Tutorial Membuat *Service Producer (view)*

Latihan Membuat *Service Producer*

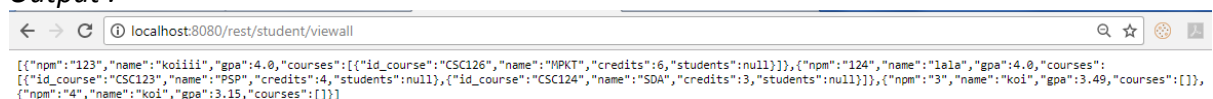1. *ViewAll*

Saya menambahkan method *viewAll* di *StudentRestController*

```
@RequestMapping("student/viewall")
public List<StudentModel> viewAll () {
    List<StudentModel> students = studentService.selectAllStudents();
    return students;
}
```

Karena yang diminta adalah mengeluarkan semua data *student* maka tentunya *output* dalam bentuk *List* sehingga *method* yang saya buat tipenya *List* dengan *return* List<StudentModel> yang berisi data dari seluruh *student.*

Output :

String parse

```json
[
    {
        "npm":"123",
        "name":"koiiii",
        "gpa":4.0,
        "courses":[
            {
                "id_course":"CSC126",
                "name":"MPKT",
                "credits":6,
                "students":null
            }
        ]
    },
    {
        "npm":"124",
        "name":"lala",
        "gpa":4.0,
        "courses":[
            {
                "id_course":"CSC123",
                "name":"PSP",
                "credits":4,
                "students":null
            },
            {
                "id_course":"CSC124",
                "name":"SDA",
                "credits":3,
                "students":null
            }
        ]
    },
    {
        "npm":"3",
        "name":"koi",
        "gpa":3.49,
        "courses":[
        ]
    },
    {
        "npm":"4",
        "name":"koi",
        "gpa":3.15,
        "courses":[
        ]
    }
```

2. Buatlah service untuk class Course. Buatlah controller baru yang terdapat service untuk melihat suatu course dengan masukan ID Course (view by ID) dan service untuk melihat semua course (view all).

a. *View by ID*

Output :

localhost:8080/rest/course/view/CSC123

{"id_course":"CSC123","name":"PSP","credits":4,"students":[{"npm":"124","name":"lala","gpa":0.0,"courses":null}]}
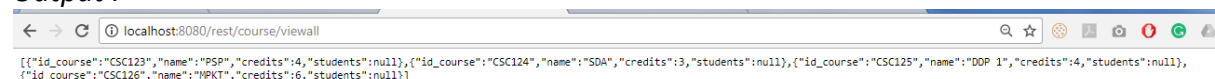
{
    "id_course":"CSC123",
    "name":"PSP",
    "credits":4,
    "students": [
        {
            "npm":"124",
            "name":"lala",
            "gpa":0.0,
            "courses":null
        }
    ]
}

Method yang saya buat untuk *view course by ID* sama seperti method *student* sebelumnya hanya saja ini dilakukan pada *course*. Ganti parameter menjadi *id_course*, ganti model menjadi *CourseModel* lalu pilih *method selectCourse* dengan menerima parameter *id_course*.

```java
@RequestMapping("course/view/{id_course}")
public CourseModel viewCourseById(@PathVariable(value = "id_course") String id_course) {
    CourseModel course = studentService.selectCourse(id_course);
    return course;
}
```

b. *Viewall*

Output :

localhost:8080/rest/course/viewall

[{"id_course":"CSC123","name":"PSP","credits":4,"students":null},{"id_course":"CSC124","name":"SDA","credits":3,"students":null},{"id_course":"CSC125","name":"DDP 1","credits":4,"students":null},
{"id_course":"CSC126","name":"MPKT","credits":6,"students":null}]

```
String parse

[
    {
        "id_course":"CSC123",
        "name":"PSP",
        "credits":4,
        "students":null
    },
    {
        "id_course":"CSC124",
        "name":"SDA",
        "credits":3,
        "students":null
    },
    {
        "id_course":"CSC125",
        "name":"DDP 1",
        "credits":4,
        "students":null
    },
    {
        "id_course":"CSC126",
        "name":"MPKT",
        "credits":6,
        "students":null
    }
]
```

- *Method* yang saya buat di *Controller*, *logic* nya sama seperti *method viewall* di *student*, hanya tinggal saja menjadi *course*.

```java
@RequestMapping("course/viewall")
public List<CourseModel> viewAllCourse() {
    List<CourseModel> courses = studentService.selectCourses();
    return courses;
}
```

- Buat *method* ini di *Mapper*

```java
@Select("select id_course, name, credits from course")
List<CourseModel> selectCourses ();
```

- Buat *method* ini di *StudentService*
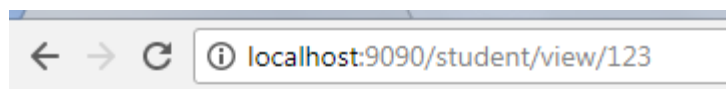
```java
List<CourseModel> selectCourses();
```

- Buat *method* ini di *StudentServiceDatabase*

```java
@Override
public List<CourseModel> selectCourses ()
{
    log.info ("select all courses");
    return studentMapper.selectCourses ();
}
```

Tutorial Membuat *Service Consumer*

Output :

NPM = 123

Name = koiiii

GPA = 4.0

Kuliah yang diambil

- MPKT-6 sks

```
2017-11-04 10:31:16.589  INFO 25888 --- [  restartedMain] s.b.c.e.t.TomcatEmbeddedServletContainer : Tomcat started on port(s): 9090 (http)
2017-11-04 10:31:16.606  INFO 25888 --- [  restartedMain] com.example.ApapTutorial06Application    : Started ApapTutorial06Application in 12.37
2017-11-04 10:32:20.600  INFO 25888 --- [nio-9090-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring FrameworkServlet 'disp
2017-11-04 10:32:20.601  INFO 25888 --- [nio-9090-exec-1] o.s.web.servlet.DispatcherServlet        : FrameworkServlet 'dispatcherServlet': init
2017-11-04 10:32:20.673  INFO 25888 --- [nio-9090-exec-1] o.s.web.servlet.DispatcherServlet        : FrameworkServlet 'dispatcherServlet': init
2017-11-04 10:32:20.805  INFO 25888 --- [nio-9090-exec-1] com.example.service.StudentServiceRest   : REST - select student with npm 123
```

Latihan Membuat *Service Customer*
1. *Viewall Student*

Saya buat ini di DAO

```
List<StudentModel> selectAllStudents();
```

Saya buat ini di DAOImpl

```
@Override
public List<StudentModel> selectAllStudents ()
{

    List<StudentModel> students =
            restTemplate.getForObject("http://localhost:8080/rest/student/viewall",
                    List.class);
    return students;
}
```

Dan membuat ini di *StudentServiceRest*

```
@Override
public List<StudentModel> selectAllStudents ()
{
    log.info ("REST - select all students");
    return studentDAO.selectAllStudents ();
}
```

Sehingga pada *controller* muncul *log* seperti berikut

```
28724 --- [nio-9090-exec-1] o.s.web.servlet.DispatcherServlet        : FrameworkServlet 'dispatcherServlet': ini
28724 --- [nio-9090-exec-1] o.s.web.servlet.DispatcherServlet        : FrameworkServlet 'dispatcherServlet': ini
28724 --- [nio-9090-exec-1] com.example.service.CourseServiceRest    : REST - select course with id_course CSC12
28724 --- [nio-9090-exec-6] com.example.service.StudentServiceRest   : REST - select all students
```
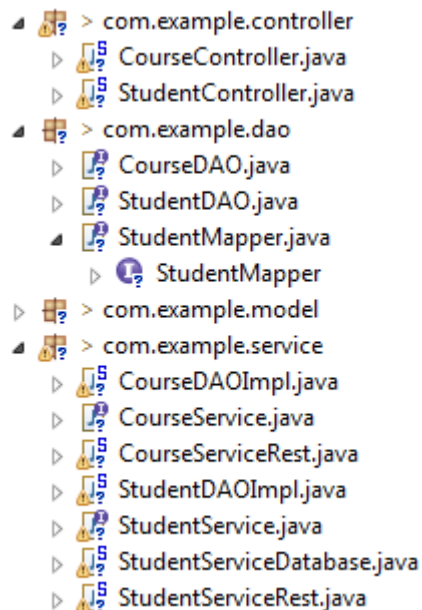
2. *View Course by ID*
Output :

localhost:9090/course/view/CSC123

ID = CSC123

Nama = PSP

SKS = 4

Mahasiswa yang mengambil

- 124-lala

Struktur :

```
▲ 🔧 > com.example.controller
   ▷ CourseController.java
   ▷ StudentController.java
▲ 🔧 > com.example.dao
   ▷ CourseDAO.java
   ▷ StudentDAO.java
   ▲ StudentMapper.java
      ▷ StudentMapper
▷ 🔧 > com.example.model
▲ 🔧 > com.example.service
   ▷ CourseDAOImpl.java
   ▷ CourseService.java
   ▷ CourseServiceRest.java
   ▷ StudentDAOImpl.java
   ▷ StudentService.java
   ▷ StudentServiceDatabase.java
   ▷ StudentServiceRest.java
```

Saya membuat *controller, DAO*, dan *ServiceRest* baru untuk *course*.
Saya membuat *method* ini di DAO

```
public interface CourseDAO {
    CourseModel selectCourse (String id_course);
```

Membuat ini pada DAOImpl

```
@Override
public CourseModel selectCourse (String id_course)
{
    CourseModel course =
            restTemplate.getForObject("http://localhost:8080/rest/course/view/"+id_course,
                    CourseModel.class);
    return course;
}
```

Membuat *log* pada *CourseServiceRest*

```
@Override
public CourseModel selectCourse (String id_course)
{
    log.info ("REST - select course with id_course {}", id_course);
    return courseDAO.selectCourse(id_course);
}
```
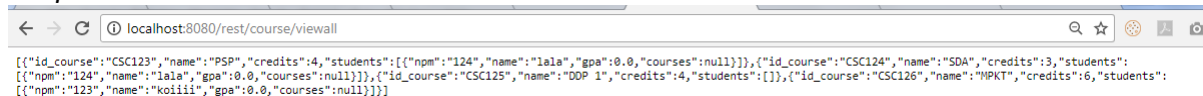
Sehingga muncul pada *controller* seperti berikut :

```
[nio-9090-exec-1] com.example.service.CourseServiceRest    : REST - select course with id_course CSC123
```

3. *Viewall Courses*

Output di *Producer* :

localhost:8080/rest/course/viewall

[{"id_course":"CSC123","name":"PSP","credits":4,"students":[{"npm":"124","name":"lala","gpa":0.0,"courses":null}]},{"id_course":"CSC124","name":"SDA","credits":3,"students":
[{"npm":"124","name":"lala","gpa":0.0,"courses":null}]},{"id_course":"CSC125","name":"DDP 1","credits":4,"students":[]},{"id_course":"CSC126","name":"MPKT","credits":6,"students":
[{"npm":"123","name":"koiiii","gpa":0.0,"courses":null}]}]

Output di *Consumer*:

ID = CSC123

Nama = PSP

SKS = 4

Mahasiswa yang mengambil

- 124-lala

ID = CSC124

Nama = SDA

SKS = 3

Mahasiswa yang mengambil

- 124-lala

ID = CSC125

Nama = DDP 1

SKS = 4

Mahasiswa yang mengambil

Saya menambahkan *method* ini di DAO

```java
List<CourseModel> selectCoursesAll ();
```

Menambahkan *method selectCourseAll* di Mapper untuk men-*select* semua *course* pada database

```java
@Select("select * from course")
@Results(value = {
        @Result(property="id_course", column="id_course"),
        @Result(property="name", column="name"),
        @Result(property="credits", column="credits"),
        @Result(property="students", column="id_course",
            javaType = List.class,
            many = @Many(select="selectStudentCourses"))
})
List<CourseModel> selectCoursesAll ();

@Select("select student.npm, name " +
        "from studentcourse join student " +
        "on studentcourse.npm = student.npm " +
        "where studentcourse.id_course = #{id_course}")
List<StudentModel> selectStudentCourses(@Param("id_course") String id_course);
```

Menambahkan *method* juga di DAOImpl

```java
public List<CourseModel> selectCoursesAll ()
{

    List<CourseModel> courses =
            restTemplate.getForObject("http://localhost:8080/rest/course/viewall",
                    List.class);
    return courses;
}
```

Kemudian menambahkan *method* pada *ServiceRest*

```java
@Override
public List<CourseModel> selectCoursesAll ()
{
    log.info ("REST - select all courses");
    return courseDAO.selectCoursesAll();
}
```

Sehingga pada *controller* muncul *log* seperti gambar berikut

```
com.example.service.CourseServiceRest     : REST - select all courses
```