香港公開大學
THE OPEN UNIVERSITY
OF HONG KONG
科技學院 School of Science & Technology

COMP S380F Web Applications: Design and Development
Group Project (15%)

In this project, you are required to form a group of 3 students (in special case, a group of 2 students may be allowed). It is supposed each of the members share similar workloads in the project.

Theme: You are required to implement a web application for a **Course Discussion Forum**.

Basic Features (70% of the project):

1. Your web application should fulfil the following basic requirements on web pages and functionalities:
    a. Using major techniques introduced in the lectures and labs, like **Java EE, HTML5, CSS, Javascript**. You are NOT allowed to use non-Java EE server for the system.
    b. You are required to use **Spring MVC web framework** and **Spring Security**.
    c. Dynamic pages generation based on user's input or request.
    d. Using the **Apache Derby database** as backend for data storage (but not necessary for uploaded files).
    e. The web application should be easy to use for normal users.

2. In the basic part, you have to implement ALL of the following features to receive full mark:
    a. Forum hierarchy:
        1. The forum has an index page, which shows 3 **categories**: Lecture, Lab, Other
        2. Each category has a set of **threads** and the **total number of threads**.
        3. Each thread has a post called **message topic**, a set of **replies** to that message topic, and the **total number of replies**.
        4. A message topic has a ***title***, ***text content***, and zero or more ***file attachments***.
        5. A reply has ***text content*** and zero or more ***file attachments***.
        6. The index page also shows **a forum poll** for registered users to vote for a multiple-choice poll question. At any time, the forum has at most 1 poll with at most 4 MC responses.
    b. User registration and login
    c. Unregistered users can read all content ***except*** downloading file attachments and voting for the poll:
        1. Read all threads in each of the categories.
        2. View the result of the current forum poll, i.e., the number of users who voted for the poll, and the number of users who chose each MC response.
    d. Registered user can read all content, download file attachments, write new posts and vote for the poll:
        1. Write a message topic of a new thread in one of the categories.
        2. Write a new reply to one of the message topics.
        3. Vote for the current forum poll; a user can only vote once for a poll.
    e. The forum administrator can do anything that a registered user can do, and the followings:
        1. Delete a reply in a thread
        2. Delete a thread (including the message topic and all its replies).
        3. Edit (add, remove, update) the list of registered users and their information.
        4. Create a new forum poll.

    Note that all the features are supposed to be fully functional.

Additional Features (30% of the project):

You are required to implement N features in the following list, where N is the number of members in your group.

1. History on the existing and previous forum poll results
2. Banning and unbanning a user without deleting the user's posts (when a user is banned, the text content and file attachments become unreadable, but they are readable again if the user is unbanned later)
3. Batch uploading of file attachments
4. Multiple languages support using Spring's LocaleResolver (e.g., English, Traditional Chinese)
5. Storing file attachments to the relational database
6. You may propose other features subject to the approval of the course instructor.

Submission and Assessment:

Source code submission

Deadline: April 20, 2020 (Monday)

- Select one group member as the group leader to submit the source code of the web application.
- Zip the maven web application project (please ***clean*** the project in NetBeans first to remove all the compiled files that are big in file size).
- Prepare one single SQL file for inserting initial data to the Apache Derby database.
- Prepare one single text file ***readme.txt***, which contains
    - the database name, username & password for your Apache Derby database,
    - the usernames and passwords for an administrator account and a registered user account, and
    - the list of additional features implemented and any necessary details for running them successfully.
- Submit the 3 files (web application zip, SQL and *readme.txt*) to the submission page on Google Classroom.

Assessment

- Your web application will be tested by the course instructor according to a procedure that can test all the functionality.
- The web application will be built and deployed to a server computer, and other computers will be used as clients for testing the functionality. It is expected that all clients can access the web application, when the web application is deployed alive.
- Note that you should **fill in your database with enough dummy data** such that functionality in your web application can be tested properly or understood more easily. For example, your database should already have the administrator account and some user accounts.