Machine Problem 0

Overview

The machine programming (MP) part of the course this semester involves building peer-to-peer applications for Google development phones. We will build applications in stages - each stage will be an individual MP. You can refer to the introduction slide for the specification of each MP. The purpose of MP0 is to get you familiar with Android programming environment, e.g. installation, run and debug of sample codes, concepts and mechanism. You do not have to submit MP0.

Programming Language and Environment for MPs

Since Android is Java SDK, you need to implement all the MPs (MP1, Mp2, Mp3) in Java. If you have prior programming experience in Java, learning Android should be easy since Java in Android carries many similar features as ordinary Java. We have listed several Android programming books at resource tab of the course website. They can help you in understanding Android in a more systematic manner with many coding examples.

Main public source for Android is located at http://developer.android.com/index.html. There are three activities for you to do: installation, trying sample code and various tools.

Installation:

You run install Eclipse Android programming environment in Windows, Linux, or Mac. We will use Android 1.5 API. Please follow instructions at http://developer.android.com/sdk/1.5_r3/installing.html. Our lab is preinstalled with Eclipse Java. If you are setting up the programming environment in your own machine, use a Java or RCP version of Eclipse.

Note: Right now, you are unable to change the system PATH in the lab machines with windows OS. Hence, whenever you run Android Debug Bridge (adb) and the other command line tools, you have to supply the full path to the tools directory. Anyway, you can still perform MP0 without trouble.

Learn Android and try out sample codes in emulator

Look at online tutorial - developer's guide and test sample codes from Hello World, Hello views, to Notepad tutorials at the following URL http://developer.android.com/guide/index.html

Tools

Among all the listed tools, learn and try at least the following ones:

Android Emulator; Android Virtual Devices (AVDs); Android Debug Bridge (adb); Traceview

Some important concept to look for

Application life cycle; activity; service(thread); intent (filter); broadcast (receiver); notification; Intent; manifest (permission); view; layout; widgets; external resource.

Laboratory

We will be using the CSIL facility in the lower level of Siebel Center (basement). You can use lab 0216 or 0218. More information about access (including remote access) and installed software is available at https://agora.cs.illinois.edu/display/CSIL/Facilities#Facilities-0220.

Feel free to post questions about any of these topics on newsgroup or to come by TA office hours at Monday 2:00pm-3:00pm or Thursday 3:15pm-4:15pm at room 0207 SC.#