Important Features
& Technologies

FOR BUILDING DATA-DRIVEN SPRING BOOT REST SERVICES

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JPA- (ORM) FACILITY

An object/relational mapping (ORM) facility is a tool that allows developers to map Java objects to relational databases. JPA (Java Persistence API) is a widely-used ORM facility/framework in Java. It provides a high-level API for managing relational data in Java applications. JPA supports various features such as object-relational mapping, caching, and transaction management.

JPA-BASED REPOSITORIES

In Spring Boot, Spring Data JPA is a library that provides a higher-level abstraction on top of JPA. It provides a set of interfaces and classes to implement repositories with common CRUD (Create, Read, Update, and Delete) operations for JPA entities. Spring Data JPA eliminates the need to write boilerplate code to implement basic data access operations.

ORM FRAMEWORK

Hibernate is a popular ORM framework in Java. It provides a mapping between Java objects and relational databases. Hibernate supports various types of mappings, such as One-To-Many / Many-To-One, One-To-One BI & UNI Directional O/R Mappings. These mappings define how Java objects are mapped to database tables and columns.

QUERYING JPA ENTITIES

JPQL (Java Persistence Query Language) is a query language for JPA entities. It is similar to SQL, but it operates on JPA entities instead of database tables. JPQL queries are executed by the JPA provider and translated into SQL queries for the underlying database.

MVC ARCHITECTURE

The Model-View-Controller (MVC) architecture is a design pattern used to structure web applications. It separates the application into three parts: the model (data), the view (user interface), and the controller (business logic). This separation of concerns makes the application more modular and easier to maintain.

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REPOSITORY PATTERN

The Repository pattern is a design pattern that separates the data access layer from the service layer. It provides an abstraction for data access operations and enables the service layer to interact with the data access layer through a set of interfaces.

DAO PATTERN

The Data Access Object (DAO) pattern is a design pattern that provides an abstraction for the persistence layer. The DAO pattern enables the service layer to interact with the persistence layer through a set of interfaces.

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SERVICE LAYER PATTERN

The Service Layer pattern is a design pattern that provides an abstraction for the business logic of the application. The service layer interacts with the data access layer through the repository interfaces and provides a set of APIs for the client applications.

DATA TRANSFER OBJECTS (DTOS)

Using Data Transfer Objects (DTOs) to transfer data between layers of an application as well as to improve performance, reduce coupling between layers, and provide a more clear and defined interface between components.

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EXCEPTION HANDLING

Exception handling is a mechanism to handle errors in an application. In Spring Boot, exceptions can be handled at different layers, such as the service layer and the DAO layer. By handling exceptions, the application can be made more resilient to errors and provide better user experience.

SWAGGER DOCUMENTATION

Swagger is a tool that generates API documentation for RESTful services. In Spring Boot, Swagger can be integrated into the application to automatically generate API documentation based on the annotations in the source code.

LOGGING

Logging is a mechanism to capture and store information about the application's behavior. In Spring Boot, SLF4J (Simple Logging Facade for Java) is a widely-used logging framework. It provides a simple and consistent API for logging statements across different logging implementations.

PROJECT LOMBOK

Project Lombok is a library that reduces boilerplate code in Java applications. It provides annotations to automatically generate getters and setters, constructors, and other methods that are commonly used in Java classes. Using Project Lombok can improve code readability and reduce development time.

SPRING BOOT 3.0 SECURITY

Using the userDetailsManager and securityFilterChain methods in Spring Boot's simple Spring Security allows for a comprehensive user authentication and authorization system. The userDetailsManager allows for storing user details and credentials in a persistent data store, such as a database, while the securityFilterChain method enables the configuration of security filters for protecting resources based on access rules.

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