

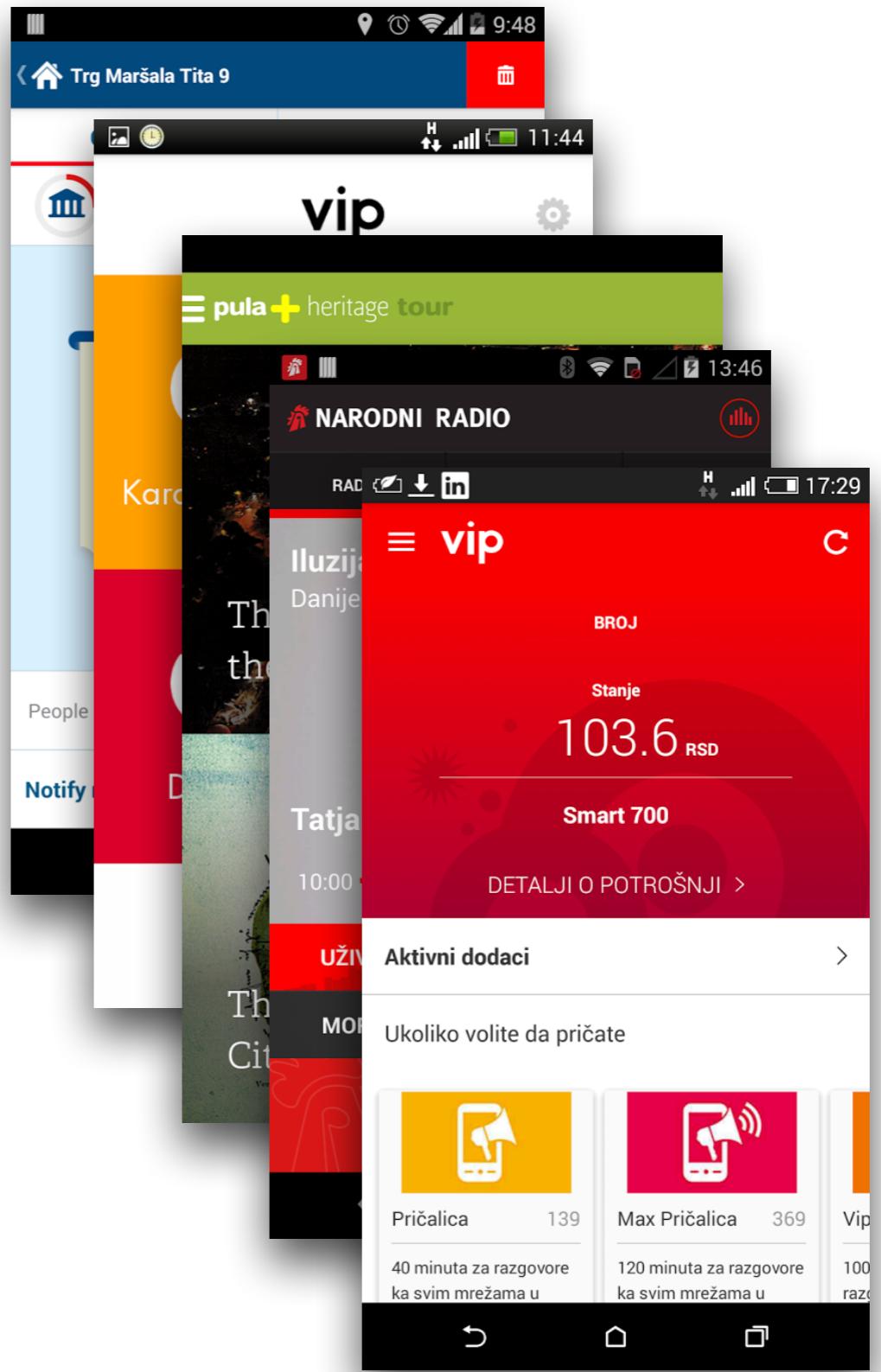
# Hello Android!



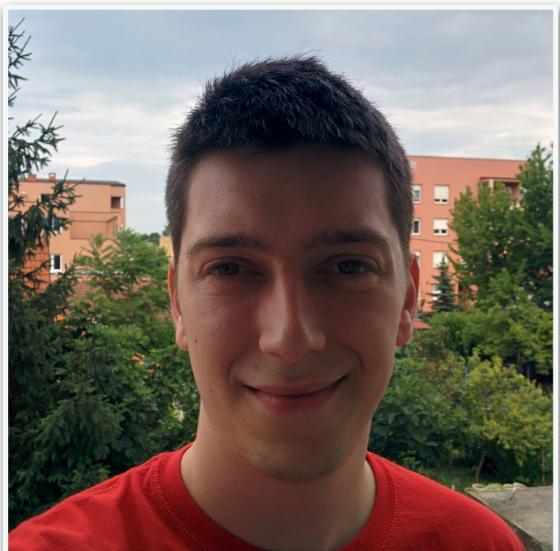
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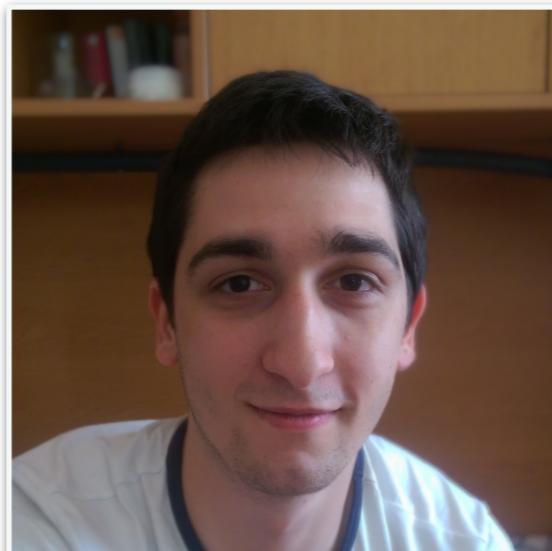
# Aplikacije



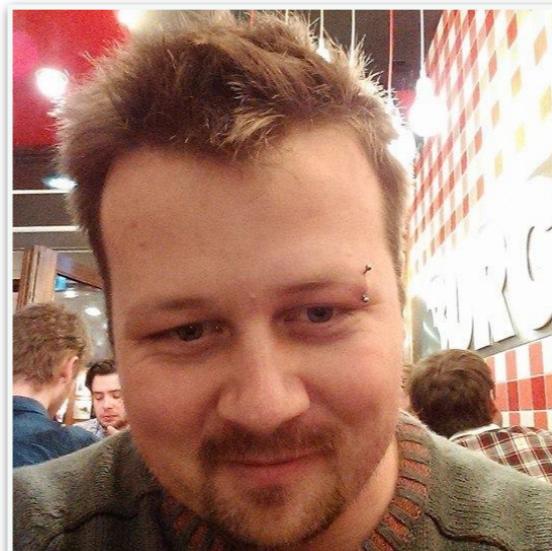
# Predavači



Dino Kovač



Ivan Marić



Kristijan Jurković

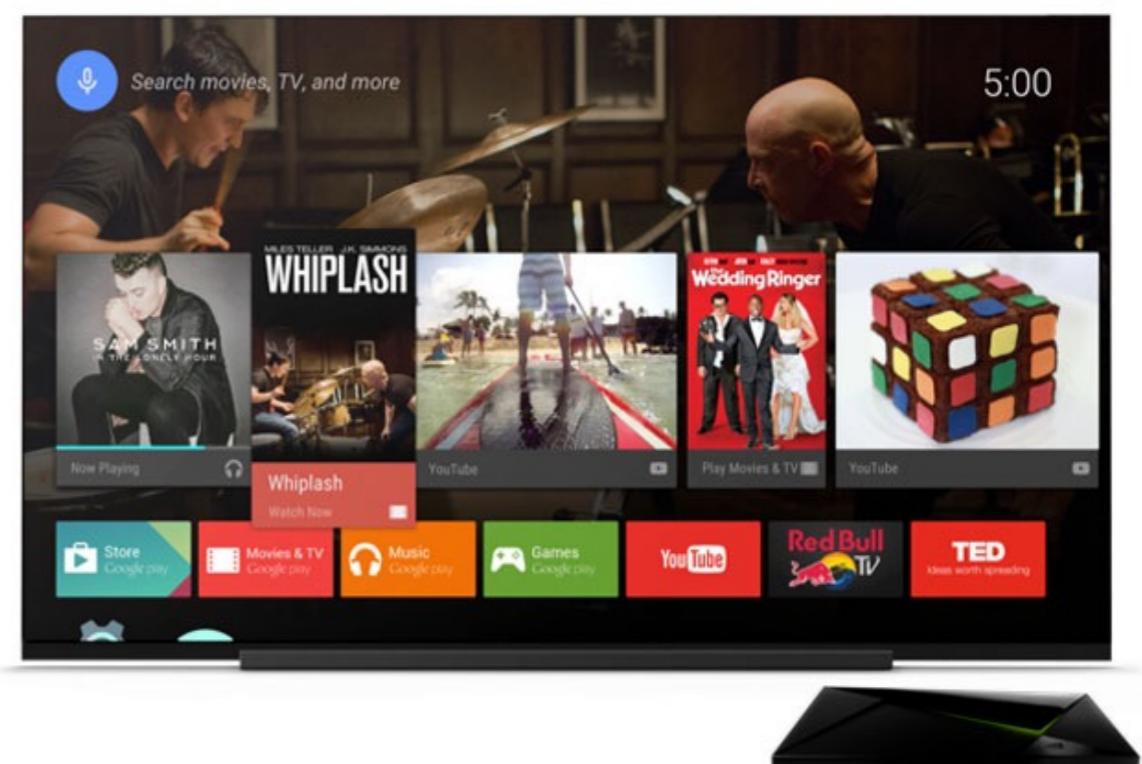
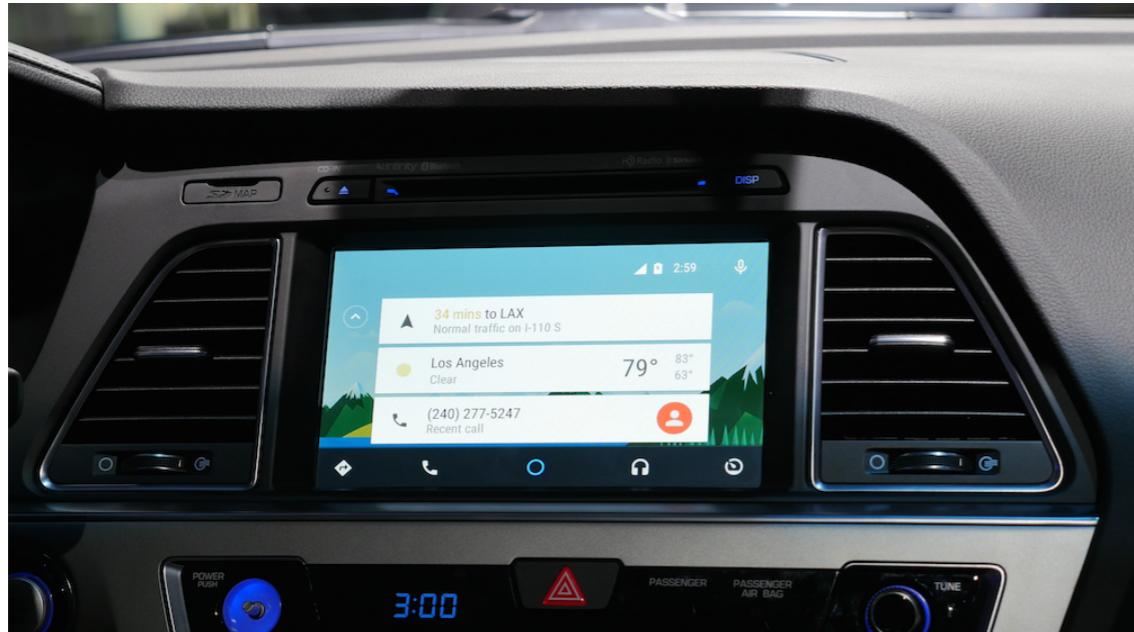


Ivan Kušt

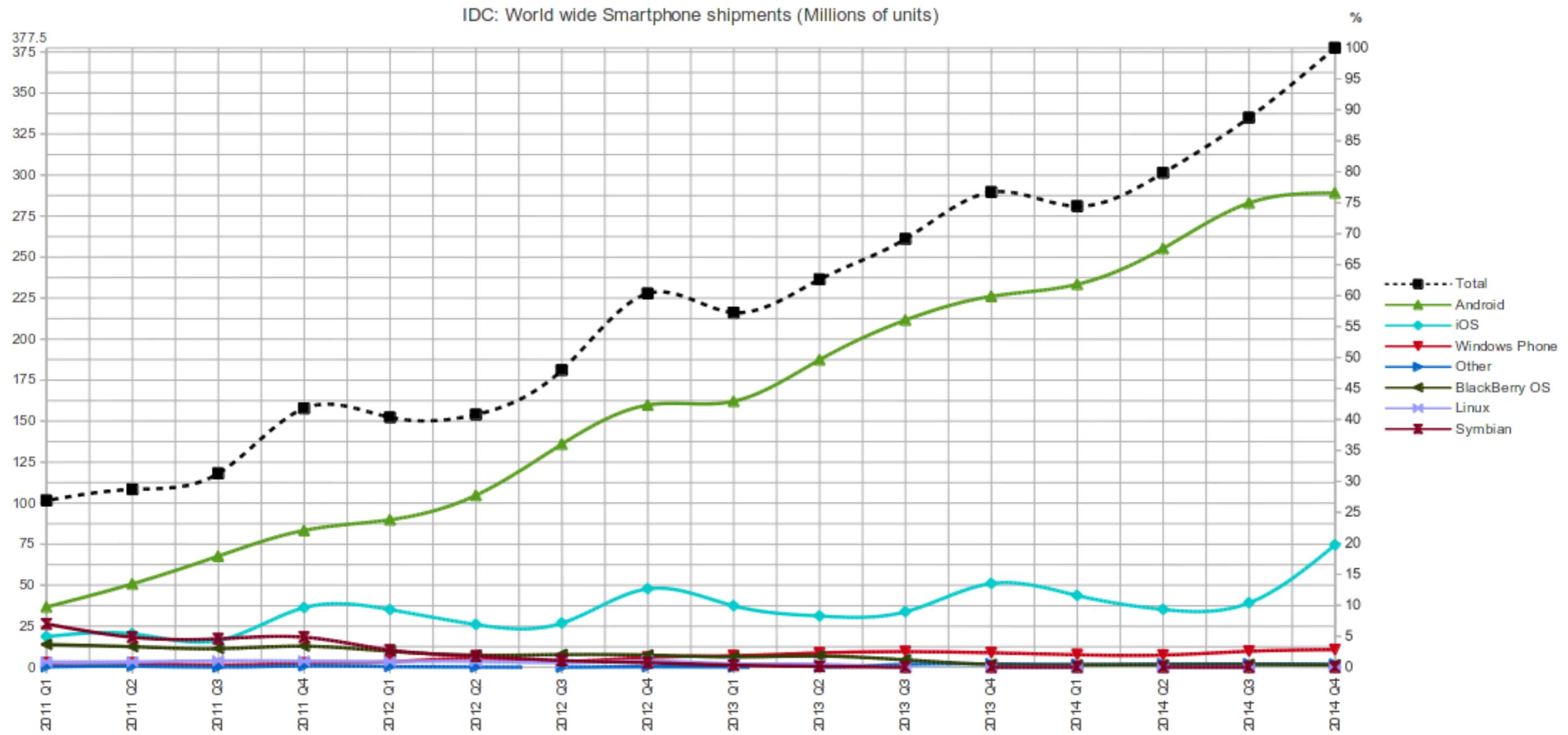
# Android

“[...] early intentions of the company were to develop an advanced operating system for digital cameras”

# Bilo kuda – Android svuda



# Mobile market share



O tečaju

# Nastavni plan

- Intro, terminology, “hello world” <--- YOU ARE HERE
- Activities and Intents, View basics
- Preserving state and displaying lists
- Rich and responsive layouts
- Networking
- Databases
- Separation of UI and business logic
- Testing

# Zadaci

- nakon svakog predavanja obavezni zadatak
- rok je tjedan dana
- predaja
  - napraviti pull request s rješenjem
  - doći u dogovoren i termin na predaju

# Pravila

- predavanja su obavezna
  - smijete jedanput (opravdano) izostati
  - morate predati sve zadatke u zadanom roku

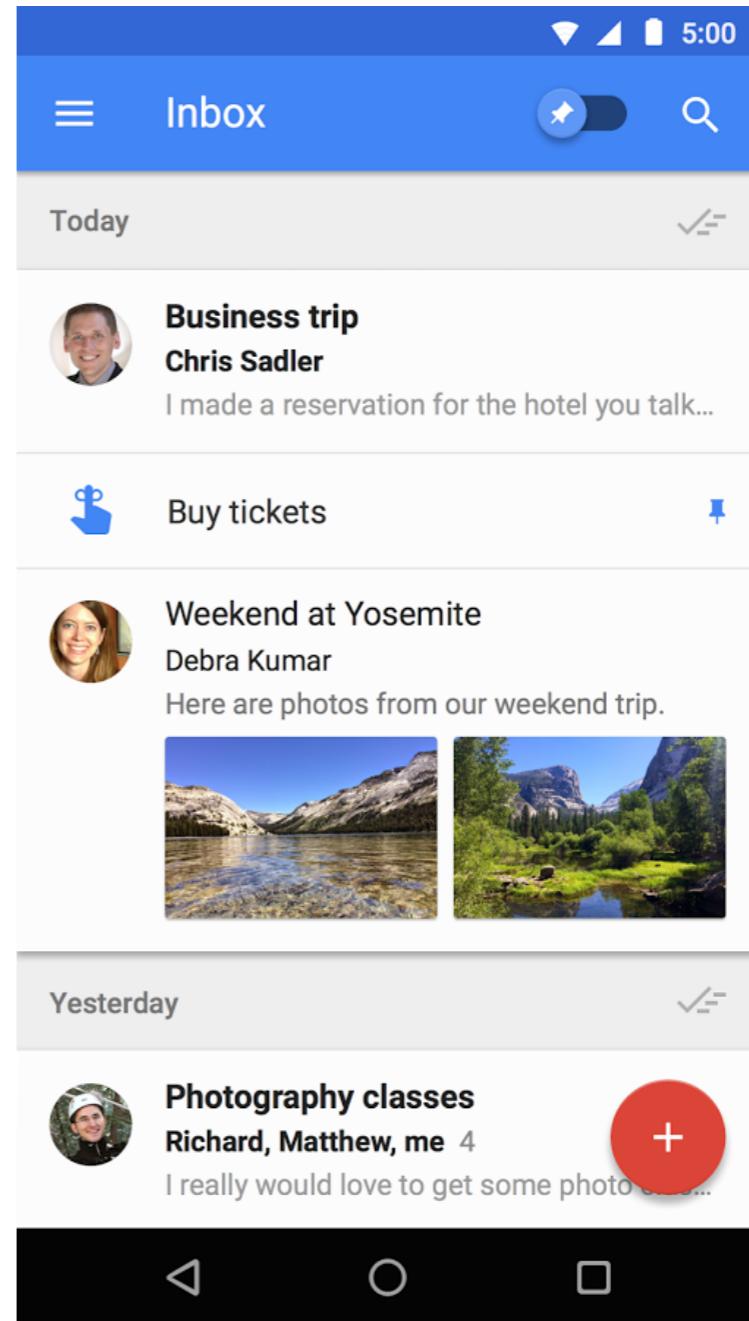
# Kako tražiti pomoć

- službena android dokumentacija
- google it (StackOverflow)
- Slack #android-tecaj
- Slack PM / mail / konzultacije

# Terminologija

# Activity

- java klasa
- dio aplikacije koji omogućuje neku aktivnost
  - pregledavanje mailova
  - pisanje maila
- ~ jedan ekran



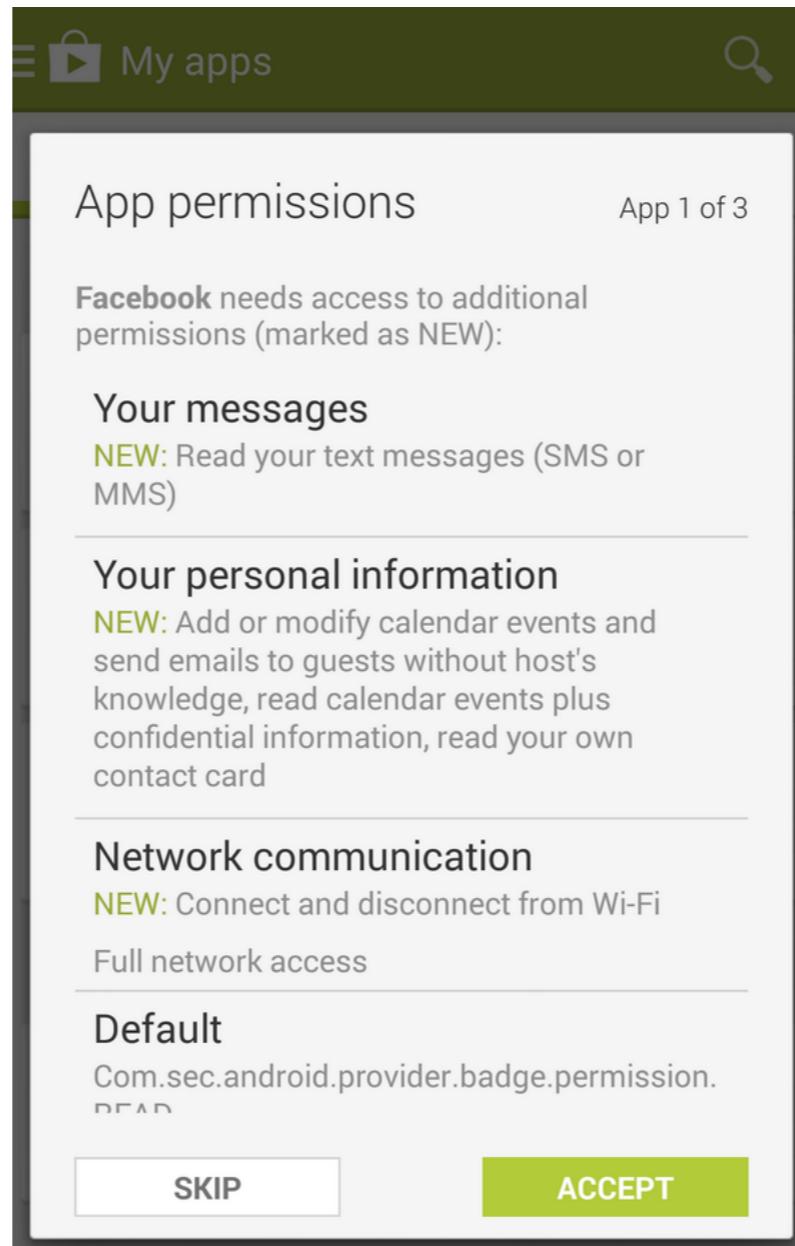
The screenshot shows the Android Studio interface. On the left, the XML code for `activity_main.xml` is displayed:

```
1 <RelativeLayout xmlns:android="http://schemas.android.com/apk/res/android"
2     xmlns:tools="http://schemas.android.com/tools"
3     android:layout_width="match_parent"
4     android:layout_height="match_parent"
5     android:paddingLeft="16dp"
6     android:paddingRight="16dp"
7     android:paddingTop="16dp"
8     android:paddingBottom="16dp"
9     tools:context=".MainActivity">
10
11    <TextView
12        android:id="@+id/button_counter"
13        android:text="Hello world!"
14        android:layout_width="wrap_content"
15        android:layout_height="wrap_content"
16        android:layout_centerInParent="true"/>
17
18 </RelativeLayout>
```

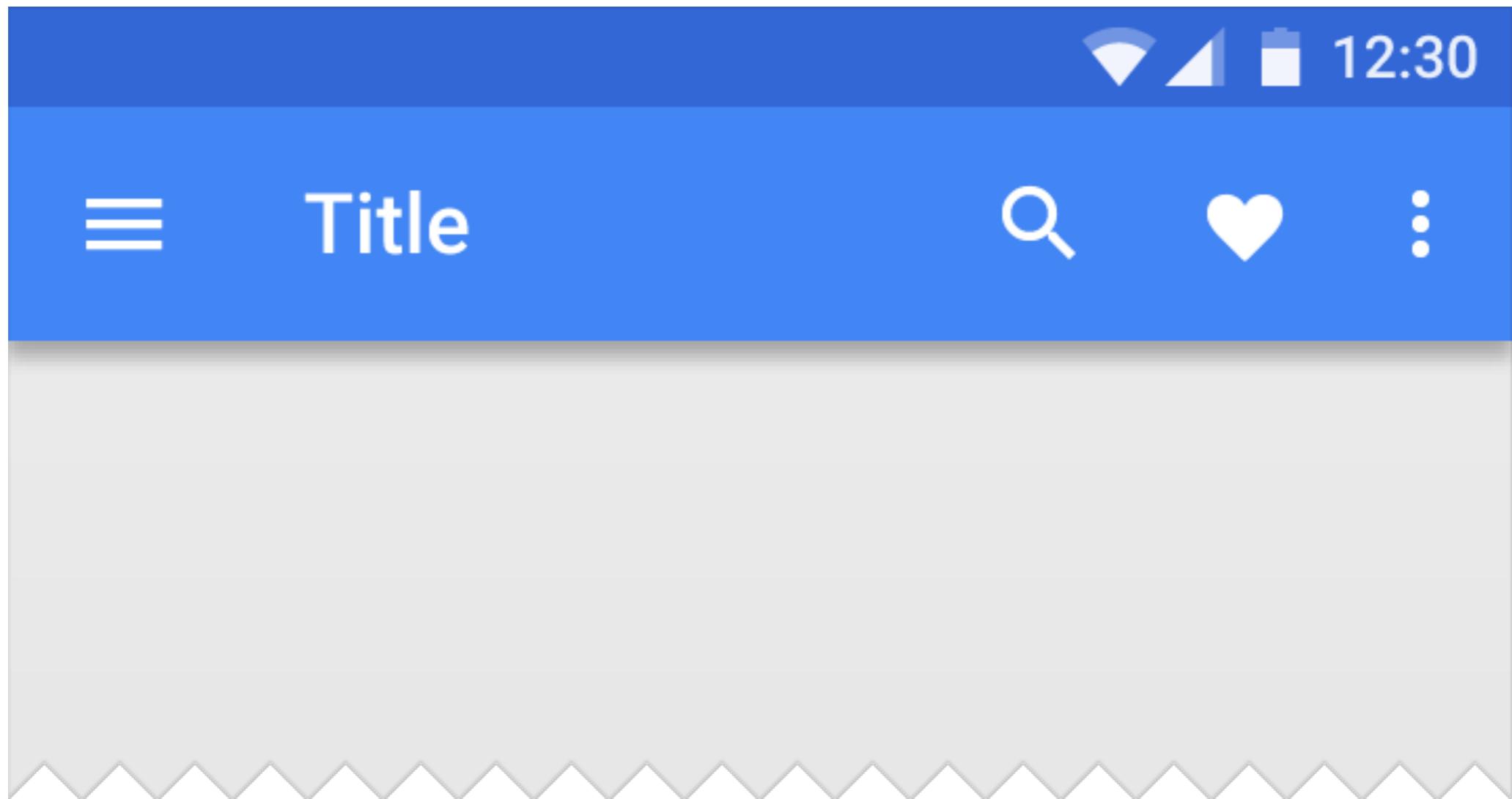
On the right, the "Preview" tab is active, showing a smartphone screen with the title "First" at the top and the text "Hello world!" in the center. The phone is set to a Nexus 4 device with AppTheme and MainActivity selected. The bottom tabs show "Text" and "Design".

# Layout

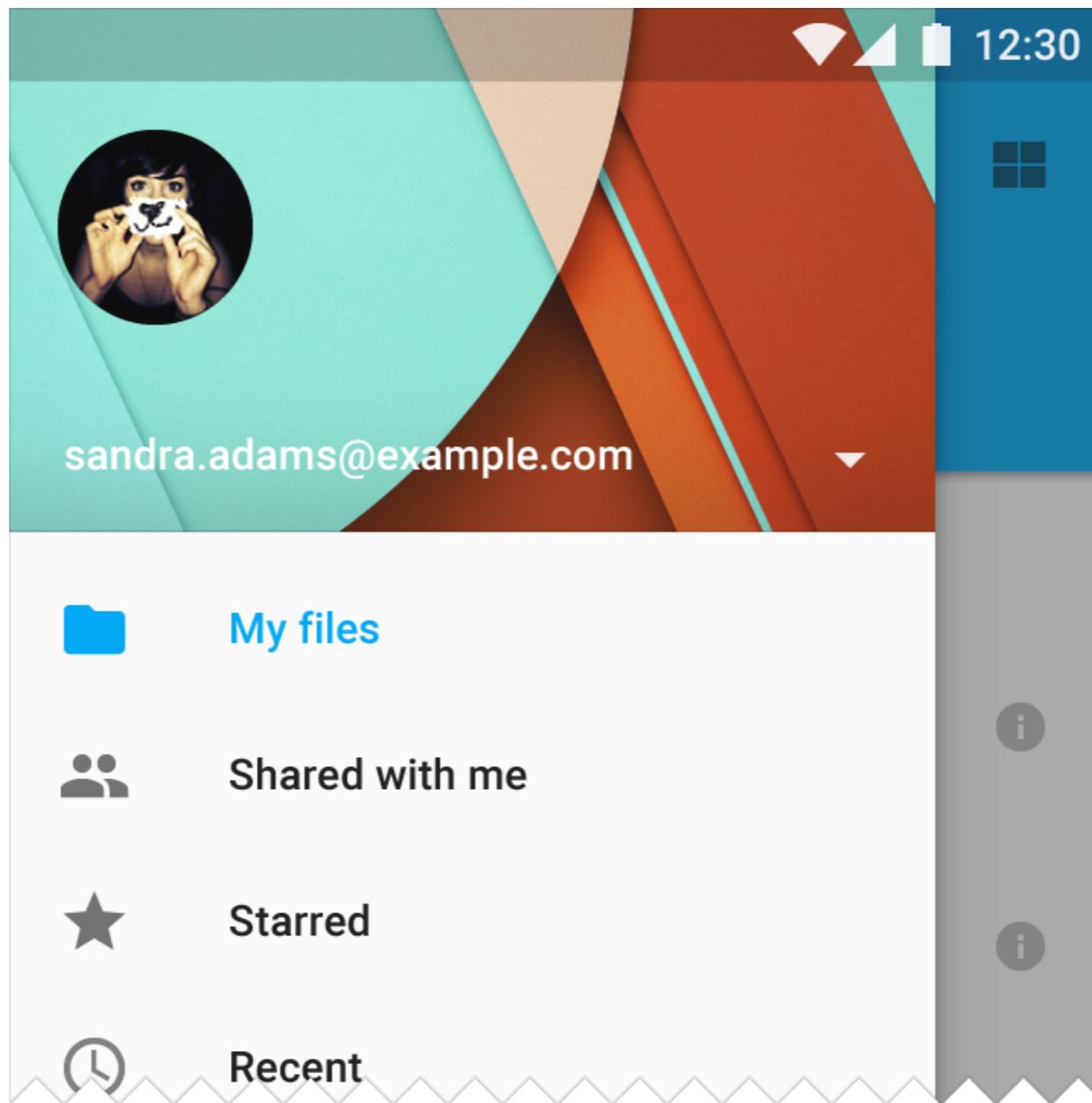
xml datoteka koja opisuje izgled sučelja, može se definirati i programatski



# App permissions



# Toolbar / Actionbar



# Navigation drawer

Title

## Use Google's location service?

Content

Let Google help apps determine location. This means sending anonymous location data to Google, even when no apps are running.

Actions

[DISAGREE](#) [AGREE](#)

# Dialog

# Alati

The screenshot shows the Android Studio interface with the following details:

- Project Structure:** The left sidebar shows the project structure under the **MessagingService** application. It includes the **Application** folder with **manifests** and **java** subfolders containing various Java classes like Conversations, MainActivity, MessageLogger, etc. The **res** folder contains **drawable**, **layout**, **values**, and **xml** subfolders, with **fragment\_message\_me.xml** selected.
- Code Editor:** The main editor window displays the XML code for **fragment\_message\_me.xml**. The code defines a **LinearLayout** with three buttons for sending conversations with 1, 2, or 3 messages, and a **TextView** for displaying log data, followed by a **Button** to clear the log.
- Preview:** On the right, the **Preview** tab shows a smartphone screen titled "Messaging Sample" with three buttons labeled "SEND 1 CONVERSATION WITH 1 MESSAGE", "SEND 2 CONVERSATIONS WITH 1 MESSAGE", and "SEND 1 CONVERSATION WITH 3 MESSAGES". Below these is a "CLEAR LOG" button.
- Bottom Bar:** The bottom navigation bar includes icons for **TODO**, **Android**, **Terminal**, **Event Log**, **Gradle Console**, and **Memory Monitor**.

# Android Studio

sadrži Android SDK i sve pripadne alate

# Emulator



# **Struktura projektu**

First (~/android/First)

- ▶ .gradle
- ▶ .idea
- ▶ app
  - ▶ build
  - ▶ libs
  - ▶ src
    - ▶ androidTest
    - ▶ main
      - ▶ java
      - ▶ res
      - ▶ AndroidManifest.xml
    - ▶ .gitignore
    - ▶ app.iml
    - ▶ build.gradle
    - ▶ proguard-rules.pro
  - ▶ build
  - ▶ gradle
    - ▶ .gitignore
    - ▶ build.gradle
    - ▶ First.iml
    - ▶ gradle.properties
    - ▶ gradlew
    - ▶ gradlew.bat
    - ▶ local.properties
    - ▶ settings.gradle

# Struktura

- app/src/\*/java
  - svi java paketi s klasama
- app/src/\*/res
  - layouts, drawables, animations, styles, ...

# App Manifest

- sadrži informacije koje Android OS treba da bi se aplikacija pokrenula na uređaju
  - opisuje komponente aplikacije (activities, broadcast receivers, services, ...)
  - traži dozvole (app permissions)
  - traži potrebna hardverska i softverska svojstva (kamera, gps, ...)
- play store filtrira po njemu (implicit features!)

# app/build.gradle

- skripta napisana u programskom jeziku Groovy
- opće informacije o aplikaciji (versionName, versionCode, applicationId)
- app signing configuration
- dependencies
- bilo kakva druga konfiguracija vezana uz aplikaciju

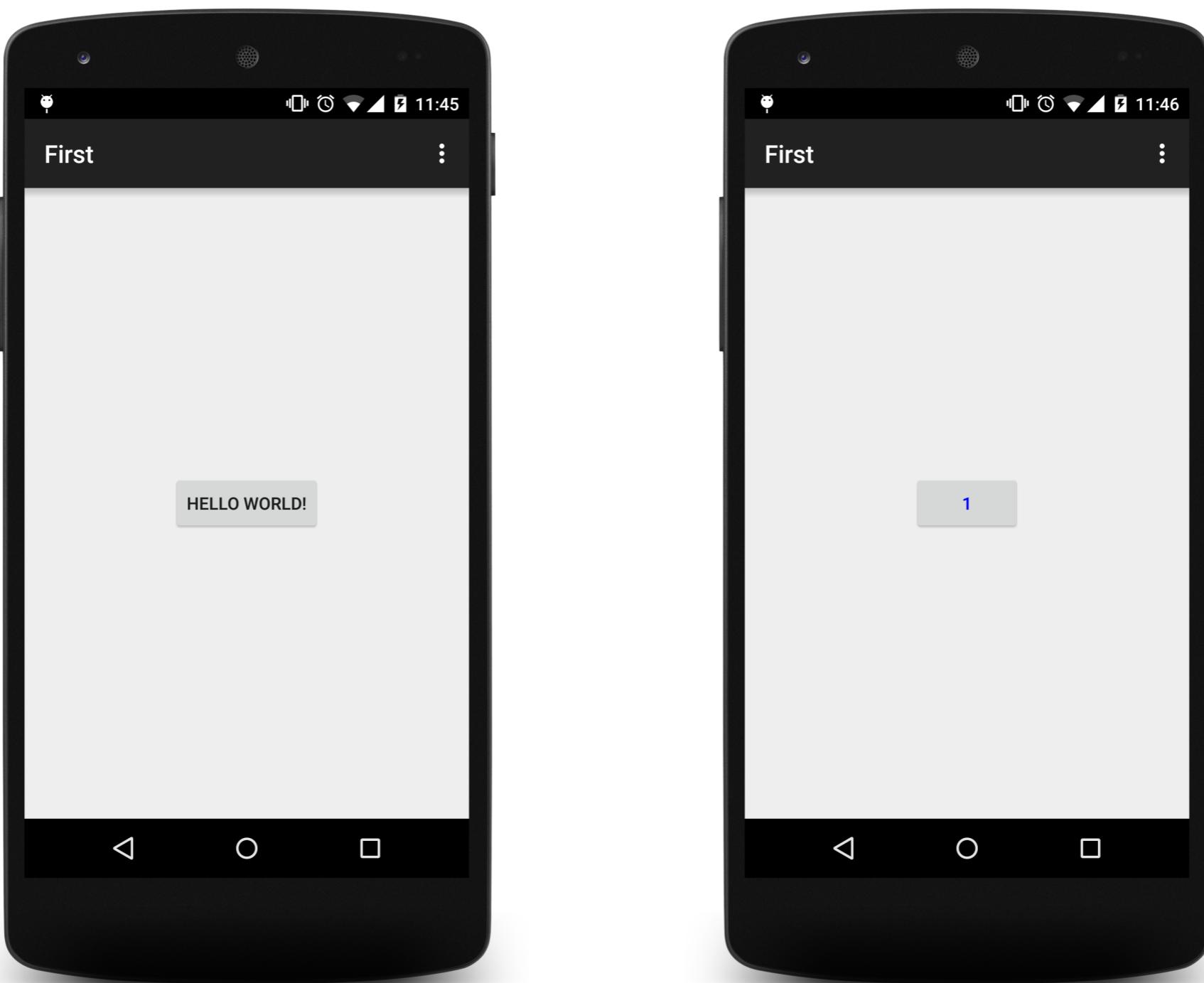
# Live coding session

# Zadatak

# Zadatak 1

- Napraviti aplikaciju koja ima jedan button s tekstrom “HELLO WORLD”
  - centrirajte button na ekranu
  - klikom na button, prikazuje se koliko puta je button kliknut (1, 2, 3, ...)
  - za parne brojeve tekst treba biti zelene boje, a za neparne plave

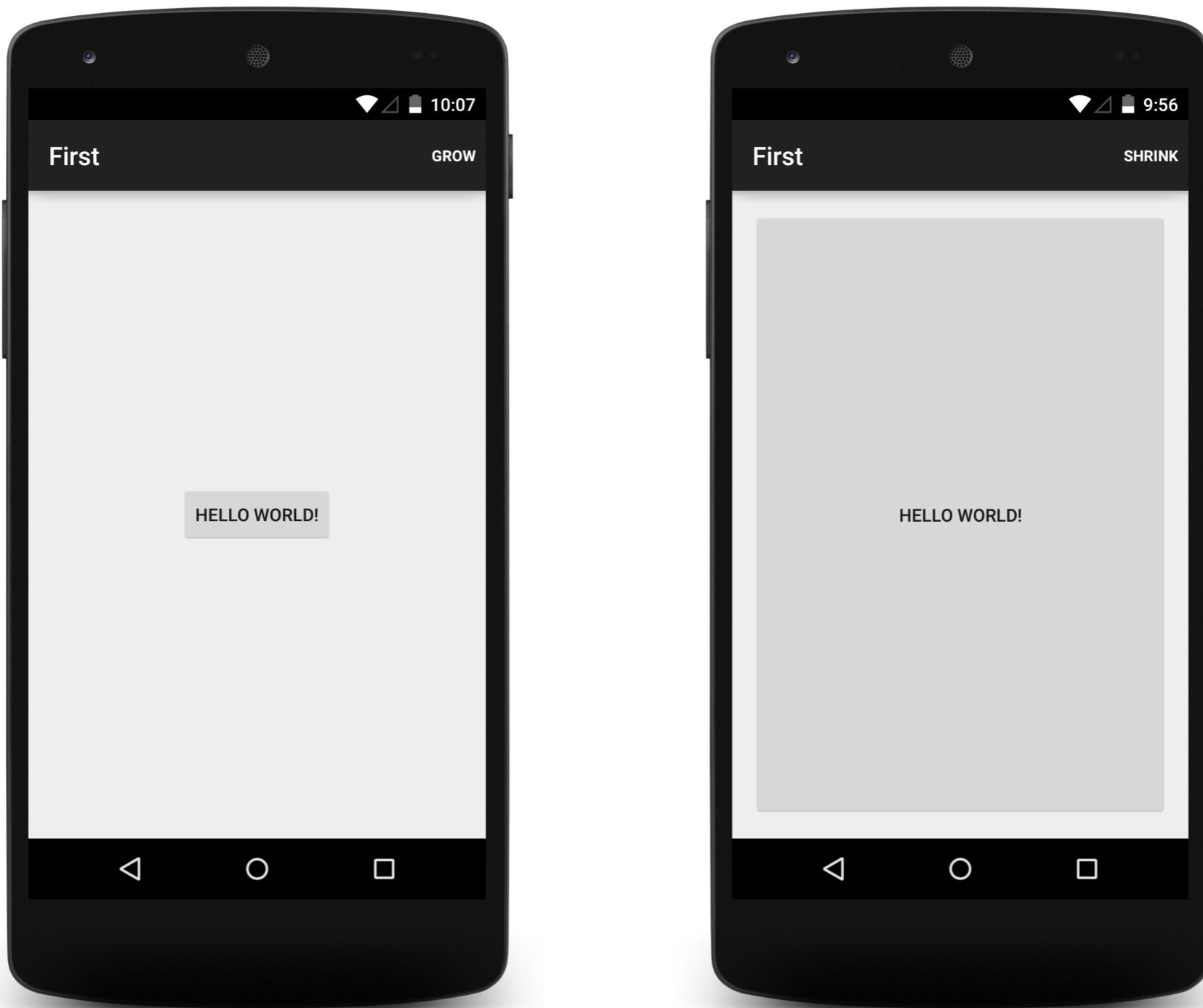
# Zadatak 1



# Zadatak 1 – za one koji žele znati više

- Implementirajte toolbar akciju koja omogućava da se button proširi preko cijelog ekrana i ponovno skupi ako se klikne opet
- Ime akcije treba mijenjati tekst na logičan način “Grow” <-> “Shrink”
- Za one koji žele još više - animirajte širenje i skupljanje (ovo nismo obradili)

# Zadatak 1 – za one koji žele znati više



# Resursi

- <http://www.google.com/design/spec/material-design/introduction.html>
- <http://developer.android.com/tools/studio/index.html>
- <http://developer.android.com/guide/topics/manifest/manifest-intro.html>
- <http://developer.android.com/guide/topics/ui/declaring-layout.html>
- <http://developer.android.com/reference/android/view/View.html>
- <https://developer.android.com/training/basics/actionbar/adding-buttons.html>