

Easy Persistence with Spring

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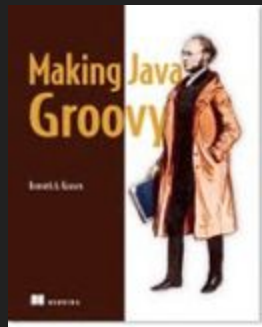
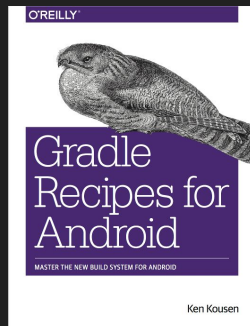
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https://github.com/kousen/Spring_repositories (repo)



Publications

O'Reilly **video** courses: See <http://shop.oreilly.com> for details

[Groovy Programming Fundamentals](#)

[Practical Groovy Programming](#)

[Mastering Groovy Programming](#)

[Learning Android](#)

[Practical Android](#)

[Gradle Fundamentals](#)

[Gradle for Android](#)

[Advanced Java Development](#)

[Spring Framework Essentials](#)

The Spring Framework

Leading Java **open source** framework

<https://spring.io/>

The Spring Framework

The **infrastructure** of an application:

Dependency injection

Services

Large library of support classes

Dependency Injection

Metadata → Spring manages **lifecycle** of classes

XML (no longer favored)

Annotations

Java configuration classes

Services

Spring provides **services** to "beans" (POJOs)

Transactions

Security

Persistence

... many others ...

Large Library

Spring API has **thousands of classes**

DataSources

Transaction Managers

Tests

... many, many others ...

Spring Boot

The new way to create a Spring application

<http://projects.spring.io/spring-boot/>

Fill out a form → Configure an application

<http://start.spring.io/>

Spring Boot

Generates **Gradle** or Maven build files

Auto-configures application based on classpath

Output jar with embedded container

Persistence with Spring

Add `spring-boot-starter-data-jpa`

JDBC

JPA

Spring Data

JDBC

Raw JDBC → very verbose

Spring JDBC:

`org.springframework.jdbc.core.JdbcTemplate`

JdbcTemplate

Easy inserts, updates, and deletes

Query methods convert ResultSet to Objects

RowMapper interface

T mapRow(ResultSet rs, int rowNum)

JdbcTemplate

RowMapper is a **Single Abstract Method** interface

Only one abstract method

Java 8 → Functional interface

Can implement with **lambda** expression

JPA

Java Persistence API

Uses a "provider" → **Hibernate**

Annotate domain classes with `@Entity`

`@Id`, `@Table`, `@Column`, ... JPA 2.1

JPA

EntityManager → persist, remove, find, createQuery, ...

EntityManagerFactory

- Maps domain classes

- Generates connection pool

- Spring → [LocalEntityManagerFactoryBean](#)

Spring Data JPA

Define an interface → generated implementation

interface extends **JpaRepository**<T, ID extends Serializable>

Testing

Spring **Test** Context

Manages beans

Injects test fixtures

Automatic **transaction rollback**

Supports JUnit, Hamcrest Matchers, Mockito, ...

Summary

Spring Boot generates application

Spring provides:

- JDBC support

- JPA entities and management

- Spring Data generated implementations