Cupcake mini project

Allocated 5 study points

This assignment is to be carried out individually or in pairs. (If you work together, you have to take turns at the keyboard distributing time evenly)

You must hand in a link to a github repository with a web application and an .sql file (This is the file that creates the tables with their constraints and fill in some sample data).

The zip-file should be named like this:
 <assignment>_<class>_<fname>_<lname>
ex: Webshop_l16cos2v15f_Mark_Smith

Hand out: Thursday 8/2-2016 at 8.00 on Fronter

Hand in: Sunday 11/9-2016 at 16.00 on Fronter

Monday septembber 12th 2016 presentation in class. Each team delivers a 10min presentation and receives feedback from teachers. It is this activity, that creates the studypoints.

Web shop

You are to develop a simple web-shop using HTML, JSP, javascript and java Servlets. Data should be stored in a MySQL database.

The web shop sells cupcakes, but only as pick-up. Customers can use the web shop to place an order and then show up in person to pick up the cupcakes. Sending cupcakes in the mail has shown to be a bad idea as they turn up with bite marks if at all.
The bakery has a very fast cup cake-machine, so the instant the order is placed the cup cakes are ready for pickup.

The cupcakes have a bottom and a topping which can be combined in many ways, but a cup cake must always have both a bottom and a topping. Bottoms and toppings can be found in appendix A.

Costumers each have an account with the shop and orders can only be placed if the account hold enough money to cover the price. Payment is handled by another system and as of now customers deposits will have to be added manually in the database, but withdrawals happen when cupcakes are ordered.
In order to pay with their account the costumers will have to use a username and a password to login before placing an order.

Lets break it down:

1 Connect to database

Create a web application with a class which is responsible for the database connection. This class holds all the information needed to make a connection.

2 Login

Create a database and add a user table. A user has a username, a password and a balance.

You will need a User class to hold the user information when it has been fetched from the database.

Create a class that contains all methods that communicate with the database. In this class create a method, which takes a username sends a query to the database and then returns the corresponding user object if it exists.

Make a web page where the user can input a username and a password. Create a servlet to receive the input and verify or dispute the password (and username).

When a user is logged in he/she is forwarded to the shop page.

3 The shop

The shop shows who is logged in and the account balance of this user.

It also displays a list of all the cupcakes bottoms and toppings. You will need to expand the database to hold cupcakes (see appendix A) – *hint you might want to consider using more than one table.*

A cupcake has a bottom, a top and a total price.

When the user chooses a bottom and a topping and a number of cupcakes – use javascript to calculate the total price to show to the user. When the user submits an order the data should be send to the servlet where objects will be created of types like: Cupcake, User, Order (Order has a reference to a User and a list of Cupcakes).

Use javascript to check if the user have enough money for the order. If not return an error message to the user without contacting the server.

You will need java entity classes of type Order, Cupcake and Orderline. Also you will need a method to create cupcake objects based on the possible toppings and bottoms from the database.

4 The shopping cart

The shopping cart holds Line Items which has information of the cupcakes (bottoms and toppings) and the quantity of cupcakes. The Line Item also has an invoice_id to prepare it for assignment 5.

The shopping cart should be stored in the session, for obvious reasons.

All the cupcake bottoms and toppings you displayed in the shop should have a radio bottom so a user can choose both a bottom and a topping and then there should be an “Add” button. When a cupcake is added, either a new OrderLine Item is created and added to the cart (or if you have time in case of adding more of the same cupcake to the cart - the quantity of an already existing Line Item is incremented).

5 The invoice

When cupcakes have been added to the cart the order can be finalized. This creates an invoice with an id and a customer(user). This invoice and all the Line Items in the shopping cart are stored in the database.

You will need to calculate the total sum of the order and withdraw it from the users balance.

6 Customer page

This is an optional extra assignment if you have time.

Create a page for the user who is logged in (has a session running). The page should show all the invoices for a particular user. If an invoice is clicked on it should show the invoice details and if possible this should be styled in a way that it looks like a printed invoice.

Appendix A – The cupcakes

The bottoms

Bottom	Price
Chocolate	5.00
Vanilla	5.00
Nutmeg	5.00
Pistacio	6.00
Almond	7.00

The toppings

Topping	Price
Chocolate	5.00
Blueberry	5.00
Rasberry	5.00
Crispy	6.00
Strawberry	6.00
Rum/Raisin	7.00
Orange	8.00
Lemon	8.00
Blue cheese	9.00