



Entwicklung mit Android Studio und Gradle

Über mich

- **Tim Roes**
- **Software Developer bei inovex GmbH**

www.timroes.de



www.timroes.de/+

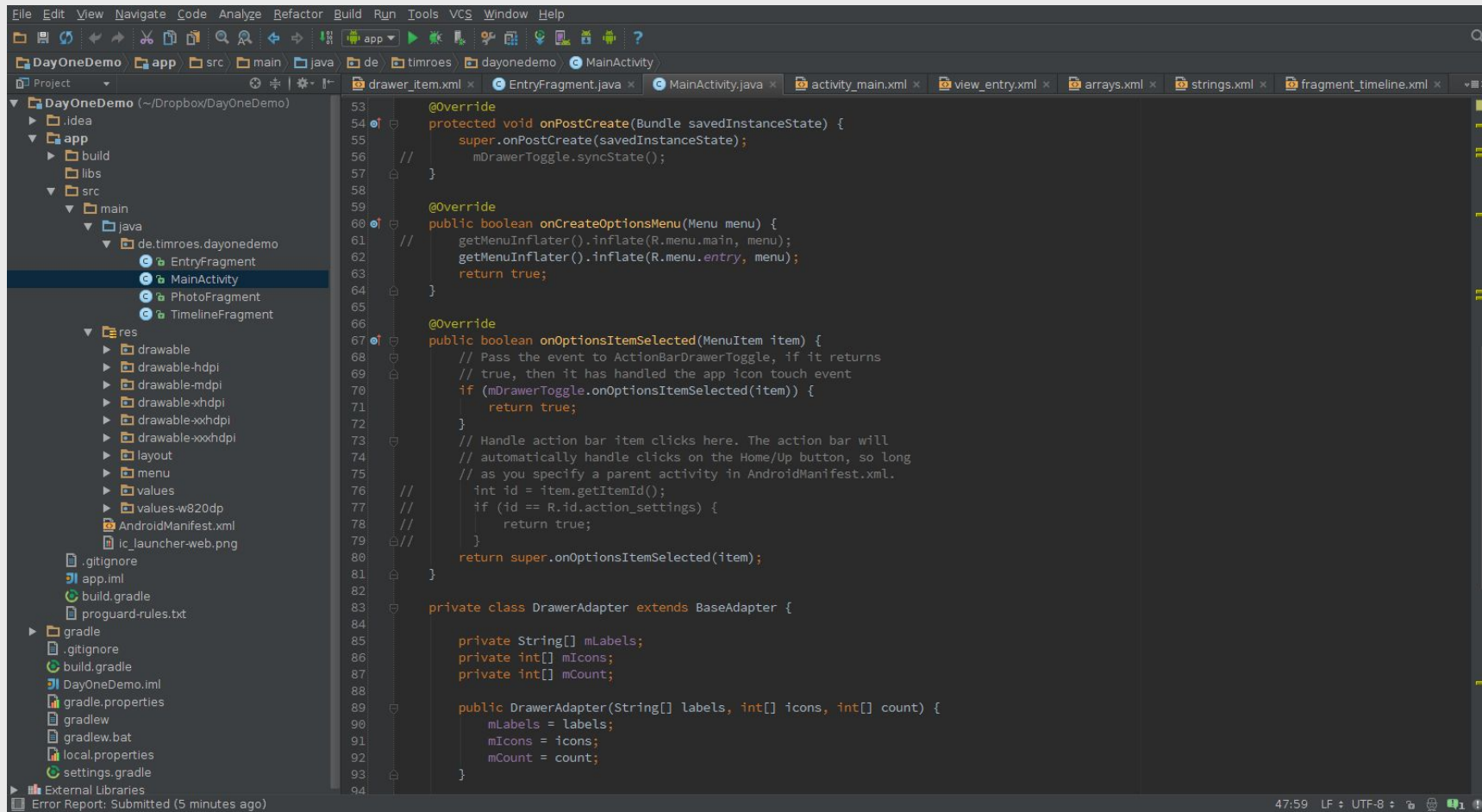
Android Studio



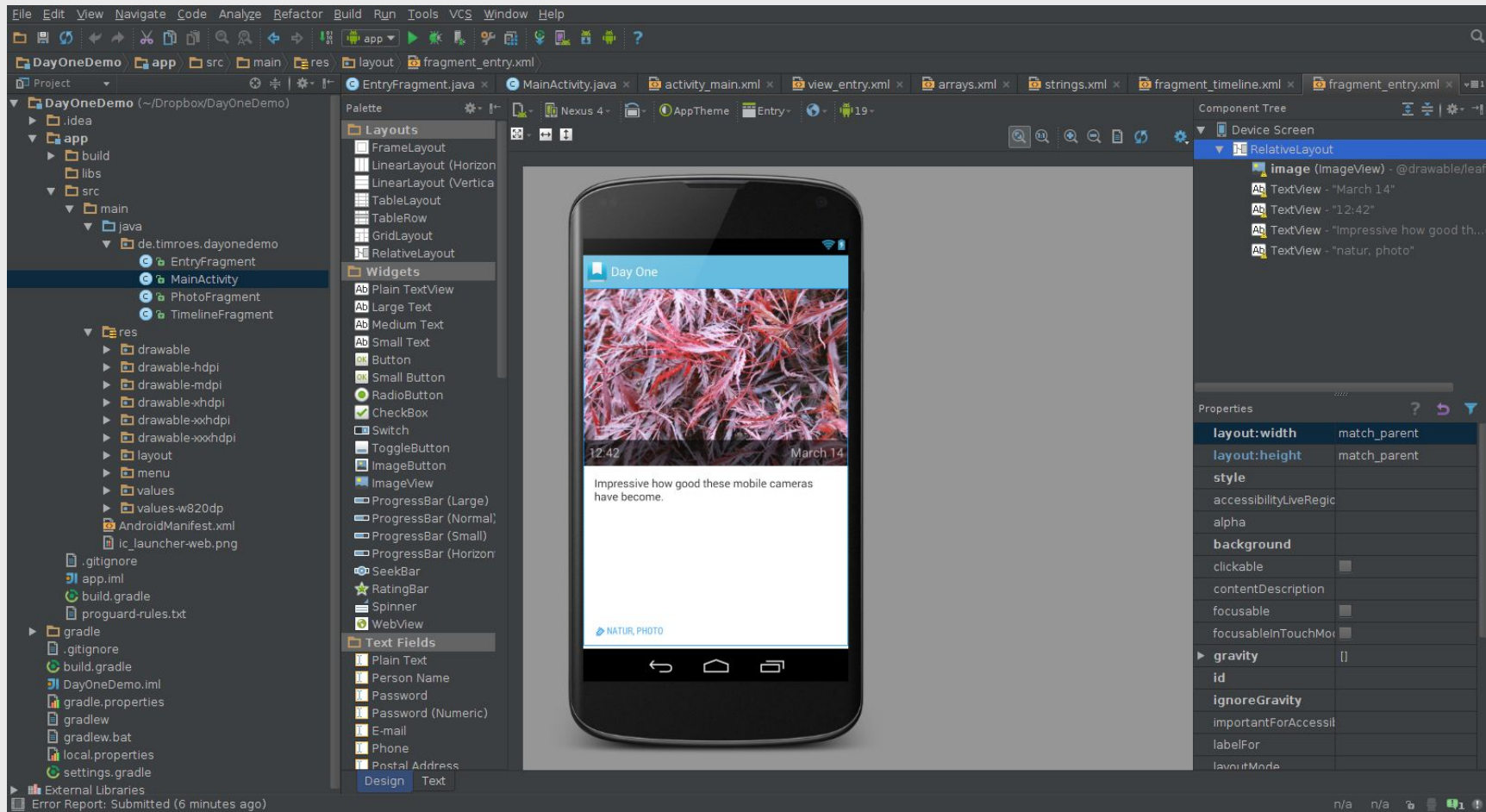
Android Studio

16. Mai 2013

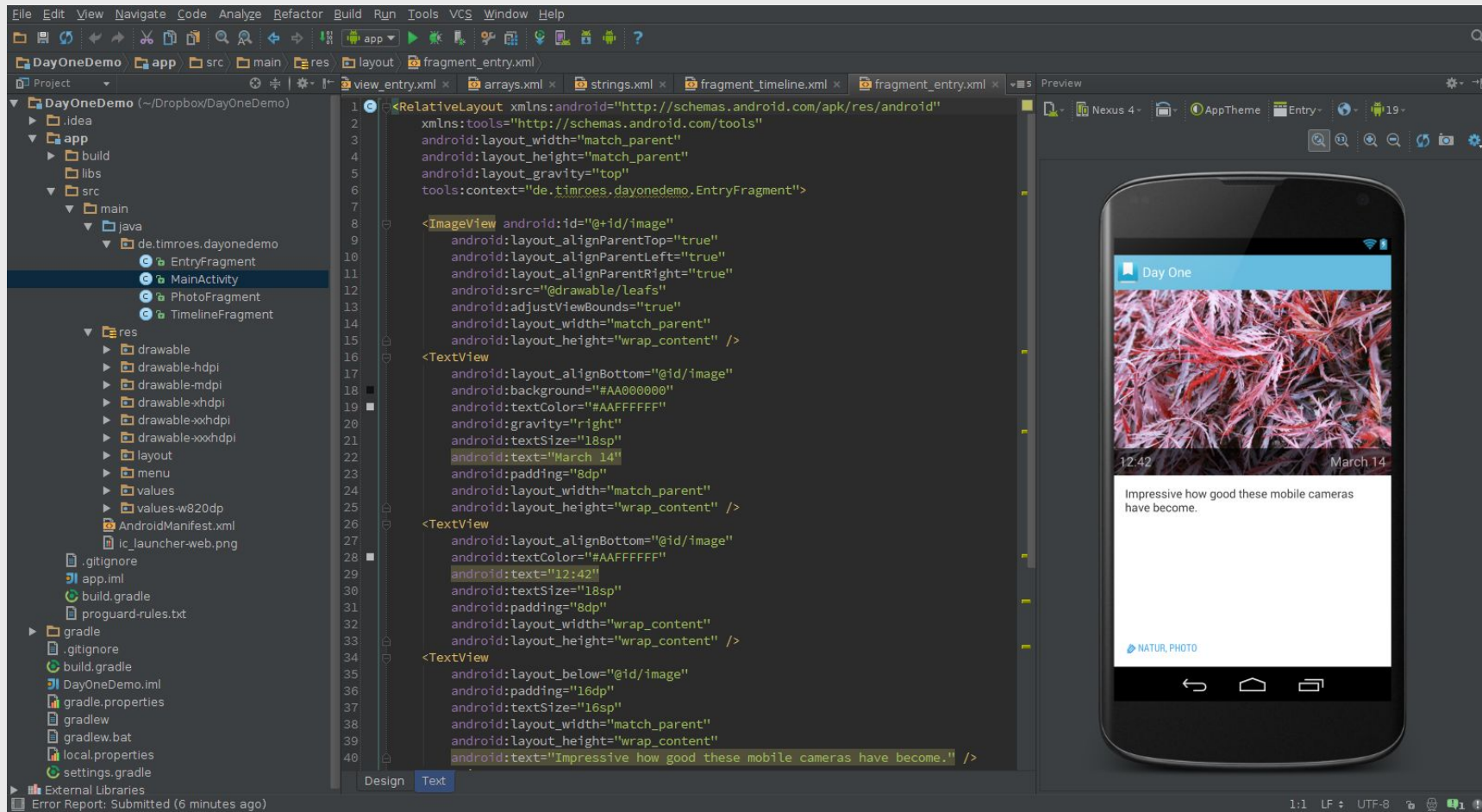
Android Studio



Android Studio



Android Studio



Android Studio vs. Eclipse



Features

Stabilität

Performance

Weiterentwicklung

Features

```
46 ■ android:textColor="#4  
47 ◆ android:drawableLeft=
```

```
label.setText("Day One");  
label.setOnClickListener((v) -> { startTransaction(); });
```

```
9 <Button  
0     android:onClick="clicked"  
1     android:layout_width="wrap_content"  
2     android:layout_height="wrap_content"  
3
```

Method 'clicked' is missing in 'MainActivity' or has incorrect signature [more...](#) (Ctrl+F1)

Enter inspection name:

- Incompatible type assignments
- Incomplete translation**
- Incorrect reference types
- Inner class too deeply nested
- Incompatible 'in' argument types
- Inner classes should use \$ rather than .
- Instance method call not qualified with 'this'
- Integer multiplication or shift implicitly cast to long
- 'assertEquals()' between objects of inconvertible types
- 'assertEquals()' between objects of inconvertible types
- 'assertEquals()' between objects of inconvertible types

Assignment issues	G
Android Lint	?
Android Lint	?
Class metrics	B
Probable bugs	G
Android Lint	?
Code style issues	B
Numeric issues	B
JUnit issues	B
TestNG	B
Probable bugs	B

Android Studio vs. Eclipse



+

Features

+

Stabilität

Performance

Weiterentwicklung

Android Studio vs. Eclipse



+

Features

+

○

Stabilität

+

Performance

Weiterentwicklung

Android Studio vs. Eclipse



+

Features

+

○

Stabilität

+

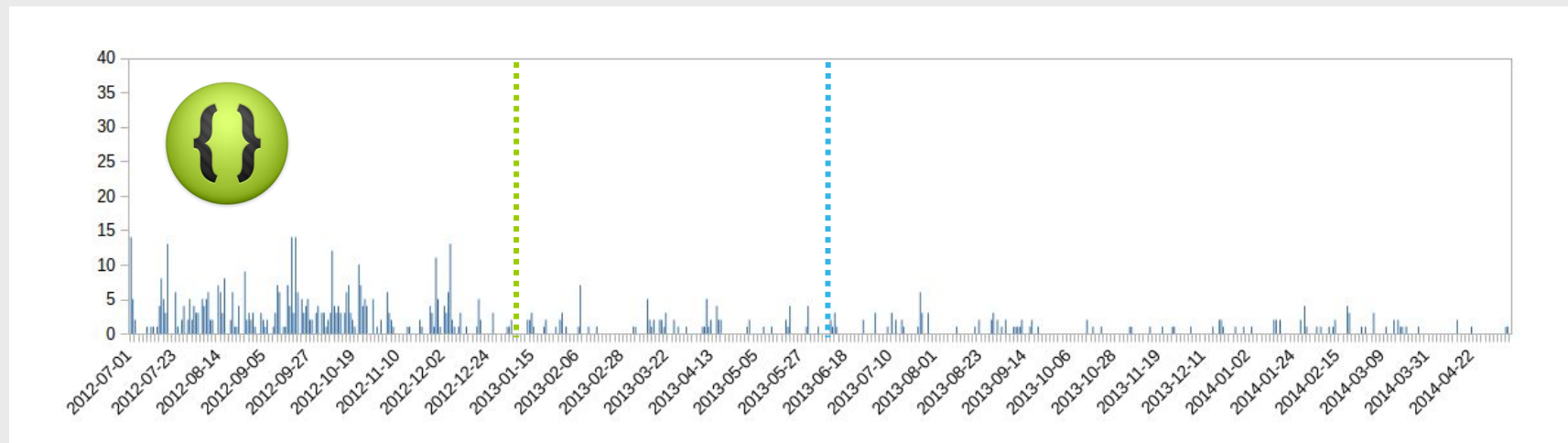
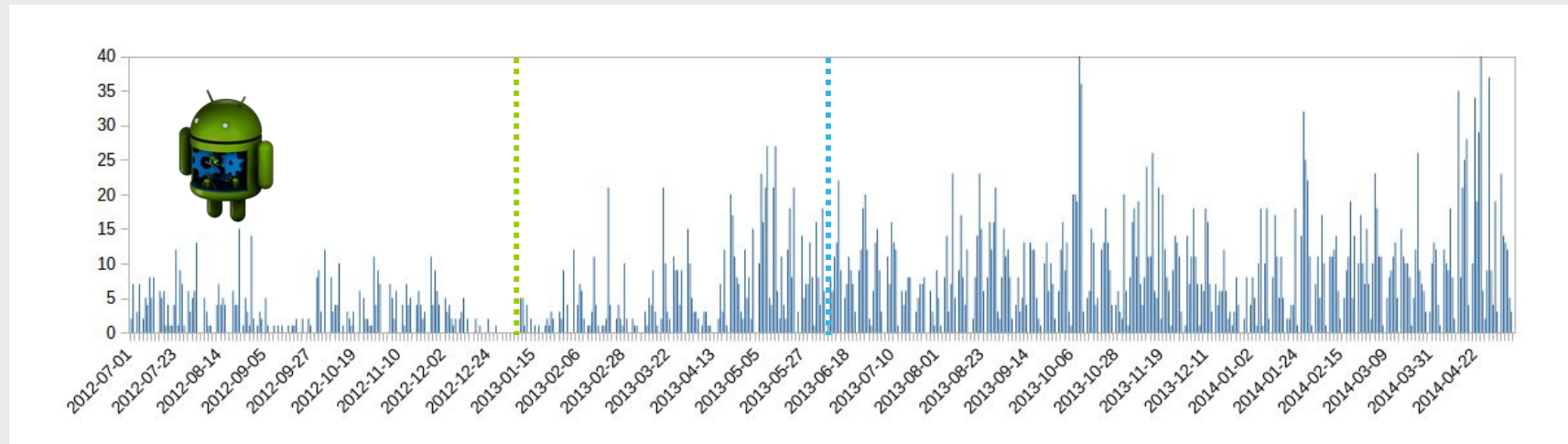
○

Performance

○

Weiterentwicklung

Weiterentwicklung



Android Studio vs. Eclipse



+

Features

+

○

Stabilität

+

○

Performance

○

+

Weiterentwicklung

○

Apache License

Gradleware



Groovy

IDE == Konsole

Gradle files have changed since last project sync. A project sync may be necessary for the IDE to work properly.

Gradle Wrapper

```
$ gradle -q wrapper
$ find . --magic-output-format
gradlew.bat
gradlew
gradle
└─ wrapper
   └─ gradle-wrapper.jar
      └─ gradle-wrapper.properties
.gradle
└─ 1.11
   └─ ...
```

Gradle Tasks

```
$ ./gradlew tasks
```

```
init
```

```
wrapper
```

```
dependencies
```

```
help
```

```
projects
```

```
properties
```

```
tasks
```


build.gradle

```
apply plugin: "java"
```

build.gradle

```
apply plugin: "java"

repositories {
    mavenCentral()
}

dependencies {
    compile 'com.google.guava:guava:17.+'
}
```

build.gradle

```
apply plugin: "java"

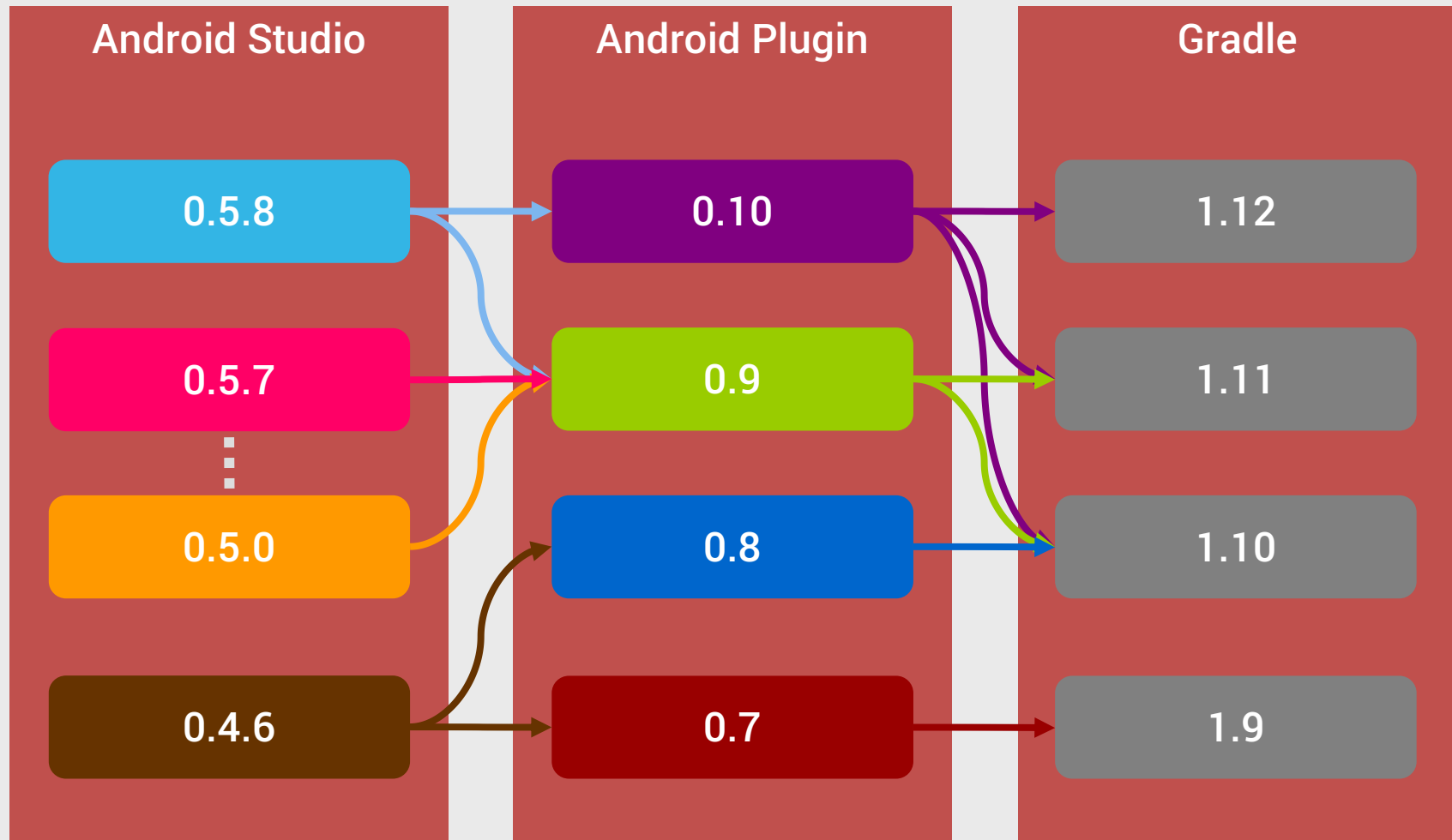
repositories {
    mavenCentral()
    maven { url "http://maven.mycompany.com/" }
}

dependencies {
    compile 'com.google.guava:guava:17.+'
    testCompile 'junit:junit:4.11'
    compile fileTree(dir: 'libs', include: ['*.jar'])
}
```

Android Plugin

```
buildscript {  
    repositories {  
        mavenCentral()  
    }  
    dependencies {  
        classpath 'com.android.tools.build:gradle:0.9.+'  
    }  
}  
  
apply plugin: "android"
```

Versions Hölle



Android Tasks

```
$ ./gradlew tasks
```

```
clean
```

```
assemble
```

```
check
```

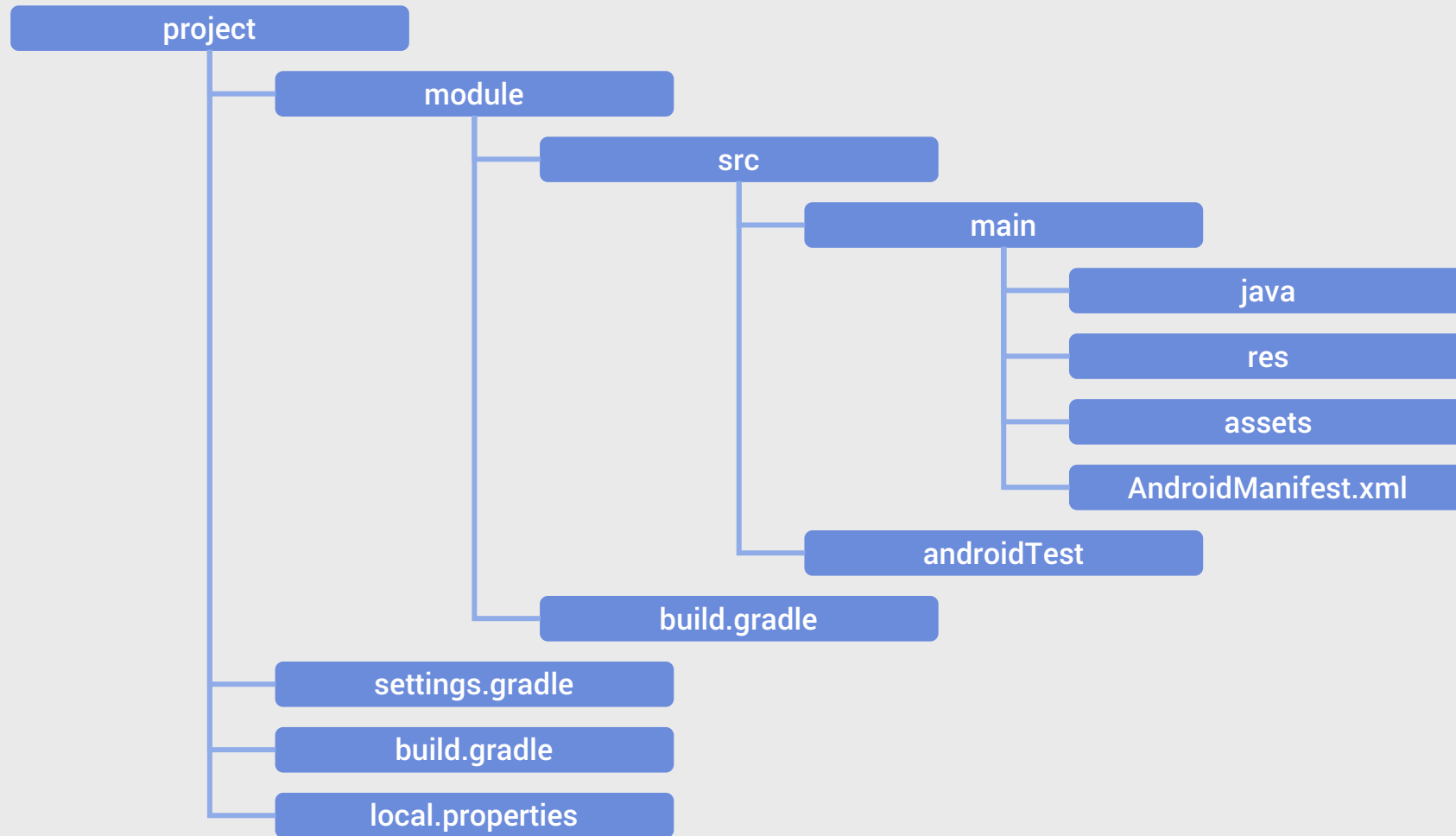
```
build
```

```
installDebug
```

```
connectedCheck
```

```
deviceCheck
```

Android Projekt Struktur



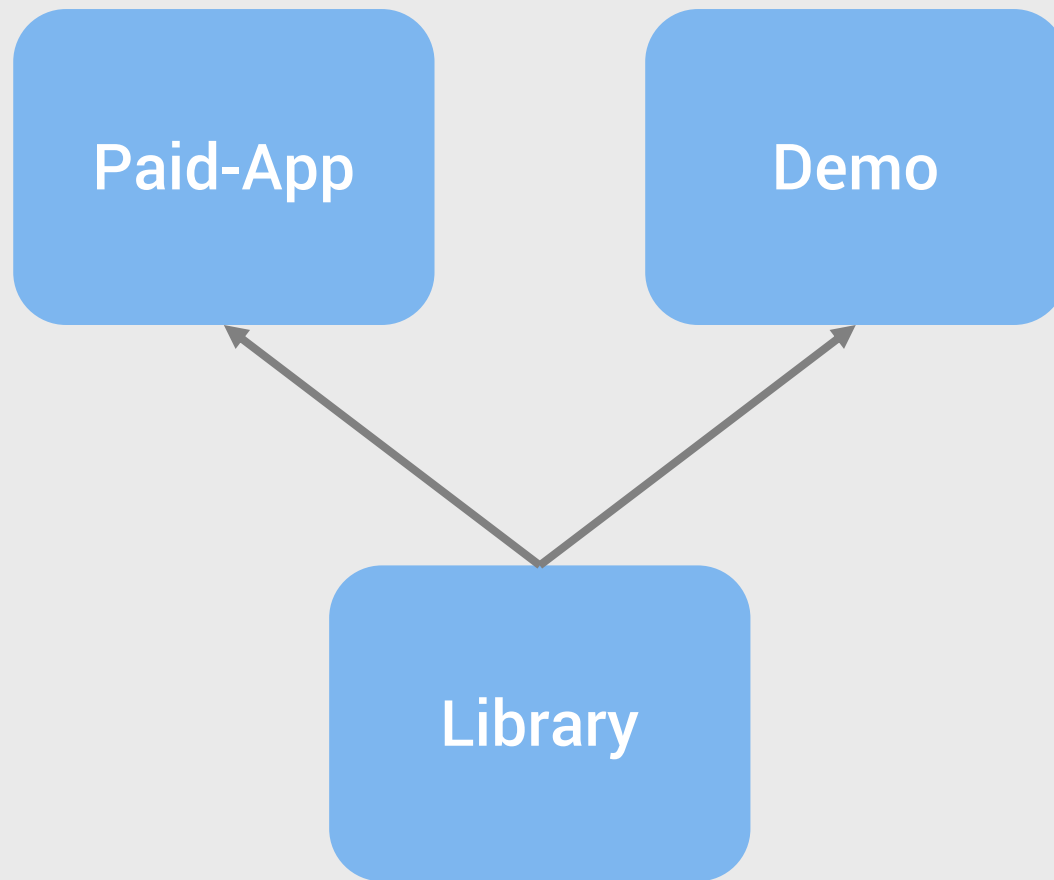
Android Config

```
android {  
    compileSdkVersion 19  
    buildToolsVersion "19.1"  
  
    defaultConfig {  
        minSdkVersion 14  
        targetSdkVersion 19  
        versionCode 5  
        versionName "1.3.1"  
    }  
}
```


Build Types

```
android {  
    buildTypes {  
        debug {  
            packageNameSuffix ".debug"  
        }  
  
        proGuard.initWith(buildTypes.debug)  
        proGuard {  
            runProguard true  
            proguardFile 'proguard-rules.txt'  
        }  
    }  
}
```

Multi-APK/Version



Projektstruktur

```
src
├── main
│   ├── java
│   └── res
├── paid
│   ├── java
│   └── res
├── free
│   ├── java
│   └── res
└── AndroidManifest.xml
```

Product Flavors

```
productFlavors {  
    paid {  
        packageName "com.mycompany.app.paid"  
    }  
    free {  
        packageName "com.mycompany.app.free"  
        minSdkVersion 8  
    }  
}
```

Build Variant

Build Variant = Product Flavor + BuildType

paidDebug

paidRelease

paidProGuard

freeDebug

freeRelease

freeProGuard

**Kann ich Android Studio
schon produktiv einsetzen?**



Ja, aber...

Literaturempfehlung

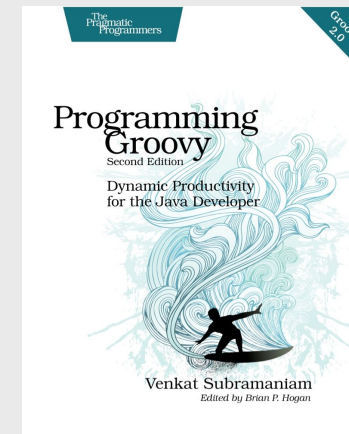


Gradle: Ein kompakter Einstieg in das Build-Management-System

Joachim Baumann

Programming Groovy 2: Dynamic Productivity for the Java Developer

Venkat Subramaniam





www.timroes.de

www.inovex.de

Disclaimer: Logos are copyrighted trademarks by their respective companies. Android Robot is reproduced or modified from work created and shared by Google and used according to terms described in the Creative Commons 3.0 Attribution License.

NDK Builds

```
android {
  defaultConfig {
    ndk {
      moduleName "jni-utils"
      ldLibs "log", "GLLESv2"
    }
  }
  productFlavors {
    arm {
      ndk {
        abiFilters "armeabi", "armeabi-v7a"
      }
    }
  }
}
```

Multi-flavor variants

```
android {  
    flavorGroups "abi", "version"  
  
    productFlavors {  
        free { flavorGroup "version" }  
        paid { flavorGroup "version" }  
        x86 { flavorGroup "abi" }  
        arm { flavorGroup "abi" }  
    }  
}
```