Project summary

This document is the README for the MP3 of class ITMD 515. The project consisted on adding a business layer to the domain previously defined in MP2, and adding security to the whole application. A plethora of technologies were used during the development of this project, making use of what we've learned so far in the class.

A few tools were used in order to reach this objective, such as NetBeans as an IDE, MySQL to manage the databases, GlassFish as a local server, and Java EE as the programming language. This topic is covered in more detail in the 'Requirements' section.

I used the guidance from the video of Week 9 of the class in order to complete this assignment. Because of that, I would like to acknowledge here that parts of the code are similar to the ones in the example for that reason.

Design and development insights

The objective of this assignment was for the students to learn more about how to add a business layer to an already developed domain model, and also learn more about web application security. Working on a Java EE application, we already had the persistence layer developed from MP2, and this project accomplished adding a business layer on top of that.

In my opinion, the most problematic part of the project could be setting all the configuration files required for it to work, and possibly adding security to the GlassFish server. For all of that, the example coded in week 9 of the class proved invaluable to help making sure that all the configuration was done correctly, and watching the professor as he went through the example was a great base for our own project.

While I already had experience working with web applications based on Java, I didn't really use Java EE, and I continue to get amazed with how powerful it feels. Even though I don't like when things are 'black magic' (you use something that works but you don't know how), I must admit that some of the tools offered by the language are simply great.

I'm happy with how much we are learning, and the pace and classes are great. I would like to point out that, if I could add something more to the class, it would be maybe going through some of the frameworks like Spring or Hibernate. I think that knowledge would prove valuable once we are out there looking for a job.

Requirements

For this project to be tested, it's necessary to have a few tools installed:

- Java EE SDK
- NetBeans, or a similar IDE
- MySQL, with a user called itmd4515 – password: itmd4515
- A MySQL database called ssanguin_itmd4515
- GlassFish server

The easiest way to test this project is with the NetBeans IDE. Open the project, right click on its name, and select 'Run'. The project will deploy in GlassFish and open up the index page. Once there, there is a form where you should enter any of the following username/password combinations:

- jlannister/k1ngslay3r
- bobama/y3swec4n
- bbaggins/mypreciou5
- poppins/bestmaidever
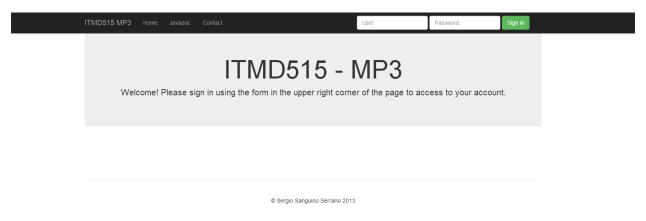- jsmith/thisisfun
- washington/usa!usa!

The first three are users of the security group Student, and the last three are Instructor.

A library from apache was used to encrypt the passwords in the database. Said library is the Apache Commons Codec version 1.8 (http://commons.apache.org/proper/commons-codec/).

Screen captures and expected results

The result of testing the project is different depending on the action performed. If the user tries to log in into the application using an invalid user, a webpage showing an error message will show up, and nothing else. If the user tries to log in with a user of the Instructor group, the application will show a page with the name of the user, a list of classes that the instructor teaches, and a list of the students in each of those classes. If the user logs in with a user of the Student group, only the name of the student and the list of classes in which he is enrolled will show up.

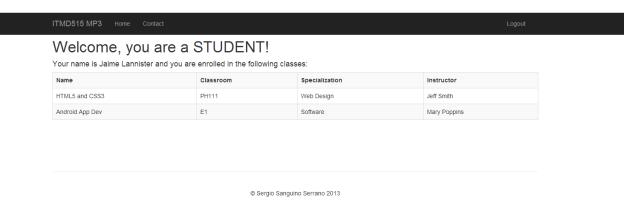The first screenshot is the index page, where the user can try to log in with a valid user.

The next screenshot is the result of trying to log in with an invalid user/password combination:

The next screenshot is the page resulting when the user logs in as a Student:

Welcome, you are a STUDENT!

Your name is Jaime Lannister and you are enrolled in the following classes:

Name	Classroom	Specialization	Instructor
HTML5 and CSS3	PH111	Web Design	Jeff Smith
Android App Dev	E1	Software	Mary Poppins

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And the last screenshot is the page that a user gets when he logs in as an Instructor:

Welcome, you are an INSTRUCTOR!

Your name is George Washington and you are teaching the following classes:

Name	Classroom	Specialization	Instructor
Project Management	SB25	Management	George Washington

Here is a list of students per class:

Project Management

FirstName	LastName	Email
Barack	Obama	example8@example.com
Cathy	Perry	example3@example.com
Avril	Lavigne	example4@example.com
Arya	Stark	example5@example.com

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