MINI PROJECT 3 READ ME

Aim:

To explore the use of Enterprise Java Beans as the business layer of an enterprise application, integrate MP2 JPA domain model with the business layer, and introduce security to the application

Project Summary:

- The MP3 consists of a NetBeans Web Application project, and will incorporate the MP2 domain model as the persistence layer using the EclipseLink JPA implementation and MySQL database connectivity
- Reused the domain entities from MP2 but created an abstract entity – UtilityEntity in order to refactor the common fields
- Made use of entity callbacks such as @PrePersist,@PreUpdate and @PreRemove in the UtilityEntity
- Created the User and Group Entities in order to introduce security
- Created the various bean entities : stateless EJB components to extend the abstract bean entity that provides implementation for the database operations(CRUD)
- Created a DatabasePopulator bean that is the singleton EJB component which kicks off at the start and is responsible for populating the database relations
- Created a new security realm in the glassfish admin console to reflect the user and group database information for providing authentication and authorization
- In the java web application added the descriptor web.xml and specified the roles for different users
- Also specified various constraints
- Role mapping was done by configuring the glassfish.xml
- In order to encrypt the stored password, added the apache codecs common library to the JAR libraries of the project and utilized the DigestUtils.md5Hex method
- Added the NamedQueries in the user entities(Customer and Designer) in order to recover the username of the logged in

person
- Created basic html files for login, error and logout purposes
- Also, created servlets to display data based on authenticated user and display sections on the user's mapped roles
- Provided the logout functionality through the logout servlet
- This MP3 was based on the Instructor's example from the class

Design & Development Insights:

- This project helped to understand the concept of layering and the process of relating the security domain to the business domain
- Prof. Spyrison's EJB example helped to understand the process very well
- I liked the step-wise approach in building up the entire project due to which I was able to implement all the details without any confusion
- I had trouble implementing the external CSS but due to lack of time could not figure out a way to resolve the issue so used inline styling. The servlet and CSS incorporation was what I did not like. I should have used JSP for better organization of the code, I will implement it in the final project

Requirements:

- *OS*: Mac OX 10.8
- *Installation*: MySQL WorkBench, NetBeans and JDK 7 for macosx
- *MySQL user*: itmd4515 with password as itmd4515
- Right-Click on the Tgajare MP3 web application in NetBeans and click run
- Once the browser is opened append **"/MP3Servlet"** to the existing URL and press enter
- This should navigate the user to the login page
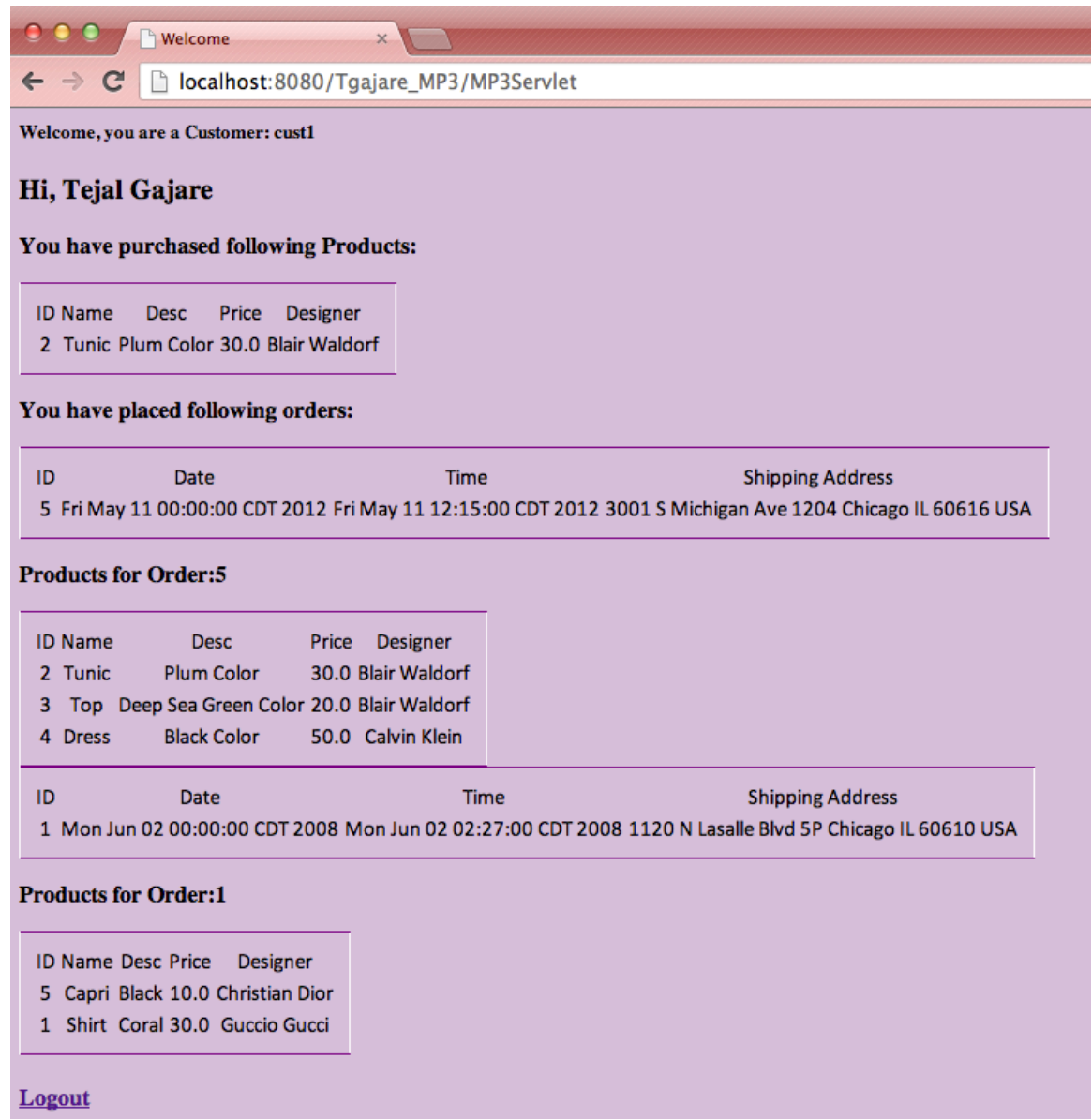- *Libraries*: Apache Common Codec 1.8 jar for encryption of password in the database
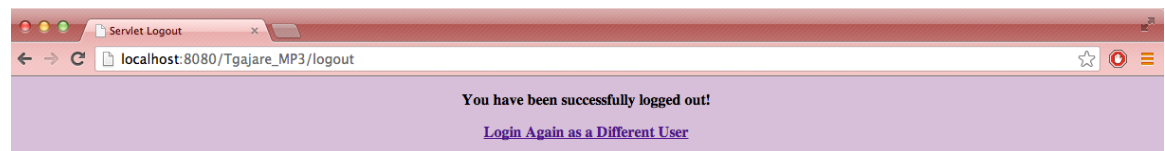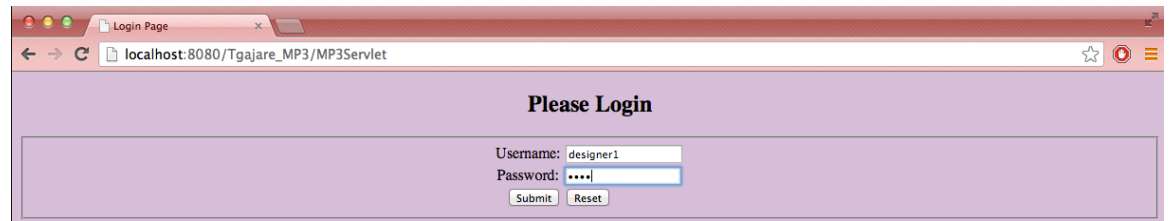
Screen Captures:

Project structure
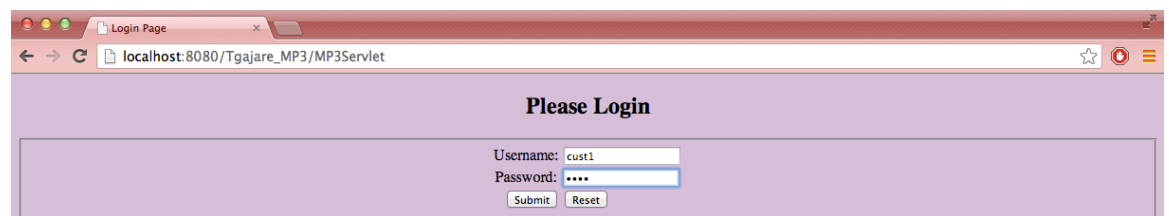
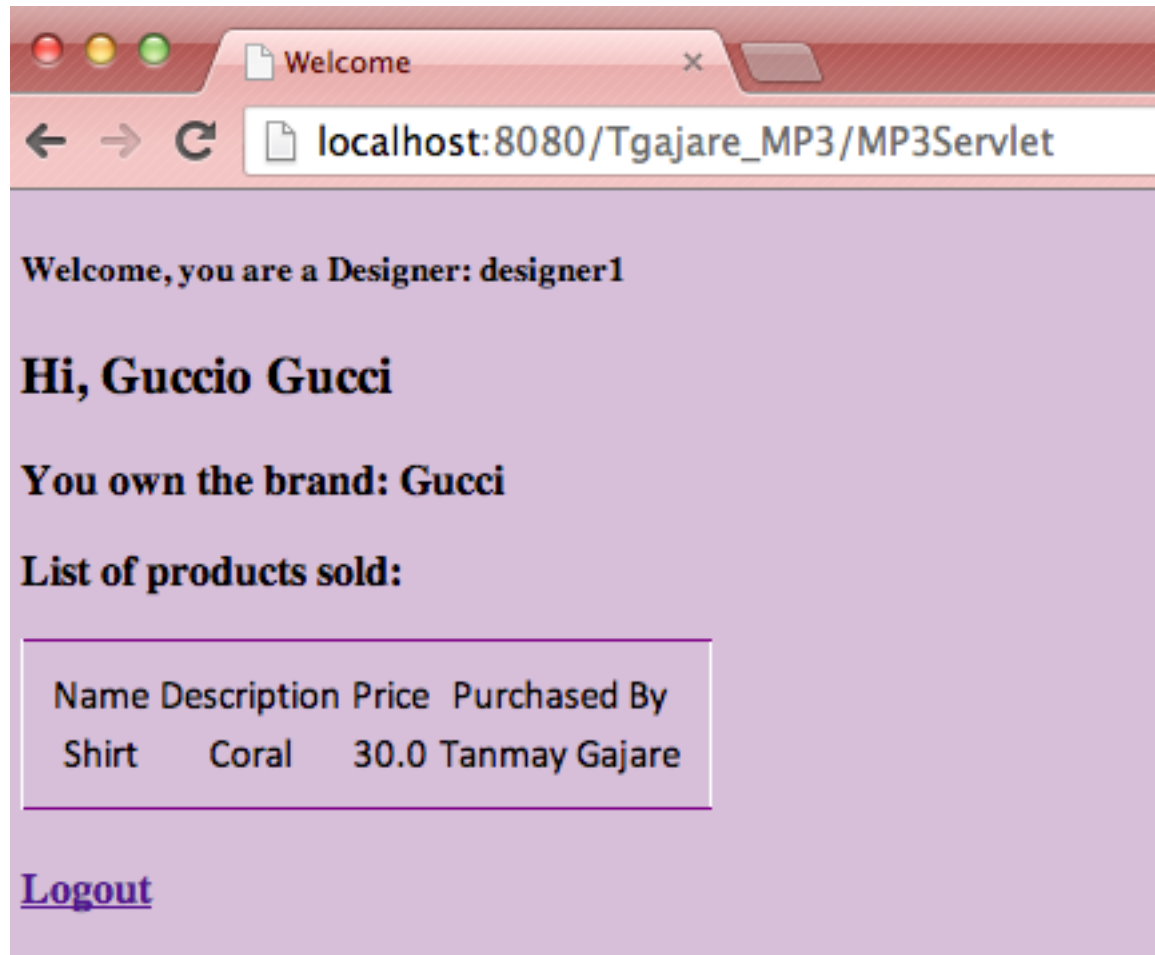Login Page after navigating to /MP3Servlet

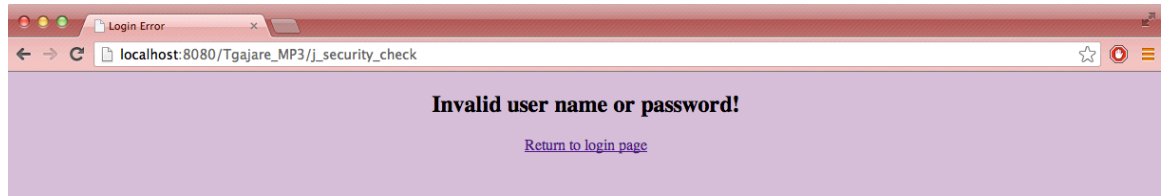Username entered was : cust1 with password as cust

After clicking on Logout customer is navigated to the above page

After clicking on Login as a different user, user is navigated to the login page

Logged in as a designer1 with password desi to display the relevant designer data

When the user enters incorrect username/password

Expected Results:

Please enter the following usernames and passwords:

For Customers:

'cust1'   'cust'

'cust2'   'cust'

'cust3'   'cust'

'cust4'   'cust'

'cust5'   'cust'

For Designers:

'designer1' 'desi'

'designer2' 'desi'

'designer3' 'desi'

'designer4' 'desi'

'designer5' 'desi'