

Android Udvikling

- Open Source
- Java
- Subset af JDK
- Dalvik VM
- 3rd party pakker



Android SDK

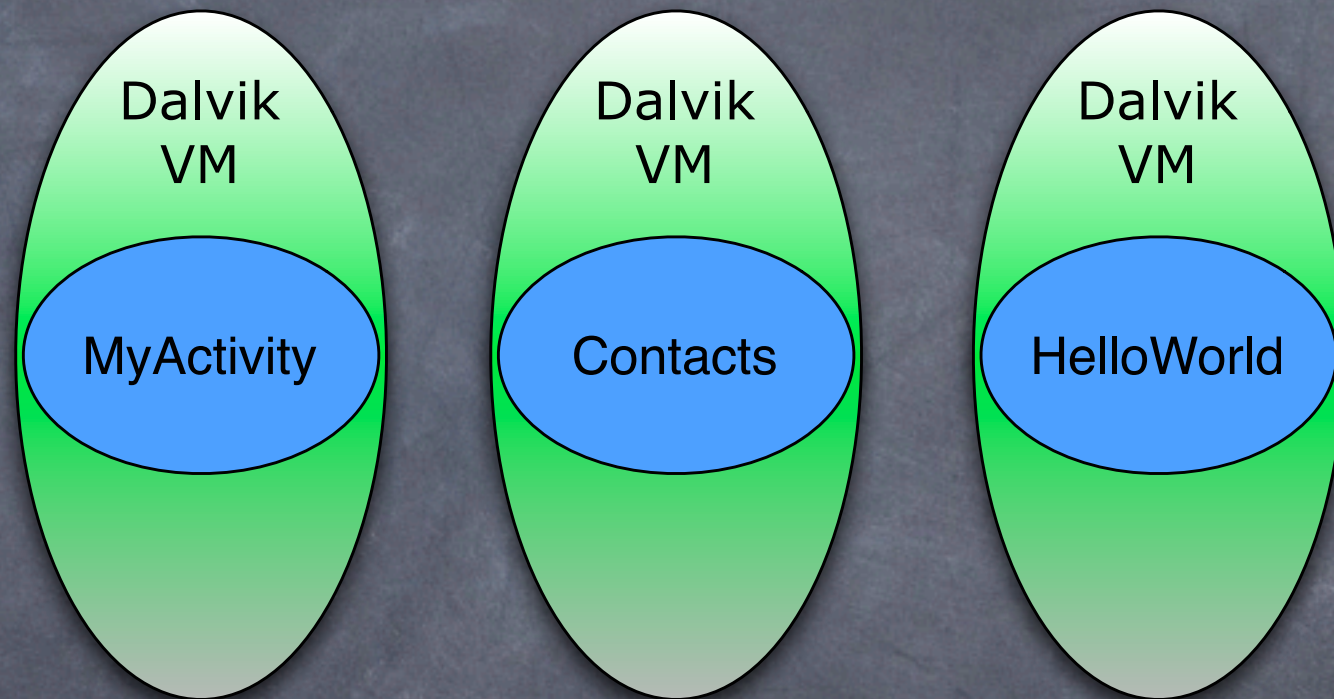
- Windows, Mac OSX, Linux
- Består af
 - Debugger
 - Emulator
 - Docs og tools



Android SDK

- Java → Dalvik bytecode (dex)
- Dalvik VM kører bytecode





Android SDK

- Binaries .apk
- Signeret Jar fil
- XML konverteret til bytecode



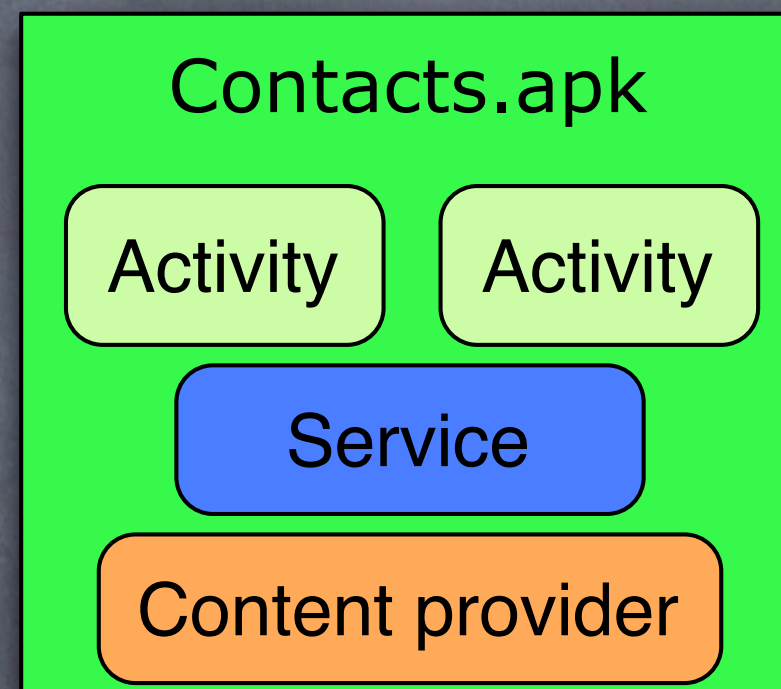
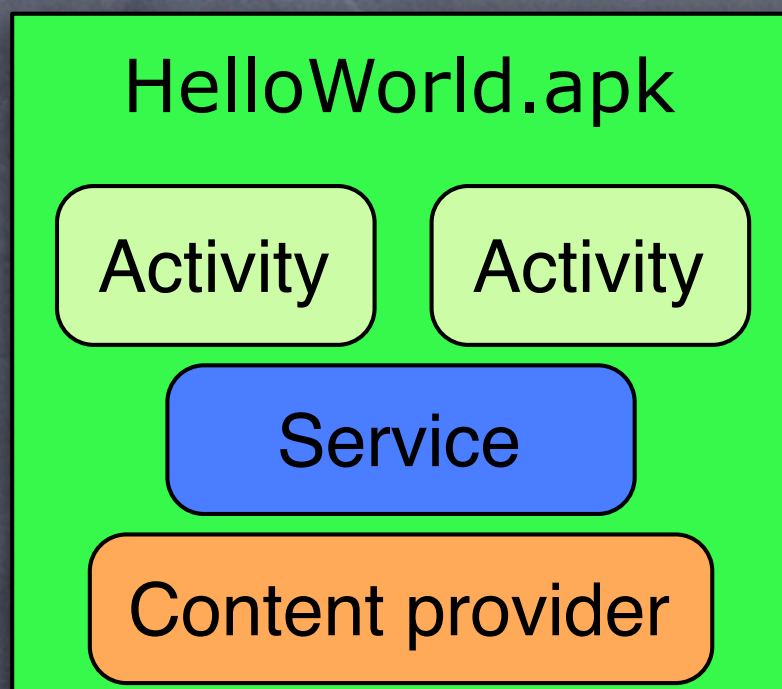
Hvad består en app af?

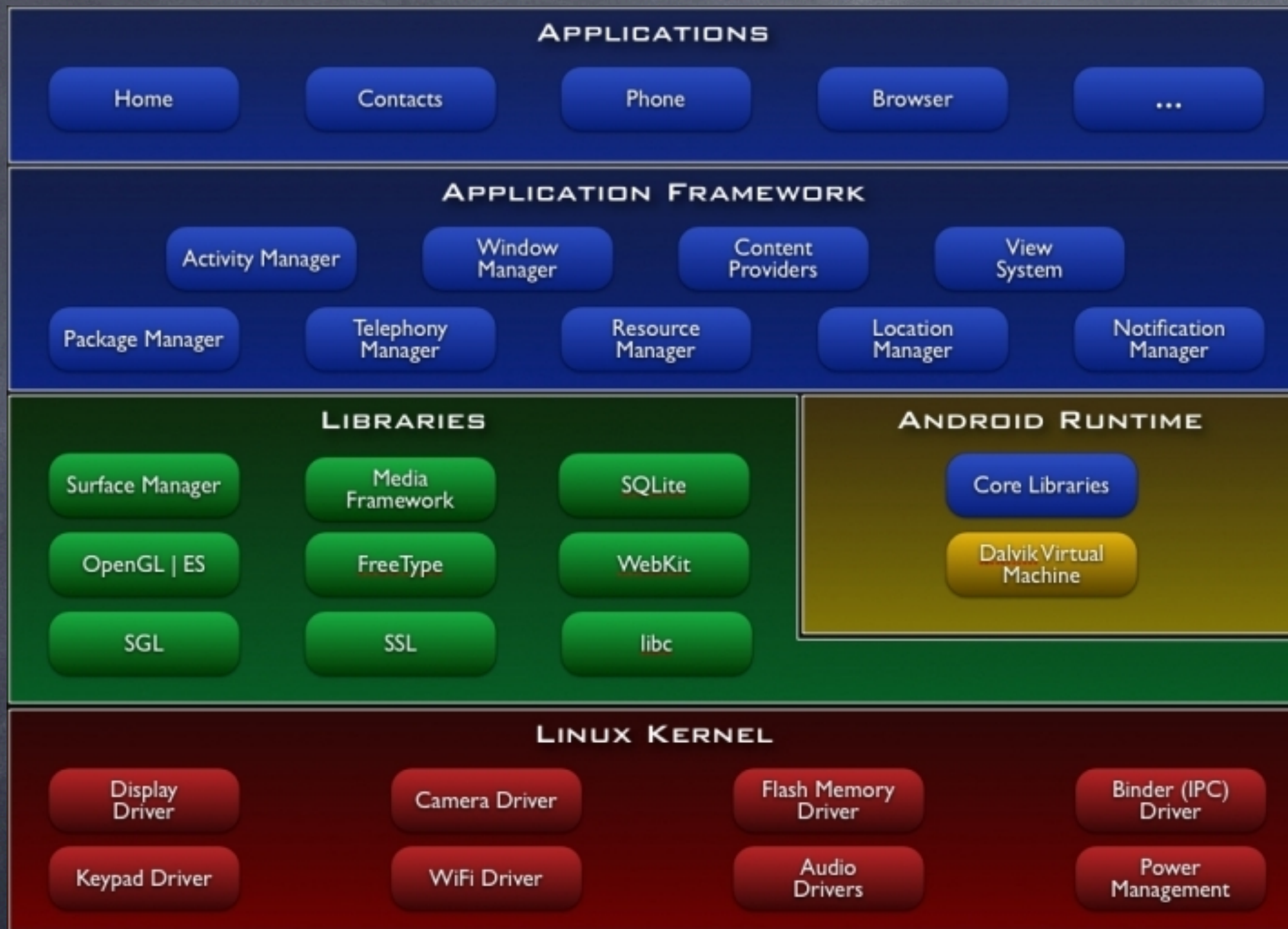
- AndroidManifest.xml
- Source kode
- Resourcer
 - XML
 - Binære
 - Text

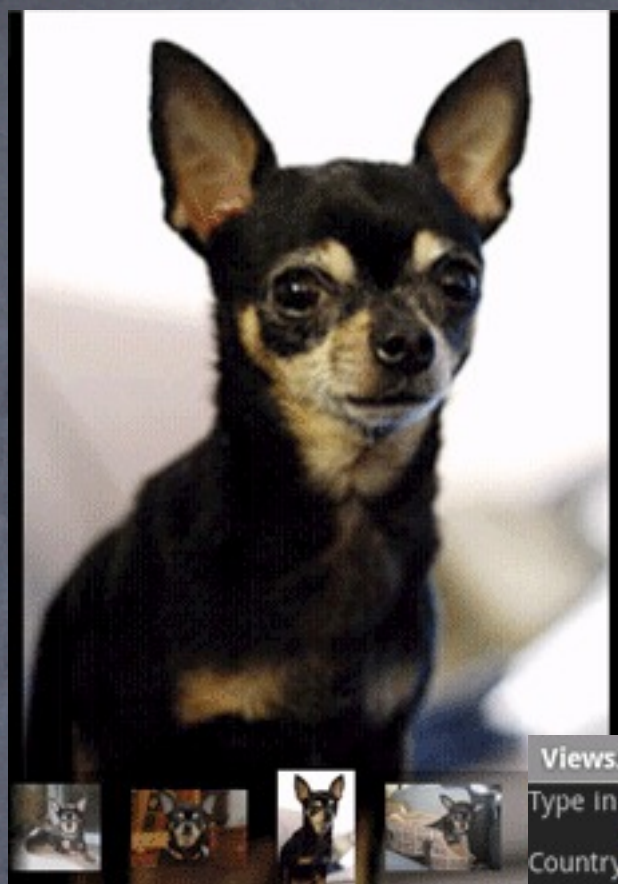


Hvad består en app af?

- Activities
- Widgets
- Services (background!)
- Content Providers
- Intents
- Permissions







Views/Grid/2. Photo Grid

Views/Date Widgets/1. Dialog

8-12-2008 20:49

change the date

Thu, August 14, 2008

+	+	+
Aug	14	2008
-	-	-

Set Cancel

Views/Auto Complete/1. Screen Top

Type in the text field for auto-completion.

Country: CO

Give m

- Cote d'Ivoire
- Cocos (Keeling) Islands
- Colombia
- Comoros
- Congo

Views/Controls/1. Light Theme

Save

Checkbox 1

Checkbox 2

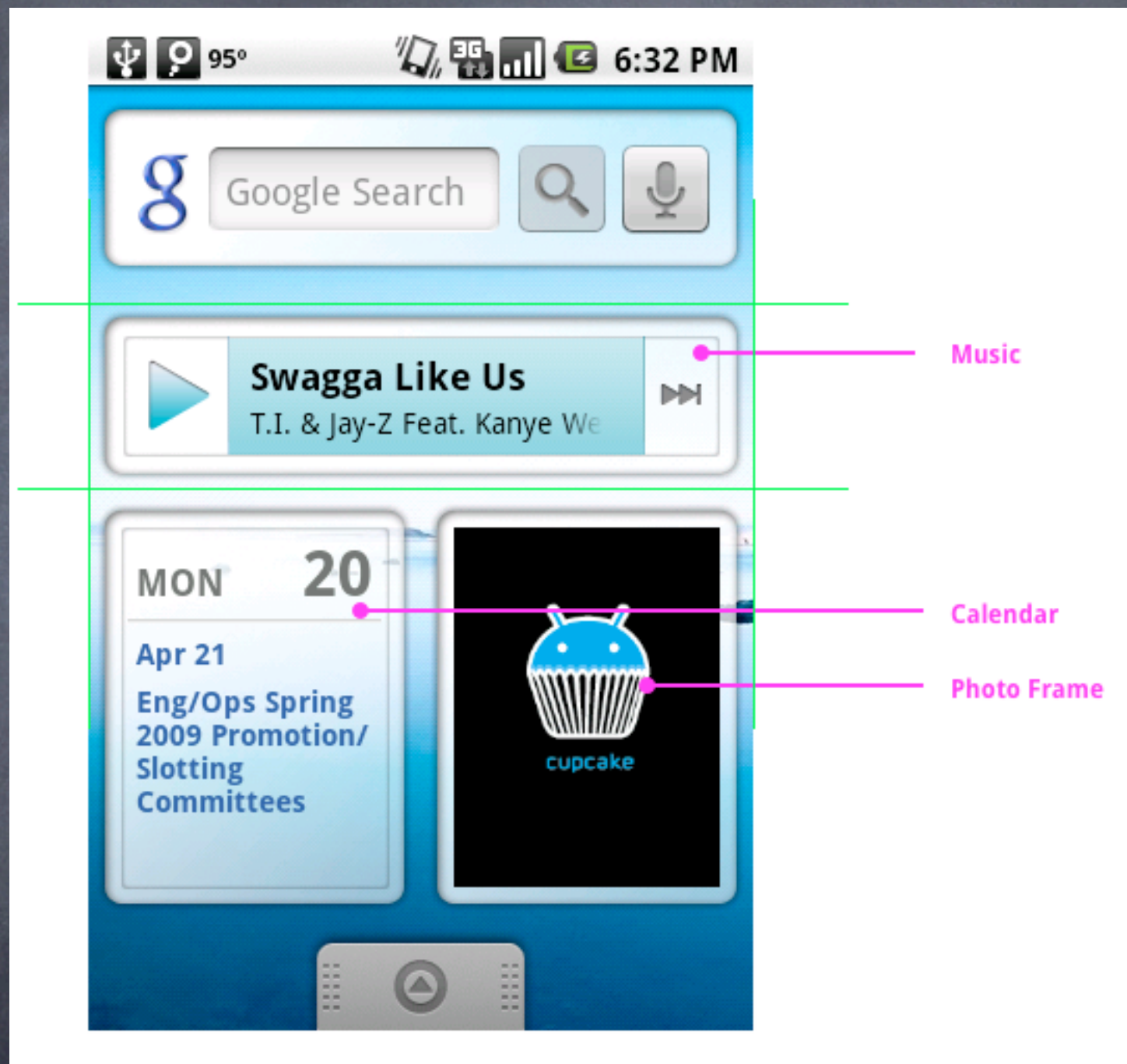
RadioButton 1

RadioButton 2

Star

OFF

OFF

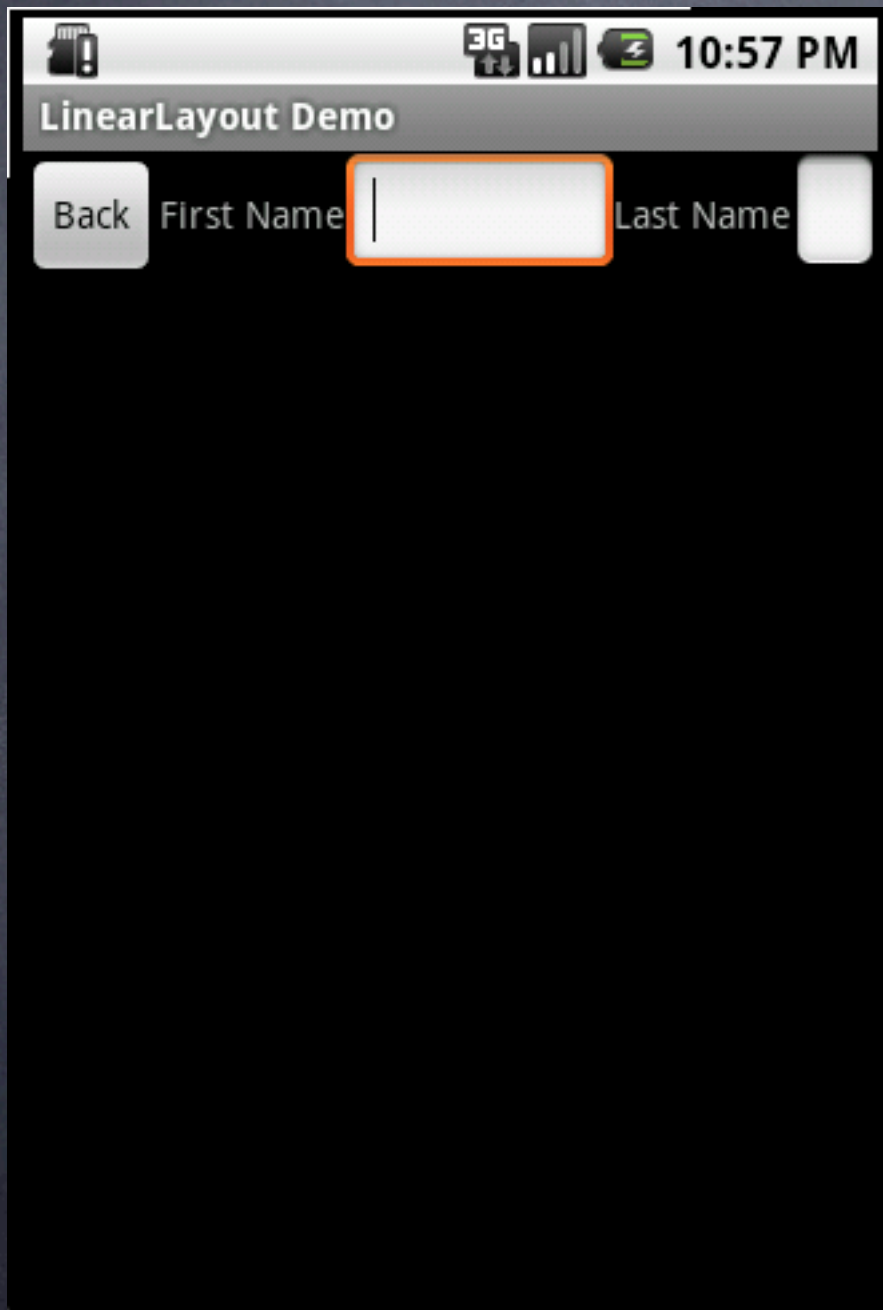


Music

Calendar

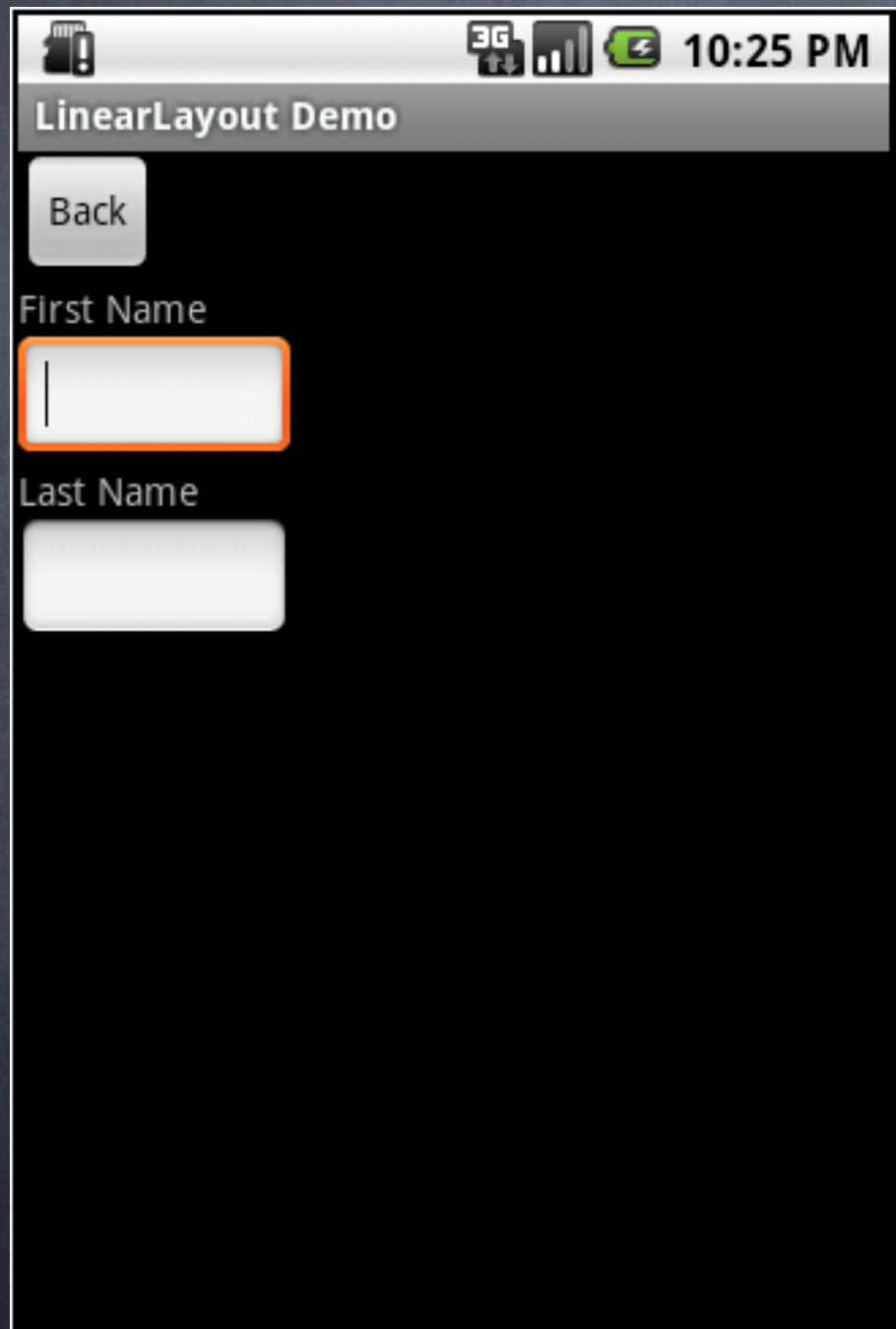
Photo Frame

Layouts



```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="horizontal"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent">
    <Button
        android:id="@+id/backbutton"
        android:text="Back"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <TextView
        android:text="First Name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <EditText
        android:width="100px"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <TextView
        android:text="Last Name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <EditText
        android:width="100px"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
</LinearLayout>
```


Layouts



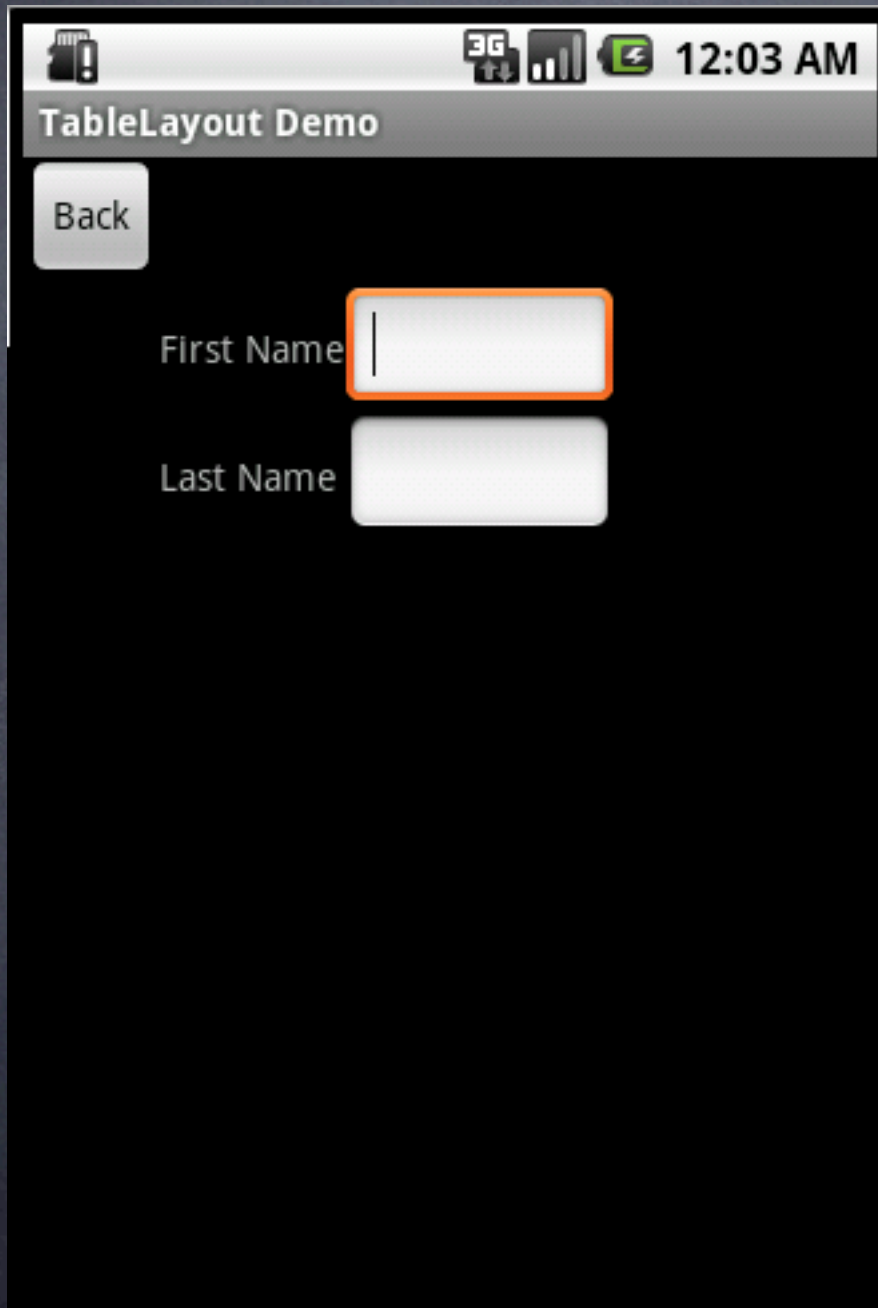
`android:orientation="vertical"`

Layouts



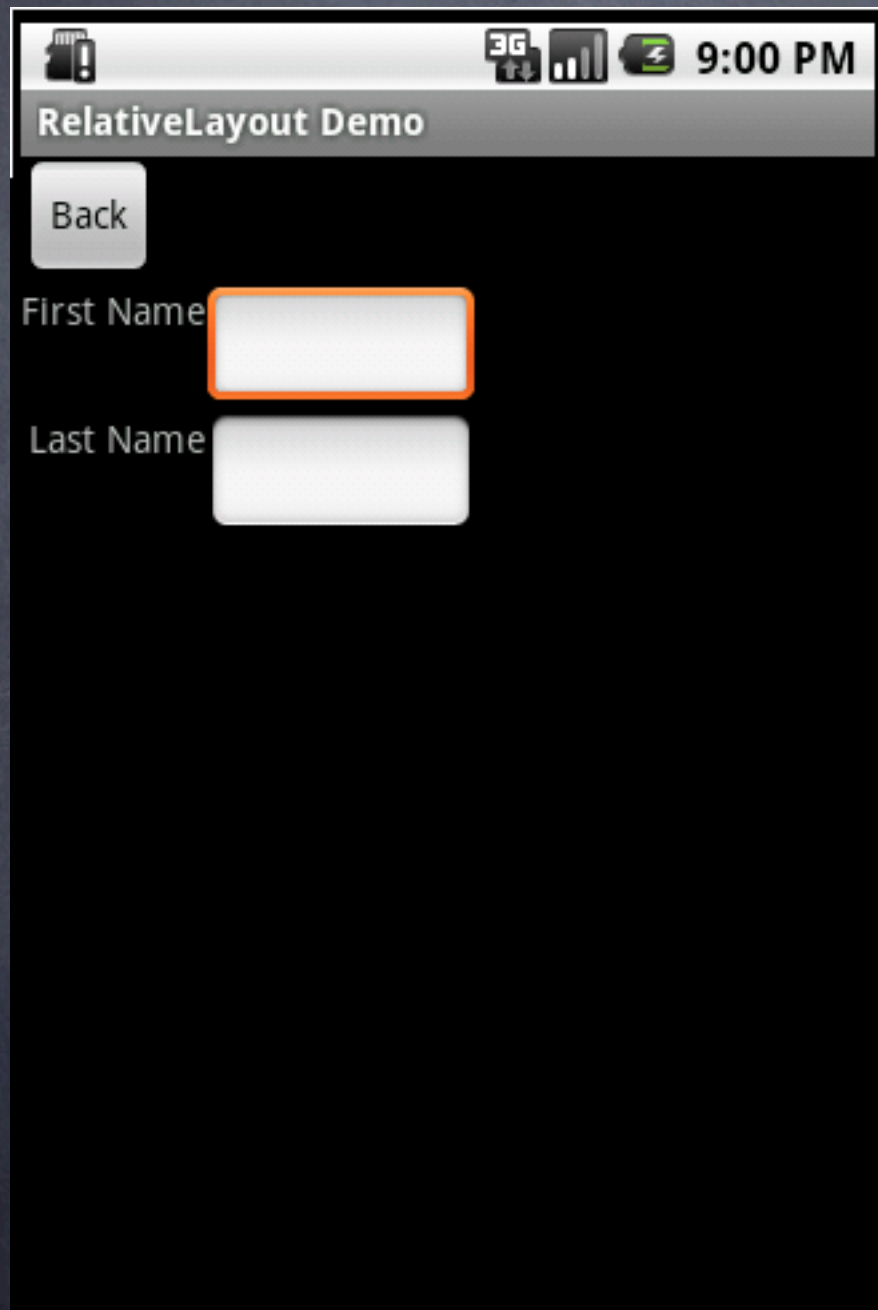
```
<LinearLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent">
    <Button
        android:id="@+id/backbutton"
        android:text="Back"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <LinearLayout
        android:orientation="horizontal"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content">
        <TextView
            android:text="First Name"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />
        <EditText
            android:width="100px"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />
    </LinearLayout>
    <LinearLayout
        android:orientation="horizontal"
        android:layout_width="fill_parent"
        android:layout_height="wrap_content">
        <TextView
            android:text="Last Name"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />
        <EditText
            android:width="100px"
            android:layout_width="wrap_content"
            android:layout_height="wrap_content" />
    </LinearLayout>
</LinearLayout>
```


Layouts



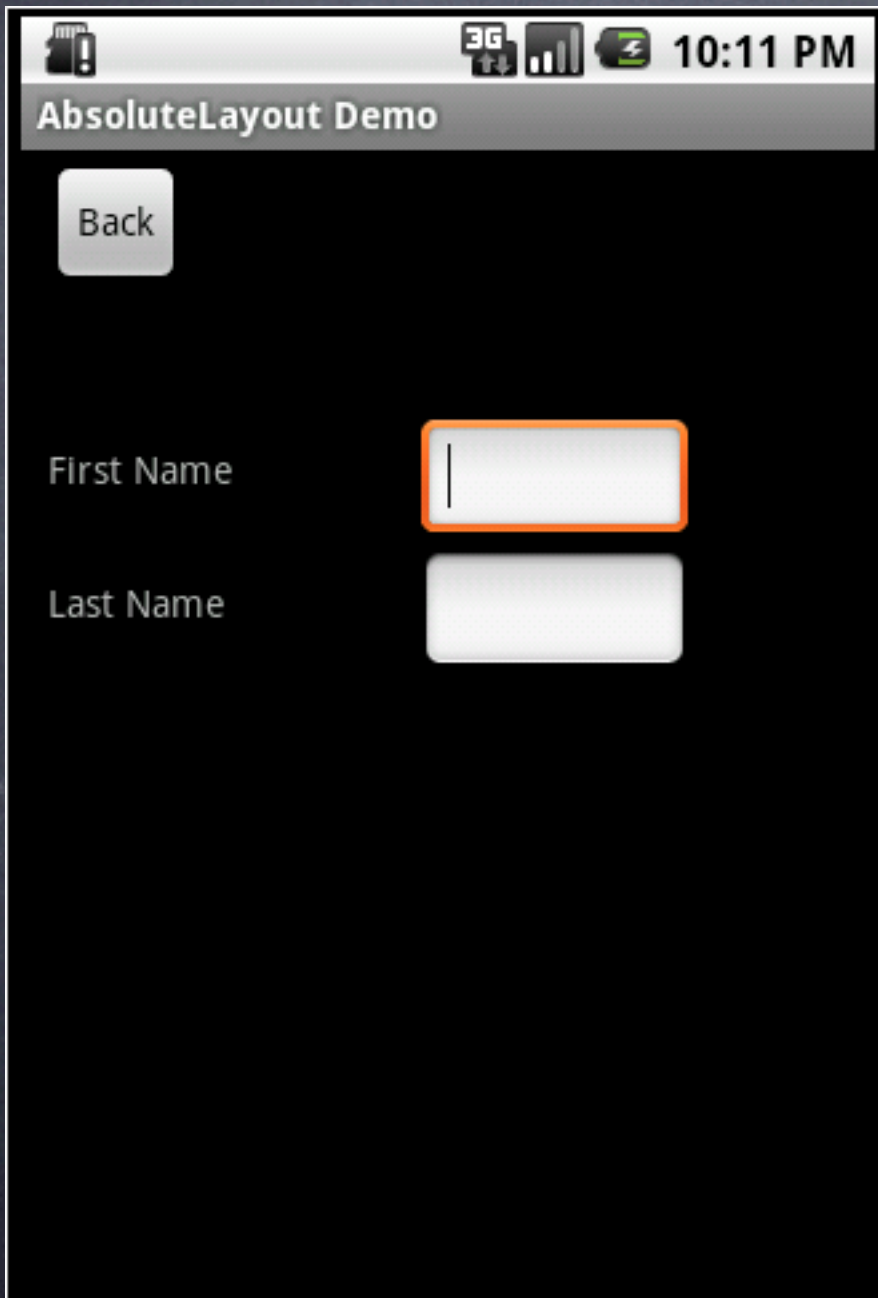
```
<TableLayout
  android:layout_width="fill_parent"
  android:layout_height="fill_parent"
  xmlns:android="http://schemas.android.com/apk/res/android">
  <TableRow>
    <Button
      android:id="@+id/backbutton"
      android:text="Back"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content" />
  </TableRow>
  <TableRow>
    <TextView
      android:text="First Name"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_column="1" />
    <EditText
      android:width="100px"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content" />
  </TableRow>
  <TableRow>
    <TextView
      android:text="Last Name"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      android:layout_column="1" />
    <EditText
      android:width="100px"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content" />
  </TableRow>
</TableLayout>
```


Layouts



```
<RelativeLayout
    android:layout_width="fill_parent"
    android:layout_height="fill_parent"
    xmlns:android="http://schemas.android.com/apk/res/android">
    <Button
        android:id="@+id/backbutton"
        android:text="Back"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <TextView
        android:id="@+id/firstName"
        android:text="First Name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/backbutton" />
    <EditText
        android:width="100px"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_toRightOf="@id/firstName"
        android:layout_alignBaseline="@id/firstName" />
    <TextView
        android:id="@+id/lastName"
        android:text="Last Name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_below="@id/firstName" />
    <EditText
        android:width="100px"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:layout_toRightOf="@id/lastName"
        android:layout_alignBaseline="@id/lastName" />
</RelativeLayout>
```


Layouts



```
<AbsoluteLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent">
    <Button
        android:id="@+id/backbutton"
        android:text="Back"
        android:layout_x="10px"
        android:layout_y="5px"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <TextView
        android:layout_x="10px"
        android:layout_y="110px"
        android:text="First Name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <EditText
        android:layout_x="150px"
        android:layout_y="100px"
        android:width="100px"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <TextView
        android:layout_x="10px"
        android:layout_y="160px"
        android:text="Last Name"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
    <EditText
        android:layout_x="150px"
        android:layout_y="150px"
        android:width="100px"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content" />
</AbsoluteLayout>
```


A toast !!

```
Toast.makeText(this, "A toast !",  
Toast.LENGTH_SHORT).show();
```

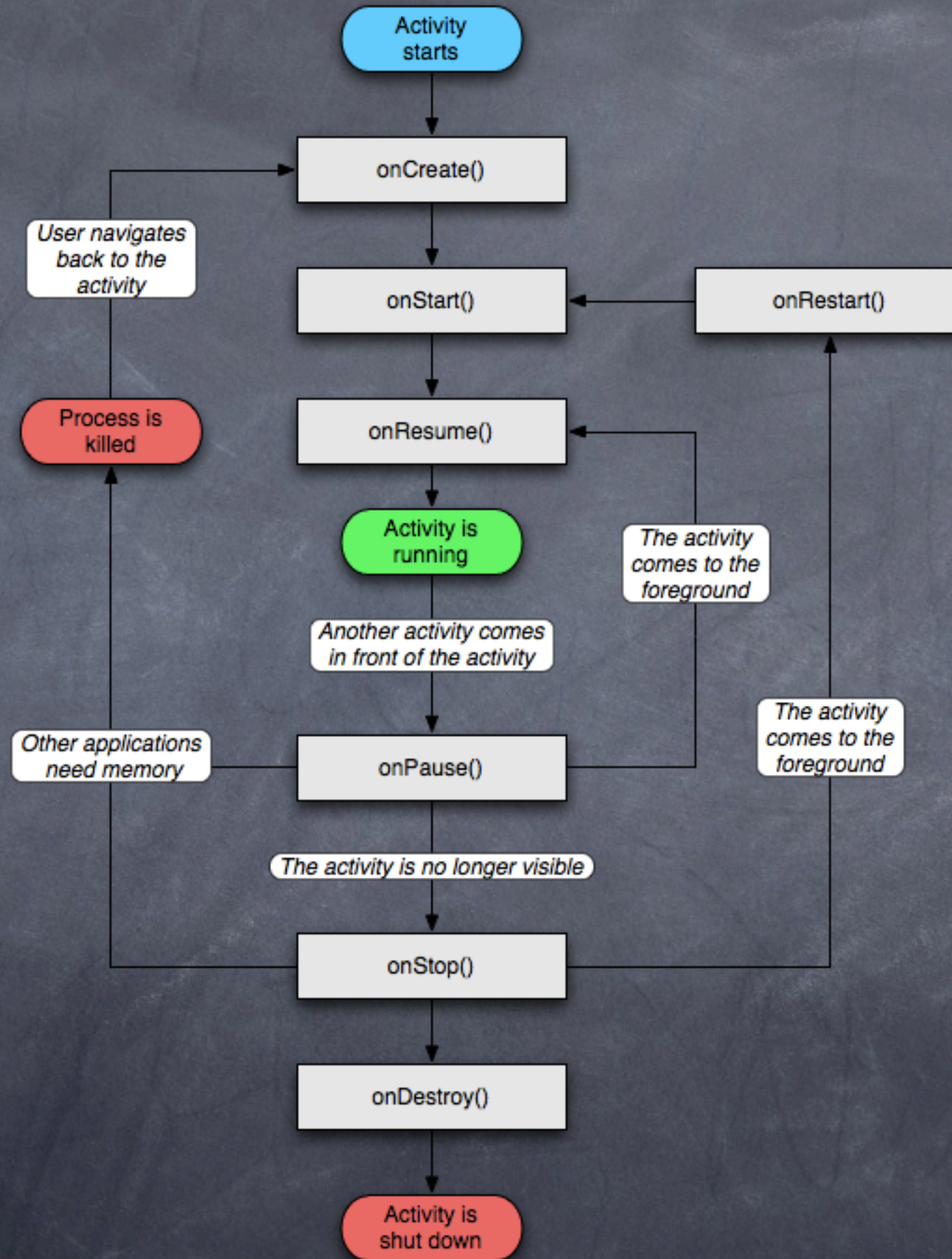

Manifest

```
<?xml version="1.0" encoding="utf-8"?>
<manifest xmlns:android="http://schemas.android.com/apk/res/android"
    package="dk.anug"
    android:versionCode="1"
    android:versionName="1.0">
    <application android:icon="@drawable/icon" android:label="@string/app_name">
        <activity android:name=".MainActivity"
            android:label="@string/app_name">
            <intent-filter>
                <action android:name="android.intent.action.MAIN" />
                <category android:name="android.intent.category.LAUNCHER" />
            </intent-filter>
        </activity>

    </application>
    <uses-sdk android:minSdkVersion="5" />

</manifest>
```


Activity lifecycle



Logging

- `android.util.Log`
- `Log.i()`
- `Log.d()`
- `Log.w()`
- `Log.e()`