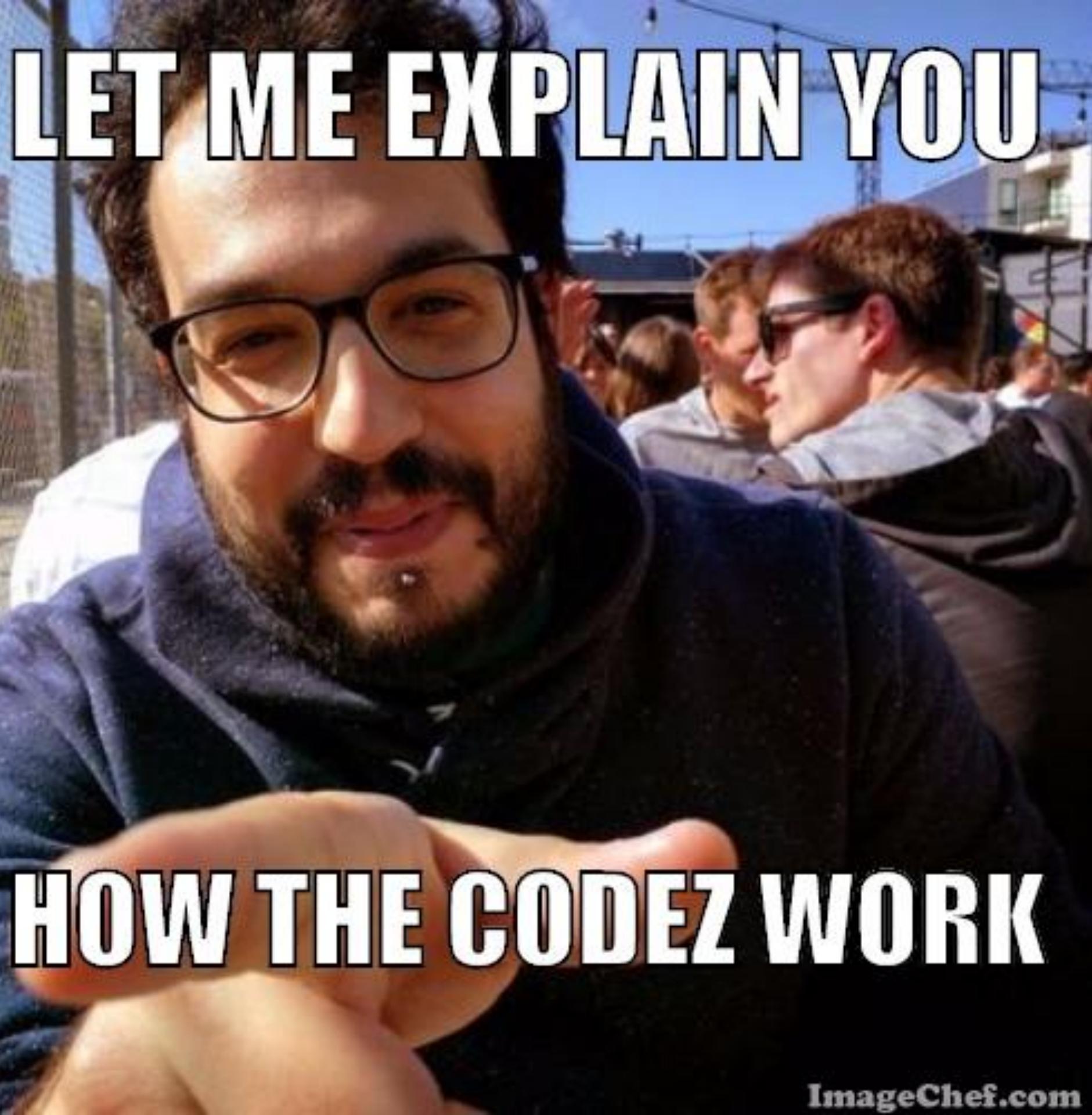


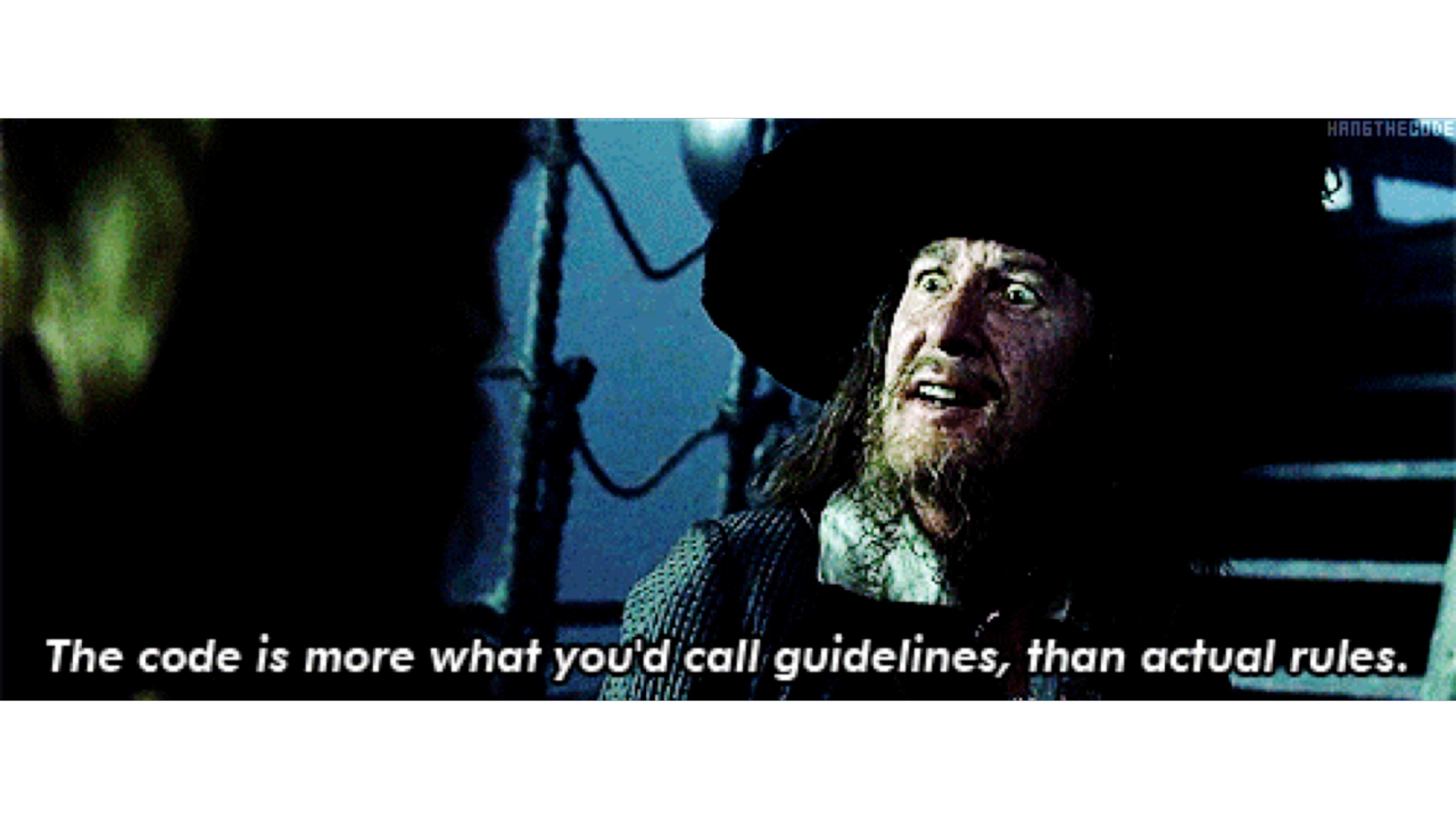
Android Development

The Pirate's CODE

A close-up photograph of a man with a full, dark brown beard and mustache. He is wearing black-rimmed glasses and a dark blue zip-up hoodie. He is looking directly at the camera with a neutral expression. In the background, there are other people and some buildings under a clear blue sky.

LET ME EXPLAIN YOU

HOW THE CODEZ WORK

A photograph of a man with a beard and a woman in a blue hoodie looking up at a hanging sign. The sign has the word "HANGTHECODE" and a small graphic of a hand holding a key.

HANGTHECODE

The code is more what you'd call guidelines, than actual rules.

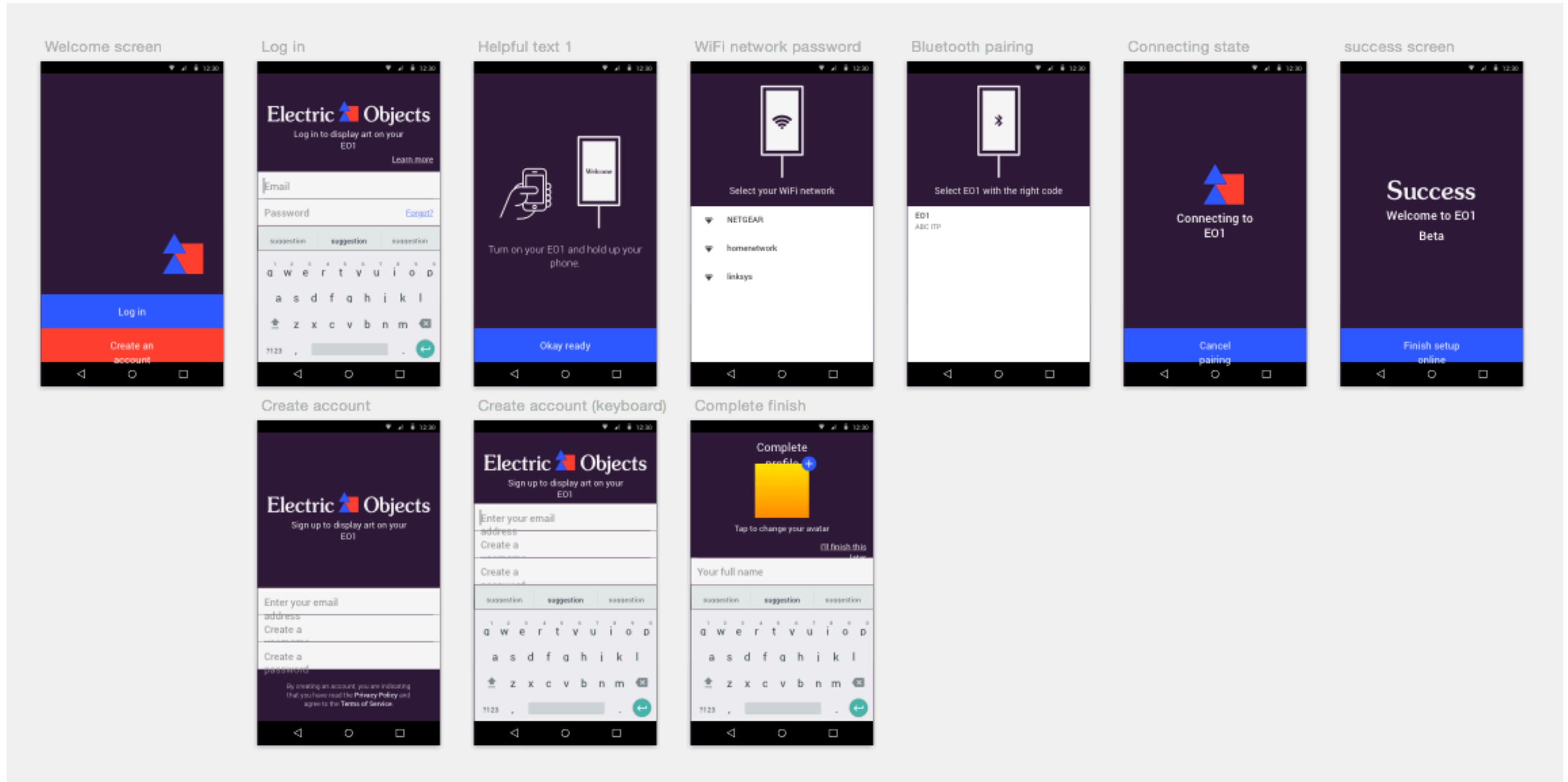
Android Development

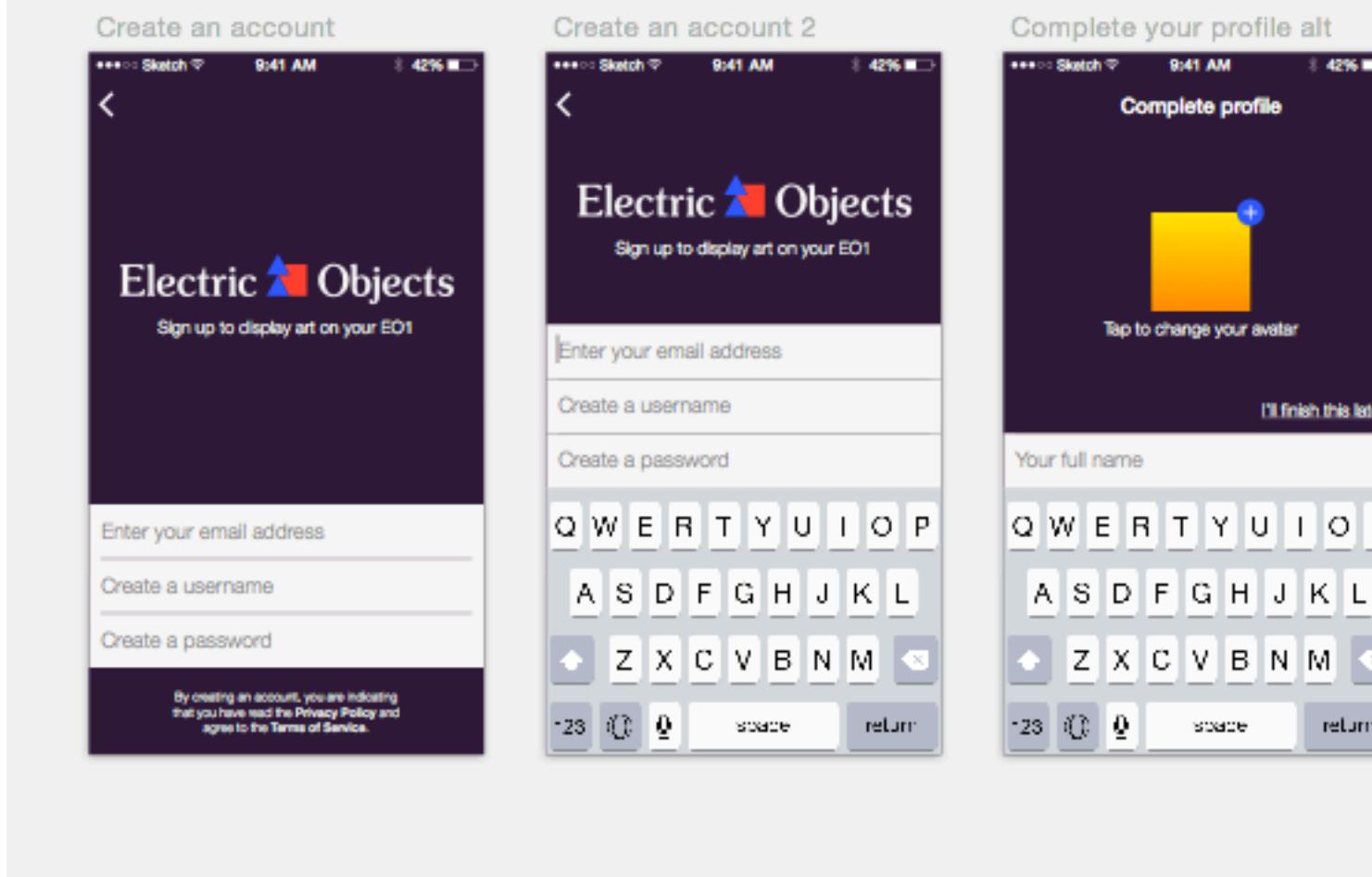
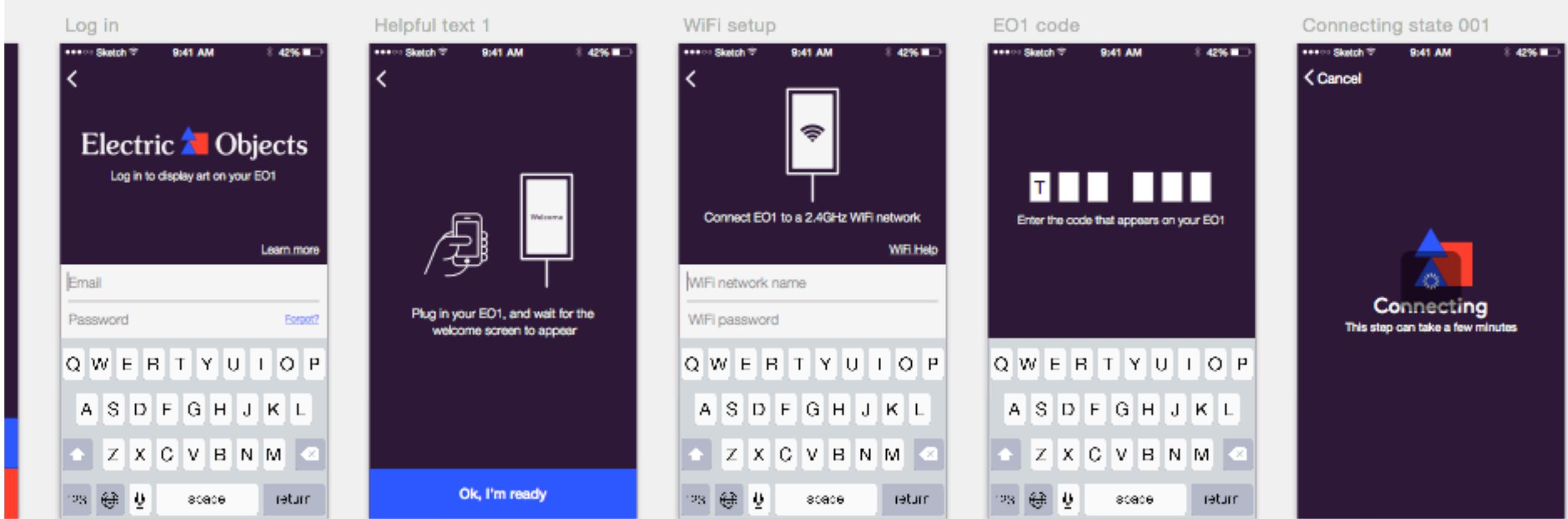
The Pirate's Guidelines

Where did these come
from?

Where did these come
from?

How Do I Start An Android App?

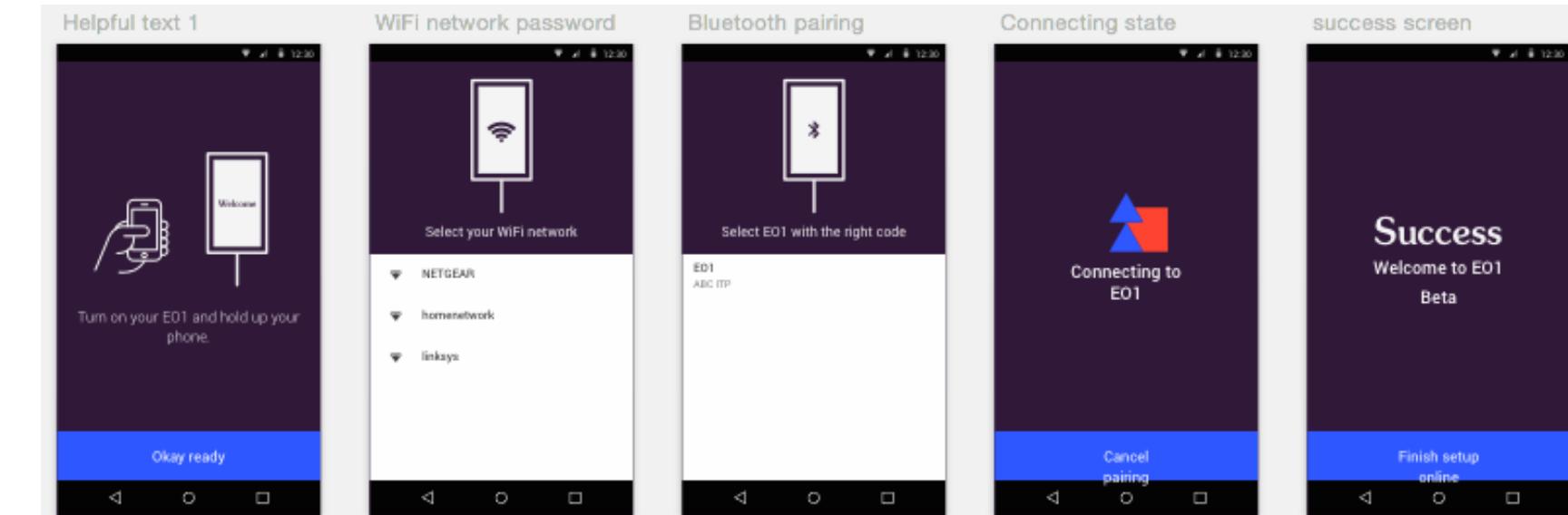
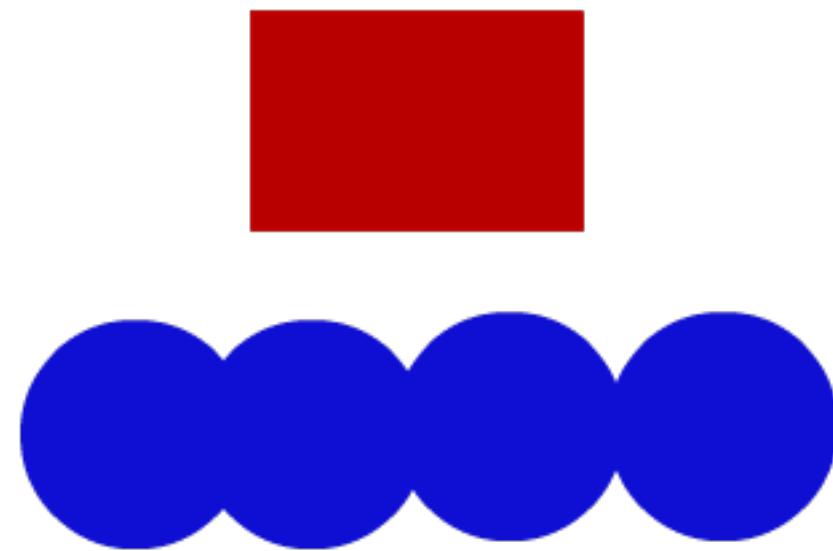


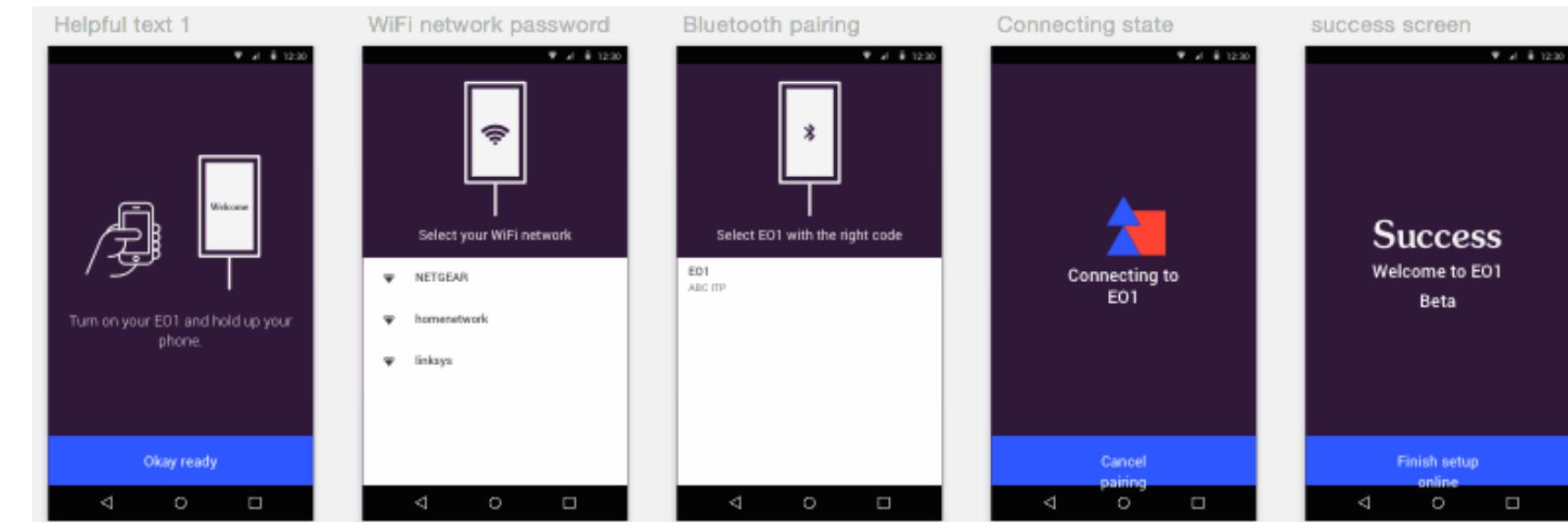
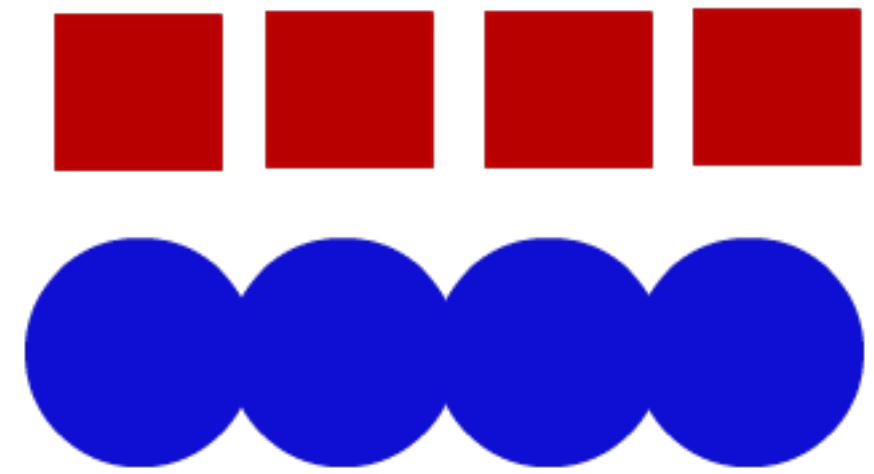


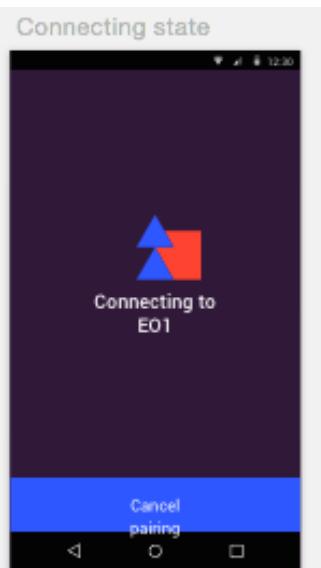
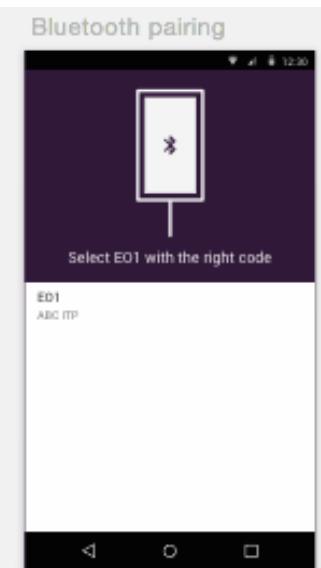
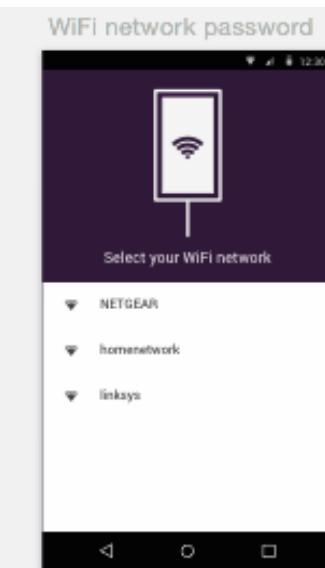
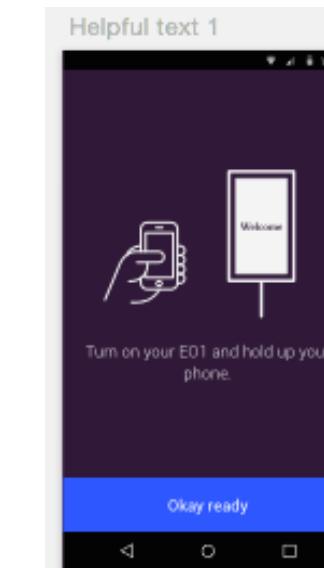
How Do I Start An Android App?

How do I map these mockups to Android 'Pieces'?

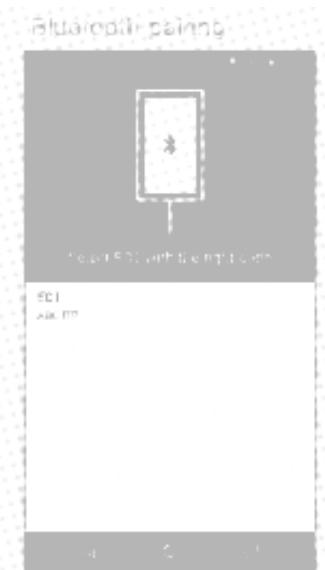








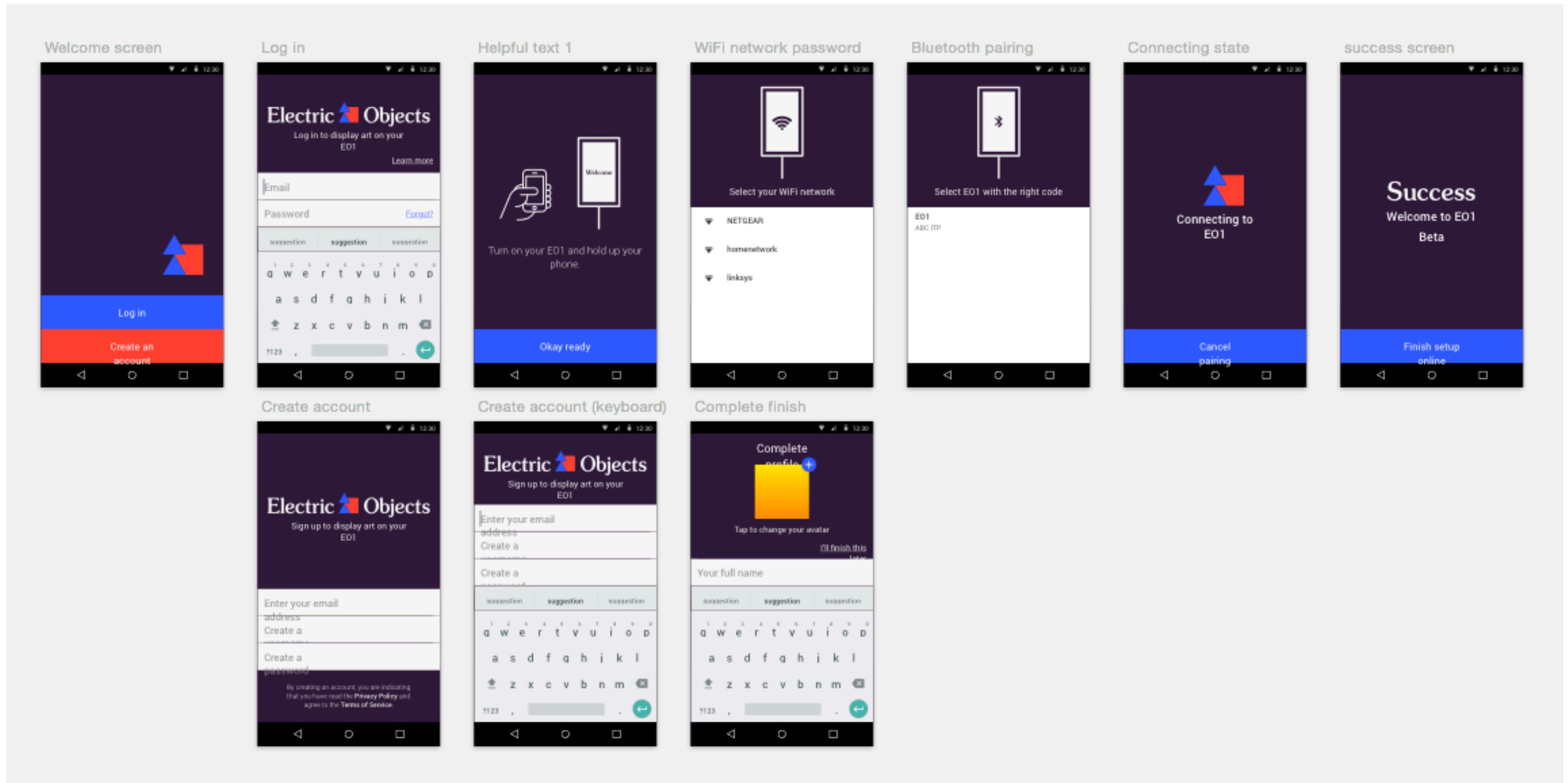
Pirate Guideline #1

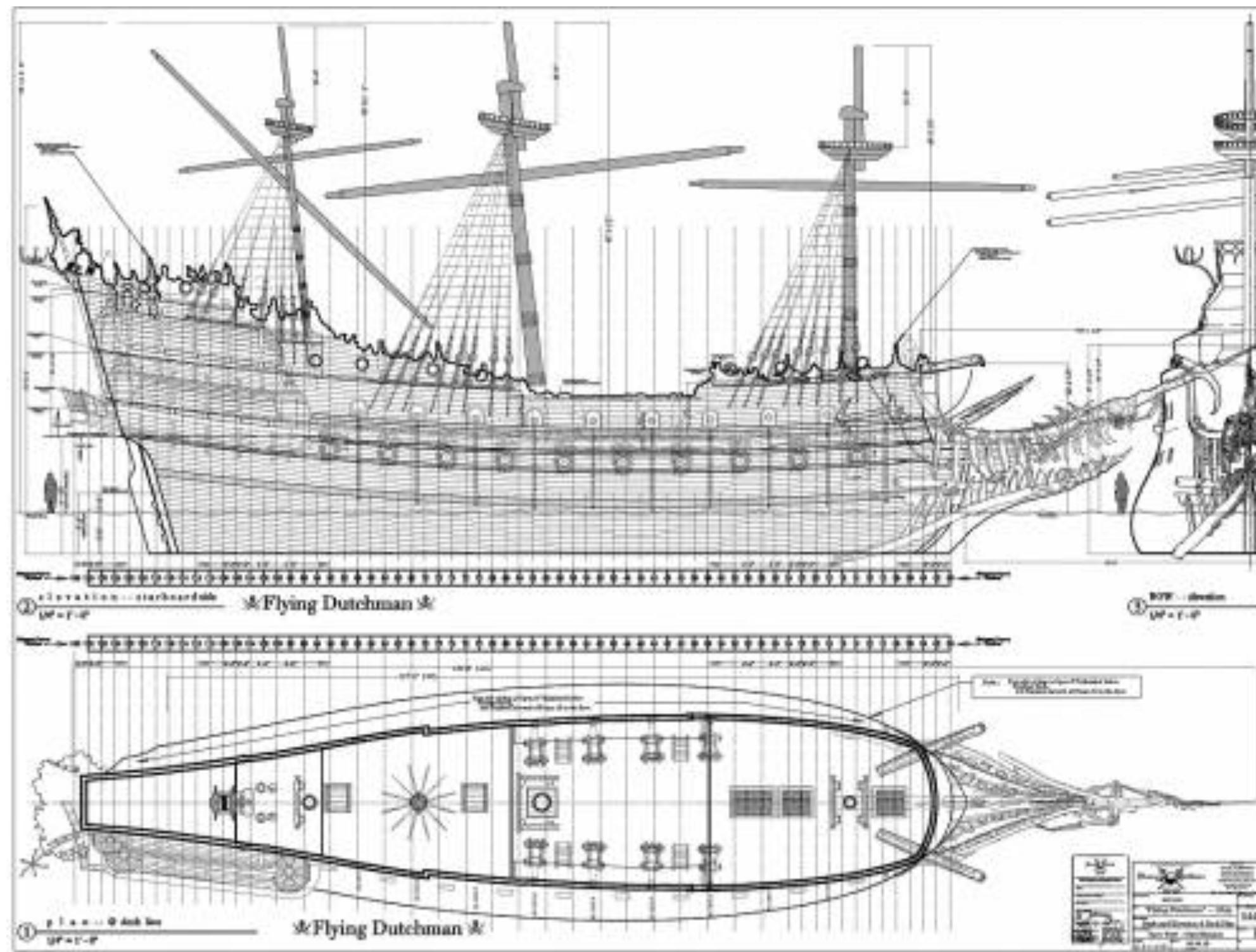


Pirate Guideline #1

**There is a one to one
correspondence between a
wireframe screen and an Activity**

**Super easy to get started
writing a new application**

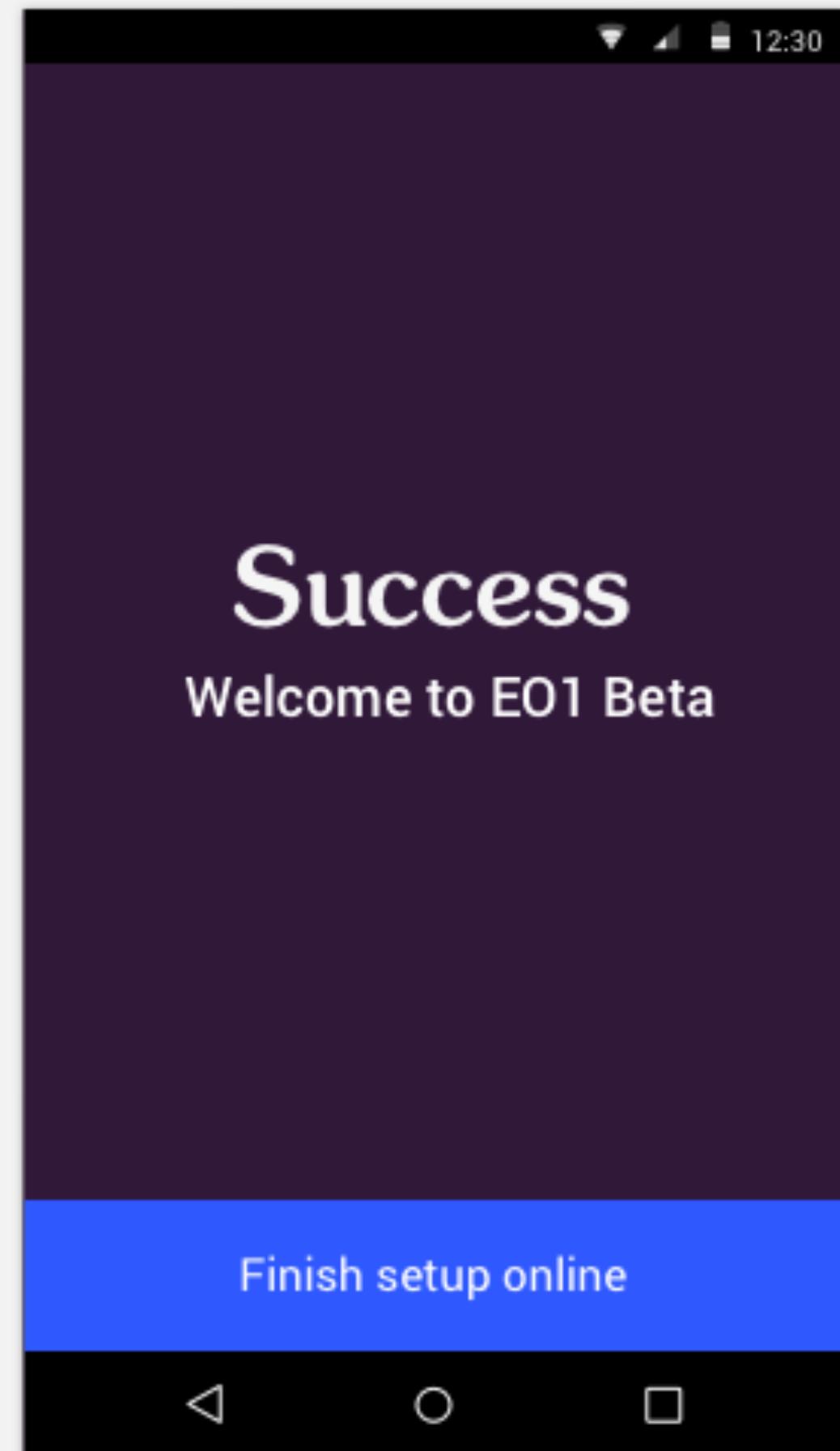




Helpful text 1



success screen



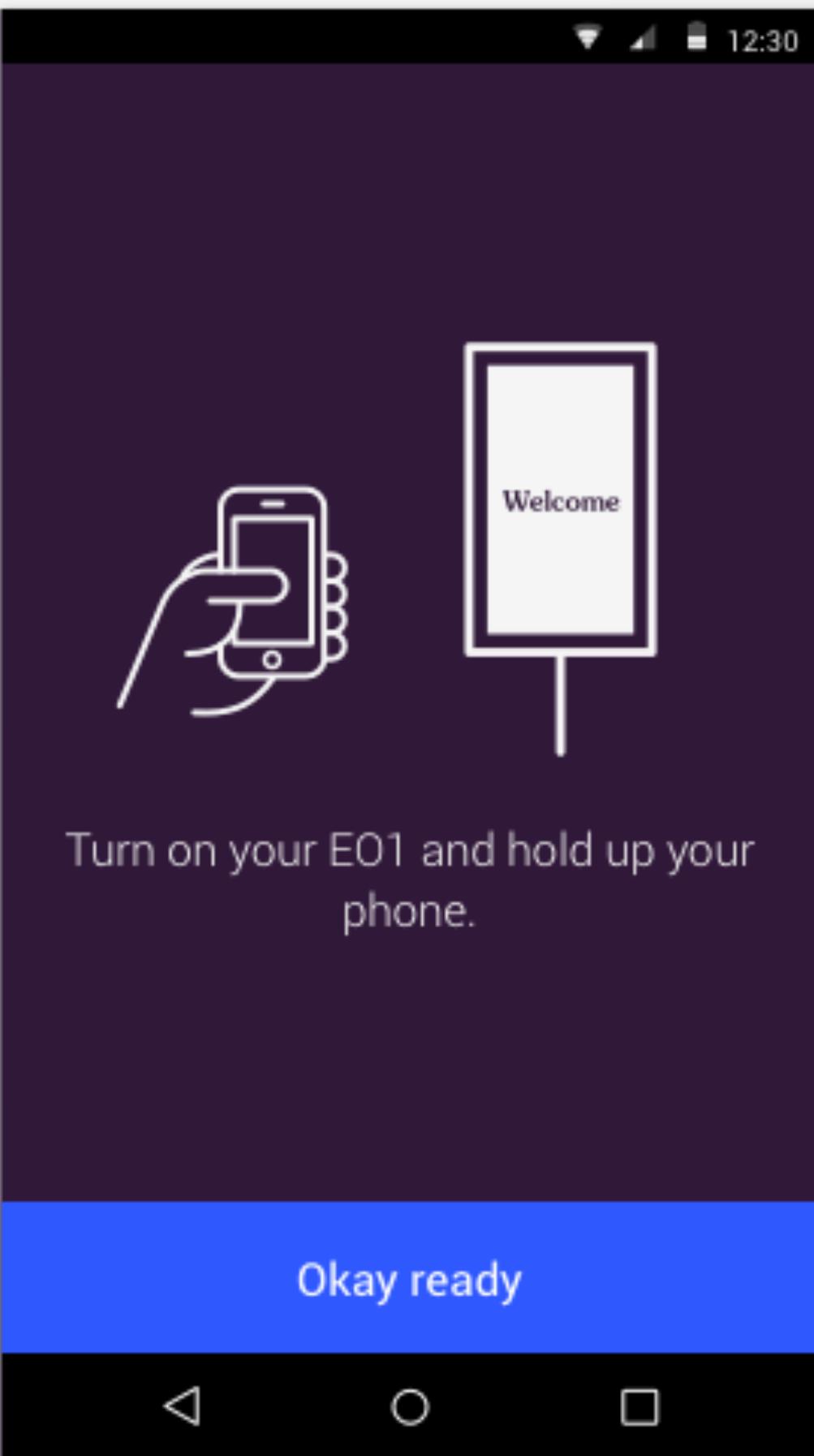
OkayActivity.java

setContentView(R.layout.activity_generic.xml);

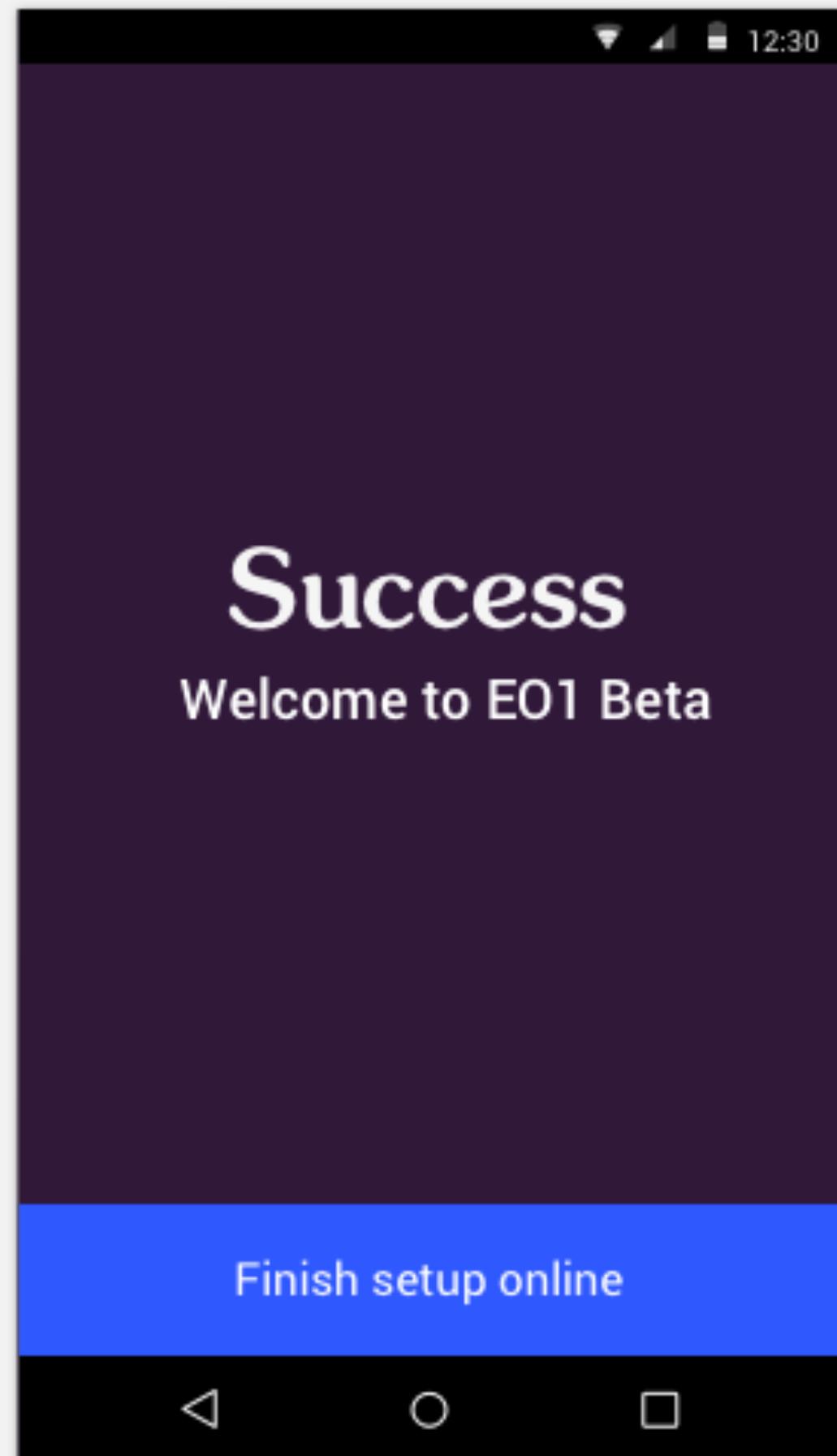
SuccessActivity.java

setContentView(R.layout.activity_generic.xml);

Helpful text 1



success screen



luke: hey lisa! 

luke: hey lisa! 

lisa: hey!  

luke: the app's looking really great!  

luke: the app's looking really great!  

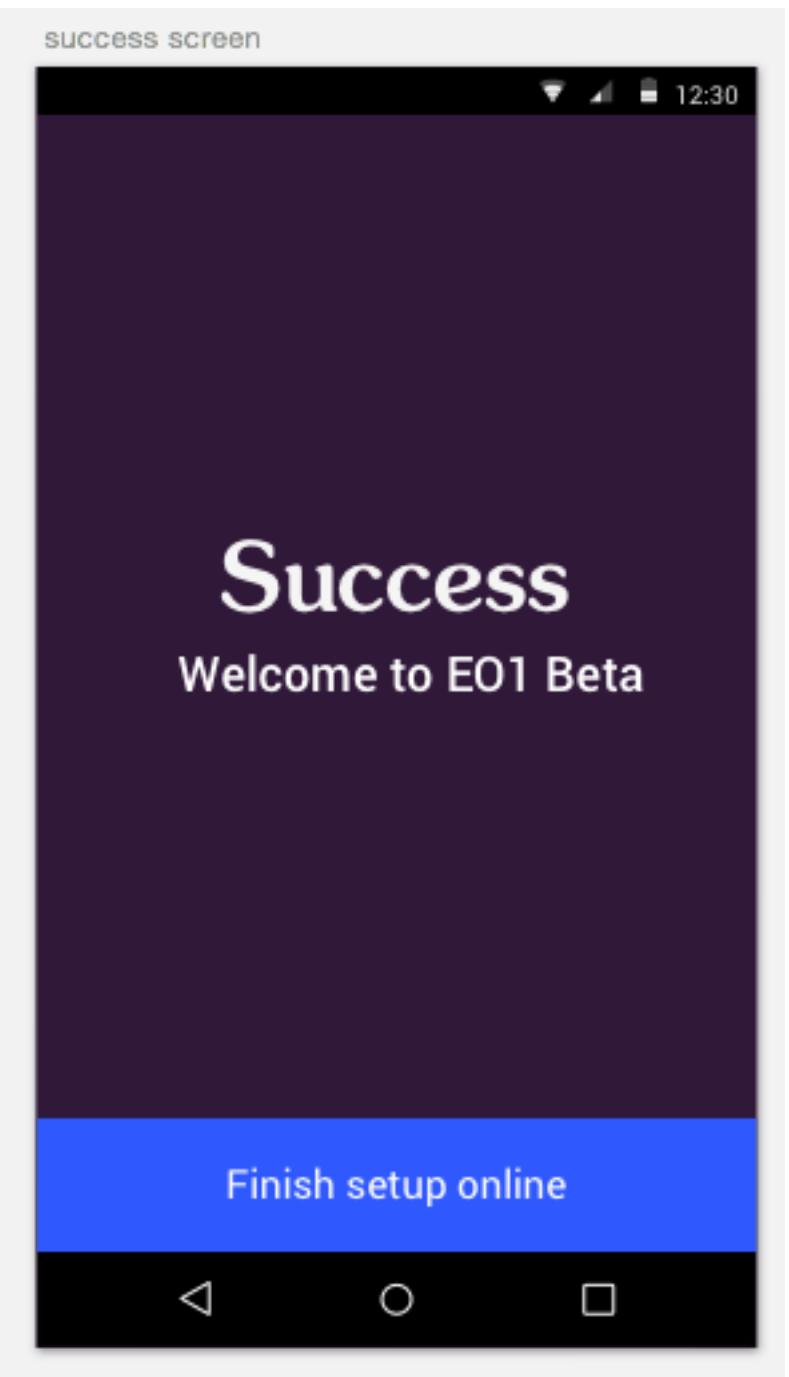
lisa: /me blushes 

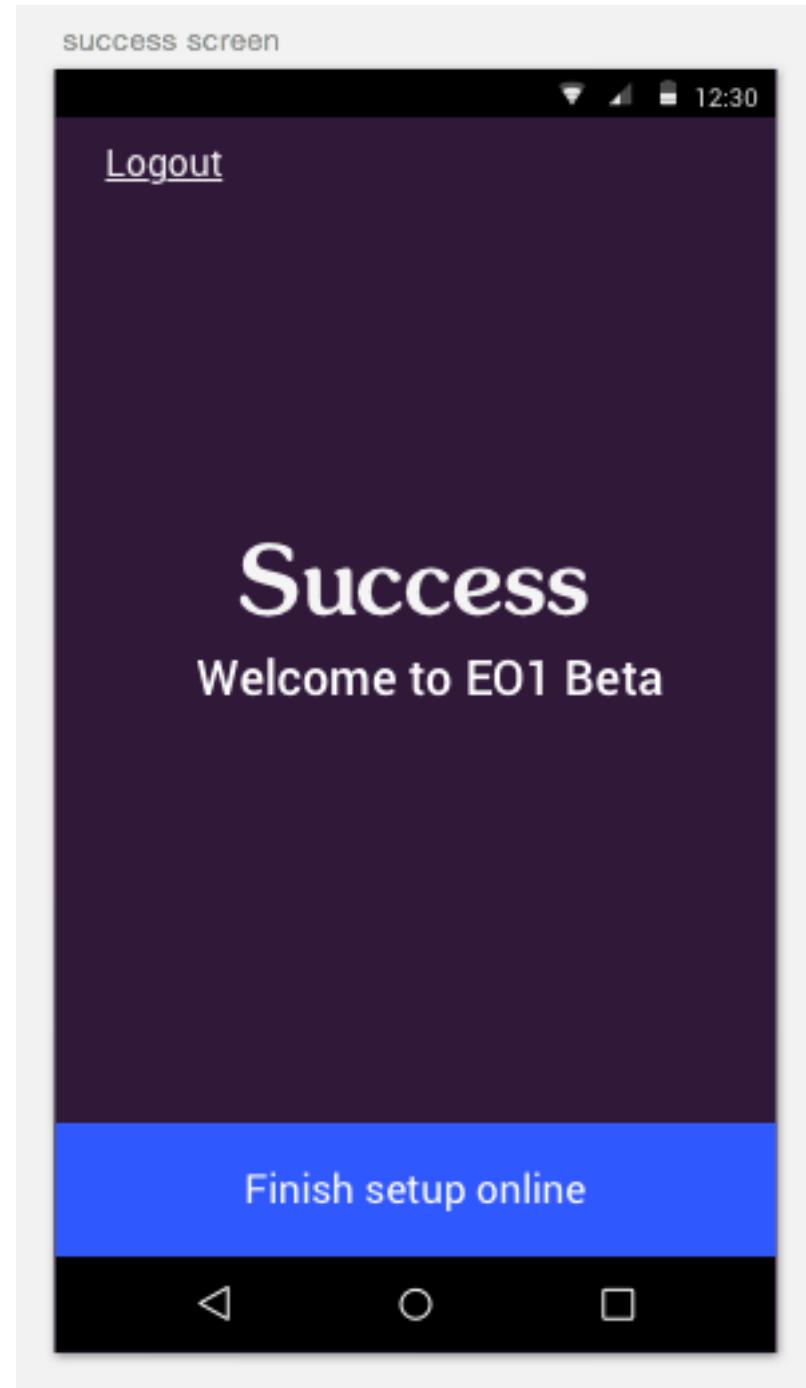
luke: just one thing

luke: just one thing

luke: *explains how someone could get
stuck*

luke: we need a logout button





lisa: /me prepares diatribe on the
Android Back Button

lisa: /me realizes she is vastly outnumbered by iOS devices

lisa: /me ctrl-C; ctrl-V

OkayActivity.java

setContentView(R.layout.activity_generic.xml);

SuccessActivity.java

setContentView(R.layout.activity_slightly_less_generic.xml);

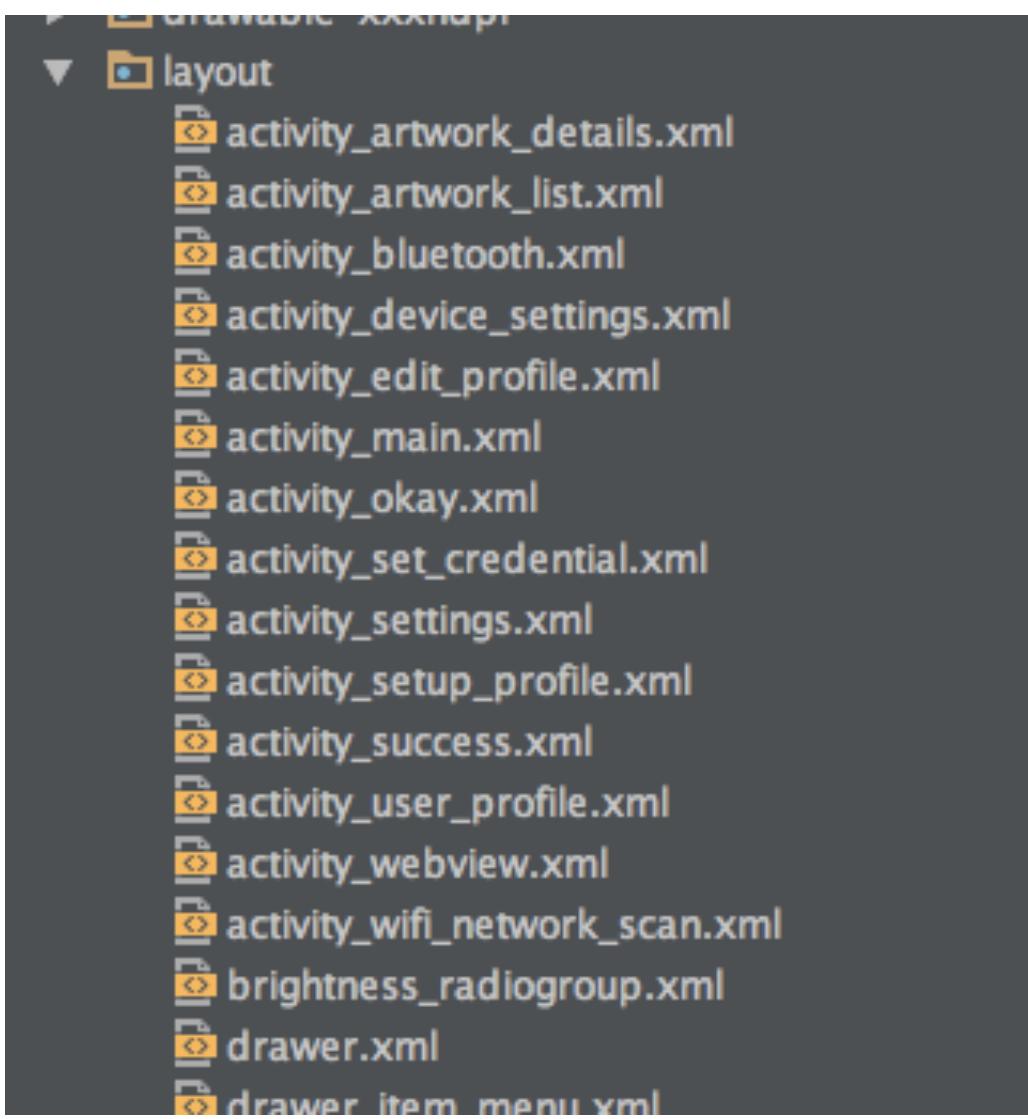
Pirate Guideline #2

PlayActivity.java

SuccessActivity.java

Pirate Guideline #2

Every Activity has its own layout file



PRGRAMMING BSET PRACTICES PRINCIPAL 101

PRGRAMMING BSET PRACTICES PRINCIPAL 101

DRY: Don't Repeat Yourself

Pirate Guideline #3

Pirate Guideline #3

**Reusable View code belongs in a
View class**



Public Gallery

There was a problem downloading artwork.
Are you connected to the Internet?

[Retry](#)

```
<ProgressBar  
    android:id="@+id/view_progress"  
    style="?android:attr/progressBarStyleInverse"  
    android:layout_width="50dp"  
    android:layout_height="wrap_content"  
    android:indeterminate="true"  
    android:indeterminateTintMode="src_atop"  
    android:indeterminateTint="@color/white"  
/>  
  
</LinearLayout>  
  
<include layout="@layout/partial_error" />  
  
</FrameLayout>
```

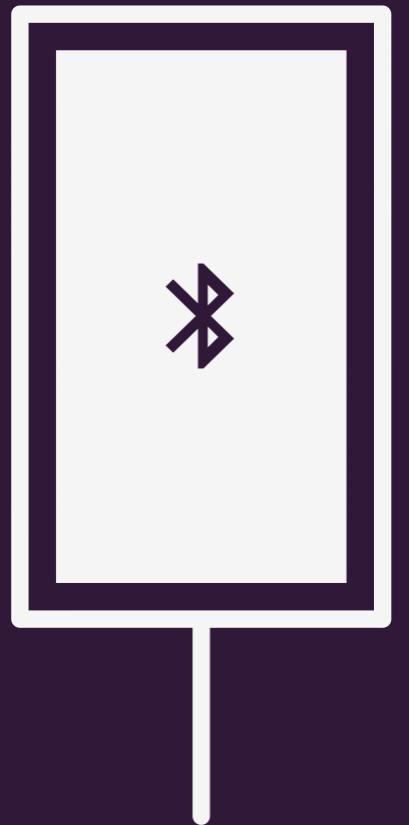
PRGRAMMING BSET PRACTICES PRINCIPAL 101

PRGRAMMING BSET PRACTICES PRINCIPAL 101

**Favor composition over
inheritance**



16:12



Select EO1 with the right code



16:12



Connect EO1 to a 2.4GHz WiFi network

EO1 not found. Scan again?

Re-scan

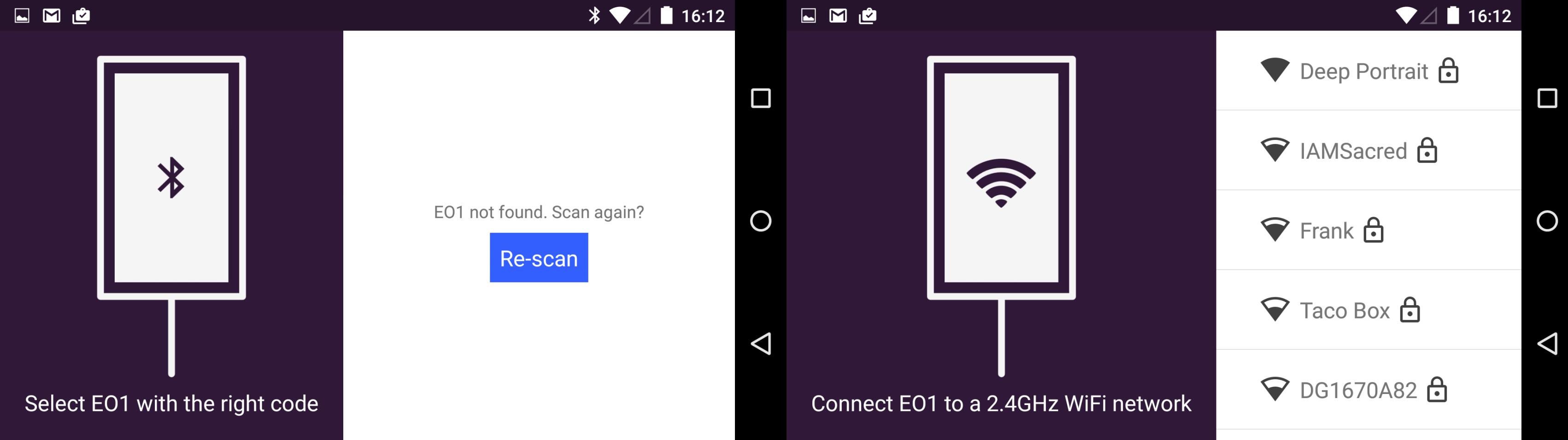
Deep Portrait

IAMSacred

Frank

Taco Box





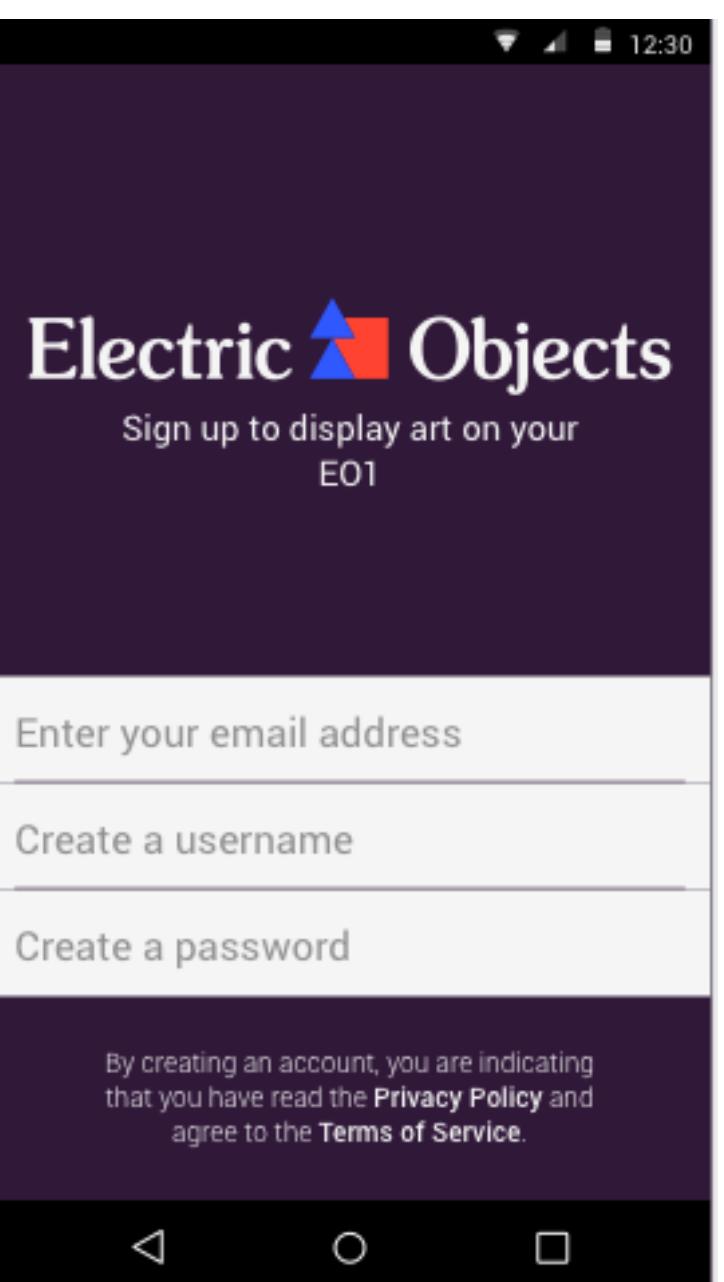
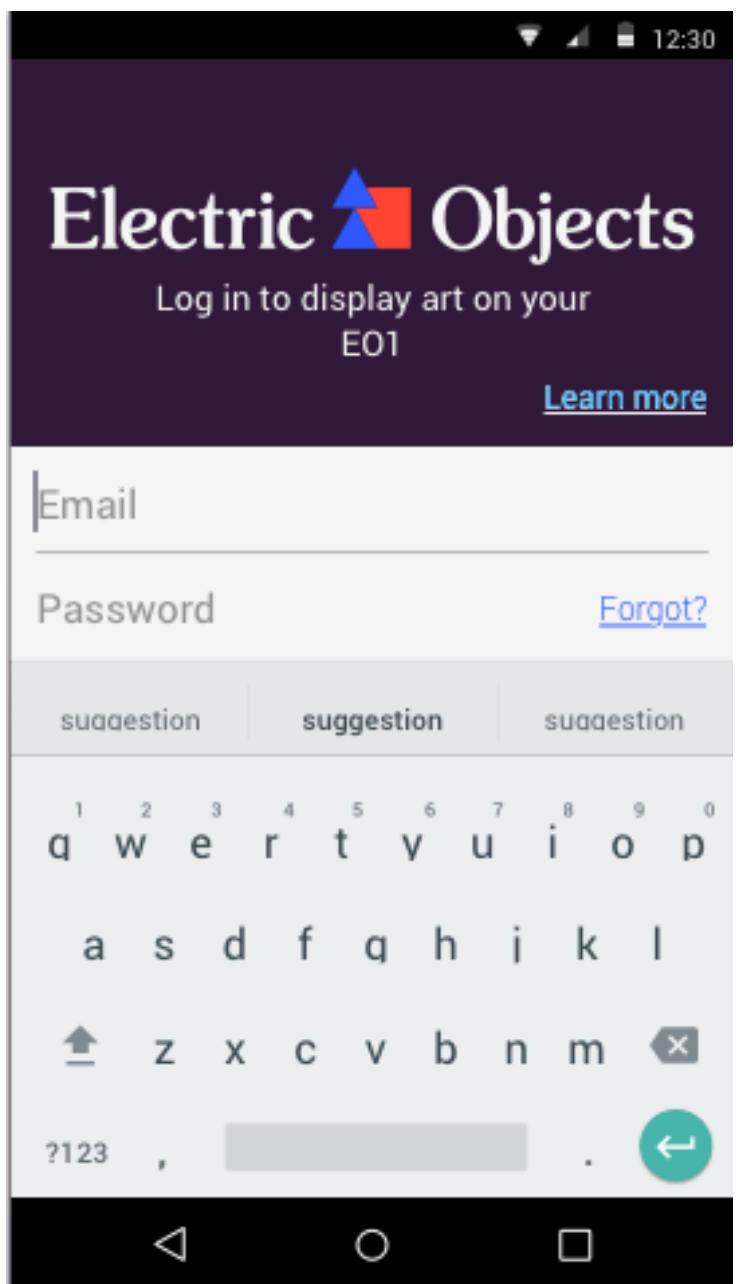
```
tools:showIn="@layout/activity_blueooth" >  
    <ImageView  
        style="@style/LargeImage"  
        android:src="@drawable/bluetooth_pairing"  
        android:layout_marginBottom="@dimen/padding_medium" />  
  
    <TextView  
        android:layout_width="wrap_content"
```

```
<style name="LargeImage">
    <item name="android:layout_height">wrap_content</item>
    <item name="android:layout_width">wrap_content</item>
</style>
```

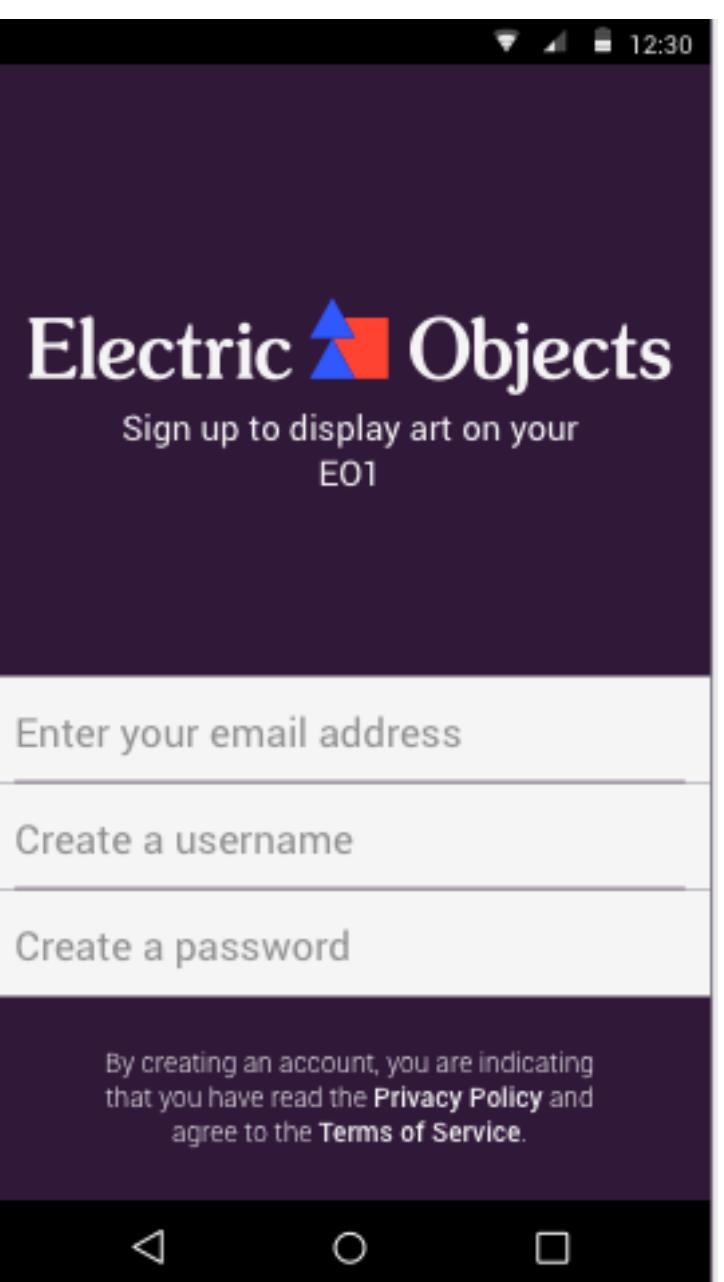
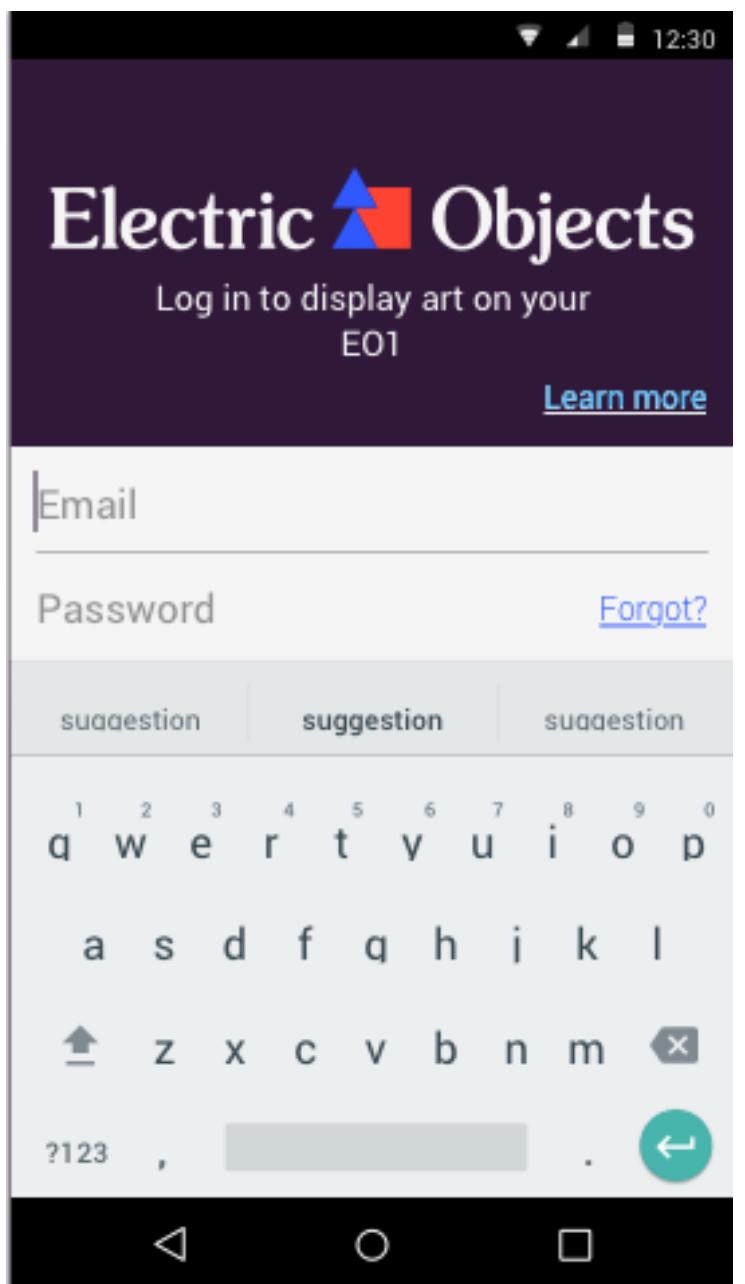
```
<style name="LargeImage">
    <item name="android:layout_height">0dp</item>
    <item name="android:layout_width">wrap_content</item>
    <item name="android:layout_weight">1</item>
</style>
```

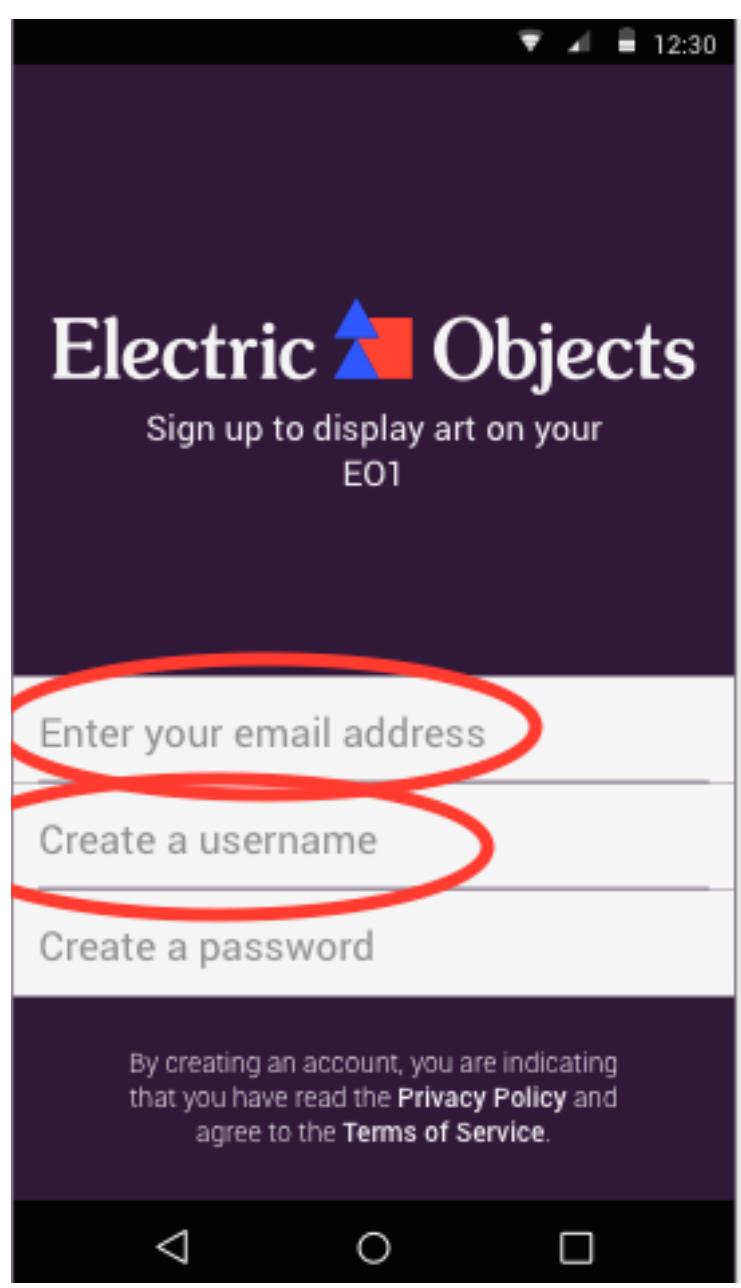
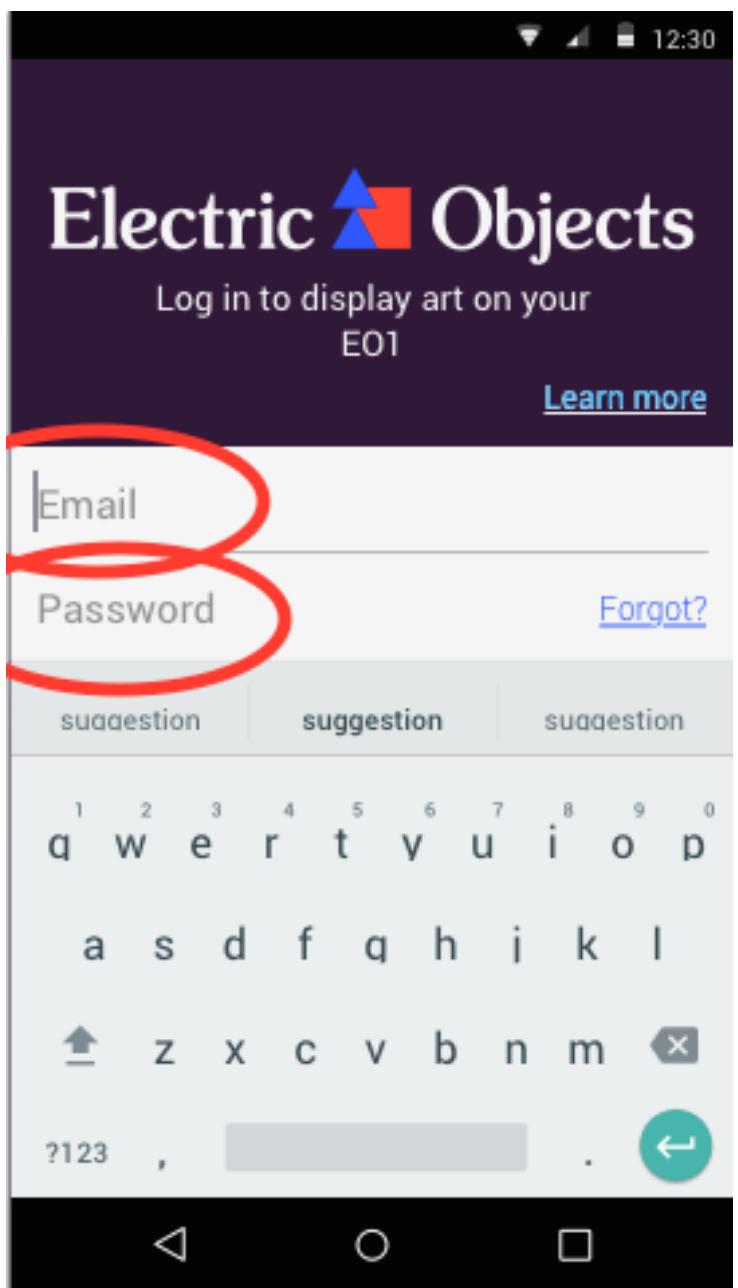
Pirate Guideline #3A

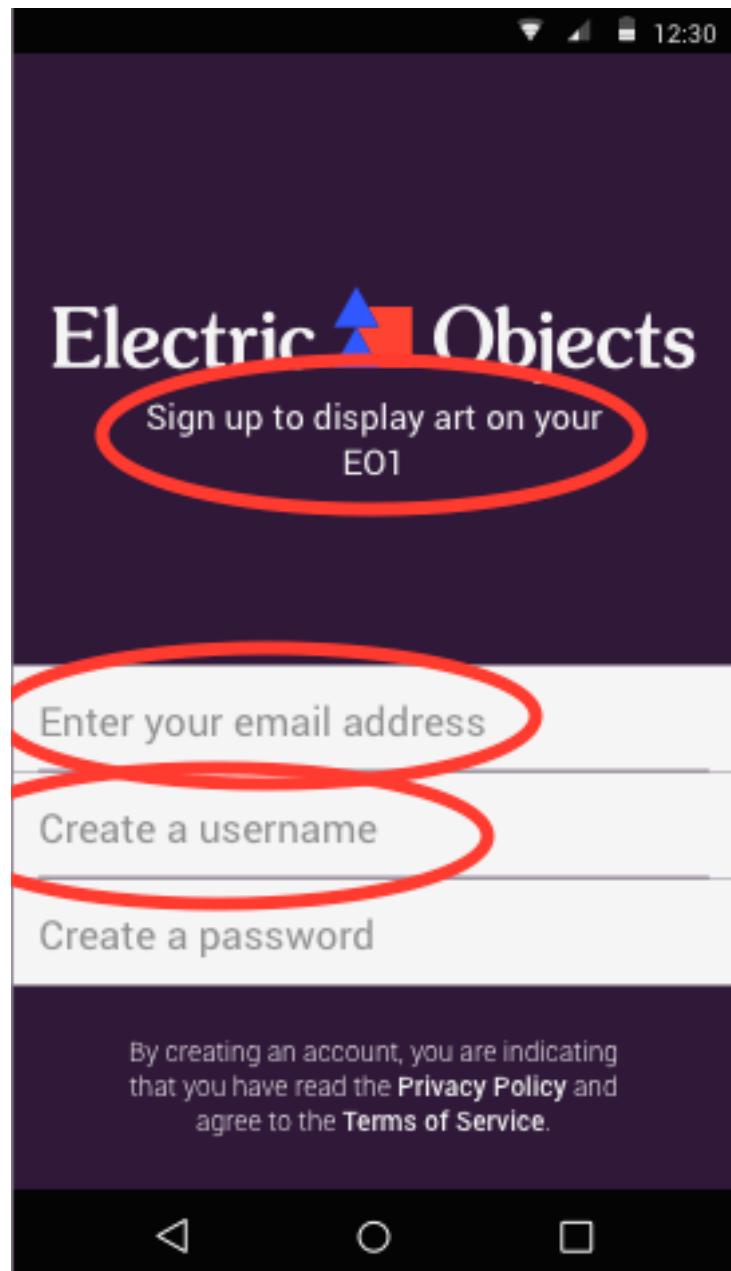
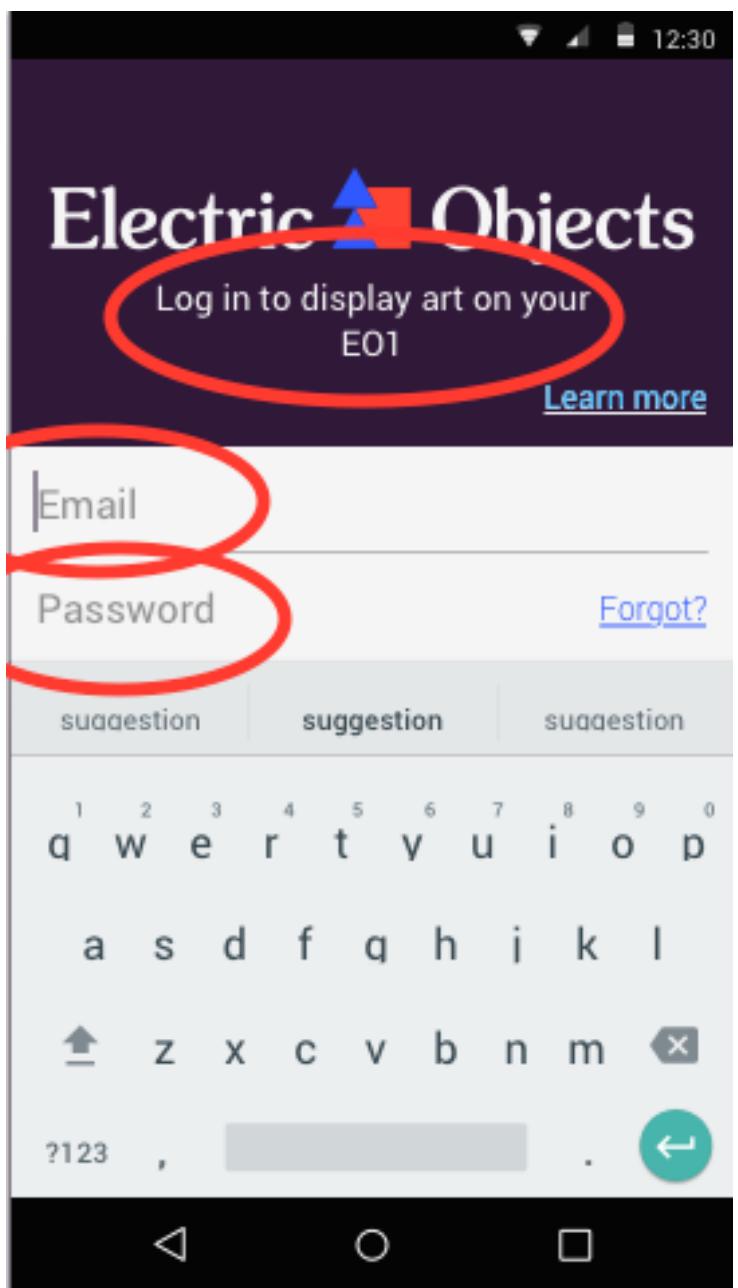
Reusable View attributes belong in a style

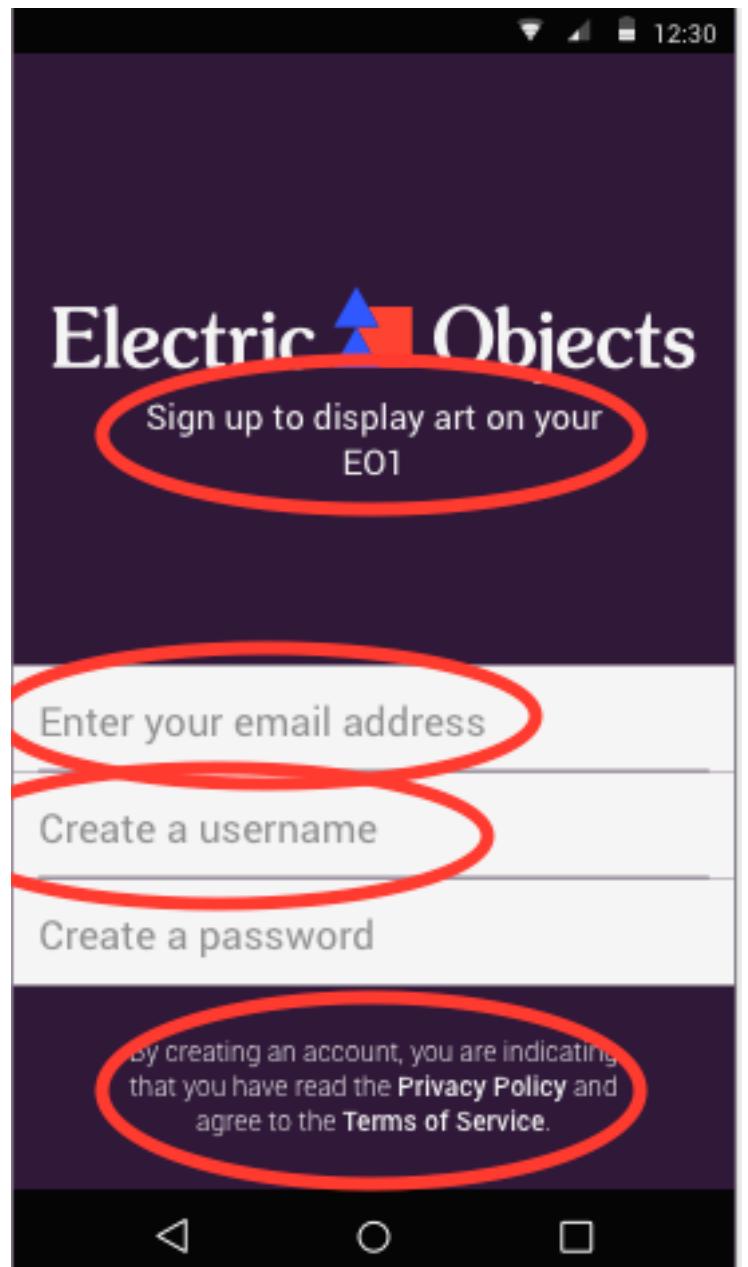
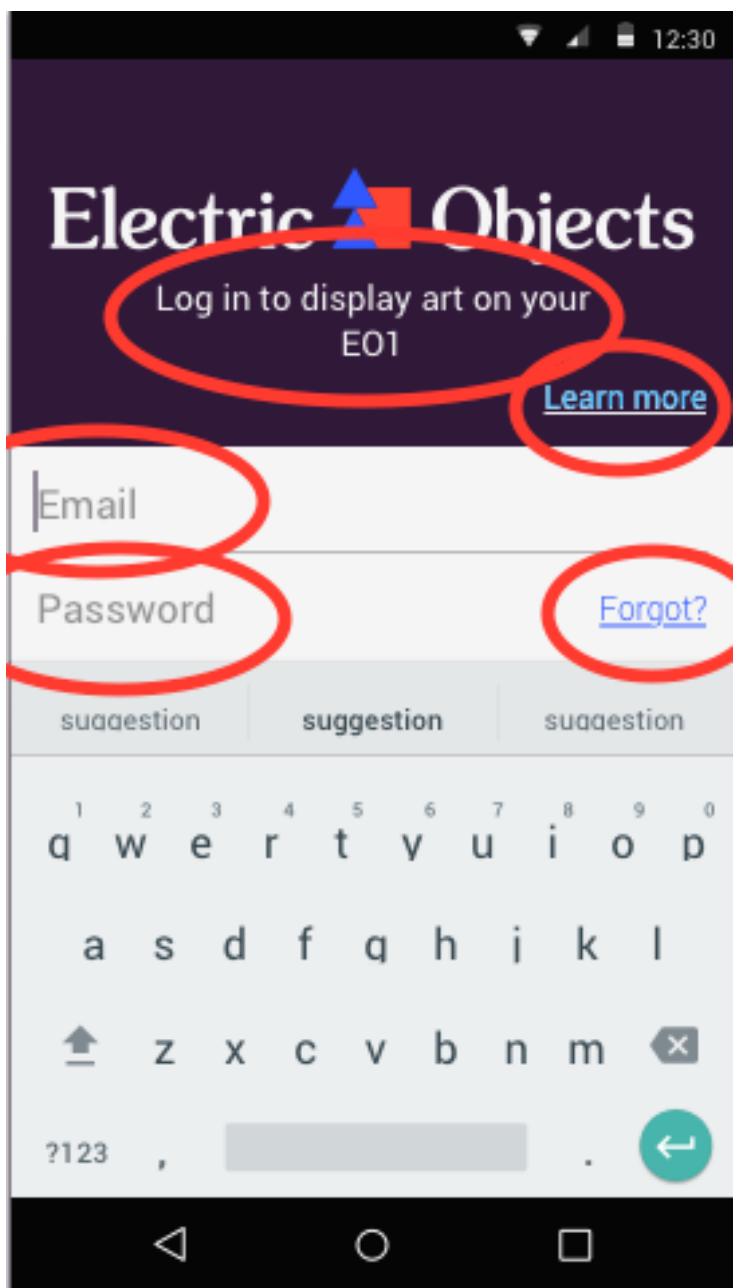


```
/**  
 * Created by lisa on 1/29/15.  
 *  
 */  
public class LoginView extends FrameLayout implements TextView.OnEditorActionListener, View.OnKeyListener, View  
  
    private static final String TAG = EoLog.makeText(LoginView.class);  
    private LoginCallback mCallback;  
    private ErrorView mErrorView;  
    private View mUsernameBorder;  
  
    public interface LoginCallback {  
        public void onEnterPressed();  
        public void onLearnMorePressed();  
        public void onForgotPasswordPressed();  
    }  
  
    EditText mEmail;  
    EditText mPassword;  
    EditText mUsername;  
    View mForgotPassword;  
    TextView mTermsAndCond;  
    TextView mFlavorText;  
    View mLearnMoreLink;  
  
    public LoginView(Context context, LoginCallback callback) {  
        super(context);  
        init(callback);  
    }  
  
    public LoginView(Context context, AttributeSet attrs) {  
        super(context, attrs);  
        init(null);  
    }  
  
    public LoginView(Context context, AttributeSet attrs, int defStyleAttr) {  
        super(context, attrs, defStyleAttr);  
        init(null);  
    }  
}
```











Ineigut 1:55 PM

lol yeah

i wish i had screenshots that i sent to dallas somepoint last year

1:55 ★ on the etsy app where fragments were just [redacted] disappearing
into some abyss



kasra 1:56 PM

hahaha

yeah my fav one at stack right now is you can basically view 3 pages ontop of each other
and... idk how to repro it except sometimes it just randomly happens when i'm rotating



Pirate Guideline #4



Pirate Guideline #4

**Fragments are not simple. Don't
use fragments.***

Pirate Guideline #4

Fragments are not simple. Don't use fragments.*

*unless it is absolutely necessary


```
@Override  
public void onConfigurationChanged(Configuration newConfig) {  
    super.onConfigurationChanged(newConfig);  
}  
}
```

```
@Override  
public void onConfigurationChanged(Configuration newConfig) {  
    super.onConfigurationChanged(newConfig);  
    \\ ~~something real hacky~~  
}
```

– languages not changing correctly

- languages not changing correctly
- views not resizing properly

- languages not changing correctly
- views not resizing properly
- strange invocations to `.onSaveInstanceState()` in `onConfigurationChanged`

- BUGGY
- HARD TO TEST
- HARD TO FIX

Pirate Guideline #5

Pirate Guideline #5

**Never override configuration
changed.***

Pirate Guideline #5

**Never override configuration
changed.***

* for view code

```
setRetainState(true);
```

```
setRetainState(true);
```

How well do you *really* know the Activity Lifecycle?


```
@Override  
protected void onSaveInstanceState(Bundle outState) {  
    super.onSaveInstanceState(outState);  
    // save my state!  
}
```

Pirate Guideline #6

Retain nothing but state*

Pirate Guideline #6

Retain nothing but state*

*and hardware adapters

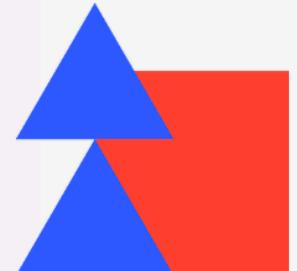
CAVEAT:

CAVEAT:

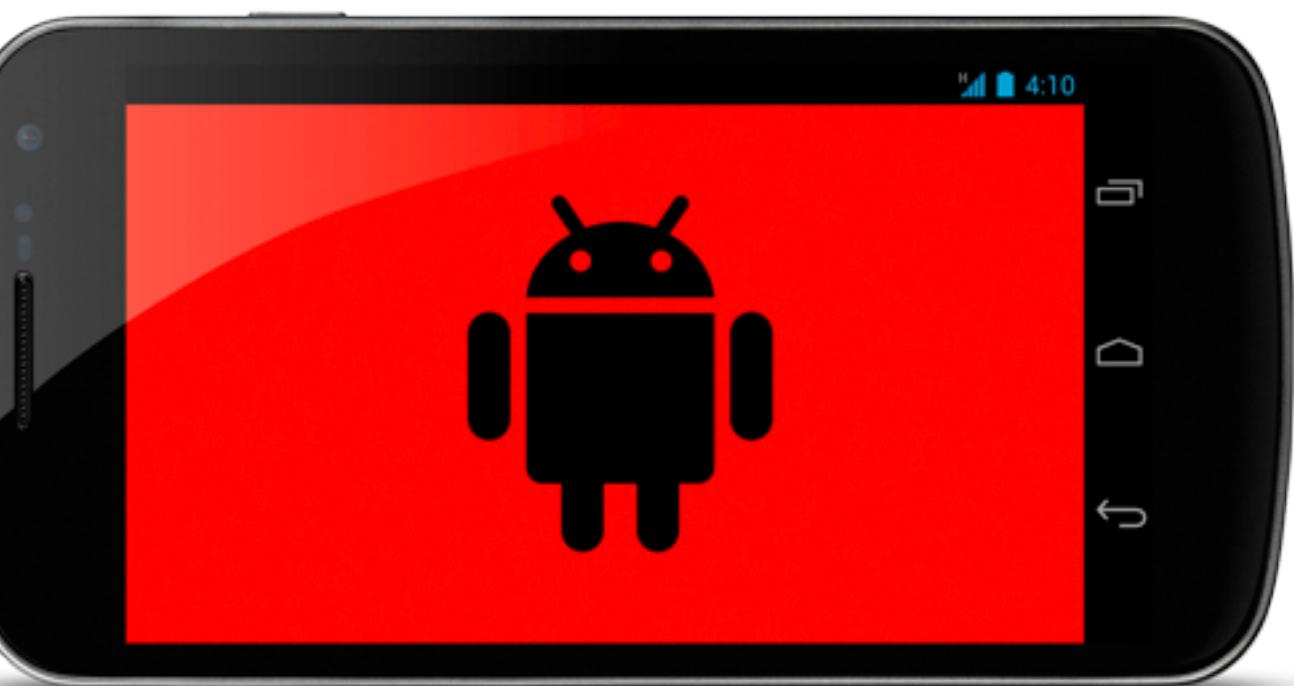
headless fragments



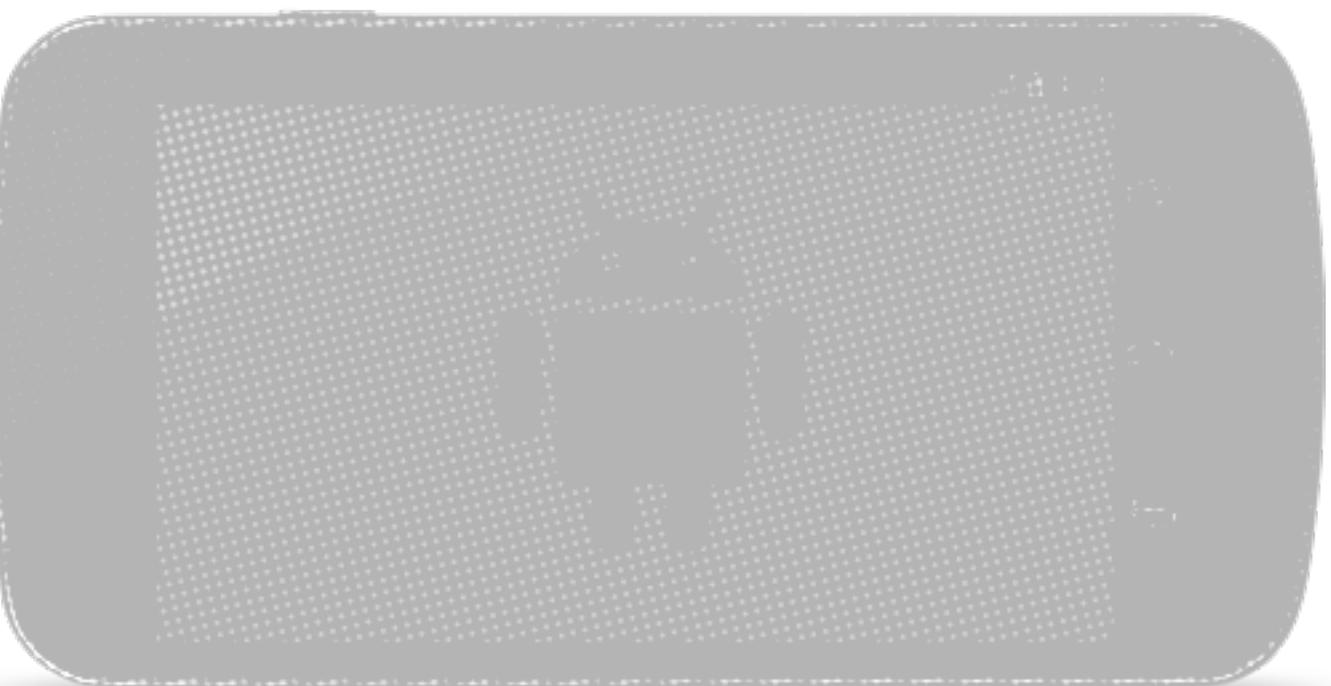
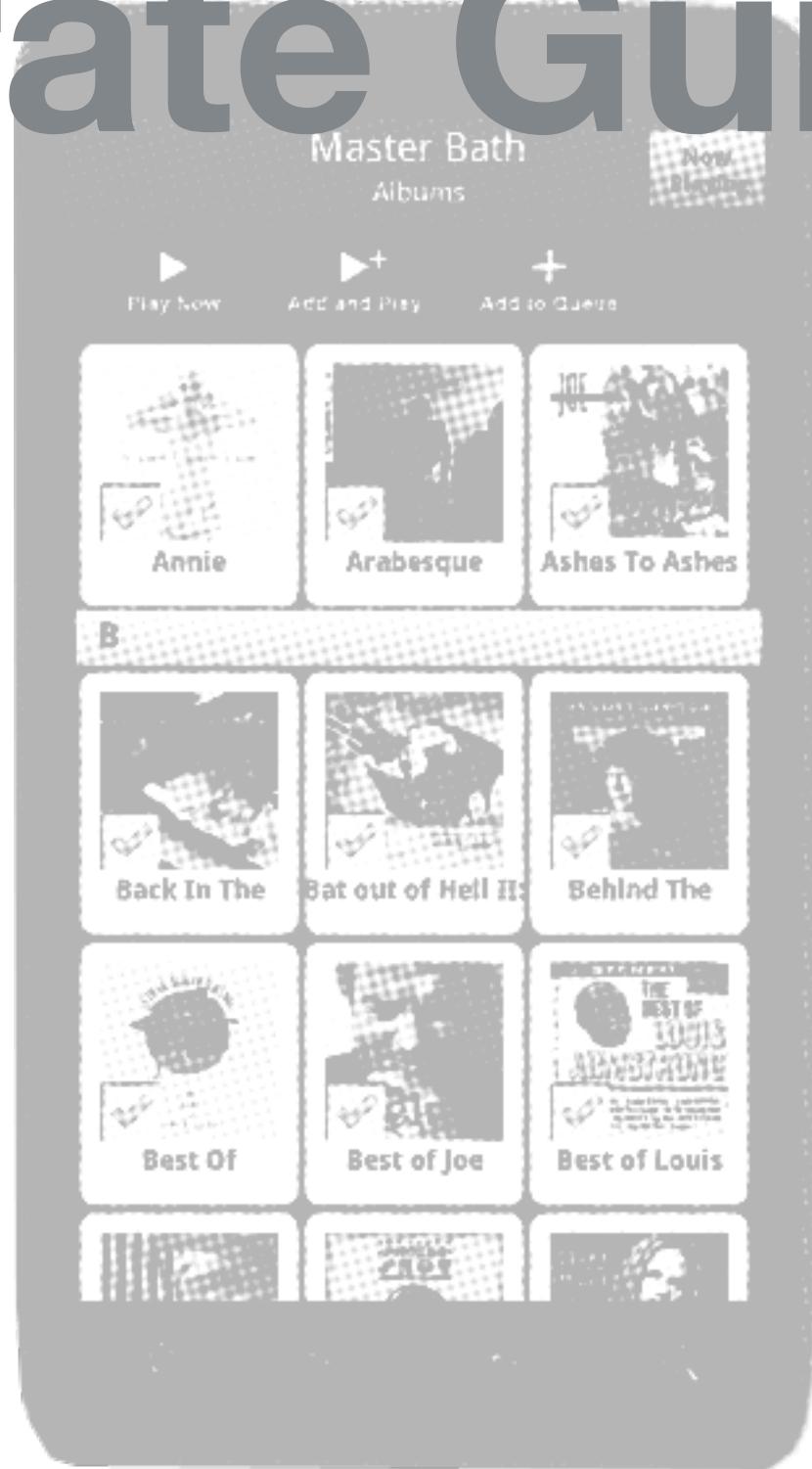
— Mark Weiser, The Computer for the 21st Century (1991)



Elements Network Sources Timeline Profiles Resources Audits Console

```
<!DOCTYPE html>
<html>
  <head>...</head>
  <body class="landing">
    <header class="global-header mb0">...</header>
    <main>
      <section class="landing__section">
        ::before
        <blockquote class="landing-hero-quote">...</blockquote>
        <div class="landing_hero-section_eo1-video" data-traits="full-width-video">
          <video autobuffer="autobuffer" autoplay="autoplay" height="1440" loop="loop" poster="//electric-objects-web-production-assets.s3.amazonaws.com/landing/eo1-black-nicolas-sassoon-placeholder.png" src="//electric-objects-web-production-assets.s3.amazonaws.com/landing/eo1-black-nicolas-sassoon-full.mp4" width="720"></video>
          <cite>SLIDE by Nicolas Sassoon</cite>
          <h1>E01 by Electric Objects</h1>
          <a class="button button--shop-button" href="http://shop.electricobjects.com" style="margin-bottom:10px">Pre-order</a>
        <p>...</p>
        <a class="link--text" href="http://www.amazon.com/dp/B00X980MKE" style="margin-left:20px;font-size:20px;">Also at Amazon.com</a>
      </div>
      ::after
    </section>
    <section class="landing__learn-more">...</section>
    <section class="landing__press-section">...</section>
    data:image/s3,anthropic-data-us-east-2/u/marker_images/1100/0000/1100/11111101/sfishman-chandramapper-0319211211/b7b0af656118c4bd2830c62a0a4edace.jpg</antml:image>

# Pirate Guideline #7

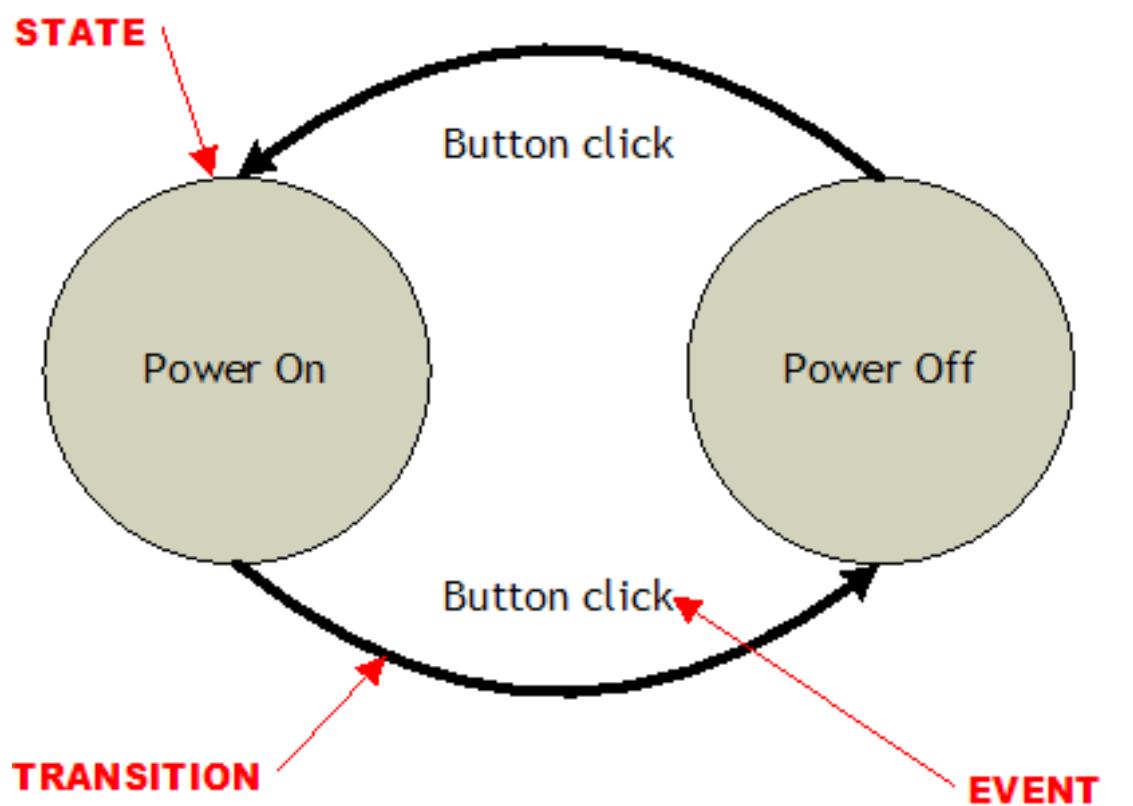


# Pirate Guideline #7

**Embrace state machines**

# A State Machine

- States are explicitly defined
- Can only do certain things in each state
- Where you can go next depends on where you are now





```
public abstract class BluetoothAdapterFragment extends Fragment {

 private static final String TAG = EoLog.makeTextTag(BluetoothAdapterFragment.class);
 public static final String FRAGMENT_TAG = "blt_frag";

 public interface State {
 int INIT = 0x00;
 int ASKING_BT_PERMS = 0x01;
 int ENABLING_BT = 0x02;
 }

 public static class BluetoothStateHolder {
 public int state = State.INIT;
 }
}
```

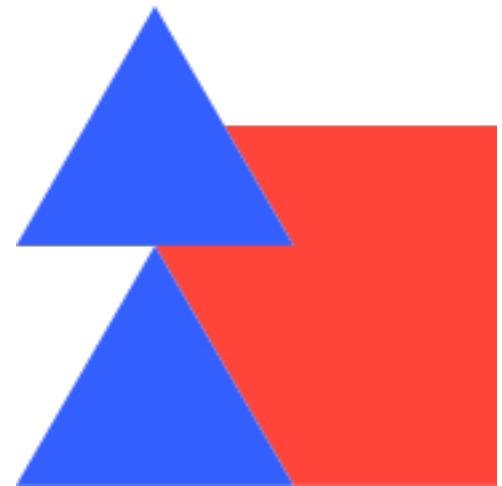
```
@Override
public void onStateChanged(BluetoothAdapterFragment.BluetoothStateHolder stateHolder) {
 switch (stateHolder.state) {
 case BluetoothSendCredsFragment.State.SENDING_CREDS:
 mErrorView.hideError();
 mProgressView.setVisibility(View.VISIBLE);
 break;
 case BluetoothSendCredsFragment.State.ASKING_BT_PERMS:
 showEnableBluetoothDialog();
 break;
 case BluetoothSendCredsFragment.State.CREDS_FAILED:
 onCredsFailed();
 break;
 case BluetoothSendCredsFragment.State.CREDS_SUCCESS:
 mBluetoothFragment.setState(BluetoothSendCredsFragment.State.INIT);
 boolean useLegacy = ((BluetoothSendCredsFragment.BluetoothCredsStateHolder) stateHolder).useLegacy;
 onCredsSent(useLegacy);
 break;
 case BluetoothSendCredsFragment.State.INIT:
 case BluetoothSendCredsFragment.State.ENABLELING_BT:
 default:
 // none
 }
}
```

# Android Development

## A Pirate's Guidelines

- There is a one to one correspondence between a wireframe screen and an Activity
- Every Activity has its own layout file
- Reusable View code belongs in a View class
- Fragments are not simple. Don't use fragments.\*
- Never override configuration changed\*
- Retain nothing but state\*
- Embrace state machines

~thank you~



# Lisa Neigut

**work @electricobjects**

me on the internet, @niftynei

