BIRZEIT UNIVERSITY

Advanced Computer Systems Engineering Laboratory – ENCS5150

TODO 3: Personal Expenses Tracker

Objective:

Create an Android application to help users track their finances, utilizing Android fragments, shared preferences, and SQLite database.

User Interface (a single activity consisting of 3 fragments):

- AddFragment:
    1. This fragment allows you to add a new expense, with the following UI elements:
        - **Dropdown**: Utilizes a predefined list (stored in the database) of expense types, such as groceries, entertainment, electricity bills, etc.
        - **InputNumberField**: The amount of the expense.
        - **MultilineTextArea**: This field allows users to add multi-line notes (if any).
        - **AddButton**: This button is used to add the new entry.
    2. All fields are required, except for the MultilineTextArea, which is optional.
    3. If the add button is clicked, and all mandatory fields are filled:
        - The current date and time will be added to that entry as well.
        - A new record will be inserted into the "expenses" database table, containing data from the user input along with the current date and time.
        - ListFragment will be updated with the new entry.

- ListFragment:
    1. This fragment lists all expenses.
    2. At startup, it will load and display all the entries from the "expenses" database table..
    3. It will be updated each time a new entry is added through addFragment.
    4. Every entry will only show the expense type and the time in HH:MM:SS format.

- DetailsFragemnt:
    1. Then clicking on any entry in ListFragment, DetailsFragemnt will show all the entry details, including type, value, notes, date, and time.
    2. It should be possible to delete an entry via a trash bin icon. When an entry is deleted, it should be removed from the database and the ListFragment. Additionally, the detailsFragment UI should be cleared of the deleted item.
    3. Plus and minus icons to adjust the font size, along with a text view displaying the current font size.

4. The font size in DetailsFragemnt should be stored in shared preferences and updated when the plus/minus icons are clicked.
5. Any change in font size will affect all the text in all fragments.

Notes:

- You can create any design as long as it is clear, easy to understand, and follows any mentioned specifics in the "**User Interface"** section above (such as specific color or hint requirements).
- Utilize the inter-communication design patterns discussed in class to ensure efficient communication between fragments.
- All 3 fragments should be visible at all times, so work on the design to fit all 3 fragments on one screen.
- Use Pixel 3a XL device with API Level 26 (Graphic=Software).
- ToDo is individual work and cheating/using LLM Models such as ChatGPT will result in a **0 mark**.
- A good design will help you achieve higher grades.
- No late submissions whatsoever, if the deadline is about to arrive, submit your work as it is.
- What to submit:
    1. **Project.zip** file (Size in KB)
        From Android Studio: File → Export → Export to Zip File
    2. **app-debug.apk** file (Size in MB)
        From Android Studio: Build → Build Bundle(s) / APK(s) → Build APK(s)
        You will find the APK file under "app\build\outputs\apk\debug\app-debug.apk"

    Send both the APK file and the ZIP file as a reply to my message.

    - Test your APK before submission, either by installing it to the emulator by dragging and dropping the app-debug.apk file into the emulated phone, or by installing it to your personal Android phone. At least one mark will be deducted for submitting a faulty APK file.
- Deadline: **11/08/2024 Midnight (Send it before 12/08/2024)**