

Spring MVC Introduction

“Code with Passion!”



Topics

- Introduction to Spring MVC
- DispatcherServlet, Context configuration
- SpringMVC interfaces

Introduction to Spring MVC

What is Spring MVC?

- MVC-based Web application framework that takes advantage of design principles of Spring framework
 - > Dependency Injection
 - > Interface-driven design
 - > POJO style everywhere
 - > Test-driven development (TDD)

Features of Spring MVC

- Clear separation of roles
 - > Controller, validator, command object, form object, model object, DispatcherServlet, handler mapping, view resolver, and so on
 - > These roles are represented by Java interfaces and their implementations - each of these roles can be pluggable
- Powerful and straightforward configuration
 - > Both framework and application classes are configured as POJOs
- Adaptability, non-intrusiveness, and flexibility
 - > Example: define any controller method signature you need with `@Controller` annotation for a given scenario

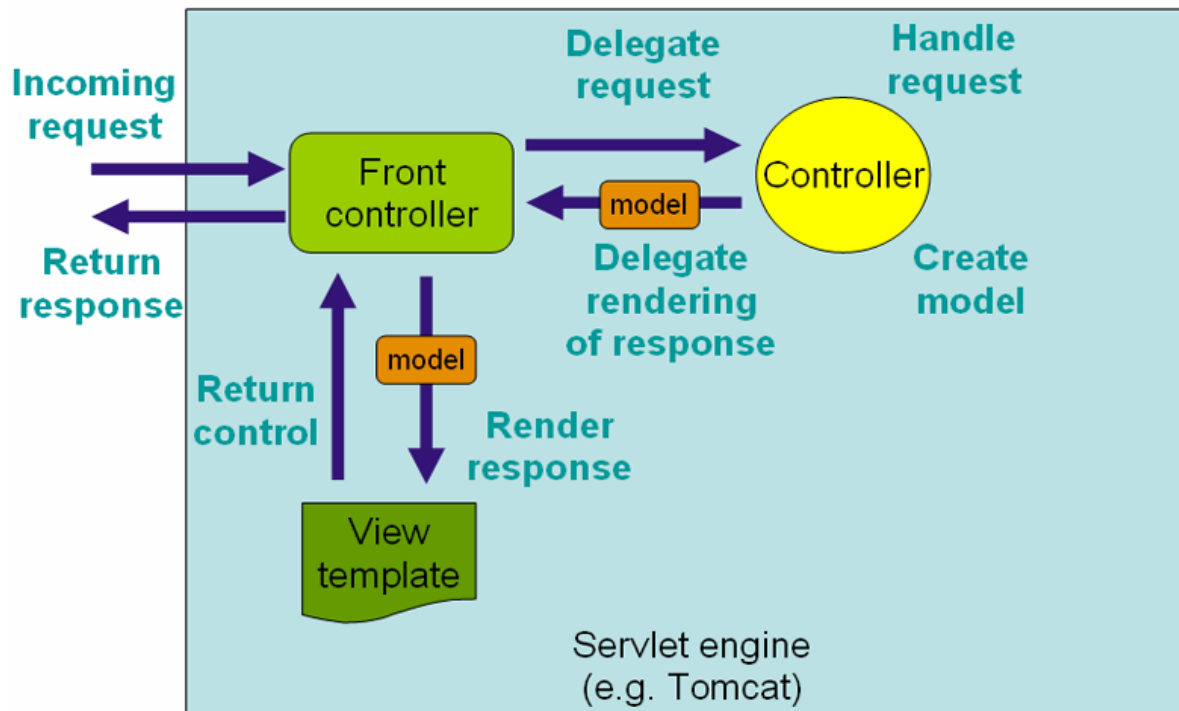
Features of Spring MVC (Continued)

- Customizable data binding, type conversion, and validation
 - > Data binding allows user input to be dynamically bound to the domain model of an application
- Customizable handler mapping and view resolution
 - > Handler mapping and view resolution strategies range from simple URL-based configuration, to sophisticated resolution strategies
- Flexible model transfer
 - > Model transfer with a name/value Map supports easy integration with any view technology
- Customizable locale and theme resolution
- Template technologies: thymeleaf, freemarker, velocity

DispatcherServlet

DispatcherServlet Spring Internal Servlet

- It plays the role of Front controller in Spring MVC
 - > Coordinates the HTTP request life-cycle



Sequence of HTTP Request Handling

1. *DispatchServlet* receives a HTTP request
2. *DispatchServlet* selects a Controller (actually a handler method within a Controller) based on the URL Handler mapping and pass the request to the Controller
3. *Controller* (actually a handler method within a Controller) performs the business logic and set values of Model object
4. *Controller* (actually a handler method within a Controller) returns a logical view
5. A *ViewResolver*, which provides a particular view (HTML, JSP, PDF, Excel, etc.), is selected
6. A view gets displayed accessing attributes of a Model object

DispatcherServlet Configuration

- Automatically configured *in Spring Boot application* (through *SprintBootServletInitializer*)

SpringMvc Context Configuration

Spring MVC Configuration Files

- Two (or more) Spring MVC configuration files might be a recommended convention for medium/large project
- Example web configuration files (if Java configuration is used)
 - > WebConfiguration.java
 - > DataSourceConfiguration.java
 - > SecurityConfiguration.java
 - > ...

Spring MVC framework beans

- Spring MVC framework beans that can be configured – these are automatically configured for Spring Boot-based MVC application via auto-configuration
 - > Controllers
 - > Handler mappings
 - > View resolvers
 - > Locale resolvers
 - > Theme resolvers
 - > Multipart file resolver
 - > Handler exception resolvers
 - > ...

Spring MVC Interfaces

What are Spring MVC Interfaces for?

- Key features of the Spring MVC are modularized through Spring MVC interfaces
- Spring framework comes with built-in implementations of these interfaces
 - > Default implementation is pre-selected for most common cases
- Custom implementations can be created and configured
 - > This is how Spring framework itself can be extended and customized

Examples of Spring MVC Interfaces

- *HandlerMapping*
 - > Mapping of requests to controllers/handlers
- *ViewResolver*
 - > Maps symbolic name to a view
- *HandlerExceptionResolver*
 - > Maps exceptions to error pages
- *LocaleResolver*
 - > Selects locale based on HTTP accept header, cookie

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