Handling UI Events
A Quick Review

- Remember, an Activities UI is defined using View and ViewGroup nodes and is represented by a hierarchy tree.

- Question: What is the hierarchy tree for MyAddition?
Rendering

• What is the purpose of setContentView ()?

• How is the screen rendered?
Event-handling

• Events are created through user interaction
• Events are captured from a View object the user interacts with

Example: When a View such as a Button is touched, the method onTouchEvent() is called on the touched object
How to handle the event?

• If a Button is touched, how do we provide “our” functionality for the Button?

• Answer: We could extend the class and override the method

• Question: What is the down side of this method?
Nested Interfaces

• The View class contains nested interfaces that are easily definable.

• Of particular interest for our present application is View.OnClickListener

• Let’s go to http://developer.android.com/reference/android/view/View.html and look at Nested Classes and then look at View.OnClickListener
Let’s add a listener

• Problem: Let’s add a listener for our CLEAR Button.

• First we need a Button variable:

private Button mButtonClear;

private instance variables are typically preceded with a m. Please use this convention.
What might a Button look like?

class Button
{
    private View.OnClickListener listener;
    public Button ()
    {
        listener = null;
    }
    public void setOnClickListener (View.OnClickListener L)
    {
        listener = L;
    }
    private void handleEvent(Event e)
    {
        paintButton();
        if( listener != null)
        {
            listener.onClick (this);
        }
    }
} ...
Add Clear Button Functionality

1. Add `implements` `View.OnClickListener` to Activity

2. Add to `onCreate`

```java
mButtonClear = (Button) findViewById(R.id.buttonClear);
mButtonClear.setOnClickListener(this);
```
Write the code for OnClick

```java
public void onClick (View view) {
    if (view == mButtonClear) {
    }
}
```
Problem

• You are to write the code that will clear each editText field if the CLEAR Button is pressed. Fill the editText fields and test away!!!