CST8288_450
OOP with Design Patterns
Capstone IV

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New Features and Challenges

MVC Pattern

While a rudimentary form of MVC has been present in this project since Capstone II, it was not explicit or particularly well organised. For Capstone IV, we refactored the project to include Model and Controller Java packages and a View folder. The ApplicationDAO, DBConnection, and various Java bean classes were moved to the Model package; The servlets were moved to the Controller package; and the html and css folders containing the JSPs and style sheets were moved to the View folder.
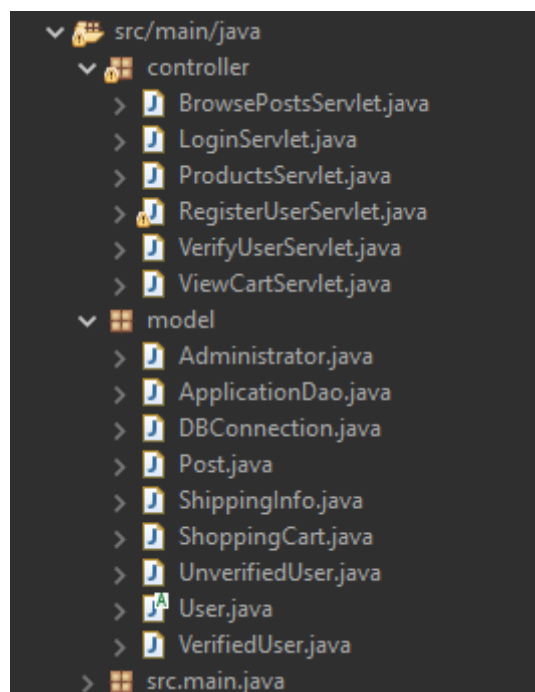

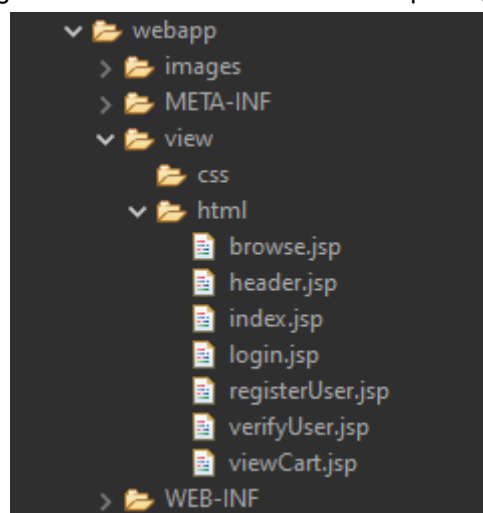Figure 1.1: The model and controller packages.

Figure 1.2: The view folder.

Email Verification

We attempted to implement an email verification feature for new user registration but ran into some configuration issues. The idea was to use a Javamail utility class to send emails from Andrew's college email address. While the code works fine in theory, it appears that Outlook is blocking the SMTP connection. This is likely the result of security features on Outlook's end set up to prevent bots from taking over accounts. While I am sure that this could be circumvented by setting up a proper email server and whitelisting our web app, we feel that this approach is well outside the scope of the project and would take far too much time and effort to implement. The Mailer class was left in the WAR file regardless with the code calling it commented out.

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Exception

java.lang.RuntimeException: javax.mail.AuthenticationFailedException: 535 5.7.139 Authentication unsuccessful, the request did not meet the criteria to be
    src.main.java.Mailer.send(Mailer.java:43)
    controller.RegisterUserServlet.doPost(RegisterUserServlet.java:66)
    javax.servlet.http.HttpServlet.service(HttpServlet.java:681)
    javax.servlet.http.HttpServlet.service(HttpServlet.java:764)
    org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)

Root Cause

javax.mail.AuthenticationFailedException: 535 5.7.139 Authentication unsuccessful, the request did not meet the criteria to be authenticated successfully.
    com.sun.mail.smtp.SMTPTransport$Authenticator.authenticate(SMTPTransport.java:965)
    com.sun.mail.smtp.SMTPTransport.authenticate(SMTPTransport.java:876)
    com.sun.mail.smtp.SMTPTransport.protocolConnect(SMTPTransport.java:780)
    javax.mail.Service.connect(Service.java:388)
    javax.mail.Service.connect(Service.java:246)
    javax.mail.Service.connect(Service.java:195)
    javax.mail.Transport.send0(Transport.java:254)
    javax.mail.Transport.send(Transport.java:124)
    src.main.java.Mailer.send(Mailer.java:38)
    controller.RegisterUserServlet.doPost(RegisterUserServlet.java:66)
    javax.servlet.http.HttpServlet.service(HttpServlet.java:681)
    javax.servlet.http.HttpServlet.service(HttpServlet.java:764)
    org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)

Note The full stack trace of the root cause is available in the server logs.
```

Figure 2: AuthenticationFailedException.

CSS and Styling

Some very simple CSS styling was added to make the web app look a little bit more interesting. An example can be seen below.

Figure 3: CSS styling.