FACULTY OF ENGINEERING AND ARCHITECTURE

LAB6: Mobile Development with Kotlin

Cloud and mobile applications

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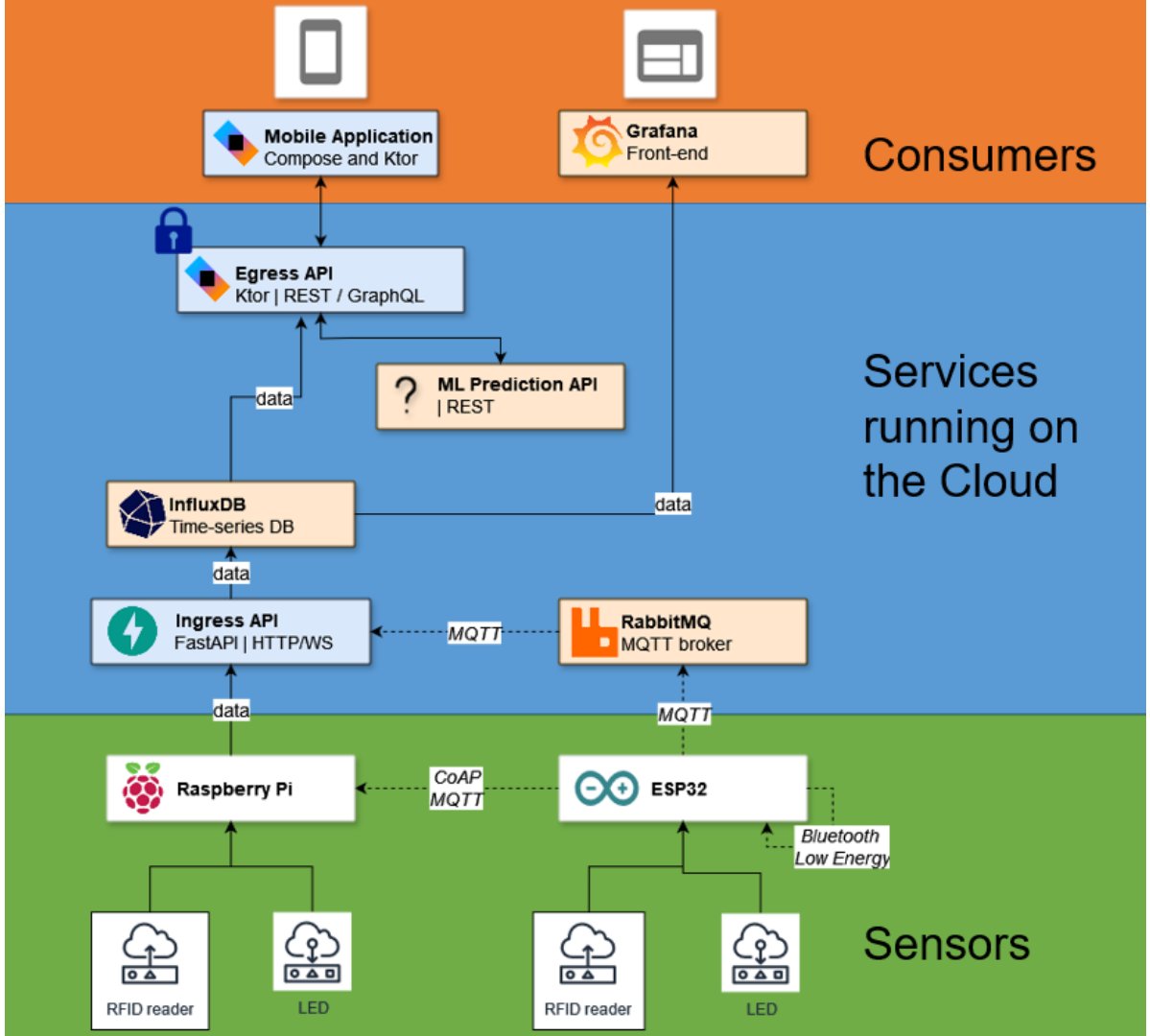

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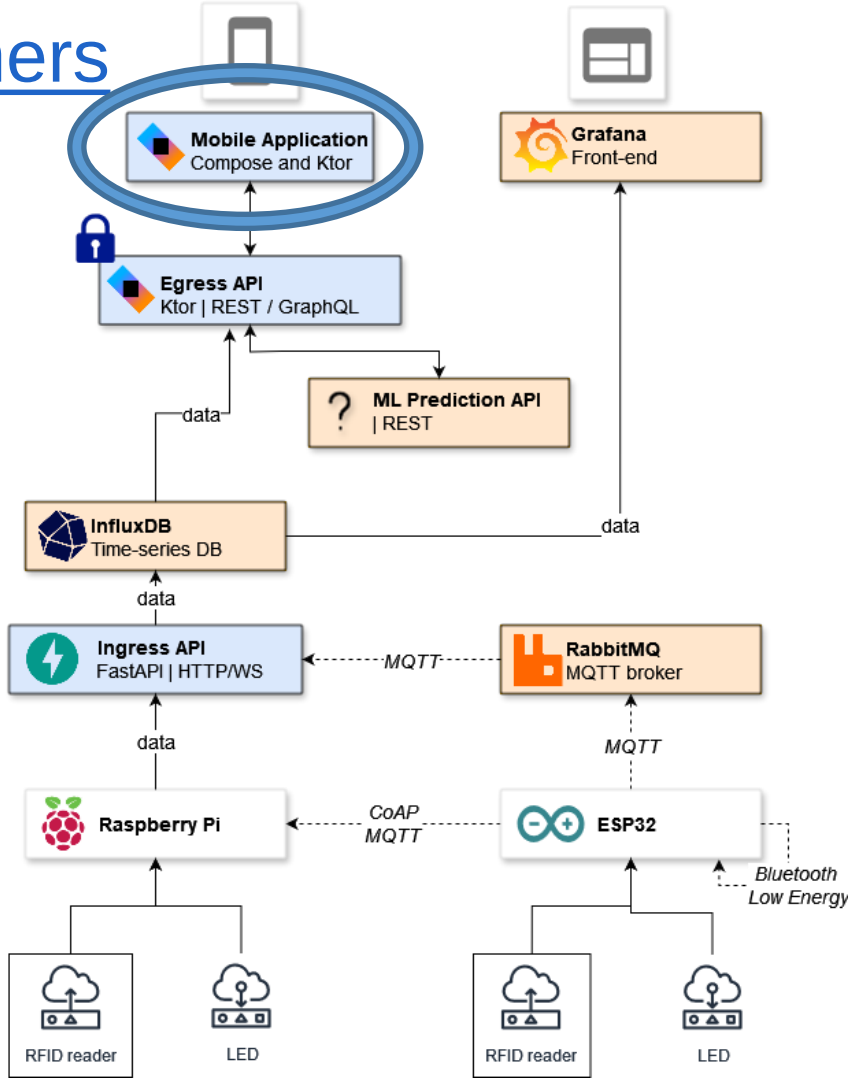
This Lab: Consumers



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Goals

1. Creating a mobile application.
2. Finishing our IoT stack development, from sensors through microservices to consumers.
3. Interpreting a given source code and expanding it with extra functionality.

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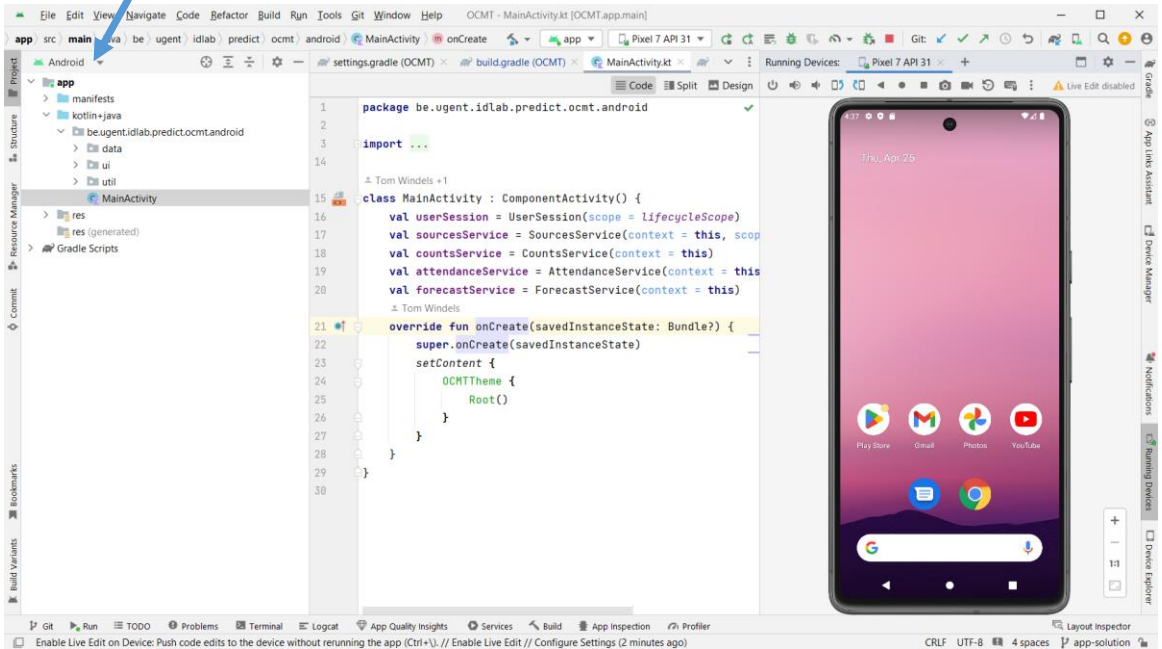
@Home: Preparation Part

- Install Android Studio and emulator (Section 3.1)
- Tutorial 1: Understanding Jetpack Compose
- Tutorial 2: Project view in Android Studio



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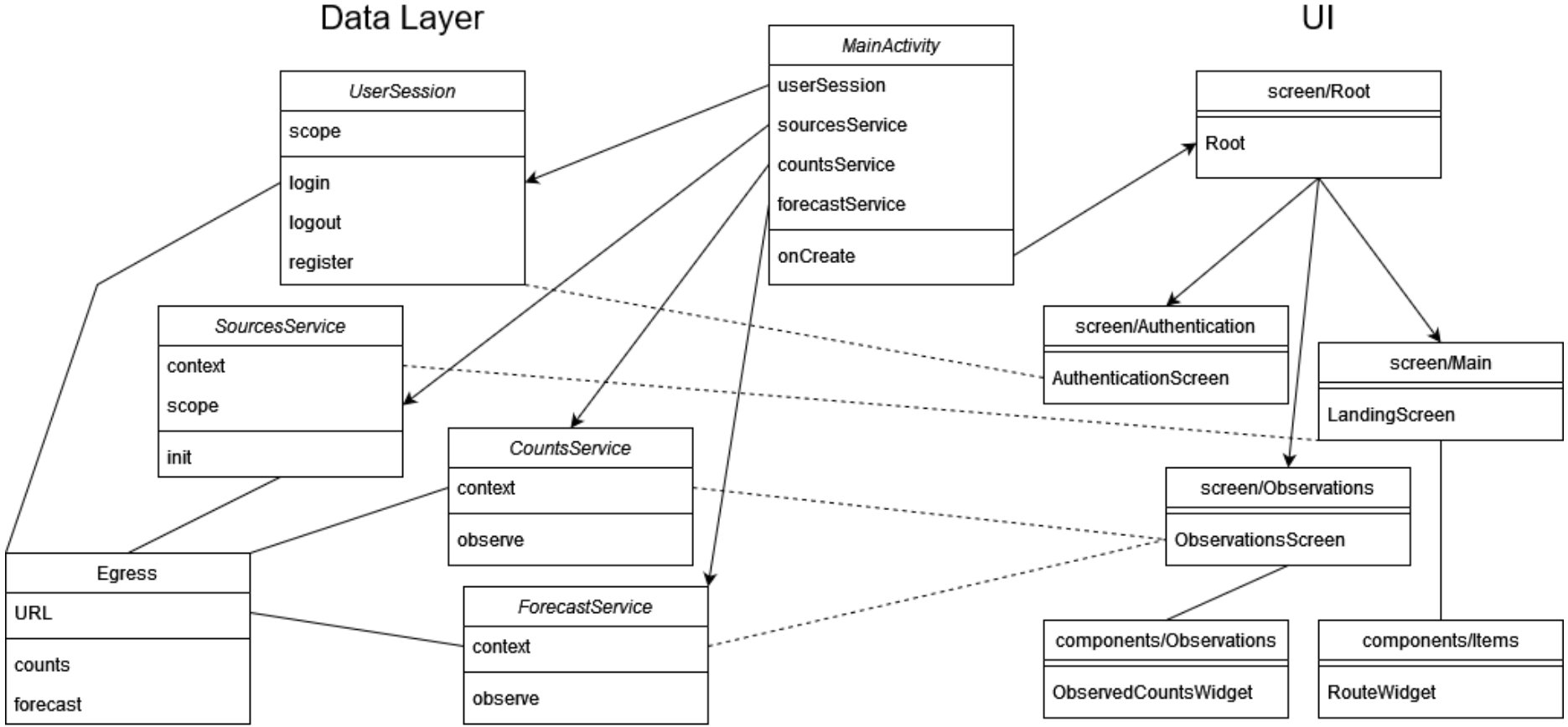
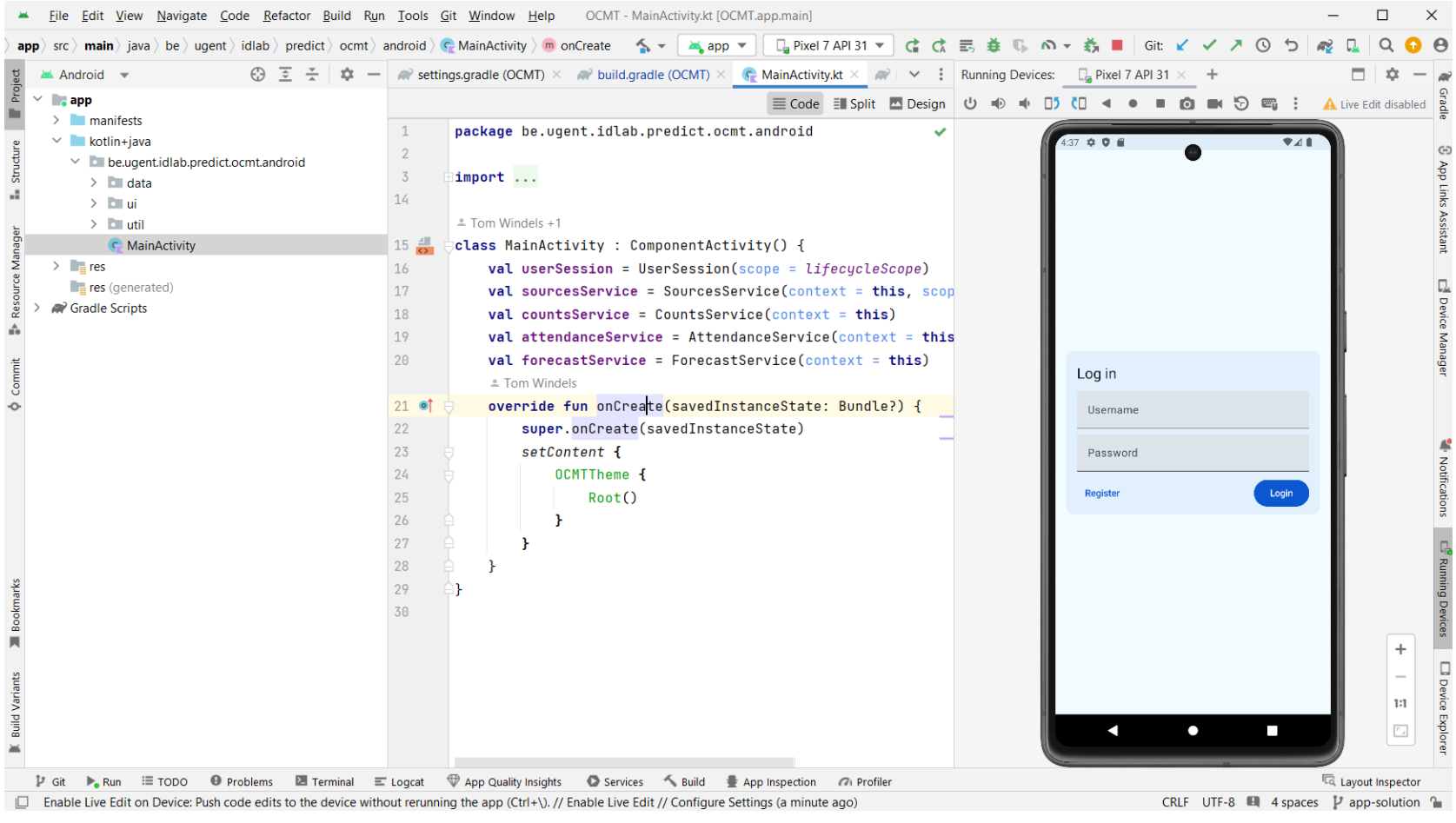
In Lab: Tutorial 3: Consuming the Egress API

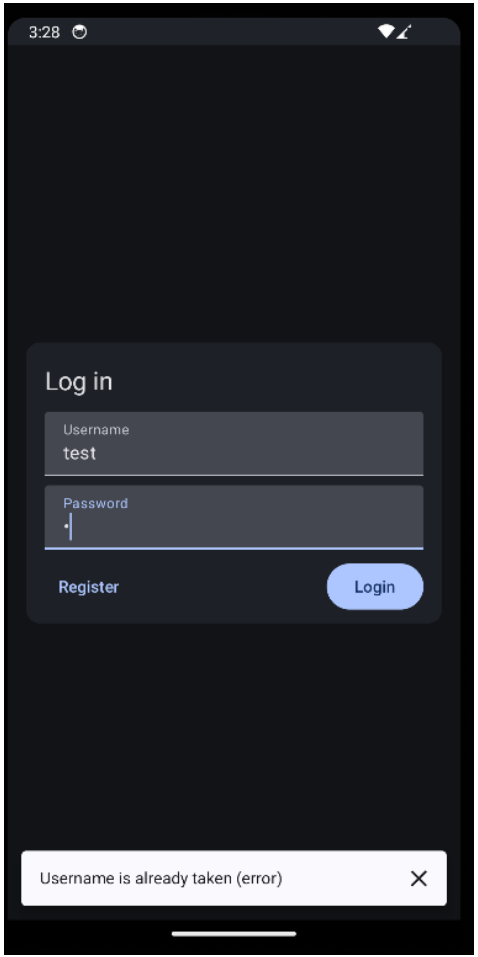


In Lab: Task0 Running the app: URL in Egress.kt and run



In Lab: Task1

- Authentication
  - `UserSession`: register & login functions with credentials
  - Communicate with Egress



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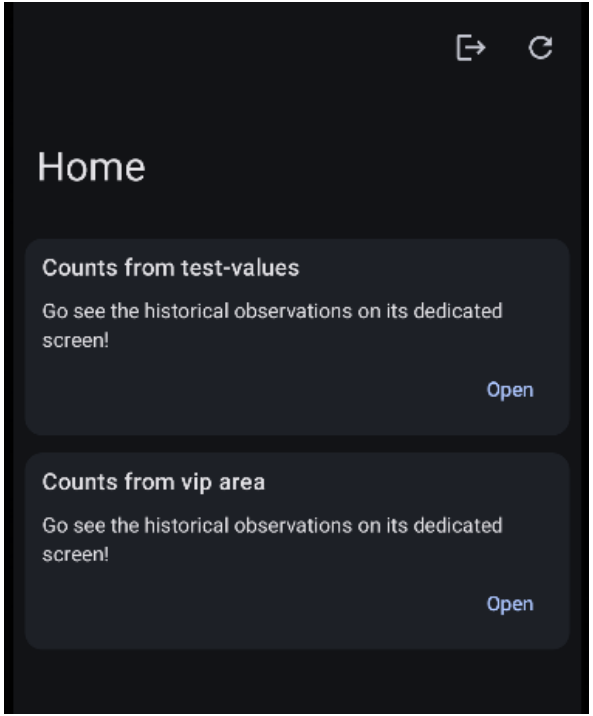
In Lab: Task2

- Sources overview
  - sensor_names from InfluxDB
  - `SourcesService`
  - Communicate with Egress
  - Use token from Task1



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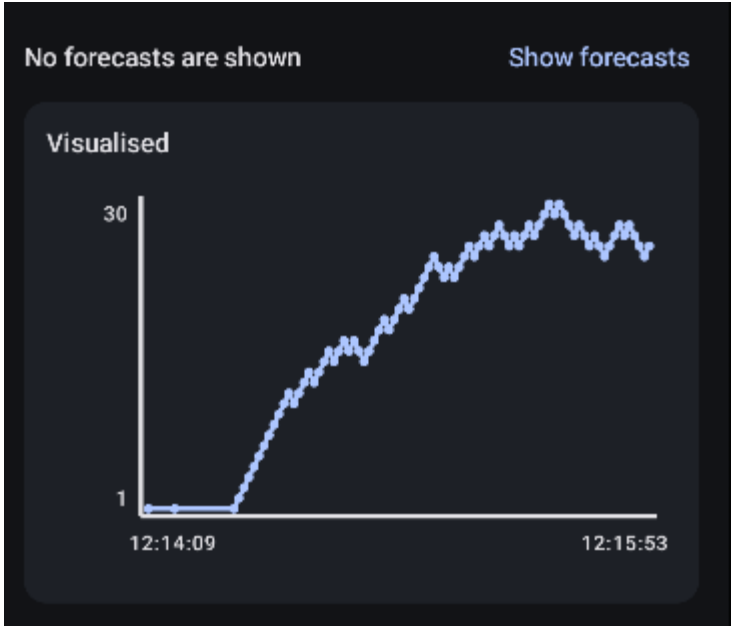
In Lab: Task3

- Counts & forecast
  - `CountsService`
  - `ForecastService`
  - Return a Flow, a stream of data asynchronously retrieving new values
  - Use token from Task1



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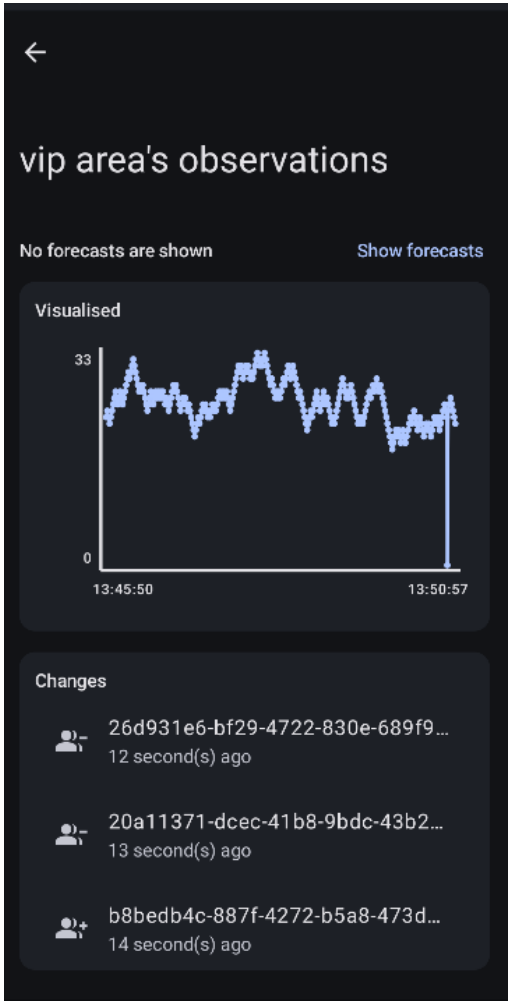
In Lab: Task4

- Attendance
  - `AttendanceService`
  - You implement UI widget below graph
  - Compose is your friend!



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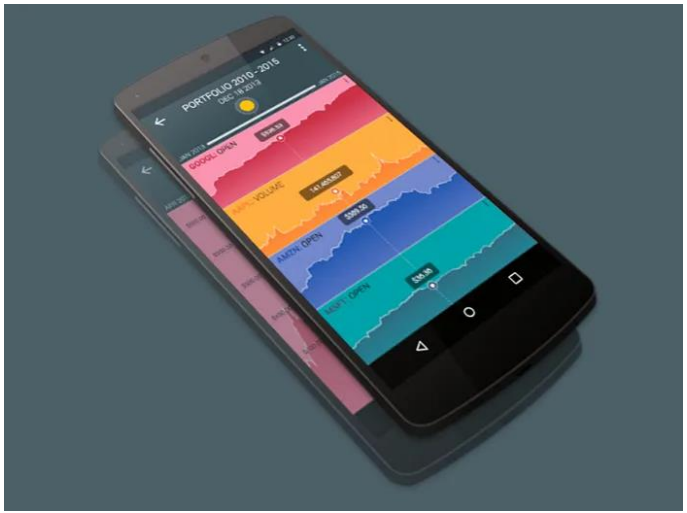
In Lab: Extra tasks to get above 14 / 20

- Add extra functionality to your mobile application for the last 6 points of the assignment
- List of potential tasks, or you choose your own
- Be creative!



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Material to submit

- Preparation part at home: due **Thursday 8 May at 10:00**
  - Checklist on Ufora
- Archive (Lab6_FamilyName_FirstName.zip): **due Tuesday 22 May @10:00**
  - Lab report in .pdf
    - Explanation of code
    - Screenshots of task results
    - Questions
  - Source code
    - Just app/src folder is sufficient
  - Video of task results (if applicable)
- **Demo** after you turn in your exam on **5 June**!

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FACULTY OF ENGINEERING AND ARCHITECTURE

Ing. Tom Windels
PhD student

Tom.Windels@UGent.be

Ing. Cedric Bruylandt
PhD student

Cedric.Bruylandt@UGent.be

Dr. Jennifer B. Sartor
Onderwijsbegeleider

Jennifer.Sartor@ugent.be

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