

# Tutorial 7

## Service producer

<http://localhost:8080/rest/student/view/123>

```
{ "npm": "123", "name": "Channek", "gpa": 4.0, "courses": [{ "id_course": "CSC126", "name": "MPKT", "credits": 6, "students": null }] }
```

String parse

```
{  
  "npm": "123",  
  "name": "Channek",  
  "gpa": 4.0,  
  "courses": [  
    {  
      "id_course": "CSC126",  
      "name": "MPKT",  
      "credits": 6,  
      "students": null  
    }  
  ]  
}
```

## Latihan

1. **Latihan 1:** Buatlah *service* untuk mengembalikan seluruh student yang ada di basis data. *Service* ini mirip seperti *method* `viewAll` di Web Controller. *Service* tersebut di-mapping ke `"/rest/student/viewall"`. Contoh tampilan keluarannya:

<http://localhost:8080/rest/student/viewall>

```
[{"npm": "123", "name": "Channek", "gpa": 4.0, "courses": [{"id_course": "CSC126", "name": "MPKT", "credits": 6, "students": null}]}, {"npm": "124", "name": "Channek Jr.", "gpa": 3.0, "courses": [{"id_course": "CSC123", "name": "PSP", "credits": 4, "students": null}, {"id_course": "CSC124", "name": "SDA", "credits": 3, "students": null}]}]
```

String parse

```
[  
  {  
    "npm": "123",  
    "name": "Channek",  
    "gpa": 4.0,  
    "courses": [  
      {  
        "id_course": "CSC126",  
        "name": "MPKT",  
        "credits": 6,  
        "students": null  
      }  
    ],  
  },  
  {  
    "npm": "124",  
    "name": "Channek Jr.",  
    "gpa": 3.0,  
    "courses": [  
      {  
        "id_course": "CSC123",  
        "name": "PSP",  
        "credits": 4,  
        "students": null  
      },  
      {  
        "id_course": "CSC124",  
        "name": "SDA",  
        "credits": 3,  
        "students": null  
      }  
    ]  
  }  
]
```

2. **Latihan 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. Melihat suatu course

- Membuat service dan servicedatabase dari course untuk melakukan pemanggilan method `selectCourse`

```
1 package com.example.service;
2
3 import com.example.model.CourseModel;
4
5 public interface CourseService {
6     CourseModel selectCourse(String id_course);
7 }
~
```

```
1 package com.example.service;
2
3 import org.springframework.beans.factory.annotation.Autowired;
4 import org.springframework.stereotype.Service;
5
6 import com.example.dao.CourseMapper;
7 import com.example.model.CourseModel;
8 import lombok.extern.slf4j.Slf4j;
9
10 @Slf4j
11 @Service
12 public class CourseServiceDatabase implements CourseService {
13     @Autowired
14     private CourseMapper courseMapper;
15
16     @Override
17     public CourseModel selectCourse(String id_course) {
18         log.info("select course with id {}", id_course);
19         return courseMapper.selectCourse(id_course);
20     }
21 }
--
```

- Membuat mapper dari course untuk melakukan pemanggilan query select berdasarkan `id_course`

```
1 package com.example.dao;
2
3 import org.apache.ibatis.annotations.Mapper;
4 import org.apache.ibatis.annotations.Param;
5 import org.apache.ibatis.annotations.Select;
6 import com.example.model.CourseModel;
7
8 @Mapper
9 public interface CourseMapper {
10     @Select("select * from course where id_course = #{id_course}")
11     CourseModel selectCourse(@Param("id_course") String id_course);
12 }
```

- Membuat method controller untuk memanggil object dari `selectCourse`

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

- Hasil: <http://localhost:8080/rest/course/view/CSC123>

```
← → ↺ localhost:8080/rest/course/view/CSC123
{"id_course":"CSC123","name":"PSP","credits":4,"students":null}
```

String parse

```
{
  "id_course": "CSC123",
  "name": "PSP",
  "credits": 4,
  "students": null
}
```

b. Melihat semua course

- Membuat service dan servicedatabase dari semua course untuk melakukan pemanggilan method selectAllCourse

```
public interface CourseService {  
    CourseModel selectCourse(String id_course);  
    List<CourseModel> selectAllCourses();  
}  
  
@Override  
public List<CourseModel> selectAllCourses() {  
    Log.info("select all courses");  
    return courseMapper.selectAllCourses();  
}
```

- Membuat mapper dari semua course untuk melakukan pemanggilan query select

```
@Select("select * from course")  
List<CourseModel> selectAllCourses();
```

- Membuat method controller untuk memanggil semua object dari AllCourse

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

- Hasil: <http://localhost:8080/rest/course/viewall>

← → ↻ 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  
  }  
]
```