

Struts

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Struts Framework

- Open source.
- Use to build well-structured Web applications.
- Based on Model-View-Controller (MVC) design.

MVC Design

- Model (M) : implementation /business layer.
Implementation of business logic / business processes.
- View (V) : data presentation layer. Presentation of the data to the user.
- Controller (C) : central control unit. Route requests and responses i.e. handling application flow.

Struts Components

- **View:** JSP, JavaBeans, Struts JSP tags etc.
- **Controller:** Maps request URI to action class.
- Configuration file: **struts_config.xml** file contains all the configuration or routing information.
- **Action Class:** process a request and returns ActionForward object of the next component to be invoked.
- **Action Forms:** Captures the user input and validates before passes the request to the action.

Struts Taglib

- Different type of tag libraries:
 - Bean
 - HTML
 - Logic
 - Template

Tag library need to be declared in the web.xml file.

Bean Tags

- Access beans and their properties.
- Define new bean based on value of request cookies, parameters and headers.
- Examples:
 - <bean:define/>** create variables from beans
 - <bean:write/>** used to output contents of the bean
 - <bean:parameter/>** get a request parameter

HTML Tags

- Used to create input forms in Struts.
- Also error messages and hyper linking.
- Examples
 - `<html:errors/>` display error (ActionErrors is already created inside `validate()` or `execute()`)

Logic Tags

- Presentation logic tags – no need of scriptlets.
- Looping over object collection, generating output on conditions etc.
- Examples:
 - <logic:present/> & <logic:notPresent>** present in JSP page or not.
 - <logic:equal/> & <logic:notEqual>** compare with a particular value

Template Tag

- Dynamic content inclusion like include directive in standard JSP.
- Dynamic JSP template.
- Examples:
 - <template:insert>** includes a template
 - <template:put>** puts content into template
 - <template:get>** gets the content inserted into the template using put

Struts 2

- Improvement on Struts 1.
- Struts2 classes are based on interfaces and HTTP independent.
- XML based default configuration files which are easy to extend.
- Instead of a servlet with `HttpServletRequest` and `HttpServletResponse` any java class with `execute()` method can be use as a Action class.
- Tags provided for implementing AJAX functionality in application.

- Thank You