Struts Framework

# What is Struts

**Struts** is an open-source web application framework developed by Apache Software Foundation, it is used to create a web application based on servlet and JSP. It depends on the MVC (Model View Controller) framework.

* Useful in building J2EE (Java 2 Platform, Enterprise Edition) applications, follows these J2EE design patterns including MVC and JSP custom tag libraries.
* The composite view manages the layout of its sub-views and can implement a template, making persistent look and feel easier to achieve and customize across the entire application.
* Consist of a set of custom tag libraries, support utility classes.

The main purpose of the struts framework is to provision separation of concerns between the business logic and the presentation logic (view), making it easier to manage and develop large-scale web applications.

# Feature of Struts

Struts have the following features:

* Encourages good design practices and modeling because the framework is designed with “time-proven” design patterns.
* Simple, so easy to learn and use.
* Supports many convenient features such as input validation and internationalization.
* Instead of building your own MVC framework, you can use struts.
* Well integrated with J2EE.
* Flexible and extensible, easy for the existing web applications to adapt.
* Provide good tag libraries.
* Allows capturing input form data into JavaBean objects called Action forms.
* Hands over standard error handling both programmatically and declaratively.

# Working of Struts

A diagram of a program

Description automatically generated

# Implementation of Struts

### Step 1: Initialization Phase

* The controller rectifies a configuration file (like the manual for initialization).
* Used to deploy the controller layer objects.

### Step 2: Composition of Configuration file

* Config file’s core is formed by all the objects defined inside it (these objects include action mapping which plays in defining the behavior of application, contains the definition of these action mappings).
* Action mappings are the key aspects in instructing the servlet controllers for handling the HTTP Requests.

### Step 3: Routing of HTTP Requests & process flow

* The requests are directed towards the action and then JSP.
* JSP does further processing and rendering the view page.

### Step 4: Action object request handling

* Action objects handle all the requests of client.
* These objects have access to the servlet controller of our application, and they can execute specific actions defined inside controllers.
* The action object can indirectly forward one or more shared objects, these shared objects can be JavaBeans, and are typically shared in shared context which is established using Java Servlets.

# Struts vs Spring

Struts and Spring both are used to develop Java web applications. Struts were developed earlier than Spring but with enhancements in the Struts framework, both are used nowadays to develop web applications using Java.

A screenshot of a computer

Description automatically generated

When you need to build a web application based on servlets and JSP then, **Struts** is best suited. **Spring** is best when you are working with server-less software.