spring DATA JPA

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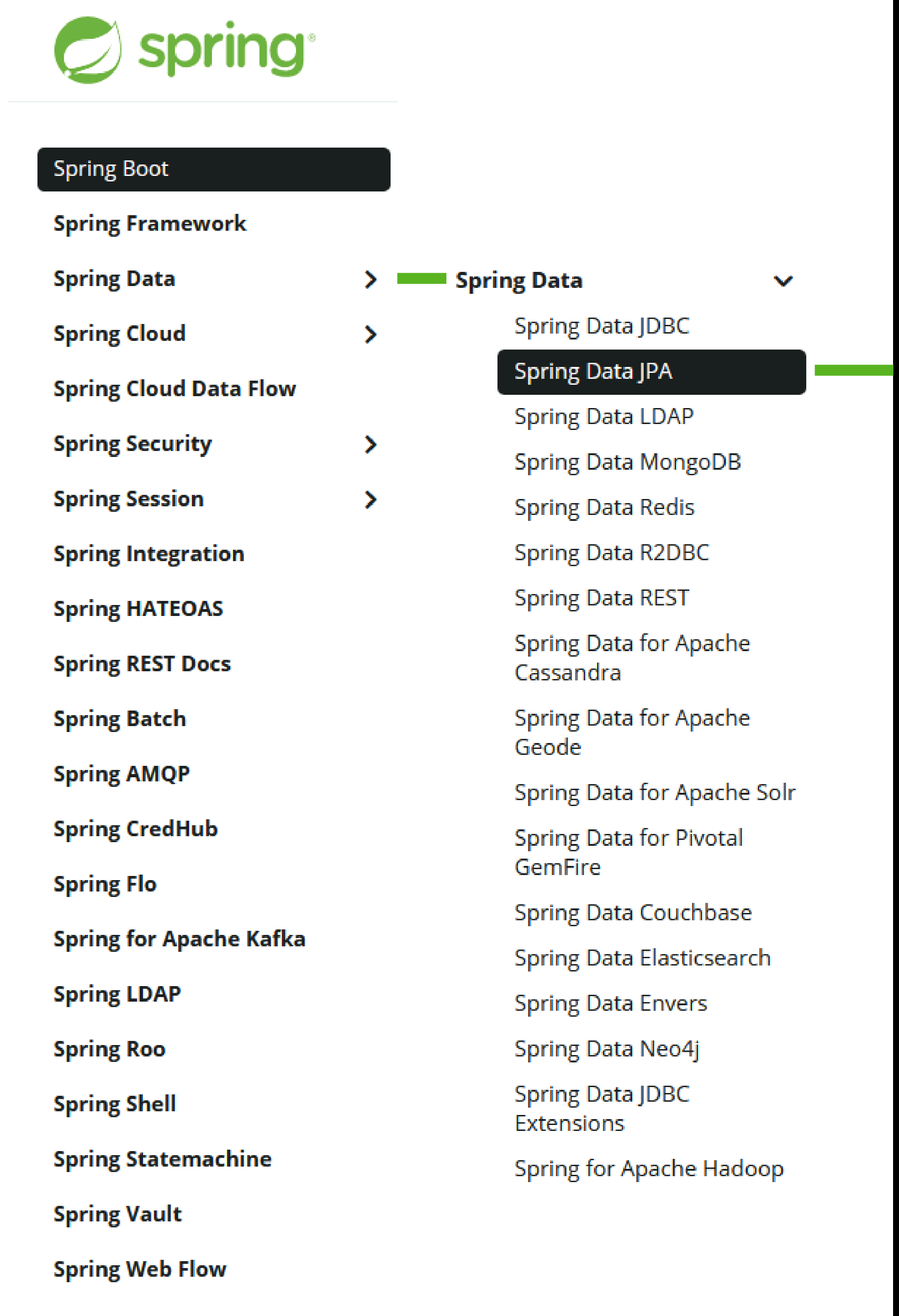


SPRING FRAMEWORK

Most popular Java Framework

- aspect oriented programming
- application context
- dependency injection
- Multiple Useful extensions

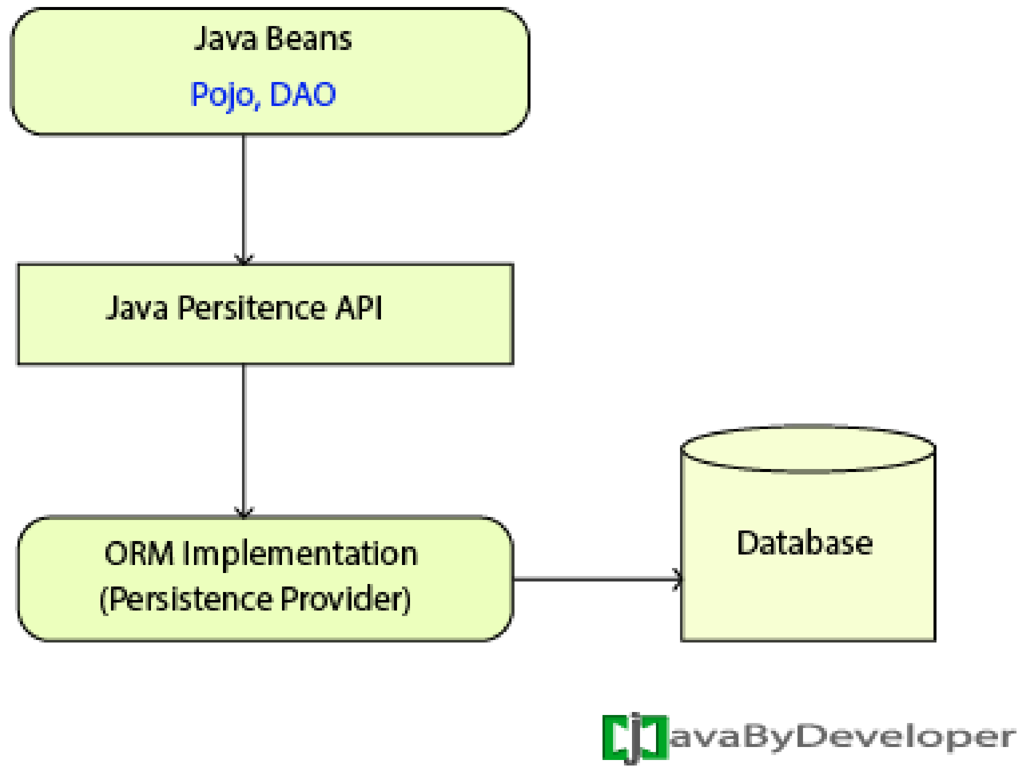
JPA

Jakarta Persistence API

Specification for accessing, persisting and managing data between Java Objects and Relational Database

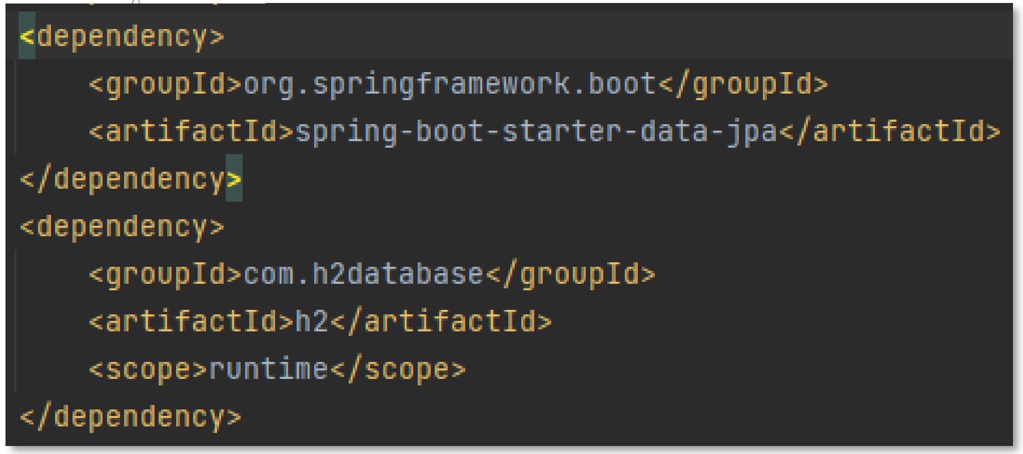
Needs ORM implementation

```
import javax.persistence.*;
```

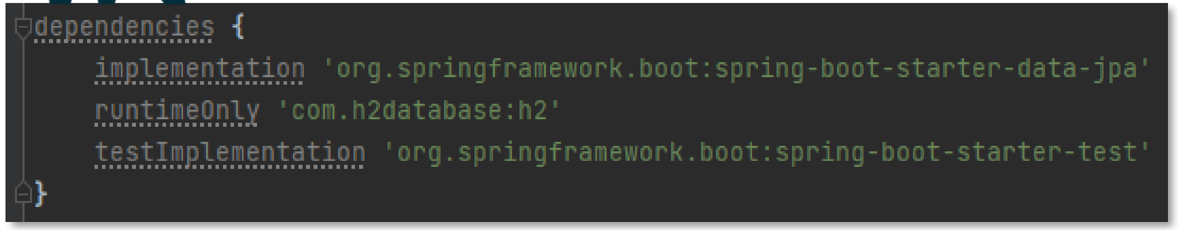


IMPLEMENTING SPRING DATA JPA

Dependencies & Database implementation



```xml
<dependency>
    <groupId>org.springframework.boot</groupId>
    <artifactId>spring-boot-starter-data-jpa</artifactId>
</dependency>
<dependency>
    <groupId>com.h2database</groupId>
    <artifactId>h2</artifactId>
    <scope>runtime</scope>
</dependency>
```



```groovy
dependencies {
    implementation 'org.springframework.boot:spring-boot-starter-data-jpa'
    runtimeOnly 'com.h2database:h2'
    testImplementation 'org.springframework.boot:spring-boot-starter-test'
}
```

WORKING WITH SPRING DATA JPA

Entities

- annotate class with @Entity
- annotate one attribute with @Id

```
import javax.persistence.*;

@Entity
public class item {
   @Id
   private Long itemNr;
}
```

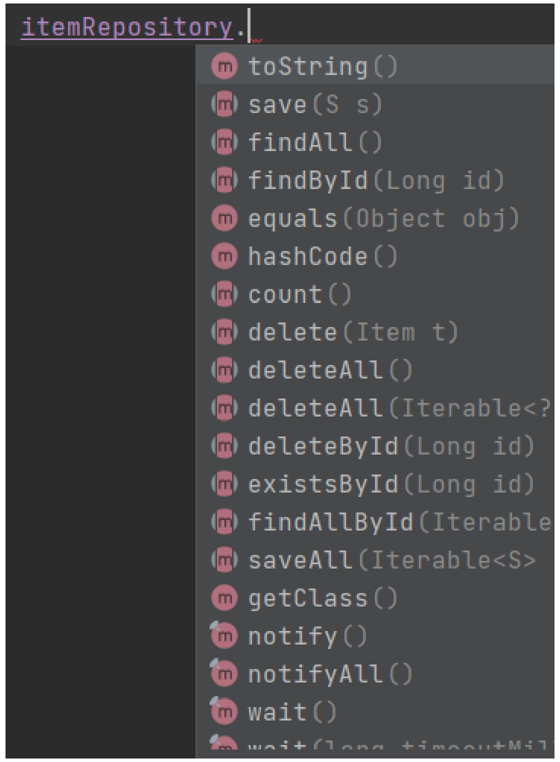
additional specifications:

```
@Entity
@Table(name="courseMembership")
public class CourseMembership {
   @Id
   @NonNull
   @GeneratedValue(strategy = GenerationType.AUTO)
   private Long id;

   @NonNull
   @ManyToOne
   @JoinColumn(name = "COURSE_ID")
   private Course course;
…
```

WORKING WITH SPRING DATA JPA

Repositories

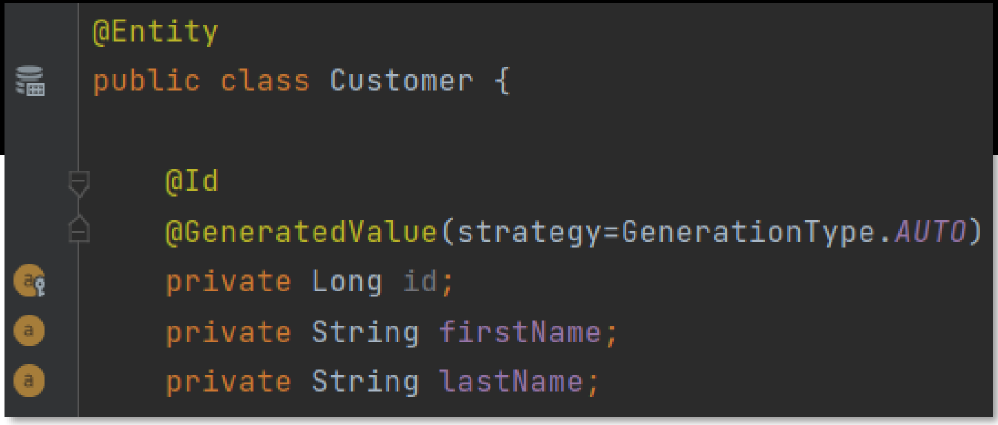
```java
import org.springframework.data.repository.CrudRepository;

public interface ItemRepository extends CrudRepository<Item,Long> {
}
```



```
itemRepository.
m toString()
m save(S s)
m findAll()
m findById(Long id)
m equals(Object obj)
m hashCode()
m count()
m delete(Item t)
m deleteAll()
m deleteAll(Iterable<?
m deleteById(Long id)
m existsById(Long id)
m findAllById(Iterable
m saveAll(Iterable<S>
m getClass()
m notify()
m notifyAll()
m wait()
m wait(long timeoutMil
```

WORKING WITH SPRING DATA JPA

Repositories



```
@Entity
public class Customer {

    @Id
    @GeneratedValue(strategy=GenerationType.AUTO)
    private Long id;
    private String firstName;
    private String lastName;
```

```
public interface CustomerRepository extends CrudRepository<Customer, Long> {
   List<Customer> findByLastName (String lastName);
   Customer findById(long id);
}
```

PRACTICAL TASK

Project generator: https://start.spring.io/