Programming with Android:
Calculator Example

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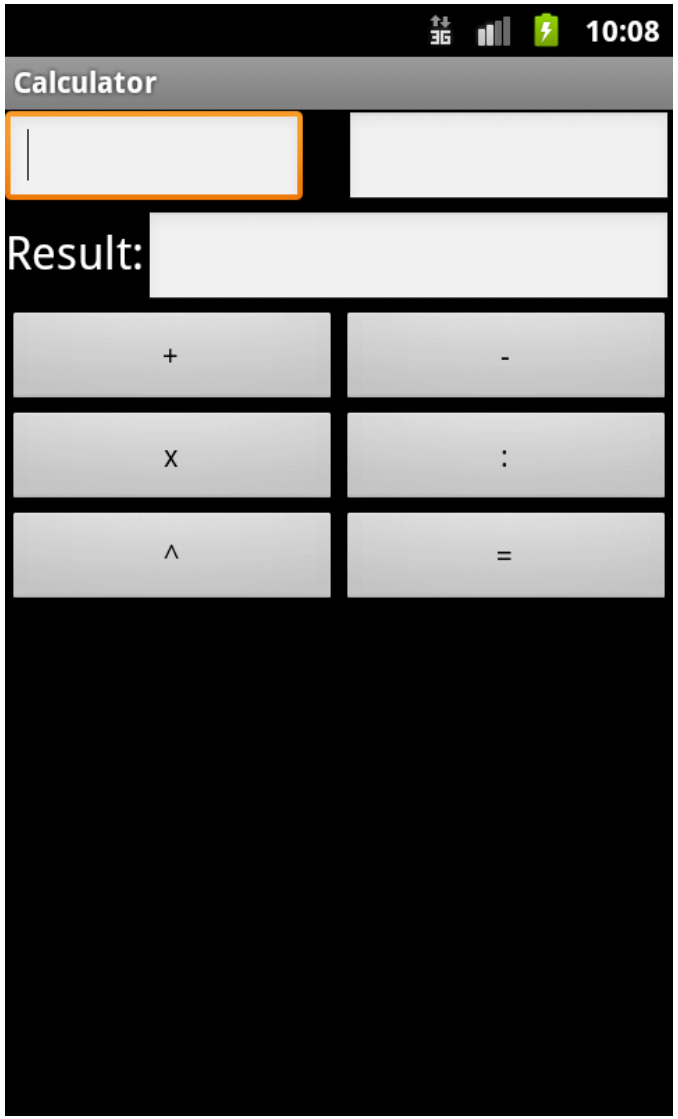
Calculator: Outline

- Today:
  - How to build a Calculator?
  - Define the layout of the application
  - Create an application that uses this layout
  - Add some sort of intelligence to the application
  - Test it

Calculator: layout

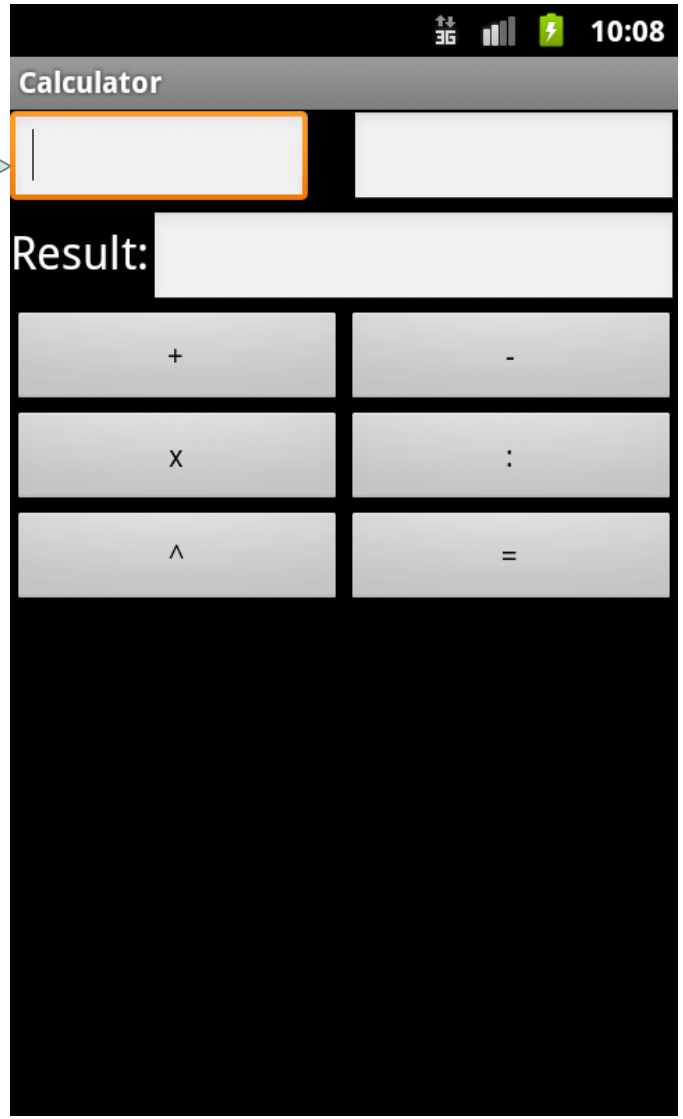
- Define the buttons, labels, cells and so on
- Place them on the screen
- Pay attention: Android powered phones are very different in terms of resolutions
- Try not to stick with absolute values/positioning (we will see this later)

Calculator: layout definition



Calculator: layout definition

First Operand



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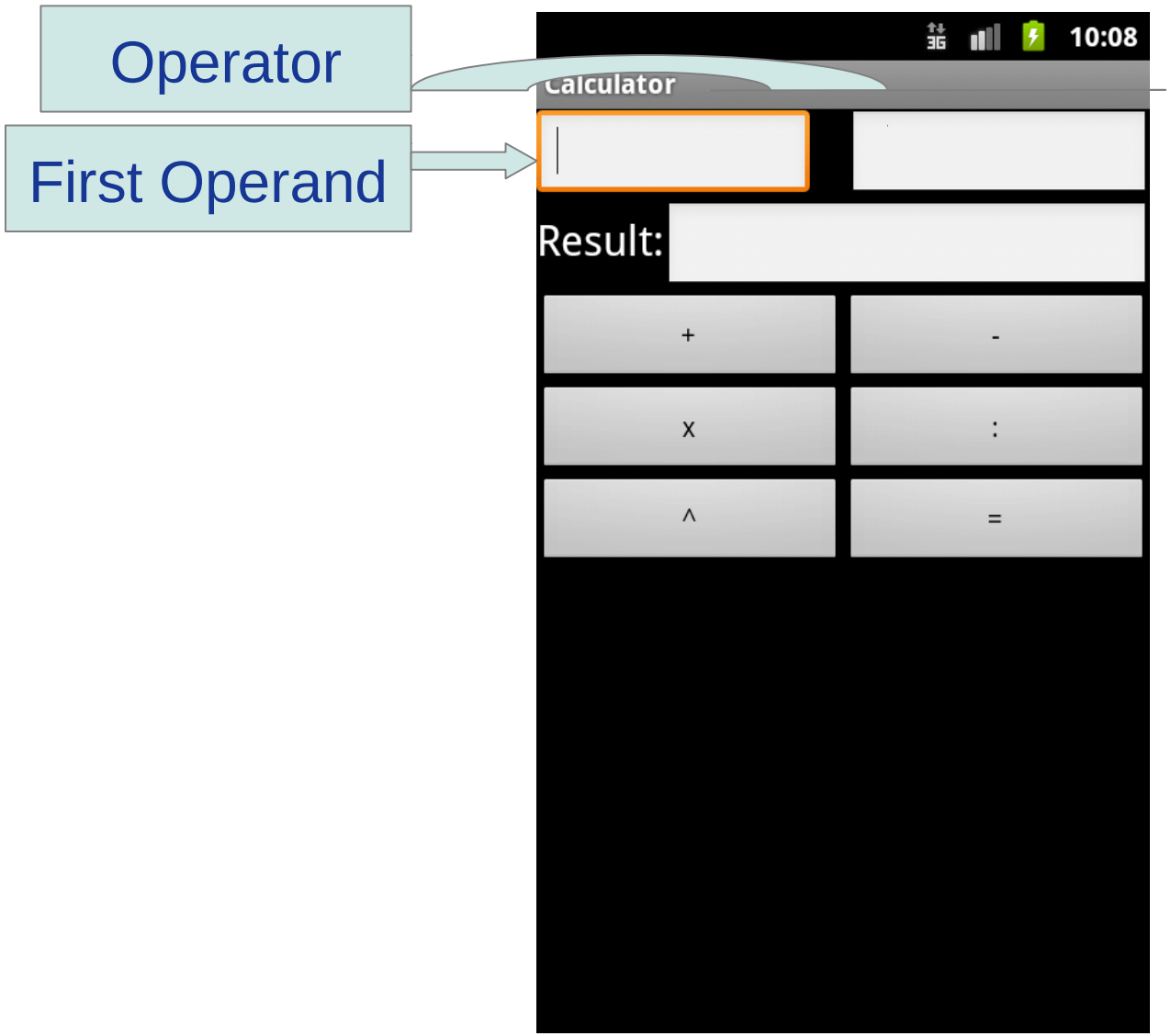

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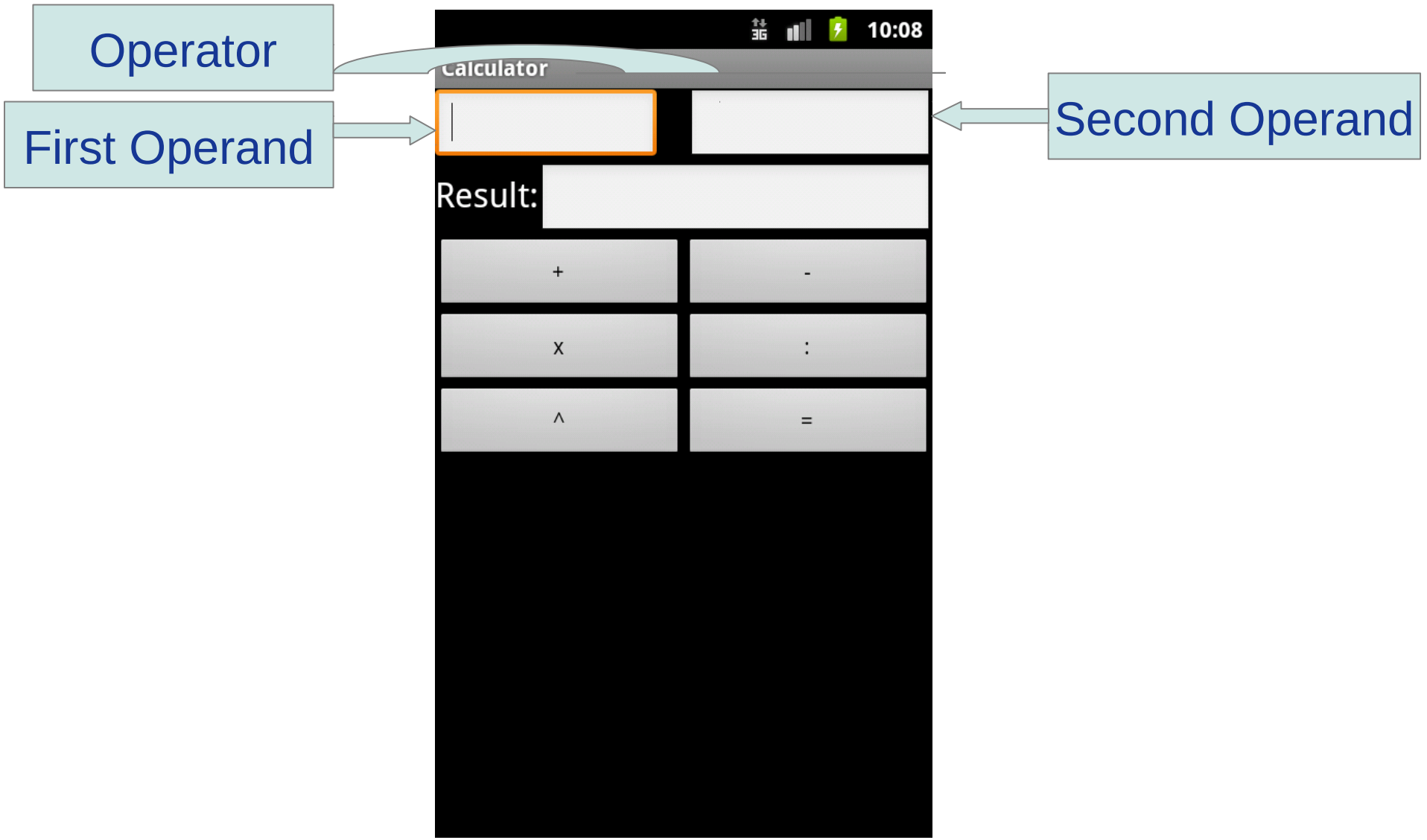

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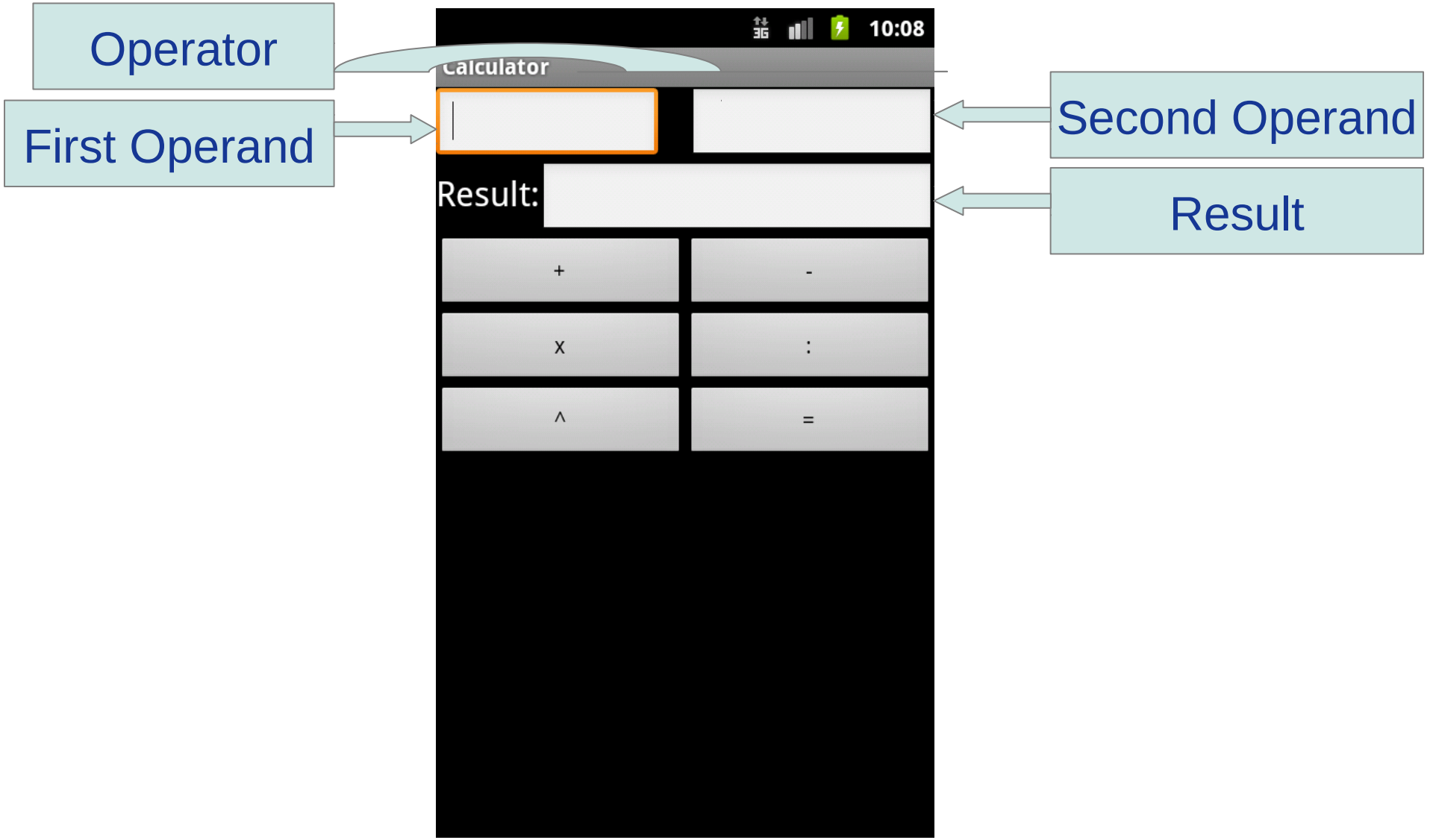

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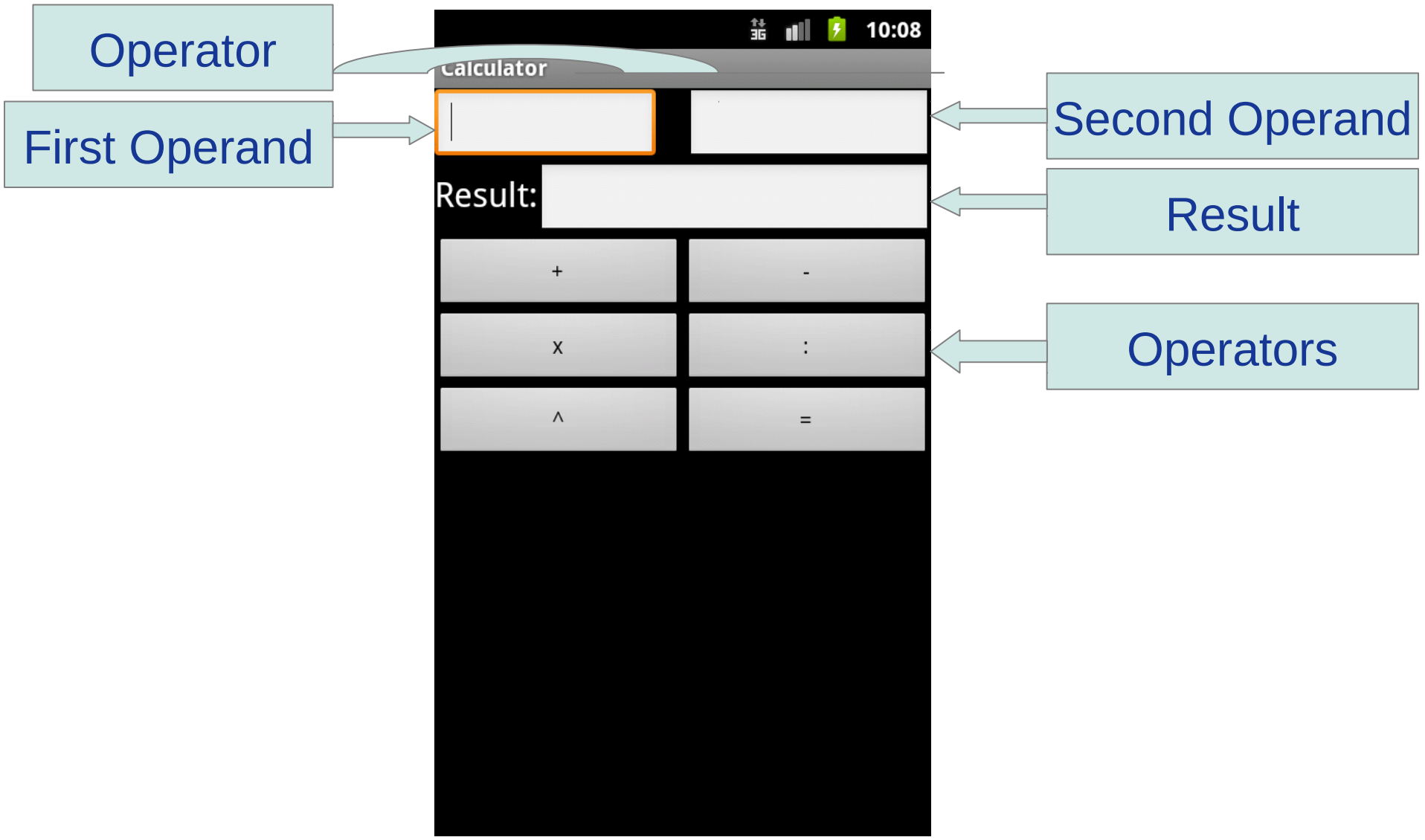

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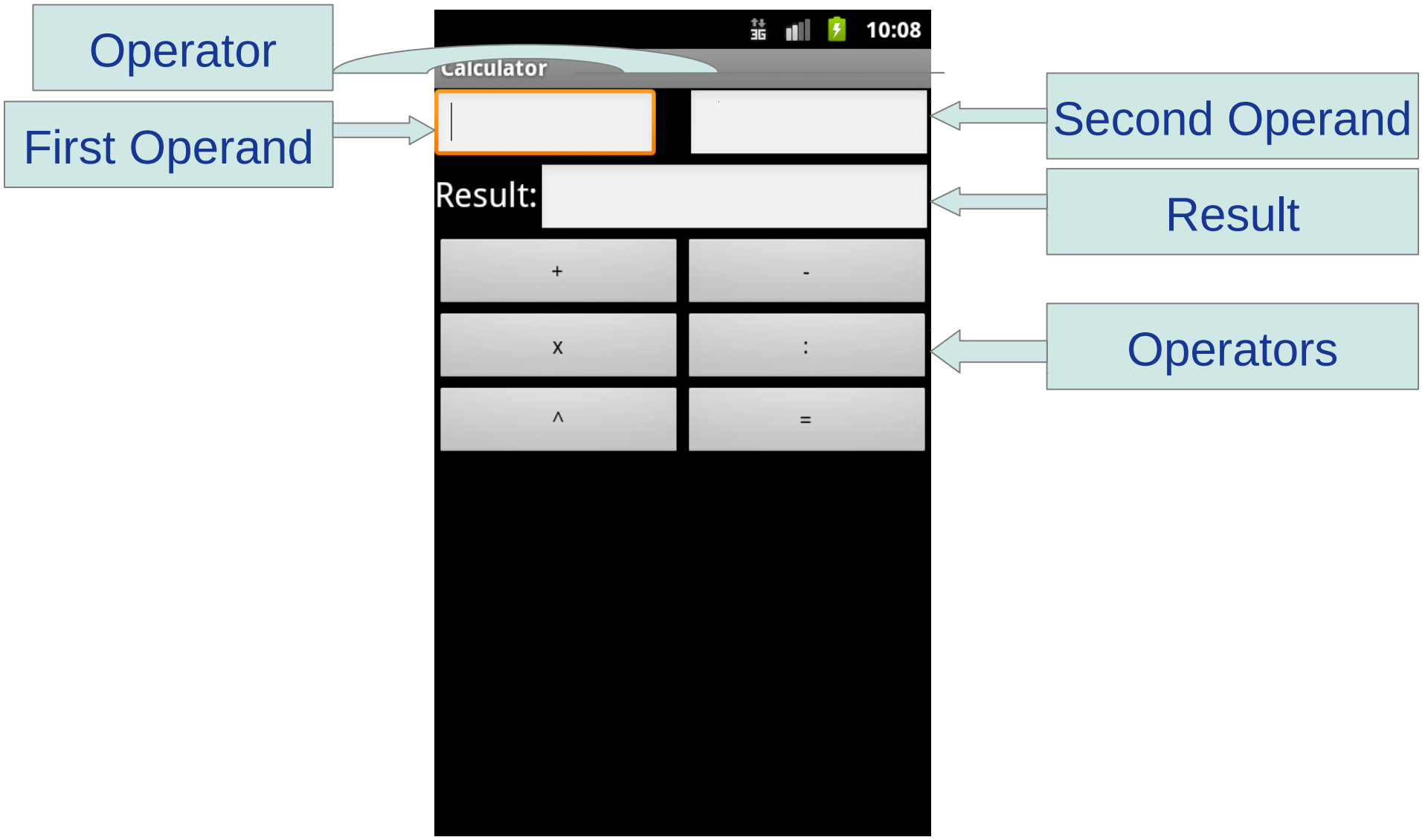

Calculator: logic definition

- Whenever a user selects a operand cell, a keyboard will pop up
- Pressing an operator button will switch the focus from one operand to another (except for =)
- We want to deal with float numbers

Calculator: events

- We want to be warned when a user touches something on the screen
  - Every time this happens, we will react with a set of actions
  - The MVC pattern is relaxed that way (pros and cons)
- We do not want the result to be focusable

Calculator: layout building

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- Layouts are grouped together following a hierarchy
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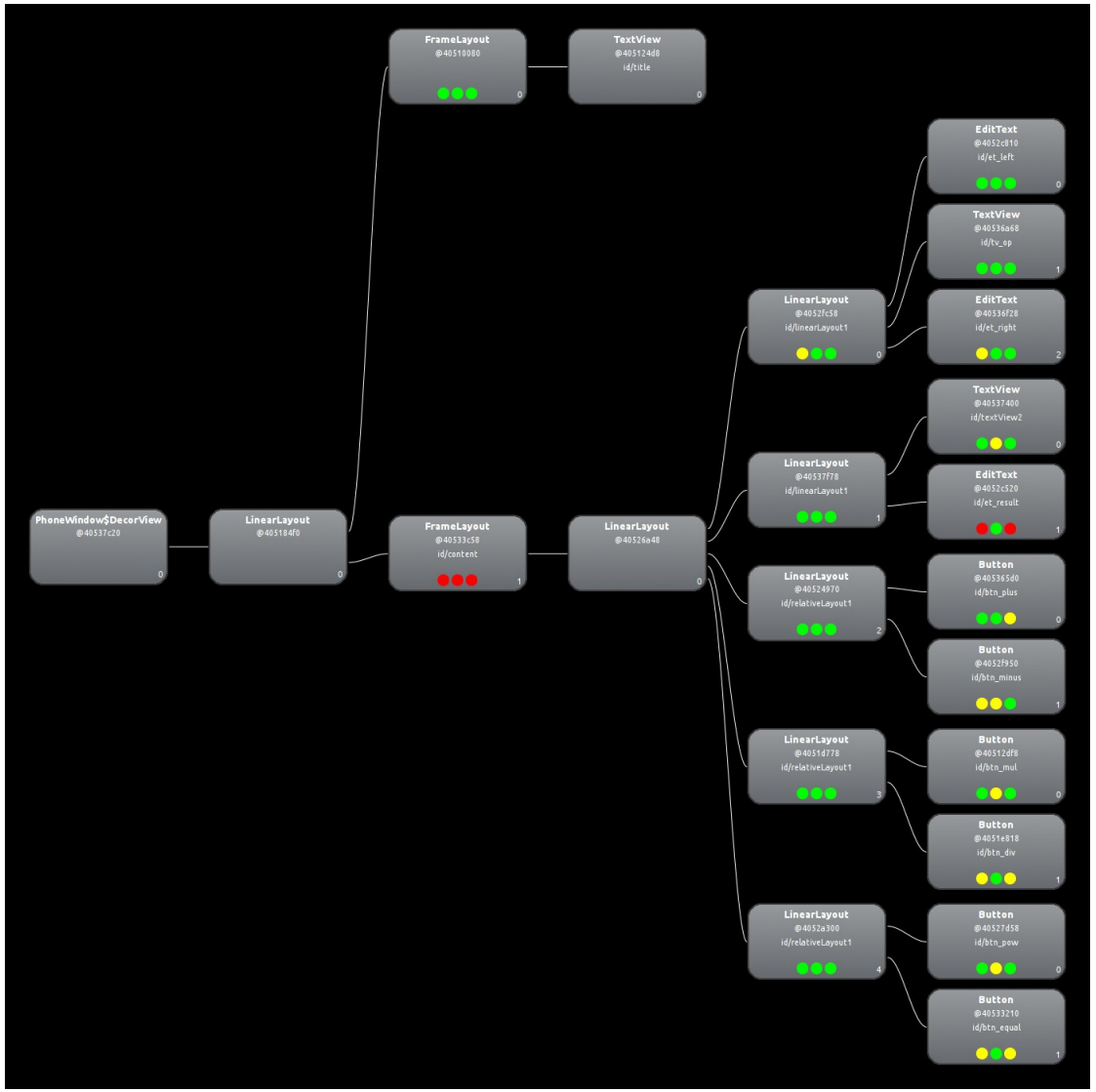
Need to build dynamic applications that performs different depending on the device they're running in.

Calculator: hierarchy viewer



Calculator: Recap

- Define a Layout
  - Pay Attention to devices heterogeneity
- Features
  - Keyboard should pop up when needed
    - Should not pop up on the result
  - Switch from one cell to another when pressing operand
    - React to Events

Calculator: start

Let's start developing the calculator