



SCHWEIZER JUGEND FORSCHT
LA SCIENCE APPELLE LES JEUNES
SCIENZA E GIOVENTÙ
SCIENZA E GIUVNETTGNA

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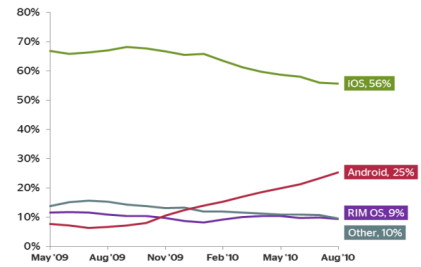
Smartphone Development

Fascination Informatics, study week at the USI Lugano, 5 – 11 September 2010

Android vs. iPhone



Even if Nokia sells most of the mobile phones, the war in the customer's pocket is about Google Android and Apple iPhone. But the latest trends show that 165'000 Android devices are sold per day, Apple iPhone 4 only reaches 65'000. The advantage of the android project is the fact that it is open source, it is totally free and applications are easy to load onto your own phone. If you create a useful application, you can upload it to the android market – for free surely – and everyone can download and use it.

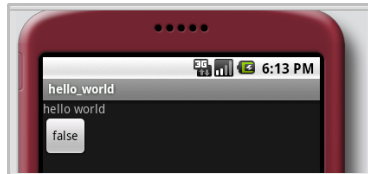


Source: www.iphone-könig.de

Language	Kernel	License	IDE	IDE Platform	Current Version	Handsets	
Android	Java	Linux	Open	Eclipse	Multiple	2.2	Multiple
iPhone	Objective C	Mac OS X	Closed	Xcode	Mac OS C	4.1	Apple

Source: www.quantcast.com

Development in Eclipse with the SDK



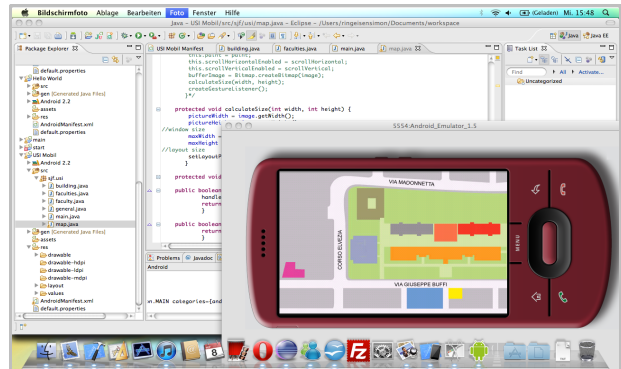
Example for a "hello world" screen with a simple button

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    >
    <TextView
        android:layout_width="fill_parent"
        android:layout_height="wrap_content"
        android:text="hello world"
    />
    <Button
        android:text="@+id/Button01"
        android:id="@+id/Button01"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
    />
</LinearLayout>
```

Example for xml-code to create layout

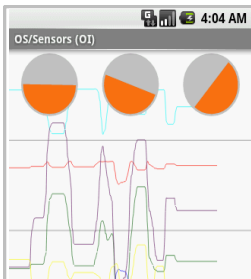
The commonly used development environment is Eclipse with the Android SDK and ADT plugin. With Eclipse it is very easy to write Android applications and directly load them on an emulator or an Android Device.

First we trained some functions in little programs like the "hello world" program, that just shows a little text on the screen of the device. Then we extended the Application with different Views like interactive Buttons, Labels etc.

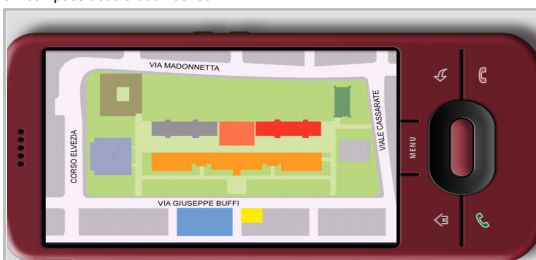


The editor Eclipse with and emulated android device

Results: Information-App about the University of Lugano (USI)



The "demo API", a collection of examples for some functions, here the 3D compass/acceleration sensor



The goal of our main project was to develop an application providing information about the USI Lugano, for guests or future students visiting the USI Lugano. The application should include contacts, info about the buildings, the faculties and some general information about the USI.

We tried many functions like GPS-functionality but we had to stay realistic and just pack all the informations into our final app. It took a lot of our time to set the whole layout and solve small errors, but in the end we managed to have a working application, which informs about general info that people may want to know about USI in an easy and smooth way.

For our application we developed 3 parts: one about general information, an interactive map with information about the buildings and some interesting facts about the faculties. To complete this, we added contact buttons that allow you to open the e-mail client to write to the target faculty, to automatically dial the correct phone number, or to open the browser on the USI website or on the USI Facebook page.

QR-Code



QR-Code, Quick Response Code, is a two-dimensional code that contain text like contact cards or URLs. It is possible to use it as a link to a program in the android market. Try to read it with the "Barcode Scanner"-App.