M1 – software engineering

JEE Report

Mathieu Cantagrel
Théo Delettre
Vincent Dubois
Karsten Roy
Vincent Mouillon
Victor Tang

As part of our JEE course, we have been given the task of creating a JEE application to help teachers view and manage their assigned internships. We have created a first version of the project using Glassfish, Maven, and a PostgreSQL database connected using JDBC. In a second version, we restructured our code to use JPA, and set up quality assurance tests and measurements with Junit, Mockito, Sonarqube, and JMeter.

Our program meets all the project specifications:

- ✔ A log-in with password for each tutor
- ✔ Listing of all internships of a tutor with filtering options
- ✔ Details of an internship
- ✔ Modifying internship values in both list and details
- ✔ Intuitive navigation

As well as these bonus features:

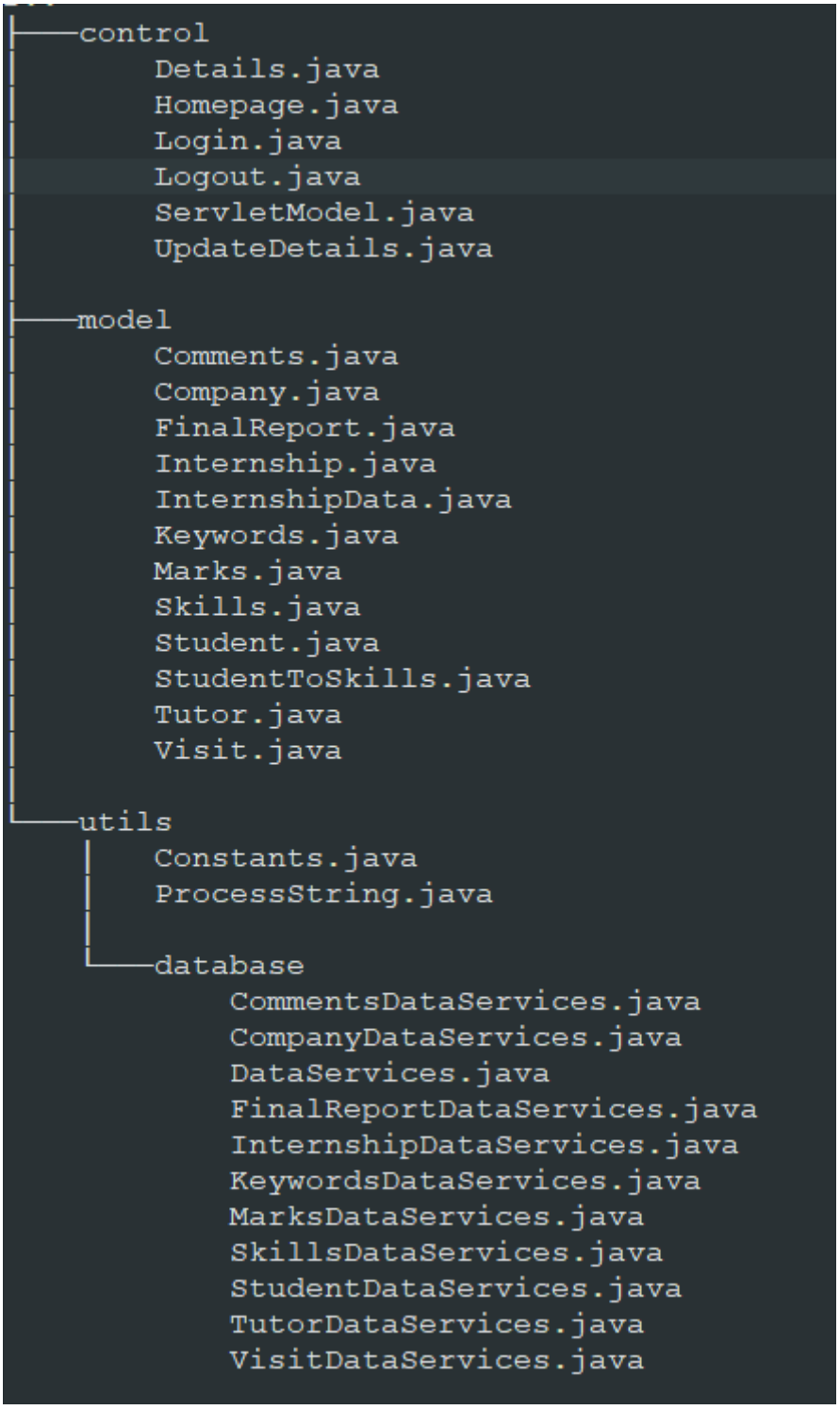
- ✔ View Internships in all years
- ✔ Auto-completion of skills in JS
- ✔ Enhanced details page

There were a few details where we had to implement our interpretation of what the specifications asked since we were uncertain.

I- UML Class Diagram

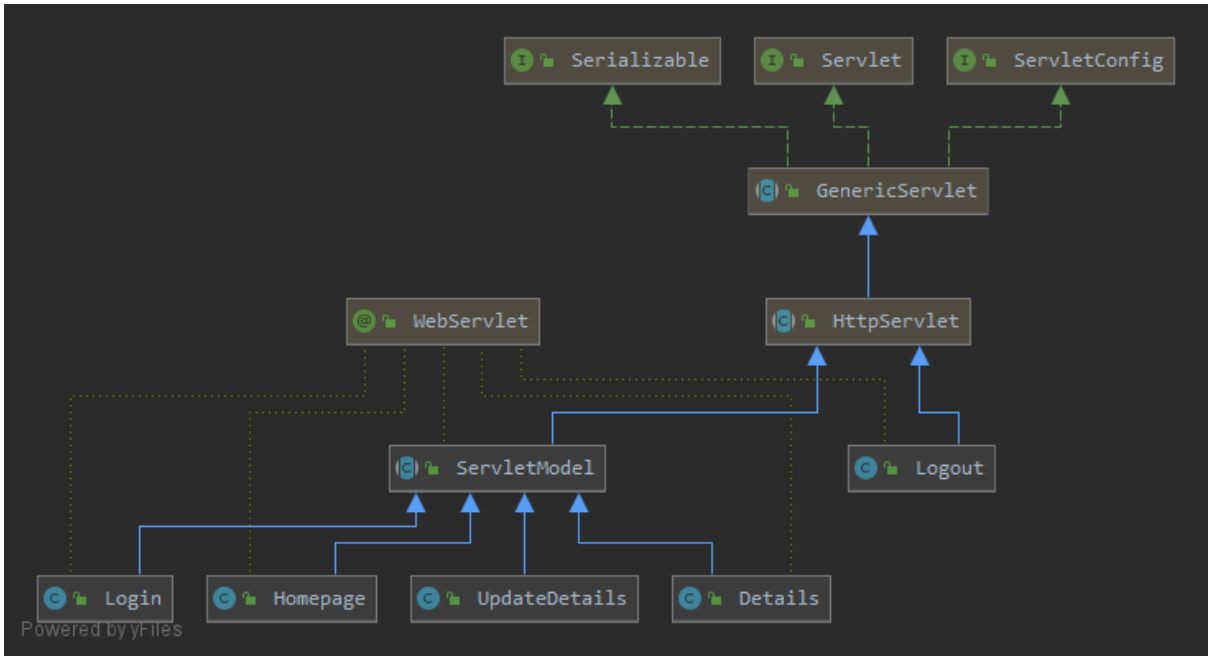
A) Directory architecture

Our java source code is stored in the src/main/java package and divided into three other packages, control, model and utils, as below. This directory tree allows us to follow the MVC pattern.



The control package contains the servlets, the model package contains the Java beans and the utils package contains static utility classes and database connection.

B) Control package



Inside the control package, we can find a mother class ServletModel which is herself a child class of the HttpServlet class, and our servlets that extend the ServletModel class. We have one servlet per page, one for the logout and one for updating the details in the homepage.

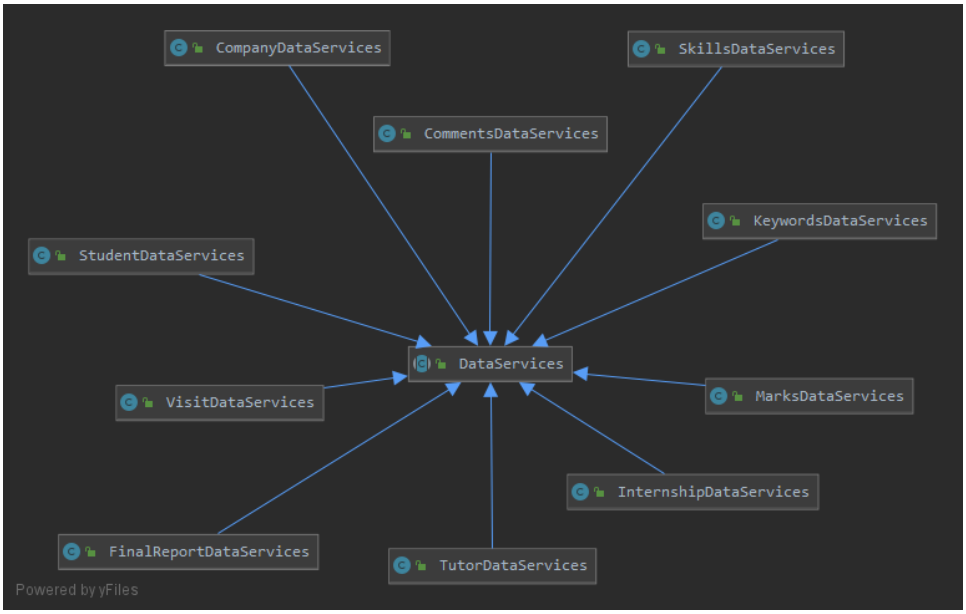
C) Model package

Model package contains all the java beans. They all respect the java bean convention:

- private attributes
- default constructor
- getters/setters

D) Utils package

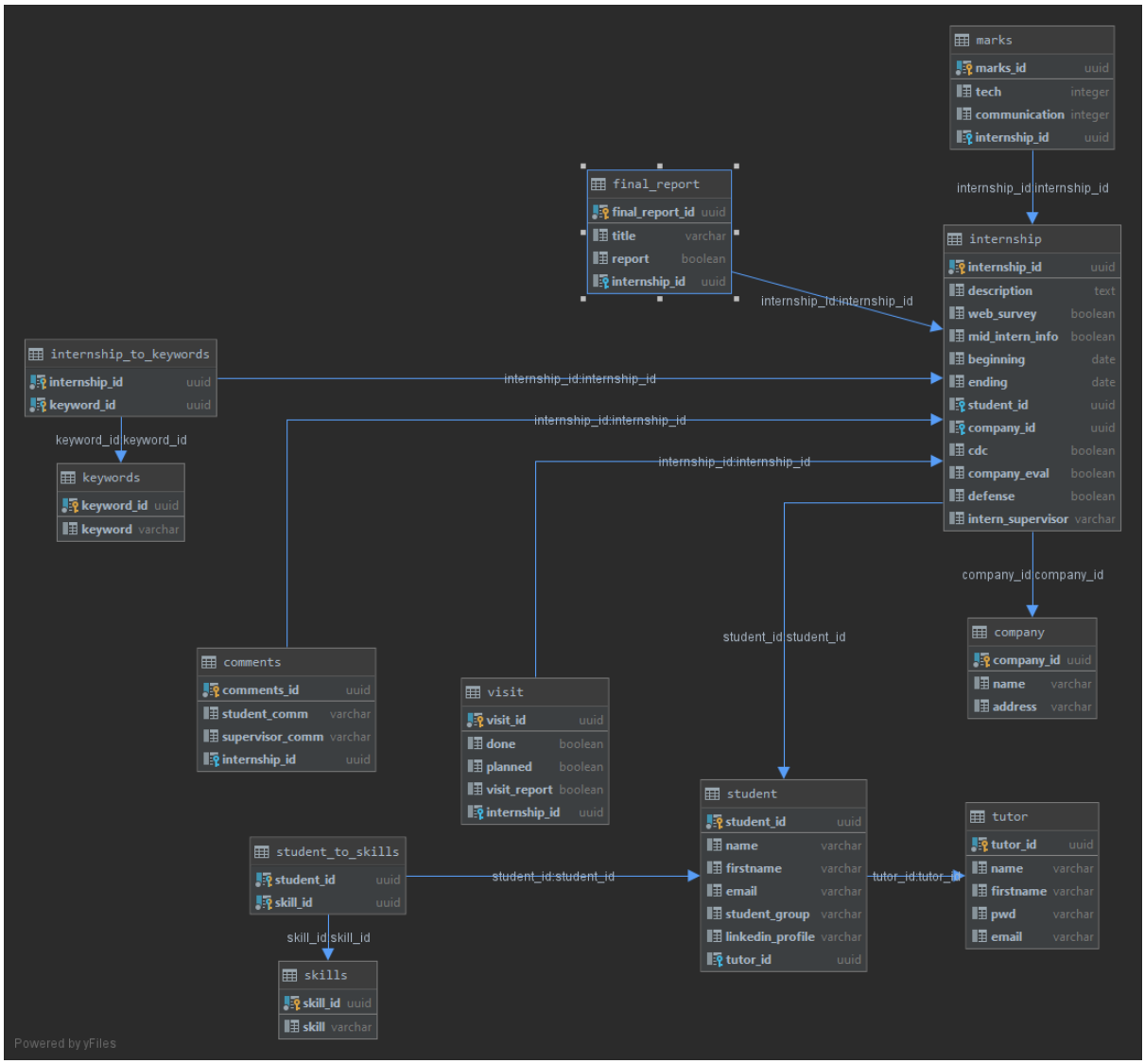
The utils package contains one file for the constants and one java static class used for string manipulation. It also contains a package that regroups all the data services class. Each data service handles the communication to the database and the SQL queries using JDBC. The classes extend the DataServices class.



II- Link to the remote repository

https://github.com/nerstak/M1-JEE-Project/

III- Representation of the data model



We decided to have one “supervisor” on the side of the school, who is the tutor, as well as one “supervisor” on the company side, who is the internship supervisor. Of course, only the tutor can log in. Each student has one school supervisor (tutor) and each internship has one internship supervisor (supervisor).