

## SERVLETS AND JSP COURSE

# FINAL EXERCISE SERVLETS AND JSP'S



By the expert: Ubaldo Acosta



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Hello, Ubaldo Acosta greets you again.

We are about to conclude our incredible Servlets and JSP Course. We just need to develop our final laboratory where we will involve everything seen throughout the course.

Are you ready? Come on!

## WEB APPLICATION SMS

- Creation of a Web application: Student Management System (SMS).
- The MVC design pattern will be used, using JSP's and Servlets.
- A 3-layer architecture is proposed for the development of the project.
- The project will be released on a Glassfish server.

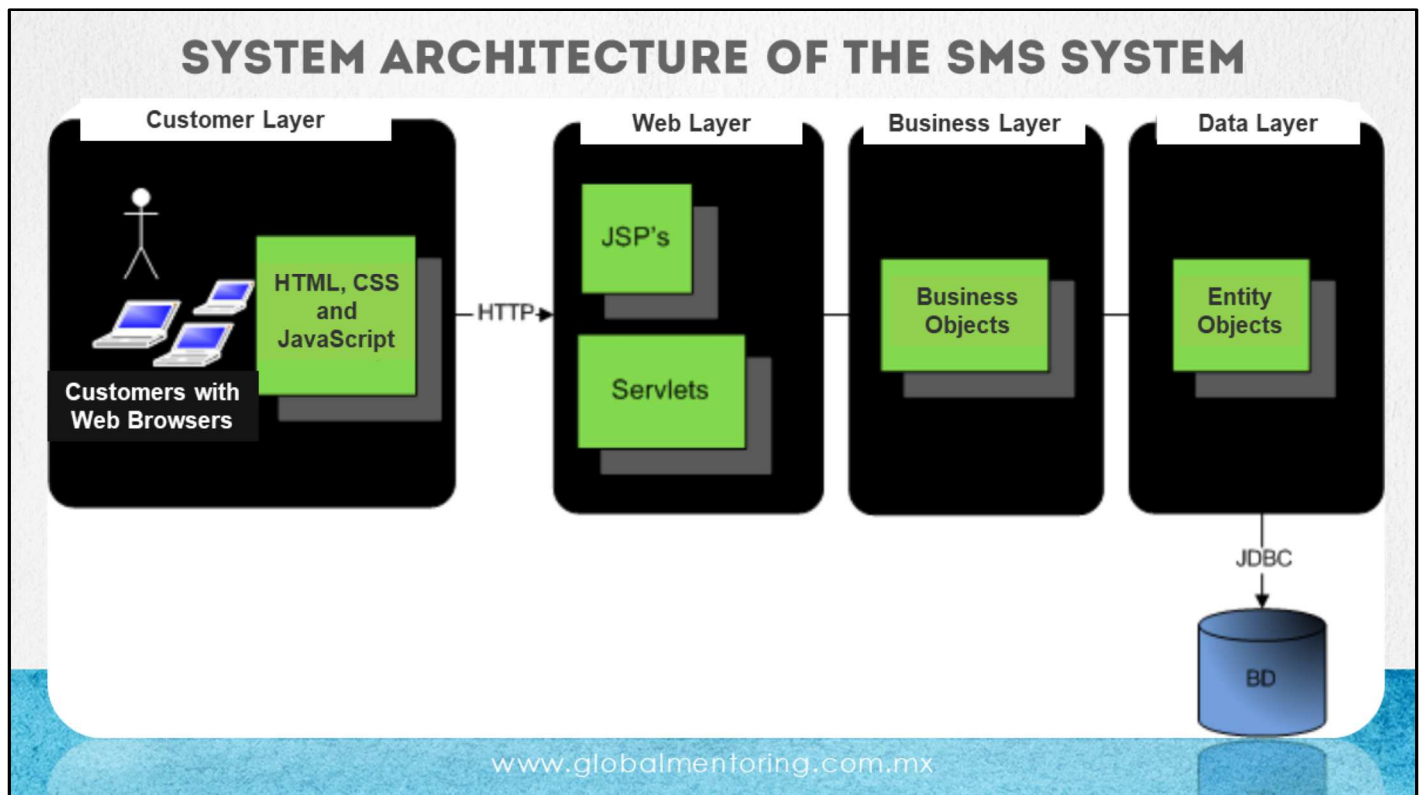


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In this lesson we will create a web application whose architecture is used in the real world and can be the basis for your own Web projects with Java.

In this case the web application will be called SMS (Student Management System).

To develop this project we will use the MVC design pattern using the JSPs and Servlets that we have studied in this course, and we will use a 3-layer architecture for the development of this project, finally the project will be released on a Glassfish server, however you can use any other Java application server such as Tomcat, JBoss, or any of your preference.



Let's now review the architecture of the SMS.

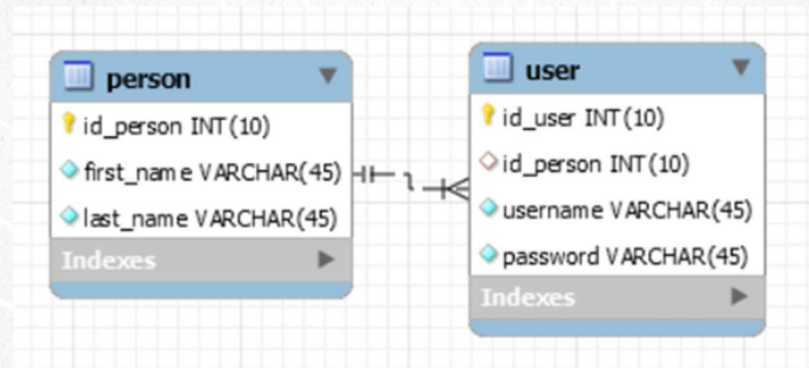
In this case, we are going to review a 3-layer architecture.

To do this we will have a web layer, a business layer and a data layer on the server side.

At the same time we will have clients that are going to be interacting with our web server, so as we have studied before, when we have reviewed the design patterns we will apply several design patterns and we will also apply the 3-layer architecture, which will facilitate the creation of the system and also it will facilitate our maintenance.

## ENTITY - RELATIONSHIP SCHEME (E-R)

- Note: In the User table, the option "onDelete = set null" has been enabled. The mysql DB script is included.



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We will briefly show the entity - relationship diagram that we are going to use. In this case, the solution we are going to use is only going to be applying these two tables.

We have the table of people and we have the user table which has a one to many relationship, a person can have many users. The user table will allow us to restrict access to our application, so we have to assign a username and password to a user to access the application, on the other hand people will allow us to start simulating catalogs of people, although in this case they only have two fields, so in this case we are only exemplifying and we are going to create a web application with these two tables.

Here we add a note in the user table. We have added an option, a restriction in which we are indicating that when we delete a record from the table of people, it will automatically put a value of null in the field of id\_person, so we can delete a record of the person table without verifying if you already have a user associated with the user table. This is a more database topic, but we include it to facilitate the handling of data in our SMS application.



## DEVELOPMENT STAGE

- In this stage the code of the classes is included according to the proposed architecture.
- The system includes, in general, the following Java packages:
  - sms.web (presentation layer)
  - sms.services (service layer)
  - sms.eis (data layer)
- Note: EIS means Enterprise Information Systems.

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In the next stage of development we are going to include the code of the classes according to the proposed architecture, therefore in our application we will have the Java packages described. This is roughly, because each of the layers and each of the packages can have subpackets that represent the detail of each of these layers, but roughly we will have the packages of sms.web, sms.services and sms.eis.

Each of the packages will represent one of the layers of our architecture that we have proposed. EIS means Enterprise Information Systems, and in our case it will represent the data layer of our system.

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