

# Linear Layouts

A View Group (aka Panel)

# VIEW GROUPS



# XML SYNTAX

Start  
Linear  
Layout

```
<LinearLayout  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:orientation="vertical">  
  
    <TextView  
        android:text="Happy Birthday"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"/>  
  
    <TextView  
        android:text="You're the best!"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"/>  
  
</LinearLayout>
```

Child 1 of  
Linear  
Layout

Child 2 of  
Linear  
Layout

End Linear  
Layout

# MEET THE VIEWS



Ray  
RelativeLayout



Laura  
LinearLayout



Tommy  
TextView



Ivy  
ImageView

# PARENTAL SUPERVISION



Laura  
LinearLayout

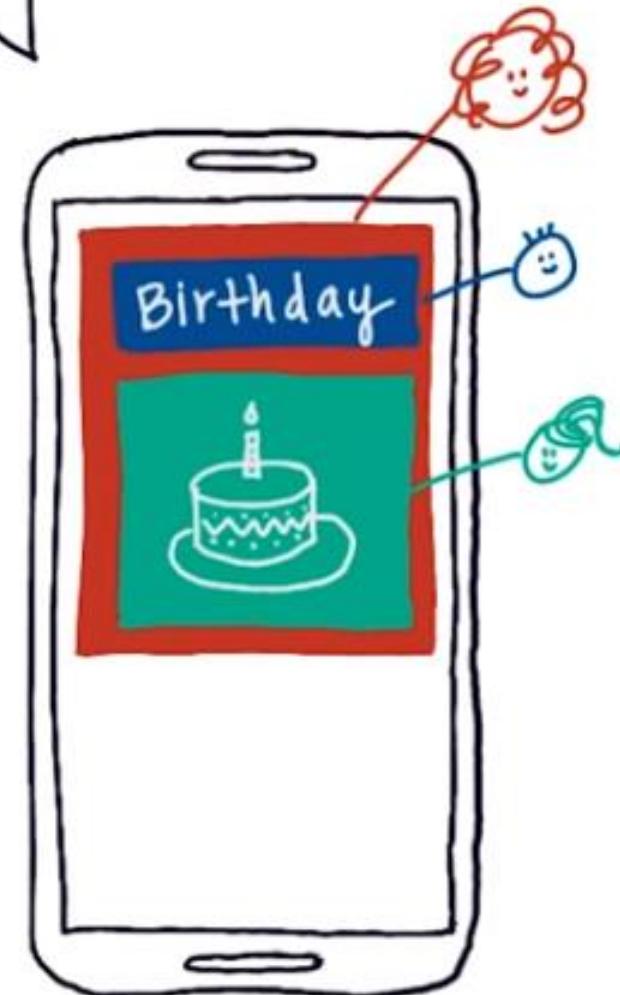
— Tommy, sit here.  
— Ivy, sit over there.  
— Don't move!



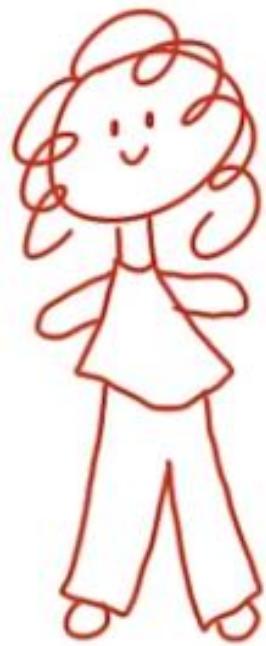
Tommy  
TextView



Ivy  
ImageView



# PARENTAL SUPERVISION



Laura  
LinearLayout

— Tommy, sit here.  
— Ivy, sit over there.  
— Don't move!



Tommy  
TextView



Ivy  
ImageView



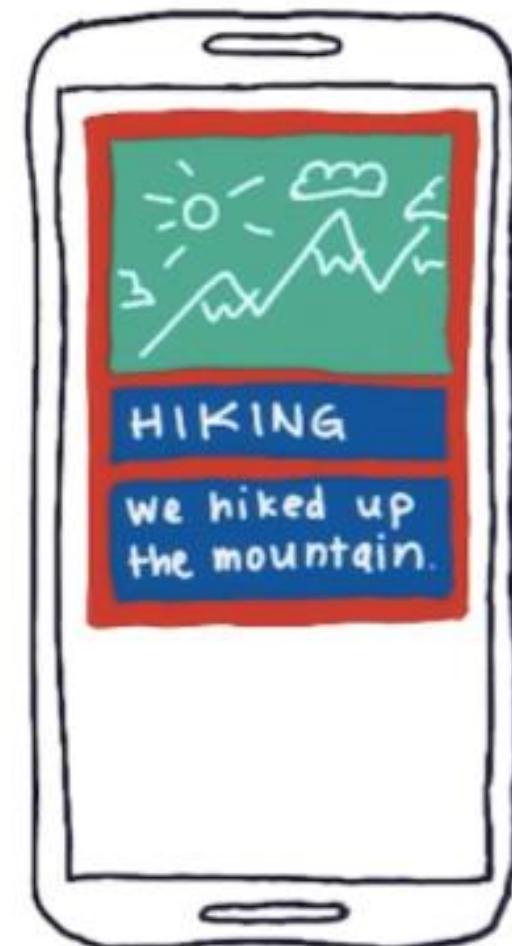
# VIEW GROUPS

1. How many views are there?
2. The mountain image is a \_\_\_\_\_ of the red ViewGroup.  
 child       parent
3. The red ViewGroup is the \_\_\_\_ of the "Hiking" TextView.  
 child       parent
4. Which views are siblings of each other?



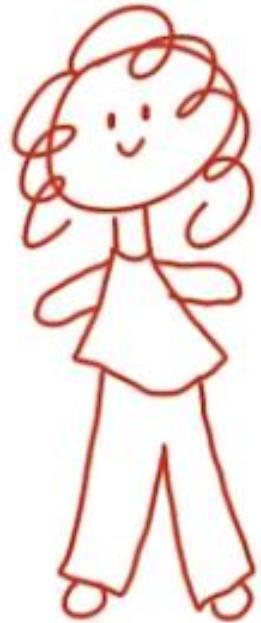
# VIEW GROUPS

1. How many views are there?
2. The mountain image is a \_\_\_\_\_ of the red ViewGroup.  
 child       parent
3. The red ViewGroup is the \_\_\_\_ of the "Hiking" TextView.  
 child       parent
4. Which views are siblings of each other?



# LINEAR LAYOUT

vertical column



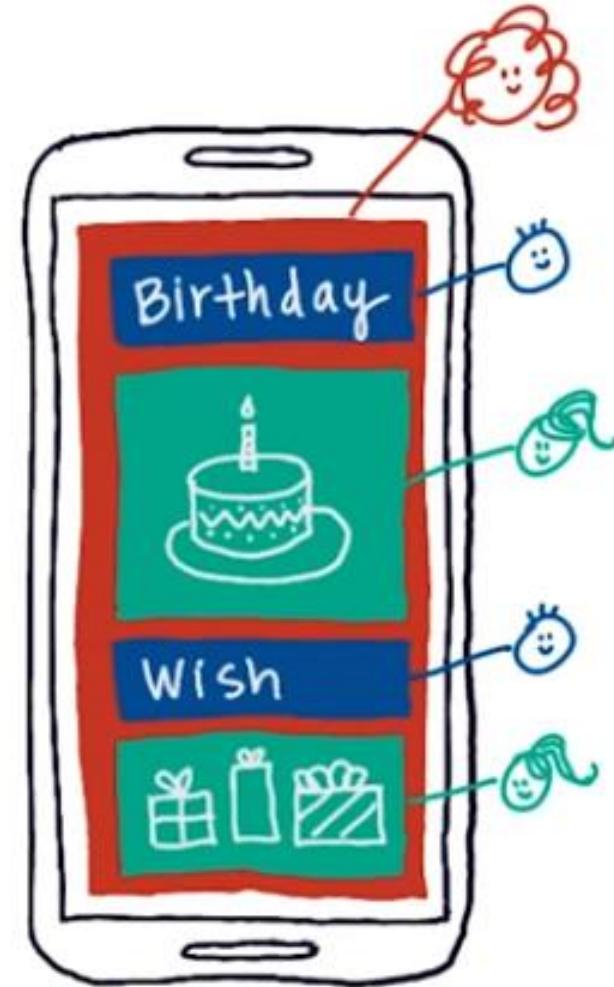
Laura  
Linear Layout



Tommy  
TextView

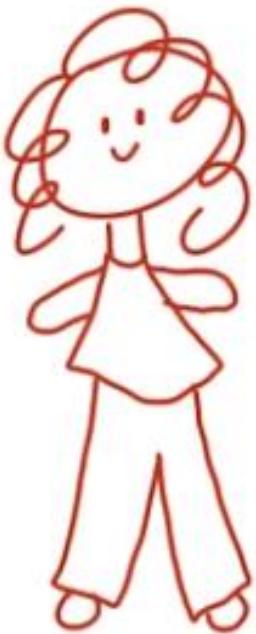


Ivy  
ImageView



# LINEAR LAYOUT

Horizontal row



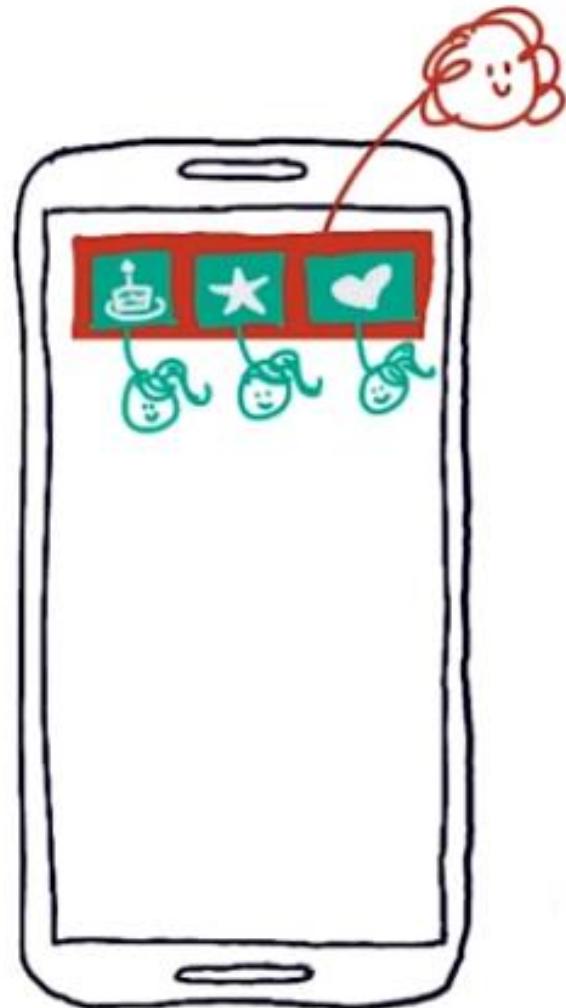
Laura  
Linear Layout



Tommy  
TextView

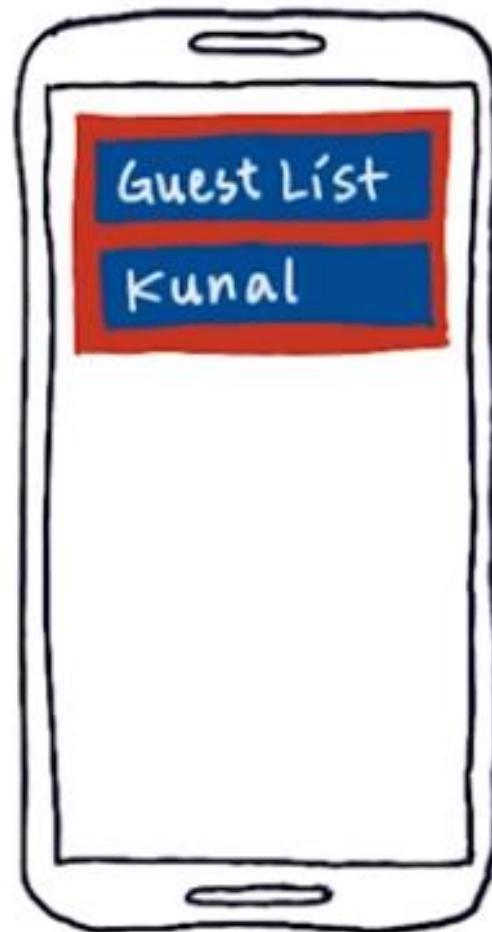


Ivy  
ImageView



# VIEW GROUPS

```
<LinearLayout  
    android:orientation="vertical"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content">  
  
    <TextView  
        android:text="Guest List"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content" />  
  
    <TextView  
        android:text="Kunal"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content" />  
  
</LinearLayout>
```



## DIFFERENT WIDTHS ON CHILD VIEWS

200 dp



wrap-content



match-parent



## DIFFERENT HEIGHTS ON CHILD VIEWS

200 dp



wrap-content



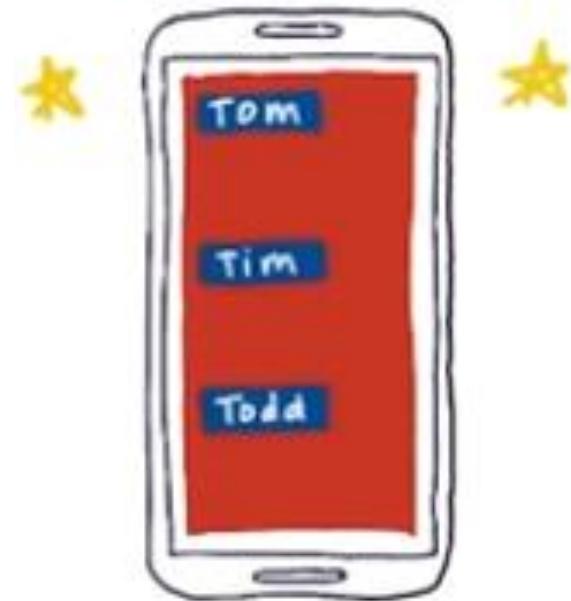
match-parent



What we have:

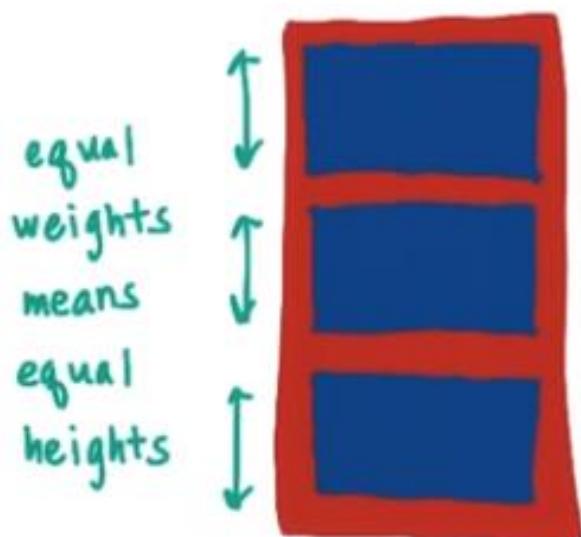


What we want:



# LINEAR LAYOUT WEIGHT

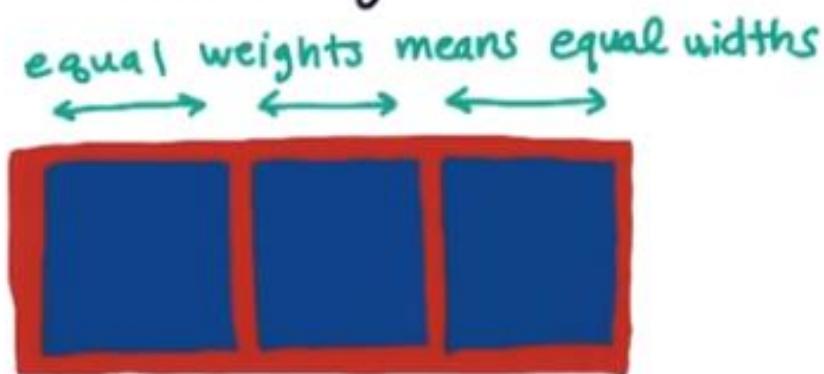
## Vertical Linear Layout



equal weights means equal heights

3 child views  
height: 0 dp  
weight: 1

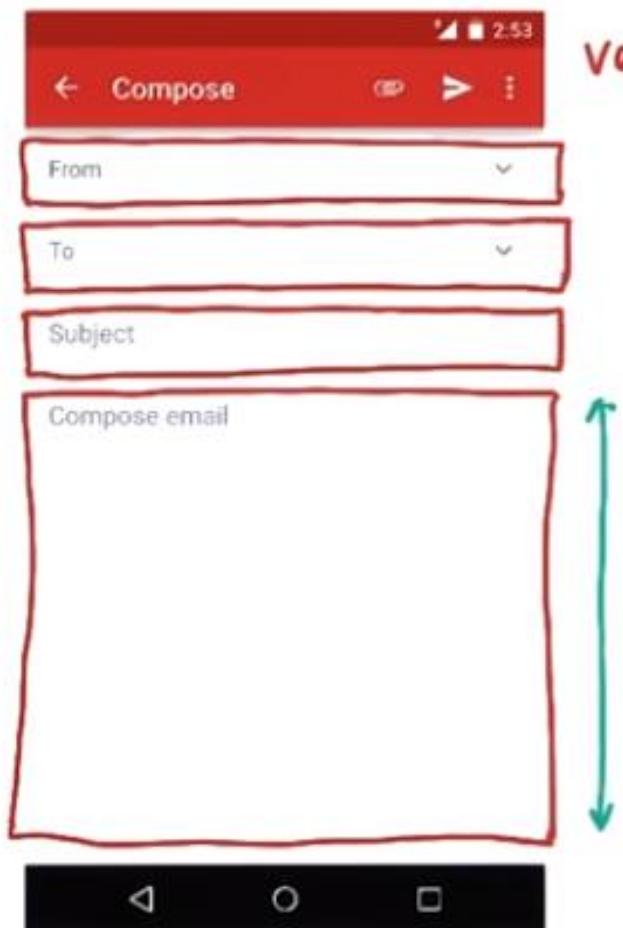
## Horizontal Linear layout



equal weights means equal widths

3 child views  
width: 0 dp  
weight: 1

# EMAIL APP



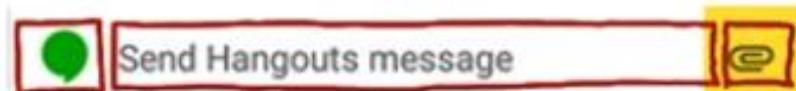
Vertical Linear Layout

	Width	Height	Weight
Edit Text	match-parent	wrap-content	0
Edit Text	match-parent	wrap-content	0
Edit Text	match-parent	wrap-content	0
Edit Text	match-parent	0dp	1

# HANGOUTS APP



Horizontal linear layout



ImageView

EditText

ImageView

Height

wrap-content

wrap-content

wrap-content

width

wrap-content

0dp

wrap-content

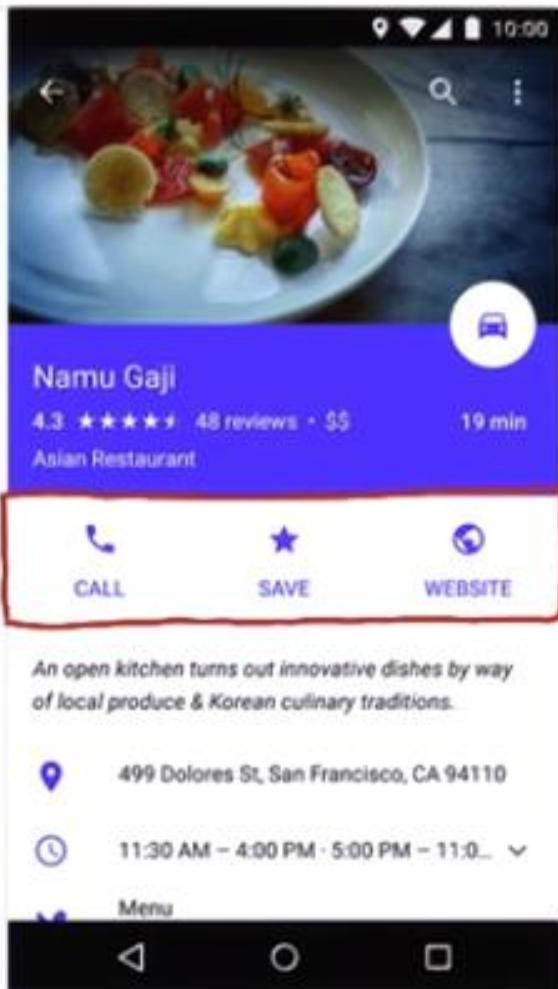
weight

0

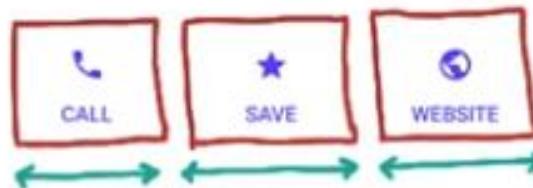
1

0

# MAPS APP



Horizontal linear layout



TextView

TextView

TextView

Height

wrap\_content

wrap\_content

wrap\_content

width

0dp

0dp

0dp

weight

1

1

1

# LINEAR LAYOUT WEIGHT

Build this layout!



Start with XML provided below.

1. Determine width of each view first
2. Determine height of each view
3. Make sure the image  takes up any remaining height in parent Linear Layout

Android Studio interface showing the layout editor for activity\_main.xml.

**Project Structure:**

- app
  - manifests
  - java
    - ca.gorskicompsci.www.welcome (MainActivity)
    - ca.gorskicompsci.www.welcome (android)
    - ca.gorskicompsci.www.welcome (test)
  - res
    - drawable (storycubes2.jpg)
    - layout (activity\_main.xml)
    - mipmap
    - values
- Gradle Scripts
  - build.gradle (Project: Welcome)
  - build.gradle (Module: app)
  - gradle-wrapper.properties (Gradle Version)
  - proguard-rules.pro (ProGuard Rules for app)
  - gradle.properties (Project Properties)
  - settings.gradle (Project Settings)
  - local.properties (SDK Location)

**Layout Editor:**

- Toolbar:** Includes icons for file operations, search, and navigation.
- File Path:** Welcome > app > src > main > res > layout > activity\_main.xml
- Palette:** Shows categories like All, Widgets, Text, and Layouts. Widgets currently selected include TextView, Button, ToggleButton, and CheckBox.
- Properties:** Shows properties for the selected send button, including ID (send), layout\_width (100dp), layout\_height (wrap\_content), style (buttonStyle), and text (Send).
- Component Tree:** Shows the structure of the layout:
  - LinearLayout (vertical)
    - to (EditText)
    - subject (EditText)
    - message (EditText)
    - send (Button) - "Send"
- Design View:** Shows the visual representation of the layout with a title bar "Welcome", three text input fields, and a button at the bottom labeled "SEND".
- Text View:** Shows the XML code for the layout.
- Bottom Navigation:** Design, Text tabs.
- Notifications:** Platform and Plugin Updates message: "Android Studio is ready to update."
- Bottom Bar:** TODO, Android Monitor, Messages, Terminal, Event Log, Gradle Console.
- Logs:** Gradle build finished in 9s 180ms (16 minutes ago).

# LINEAR LAYOUT WEIGHT



Vertical Linear Layout

width	height	weight
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ImageView

match-parent	0dp	1
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TextView  
TextView

match-parent	wrap-content	0
match-parent	wrap-content	0

# AN ANDROID APP

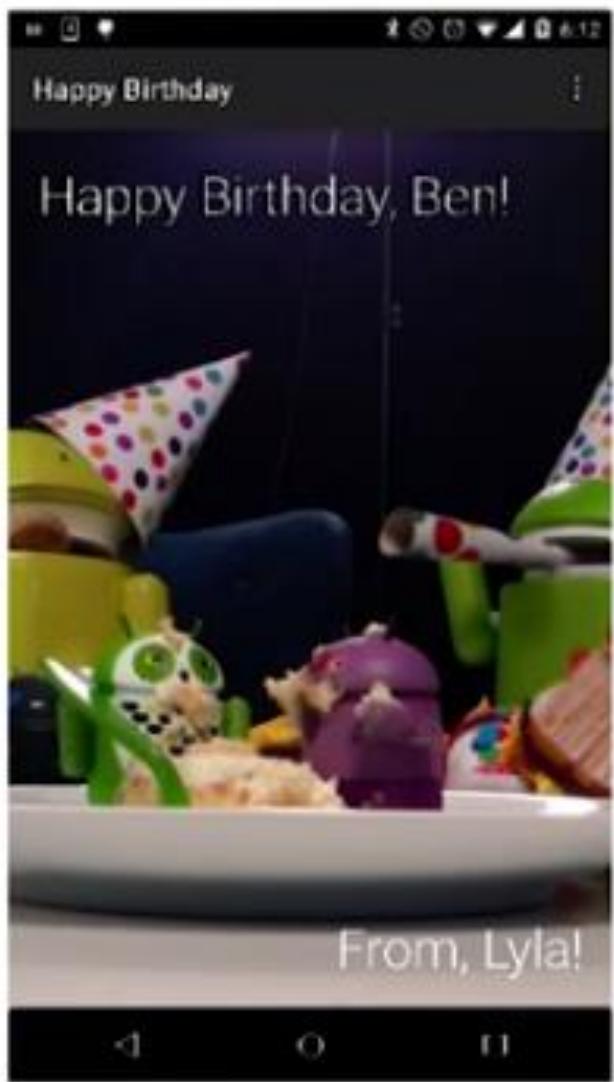
## Resources



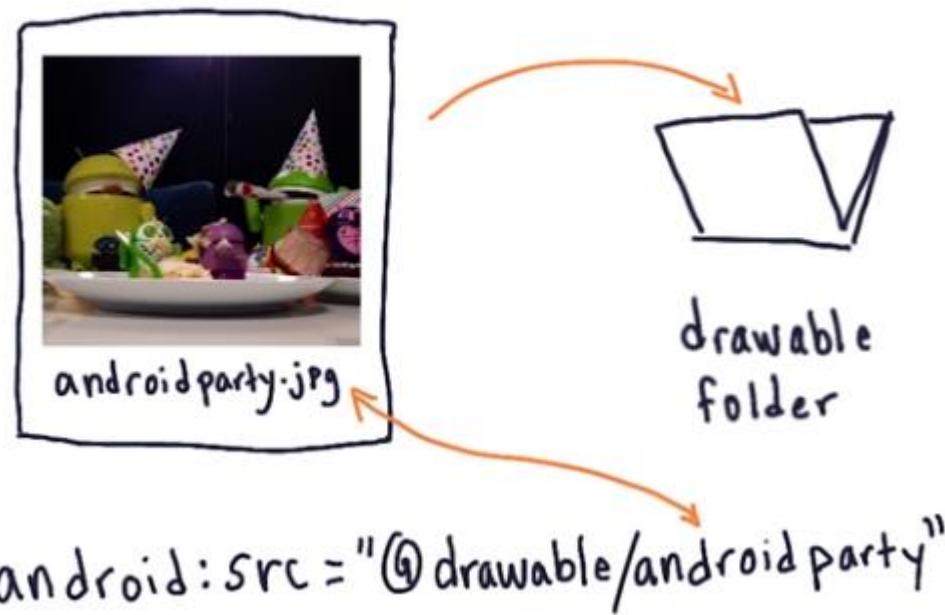
## Java code



logic for the app



## The Drawable Folder





## Things Todo:

- text is much larger
- text font is different
- text is white
- image is expanded to fill the screen
- text is not pushed against side of screen

