Mobile Application Development Project

MTAT.03.266

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Course Purpose

• Practice the mobile application development
• Apply well-known techniques to develop applications for the mobile devices
• Glance of research at Mobile Cloud Lab

• http://courses.cs.ut.ee/2012/MADP/
Questions

• Have you ever programmed for mobile devices?
  – This course assumes you have experience with at least one mobile technology
  – Or you have taken/taking MTAT.03.262 Mobile Application Development course

• Which mobile platforms have you used already?

• How comfortable you are with programming?
  – Java?
    • External APIs?
  – Web programming?

• Have you heard of cloud computing?
Related Courses

- **MTAT.03.262** Mobile Application Development (3 ECTS)
  - Tue. 14.15 - 18.00, J. Liivi 2 - 403

- **MTAT.03.280** Mobile and Cloud Computing Seminar (3 ECTS)
  - Wed. 14.15 - 16.00, J. Liivi 2 - 512

- **MTAT.08.027** Basics of Cloud Computing (3 ECTS)
  - Spring 2013
Grading

• No written exam
• Just deliver a project
  – Max 4 persons per group
• Activities
  – Design the application
  – Develop using the platform of your choice; Android is preferred
  – Provide the marketing plan
  – Deliver the project with detailed reports
Outline

• Mobile Application Development
• Introduction to the projects
• General discussion and forming groups
Lecture 1

MOBILE APPLICATION DEVELOPMENT
Mobile is 7th Mass Media

The Seven Mass Media

First Mass Media Channel - *Print* from the 1500s
Second Mass Media Channel - *Recordings* from 1900s
Third Mass Media Channel - *Cinema* from 1910s
Fourth Mass Media Channel - *Radio* from 1920s
Fifth Mass Media Channel - *TV* from 1950s
Sixth Mass Media Channel - *Internet* from 1990s
Seventh Mass Media Channel - *Mobile* from 2000s

Tomi T Ahonen, Mobile as 7th of the Mass Media, http://mobile7th.futuretext.com/
Some numbers

• There are lot of mobile phones already by 2011
  – 5.6 billion subscriptions with global population of 6.97 billion
  – > 3.6 billion people with at least one mobile

• Mobile Data Services Revenue Totals $314.7 Billion

• http://www.gartner.com/it/page.jsp?id=1759714
10 Popular Consumer Mobile Applications

- Location-based services (LBSs)
  - Deliver services to users based on his location
- Mobile social networking
  - Most popular social networking platforms have apps for mobiles
- Mobile search
  - Visual search is usually related with product search to enable price comparisons
- Mobile commerce
  - An extension of e-commerce
- Mobile payment
  - Near field communication (NFC) payment
10 Popular Consumer Mobile Applications - continued

• Context-aware services
  – Context means person's interests, intentions, history, environment, activities, schedule, priorities, connections, preferences etc.
  – Proactively serve up the most appropriate content, product or service

• Object recognition (OR)
  – Sensor and processing capability used to recognize the user's surroundings

• Mobile instant messaging (MIM)
  – Skype for mobiles

• Mobile e-mail

• Mobile video
Variety of languages and platforms to choose from

<table>
<thead>
<tr>
<th></th>
<th>Programming language</th>
<th>Debuggers available</th>
<th>Emulator available</th>
<th>Integrated development environment available</th>
<th>Cross-platform deployment</th>
<th>Installer packaging options</th>
<th>Development tool cost</th>
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<tbody>
<tr>
<td>Adobe AIR</td>
<td>Action Script, HTML, CSS, JavaScript</td>
<td>Yes</td>
<td>Yes</td>
<td>Flash Builder, Flash Professional</td>
<td>iOS (iPhone, iPad, iPod touch), Android, BlackBerry</td>
<td>The native distribution format of each platform</td>
<td>Flash Builder, Flash Professional - Commercial licenses available Adobe AIR SDK (command line tool) - Free</td>
</tr>
<tr>
<td>Airplay SDK (Now Marmalade)®</td>
<td>C, C++</td>
<td>Yes</td>
<td>Yes</td>
<td>Visual Studio, XCode</td>
<td>All native: Android, BlackBerry, BREW, iOS (iPhone), Maemo, Palm/webOS, Samsung bada, Symbian, Windows Mobile 6.x and desktop, OSX</td>
<td>The native distribution format of each platform</td>
<td>Commercial licenses available</td>
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<tr>
<td>alcheMo</td>
<td>Java</td>
<td>Yes</td>
<td></td>
<td>Visual Studio, Eclipse, XCode</td>
<td>Android, BREW, iOS (iPhone), Windows Mobile</td>
<td>The native distribution format of each platform</td>
<td>Commercial licenses available</td>
</tr>
<tr>
<td>Android</td>
<td>Java but portions of code can be in C, C++</td>
<td>Yes, in Eclipse standalone debugging monitor available</td>
<td>Yes</td>
<td>Eclipse, Project Kenai Android plugin for NetBeans</td>
<td>Android only, because of Dalvik VM, March 2009</td>
<td>apk</td>
<td>Free</td>
</tr>
<tr>
<td>Appcelerator</td>
<td>JavaScript</td>
<td>Yes</td>
<td></td>
<td>Internal SDK</td>
<td>Android, iPhone, BlackBerry signed</td>
<td>The native distribution format of each platform</td>
<td>Apache 2.0 license, commercial licenses</td>
</tr>
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</table>

http://en.wikipedia.org/wiki/Mobile_application_development
http://en.wikipedia.org/wiki/Mobile_operating_system
Popular platforms – Market share

http://en.wikipedia.org/wiki/Mobile_operating_system
The devices we use
Course Schedule

• Today we introduce you the projects

• Lecture 2 (21.09)
  – Deadline for choosing a project
  – By that time Android part of Mobile Application Development course is also completed
  – Deliver a preliminary report of the project
    • Meaningful report explaining (architecture, design, similar solutions etc.)

• Lecture 3 (05.10)
  – Short presentation about the advances of the project
    • 10 mins per group, backed with slides

• Lecture 4 (19.10)
  – Demonstration – functional prototype 1
Course Schedule - continued

• Lecture 5 (02.11)
  – Demonstration - prototype 2
  – Updates and corrections to prototype 1
• Lecture 6 (09.11)
  – Mobile technology management (Huber Flores)
• Lecture 7 (16.11)
  – Deliver the market plan (Report)
  – Or an analysis on performance (Report)
• Lecture 8 (23.11)
  – Final presentation with demonstration
    • 20 mins per group, backed with slides
• Lecture 9 (30.11)
  – Final presentation with demonstration (Group 2)
Project selection

• Projects are available at
  https://courses.cs.ut.ee/2012/MADP/Main/Projects

• Responsible person
  – Huber Flores (huber AT ut DOT ee)
THANK YOU