Spring Boot MVC

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What is Spring MVC

1. Spring MVC is a popular module in Spring Framework and it is used to develop web applications as well as RESTful web services.

2. Spring MVC is called web framework because it provides all required components to develop a complete web application.

3. The Spring MVC framework provides Model-View-Controller (MVC) architecture and ready components that can be used to develop flexible and loosely coupled web applications

What is Spring MVC

What is Spring MVC

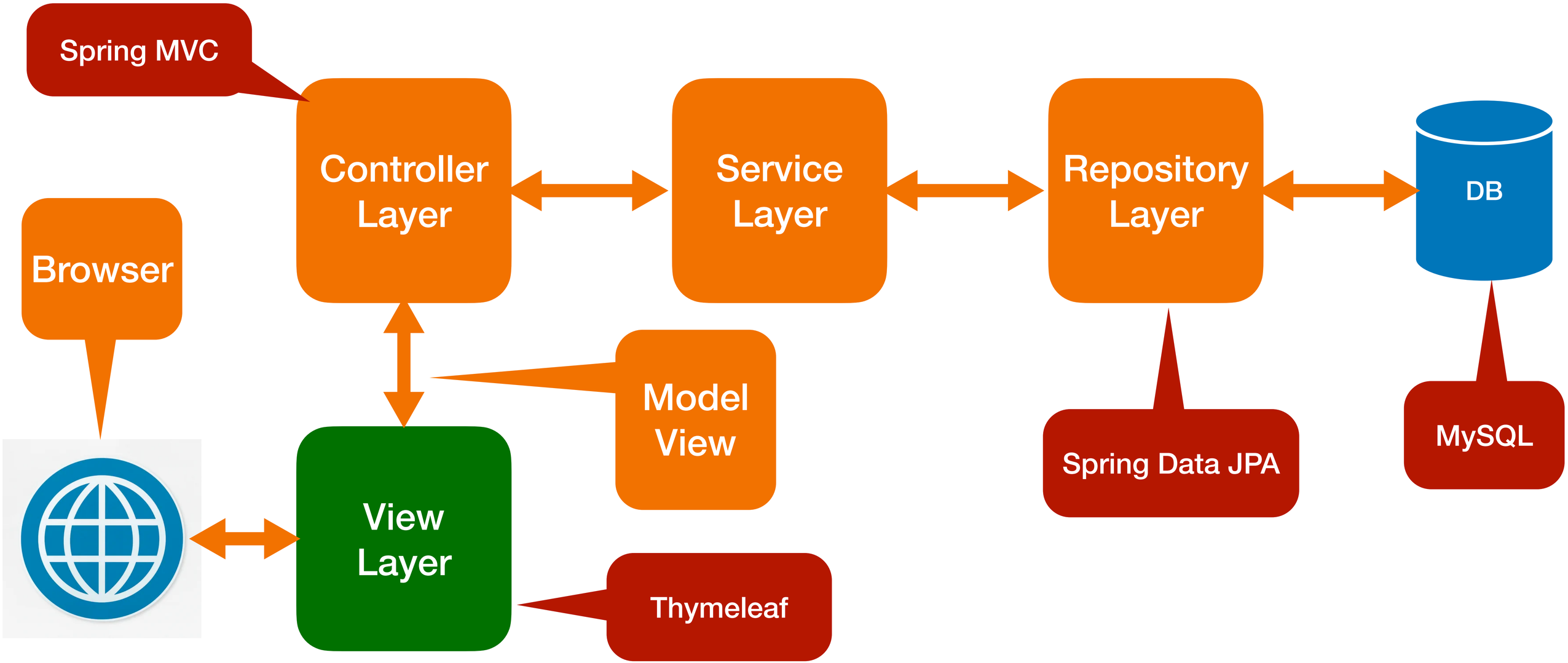
The MVC pattern results in separating the different aspects of the application while providing a loose coupling between these elements.

1. The Model encapsulates the application data and in general they will consist of POJO.

2. The View is responsible for rendering the model data and in general it generates HTML output that the client's browser can interpret.

3. The Controller is responsible for processing user requests and building an appropriate model and passes it to the view for rendering.

Spring Boot Web MVC Architecture



What is Spring MVC

1. The Spring MVC (model-view-controller) framework is designed around a **DispatcherServlet** that handles all the HTTP requests and responses.

2. In Spring Web MVC, the DispatcherServlet class works as the **front controller.** It is responsible to manage the flow of the Spring MVC application.

What is DispatcherServlet

1. In Spring Web MVC, the DispatcherServlet class works as the **front controller** and it is responsible to manage the HTTP request flow of the Spring MVC application.

2. A **Front Controller** is a common pattern in web applications and is used to receive requests and delegate to other components in the application for actual processing. The **DispatcherServlet** is a front controller like it provides a single entry point for a client request to Spring MVC web application and forwards request to Spring MVC controllers for processing.

What is DispatcherServlet

1. DispatcherServlet is a actual Servlet and we can configure in **web.xml** or using **AbstractAnnotationConfigDispatcherServletInitialzer**

2. Spring Boot provides the **spring-boot-starter-web** library for developing web applications using Spring MVC. One of the main features of Spring Boot is autoconfiguration. The Spring Boot autoconfiguration registers and configures the **DispatcherServlet** automatically. Therefore, we don't need to register the **DispatcherServlet** manually.

Spring MVC Components

1. DispatcherServlet
2. Controller
3. Handler method
4. ViewResolver
5. View
6. Model

What is Controller

1. Controller in Spring MVC web application is a component that handles incoming HTTP requests
2. Spring provides @Controller annotation to make a Java class as a Spring MVC controller. The @Controller annotation indicates that a particular class serves the role of a controller.
3. We will define handler methods within Controller.

What is Handler Method

1. Handler method is a method annotated with @RequestMapping annotation (GetMapping and PostMapping) capable to handle incoming HTTP request.
2. We define Handler method in Controller.
3. Handler method process the HTTP request and return model and view.

What is ViewResolver

1. **ViewResolver** responsible to map logical view with actual view and return the actual view details back to the DispatcherServlet.
2. Spring boot auto configures **ViewResolver** for Thymeleaf so we don’t have to manually configure **ViewResolver** for Thymeleaf.

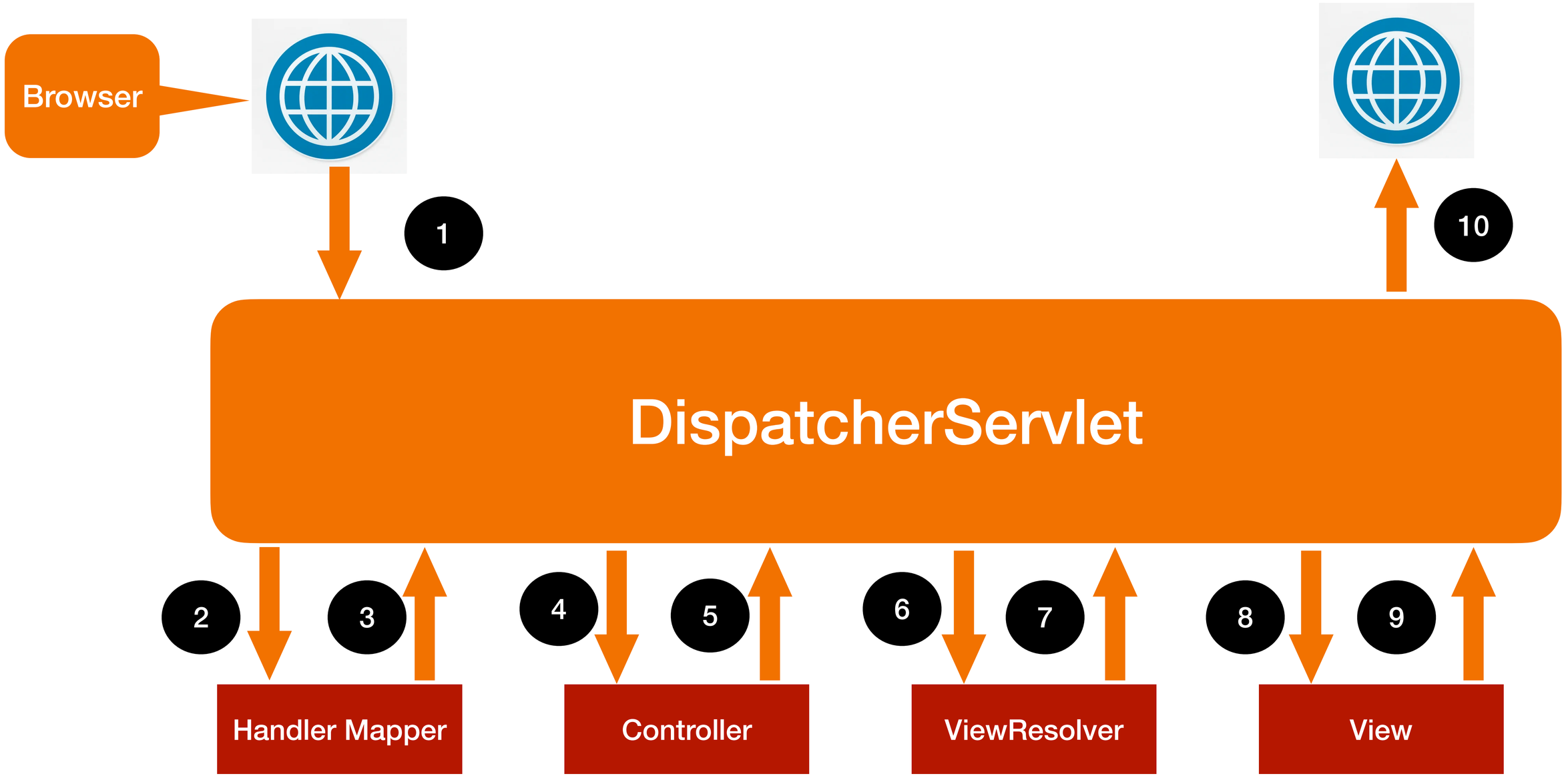
What is View

1. The **View** component merge view and model and forms a plain HTML output. Finally, the View component sends HTML output back to the DispatcherServlet.
2. DispatcherServlet send HTML output in response to display in a browser.

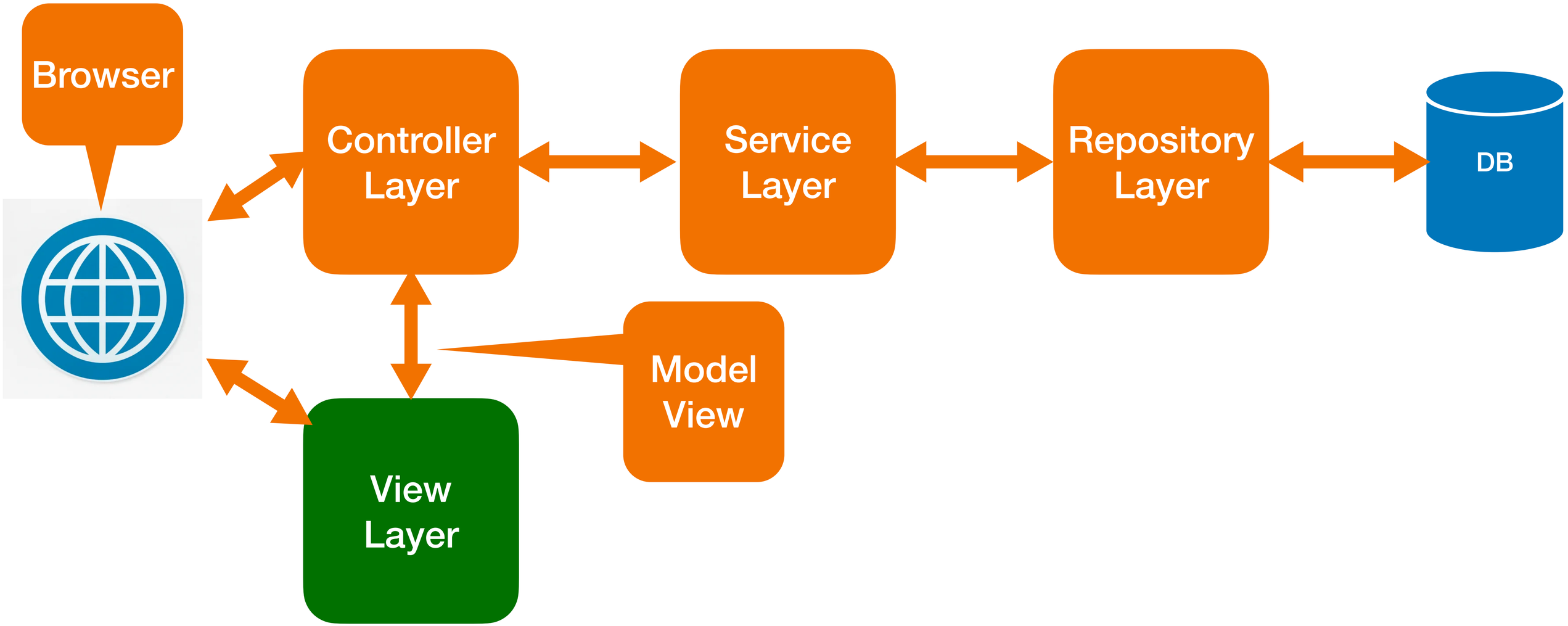
What is Model

1. The Model encapsulates the application data and in general they will consist of POJO.

How Spring MVC Works Internally



Spring Boot Web MVC Architecture (Three -layer Architecture)



Spring Boot Web MVC Architecture