

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

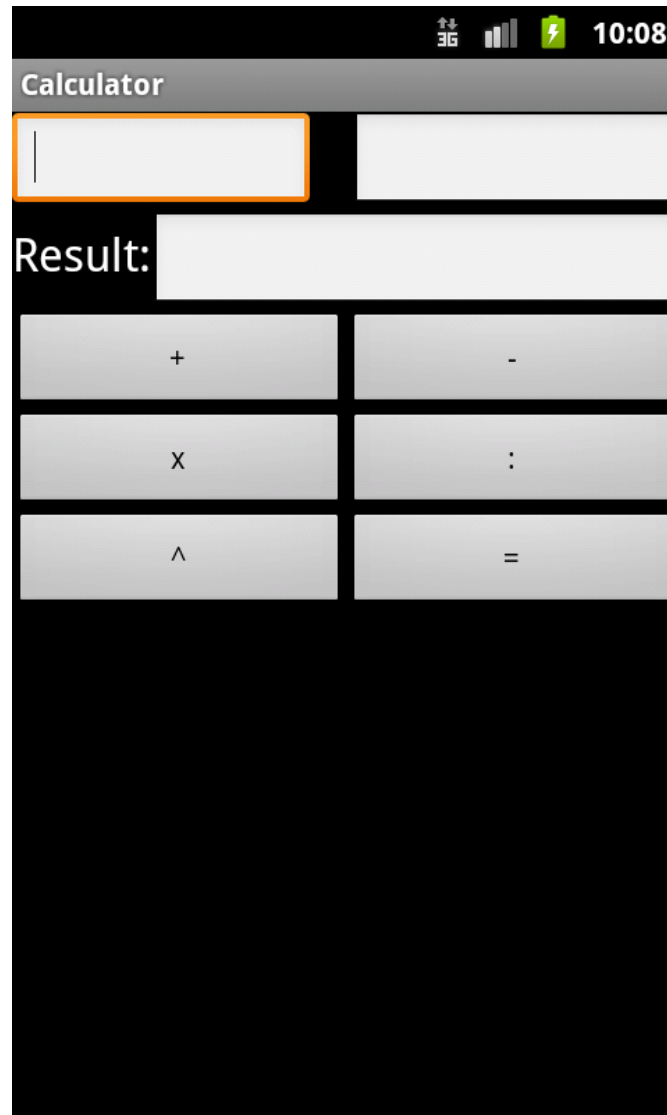


Calculator: **layout**

- ❖ 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)



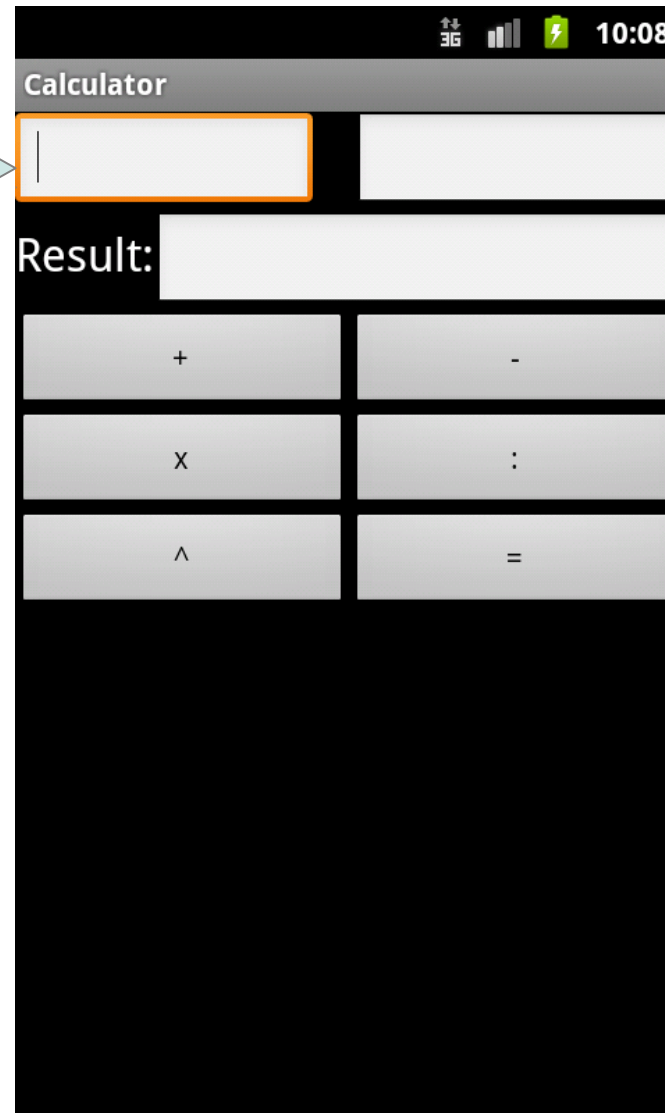
Calculator: layout definition





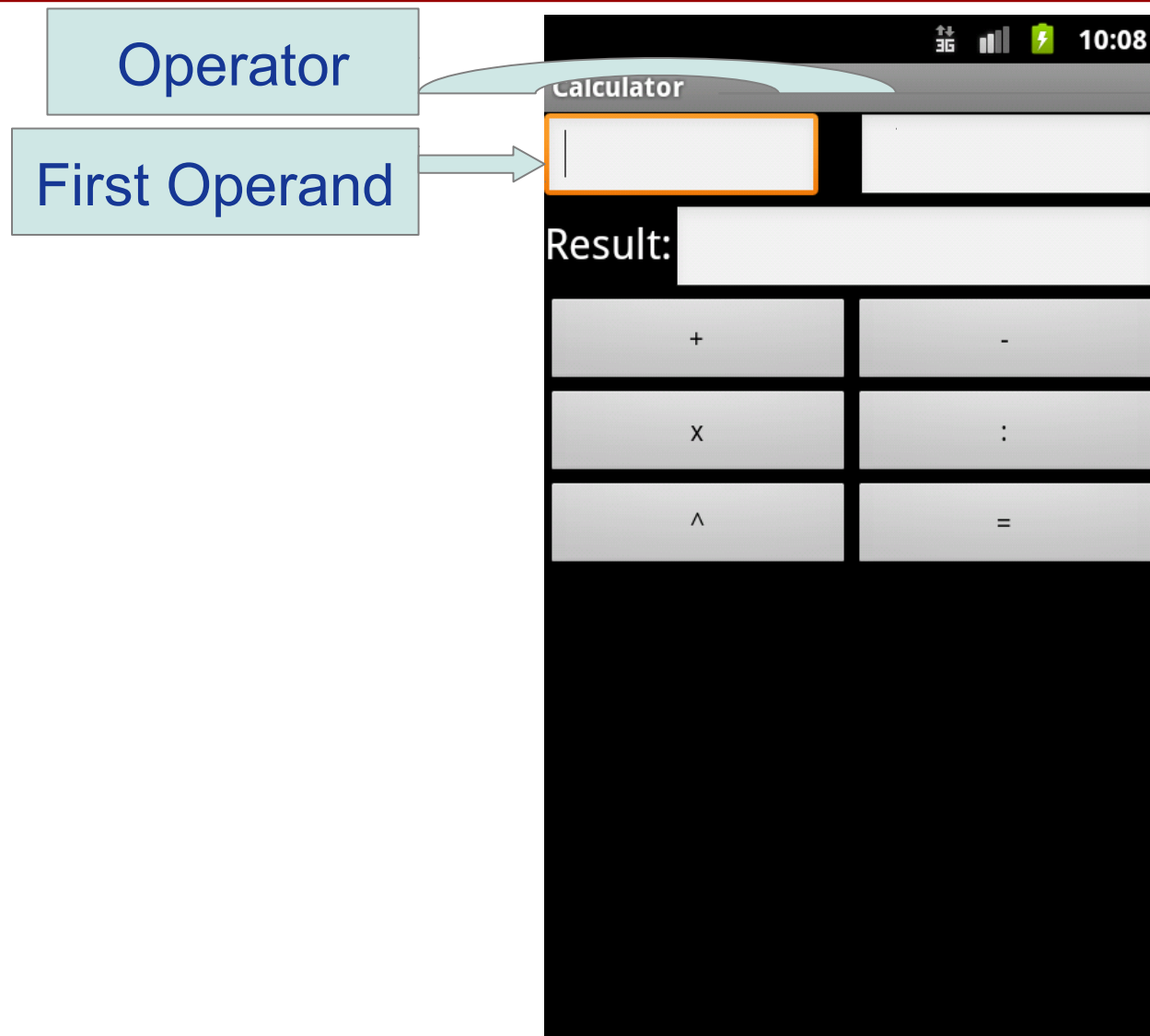
Calculator: layout definition

First Operand



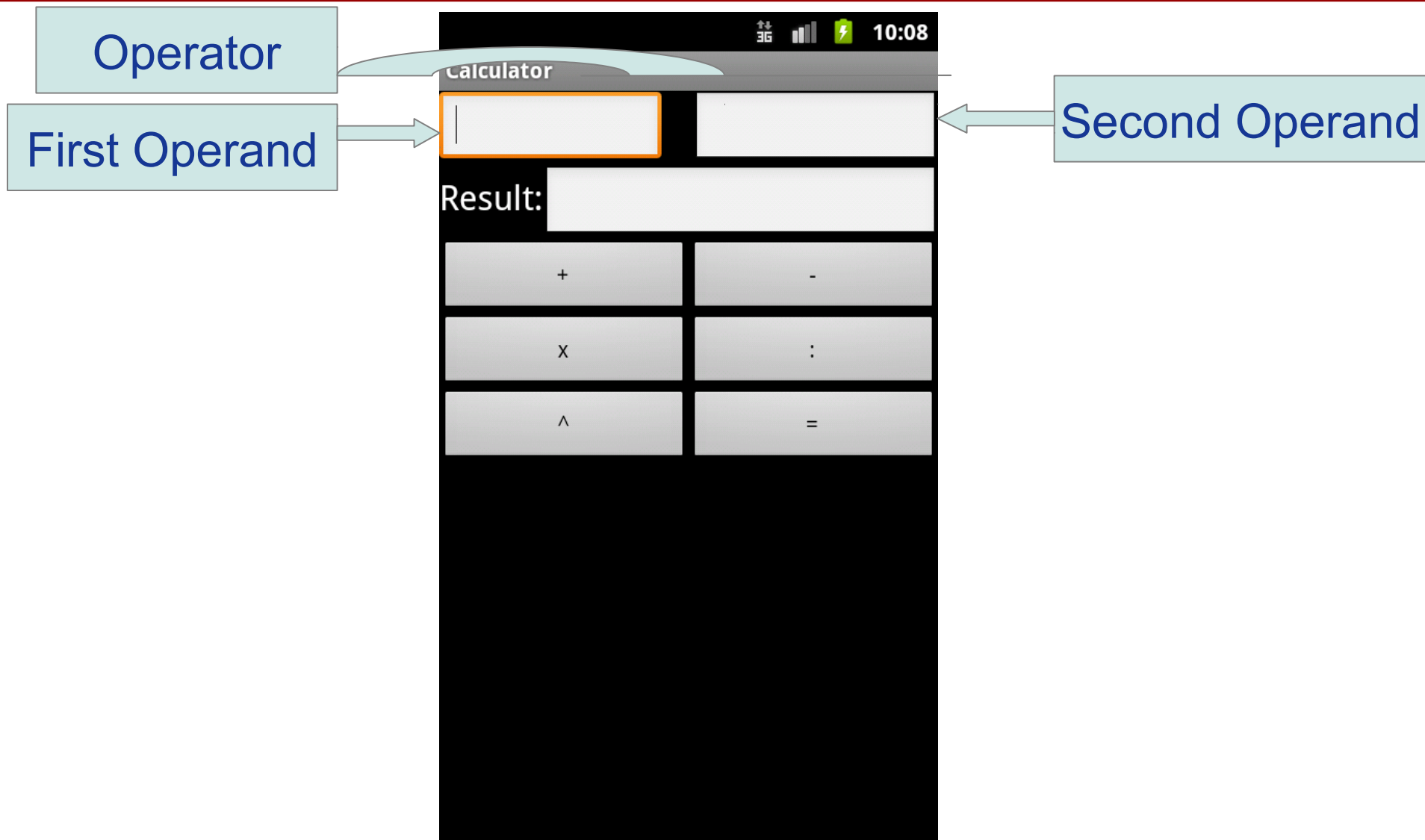


Calculator: layout definition



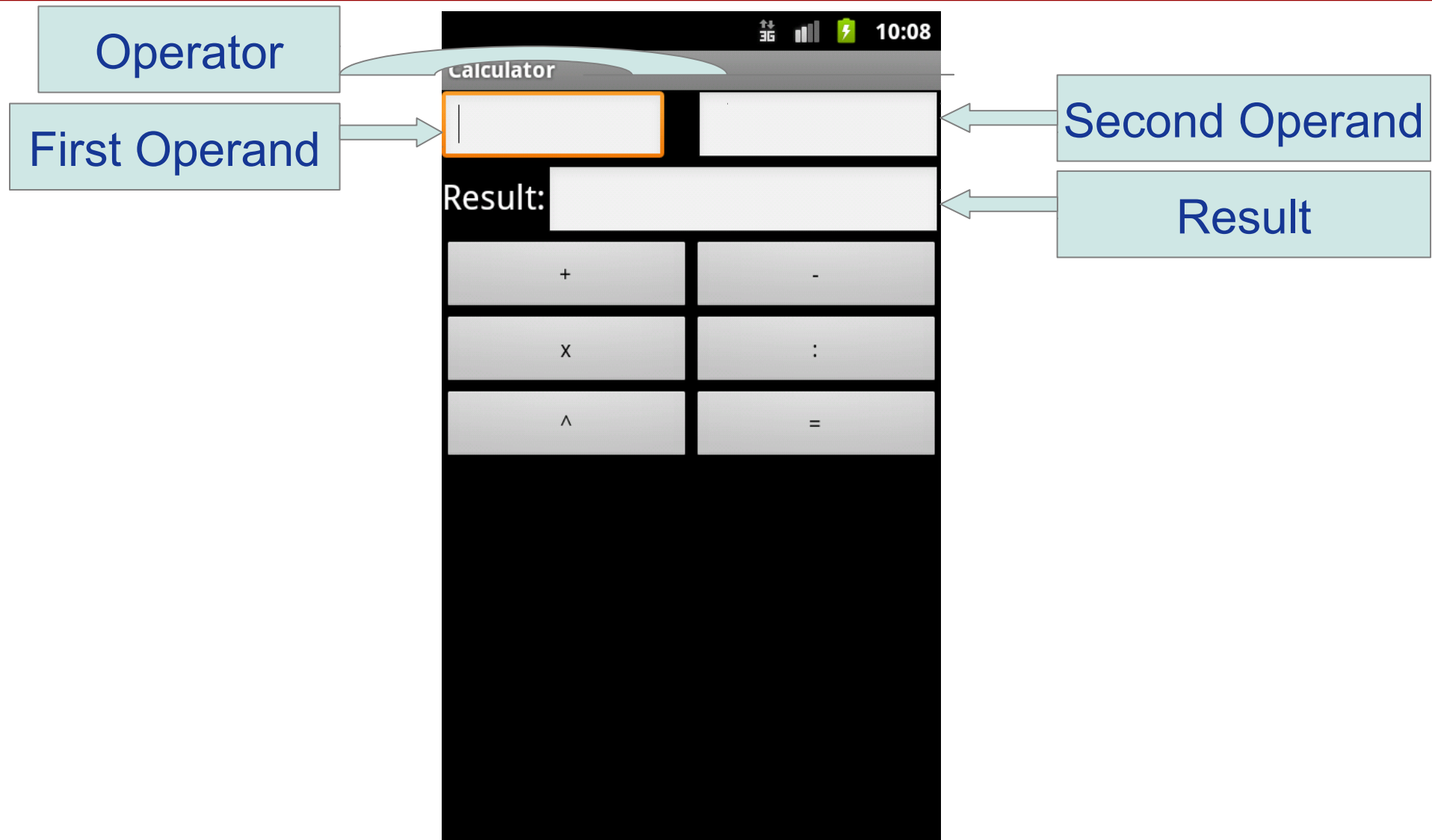


Calculator: layout definition



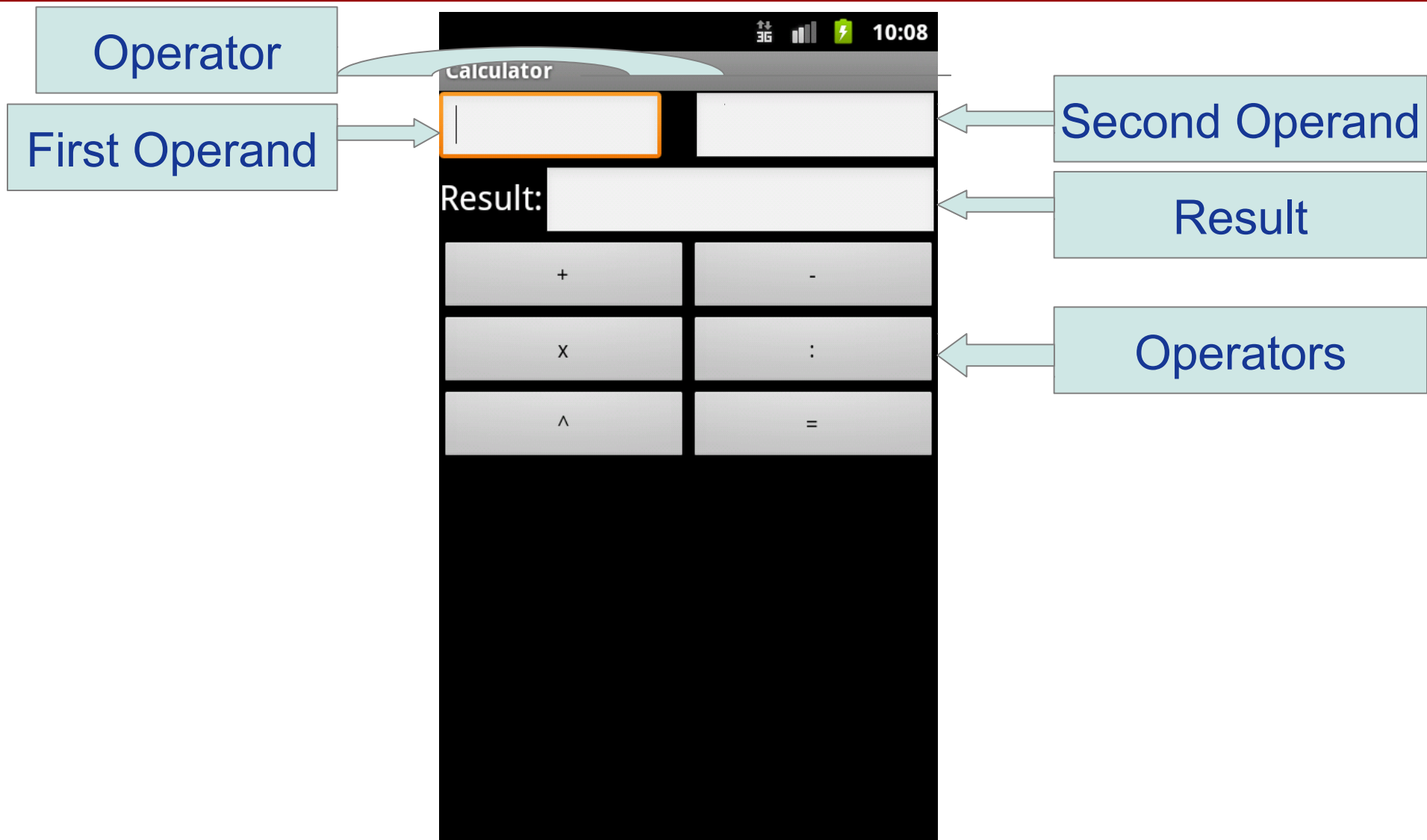


Calculator: layout definition



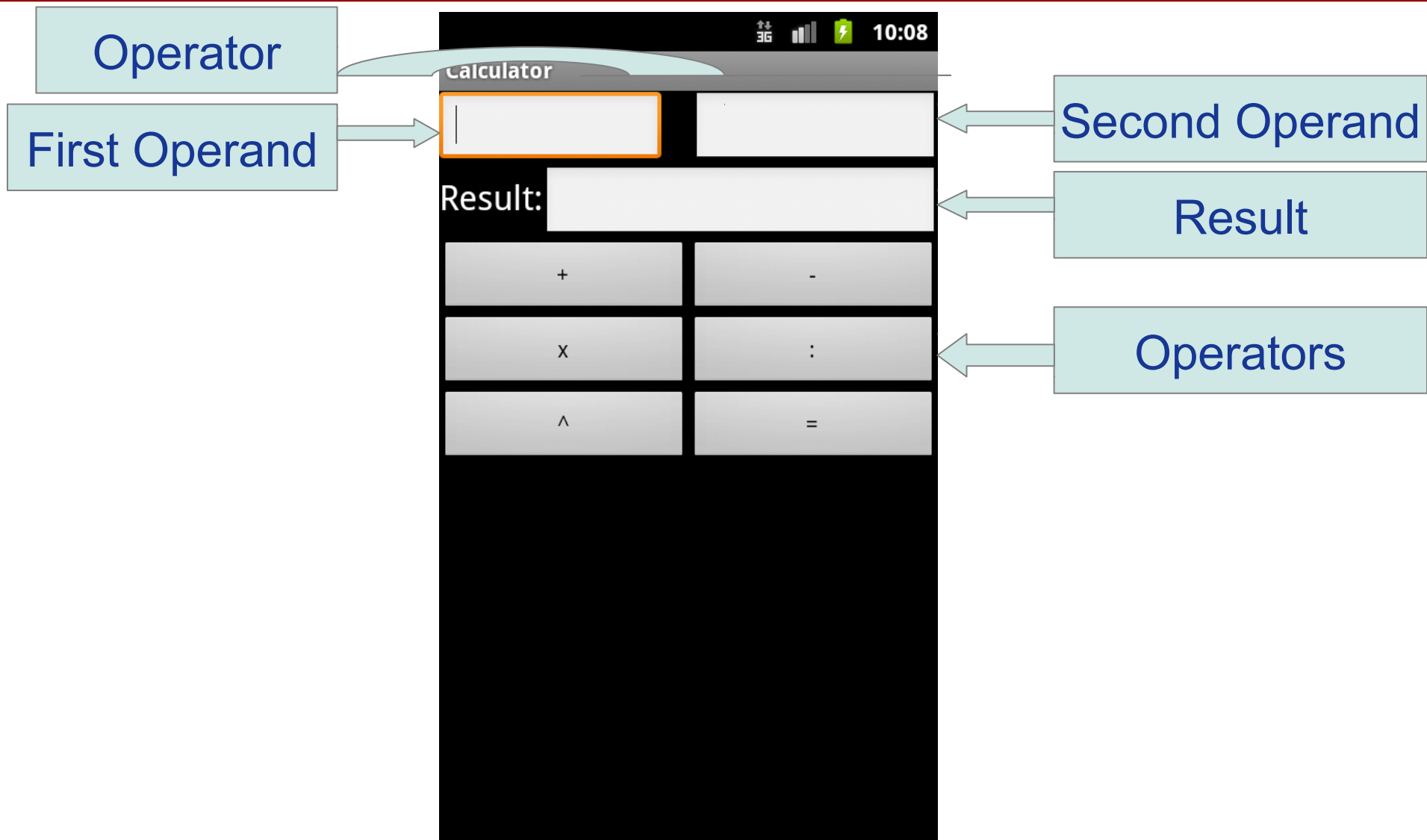


Calculator: layout definition





Calculator: layout definition





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**

- ❖ We will use a set of layouts
- ❖ Layouts are grouped together following a hierarchy
- ❖ Why not absolute positioning?



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- ❖ Why not absolute positioning?
 - Android has a wide range of devices
 - Wide range of resolution
 - Wide range of capabilities



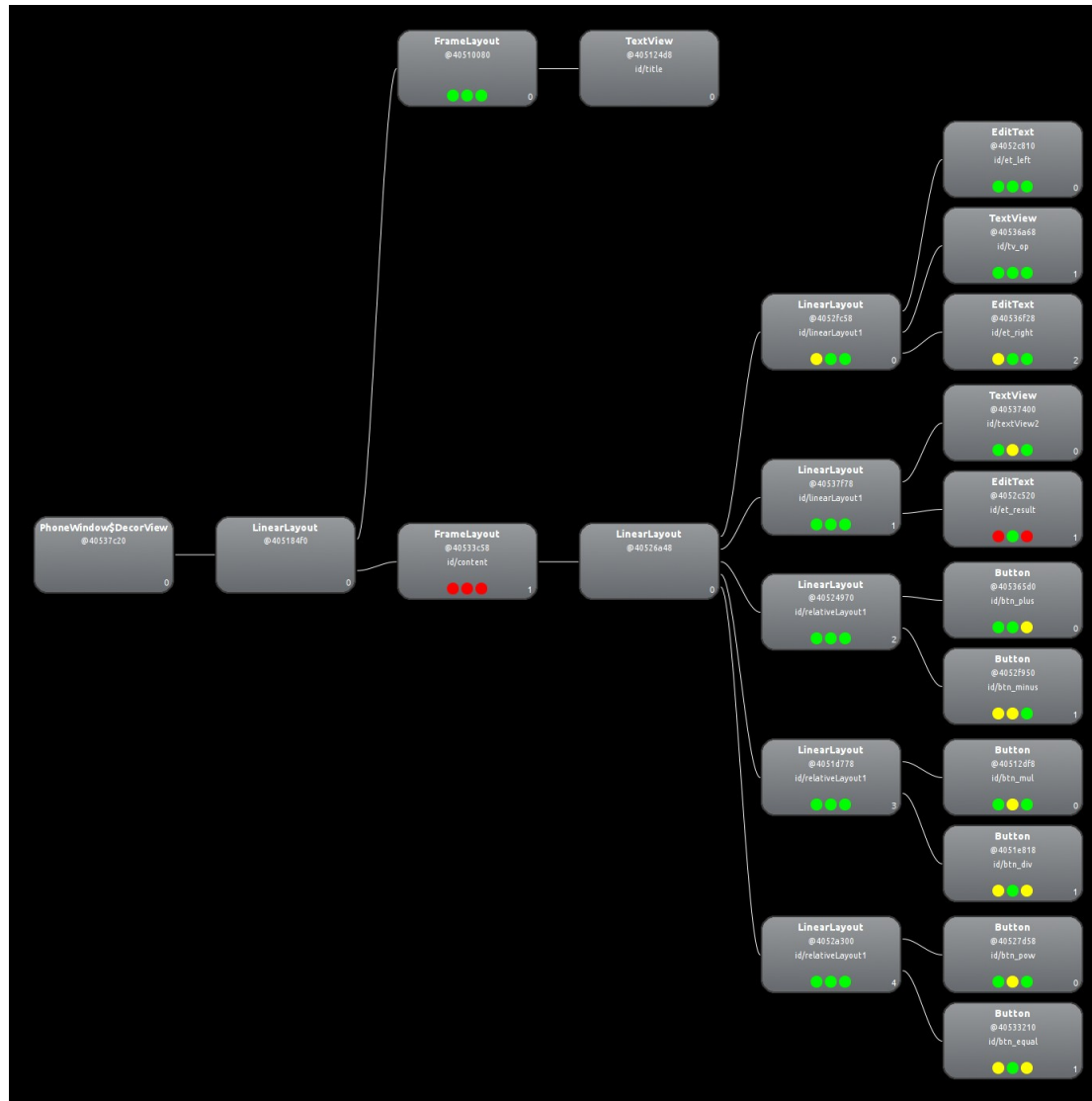
Calculator: **layout building**

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Need to build dynamic applications that performs different depending on the device they're running in.



Calculator: hierarchy viewer





Calculator: **start**

Let's start developing the calculator