Hibernate & Spring Data JPA

Beginner to Guru

Hibernate DDL Schema Generation Tool

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- Hibernate Schema Generation Tool - aka - hbm2ddl.auto configuration property
- Hibernate has the ability to reflect on JPA annotated classes to determine necessary database structure
- Hibernate can:
  - Create DDL statements to file
  - Execute DDL statements to create or update database tables
- Spring Boot is auto configuring this property to automatically generate database tables

HBM DDL Auto Properties

- none - Disables schema generation tool
- create-only - Create database schema from JPA Entities
- drop - drops database tables related to JPA Entities
- create - drops database schema and re-creates from JPA Entities
- create-drop - drops database schema and re-creates from JPA Entities, then will drop when shutting down
- validate - Validates schema, fatal error if wrong
- update - updates schema from JPA Entities

How it Works

- Hibernate Schema Generation Tool uses reflection on JPA Entities to determine database structure
- Allows for minimalist JPA configuration
  - Table names and column names inferred from type and property names
    - Default is camel case to snake case
    - productDescription -> PRODUCT_DESCRIPTION
  - Datatypes are also defaulted
- If JPA mappings are present, they will be used (You can set table names, column names, types, etc in JPA)

Which Mode to Use

- Hibernate Schema Generation Tool is great to use for rapid development
- Allows you rapidly evolve your object model without maintaining SQL DDL statements
- NOT recommended for production databases
- For production databases use validate or none
  - Validate is a good option since startup will fail if database schema is wrong
  - Without errors could occur at run time
- Also uses data source user, requiring elevated database privileges

Database Schema Management

- Management of production database schemas is always a difficult topic
- There is no 'one size fits all' solution
- In some organizations you will have more access, others much less
- Regulatory environments will often require 'separation of duties', thus only DBAs will be allowed to modify schemas
- Schema management may be manual or automated with tools such as flyway or liquidbase
- More to come on this topic!

SPRING FRAMEWORK

GURU