Android
Week One

Yehyun (Joseph) Ryu
UMN App Developers

About Me

- Seoul, South Korea
- Sophomore
- Computer Science
- Android Developer
    - https://github.com/ryubears
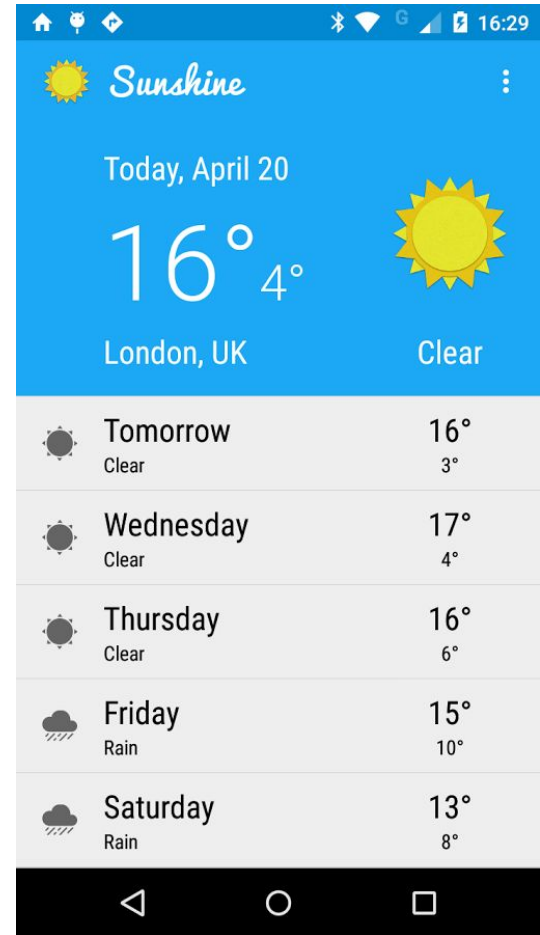   - https://www.linkedin.com/in/yehyun-ryu-821541136/

About the Session

- Learn about …
  - Android concepts
  - How to use Android Studio
  - How to build Android apps
- Interactive Session
  - Coding together
  - Follow my code
  - Ask questions

Semester Project

- MyWeather: Weather App
- Udacity Sunshine App
- Open Weather Map API
  - https://openweathermap.org/current
- Networking
- RecyclerView
- SQLite Database

Before We Start ...

- Java
- Android Studio
  - https://developer.android.com/studio/index.html
- Download the Android Learning Session repository on GitHub
  - https://github.com/ryubears/AndroidLearningSession

Android File Structure

Strings

Android
Manifest

User Interaction

Layouts

Activity

XML

Java

Colors

Networking

Images

Data Storage

Gradle
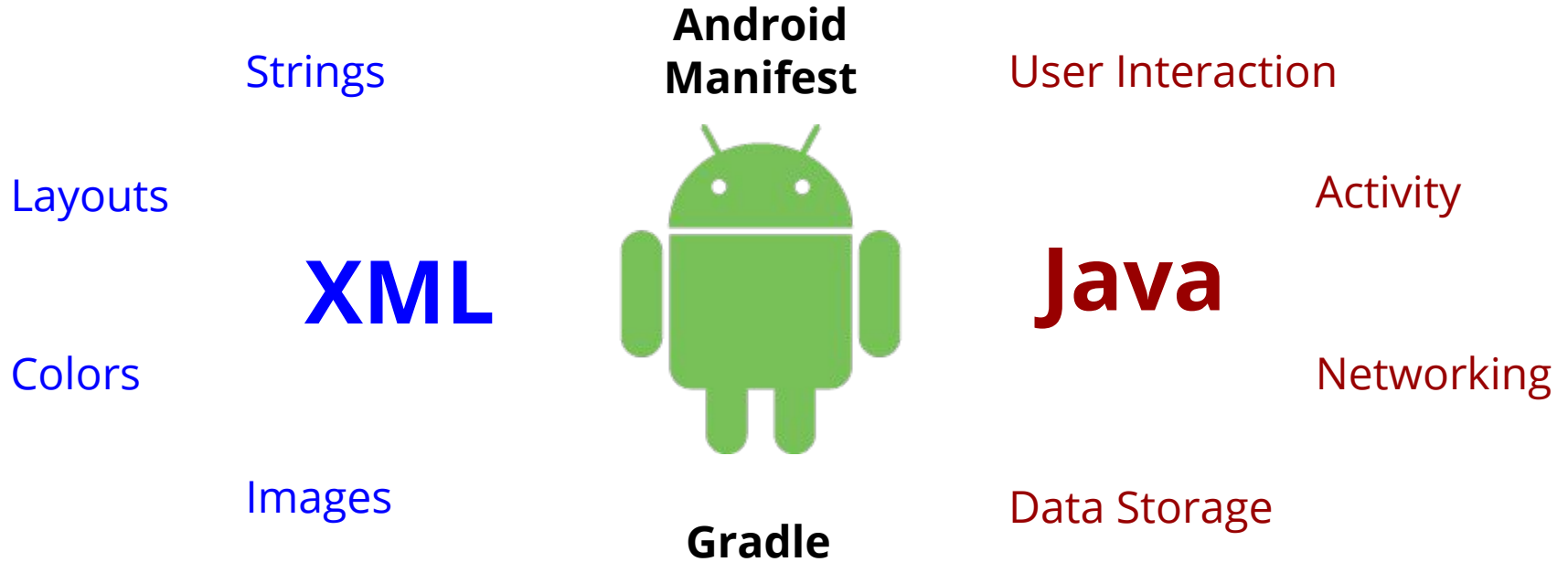
XML

- e**X**tensive **M**arkup **L**anguage
- Similar to HTML
- All design components
- res - resource
  - drawable
  - layout
  - mipmap
  - values
    - colors
    - strings
    - styles

XML Syntax (general)

Start Tag and Close Tag

\<TagName
 attributes>

Children Tags

\</TagName>

Self Closing

\<TagName
 attributes />

XML Syntax (layout)

Start Tag and Close Tag

<ViewType
    attributes>

Children Views

</ViewType>

Self Closing

<ViewType
    attributes />

XML Syntax (values)

<resources>

 <valueType name="valueName"> value </valueType>

</resources>

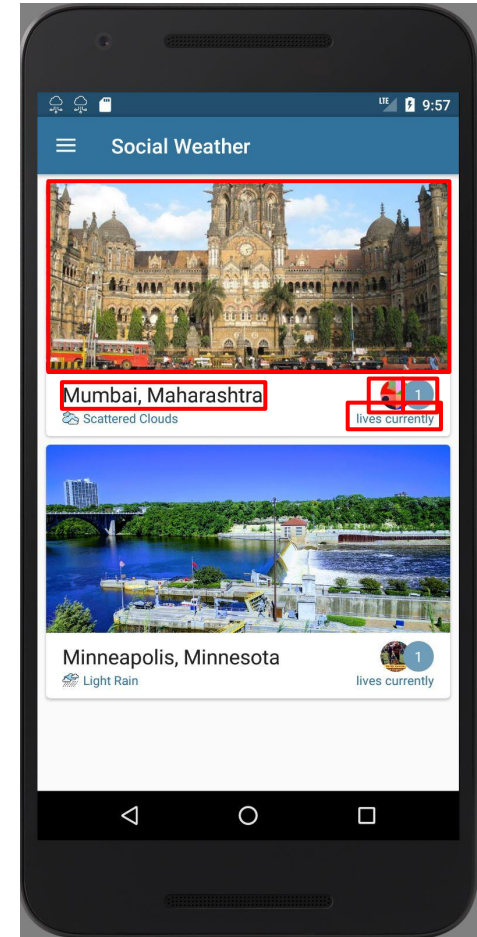To Access: @valueType/resourceName
ex) @drawable/androidImage

Activity

- An activity is a single, focused thing that the user can do.
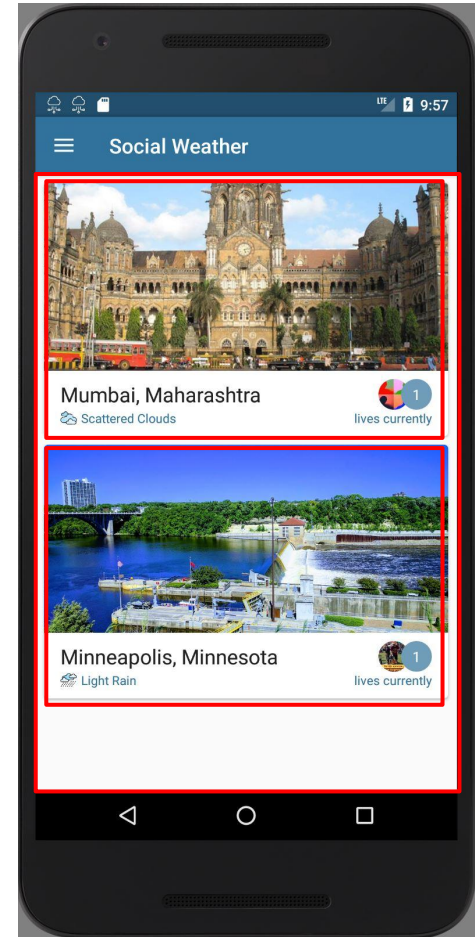- Screen where users mainly interact with the app with.
- SomeActivity.java
- activity_some.xml
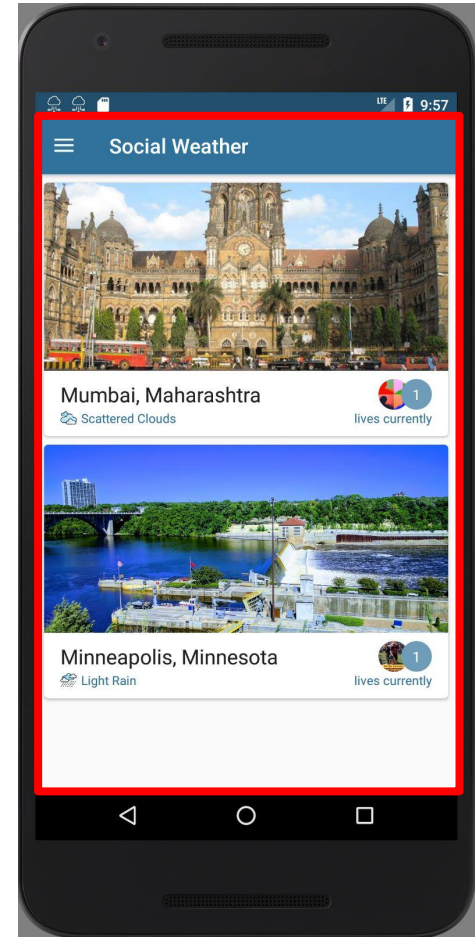
View

- Basic building block of a layout
- Smaller rectangle that holds some content
  - Texts
  - Images
  - Other Views

ViewGroup

- Special view that can hold other views.

View

|

ViewGroup

- A ViewGroup is a View
- A View is not necessarily a ViewGroup

Parent View vs. Child View

- View A is a ViewGroup
- View A is parent view of View B
- View B is child view of View A
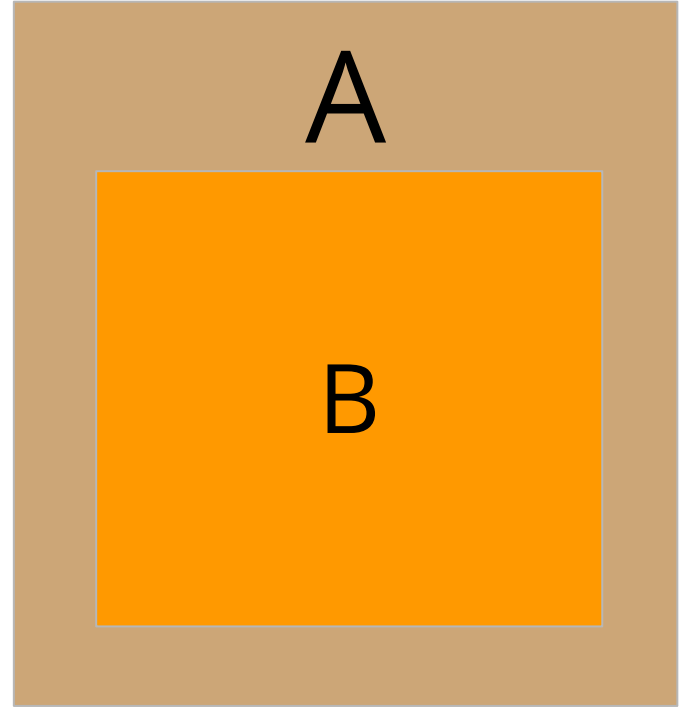
Common ViewTypes

TextView

Displays text

```
<TextView
    android:id="@+id/title_text_view"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="@string/my_photos"
    android:textAppearance="?android:textAppearanceLarge"
    android:textColor="#4689C8"
    android:textStyle="bold" />
```
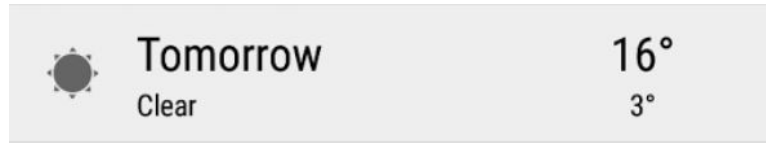
My Photos

ImageView

Displays Image

```
<ImageView
    android:id="@+id/photo_image_view"
    android:layout_width="match_parent"
    android:layout_height="match_parent"
    android:scaleType="centerCrop"
    android:src="@drawable/beach" />
```
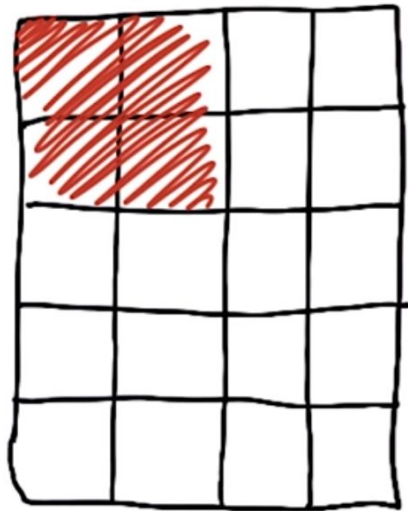
Today's Code

- Create layout file for a single item in a weather list
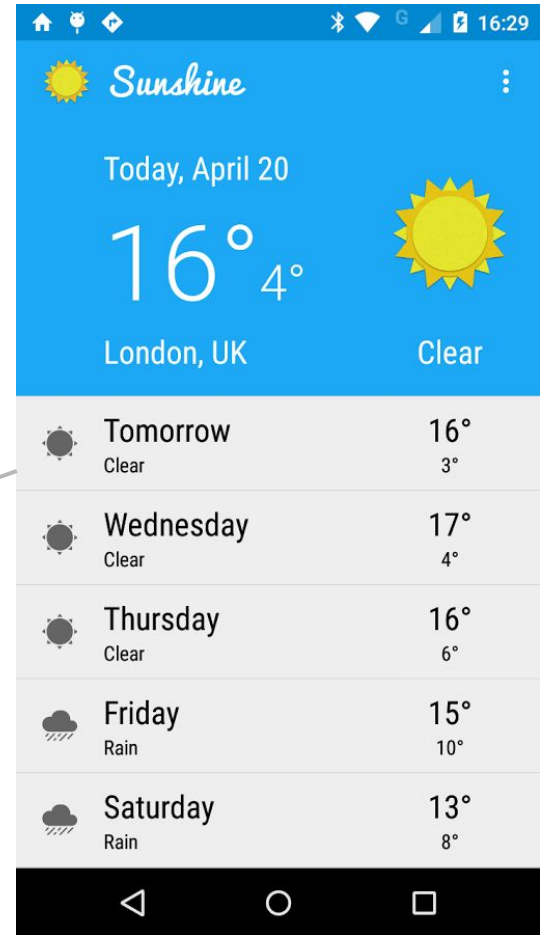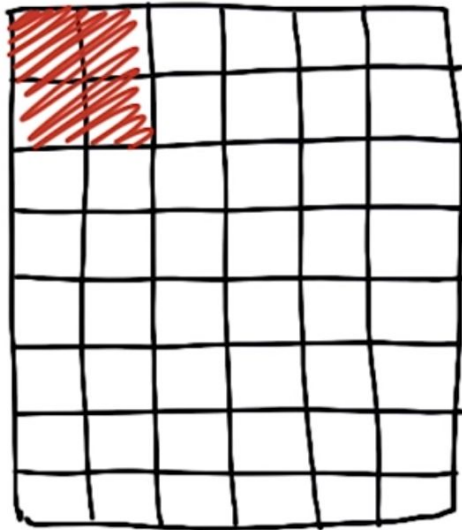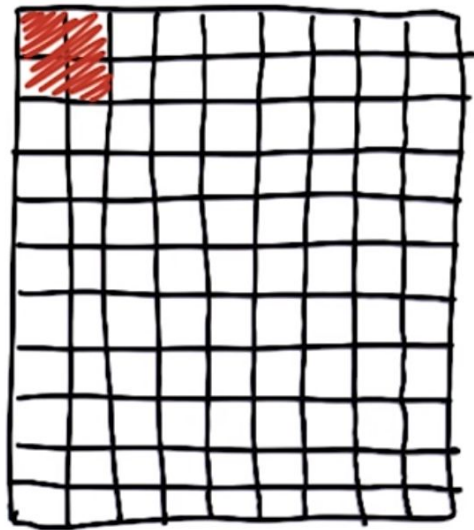
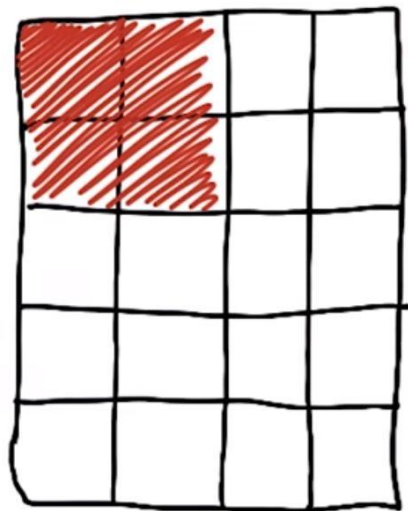# DP and SP

2 pixels by 2 pixels

Medium Resolution Device

High Resolution Device

Extra-High Resolution Device

DP and SP

2 dp by 2 dp

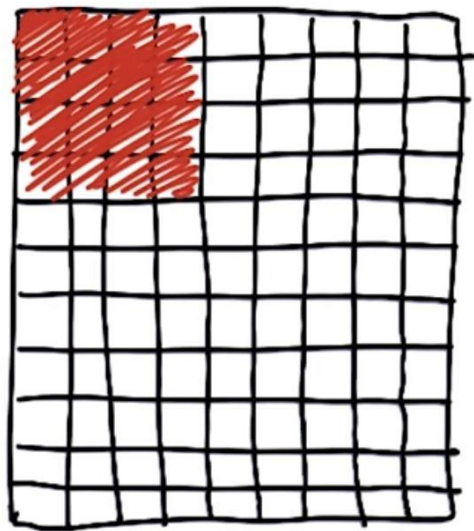★ Make touch targets 48 dp at least ★

Medium Resolution Device
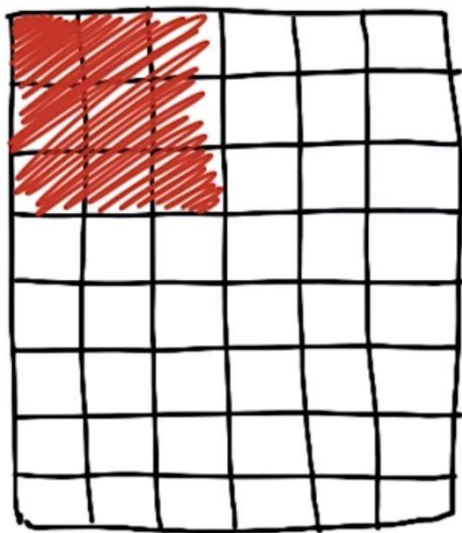
High Resolution Device
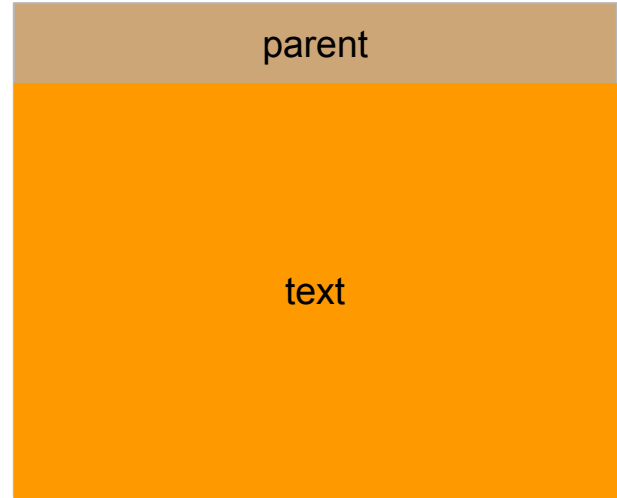
Extra-High Resolution Device

wrap_content and match_parent

parent

text

text

DP and SP
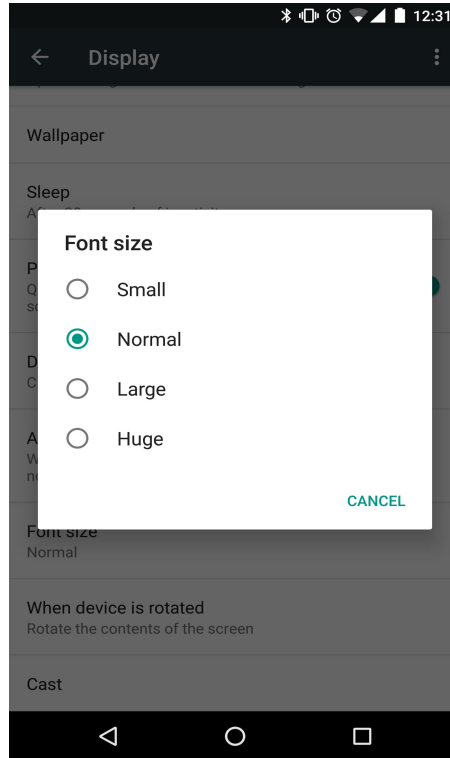
Additional Resources

- Udacity
  - https://www.udacity.com/course/android-basics-user-interface--ud834
- Android Documentation
  - https://developer.android.com/guide/index.html
- Common Android Views Cheat Sheet
  - http://labs.udacity.com/images/Common-Android-Views-Cheat-Sheet.pdf

Next Week

- ViewGroups
  - LinearLayout
  - RelativeLayout
  - ConstraintLayout