

# Making Mobile Apps

## **Lec 5. Layout, Activities**



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# **Layout with Constraints**

# Margin (relative spacing)

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This screenshot shows the Android Studio IDE with a UI design in progress. The design features a blue header bar with the text "Ultest" and a status bar at the top showing a Wi-Fi icon, a battery icon, and the time "7:00". Below the header, there is a grey button labeled "BUTTON". A second, larger grey button labeled "BUTTON" is positioned below the first one, with its margins (top, bottom, left, right) set to 16. Red arrows point to various UI elements and settings:

- An arrow points to the "auto layout?" button in the top toolbar.
- An arrow points to the "portrait/landscape" orientation selector in the top toolbar.
- An arrow points to the "margin" property in the Properties panel, which is set to 16 for the selected button.

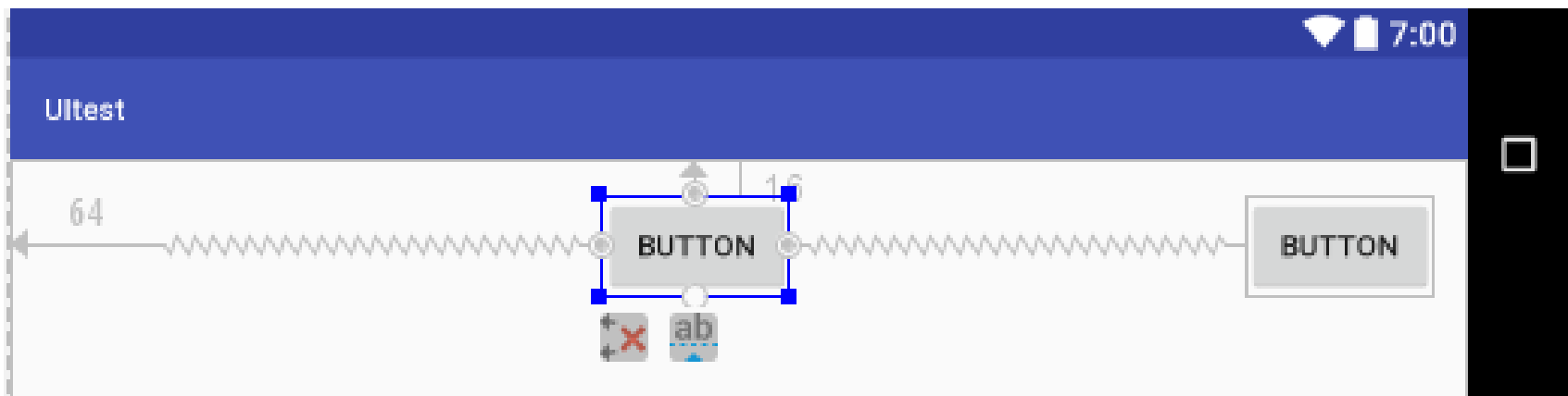
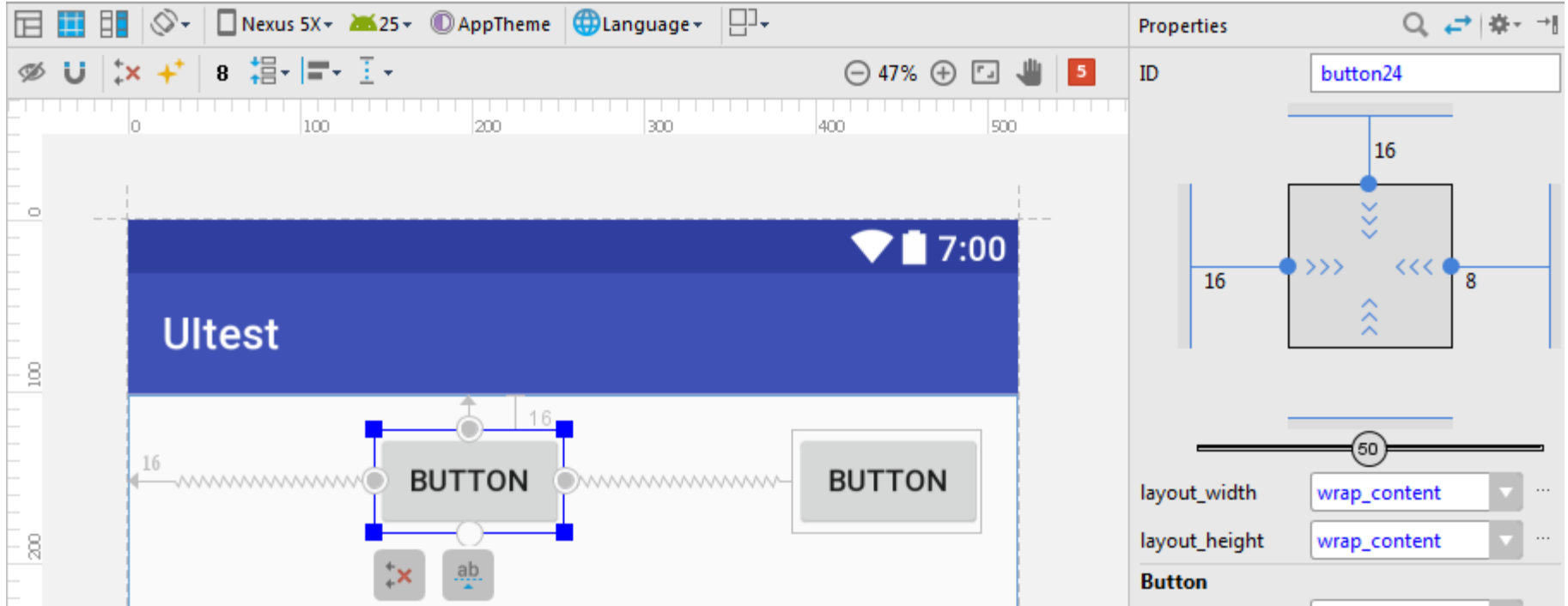
The Properties panel on the right shows the following settings for the selected button (ID: button23):

- layout\_width: wrap\_content
- layout\_height: wrap\_content
- Button style: buttonStyle



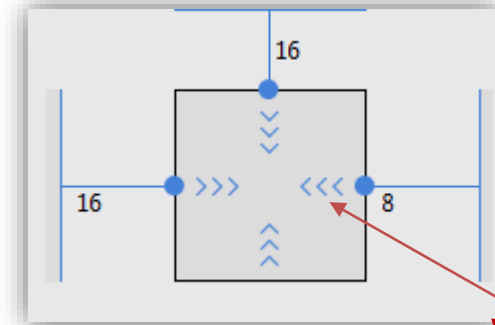
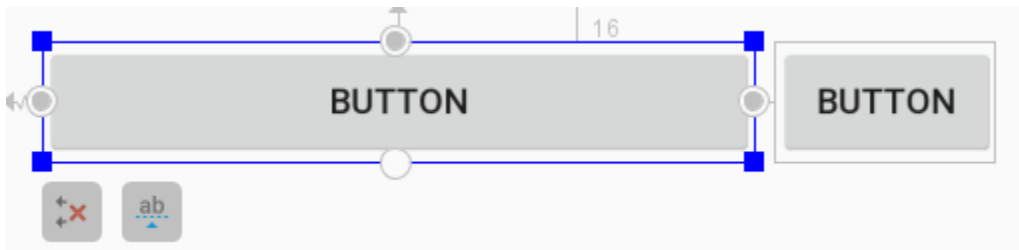
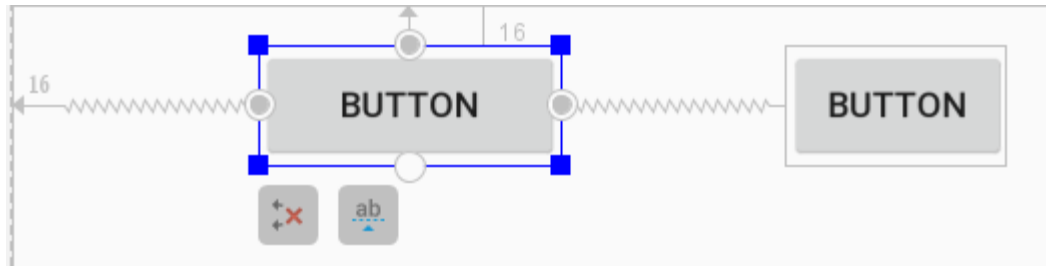
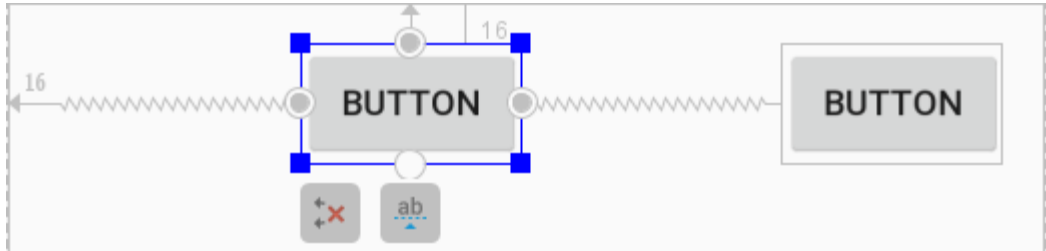
# Spring constraint with margin

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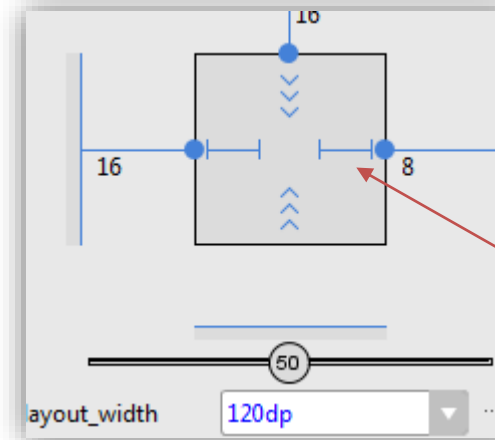


# Size : wrap content, fixed, match constraint

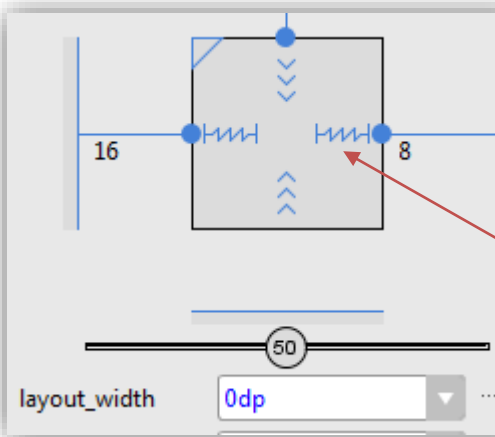
5



wrap content



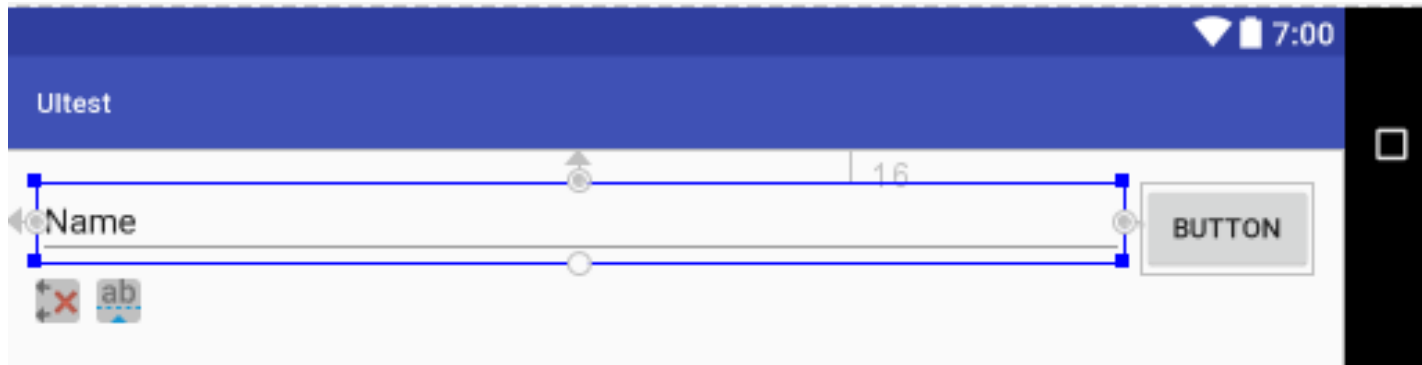
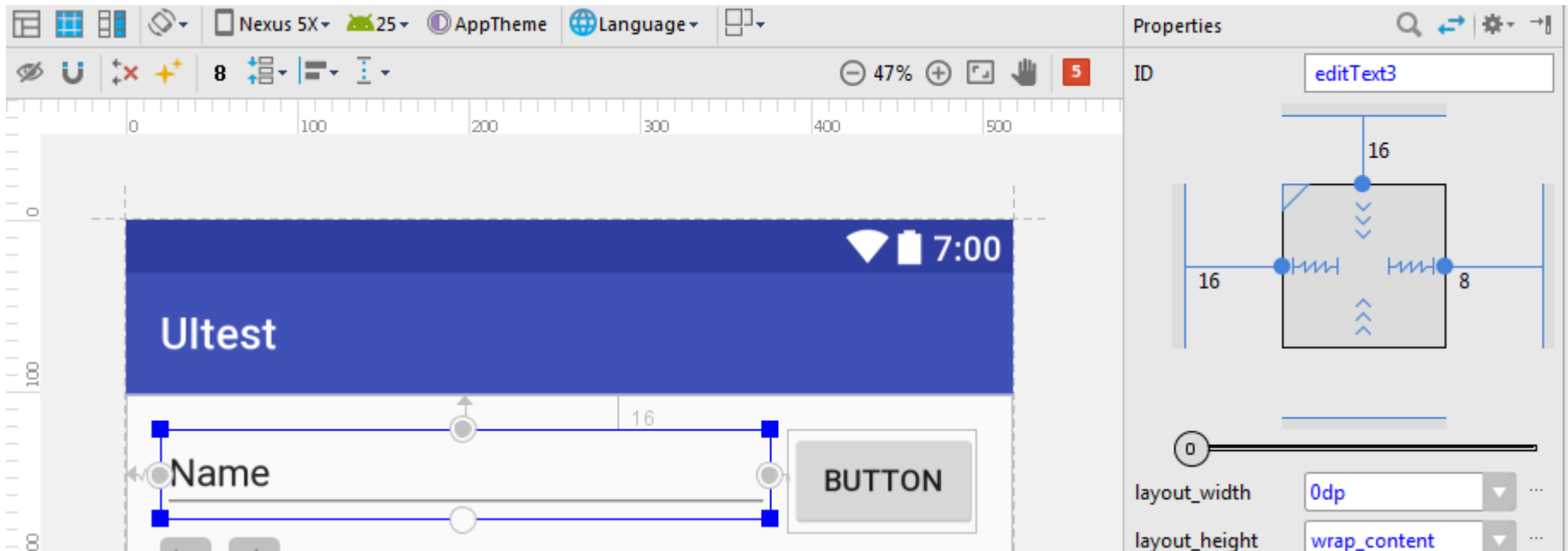
fixed



match  
constraint

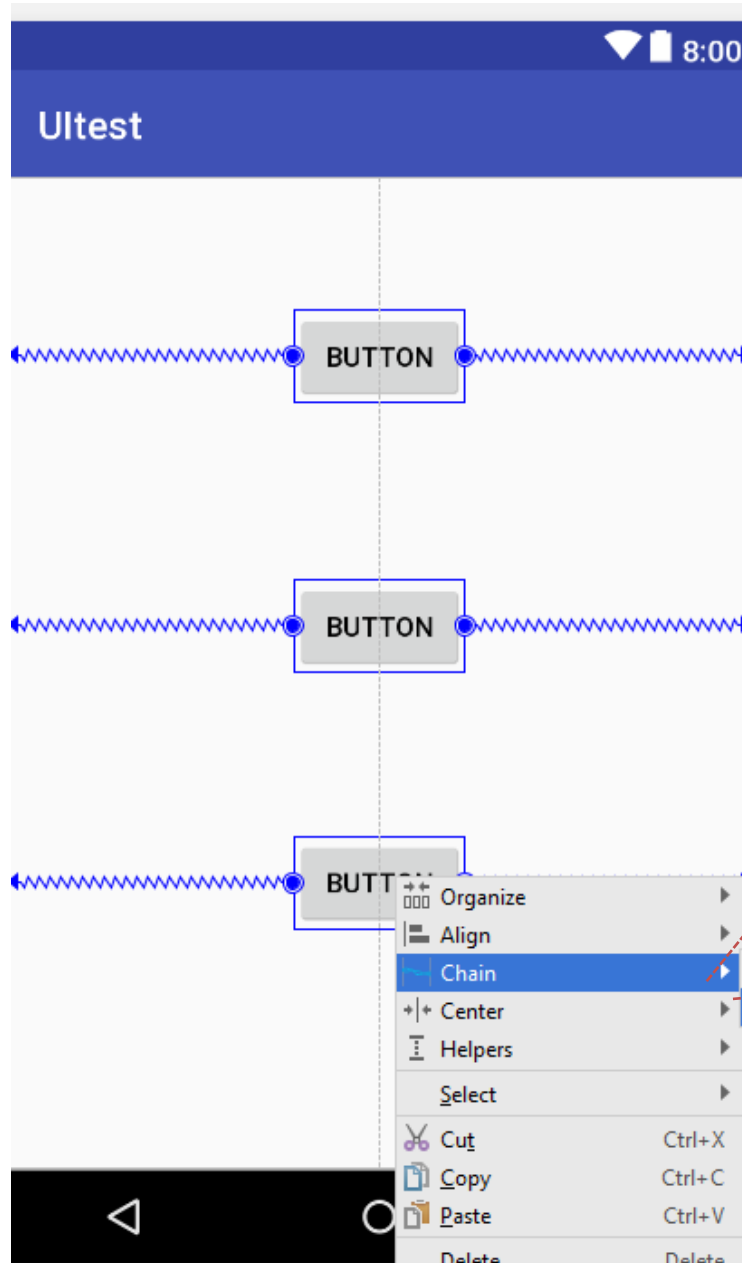
# Useful for filling the screen space

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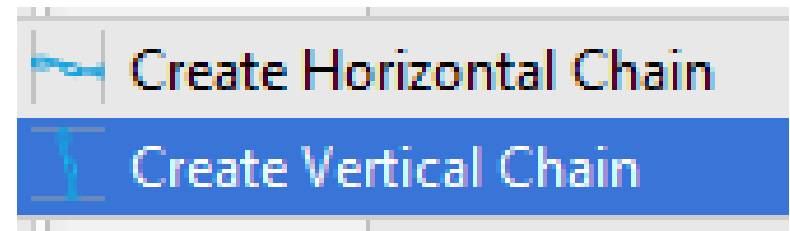


# Chain : a bi-directional constraint

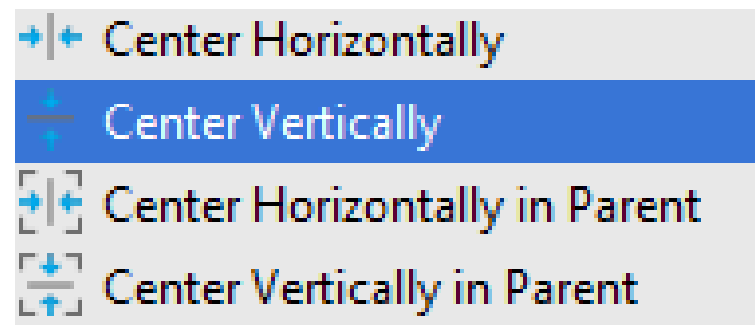
7



create chains

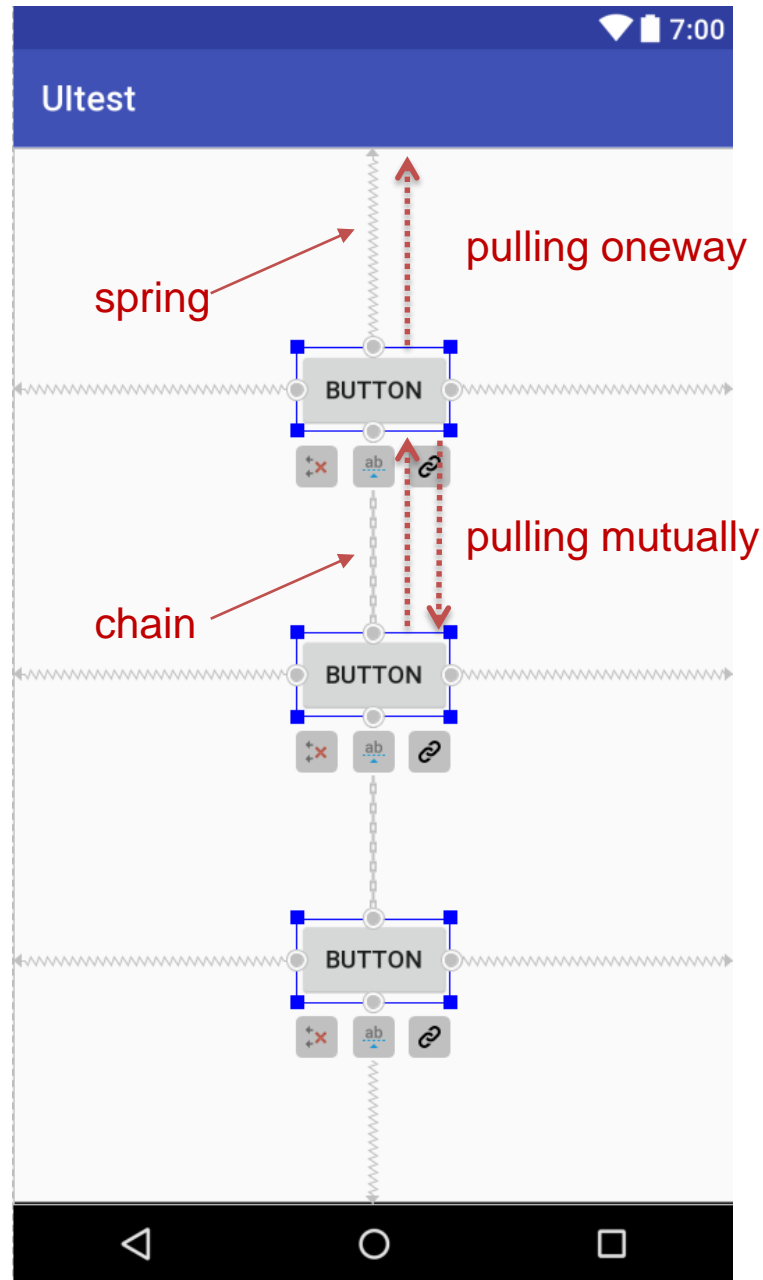


or



# Chain : a bi-directional constraint

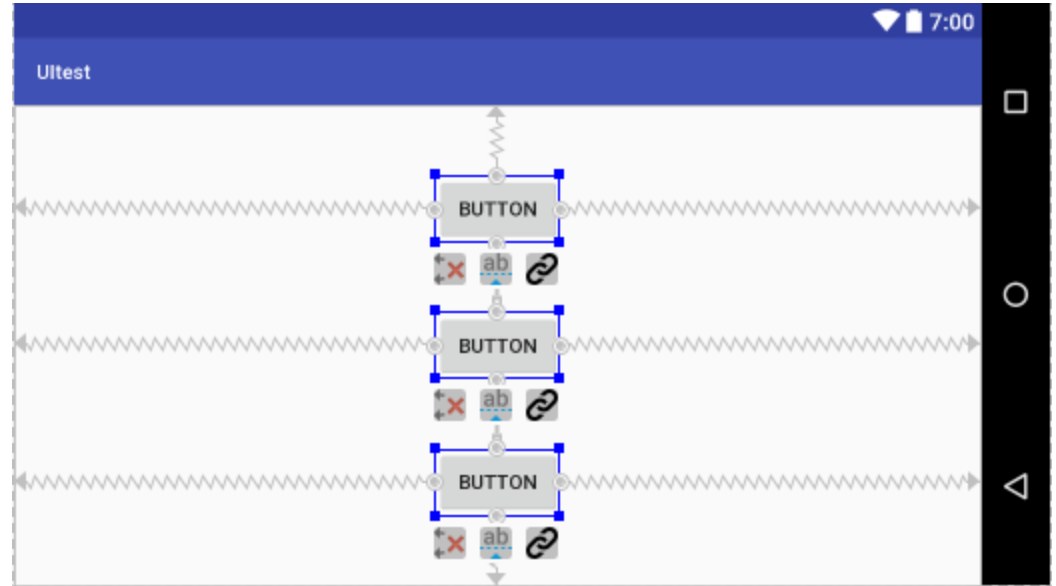
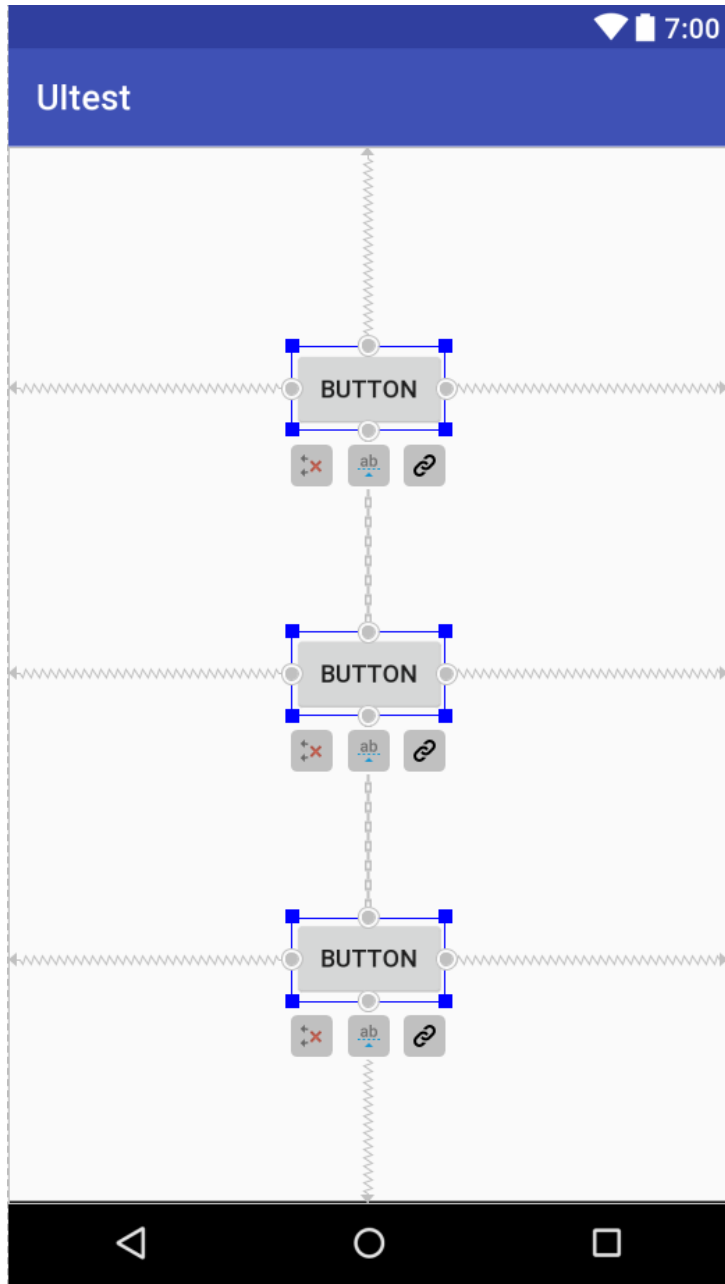
8



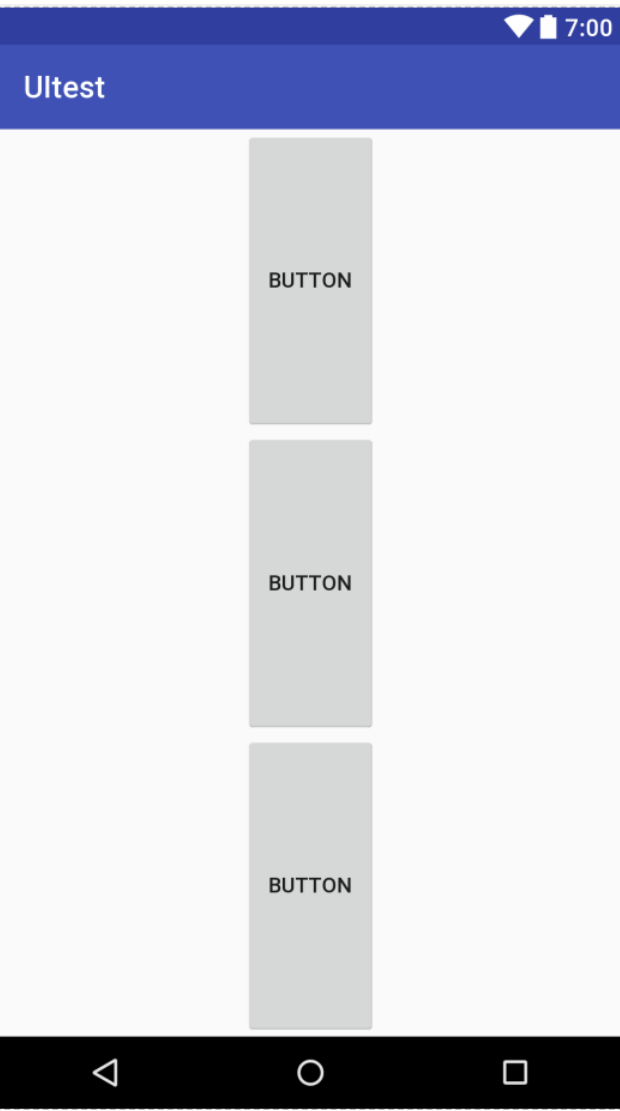
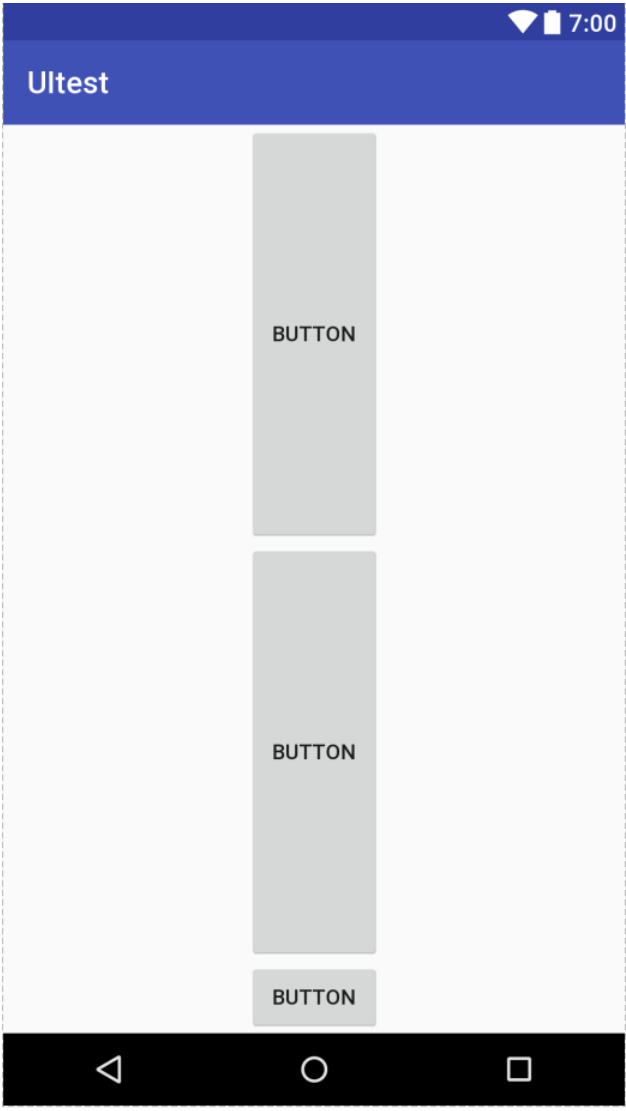
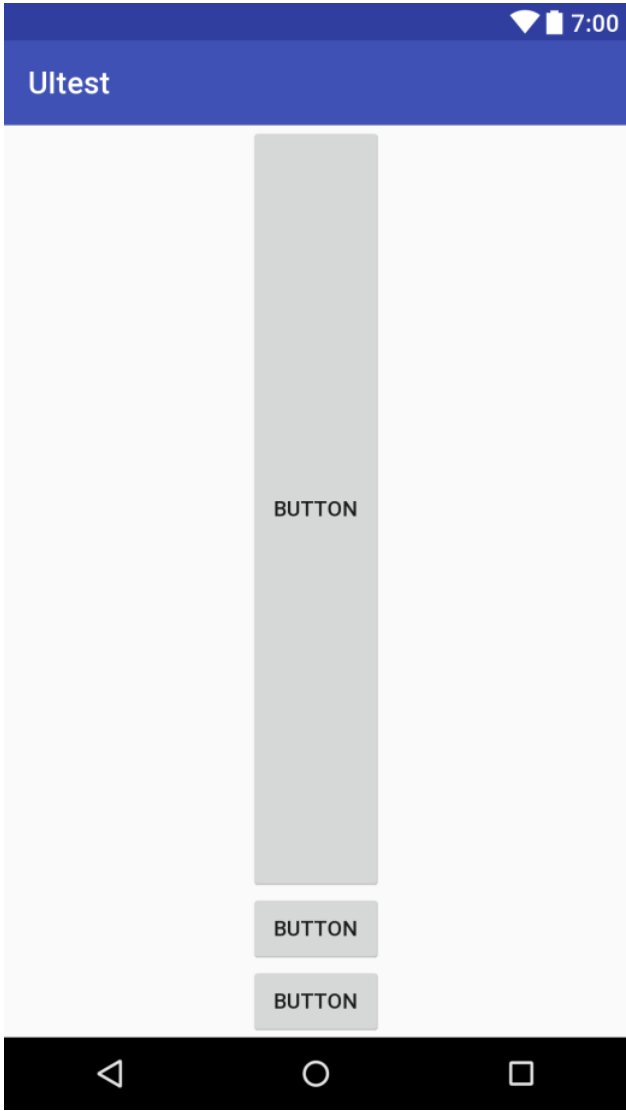


# Chain : Useful for laying out evenly

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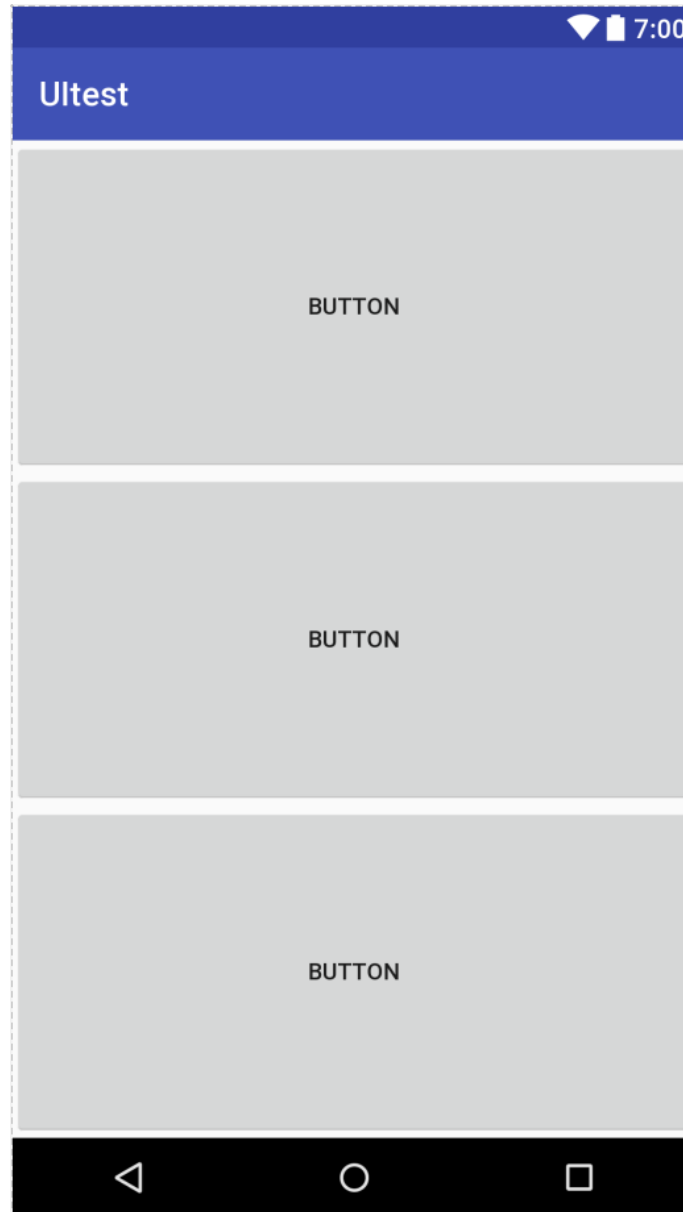


*with “match constraint (no size given)”*



# ***“match constraint” for the width too***

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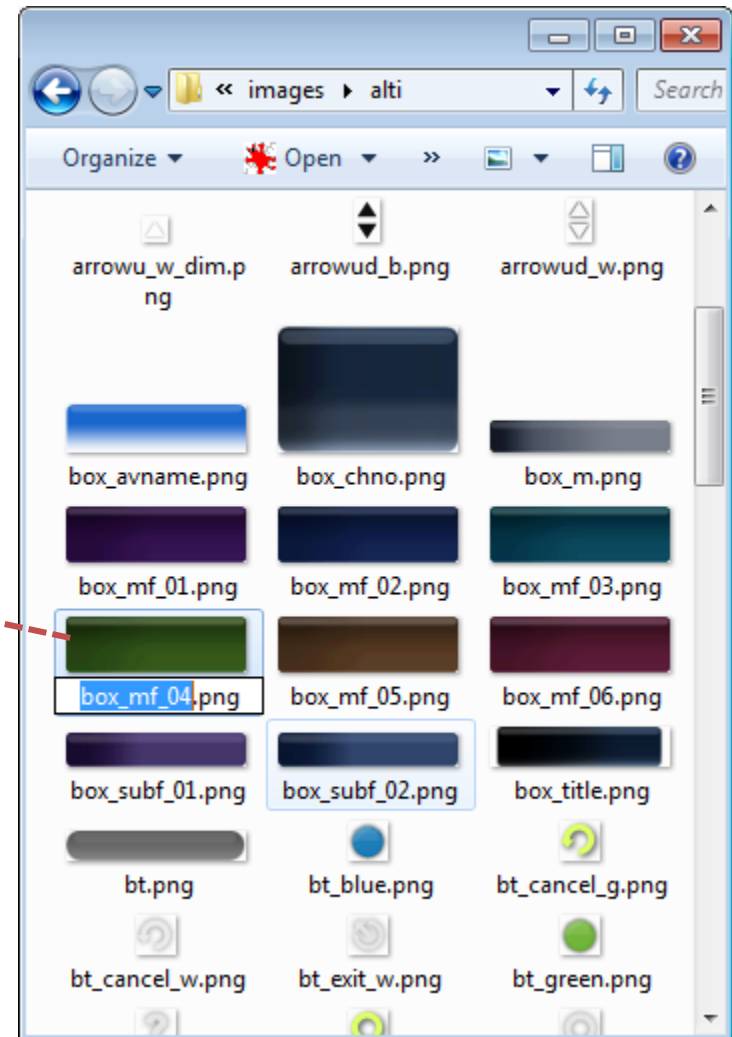
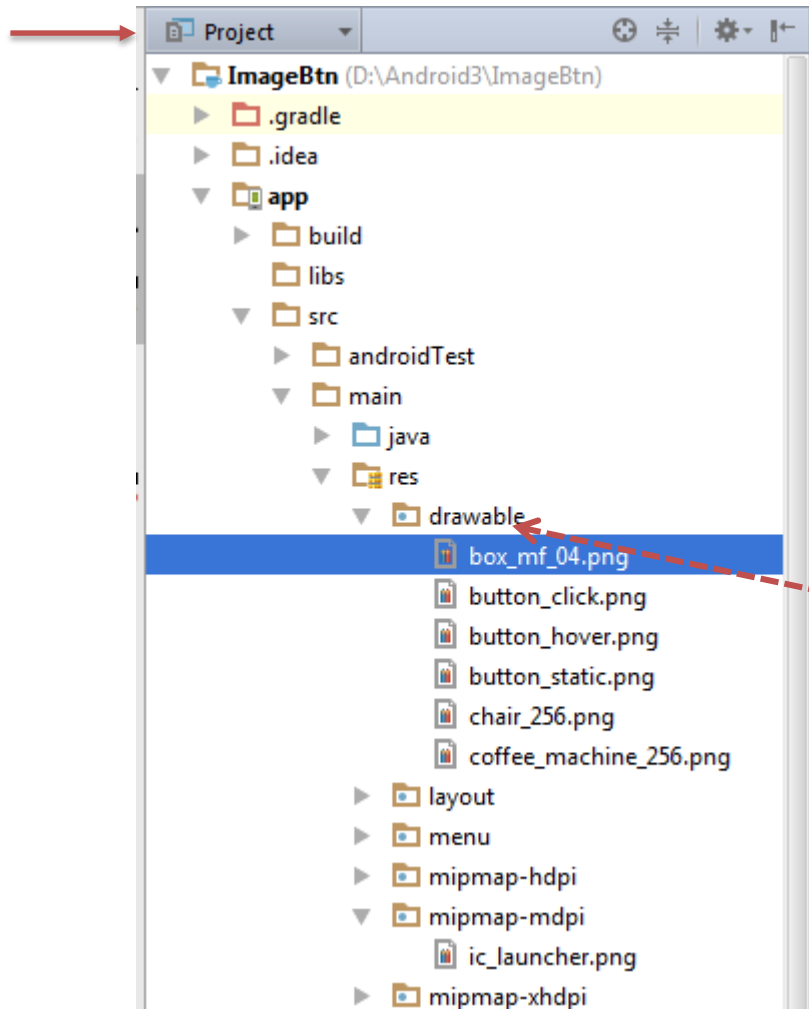


# Using Images

# Add images to your App

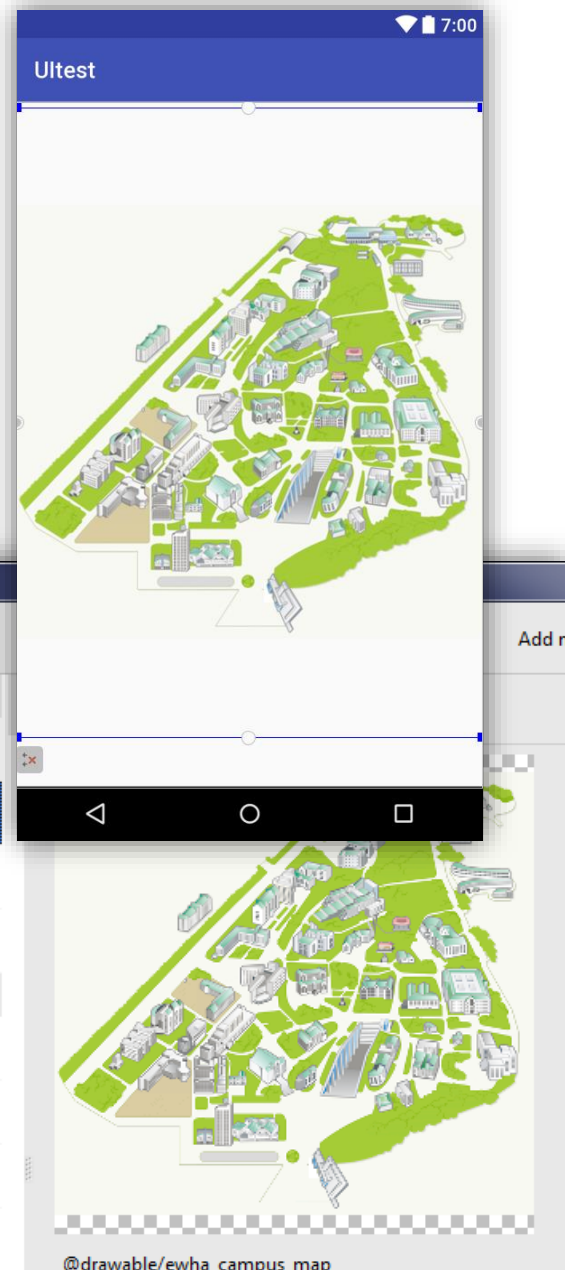
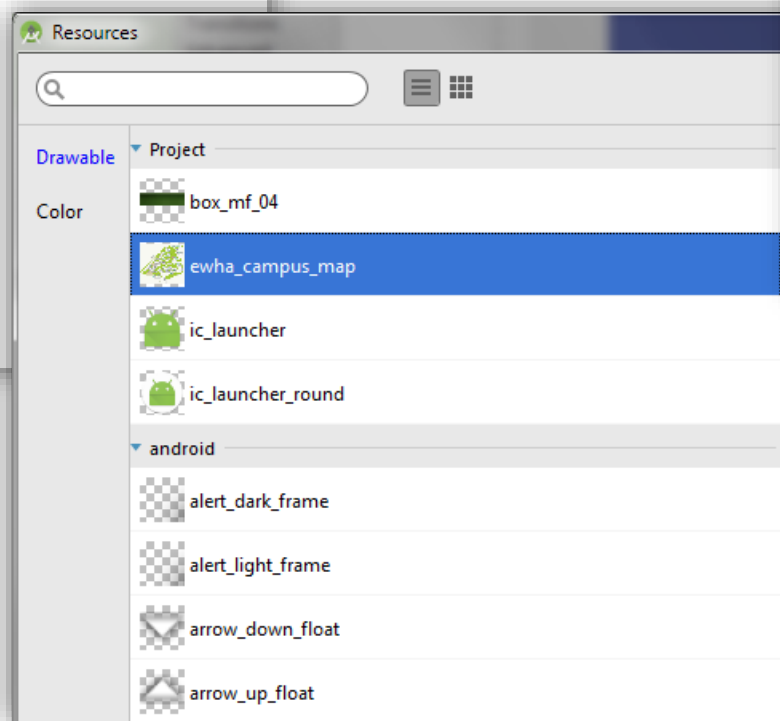
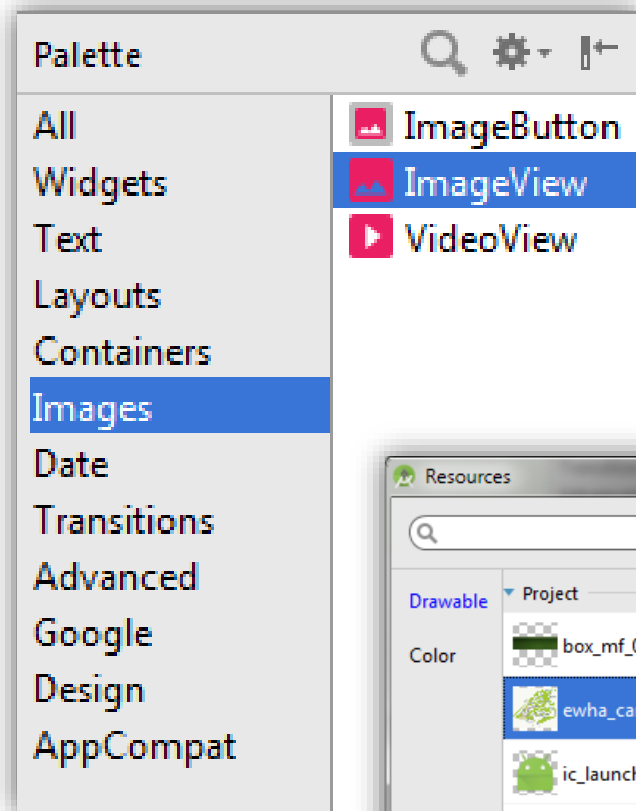
13

- Just copy the images to res/drawable directories (in Project mode)
  - Drag & Drop files with holding control key down



# ImageView

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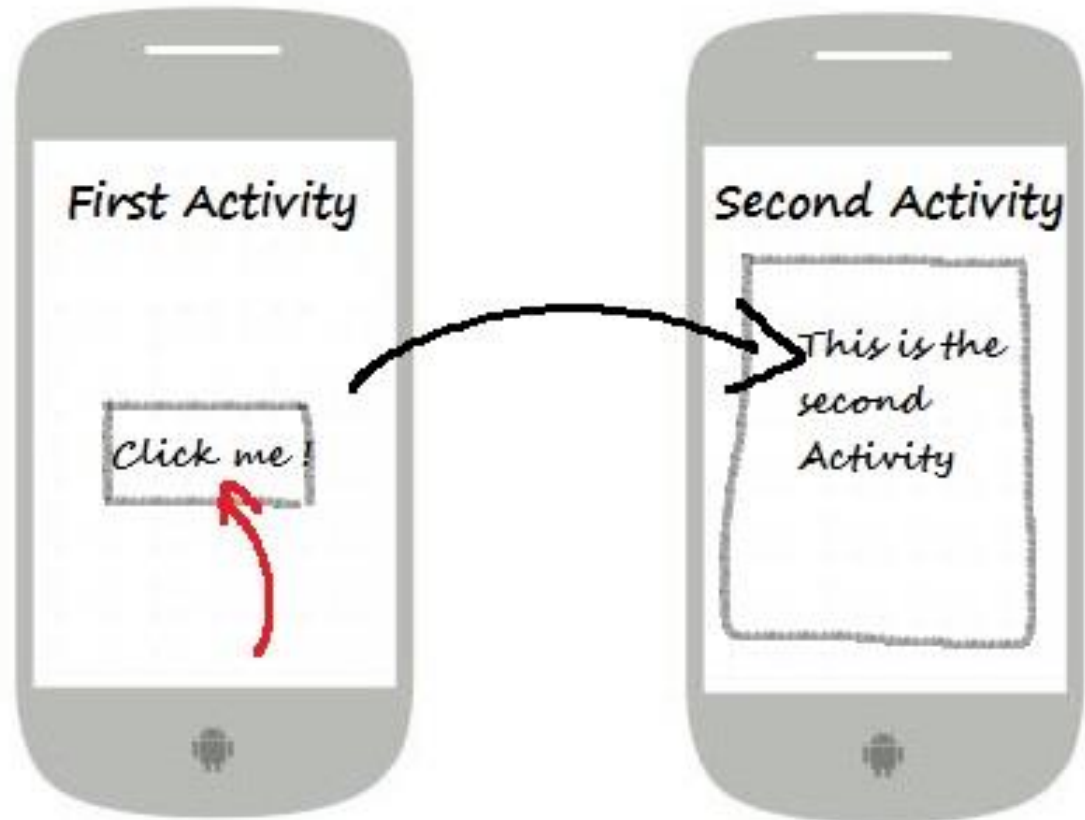


# Activities

# Android Activities

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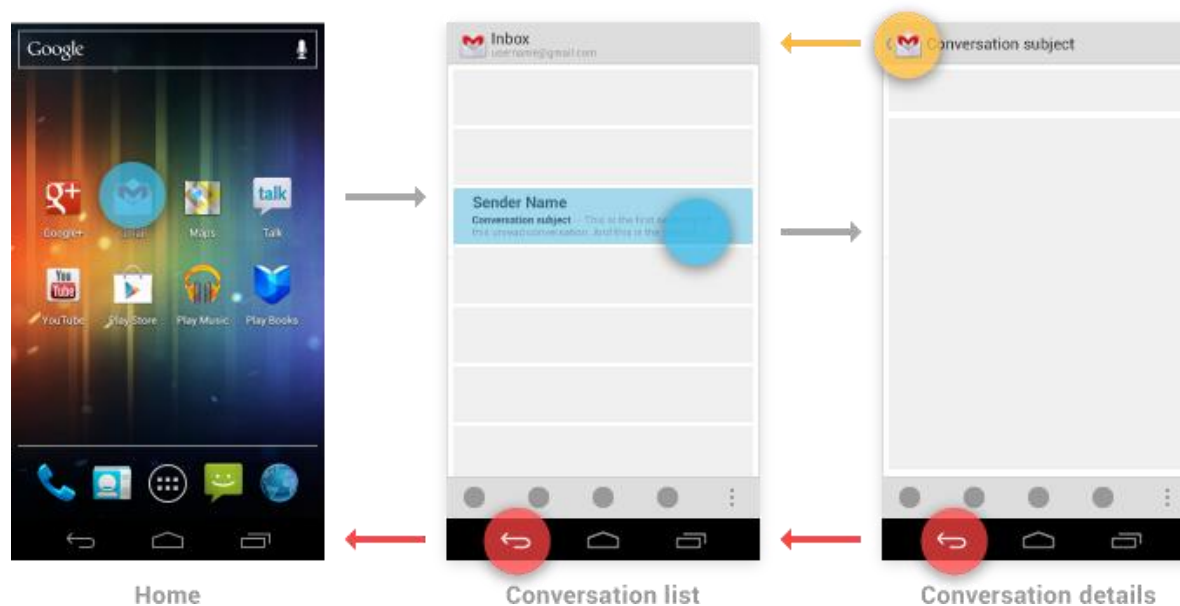
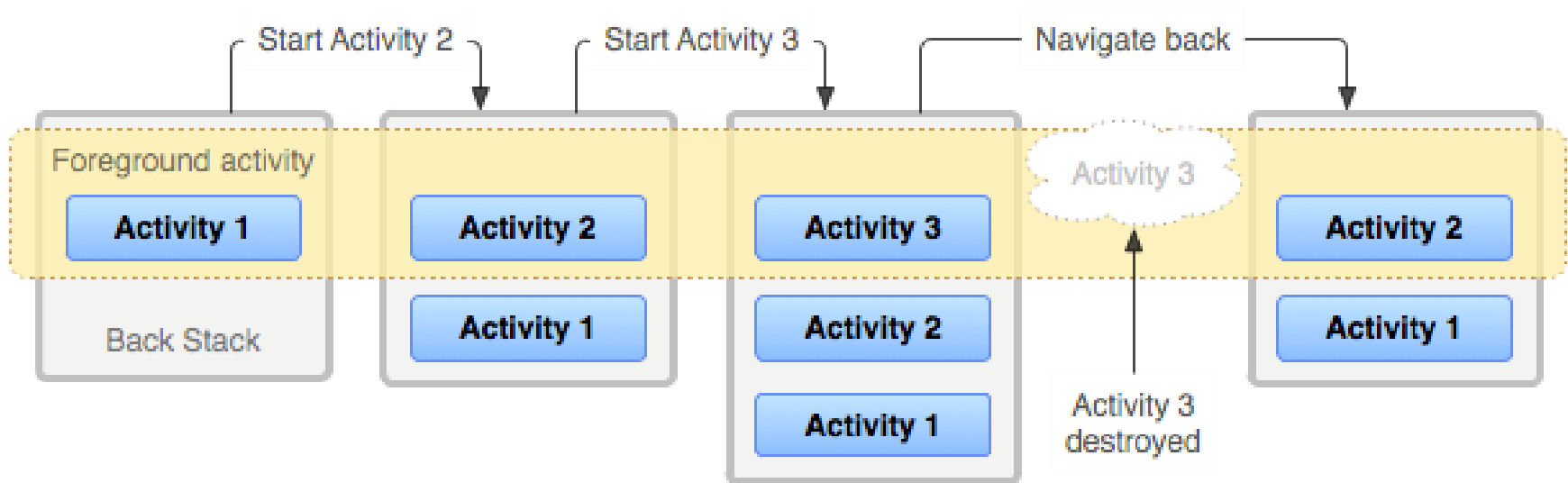
- A GUI screen (session)
- Entry point of App
- Navigation (Back)

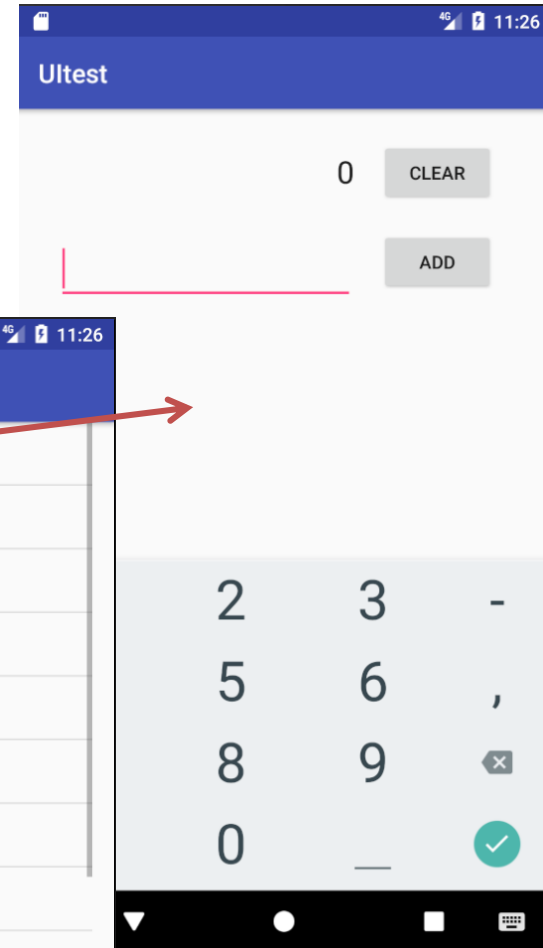
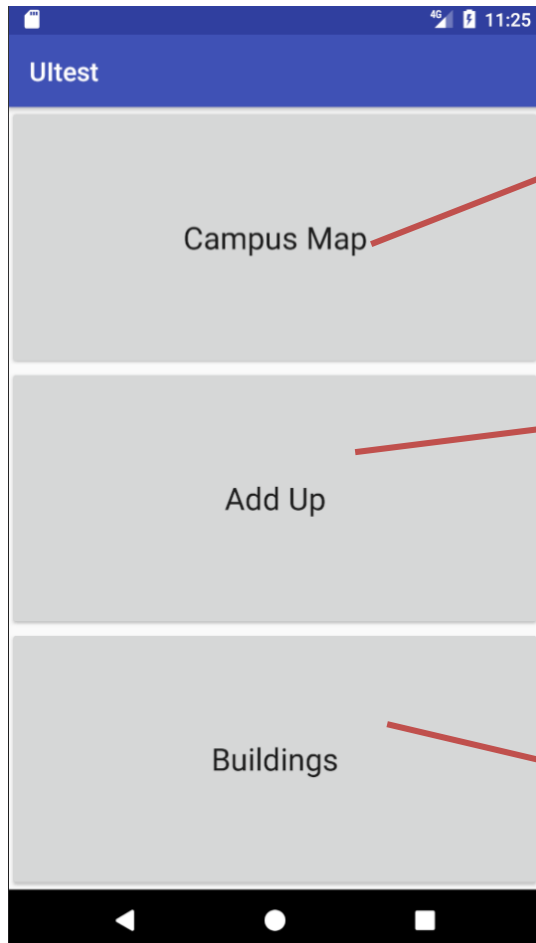




# Activity Navigation

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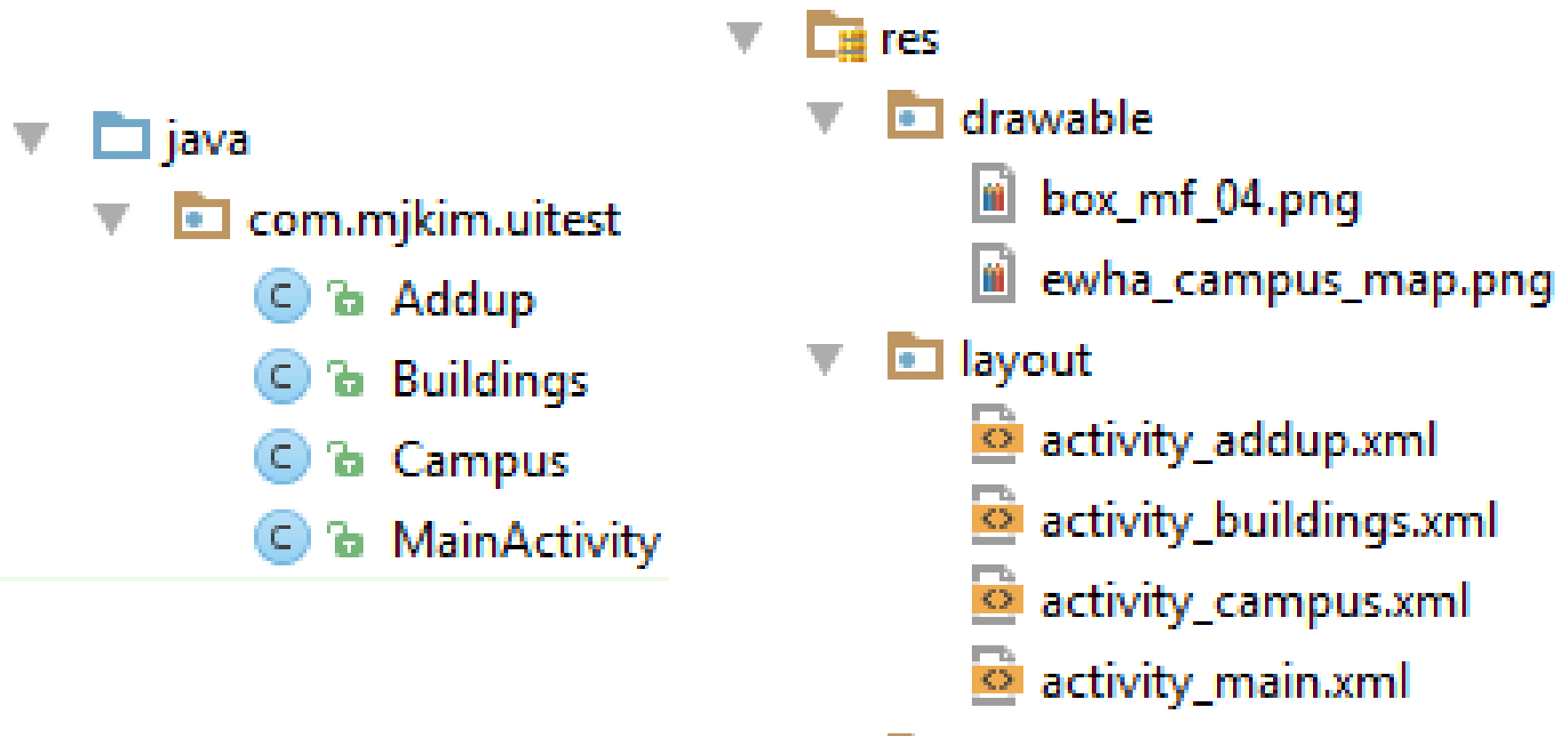




# Four Activities

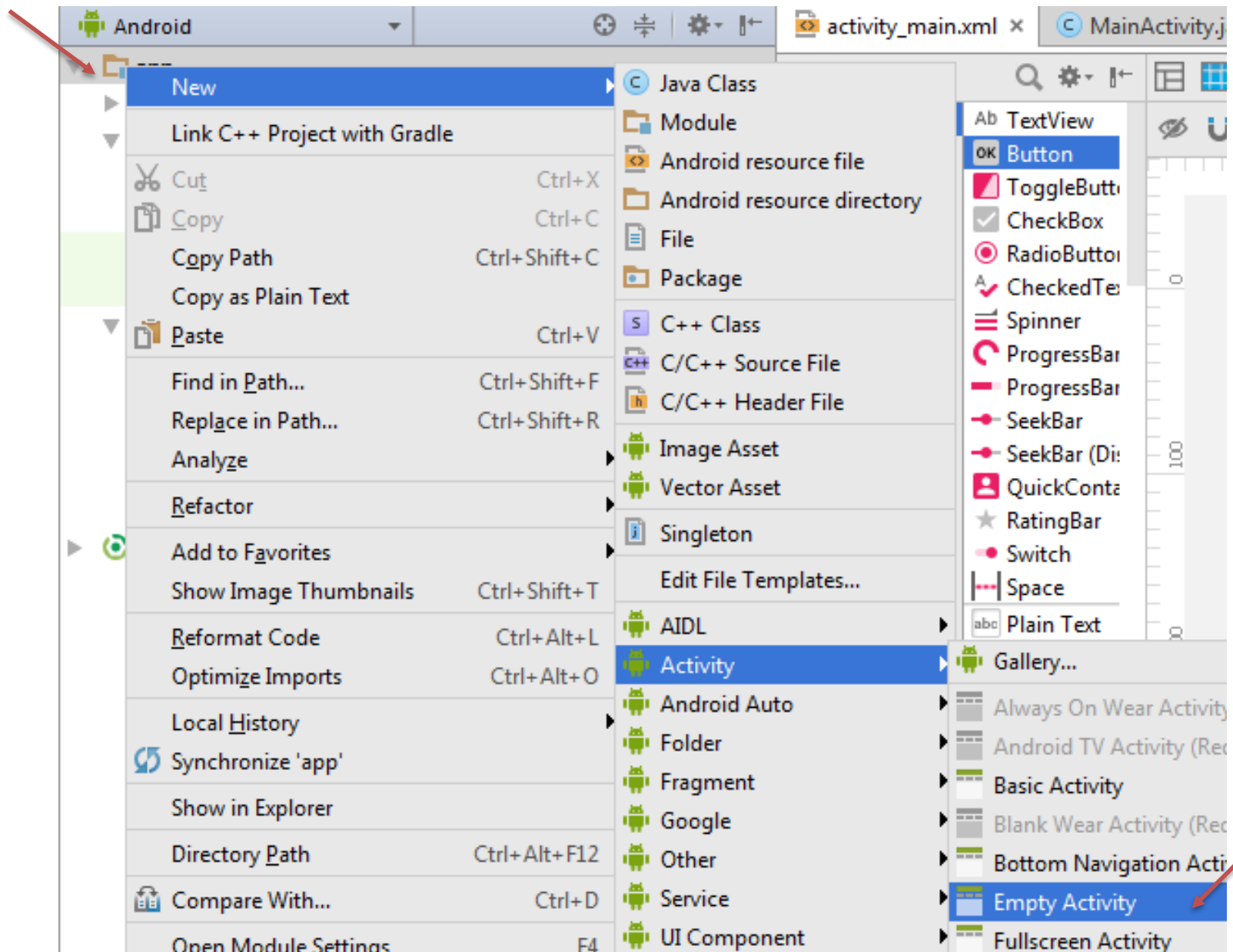
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- Activity = Kotlin(or Java) + Layout



# Add an Activity


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# Add an Activity – Name it

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New Android Activity



## Configure Activity

Android Studio

Creates a new empty activity



Activity Name:

☒ Generate Layout File

Layout Name:

☐ Launcher Activity

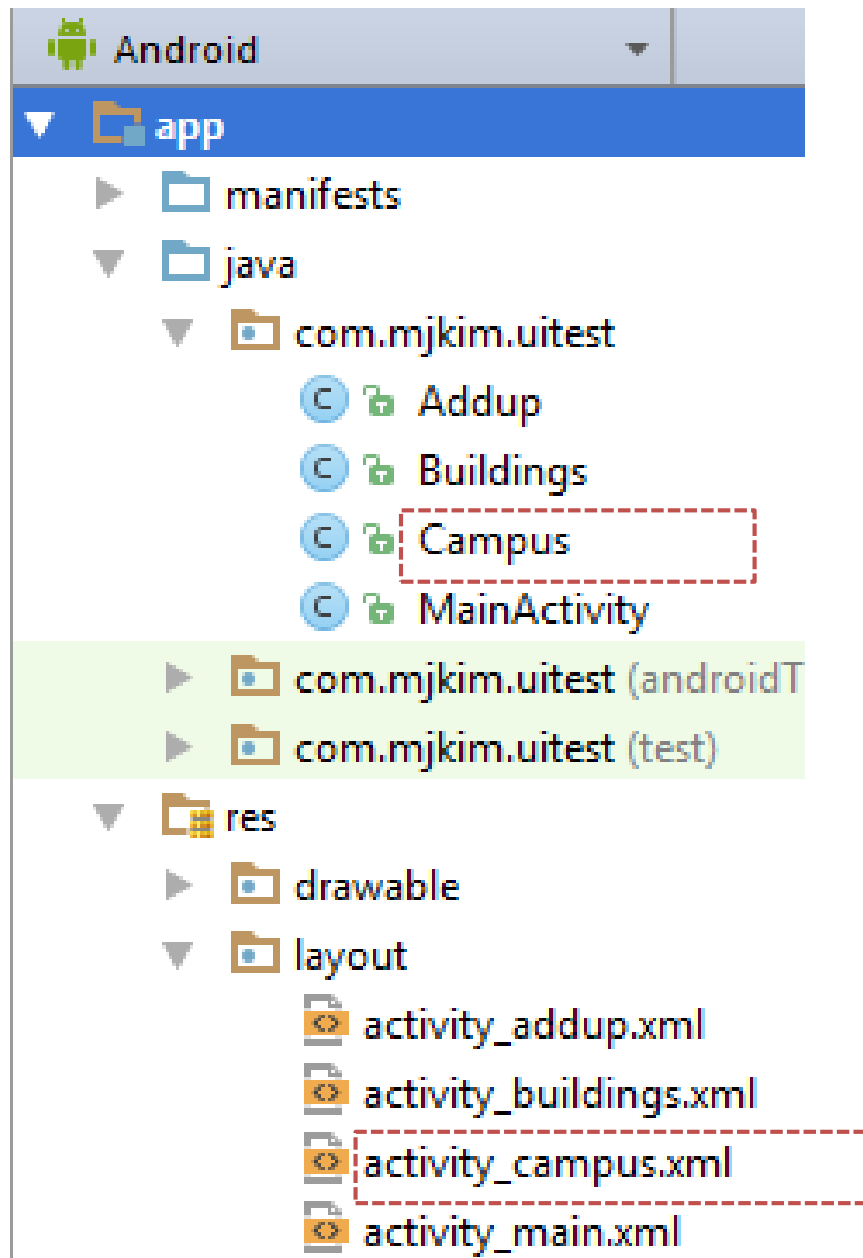
☒ Backwards Compatibility (AppCompat)

Package name:

Target Source Set:

# “Java + Layout” added

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# Start Activity using Intent

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```
fun start_campus(view : View) {  
    var intent = Intent(this, Campus::class.java)  
    startActivity(intent)  
}
```

```
fun start_buildings(view : View) {  
    var intent = Intent(this, Buildings::class.java)  
    startActivity(intent)  
}
```

```
fun start_addup(view : View) {  
    var intent = Intent(this, Addup::class.java)  
    startActivity(intent)  
}
```



```
class Campus : AppCompatActivity() {
```

```
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_campus)  
    }  
}
```

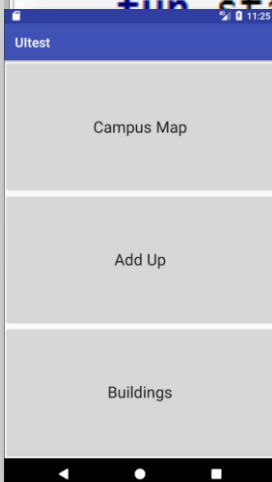
```
class MainActivity
```

```
    override fun onCreate(savedInstanceState: Bundle?) {  
        super.onCreate(savedInstanceState)  
        setContentView(R.layout.activity_main)  
    }  
}
```

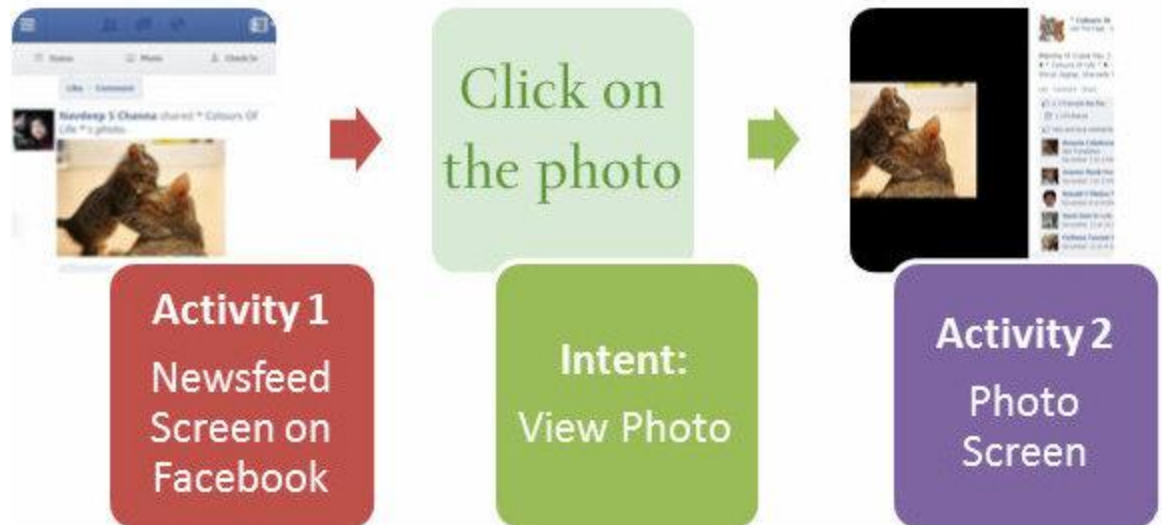
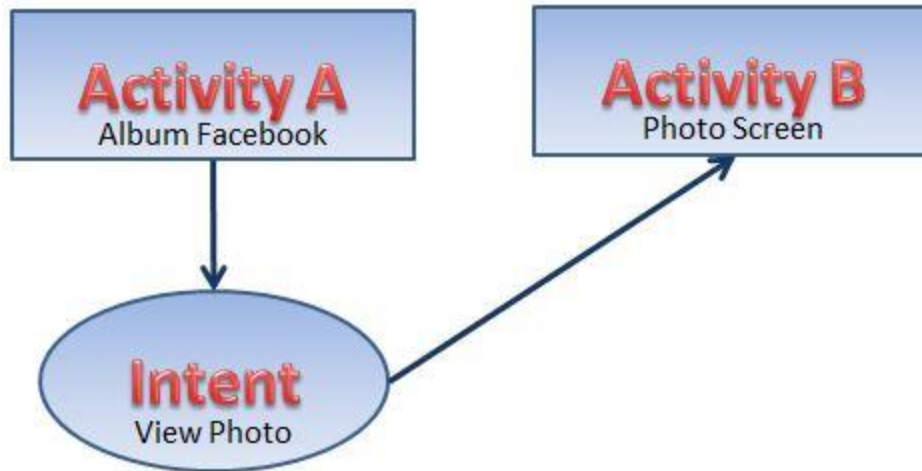
```
    fun start_campus(view : View) {  
        var intent = Intent(this, Campus::class.java)  
        startActivity(intent)  
    }  
}
```

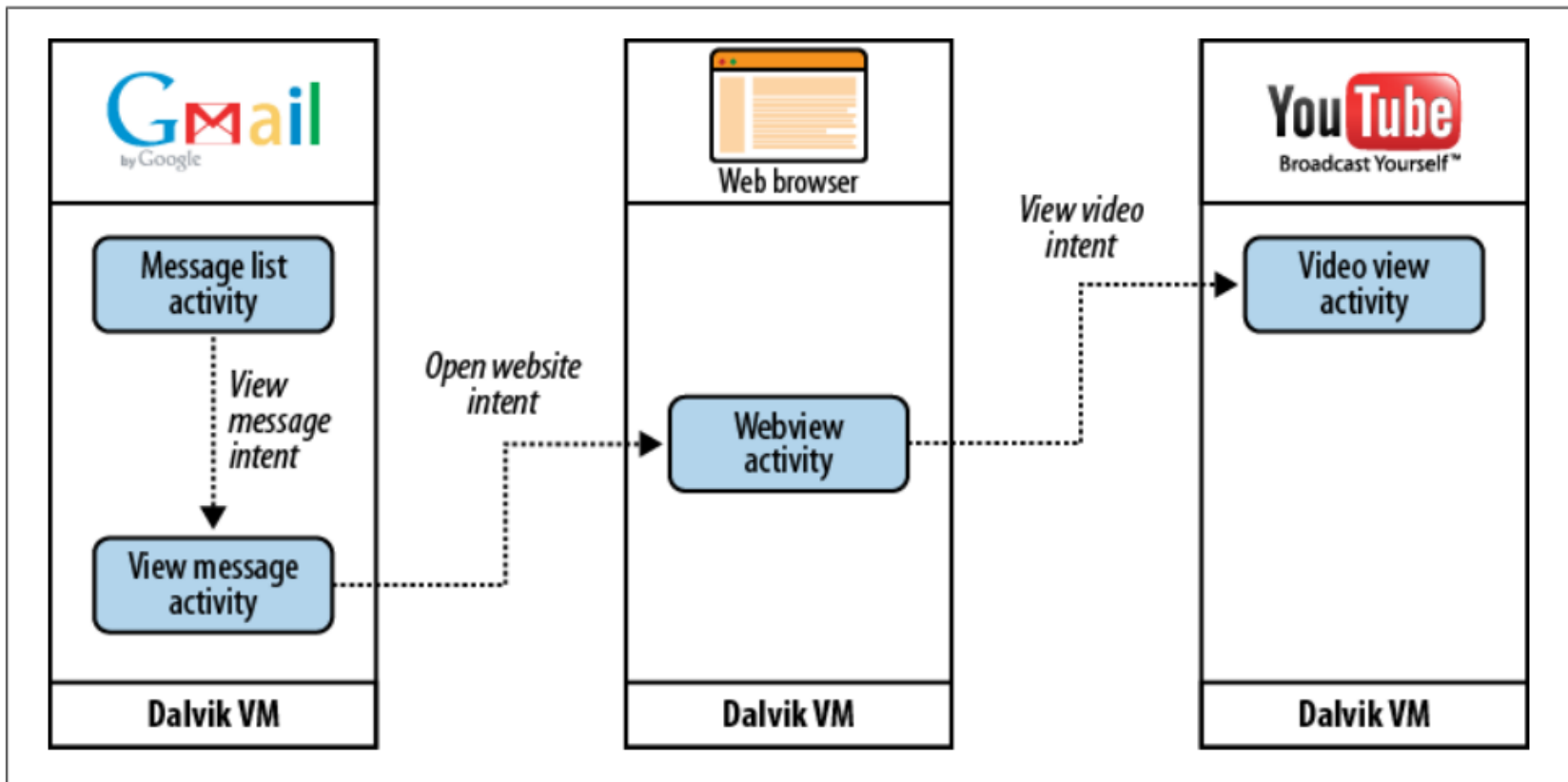
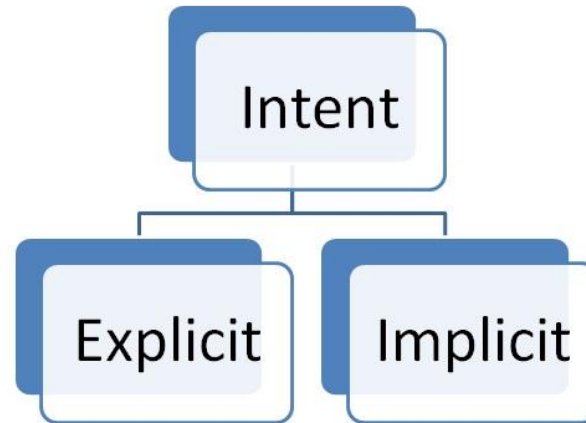
```
    fun start_buildings(view : View) {  
        var intent = Intent(this, Buildings::class.java)  
        startActivity(intent)  
    }  
}
```

```
    fun start_addup(view : View) {  
        var intent = Intent(this, Addup::class.java)  
        startActivity(intent)  
    }  
}
```





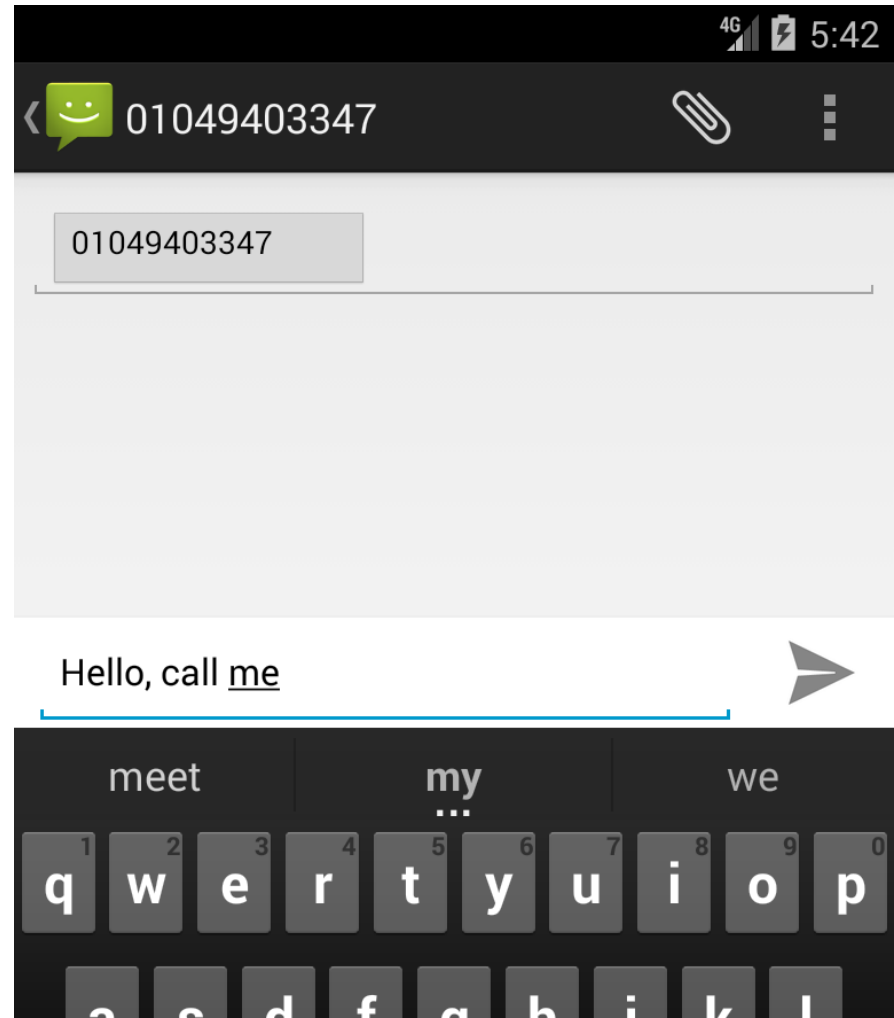




## Ex) Implicit Intent (SMS)

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```
var sms_intent = Intent(Intent.ACTION_VIEW, Uri.parse("sms:01049403347"))
sms_intent.putExtra("sms_body", "Hello, call me")
startActivity(sms_intent)
```



## Ex) Implicit Intent (SMS)

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```
fun send_sms(view : View) {  
    var sms_intent = Intent(Intent.ACTION_VIEW, Uri.parse("sms:01049403347"))  
    sms_intent.putExtra("sms_body", editText.text.toString())  
    startActivity(sms_intent)  
}
```



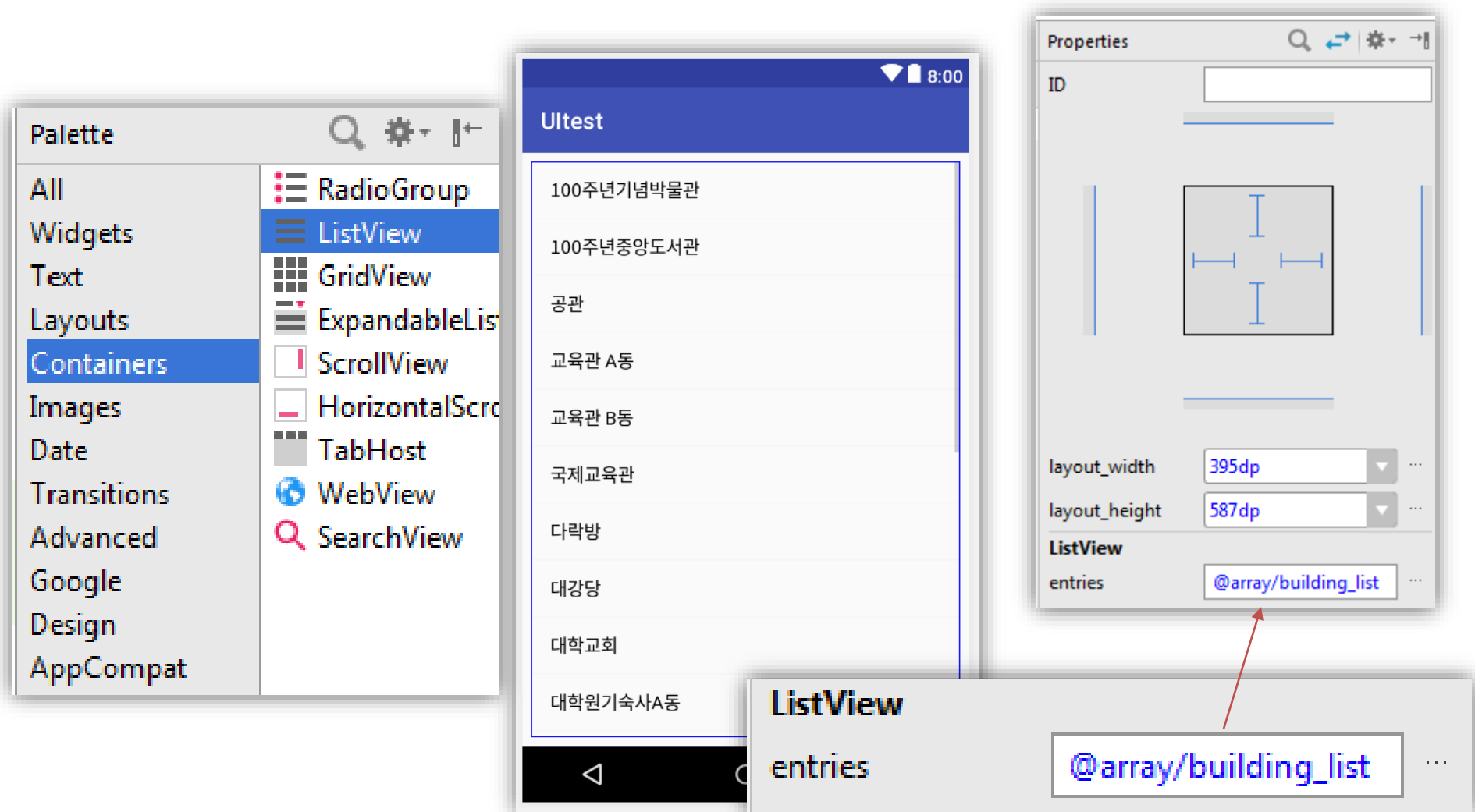
# Listview (Buildings Activity)

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# Listview Layout

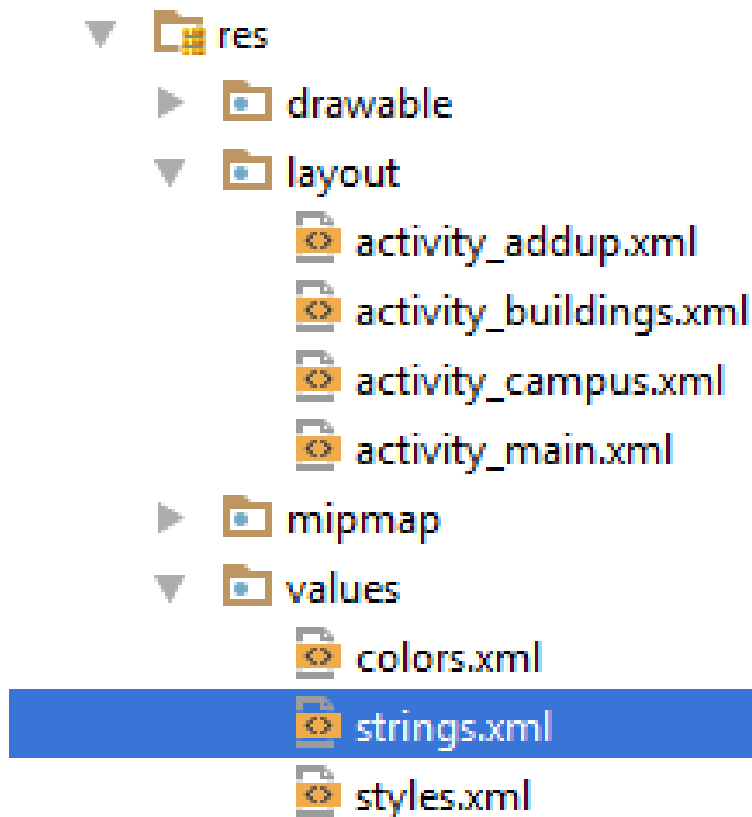
30



# ListView Entries

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- in strings.xml



```
<resources>
  <string name="app_name">Uitest</string>
  <string-array name="building_list">
    <item> 100주년기념박물관</item>
    <item> 100주년중앙도서관</item>
    <item> 공관</item>
    <item> 교육관 A동</item>
    <item> 교육관 B동</item>
    <item> 국제교육관</item>
    <item> 다락방</item>
    <item> 대강당</item>
    <item> 대학교회</item>
    <item> 대학원기숙사A동</item>
    <item> 대학원기숙사B동</item>
    <item> 대학원별관</item>
    <item> 대학원관</item>
    <item> 법인행정동</item>
    <item> 법학관</item>
    <item> 본관</item>
    <item> 부속이화·금란고등학교</item>
    <item> 부속이화·금란중학교</item>
    <item> 부속유치원</item>
    <item> 부속초등학교</item>
  </string-array>
</resources>
```

# Listview Entries

```
<string-array name="building_list">
    <item> 100주년기념박물관</item>
    <item> 100주년중앙도서관</item>
    <item> 공관</item>
    <item> 교육관 A동</item>
    <item> 교육관 B동</item>
    <item> 국제교육관</item>
    <item> 다락방</item>
    <item> 대강당</item>
    <item> 대학교회</item>
    <item> 대학원기숙사A동</item>
    <item> 대학원기숙사B동</item>
    <item> 대학원별관</item>
    <item> 대학원관</item>
    <item> 법인행정동</item>
    <item> 법학관</item>
    <item> 본관</item>
    <item> 부속이화·금란고등학교</item>
    <item> 부속이화·금란중학교</item>
    <item> 부속유치원</item>
    <item> 부속초등학교</item>
</string-array>
```