Understanding JSP- Servlet

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What is JSP?

- JSP (JavaServer Pages): JSP is a technology for creating dynamic web pages in Java. It allows embedding Java code within HTML, generating dynamic content for web applications.

- Goal: The goal of JSP is to simplify web development by enabling the creation of dynamic web pages that combine Java code and HTML, facilitating the presentation of dynamic data and interactions to users.

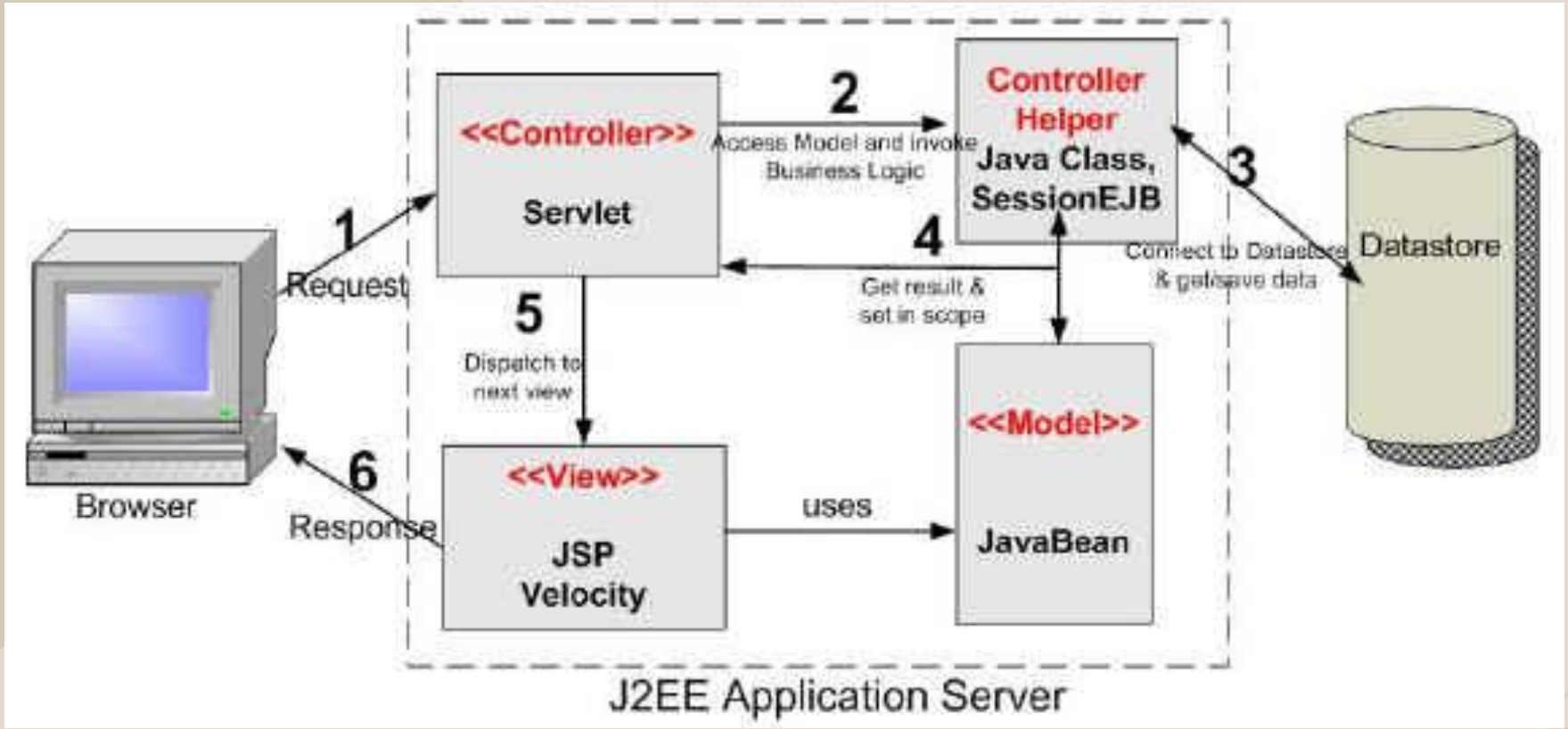
What is Servlet?

- Servlets are Java classes that handle requests and responses between a web client (typically a web browser) and a web server. They provide a more programmatic and fine-grained approach to handling web requests compared to traditional CGI scripts.
- Servlets are typically used to perform tasks such as form processing, user authentication, data manipulation, and more. They follow the Java Servlet API specification and are often used in conjunction with JSP to create full-fledged dynamic web applications.

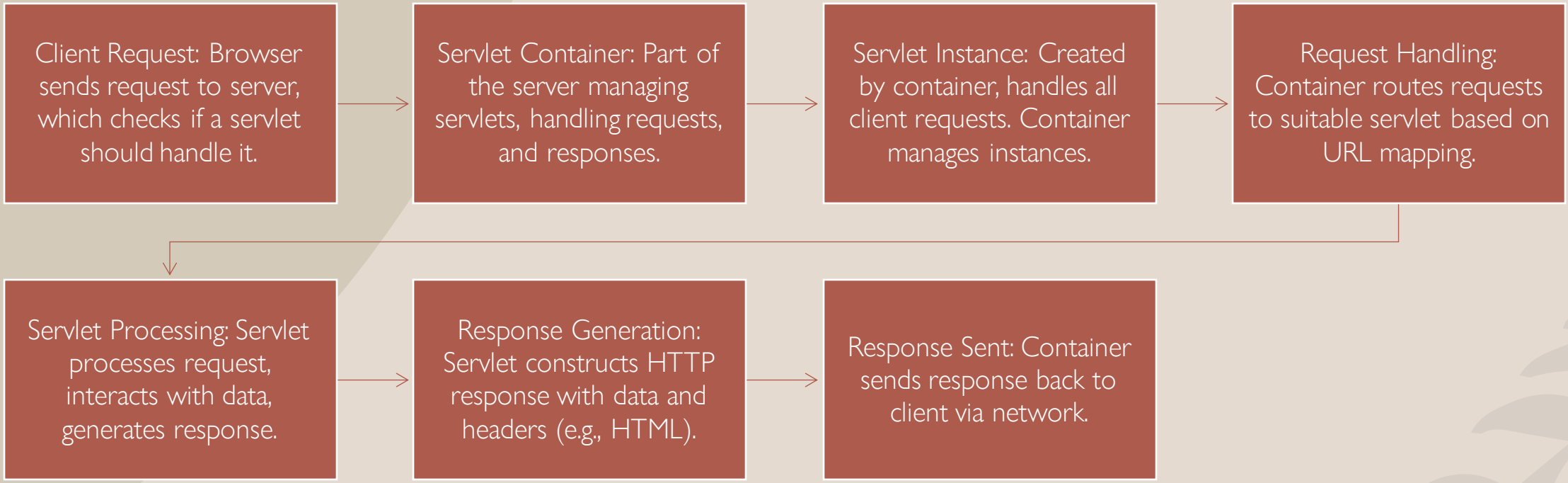
How does JSP and Servlet work together?

- JSP pages are used for the presentation layer, and servlets for processing tasks.
- The servlet acts as a controller responsible for processing requests and creating any beans needed by the JSP page.
- The controller is also responsible for deciding to which JSP page to forward the request.

How does JSP and Servlet work together?



Servlet Architecture



Servlet life cycle

1. Initialization (`init`): Servlet instance created, initialization tasks performed.

2. Request Handling (`service`): Handle multiple client requests using `service` method.

3. Shutdown (`destroy`): Cleanup tasks executed before servlet removal.

JSP vs ThymeLeaf?

Similarities:

- **Template Engines:** Both JSP (JavaServer Pages) and Thymeleaf are template engines used for creating dynamic web pages in Java-based web applications.
- **Server-Side Rendering:** Both technologies facilitate server-side rendering, allowing you to generate dynamic content on the server before sending it to the client's browser.

JSP vs ThymeLeaf?

Differences:

1. Syntax:

- JSP uses a mixture of Java code and custom tags within HTML, which can make it look cluttered.
- Thymeleaf uses its own attribute-based syntax that integrates seamlessly with HTML, making it more readable and maintainable.

2. Natural Templating:

- Thymeleaf's syntax closely resembles HTML, making it easier for frontend developers to understand and work with.
- JSP's mix of Java and custom tags can be less intuitive for frontend developers.

3. Processing:

- JSP templates are compiled into servlets, which are then executed on the server. This adds a compilation step before running the application.
- Thymeleaf templates are processed dynamically at runtime, which allows for easier modification and testing without needing to recompile.

JSP vs ThymeLeaf?

Differences:

4. Use of Expressions:

- JSP uses Java code within <% %> tags for dynamic content.
- Thymeleaf uses expressions enclosed in #{} or ${} for dynamic content, allowing for better separation of concerns.

5. Integration with Spring:

- Both JSP and Thymeleaf can be integrated with Spring Framework for building web applications.
- Thymeleaf is a preferred choice in modern Spring applications due to its natural syntax and features like automatic context evaluation.

Overview

JSP (JavaServer Pages) is a technology for creating dynamic web pages by embedding Java code within HTML templates. It's used to display dynamic content and interact with databases.

Servlets are Java classes that handle requests and responses in web applications. They provide server-side processing, such as form handling and data manipulation.

Thank You