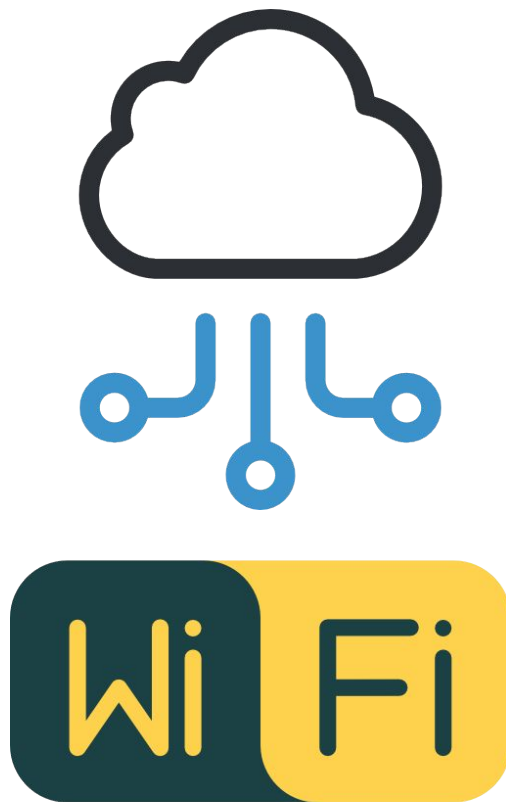


Android Week One

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About Me

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Outline

1. Setting up the Android Dev Environment
 - a. Installing Java Development Kit
 - b. Installing Android Studio and Android SDK
2. Activities and Views
 - a. Activity
 - b. TextViews
 - c. ImageViews
 - d. Button
3. XML
 - a. XML Syntax
4. Simple App
 - a. Card with Images, Text, and Button



Android Studio

- Powered by IntelliJ
- Official IDE for Android
- Don't use Eclipse



Installing Android Studio!

Install Java Development Kit

1. Check if Java is installed on your computer by running “java -version” in your command prompt.
2. If not installed, use this link:

<http://www.oracle.com/technetwork/java/javase/downloads/index.html>

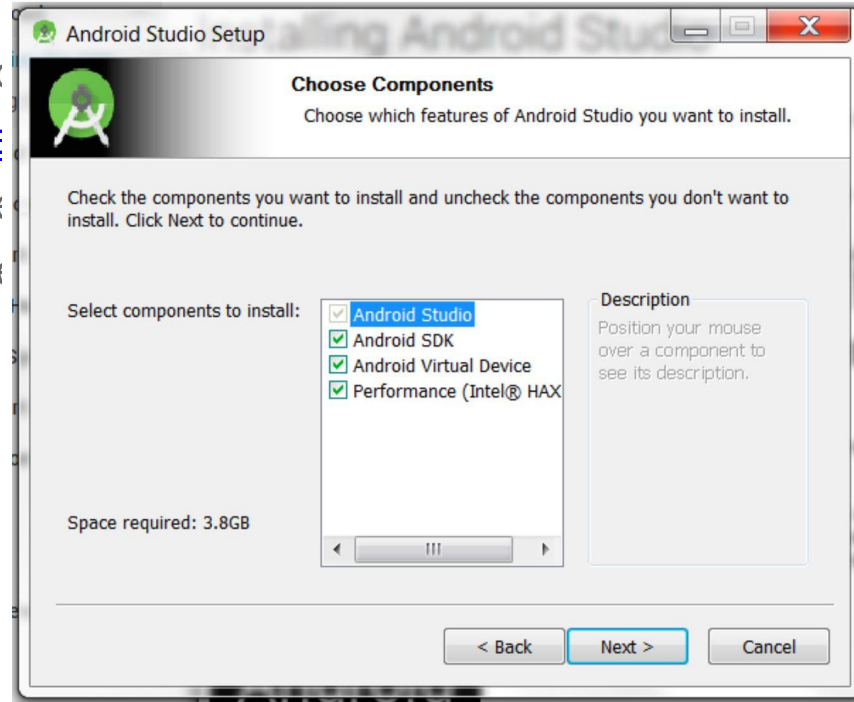


Java Platform (JDK) 9

Java SE Development Kit 9		
You must accept the Oracle Binary Code License Agreement for Java SE to download this software.		
Thank you for accepting the Oracle Binary Code License Agreement for Java SE; you may now download this software.		
Product / File Description	File Size	Download
Linux	298.02 MB	jdk-9_linux-x64_bin.rpm
Linux	330.23 MB	jdk-9_linux-x64_bin.tar.gz
macOS	371.64 MB	jdk-9_osx-x64_bin.dmg
Windows	358.69 MB	jdk-9_windows-x64_bin.exe
Solaris SPARC	207.05 MB	jdk-9_solaris-sparcv9_bin.tar.gz

Install Android Studio

1. Download Android Studio
<https://developer.android.com/studio>
2. Open the installer
3. Make sure to check



dialog.

Creating a New Project!



Welcome to Android Studio

Recent Projects

My Application

~\AndroidStudioProjects\MyApplication

Lavi

~\AndroidStudioProjects\Lavi

Ravi

~\AndroidStudioProjects\Ravi

Hello

~\AndroidStudioProjects\Hello

Quick Start



Start a new Android Studio project



Open an existing Android Studio project



Check out project from Version Control



Import project (Eclipse ADT, Gradle, etc.)



Import an Android code sample



Configure

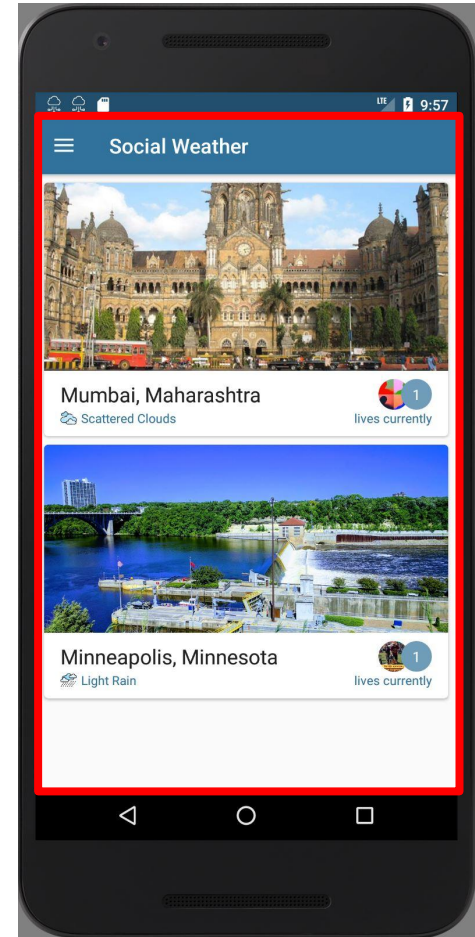


Docs and How-Tos



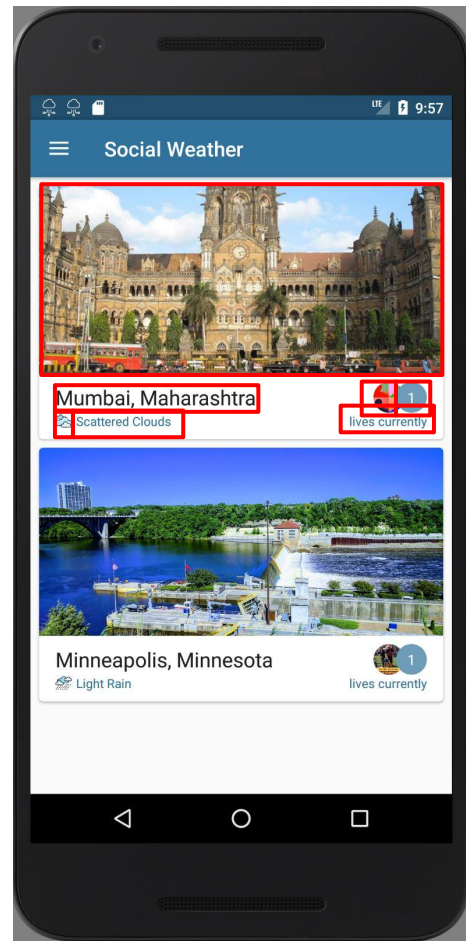
Activity

- An activity is a single, focused thing that the user can do.
- Rectangle that covers the whole screen that users can interact with.
- One of the four main components of Android.
- Activity lifecycle (later...)



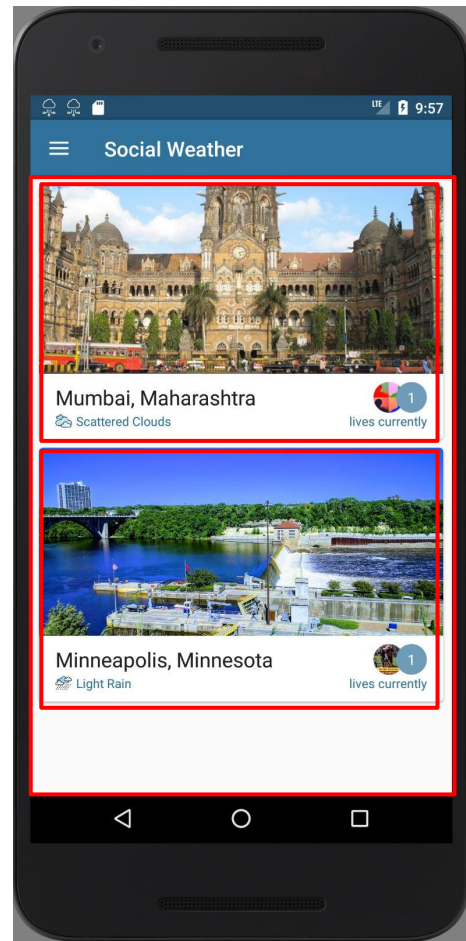
View

- Basic building block for user interface components.
- Smaller rectangle that holds content.
 - Texts
 - Images
 - Videos
 - Other views



ViewGroup

- Special view that contains other views.
- **LinearLayout**
 - Displays views in one direction (horizontal, vertical).
- **RelativeLayout**
 - Displays views relative to one another.
- **ConstraintLayout**
 - Similar to relative layout but more specific and takes less time to load.



XML

- eXtensive Markup Language
- Handles all design components in Android

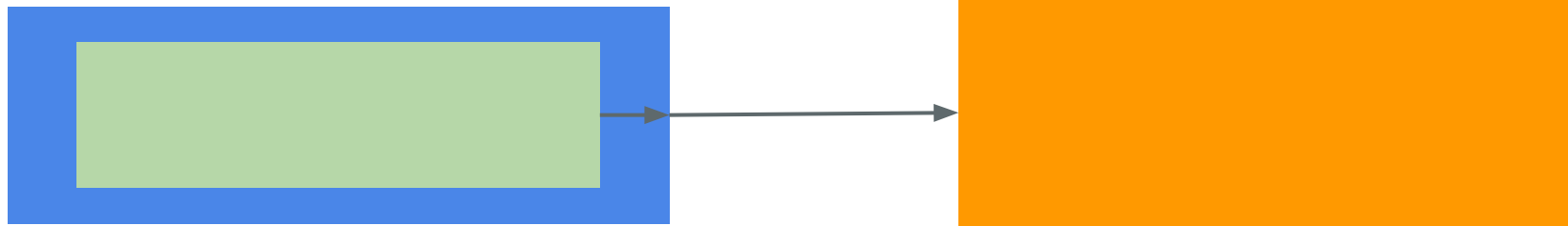


XML Syntax

- Opening tag: <(view name)
- Closing tag: /> or </(view name)>
- Attributes in the middle
 - android:layout_width
 - android:layout_height
 - android:id
 - android:margin
 - android:padding

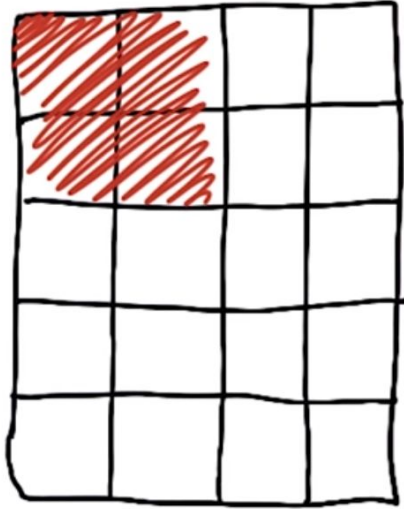
<TextView

```
    android:layout_width="100dp"  
    android:layout_height="100dp"  
    android:text="Hello World!"  
    android:textSize="24sp" />
```

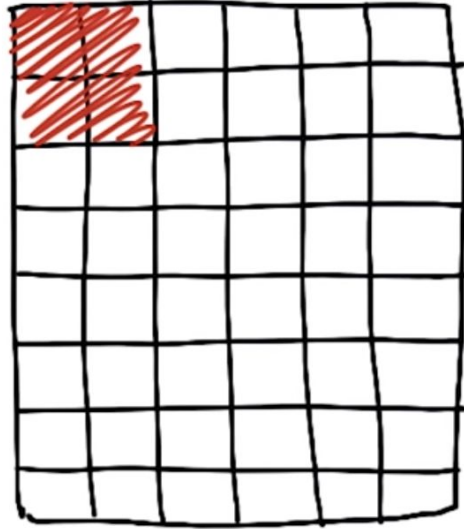


Density Independent Pixel (dp)

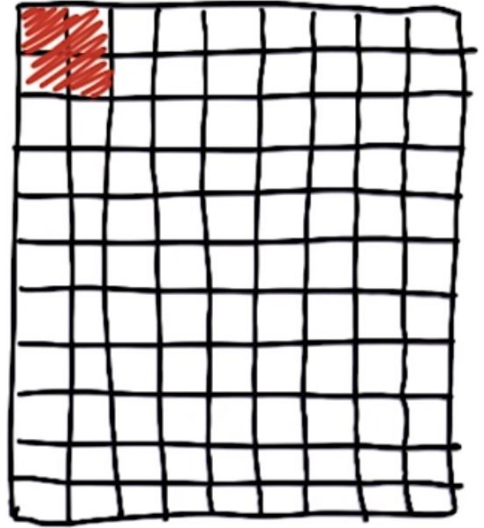
2 pixels by 2 pixels



Medium Resolution Device



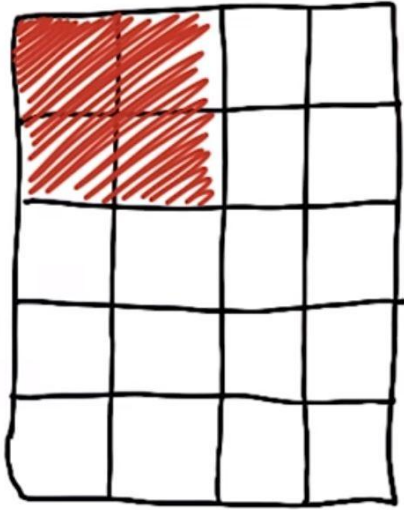
High Resolution Device



Extra-High Resolution Device

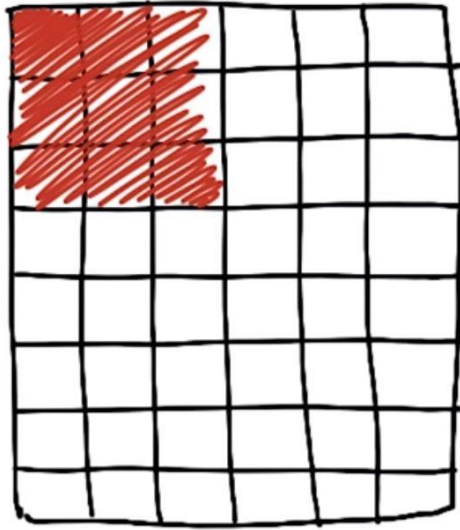
Density Independent Pixel (dp)

2 dp by 2 dp

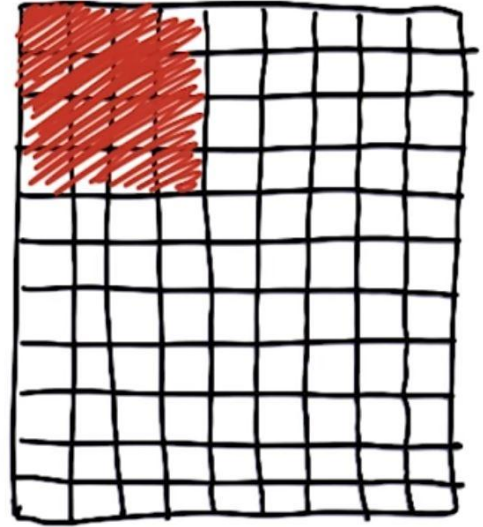


Medium Resolution Device

★ Make touch targets 48 dp at least ★

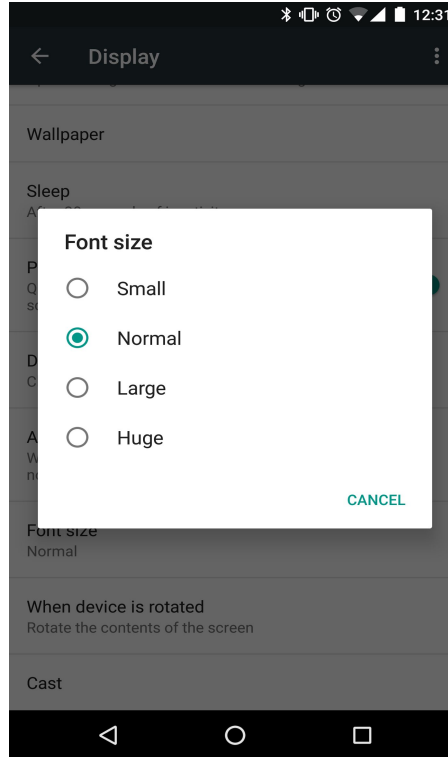


High Resolution Device



Extra-High Resolution Device

Scale Independent Pixel (sp)



TextView

- A user interface that displays text to the user.
- View that contains text.
- android:text="Hello World!"
- android:textSize="24sp"
- android:fontFamily="sans-serif"
- android:textColor="(color value)"

<TextView

```
    android:layout_width="100dp"  
    android:layout_height="100dp"  
    android:text="Hello World!"  
    android:textSize="24sp"  
    android:textColor="@android:color/black"  
    android:fontFamily="sans-serif"/>
```

ImageView

- Displays image resources.
- Views that contain images.
- android:src="image resource"
- android:scaleType="centerCrop"

```
<ImageView  
    android:id="@+id/about_us_logo"  
    android:layout_width="160dp"  
    android:layout_height="160dp"  
    android:src="@drawable/app_logo" />
```

Button

- A user interface that a user can click on to perform an action.
- Button is styled with the default Android style.
- `android:onClick="methodName"`

```
<Button  
    android:layout_width="100dp"  
    android:layout_height="100dp"  
    android:onClick="onButtonClick" />
```

LinearLayout

- A viewgroup that displays its views in one direction.
- android:orientation="horizontal" (vertical)
- android:weight="1" (child attribute)

```
<LinearLayout  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:orientation="horizontal">
```

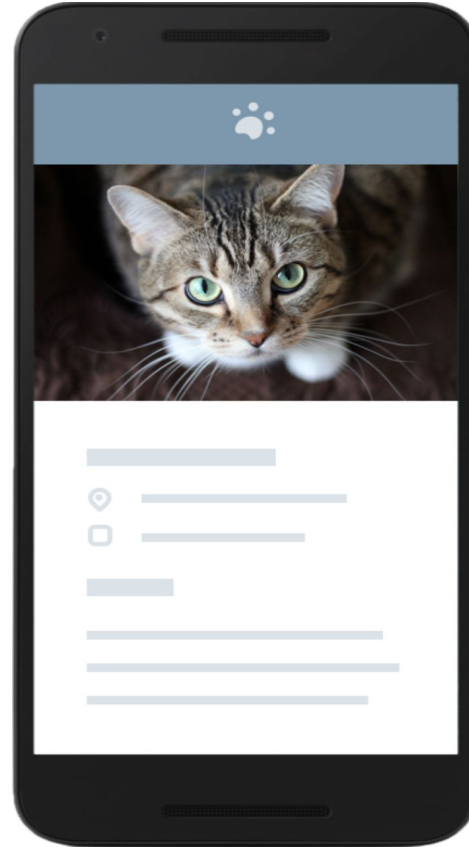
```
<!-- Views inside LinearLayout -->
```

```
</LinearLayout>
```

RelativeLayout

- A viewgroup that displays views relative to one another.
- `android:layout_alignParentTop="true"` (child attribute)
- `android:layout_alignParentLeft="true"` (child attribute)
- `android:layout_below="@viewid"` (child attribute)
- `android:layout_toLeftOf="@viewid"` (child attribute)

Build a Single Screen using Android Studio!



Next Week

- Multi-Screen Apps
- Use Java to make interactive user interface.
- Intents
- Button Clicks