Einführung in Spring Data



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Berufserfahrung

cdi CDI | Part of Hyand

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Teilzeit

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Ausbildung



Fachhochschule Dortmund

Diplom-Ingenieur, Informatik

2004-2008











Agenda

Was ist Spring?

Was ist Spring Boot?

Welche Module gibt es in Spring?

Livecoding einer Spring Boot Anwendung



Was ist Spring?

- Dependency Injection
- Aspektorientierte Entwicklung (AOP)
- Templates



Was ist dependency injection?

Dependency Injection bedeutet, einem Objekt oder einer Funktion die benötigten Abhängigkeiten von außen zur Verfügung zu stellen, anstatt sie intern zu erstellen.

Anstatt dass jedes Objekt seine eigenen Abhängigkeiten verwaltet, zentralisiert DI diese Verantwortung und macht den Code modularer und wartbarer.

Warum dependency injection verwenden?

Lose Kopplung

Vorteile beim Testen

Flexibilität bei der Konfiguration

Arten von Dependency Injection

Constructor injection

Field / Setter injection

Aspektorientierte Entwicklung (AOP)

- Einfache Berücksichtigung von generischen Aspekten im Code (Cross-Cutting-Concerns)
- Generische Aspekte einer Softwareanwendung sind zum Beispiel
 - Transaktionssteuerung
 - Zugriffskontrolle
 - Logging
- AOP sorgt für einfacheren und wartbaren Code und hilft dabei den Fokus auf die Fachlichkeit zu legen

Aspektorientierte Entwicklung (AOP)

```
LoanRequestService.java
    @Service
    public class LoanRequestService {
        public void save(LoanRequest loanRequest) {
            Transaction tx = null;
            try {
                tx = session.beginTransaction();
               loanRequestRepository.save(loanRequest);
                tx.commit();
10
            } catch (RuntimeException e) {
                if(tx \neq null) tx.rollback();
11
12
                throw e;
13
14
15
16
```

Aspektorientierte Entwicklung (AOP)

```
LoanRequestService.java
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       public class LoanRequestService {
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                                                         LoanRequestService.java
                   if(tx \neq null) tx.rollback();
  11
  12
                   throw e;
  13
                                                            @Service
  14
                                                            public class LoanRequestService {
  15
  16
                                                                @Transactional
                                                                public void save(LoanRequest loanRequest) {
                                                                    loanRequestRepository.save(loanRequest);
                                                        9
Hyand
```

Welche Vorteile hat Spring Boot?

- Spring Boot starters
- Autokonfiguration
- Convention over Configuration (Coc)
- Eigenständige Anwendung





Spring starter Module

spring-boot-starter-data-jdbc	Starter for using Spring Data JDBC
spring-boot-starter-data-jpa	Starter for using Spring Data JPA with Hibernate
spring-boot-starter-data-ldap	Starter for using Spring Data LDAP
spring-boot-starter-data-mongodb	Starter for using MongoDB document-oriented database and Spring Data MongoDB
spring-boot-starter-data-mongodb-reactive	Starter for using MongoDB document-oriented database and Spring Data MongoDB Reactive
spring-boot-starter-data-neo4j	Starter for using Neo4j graph database and Spring Data Neo4j



Spring starter Module

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Spring Data Repositories

```
CrudRepository<T, ID>
void
void
m indByld(ID)
                     Optional<T>
m indAll()
                     Iterable < T >

    findAllById(Iterable < ID>) Iterable < T>

m = delete (T)
                           void
(1) deleteAll
                           void
(m) ¹ count ()
                           long
(ID) = existsByld(ID)
                        boolean
(ID) a deleteByld
                           void
Iterable < S>
① ListCrudRepository<T, ID>
List<S>
m indAll ()
                        List<T>

    findAllById(Iterable < ID>)

                        List<T>
```

```
Repository<T, ID>

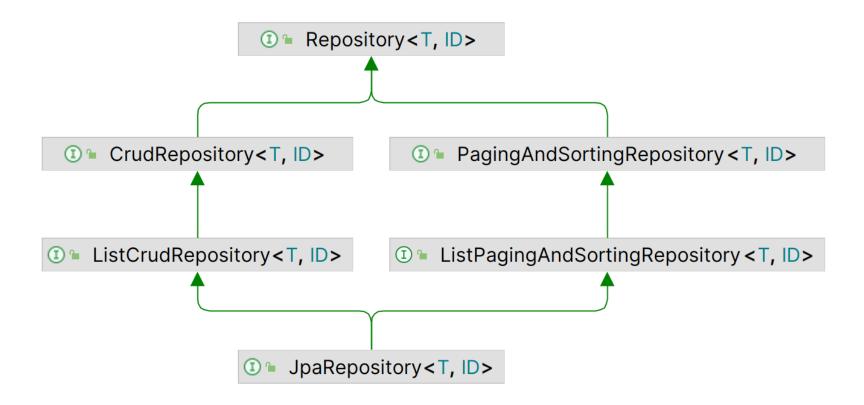
    PagingAndSortingRepository < T, ID >

      m indAll (Sort)
                                            Iterable < T >
      (Pageable)
                                              Page<T>

    □ ListPagingAndSortingRepository < T, ID >

      m indAll (Sort)
                                               List<T>
```

Spring Data JPA Repository

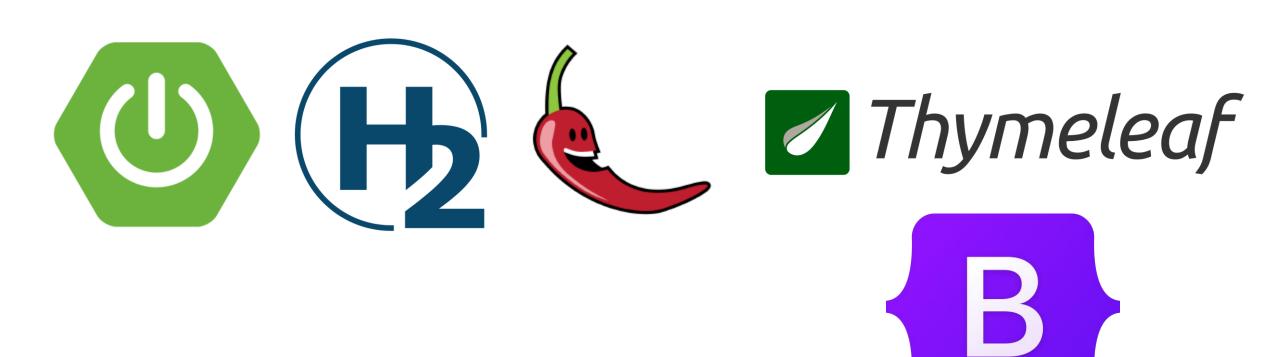


Codebeispiel

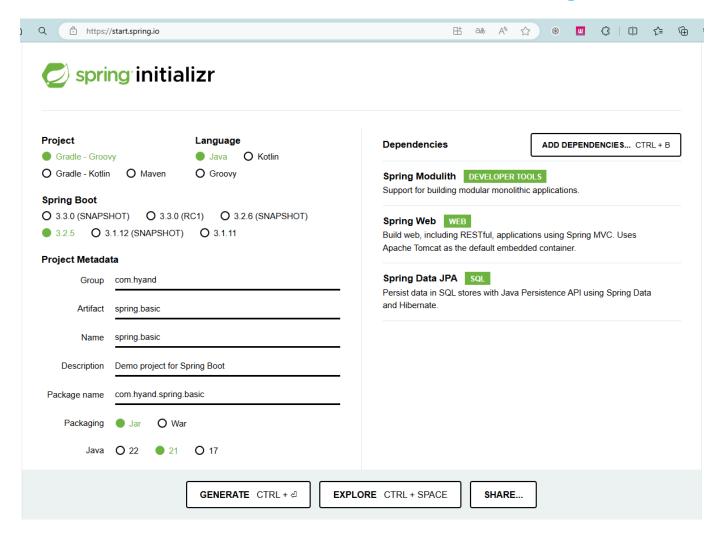
Codebespiel

- Spring initialization
- Entitäten und Repositories definieren
 - Generierung von Spring
- Service
 - Dependency Injection der Repositories
 - Transaktionskontrolle mit Aspektorientierter Entwicklung
- UI Entwicklung
 - Controller
 - Html Seiten

Codebespiel - Frameworks



Spring intializr – https://start.spring.io





Live Coding

(ok, mit Fangnetz)

Vielen Dank für eure Aufmerksamkeit



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Codebeispiel

https://github.com/slammering/spring-data-basic





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