

04 - Dispatcher Servlet

The **DispatcherServlet** is the front controller in Spring MVC architecture. It is a core component of Spring's web framework and is responsible for managing the entire request lifecycle in a Spring MVC application.

👉 Key Responsibilities of DispatcherServlet:

- **Front Controller:**
 - Centralized entry point for all HTTP requests in Spring MVC.
 - Intercepts requests and delegates them to appropriate controllers, following the Front Controller design pattern.
- **Routing Requests:**
 - Identifies the correct controller based on URL mapping.
 - After processing, it decides which view (e.g., JSP, Thymeleaf) to render.
- **Integration with Spring Components:**
 - Works with Handler Mappings (to map requests to controllers), View Resolvers (to select the view), and Exception Handlers for error management.
- **Request Lifecycle:**
 - Receives a request, maps it to a controller, processes it, and resolves the view to display the response, which is then sent back to the client.

👉 Tomcat as Servlet Container:

- Tomcat is a Servlet Container responsible for running servlets.
- A servlet processes requests and sends responses. Therefore, each request must be mapped to a servlet in the application.
- In the Spring framework, we have multiple components that need to communicate.
- The Front Controller pattern is used to manage the navigation between different controllers using DispatcherServlet.

👉 DispatcherServlet Configuration:

We need to configure DispatcherServlet in the web.xml file for the Spring MVC application.

Web.xml:

```
<web-app>
  <display-name>Archetype Created Web Application</display-name>

  <servlet>
    <servlet-name>telusko</servlet-name>
    <servlet-class>org.springframework.web.servlet.DispatcherServlet</servlet-class>
  </servlet>

  <servlet-mapping>
    <servlet-name>telusko</servlet-name>
    <url-pattern>/</url-pattern>
  </servlet-mapping>
</web-app>
```

- **<servlet-name>:** Defines the servlet's name (in this case, it is telusko).
 - **<servlet-class>:** Specifies the DispatcherServlet class to be used.
 - **<servlet-mapping>:** Maps the servlet to the root URL (/), it means all requests will be handled by DispatcherServlet.
- After configuring the web.xml, ensure that Apache Tomcat is correctly set up in the build path to run the project.
- If we run the code, it gives an **Internal Server Error**. This occurs because this configuration only indicates to use Dispatcher Servlet, but the DispatcherServlet has not been fully configured.

Code Link:

<https://github.com/navinreddy20/spring6-course/tree/c6690e4f2c70d8f530d70623f13d14ff0ffd7e7d/6%20Exploring%20Web%20MVC%20without%20Spring%20Boot/6.4%20Dispatcher%20Servlet>