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APAP – A

Write-up Tutorial 7

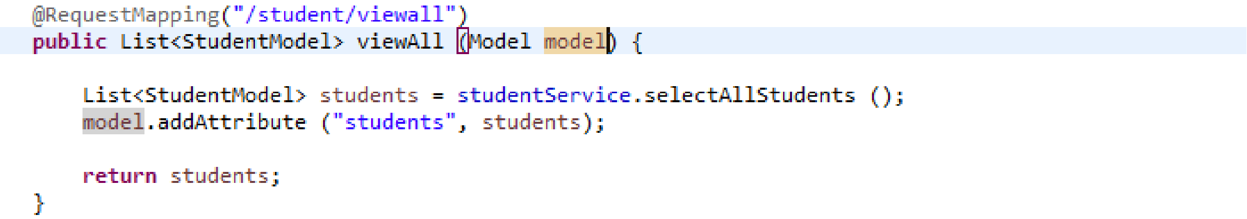
a. Ringkasan dari materi yang Anda telah pelajari pada tutorial kali ini

Saya mempelajari bagaimana menggunakan web service, dimana membagi program menjadi producer yang mengolah database dan consumer yang menanggapi

b. Latihan

Latihan 1: Membuat service untuk mengembalikan seluruh student yang ada di basis data.

1. Membuat request mapping /student/viewall
2. Mencari list of students dengan method selectAllStudents dari interface studentService
3. Mereturn object students.

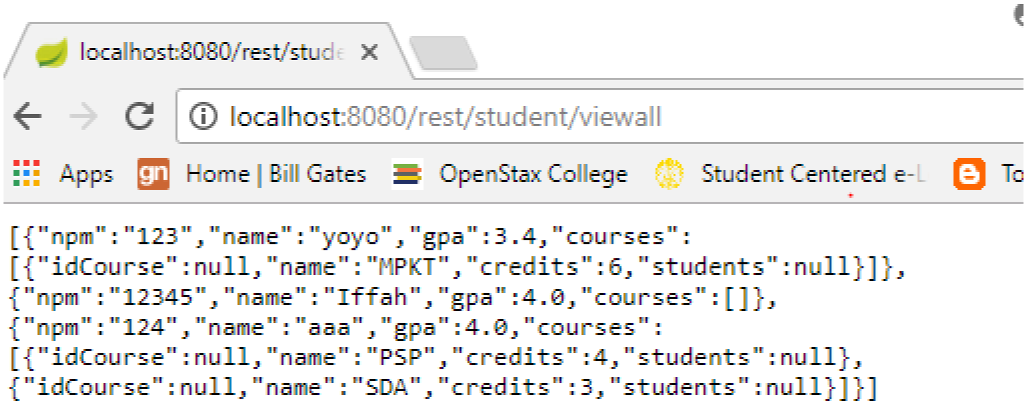


```
@RequestMapping("/student/viewall")
public List<StudentModel> viewAll (Model model) {

    List<StudentModel> students = studentService.selectAllStudents ();
    model.addAttribute ("students", students);

    return students;
}
```

Hasil dari rest/student/viewall.



```
[{"npm":"123","name":"yoyo","gpa":3.4,"courses":
[{"idCourse":null,"name":"MPKT","credits":6,"students":null}]},
{"npm":"12345","name":"Iffah","gpa":4.0,"courses":[]},
{"npm":"124","name":"aaa","gpa":4.0,"courses":
[{"idCourse":null,"name":"PSP","credits":4,"students":null},
{"idCourse":null,"name":"SDA","credits":3,"students":null}]}]
```

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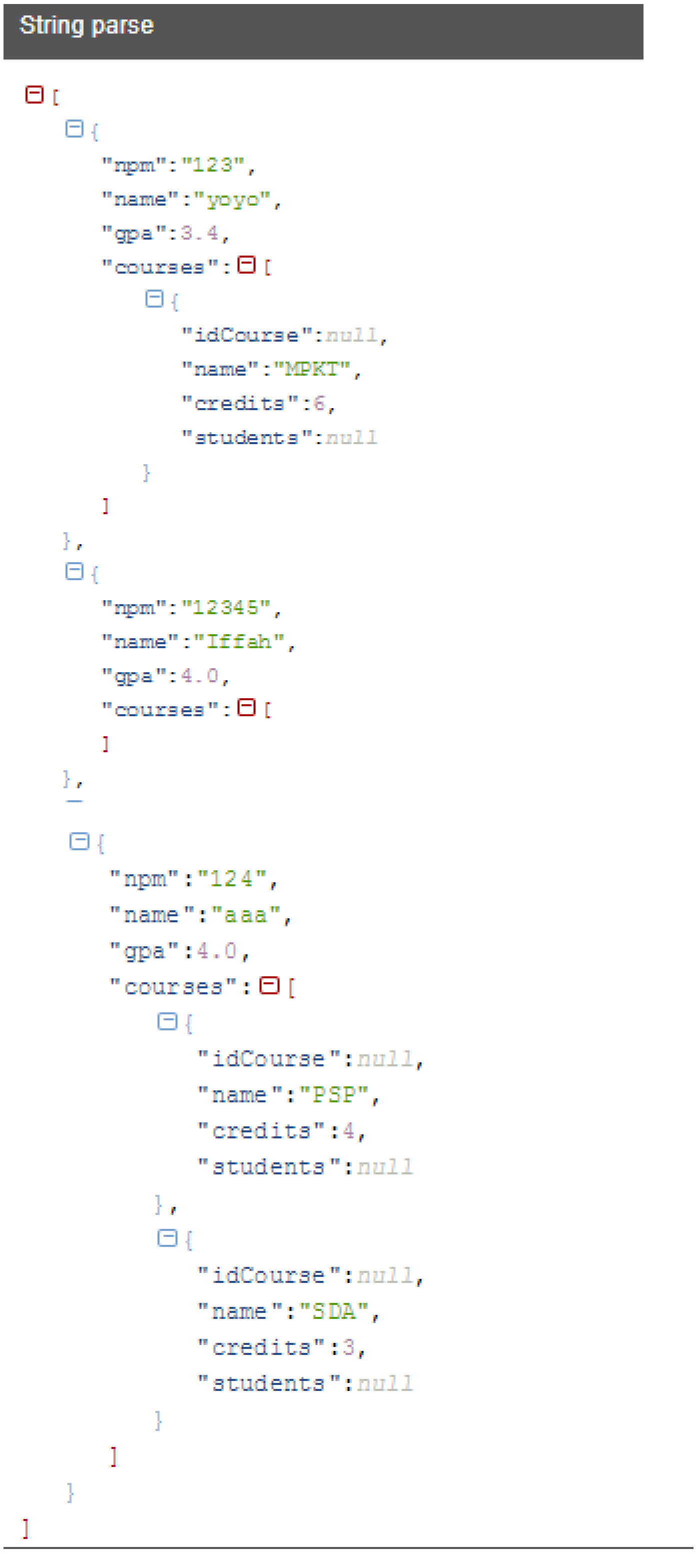
Hasil dari rest/student/viewall dengan JSON parse.



```
[
   {
      "npm":"123",
      "name":"yoyo",
      "gpa":3.4,
      "courses":[
         {
            "idCourse":null,
            "name":"MPKT",
            "credits":6,
            "students":null
         }
      ]
   },
   {
      "npm":"12345",
      "name":"Iffah",
      "gpa":4.0,
      "courses":[
      ]
   },
   {
      "npm":"124",
      "name":"aaa",
      "gpa":4.0,
      "courses":[
         {
            "idCourse":null,
            "name":"PSP",
            "credits":4,
            "students":null
         },
         {
            "idCourse":null,
            "name":"SDA",
            "credits":3,
            "students":null
         }
      ]
   }
]
```

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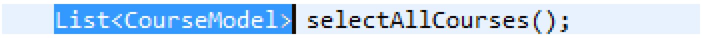
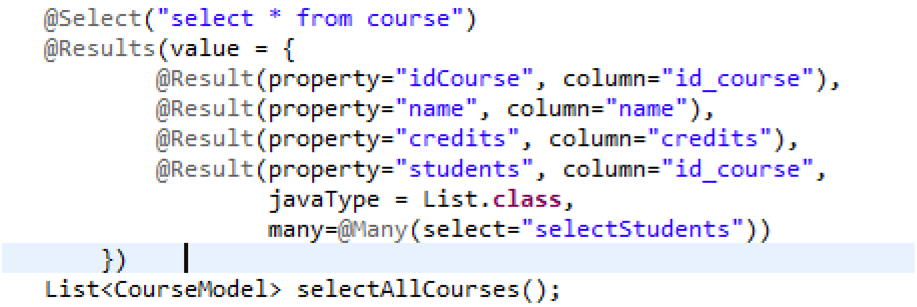
Latihan 2: Membuat service untuk Class Course yang terdapat service untuk melihat suatu course dengan memasukkan ID Course (view by ID) dan service untuk melihat semua course (view all).

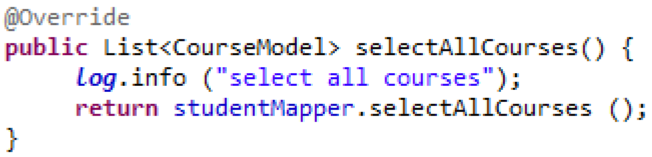
1. Membuat method selectAllCourses()



```
    List<CourseModel> selectAllCourses();
```

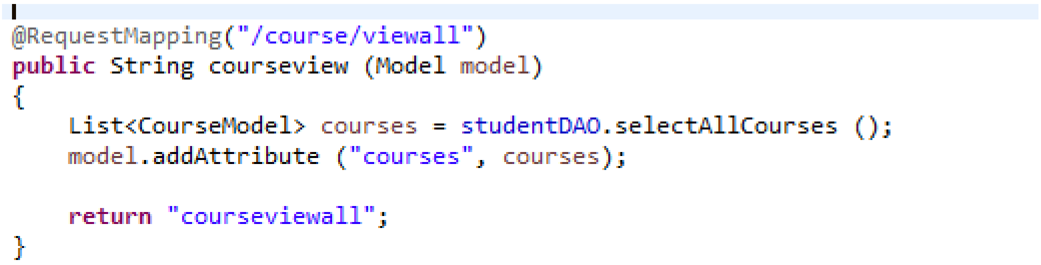


```
   @Select("select * from course")
   @Results(value = {
           @Result(property="idCourse", column="id_course"),
           @Result(property="name", column="name"),
           @Result(property="credits", column="credits"),
           @Result(property="students", column="id_course",
        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



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

2. Membuat /course/viewall pada StudentController.java



```
@RequestMapping("/course/viewall")
public String courseview (Model model)
{
    List<CourseModel> courses = studentDAO.selectAllCourses ();
    model.addAttribute ("courses", courses);

    return "courseviewall";
}
```

3. Membuat page html courseviewall.html

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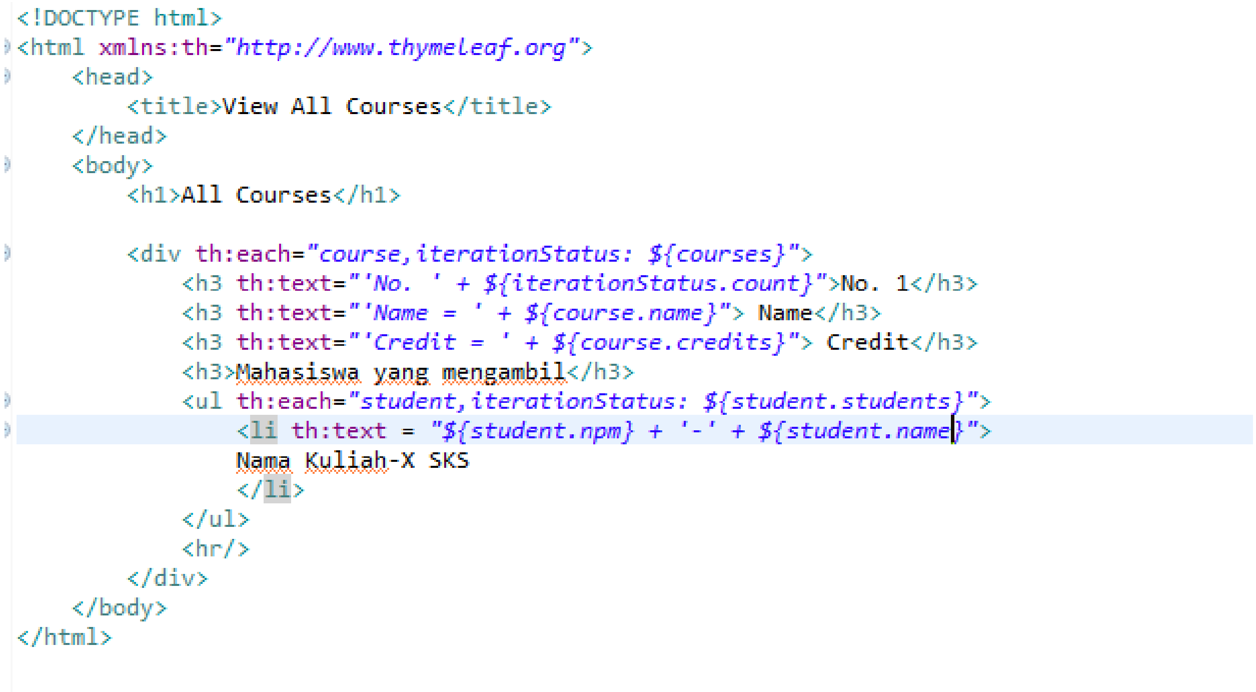
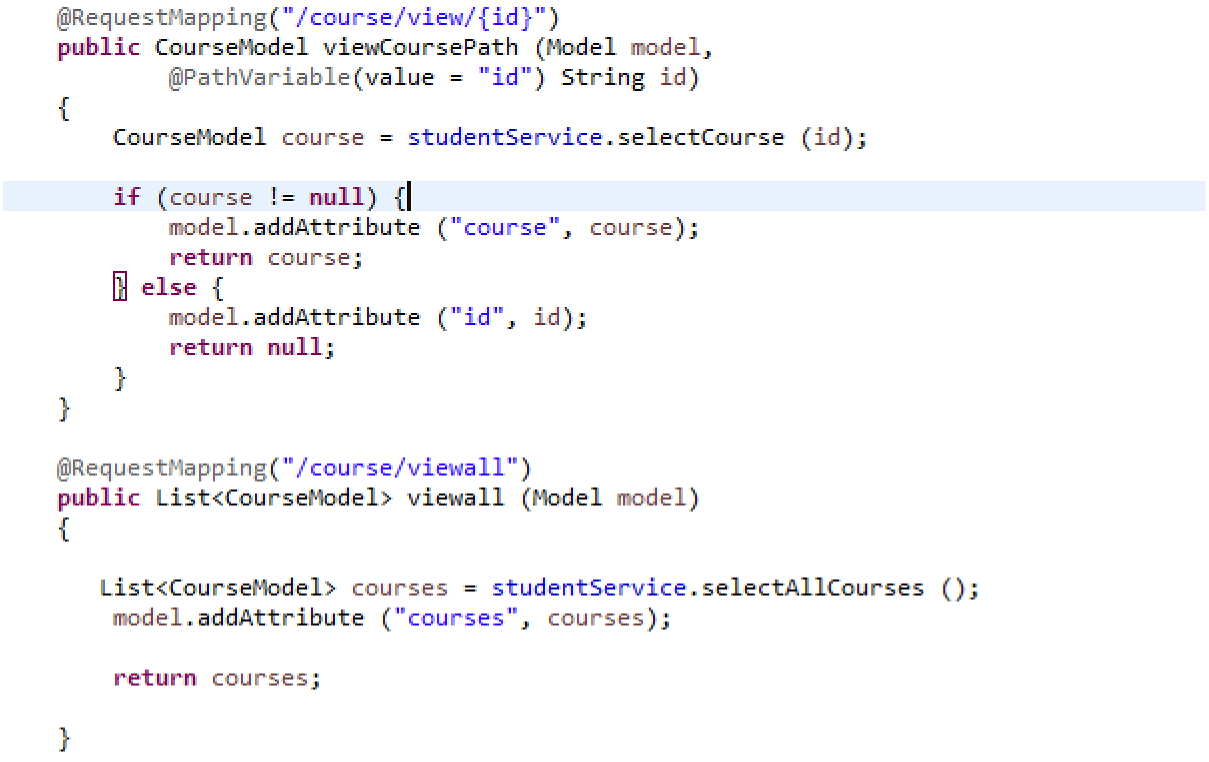


```
<!DOCTYPE html>
<html xmlns:th="http://www.thymeleaf.org">
    <head>
        <title>View All Courses</title>
    </head>
    <body>
        <h1>All Courses</h1>

        <div th:each="course,iterationStatus: ${courses}">
            <h3 th:text="'No.  ' + ${iterationStatus.count}">No. 1</h3>
            <h3 th:text="'Name = ' + ${course.name}"> Name</h3>
            <h3 th:text="'Credit = ' + ${course.credits}"> Credit</h3>
            <h3>Mahasiswa yang mengambil</h3>
            <ul th:each="student,iterationStatus: ${student.students}">
                <li th:text = "${student.npm} + '-' + ${student.name}">
                Nama Kuliah-X SKS
                </li>
            </ul>
            <hr/>
        </div>
    </body>
</html>
```

4. Membuat CourseRestController.java pada com.example.rest dan membuat request mapping /course/viewall dan /course/view{id} pada CourseRestController.java



```
    @RequestMapping("/course/view/{id}")
    public CourseModel viewCoursePath (Model model,
            @PathVariable(value = "id") String id)
    {
        CourseModel course = studentService.selectCourse (id);

        if (course != null) {
            model.addAttribute ("course", course);
            return course;
        } else {
            model.addAttribute ("id", id);
            return null;
        }
    }

    @RequestMapping("/course/viewall")
    public List<CourseModel> viewall (Model model)
    {

       List<CourseModel> courses = studentService.selectAllCourses ();
        model.addAttribute ("courses", courses);

        return courses;

    }
```

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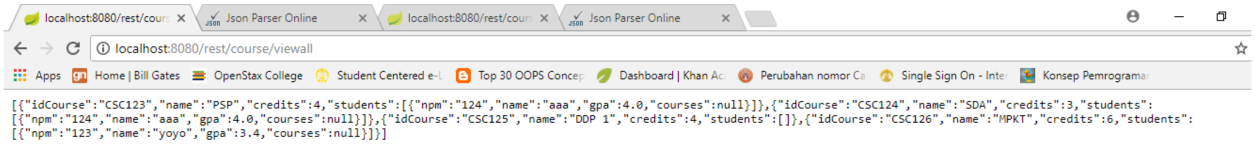
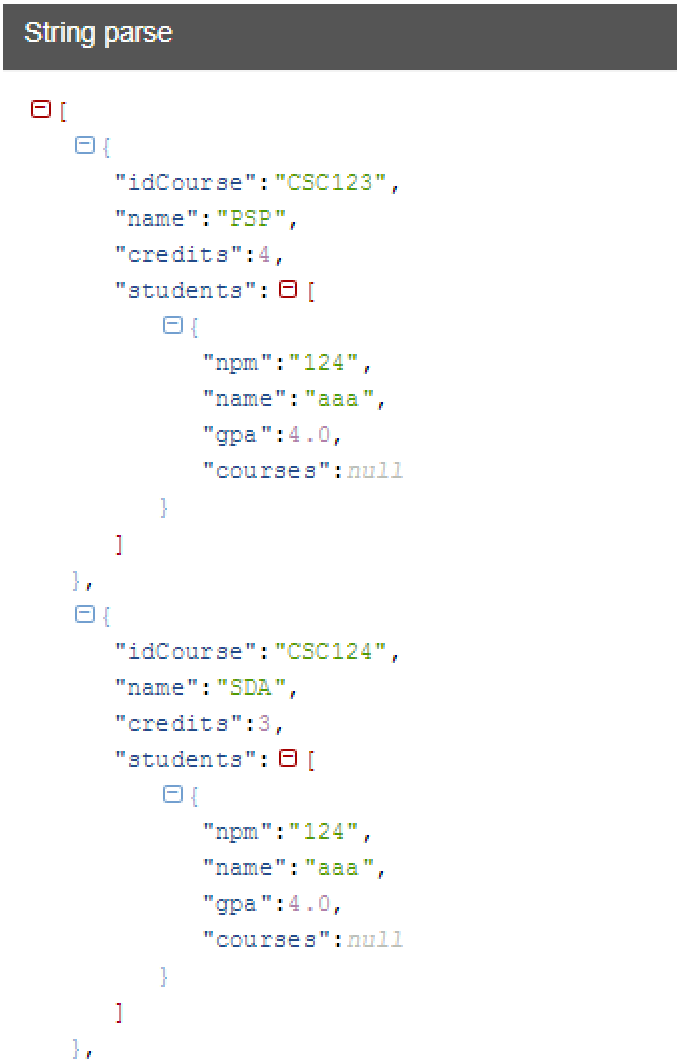
Hasil dari rest/course/viewall.



```
[{"idCourse":"CSC123","name":"PSP","credits":4,"students":[{"npm":"124","name":"aaa","gpa":4.0,"courses":null}]},{"idCourse":"CSC124","name":"SDA","credits":3,"students":
[{"npm":"124","name":"aaa","gpa":4.0,"courses":null}]},{"idCourse":"CSC125","name":"DDP 1","credits":4,"students":[]},{"idCourse":"CSC126","name":"MPKT","credits":6,"students":
[{"npm":"123","name":"yoyo","gpa":3.4,"courses":null}]}]
```

Hasil dari rest/course/viewall dengan JSON parse.



```
⊟ [
    ⊟ {
        "idCourse":"CSC123",
        "name":"PSP",
        "credits":4,
        "students":⊟ [
            ⊟ {
                "npm":"124",
                "name":"aaa",
                "gpa":4.0,
                "courses":null
            }
        ]
    },
    ⊟ {
        "idCourse":"CSC124",
        "name":"SDA",
        "credits":3,
        "students":⊟ [
            ⊟ {
                "npm":"124",
                "name":"aaa",
                "gpa":4.0,
                "courses":null
            }
        ]
    },
```

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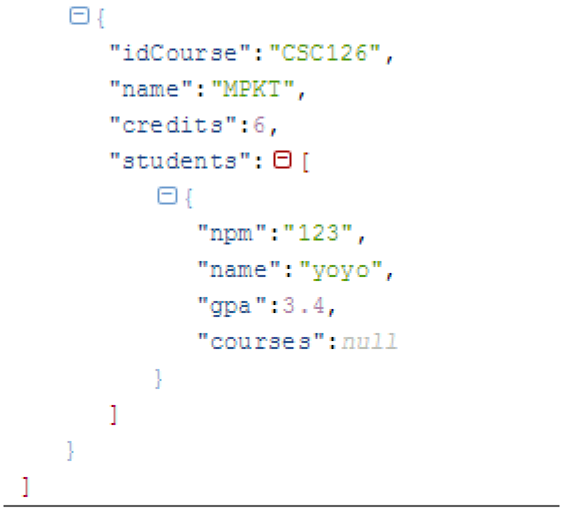
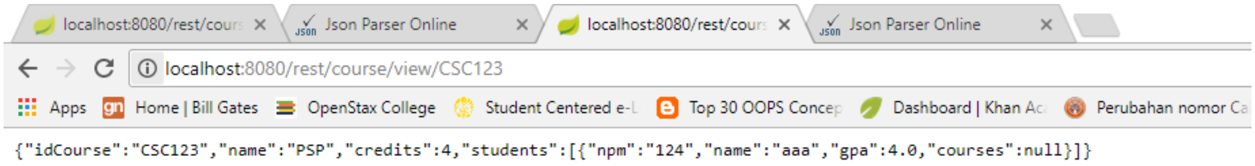


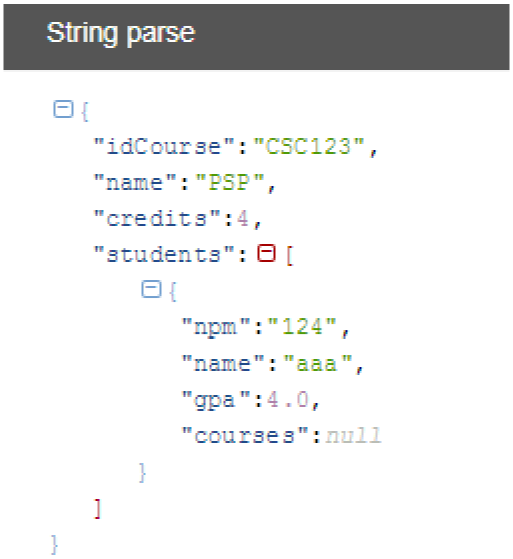
```
  {
     "idCourse":"CSC126",
     "name":"MPKT",
     "credits":6,
     "students": [
        {
           "npm":"123",
           "name":"yoyo",
           "gpa":3.4,
           "courses":null
        }
     ]
  }
]
```

Hasil dari rest/course/view/CSC123.



```
{"idCourse":"CSC123","name":"PSP","credits":4,"students":[{"npm":"124","name":"aaa","gpa":4.0,"courses":null}]}
```

Hasil dari rest/course/view/CSC123 dengan JSON parse.



```
{
   "idCourse":"CSC123",
   "name":"PSP",
   "credits":4,
   "students": [
      {
         "npm":"124",
         "name":"aaa",
         "gpa":4.0,
         "courses":null
      }
   ]
}
```

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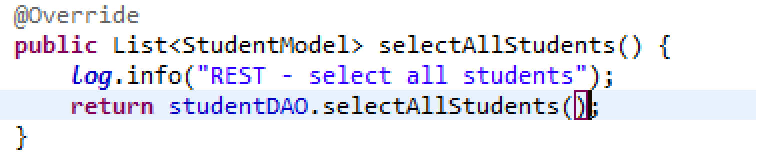
Latihan 3: Implementasi service consumer untuk view all Students dengan melengkapi method selectAllStudents yang ada di kelas StudentServiceRest.

1. Melengkapi method selectAllStudents pada StudentDAOImpl.java

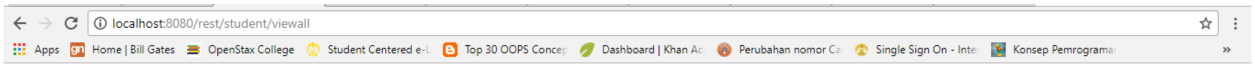
```
@Override
	public List<StudentModel> selectAllStudents() {
		// TODO Auto-generated method stub
		ResponseEntity<List<StudentModel>> rateResponse =
restTemplate.exchange("http://localhost:8080/rest/student/viewall/",
HttpMethod.GET, null,new ParameterizedTypeReference<List<StudentModel>>() {});
		List<StudentModel> students = rateResponse.getBody();
		return students;
	}
```

2. Melengkapi method selectAllStudents pada StudentServiceRest.java



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

Hasil dari localhost:8080/rest/student/viewall.



[{"npm":"123","name":"yoyo","gpa":3.4,"courses":[{"idCourse":null,"name":"MPKT","credits":6,"students":null}]},{"npm":"12345","name":"Iffah","gpa":4.0,"courses":[]},
{"npm":"124","name":"aaa","gpa":4.0,"courses":[{"idCourse":null,"name":"PSP","credits":4,"students":null},{"idCourse":null,"name":"SDA","credits":3,"students":null}]}]

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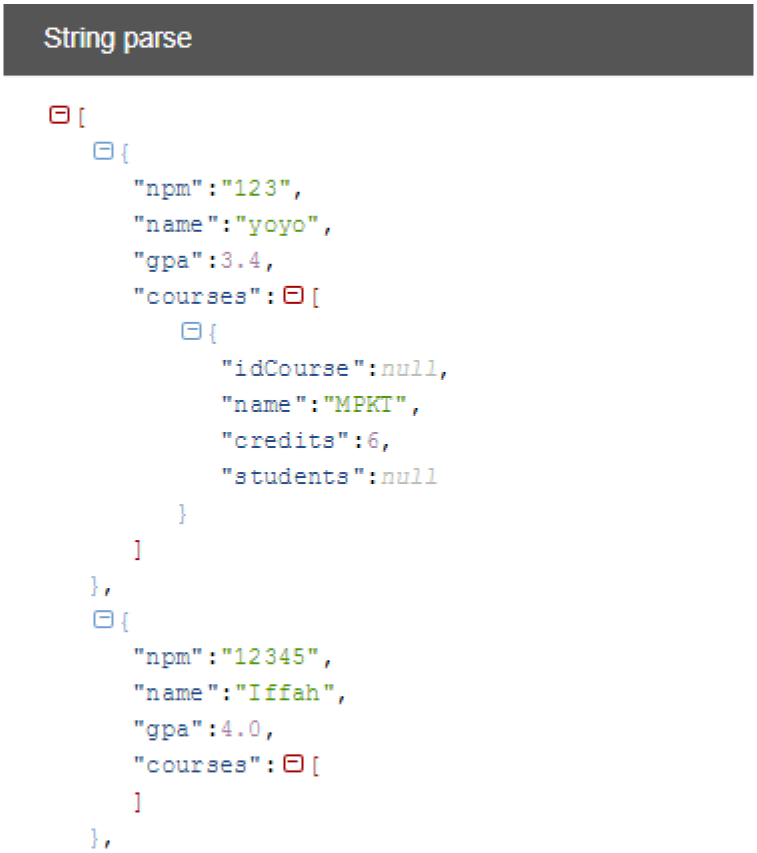
Hasil dari localhost:8080/rest/student/viewall dengan JSON parse.



String parse

```
⊟[
   ⊟{
      "npm":"123",
      "name":"yoyo",
      "gpa":3.4,
      "courses":⊟[
         ⊟{
            "idCourse":null,
            "name":"MPKT",
            "credits":6,
            "students":null
         }
      ]
   },
   ⊟{
      "npm":"12345",
      "name":"Iffah",
      "gpa":4.0,
      "courses":⊟[
      ]
   },
```

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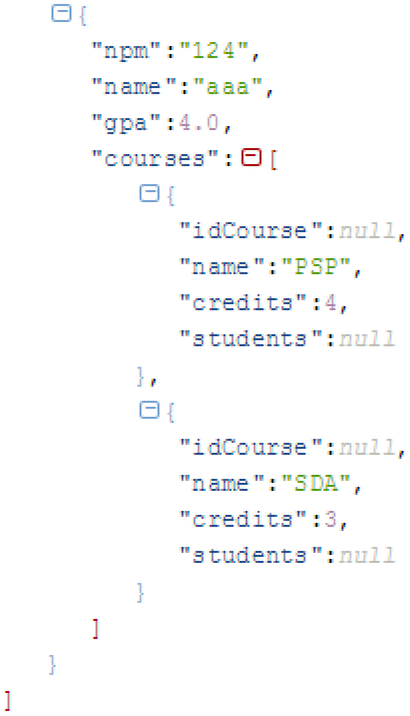
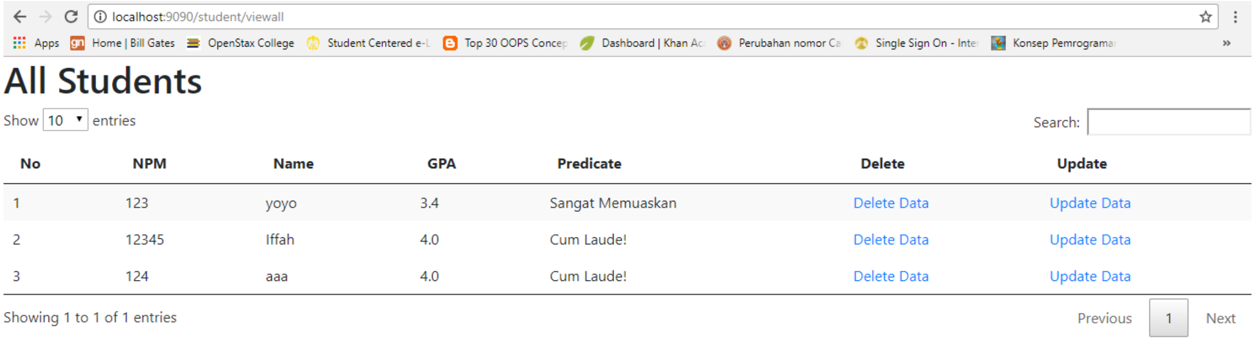


```
  {
     "npm":"124",
     "name":"aaa",
     "gpa":4.0,
     "courses":[
        {
           "idCourse":null,
           "name":"PSP",
           "credits":4,
           "students":null
        },
        {
           "idCourse":null,
           "name":"SDA",
           "credits":3,
           "students":null
        }
     ]
  }
]
```

Hasil dari localhost:9090/student/viewall.



All Students

Show 10 ▾ entries

Search:

No	NPM	Name	GPA	Predicate	Delete	Update
1	123	yoyo	3.4	Sangat Memuaskan	Delete Data	Update Data
2	12345	Iffah	4.0	Cum Laude!	Delete Data	Update Data
3	124	aaa	4.0	Cum Laude!	Delete Data	Update Data

Showing 1 to 1 of 1 entries

Previous 1 Next

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Latihan 4: