

# CS160 User Interface Design

## Introduction to Android

Section 1 • 8/28/2015



**Sign in!**

<http://tinyurl.com/jingyi-160>

Jingyi Li • **OH** Weds 2-3 411 Soda • [noon@berkeley.edu](mailto:noon@berkeley.edu)

# Logistics

## Android Studio & Android SDK (adb)

<https://developer.android.com/sdk/installing/studio.html>

## Genymotion

<https://cloud.genymotion.com/page/launchpad/download/>

**Sign in? Class account?**

# Me!



3rd year EECS

Took CS160 Su' 15

Bcrew

Berkeley Innovation

"Maker" spaces

Adobe Creative Suite

# Class Links

**Course Website:** [http://teaching.paulos.net/cs160\\_FL2015/](http://teaching.paulos.net/cs160_FL2015/)

For syllabus, grading policies, staff hours, useful links

**bCourses:** <https://bcourses.berkeley.edu/courses/1363972>

For reading response/assignment submissions, grades

**Piazza:** <http://piazza.com/berkeley/fall2015/cs160>

For Q&A

**Hackster:** For portfolio-ing submissions

**Bitbucket:** For submitting code

# Assignments

**Reading Response** (due before next class, Thu 9/3)

0-2 scale (3 EC) • on bCourses

**PRG01: You Animal** (due 11:59pm Fri 9/11)

Get familiar with Android • details on bCourses •  
submit on Hackster/Bitbucket

**DESIGN 01: Watches in the Wild** (due before  
next-next class, Thu 9/10)

Practice the design cycle • details on bCourses •  
submit on Hackster

**What is HCI?**

Invite Friends To Pinterest

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- Rachel Bittenson [Invite](#)
- Niraj Amalkanti [Invite](#)

Invite Friends

Find Friends

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Topology Find more at [www.pinterest.com...](http://www.pinterest.com...)

Found in Character Design



Monster Children - I had the pleasure of hearing Campbell Milligan speak last night at the apple store in Sydney. Ive been following the mag for 10 years, and it still seems relevant and progressive. It was interesting to hear his creative influences were very similar to mine. I need to go and look at all my old David Carson books again. Inspiration at it finest. Nice one MC!

Found in Layout

Related Pin



The Orange Dot Gallery presents: ORIGIN LONDON iloveyourtshirt.c...

Found in Typography



Milk Jar Cookies logo sketch by This Paper Ship

Found in Typography/Lettering

Related Pin



30 Flat Poster Design for Your Inspiration

Found in Inspiration









# This Class:



## Devices



- How does it work?  
(61C/162)
- How is the architecture set up of connected devices? (168)
- How can we manage stored information?  
(186)

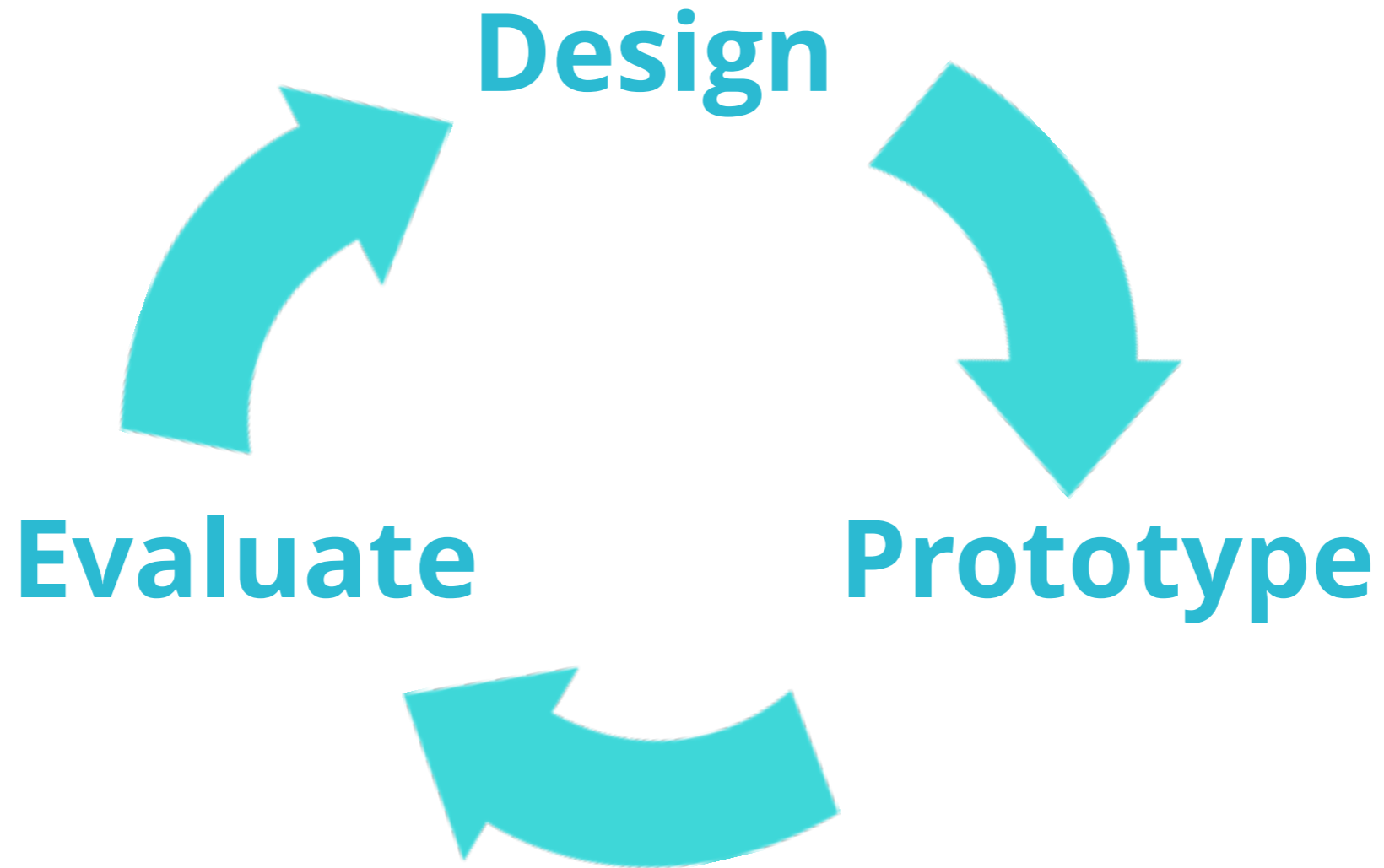


## User



- How can we abstract this information so the user has a good time interacting with it?
- (Hint: You're going to have to actually talk to people!)

# Design is iterative.



# Industry: UI/UX / Front-end

The Content



User Interface



User Experience



# Research

## Makers' Marks:

Physical Markup for Designing and  
Fabricating Functional Objects

Valkyrie Savage\*, Sean Follmer<sup>◇</sup>,  
Jingyi Li\*, Björn Hartmann\*

\*UC Berkeley EECS  
<sup>◇</sup>Stanford University


music by candu

**Let's get started  
with Android!**



# Creating a New Project

Create New Project

 **New Project**  
Android Studio

**Configure your new project**

Application name:


Company Domain:

Package name:  [Edit](#)

Project location:

# Creating a New Project

Create New Project

 Target Android Devices

**Select the form factors your app will run on**

Different platforms may require separate SDKs

Phone and Tablet

Minimum SDK:

Lower API levels target more devices, but have fewer features available. By targeting API 21 and later, your app will run on approximately 9.7% of the devices that are active on the Google Play Store.

[Help me choose](#)

Wear

Minimum SDK:

TV

Minimum SDK:



Android Auto

Glass


Minimum SDK:

# Creating a New Project

Create New Project

 Customize the Activity 

Creates a new blank activity with an action bar.



Blank Activity

Activity Name:

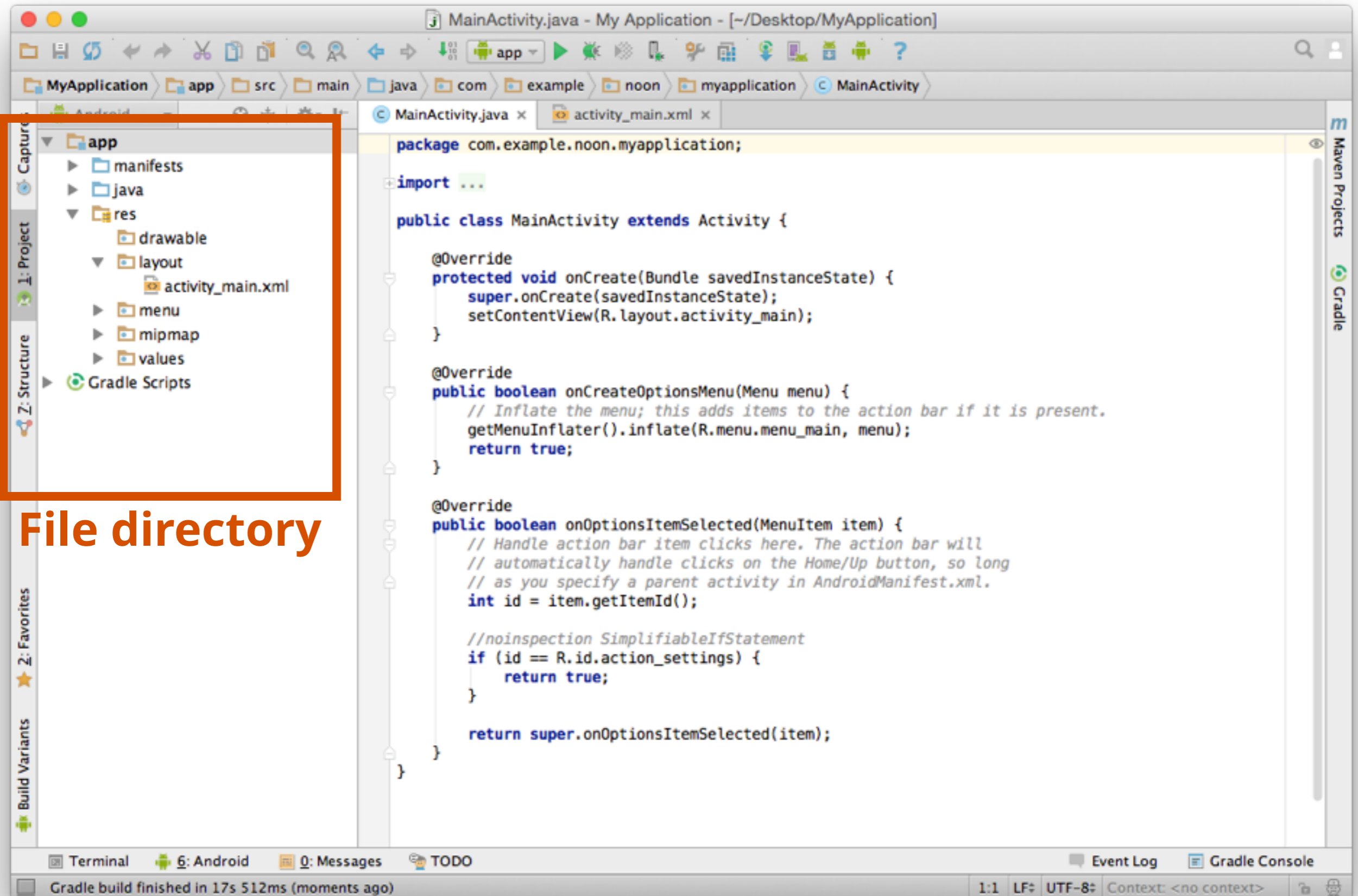
Layout Name:

Title:

Menu Resource Name:

The name of the activity class to create

# Android Studio Layout



The screenshot displays the Android Studio interface. On the left, the 'Project' tool window shows the file directory structure for the 'app' module, including folders for manifests, java, res (with subfolders for drawable, layout, menu, mipmap, and values), and Gradle Scripts. The 'activity\_main.xml' file is highlighted under the 'layout' folder. The main editor window shows the Java code for MainActivity.java, which extends Activity and implements onCreate, onCreateOptionsMenu, and onOptionsItemSelected methods. The code is as follows:

```
package com.example.noon.myapplication;

import ...

public class MainActivity extends Activity {

    @Override
    protected void onCreate(Bundle savedInstanceState) {
        super.onCreate(savedInstanceState);
        setContentView(R.layout.activity_main);
    }

    @Override
    public boolean onCreateOptionsMenu(Menu menu) {
        // Inflate the menu; this adds items to the action bar if it is present.
        getMenuInflater().inflate(R.menu.menu_main, menu);
        return true;
    }

    @Override
    public boolean onOptionsItemSelected(MenuItem item) {
        // Handle action bar item clicks here. The action bar will
        // automatically handle clicks on the Home/Up button, so long
        // as you specify a parent activity in AndroidManifest.xml.
        int id = item.getItemId();

        //noinspection SimplifiableIfStatement
        if (id == R.id.action_settings) {
            return true;
        }

        return super.onOptionsItemSelected(item);
    }
}
```

At the bottom of the IDE, the status bar shows 'Gradle build finished in 17s 512ms (moments ago)' and the current encoding is 'UTF-8'.

File directory

# SDK Version: API 21

Open up `app > build.gradle`

Make sure `compileSdkversion` and `targetSdkVersion` are  $\geq 21$

```
apply plugin: 'com.android.application'

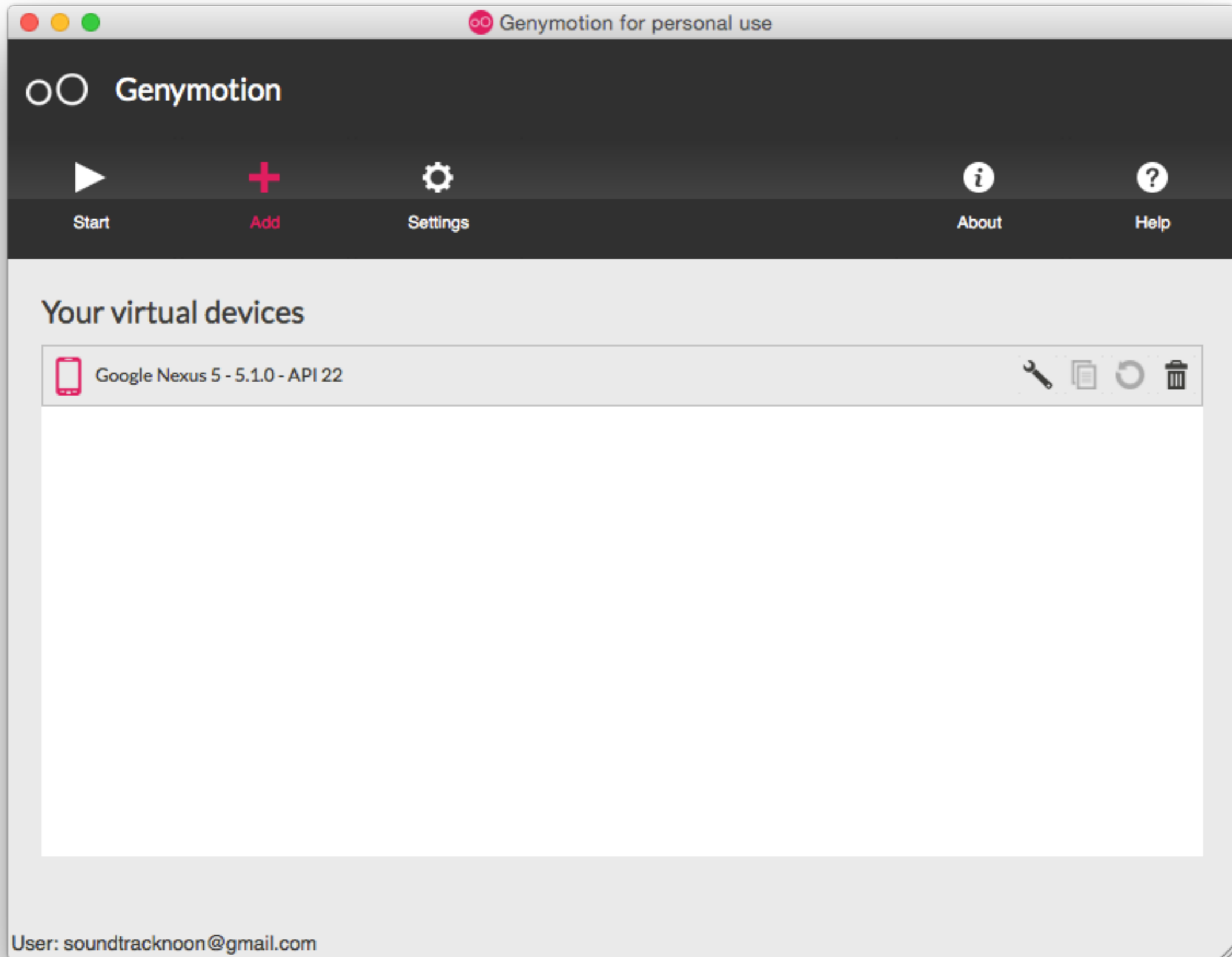
android {
    compileSdkVersion 22
    buildToolsVersion "23.0.0 rc3"

    defaultConfig {
        applicationId "com.example.noon.myapplication"
        minSdkVersion 21
        targetSdkVersion 22
        versionCode 1
        versionName "1.0"
    }

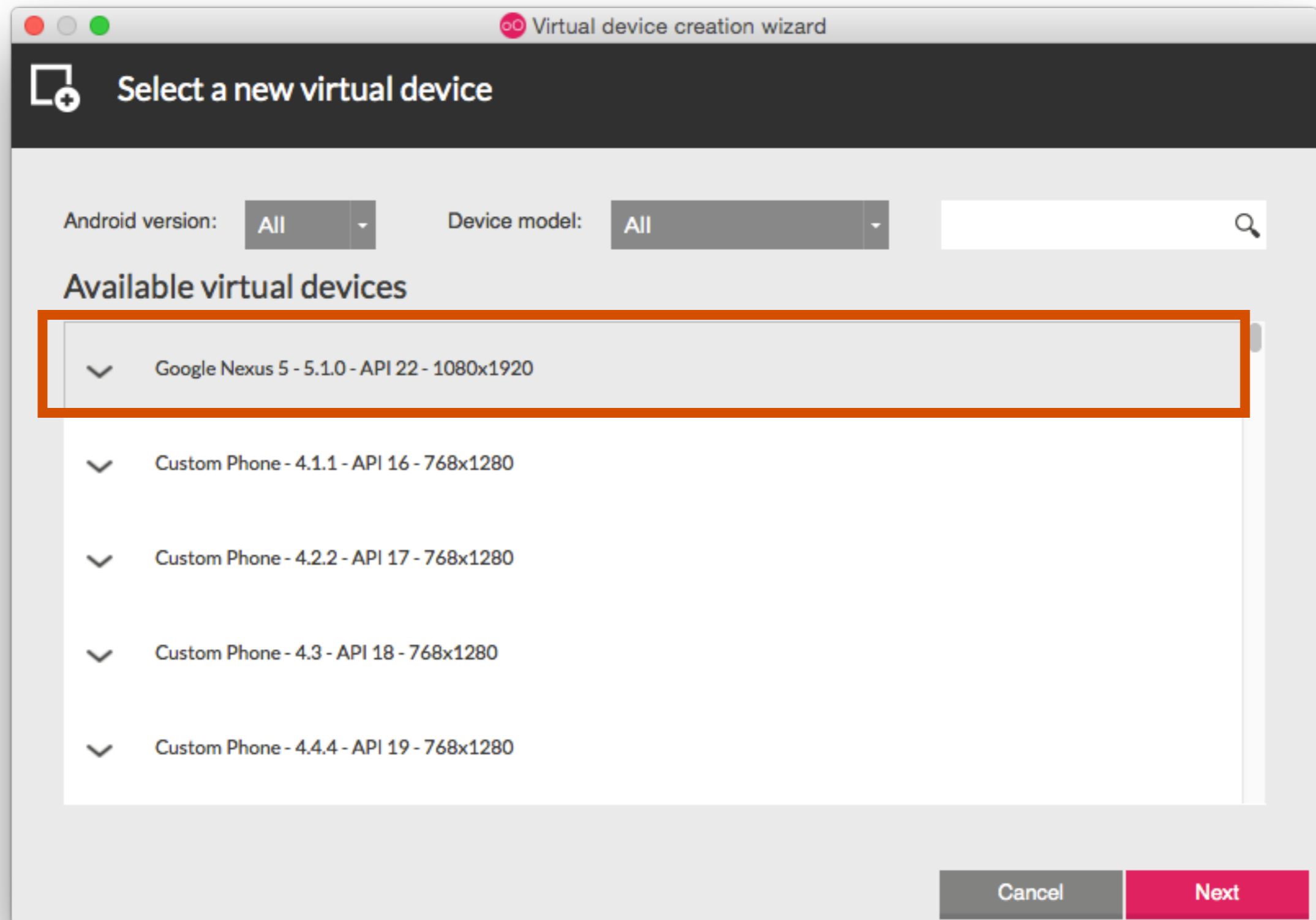
    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android.txt'), 'proguard-rules.pro'
        }
    }
}

dependencies {
    compile fileTree(dir: 'libs', include: ['*.jar'])
}
```

# Genymotion



# Genymotion



Android is starting...  
Optimizing app 81 of 87.

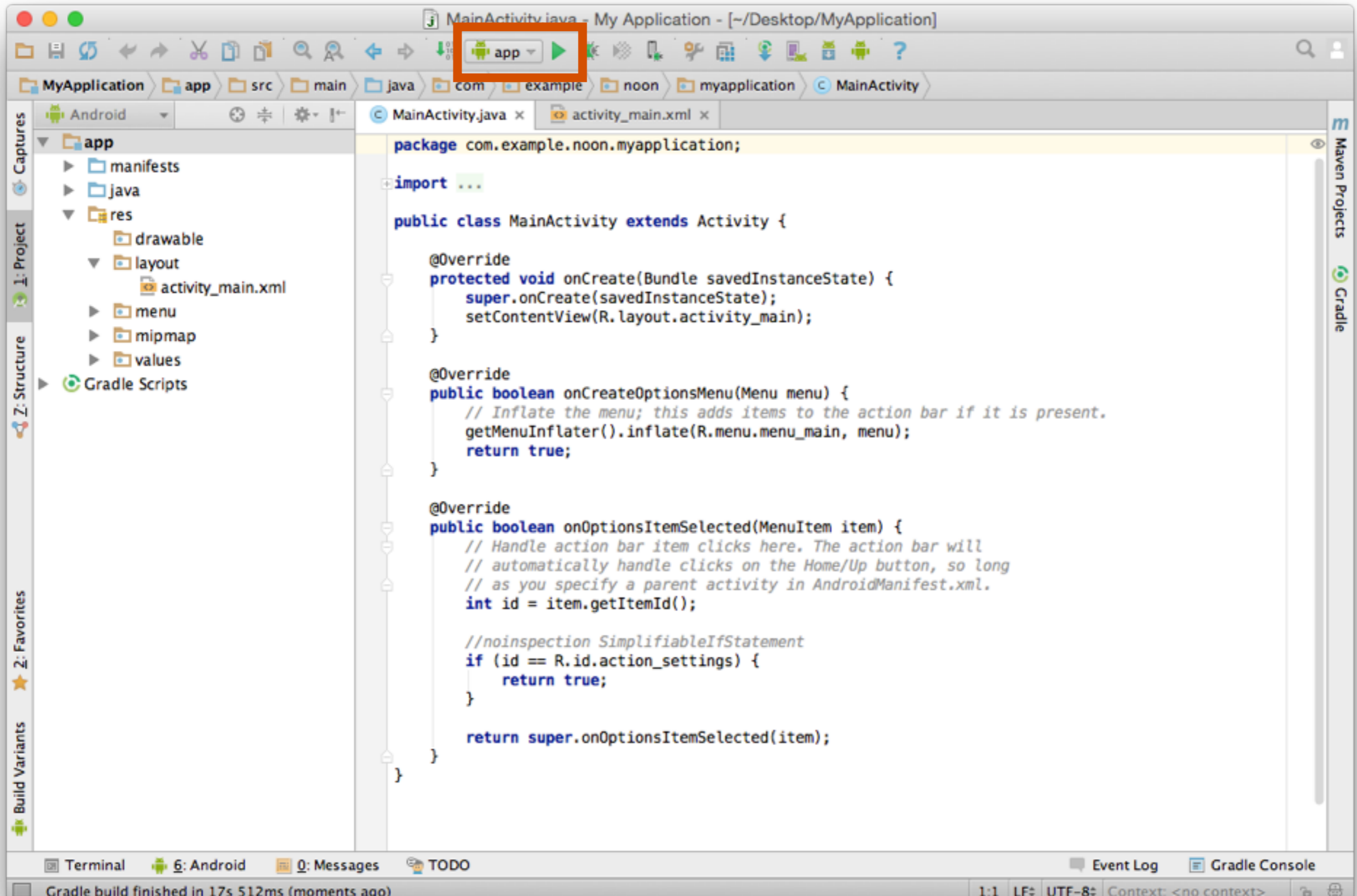


# Genymotion

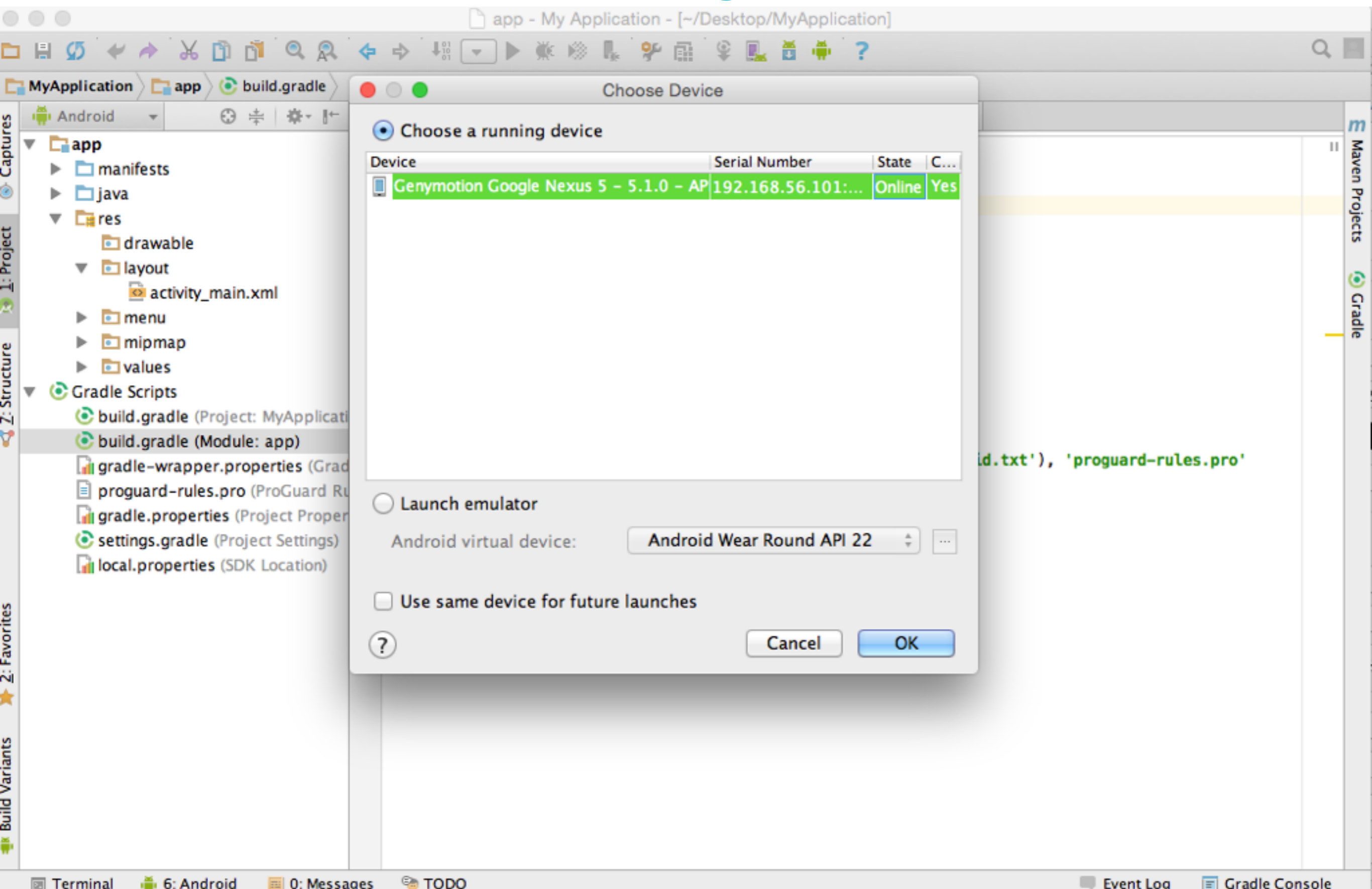


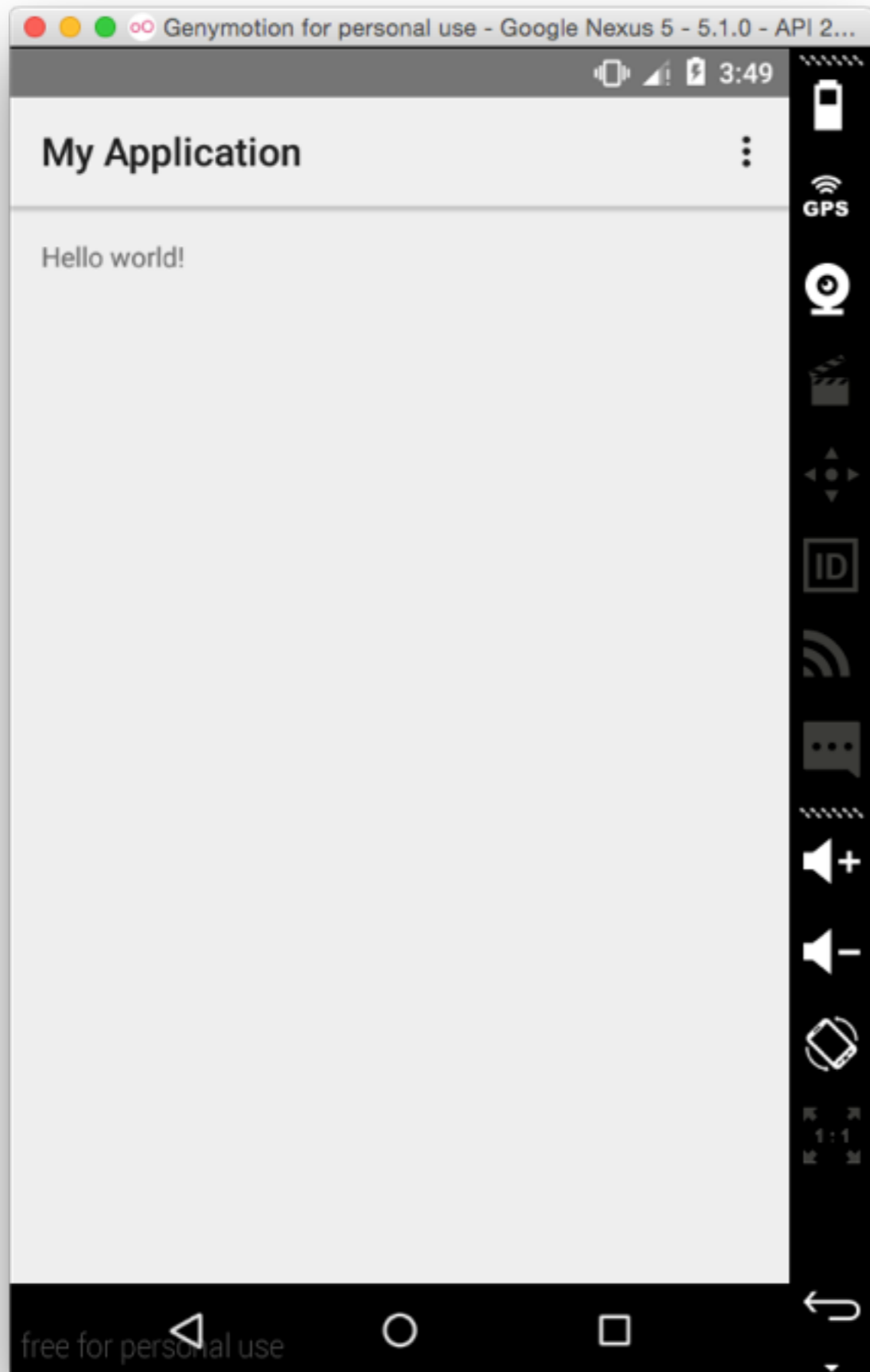
# Android Studio Layout

## Run the app



# Android Studio Layout

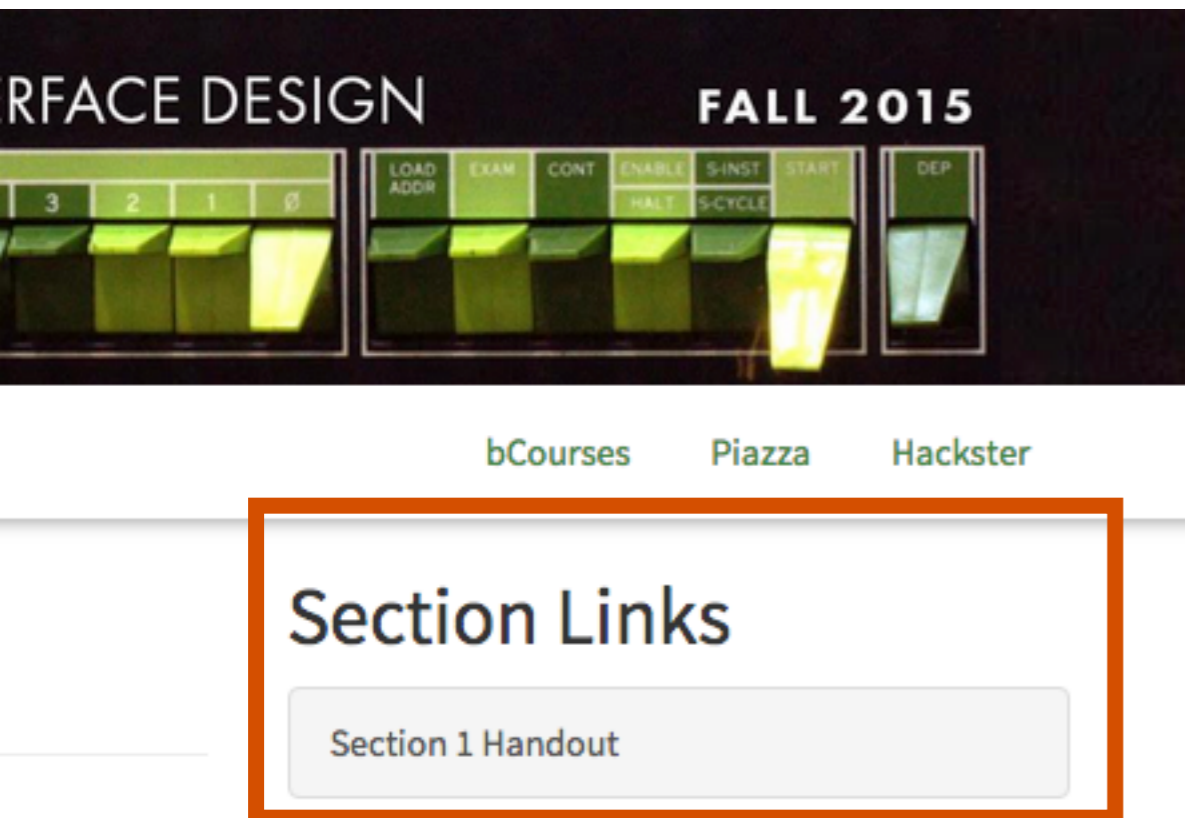


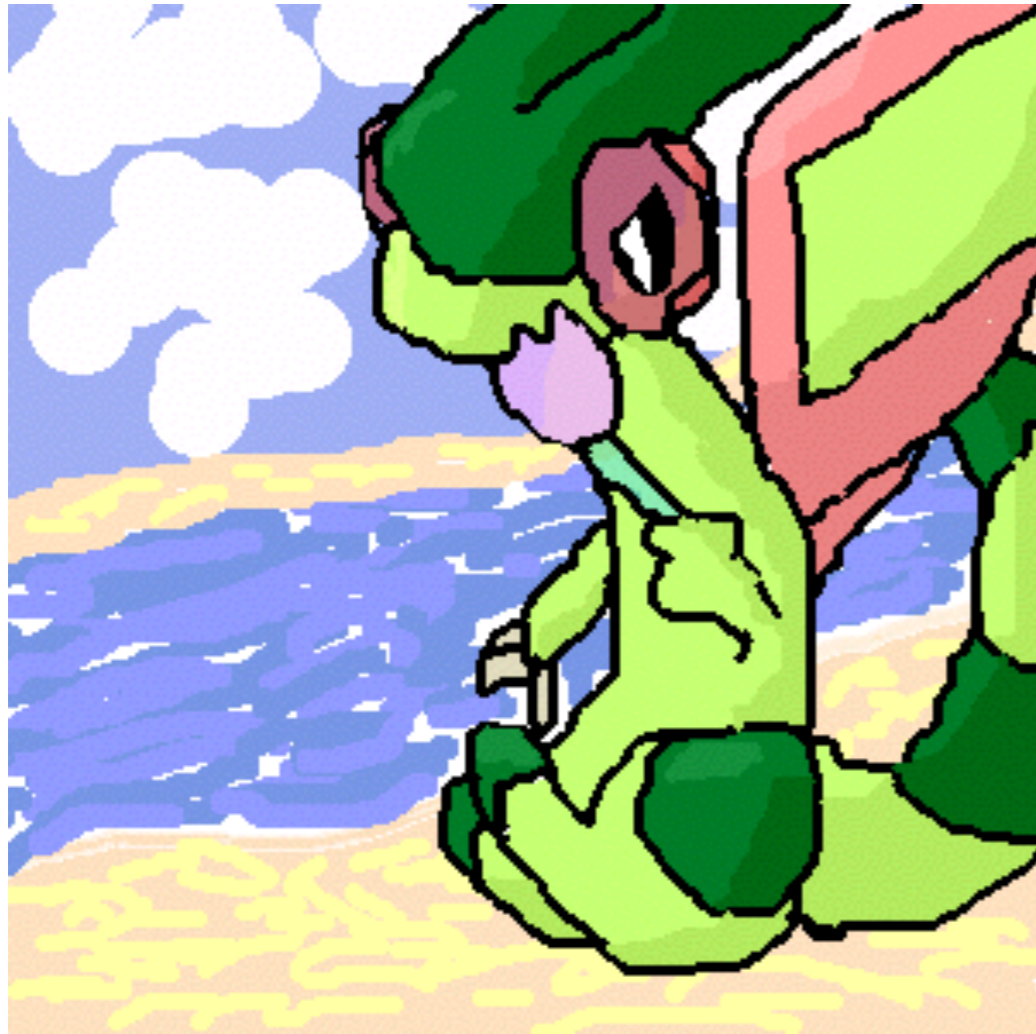


**You did it!**

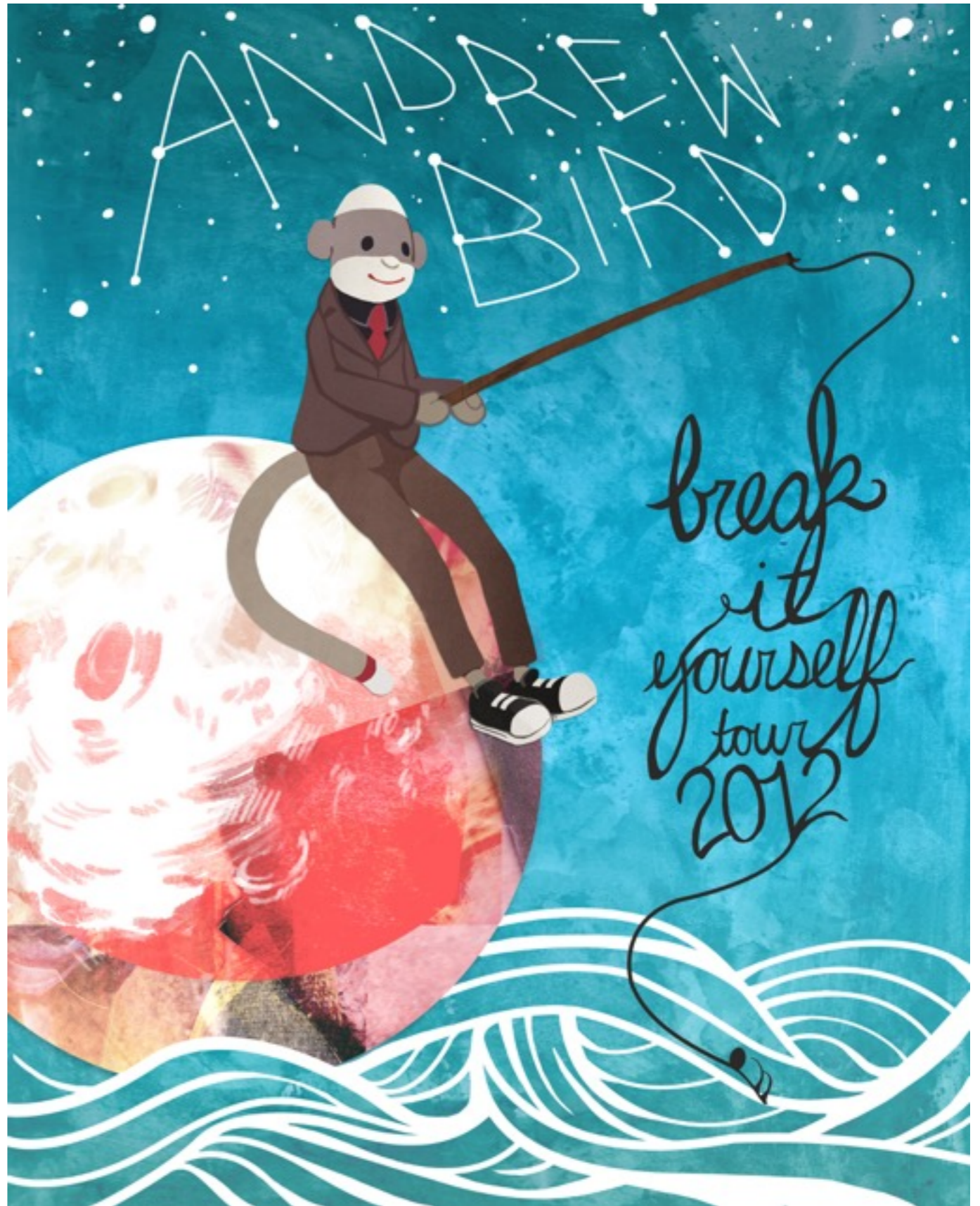
# Section Handout

- Code
- IDE tips
- User Interface Layout 101:
  - Software Architecture
  - Views
  - Android Style Guide
  - Controllers & Models
  - Emulator help
  - Debugging your Program





2005



2012

# Did you sign in? Class account form?

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