Mobile Computing - Winter 2025
Assignment 3 – Sensing and Native Code – 40 + 40 marks;
Deadline: Apr 24, 9pm

1. Write a matrix calculator that adds, subtracts, multiplies and divides not numbers, but matrices. The first input is the dimension of the matrix, followed by the actual matrix elements. You need to support any dimension of the matrices, but only two distinct operands need to be taken. Note that you must use any C++ library that supports vector operation to internally implement the operations.

2. Write an app that logs the received signal strength of the WiFi APs that are accessible to us in different locations as a matrix of 100 elements per location. Your app must identify at least three different locations within the app, and show how the range of RSS differs across them.

What and How To Submit

- The Kotlin/Java/C and Gradle program sources, along with XML. Composition needs to be used wherever appropriate. Use of XML files are also allowed, but their id's need to be used to make the changes wherever necessary.

- A readme text file, explaining the way the implementation has been done.

- Uploading to github via a private repository is a must. The submission needs to be made to BOTH Google Classroom and github.

Grading Rubric

For Q1,

1. Activity with the UI – 10 marks

2. Interface to accept input – 10 marks

3. Use of a C++ library for vector operations – 5 marks

4. Use of native code and its interfacing with Kotlin/Java – 15 marks

For Q2,

1. Creation of app interface – 10 marks

2. Ability to log the data – 15 marks

3. Showing the data in the demo from three locations – 15 marks

Late Submission Policy

- -0.25 per hour for the first 96 hours.

- Submissions beyond 4 days of delay would only be accepted with official leaves of absence.