Write Up Tutorial 7
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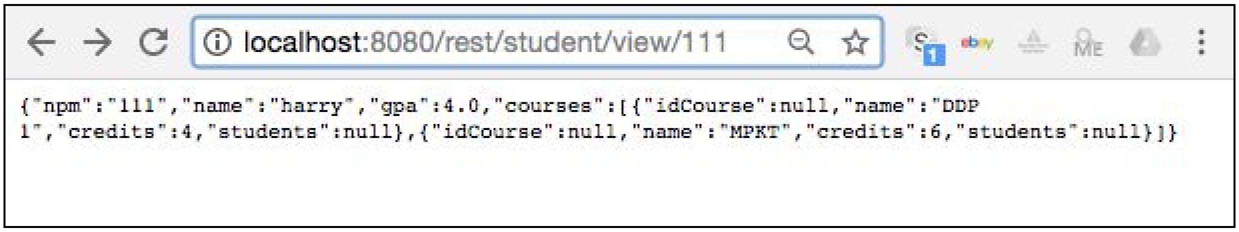
APAP - B

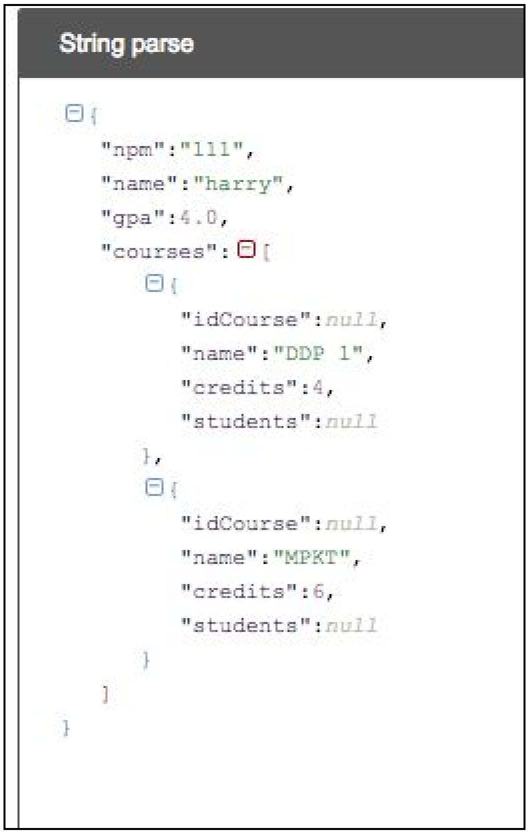
Membuat Service Producer

→ akses rest/student/view/11


localhost:8080/rest/student/view/111

```
{"npm":"111","name":"harry","gpa":4.0,"courses":[{"idCourse":null,"name":"DDP
1","credits":4,"students":null},{"idCourse":null,"name":"MPKT","credits":6,"students":null}]}
```

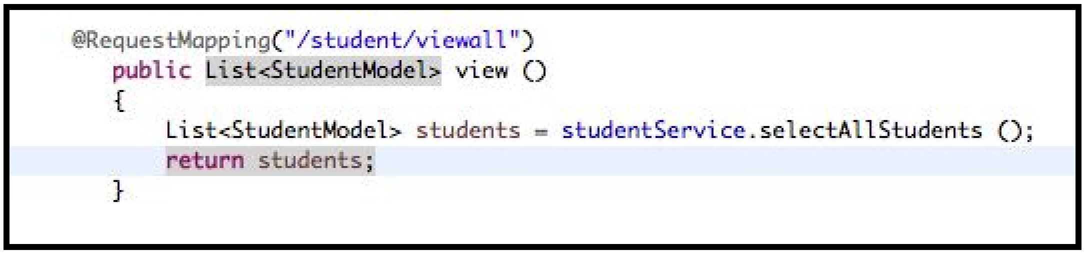
JSON:


String parse

```
{
   "npm":"111",
   "name":"harry",
   "gpa":4.0,
   "courses":[
      {
         "idCourse":null,
         "name":"DDP 1",
         "credits":4,
         "students":null
      },
      {
         "idCourse":null,
         "name":"MPKT",
         "credits":6,
         "students":null
      }
   ]
}
```

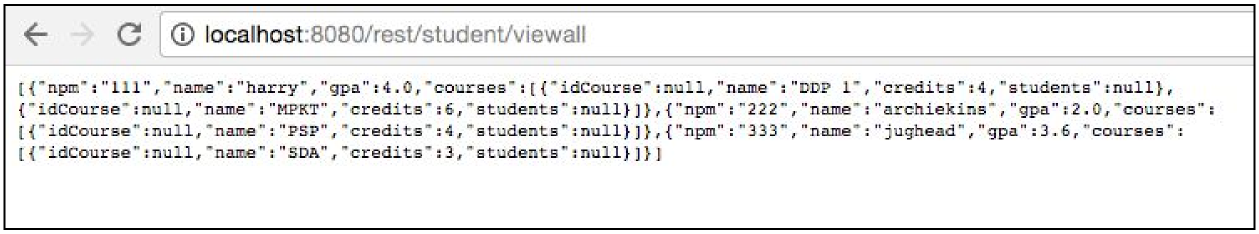
Latihan 1:

→ yang dilakukan ialah membuat method baru untuk fitur viewall student, saya menggunakan List<StudentModel> untuk mengambil serangkaian student melalui pemanggilan method selectAllStudents(). berikut adalah code dari method tersebut:



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

Hasil:



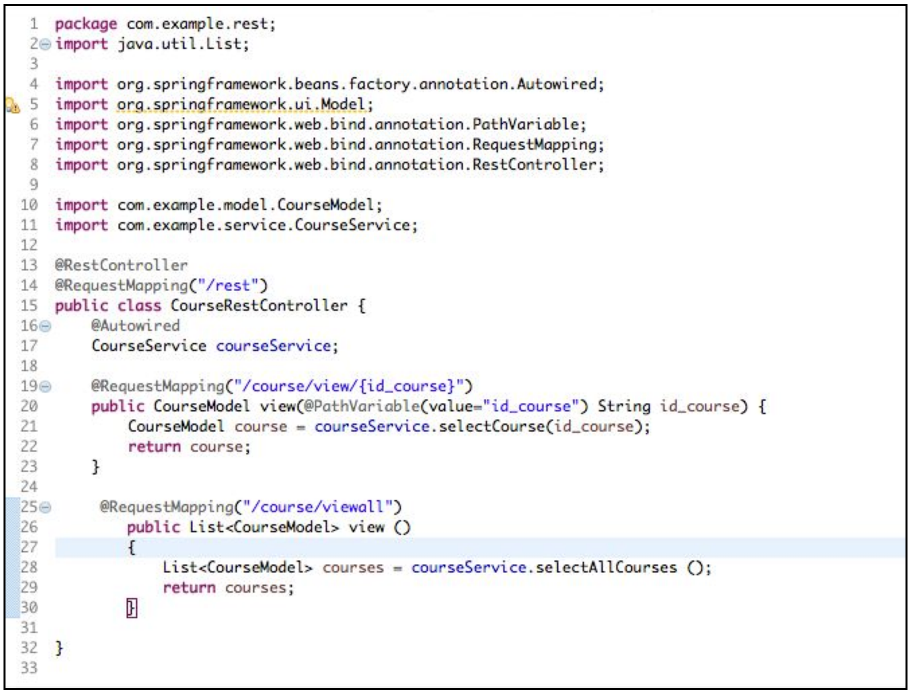
```
[{"npm":"111","name":"harry","gpa":4.0,"courses":[{"idCourse":null,"name":"DDP 1","credits":4,"students":null},
{"idCourse":null,"name":"MPKT","credits":6,"students":null}]},{"npm":"222","name":"archiekins","gpa":2.0,"courses":
[{"idCourse":null,"name":"PSP","credits":4,"students":null}]},{"npm":"333","name":"jughead","gpa":3.6,"courses":
[{"idCourse":null,"name":"SDA","credits":3,"students":null}]}]
```

Latihan 2

→ Pertama-tama saya membuat javaclass baru yaitu CourseRestController.java, setelah itu saya membuat method berisikan service untuk dapat melihat course sesuai ID course yang dimasukan, dan juga method yang serupa untuk melihat semua course.

Untuk method view course by ID, saya membuat method dengan return sebuah CourseModel dengan memanggil method selectCourse(id_course). Dan untuk method viewall course, saya membuat method dengan return List<CourseModel> untuk mengambil serangkaian course melalui pemanggilan method selectAllCourses().

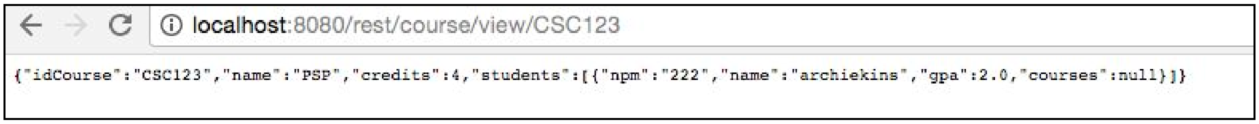
Berikut adalah source code dari kedua method tersebut:



```java
package com.example.rest;
import java.util.List;

import org.springframework.beans.factory.annotation.Autowired;
import org.springframework.ui.Model;
import org.springframework.web.bind.annotation.PathVariable;
import org.springframework.web.bind.annotation.RequestMapping;
import org.springframework.web.bind.annotation.RestController;

import com.example.model.CourseModel;
import com.example.service.CourseService;

@RestController
@RequestMapping("/rest")
public class CourseRestController {
    @Autowired
    CourseService courseService;

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

     @RequestMapping("/course/viewall")
        public List<CourseModel> view ()
        {
            List<CourseModel> courses = courseService.selectAllCourses ();
            return courses;
        }

}
```

Hasil:

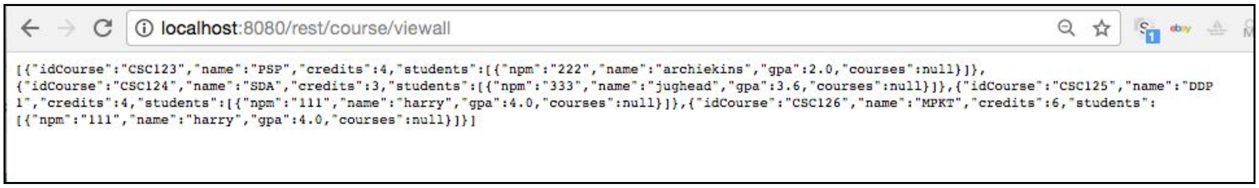
→ hasil view course by ID



localhost:8080/rest/course/view/CSC123

```
{"idCourse":"CSC123","name":"PSP","credits":4,"students":[{"npm":"222","name":"archiekins","gpa":2.0,"courses":null}]}
```

→ hasil view all course

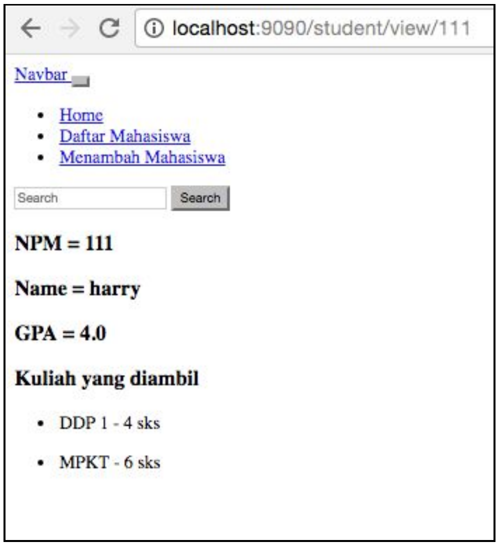


localhost:8080/rest/course/viewall

```
[{"idCourse":"CSC123","name":"PSP","credits":4,"students":[{"npm":"222","name":"archiekins","gpa":2.0,"courses":null}]},
{"idCourse":"CSC124","name":"SDA","credits":3,"students":[{"npm":"333","name":"jughead","gpa":3.6,"courses":null}]},{"idCourse":"CSC125","name":"DDP
1","credits":4,"students":[{"npm":"111","name":"harry","gpa":4.0,"courses":null}]},{"idCourse":"CSC126","name":"MPKT","credits":6,"students":
[{"npm":"111","name":"harry","gpa":4.0,"courses":null}]}]
```

Membuat Service Consumer:

→ hasil run consumer



NPM = 111

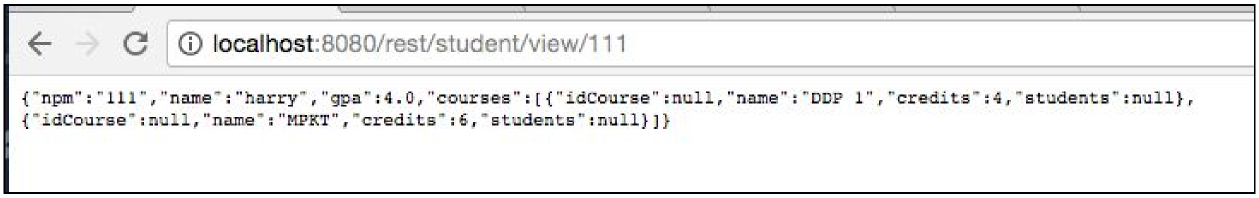
Name = harry

GPA = 4.0

Kuliah yang diambil

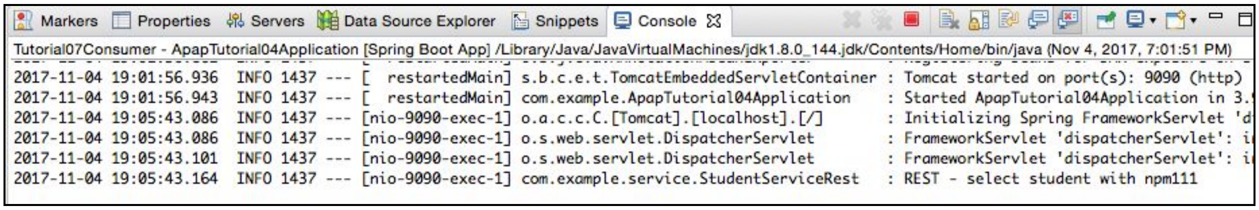
- DDP 1 - 4 sks
- MPKT - 6 sks

→ hasil run producer



```
{"npm":"111","name":"harry","gpa":4.0,"courses":[{"idCourse":null,"name":"DDP 1","credits":4,"students":null},
{"idCourse":null,"name":"MPKT","credits":6,"students":null}]}
```

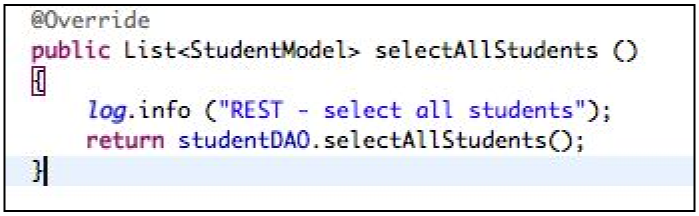
→ tampilan pada console



```
Tutorial07Consumer - ApapTutorial04Application [Spring Boot App] /Library/Java/JavaVirtualMachines/jdk1.8.0_144.jdk/Contents/Home/bin/java (Nov 4, 2017, 7:01:51 PM)
2017-11-04 19:01:56.936  INFO 1437 --- [  restartedMain] s.b.c.e.t.TomcatEmbeddedServletContainer : Tomcat started on port(s): 9090 (http)
2017-11-04 19:01:56.943  INFO 1437 --- [  restartedMain] com.example.ApapTutorial04Application    : Started ApapTutorial04Application in 3.
2017-11-04 19:05:43.086  INFO 1437 --- [nio-9090-exec-1] o.a.c.c.C.[Tomcat].[localhost].[/]       : Initializing Spring FrameworkServlet 'd
2017-11-04 19:05:43.086  INFO 1437 --- [nio-9090-exec-1] o.s.web.servlet.DispatcherServlet        : FrameworkServlet 'dispatcherServlet': i
2017-11-04 19:05:43.101  INFO 1437 --- [nio-9090-exec-1] o.s.web.servlet.DispatcherServlet        : FrameworkServlet 'dispatcherServlet': i
2017-11-04 19:05:43.164  INFO 1437 --- [nio-9090-exec-1] com.example.service.StudentServiceRest   : REST - select student with npm111
```

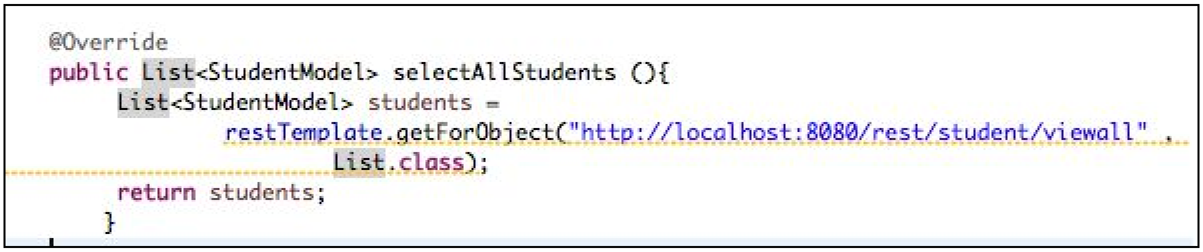
Latihan 3:

→ Pertama-tama saya melengkapi code untuk method service viewall di StudentServiceRest.java, dengan mereturn method selectAllStudents();



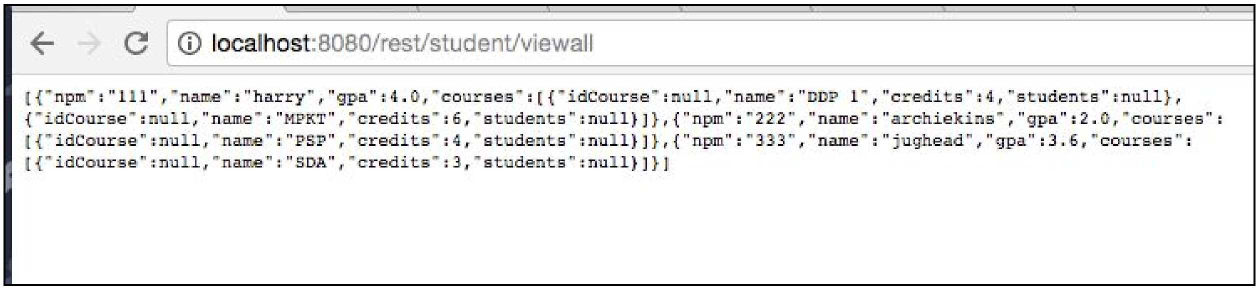
```
@Override
public List<StudentModel> selectAllStudents ()
{
    log.info ("REST - select all students");
    return studentDAO.selectAllStudents();
}
```

→ setelah itu saya melengkapi method selectAllStudents yang berada pada studentDAOImpl.java untuk memanggil getForObject yang menerima parameter berupa URL producer web service untuk fitur viewall. Berikut source code nya



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

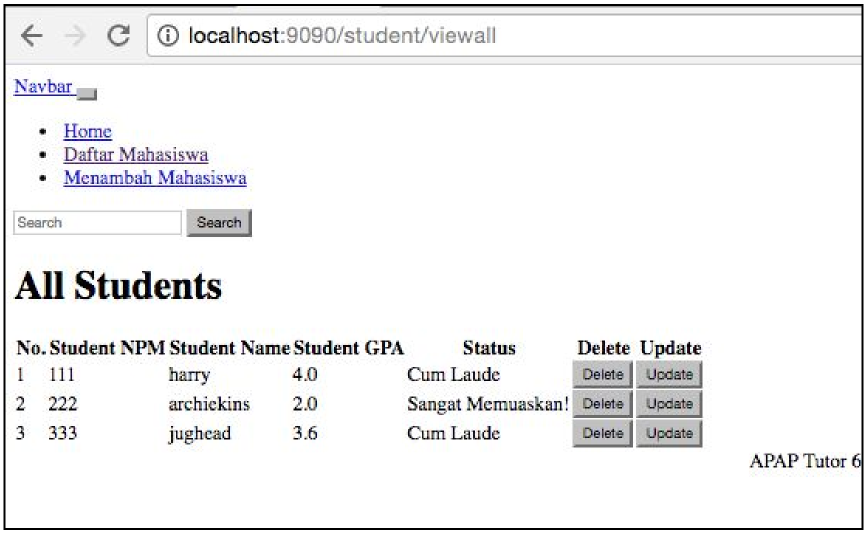
→ **Hasil latihan 3 producer**



localhost:8080/rest/student/viewall

```
[{"npm":"111","name":"harry","gpa":4.0,"courses":[{"idCourse":null,"name":"DDP 1","credits":4,"students":null},
{"idCourse":null,"name":"MPKT","credits":6,"students":null}]},{"npm":"222","name":"archiekins","gpa":2.0,"courses":
[{"idCourse":null,"name":"PSP","credits":4,"students":null}]},{"npm":"333","name":"jughead","gpa":3.6,"courses":
[{"idCourse":null,"name":"SDA","credits":3,"students":null}]}]
```

→ **Hasil latihan 3 consumer**



localhost:9090/student/viewall

Navbar

- Home
- Daftar Mahasiswa
- Menambah Mahasiswa

Search [Search]

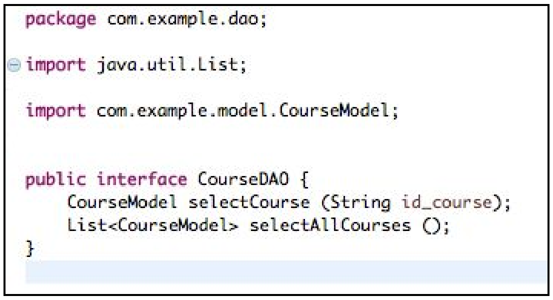
All Students

No.	Student NPM	Student Name	Student GPA	Status	Delete	Update
1	111	harry	4.0	Cum Laude	Delete	Update
2	222	archiekins	2.0	Sangat Memuaskan!	Delete	Update
3	333	jughead	3.6	Cum Laude	Delete	Update

APAP Tutor 6

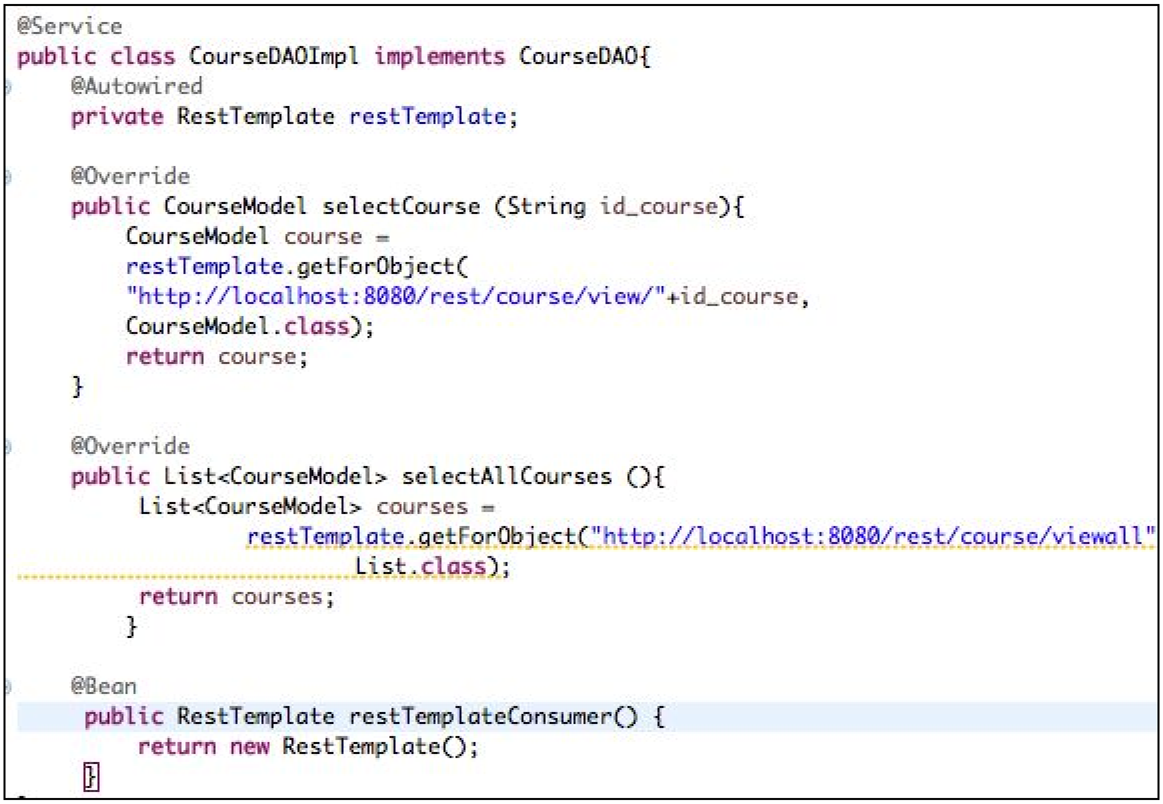
Latihan 4:

→ Pertama-tama saya membuat interface baru pada package dao yaitu CourseDAO yang berisikan method2 yang akan diimplementasikan yaitu select Course by ID, dan selectAllCourses:



```
package com.example.dao;

import java.util.List;

import com.example.model.CourseModel;


public interface CourseDAO {
    CourseModel selectCourse (String id_course);
    List<CourseModel> selectAllCourses ();
}
```

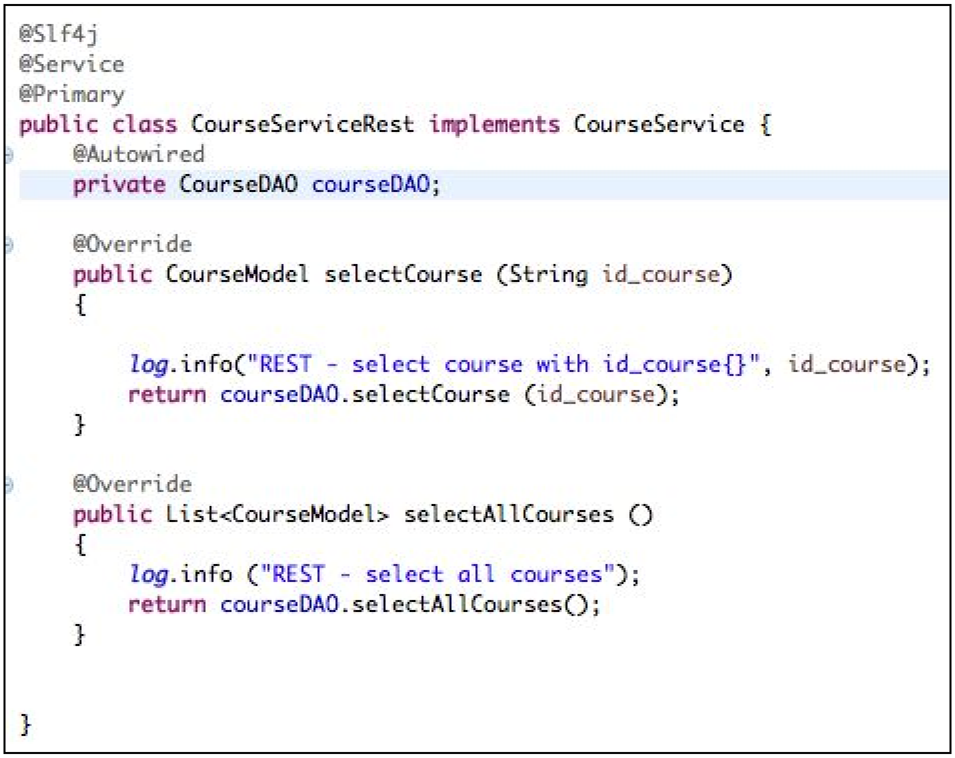
→ selanjutnya saya membuat CourseDAOImpl yang akan mengimplentasi CourseDAO. Isi dari CourseDAOImpl ialah method getForObject yang menerima parameter berupa URL producer web service untuk kedua fitur (view course by id dan view all courses). Berikut adalah source code nya.



```
@Service
public class CourseDAOImpl implements CourseDAO{
    @Autowired
    private RestTemplate restTemplate;

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

    @Override
    public List<CourseModel> selectAllCourses (){
         List<CourseModel> courses =
                 restTemplate.getForObject("http://localhost:8080/rest/course/viewall"
                         List.class);
         return courses;
        }

    @Bean
     public RestTemplate restTemplateConsumer() {
         return new RestTemplate();
     }
```

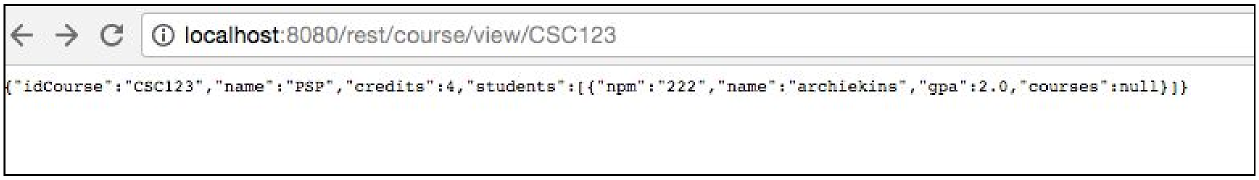
→ selanjutnya saya membuat CourseServiceRest pada package service. Class tersebut meng-implements StudentService dan berisikan implementasi method2 yang mereturn coursemodel untuk select course by Id, dan return list of coursemodel untuk selectAllcourses.

Berikut adalah source code nya.



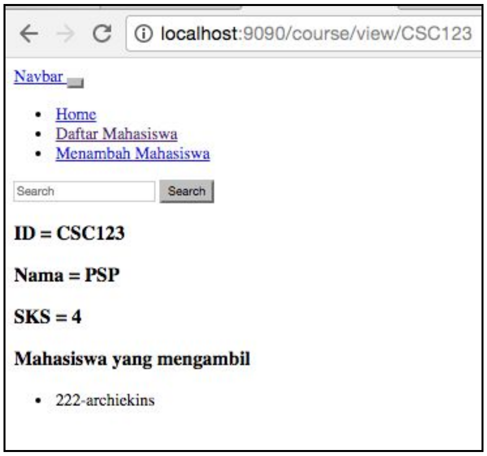
```
@Slf4j
@Service
@Primary
public class CourseServiceRest implements CourseService {
    @Autowired
    private CourseDAO courseDAO;

    @Override
    public CourseModel selectCourse (String id_course)
    {

        log.info("REST - select course with id_course{}", id_course);
        return courseDAO.selectCourse (id_course);
    }

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


}
```

→ hasil producer view course by id



```
{"idCourse":"CSC123","name":"PSP","credits":4,"students":[{"npm":"222","name":"archiekins","gpa":2.0,"courses":null}]}
```

→ hasil consumer view course by id



ID = CSC123

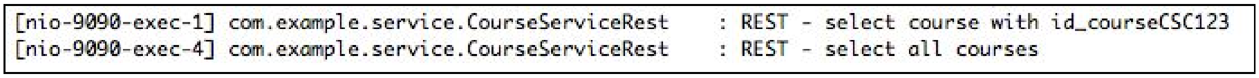
Nama = PSP

SKS = 4

Mahasiswa yang mengambil

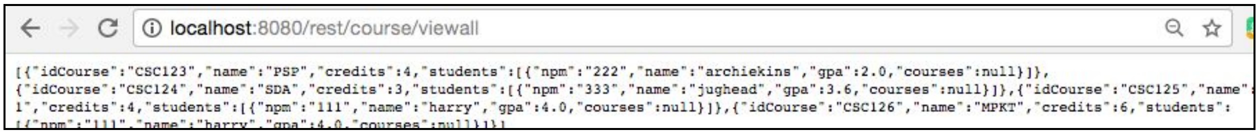
- 222-archiekins

→ console



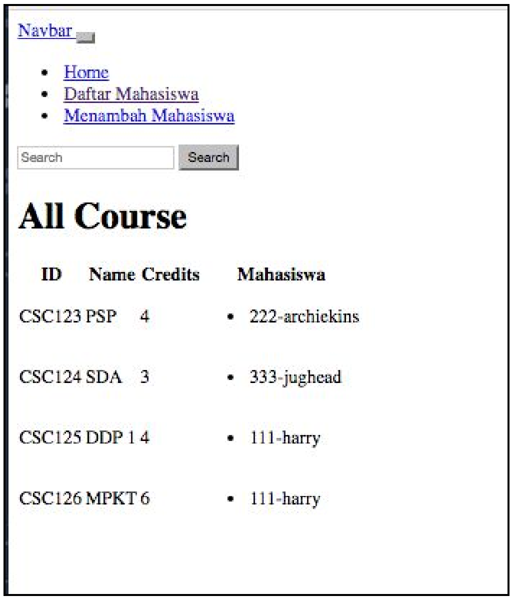
```
[nio-9090-exec-1] com.example.service.CourseServiceRest     : REST - select course with id_courseCSC123
[nio-9090-exec-4] com.example.service.CourseServiceRest     : REST - select all courses
```

→ hasil producer view all courses



```
[{"idCourse":"CSC123","name":"PSP","credits":4,"students":[{"npm":"222","name":"archiekins","gpa":2.0,"courses":null}]},
{"idCourse":"CSC124","name":"SDA","credits":3,"students":[{"npm":"333","name":"jughead","gpa":3.6,"courses":null}]},{"idCourse":"CSC125","name":
1","credits":4,"students":[{"npm":"111","name":"harry","gpa":4.0,"courses":null}]},{"idCourse":"CSC126","name":"MPKT","credits":6,"students":
[{"npm":"111","name":"harry","gpa":4.0,"courses":null}]}]
```

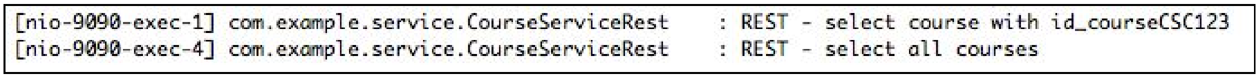
→ hasil consumer view all courses



All Course

ID	Name	Credits	Mahasiswa
CSC123	PSP	4	• 222-archiekins
CSC124	SDA	3	• 333-jughead
CSC125	DDP 1	4	• 111-harry
CSC126	MPKT	6	• 111-harry

→ console



```
[nio-9090-exec-1] com.example.service.CourseServiceRest    : REST - select course with id_courseCSC123
[nio-9090-exec-4] com.example.service.CourseServiceRest    : REST - select all courses
```