[bonnit-ws16-WoT-Lab]
Sensor Project

Lavinia Banu and Jeanine Bonot
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Outline

Code Organization and Architecture

Use Cases

User Interface

Lessons Learnt

Future Work

Link to Repository

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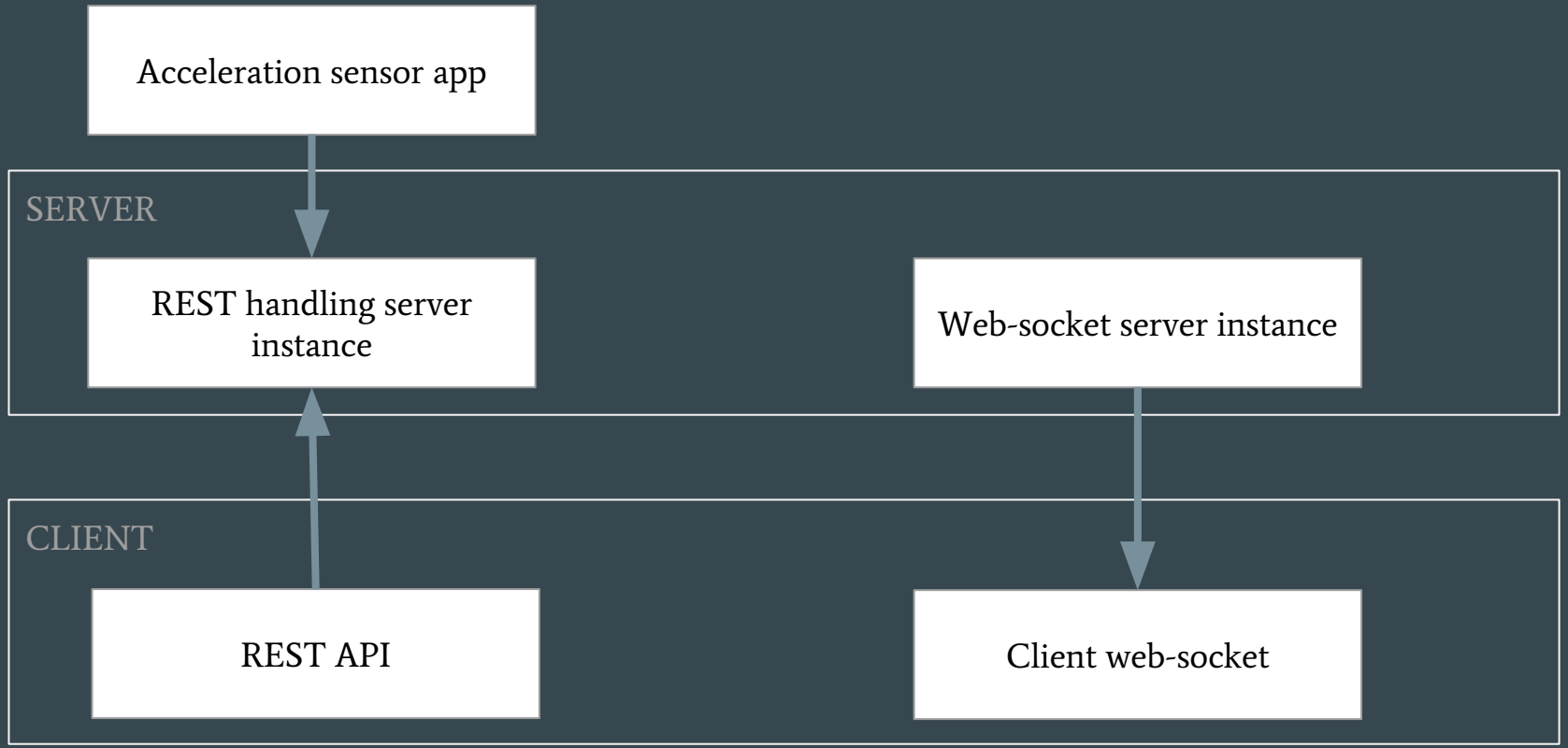
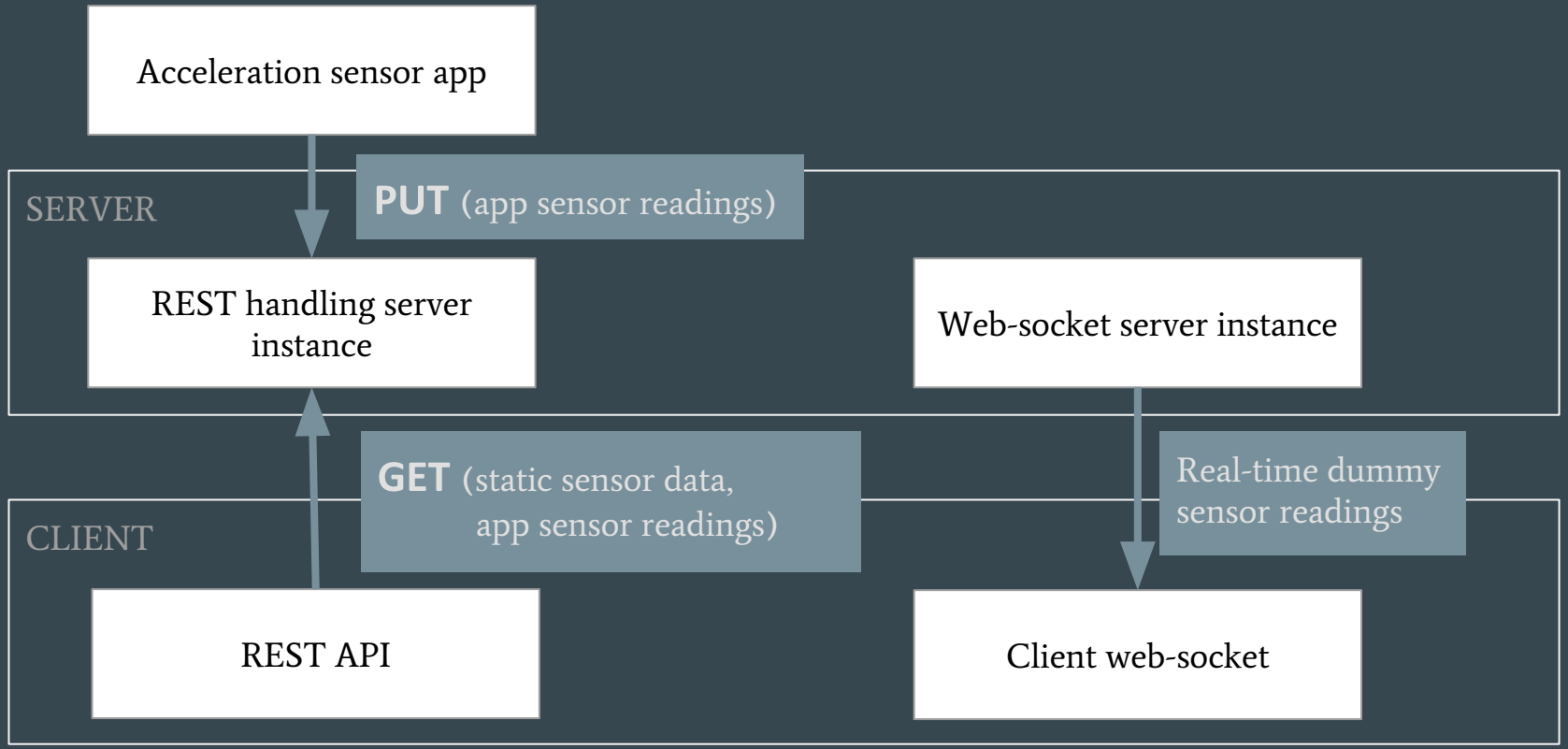
Code Organisation and Architecture



Code organisation and architecture



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Use Cases

1. Server setup
2. Sending dummy sensor data
3. Sending accelerometer data from mobile app
4. Displaying sensor data on dashboard

Use Case: Server Setup

Preconditions: None

Basic flow:

1. Create preset list of dummy sensors from JSON
2. Create web socket server (port 8081)
3. Create REST request handler (port 8080)

Use Case: Send Dummy Sensor Data

Preconditions:

- Server is set up

Trigger:

- User opens sensor dashboard (server detects web socket connection)

Basic flow (every second):

1. Collect the latest sensor value
2. Send value to web client via web socket

Use Case: Send Accelerometer Data from Mobile App

Preconditions:

- Server is set up
- User has entered server URL

Trigger:

- User enables data transmission via UI

Basic flow (every second):

1. Collect acceleration data and timestamp
2. Make HTTP PUT request to send latest acceleration information to server

Use Case: Display Sensor Data on Dashboard

Preconditions: Server is set up

Basic flow:

1. HTTP GET request to fetch general sensor data from the server
2. Get latest sensor readings and render information on graph
    a. **Dummy sensors:** Receive message from web socket
    b. **Acceleration app: Send** HTTP GET request to fetch latest reading sent to server

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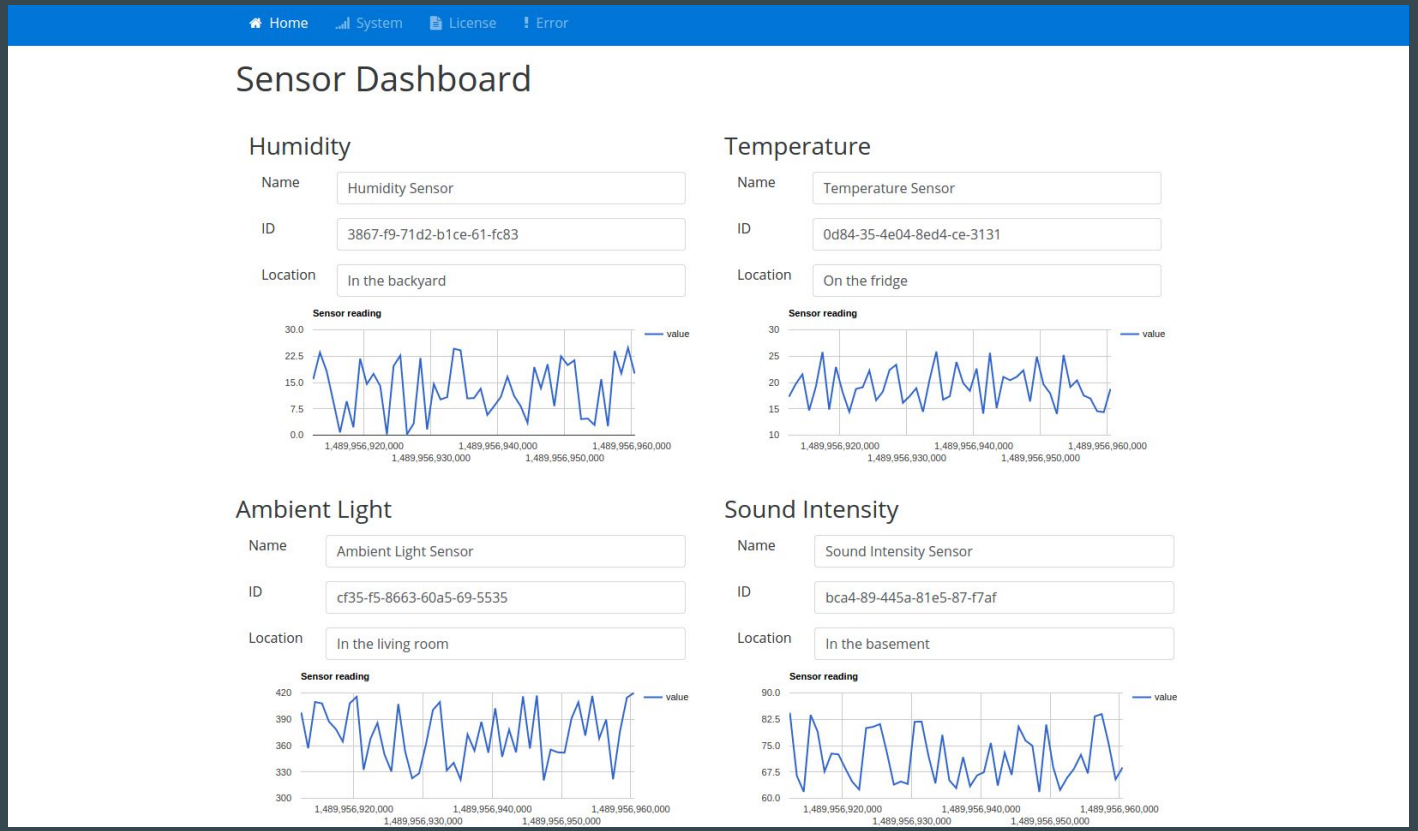
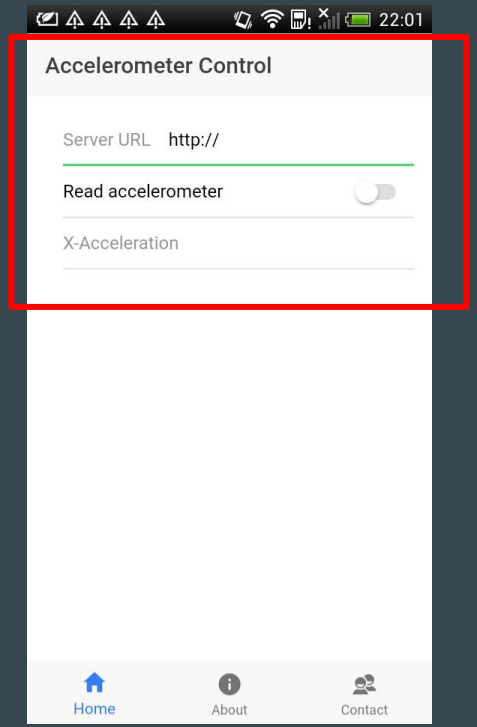
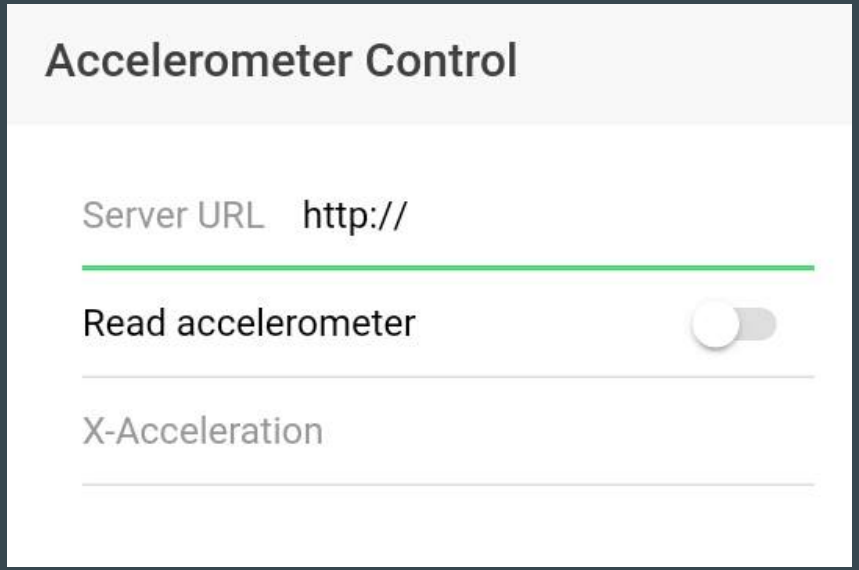
User Interface - Dashboard

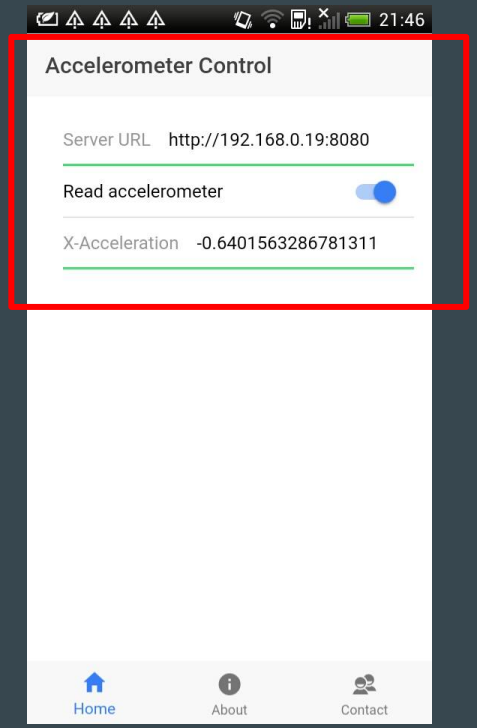


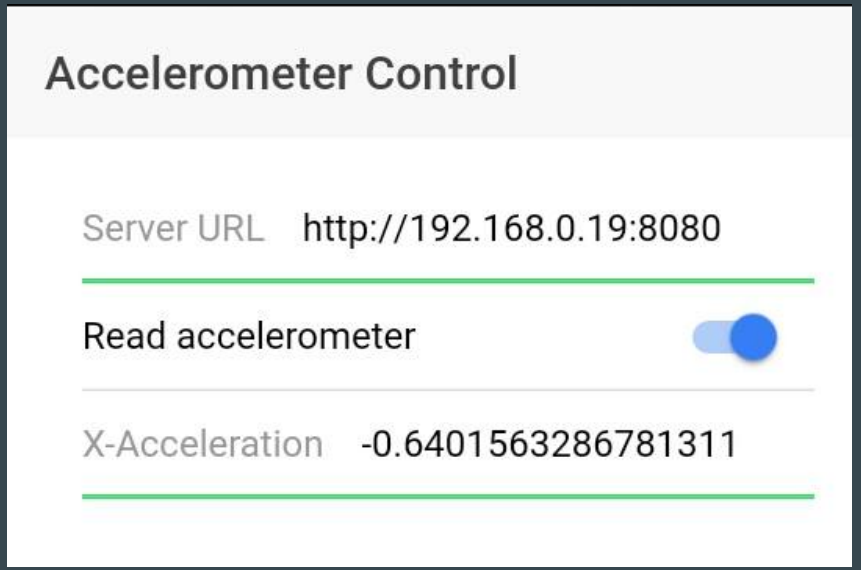
User Interface - Accelerometer Sensor App





User Interface - Accelerometer Sensor App





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What We Learned

- Sending data using REST API
  - Cf. web sockets, SQL
- Different ways of testing
  - E.g., Postman, Mocha
- Creating cross-platform apps (Ionic)
- Introduction to working with sensors

Future Work

- Access to physical sensors
- More in-depth work with Ionic/Cordova
- Practical applications using sensors
- Adding different forms of output (e.g., robotics)

Link to Git Repository

https://github.com/jbonot/sensor-project