BIRZEIT UNIVERSITY

Electrical and Computer Engineering Department

ENCS5150 – Advanced Computer Systems Engineering Laboratory

Android Project

First Semester - 2024

Submission Deadline: December 13, 2024
Discussion Date: the week after the submission deadline during the lab time
Team Work: Teams of two students
Total Points: 100; 45% out of the final grade

Project Description:

We want to create a Task Management App for multiple users. Each user should sign up using an email address and a password. When users are logged in, they should be able to add a to-do task, view current tasks in the list, and also mark completed tasks.

The application should have the following functionalities:

1. **Signup, Sign in, and Logout [20 points]**

   This layout should have a "Sign in" and "Sign Up" buttons.

   a. In the main page (first page), the user can enter his or her email and password that are registered in the database to sign in. This layout must have a check box called "remember me" which will save the email in shared preferences, so that next time the user does not need to re-type the email address.

   b. The "Sign Up" button redirects the user to a sign-up form which has the following required fields:
      I. **Email address**. Must be in a correct email format. It is the primary key of the user.
      II. **First name**. Minimum 5 characters and maximum 20 characters.
      III. **Last name**. Minimum 5 characters and maximum 20 characters.
      IV. **Password**. Minimum 6 characters and maximum 12 characters. It must contain at least one number, one lowercase letter, and one uppercase letter.
      V. **Confirm password** field.

      If all required fields in the sign-up form are filled with valid data, then and only then the user can be registered. Otherwise, an error message is displayed, and the missing or invalid fields are colored in red.

2. Home layout [30]

This layout should be a Navigation Drawer Activity which will contain the to-do tasks for today. The navigation bar should have the following functionalities:

a. **Today**: displays the to-do tasks for today (main page).
b. **New task**: allows the user to add a new to-do task, task components are:
    a. Task title.
    b. Task description.
    c. Due date and time.
    d. Priority level.
    e. Completion status.
    f. Reminder Icon.
    g. Action icons (edit, delete).
c. **All**: displays all the to-do tasks sorted chronologically and grouped by day.
d. **Completed**: displays all completed tasks sorted chronologically and grouped by day
e. **Search**: allows the user to display to-do tasks in a period specified by a start date and an end date.
f. **Profile**: allows users to view and edit their profiles [Email address and Password only can be edited].
g. **Logout**: allows user to log out from the application and redirects them to the sign in page.

3. Other features [40]

a. The user should have the ability to modify any of the displayed to-do tasks (in any menu), mark them as completed, share them via email, or delete them.

b. Implement a search bar to filter tasks based on keywords in the task title or description

c. The user should have the ability to set a notification alert for any of the tasks

d. When all the tasks for today are marked as completed, the application should display a congratulations message using toast messages (you can also think of an additional nice animation to display for a short period).

e. Add a button that imports a list of tasks using REST API. For this feature, create your own dummy API that contains list of tasks.

f. The application should support both dark and light mode.

g. Allow users to set priorities (High, Medium, Low) to help users organize tasks based on urgency. The default priority should be Medium. And allow users to sort tasks based on priority for each day.

h. Enable users to customize the notification times for tasks, such as a day before or a few hours before the task. Also, add an option for snoozing reminders if users need additional time.

4. UI design [10]

We would like to leave the application UI design up to your preference. Nice UI design will be rewarded.

The project must be designed using Android packages and must use: Android Layouts (dynamically and statically). Intents and Notifications (toast messages). SQLite Database. Animation (frame or tween). Fragments. Shared Preferences.

Notes:

- *You can create any design as long as it is clear, arranged, and understandable.*
- *The name of the application must follow the convention* ***FirstStudentID_SecondStudentID_CourseProject.***
- *We will use a Pixel 3a XL device with API Level 26 (Graphic=Software). So, please match these requirements to avoid unexpected issues once we test your solution.*
- *You are allowed to use any internet resources to learn from, but auto-generated code using ChatGPT or any AI models is not allowed (it will lead to a 0 mark!).*

What to submit?

1. *Project.zip file (Size in KB)*

   From Android Studio: File → Export to zip file

2. *APK file*

From Android Studio: Build → Build Bundle(s) / APK(s) → Build APK(s)

Where to submit

Send all the APK file and ZIP file as a reply to this message

Discussion

A sheet will be sent to you as the deadline approaches. Both students (can be from any section) are required to attend the discussion. During this time, you may be asked to explain a part of the code, make changes, or add additional elements, so please be prepared and ensure you understand all parts of the code. Not attending the discussion will result in a grade of zero.