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:

Written exam	180 points
Practical exercises[1]	45 points
Theoretical exercises[2]	20 points
Total	245 points

[1] Points can be carried forward from last year

[2] Prof. Wattenhofer

Team

Leyna Sadamori   Vincent Becker   Mihai Bâce   Liliana Barrios

Schedule

- A1: **GUI, sensors and Bluetooth Low Energy**
  - 02 Oct 2017–12 Oct 2017 (9 days)

- A2: **HTTP, REST, Web Services**
  - 13 Oct 2017–24 Oct 2017 (8 days)

- A3: **Group communication and logical time**
  - 23 Oct 2017–02 Nov 2017 (9 days)

- A4: **Project** (with presentation)
  - 03 Nov 2017–17 Dec 2017 (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 (have to log in once to appear in list)
- 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 <u>empty</u> 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
  - http://www.oracle.com/technetwork/java/javase/downloads/index.html
- Android SDK and Android Studio
  - http://developer.android.com/sdk/index.html
- In the SDK Manager, make sure to have
  - Android 6.0 (API Level 23) SDK Platform
  - SDK Tools 26.0.2
  - SDK Platform-Tools 26.0.0
  - Android SDK Build Tools 26.0.1

Test Your Toolchain

- Create an AVD in the «Android Virtual Device Manager»
  - Device: Nexus 5
  - Target: Android 6.0 - API Level 23
  - ABI: x86_64
  - 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, 25 September 2017
  - 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 12.15 p.m. in CNB H 110