Assignment 2 ***Android Sensor Framework***

COMP2430-Mobile Computing Technologies

Department of Computer Science

Winter 2025

The objective of this assignment is to ffamiliarize students with basics of Android Sensors Framework. Students will extend their app from their first assignment to display data obtained from sensors.

1. This assignment **shall** be completed in groups of **three or four**.
    - Please don't email us regarding team building.
    - Those who missed the grouping will not see the assignment in D2L and cannot attempt it.
2. You must submit your solution through D2L
    - Don't email me or the TA your submission, please. I am receiving a high number of emails. Your email may not be processed before the deadline.
    - You can upload/submit several times. D2L is configured to keep the last submission with all previous submissions overwritten.
    - Your **submission** should consist of:
        - A **PDF file containing your report** (with explanations, screen shots, hyperlinks, etc.).
        - A **screen recording video** showing that the app is running as expected
            - Record your screen for 10s to 20s and show that your app is running either on an Android device or on the emulator. You can use Android's features for screen recording.
        - A **presentation video** with your verbal (audio) presentations.
            - Provide a brief explanation of the code segment that you modified to output two sensory data. Explain the specific things you have done to get the app started and run correctly. Based on these explanations, the marker should be able to reproduce your results.
        - Your **Kotlin code** in a text file e.g., xxx.kt.txt
            - You must extend the code of your app from your first assignment; the 'Greeting app' you developed in your first assignment
            - Include a screenshot in your PDF report showing the relevant extensions to your first assignment's code.
        - Your **project files**

Note: If your videos are large and cannot be uploaded to D2L, upload the videos to Google Drive and just provide a link to the videos in your report. Test your hyperlink and make sure the uploaded files are not damaged. If the videos don't exist at the provided

link or don't play within a standard browser (Chrome, Safari, Microsoft Edge, or Firefox) we will treat it as a major error.

3. The evaluation policy is as follows:
    - **"All or Nothing"**: Ensure that the code is error-free and the app runs; achieving this will earn you 100% of the allotted points.
    - **Minor Errors:** 5% will be deducted for **each** minor error. If the same minor error is encountered more than once, 5% will be deducted for each encounter.
    - **Major Errors**: 15% will be deducted for **each** major error.

4. Should you require further clarification regarding the assignment, please ask questions during the lecture, or feel free to contact me during my office hours (**check the syllabus** for hours and a calendar link).
    - Technical questions asked via email cannot be answered.

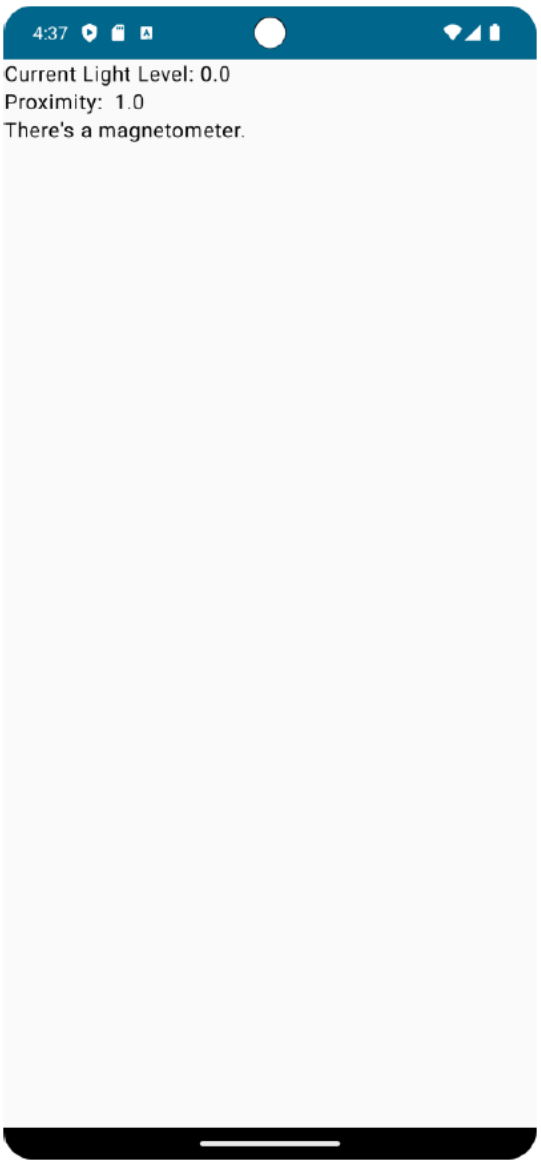
5. The deadline is **sown in D2L** (Toronto time).
    - The submission site will close after the deadline.
    - The deadline can't be extended.
    - Please see the syllabus regarding the penalty for late submissions. Please check the course page for the most updated version of the syllabus.

Q1) Change and extend your business card app as described below :

- Study the power point slides “Lecture 5 - Lecture 6 slides” (available in D2L). Also have a look into the code segment in its last page’s notes section. You may want to refactor the code, or use parts of it. To learn more about “Columns”, read the following resource: https://developer.android.com/jetpack/compose/layouts/basics

- Change and extend your business card app from your first assignment to show the following information arranged in a Column (**30 pts; 100% of this assignment**)
    - the current light level,
    - the current proximity level,
    - a message informing us whether there is a magnetometer on the Android device.

Note: A possible solution is shown in the picture below.


4:37
Current Light Level: 0.0
Proximity: 1.0
There's a magnetometer.