

Introduction Android Apps



Agenda

- Technologies
- IDE's / SDK
- Concepts
 - Activities / fragments
 - The R.java
 - much More
- Example
- Getting started / further topics

Technologies

- Guess what?

Technologies



Technologies



Technologies

- Java
- XML
- OpenGL
- ...
- Virtualisation for local testing
 - Qemu, VirtualBox, ...

IDE's / SDK

- Android SDK-Manager
 - Is for managing different API-Versionen and addons
- Android SDK with Eclipse Plugins
 - If you know and like eclipse, it's good
- Android Studio incl. SDK
 - If you are new to this, just start using Android Studio
- But: installing takes a while...

Concepts

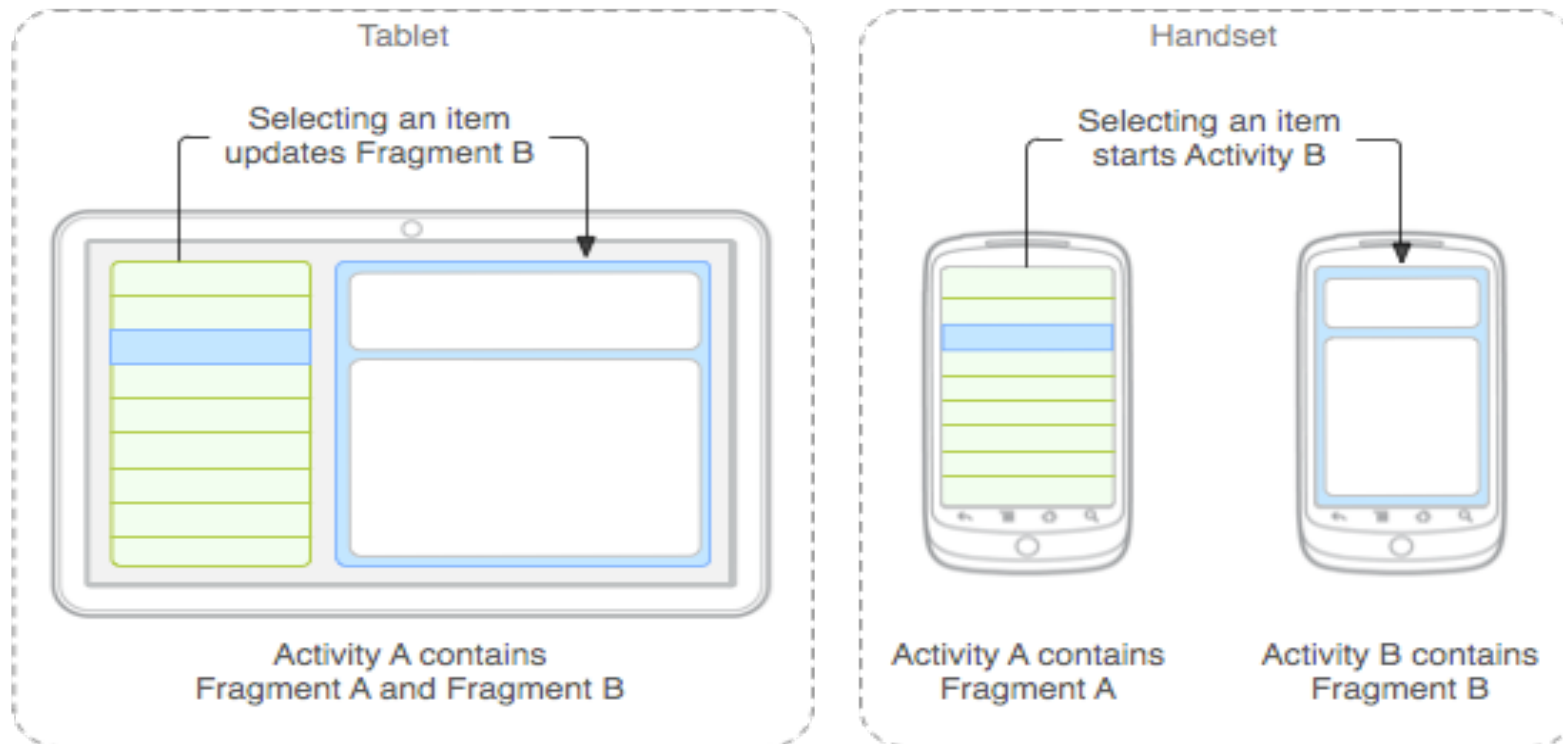
Activity

- There is no main() method!
- One screen is one „Activity“
- Each activity has defined States and FunctionHooks for a state transision
- Each Activity has one xml-file and one Java-Class
 - And also there are fragments...
- Much much more, but not today

Concepts

fragments

- New since Android 3.0
- One activity can have many fragments
- Used for different devices (Phone/Tablet/TV/Watch)



Concepts

The R.java class

- Glue between xml and java code
- Auto generated file by the SDK
- Access to: UI-elements, resources (text, images and so on)
- Examples:
 - `R.drawable.logo` acces to a image
 - `R.layout.activity_main` access to an activity

The Manifest.xml

- Is the „Main()“ for the app

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android" package="
    <application
        android:allowBackup="true"
        android:icon="@mipmap/ic_launcher"
        android:label="My Application"
        android:theme="@style/AppTheme" >
        <activity
            android:name=".MainActivity"
            android:label="My Application" >
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>
    </application>
</manifest>
```

DEMO

- Simple Application
- One activity „activity_main“
- Two buttons
 - „ADDONE“ calls function addOne()
 - „NEXT“ calls function onButtonClickNext
- TextView
 - Shows counter of function AddOne()

Further concepts

- Content provider
 - Defined apis to access central stored data
 - e.g. contacts, calendar
 - <http://developer.android.com/guide/topics/providers/content-providers.html>
- Intents
 - Communication between activitys
 - <http://developer.android.com/guide/components/intents-filters.html>
- Services
 - Service for background actions
 - e.g. e-mail account, gmail-account, weather-app
 - <http://developer.android.com/guide/components/services.html>

Further concepts

- Widgets

- <http://developer.android.com/guide/topics/appwidgets/index.html>

- Permissions

- <http://developer.android.com/guide/topics/manifest/manifest-intro.html#perms>

- Access to google play services

- <http://developer.android.com/google/play-services/index.html>

- Access to hardware

- <http://developer.android.com/guide/topics/sensors/index.html>
- <http://developer.android.com/guide/topics/connectivity/index.html>

- Processes and threads

- <http://developer.android.com/guide/components/processes-and-threads.html>

Where to go from here

- Many example projects included in SKD
- <http://developer.android.com/>
- Many open source apps, to get you turned on by android

Thx

Any questions?