



Recap by:  
[isumizumi.github.io](https://isumizumi.github.io)

#Batch 3.2  
Agustus, 2017

# Overview

## //Udacity Program for Beginner

*Udacity.com*  
**Beginner**

- *Android Development for Beginner*

- How to create <anything> in Android
- Android Basics: Multi-Screen Apps
- Android Basics: Networking
- Android Basics: Data Storage
- Intro to Java Programming
- UX Design for Mobile Developers
- Java Programming Basics

# Recap Materi Level Beginner



# Intro

## //Android Version



A  
Alpha



B  
Beta



C  
Cupcake



D  
Donut



E  
Eclair



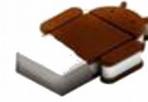
F  
Froyo



G  
Gingerbread



Honeycomb



Ice Cream Sandwich



Jelly Bean



KitKat



Lollipop



Marshmallow



Nougat

H

I

J

K

L

M

N

Version	Codename	API	Distribution
2.2	Froyo	8	0.1%
2.3.3 - 2.3.7	Gingerbread	10	1.3%
4.0.3 - 4.0.4	Ice Cream Sandwich	15	1.3%
4.1.x	Jelly Bean	16	4.9%
4.2.x		17	6.8%
4.3		18	2.0%

Version	Codename	API	Distribution
4.4	KitKat	19	25.2%
5.0	Lollipop	21	11.3%
5.1		22	22.8%
6.0	Marshmallow	23	24.0%
7.0	Nougat	24	0.3%

# Intro //Android App

## AN ANDROID APP



1. Place to write a code
  - a. IDE (Integrated Development Environment)
    - Source code editor
    - Build Automation Tools
    - Debugger
    - Contoh : Android Studio, Eclipse → XML Visualizer
2. Language
  - a. XML → eXtensible Markup Language

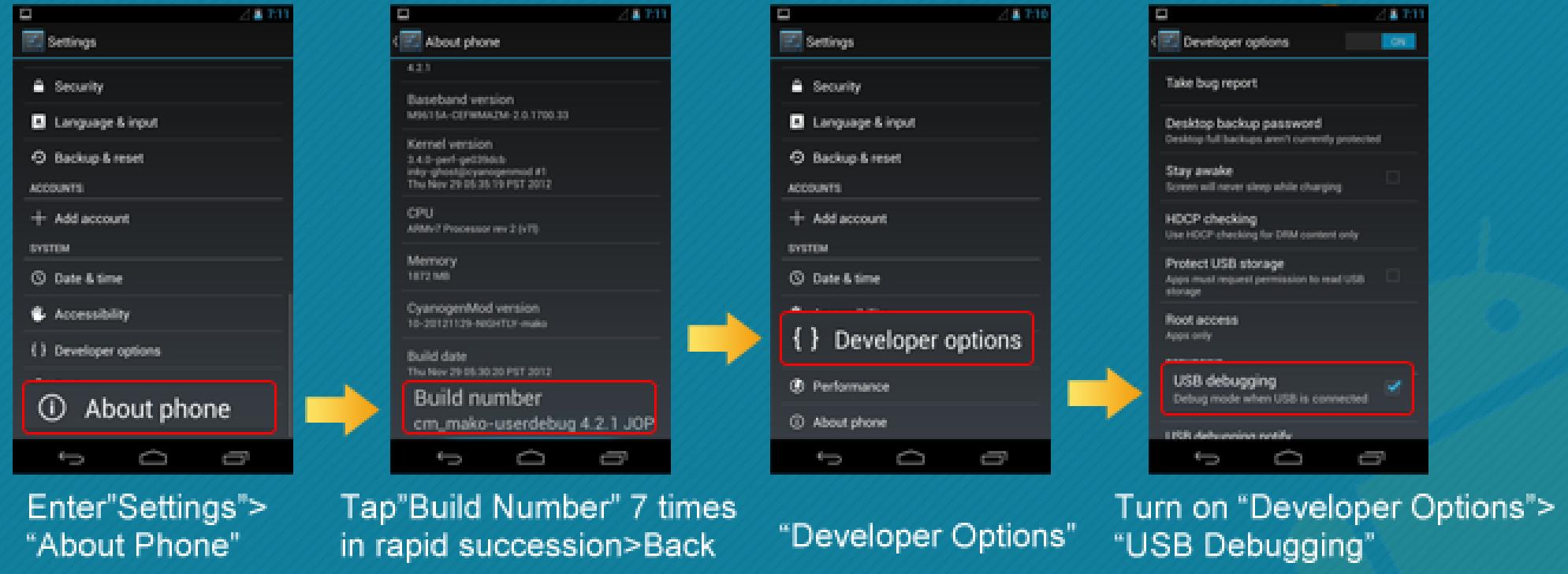
# Intro //System Requirement (for PC/Laptop)

Windows	Mac	Linux
<ul style="list-style-type: none"><li>Microsoft® Windows® 7/8/10 (32- atau 64-bit)</li><li>RAM minimum 3 GB, RAM yang disarankan 8 GB; tambah 1 GB untuk Emulator Android</li><li>Ruang disk minimum yang tersedia 2 GB, Disarankan 4 GB (500 MB untuk IDE + 1,5 GB untuk Android SDK dan gambar sistem emulator)</li><li>Resolusi layar minimum 1280 x 800</li><li>Untuk emulator akselerasi: sistem operasi 64-bit dan prosesor Intel® dengan dukungan untuk Intel® VT-x, Intel® EM64T(Intel® 64), dan fungsionalitas Execute Disable (XD) Bit</li></ul>	<ul style="list-style-type: none"><li>Mac® OS X® 10.10 (Yosemite) atau lebih tinggi, hingga 10.12 (macOS Sierra)</li><li>RAM minimum 3 GB, RAM yang disarankan 8 GB; tambah 1 GB untuk Emulator Android</li><li>Ruang disk minimum yang tersedia 2 GB, Disarankan 4 GB (500 MB untuk IDE + 1,5 GB untuk Android SDK dan gambar sistem emulator)</li><li>Resolusi layar minimum 1280 x 800</li></ul>	<ul style="list-style-type: none"><li>Desktop GNOME atau KDE</li><li><i>Telah diuji pada Ubuntu® 12.04, Precise Pangolin (distribusi 64-bit yang mampu menjalankan aplikasi 32-bit).</i></li><li>distribusi 64-bit yang mampu menjalankan aplikasi 32-bit</li><li>GNU C Library (glibc) 2.19 atau yang lebih baru</li><li>RAM minimum 3 GB, RAM yang disarankan 8 GB; tambah 1 GB untuk Emulator Android</li><li>Ruang disk minimum yang tersedia 2 GB, Disarankan 4 GB (500 MB untuk IDE + 1,5 GB untuk Android SDK dan gambar sistem emulator)</li><li>Resolusi layar minimum 1280 x 800</li><li>Untuk emulator akselerasi: Prosesor Intel® dengan dukungan untuk Intel® VT-x, Intel® EM64T(Intel® 64), dan fungsionalitas Execute Disable (XD) Bit, atau prosesor AMD dengan dukungan untuk AMD Virtualization™ (AMD-V™)</li></ul>

# Intro

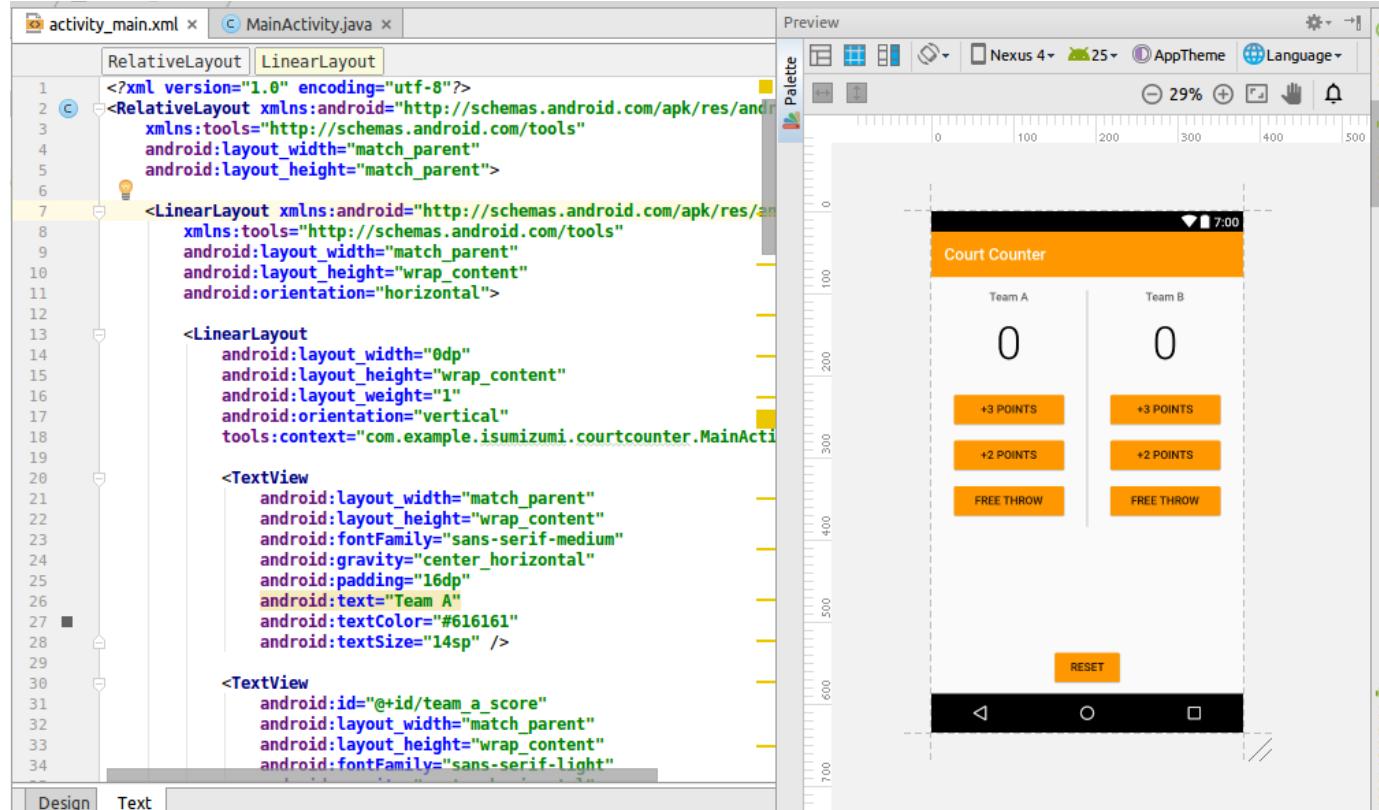
## //Setting Developer Mode (for Smartphone)

Please take the following steps after selecting your OS version to enable USB debugging on your device.



\* For more information: <http://tiktaktekno.blogspot.co.id>

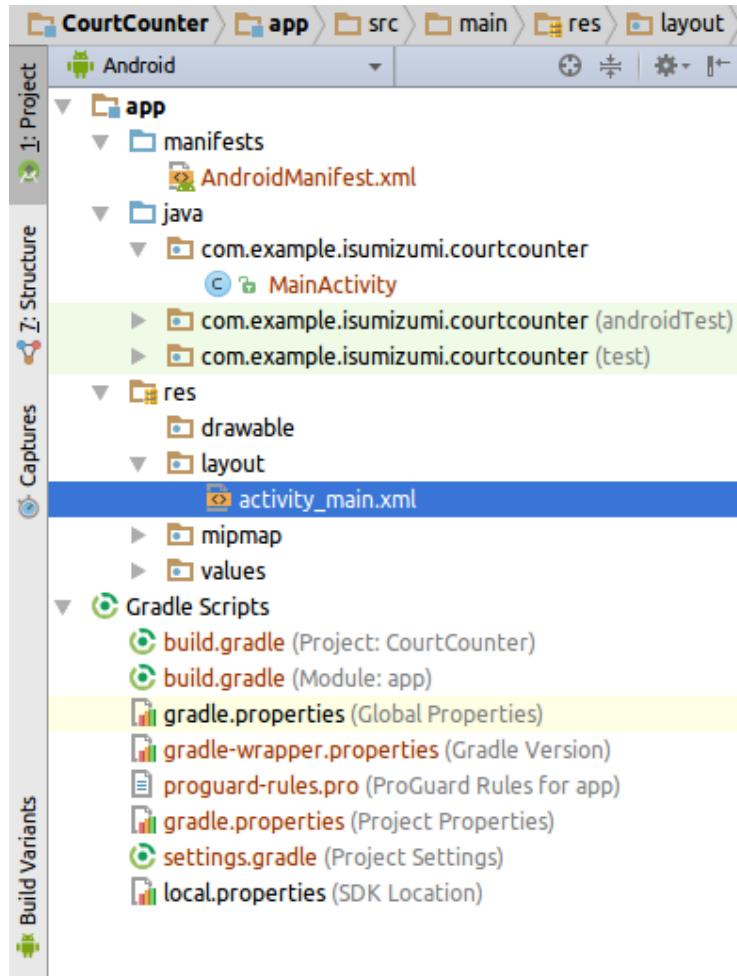
# Intro //Layout Android Studio



**Layout Android Studio ada 2, yaitu:**  
**1. Design**  
**2. Text**

**\*secara default: Design mode, tapi bisa diubah ke Text mode sehingga terlihat source code dari text XML-nya.  
Di Android studio juga sudah memiliki Live Preview (kanan).**

# Intro //Folder Hierarchy



**Folder app/ adalah folder utama pada aplikasi Android.**

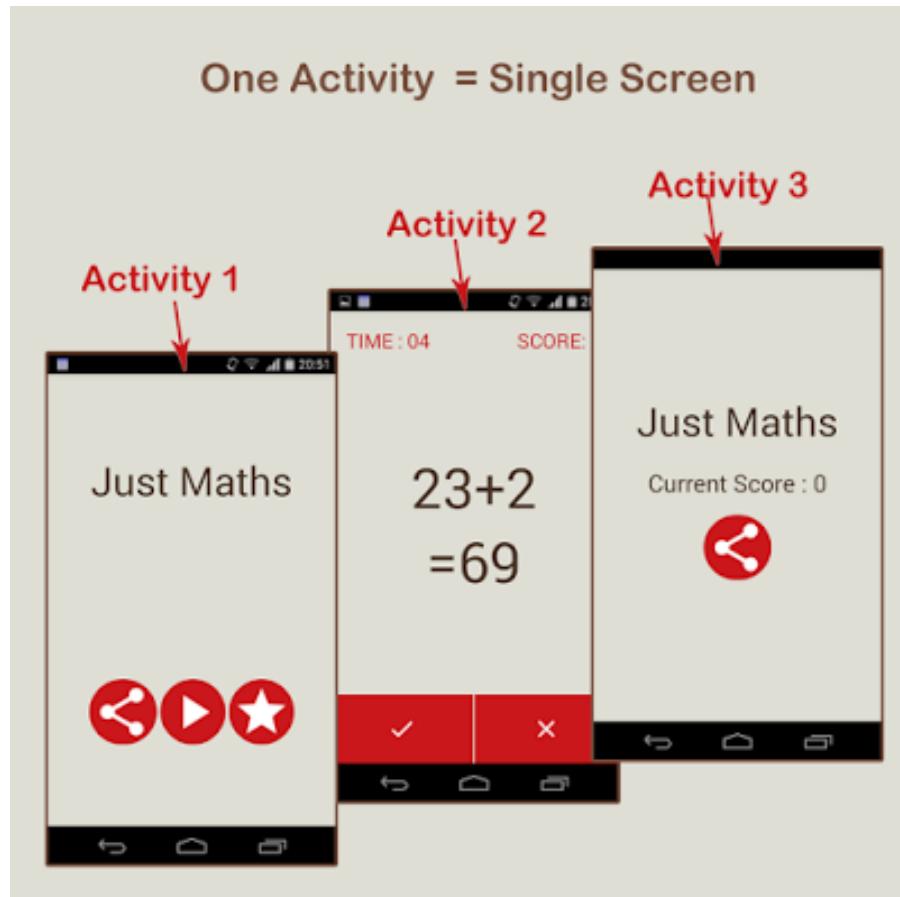
**Gradle Scripts adalah Build Automation Tool ([www.gradle.org](http://www.gradle.org))**

**File Gradle berisi: library yang digunakan, versi aplikasi, signed key properties, lokasi repository, dll.**

**File yang sering diubah: build.gradle  
Pengaturan untuk versi sdk yang di compile, build version yang digunakan, nama paket, minSDK, versioncode, versionname, dan dependencies.**

# Intro //Activity

**Activity is just a single screen. Activity is a screen that displays some information to the user or requires some input from the user.**



**For example:**  
**Main Menu Screen is one activity,**  
**Game Screen is another activity, and**  
**Score Screen is another activity.**

**So, Activity handles the interaction with the user.**

\* For more information: <http://www.cheezycode.com>

# Intro //Activity and Layout

**Every activity inherits from android.app.Activity, and onCreate() is the method which is called after activity object is created.**

**Layout is an XML resource which has an ID. In fact, every resource in the resources folder has ID which is used to access them in Java code.**

This layout file defines the appearance of the activity and defines how all the controls are placed.

**Controls are Views and ViewGroups.  
ViewGroups are the containers or  
the layout managers.**

## From Java View - Activity and Layout

main/java/package/MainActivity.java

```
public class MainActivity extends Activity {  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_main);  
    }  
}
```

1. Every Activity is a subclass of android.app.Activity class.
  2. Android call onCreate(Bundle) for you after Activity object is created. This is where initialization is done.
  3. setContentView(LayoutId) - Layout and Activity are binded via this method. Every layout has a ID which is passed in this method to tell activity about the layout.

The diagram illustrates the relationship between an Activity and its corresponding XML layout file. On the left, there is a box labeled "Activity(.java)". To its right is a box labeled "Layout (XML)". A dashed line connects the two boxes, indicating that the Java code in the Activity handles user interactions while the XML layout defines the screen's appearance.

\* For more information: <http://www.cheezycode.com>

# Views

## //Intro

- TextView
- ImageView
- Button
- CheckBox
- EditText

Identify the views, and their types

1 ImageView



2 TextView

New in Gmail

All the features you love with a fresh new look

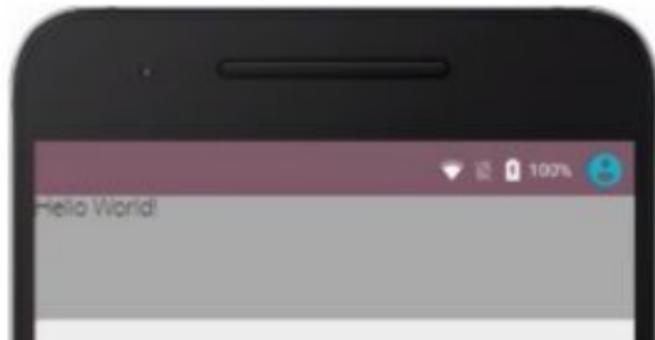
3 Button

GOT IT

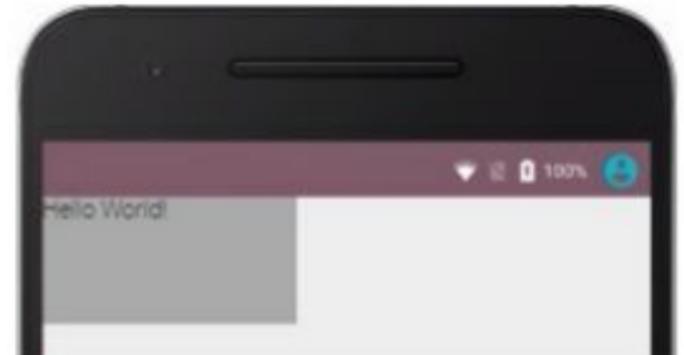
# TextView

## //Sample 1

```
<TextView  
    android:text="Hello World!"  
    android:background="@android:color/darker_gray"  
    android:layout_width="match_parent"  
    android:layout_height="75dp" />
```



```
<TextView  
    android:text="Hello World!"  
    android:background="@android:color/darker_gray"  
    android:layout_width="150dp"  
    android:layout_height="75dp" />
```



# TextView

## //Sample 2

XML Layout Code

UNDO    REDO    *Code has been saved*    RESET CODE

```
1 <LinearLayout
2     xmlns:android="http://schemas.android.com/apk/res/android"
3     android:orientation="vertical"
4     android:layout_width="match_parent"
5     android:layout_height="match_parent"
6     android:background="@android:color/darker_gray">
7
8     <TextView
9         android:text="VIP List"
10        android:layout_width="wrap_content"
11        android:layout_height="wrap_content"
12        android:background="#4CAF50"
13        android:textSize="24sp" />
14
15     <TextView
16         android:text="Kunal"
17         android:layout_width="wrap_content"
18         android:layout_height="wrap_content"
19         android:background="#4CAF50"
20         android:textSize="24sp" />
21
22     <TextView
23         android:text="Kagure"
24         android:layout_width="wrap_content"
25         android:layout_height="wrap_content"
26         android:background="#4CAF50"
27         android:textSize="24sp" />
28
29     <TextView
30         android:text="Lyla"
31         android:layout_width="wrap_content"
32         android:layout_height="wrap_content"
33         android:background="#4CAF50"
34         android:textSize="24sp" />
35
36 </LinearLayout>
```

The smartphone screen shows a list of names under the heading "VIP List". The names listed are Kunal, Kagure, and Lyla. The background of the app is a dark green color, and the text is white or light green.

\* For more details: [match\\_parent](#)

# TextView

## //Sample 3

XML Layout Code

UNDO REDO *Code has been saved* RESET CODE

```
1 <TextView
2     android:text="Hi there!"
3     android:layout_width="wrap_content"
4     android:layout_height="wrap_content"
5     android:textSize="36sp"
6     android:fontFamily="sans-serif-light"
7     android:textColor="@android:color/black"
8     android:background="#ccddff"
9     android:padding="20dp"/>
```



\* For more details: [wrap\\_content](#)

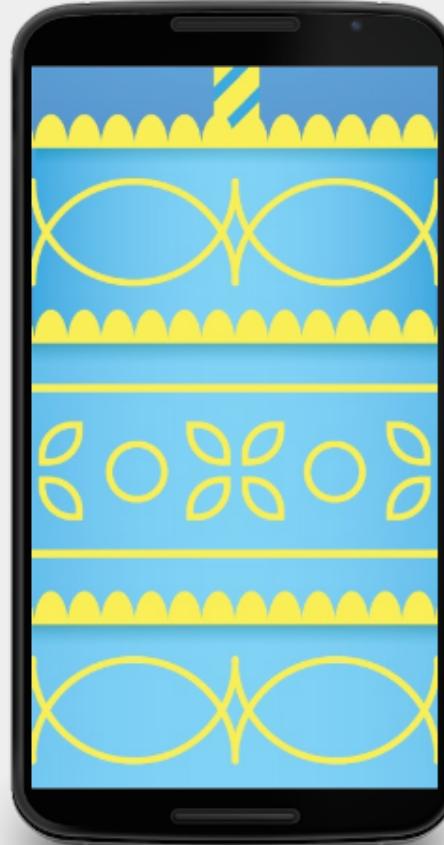
# ImageView //Sample 1

XML Layout Code

UNDO    REDO    *Code has been saved*    RESET CODE

```
1 <ImageView
2     android:src="@drawable/cake"
3     android:layout_width="wrap_content"
4     android:layout_height="wrap_content"
5     android:scaleType="center"/>
```

AVAILABLE IMAGES    REPORT ISSUE    CHEAT SHEET



\* For more details: [simple\\_imageview](#)

# ImageView //scaleType: center

scaleType center



# ImageView //scaleType: centerCrop

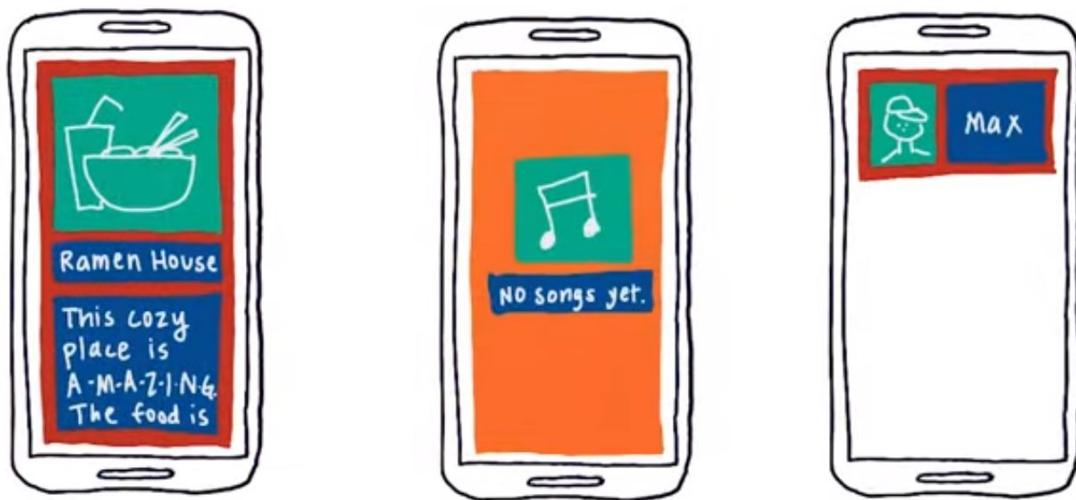
scaleType centerCrop



# View Groups

## //Intro

A ViewGroup is a special view that contain other views (called children).  
The view group is the base class for layouts and views containers.



Main topics (Beginner):  
1. LinearLayout  
2. RelativeLayout

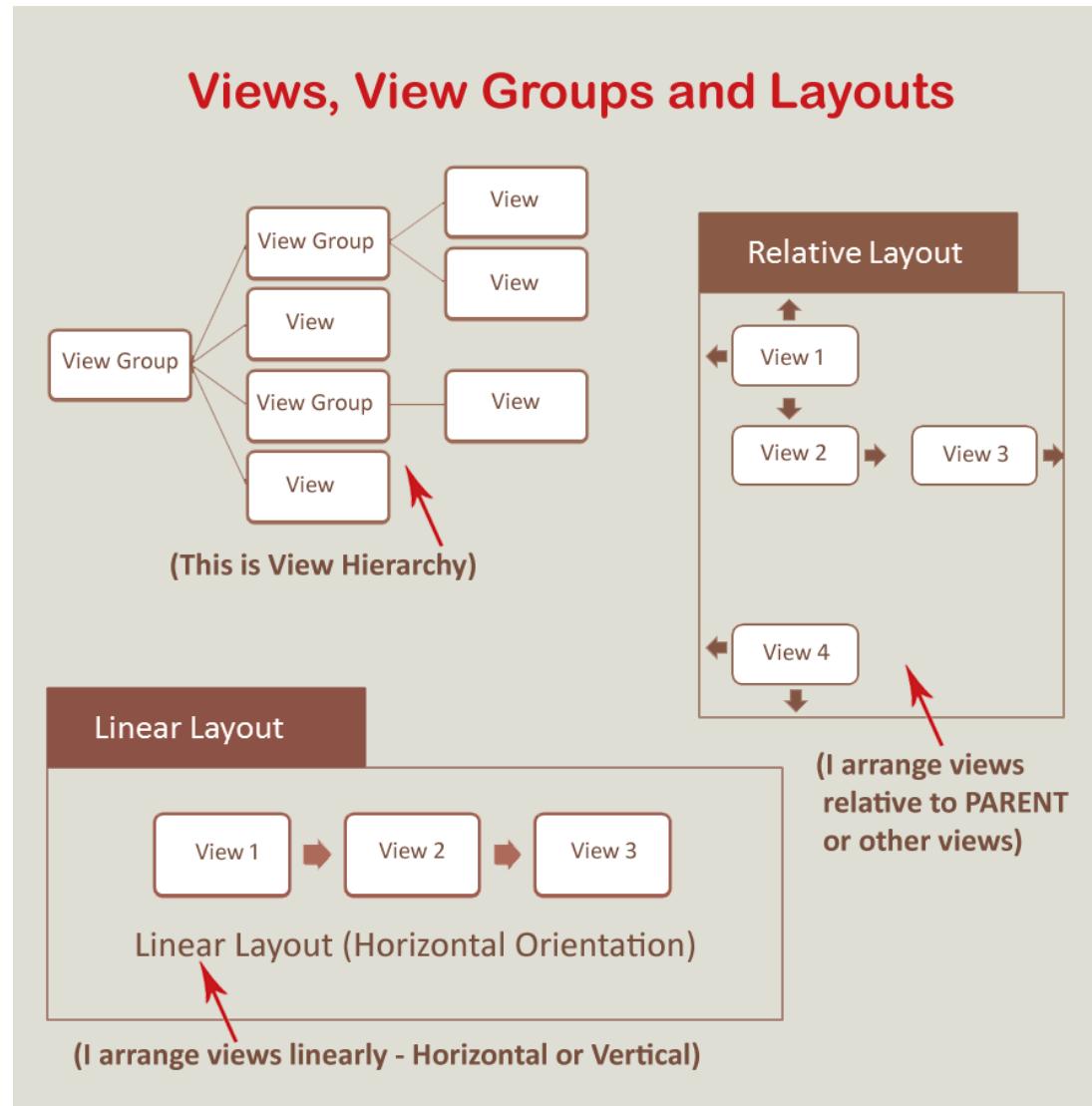


Another ViewGroup with a Adapter  
(just info):  
3. ListView  
4. GridView



\* For more information: [declaring\\_layout](#)

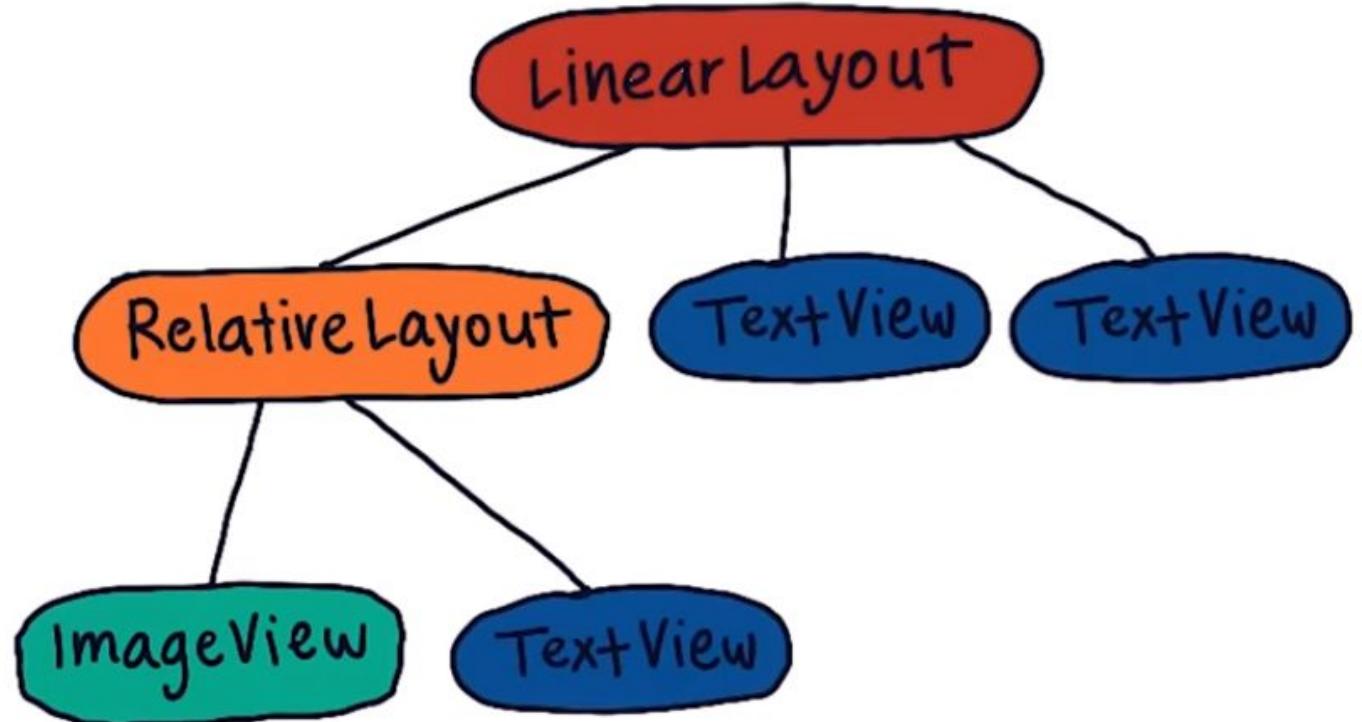
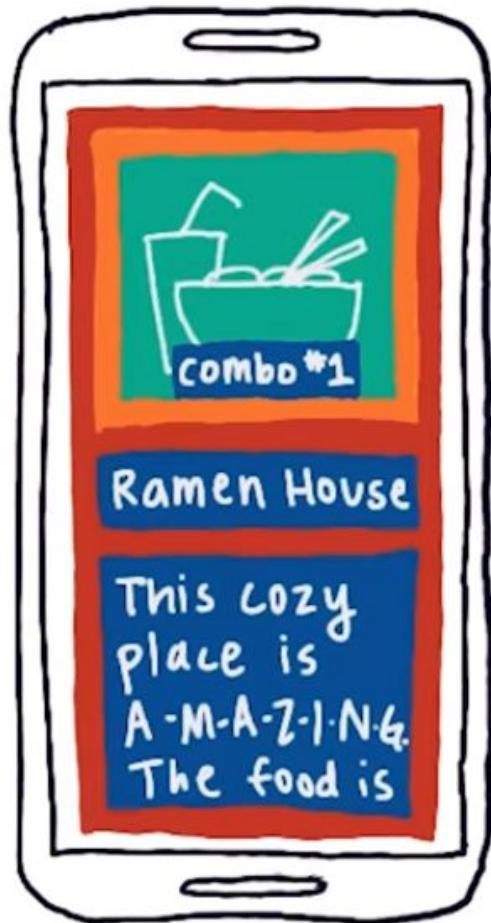
# Layout Parameters // Hierarchy



\* For more information: [layout\\_params](#)

# Nested View Groups

## //Intro



\* For more details: [linear\\_layout](#)

# View Groups

## //LinearLayout: vertical

```
<LinearLayout  
    xmlns:android="http://schemas.android.com/apk/res/android"  
    android:orientation="vertical"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:text="TextView 1" />  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:text="TextView 2" />  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:text="TextView 3" />  
  
</LinearLayout>
```



\* For more details: [linear\\_layout](#)

# View Groups

## //LinearLayout: vertical-weight (1)

```
<LinearLayout  
    xmlns:android="http://schemas.android.com/apk/res/android"  
    android:orientation="vertical"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="0dp"  
        android:layout_weight="1"  
        android:text="TextView 1" />  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:text="TextView 2" />  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="wrap_content"  
        android:text="TextView 3" />  
  
</LinearLayout>
```



\* For more details: [equal\\_space\\_children](#)

# View Groups

## //LinearLayout: vertical-weight (2)

```
<LinearLayout  
    xmlns:android="http://schemas.android.com/apk/res/android"  
    android:orientation="vertical"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="0dp"  
        android:layout_weight="1"  
        android:text="TextView 1" />  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="0dp"  
        android:layout_weight="2"  
        android:text="TextView 2" />  
  
    <TextView  
        android:layout_width="match_parent"  
        android:layout_height="0dp"  
        android:layout_weight="1"  
        android:text="TextView 3" />  
  
</LinearLayout>
```



\* For more details: [linear\\_layout\\_weight](#)

# View Groups

## //LinearLayout: horizontal-weight

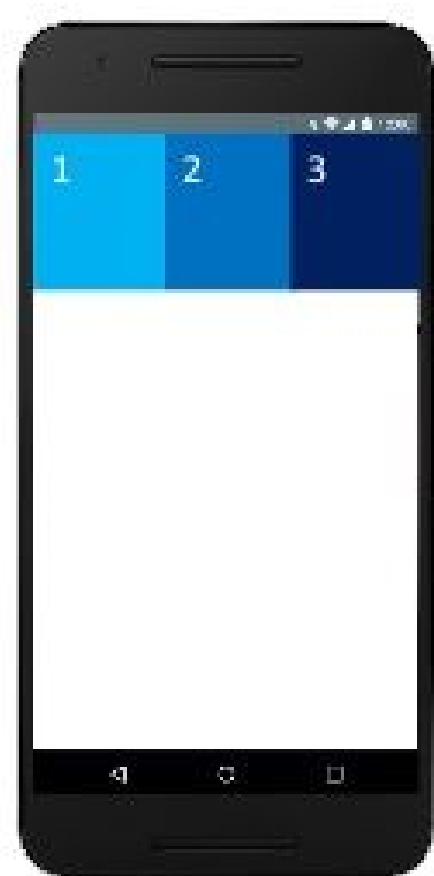
```
<LinearLayout
    xmlns:android="http://schemas.android.com/apk/res/android"
    android:orientation="horizontal"
    android:layout_width="match_parent"
    android:layout_height="match_parent">

    <TextView
        android:layout_width="0dp"
        android:layout_height="64dp"
        android:layout_weight="1"
        android:text="1" />

    <TextView
        android:layout_width="0dp"
        android:layout_height="64dp"
        android:layout_weight="1"
        android:text="2" />

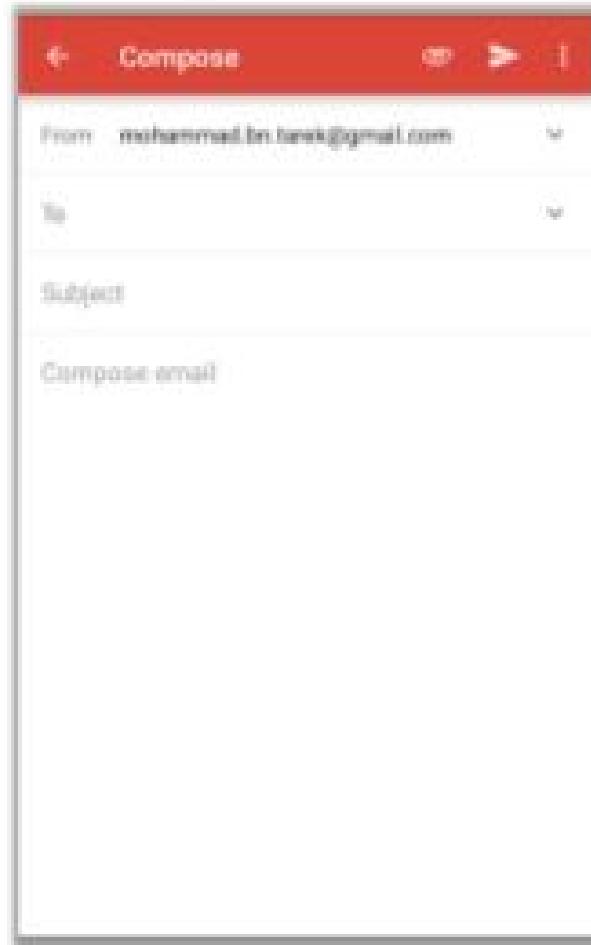
    <TextView
        android:layout_width="0dp"
        android:layout_height="64dp"
        android:layout_weight="1"
        android:text="3" />

</LinearLayout>
```



# View Groups

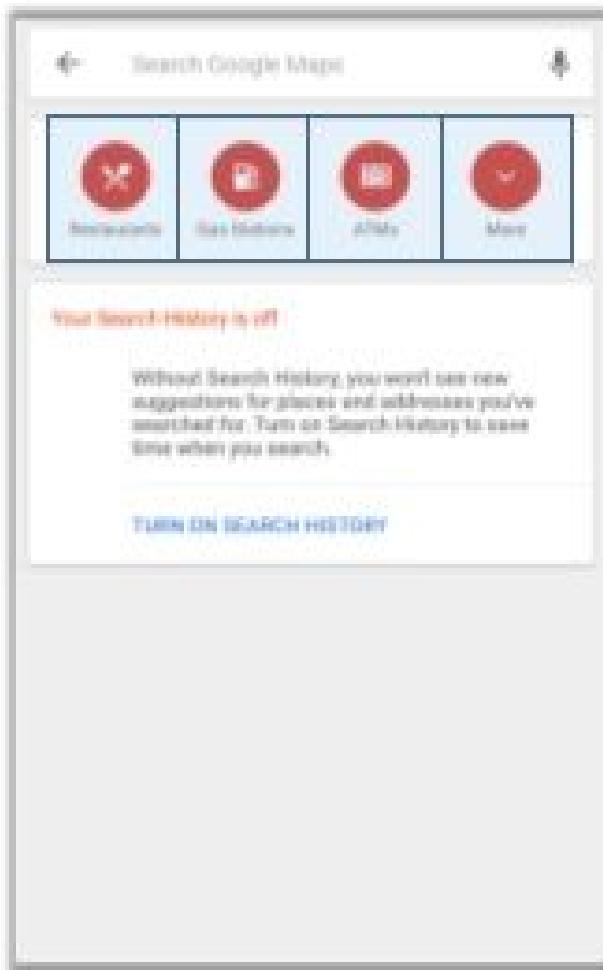
## //LinearLayout: vertical (sample)



View	Width	Height	Weight
TextView	match_parent	wrap_content	0
TextView	match_parent	wrap_content	0
TextView	match_parent	wrap_content	0
TextView	match_parent	0dp	1

# View Groups

## //LinearLayout: horizontal (sample)

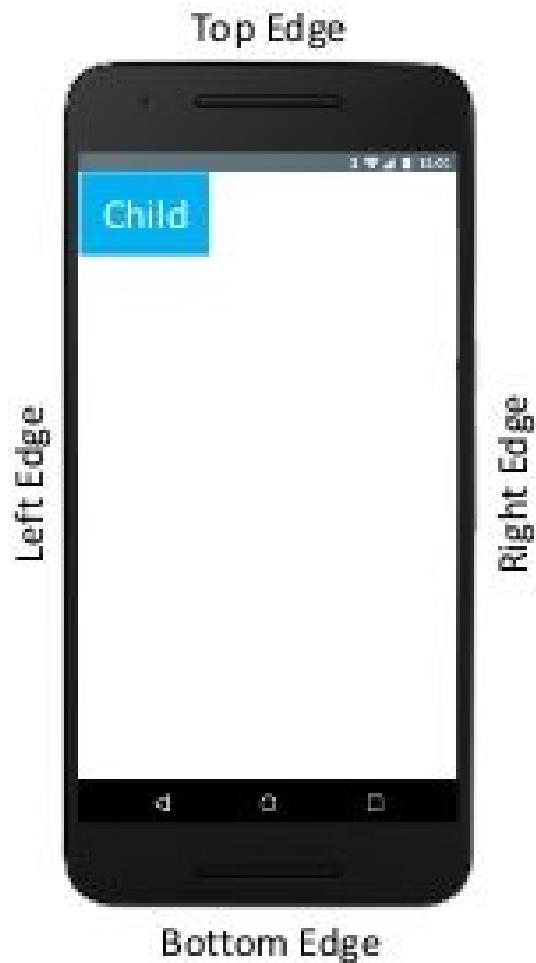


View	Width	Height	Weight
TextView	0dp	wrap_content	1
TextView	0dp	wrap_content	1
TextView	0dp	wrap_content	1
TextView	0dp	wrap_content	1

# View Groups

## //RelativeLayout: to Parent (1)

```
<RelativeLayout  
    xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
  
    <TextView  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="Child"  
        android:layout_alignParentTop="true"  
        android:layout_alignParentRight="false"  
        android:layout_alignParentBottom="false"  
        android:layout_alignParentLeft="true" />  
  
</RelativeLayout>
```

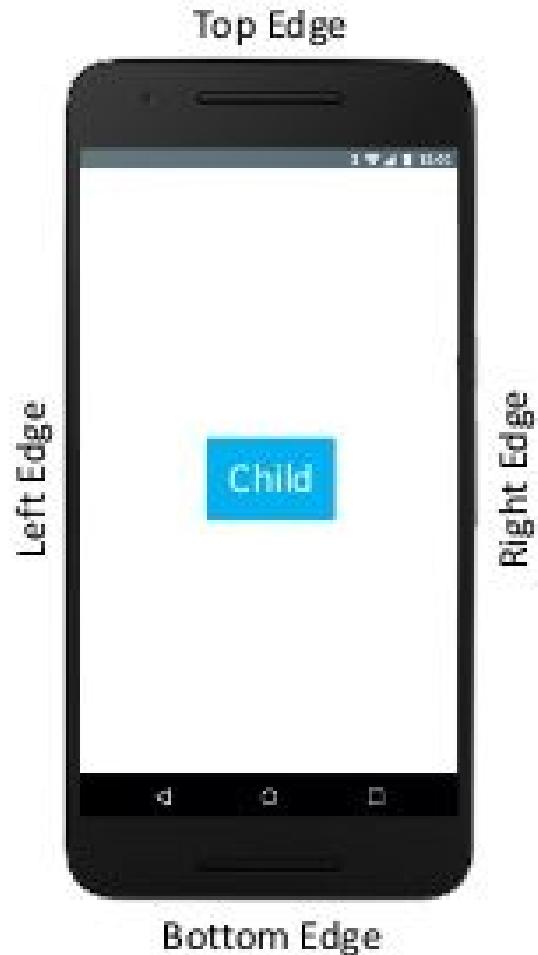


\* For more details: [to\\_parent](#)

# View Groups

## //RelativeLayout: to Parent (2)

```
<RelativeLayout  
    xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
  
    <TextView  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="Child"  
        android:layout_alignParentTop="false"  
        android:layout_alignParentRight="false"  
        android:layout_alignParentBottom="false"  
        android:layout_alignParentLeft="false"  
        android:layout_centerVertical="true"  
        android:layout_centerHorizontal="true" />  
  
</RelativeLayout>
```

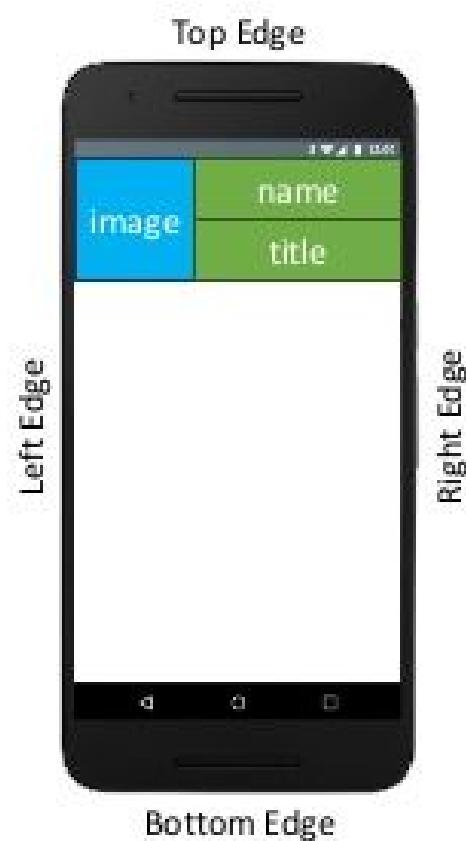


\* For more details: [relative\\_layout\\_list\\_item](#)

# View Groups

## //RelativeLayout: to Other Views

```
<RelativeLayout  
    xmlns:android="http://schemas.android.com/apk/res/android"  
    android:layout_width="match_parent"  
    android:layout_height="match_parent">  
  
    <ImageView  
        android:id="@+id/image"  
        android:src="@drawable/thumbnail"  
        android:layout_width="64dp"  
        android:layout_height="64dp"  
        android:scaleType="centerCrop"/>  
  
    <TextView  
        android:id="@+id/name"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="Mohammad Tarek"  
        android:layout_toRightOf="@+id/image" />  
  
    <TextView  
        android:id="@+id/title"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="Software Engineer"  
        android:layout_below="@+id/name"  
        android:layout_toRightOf="@+id/image" />  
/<RelativeLayout>
```



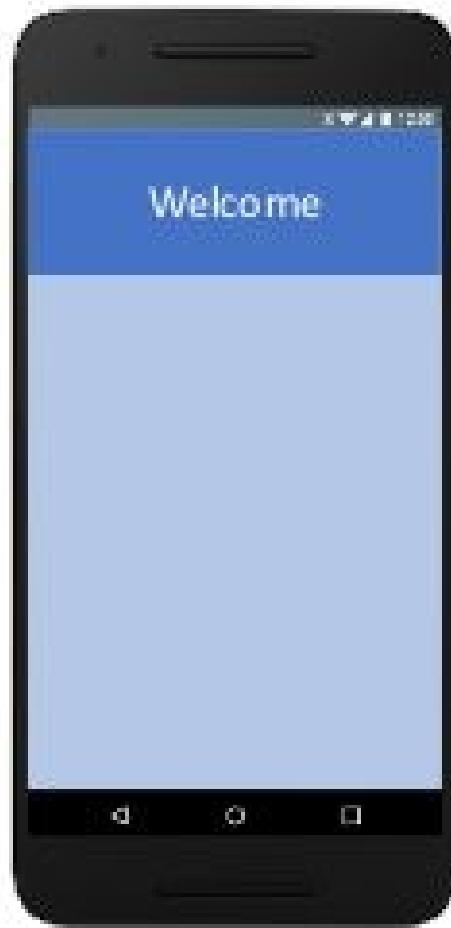
\* Quiz details: [relative\\_layout](#)

# Padding and Margin

## //Intro



Original



Padding



Margin

\* For more details: [padding\\_margin](#)

# Padding //Sample

```
<TextView  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="Welcome"  
    android:padding="8dp" />
```

OR

```
<TextView  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="Welcome"  
    android:paddingTop="8dp"  
    android:paddingRight="8dp"  
    android:paddingBottom="8dp"  
    android:paddingLeft="8dp" />
```



# Margin //Sample

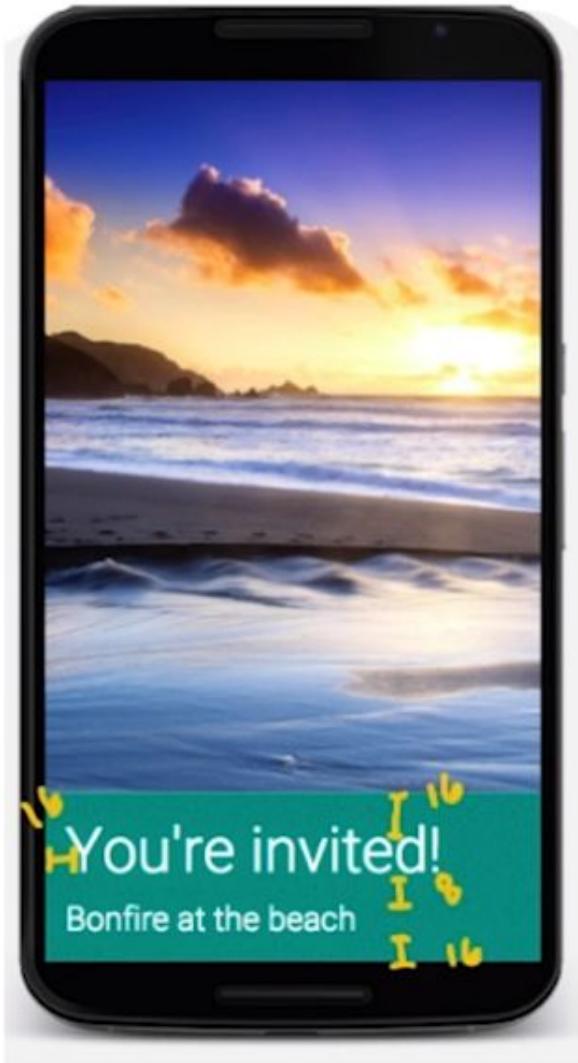
```
<TextView  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="Welcome"  
    android:layout_margin="8dp" />
```

OR

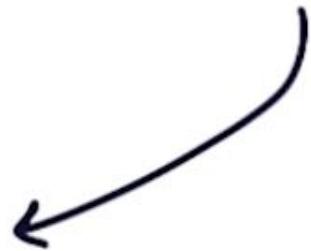
```
<TextView  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:text="Welcome"  
    android:layout_marginTop="8dp"  
    android:layout_marginRight="8dp"  
    android:layout_marginBottom="8dp"  
    android:layout_marginLeft="8dp" />
```



# Experiments



- Modify the provided XML to build this desired layout



**See you again!**

**Sayonara!**

**Sukses selalu!**

*Viel Glück!*  
:-)

**Senyum dong!**  
;)

**Semangat!**

**Selalu doa!**