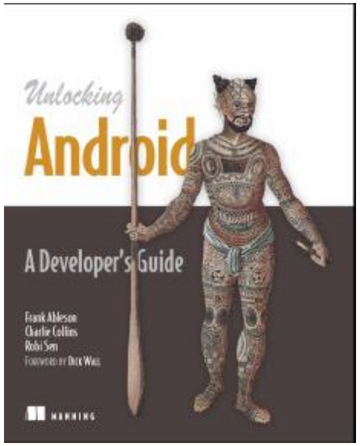


Unlocking Android

Frank Ableson
MSI Services, Inc. (http://msiservices.com)
Linux Magazine Mobile Editor (http://linux-mag.com/blogs/fableson)
Unlocking Android author (http://manning.com/ableson)

This presentation available on blog @ http://www.msiservices.com/index.php/blog/

Who am I & why am I here?

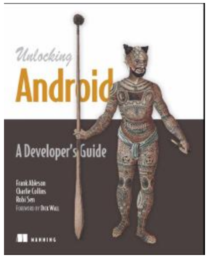
- I am a curious entrepreneur who “codes”.
- I’m here to learn and network – just like you
- If you want deep Android answers, you can ask, though I will likely point you to the Google developer mailing list ☺. I presently have about 12,000 unread emails from that list alone!

What are we going to review today?

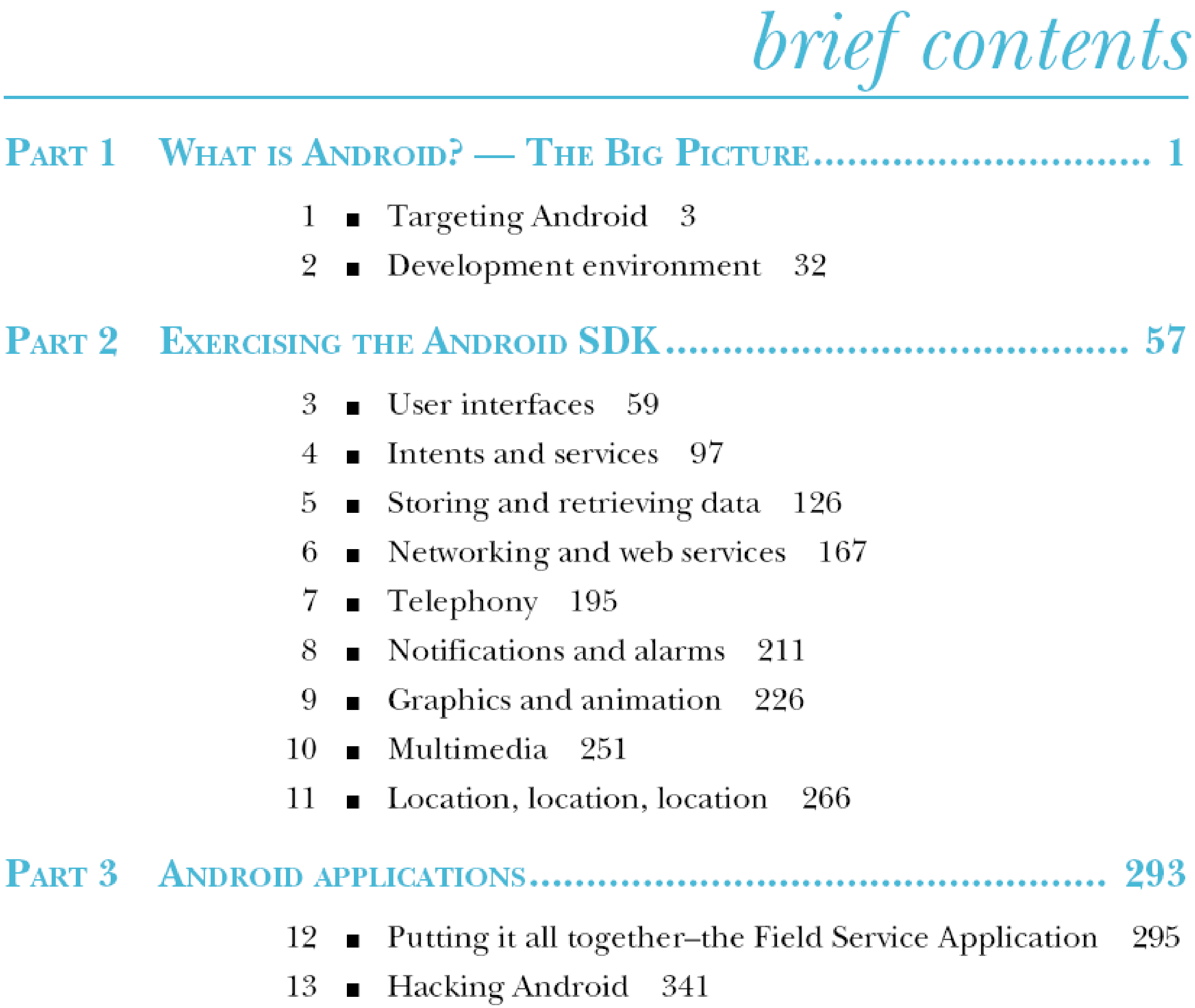
- Review some Android resources
- Look at an example application for Android
- Look at Android Scripting Environment
- Linux Magazine – how you can participate

Some Android Resources

- http://developer.android.com
  - SDK
  - Eclipse Plugin : https://dl-ssl.google.com/android/eclipse/
  - Developer Guides
  - Class References
  - Blog
  - Mailing Lists
    - Beginners
    - Developers
    - Discussion
    - NDK
    - Security
    - Market
- Unlocking Android, Published by Manning. http://manning.com/ableson
- http://code.google.com/p/unlocking-android/ source from the book (SVN)
- http://subclipse.tigris.org/update_1.6.x (SVN Plugin)



Unlocking Android Contents



brief contents

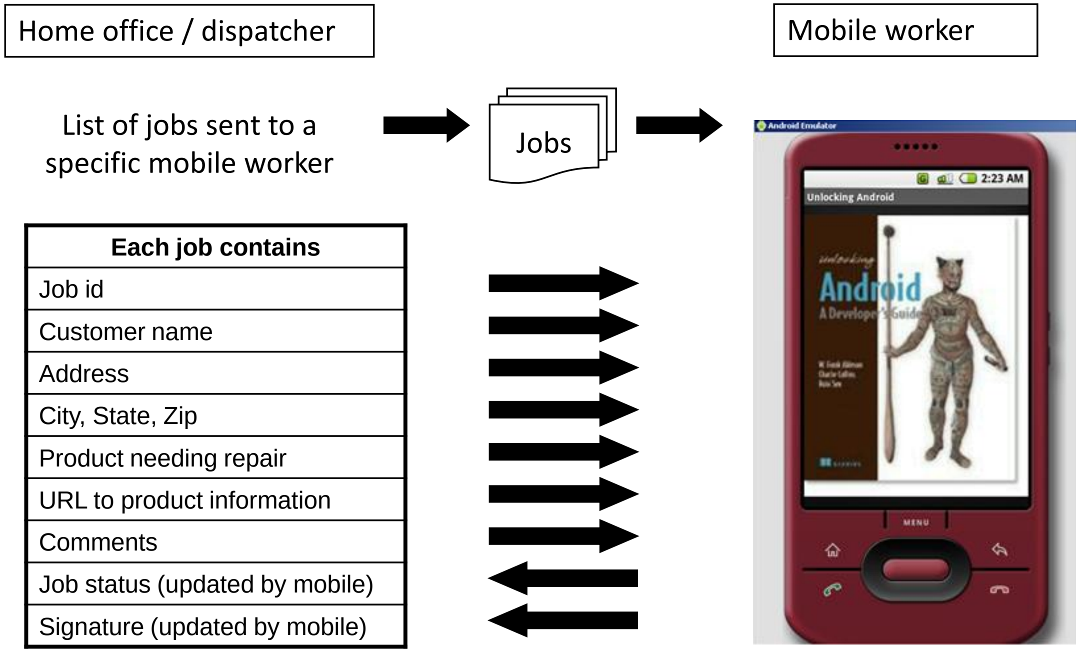
Plus installing dev tools & signing applications

Any questions before we start?

Field Service Application

- Enabling a mobile workforce
- Centrally dispatched
- Workers carrying Android devices (of course)
- “Hands and Feet” – not specialists
  - Need to augment their knowledge
  - Give them some navigational guidance
  - Capture signatures to confirm work was completed
- Fully un-tethered
  - Download jobs from server
  - Upload signatures
  - Confirm signatures

Data Model



Home office / dispatcher

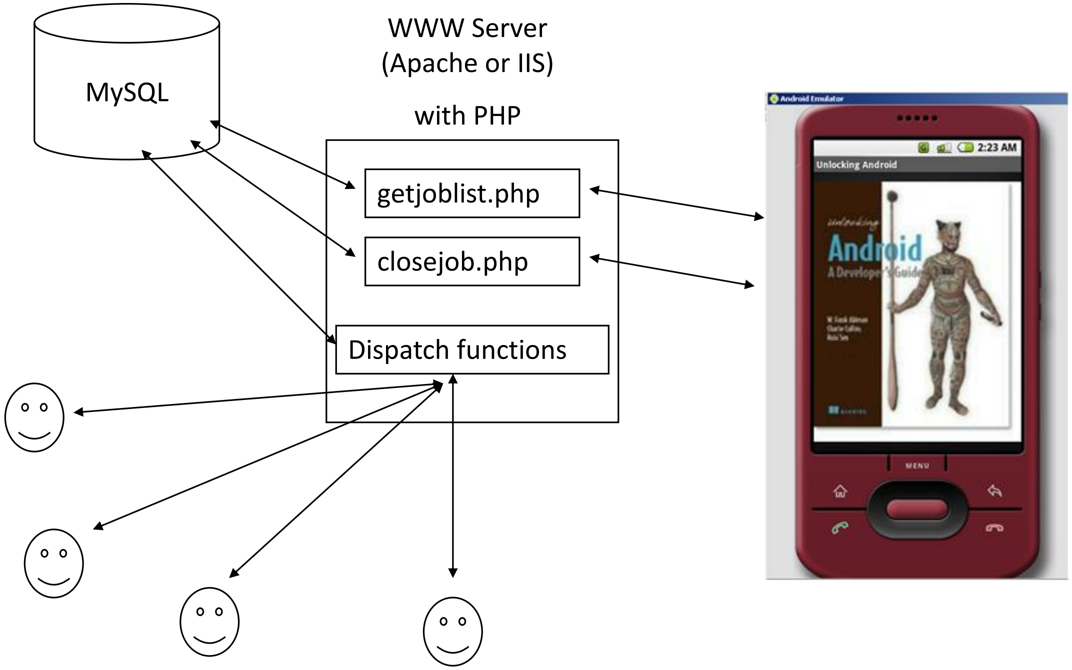
Mobile worker

List of jobs sent to a specific mobile worker

Jobs

Each job contains
Job id
Customer name
Address
City, State, Zip
Product needing repair
URL to product information
Comments
Job status (updated by mobile)
Signature (updated by mobile)

Application Architecture



MySQL

WWW Server
(Apache or IIS)

with PHP

getjoblist.php

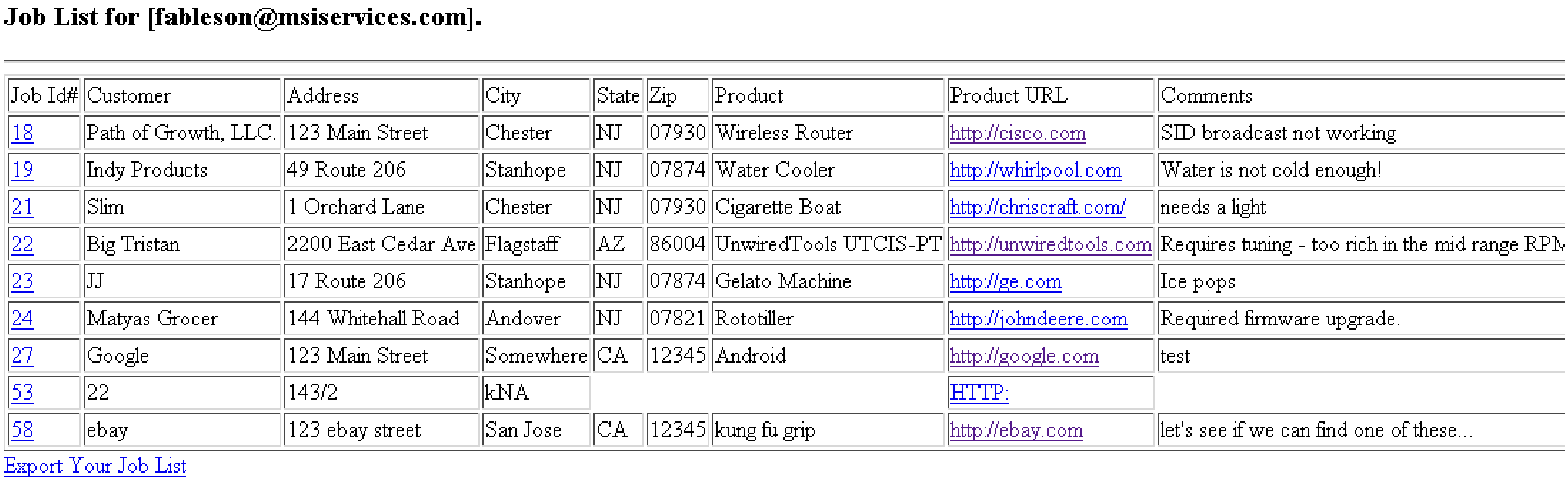
closejob.php

Dispatch functions

Distributed dispatchers

Application in action – Data

http://android12.msi-wireless.com

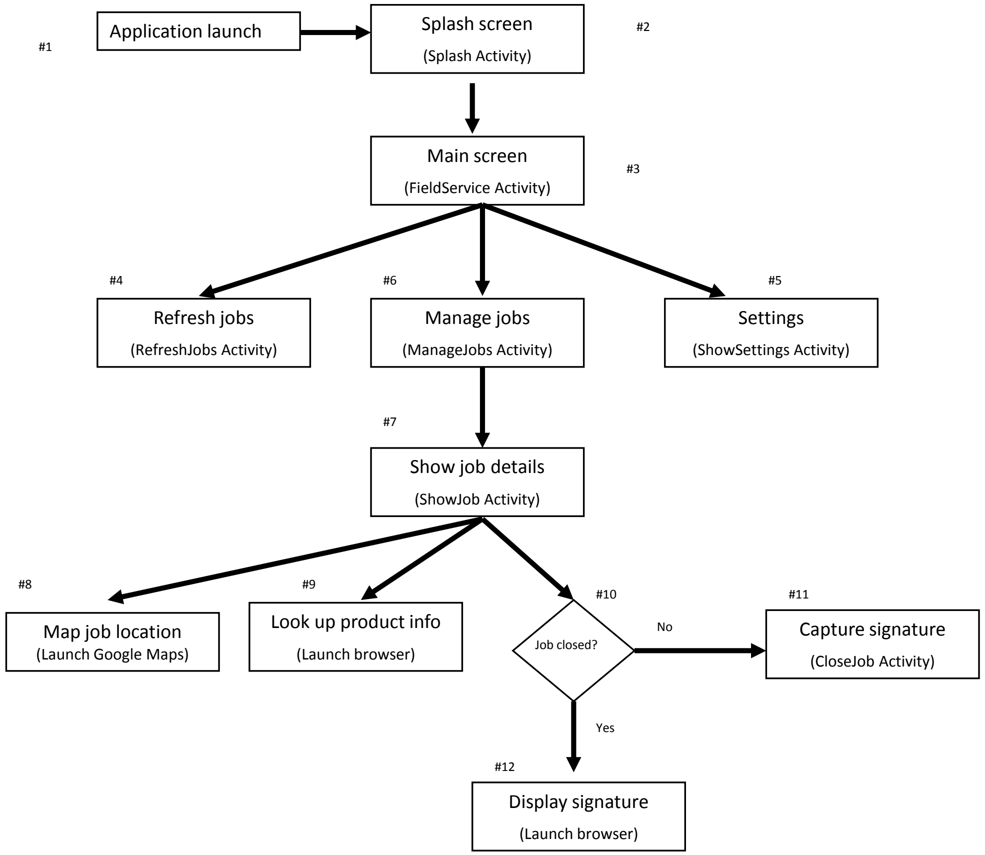


Job List for [fableson@msiservices.com].

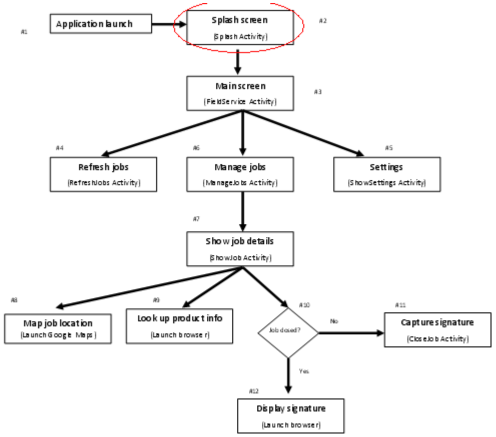
Job Id#	Customer	Address	City	State	Zip	Product	Product URL	Comments
18	Path of Growth, LLC.	123 Main Street	Chester	NJ	07930	Wireless Router	http://cisco.com	SID broadcast not working
19	Indy Products	49 Route 206	Stanhope	NJ	07874	Water Cooler	http://whirlpool.com	Water is not cold enough!
21	Slim	1 Orchard Lane	Chester	NJ	07930	Cigarette Boat	http://chriscraft.com/	needs a light
22	Big Tristan	2200 East Cedar Ave	Flagstaff	AZ	86004	UnwiredTools UTCIS-PT	http://unwiredtools.com	Requires tuning - too rich in the mid range RPM
23	JJ	17 Route 206	Stanhope	NJ	07874	Gelato Machine	http://ge.com	Ice pops
24	Matyas Grocer	144 Whitehall Road	Andover	NJ	07821	Rototiller	http://johndeere.com	Required firmware upgrade.
27	Google	123 Main Street	Somewhere	CA	12345	Android	http://google.com	test
53	22	143/2	kNA				HTTP:	
58	ebay	123 ebay street	San Jose	CA	12345	kung fu grip	http://ebay.com	let's see if we can find one of these...

Export Your Job List

Application Flow



Application in action - Splash



#1 Application launch

#2 Splash screen (Splash Activity)

#3 Mainscreen (FieldService Activity)

#4 Refresh jobs (RefreshJobs Activity)

#6 Manage jobs (ManageJobs Activity)

#5 Settings (ShowSettings Activity)

#7 Show job details (ShowJob Activity)

#8 Map job location (Launch Google Maps)

#9 Look up product info (Launch browser)

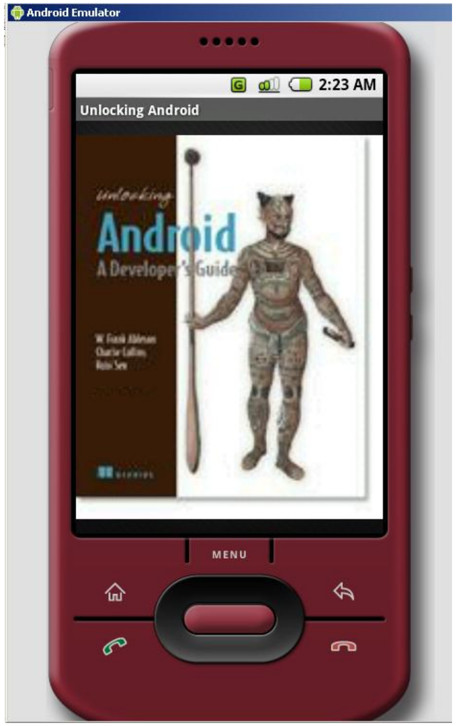
#10 Job closed?

No

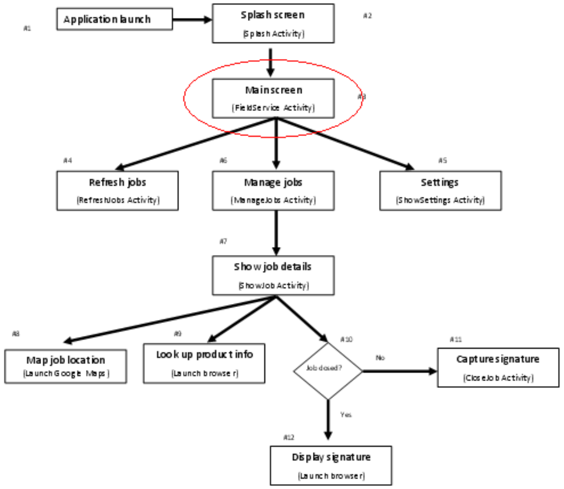
#11 Capture signature (CloseJob Activity)

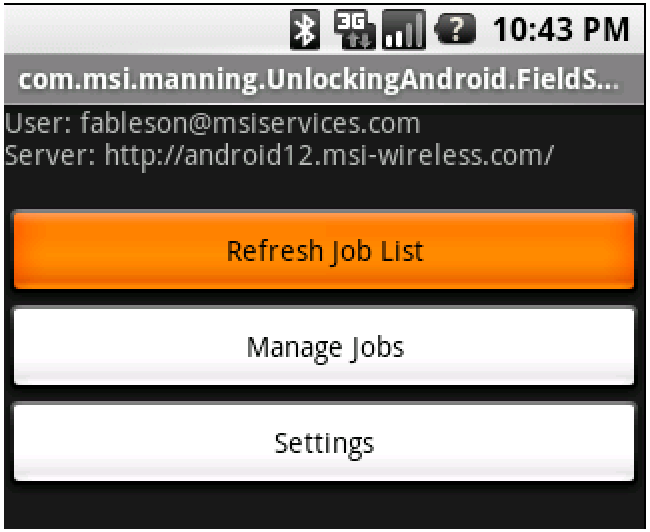
Yes

#12 Display signature (Launch browser)



Application in action – Main Screen

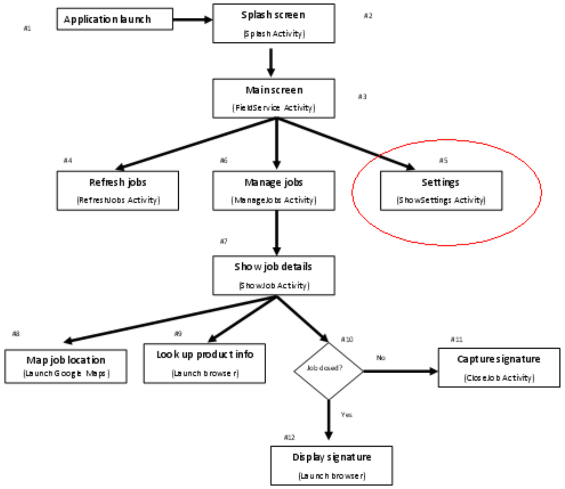


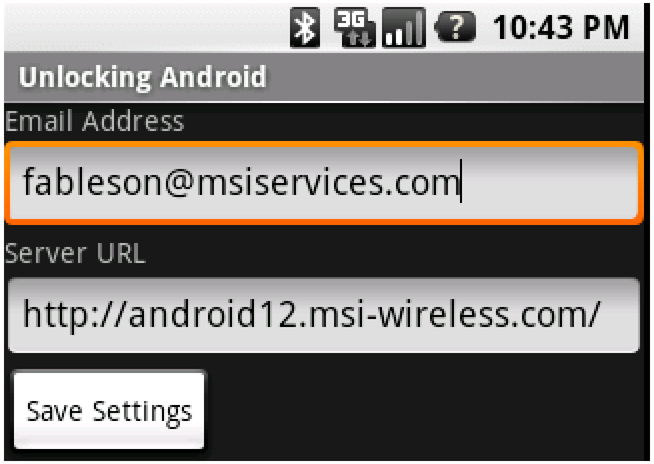


com.msi.manning.UnlockingAndroid.FieldS...

User: fableson@msiservices.com
Server: http://android12.msi-wireless.com/

Application in action - Settings





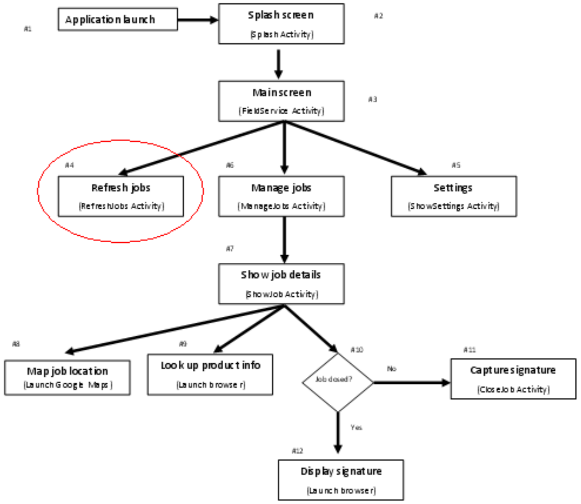
Email Address

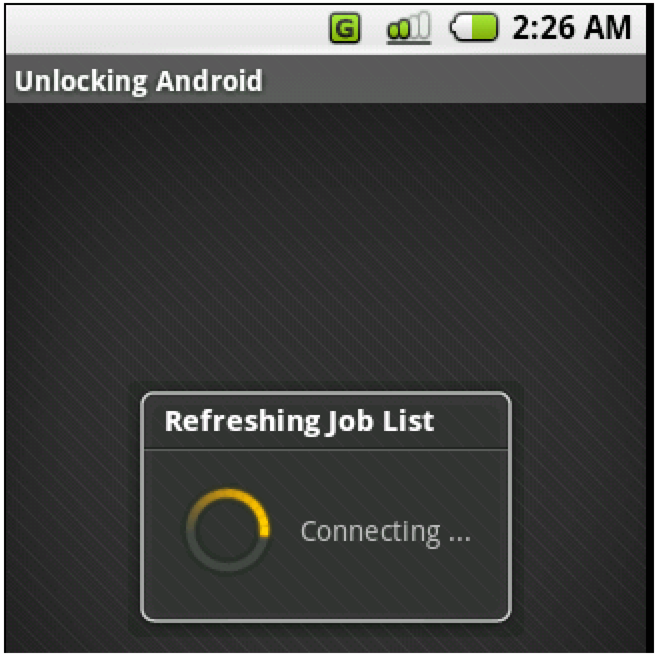
fableson@msiservices.com

Server URL

http://android12.msi-wireless.com/

Application in action – Refresh



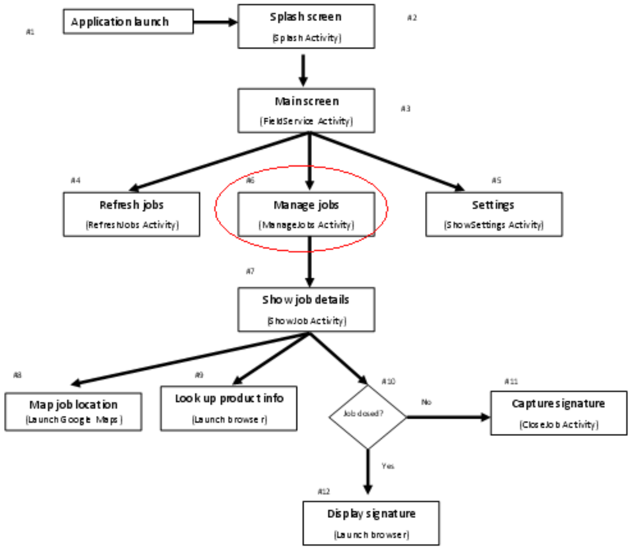


Unlocking Android

Refreshing Job List

Connecting ...

Application in action – Job List



#1 Application launch

#2 Splash screen (Splash Activity)

#3 Mainscreen (FieldService Activity)

#4 Refresh jobs (RefreshJobs Activity)

#6 Manage jobs (ManageJobs Activity)

#5 Settings (ShowSettings Activity)

#7 Show job details (ShowJob Activity)

#8 Map job location (Launch Google Maps)

#9 Look up product info (Launch browser)

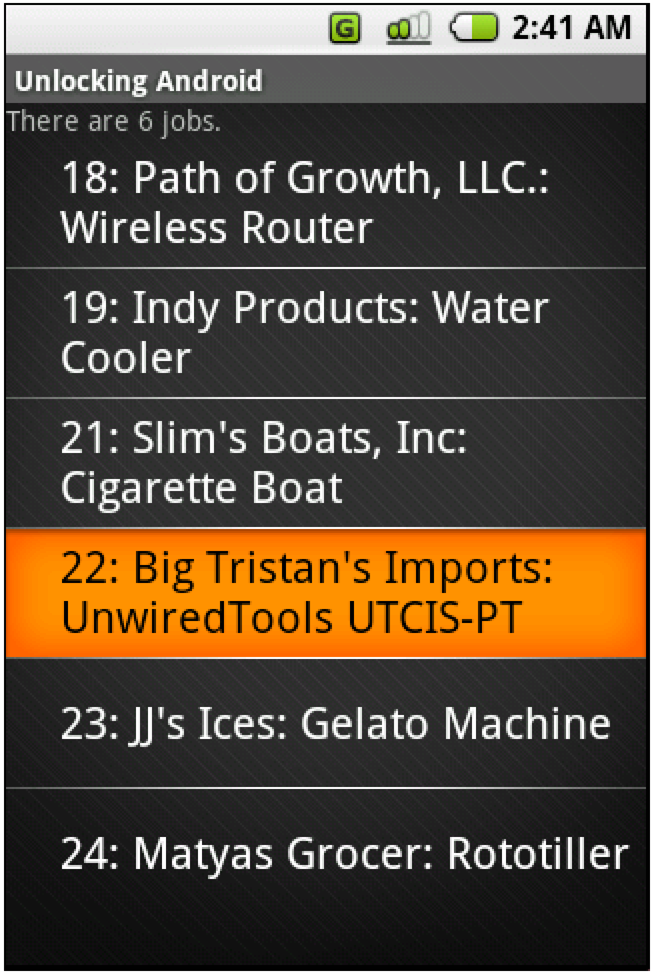
#10 Job closed?

No

#11 Capture signature (CloseJob Activity)

Yes

#12 Display signature (Launch browser)



Unlocking Android

There are 6 jobs.

18: Path of Growth, LLC.: Wireless Router

19: Indy Products: Water Cooler

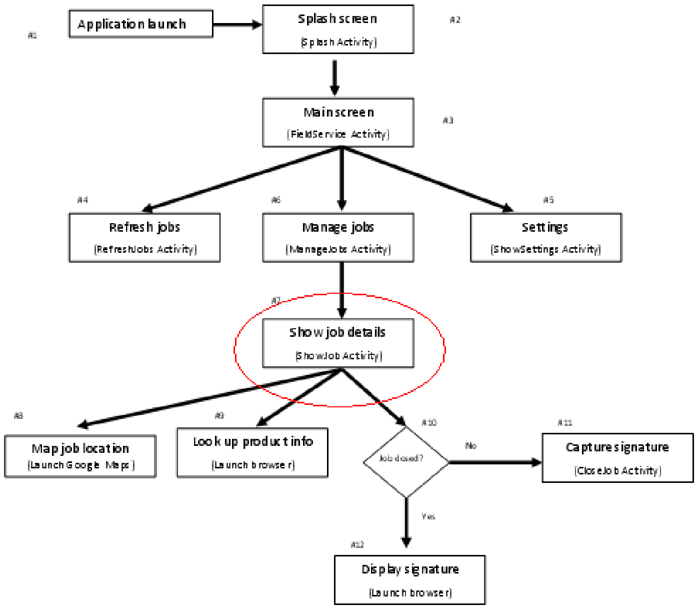
21: Slim's Boats, Inc: Cigarette Boat

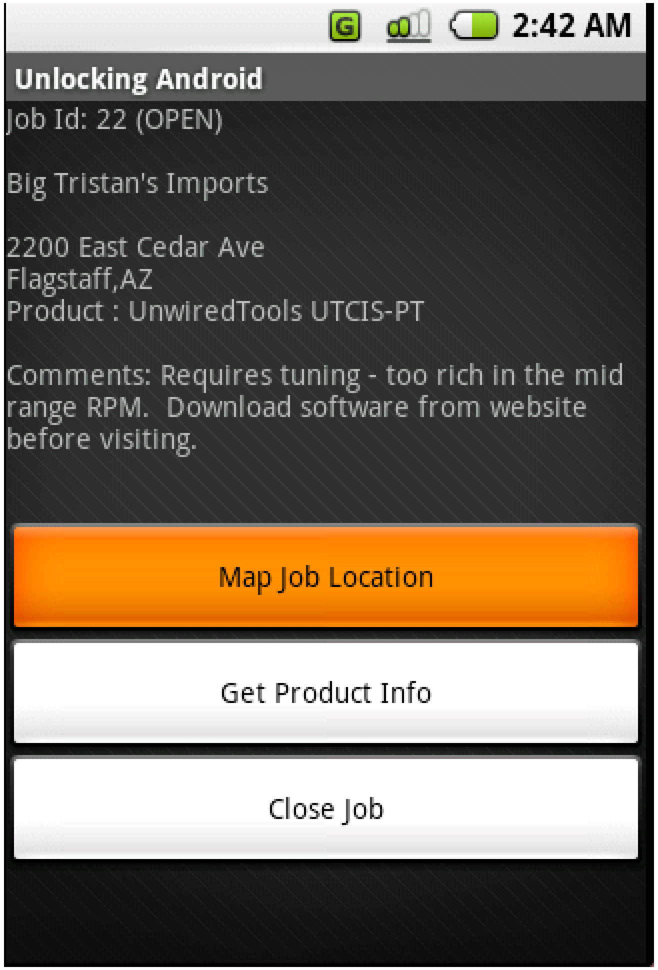
22: Big Tristan's Imports: UnwiredTools UTCIS-PT

23: JJ's Ices: Gelato Machine

24: Matyas Grocer: Rototiller

Application in action - Details





Unlocking Android

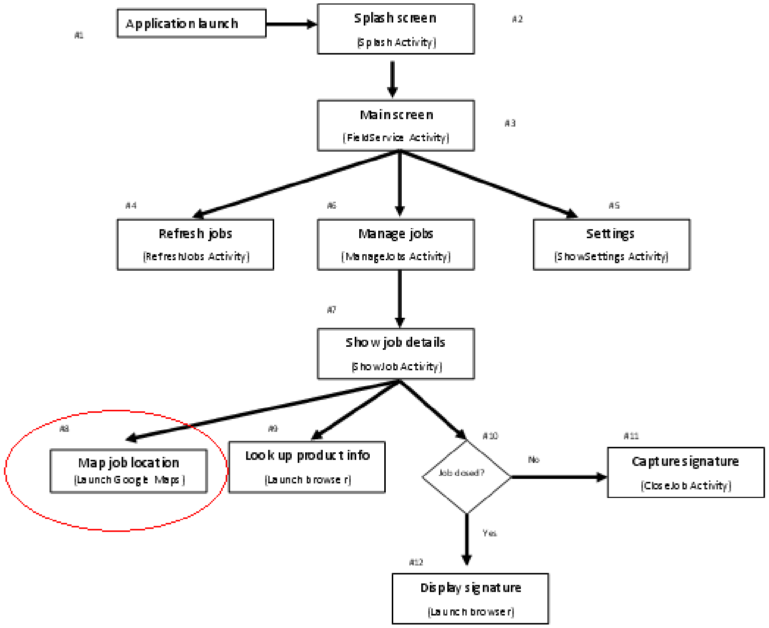
Job Id: 22 (OPEN)

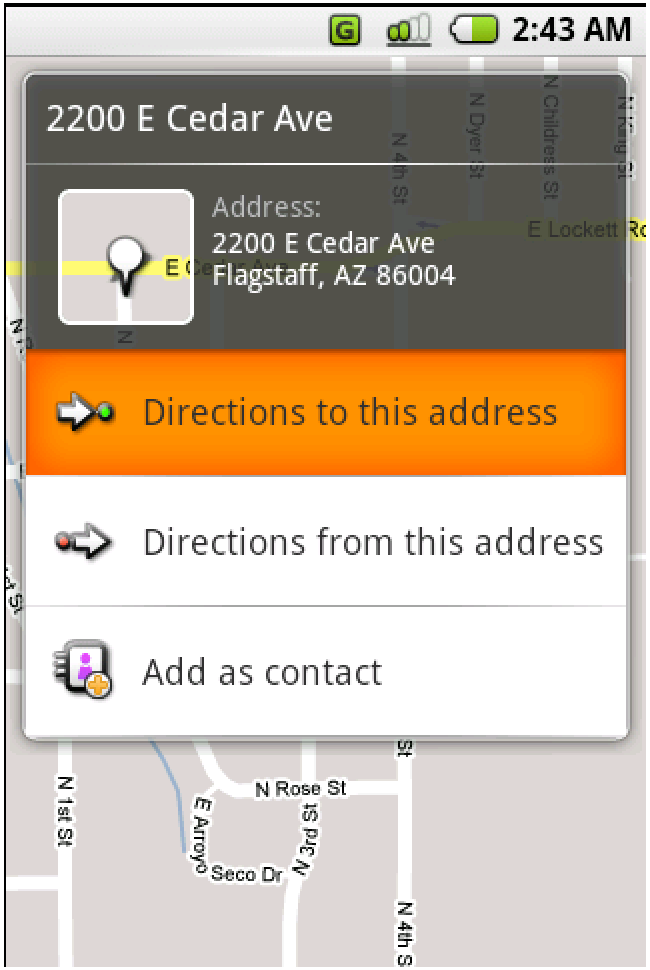
Big Tristan's Imports

2200 East Cedar Ave
Flagstaff,AZ
Product : UnwiredTools UTCIS-PT

Comments: Requires tuning - too rich in the mid range RPM. Download software from website before visiting.

Application in action – Mapping

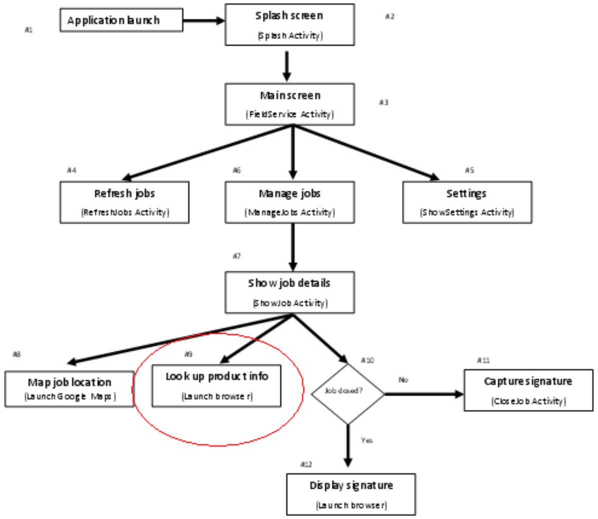


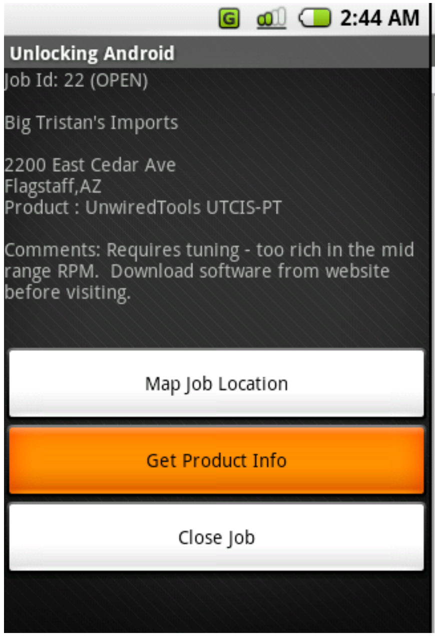


2200 E Cedar Ave

Address:
2200 E Cedar Ave
Flagstaff, AZ 86004

Application in action – Product Info



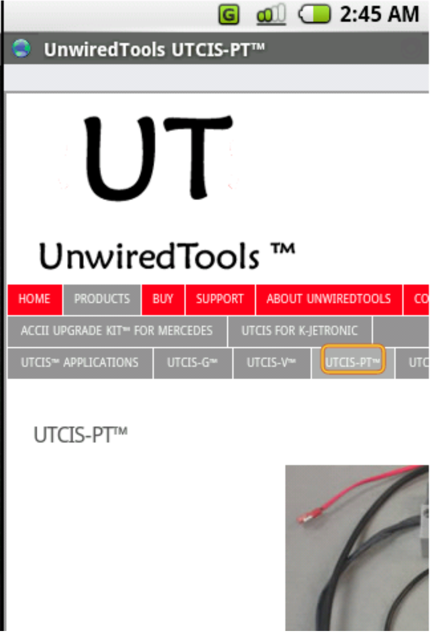


Job Id: 22 (OPEN)

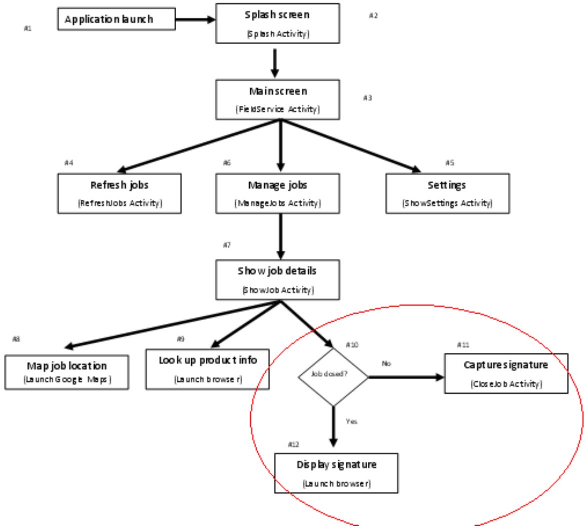
Big Tristan's Imports

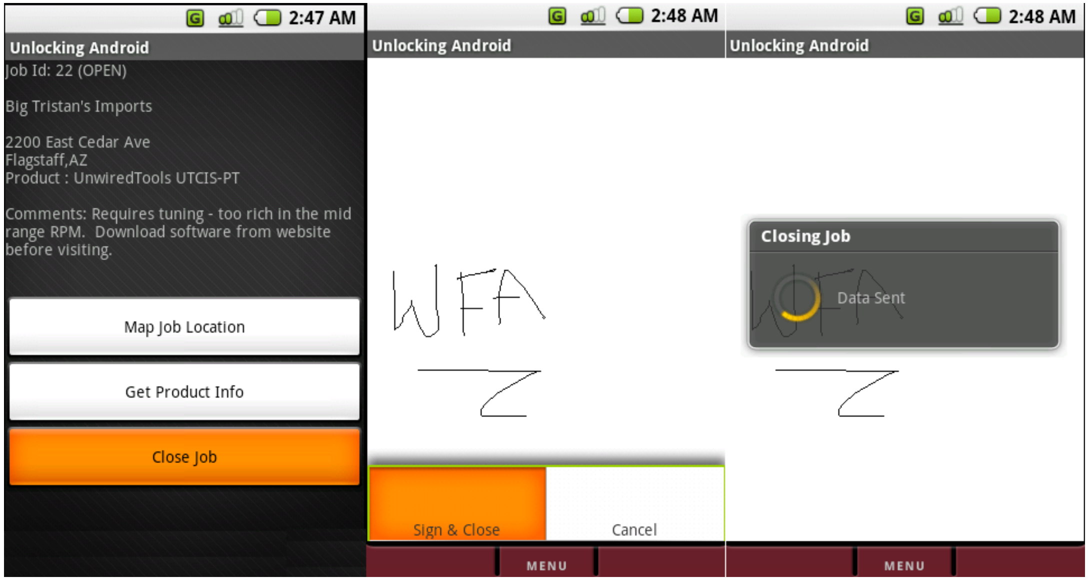
2200 East Cedar Ave
Flagstaff,AZ
Product : UnwiredTools UTCIS-PT

Comments: Requires tuning - too rich in the mid range RPM. Download software from website before visiting.



Application in action - Close





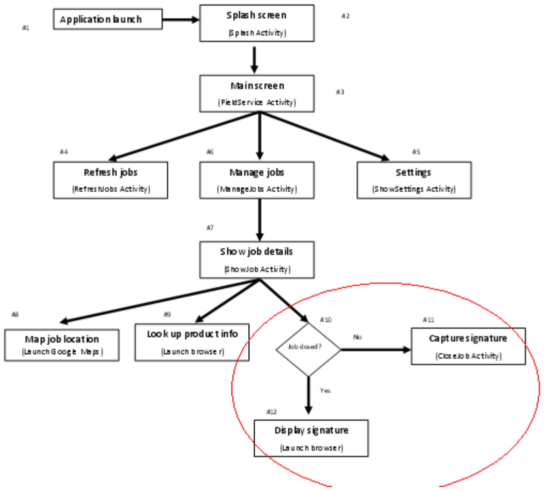
Job Id: 22 (OPEN)

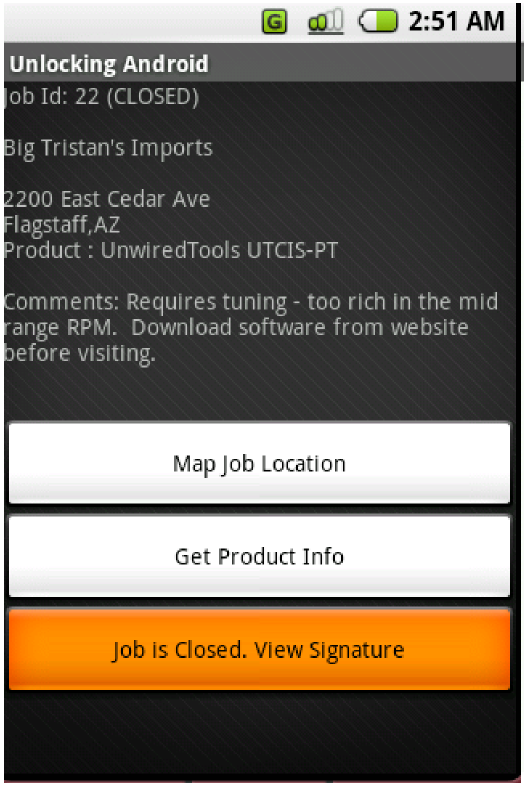
Big Tristan's Imports

2200 East Cedar Ave
Flagstaff,AZ
Product : UnwiredTools UTCIS-PT

Comments: Requires tuning - too rich in the mid range RPM. Download software from website before visiting.

Application in action – After Close





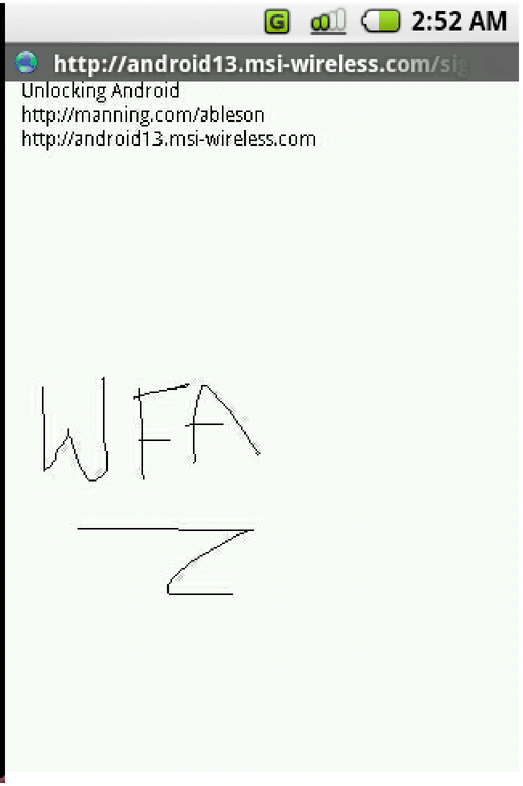
Unlocking Android

Job Id: 22 (CLOSED)

Big Tristan's Imports

2200 East Cedar Ave
Flagstaff,AZ
Product : UnwiredTools UTCIS-PT

Comments: Requires tuning - too rich in the mid range RPM. Download software from website before visiting.



Unlocking Android
http://manning.com/ableson
http://android13.msi-wireless.com

WFA

Source Code Roadmap

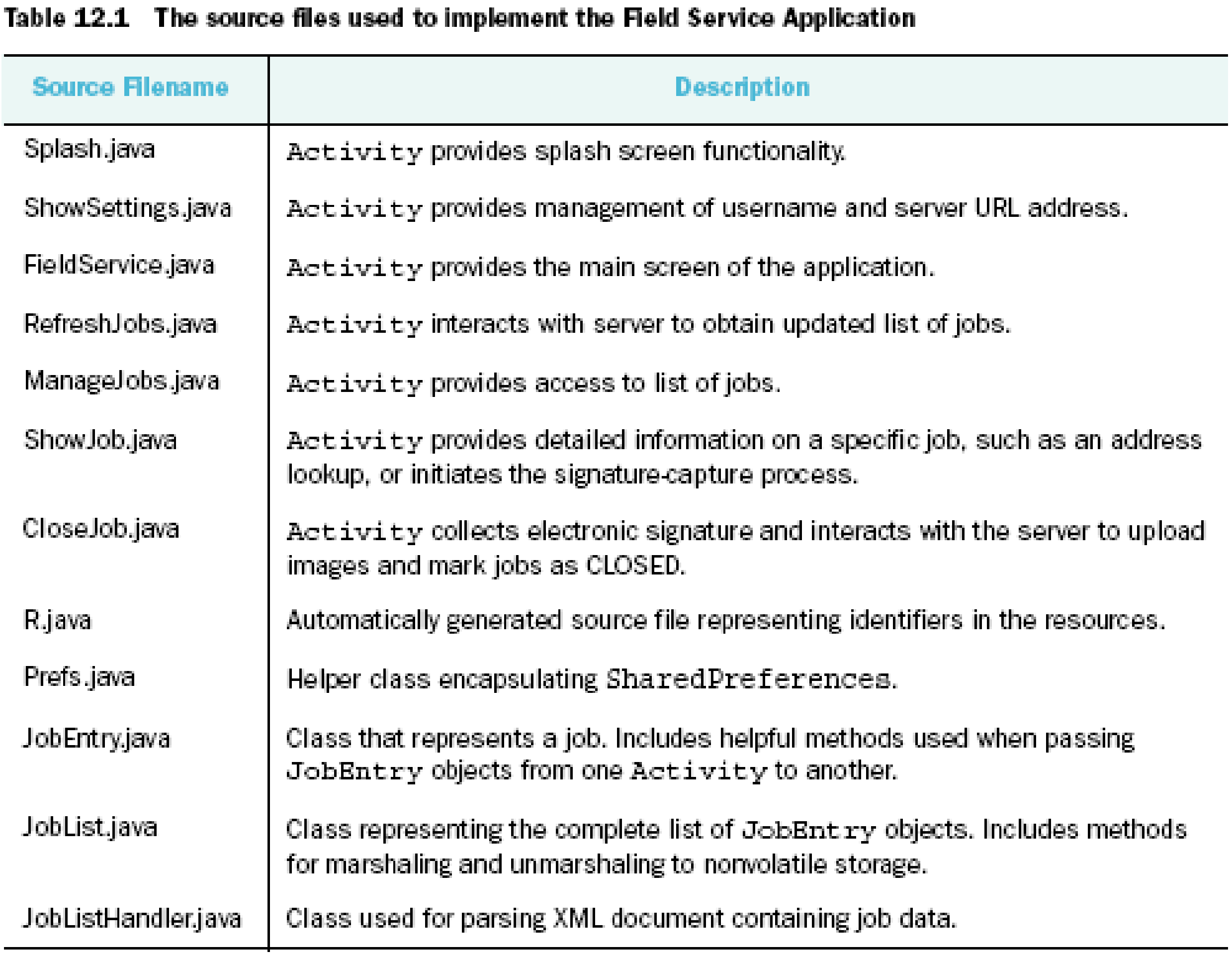
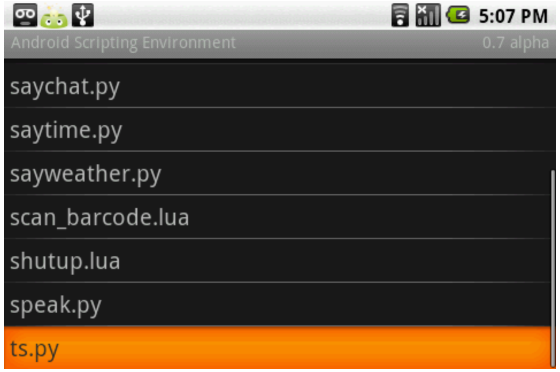


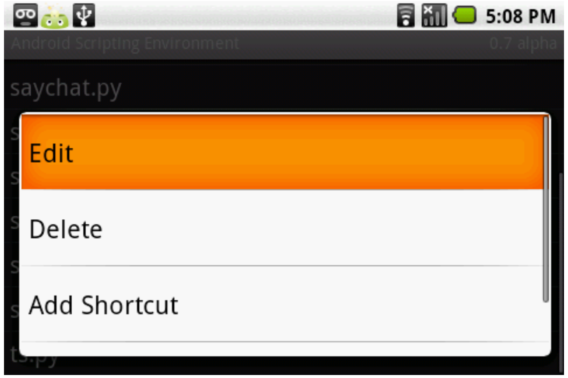
Table 12.1 The source files used to implement the Field Service Application

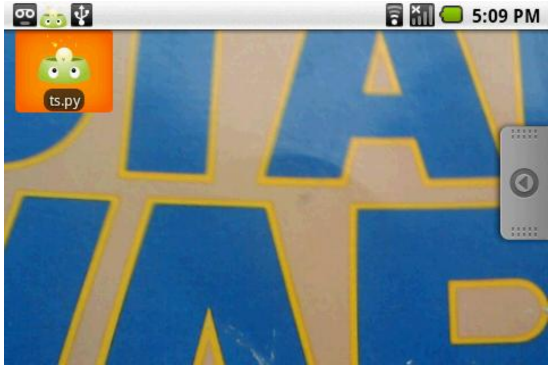
Source Filename	Description
Splash.java	`Activity` provides splash screen functionality.
ShowSettings.java	`Activity` provides management of username and server URL address.
FieldService.java	`Activity` provides the main screen of the application.
RefreshJobs.java	`Activity` interacts with server to obtain updated list of jobs.
ManageJobs.java	`Activity` provides access to list of jobs.
ShowJob.java	`Activity` provides detailed information on a specific job, such as an address lookup, or initiates the signature-capture process.
CloseJob.java	`Activity` collects electronic signature and interacts with the server to upload images and mark jobs as CLOSED.
R.java	Automatically generated source file representing identifiers in the resources.
Prefs.java	Helper class encapsulating `SharedPreferences`.
JobEntry.java	Class that represents a job. Includes helpful methods used when passing `JobEntry` objects from one `Activity` to another.
JobList.java	Class representing the complete list of `JobEntry` objects. Includes methods for marshaling and unmarshaling to nonvolatile storage.
JobListHandler.java	Class used for parsing XML document containing job data.

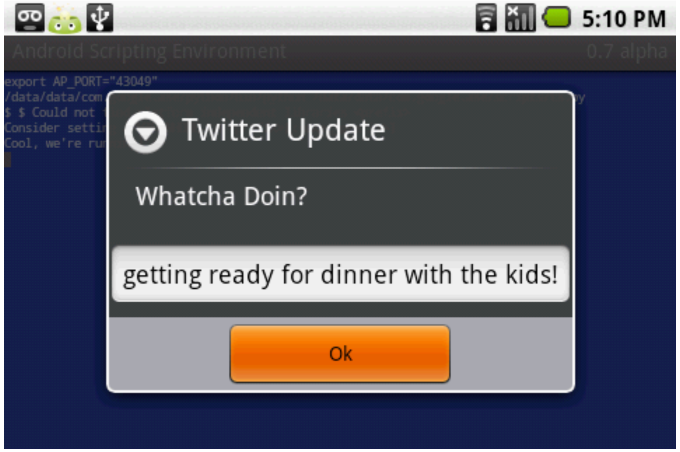
Twitter with the Android Scripting Environment



saychat.py
saytime.py
sayweather.py
scan_barcode.lua
shutup.lua
speak.py
ts.py





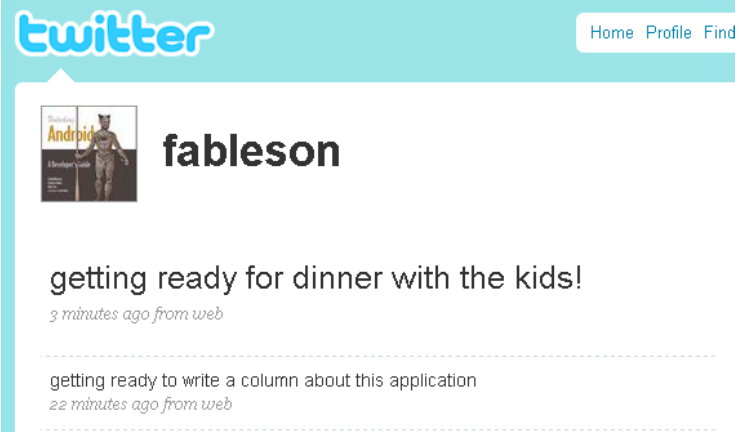


```
export AP_PORT="43049"
/data/data/com
$ $ Could not
Consider setti
Cool, we're ru
```

Twitter Update

Whatcha Doin?

getting ready for dinner with the kids!



fableson

getting ready for dinner with the kids!
3 minutes ago from web

getting ready to write a column about this application
22 minutes ago from web

Twitter Python Code

```
import android      # core Android routines
import httplib      # for talking to web servers
import urllib       # to format our status update nicely
import base64       # to encode our username and password for Basic authentication

print 'Cool, we're running!'      # sorry, had to do this...

# get an instance of Android
droid = android.Android()

# where are we posting data to?
twitterhost = 'twitter.com'
uri = '/statuses/update.xml?'

# get our status update from user
statusmsg = droid.getInput('Twitter Update','Whatcha Doin?')

#extract the "textual" portion of the response
statusdata = "%(result)s" % statusmsg

# uncomment the next line to display the message to the terminal screen
#print statusdata

# uncomment the next line to display a notification to the user
#droid.makeToast(statusdata)

# clean up the data so it can be sent as the 'querystring'
statusupdate = urllib.urlencode({'status':statusdata})

# setup your username and password here...
username = 'yourusernamehere'
password = 'yourpasswordhere'

credentials = username + ":" + password

# uncomment the next line to see what credentials you are using....
#print credentials

encodedcredentials = base64.encodestring(credentials)
```

```
# connect to server
h = httplib.HTTP(twitterhost)

# build url we want to request
fullurl = uri + statusupdate

#uncomment the next line to see the url printed
#print fullurl

# POST our data.  Twitter requires status updates to be POSTed
h.putrequest('POST',uri + statusupdate)

# setup the authentication header
h.putheader('Authorization','Basic ' + base64.encodestring(credentials))

# setup the user agent
h.putheader('user-agent','Android-Scripting-Engine-Python')

# we're done with the headers....
h.endheaders()

# get the response from the request
returncode,returnmsg,headers = h.getreply()

# should compare the returncode to 200 for a good response, etc.

#display whatever the results are....
f = h.getfile()
print f.read()
```

Linux Magazine Mobile Column

Author Archive

Open Source Solution for Multiple Mobile Platforms There is a never ending debate about which platform is best: Android, iPhone, Palm, BlackBerry, Windows Mobile, or Symbian. But what if the correct answer is … JavaScript? Is this a joke? Not according to an open source project named PhoneGap.
July 20, 2009

Best Practices for Troubleshooting Mobile Software During software projects, you often have to eat some bugs. Just try not to chew on them.
July 13, 2009

Open Source iPhone Dev: XML to the Rescue? Can a project originating from San Francisco State University bridge the digital divide and bring true open source development to the iPhone platform? It looks promising, but the climb is steep and the gap is wide.
July 6, 2009

An Open Source Recipe for the iPhone The platform that has defined “cool” for years has not had a reputation for being an open platform, but that hasn’t discouraged a number of open source projects for iPhone/iPod Touch.
June 30, 2009

Is Palm a Player or Just a Pre-Tender? Once the leader and innovator in all things mobile, in recent years Palm has barely kept up with the pack, let alone acted as a leader. With the introduction of the Palm Pre it appears that open source technology is helping bring Palm back from the edge of irrelevancy.
June 23, 2009

Writing an Android Twitter Client with Python Get up and running with the Android Scripting Environment. Whip up a Twitter update app in a matter of minutes and tell everyone what sandwich you’re eating from within Android!
June 16, 2009

Is Android The Perfect Mobile Software Platform? Is Android an iPhone killer or is it just another failed attempt at taking Linux mainstream on a mobile phone?
June 8, 2009

Contact info

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http://www.linux-mag.com/blogs/fableson