# Android Projects A3\_1 & A3\_2

This repository contains two Android assignments:

- 1. A3\_1: Matrix Calculator
- 2. A3\_2: Wi-Fi RSS Logger



### A3\_1: Matrix Calculator



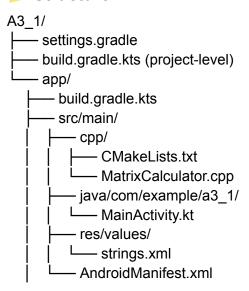
#### Overview

A native-backed Android app that performs element-wise matrix additions, subtractions, multiplications, and divisions on two matrices. The UI is built using Jetpack Compose, and the computation is done in C++ via JNI using the valarray vector class.

#### Features

- Supports any square matrix dimension
- Accepts two matrix inputs from the user
- Supports operations: Add, Subtract, Multiply, Divide
- Uses C++ std::valarray for performance
- JNI interface for Kotlin <-> Native communication

#### Structure



#### **X** Build Instructions

- 1. Open project in Android Studio
- 2. Ensure NDK and CMake are installed
- 3. Sync Gradle
- 4. Build → Clean Project → Rebuild

### Usage

- 1. Enter matrix dimension
- 2. Enter two matrix values (row-major, space/newline-separated)
- 3. Choose an operation: Add / Subtract / Multiply / Divide
- 4. Tap Calculate to see results

## A3\_2: Wi-Fi RSS Logger

### Overview

This app logs Wi-Fi RSSI (Received Signal Strength Indicator) values from surrounding Access Points (APs) and displays them as a 10×10 matrix for each of **3 selectable locations**.

#### Features

- Spinner to choose Location A, B, or C
- Button to **Start/Stop** signal logging
- Logs strongest RSSI from WiFi scan
- Maintains last 100 values per location
- Displays data in a 10×10 matrix format