

Answer the following Question

1. What is the Spring boot framework? Explain its advantages.

Ans –

Spring Boot is a framework built on top of the Spring Framework. It is designed to simplify the development of Spring-based applications by providing a more streamlined and efficient configuration process. Spring Boot eliminates the need for boilerplate code, complex configuration, and extensive dependency management. It offers a set of tools and conventions that make it easier to create production-ready applications with minimal effort.

Key Features of Spring Boot

1. **Auto-Configuration:** Automatically configures Spring applications based on the dependencies present in the classpath.
2. **Embedded Servers:** Includes embedded servers like Tomcat, Jetty, or Undertow, eliminating the need for external server setup.
3. **Starter Dependencies:** Provides starter dependencies to simplify the addition of necessary libraries for specific features (e.g., spring-boot-starter-web).
4. **Production-Ready Tools:** Includes features like health checks, metrics, and application monitoring through Spring Boot Actuator.
5. **Command-Line Interface (CLI):** Allows running and testing Spring Boot applications with Groovy scripts.

Advantages of Spring Boot

1. **Simplified Development:** Reduces boilerplate code and configuration complexity, enabling faster development.
2. **Microservices-Friendly:** Ideal for creating microservices due to its lightweight nature and built-in support for RESTful web services.
3. **Embedded Server Support:** No need to install or configure an external server; applications can run standalone.
4. **Rich Ecosystem:** Offers comprehensive documentation, support for various third-party libraries, and a vibrant community.

5. **Faster Prototyping:** Starter dependencies and auto-configuration allow quick setup and experimentation.
6. **Production-Ready Features:** Built-in monitoring, logging, and management tools for deployment-ready applications.

2. Distinguish between Spring and Spring Boot.

Feature	Spring Framework	Spring Boot
Definition	A comprehensive framework for building Java applications.	A specialized framework that simplifies Spring application development.
Configuration	Requires extensive manual configuration using XML or Java-based configurations.	Auto-configures applications based on classpath dependencies.
Dependency Management	Developers need to manually manage dependencies.	Provides pre-defined starter dependencies.
Ease of Use	Requires significant effort to set up and configure.	Designed to simplify setup and development.
Startup Time	Slower due to manual configurations and external server setup.	Faster due to auto-configuration and embedded server support.
Embedded Server	No built-in server support; requires deployment to external servers.	Comes with embedded servers like Tomcat or Jetty.
Application Types	Suitable for a wide range of enterprise applications.	Ideal for microservices and RESTful APIs.