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