Distributed Systems – Practical

Matthias Kovatsch
Android Smartphone Market Share (U.S. 13+)

Source: www.comScore.com
Team

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Exercises

- Practical
  - Programming for Android
  - Three assignments
  - One open project
  - 20% of the final grade (45 points + 180 points in the exam)
  - Can be carried forward from last year

- Theoretical Exercises
  - Preparation for the exam
  - Available at the end of the semester
Practical

- Organization
  - Teams of two (sometimes three)
  - Develop with the emulator
  - Test on the actual phone
  - Document your work in a report

- Grading
  - Per group
  - «Save-Points»
    Practical cannot decrease your final grade when all marked exercises were solved
Schedule

- A1: GUI and hardware
  - 01 Oct 2012 – 12 Oct 2012 (1.5 weeks)

- A2: Client/server, Web services, and the Cloud
  - 12 Oct 2012 – 26 Oct 2012 (2 weeks)

- A3: Group communication and logical time
  - 26 Oct 2012 – 09 Nov 2012 (2 weeks)

- A4: Open project (with presentation)
  - 09 Nov 2011 – 17 Dec 2011 (5.5 weeks)
HOMEWORK
Create Groups

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

- Leader starts a group

- Add partner(s)

- Specify which phone you will be using
  - Own device
  - One of our HTC Desires

- Join our Google group for questions
  - https://groups.google.com/d/forum/vs-hs2012
Get a Phone

- 22 HTC Desires available
- Updated to CyanogenMod 7.2 (Android 2.3.7)
- Issued in CNB H 108
  - Tuesday
  - Wednesday 2pm – 4pm
  - Thursday

- Activate debugging
  - «Settings > Applications > Development > Android debugging»
- Familiarize yourself with the device
Install the Toolchain

- **Java SE JDK 7**

- **Android SDK**
  - Get «Tools», «Google USB Driver», and «API 10» packages

- **Eclipse 4.2 «Juno» («Classic» or «Java Developers»)**
  - Add ADT plugin («Help > Install New Software…»)
  - Configure SDK («Window > Preferences > Android»)
Ubuntu Linux

- Create /etc/udev/rules.d/51-android.rules as superuser

  ```
  SUBSYSTEM=="usb", SYSFS{idVendor}=="0bb4", MODE="0666", GROUP="plugdev"
  ```

- 0bb4 is for HTC devices
- Adapt for own devices accordingly

- Change Permissions

  ```
  chmod a+r /etc/udev/rules.d/51-android.rules
  ```
Windows

- Driver problems?

1. How do you want to search for driver software?

   - Search automatically for updated driver software
     Windows will search your computer and the Internet for the latest driver software for your device, when you’ve disabled this feature in your device installation settings.

   - Browse my computer for driver software
     Locate and install driver software manually.

2. Browse for driver software on your computer

   Search for driver software in this location:

   - Include subfolders

3. Let me pick from a list of device drivers on my computer

   This list will show installed driver software compatible with the device, and all driver software in the same category as the device.

4. Select your device’s type from the list below.

5. Select the device driver you want to install for this hardware.

   - Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.

6. Install from Disk

   - Insert the manufacturer’s installation disk, and then make sure that the correct drive is selected below.

   - Browse...

7. Select the device driver you want to install for this hardware.

   - Select the manufacturer and model of your hardware device and then click Next. If you have a disk that contains the driver you want to install, click Have Disk.

   - Browse...

Test Your Toolchain

- Create an AVD in the «Android Virtual Device Manager»
  - Target: Android 2.3.3 - API Level 10
  - Skin: WVGA800
  - Device ram size: 512

- Create an «Android Sample Project» in Eclipse
  - Target: Android 2.3.3
  - Sample: ApiDemos

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

- Monday, 01 October 2012
- Introduction to Android programming
- «Live-Hacking» together with you
  → Be prepared!
- First Assignment