

SPPU-TE-COMP-CONTENT – KSKA Git

Q1) What is Struts? What are the features of Struts.

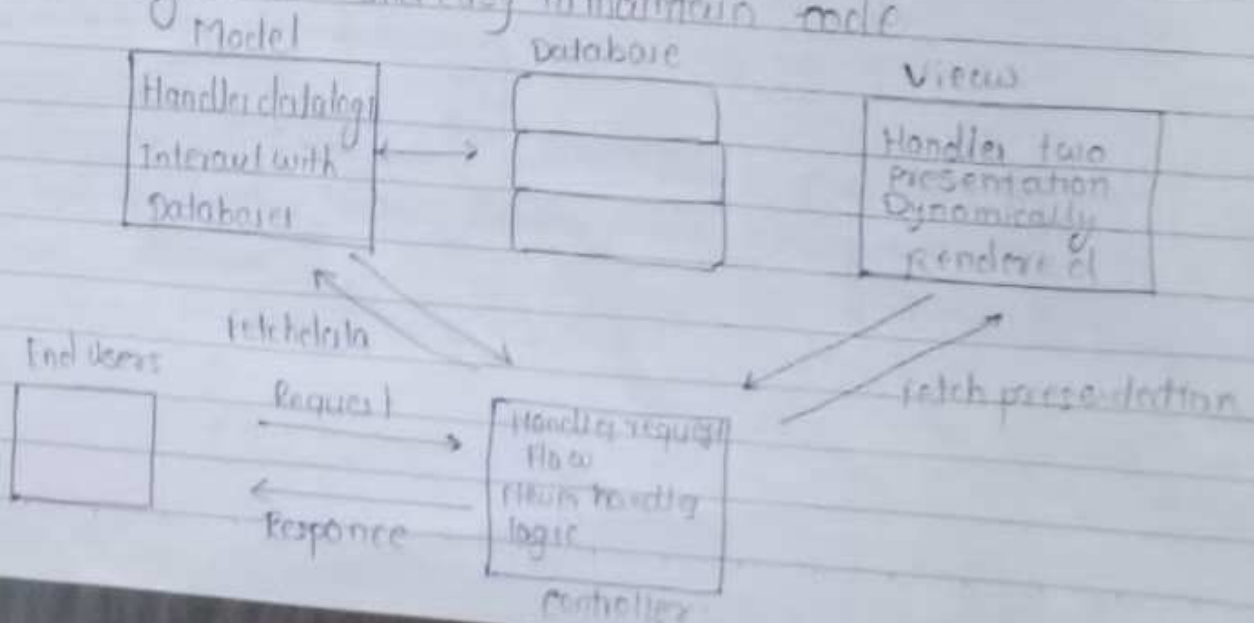
→ Apache Struts is an open-source framework for developing Java EE web application. It is based on the Model-View-Controller (MVC) design pattern and helps developers build scalable, maintainable and efficient web applications. Struts extends Java Servlet API and simplifies web development by providing structured way to handle user request.

features of struts

- 1) MVC Based Archi framework
- 2) Action Based framework
- 3) Tag Libraries
- 4) Validation framework
- 5) Integration with other technologies.
- 6) flexible and extensible

Q2) Explain MVC with diagram in details?

→ MVC architecture is a universal pattern of a structure in which an application is divided into three parts which are all dedicated to certain parts of the whole application. This pattern is normally used in software development to create organized and easy to maintain code.



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Q3] What are the main classes which are used in struts application

→ Struts framework consists of several core classes that facilitate request handling, data management and response. Below are the main classes used in a Struts application:

1] Action Class (Action)

- The core component that handles user request in struts.
- Extends `org.apache.struts.action.Action`.
- Process the request and returns an `ActionForward` object.

2] Action Form (ActionForm)

- A Java Bean class that holds form data submitted by the user.
- Extends `org.apache.struts.action.ActionForm`.
- Automatically populates form data.

3] Action Mapping (ActionMapping)

- Maps an Action class to a specific URL in `struts-config.xml`.
- Helps Struts identify the correct action for a request.

4] Action Forward (ActionForward)

- Defines the forwarding path after processing an action.
- Used in `struts-config.xml` to map navigation flow.

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Q. How validation is performed in struts application?
→ struts provides a built in validation framework that helps validate user input before processing the request. It ensures that only valid data is sent to the server, improving security and user experience.

Validation in struts 1

1] Validation Using validate() method in Action form

- The validate() method is implemented inside the ActionForm class.
- This method is called automatically before executing the action.
- If validation fails errors are added to an ActionErrors object, which is then displayed on the UI.
- This method is useful for simple field level validation like checking if a field is empty or if a value is within a specific range.

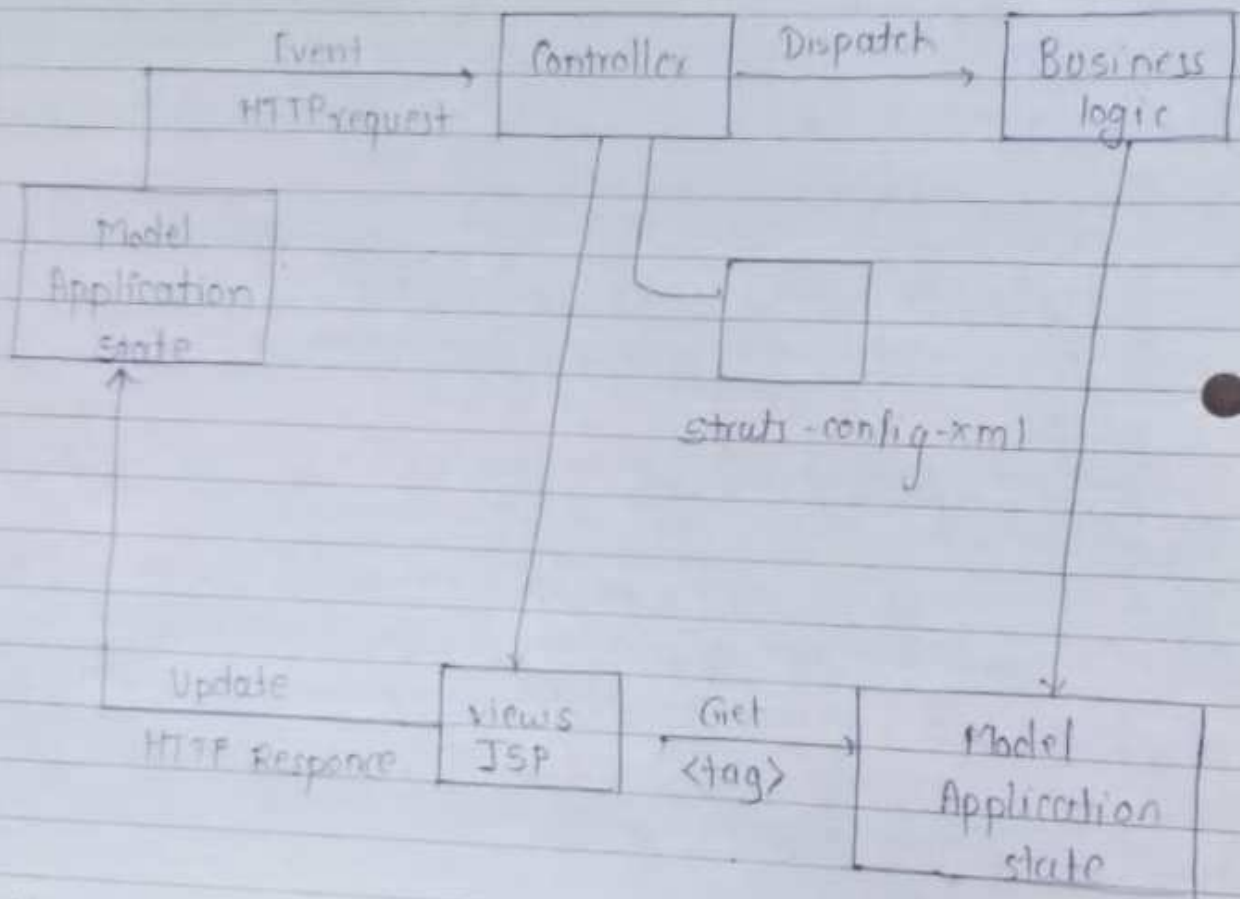
Validation in struts 2

1] Validation Using validate() method in Action class

- Similar to struts 1, struts 2 provides a validate() method in the ActionSupport class.
- This method is automatically executed before the execute() method in the action class.
- If validation fails error messages are stored and displayed to the users.
- This method is simple but may not be the best approach for complex validation logic.

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Q5] Explain struts work flow with diagram?



Step 1 : Initialization phase

- In this phase the controller rectifies a configuration file.
- This configuration file is like the manual for initialization and is 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 behaviours of application.

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Step 3 Loading of HTTP Request and Process flow.

- JSP does further processing and rendering the view page

Step 4: Action object request handling.

- Action object handle all the request handling.