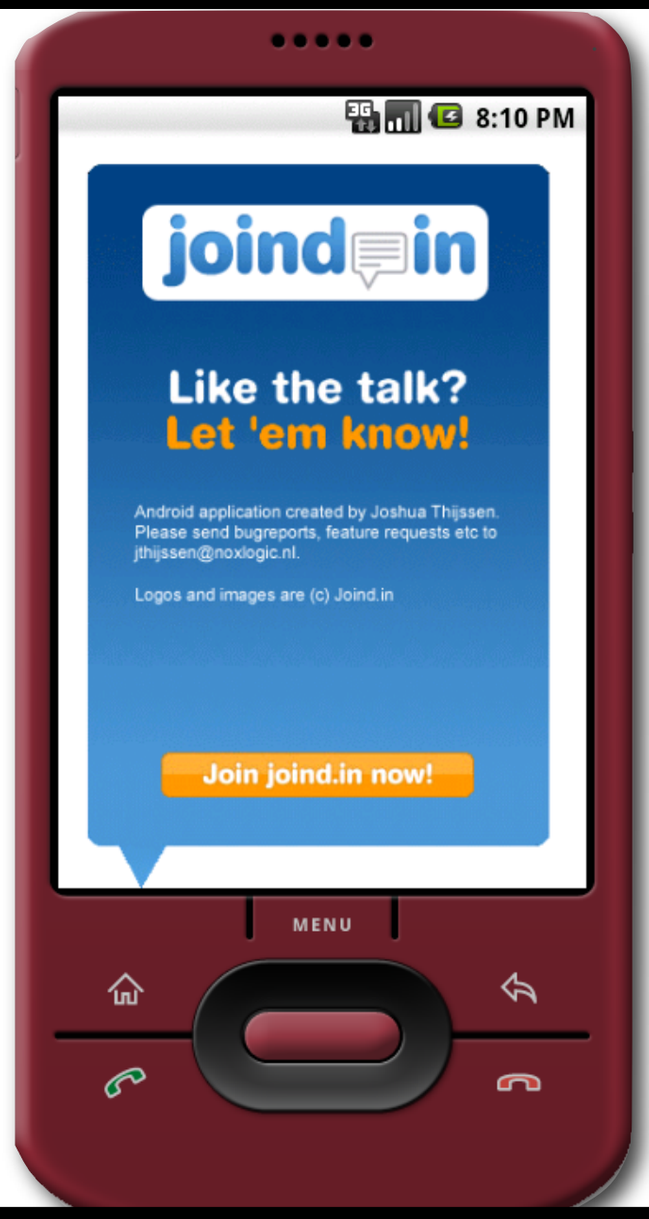
The Joind.in Android App

A story about Android programming, API compatibility and the lessons learned...



#4developers - 4 april 2011
Warsaw - Poland

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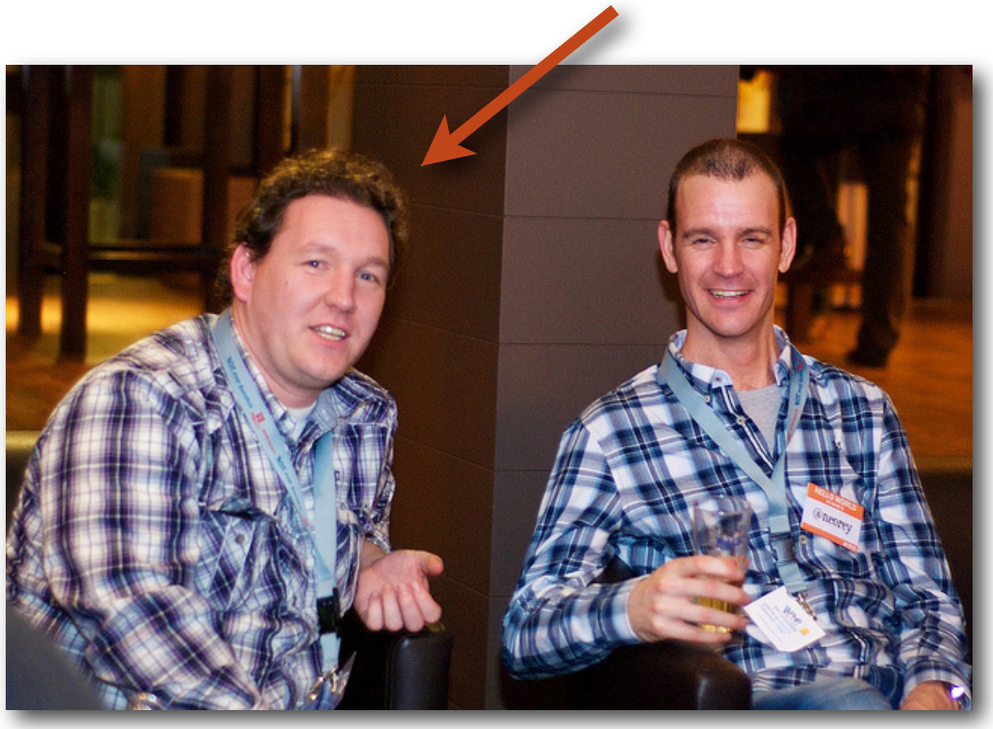
Who am I?



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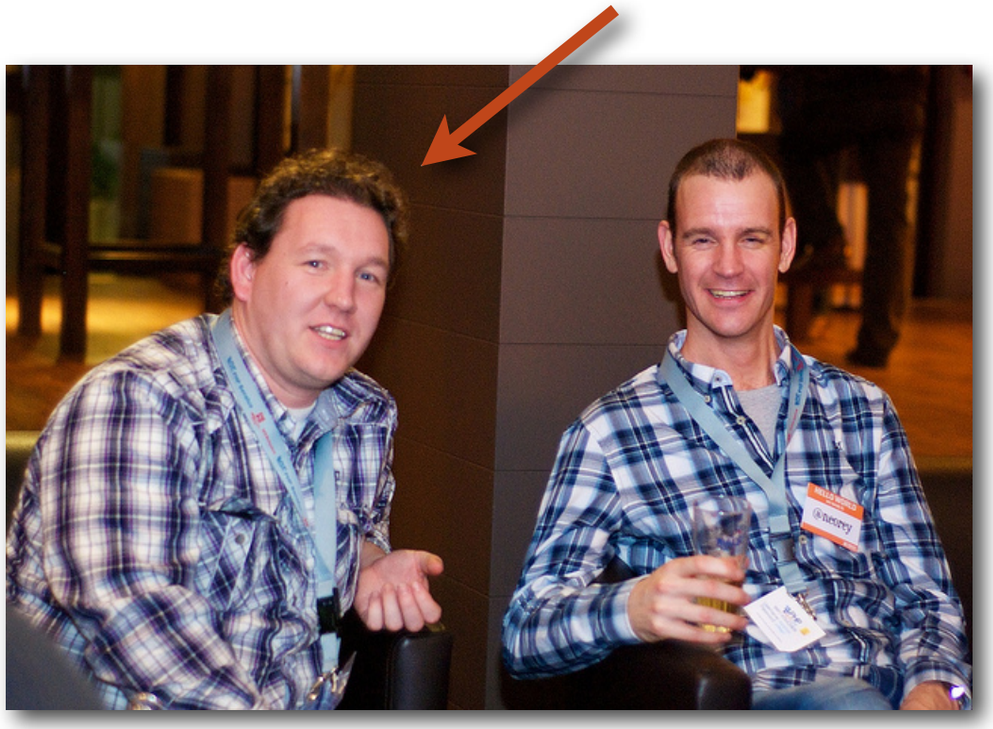
Who am I?

Joshua Thijssen (32)



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Development in PHP, Python, Perl,
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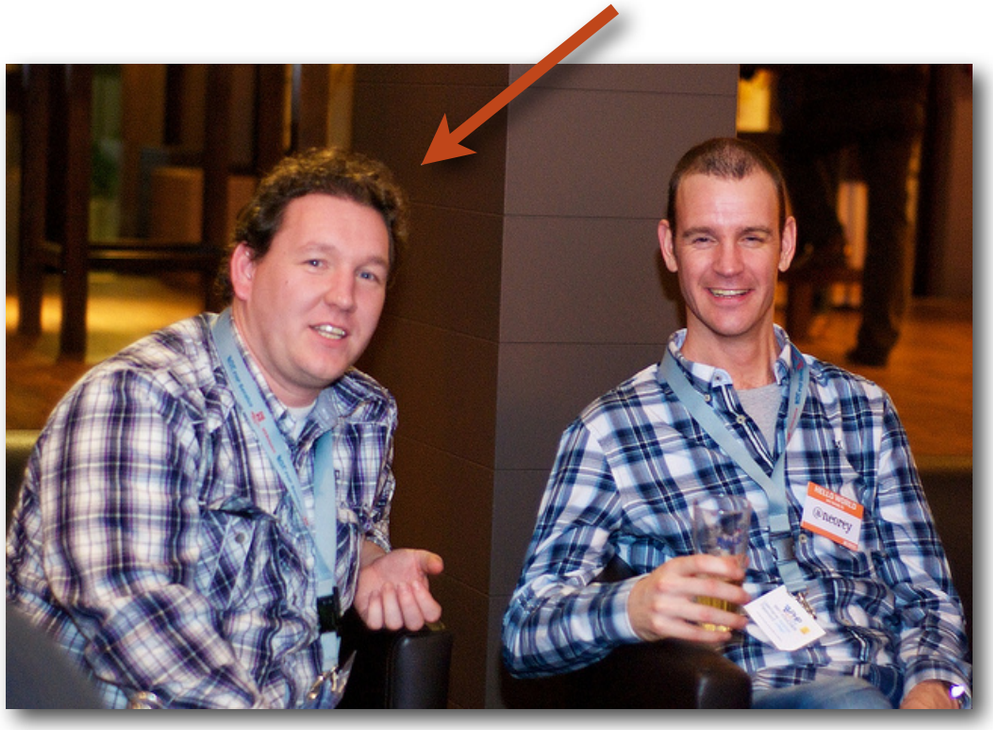
http://www.enrise.com/blog



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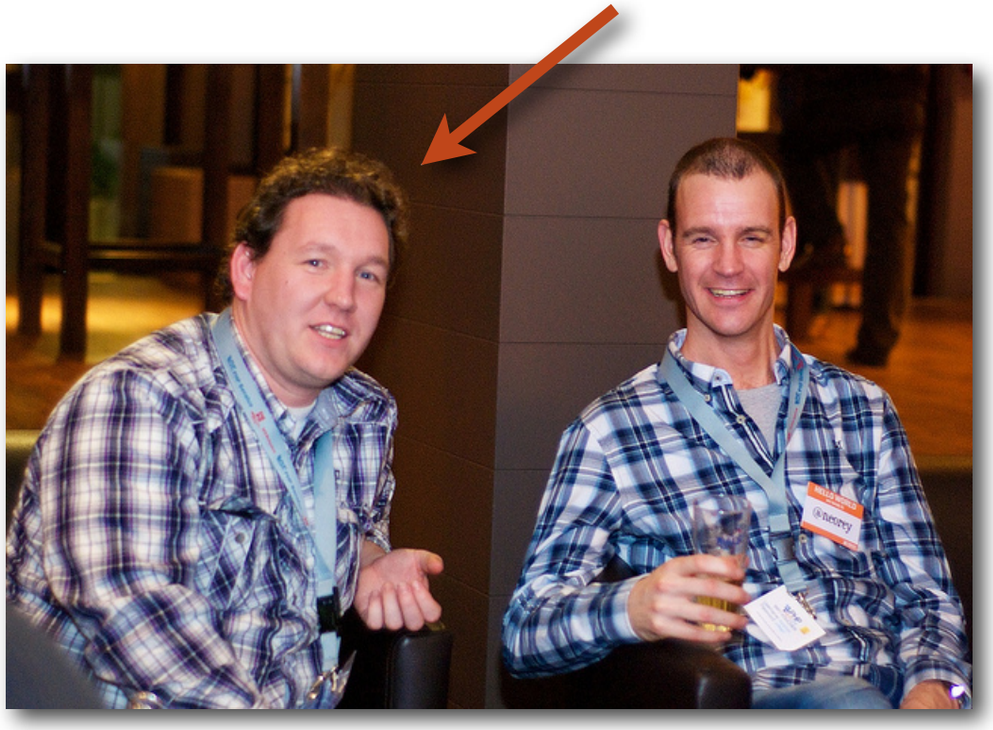

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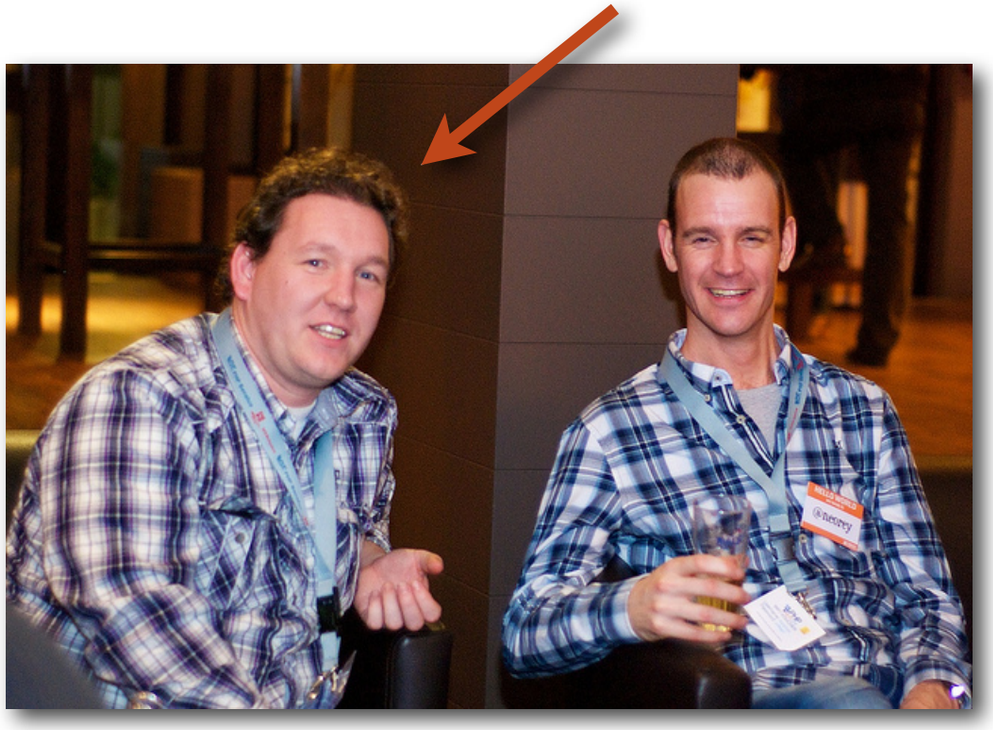
Email: joshua@enrise.com

Twitter: @jaytaph
Identi.ca: jaytaph



Certified MySQL 5.0 Database Administrator
Certified MySQL 5.0 Developer
Linux Professional Institute LPIC-2
Linux Professional Institute LPIC-1
Zend Certified Engineer PHP 5
Zend Certified Engineer PHP 5.3
Zend Certified Engineer Zend Framework

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What is this talk about?

- QUESTIONS? RAISE YOUR HAND OR YELL LOUD

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What is this talk about?

- The story about the joind.in website.

- QUESTIONS? RAISE YOUR HAND OR YELL LOUD

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What is this talk about?

- The story about the joind.in website.
- The story about the joind.in Android app.

- QUESTIONS? RAISE YOUR HAND OR YELL LOUD

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- The story about the joind.in website.
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- The story about mobile API connectivity.

- QUESTIONS? RAISE YOUR HAND OR YELL LOUD

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What is this talk about?

- The story about the joind.in website.
- The story about the joind.in Android app.
- The story about mobile API connectivity.
- The story about android programming.

- QUESTIONS? RAISE YOUR HAND OR YELL LOUD

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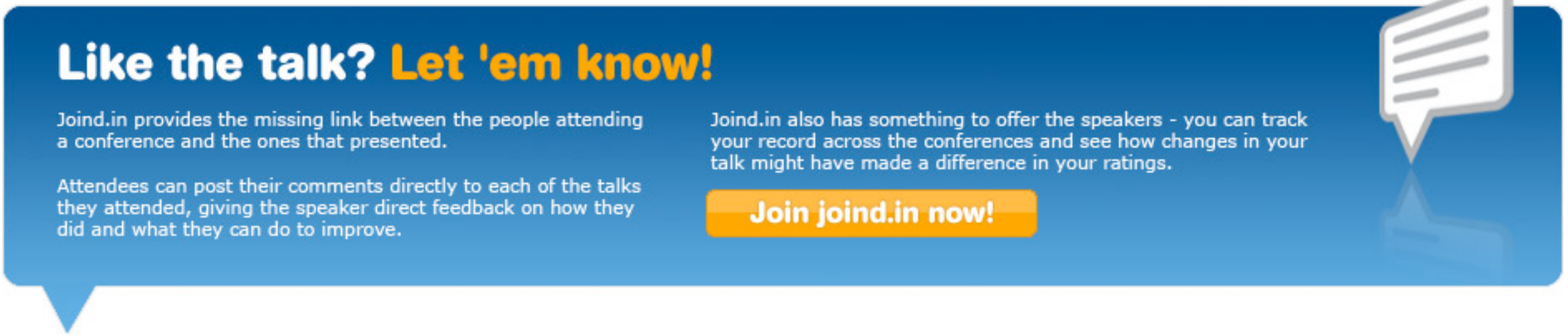
The story about joind.in



http://joind.in/inc/img/splash.jpg

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The story about joind.in (1)

- Launched by Chris Cornutt (phpdeveloper.org) in 2008
- Adopted by Lorna Mitchell and others.
- https://github.com/joindin/joind.in
- Large in the PHP community and gaining ground in others as well.

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The story about joind.in (2)

- A website for conference organizers and attendees.
- Find information and give feedback on conference talks (like this one).
- Helps speakers to improve their talks.
- Over 10K registered users and over 30K page views per month.

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The story about joind.in (3)

- What events are currently happening?
- Which talks are hot (or not)?
- Should I see talk X or Y?
- feedback = improvement
- your future conference planner

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The story about the joind.in android app

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The story about the joind.in android app (1)

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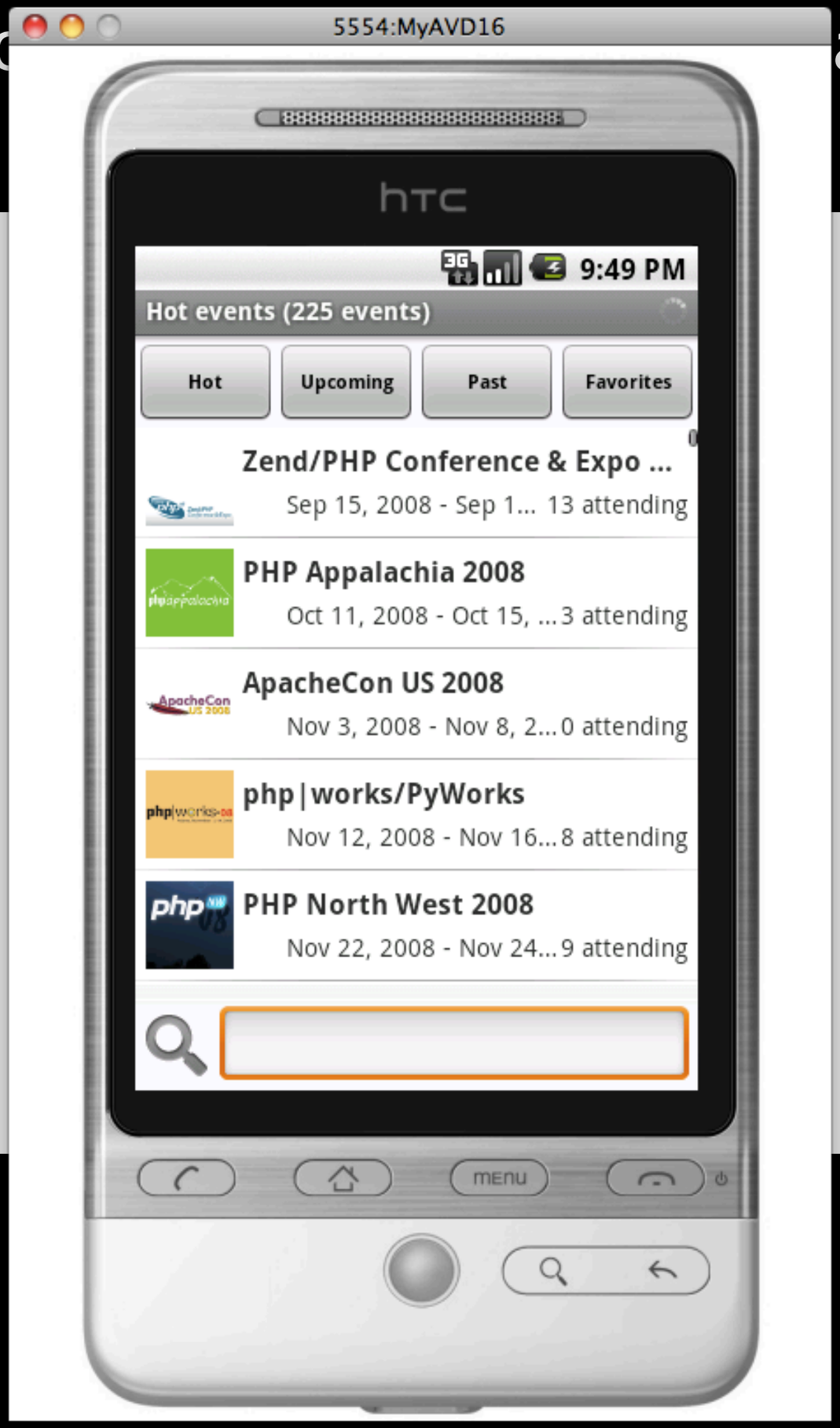
The story abo app (1)



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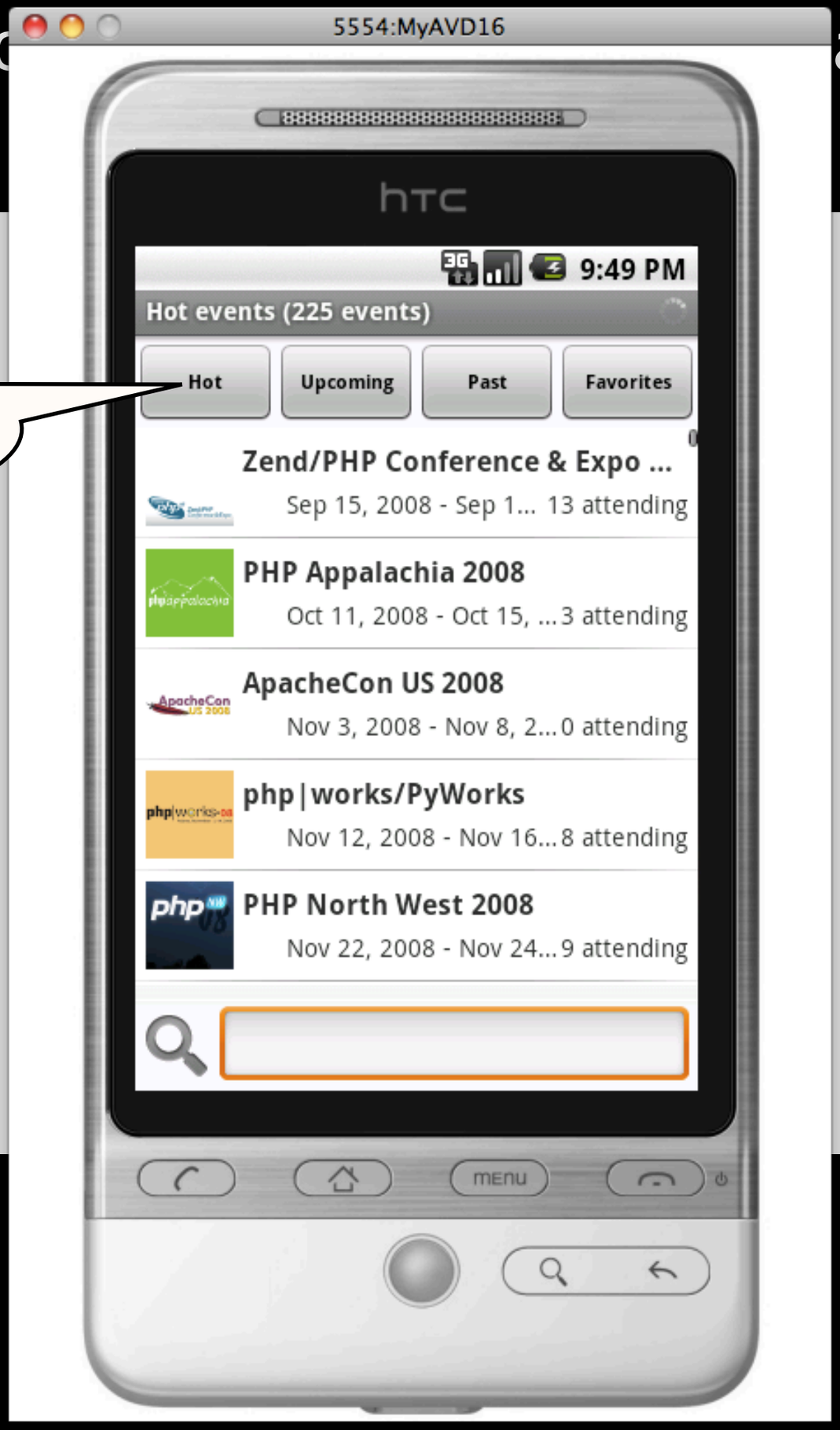
The story abo app (1)

Simple buttons

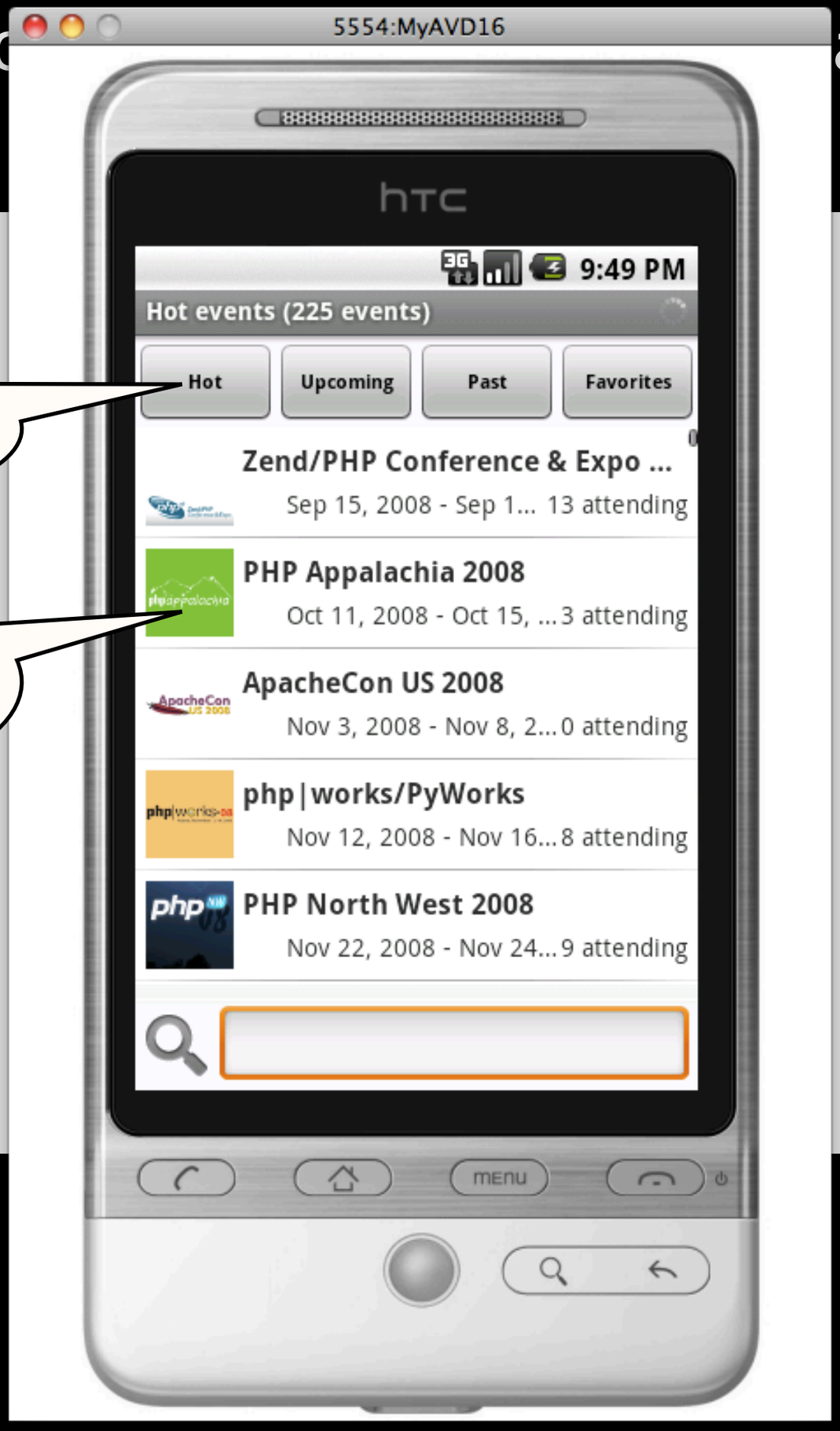


ENRISE

The story abo app (1)

Simple buttons

Loaded in separate thread



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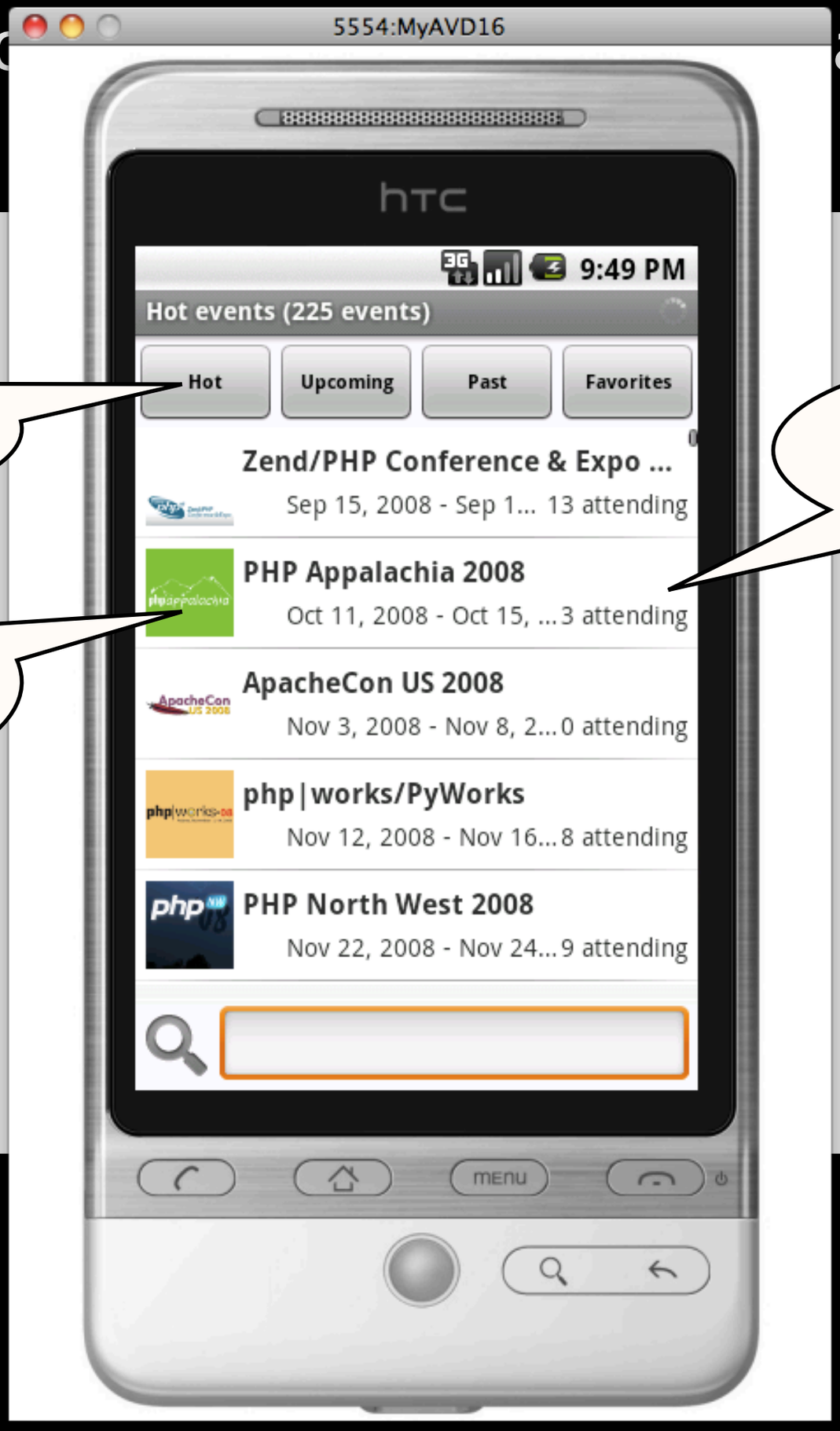
The story abo app (1)



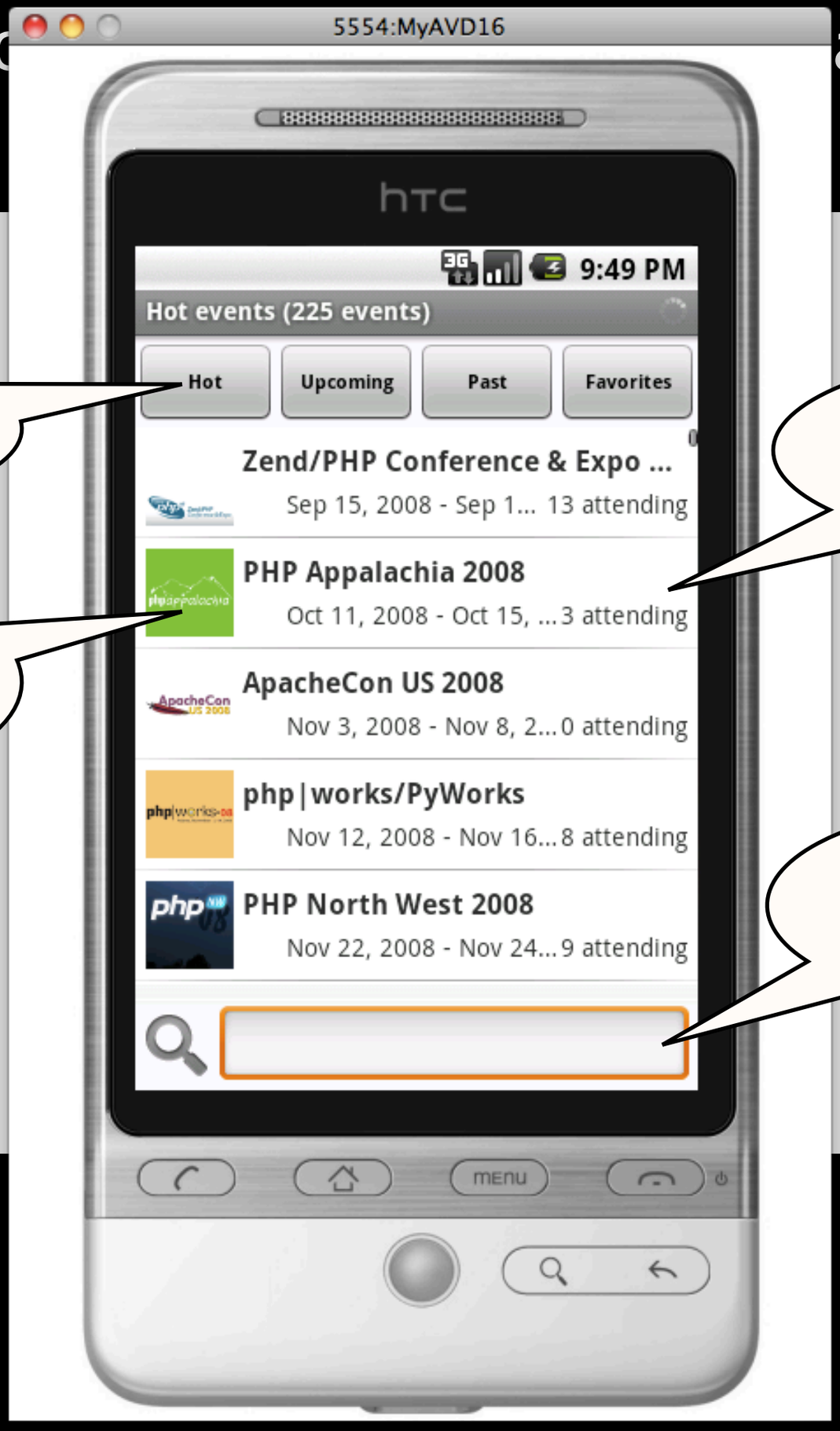
Simple buttons

Loaded in separate thread

"viewrow" inside listadapter

ENRISE

The story abo app (1)



Simple buttons

Loaded in separate thread

"viewrow" inside listadapter

Filtering / searchbox

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The story about the joind.in android app (1)

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The story about the joind.in android app (2)

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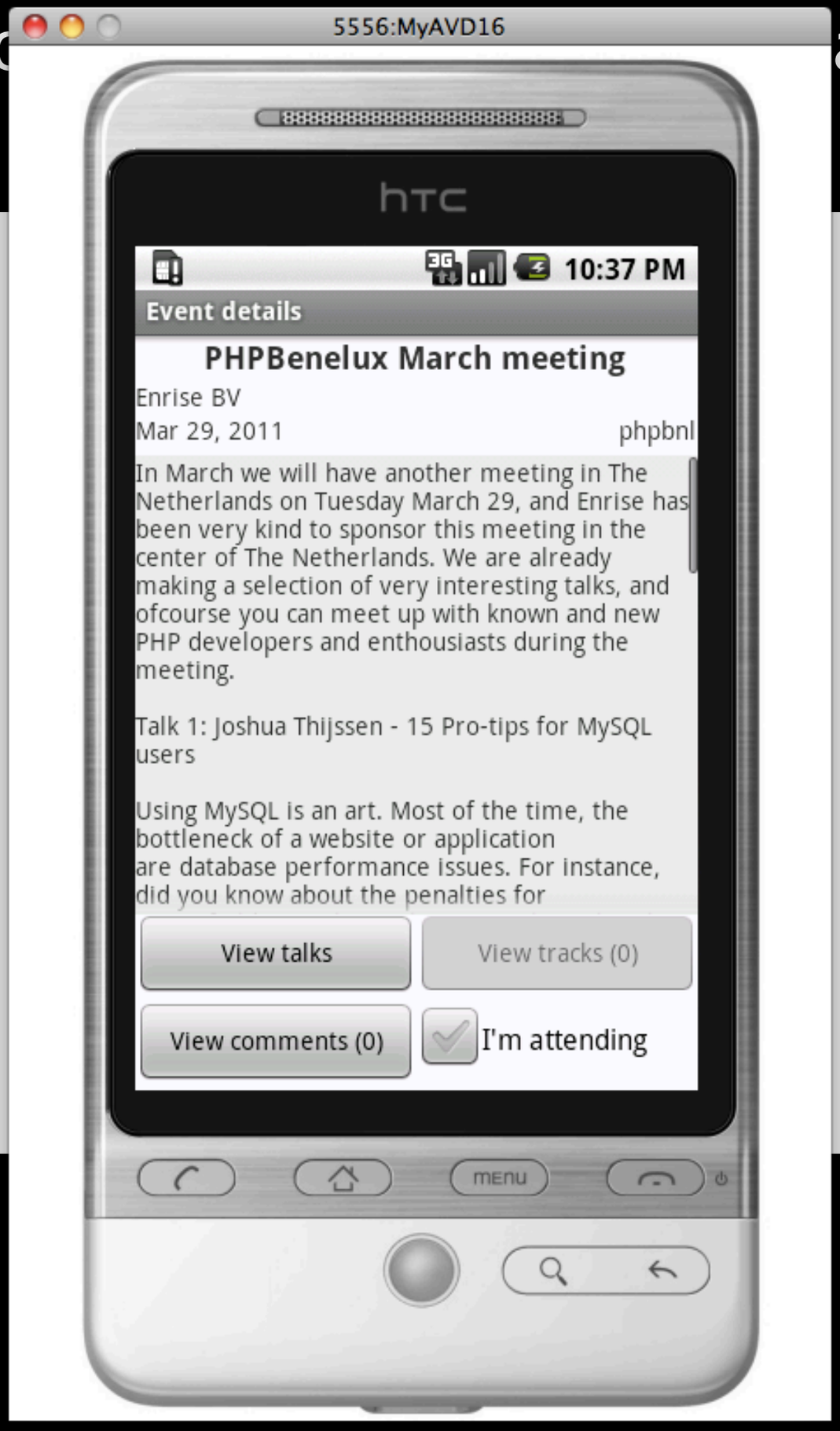
The story abo app (2)



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The story about the joind.in android app (2)

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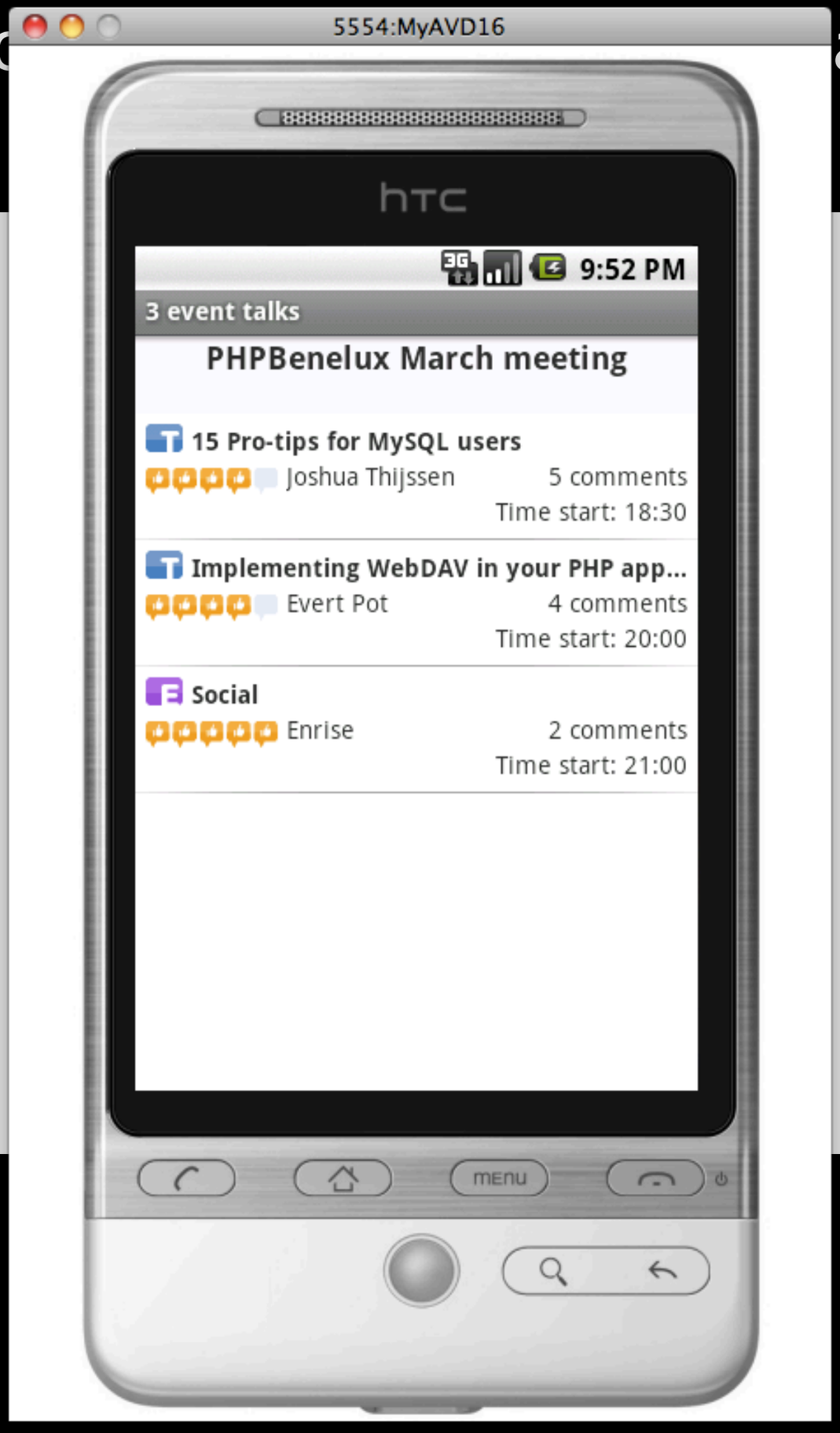
The story about the joind.in android app (3)

ENRISE

The story abo app (3)



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The story about the joind.in android app (3)

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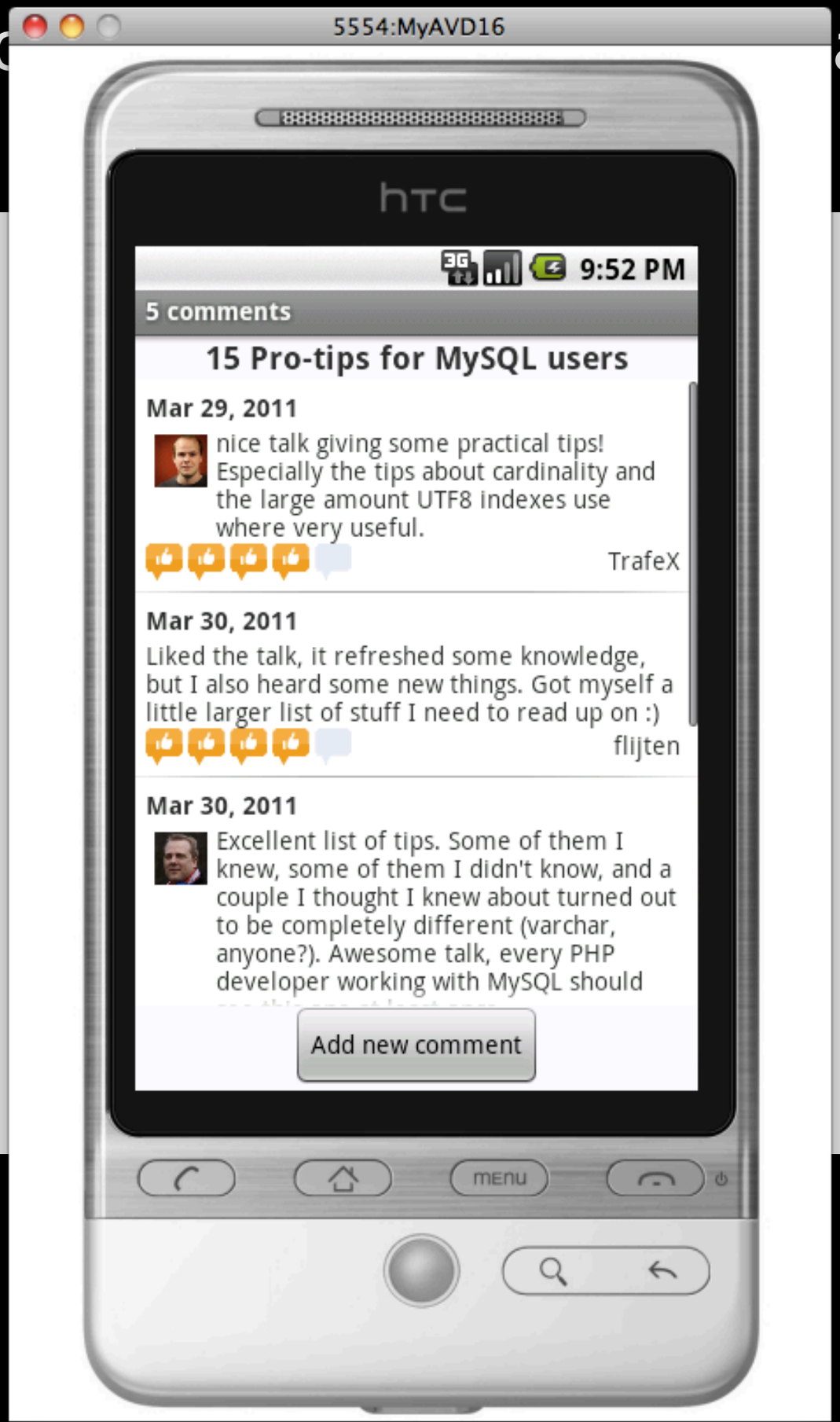
The story about the joind.in android app (4)

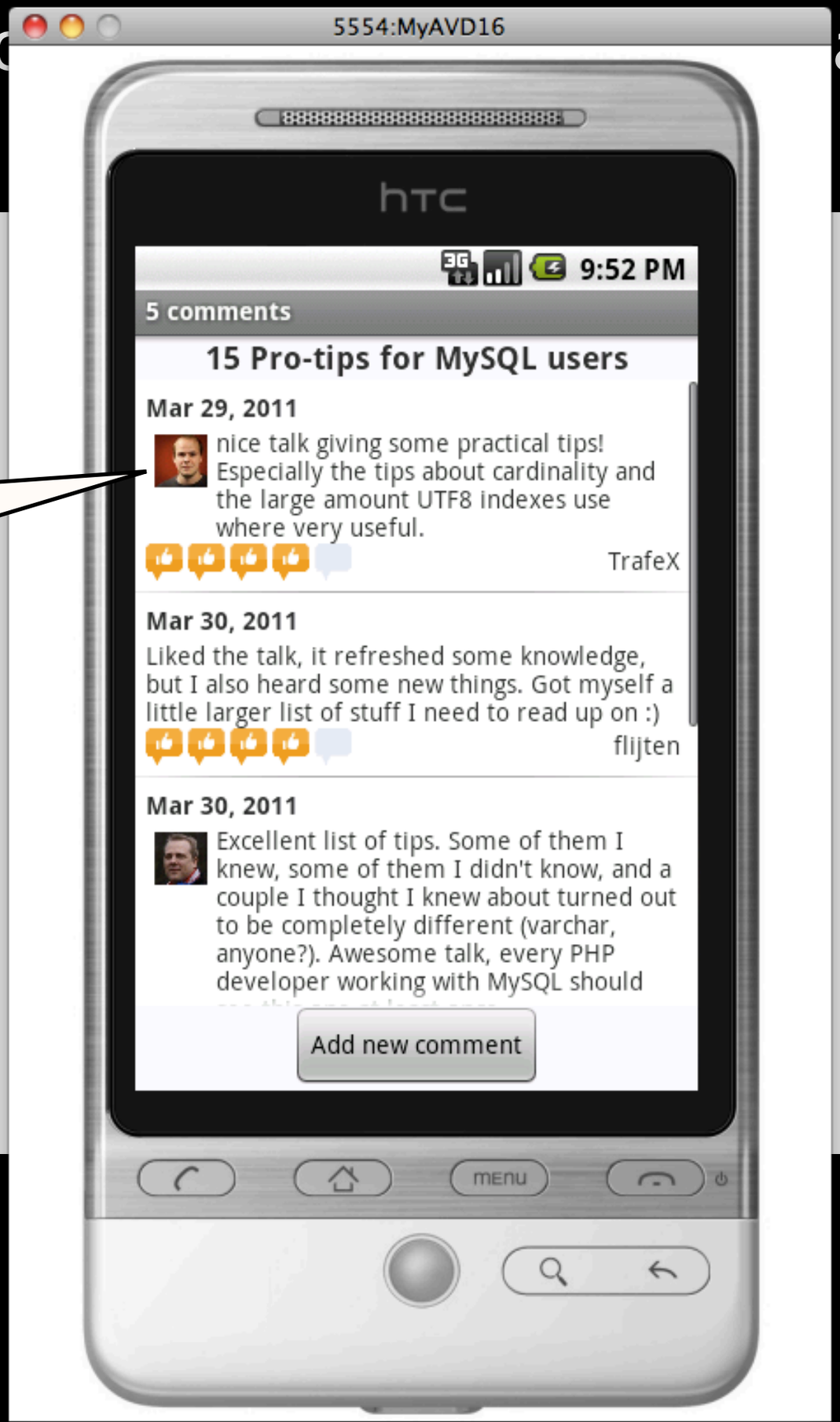
ENRISE

The story abo app (4)



ENRISE

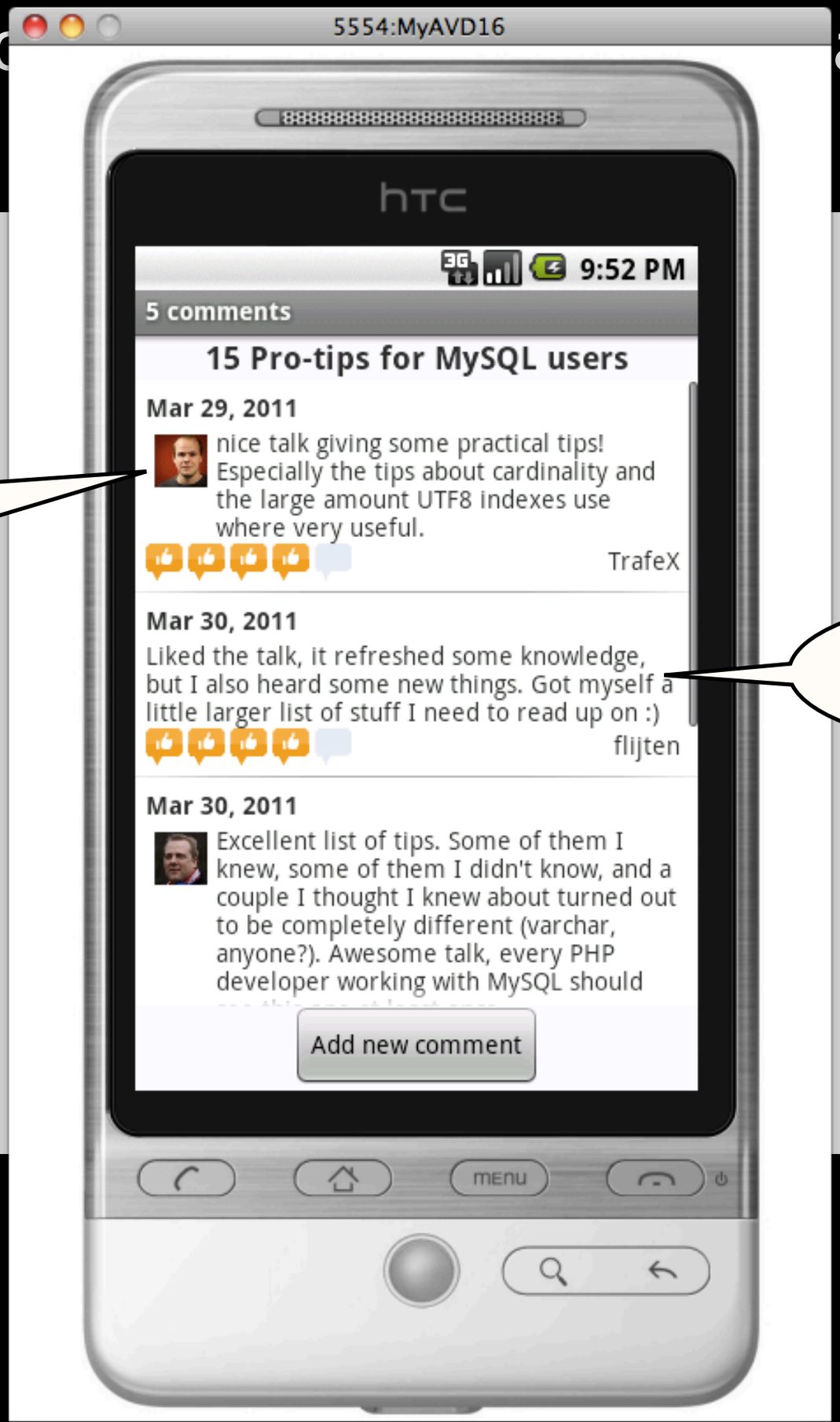
The story abo app (4)



Loaded from gravatar / separate thread

ENRISE

The story abo app (4)



Loaded from gravatar / separate thread

Gravatar not yet loaded

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The story about the joind.in android app (4)

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The story about the joind.in android app (5)

- First (serious) android project
- Open source
- http://github.com/jaytaph
- Biggest concern now & then: using the API.

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Mobile API connectivity

http://www.flickr.com/photos/stevewilhelm/2591525747/sizes/l/in/photostream/

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Mobile API connectivity (1)

CRM

Accounting

ERP

- ISOLATED APPLICATIONS

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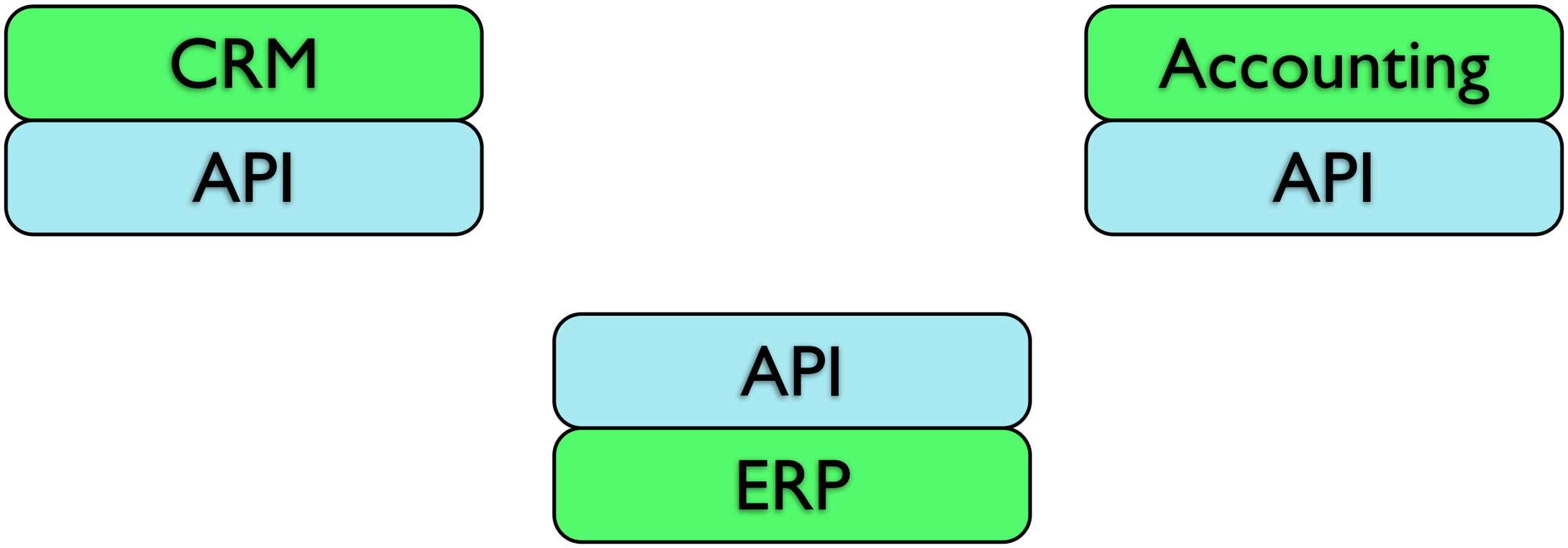
Mobile API connectivity (1)



- API’S ON TOP OF APPLICATIONS

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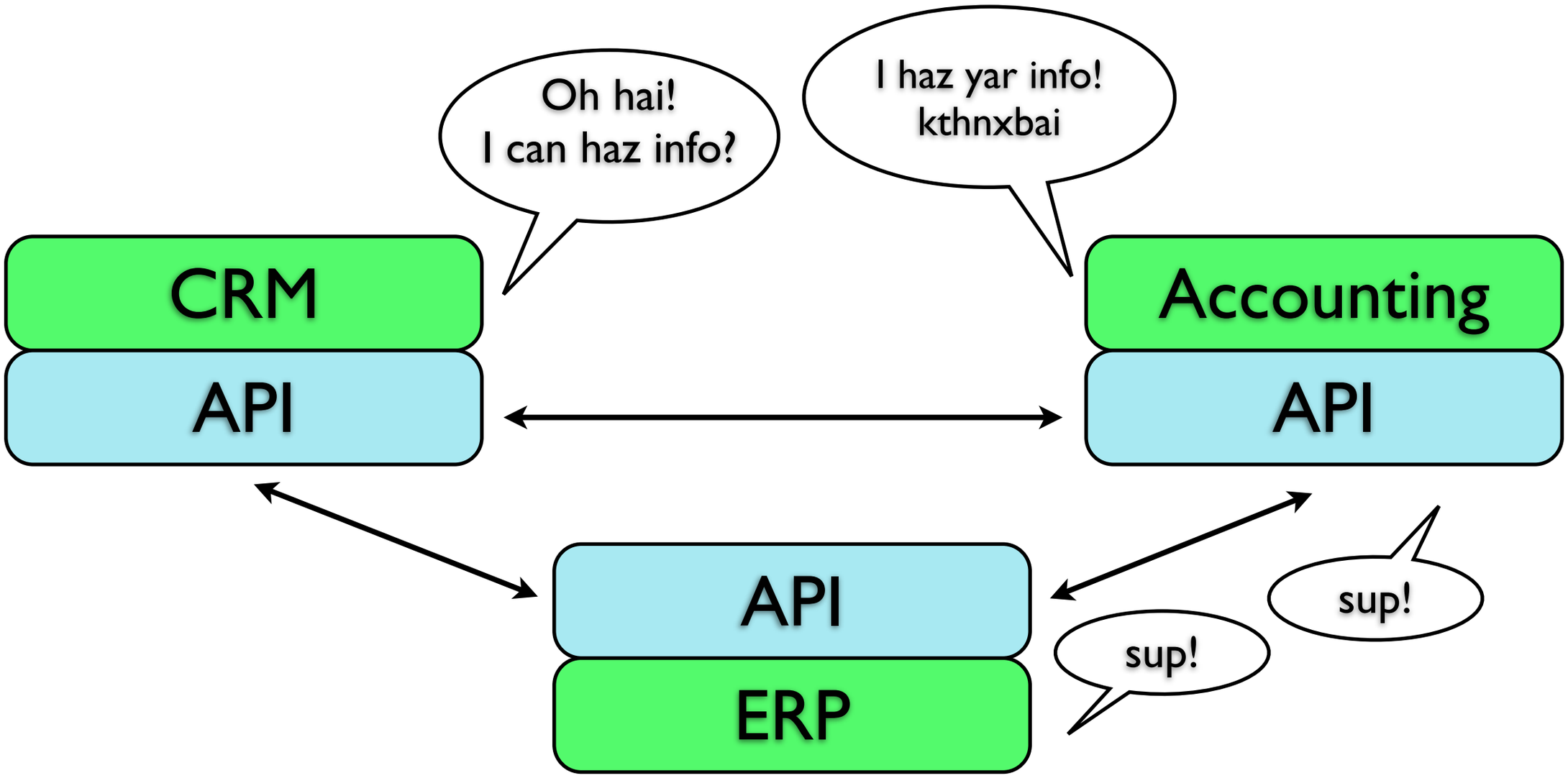
Mobile API connectivity (1)



- LET'S START CHATTING

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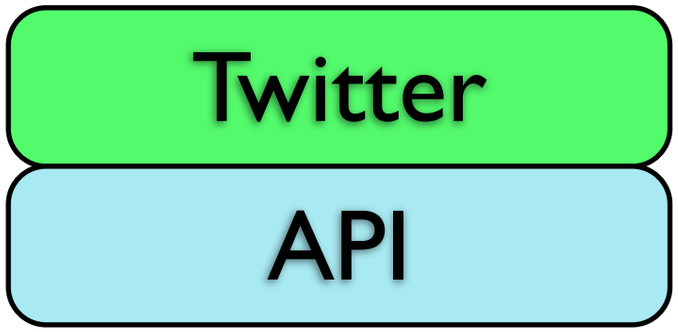
Mobile API connectivity (2)

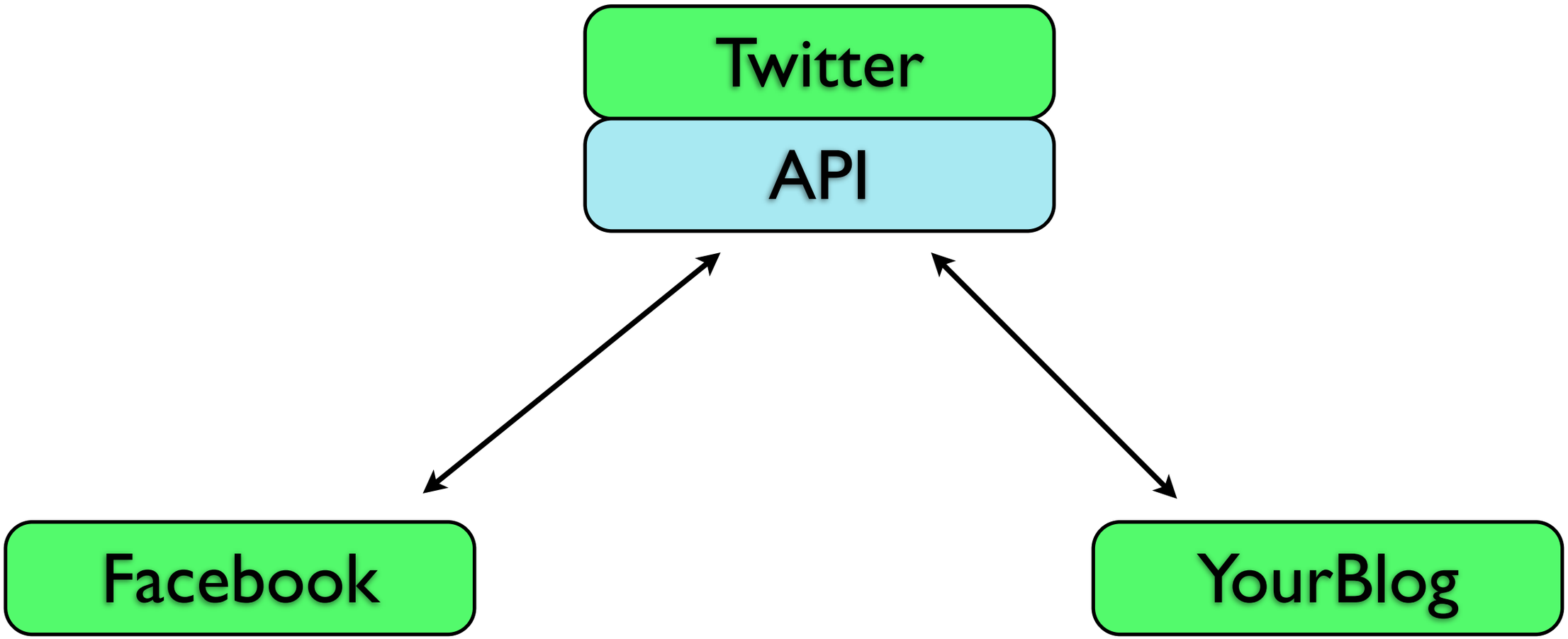


Facebook

YourBlog

ENRISE

Mobile API connectivity (2)



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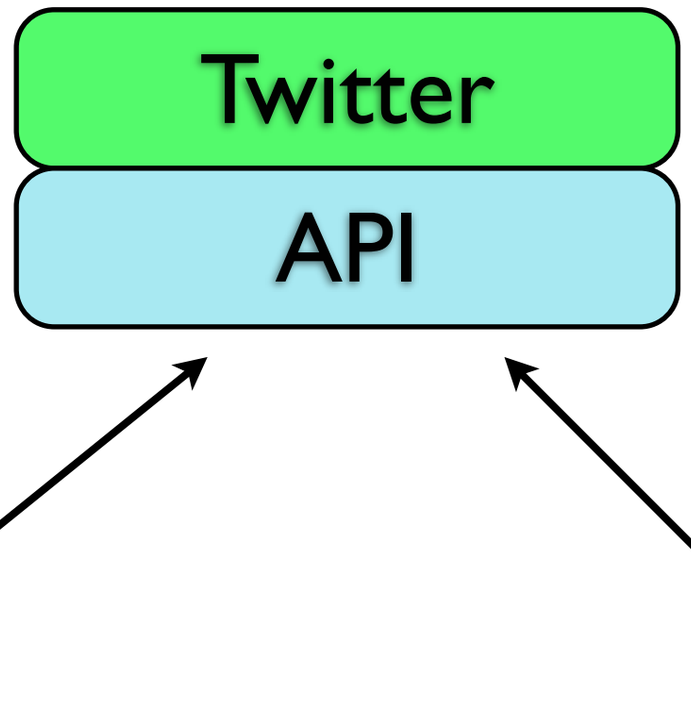
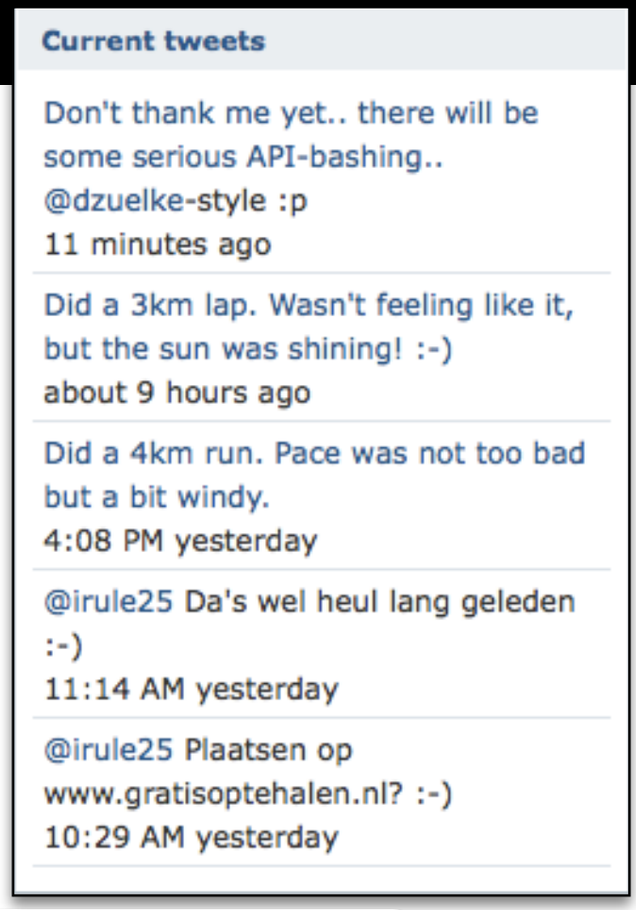
Mobile API connectivity (2)





- USING OTHER APPLICATION'S DATA

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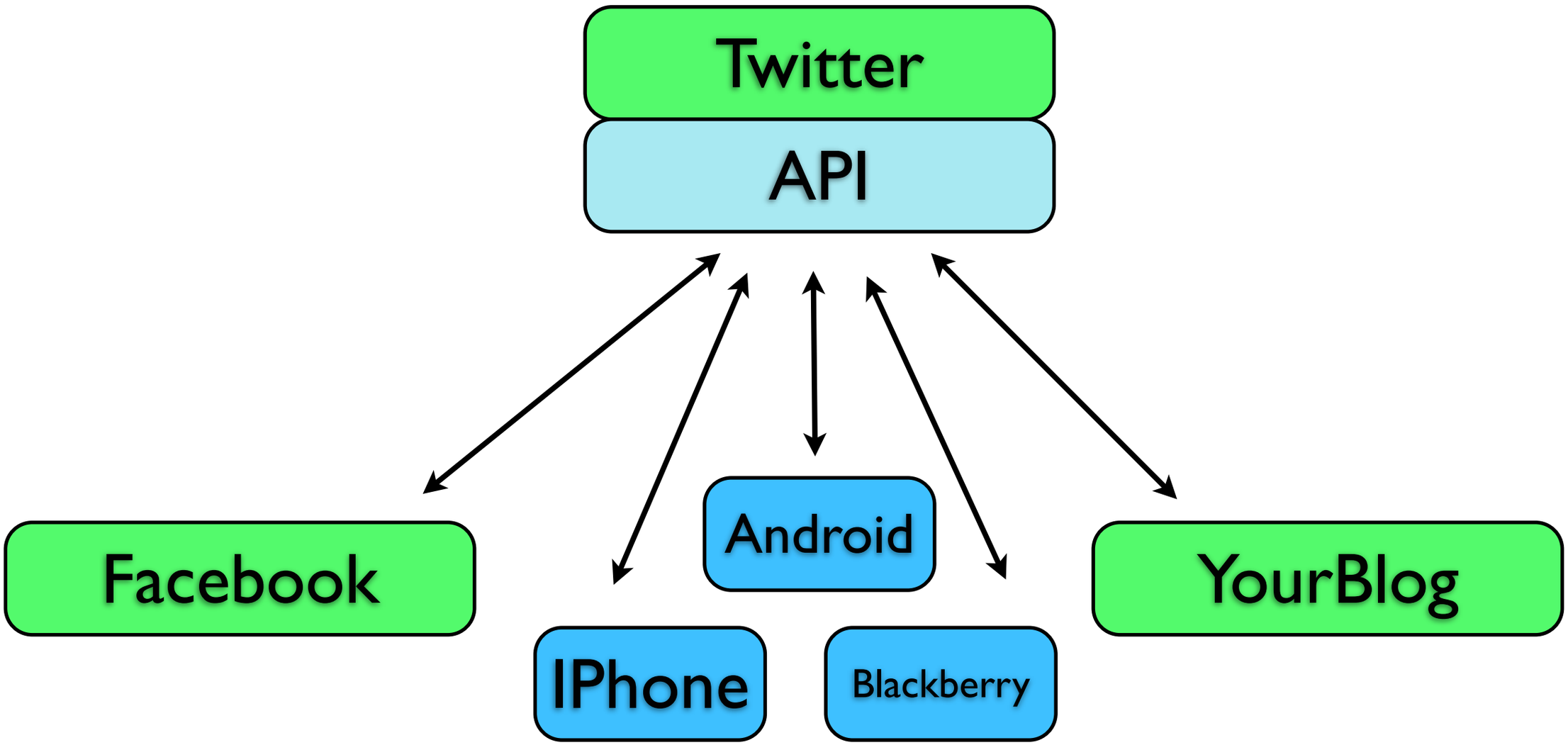
Mobile API connectivity (2)



- ONE TO MANY

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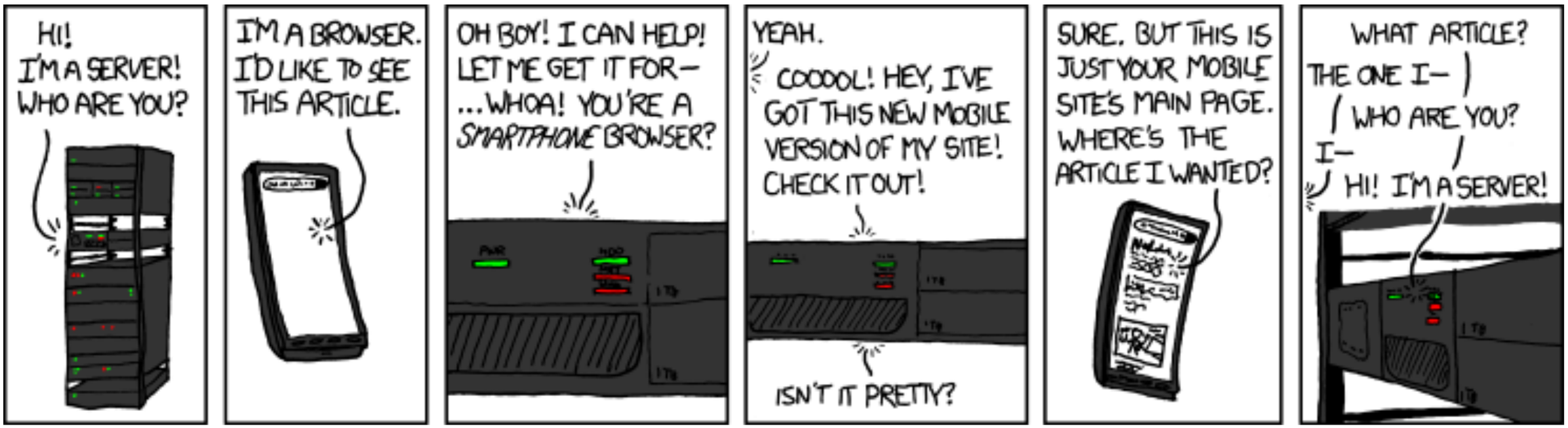
Mobile API connectivity (3)



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Mobile API connectivity (4)

Is your application REALLY ready for mobile connectivity?

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Mobile API connectivity (5)

- Mobile bandwidth is expensive.
- Connectivity is slow and unreliable.
- Client side processing is harder.

Mobile API connectivity (5)

- Not giving client what they want.
- Updating your API will be harder.
- BC breaks are a no-go.

Mobile API connectivity (6)

- PROBLEMS WITH THE JOIND.IN API

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Mobile API connectivity (6)

- Authentication

- PROBLEMS WITH THE JOIND.IN API

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Mobile API connectivity (6)

- Authentication
- Too much data being returned
  (>300Kb per request)

- PROBLEMS WITH THE JOIND.IN API

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Mobile API connectivity (6)

- Authentication
- Too much data being returned
  (>300Kb per request)
- No pagination (want first 10 talks, get 200+)

- PROBLEMS WITH THE JOIND.IN API

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Mobile API connectivity (6)

- Authentication
- Too much data being returned
  (>300Kb per request)
- No pagination (want first 10 talks, get 200+)
- Duplicate data (tracks, talks, speaker info)

- PROBLEMS WITH THE JOIND.IN API

ENRISE

Mobile API connectivity (6)

- Authentication
- Too much data being returned
  (>300Kb per request)
- No pagination (want first 10 talks, get 200+)
- Duplicate data (tracks, talks, speaker info)
- Occasional BC breaks

- PROBLEMS WITH THE JOIND.IN API

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Mobile API connectivity (7)

This will all change in the v2.0 API release.

(hopefully)

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Writing (native) Android applications

```
29          super.onCreate(savedInstanceState);
30
31          // Set layout
32          setContentView(R.layout.eventtracks);
33
34          // Get event ID from the intent scratch board
35          try {
36              this.eventJSON = new JSONObject(getIntent().getStringExtra("eventJSON"));
37          } catch (JSONException e) {
38              android.util.Log.e("JoindInApp", "No event passed to activity", e);
39          }
40
41          // Set all the event information
42          TextView t;
43          t = (TextView) this.findViewById(R.id.EventTracksCaption);
44          t.setText (this.eventJSON.optString("event_name"));
45
46          // Initialize track list
47          ArrayList<JSONObject> m_tracks = new ArrayList<JSONObject>();
48          m_trackAdapter = new JITrackAdapter(this, R.layout.trackrow, m_tracks);
49          ListView tracklist =(ListView)findViewById(R.id.ListViewEventTracks);
50          tracklist.setAdapter(m_trackAdapter);
51
52          // Add listview listener so when we click on an talk, we can display details
53          tracklist.setOnItemClickListener(new OnItemClickListener() {
54              public void onItemClick(AdapterView<?>parent, View view, int pos, long id) {
55                  // Open event details with additional eventTrack data.
56                  Intent myIntent = new Intent ();
57                  myIntent.setClass(getApplicationContext(), EventTalks.class);
58                  myIntent.putExtra("eventJSON", getIntent().getStringExtra("eventJSON"));
59                  myIntent.putExtra("eventTrack", parent.getAdapter().getItem(pos).toString());
60                  startActivity(myIntent);
61              }
62          });
```

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Writing (native) Android applications (1)

Writing (native) Android applications (1)

✓ Native (java)

✗ Non-native (php4android, html5/js)

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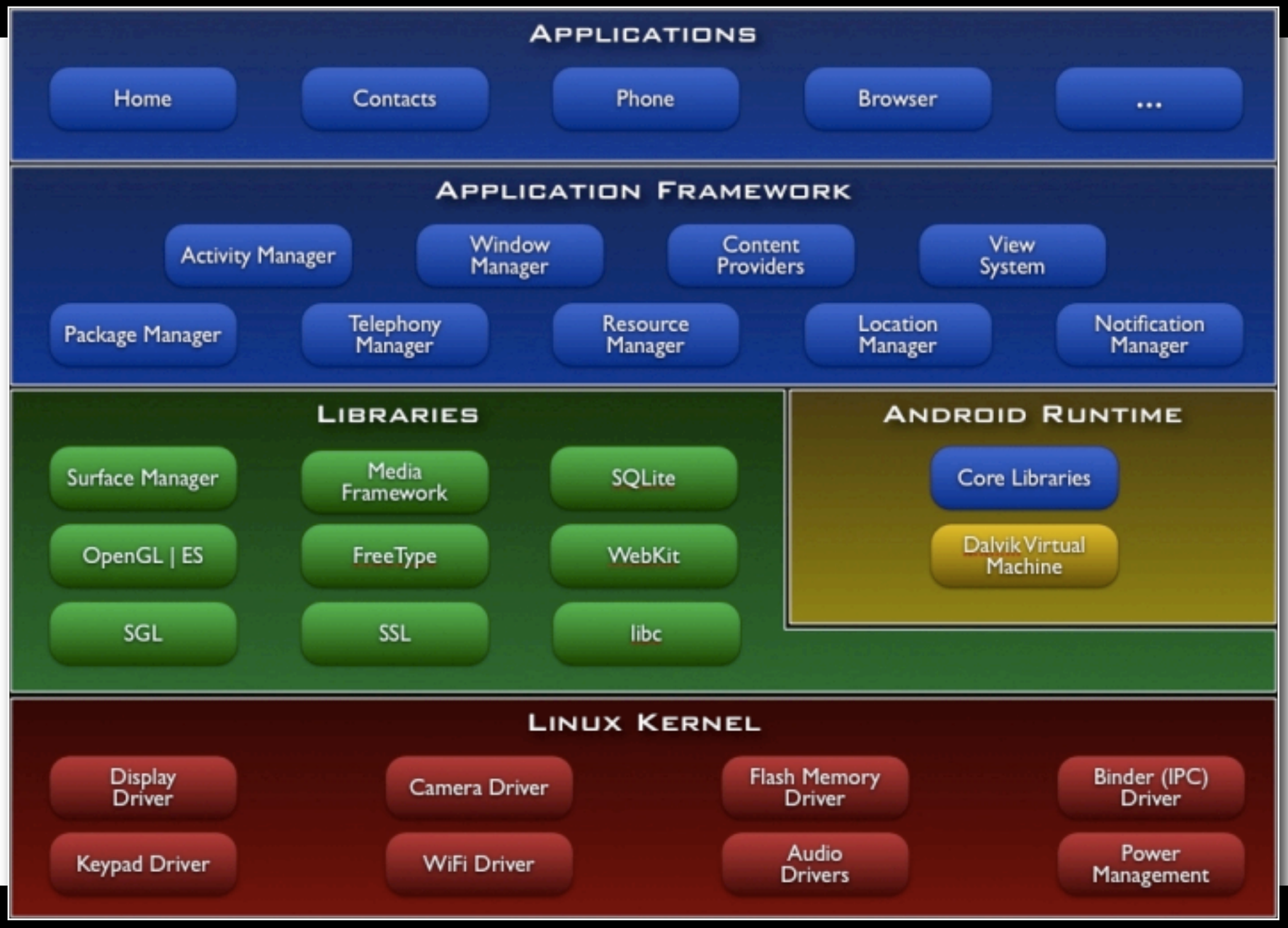
Writing (native) Android applications (2)



http://developer.android.com/guide/basics/what-is-android.html

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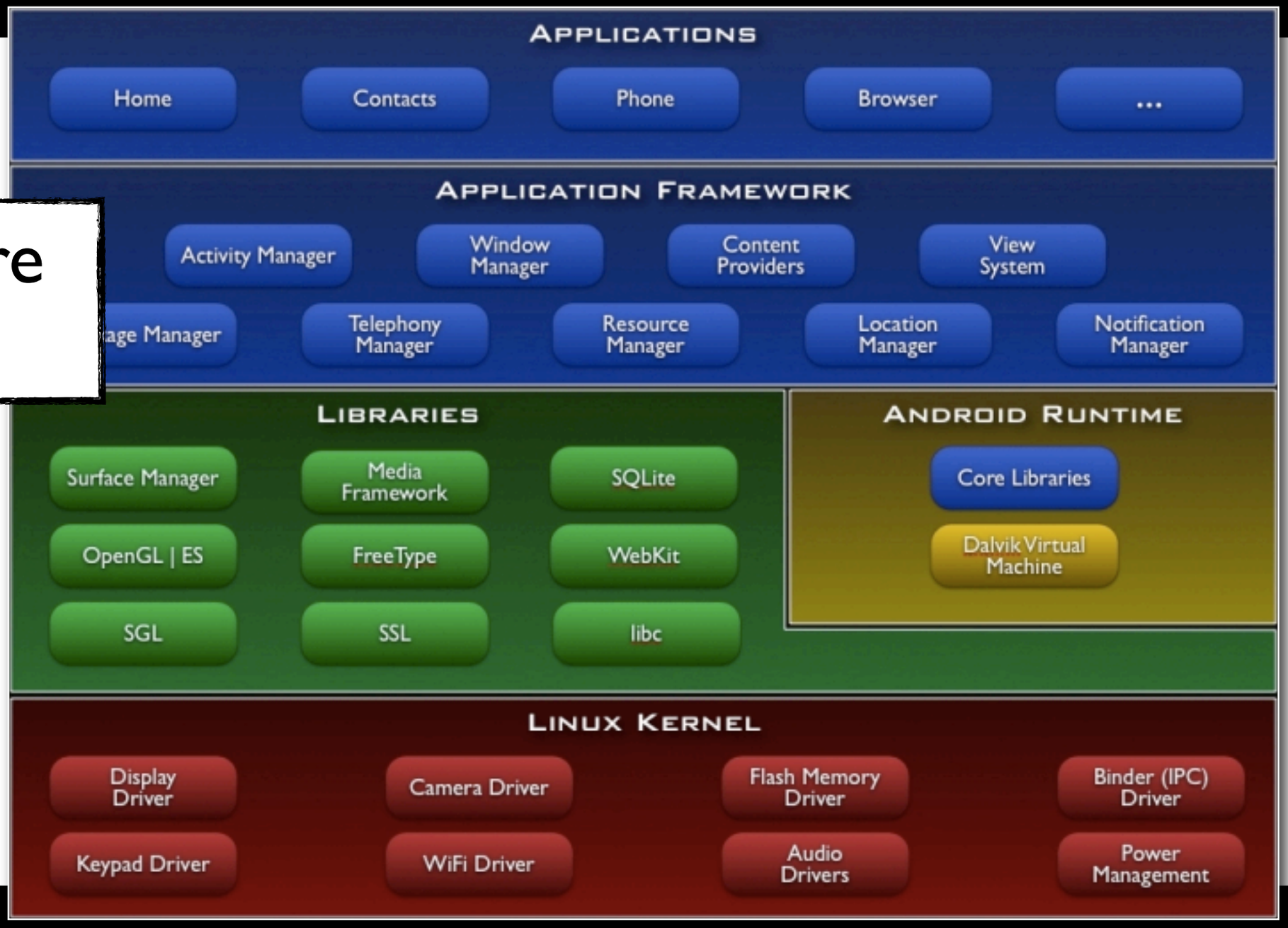
Writing (native) Android applications (2)

You are here



http://developer.android.com/guide/basics/what-is-android.html

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Writing (native) Android applications (3)

- **Activities**
- Layouts
- Intents

http://developer.android.com/guide/basics/what-is-android.html

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Activities (1)

http://developer.android.com/guide/basics/what-is-android.html

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Activities (1)

- provides a screen with which a user can interact.

http://developer.android.com/guide/basics/what-is-android.html

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Activities (1)

- provides a screen with which a user can interact.
- activities are “stacked”.

http://developer.android.com/guide/basics/what-is-android.html

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Activities (2)

http://developer.android.com/guide/basics/what-is-android.html

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Activities (2)

- activity 1 starts

http://developer.android.com/guide/basics/what-is-android.html

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Activities (2)

- activity 1 starts
  - activity 2 starts & activity 1 pauzes

http://developer.android.com/guide/basics/what-is-android.html

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Activities (2)

- activity 1 starts
  - activity 2 starts & activity 1 pauzes
  - activity 2 stops

http://developer.android.com/guide/basics/what-is-android.html

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Activities (2)

- activity 1 starts
  - activity 2 starts & activity 1 pauzes
  - activity 2 stops
- activity 1 resumes

http://developer.android.com/guide/basics/what-is-android.html

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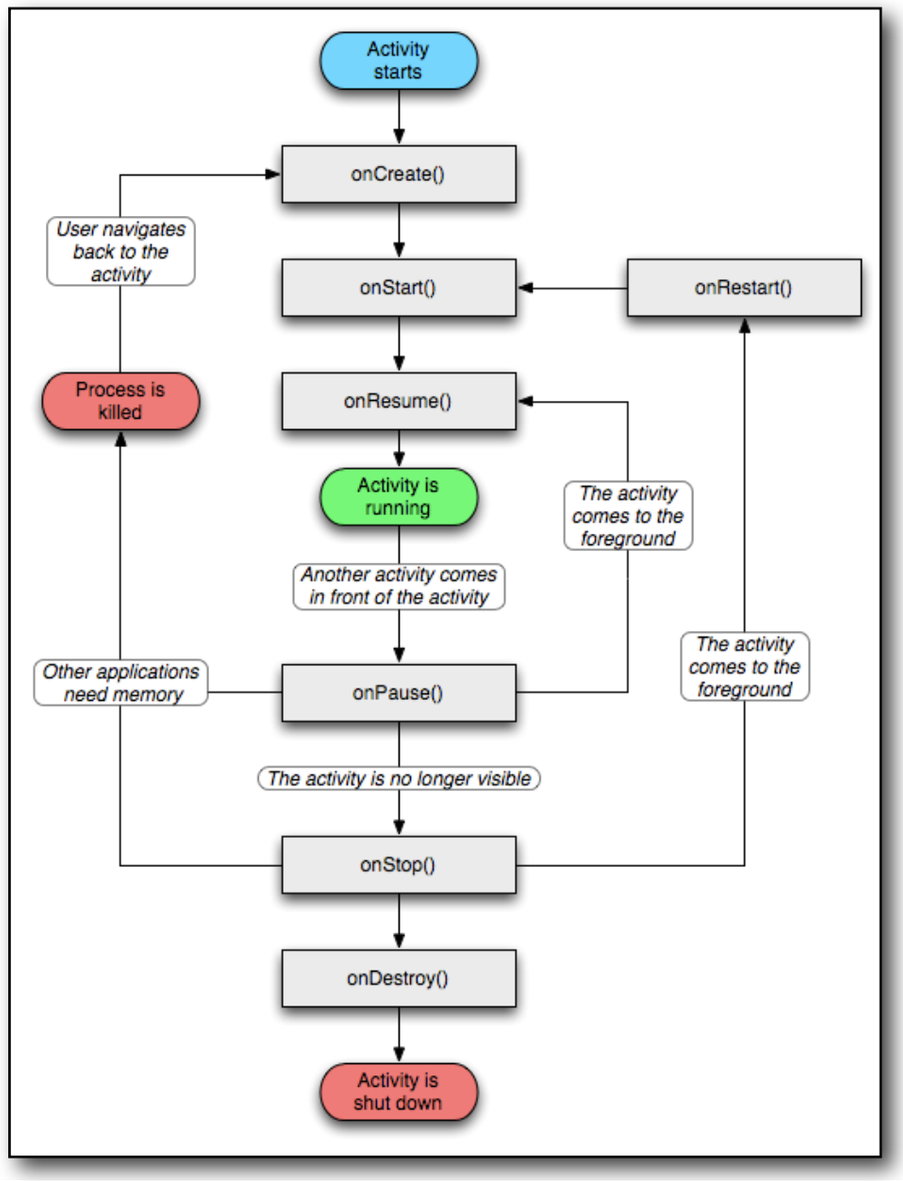
Activities (3)



- ACTIVITY LIFE CYCLE

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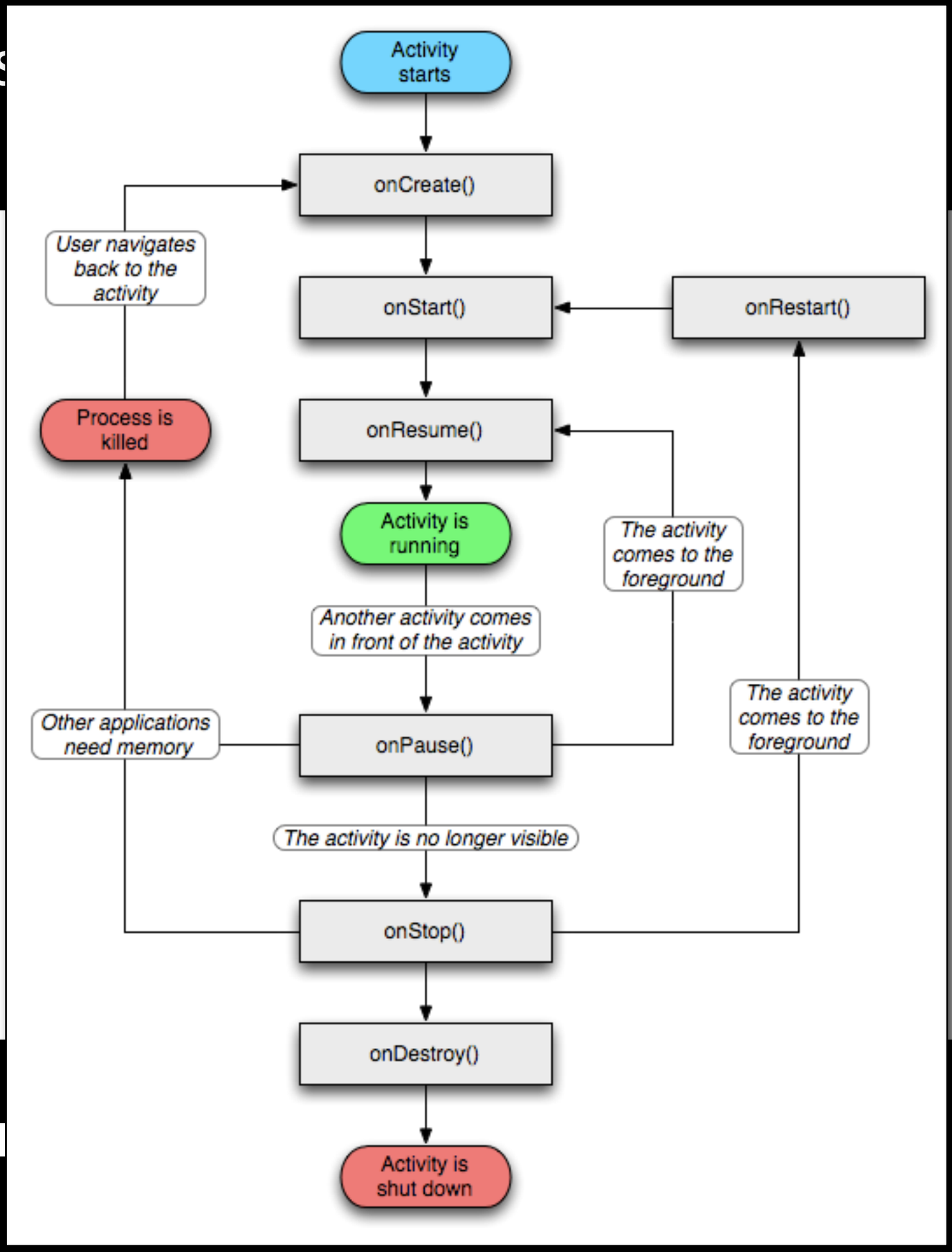
Activities



- ACTIVITY LI

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Writing (native) Android applications (3)

- Activities
- **Layouts**
- Intents

http://developer.android.com/guide/basics/what-is-android.html

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Layouts (1)

Layouts (1)

- Get stuff onto your display

Layouts (1)

- Get stuff onto your display
- Created as XML resources

Layouts (1)

- Get stuff onto your display
- Created as XML resources
- “inflated” by android (costly)

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Layouts (2)

- LinearLayout — Single column or row
- TableLayout — <table></table>
- FrameLayout — <placeholder>
- RelativeLayout

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- LinearLayout — Single column or row
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- FrameLayout — <placeholder>
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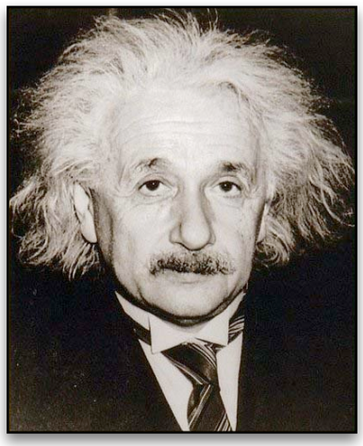

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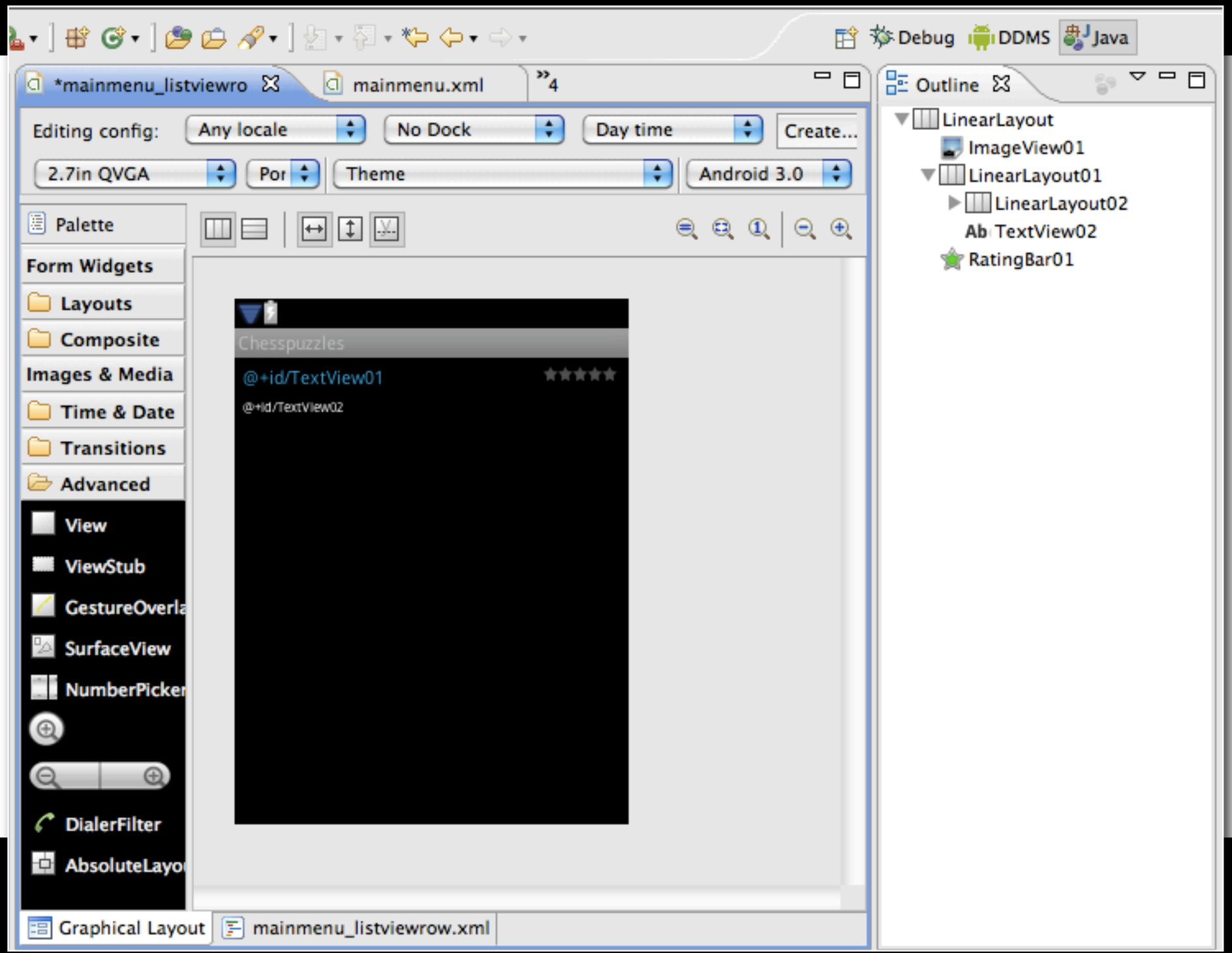
Layouts (3)



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Layouts (4)

XML

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
  xmlns:android="http://schemas.android.com/apk/res/android"
  android:layout_width="match_parent"
  android:layout_height="match_parent"
  android:alwaysDrawnWithCache="true">
    <TableLayout
      android:id="@+id/tableLayout1"
      android:layout_width="match_parent"
      android:layout_height="wrap_content"
      android:layout_gravity="center_vertical"
      android:layout_margin="10dip">
        <TableRow
          android:id="@+id/tableRow5"
          android:layout_width="wrap_content"
          android:layout_height="match_parent">
           <TextView
                android:layout_height="wrap_content"
                android:layout_width="wrap_content"
                android:textStyle="bold"
                android:id="@+id/TextView01"
                android:textSize="20dip"
                android:text="Username"></TextView>
        </TableRow>
....
```

Light theme

Dark (normal) theme

∂ DEFINING ANDROID LAYOUTS

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Writing (native) Android applications (3)

- Activities
- Layouts
- **Intents**

http://developer.android.com/guide/basics/what-is-android.html

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Intents (1)

http://developer.android.com/guide/basics/what-is-android.html

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Intents (1)

- “message queue” between different android components.

http://developer.android.com/guide/basics/what-is-android.html

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Intents (1)

- “message queue” between different android components.
- Explicit & implicit intents

http://developer.android.com/guide/basics/what-is-android.html

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Intents (2)

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Start a new activity (explicit):

```
Intent myIntent = new Intent ();
myIntent.setClass(class.this, com.another.class);
myIntent.putExtra("Data", "somedata");
startActivity(myIntent);
```

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Dial a number (implicit):

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Intent intent = new Intent(Intent.ACTION_DIAL, Uri.parse("tel:123-456789"));
startActivity(intent);
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startActivity(myInt
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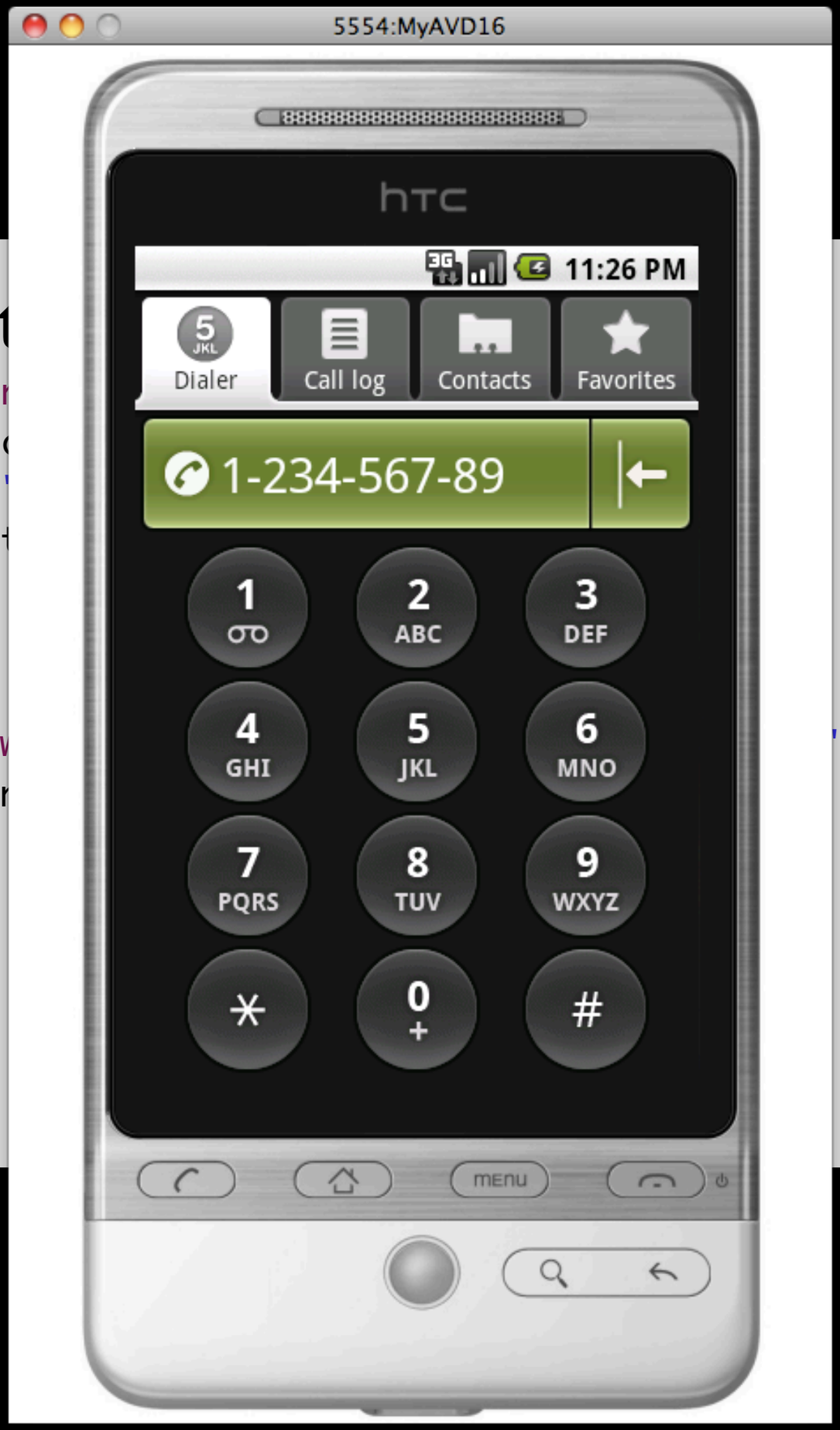

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Visit a website

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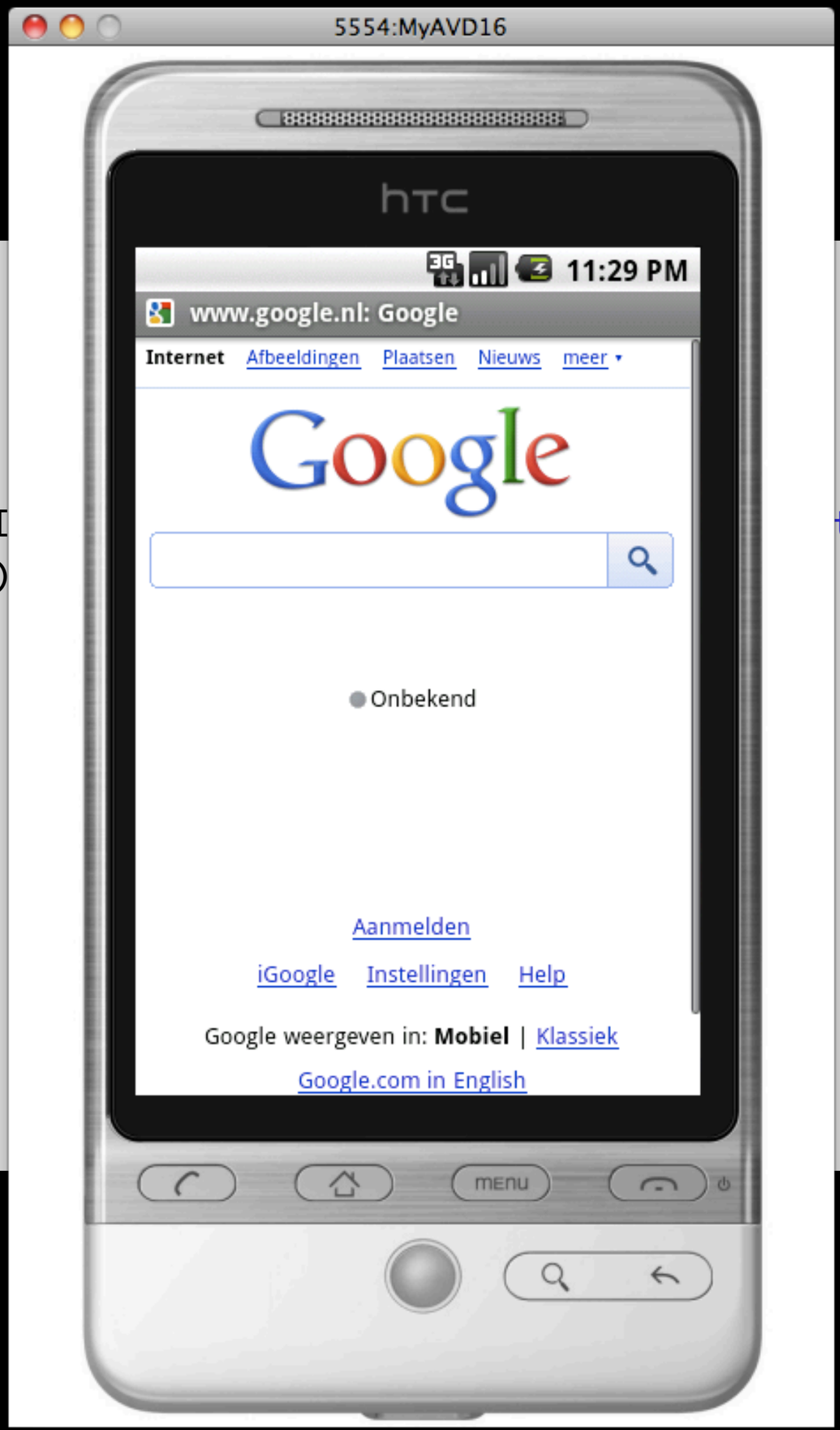

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startActivity(intent);
```

Open Google Maps (implicit):

```
Intent intent = new Intent(Intent.ACTION_VIEW, Uri.parse("geo:52.257651,21.058044?z=17"));
startActivity(intent);
```

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Intents (3)

Visit a website

```
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startActivity(intent)
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Open Google N

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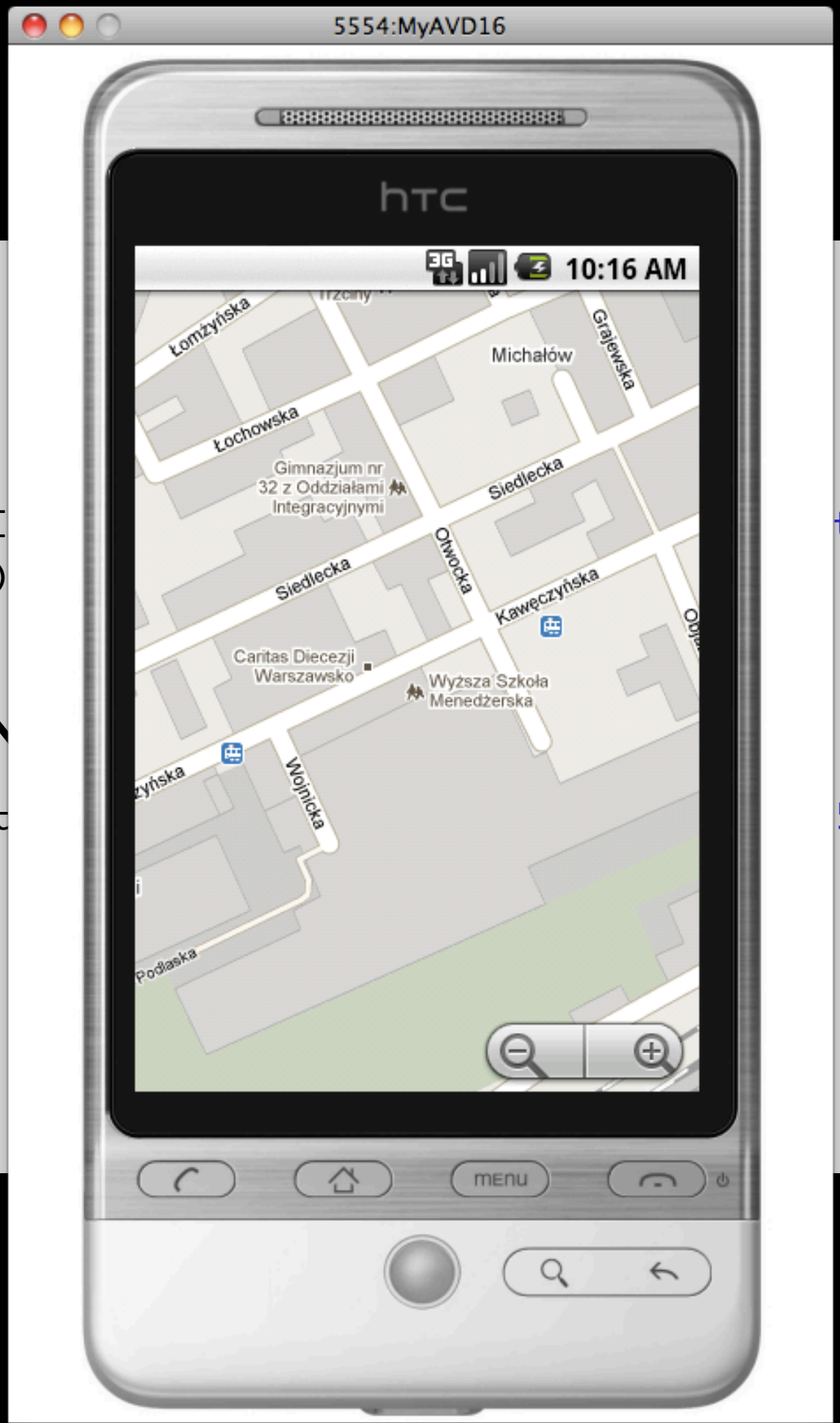

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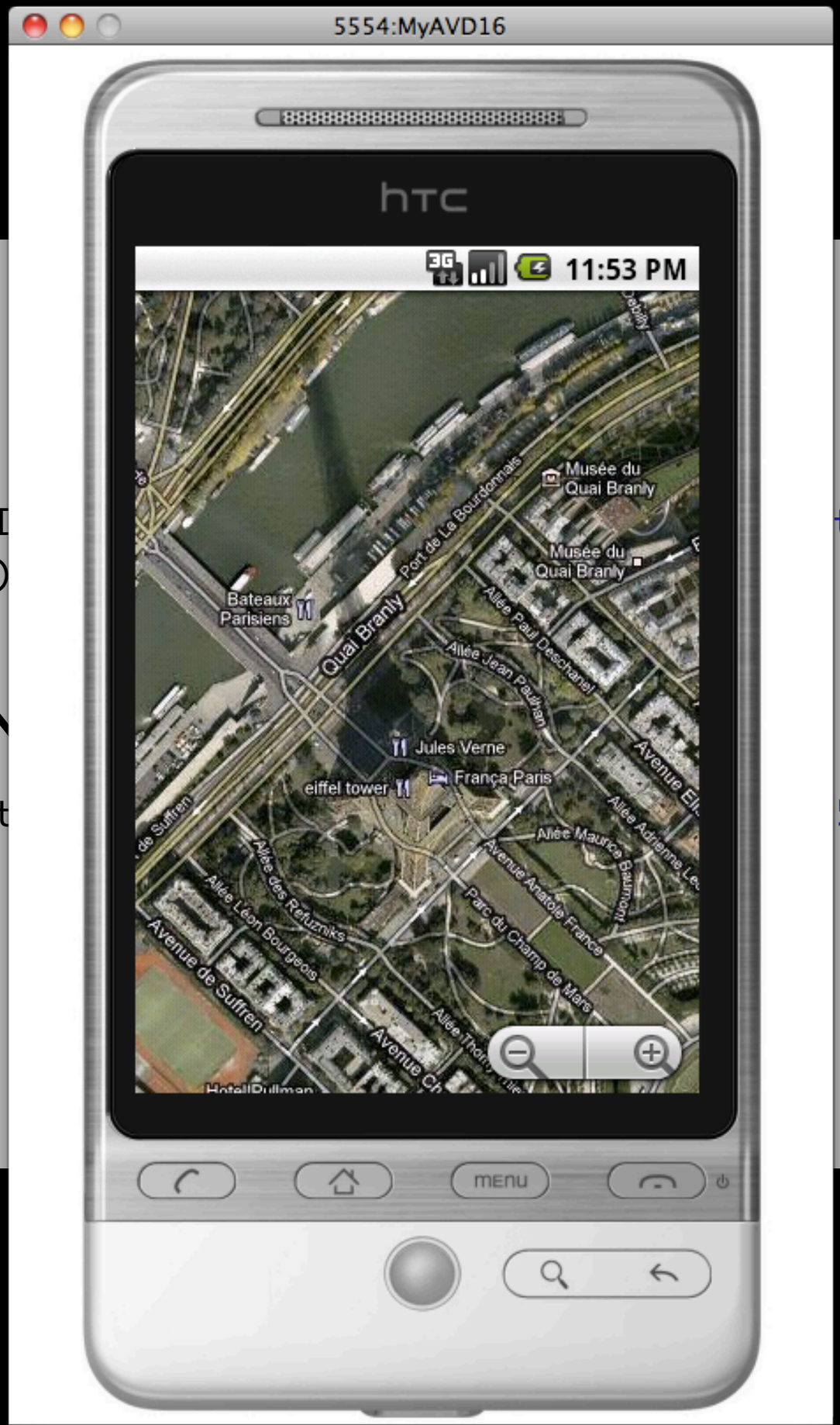

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Nine-patch (1)

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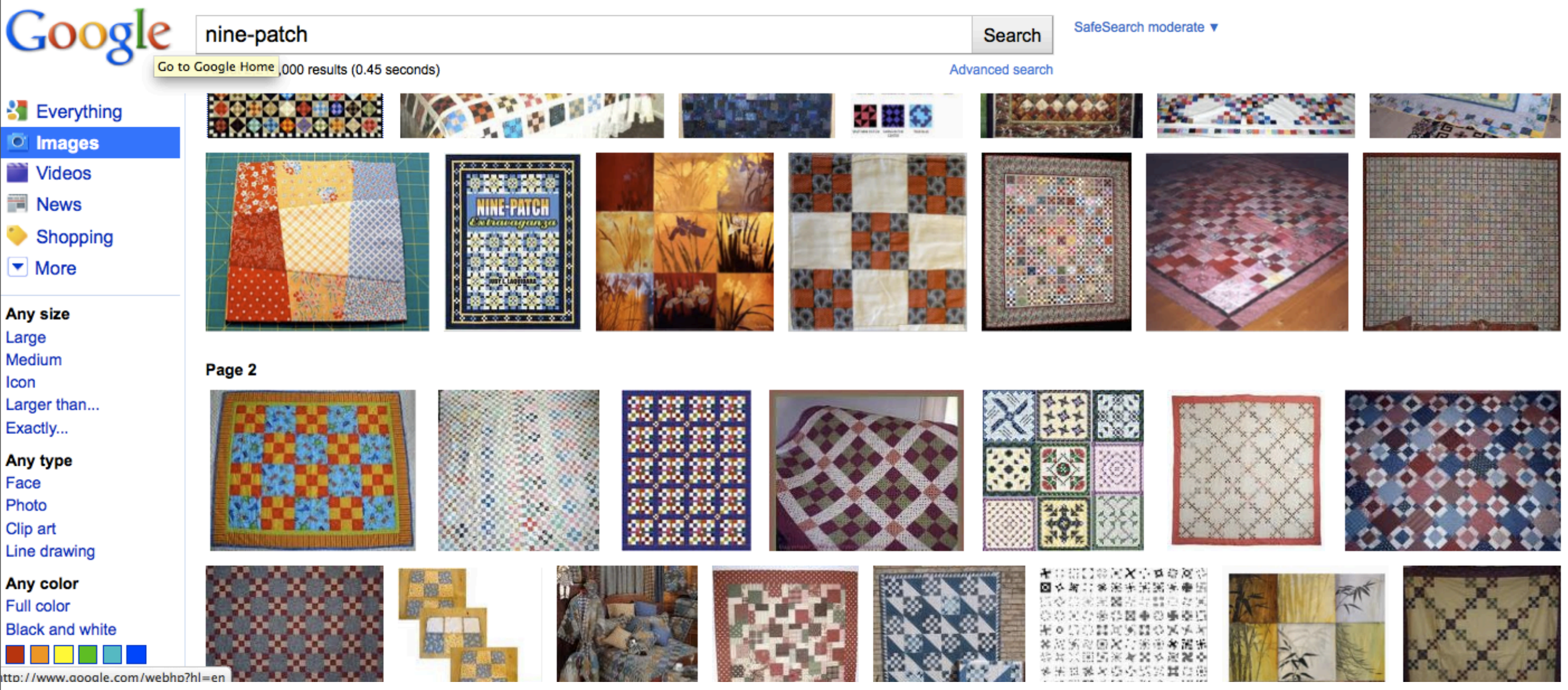

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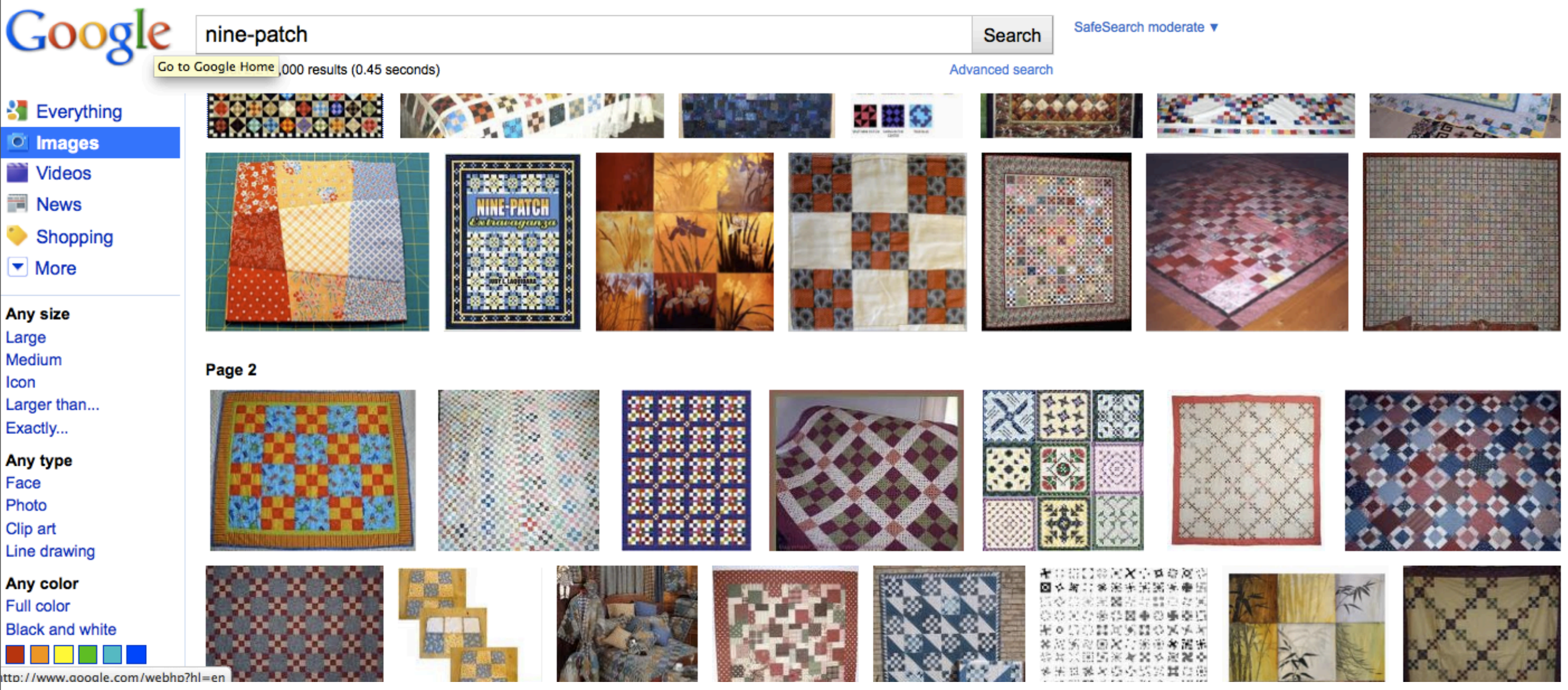
Nine-patch (1)



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Nine-patch (2)

http://www.pookiescreations.com/images/lrg%209%20patch%20kit%20005.jpg

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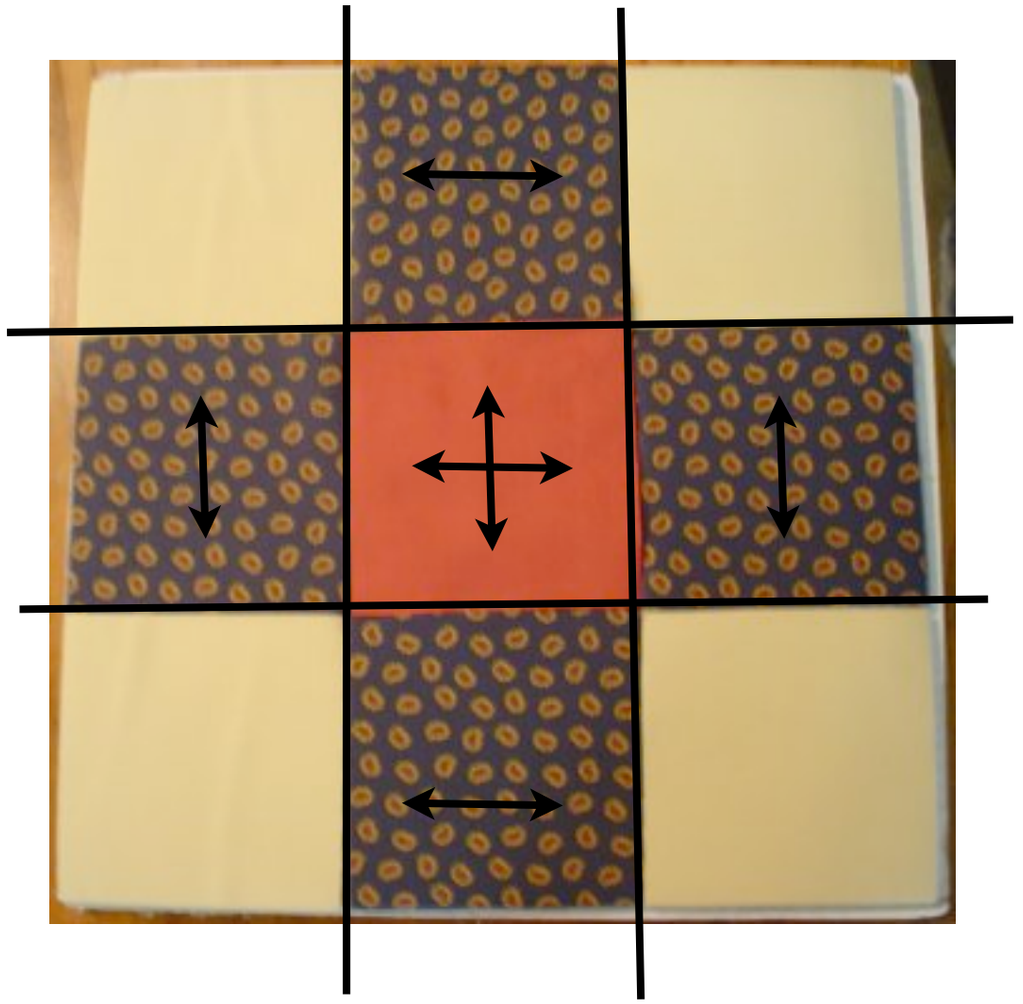
Nine-patch (3)



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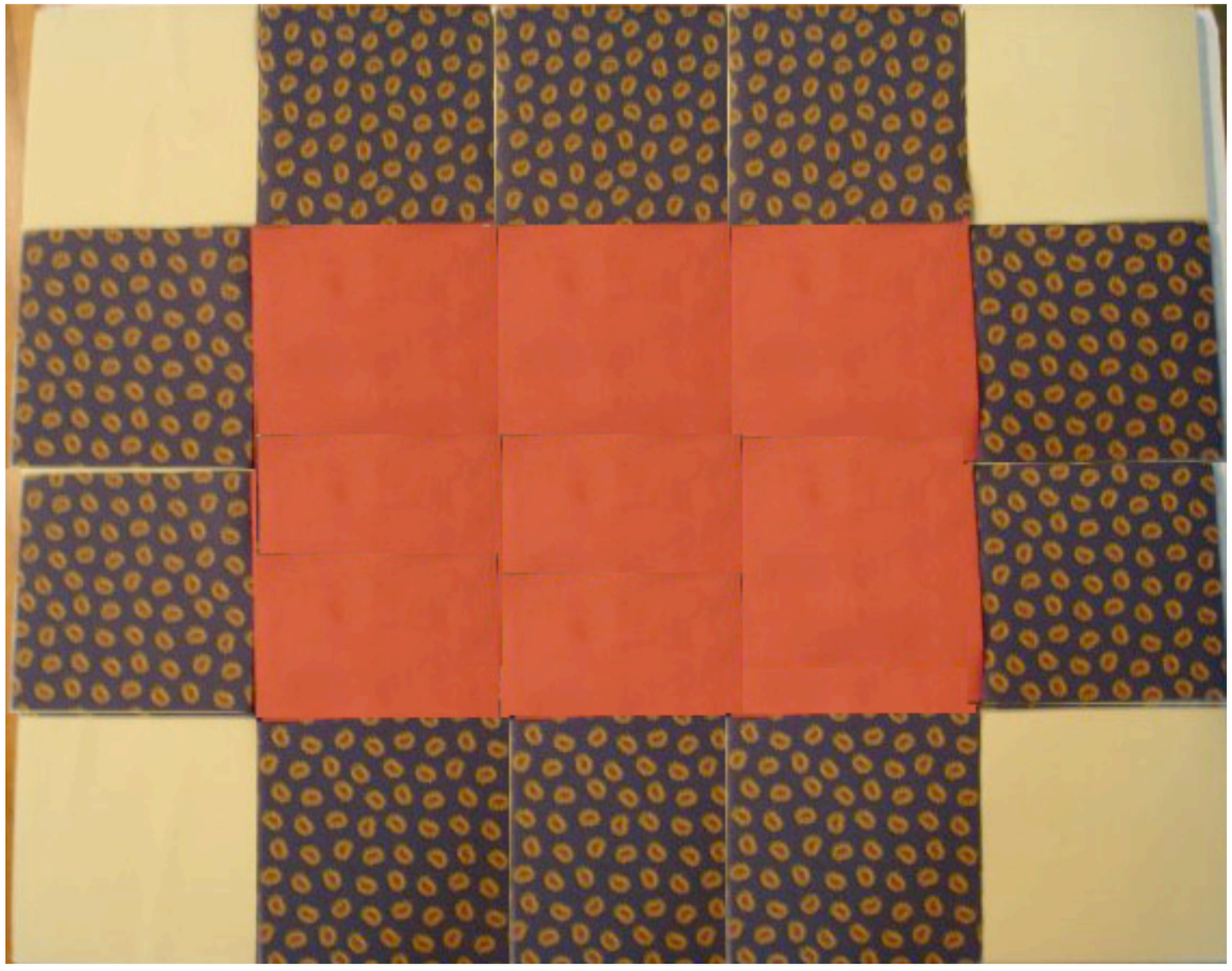
Nine-patch (4)



- ALMOST IMPOSSIBLE TO TELL THAT THIS IS PHOTOSHOPPED

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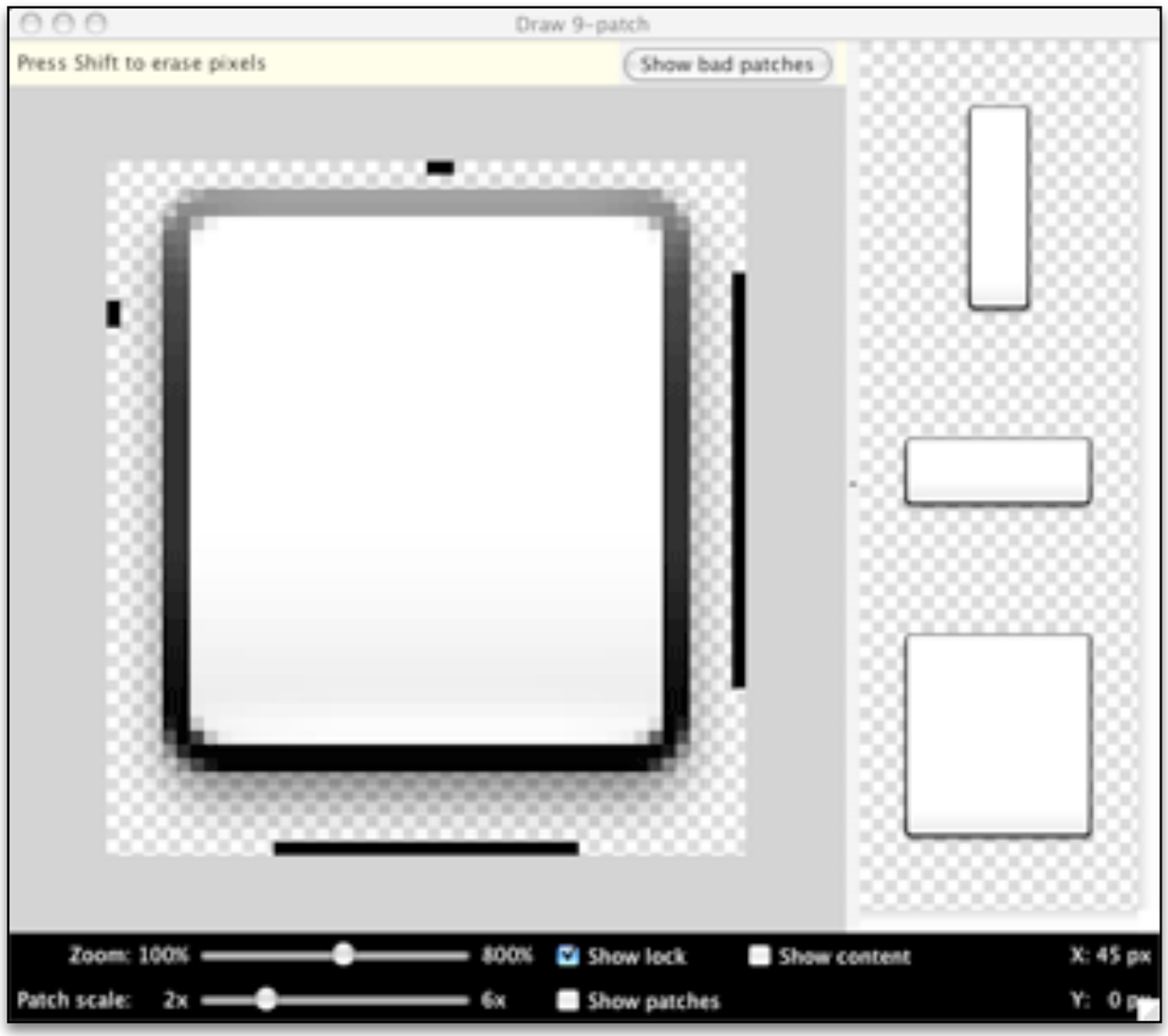
Nine-patch (5)



- A BETTER EXAMPLE

http://developer.android.com/images/draw9patch-norm.png

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Code examples

http://www.flickr.com/photos/oskay/472097903/

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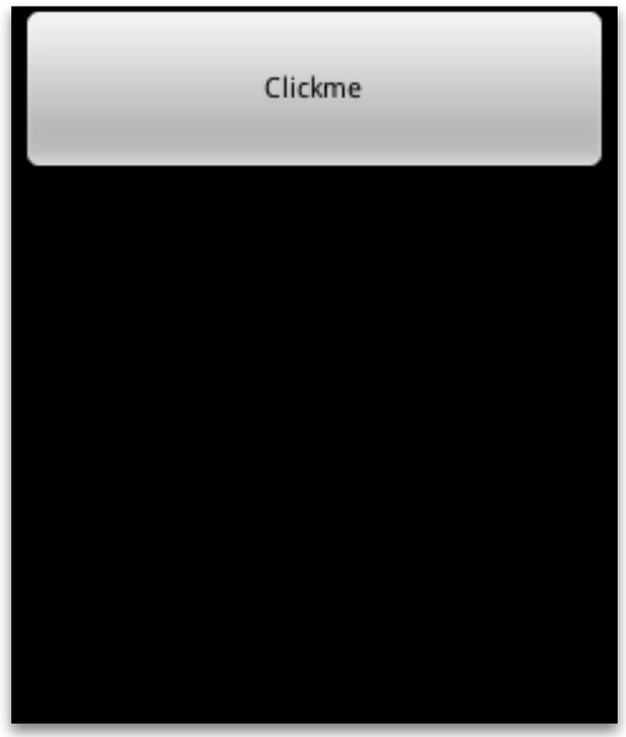
Code examples (1)

res/layout/main.xml

```
<?xml version="1.0" encoding="utf-8"?>
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="vertical"
    android:layout_width="fill_parent"
    android:layout_height="fill_parent">
    <Button
     android:text="Clickme"
     android:id="@+id/button1"
     android:layout_height="wrap_content"
     android:layout_width="fill_parent"></Button>
</LinearLayout>
```



- DEFINE LAYOUT

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Code examples (2)

```
package com.fourdevelopers;

import android.app.Activity;
import android.os.Bundle;

public class main extends Activity {

    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.main);
    }

}
```

- HELLO WORLD

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Code examples (2)

Activity

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Saved state after onSaveInstanceState()

- HELLO WORLD

ENRISE

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Activity

Saved state after onSaveInstanceState()

Layout XML to display

- HELLO WORLD

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Code examples (3)

```
package com.fourdevelopers;

import android.app.Activity;
import android.os.Bundle;
import android.view.View;
import android.view.View.OnClickListener;
import android.widget.Button;
import android.widget.Toast;

public class main extends Activity implements OnClickListener {

    public void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.main);

        Button button = (Button)findViewById(R.id.button1);
        button.setOnClickListener(this);
    }

    public void onClick(View v) {
        Toast.makeText(this, "Button clicked", Toast.LENGTH_SHORT).show();
    }

}
```

- REMEMBER: TMTOWTDI!

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Imports

- REMEMBER: TMTOWTDI!

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Imports

Implement click listener

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Imports

Implement click listener

Connect click listener to button

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Imports

Implement click listener

Connect click listener to button

Called when “something” is clicked

- REMEMBER: TMTOWTDI!

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Code example (4)

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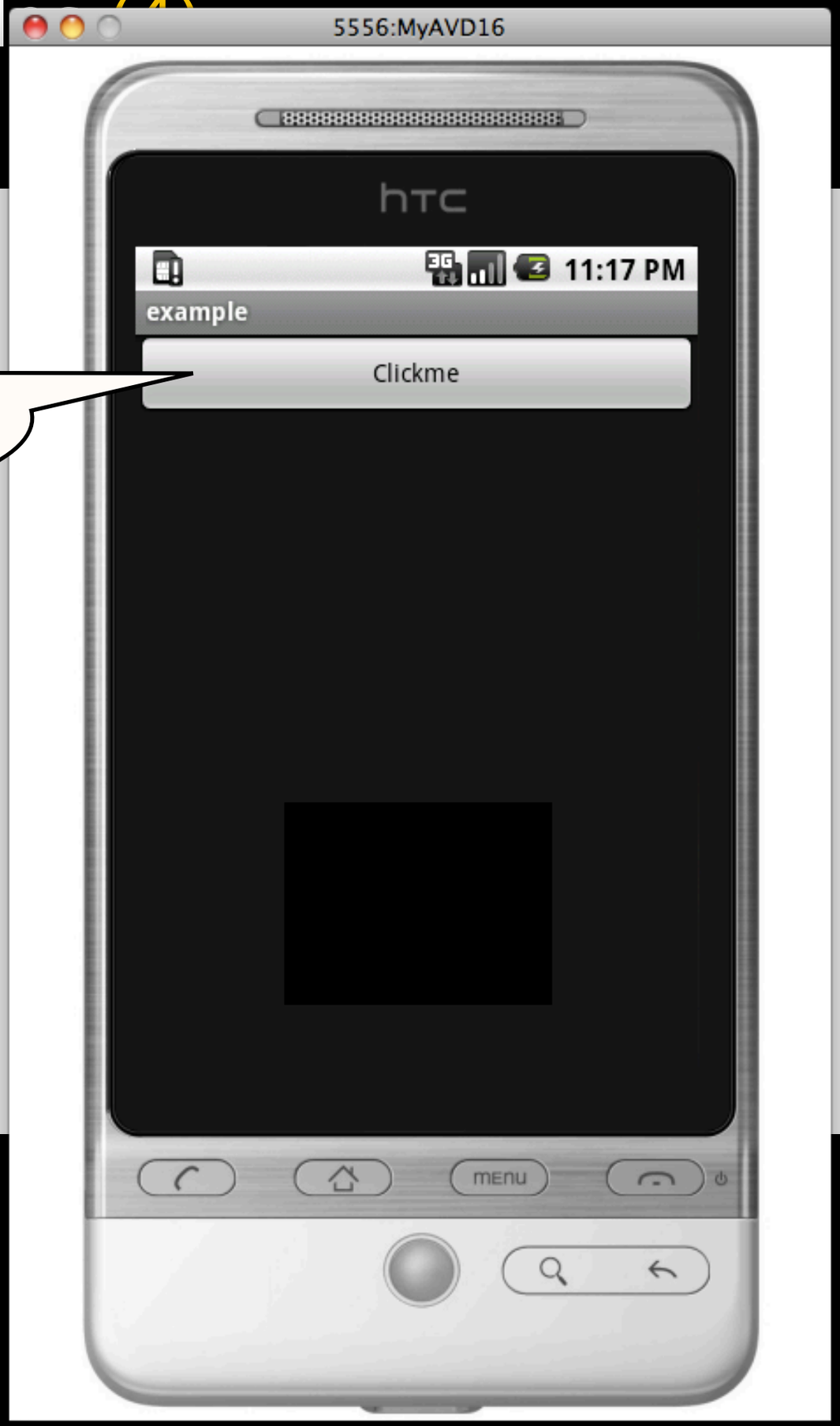
Code example (4)

Simple button



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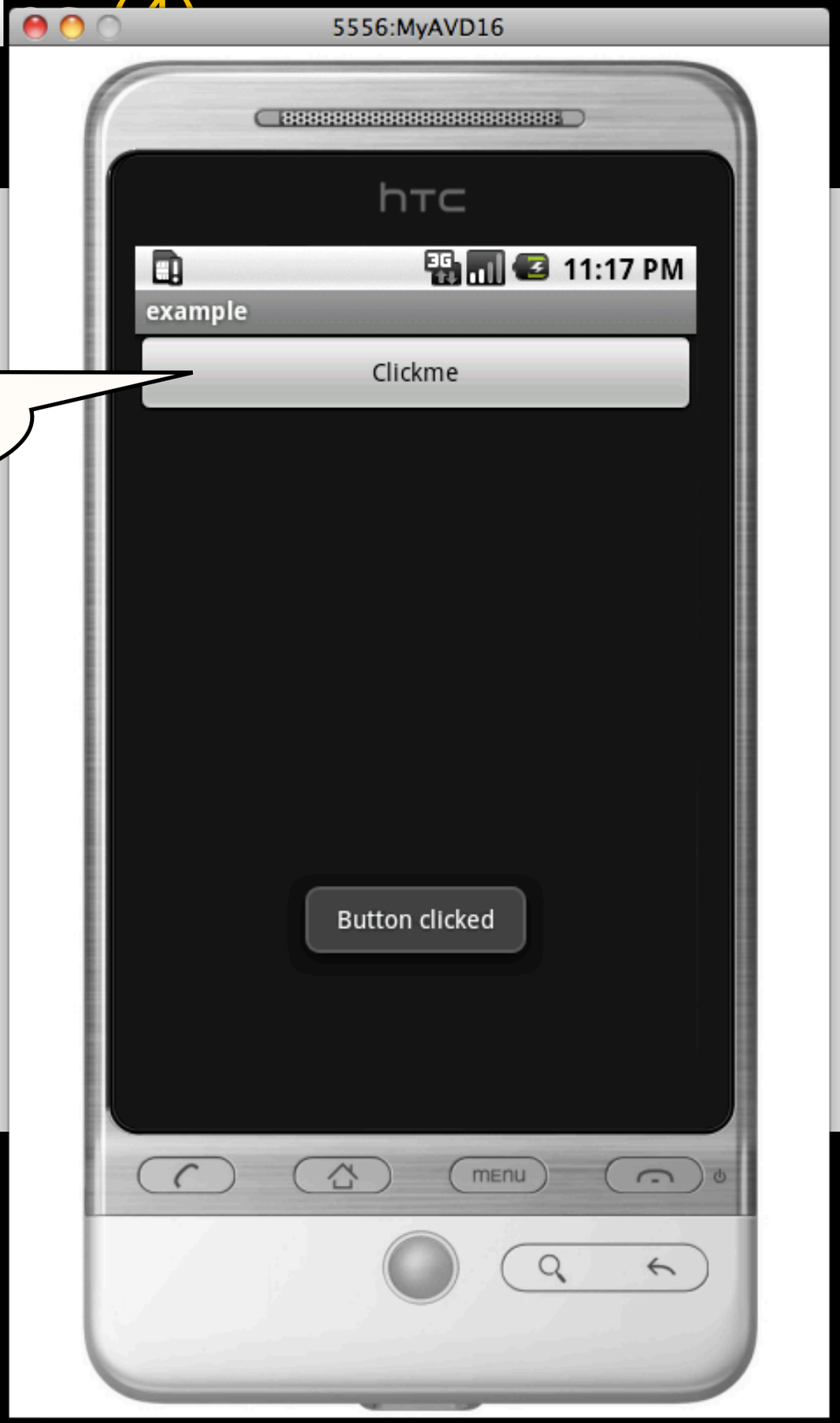

Simple button

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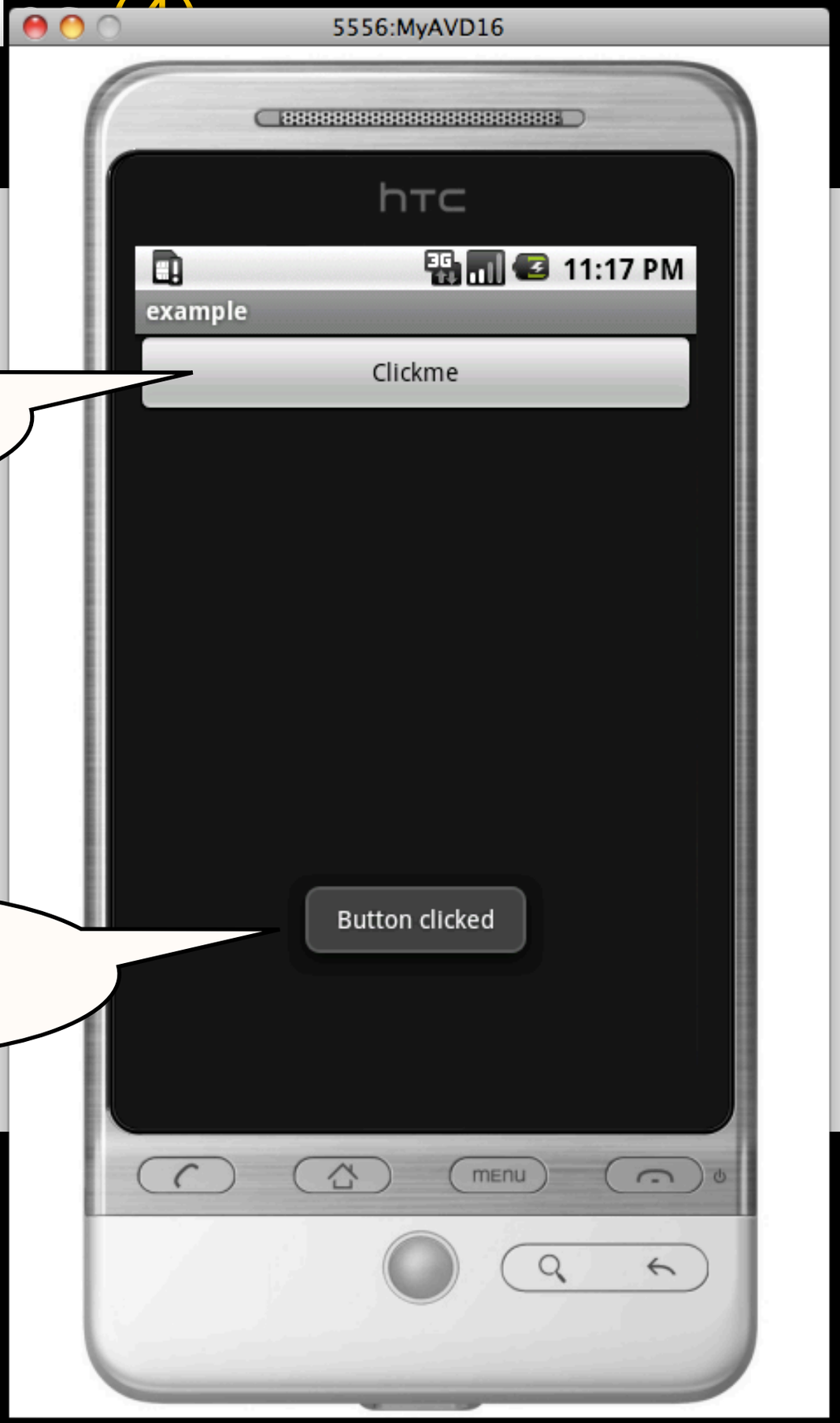
Code example (4)



Simple button

Toast

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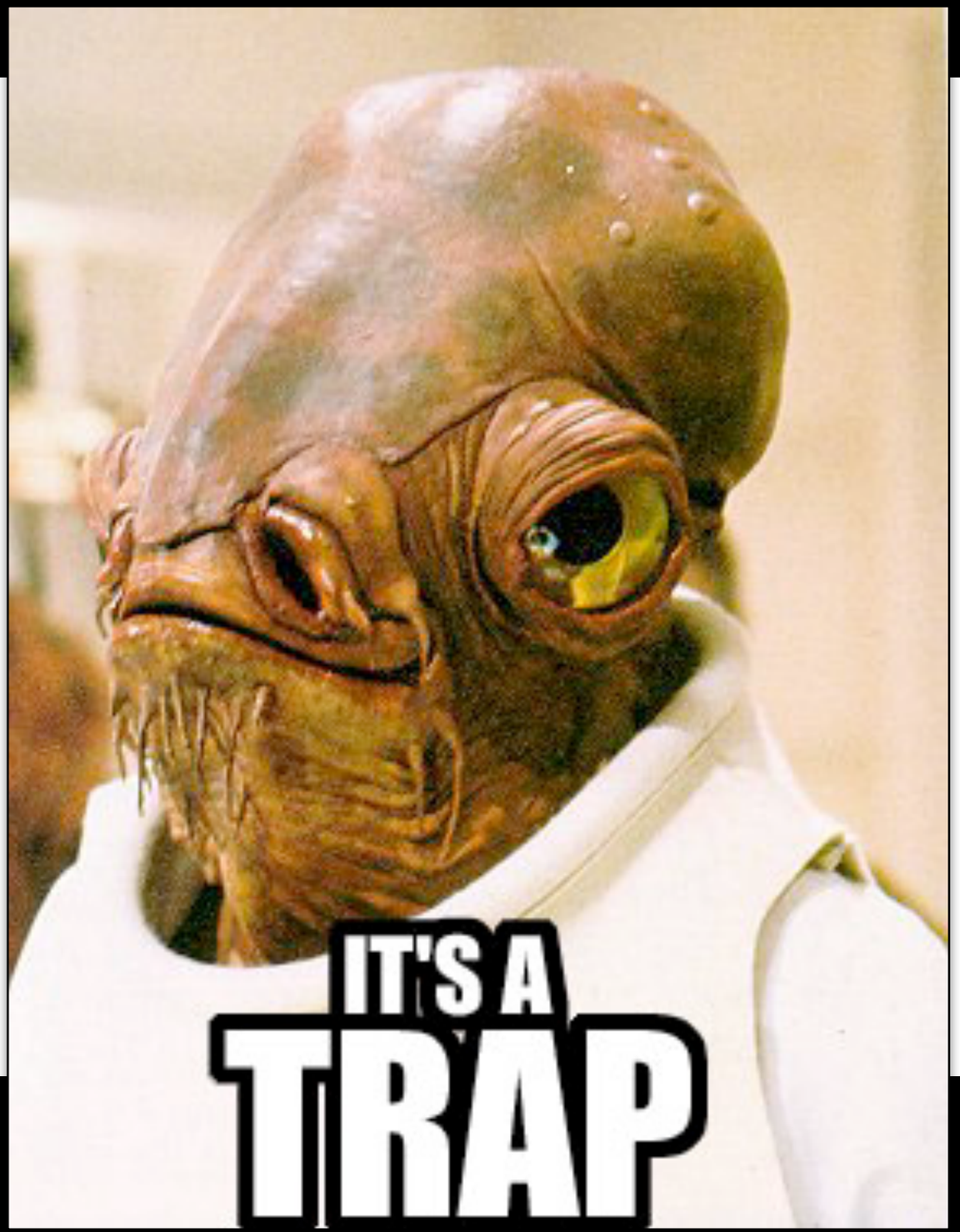
About the catches



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Tips for writing Android applications (1)

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- Don’t assume anything (Phones, Tablets, TV?, desktop?)

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- Don’t assume anything (Phones, Tablets, TV?, desktop?)
- Don’t assume connectivity.

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Tips for writing Android applications (1)

- Don’t assume anything (Phones, Tablets, TV?, desktop?)
- Don’t assume connectivity.
- You’re not alone. Don’t hog resources.

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Writing (native) Android applications (2)

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- Do your business in separate threads.

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- Cache EVERYTHING!

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Writing (native) Android applications (2)

- Do your business in separate threads.
- Cache EVERYTHING!
- show what you can, fetch more up-to-date info in the background.
- Don’t quit when something fails, display what you know.

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Writing (native) Android applications (2)

Writing (native) Android applications (2)

- BC breaks are a no-go.

Writing (native) Android applications (2)

- BC breaks are a no-go.
- Make sure you portrait and landscape are working.

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Writing (native) Android applications (2)

- BC breaks are a no-go.
- Make sure you portrait and landscape are working.
- Usability is an art (and I'm not an artist)

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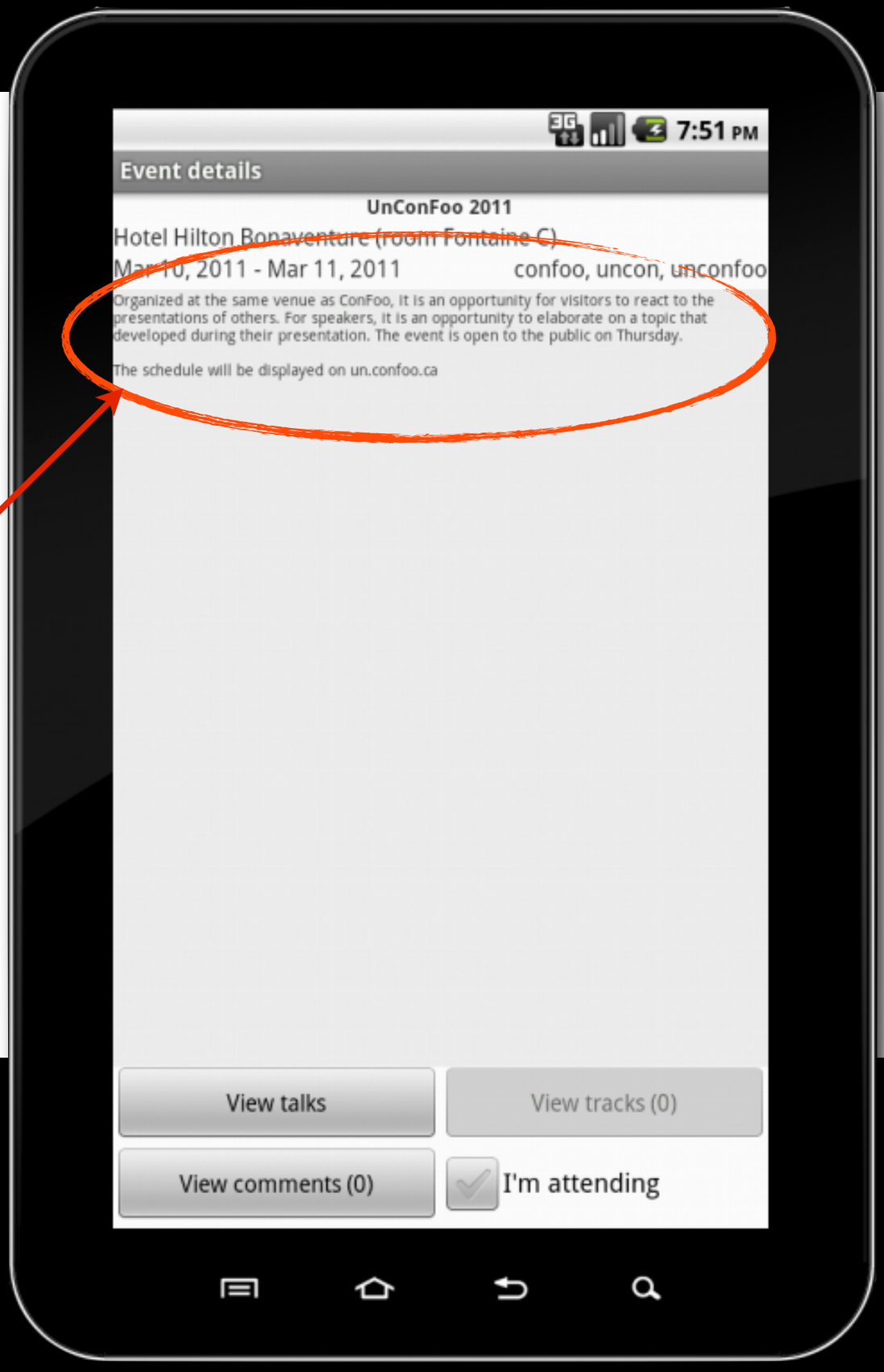
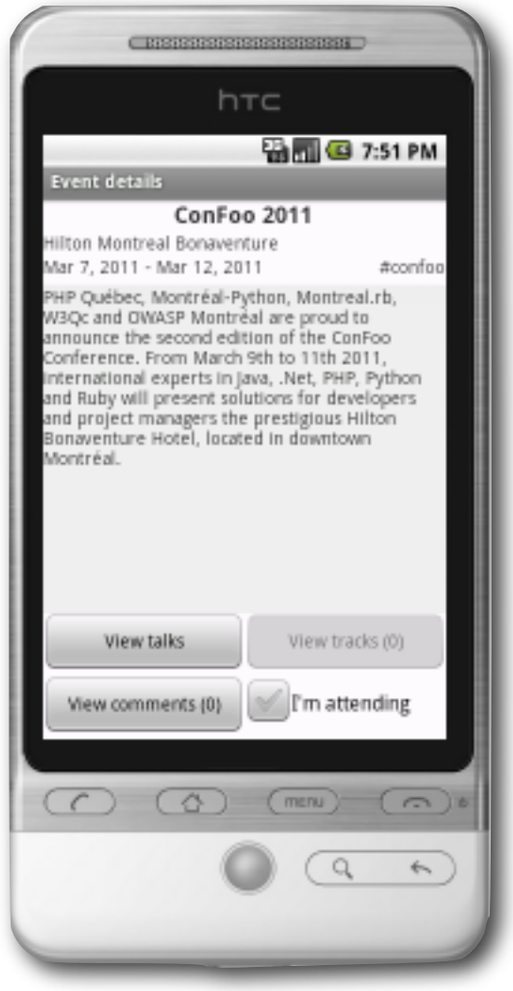
Sizes and usability (1)

Pixels instead of Dip's





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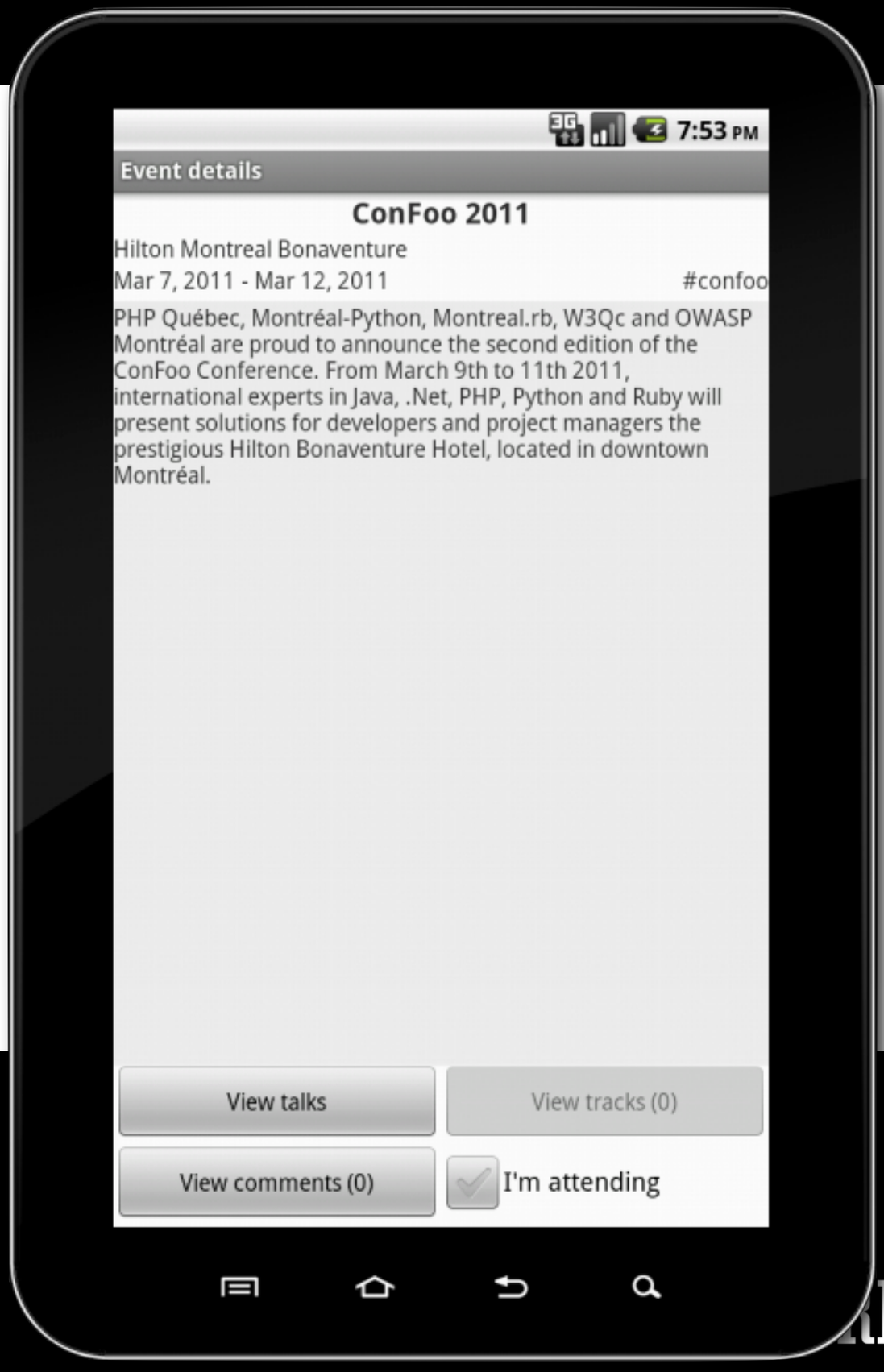
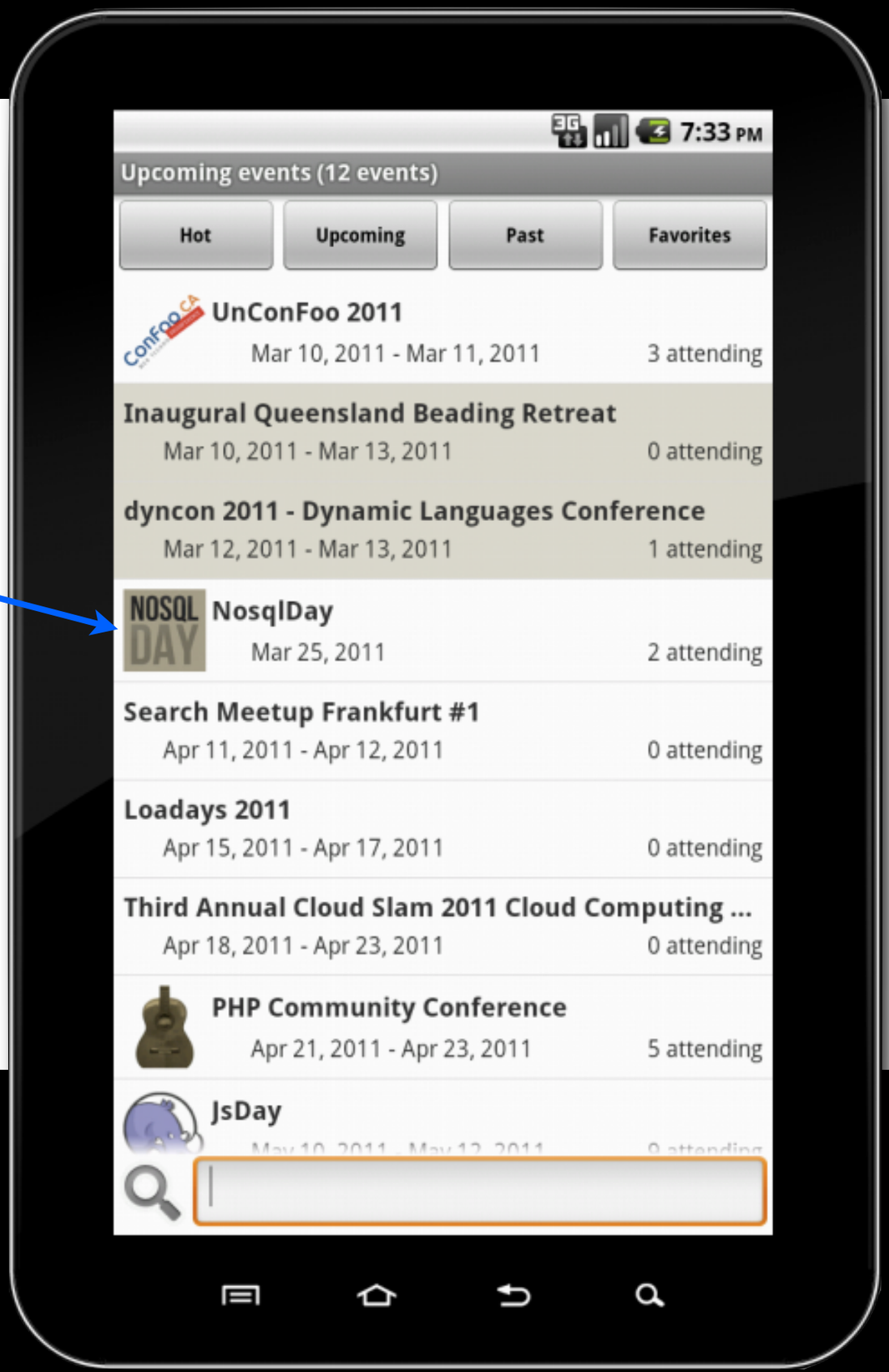
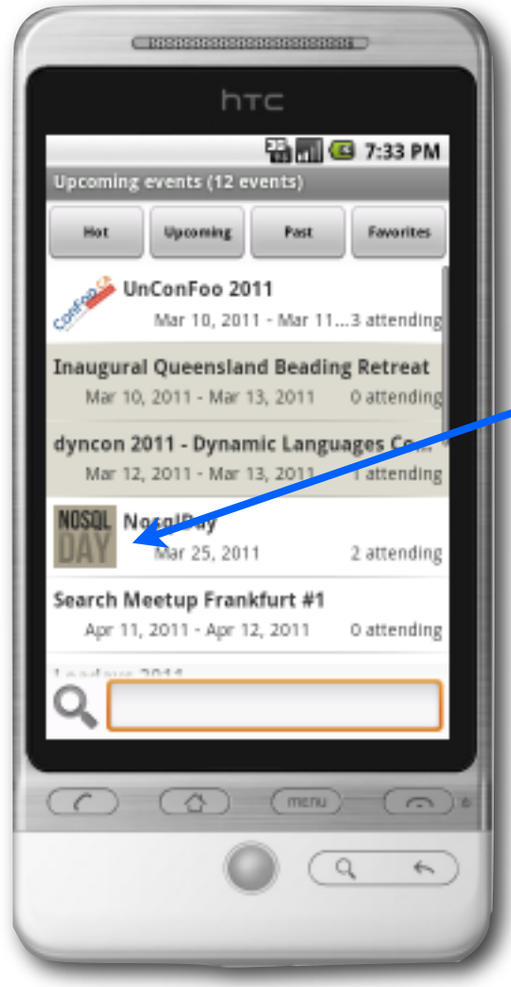
Sizes and usability (2)



Sizes and usability (3)

Scaled properly





Scaled properly

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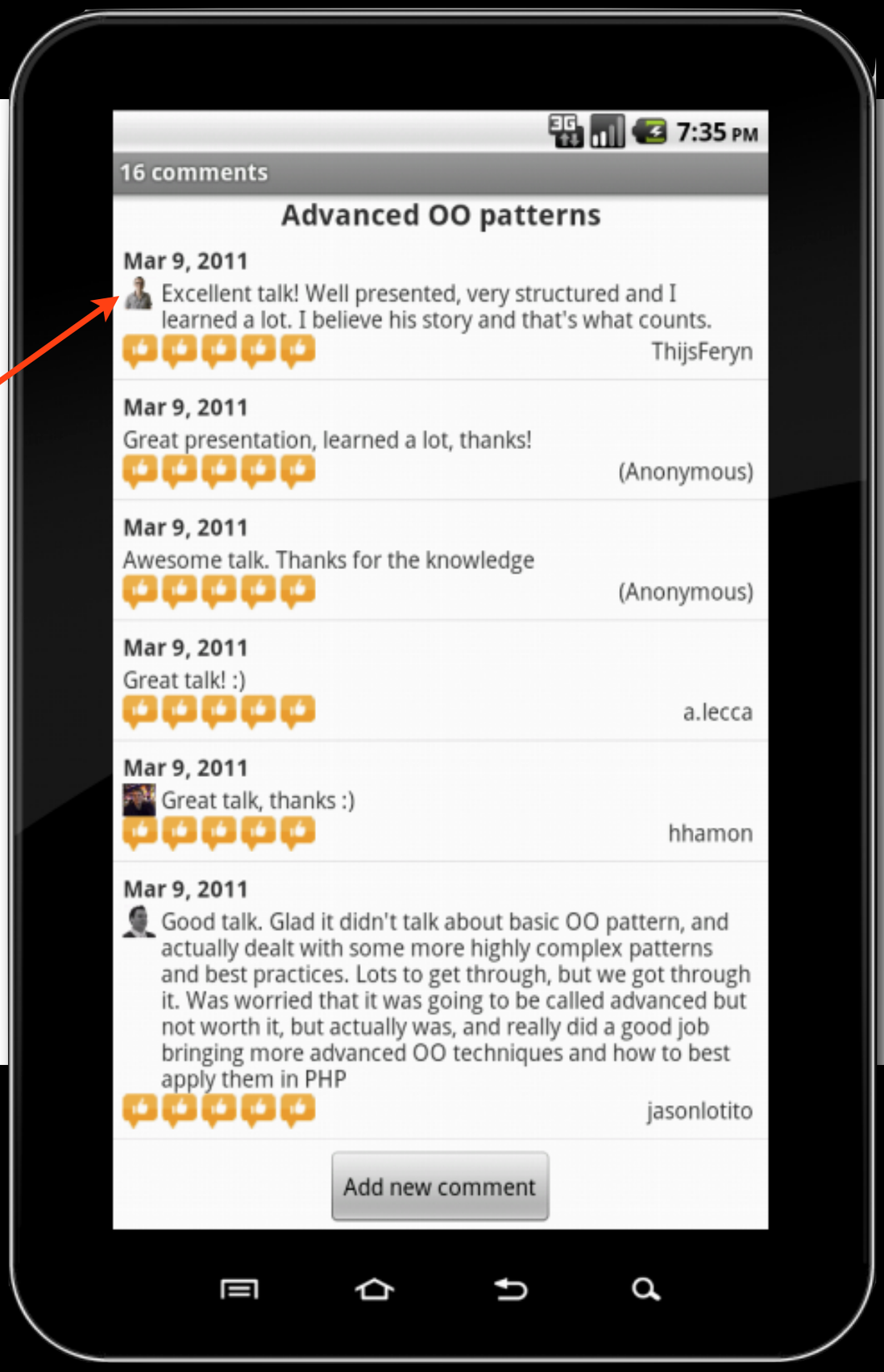
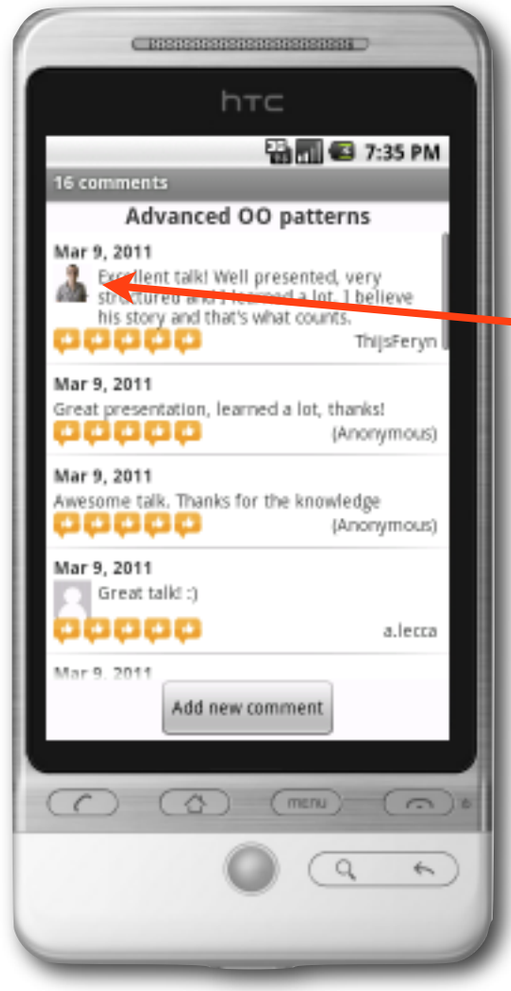
Sizes and usability (4)

Gravatar image not scaled properly



Here it's ok



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The most useful link

developer.android.com

And of course...

http://joind.in/talk/view/3180

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Any questions?

- QUESTIONS?

http://farm1.static.flickr.com/73/163450213_18478d3aa6_d.jpg

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- THANK YOU FOR YOUR ATTENTION