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Spring Boot Back End

Java Development Environment

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Java Development Environment

- We assume that you are already an experienced Spring Boot Developer

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  - Java IDE (we'll use IntelliJ in the videos, but any Java IDE will work)

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  - Maven

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Java Development Environment

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  - Java Development Kit (JDK)
  - Java IDE (we'll use IntelliJ in the videos, but any Java IDE will work)
  - Maven
  - MySQL Database and MySQL Workbench

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About IntelliJ

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Super Amazing IDE!!!

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- You can also use the Ultimate Edition ($) ... free trial version is available

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Additional Java IDEs

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- We will provide tech support for IntelliJ, Eclipse, VS Code, NetBeans

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Spring Boot Back End

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- Leverage Spring Data REST for REST API

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- Minimizes the coding for Spring Boot back end

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Create Repository

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```
public interface ProductRepository extends JpaRepository<Product, Long> {

}
```


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REST Endpoints

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REST Endpoints

- By default, Spring Data REST will create endpoints based on entity type

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/products

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REST API

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REST API

- Spring Data REST will expose these endpoints for free!

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REST API

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HTTP Method		CRUD Action
POST	/products	**C**reate a new product
GET	/products	**R**ead a list of products
GET	/products/{id}	**R**ead a single product
PUT	/products/{id}	**U**pdate an existing product
DELETE	/products/{id}	**D**elete an existing product

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Database Schema - Release 1.0

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Database Schema - Release 1.0

Show a Product List

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Database Schema - Release 1.0

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Database Schema - Release 1.0

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Database Schema - Release 1.0

@ManyToOne
Many products belong to one category

@OneToMany
One category has many products

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Two Database Scripts

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Two Database Scripts

- 01-create-user.sql
- 02-create-products.sql

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About: 01-create-user.sql

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About: 01-create-user.sql

1. Create a new MySQL user for our application
   - user id: **ecommerceapp**
   - password: **ecommerceapp**

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About: 02-create-products.sql

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About: 02-create-products.sql

1. Create new database tables: **product, product_category**

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About: 02-create-products.sql

1. Create new database tables: **product, product_category**

2. Load tables with sample data

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Spring Boot Back End

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Development Process

Step-By-Step

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1. Set up the database tables

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2. Create a Spring Boot starter project (start.spring.io)

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```
spring-boot-starter-data-jpa
spring-boot-starter-data-rest
mysql-connector-java
lombok
```


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Development Process

Step-By-Step

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3. Develop the Entities: **Product** and **ProductCategory**

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1. Set up the database tables

2. Create a Spring Boot starter project (start.spring.io)

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spring-boot-starter-data-jpa
spring-boot-starter-data-rest
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lombok
```

3. Develop the Entities: **Product** and **ProductCategory**

4. Create REST APIs with Spring Data JPA Repositories and Spring Data REST

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Project Lombok

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Project Lombok

- Modern Java project

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- Lombok automagically generates the getters/setters (behind the scenes)

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- Easy-to-use Annotations to eliminate boilerplate code

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Project Lombok

- Modern Java project
- Lombok automagically generates the getters/setters (behind the scenes)
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http://www.projectlombok.org

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Project Lombok

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Project Lombok

Before Lombok

```java
@Entity
@Table(name = "product")
public class Product {

    @Id
    @GeneratedValue(strategy = GenerationType.IDENTITY)
    @Column(name="id")
    private Long id;

    @Column(name = "name")
    @NotBlank
    private String name;

    public Product() {
    }

    public Long getId() {
        return id;
    }

    public void setId(Long id) {
        this.id = id;
    }

    public String getName() {
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    public void setName(String name) {
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    @Override
    public boolean equals(Object o) {
        if (this == o) return true;
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