

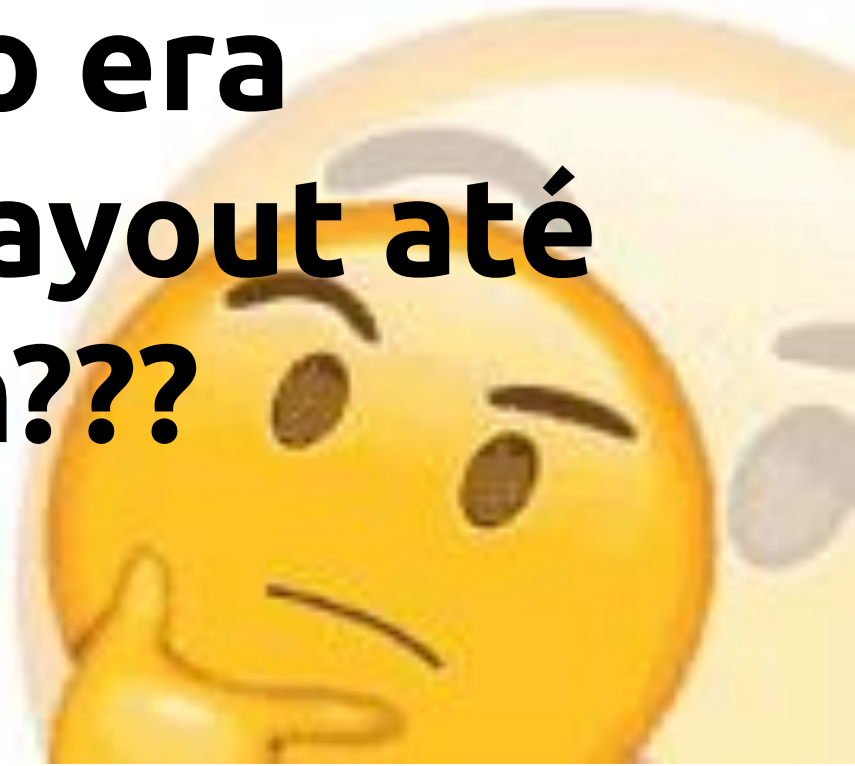
Motion Layout

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**Mas não era
ConstraintLayout até
ontem???**

**Mas não era
ConstraintLayout até
ontem???**





KEEP
CALM
AND
LET'S
RECAP

Layouts no Android

ConstraintLayout 1.x

Resolve o problema da hierarquia de views

ConstraintLayout 1.x

Resolve o problema da hierarquia de views

Flexibilidade para layouts complexos

ConstraintLayout 1.x

Resolve o problema da hierarquia de views

Flexibilidade para layouts complexos

Amigável ao editor visual

ConstraintLayout 1.x

Resolve o problema da hierarquia de views

Flexibilidade para layouts complexos

Amigável ao **editor visual**



ConstraintLayout 1.x

Resolve o problema da hierarquia de views

Flexibilidade para layouts complexos

Amigável ao editor visual

Várias outras coisas que eram treta de se fazer antes (**Barrier**, **Guideline**, **Chains**, layout circular, etc)

e

E

ConstraintLayout 1.x

Resolve o problema da hierarquia de views

Flexibilidade para layouts complexos

Amigável ao editor visual

Várias outras coisas que eram treta de se fazer antes (**Barrier**, **Guideline**, **Chains**, layout circular, etc)

Um jeito simples de animar estados de uma tela (**ConstraintSets**)

```
<androidx.constraintlayout.widget.ConstraintLayout
    android:id="@+id/root">

    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

```
<androidx.constraintlayout.widget.ConstraintLayout  
    android:id="@+id/root">
```

```
    <TextView  
        android:id="@+id/text"  
        android:layout_width="wrap_content"  
        android:layout_height="wrap_content"  
        android:text="Hello World!"  
        app:layout_constraintBottom_toBottomOf="parent"  
        app:layout_constraintStart_toStartOf="parent" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

```
<androidx.constraintlayout.widget.ConstraintLayout  
    android:id="@+id/root">
```

```
    <TextView
```

```
        android:id="@+id/text"
```

```
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
```

```
        android:text="Hello World!"
```

```
        app:layout_constraintBottom_toBottomOf="parent"
```

```
        app:layout_constraintStart_toStartOf="parent" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```

```
<androidx.constraintlayout.widget.ConstraintLayout
    android:id="@+id/root">

    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```



```
<androidx.constraintlayout.widget.ConstraintLayout
    android:id="@+id/root">

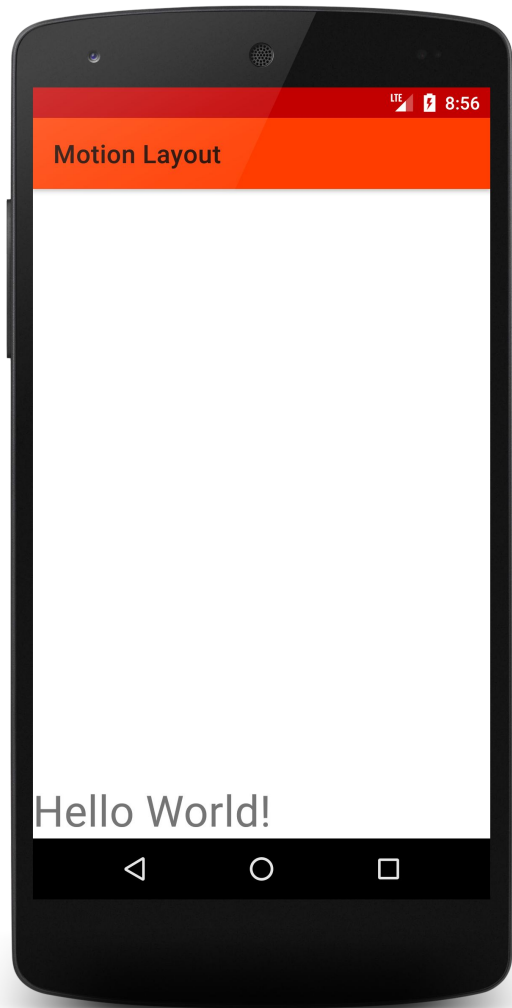
    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```

```
<androidx.constraintlayout.widget.ConstraintLayout
    android:id="@+id/root">

    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```



```
root.setOnClickListener {
```

```
    ConstraintSet().apply {
```

```
        constrainWidth(text, WRAP_CONTENT)
```

```
        constrainHeight(text, WRAP_CONTENT)
```

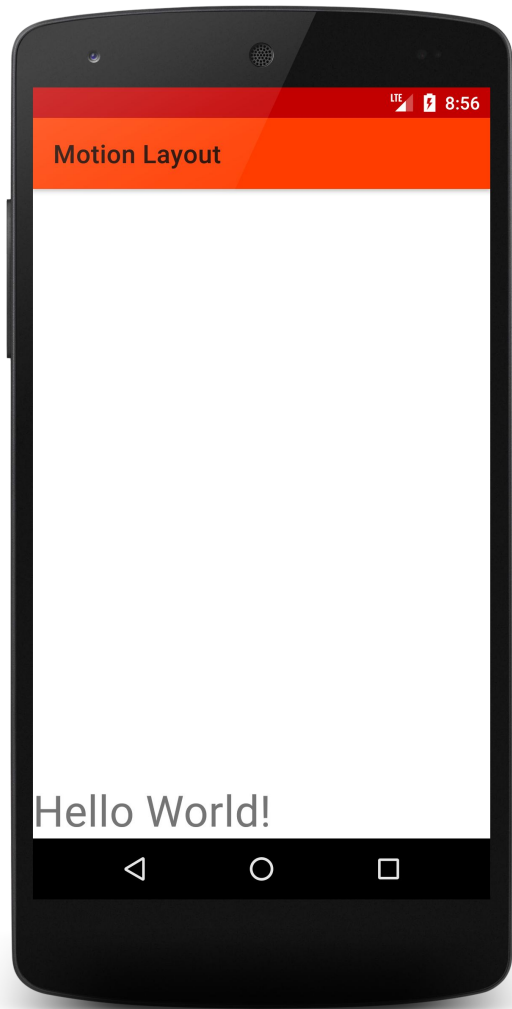
```
        connect(text, END, PARENT_ID, END)
```

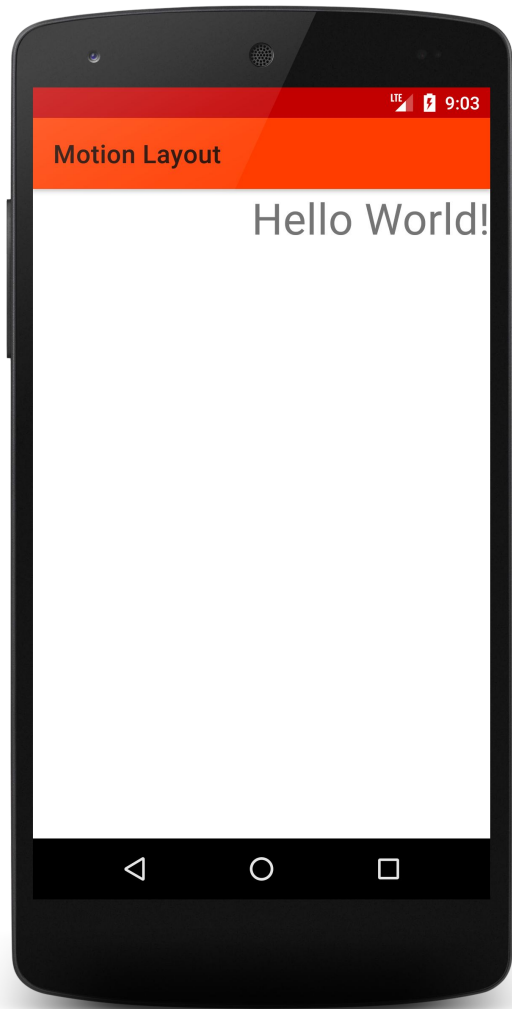
```
        connect(text, TOP, PARENT_ID, TOP)
```

```
        applyTo(root)
```

```
    }
```

```
}
```





```
root.setOnClickListener {
```

```
    ConstraintSet().apply {
```

```
        constrainWidth(text, WRAP_CONTENT)
```

```
        constrainHeight(text, WRAP_CONTENT)
```

```
        connect(text, END, PARENT_ID, END)
```

```
        connect(text, TOP, PARENT_ID, TOP)
```

```
        applyTo(root)
```

```
    }
```

```
}
```

```
root.setOnClickListener {  
    TransitionManager.beginDelayedTransition(root)  
  
    ConstraintSet().apply {  
        constrainWidth(text, WRAP_CONTENT)  
        constrainHeight(text, WRAP_CONTENT)  
        connect(text, END, PARENT_ID, END)  
        connect(text, TOP, PARENT_ID, TOP)  
        applyTo(root)  
    }  
}
```

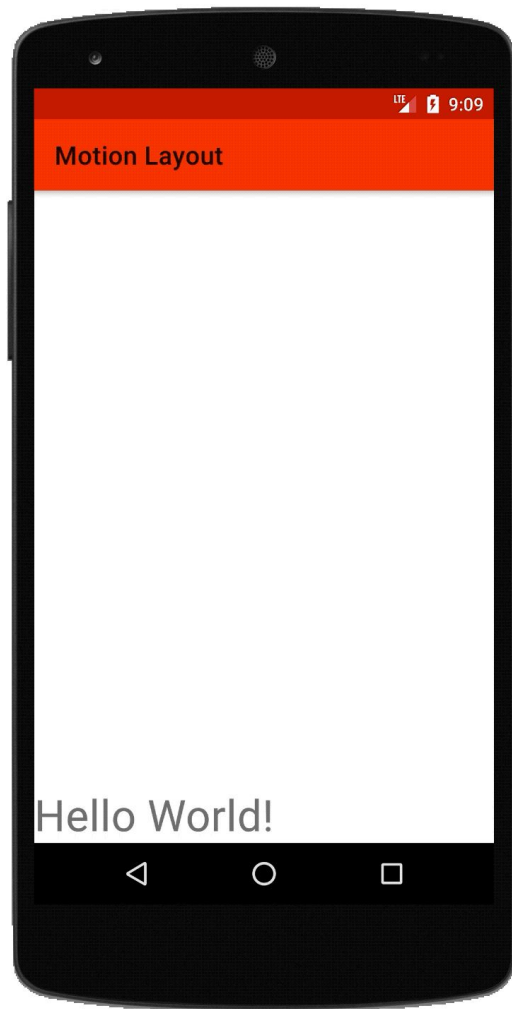


```
root.setOnClickListener {  
    TransitionManager.beginDelayedTransition(root)  
  
    ConstraintSet().apply {  
        constrainWidth(text, WRAP_CONTENT)  
        constrainHeight(text, WRAP_CONTENT)  
        connect(text, END, PARENT_ID, END)  
        connect(text, TOP, PARENT_ID, TOP)  
        applyTo(root)  
    }  
}
```

```
root.setOnClickListener {
    TransitionManager.beginDelayedTransition(root)

    ConstraintSet().apply {
        constrainWidth(text, WRAP_CONTENT)
        constrainHeight(text, WRAP_CONTENT)
        connect(text, END, PARENT_ID, END)
        connect(text, TOP, PARENT_ID, TOP)
        applyTo(root)
    }
}

implementation 'androidx.transition:transition:1.1.0'
```



```
root.setOnClickListener {  
    TransitionManager.beginDelayedTransition(root)  
  
    ConstraintSet().apply {  
        load(R.id.dest)  
        applyTo(root)  
    }  
}
```

ConstraintLayout 2.0

MotionLayout

MotionLayout

Estende ConstraintLayout

Adiciona uma série de funcionalidades para **controle de animação**

```
<androidx.constraintlayout.widget.ConstraintLayout
    android:id="@+id/root">

    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

</androidx.constraintlayout.widget.ConstraintLayout>
```



```
<androidx.constraintlayout.widget.ConstraintLayout  
    android:id="@+id/root">
```

```
    <TextView
```

```
        android:id="@+id/text"
```

```
        android:layout_width="wrap_content"
```

```
        android:layout_height="wrap_content"
```

```
        android:text="Hello World!"
```

```
        app:layout_constraintBottom_toBottomOf="parent"
```

```
        app:layout_constraintStart_toStartOf="parent" />
```

```
</androidx.constraintlayout.widget.ConstraintLayout>
```


```
<androidx.constraintlayout.motion.widget.MotionLayout
    android:id="@+id/root"
    app:layoutDescription="@xml/motion_scene">

    <TextView
        android:id="@+id/text"
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        android:text="Hello World!"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />

</androidx.constraintlayout.motion.widget.MotionLayout>
```

```
<androidx.constraintlayout.motion.widget.MotionLayout  
    android:id="@+id/root"  
    app:layoutDescription="@xml/motion_scene">
```

```
<TextView  
    android:id="@+id/text"  
    android:layout_width="wrap_content"  
    android:layout_height="wrap_content"  
    android:text="Hello World!"  
    app:layout_constraintBottom_toBottomOf="parent"  
    app:layout_constraintStart_toStartOf="parent" />
```



```
</androidx.constraintlayout.motion.widget.MotionLayout>
```

```
<MotionScene>
  <ConstraintSet android:id="@+id/start">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintStart_toStartOf="parent" />
    </Constraint>
  </ConstraintSet>
</MotionScene>
```

```
<MotionScene>
  <ConstraintSet android:id="@+id/start">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintStart_toStartOf="parent" />
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintTop_toTopOf="parent" />
  </ConstraintSet>
</MotionScene>
```

<MotionScene>

```
<ConstraintSet android:id="@+id/start">
```

```
  <Constraint
```

```
    android:id="@+id/text"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    app:layout_constraintBottom_toBottomOf="parent"
```

```
    app:layout_constraintStart_toStartOf="parent" />
```

```
</ConstraintSet>
```

```
<ConstraintSet android:id="@+id/end">
```

```
  <Constraint
```

```
    android:id="@+id/text"
```

```
    android:layout_width="wrap_content"
```

```
    android:layout_height="wrap_content"
```

```
    app:layout_constraintEnd_toEndOf="parent"
```

```
    app:layout_constraintTop_toTopOf="parent" />
```

```
</ConstraintSet>
```

</MotionScene>

```
<MotionScene>
  <ConstraintSet android:id="@+id/start">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintStart_toStartOf="parent" />
    </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintTop_toTopOf="parent" />
    </ConstraintSet>
</MotionScene>
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<MotionScene>
  <ConstraintSet android:id="@+id/start">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintStart_toStartOf="parent" />
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintTop_toTopOf="parent" />
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</MotionScene>
```



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  <ConstraintSet android:id="@+id/start">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintStart_toStartOf="parent" />
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintTop_toTopOf="parent" />
  </ConstraintSet>
</MotionScene>
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<MotionScene>
  <ConstraintSet android:id="@+id/start">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintStart_toStartOf="parent" />
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintTop_toTopOf="parent" />
  </ConstraintSet>
</MotionScene>
```

```
<MotionScene>
  <ConstraintSet android:id="@+id/start">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintBottom_toBottomOf="parent"
      app:layout_constraintStart_toStartOf="parent" />
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    <Constraint
      android:id="@+id/text"
      android:layout_width="wrap_content"
      android:layout_height="wrap_content"
      app:layout_constraintEnd_toEndOf="parent"
      app:layout_constraintTop_toTopOf="parent" />
  </ConstraintSet>
</MotionScene>
```

```
<MotionScene>
```

```
    <ConstraintSet android:id="@+id/start">
```

```
        ...
```

```
    </ConstraintSet>
```

```
    <ConstraintSet android:id="@+id/end">
```

```
        ...
```

```
    </ConstraintSet>
```

```
</MotionScene>
```

```
<MotionScene>
  <Transition
    app:constraintSetEnd="@+id/end"
    app:constraintSetStart="@+id/start" />

  <ConstraintSet android:id="@+id/start">
    ...
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```

```
<MotionScene>
  <Transition
    app:constraintSetEnd="@+id/end"
    app:constraintSetStart="@+id/start" />

  <ConstraintSet android:id="@+id/start">
    ...
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```

```
<MotionScene>
  <Transition
    app:constraintSetEnd="@+id/end"
    app:constraintSetStart="@+id/start">

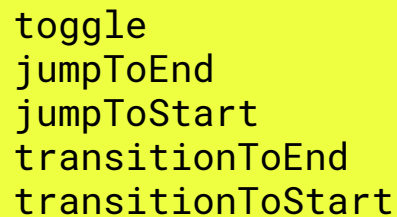
    <OnClick
      app:clickAction="toggle"
      app:targetId="@+id/root" />
  </Transition>

  <ConstraintSet android:id="@+id/start">
    ...
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```

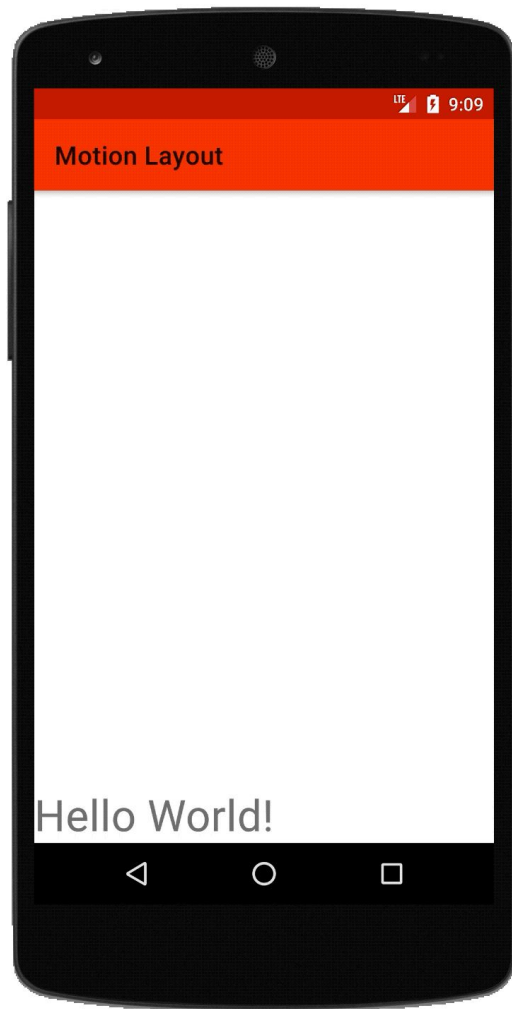
```
<MotionScene>
  <Transition
    app:constraintSetEnd="@+id/end"
    app:constraintSetStart="@+id/start">

    <OnClick
      app:clickAction="toggle"
      app:targetId="@+id/root" />
  </Transition>

  <ConstraintSet android:id="@+id/start">
    ...
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```



```
toggle
jumpToEnd
jumpToStart
transitionToEnd
transitionToStart
```

```
class MainActivity : AppCompatActivity(R.layout.activity_main)
```

```
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```



```
class MainActivity : AppCompatActivity(R.layout.activity_main)
```

```
implementation 'androidx.appcompat:appcompat:1.1.0-rc01'
```



```
class MainActivity : AppCompatActivity(R.layout.activity_main)
```

```
implementation 'androidx.appcompat:appcompat:1.1.0-rc01'
```



Voltando...



ConstraintSets

Atributos do ConstraintSet

Layout - **atributos de posicionamento**

Atributos do ConstraintSet

Layout

Transform - **rotação, redefinição de tamanho, translação**

Atributos do ConstraintSet

Layout

Transform

Property - **transparência (alpha), visibilidade**

Atributos do ConstraintSet

Layout

Transform

Property

Motion - **caminho (path), easing (timing de movimento)**

Atributos do ConstraintSet

Layout

Transform

Property

Motion

CustomAttributes - **qualquer atributo da View, via reflection**

```
<MotionScene>
  ...
  <ConstraintSet android:id="@+id/start">
    <Constraint android:id="@+id/text">
      <Layout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
      </Constraint>
    </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```

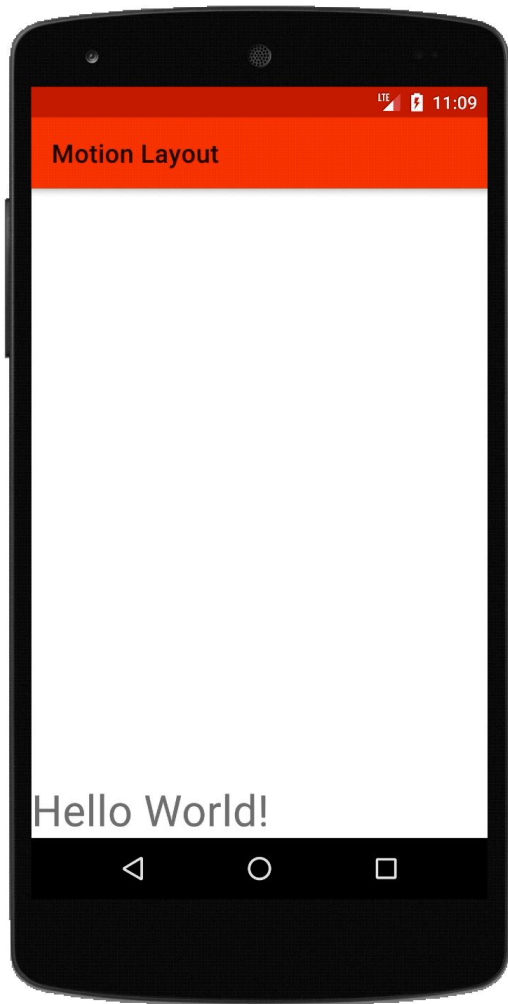
```
<MotionScene>
  ...
  <ConstraintSet android:id="@+id/start">
    <Constraint android:id="@+id/text">
      <Layout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
      </Constraint>
    </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```

```
<MotionScene>
  ...
  <ConstraintSet android:id="@+id/start">
    <Constraint android:id="@+id/text">
      <Layout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
      </Constraint>
    </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```

```
<MotionScene>
  ...
  <ConstraintSet android:id="@+id/start">
    <Constraint android:id="@+id/text">
      <Layout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
      <Motion app:pathMotionArc="startHorizontal" />
    </Constraint>
  </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```



```
<MotionScene>
  ...
  <ConstraintSet android:id="@+id/start">
    <Constraint android:id="@+id/text">
      <Layout
        android:layout_width="wrap_content"
        android:layout_height="wrap_content"
        app:layout_constraintBottom_toBottomOf="parent"
        app:layout_constraintStart_toStartOf="parent" />
        <Motion app:pathMotionArc="startHorizontal" />
      </Constraint>
    </ConstraintSet>
  <ConstraintSet android:id="@+id/end">
    ...
  </ConstraintSet>
</MotionScene>
```



```
class MainActivity : AppCompatActivity(R.layout.activity_main)
```

e a Activity...

```
<MotionScene>
  <Transition
    app:constraintSetEnd="@+id/end"
    app:constraintSetStart="@+id/start"
    app:duration="400"
    app:motionInterpolator="easeIn">

    <OnClick
      app:clickAction="toggle"
      app:targetId="@+id/root" />

  </Transition>

  <ConstraintSet android:id="@+id/start" ... />
  <ConstraintSet android:id="@+id/end" ... />
</MotionScene>
```

```
<MotionScene>
  <Transition
    app:constraintSetEnd="@+id/end"
    app:constraintSetStart="@+id/start"
    app:duration="400"
    app:motionInterpolator="easeIn">

    <OnClick
      app:clickAction="toggle"
      app:targetId="@+id/root" />

  </Transition>

  <ConstraintSet android:id="@+id/start" ... />
  <ConstraintSet android:id="@+id/end" ... />
</MotionScene>
```

```
<MotionScene>
  <Transition
    app:constraintSetEnd="@+id/end"
    app:constraintSetStart="@+id/start"
    app:duration="400"
    app:motionInterpolator="easeIn">

    <OnClick
      app:clickAction="toggle"
      app:targetId="@+id/root" />

  </Transition>

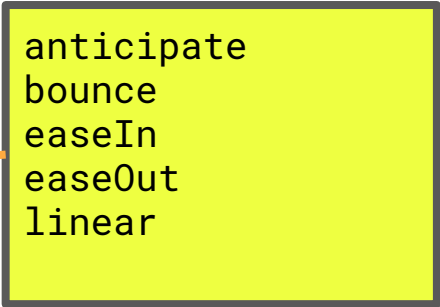
  <ConstraintSet android:id="@+id/start" ... />
  <ConstraintSet android:id="@+id/end" ... />
</MotionScene>
```

```
<MotionScene>
  <Transition
    app:constraintSetEnd="@+id/end"
    app:constraintSetStart="@+id/start"
    app:duration="400"
    app:motionInterpolator="easeIn">

    <OnClick
      app:clickAction="toggle"
      app:targetId="@+id/root" />

  </Transition>

  <ConstraintSet android:id="@+id/start" ... />
  <ConstraintSet android:id="@+id/end" ... />
</MotionScene>
```



anticipate
bounce
easeIn
easeOut
linear

KeyFrameSet

Início
progresso: 0

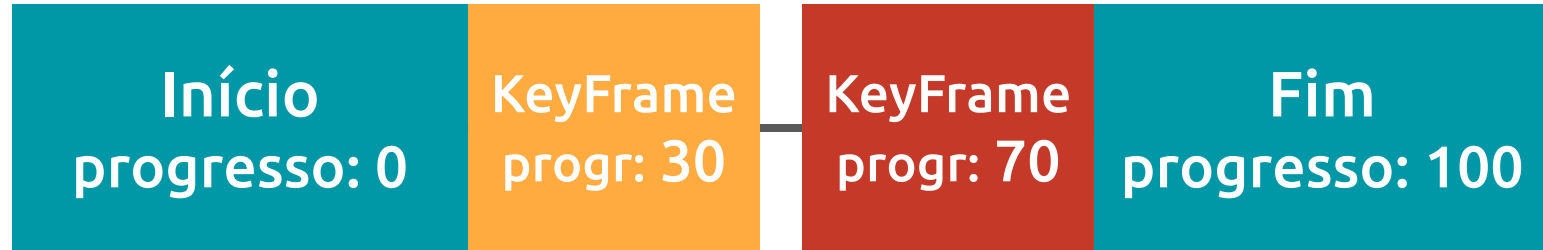


Fim
progresso: 100

Início
progresso: 0

KeyFrame
progresso: 50

Fim
progresso: 100



KeyFrames

KeyPosition - **controla a posição durante a animação**

KeyFrames

KeyPosition

KeyAttribute - **controla atributos da view durante a animação**

KeyFrames

KeyPosition

KeyAttribute

KeyCicle - **controla oscilações referentes ao posicionamento da view durante a animação**

KeyFrames

KeyPosition

KeyAttribute

KeyCicle

KeyTimeCicle - **controla oscilações referentes ao tempo durante a animação**

```
<MotionScene>
  <Transition>
    <KeyFrameSet>
      <KeyPosition
        app:framePosition="50"
        app:keyPositionType="parentRelative"
        app:motionTarget="@+id/text"
        app:percentX=".5"
        app:percentY=".5" />
      </KeyFrameSet>

      <OnClick ... />
    </Transition>
    ...
  </MotionScene>
```



```
<MotionScene>
  <Transition>
    <KeyFrameSet>
      <KeyPosition
        app:framePosition="50"
        app:keyPositionType="parentRelative"
        app:motionTarget="@+id/text"
        app:percentX=".5"
        app:percentY=".5" />
      </KeyFrameSet>

      <OnClick ... />
    </Transition>
    ...
</MotionScene>
```

```
<MotionScene>
  <Transition>
    <KeyFrameSet>
      <KeyPosition
        app:framePosition="50"
        app:keyPositionType="parentRelative"
        app:motionTarget="@+id/text"
        app:percentX=".5"
        app:percentY=".5" />
      </KeyFrameSet>

      <OnClick ... />
    </Transition>
    ...
</MotionScene>
```

```
<MotionScene>
  <Transition>
    <KeyFrameSet>
      <KeyPosition
        app:framePosition="50"
        app:keyPositionType="parentRelative"
        app:motionTarget="@+id/text"
        app:percentX=".5"
        app:percentY=".5" />
      </KeyFrameSet>

      <OnClick ... />
    </Transition>
    ...
</MotionScene>
```

```
<MotionScene>
  <Transition>
    <KeyFrameSet>
      <KeyPosition
        app:framePosition="50"
        app:keyPositionType="parentRelative"
        app:motionTarget="@+id/text"
        app:percentX=".5"
        app:percentY=".5" />
      </KeyFrameSet>

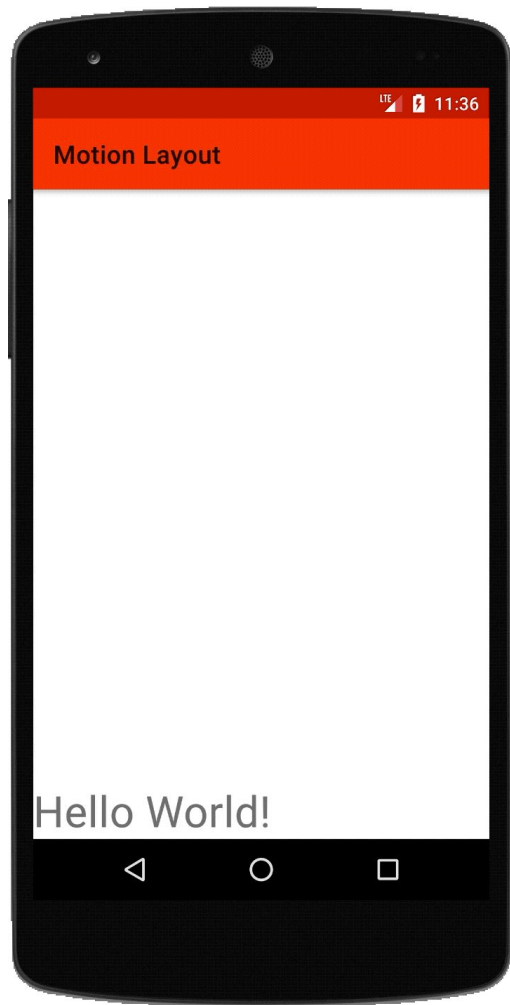
      <OnClick ... />
    </Transition>
    ...
  </MotionScene>
```

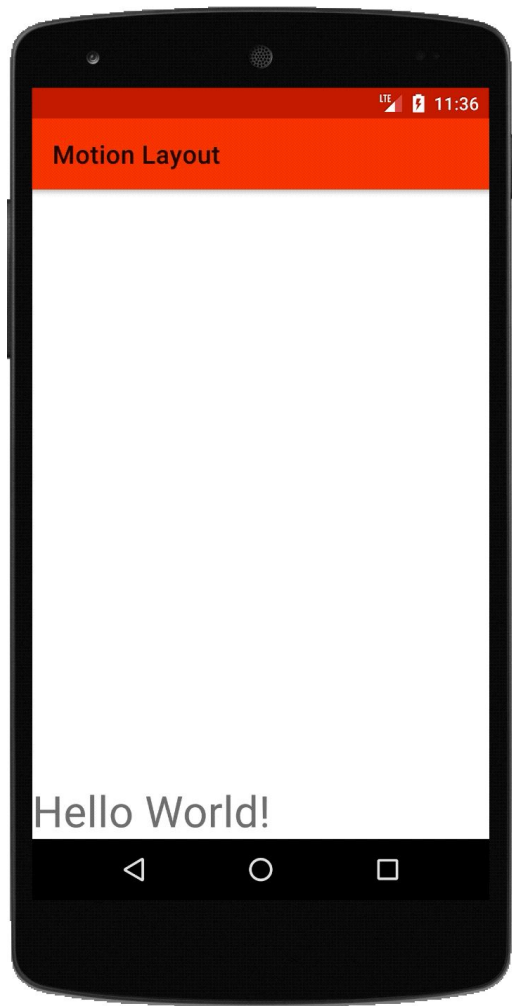
```
<MotionScene>
  <Transition>
    <KeyFrameSet>
      <KeyPosition
        app:framePosition="50"
        app:keyPositionType="parentRelative"
        app:motionTarget="@+id/text"
        app:percentX=".5"
        app:percentY=".5" />
      </KeyFrameSet>

      <OnClick ... />
    </Transition>
    ...
  </MotionScene>
```

```
<MotionScene>
  <Transition>
    <KeyFrameSet>
      <KeyPosition
        app:framePosition="50"
        app:keyPositionType="parentRelative"
        app:motionTarget="@+id/text"
        app:percentX=".5"
        app:percentY=".5" />
      </KeyFrameSet>

      <OnClick ... />
    </Transition>
    ...
  </MotionScene>
```





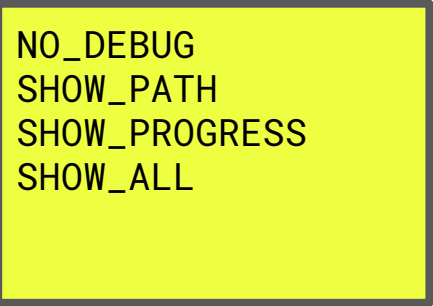
Dica Top!

Dica Faust**TOP!**



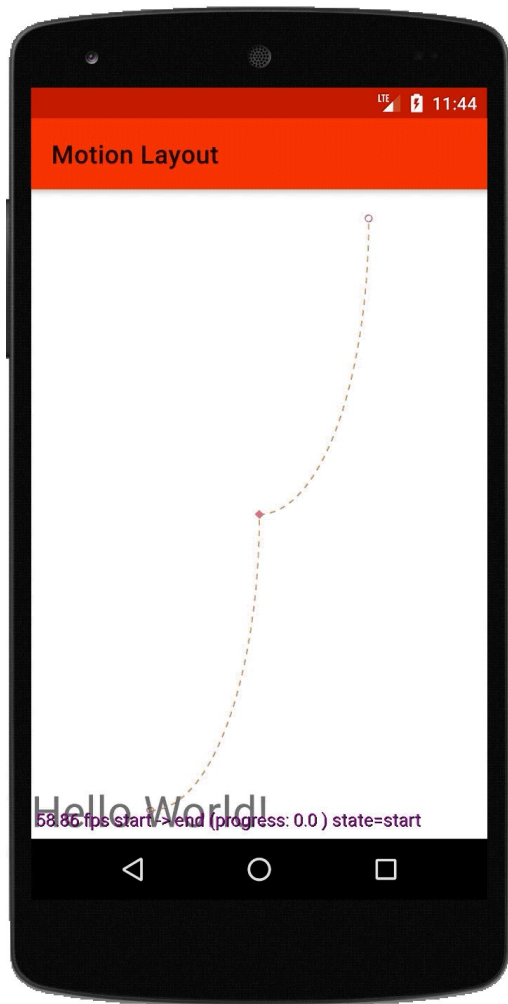
```
<androidx.constraintlayout.motion.widget.MotionLayout
    android:id="@+id/root"
    app:layoutDescription="@xml/motion_scene"
    app:motionDebug="SHOW_ALL">
```

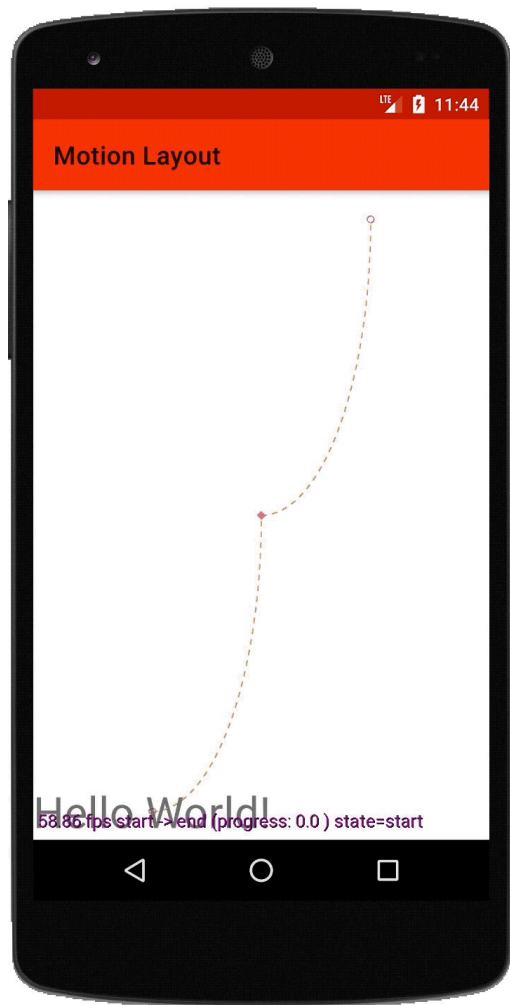
```
<TextView
    android:id="@+id/text"
    android:layout_width="wrap_content"
    android:layout_height="wrap_content"
    android:text="Hello World!"
    app:layout_constraintBottom_toBottomOf="parent"
    app:layout_constraintStart_toStartOf="parent" />
```



NO_DEBUG
SHOW_PATH
SHOW_PROGRESS
SHOW_ALL

```
</androidx.constraintlayout.motion.widget.MotionLayout>
```





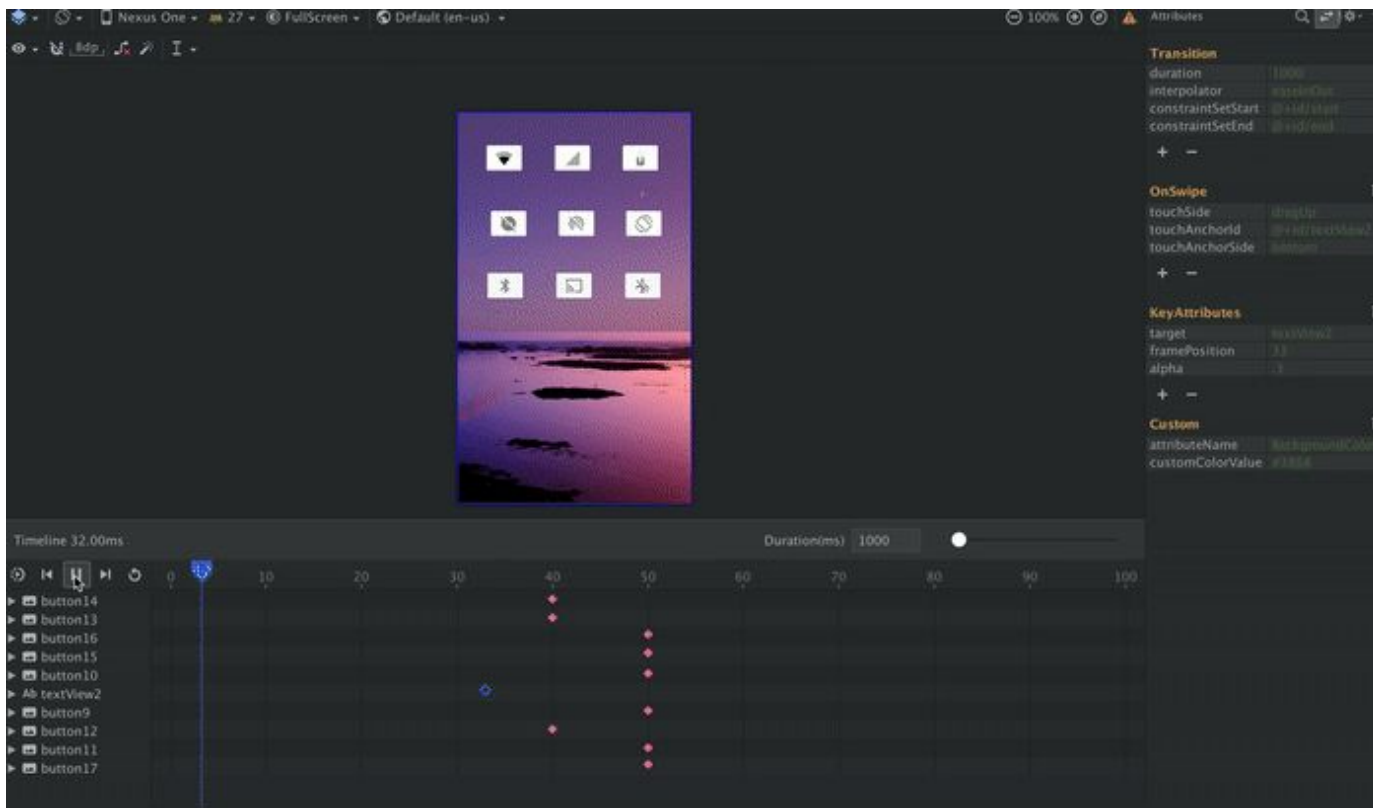
E as tretas?

Ainda está em beta - o lançamento de releases não é lá tão frequente

"Às vezes" é tentativa e erro

É fácil encontrar experimentos, difícil encontrar material pra começar

Num futuro, teremos o Motion Editor!



Links!

Github com vários exemplos

github.com/googlesamples/android-ConstraintLayoutExamples

What's new in Constraint Layout (Google I/O 2019)

youtube.com/watch?v=29gLA90m6Gk

Outras talks!

Advanced and Practical MotionLayout

speakerdeck.com/kaeawc/advanced-and-practical-motionlayout

MotionLayout: Make Your Apps Move Auto-magically

speakerdeck.com/hashlin/motion-layout-make-your-apps-move-auto-magically

Make Your App Dance with MotionLayout

speakerdeck.com/brittbarak/make-your-app-dance-with-motionlayout

Valeu!

speakerdeck.com/rafaeltoledo

Rafael Toledo
[@_rafaeltoledo](#)

