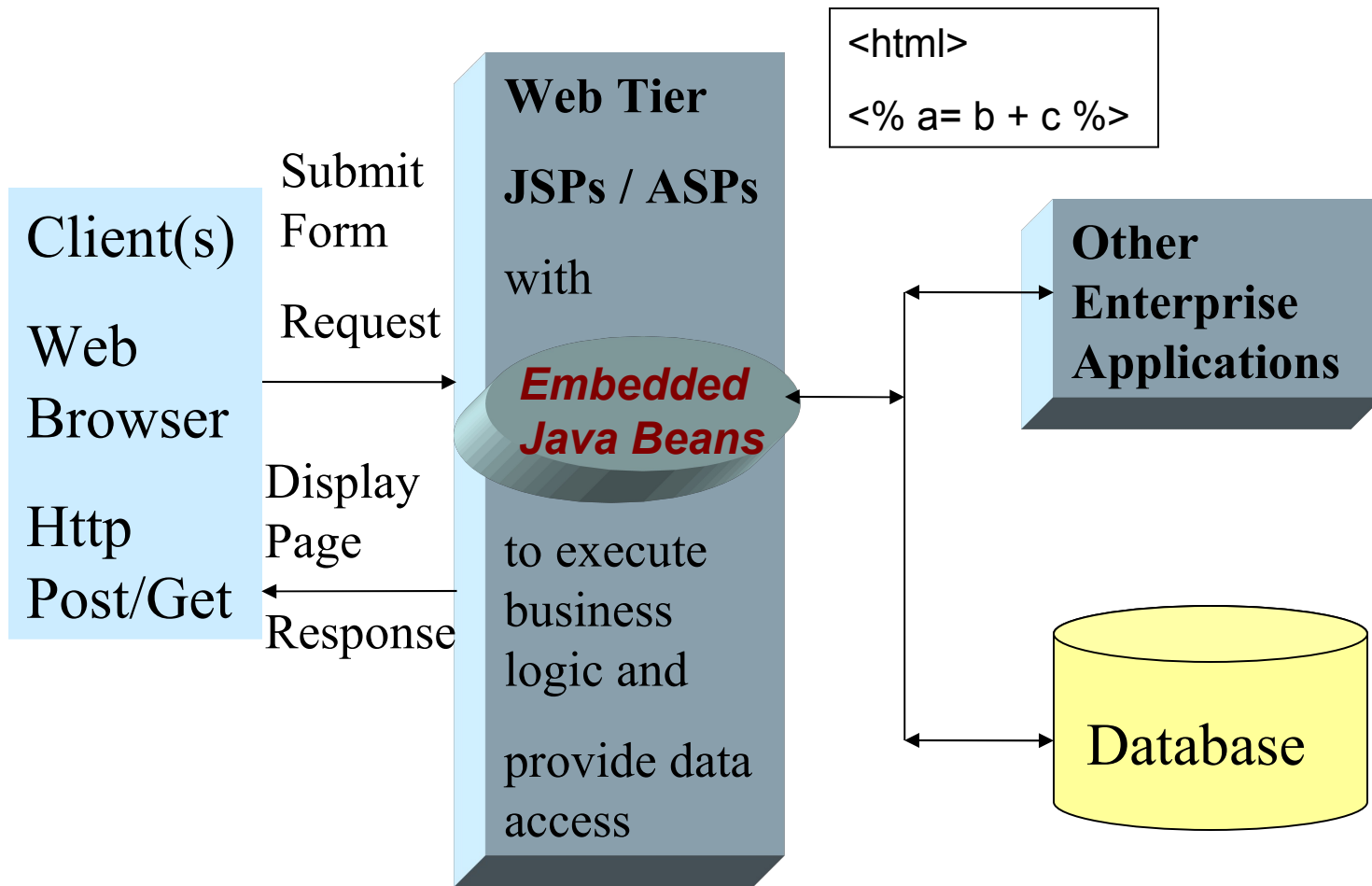


Each client request fires up a program (process) on the server side that performs business logic and sends a dynamic HTML page back to the client



# MVC Model 1

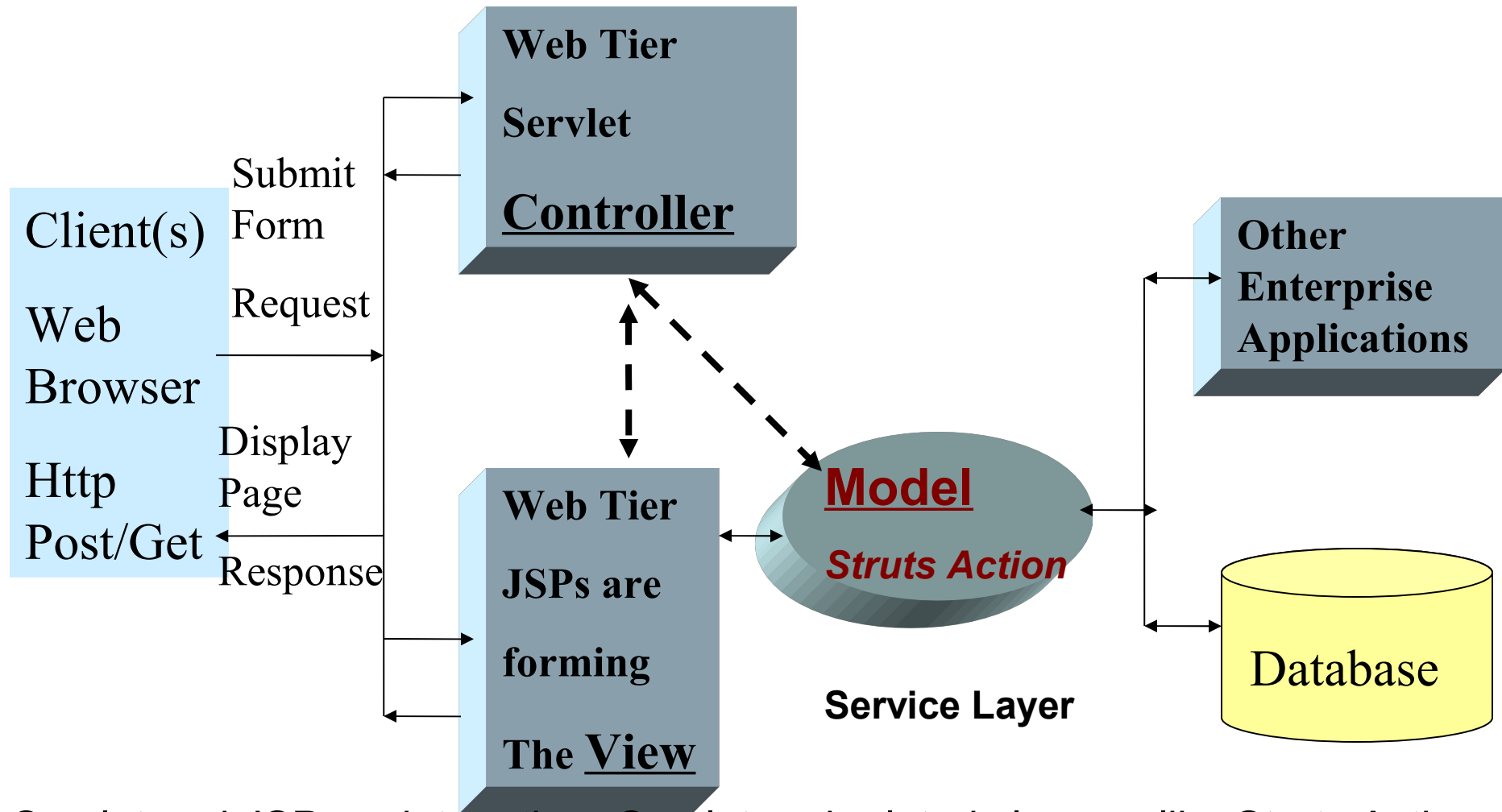
## Page-Centric Architecture



Interrelated JSP pages provide presentation, control, and business processing with scriptlets 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

*Portal/Portlets*

JSR 168

JSR 286

Render

ProcessAction

*DataService*

DataAction extends StrutsAction

PortletDataAction extends StrutsPortlet

Takes care of connections, and data types

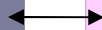
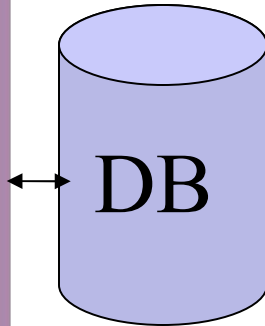
No ORM, You master SQL and store statements in files in the WEB-INF/sql - folder

Persistence Layer

Easy, no configuration files

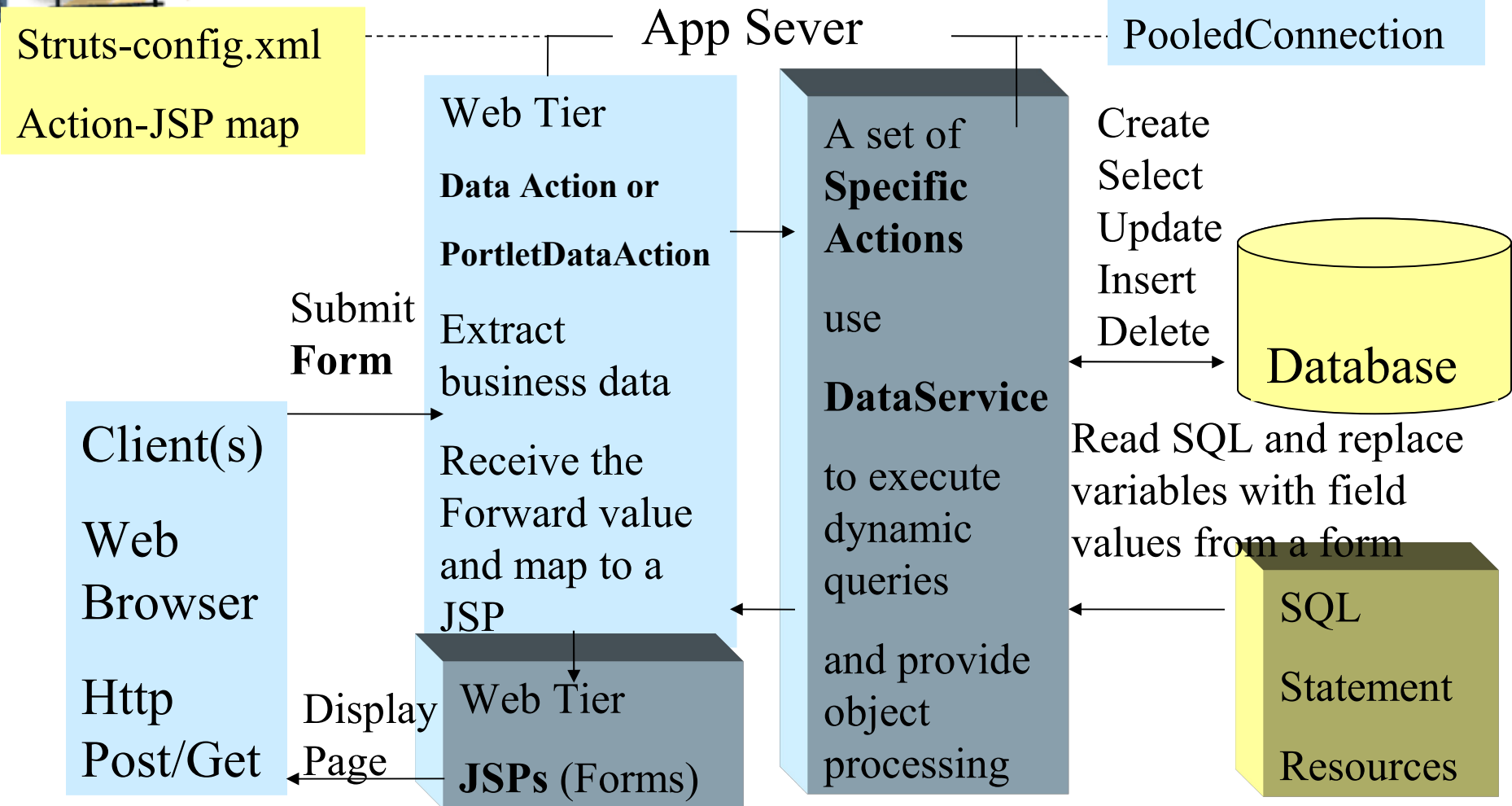
Self-Testing & Diagnostics Layer

Service descriptions, rules & scenarios





# Web Applications with Data Service Frameworks



**Data Service Frameworks as complementary for Struts and Portlets:**

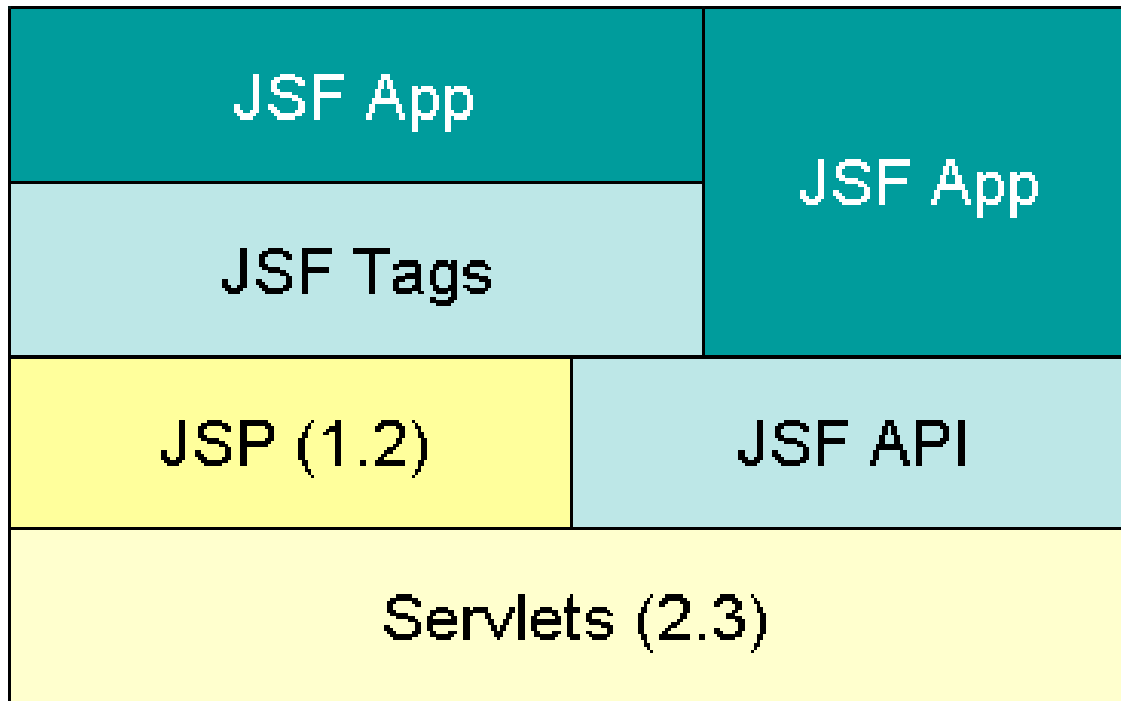
**Struts: DataAction extends StrutsAction**

**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)**



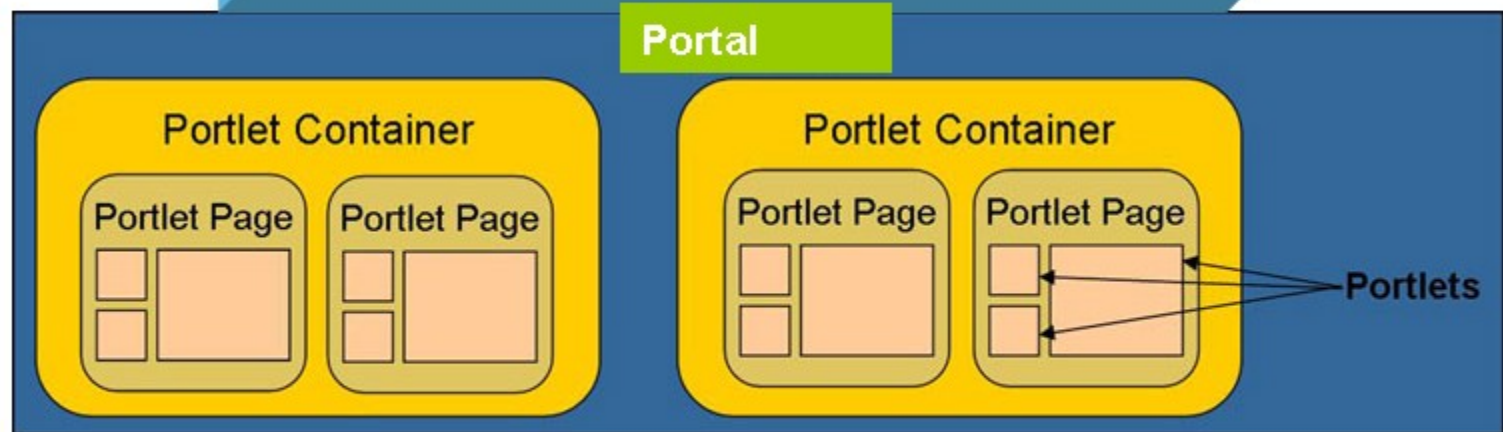
# Web Portal

User Management

Content Management

Search

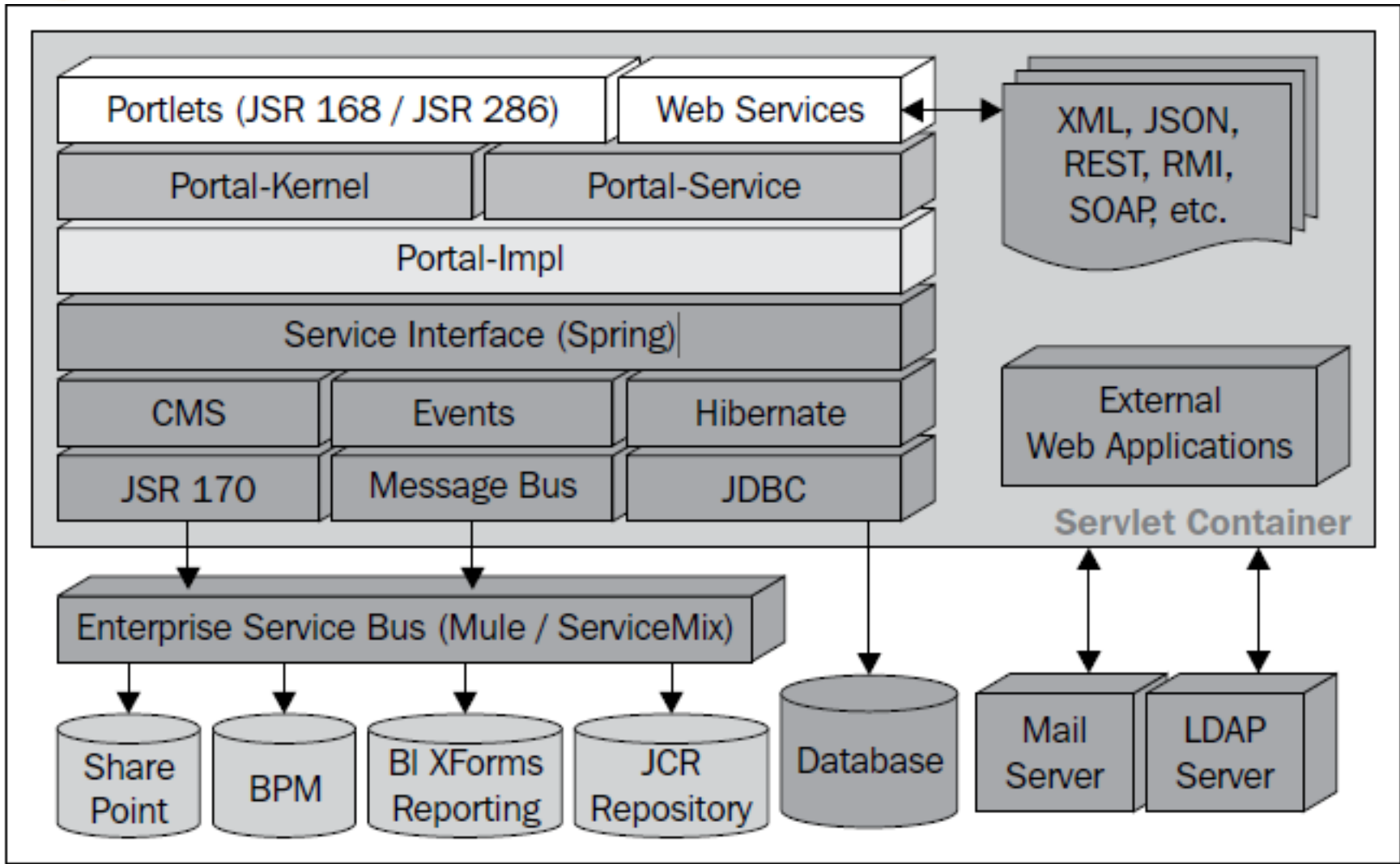
## Portal and Portlet Management



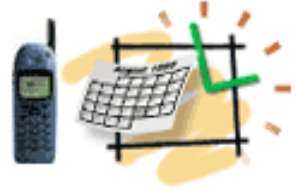
### Benefits:

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

# Liferay Portal – SOA platform

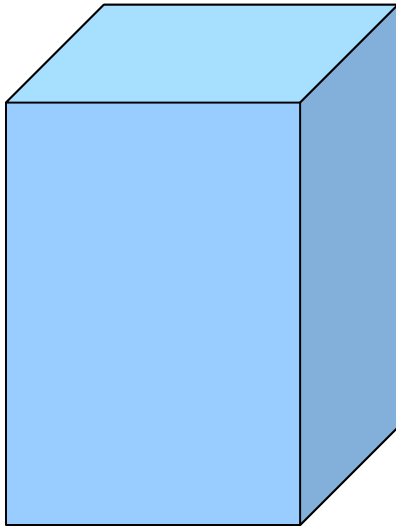


Complementary Semantics (DataService) Frameworks: Data, Services, Rules & Scenarios

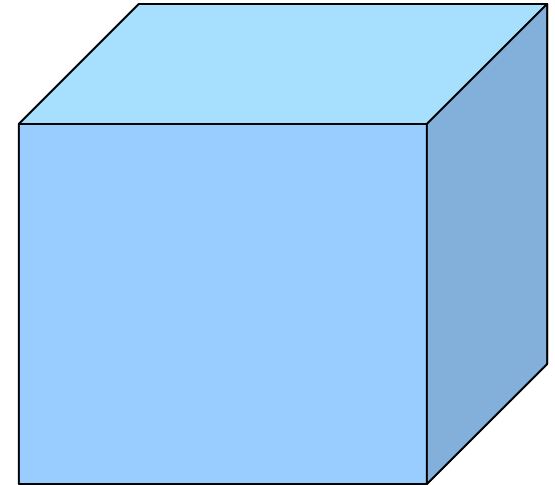


# Basic Components

Liferay Platform  
Source & Library



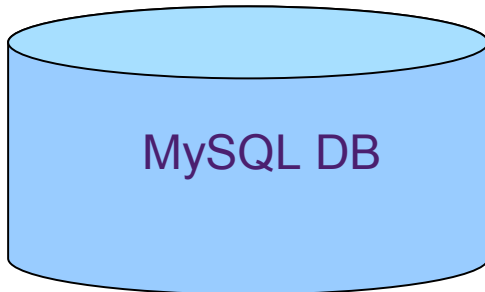
Tomcat 6  
Application Server

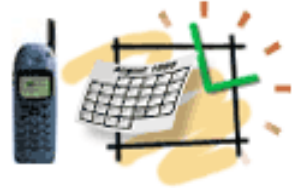


Development  
Environment:  
Eclipse & Ant



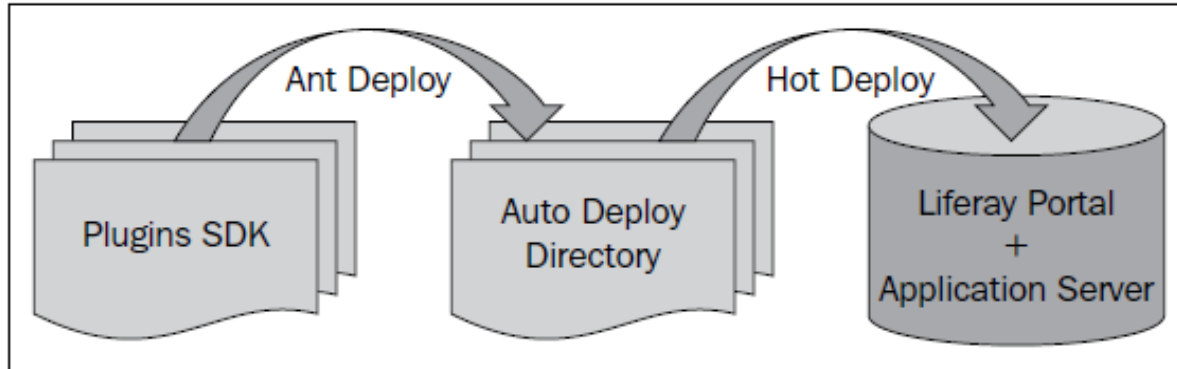
MySQL DB



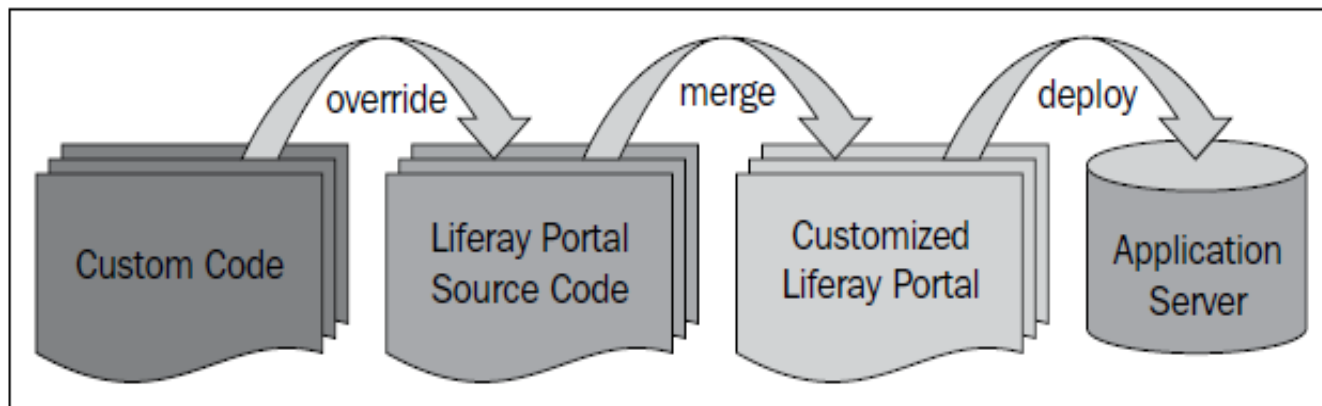


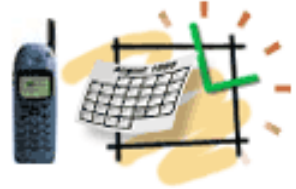
# Plugins SDK and Extension Environment

## Plugins SDK



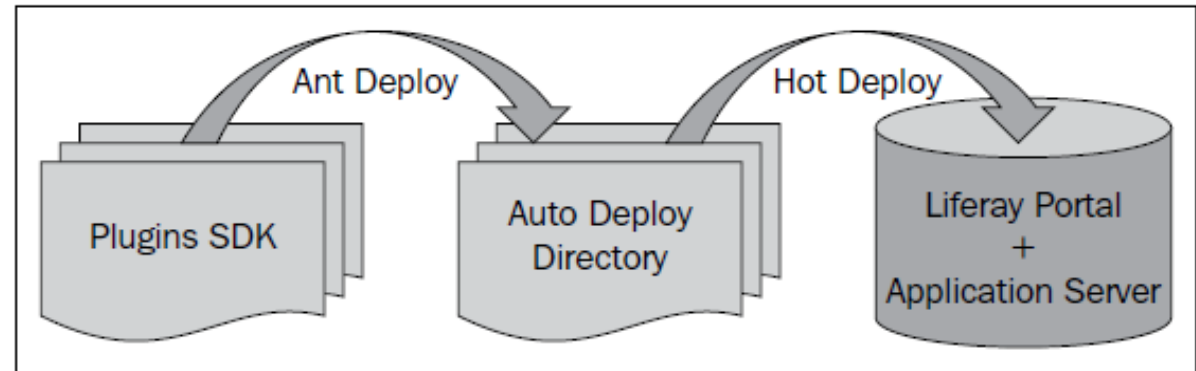
## EXT Environment





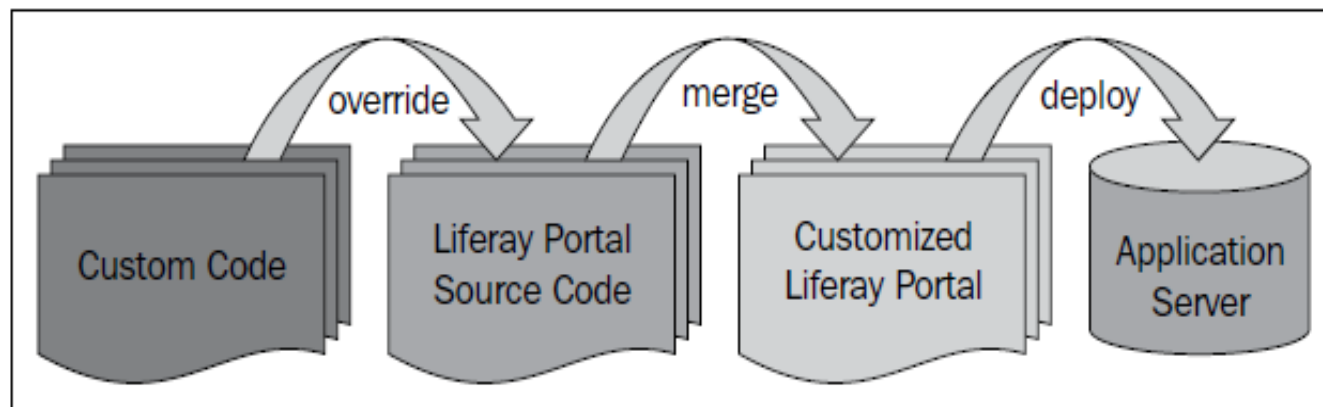
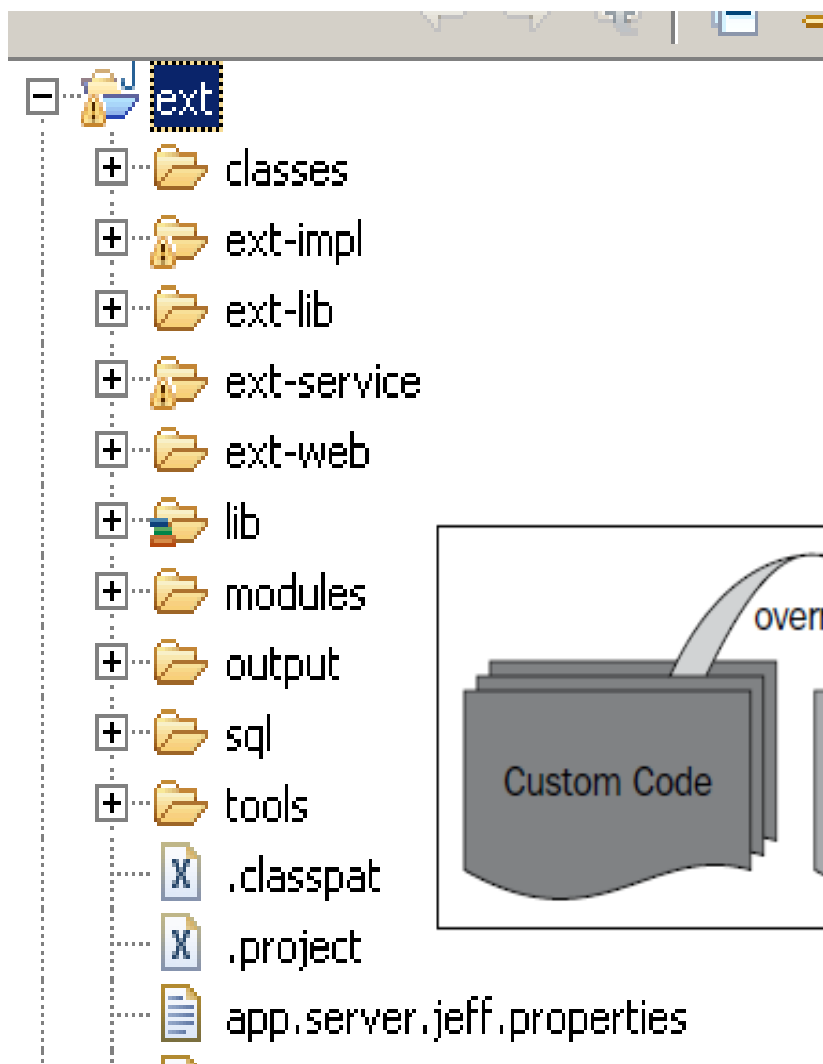
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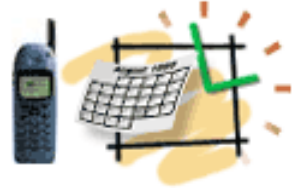
- sdk
  - clients
  - dist
  - hooks
  - + layouttp
  - lib
  - misc
  - portlets
    - + bcd-portlet
    - + dao-portlet
    - + newportlet-portlet
    - + osicdao-portlet
    - + portlet.zip
  - + themes
  - + tools





# EXT Environment





# Portal and Portlets

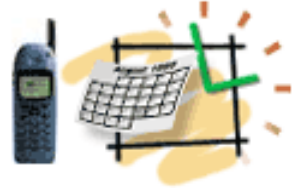
## JSR 286

### (Java Specification Request)

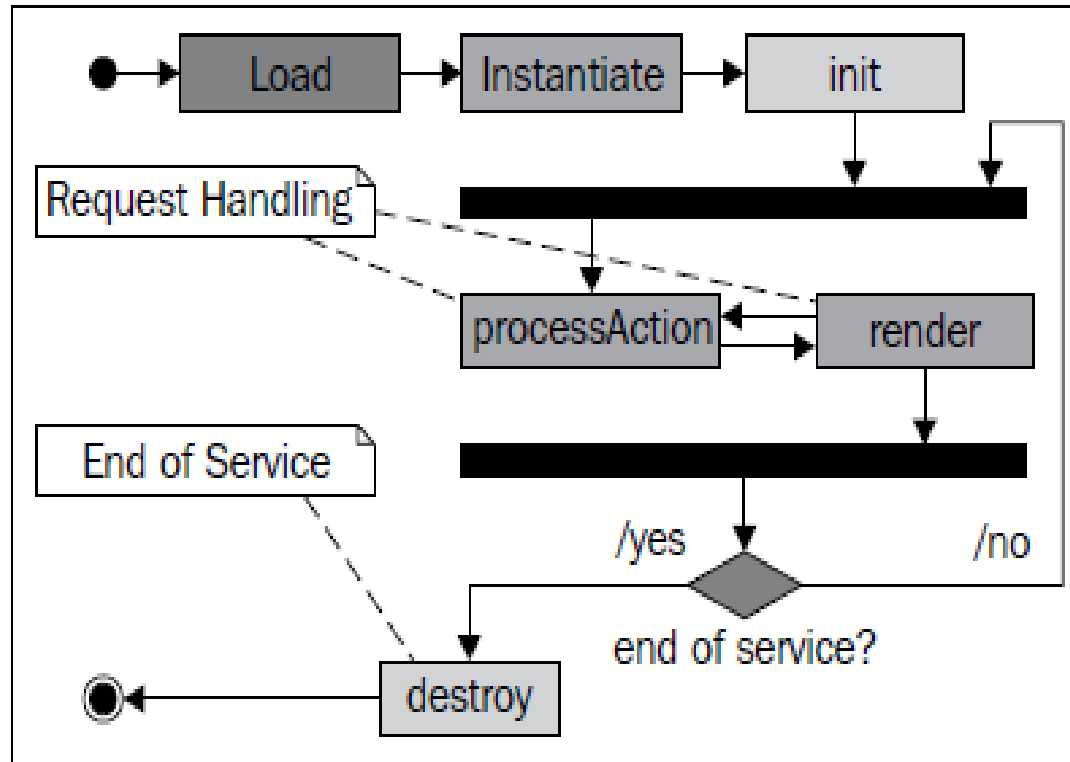


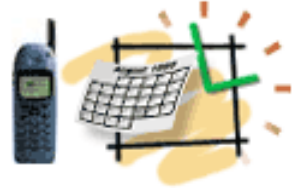
A Portlet is an application that presents a fragment of a portal page

A Portlet Container assembles the portlets into a portal page

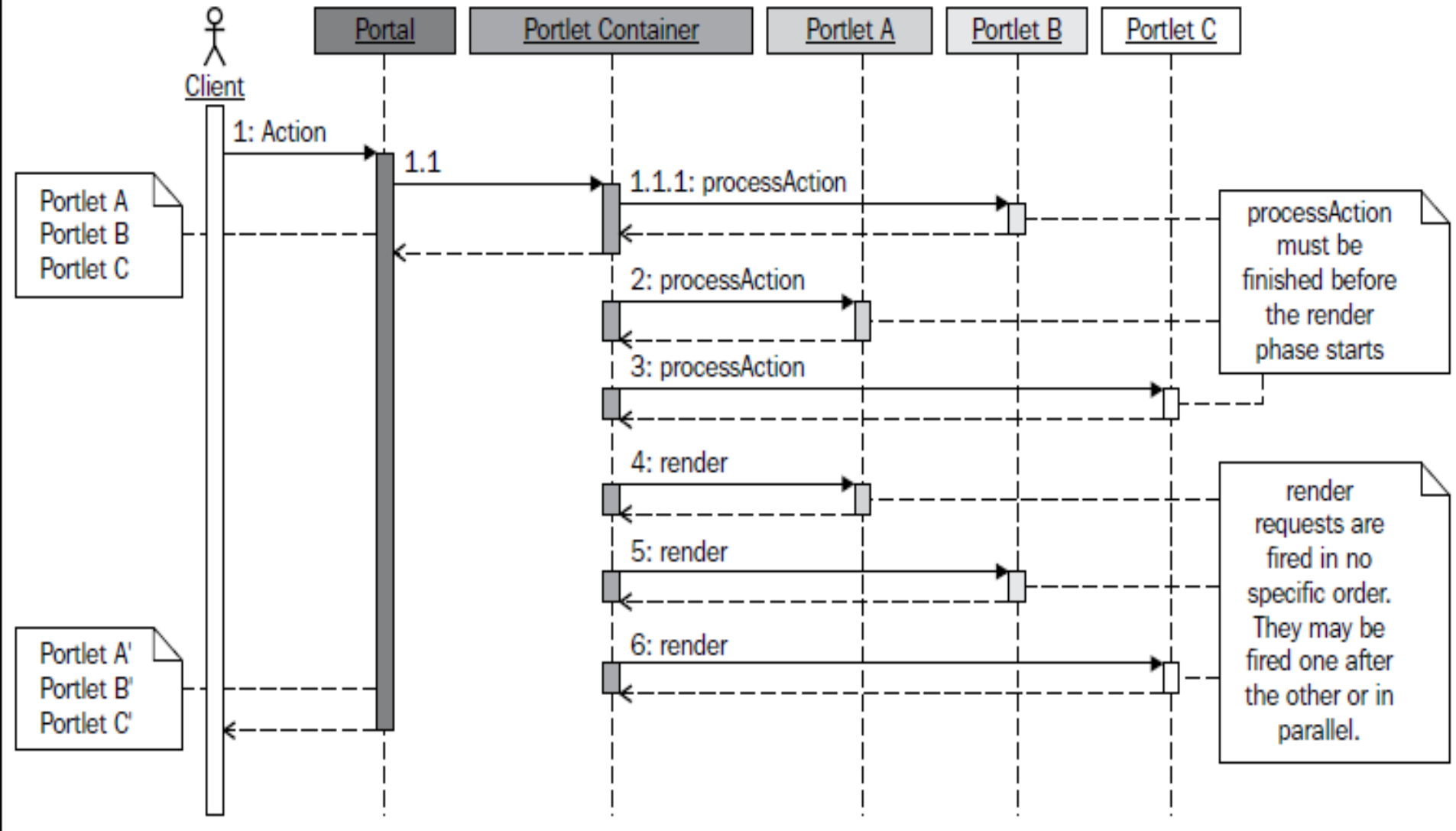


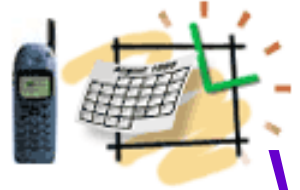
# Portlet Life-Cycle





# Portlet Life Details

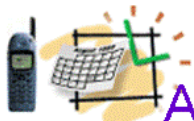




# Summary/Repetition

## Web Application Frameworks

- **1 No MVC = CGI**



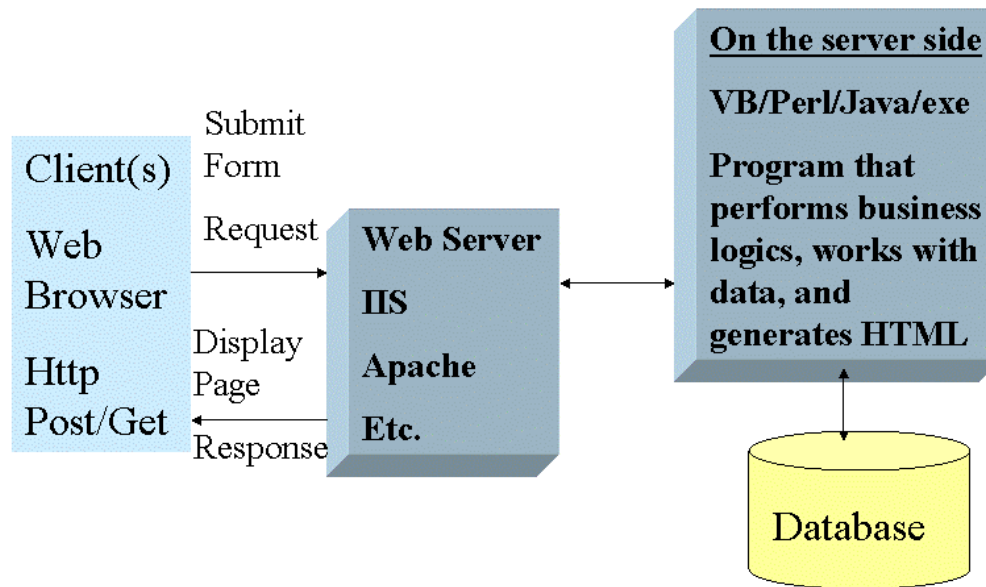
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A Mix of Presentation and Business Logics  
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- 2 ?

- 3 ?

- 4 ?

- 5 ?



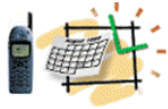
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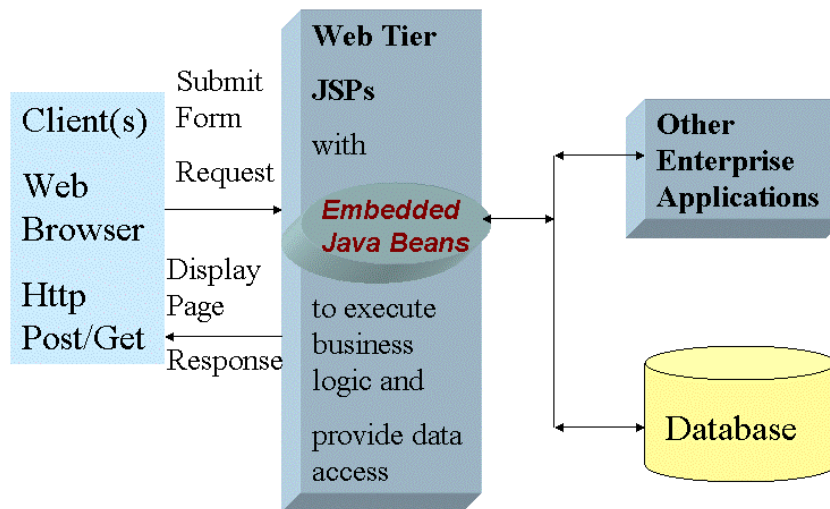
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- 1 No MVC = CGI
- 2 MVC Model 1 – Page-Centric Architecture

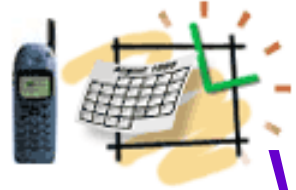


### MVC Model 1 Page-Centric Architecture

- 3
- 4
- 5



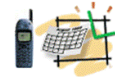
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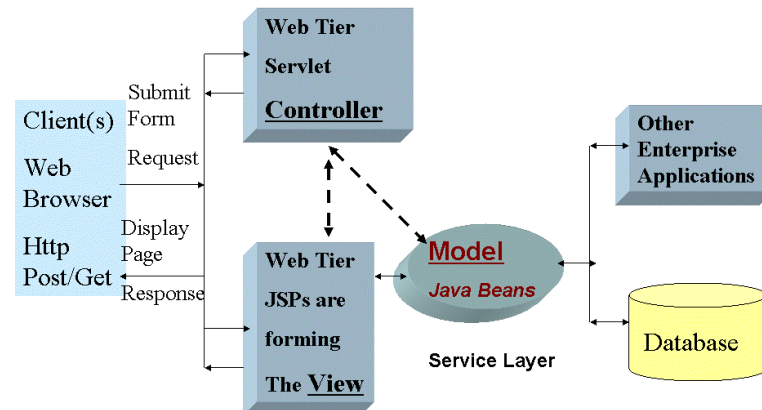
## Web Application Frameworks

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- 2 MVC Model 1 – Page-Centric Architecture
- 3 MVC Model 2 - Better Separation of Business and Presentation Layers



MVC Model 2 - Better Separation of Business and Presentation Layers

- 4 ?
- 5 ?



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



# 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**