Lecture 4

Lab - Spring 101

4.1 Task 0

If you would like to use an IDE to develop web applications using Spring you probably want to install the Spring Tool Suite from `https://spring.io/tools/sts`. You can also use eclipse. If you don't want an IDE, you will need to install Maven to build your app (`http://maven.apache.org`).

4.2 Task 1 - Importing and Running a Spring Web App

You should start by cloning the course bitbucket repository available at `https://bitbucket.org/jacome/iadi`. Inside it, you can find a project example to guide you through the first lab session (folder ciai-lab1). Your first task is to make such an application run. In the following we will describe the necessary steps to do so. Within STS do as follows:

- File > Import... > General, sub-option Existing Projects into Workspace > Next > Select root directory: choose the project folder (ciai-lab1) > Finish
- Right click on the project > Run as > Maven build > In the Goals option write "spring-boot:run"

If everything goes as expected you can now open a browser and navigate to the URL `http://localhost:8080/greeting` and see a simple form web app (STS may also open such web page).

Note that this project has already a test (under src/test/java). You should build your applications writing tests for all the features you implement. Since this is an web app such tests should also include navigation tests.

A few notes you should keep in mind:

- Every time you change the pom.xml file, you should update your project (right click on the project, choose the Maven menu, click Update Project, and then hit OK.)

- Make sure you are using Java 1.7 or 1.8 (not 1.6 or below) and the same version everywhere. The version in the pom file is 1.7. If you are using 1.8, please update the pom (and the project).

There are some typical setup errors:

- If you cannot compile your project and you get a message suggesting you don't have the JDK installed, it probably means STS didn't find the JDK folder. To solve this, you need to go to the STS preferences, Java section, Installed JREs sub-section, and then add the path of your JDK installation folder.
- It may happen that after stopping the server you cannot compile the project again. It may be because tomcat is still running. Go to your operating system process manager and kill it.

4.3 Task 2 - How to Create a New Project

To create a new project do the following steps:

- File > New > Maven Project > Select the option "Create a simple project" > Next > Group Id: ciai and Artifact Id: ciai > Finish
- Right click on the project > Run as > Maven build > In the Goals option write "spring-boot:run"

You can now start adding content to your application.

4.4 Task 3 - Hotels Web App

The goal of this task is to develop an application that allows to register hotels through a form. All the registered hotels should be kept while the app is running. The following features should be available:

- Add a new hotel with attributes *name*, *location*, *number of stars*, and *number of rooms*. This gives you the model structure you need for you MVC application.
- View the details of a specific hotel.
- Edit the attributes of a specific hotel.
- List all existing hotels.

Thus, the application should handle the following requests:

- `/new`, through GET (it necessary to write a controller method), to show the form to add the new hotel through a view termed *new_hotel*;

- `/new`, through POST (it necessary to write a controller method), to save the hotel information and show it through a view called *added_hotel*;
- `/hotels`, through GET (it necessary to write a controller method), to show all the existing hotels through a view termed *hotels*; this view should also include a link to add a new hotel;
- `/view/<hotel_id>`, to view a particular hotel;
- `/edit/<hotel_id>`, to edit the data of a particular hotel;

In fact, this describes most of the structure your application should have, both in terms of controllers and in terms of views.

Keep in mind that you should write tests for all the features you implement.

You should develop your application incrementally, that is, step-by-step. Indeed, you should start by creating and handling the form. Only after this your should care about the persistence of the information. Do not forgot to add tests to your app!

You can and should use the `pom.xml` file from the application we gave you.