

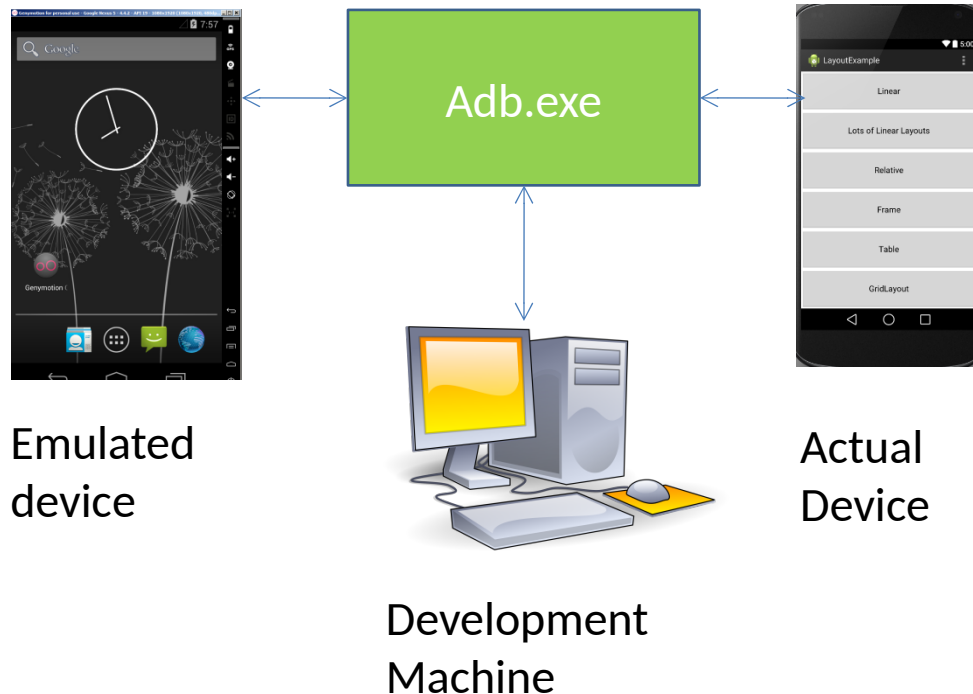
# CPSC 475/575 - Mobile Computing

# Topics

- Communications between Android Studio and Device and Emulator
- Compilation
- Layouts

# Communications - Adb.exe

- How does Android Studio communicate with emulator or device?



A screenshot of the Windows Task Manager window, specifically the "Processes" tab. The window title is "Windows Task Manager" and it has a menu bar with "File", "Options", "View", and "Help". Below the menu bar are tabs for "Applications", "Processes", "Services", "Performance", "Networking", and "Users". The "Processes" tab is active, showing a list of running processes. The list has columns for "Image Name", "User Name", "C...", and "Memor". Two processes are highlighted with red rectangles: "studio64.exe" and "adb.exe \*32".

Image Name	User Name	C...	Memor
studio64.exe	Perkins	21	8
taskmgr.exe	Perkins	01	
wordpad.exe	Perkins	00	
java.exe	Perkins	00	5
ACORD32.EXE *32	Perkins	00	
adb.exe *32	Perkins	00	
tsnouter.exe *32	Perkins	00	
conhost.exe	Perkins	00	
POWERPNT.EXE *32	Perkins	00	
InputPersonalization.exe	Perkins	00	
chrome.exe *32	Perkins	00	1
chrome.exe *32	Perkins	00	
WINWORD.EXE *32	Perkins	00	
PrivacyIconClient.exe	Perkins	00	
splwow64.exe	Perkins	00	

# Layouts

# Layouts

- Location



- 2 today

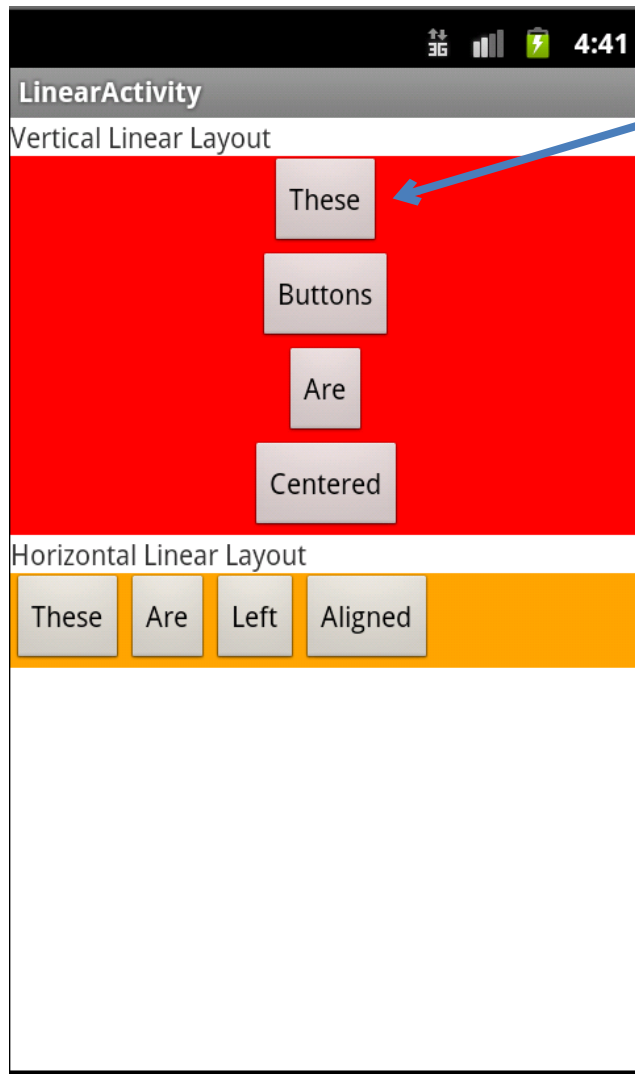
- Linear (3\_layoutExample project)
- Framelayout “

- See the online doc on Constraint Layout

# LinearLayout

(see 3\_layoutExample project)

LinearLayout



```
<Button android:text="These"  
        android:layout_gravity="center"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
/>
```

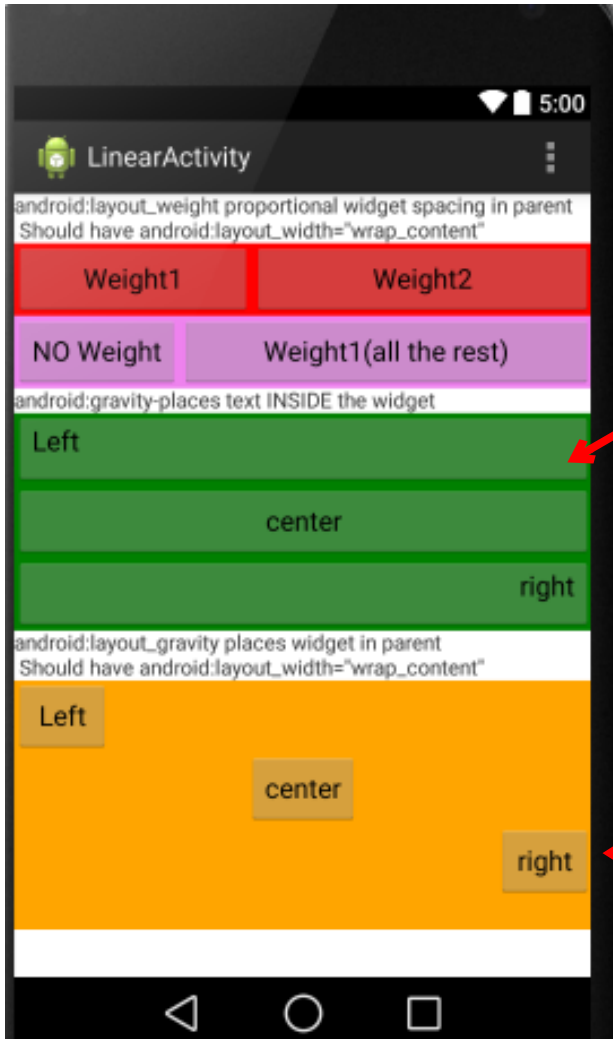
```
<LinearLayout  
    android:layout_height="wrap_content"  
    android:layout_width="match_parent"  
    android:orientation="vertical"  
    android:background="#ffff180a">
```

```
<LinearLayout  
    android:orientation="horizontal"  
    android:layout_width="match_parent"  
    android:layout_height="wrap_content"  
    android:gravity="left"  
    android:background="#ffff980c">
```

# LinearLayout

gravity layout\_gravity

gravity – align text **inside** widget



```
<Button
    android:layout_width="match_parent"
    android:layout_height="wrap_content"
    android:gravity="left"
    android:text="Left" />
```

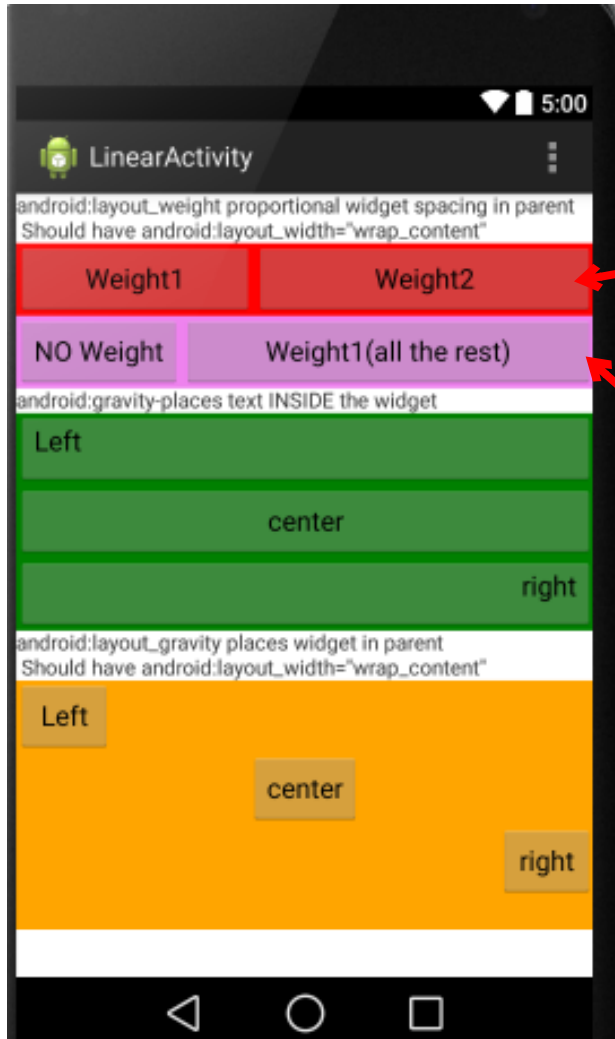
layout-gravity – align widget in parent

```
<Button
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:layout_gravity="right"
    android:text="right" />
```

# LinearLayout

`android:layout_weight` (There is no `android:weight`!)

## Proportions widget spacing



```
<Button android:text="Weight1"
        android:layout_weight="1"
        android:gravity="center"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

<Button android:text="Weight2"
        android:layout_weight="2"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

<Button android:text="NO Weight"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>

<Button android:text="Weight1(all the rest)"
        android:layout_weight="1"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"/>
```

Note `android:layout_width="wrap_content"`  
Necessary for proper function



# FrameLayout

- Placed on screen
- On Top of each other
- In order declared



```
<FrameLayout xmlns:android="http://schemas.android.com/apk/res/android"
    android:id="@+id/FL"
    android:layout_width="match_parent" android:layout_height="match_parent"
    android:background="@drawable/ic_launcher">

    <TextView
        android:layout_width="match_parent"
        android:layout_height="96dp"
        android:text="New Text"
        android:id="@+id/textView"
        android:layout_gravity="center_horizontal|bottom"
        android:background="#44ee0bff" />

    <Button
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="click me"
        android:onClick="doButton"
        android:id="@+id/button"
        android:layout_gravity="right|bottom" />
</FrameLayout>
```

Use dp not px

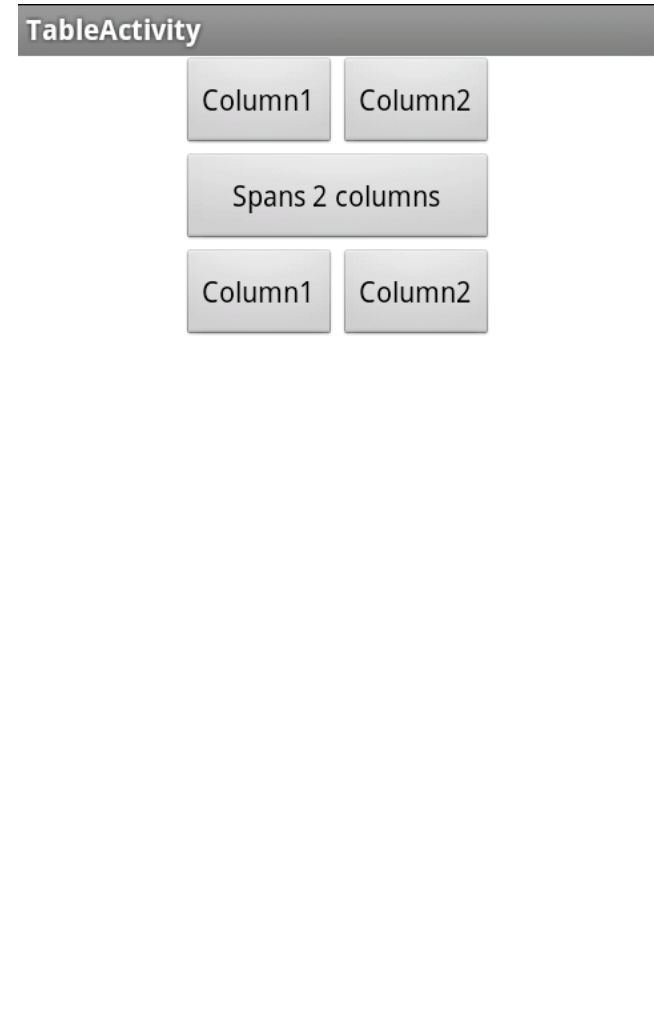
# FrameLayout



```
public class FrameLayoutActivity extends Activity {  
    private boolean isGreen = false;  
    private int Id;  
    @Override  
    protected void onCreate(Bundle savedInstanceState) {  
        super.onCreate(savedInstanceState);  
        setContentView(R.layout.activity_framelayout);  
        Resources resources = this.getApplicationContext().getResources();  
        Id = resources.getIdentifier("ic_launcher", "drawable", getPackageName());  
    }  
  
    public void doButton(View view) {  
        FrameLayout ml = (FrameLayout)findViewById(R.id.FL);  
  
        if (isGreen)  
            ml.setBackgroundResource(Id);  
        else  
            ml.setBackgroundColor(0xFF00FF00);  
  
        isGreen = !isGreen;  
    }  
}
```

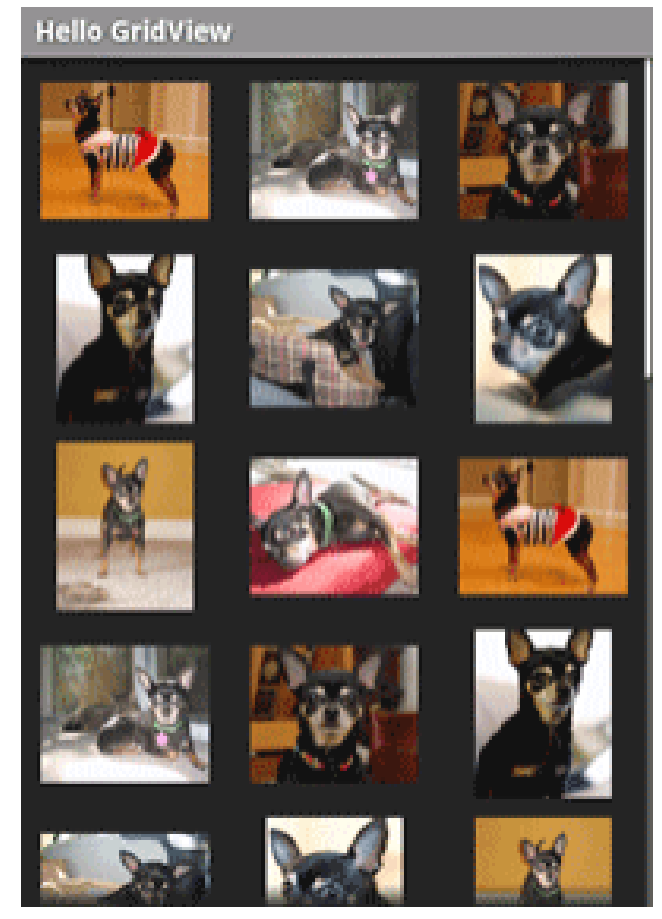
# TableLayout

- rows and columns
- rows normally  
TableRows
- TableRows contain  
other elements such  
as buttons, text, etc.



# Other Layouts - GridView

- Two Dimensional Scrollable Grid
- Items inserted into layout via a ListAdapter



# Other Layouts - TabLayout

- Uses a TabHost and TabWidget
- Swap between views in same activity or switch between different activities



# Other Views - Layouts

- Gallery
  - horizontal scrolling display of images from a list
- SurfaceView
  - provide access to a "drawing" surface.  
Intended to draw pixels, not display other views / widgets