**Week-4,5**

**Exercise-1:**

**Online Bookstore - Setting Up RESTful Services**

**Business Scenario:**

You are tasked with developing a RESTful service for an online bookstore. The service will manage books, authors, and customers.

**Instructions:**

1. **Setup Spring Boot Project:**
   * Initialize a new Spring Boot project named **BookstoreAPI**.
   * Add dependencies: **Spring Web, Spring Boot DevTools, Lombok**.
2. **Project Structure:**
   * Familiarize yourself with the generated project structure.
3. **What's New in Spring Boot 3:**
   * Explore and document the new features introduced in Spring Boot 3.

**Solution:**

**1. Java 17 Baseline**

* **Requirement**: Spring Boot 3 requires Java 17 or later as the minimum version.
* **Benefits**: Java 17 introduces new language features and performance improvements, making Spring Boot applications more efficient and easier to maintain.

**2. Native Image Support with GraalVM**

* **Native Executables**: Spring Boot 3 offers first-class support for creating native images using GraalVM.
* **Faster Startup**: Native executables provide faster startup times and lower memory consumption.
* Ideal for serverless environments, microservices and resource-constrained environments.

**3. Improved Observability**

* **Micrometer and Micrometer Tracing**: Enhanced observability with out-of-the-box support for distributed tracing and metrics.
* **Tracing**: Integration with OpenTelemetry for better traceability across distributed systems.
* **Health Checks**: More detailed health checks and improved support for monitoring tools.

**4. Declarative HTTP Clients**

* **@HttpExchange Annotation**: Introduces a declarative approach for making HTTP calls.
* **Simplified RestTemplate Replacement**: Replaces the older RestTemplate with a more modern and concise approach using @HttpExchange.

**5. Enhanced Security**

* **Security Configurations**: More straightforward and powerful security configuration options using Spring Security 6.
* **Simplified OAuth2 Configuration**: Better support and easier configuration for OAuth2 and OpenID Connect.

**6. Spring Framework 6 Integration**

* **Core Framework Enhancements**: Spring Boot 3 builds on Spring Framework 6, leveraging its new features like better native support and observability enhancements.