ANDROID DEVELOPMENT #6

@brmlab

UI LAYOUTS

- Linear
- Frame
- Table
- Relative
- Grid

VIEWGROUP

- Can contain children
- SuperType for Layouts and Containers
- Can contain Views and/or ViewGroups
- Layouts can contain Layouts

LAYOUT XML FILE

- Root element is single
  - ViewGroup
  - View
- Must be XML file (res/layouts/my_layout.xml)
- Can be provided multiple times (resources)
  - -xhdpi, -en-rGB, -sw600dp, -xlarge

LAYOUT PARAMS

- layout_width
- layout_height
- layout_weight (of this view in parent view)
- layout_margin (outer spacing)
- layout_gravity (positioning in parent view)

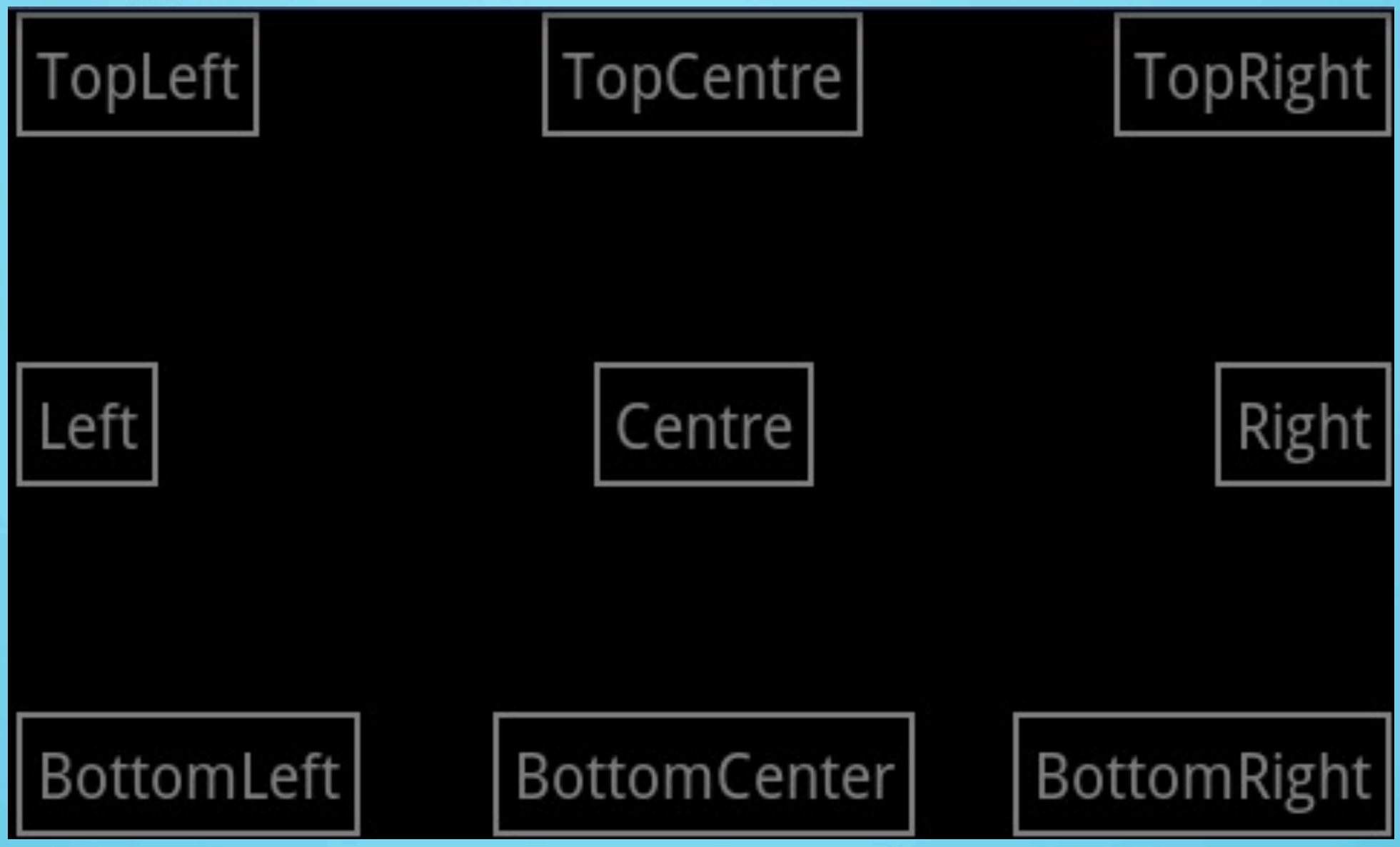
OTHER PARAMS

- gravity (inner content positioning)
- padding (inner spacing)
- weightSum (sum of all children layout_weight)
- id (@id/my_id, @+id/my_id)

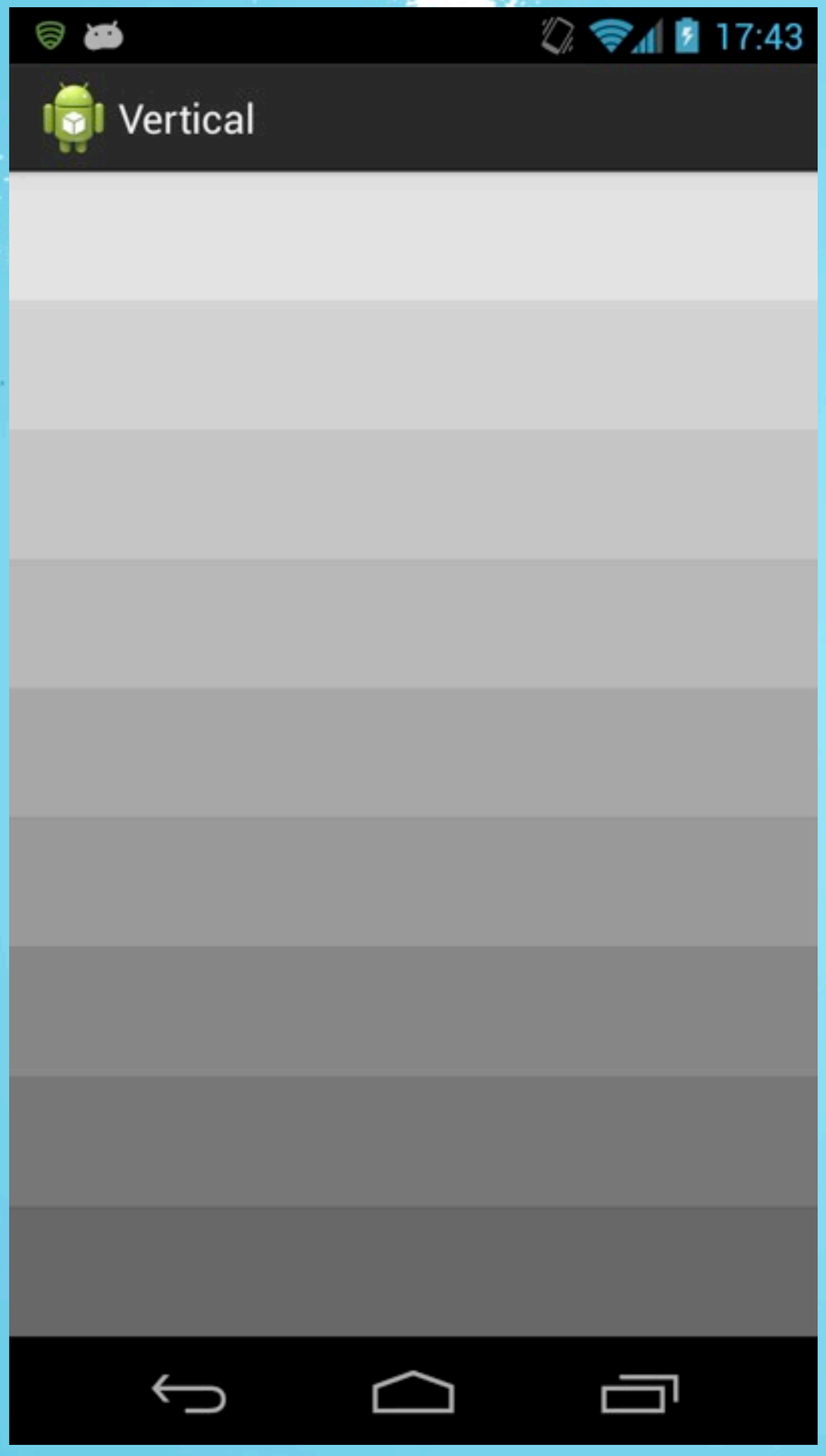
WEIGHT

- ViewGroup {weightSum:4}
  - View {weight:1}
  - View {weight:1}
  - View {weight:1}
  - View {weight:1}

LAYOUT GRAVITY

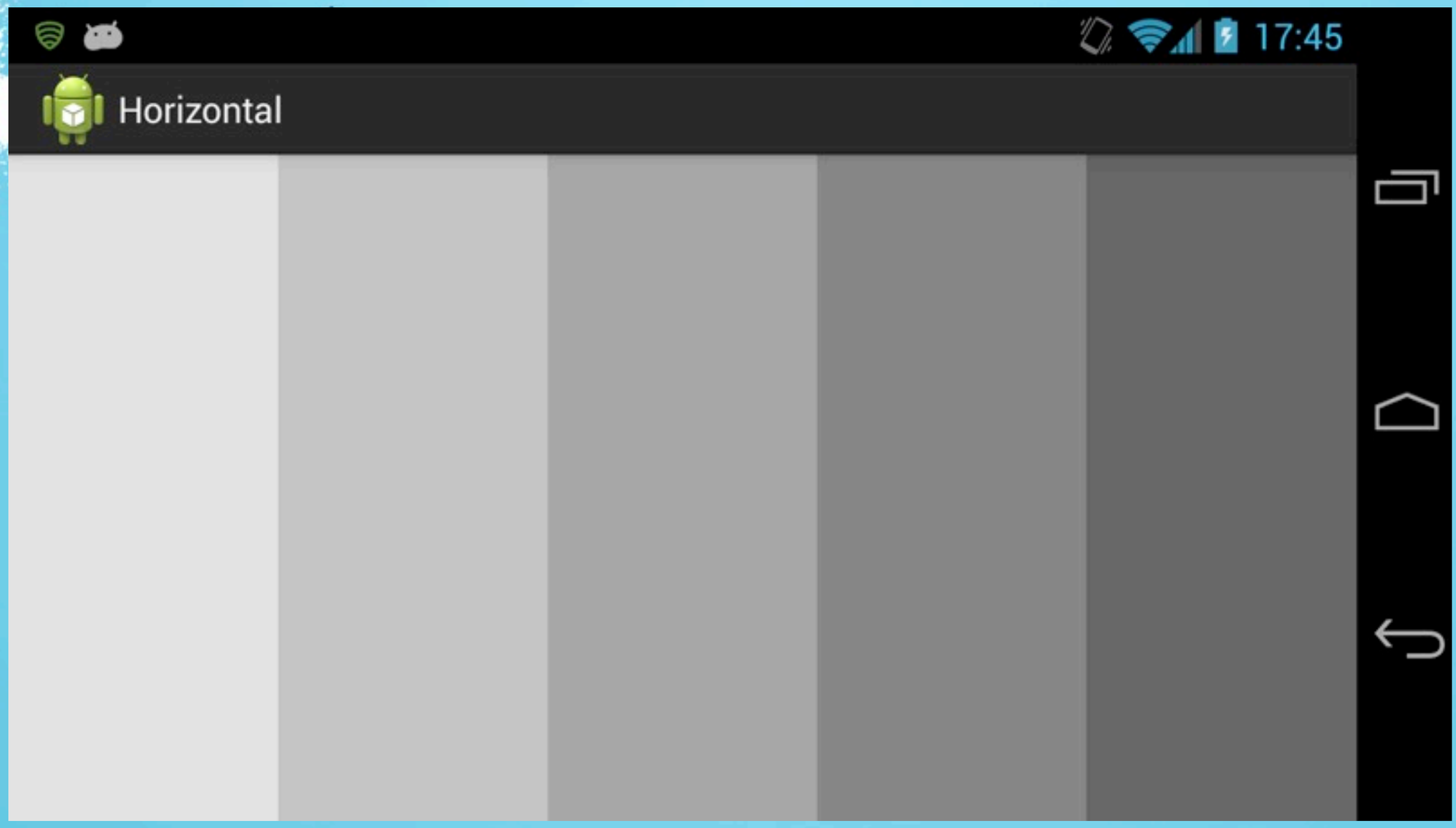


(CONTENT) GRAVITY



LINEAR LAYOUT

LINEAR LAYOUT



FRAME LAYOUT

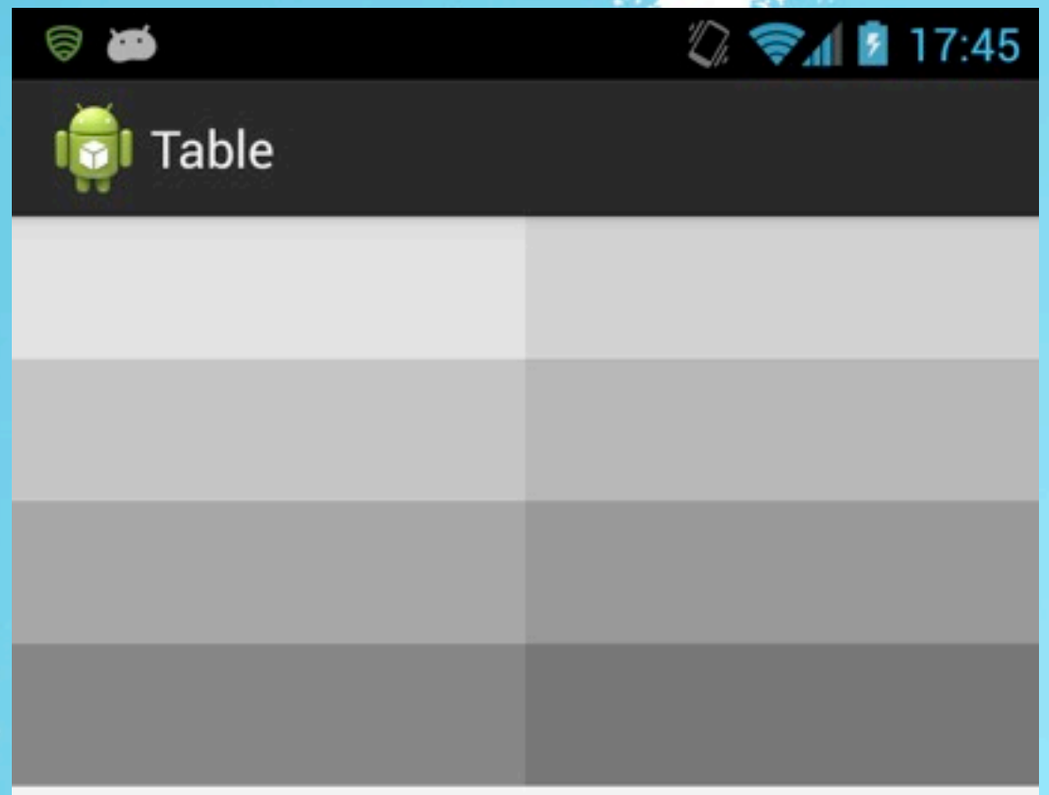
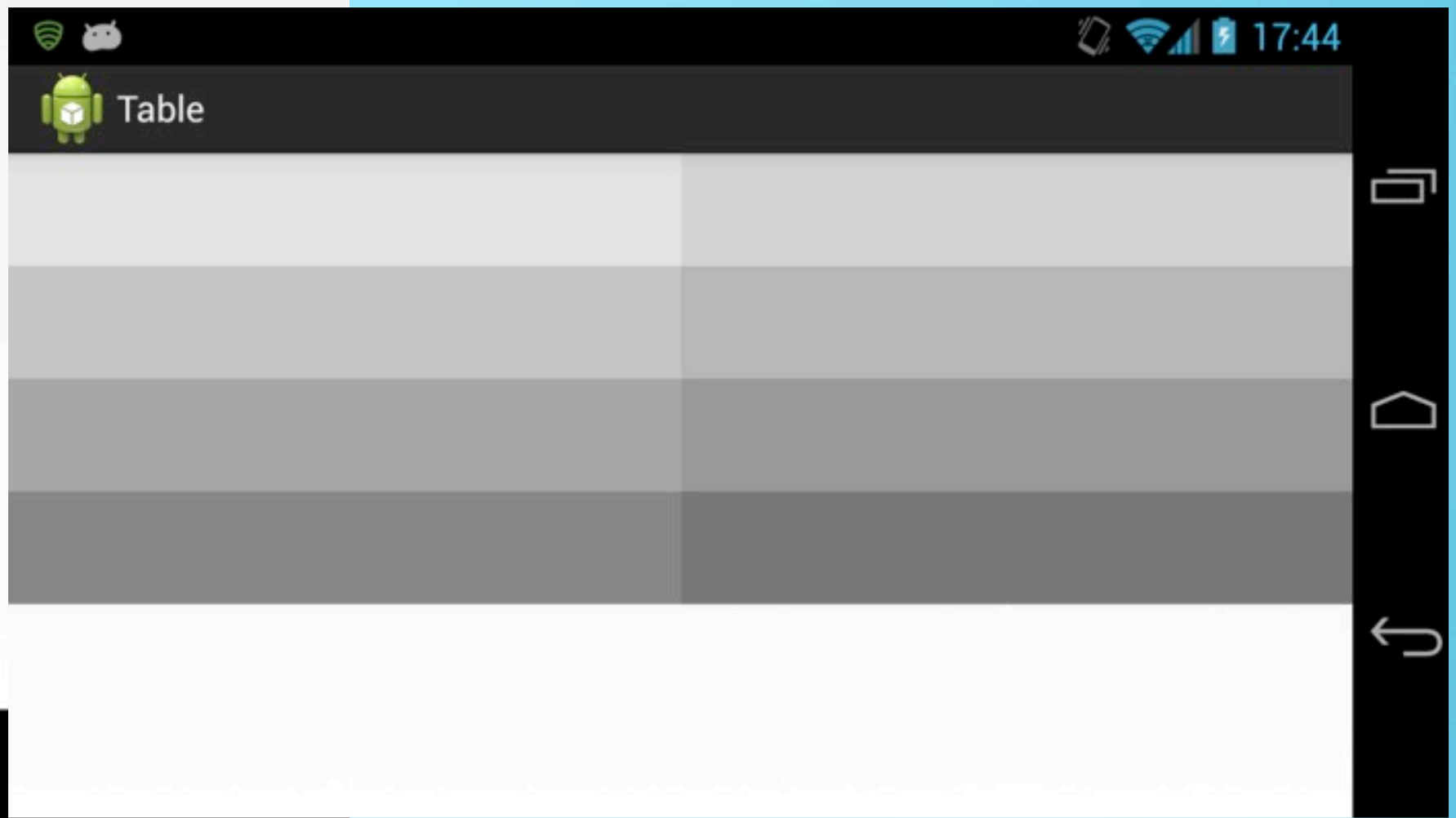
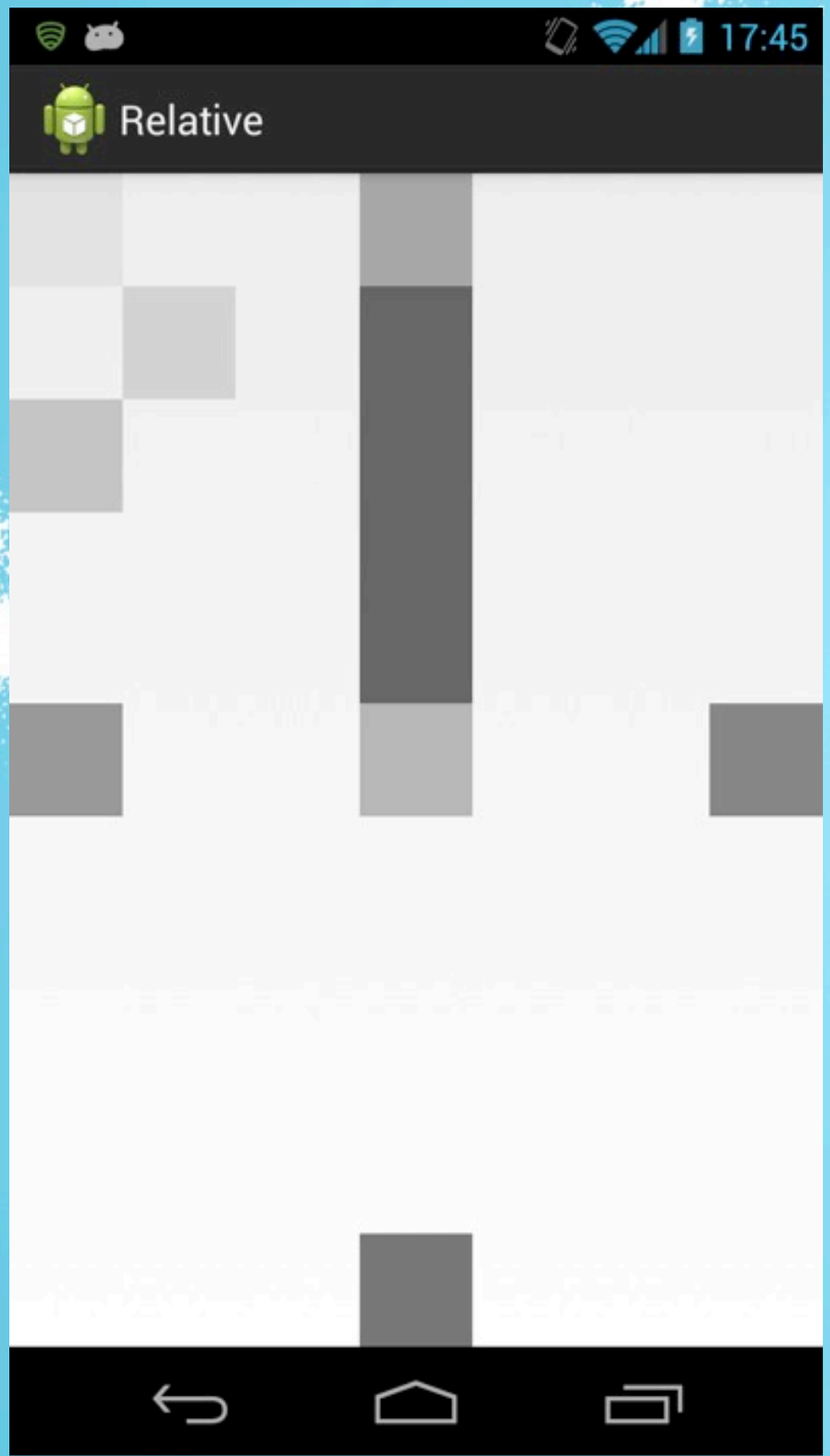
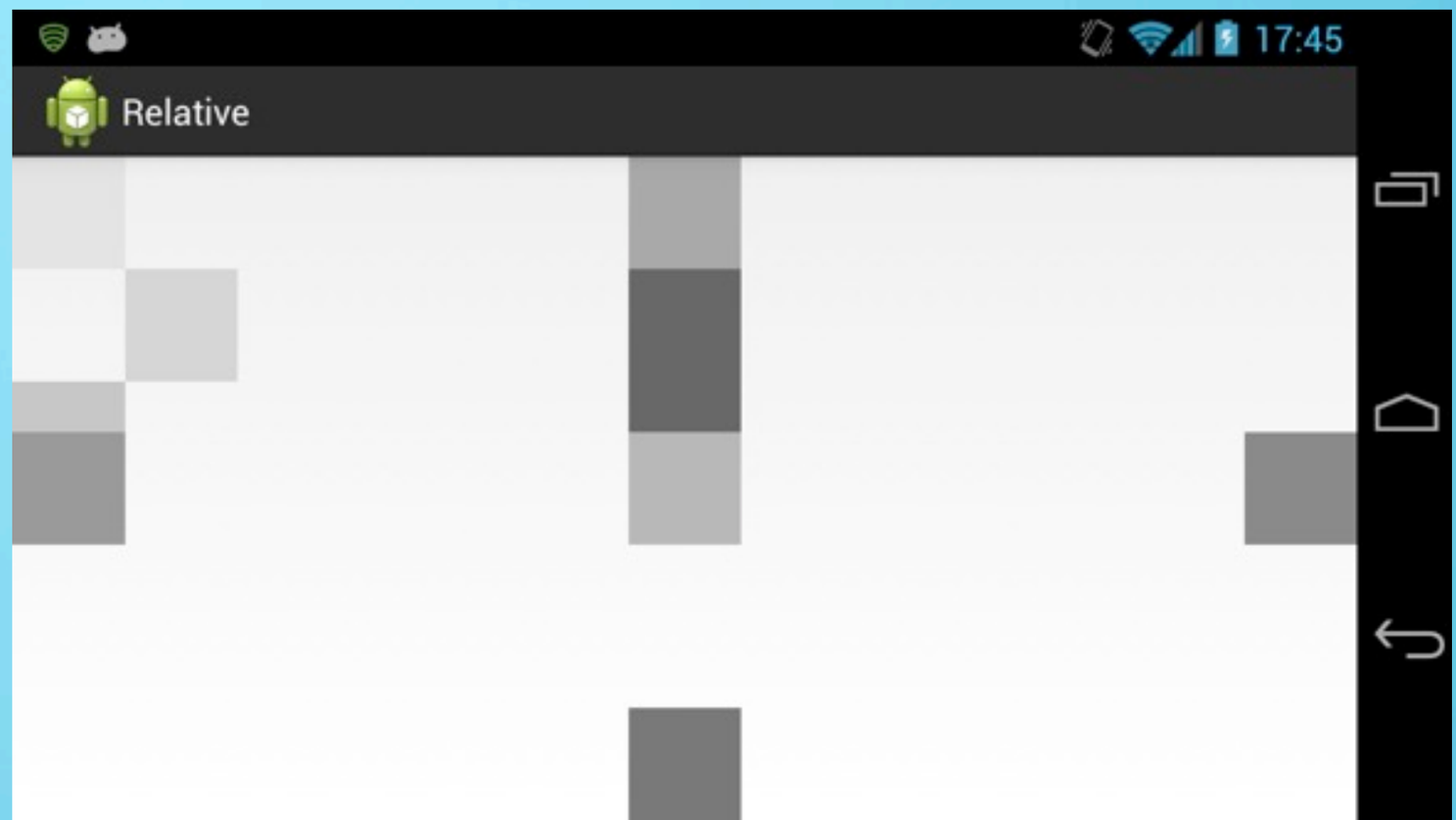


TABLE LAYOUT





RELATIVE LAYOUT



VIEWS PROGRAMATICALLY

- ViewGroup extends View
- ViewGroup.addView(View child)

- LayoutParams
  - LinearLayout, FrameLayout, RelativeLayout
  - FrameLayout.LayoutParams
- View.setLayoutParams(LayoutParams params)

VIEWS VISIBILITY

- View.setVisibility(int)
  - View.VISIBLE - default
  - View.GONE - not using space
  - View.INVISIBLE - just hidden, takes space

VIEWGROUP CHILDREN

- View.findViewById(int)
  - returns View, have to be re-typed
  - eg. (TextView) findViewById(R.id.text)

- searching through activity layout view
- searching through LayoutInflater result

VIEWGROUP CHILDREN

```
1.  public static void setButtonsClickListener(ViewGroup vg, OnClickListener listener){
2.          for(int i = 0; i < vg.getChildCount(); i++){
3.                  View v = vg.getChildAt(i);
4.                  if(v instanceof ViewGroup){
5.                          setButtonsClickListener((ViewGroup)v, listener);
6.                  }else{
7.                          v.setOnClickListener(listener);
8.                  }
9.          }
10. }
```

MAVEN

LATEST 3.0.5

- Apache License 2.0
- Java tool
- Dependency management
- Project inheritance
- Packaging, Testing, Deploy, Install
- Plugins / Modules for version control
- Android module (build, run, package)

MAVEN INTEGRATION

- Eclipse m2e plugin
- **pom.xml**
- **apklib not supported yet**
  - apklib includes android resources
- **jar** dependencies supported

MAVEN PACKAGES

- POM - Directory hierarchy with pom files
- WAR - J2EE distribution (Sun)
- APK - Distribution (signed, unsigned)
- JAR - Libraries
- APKLIB - Android specific, includes resources

MAVEN ANDROID

Goals

- android:clean
- android:deploy / :redeploy
- android:run
- android:devices (adb list-devices)
- android:emulator-*
- android:lint
- android:apk

MAVEN ECLIPSE

- Maven Eclipse plugin
- eclipse:eclipse
- eclipse:clean
- eclipse:to-maven
- eclipse:configure-workspace

ANDROID PROJECT

- Dependencies can be mixed
  - Maven
  - /libs
  - Eclipse classpath dependency (android.jar)
  - referenced Android library projects

- Must configure exporting libraries
  - copying them to built APK archive

WHY MAVEN

- Version dependency
  - library version update is handled
- Hierarchy dependency
  - library that refers to library that refers ...
- Automatic downloading Javadoc and Sources

WHY NOT MAVEN

- APKLIB is not supported
  - Every library providing resources =>
    - images
    - layouts
    - drawables
  - => is not usable with Maven yet
  - eg. ActionBarSherlock