Computer Science E-76
Building Mobile Applications

Lecture 3: [Android] The SDK, Activities, and Views
February 13, 2012

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http://developer.android.com
.java (code) → javac (compiler) → .class (bytecode) → dx (converter) → .dex (Dalvik executable) → zip, aapt, etc. (archiver) → .apk (Android Package)
.java (code) ➔ Eclipse (IDE)
.apk (Android Package)
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**ddms** - Dalvik Debug Monitor Server. Screen caps, thread/heap info, process/state info, ..
**emulator** - The application responsible for opening AVDs instances.

**sqlite3** - manage SQLite databases.
• No support for placing or receiving actual phone calls. You can simulate phone calls (placed and received) through the emulator console, however.
• No support for USB connections
• No support for camera/video capture (input).
• No support for device-attached headphones
• No support for determining connected state
• No support for determining battery charge level and AC charging state
• No support for determining SD card insert/eject
• No support for Bluetooth
# adb - Android Debug Bridge. A client/server program that manages the state of an emulated device.

# aapt - Android Asset Packaging Tool.

# dx - The converter; converts .class files to Android bytecode.
telnet localhost <console-port>

console-port: 5554+2n
where n is the emulator number (0th, 1st, 2nd)

Use commands like:
redir, power, geo, network, gsm, sms
Data collected over 1 week ending on 2/1/2012. From: http://developer.android.com/resources/dashboard/screens.html
package com.android.helloworld;

import android.app.Activity;
import android.os.Bundle;
import android.widget.TextView;

public class HelloWorld extends Activity {
    /** Called when the activity is first created. */
    @Override
    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        TextView tv = new TextView(this);
        tv.setText("Hello, World!");
        setContentView(tv);
    }
}

public class Activity extends ApplicationContext {
  protected void onCreate(Bundle savedInstanceState);
  protected void onStart();
  protected void onRestart();
  protected void onResume();
  protected void onPause();
  protected void onStop();
  protected void onDestroy();
}

TextView tv = new TextView(this);
tv.setText("Hello, Android");

– or –

<?xml version="1.0" encoding="utf-8"?>
< TextView xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="fill_parent"
  android:layout_height="fill_parent"
  android:text="@string/hello"/>

Views

Layouts

FrameLayout  
Gallery  
GridView  
LinearLayout  
ListView  
RelativeLayout  
ScrollView  
Spinner  
SurfaceView  
TabHost  
TableLayout  
ViewFlipper  
ViewSwitcher
