

# 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)**

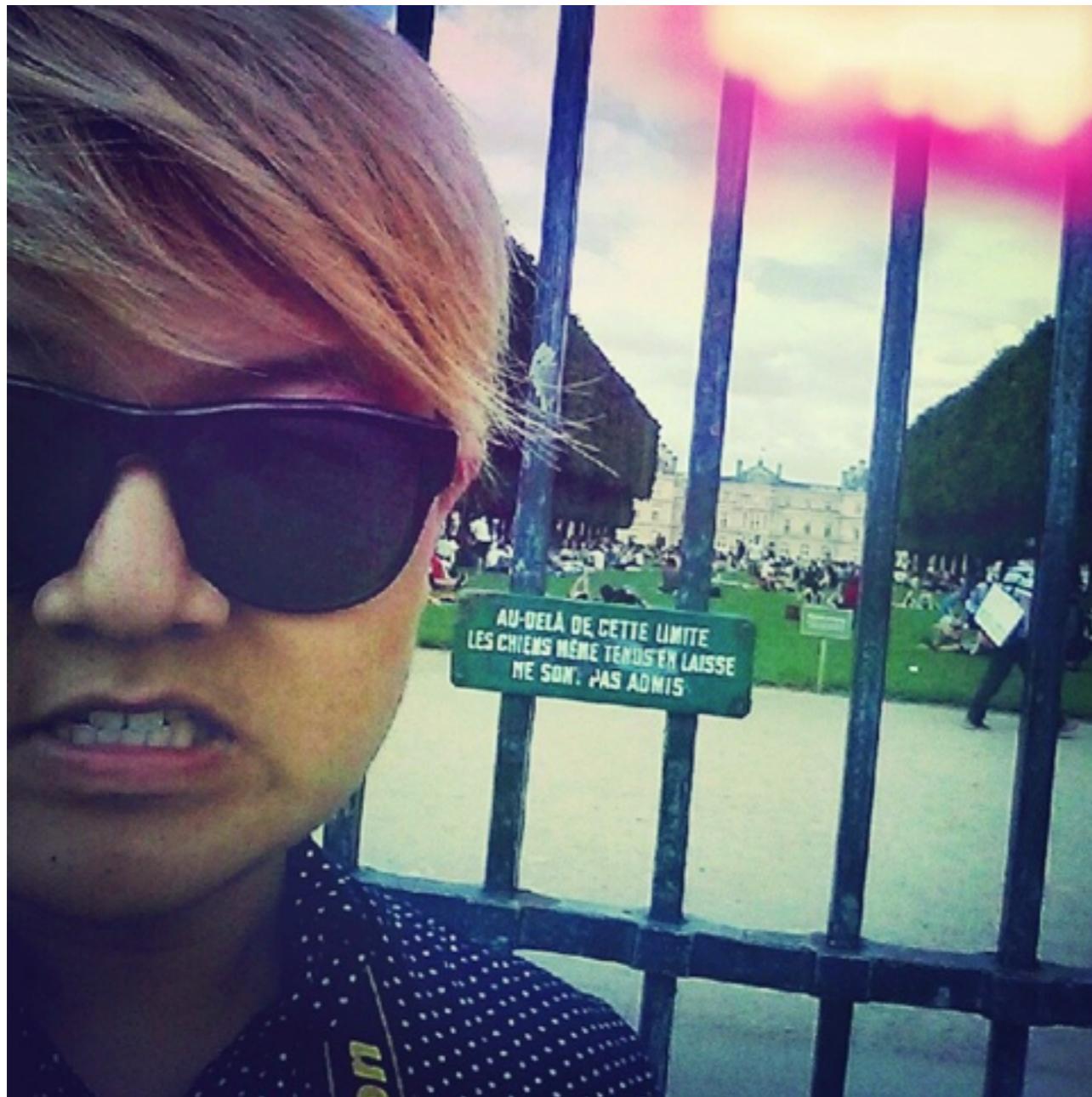
<https://developer.android.com/sdk/installing/studio.html>

**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 >

John Bourjaily  
[Invite](#)

Rachel Bittenson  
[Invite](#)

Niraj Amalkanti  
[Invite](#)

[Invite Friends](#)

Find Friends >

Kendra Prior  
[Follow](#)

Megan Johnson  
[Follow](#)

Lili Zhu  
[Follow](#)



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

2 2

Found in  
Character Design



Monster Children - I had the pleasure of hearing Campbell Milligan speak last night at the apple store in Sydney. I've 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 its finest. Nice one MC!

2 2

Nicole Esche  
Layout

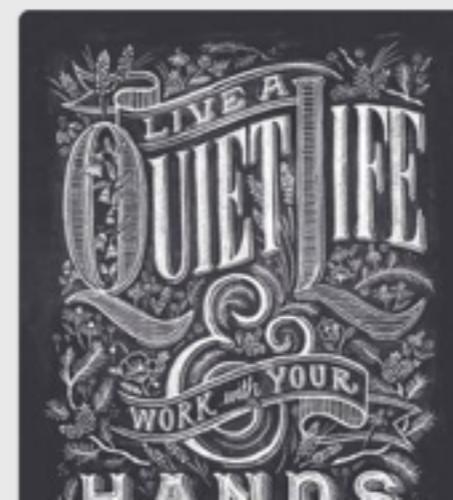
Related Pin



The Orange Dot Gallery presents:  
ORIGIN LONDON  
[iloveyourtshirt.c...](http://iloveyourtshirt.c...)

2 2

Found in  
Typography



Milk Jar Cookies logo sketch by This Paper Ship

3 1

Gretchen Farwell  
Typography/Lettering

Related Pin



30 Flat Poster Design for Your Inspiration

1 1







© 2013 CBS Interactive

# 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)

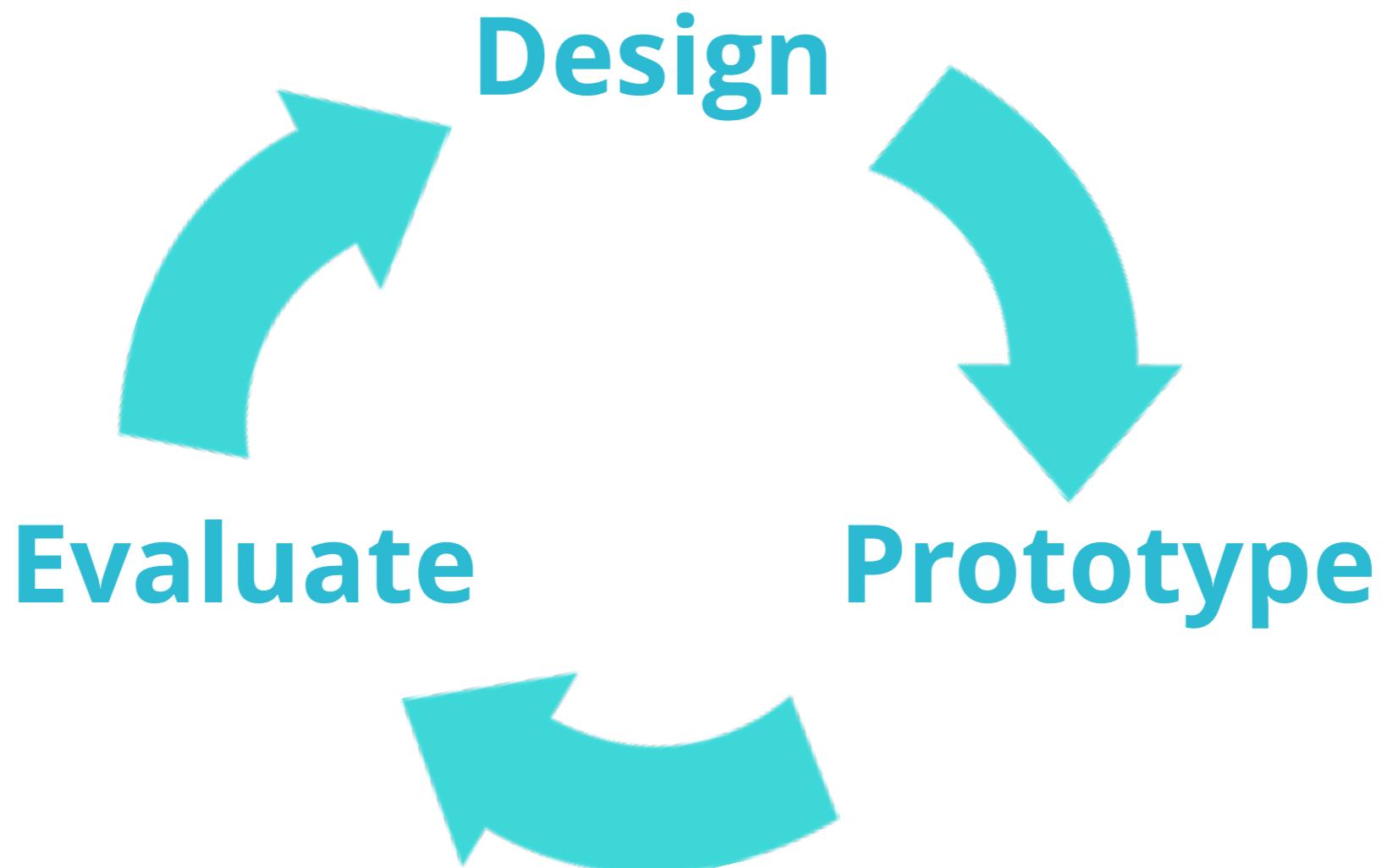


# User



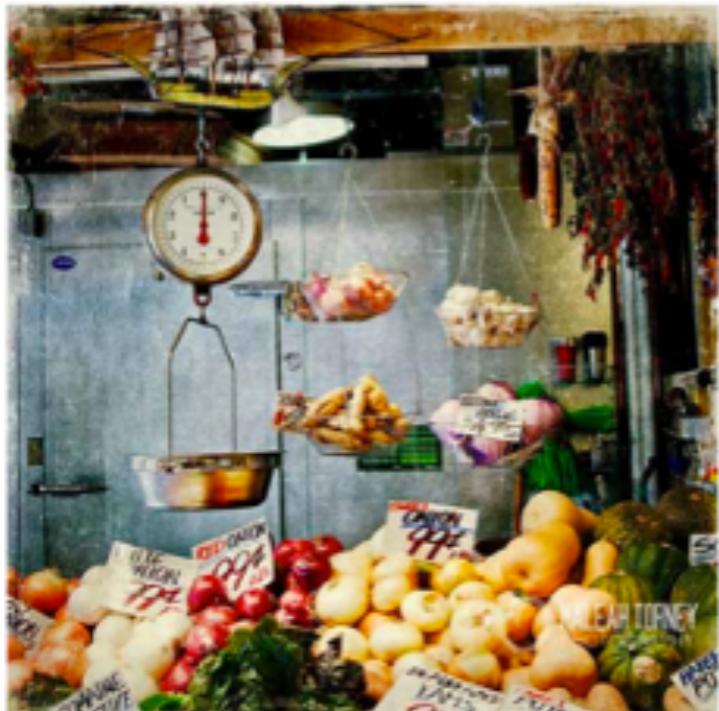
- How can we abstract this information so the user has a good time interacting with it?
- (Hint: You're going to have to actually talk to people!)

# 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

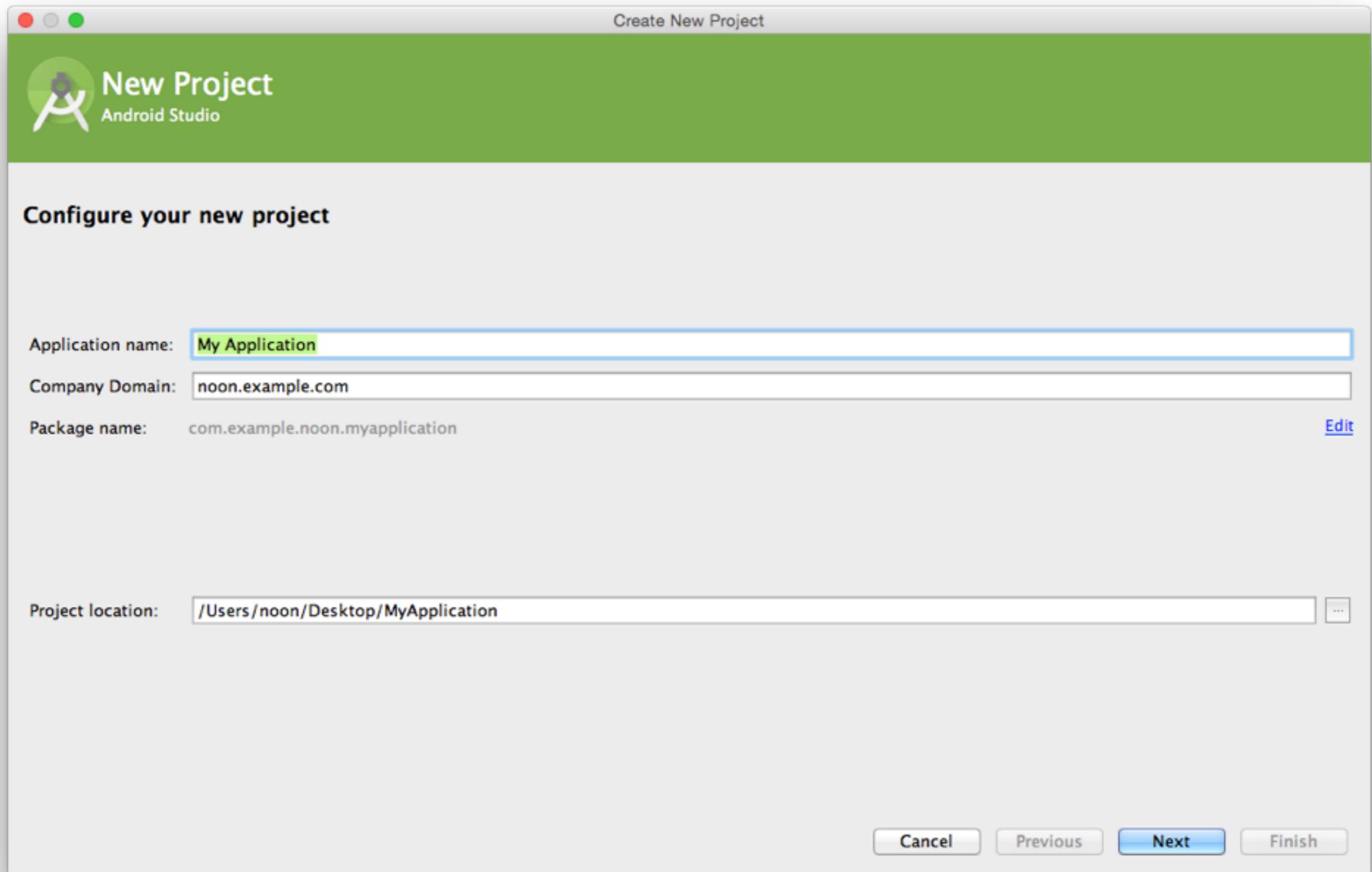
Valkyrie Savage\*, Sean Follmer<sup>◊</sup>,  
Jingyi Li\*, Björn Hartmann\*

\*UC Berkeley EECS  
◊Stanford University

music by candu

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

# Creating a New Project



# 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: API 21: Android 5.0 (Lollipop)

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: API 21: Android 5.0 (Lollipop)

TV

Minimum SDK: API 21: Android 5.0 (Lollipop)

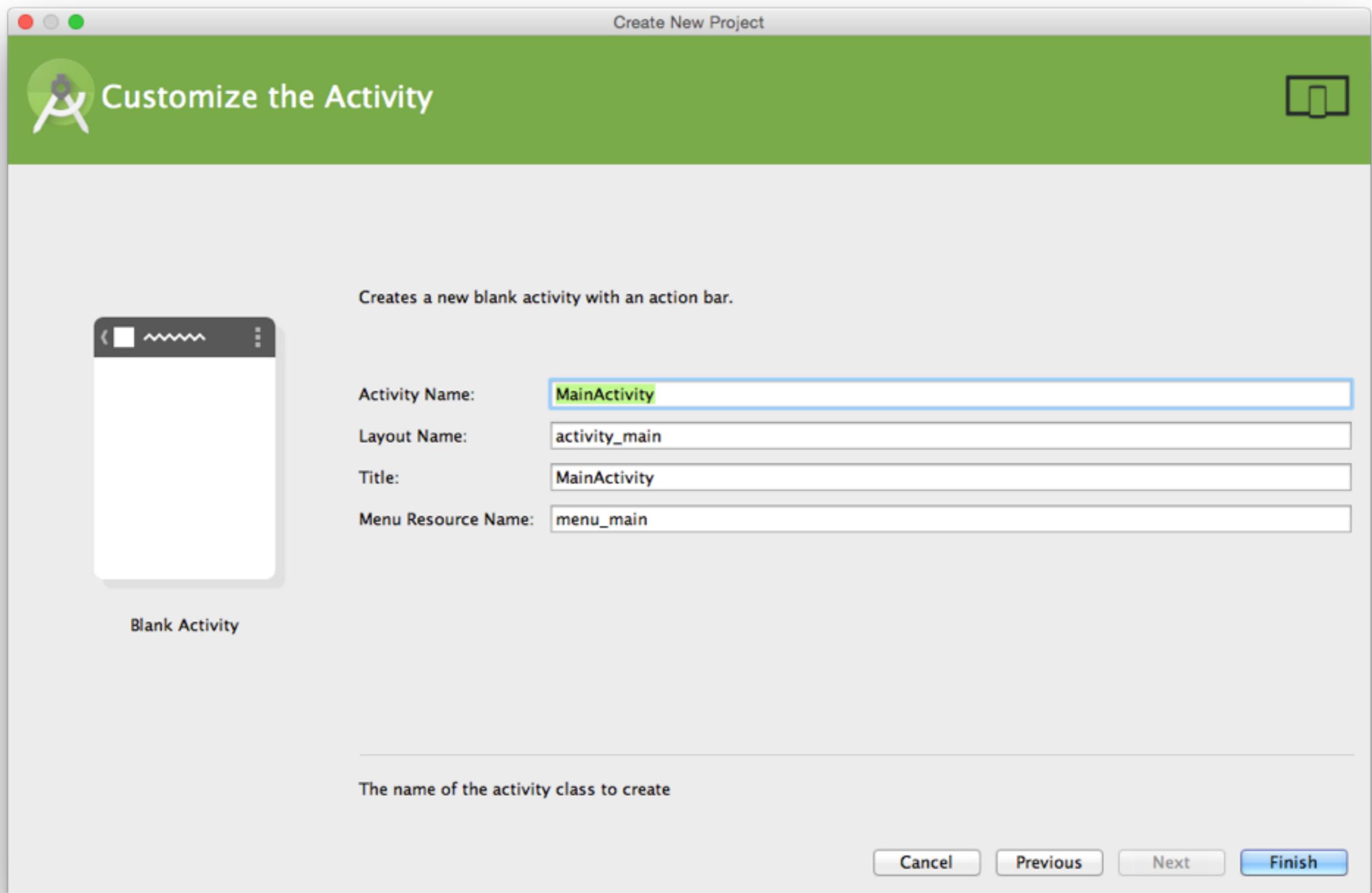
Android Auto

Glass

Minimum SDK: MNC: Android M (Preview)

Cancel Previous Next Finish

# Creating a New Project



# Android Studio Layout

The screenshot shows the Android Studio interface. On the left, the Project tool window is open, displaying the file structure of the 'My Application' project. A red box highlights the 'app' directory, which contains 'manifests', 'java', and 'res' folders. The 'res' folder is expanded, showing 'drawable', 'layout' (which contains 'activity\_main.xml'), 'menu', 'mipmap', and 'values'. Below these are 'Gradle Scripts'. On the right, the code editor displays the 'MainActivity.java' file. The code defines a MainActivity class that extends Activity. It overrides the onCreate method to set the content view to R.layout.activity\_main. It also overrides the onCreateOptionsMenu and onOptionsItemSelected methods. The 'activity\_main.xml' file is shown in the preview tab of the code editor. The bottom of the screen shows the standard Android Studio navigation bar with icons for Terminal, Messages, TODO, Event Log, and Gradle Console.

```
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);
    }
}
```

File directory

# SDK Version: API 21

Open up **app > build.gradle**

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

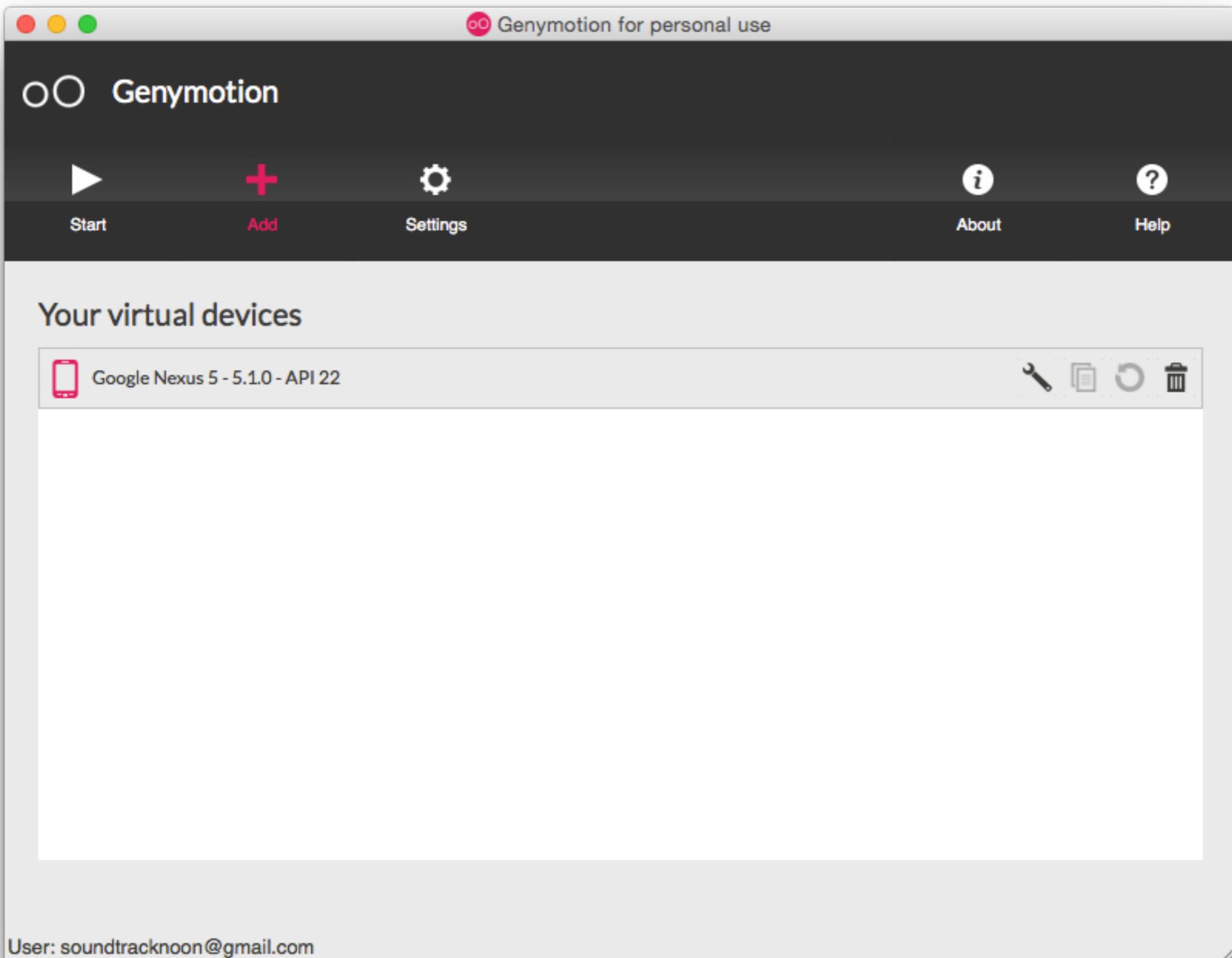
```
apply plugin: 'com.android.application'

android {
    compileSdkVersion 22
    buildToolsVersion "23.0.0 rc3"

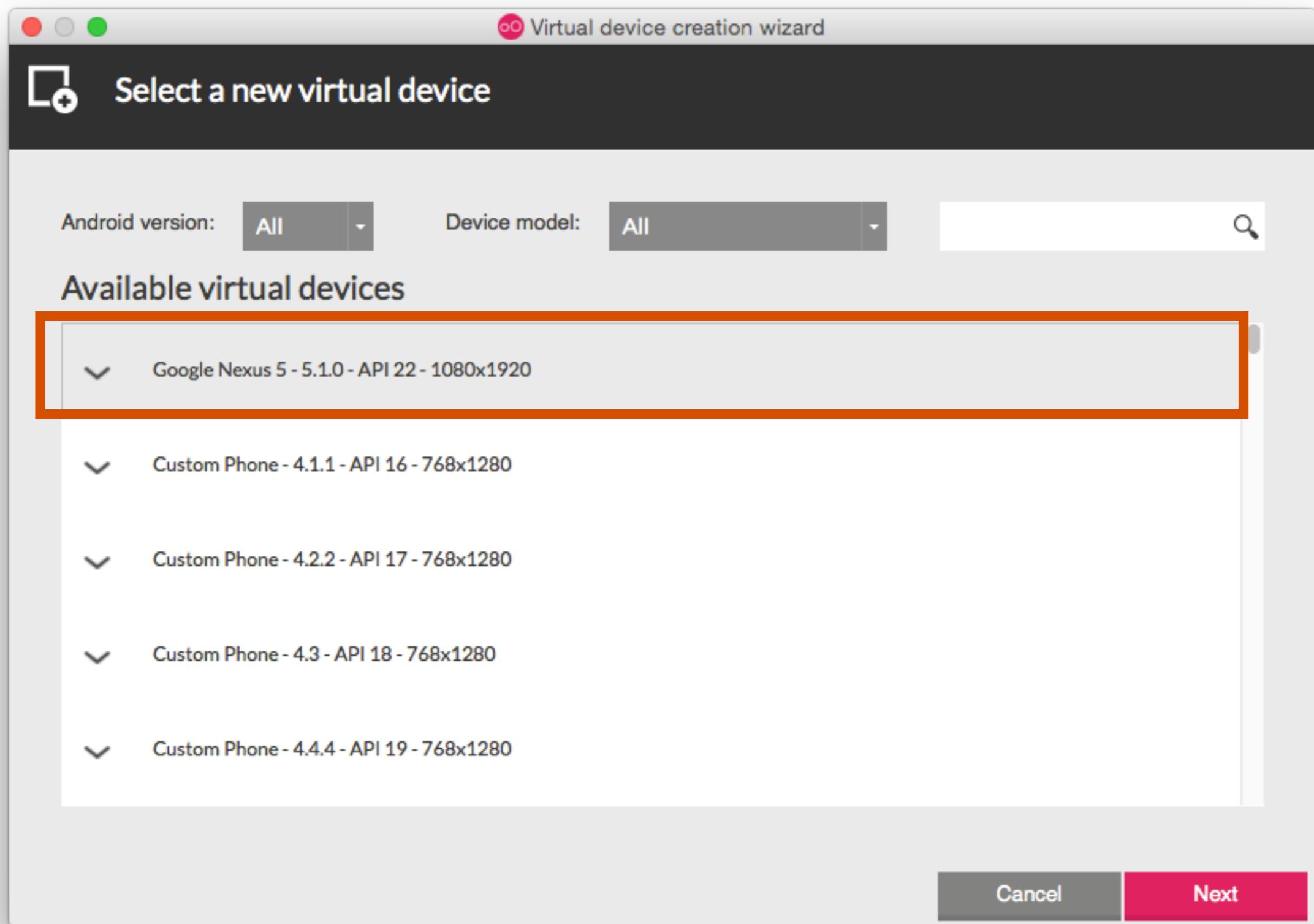
    defaultConfig {
        applicationId "com.example.noon.myapplication"
        minSdkVersion 21
        targetSdkVersion 22
        versionCode 1
        versionName "1.0"
    }
    buildTypes {
        release {
            minifyEnabled false
            proguardFiles getDefaultProguardFile('proguard-android.txt'), 'proguard-rules.pro'
        }
    }
}

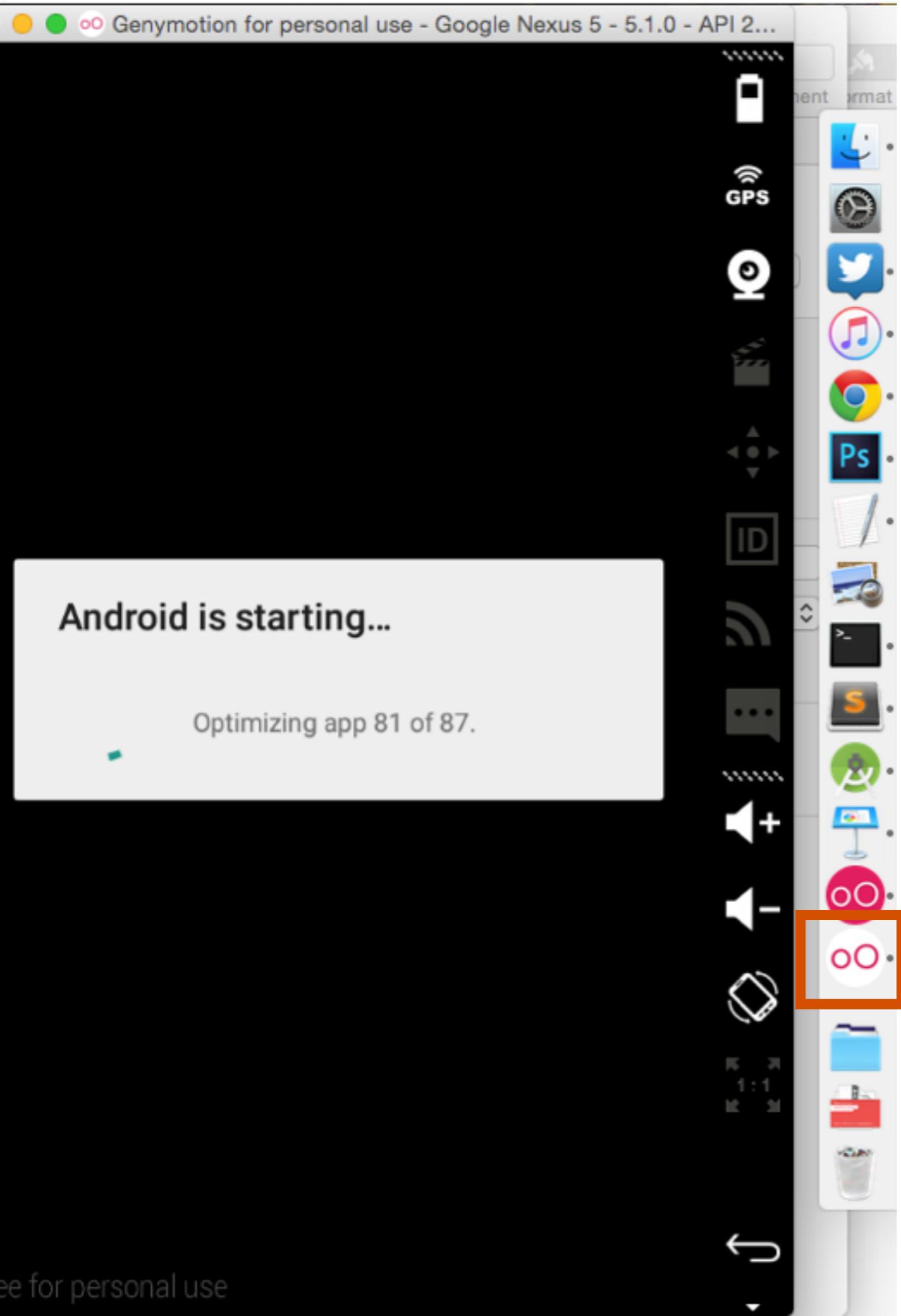
dependencies {
    compile fileTree(dir: 'libs', include: ['*.jar'])
}
```

# Genymotion



# Genymotion

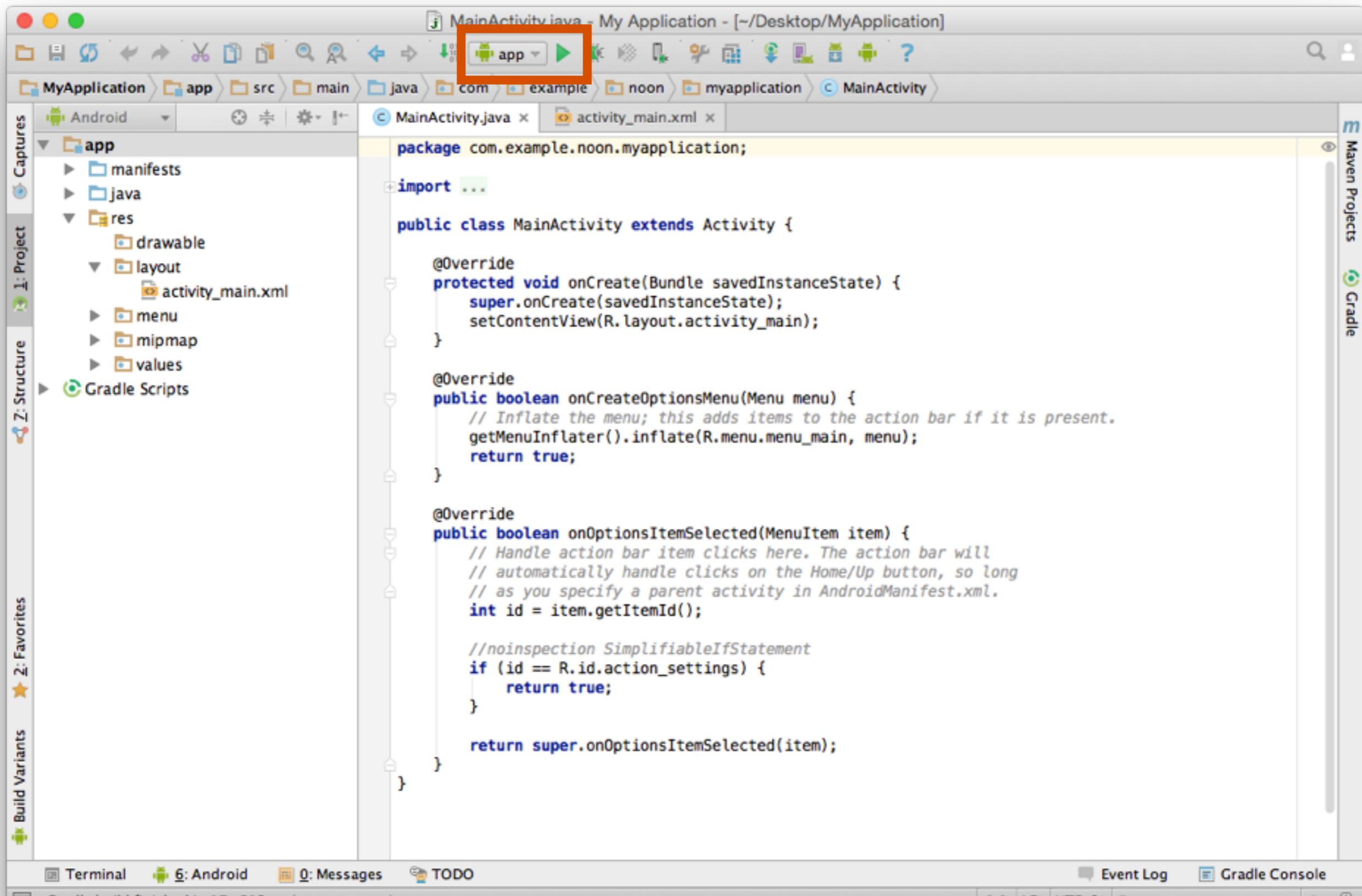




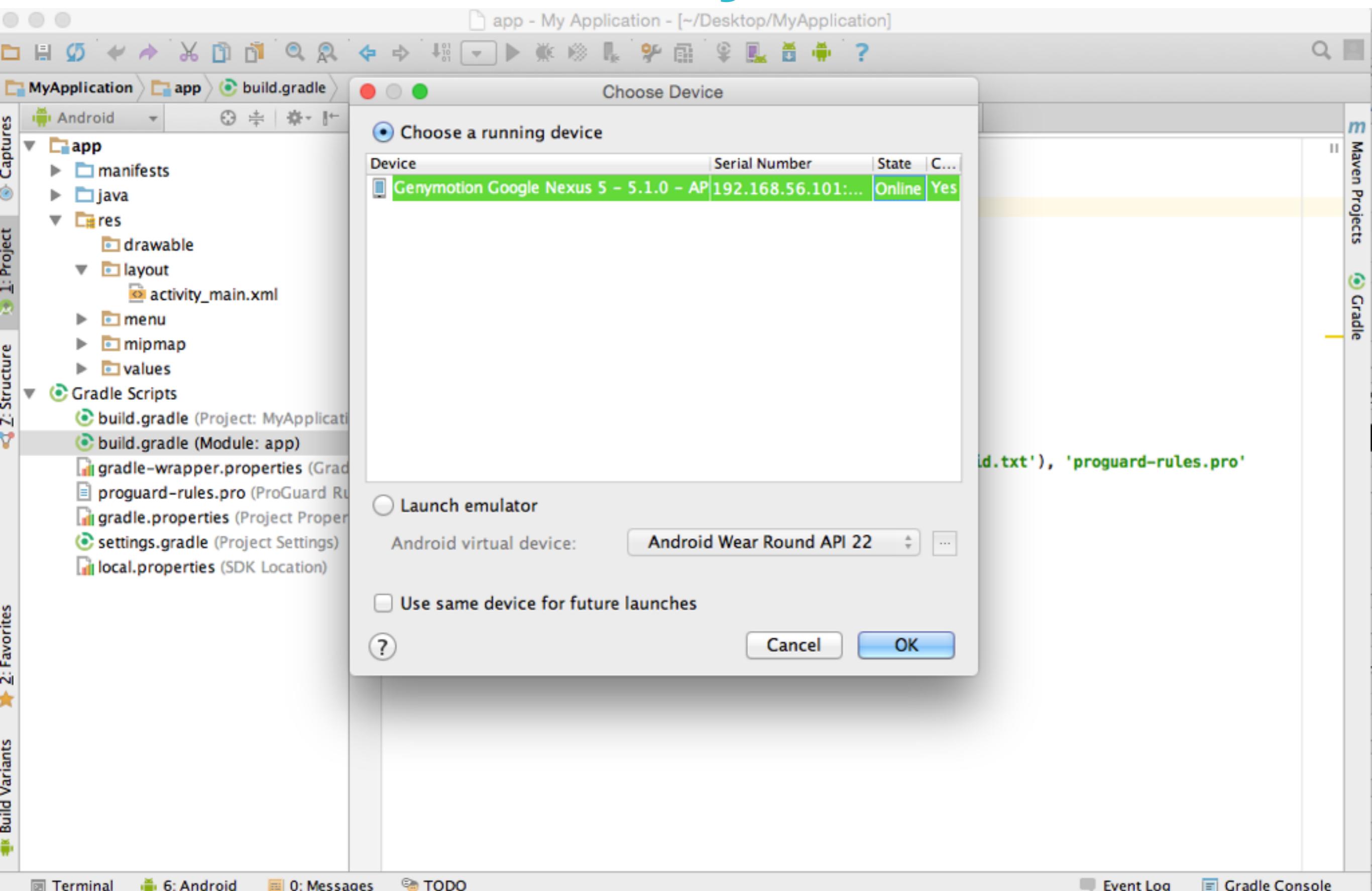
# Genymotion

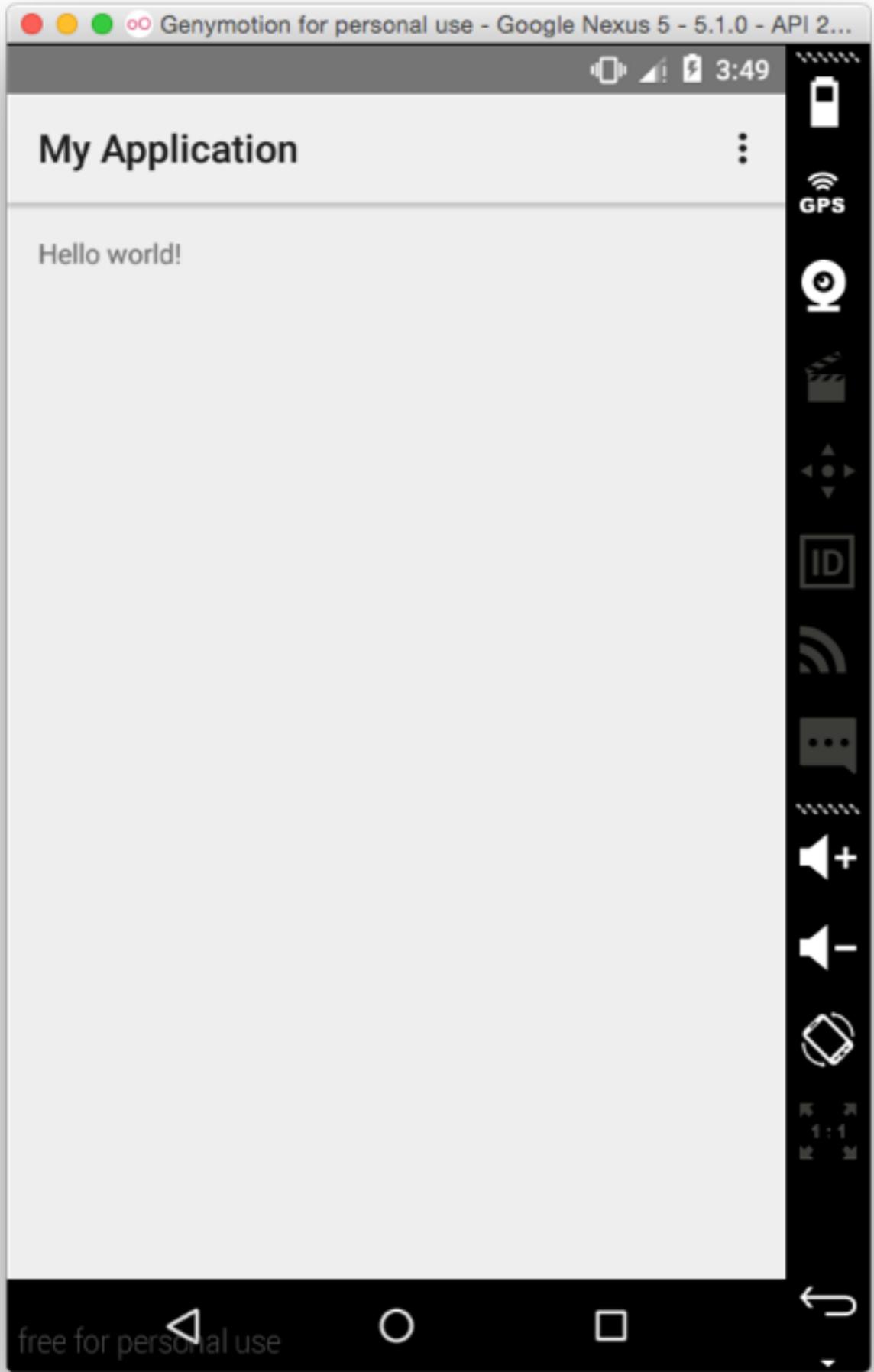
# Android Studio Layout

## Run the app



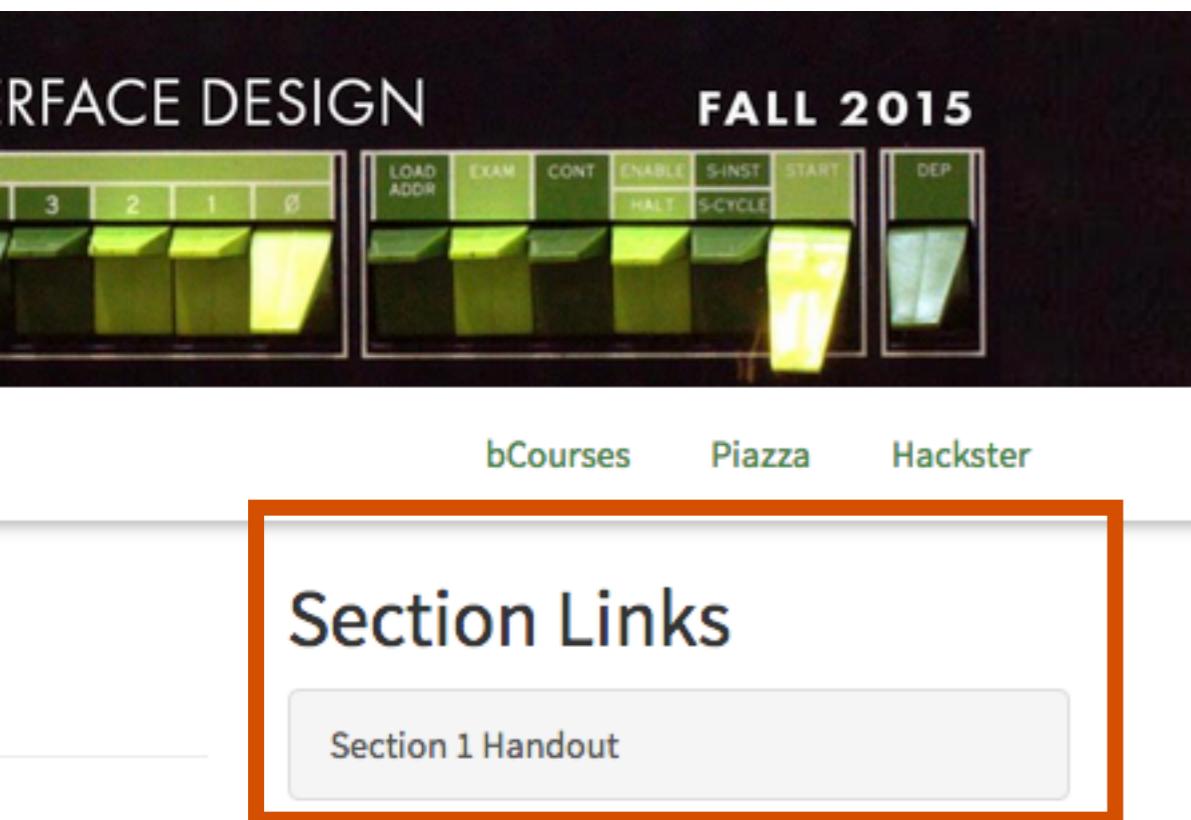
# Android Studio Layout





You did it!

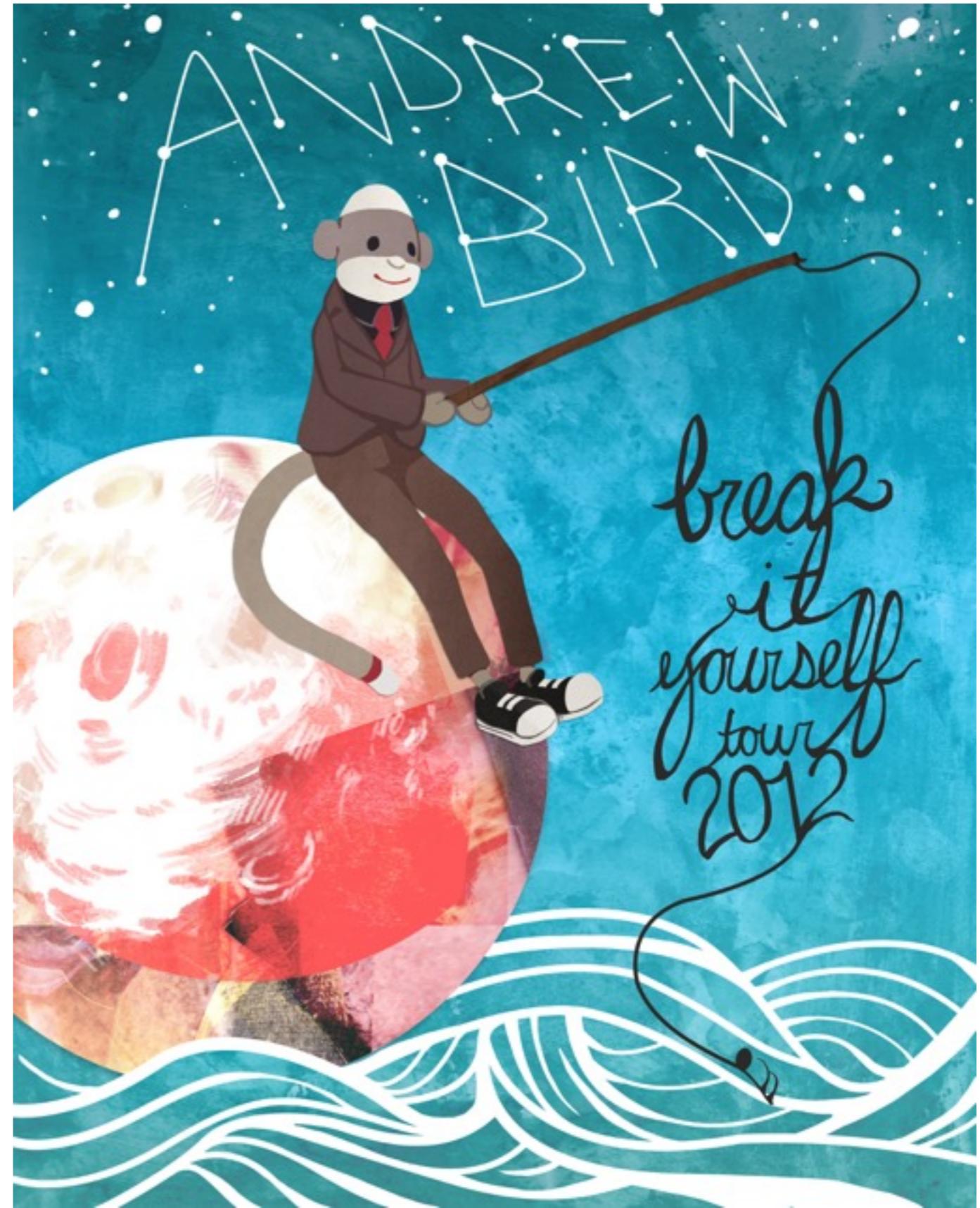
# Section Handout



- 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?

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

**Reading Response** • before class Thu 9/3

**PRG01: You Animal** • 11:59pm Fri 9/11

**DESIGN 01: Watches in the Wild** • before class Thu 9/11



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