Distributed Systems – Exercises

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VS Exercises

- Part 1 (Prof. Mattern)
  - Android programming (45 points)
  - Theoretical exercises (exam preparation)

- Part 2 (Prof. Wattenhofer)
  - Theoretical exercises (20 points)
Grading

- Maximum achievable points:
  
<table>
<thead>
<tr>
<th>Written exam</th>
<th>180 points</th>
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<tbody>
<tr>
<td>Practical exercises$^1$</td>
<td>45 points</td>
</tr>
<tr>
<td>Theoretical exercises$^2$</td>
<td>20 points</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>245 points</strong></td>
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</tbody>
</table>

$^1$ Points can be carried forward from last year

$^2$ Prof. Wattenhofer
Team

Leyna Sadamori  Vincent Becker  Mihai Bâce  Subho Basu
Schedule

- **A1: GUI, sensors and Bluetooth Low Energy**
  - 03 Oct 2016 – 13 Oct 2016 (10 days)

- **A2: HTTP, REST, Web Services**
  - 14 Oct 2016 – 24 Oct 2016 (10 days)

- **A3: Group communication and logical time**
  - 24 Oct 2016 – 03 Nov 2016 (10 days)

- **A4: Project (with presentation)**
  - 04 Nov 2016 – 18 Dec 2016 (6 weeks)
Organization

- Teams of three
  - Development with emulator and phone

- Smart phones
  - Use your own Android – no rooting required
  - If necessary, can be provided by us (1 phone per group)

- Grading
  - Per group
Homework
Create Groups

- Log in to submission system
  - https://www.vs.inf.ethz.ch/edu/vs/submissions/

- First „exercise“ is to register a group
- Leader starts a group
- Add partners
- Specify which phone you will be using
  - Own Android
  - Lecture phone
Submission System

- Deliverables are submitted via the submission system
  - Only team leader can submit files
  - Team members must **sign** the submission **to accept** submission
  - **Repeat** signature procedure for every **new upload**

- Registration „exercise“
  - Submit an **empty** file (0 bytes) *register.txt*
  - Sign this submission
Prepare your phone

- Minimum OS version: Android 5.0
- Activate debugging
  - «Settings > About phone > Build number» – Tab several times
  - «Settings > Developer options > Android debugging»
- MacOS: Change USB mode to PTP
Install the Toolchain

- **Java SE JDK**

- **Android SDK and Android Studio**

- **In the SDK Manager, make sure to have**
  - Android 7.0 (API Level 24) SDK Platform
  - SDK Tools Rev. 25 or later
  - SDK Platform-Tools Rev. 24.0.2
  - Android SDK Build Tools Rev. 24.0.2
  - Android 5.0 (API Level 21) x86 System Image
Test Your Toolchain

- Create an AVD in the «Android Virtual Device Manager»
  - Device: Nexus 5
  - Target: Android 5.0 - API Level 21
  - CPU: x86
  - Emulator Options: Host GPU

- Run Sample Application
  - Import an Android code sample
  - Pick the BasicNetworking sample project

- Run the project as Android application
  - On the AVD
  - On your phone
Android Tutorial

- Monday, 26 September 2016
  - Introduction to Android programming
  - «Live-Hacking» together with you
  - At 9:15 in CAB G 11

- Be prepared!
  - Download material from VS Web page
  - Install Android Studio
  - Test phone connection and emulator

- Phone pick-up at 2.30 p.m. in CNB H 100.5