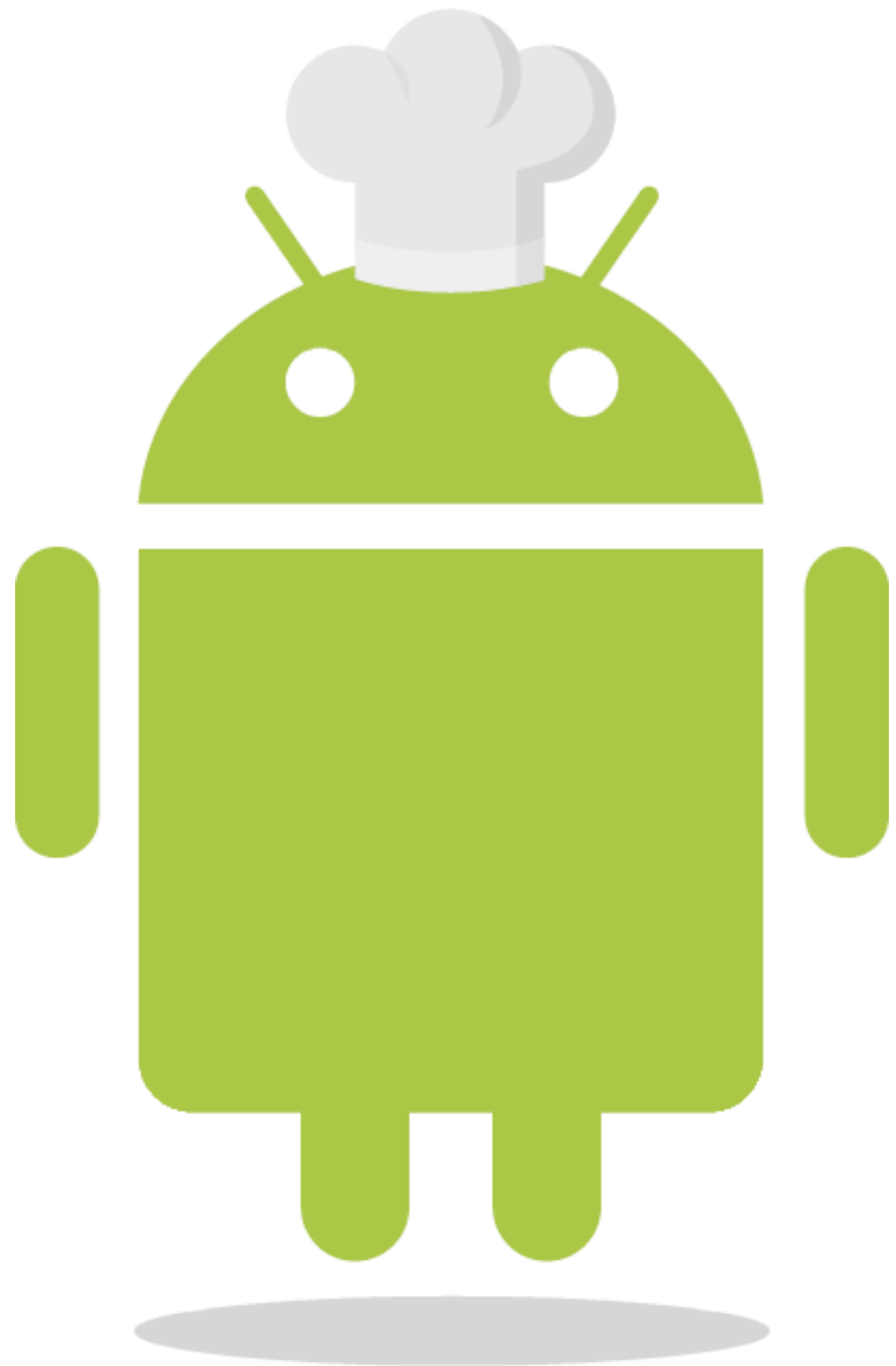


Android Testing Recipes

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Presentation Info

Presentation and code is available on GitHub

<https://github.com/patrickhammond/Presentation-AndroidTestingRecipes>

This is not a complete coverage of testing on Android!

Testing ecosystem is constantly growing and maturing.

Not at all possible to talk about in one sitting.

Goals

- Gain a common understanding of automated testing concepts
- Demo several (free!) automated testing tools available today
- Call out areas of pain that can be avoided
- Make it easier to improve the testing you are already doing today!

Agenda

- Start with JUnit and Android
- Work into Android's JUnit extensions
- Demo testing of scenarios using Robotium
- Show how Emma can help make testing fun
- Discuss other interesting testing tools

Testing Vocabulary

- Manual testing - Using human intelligence for verification and validation when automated testing is not possible
- Unit testing - Testing individual parts of the application in isolation
- Integration testing - Testing how multiple parts of the application function together
- Functional testing - Testing the functional behavior of an application

Kill this slide?

Setting up a test project

- Your test project can live anywhere on the file system.
- Convention is to put the project in a “tests” folder inside of the main project.



Unit Testing with JUnit

- xUnit style of testing is very common
- JUnit is the base for many testing tools
- Out of the box support in Android
- Easy to run (but not always fast in Android)



Android JUnit Extensions

- Additional JUnit test cases and assertions
- Provides access to resources or context
- Great for testing app components
- Be careful about entering Context hell...
- Make sure to extend the TestCase2 classes



Testing of scenarios using Robotium

- Sits on top of the Android JUnit extensions
- Great for quickly writing high level application tests.
- Convenience methods for views but you always can access a view by its id if needed



Emma on Android for code coverage

- Gives you visibility into what code in your app was invoked at least once during testing
- Only available from the command line and only on the emulator or a rooted phone
- `cd tests; ant all clean emma debug / uninstall install test`



Interesting projects

- **Robolectric**

<http://pivotal.github.com/robolectric/>

Advertises that it helps reduce test-feedback cycles on Android

- **Android Mock**

<http://code.google.com/p/android-mock/>

Lets you perform mocking (EasyMock syntax) on Dalvik

Interesting projects

- **Calabash**

<http://github.com/calabash/calabash-android>

Lets you write BDD Cucumber tests. Sits on top of Robotium.

Other areas of interest

- **monkeyrunney**
Python tool for starting and interacting with applications
- **The Monkey**
Generates a set of pseudo-random events in your app for stress testing

Useful Links

- JUnit - <http://www.junit.org>
- Android Developers - Testing (read this!)
<http://developer.android.com/guide/topics/testing/index.html>
- Robotium - <http://code.google.com/p/robotium/>

Thanks!
Questions?