Mobile Computing and Networks

Final Assessment, Semester 2, 2020/2021
BSc CS, IT, Science, Year 2

Open book Take Home Exam (100 Marks)

INSTRUCTIONS

1. Date issued: **May 26th, 2021**
2. Due date: **Examination week**
3. Group or Individual work: **Groups of max. 5 students**. Make your own groups
4. Write a brief report (max 5 pages) summarizing the following information about your app,
   i. **Background** – should answer these questions: what is the problem addressed by your project? Why is this problem important? Why use a mobile app to solve this kind of problem? Why have you chosen a particular type of app to solve this problem (i.e., a native app, mobile web, or hybrid app)?
   ii. **Functional requirements** (at least 3) and **non-functional requirements** or quality attributes (at least 5) for your app.
   iii. **Designs for your app** (UI, navigation, data model, logical design, etc). Use appropriate design tools and techniques such as wire-frames, UML, etc.
   iv. **Implementation of your app** including development platform, programming language, etc. Also provide screenshots for the app illustrating such things as user login screen, registration validation, dashboard screen, database layout, etc.
   v. **Validation of your app** i.e., explanations of whether or not the functional and non-functional requirements have been fulfilled. Provide appropriate evidence to support your claims by way of screenshots.
5. Upload your report and all code in a zipped folder on Moodle by the due date.
6. You will present your app to the class during the exam time.
7. If you work as a group, indicate on your report who was responsible for what. Examples of contributions include conceptualizing the project idea, writing source code, writing the report, team leader, etc.

You are required to complete the following activities,

Activity 1: Implement a *Splash* screen with both image and text animations. You will need a logo for the image animation, so design one for yourself. The animation should be viewed for 5 seconds before transitioning to the dashboard screen.

Activity 2: Implement a *Login* screen that requires the user to provide the following information at login time: *username* and *password*. Provide a way for the user to recover their password should they forget it e.g. by sending a token to their email or mobile phone. Also provide a button on this screen to enable a new user to go to the registration page to sign up if they had not done so.

Activity 3: Implement a *New User Sign-up* screen that captures the following details about a person: first name, last name, email address, username, password (with password visibility toggle feature), and country. It is mandatory for a user signing up to "Read & accept our privacy policy", so provide an appropriate feature for this functionality. From this sign up screen, a previously signed up user should be able to go to the sign-in screen. Ensure that a previously signed up user

does not sign up again, so provide all the necessary data validation. Also user sign up data should be stored in a database.

Activity 4: Implement a dashboard screen with at least two functionalities for your mobile app as stated by you in Homework 2 (Activity 1, item number 2). Implement a database for this purpose if the functionalities require to store data. For example, if you are building an m-commerce app for selling women's clothing online the data about clothing items and customers should be stored in a database (remember the **Model-View-Controller** design architecture we studied about earlier).

Additional requirements

Choose an appropriate theme and color scheme for your application.
Enhance / pimp your app with other interesting features to earn bonus marks.

THE END!