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Everyday Animations



<https://github.com/davetrux/everyday-animation>

Animations actually exist to improve an app's user experience. Animations help users understand state changes, guide them to notice meaningful information, gather focus to a required action, or express relationships between UI elements.

Problem: UX is not driving users to use app

Not the web. Mobile apps are supposed to delight users.

Have you ever caught yourself playing with the “pull to refresh” loader on your phone or zooming and flipping between photos? There’s a reason — we take pleasure in manipulating elements with tactile qualities. Animation’s superpower is engagement. Leverage it to capture your users’ attention and make their work enjoyable.

About Me

@davetrux



<https://davidtruxall.com>

Slides and Code

<https://github.com/davetrux/everyday-animation>

Why?

Motion helps make a UI expressive and easy to use

Among the advantages of motion for mobile apps, we would mention:

saved screen space

increased usability

originality

convenient and easy interaction

ability to fulfill several functions simultaneously

speeding up the processes of interaction

providing clear feedback to the user

creating necessary expectations.

Negatives:

loading time

distraction factor

time and effort-consuming technical realization.



User Experience

Expectation

Expectations fall into two areas—how users perceive what an object is, and how it behaves. Another way of saying this is that as designers, we want to minimize the gap between what the user expects, and what they experience.

Continuity

Continuity speaks both to the user flow and to the ‘consistency’ of the user experience. Continuity can be thought of in terms of ‘intra-continuity’—the continuity within a scene, and ‘inter-continuity’—the continuity within a series of scenes that make up the total user experience.

Narrative

Narrative is the linear progression of events in the user experience that results in a temporal/spatial framework. This can be thought of as the series of discreet moments and events that connect together throughout the user experience.

Relationship

Relationship refers to the spatial, temporal, and hierarchical representations between interface objects that guide user understanding and decision making.

Agenda

Animation Basics in Android

Specific Use Cases to Improve UX

Animation Types

- ❖ View Animation
- ❖ Property Animation
- ❖ Layout Animation
- ❖ Physics Animation
- ❖ MotionLayout

View Animations

Just don't

Not interact-able. The bounds of the actual view do not move.

Property Animations

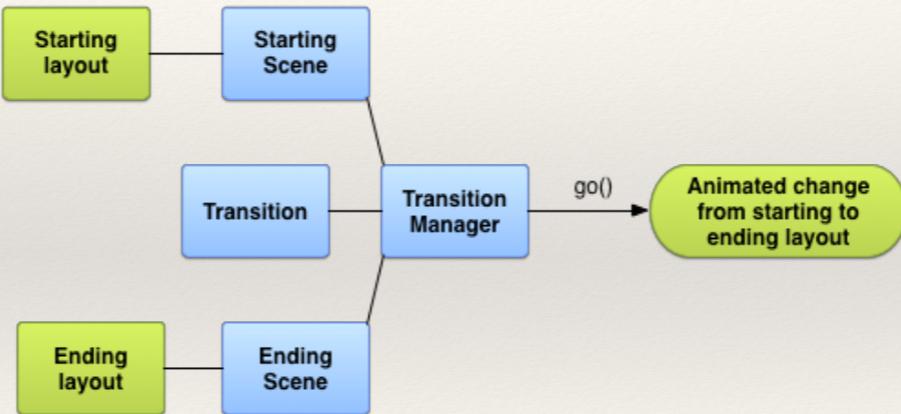
```
view.setOnClickListener { onStartAnimation() }
.....
fun onStartAnimation() {
    val animator = ValueAnimator.ofFloat(0f, -screenHeight)

    animator.addUpdateListener {
        val value = it.animatedValue as Float
        rocket.translationY = value
    }

    animator.interpolator = LinearInterpolator()
    animator.duration = 1000
    animator.start()
}
```

ValueAnimators -> Time Interpolators

Layout Animations



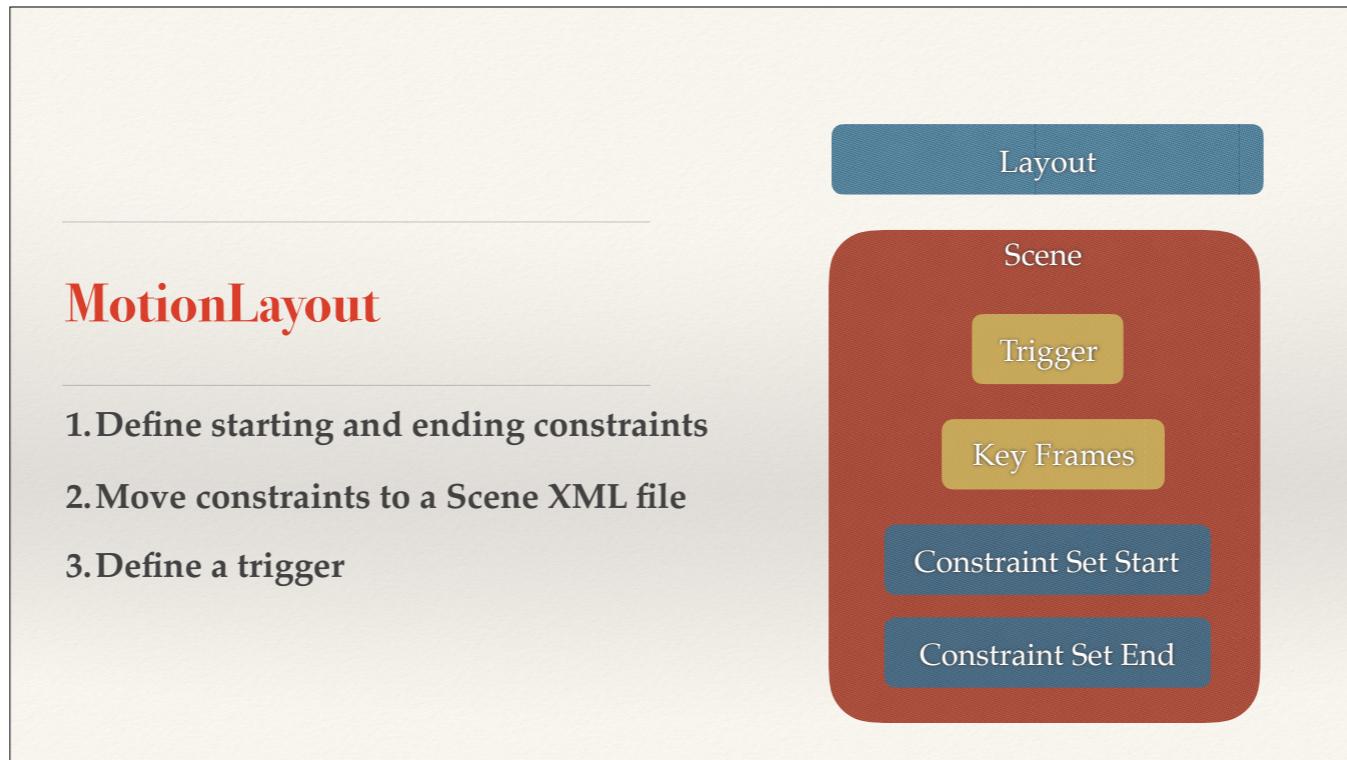
Transitions. Slightly different for activities and fragments

Can be quite complex

Physics Animations

❖ Spring

❖ Fling



Based on ConstraintLayout

Could be an entire talk unto itself

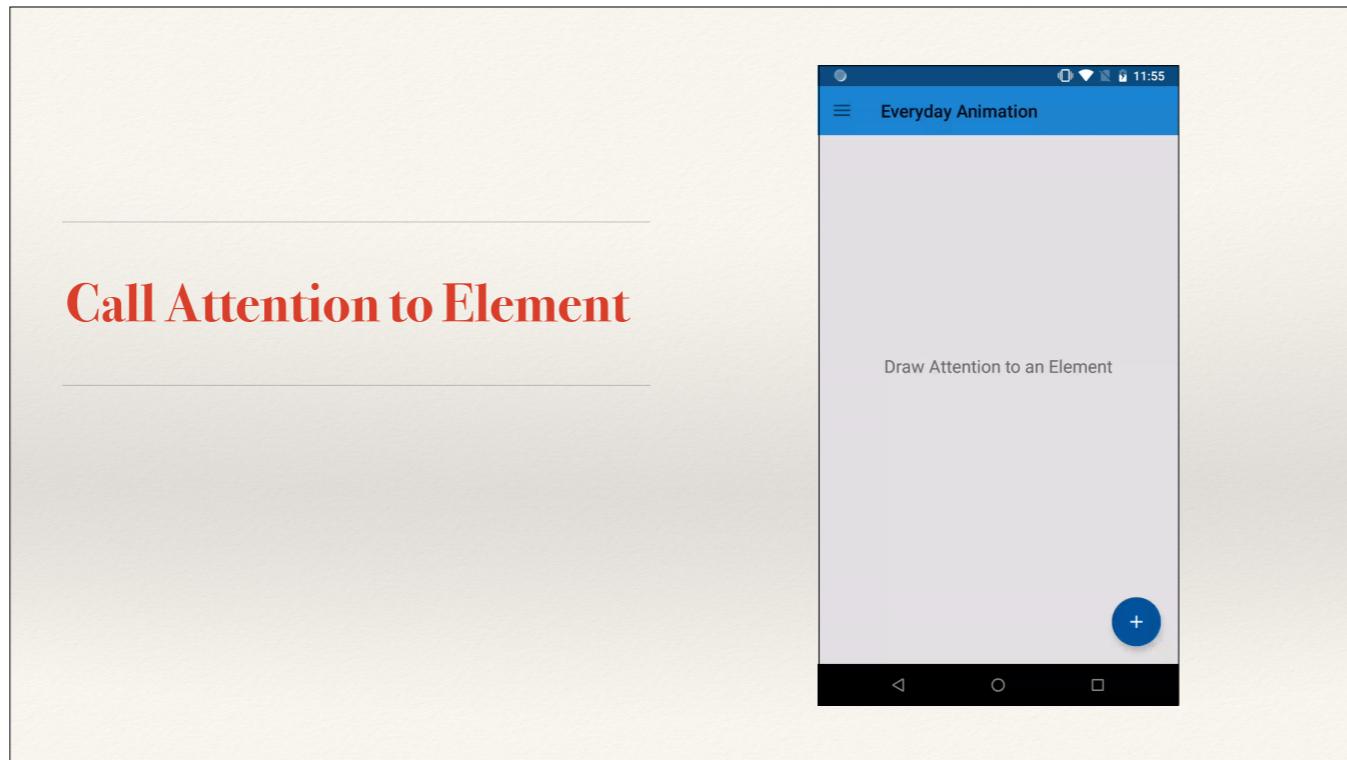
Use Cases

Caveats

- ❖ No Libraries
- ❖ Complexity == High
- ❖ Slow animations
- ❖ More than one way

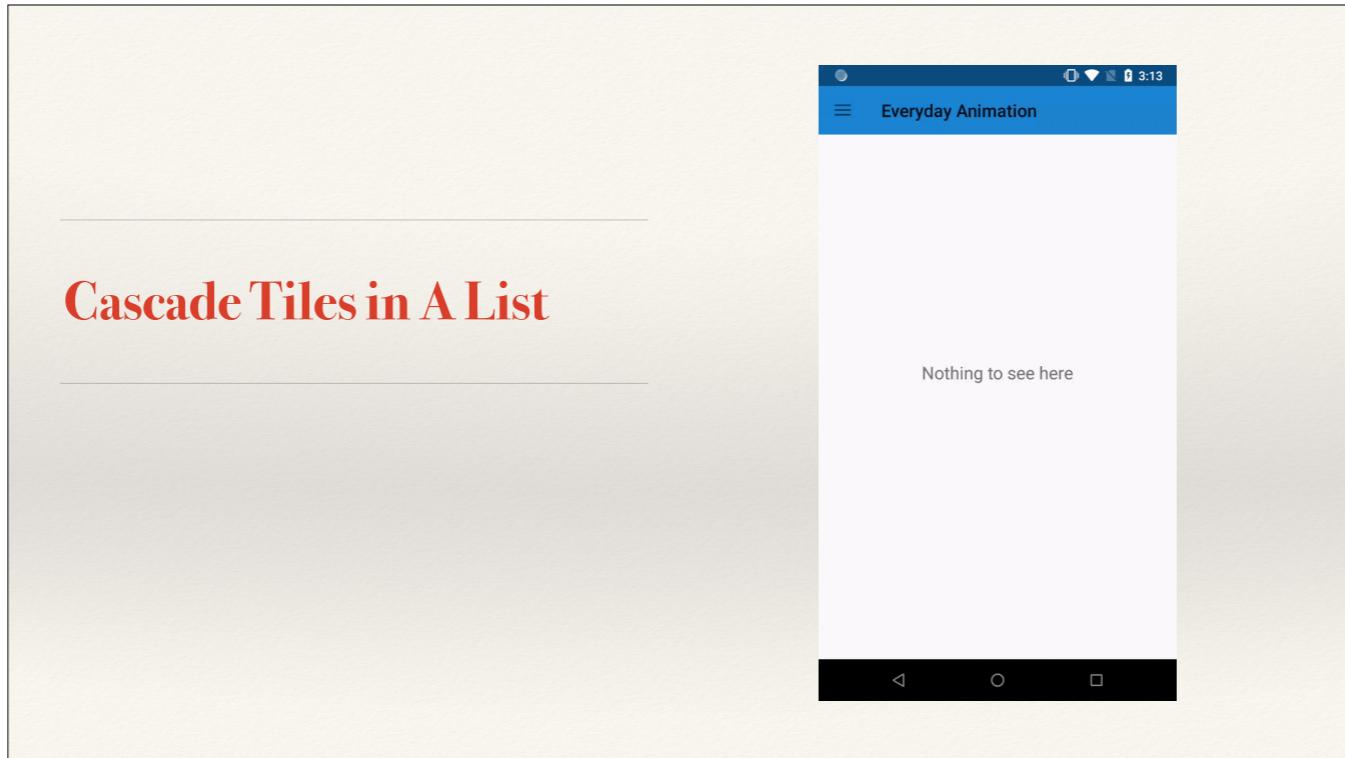
App Architecture

- ❖ **Kotlin**
- ❖ **Architecture Components**
 - ❖ **MVVM**
 - ❖ **LiveData**
 - ❖ **Room**
 - ❖ **Navigation**
- ❖ **Fragments**



[View animation](#)

Great design uses animation to bring attention to that important action, without being disruptive.
Use this only for critical actions—the more you use this effect, the less impactful it becomes



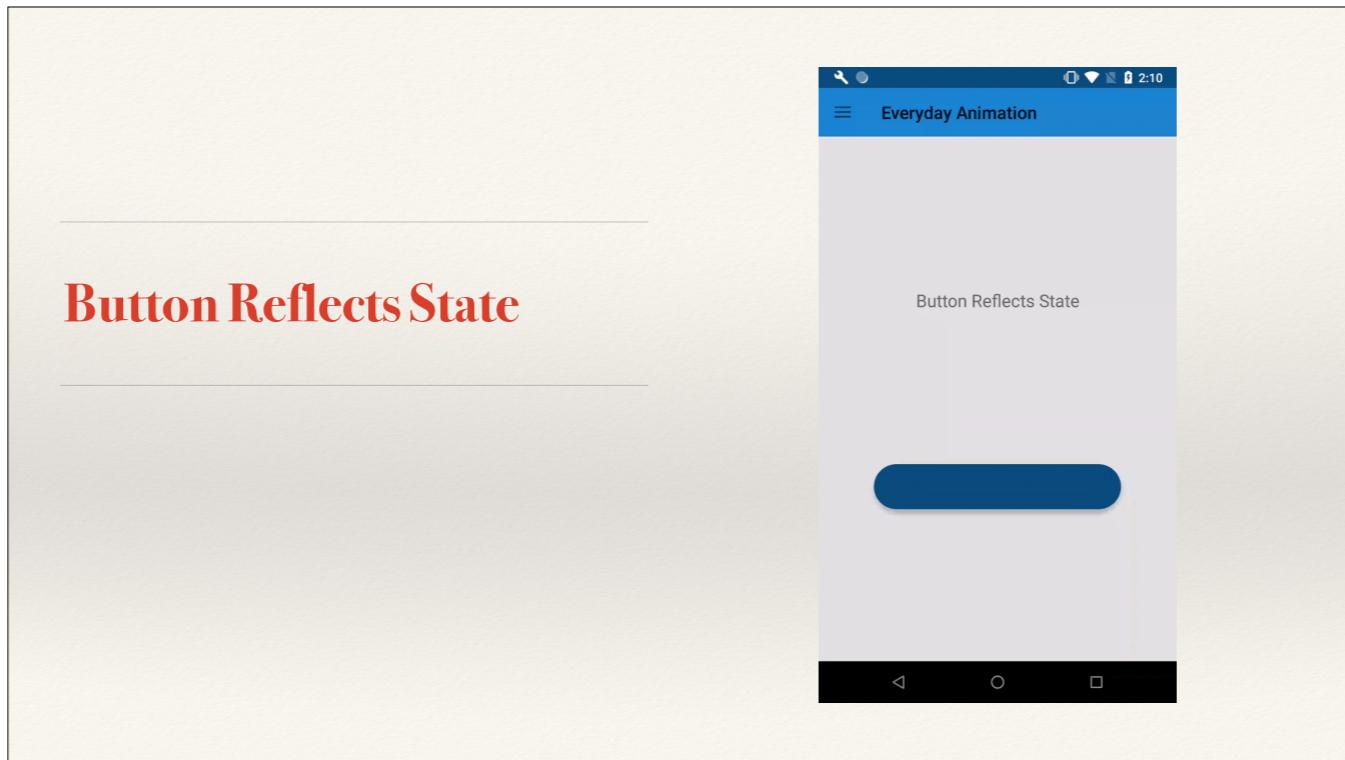
Layout animation

Transition choreography is a coordinated sequence of motion that maintains user focus as the interface adapts.

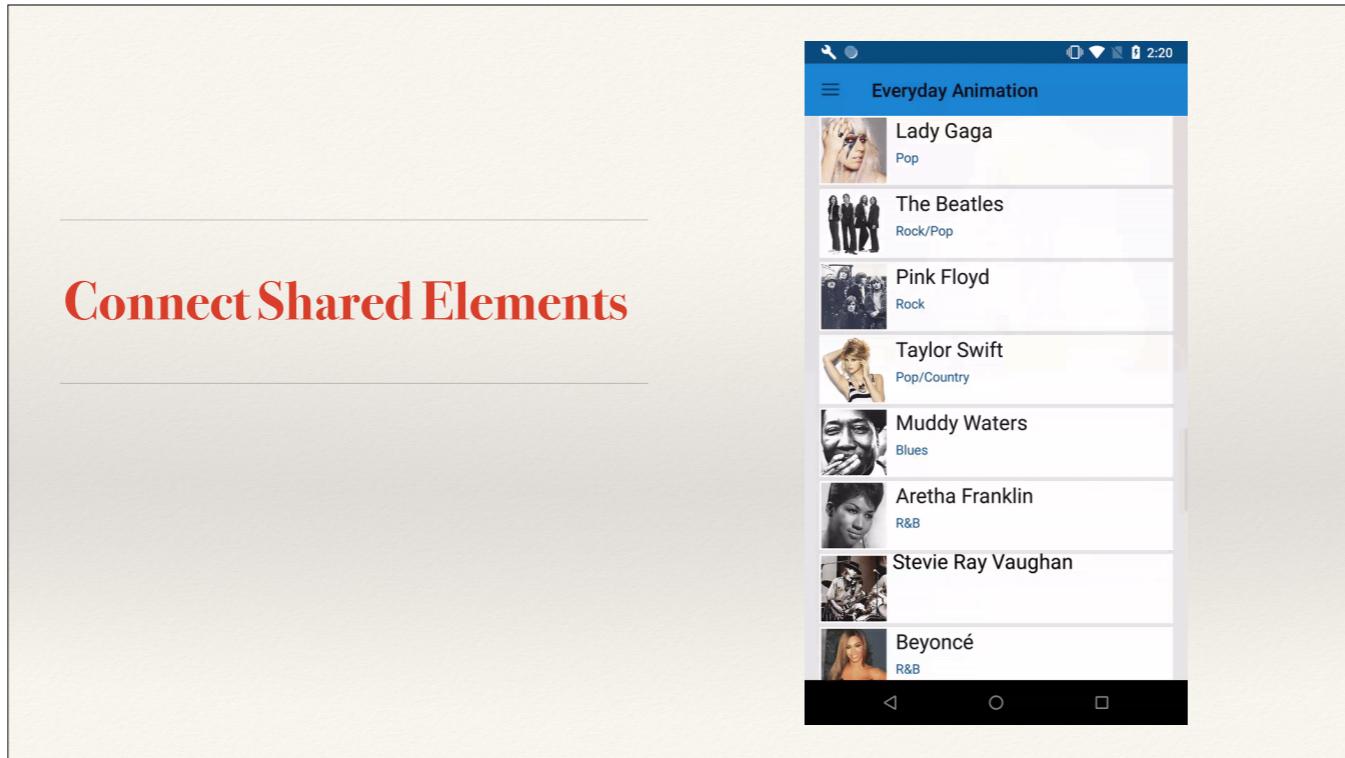
Adds the illusion of more whitespace on the view

A good animation changes the position and opacity of the material when it enters the screen.

A great animation quickly staggers the appearance of each group or element.

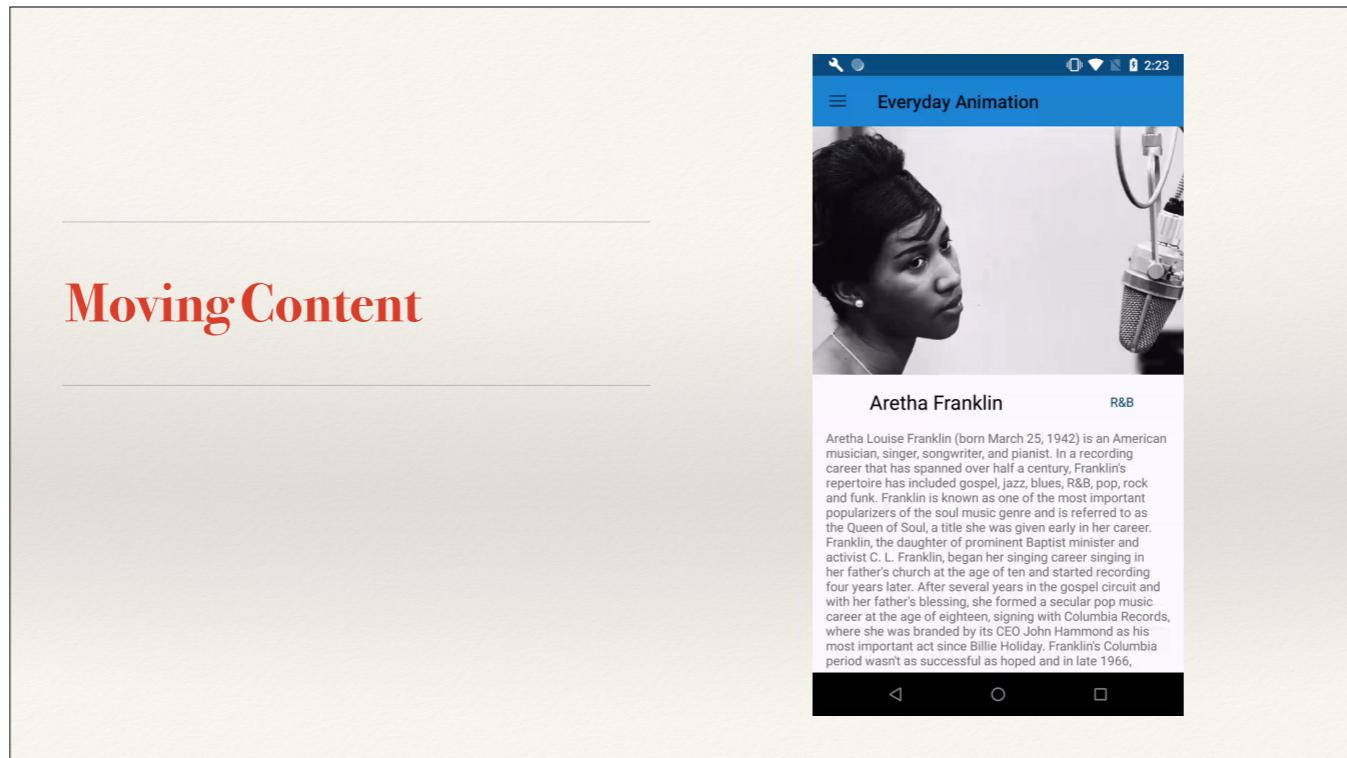


[View + Property animations](#)

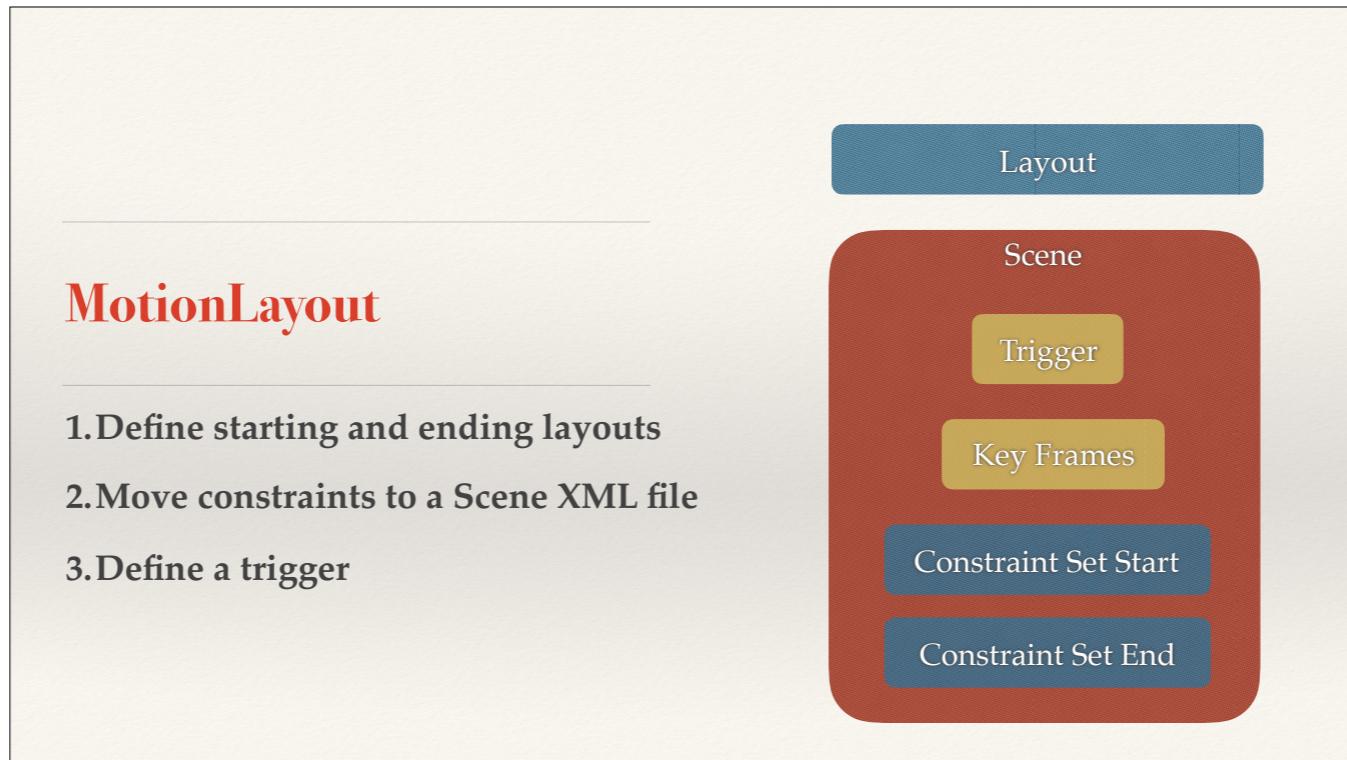


Layout Animation -> Transition

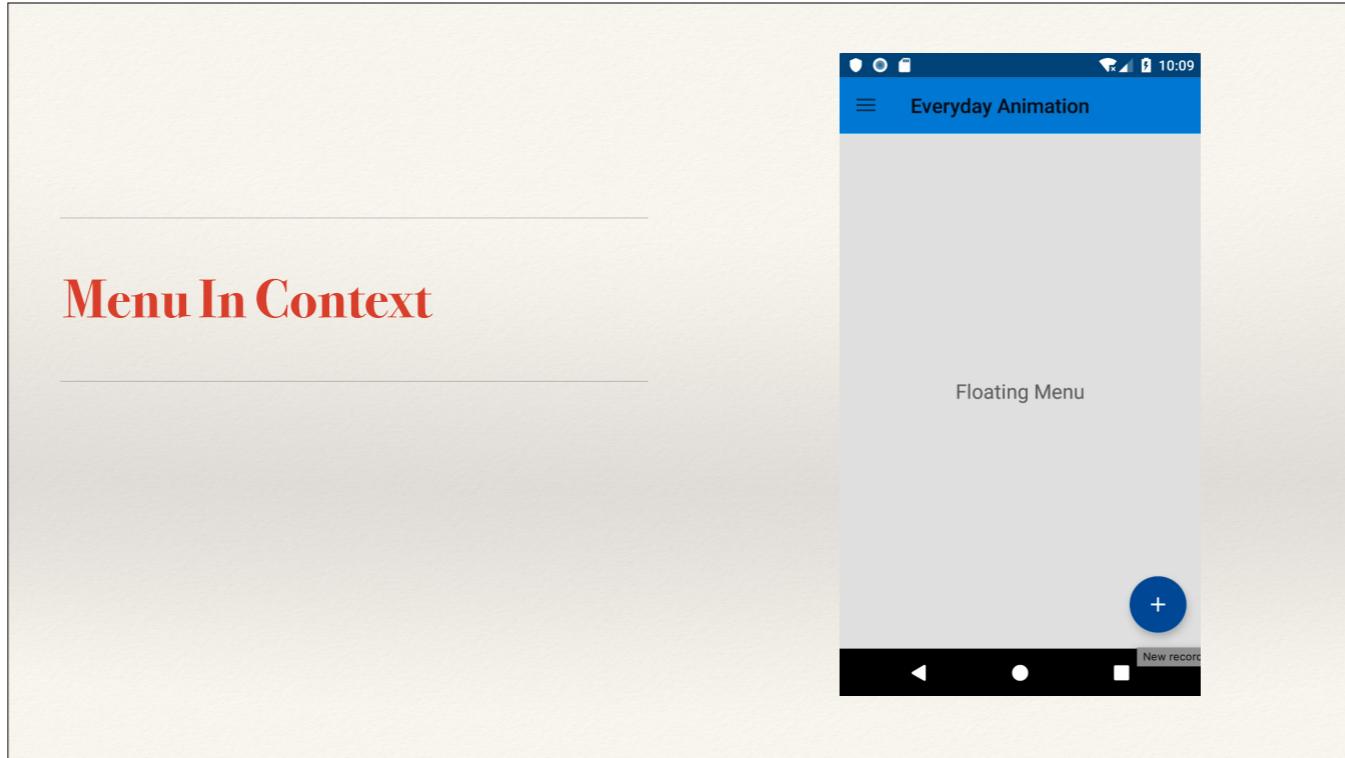
A great animation establishes a connection between two states by animating the shared content.



MotionLayout



Based on ConstraintLayout
Could be an entire talk unto itself



MotionLayout

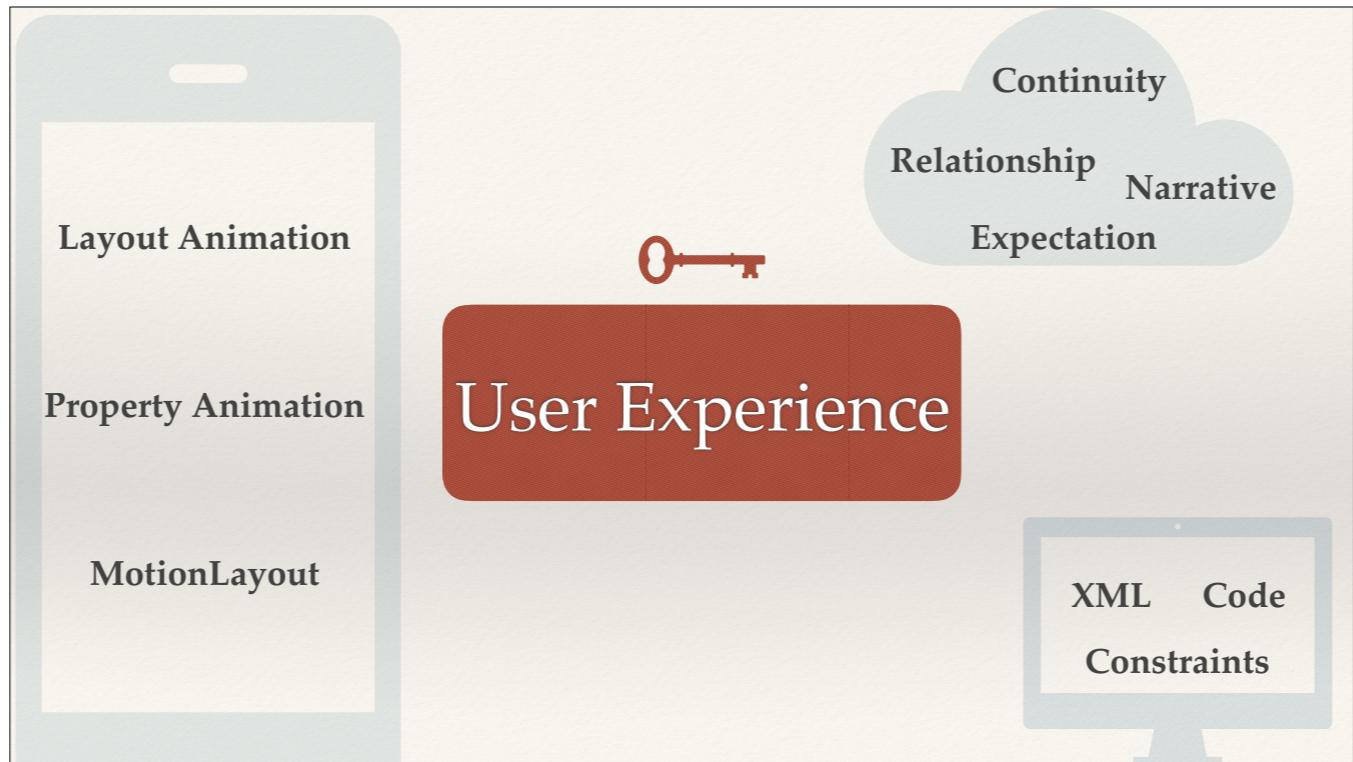
Great animated menus emerge from the action that created them, growing from the point of touch.

Accessibility

Photosensitivity/Flashing

Text alternatives

Motion is not the only method for activating a component



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