

Individual Project Assignment
Programming Ubiquitous Things
Spring 2025 - IFI/UiO

1. Introduction

This document describes the individual project to be developed by each student for the course Programming Ubiquitous Things (PUT) at UiO in Spring 2025. This work focuses on the interaction between a client application running in a smartphone (running Android, API 35), written in Kotlin and using Jetpack Compose (to make the interface) or providing the interface in XML, and a server based on Eclipse (IDE for Enterprise Java Developers with Spring Tools 4). The goal is to allow students to understand all the required settings and perform a simple remote invocation (using the "volley" library) to a specific server for which the code is given.

2. Setting

The overall system is based on a server developed with Eclipse and a client developed with Android Studio. So, both development environments should be available (Eclipse and Android Studio). The server source code is provided to students and it should not be modified.

Open the project, called "server_individual_project" (available in the PUT web page) and run it in Eclipse. This server provides two methods that you must invoke remotely from the smartphone:

- **`getMethodTesting`** - this method is just for testing the connection and invocation mechanism using GET, and
- **`postMethodTesting`** - this method is just for testing the connection and invocation mechanism using POST.

Note that the client running on the smartphone can be based on the application developed in the lab (Remote Invocation). The application should have two buttons, each one leading to the remote invocation of the two methods mentioned above, respectively. Please note that to invoke the server, you should use the following IP: **`10.0.2.2:8080`**

3. Application

Once the server is running, run the smartphone application and, by clicking on the buttons, invoke remotely the two methods mentioned above (provided by the server). Use messages to prove that all invocations are being executed correctly.

4. Evaluation

This individual project is mandatory and does not influence the final classification. It just impacts the student in terms of being allowed to finish the course (or not) by allowing them to move on to the group project and to the exam. So, if successful, this project will allow the corresponding student to continue the course; otherwise, the student fails and is not allowed to continue the course.

This individual project is to be shown working correctly in the lab, day 25 February, in the class from 14h15 to 16h. So, the deadline for having this project finished in on that same day at 14h. As mentioned above: the application in the smartphone should show information in the screen proving that the remote invocations are effectively working correctly (i.e., using "Toast" messages) and the Eclipse server that is invoked must also show that is being invoked by the smartphone.