UNIVERSITY OF EXETER

FACULTY OF ENVIRONMENT, SCIENCE
AND ECONOMY

ECM2425

Mobile and Ubiquitous Computing CA

Continuous Assessment

Hand-out date: 01 February 2024
Hand-in date: 07 March 2024

This CA comprises 40% of the overall module assessment.

This is an **individual** exercise, and your attention is drawn to the guidelines of academic conduct and practice in the TQA manual.
(https://as.exeter.ac.uk/academic-policy-standards/tqa-manual/aph/managingacademicmisconduct/).

The objective of this CA is to test your understanding and practical programming in Android development.

This document outlines the assessment specification and submission requirements for the module: ECM2425 Mobile and Ubiquitous Computing. Please ensure you read the entire document before you begin the assessment.

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February 2024

1. Task Specification

You will develop an Android app at your discretion in this task (e.g., weather app, gaming app, chatting app, news app, route planner app, photo viewer app, or music player app). Your app needs to meet the following specifications.

You are allowed to use any programming language you prefer, such as Java, Kotlin, or Dart.

Core Requirements:

1. **Multiple Screens and Navigation**: Implement multiple screens using Activities or Fragments to demonstrate, and users can navigate between screens. You are free to use the Jetpack Navigation Component.
2. **Intents**: Use both explicit intents and implicit intents; pass data between components and handle results from activities.
3. **Menus and User Interface**: Implement an intuitive user interface incorporating options menus and context menus to enhance app functionality and user interaction.
4. **RecyclerView**: Utilize RecyclerView for displaying lists or grids and handling item clicks.
5. **Data Storage**: Demonstrate the use of SharedPreferences or Preferences DataStore to store user preferences.

2. Deliverable

The deliverable is a **complete implementation of your app**, which will consist of the source code of an Android project with EVERYTHING necessary to build the app supplied in a ZIP file, including all Java and XML source files plus any additional resources (images, texts, etc).

The deliverable for this assignment is a **fully functional Android application**, provided as a compressed **ZIP** file containing the entire Android Studio project. This ZIP file should include:

- All Java/Kotlin/Dart and XML source files necessary for the application.
- Any additional resources used within the app, such as images, text files, or external libraries.
- A **README** file at the root of the project directory, detailing essential aspects of your application as outlined below.

Requirements for the ZIP File:

- Ensure that your application compiles and runs on the Android Emulator (AVD) within the Android Studio IDE, even if you develop your code in another IDE.
- If your application requires specific configurations or dependencies outside the standard Android SDK, please provide detailed instructions in the **README** file.
- Include all necessary build scripts and Gradle files to facilitate a straightforward project setup and build process.

README File Structure: Your **README** file should be concise, not exceeding two pages, and can be in any common format. It must include the following sections:

1. **Introduction:** Clearly describe the purpose and functionality of your app. Provide brief instructions on how to use your app, including any necessary configuration.
2. **Design Rationale:** Discuss the architectural and design choices made during the development of your app. This could include, but is not limited to, the decision to use Activities vs. Fragments, the choice of layout and views (e.g., LinearLayout, ConstraintLayout), and the use of specific data storage solutions (e.g., Preferences DataStore or Content Providers). Justify these decisions based on the requirements and the expected user experience.
3. **Novel Features:** If your app includes innovative or unique features that distinguish it from typical applications, describe them here. Detail how these features enhance the user experience or improve the app's functionality. If your app does not incorporate novel features, you may omit this section.
4. **Challenges and Future Improvements:** Reflect on the challenges encountered during the development process and how you addressed them. Additionally, propose potential improvements or additional features that could be implemented in future versions of the app to enhance its functionality, performance, or user experience.

3. Submission

Submit your complete implementation (in a ZIP file) using ELE, by **12 noon** on the 7th of March 2024.

4. Marking Criteria

Marking Scheme	Description	Mark
Structure and content of README	The README file is well-structured and effectively presented, with clear explanations of the app's purpose and design rationale that align with the provided specifications and the implemented code. It includes a meaningful discussion on the challenges encountered during development and proposes thoughtful strategies for future improvements.	20%
Code comments and implementation	Code comments are informative and relevant, and placed appropriately to aid understanding. The code is clean, well-organised, and adheres to best practices in formatting, making it easy to read. Functions and classes are designed for reusability and are logically organised into packages with meaningful names. Both code comments and implementation standards are in line with Google's development guidelines.	15%
Application initialization and stability	The application launches successfully without any startup crashes and is able to compile and run "out of the box." The initial screen is rendered correctly, indicating a stable launch process.	10%

Responsiveness and Adaptability	App works properly irrespective of screen size and under configuration changes such as device rotation, without loss of data or user context.	15%
Project quality	This encompasses the entire user interface (UI) design, interaction flow, aesthetic appeal, app stability, operation, and responsiveness. Additionally, considerations for app security (where applicable), app idea, and the implementation of all features and components as outlined in the project specifications will be evaluated.	40%

If you have any questions at any point throughout the project please do not hesitate to get in touch, H.Wang3@exeter.ac.uk and M.Bhatti3@exeter.ac.uk.