2025 – Lab Exam 03

Overview:

This individual assignment requires you to develop an Android app that promotes personal wellness and helps users manage their daily health routines. The app must combine multiple features using Android Studio to demonstrate your ability to use various Android development tools and principles effectively.

Objectives:

- Design and implement an interactive mobile app to manage the daily health routines of users.

- Utilize **Android Studio** and **Kotlin** for the development process.

- Demonstrate knowledge of Android programming concepts and **data persistence techniques without using databases.**

Requirements:

1. Daily Habit Tracker – Add, edit, delete daily wellness habits (e.g., drink water, meditate, steps). Display completion progress for each day.
2. Mood Journal with Emoji Selector – Log mood entries with date/time and a chosen emoji. Provide a simple list or calendar view of past moods.
3. Hydration Reminder – Use Notifications/AlarmManager/WorkManager to remind users to drink water at their chosen intervals.
4. **Advanced Feature (choose at least one)** – Home-screen Widget showing today's habit completion percentage, Sensor Integration (e.g., accelerometer to count steps or detect shake to add a quick mood), or a Simple Chart (MPAndroidChart) showing mood trend over a week.

Technical Requirements

- Architecture: Use Fragments/Activities for screens (Habits, Mood Journal, Settings).
- Data Persistence: Store user data using **SharedPreferences** where appropriate.
- Intents: Use implicit/explicit intents for navigation and sharing (e.g., share mood summary).
- State Management: Retain user settings across sessions.
- Responsive UI: Must adapt to phones and tablets, portrait & landscape.

Submission:

- Submit a zipped file of your Android Studio project via the course web.

- Include all the source code, resources, and a report in PDF format.

- The report should contain a brief description, and screenshots of the app.

Evaluation:

- Code quality and organization.

- How well does your app works and adheres to the specified requirements.

- Creativity and UI design.

- The app should not have significant bugs or issues.

- Be prepared to explain your code and design decisions during the viva session.

Plagiarism Violation Notice:

Plagiarism is strictly prohibited and will result in severe consequences. All submissions must be your original work, and any resources or references used must be appropriately cited. Cases of academic dishonesty, including but not limited to copying code, using unauthorized materials, or helping others to plagiarize, will lead to disciplinary actions as per institutional guidelines.

Marking Guide (10 Marks)

1. **Code Quality & Organization (2 Marks)**

    - **1 Mark:** Code is well-organized, with clear naming conventions and proper use of functions and classes. There is no redundant or unnecessary code.

    - **1 Mark:** Code is well-documented with comments explaining the purpose of functions and key code segments.

2. **Functionality (3 Marks)**

    - **1 Mark:** Daily Habit Tracker.

    - **1 Mark:** Mood Journal with Emoji Selector.

    - **1 Mark:** Hydration Reminder.

3. **Creativity & User Interface Design (2 Marks)**

    - **1 Mark:** Clean, intuitive, and user-friendly design.

    - **1 Mark:** App adapts well to different screen sizes/orientations and is easy to navigate.

4. **Advanced Features & Data Persistence (3 Marks)**

    - **2 Marks:** Implementing at least 1 of 3 advanced features

    - **1 Mark:** Effective use of **SharedPreferences** for saving small data like user settings and/or daily wellness habits.