

Android User Interfaces

Chapter 4 + Android Dev Guide Readings

User Interface

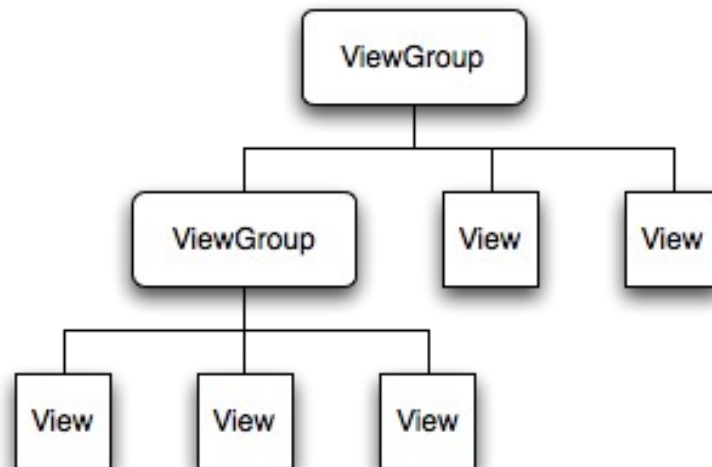
- UIs in Android are built using View and ViewGroup objects
- A View is the base class for subclasses called “widgets”
- widget is a fully implemented UI object
 - text fields
 - buttons
 - textboxes

View Object

- A View object
 - is a rectangular area of the screen
 - has measurement information
 - has layout information
 - has drawing information
 - handles scrolling
 - handles key interactions

View Hierarchy

- An Activity's UI is defined using View and ViewGroup nodes
- The hierarchy tree can be complex or simple
- Design before implementing your UI!!!!!!



setContentView

- The setContentView () method attaches the view hierarchy tree to the screen for rendering
- The root node requests that each child node draw itself
- Each ViewGroup requests that each child node draw itself

More View Hierarchy Facts

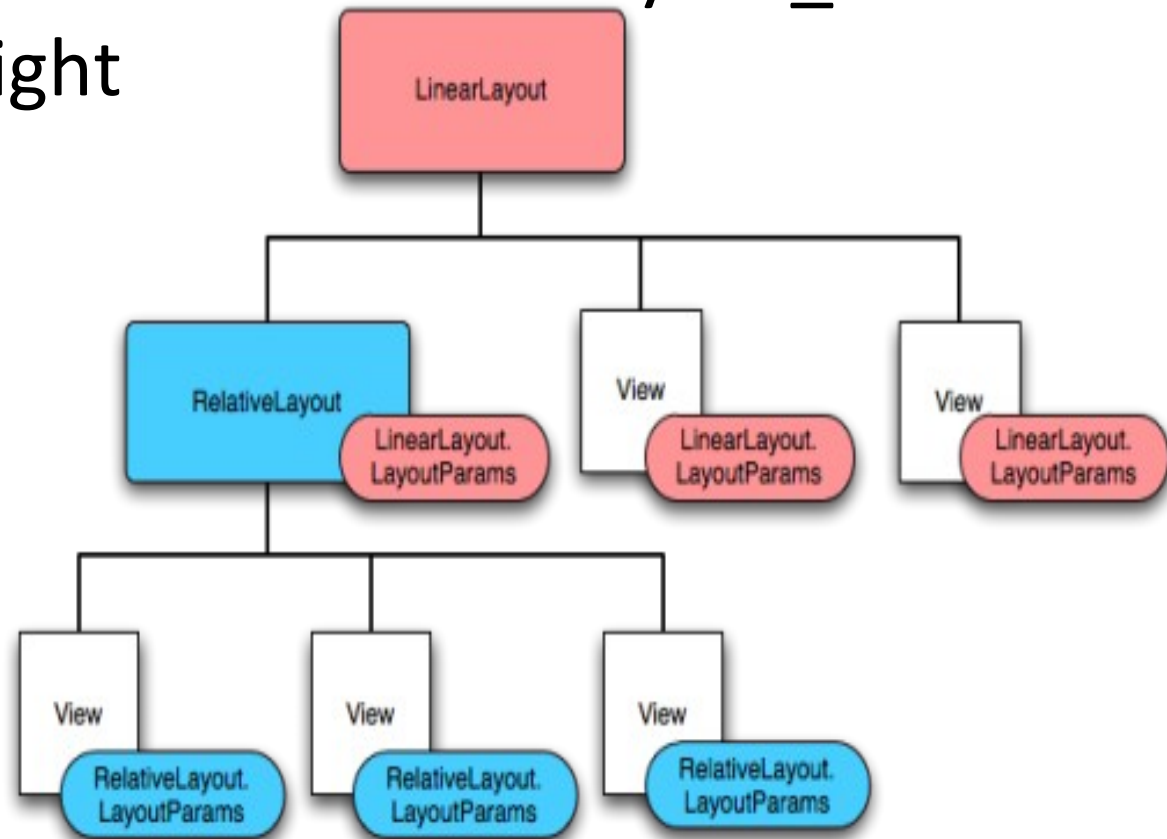
- children can make certain requests (size, location, ...), but the parent has the final say
- Views are instantiated from the root node down the tree
- If elements overlap, the last one drawn is displayed

XML Layouts

- Each element is a View, ViewGroup, or descendent
- Views are leaf nodes
- ViewGroups are internal nodes (i.e. at least one child)
- Each XML element has a corresponding Java class
- Android initializes run-time objects according to the layout elements

Layout Parameters

- Every parent view group defines layout parameters for each child view
- Each view must define the `layout_width` and `layout_height`



Problem

Children learn to add numbers at an early age.

Create the following UI that allows children to enter two two-digit numbers. You to then add the numbers together producing the result.

Note: This UI is not pretty at this stage. Pretty is left as an exercise for the reader!!! 😊

UI Design

