

Introduction to Struts

Apache Struts is a free open-source framework for creating Java web applications.

Web applications differ from conventional websites in that web applications can create a dynamic response. Many websites deliver only static pages. A web application can interact with databases and business logic engines to customize a response.

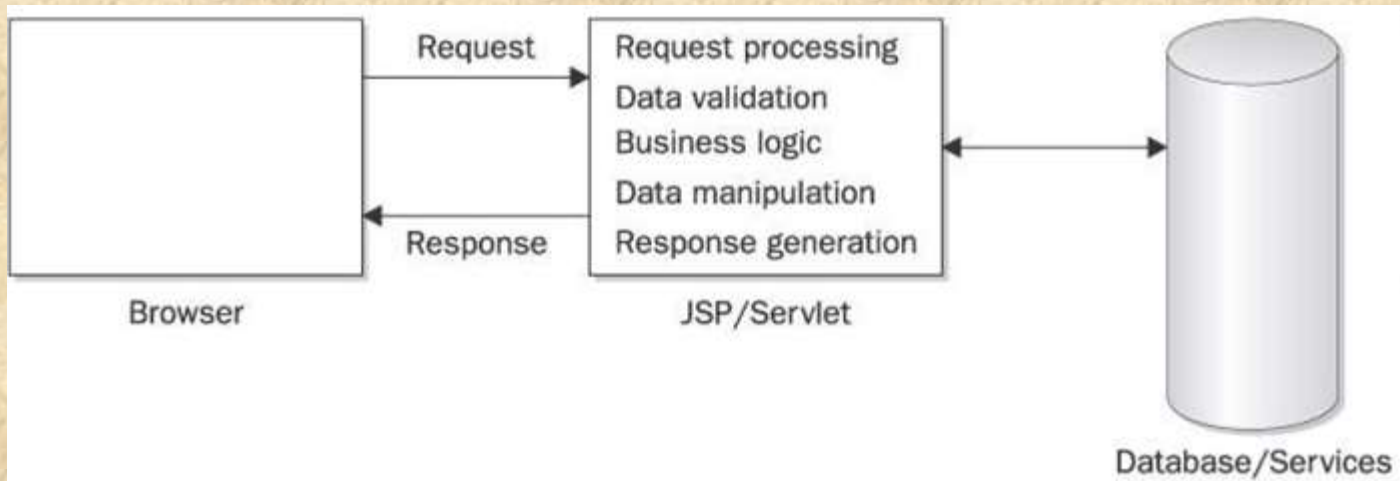
Web applications based on JavaServer Pages sometimes commingle database code, page design code, and control flow code. In practice, we find that unless these concerns are separated, larger applications become difficult to maintain.

One way to separate concerns in a software application is to use a Model-View-Controller (MVC) architecture. The *Model* represents the business or database code, the *View* represents the page design code, and the *Controller* represents the navigational code.

Two Development Models

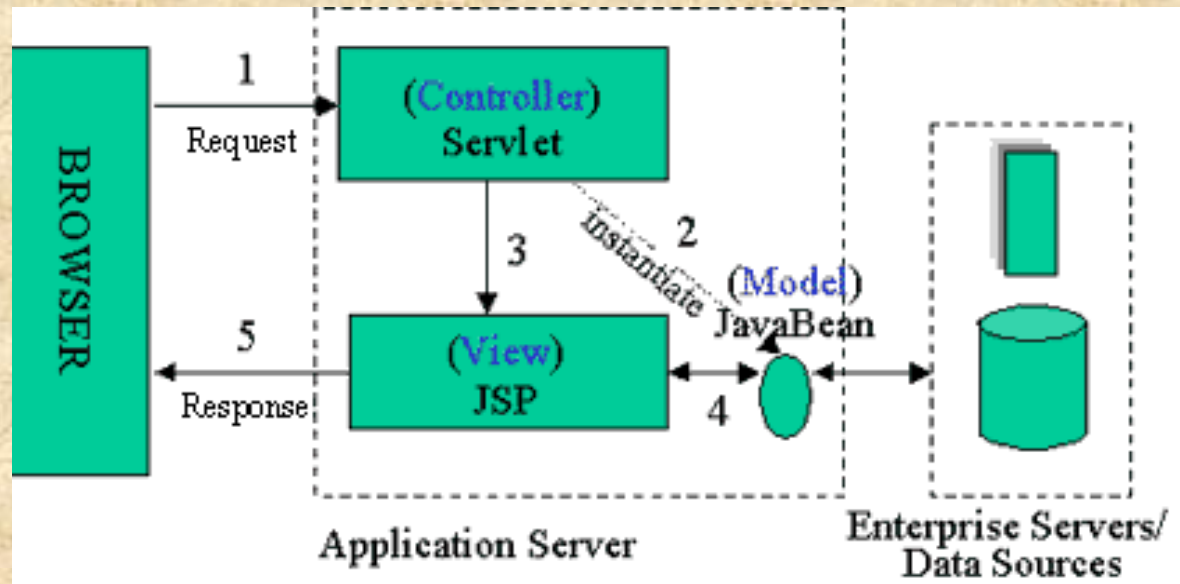
When the JSP was introduced by Sun, the two models are prescribed for building JSP-based applications. The two models are model1 and model2.

Model 1: A request is made to JSP or Servlet and then that JSP or servlet handles all responsibilities for the request, validating data, and generate response.



Two Development Models

Model2: it is referred as Model-View-Controller, solves many of the inherent problems with the original model1. In MVC the central servlet known as the controller, receives all the request for application, the *model* works with prepared data needed by *view* and forwards to JSP.



Evolution of Struts

Struts are originally created by Craig R. McClanahan and then donated to Jakarta Project of APACHE in 2000.

In June 2001 Struts 1.0 was released.

In June 2003 Struts 1.1 was released with Java compatibility.

In Dec 2004 Struts 1.2 was released with updated framework.

In 2006 Struts 1.3 was released with chain of responsibility.

Today Strut 2 is new version, based on merger of struts and web work open source framework.

Basic Components of Struts

The Struts framework is a rich collection of Java Lib. And can be broken down into the following major components:

- 1) Base Framework (ActionServlet)
- 2) JSP tag Libraries (HTML, Bean, Logic, Nested)
- 3) Tiles plugins
- 4) Validator plugin

Building a simple Struts Application

The simple Helloworld application files:

All Struts applications consists of several files, which contains various parts of the Struts program. Some are Java programs files, and other JSP and xml.

Followings are the files required:

Index.jsp,

success.jsp,

Helloworld.java,

Helloworld.class ,

web.xml,

struts.xml

Building a simple Struts Application

Key Requirements:

- 1) there must be a directory at the root level of the archive named **WEB-INF**.
- 2) There must be a Web application deployment descriptor file named **web.xml** beneath the **WEB-INF** directory .
- 3) Any libraries needed by the application should be under a directory called **lib** located beneath the **WEB-INF** directory .
- 4) Any class files needed by the application, which are not already packaged in a **.jar** file, should be under a directory called **classes** located beneath the **WEB-INF** directory.