



Touch and Gestures

Responding to motion events

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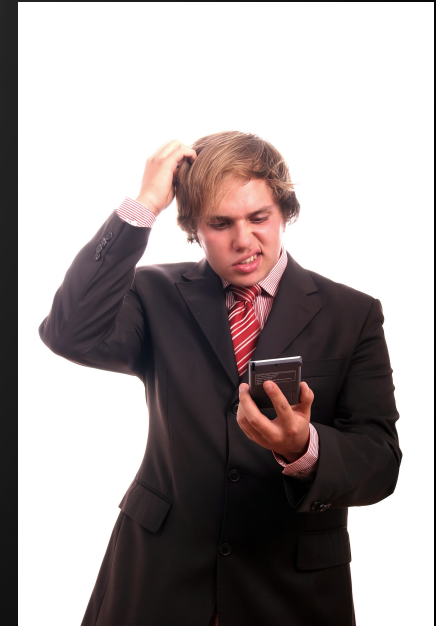


1. How to handle user input.
2. What are touch events.
3. Motion events.
4. Gestures.



No buttons on this thing...

How can I let the user interact?



- ◆ **Touch is the main form of input used by the Android devices.**
- ◆ **Every view is capable of handling touch events.**
 - **setOnClickListener() handles click or tap event.**
 - **setTouchListener() handles all touch events.**

View touch handling

Live Demo

- ◆ **Object used to report movement events of different origin (touch, mouse, pen, etc).**
- ◆ **Holding data about the event, its type, different pointers for each finger where supported and more.**
- ◆ **Used to come up with gestures logic. (if the event action is DOWN, after that it is MOVE without much of a delay and it is followed by UP - this is a scroll, etc.)**

- ◆ **onTouchEvent** handling motion events returns boolean result.
- ◆ **The returned result states whether the motion event was handled.**
 - **True** means the event was handled therefore it was consumed and no other views will be asked to handle it.
 - **False** - it was not handled by the current view, so keep asking other views to handle it.

- ◆ **Once consumed, a motion event will not be send to other views.**
- ◆ **A gesture is considered to start at DOWN and end at either UP or CANCEL. Once the view returns false it will no longer receive the rest of the gesture events.**

Motion Events

Live Demo

- ◆ **The gestures are formed by analyzing the info from the motion events - Action Down and absence of action Up in some time becomes long press etc.**
- ◆ **You can implement your own super cool gestures or use the present ones that come out of the box by implementing one of the gesture detector listeners and redirecting event handling to the detectors.**

- ♦ **The most used gestures that are available are:**
 - **Tap**
 - **Long press**
 - **Scroll**
 - **Fling**
 - **Scale**

Gestures

Live Demo

Workshop

Live Demo

- ◆ [Motion event docs](#)
- ◆ [Gesture detector docs.](#)
- ◆ [Scale gesture detector docs.](#)

Questions?

- 1. Look at the gestures demo. Implement Pinch in and Pinch out functionality that is used to zoom in and out. (Hint: play with the onScale())**
- 2. Create a simple paint program where the user is able to draw and erase with a chosen color.**
- 3. * Implement a simple range bar by extending the View class and adding touch logic to it. Make it look good :)**