

Assignment 2 – Develop a media recording app

Total: 5 marks

Due date: Submit all files as one zipped file by 8pm 5th October 2021.

Submission:

- 1. Submit all project files as one zipped file.**
- 2. A video with your app walkthrough (screen capture & voice recording) demonstrating the actions/features/functionalities that are required to be developed. You also need to demonstrate the network and energy saving optimizations explaining the implementation or using Android profiler.**
- 3. A one-page document explaining the cloud synchronisation strategies.**

Camera is one of the most frequently used sensors on an Android device. In this assignment, you are required to write an app that enables the user to take a video or photo, display it, and then upload it to Google's Firebase cloud server for backup.

1) The Main view of this app should contain [0.5 mark]:

- A GridView to display (thumbnail display) all videos and photos captured from your app and stored on the user mobile.
- A button to activate the camera to take a photo or video.
- A button to immediately upload the media content to a cloud server for backup.

2) Your app should be able to capture photos and videos leveraging built-in camera support. Once a photo or video is captured, the media should be saved locally, and the saved media should appear on the main view (GridView). [0.5 mark]

3) Your app should be able to back up the media (photos and videos) to Google's Firebase platform cloud server:

- Synchronisation of media should happen automatically without user interaction. This regular automated backup should only happen when the user is connected to WiFi. If the device is not connected to WiFi at the regular upload time, you should wait until the device is connected to WiFi. [1 mark]

- There should also be a button to allow user to immediately synchronise the local media library with the cloud server. When the user clicks on this button, if the device is not connected to WiFi, a pop-up message should be displayed to the user “You are not connected to WiFi. Would you like to proceed?” to request user preference in uploading the media. [1 mark]
 - i. If the user responded with “Yes”, backup data immediately irrespective of the connected network.
 - ii. If the user responded with “No”, backup data as soon as the device is connected to WiFi.
- 4) Device bandwidth and energy consumption of the app should be considered in designing the synchronisation process. One-page document explaining, (i) the developed strategies for both automated and user driven synchronisation and, (ii) how bandwidth and energy saving are achieved, should be submitted. [1 mark]
- 5) App should be able to be built and run successfully on emulator. [0.5 mark]
- 6) Coding [0.5 mark]:
 - Compliant with the official Android Java code style guidelines (<https://source.android.com/setup/contribute/code-style>), use proper indentation, stick within the 100 characters length for each line of code, no trailing whitespaces and no unused imports.
 - Documentation: use proper in-line code commenting, and Javadoc standard comments for new public classes, methods, variables and constants.