CPRG352 - WEB APPLICATION PROGRAMMING

FALL 2021

SAIT

Due Date: **TBD**

Submission: **Create a .zip file containing the entire NetBeans 12 project directory for your solution. Upload that .zip file to BrightSpace before the due date given above. Late assignments will be rejected by BrightSpace and cannot be accepted. Do not email assignments to your instructor, they will only be accepted via the process described here.**

Assignment 3: Update the application from Assignment 2 to store and retrieve data in a database, instead of RAM

Introduction

In this third assignment you will create a Java web application called **Assign3**. This application has the same functionality as that of **Assign2**, but for this application the user account and note data will be stored and retrieved from a MySQL database instead of RAM-based storage.

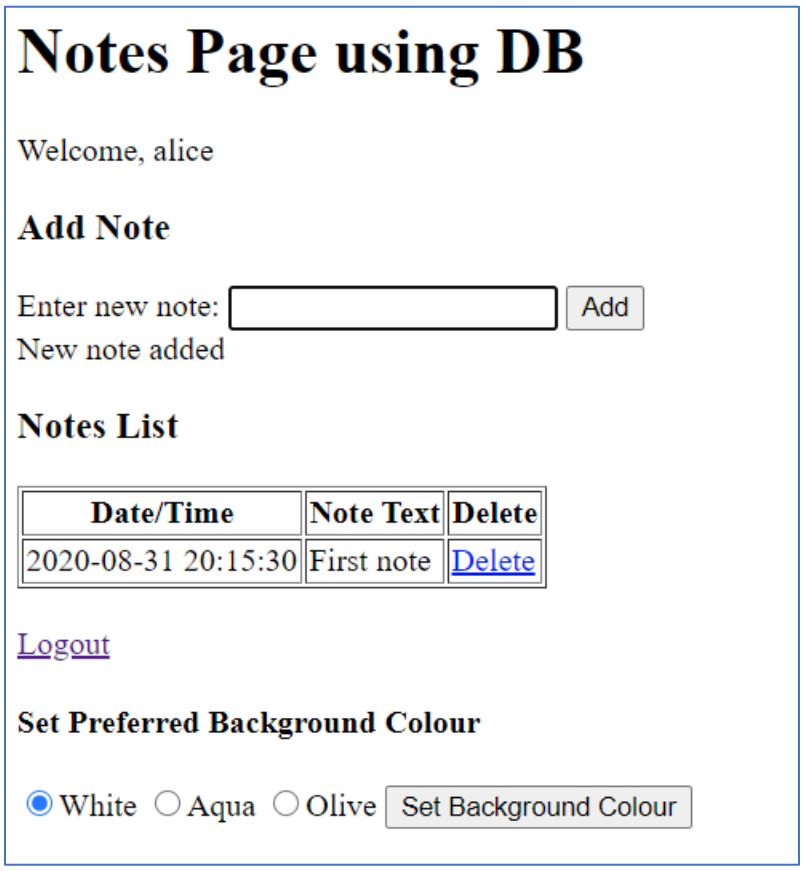
You are being given a SQL script that will create a MySQL database called **assign3db**. You will run this script and create the database in your local MySQL installation. You cannot change the structure of this database in any way, you can only change the data in the tables (adding and deleting rows). The tables in this database are:

- **users**: this table has two columns (**username** and **password)**. **username** is the primary key field. You are given two user accounts to start with ("***alice***" with a password of "***alice***", and "***bob***" with a password of "***bob***")
- **notes**: this table has four columns (**noteID**, **FK_username**, **note** and **noteDateTime**). **noteID** is the primary key (and is autoincrementing, so you do not have to provide a value for it). **FK_username** is a foreign key column that should hold a value in the **username** column of the **users** table. **noteDateTime** is automatically set to the current date and time when a new row is added to the **notes** table, so again you do not have to provide a value for it

The preferred page colour selected by the user will still be stored in a *cookie*. This cookie value will be used to set the background colour for all the pages in the application, as it was in the second assignment.

Sample Run of Application

The pages, how they look and what they do, are the same for this assignment as they were for the second assignment. The only difference a user might notice could be the format of the date given to a note in the **notes.jsp** page:



The "**Date/Time**" column format is different from that in assignment 2 because MySQL automatically adds a date with the format shown above into the **noteDateTime** column of the **notes** table whenever a new note is added to it. This format is a little different to the format provided by a Java Date object (as used in assignment 2).

Application Requirements

Your solution for this assignment must adhere to the following:

- Be implemented in a **NetBeans 12** project and run on the **Tomcat 9** application server (the software we use in class)
- Be implemented as a "***Front Servlet***" application with any JSPs located under the WEB-INF directory in the project. The front servlet must be called **NotesNavigation**

- Be implemented using JSPs and servlets *appropriately*. Servlets must be used only as *controllers*, they must not themselves output anything to display to the user. The pages seen by users in a browser must all be implemented as JSPs
- Implement and use the following domain data class:
    - **Note**: a Java class that has attributes for **noteID** (an integer, the autoincrementing value generated when a new row is added to the **notes** table in the database), **note** (a string, the note text entered by a user), and **dateTime** (a string, the date and time the note was added to the **notes** table in the database)
    - When navigating to the **notes.jsp** page to display a list of notes for a user the application must send in the request an **ArrayList<Note>** that the page will get its data from. The **notes.jsp** page must ***not*** itself query the database directly!
- All application data, except the preferred page background colour (the cookie value), must be stored and retrieved in the MySQL database
- The application must use only **PreparedStatement**s to query the database (no **Statement** or **CallableStatement** objects can be used)
- Must use *more than one servlet* to perform its various operations, e.g. one servlet to handle account registration, user login and user logout. Another separate servlet to handle note creation and deletion.