



Computación en Internet II
2025-1



Spring Boot

- Spring Boot is an open source, microservice-based Java web framework.
- The Spring Boot framework creates a fully production-ready environment that is completely configurable using its prebuilt code within its codebase.
- It eliminates the boilerplate configurations required for setting up a Spring application.
- Spring Boot enables a faster and more efficient development ecosystem.
- It aims to reduce code length.
- It provides developers the easiest way to build an application.



Spring Boot

No need deploy WAR
files

Embeds Tomcat, Jetty and
Undertow directly

Easier management and
customization

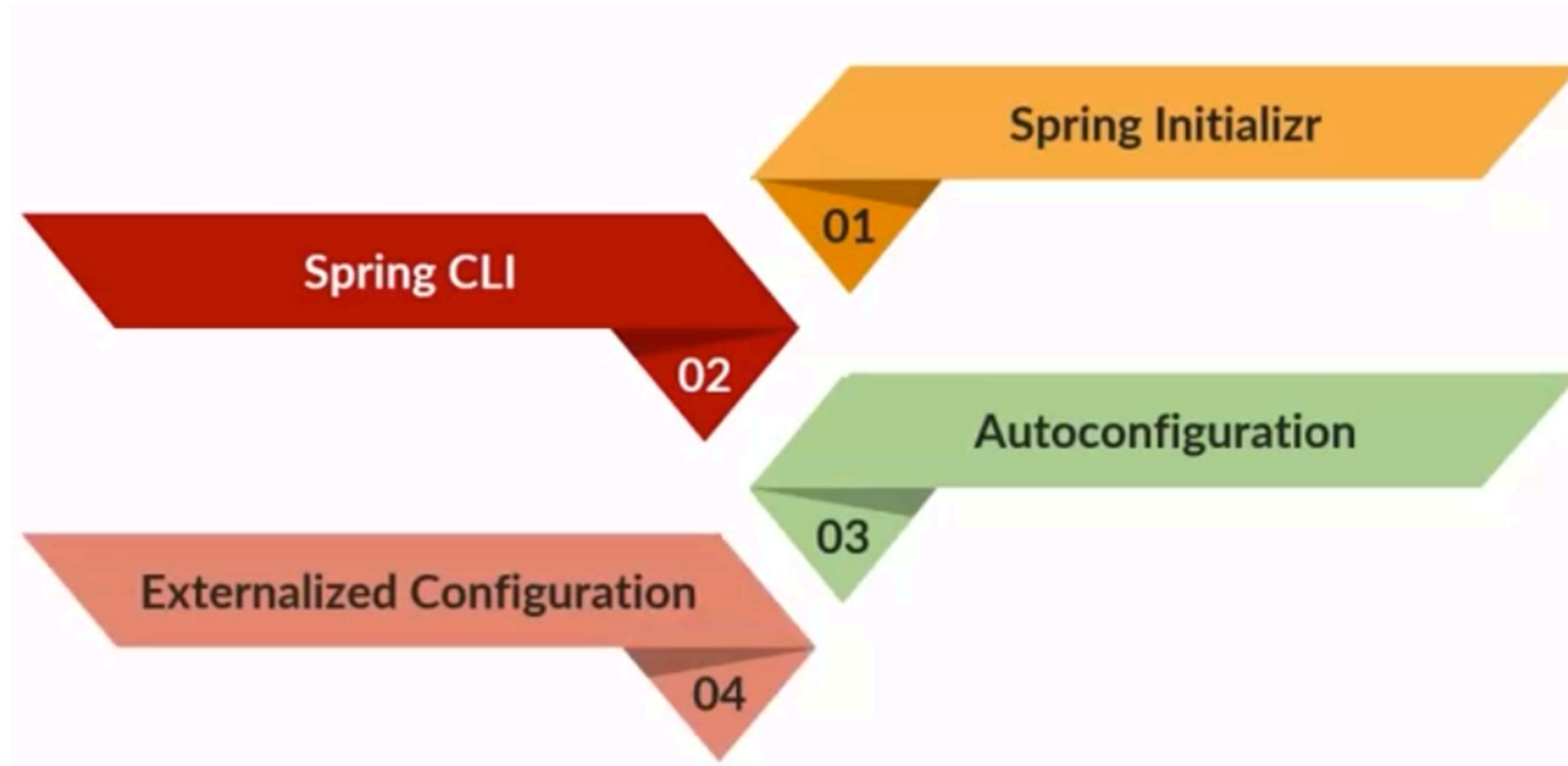


Used to build standalone
application

Doesn't require XML
configuration

Offers production ready
features

Spring Boot





Spring Boot

- It provides a flexible way to configure Java Beans, XML configurations, and Database Transactions.
- It provides a powerful batch processing and manages REST endpoints.
- In Spring Boot, everything is auto configured; no manual configurations are needed.
- It offers annotation-based spring application.
- Eases dependency management.
- It includes Embedded Servlet Container.

Spring vs Spring Boot

SPRING	SPRING BOOT
An open-source lightweight framework widely used to develop enterprise applications.	Built on top of the conventional Spring framework, widely used to develop REST APIs.
Most important feature is dependency injection.	Most important feature is Autoconfiguration.
It helps to create a loosely coupled application.	It helps to create a stand-alone application
To run Spring application, we need to set server explicitly.	Spring Boot provides embedded servers such as Tomcat and Jetty etc.
It doesn't provide support for the in-memory database.	It provides support for in-memory database such as H2.
Developers boilerplate code for smaller tasks.	In Spring Boot, there is a reduction in boilerplate code.

Spring Boot vs Spring MVC

SPRING BOOT	SPRING MVC
A module of Spring for packaging the Spring-based application with sensible defaults.	A model view controller-based web framework under the Spring framework.
Provides default configurations to build Spring-powered framework.	Provides ready to use features for building a web application.
There is no need to build configuration manually.	It requires build configuration manually.
There is no requirement for a deployment descriptor.	A Deployment descriptor is required.
It avoids boilerplate code and wraps dependencies together in a single unit.	It specifies each dependency separately.
It reduces development time and increases productivity.	It takes more time to achieve the same.

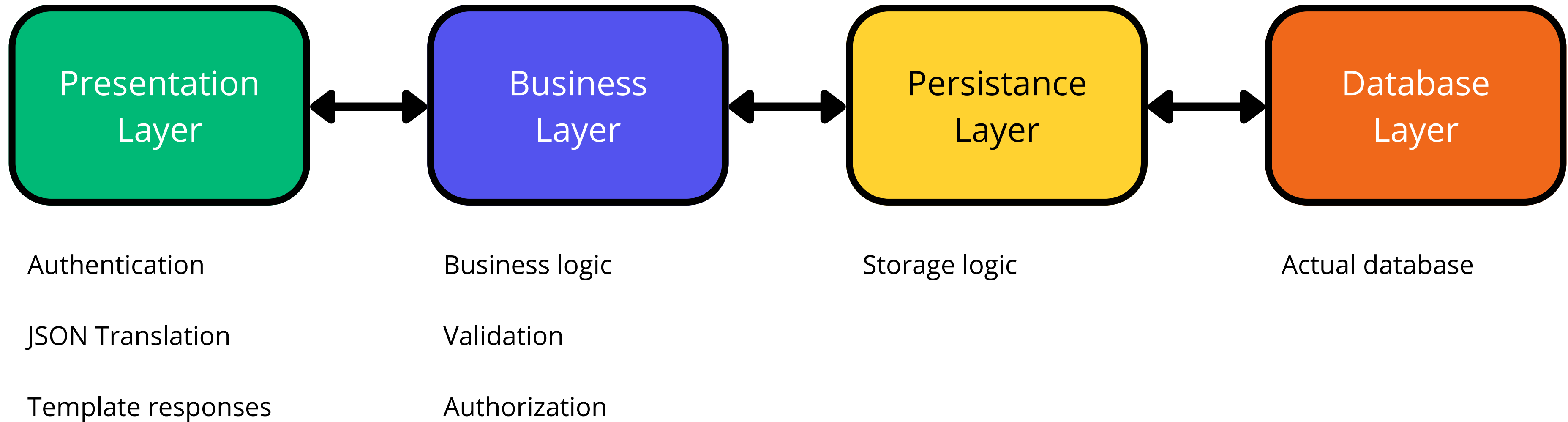


Spring Boot Architecture

- Spring Boot is a module of the Spring Framework.
- It is used to create stand-alone, production-grade Spring Applications with minimum effort.
- Spring Boot follows a layered architecture in which each layer communicates with the layer directly below or above (hierarchical structure) it.
- There are four layers in Spring Boot are as follows:
 - Presentation Layer
 - Business Layer
 - Persistence Layer
 - Database Layer



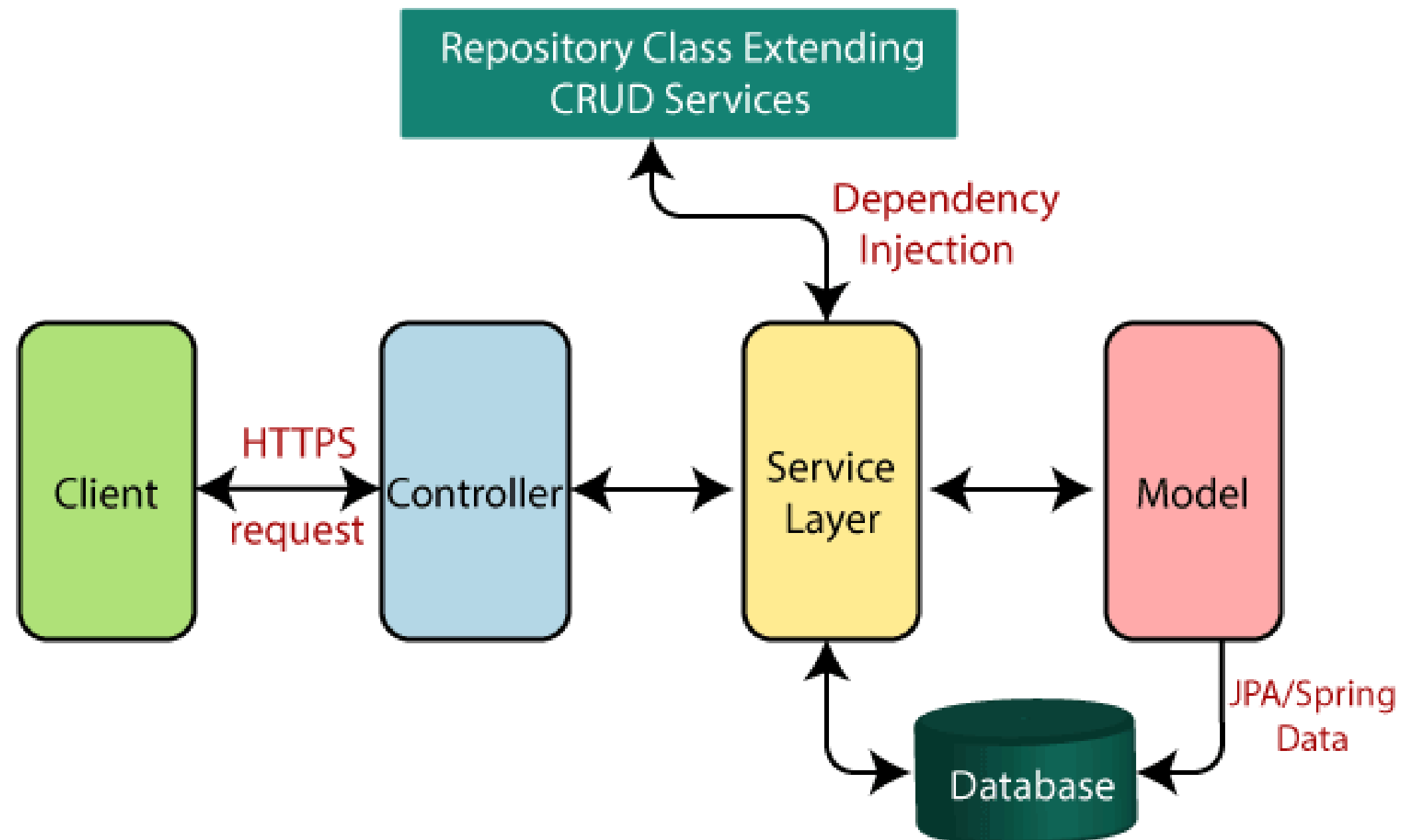
Spring Boot Architecture





Spring Boot Architecture

Spring Boot flow architecture





Spring Boot Initializr

- Spring Initializr is a web-based tool provided by the Pivotal Web Service.
- With the help of Spring Initializr, we can easily generate the structure of the Spring Boot Project.
- It offers extensible API for creating JVM-based projects.
- It also provides various options for the project that are expressed in a metadata model.
- The metadata model allows us to configure the list of dependencies supported by JVM and platform versions, etc.
- It serves its metadata in a well-known that provides necessary assistance to third-party clients.



Spring Boot Architecture

<https://www.javatpoint.com/spring-vs-spring-boot-vs-spring-mvc>

<https://www.javatpoint.com/spring-boot-architecture>

<https://docs.spring.io/spring-boot/docs/current/reference/htmlsingle/>