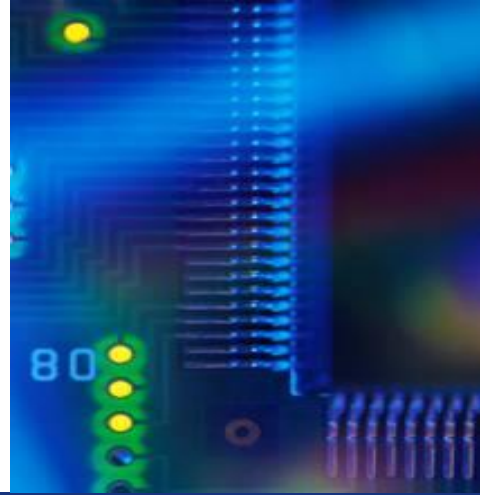
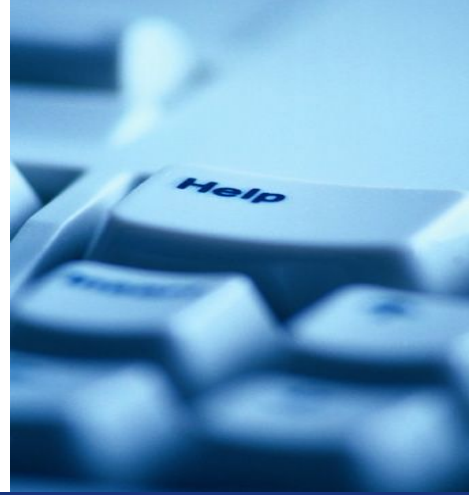




**UNIVERSITAS
BUDI LUHUR**



FAKULTAS TEKNOLOGI INFORMASI

Java Web Programming

[PG119/ 3 SKS]

Riskiana Wulan, MKom

Pertemuan 12

Working with Spring Data JPA part 2

Agenda

1. **Spring data query**
2. **Useful Tools**

AMBIL DATA BERDASARKAN NIM

- Tanpa SPRING, buat koneksi ke database lalu buat query "SELECT * FROM student WHERE nim = ?1"
- Dengan SPRING, buat method di interface repository :
Student findByNim(String nim);

AMBIL DATA BERDASARKAN NIM DAN NAMA

- Tanpa SPRING, buat koneksi ke database lalu buat query "SELECT * FROM student WHERE nim = ?1 AND name = ?2"
- Dengan SPRING, buat method di interface repository :
Student findByNimAndName(String nim, String name);

SPRING DATA QUERY

And	<u>findByLastnameAndFirstname</u>	... where x.lastname = ?1 and x.firstname = ?2
Or	<u>findByLastnameOrFirstname</u>	... where x.lastname = ?1 or x.firstname = ?2
Is,Equals	<u>findByFirstname</u> , <u>findByFirstnames</u> , <u>findByFirstnameEquals</u>	... where x.firstname = ?1
Between	<u>findByStartDateBetween</u>	... where x.startDate between ?1 and ?2
<u>LessThan</u>	<u>findByAgeLessThan</u>	... where x.age < ?1
<u>LessThanEqual</u>	<u>findByAgeLessThanEqual</u>	... where x.age <= ?1
<u>GreaterThan</u>	<u>findByAgeGreaterThan</u>	... where x.age > ?1
<u>GreaterThanEqual</u>	<u>findByAgeGreaterThanEqual</u>	... where x.age >= ?1
After	<u>findByStartDateAfter</u>	... where x.startDate > ?1
Before	<u>findByStartDateBefore</u>	... where x.startDate < ?1

SPRING DATA QUERY

IsNull	findByAgeIsNull	... where x.age is null
IsNotNull,NotNull	findByAge(Is)NotNull	... where x.age not null
Like	findByFirstnameLike	... where x.firstname like ?1
NotLike	findByFirstnameNotLike	... where x.firstname not like ?1
StartingWith	findByFirstnameStartingWith	... where x.firstname like ?1(parameter bound with appended %)
EndingWith	findByFirstnameEndingWith	... where x.firstname like ?1(parameter bound with prepended %)
Containing	findByFirstnameContaining	... where x.firstname like ?1(parameter bound wrapped in %)
OrderBy	findByAgeOrderByLastnameDesc	... where x.age = ?1 order by x.lastname desc
Not	findByLastnameNot	... where x.lastname <> ?1
In	findByAgeIn(Collection<Age> ages)	... where x.age in ?1

<https://docs.spring.io/spring-data/jpa/reference/jpa/query-methods.html>

REST

HTTP METHOD	CRUD OPERATION	PURPOSE
GET	CREATE	To create a record containing a new ID. e.g. /resources/{id}
POST	RETRIEVE/READ	To fetch the list of records, you have requested for
PUT	UPDATE	To update the record i.e. if you wish to update an instance of the record, you can set its new value
DELETE	DELETE	To delete the record

Create User: POST /api/users

View User: GET /api/users/{id}

Update User: PUT or PATCH /api/users/{id}

Delete User: DELETE /api/users/{id}

Sr. No.	API Name	HTTP Method	Path	Status Code	Description
(1)	GET Users	GET	/api/v1/users	200 (OK)	All User resources are fetched.
(2)	POST User	POST	/api/v1/users	201 (Created)	A new User resource is created.
(3)	GET User	GET	/api/v1/users/{id}	200 (OK)	One User resource is fetched.
(4)	PUT User	PUT	/api/v1/users/{id}	200 (OK)	User resource is updated.
(5)	DELETE User	DELETE	/api/v1/users/{id}	204 (No Content)	User resource is deleted.

https://www.javaguides.net/2021/01/rest-api-http-methods.html#google_vignette

Membuat endpoint get Student by Nim

1. Tambahkan method findByNim pada Repository class

```
@Repository
public interface StudentRepository extends JpaRepository<StudentEntity,Long> {

    StudentEntity findByNim(String nim);
}
```

2. Buat method untuk mengambil student berdasarkan filter nim

```
public Student getStudetByNim(String nim) {

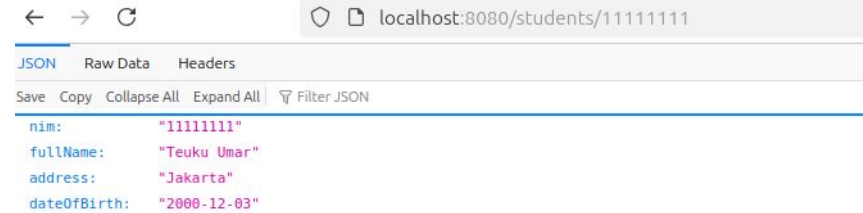
    StudentEntity studentEntity = studentRepository.findByNim(nim);
    if (studentEntity == null) {
        throw new RuntimeException("Student not found");
    }

    return this.map(studentEntity);
}
```

3. Buat endpoint get student dengan parameter nim

```
@GetMapping("/students/{nim}")
public Student getStudentByNim(@PathVariable String nim) {
    Student student = studentService.getStudetByNim(nim);
    return student;
}
```

Lalu akses endpoint melalui browser



CRUD

- **Singkatan dari Create, Read, Update and Delete.**
- **Terminologi CRUD tidak terpaku pada bahasa pemrograman yang dipakai.**
- **Empat operasi ini adalah standar di tiap sistem database.**
- **Standarnya, operasi Create menggunakan HTTP Method POST, Read menggunakan HTTP Method GET, Update menggunakan HTTP Method PUT, dan Delete menggunakan HTTP Method DELETE.**
- **Update dan Delete bisa juga menggunakan HTTP Method POST.**

AKSI CRUD

- **Tentukan role ketika melakukan CRUD, maksudnya : Tidak semua orang bisa membaca data di database, tidak semua orang bisa menambah, mengubah dan menghapus data di database.**
- **Pada kasus tertentu, ada data yang tidak bisa di hapus di database. Contohnya data master pengguna atau data audit.**
- **Pada kasus DELETE, biasanya hanya mengubah flag di database, tidak benar-benar menghapus data.**

Tools

1. Setting code completion for Java

Go to Tools-> Options->Editor->Code Completion

Choose Java Language, then check the option Auto Popup on Typing ... , Subword completion...

