Beginning Android: Pitfalls and Roadblocks

February 27th, 2014

Who Am I?

- Actually an iOS Developer
- Started Android development in November 2013
- Before that had some false starts
- Released a port of an existing iOS app
- Made some proof of concept Google Glass apps (GlassFart)

FarmLogs is HIRING

- Android Engineers
- Backend Engineers
- Android Engineers
- Growth Hackers
- Android Engineers

Android thru the lens of iOS

- Multiple IDEs, Eclipse and IntelliJ are not as well integrated as Xcode (including simulators)

- Android SDK versions are wacky and hard to distinguish (19 API versions vs 6 major versions on iOS)

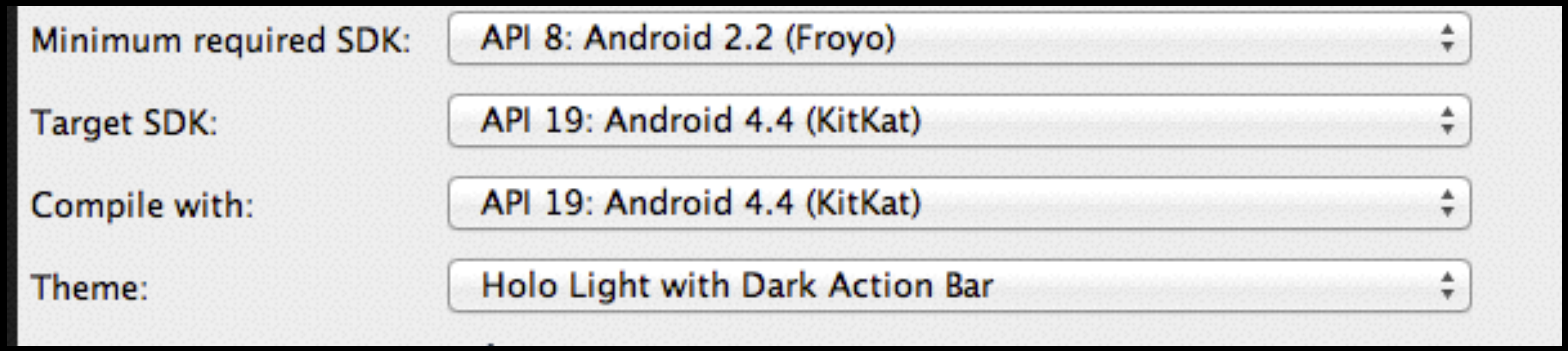
- Distribution through the Play store is great, beta testing is great!

- The back button is neat

Android is not without pitfalls!

- Which minimum API version do I want to support? (support library imports)
- Why is the simulator so stupidly slow?
- Why are http requests failing for no reason?
- How should I include a dependency in my project?
- How do I submit my app to the Play Store!?

Minimum API Version Support



Minimum required SDK: API 8: Android 2.2 (Froyo)

Target SDK: API 19: Android 4.4 (KitKat)

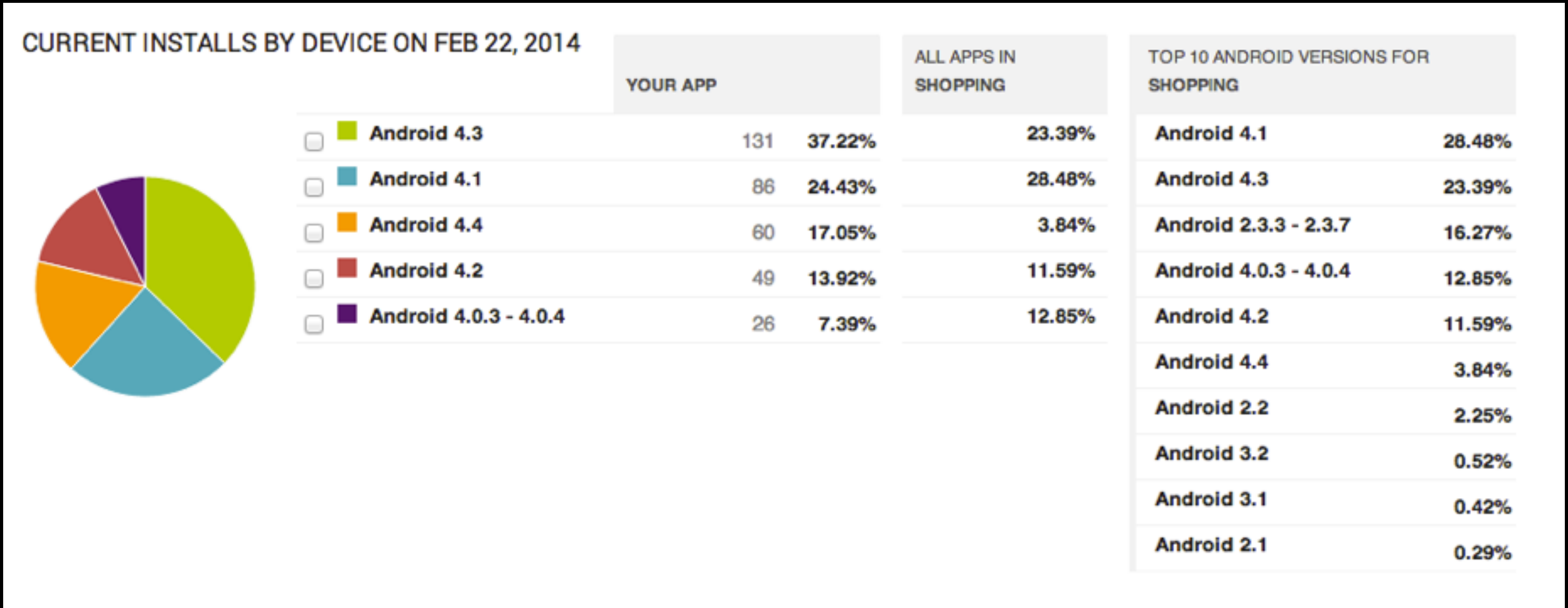
Compile with: API 19: Android 4.4 (KitKat)

Theme: Holo Light with Dark Action Bar

- Supporting lower API versions will ensure that your app can run on more devices

- Also creates more work for features that didn’t exist in earlier API versions and aren’t in the Android Support Library

Minimum API Version Support: I guess it depends



CURRENT INSTALLS BY DEVICE ON FEB 22, 2014

		YOUR APP		ALL APPS IN SHOPPING
☐	🟩 Android 4.3	131	37.22%	23.39%
☐	🟦 Android 4.1	86	24.43%	28.48%
☐	🟧 Android 4.4	60	17.05%	3.84%
☐	🟥 Android 4.2	49	13.92%	11.59%
☐	🟪 Android 4.0.3 - 4.0.4	26	7.39%	12.85%

TOP 10 ANDROID VERSIONS FOR SHOPPING	
Android 4.1	28.48%
Android 4.3	23.39%
Android 2.3.3 - 2.3.7	16.27%
Android 4.0.3 - 4.0.4	12.85%
Android 4.2	11.59%
Android 4.4	3.84%
Android 2.2	2.25%
Android 3.2	0.52%
Android 3.1	0.42%
Android 2.1	0.29%

4.0+ seems like a good idea to me

Case Study: Reddit for Android

- Makes a request to the Reddit API to fetch the front page
- Displays the front page stories with image thumbnails if available
- That’s it

Simulator Demo!

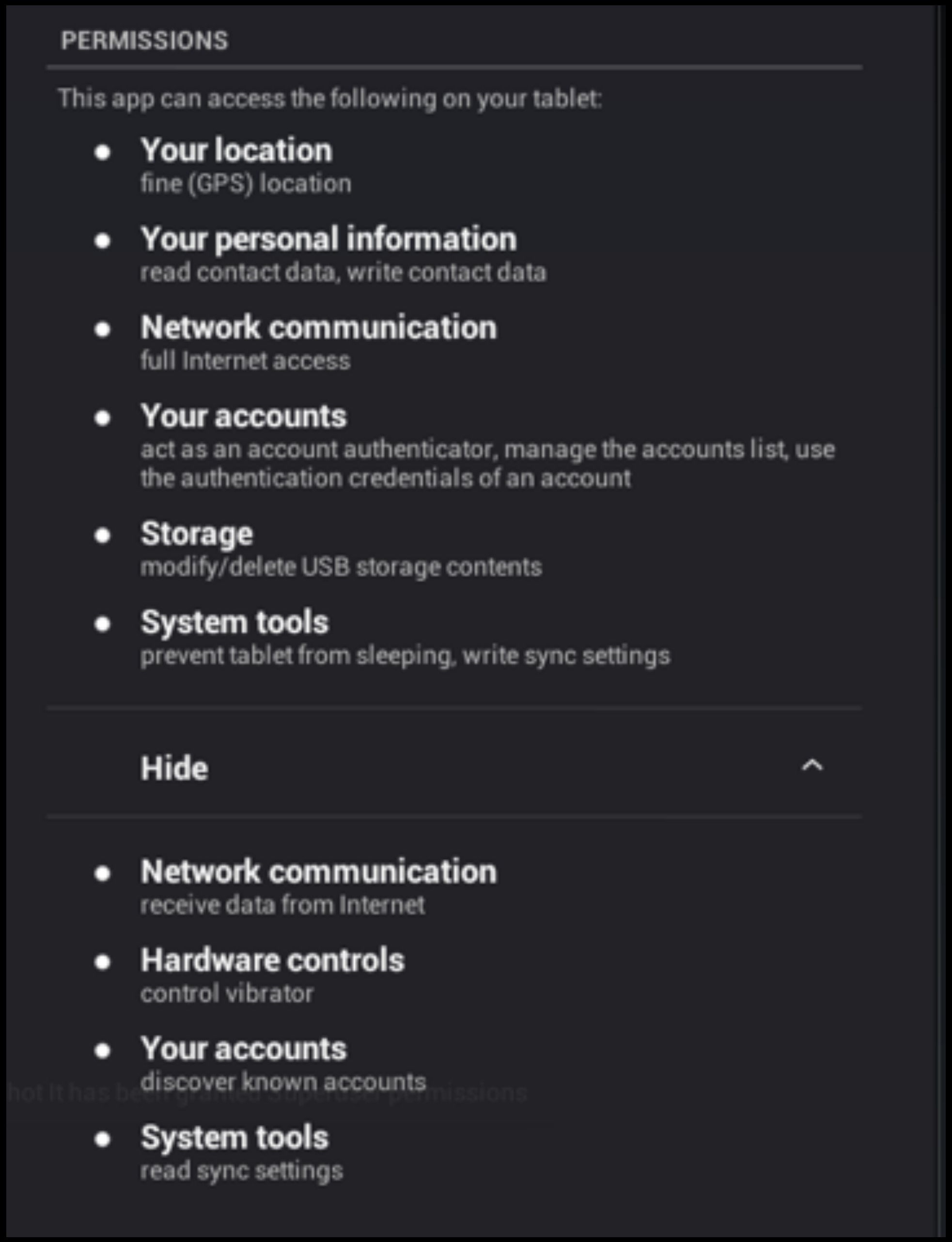
Lesson Learned

- The default simulator is way too slow to test anything
- Install Intel HAXM support if your computer supports it.
- Set up your simulator image with an Intel Atom image and Host GPU enabled.
- Test on real hardware if you have it.

Internet Demo

App permissions

- That annoying text you ignore whenever you install an app.
- Includes internet, location, bluetooth, write to external storage



PERMISSIONS

This app can access the following on your tablet:

- **Your location**
  fine (GPS) location
- **Your personal information**
  read contact data, write contact data
- **Network communication**
  full Internet access
- **Your accounts**
  act as an account authenticator, manage the accounts list, use the authentication credentials of an account
- **Storage**
  modify/delete USB storage contents
- **System tools**
  prevent tablet from sleeping, write sync settings

Hide ^

- **Network communication**
  receive data from Internet
- **Hardware controls**
  control vibrator
- **Your accounts**
  discover known accounts
- **System tools**
  read sync settings

Lesson Learned

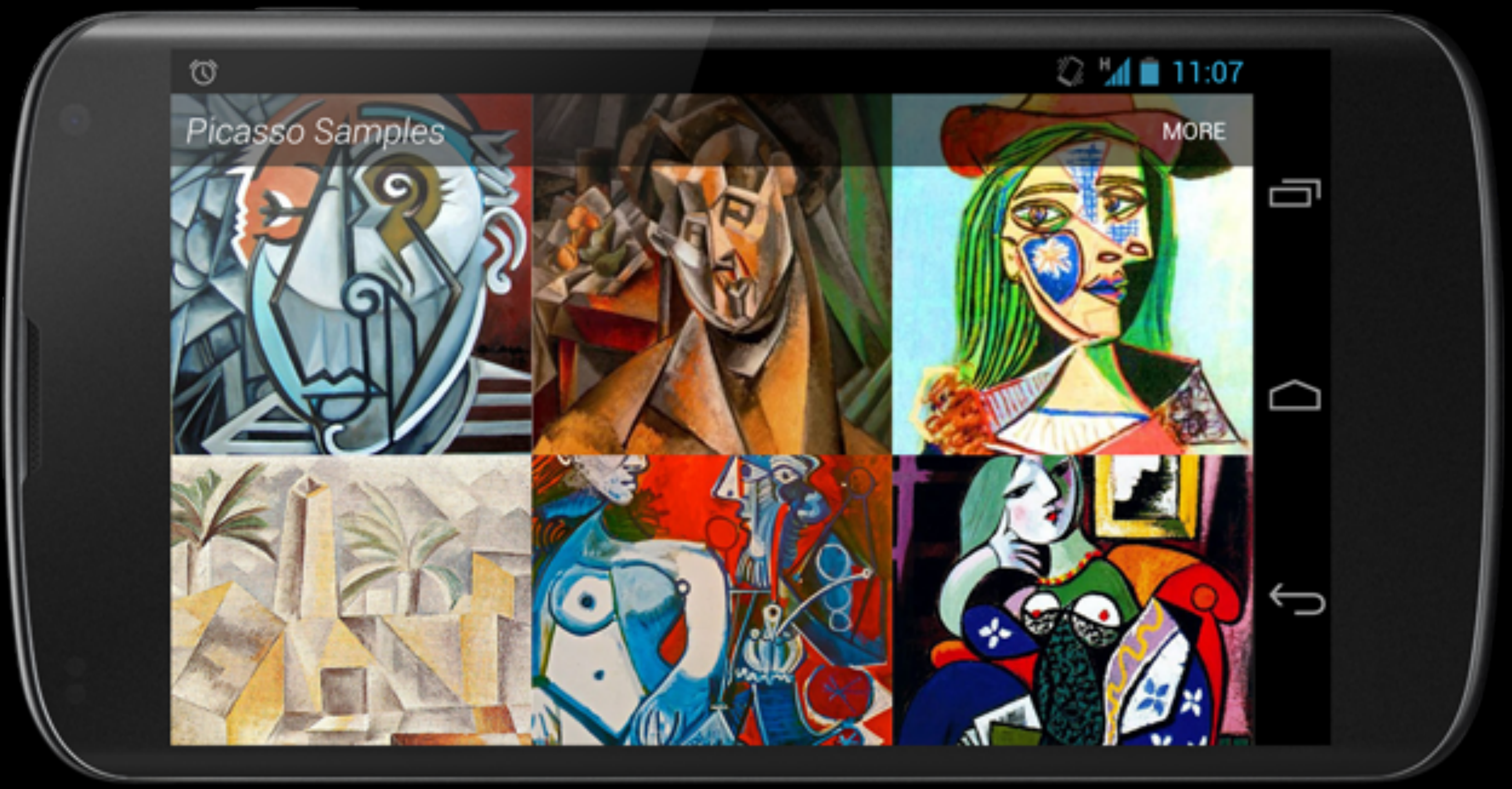
- Ask for the internet permission if you have to access the network (you probably want to do this).

Asynchronous Image Loading

- Basically the next thing you do after connecting to the internet

- No good built-in solution (doesn’t really exist on iOS either, for that matter)

Picasso by Square



- Provides an easy way to set a url for an image and load it into an ImageView

- You can install either via Maven or include a .jar

Cool guys use dependency management

Lessons Learned

- Don’t reinvent the wheel
- Use dependency management; it’s cool

Play Store Submission

- Sign builds using a keystore
- keytool -genkey -v -keystore my-release-key.keystore -alias alias_name -keyalg RSA -keysize 2048 -validity 10000
- Play Store builds must be “zip aligned”
- /Applications/Android\ Studio.app/sdk/tools/zipalign -v 4 in.apk out.apk

Conclusion

- Android Development is hard, but with a little luck and a lot of Stack Overflow, you can do it!

Questions?

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