

Exercise 2 – Advanced Topics in HCI (MMI 2)

Mobile HCI

1. Introduction to Java ME (5 Points – May 26th 2008):

This exercise aims at introducing you to the basics of Java ME [1] development as well as giving you a first knowledge about the user interface API:

- First, make yourself familiar with the given source code for a Java ME “Hello-World” MIDlet [2].
- Add an input field so that you can insert an arbitrary string (e.g. your name) and display it on the screen instead of “Hello World”.
- In addition, add your own code in order to display any image on the screen. For this purpose you can use the provided image “ex2.png” [2].

Create a MIDlet suite that contains all necessary code for running the MIDlet. In addition, create an application descriptor (*.jad) so that the application can be installed on a mobile phone. Keep in mind, that mobile phones have different screen resolutions (i.e. place all components relative to the screen size).

Submit a *.zip archive, that contains your Java archive (*.jar) and your application descriptor (*.jad). Send this file to sebastian.boring@ifi.lmu.de by **Monday, May 26th 2008 11:59 a.m.**

2. Paper Prototyping (5 Points – June 2nd 2008):

Mobile phones as well as large (public) displays blend into our everyday lives more and more. Both devices in specific settings have different attributes and features. For example, mobile phones nowadays serve as ultra-portable multimedia computers that are closely connected to their users. On the other hand, public displays hold high visual power in terms of pixels and physical size.

In this task, you have to create scenarios that include a large public display as well as **several** mobile phones (in order to allow multi-user support. The attributes of the devices are given in Table 1.

Device	Attributes
Large display:	High resolution, e.g. up to HD Available sound output <i>Optional:</i> Interactive surface (Multi-Pointer mode)
Mobile phone:	Standard mobile phone capabilities (e.g. calls, SMS, MMS) High-quality screen with 240x320 pixels Audio output Numeric key input (plus joystick) Built-in high-resolution camera (~ 5 Megapixels) Built-in acceleration sensors (full 3D) GPS receiver

Table 1. Devices and their attributes

The solution should not include any limitations regarding the technical implementation (i.e. “don’t look into what is possible with Java ME). Be as creative as possible and reason your approach. Each group should hand in one solution.

After creating your scenario, build paper prototypes that describe a walk-through of your application. The screen visualizations need to be done without any electronic help, i.e. only use hand-drawn content of the screens. Visualize both the mobile screens as well as the large screen content. Bring your paper prototypes to the tutorial on **Monday, June 2nd 2008** and send your presentation of the scenario as *.ppt (PowerPoint) or *.pdf (PDF slide show) **Monday, June 2nd 2008 11:59 a.m.** to sebastian.boring@ifi.lmu.de.

3. Appendix:

IDEs and APIs for Exercise 1:

- *NetBeans* [3]:
 - Supports every part of the Java ME application development cycle as long as the *NetBeans Mobility Pack* [4] is installed on your PC.
- *Eclipse* [5]:
 - Better choice if you are highly experienced with Eclipse
 - After installing the *Eclipse IDE* [5], download and install the *Wireless Toolkit* (e.g. *Sun Wireless Toolkit* [6]).
 - Finally, download and install *EclipseME* [7] (can be done manually or automatically through the IDE). For detailed installation description of *EclipseME* see [8].

4. Resources:

- [1] <http://java.sun.com/javame/index.jsp>
- [2] http://www.medien.ifi.lmu.de/lehre/ss08/mmi2/source_2.zip
- [3] http://www.medien.ifi.lmu.de/lehre/ss08/mmi2/tutorial_1.pdf
- [4] <http://www.netbeans.org/features/javame/index.html>
- [5] <http://www.eclipse.org/>
- [6] <http://developers.sun.com/mobility/>
- [7] <http://eclipseme.org/>
- [8] <http://eclipseme.org/docs/index.html>