

An Overview of Android Testing

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SmartLogic

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You can test Android?

Regular Android testing
leaves a lot to be
desired

Robolectric

<http://robolectric.org/>

Run tests on your
development machine

JUnit 4

Requires Maven

IntelliJ

Supports maven projects

Eclipse

Should just use IntelliJ

Android Studio

Uses gradle, not much support for
this yet

Downsides

Content Providers are
still hard to test

Still somewhat new

Not every area is able to be tested
nicely

Lack of Documentation

Extra Libraries You Should Consider

Hamcrest

<http://hamcrest.org/JavaHamcrest/>

Hamcrest

- Nicer assertions than regular JUnit

Hamcrest

```
assertThat(item.getId(), equalTo(itemId));
```

FEST Android

<https://github.com/square/fest-android>

FEST Android

- Fluent assertions make test read nicely
- FEST additions specific to Android

FEST Android

```
assertThat(view.getVisibility(), equalTo(View.GONE));
```

vs

```
assertThat(view).isGone();
```

Awaitility

<https://code.google.com/p/awaitility/>

Awaitility

- Handles testing asynchronous code nicely
- Set timeouts

Awaitility

```
public void testActivityTitle() {  
    await().atMost(TIMEOUT_SECONDS, TimeUnit.SECONDS).until(  
        activityTitle(), equalTo("Notification"));  
  
    Spoon.screenshot(getActivity(), "activity_title");  
}
```

Awaitility

```
protected Callable<String> activityTitle() {  
    return new Callable<String>() {  
        @Override  
        public String call() throws Exception {  
            return mActivity.getTitle().toString();  
        }  
    };  
}
```

Spoon

<https://github.com/square/spoon>

Spoon

- Take screenshots of app during test
- Compiles to animated gif
- Instrumentation tests

Spoon

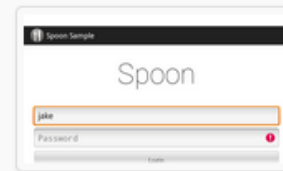
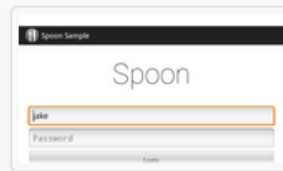
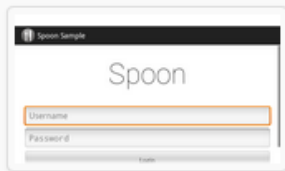
```
public void testActivity() {  
    Spoon.screenshot(getActivity(), "activity");  
}
```

Spoon

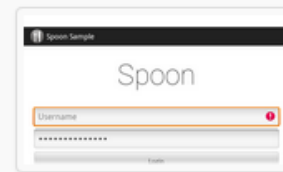
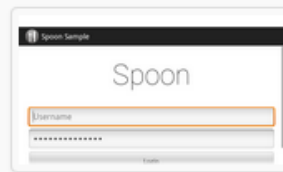
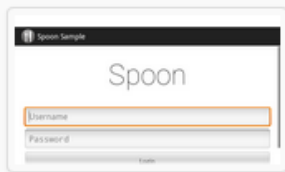
Droid

9 tests run with 7 passing and 2 failing in 1 minute, 7 seconds at 2013-02-12 10:27

Blank Password, Shows Error



Blank Username, Shows Error



Continuous Integration

Jenkins Shell Script

```
export ANDROID_HOME=/var/lib/jenkins/tools/android-sdk  
mvn clean test --batch-mode
```


Javadocs

JUnit Results

Android Emulator Plugin

<https://wiki.jenkins-ci.org/display/JENKINS/Android+Emulator+Plugin>

Resources

- <http://corner.squareup.com/2013/05/roboelectric-two-point-oh.html>
- <http://blog.bignerdranch.com/2583-testing-the-android-way/>

Questions?

<http://www.smartlogic.io>

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