Journey from Spring JDBC to JPA

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▼ Notes

▼ JdbcTemplate

Imagine you have a magic box called `JdbcTemplate`. This magic box helps you talk to a big table called `person`. But you don't want to talk to it directly because it's very big and confusing. So, you ask the magic box to help you.

Here's how you use the magic box:

1. **Find Everyone**: You tell the magic box, "Hey, can you go to the `person` table and bring me everyone?" The magic box then goes to the table, grabs all the information about each person, and brings it back to you.
2. **Read the Information**: Once the magic box brings back the information, it gives it to you in a nice format, like a list of people. Each person's information is nicely organized, so you can easily read it.
3. **Understand the People**: Now, you can look at the list and see all the people and their details, like their name, age, and where they live.

So basically, the `JdbcTemplate` is like a magical helper that makes it easy for you to get information from a big and messy table (database) without you having to deal with all the messiness directly. It's like having a friend who knows how to navigate through a big crowd and brings you exactly what you need!

▼ @Entity vs @Component

Imagine you're not just building a house with LEGO bricks, but you're also building other things like cars, trees, and even little LEGO people to populate your LEGO world.

Now, think of `@Entity` as a special marker you put on LEGO pieces that represent important parts of your house, like the foundation, walls, and roof. These are essential for your house to exist and function properly.

On the other hand, `@Component` is like a marker you put on LEGO pieces that represent other things in your LEGO world, like trees, cars, or maybe a LEGO doghouse. These things are not part of the core structure of your house, but they still add value to your LEGO world.

Similarly, in programming, `@Entity` is used to mark classes that represent essential parts of your data model, typically objects that will be stored in a database. These classes define the structure of your data.

On the flip side, `@Component` is used to mark classes as spring-managed components, which are typically used for things like services, utilities, or any other reusable objects that help your application work smoothly, but are not directly related to the data model.

So, in summary, `@Entity` is for marking classes that define your data structure for storage in a database, while `@Component` is for marking classes that provide functionality or services within your application.

▼ @PersistenceContext

imagine you're working on a big project, like building a city. Now, think of `@PersistenceContext` as a special tool belt that holds all the tools you need to interact with your city's blueprint.

In programming, when we're dealing with databases, we need a way to talk to them. The `@PersistenceContext` is like a magic tool belt that helps us connect to the database and do things like saving, retrieving, updating, and deleting data.

So, when you see `@PersistenceContext` in Java, it's saying, "Hey, this is where we keep all the tools for talking to the database." It helps the program understand how to connect to the database and handle all the important tasks related to storing and retrieving data, just like your tool belt helps you manage all the tools you need to build your city.

▼ The reason you don’t have to define database tables in JPA

The convenience of Spring Boot's auto-configuration feature, which recognizes the usage of an in-memory database and the presence of Data Persistence Annotations (DPAs) in the code, as well as the declaration of entities using annotations like `@Entity`. This triggers a process called "schema update," a feature of Hibernate, which automatically generates the necessary database schema based on the defined entities.

With this setup, there's no longer a need to manually define database tables. Instead, Hibernate handles the creation of tables based on the entity definitions, thus streamlining the development process. This automation is facilitated by Spring Boot's auto-configuration and Hibernate's schema update feature, ultimately simplifying database management tasks for developers.