

QUEM BOTOU SWIFT NA MINHA UI?



Txai Wieser

Desenvolvedor iOS desde 2013

Comunidades:

- iOSDevBR
- CocoaHeads Porto Alegre
- TDC Porto Alegre

Experiências:

- Ciência de Computação na UFRGS
- Developer Academy
- Warren Brasil
- Apple CA

Entusiasta de novas tecnologias.

SWIFT + UI

SWIFTUI

O menor caminho para construir
ótimos apps para todos dispositivos.

- Apple

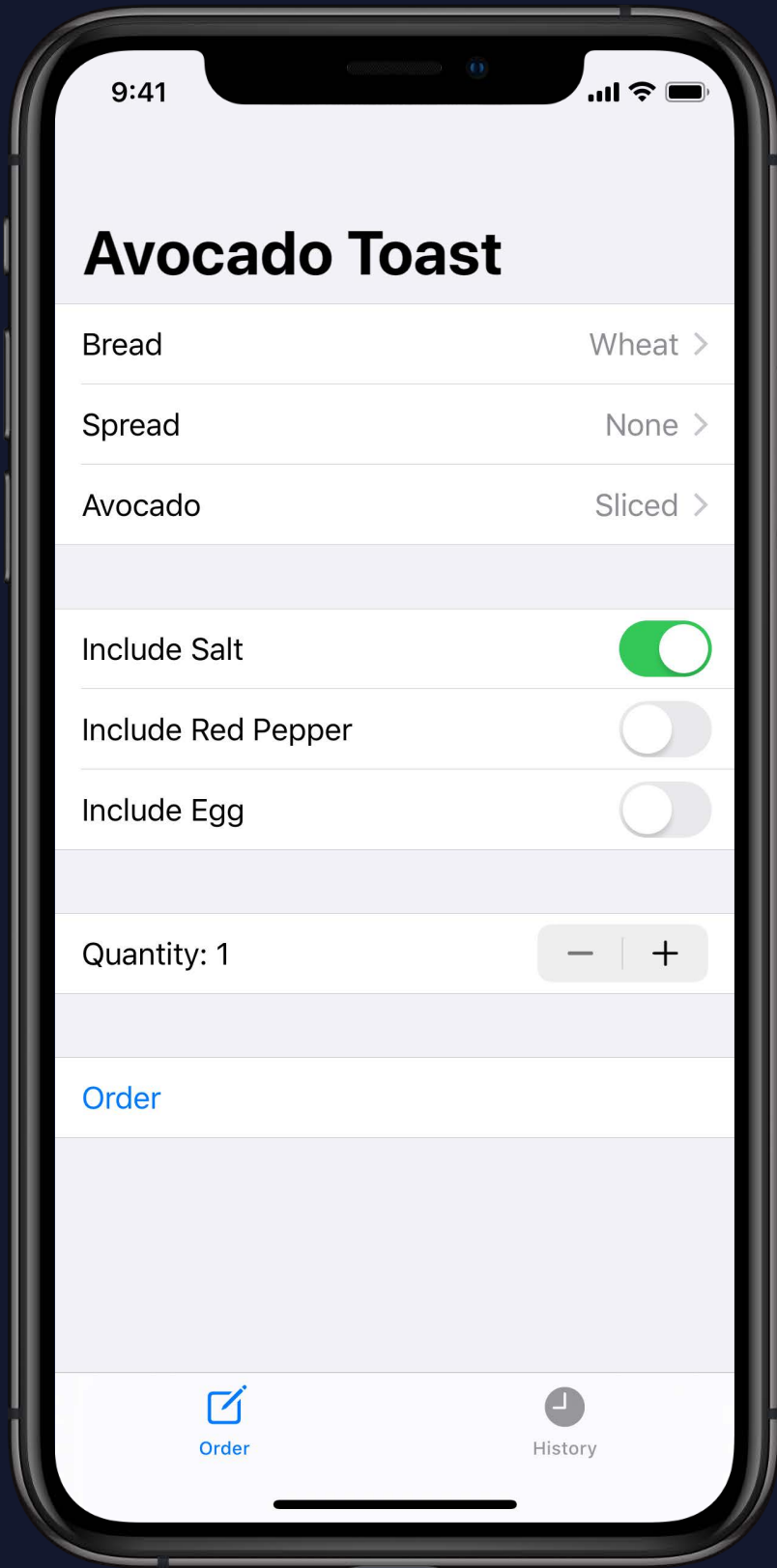
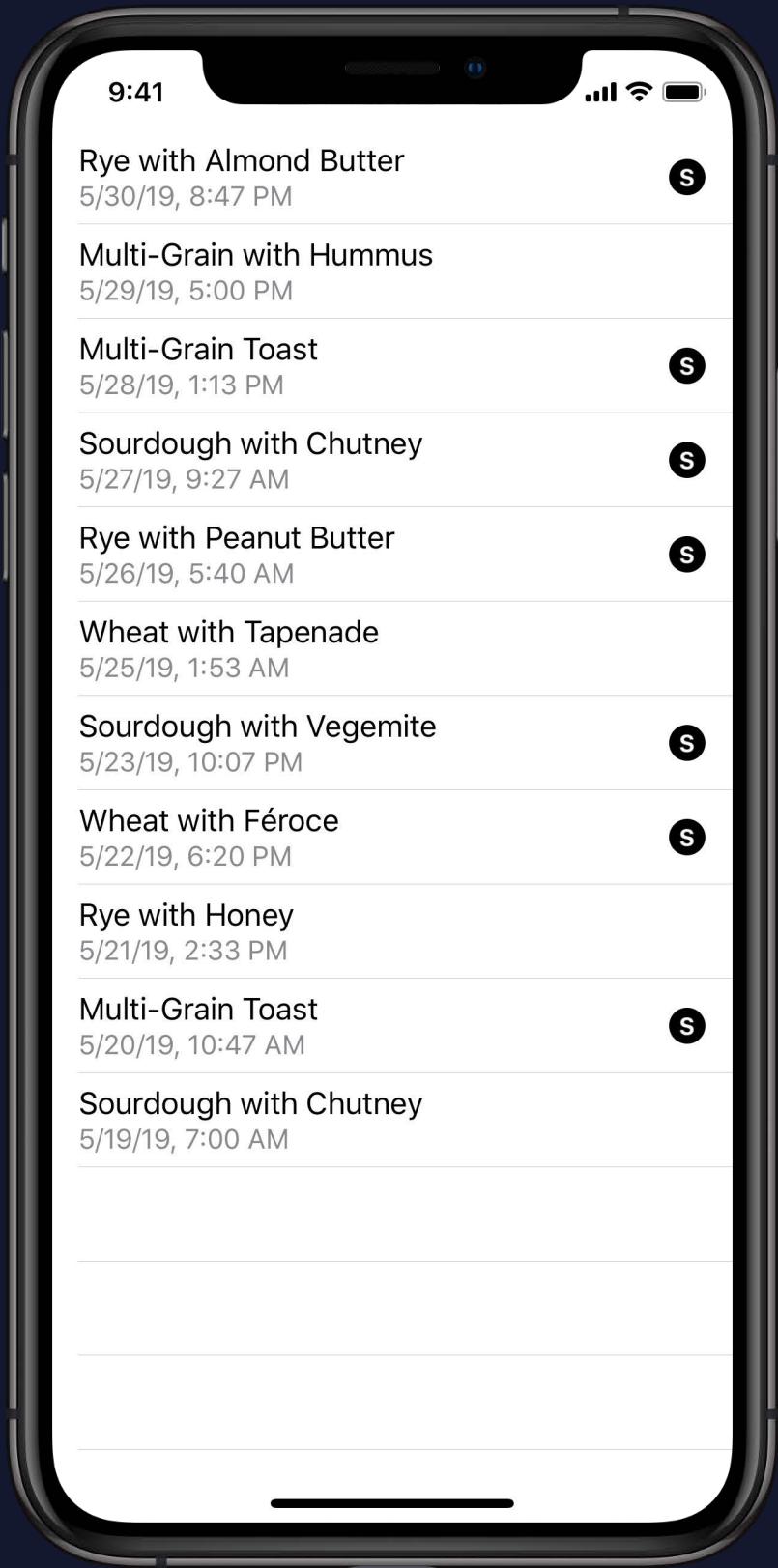
SWIFTUI

- Uma nova maneira de pensar
- Framework de UI Declarativa (e não Imperativa)
- Foco nas funcionalidades da UI (e não nas especificidades do layout)

```
Form {  
    Section {  
        TextField(  
            "Title",  
            text: $event.title  
        )  
        TextField(  
            "Location",  
            text: $event.location  
        )  
    }  
  
    Section {  
        Toggle(  
            "All-Day",  
            isOn: $event.isAllDay  
        )  
        DatePicker(  
            "Starts",  
            selection: $event.starts  
        )  
    }  
}
```

```
OrderHistory : View {
previousOrders: [CompletedOrder]

body: some View {
    List(previousOrders) { order in
        HStack {
            VStack(alignment: .leading) {
                Text(order.summary)
                Text(order.purchaseDate)
                    .font(.subheadline)
                    .foregroundColor(.secondary)
            }
            Spacer()
            if order.includeSalt {
                SaltIcon()
            }
        }
    }
}
```



```
struct ContentView : View {
    var body: some View {
        NavigationView {
            TabbedView {
                OrderForm()
                    .tabItemLabel {
                        Image(systemName: "square")
                        Text("New Order")
                    }
                OrderHistory()
                    .tabItemLabel {
                        Image(systemName: "clock")
                        Text("History")
                    }
            }
        }
    }
}
```




ALEM DO BASICO

- Layout System
- Geometry Reader
- Environment
- Preferences

LAYOUT SYSTEM

**Layout é decidir o tamanho das
coisas na tela**

LAYOUT SYSTEM

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struct ContentView: View {  
    var body: some View {  
        Text("Olá, Mundo!")  
    }  
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Olá, Mundo!

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Root View

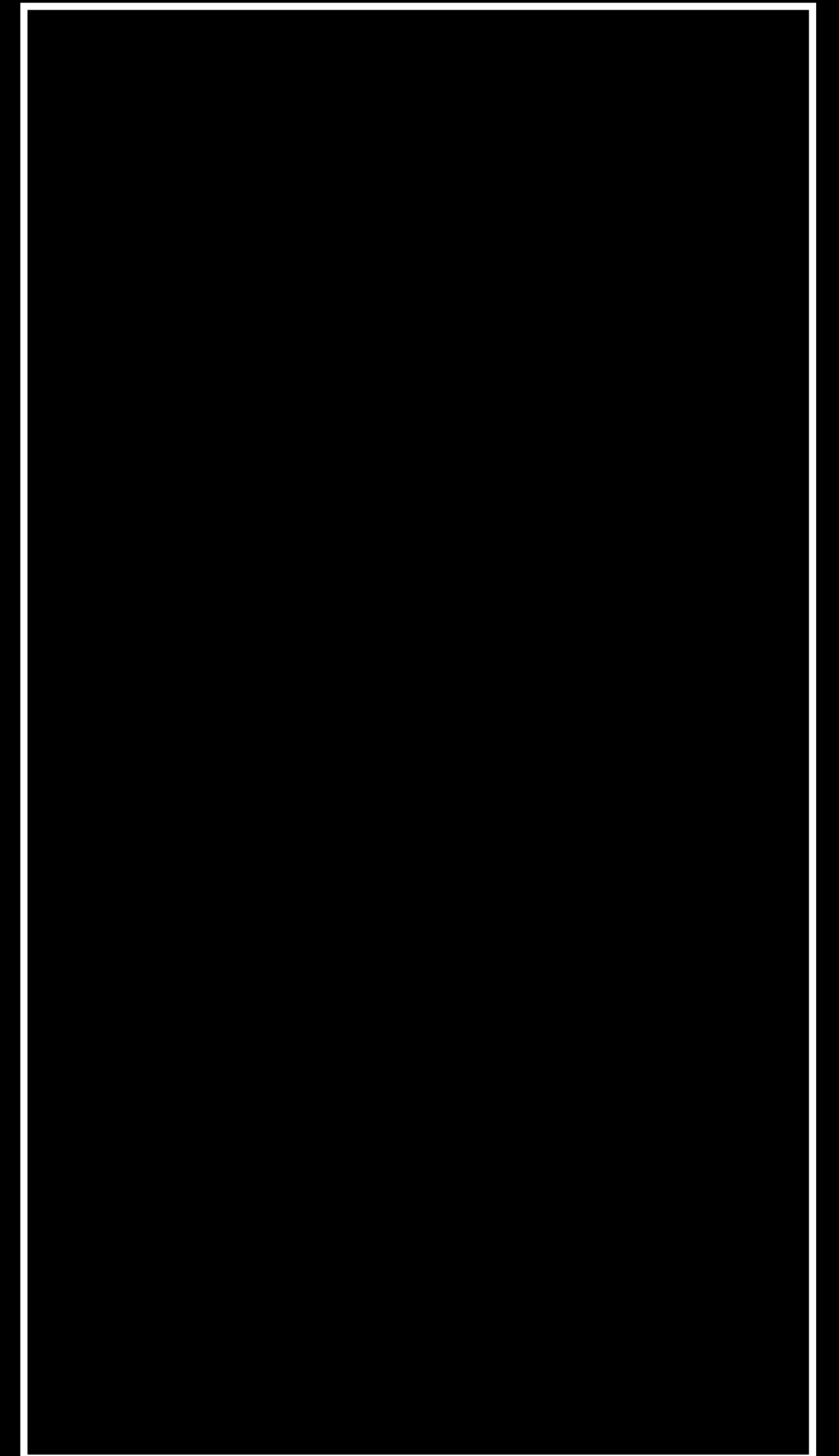
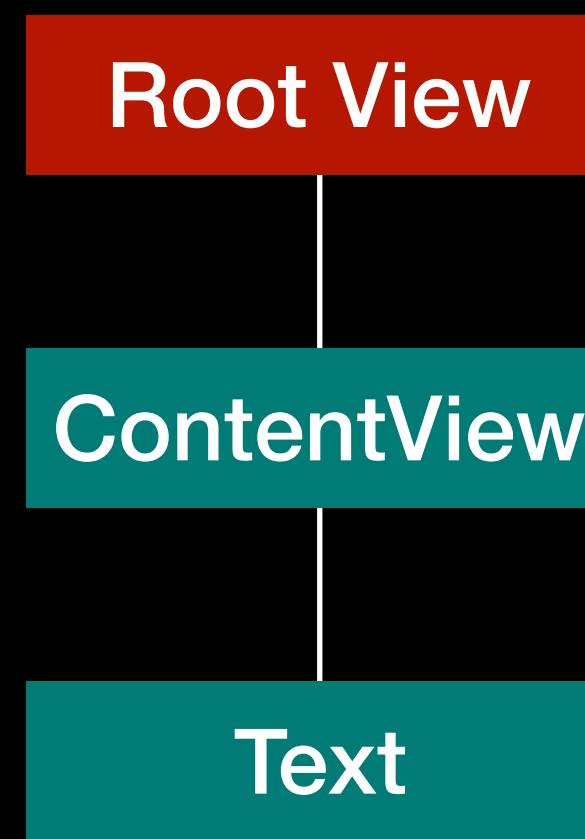
ContentView

Text

Olá, Mundo!

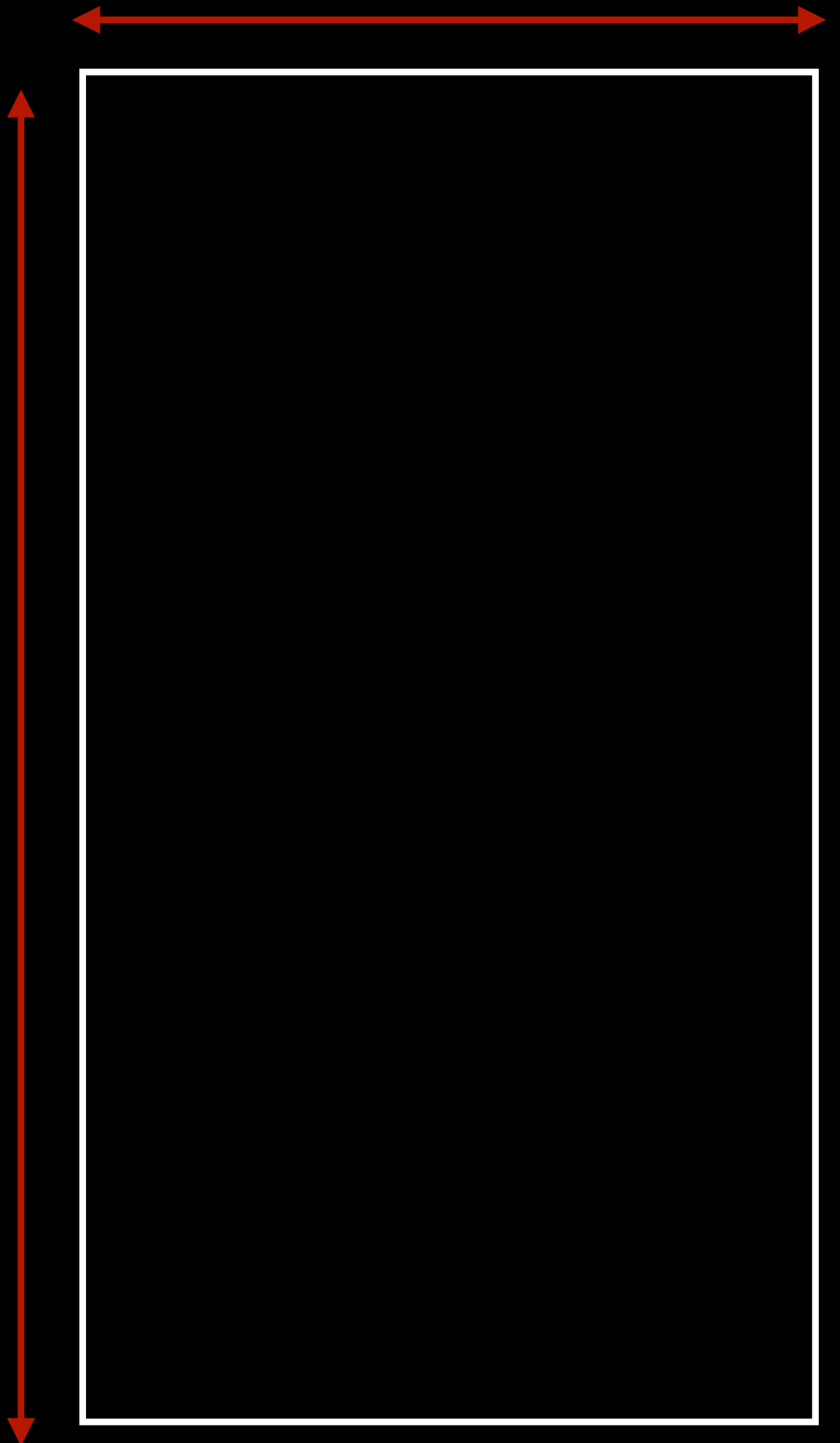
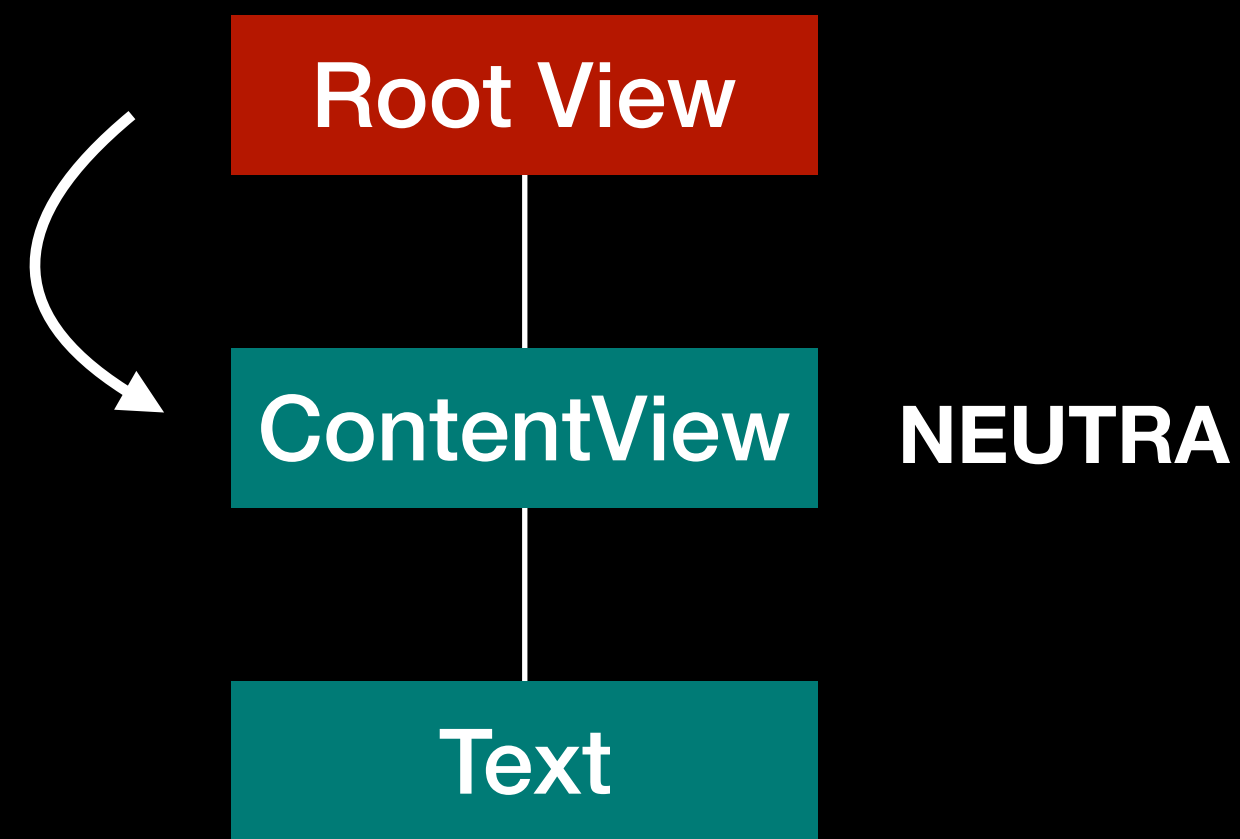
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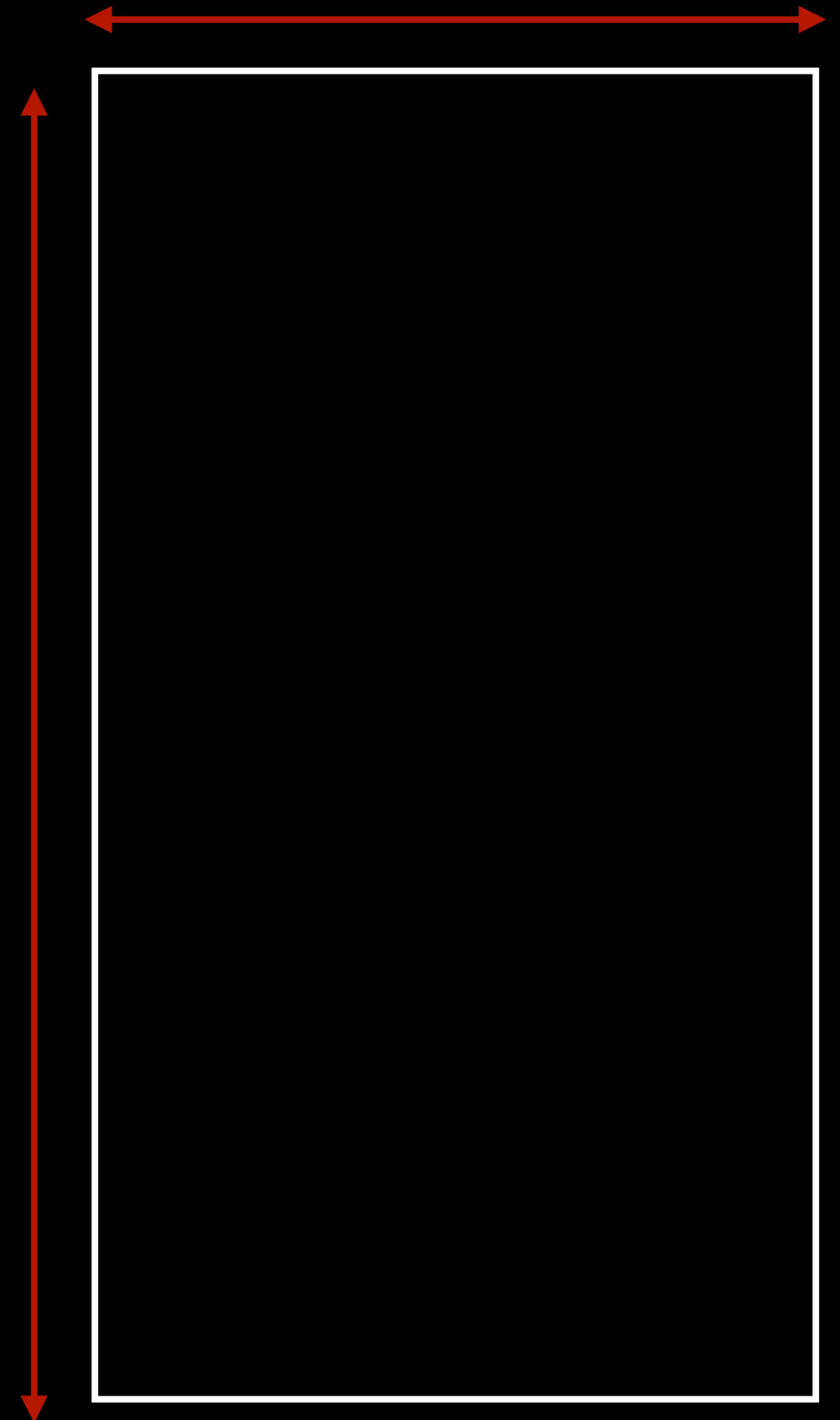
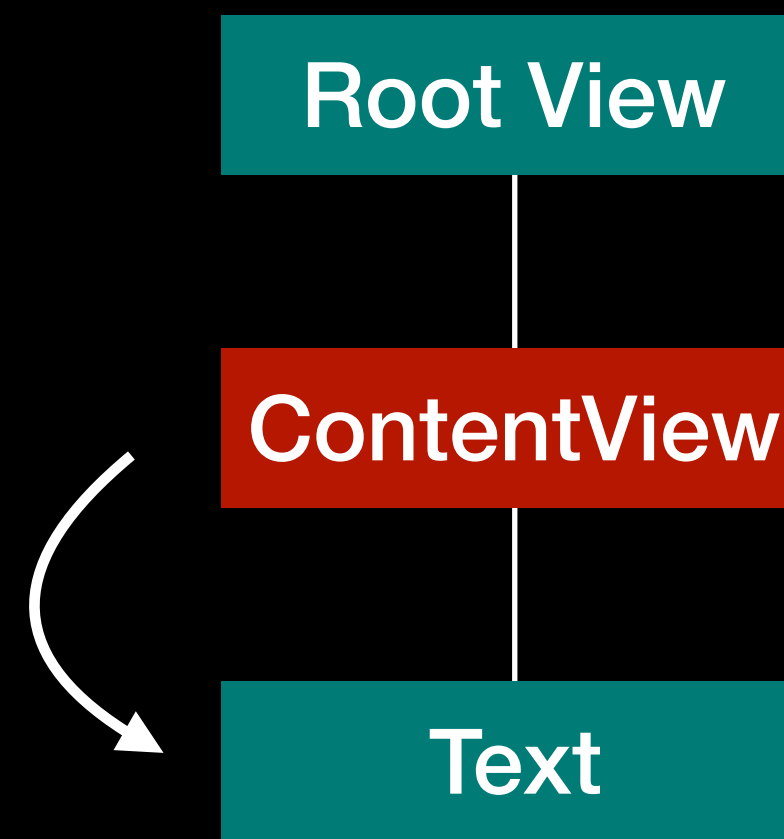
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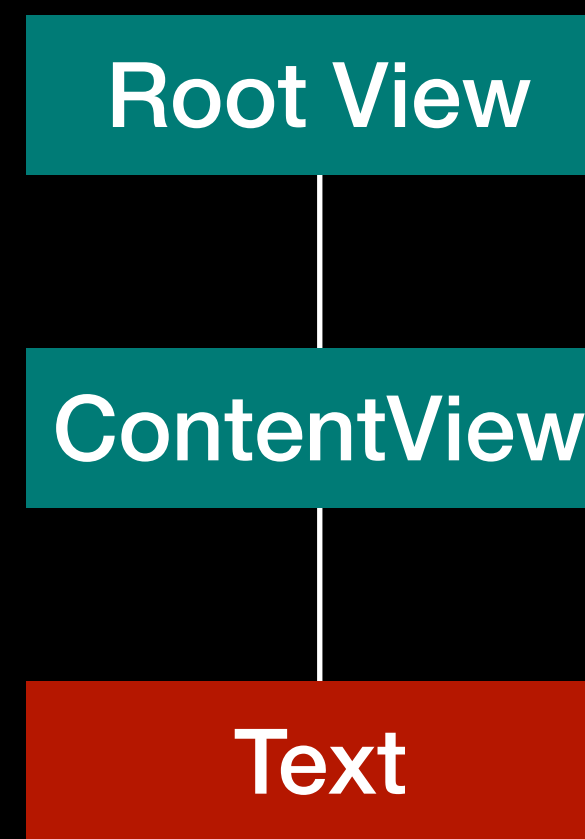
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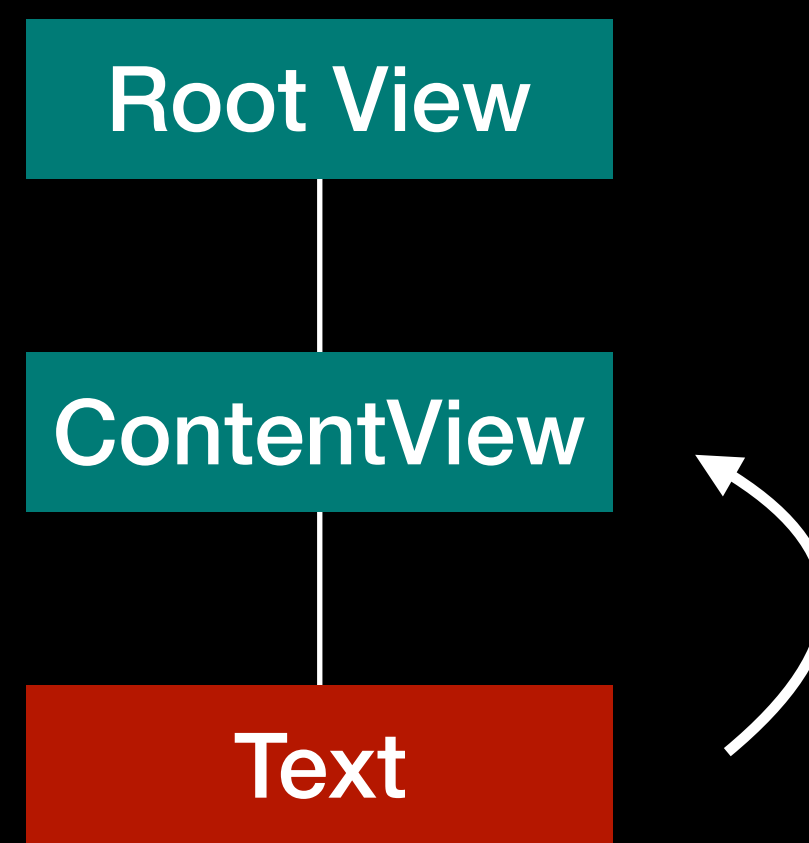
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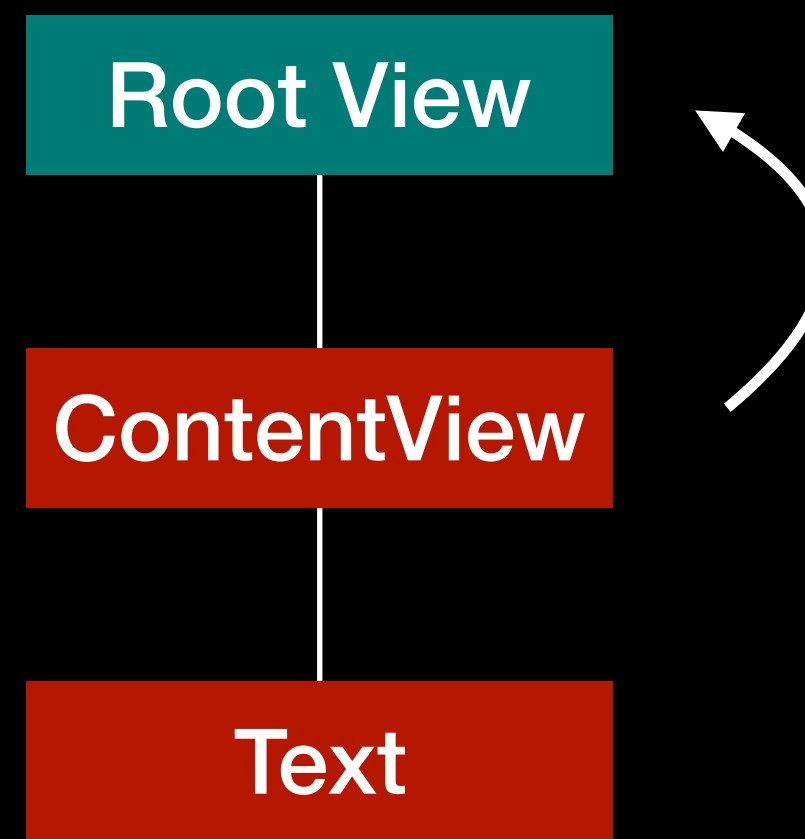
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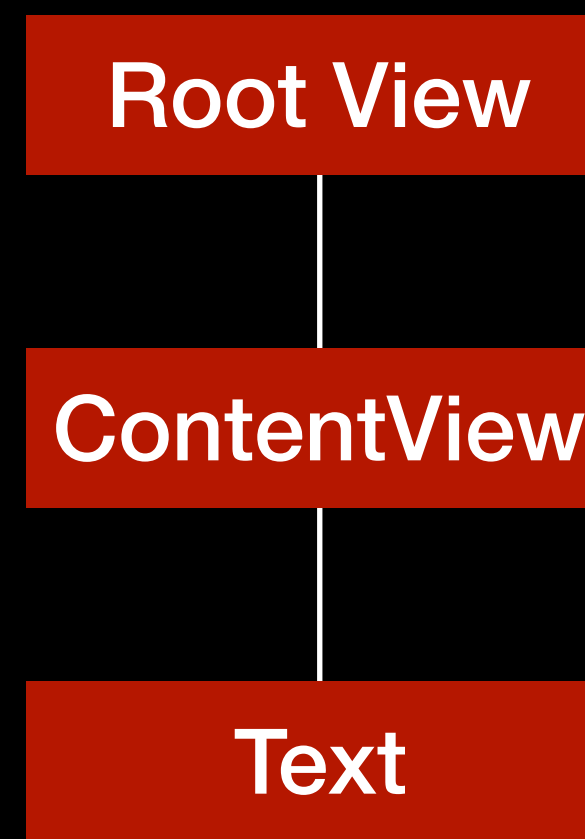
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LAYOUT SYSTEM

1. Pai propõem um tamanho ao filho
2. Filho escolhe seu próprio tamanho
3. Pai posiciona filho na coordenada do pai

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**Não existe maneira de forçar um
tamanho no seu filho.**

Não existe maneira de forçar um tamanho no seu filho.

Pense em guias, sugestões para os filhos

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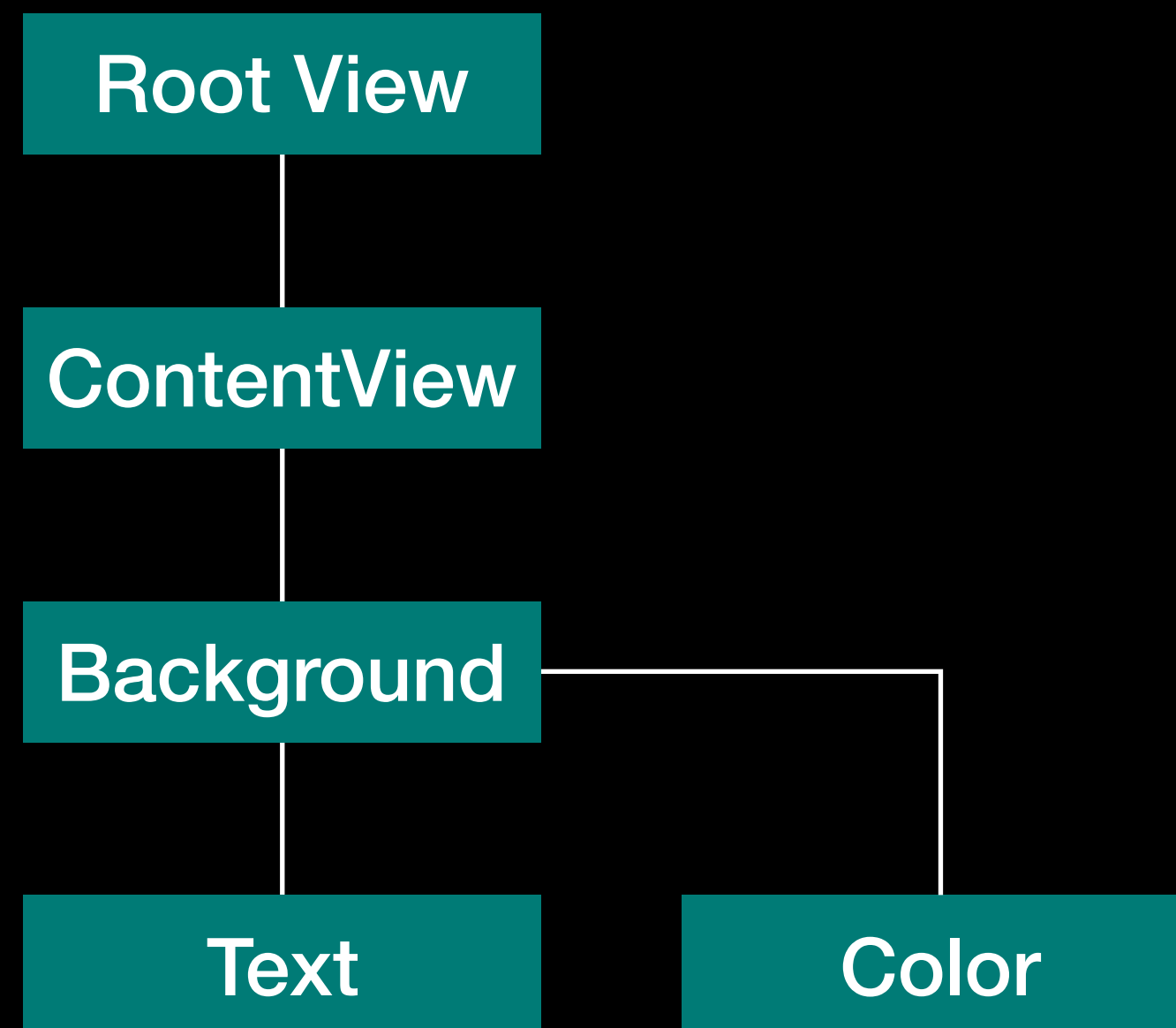
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LAYOUT SYSTEM

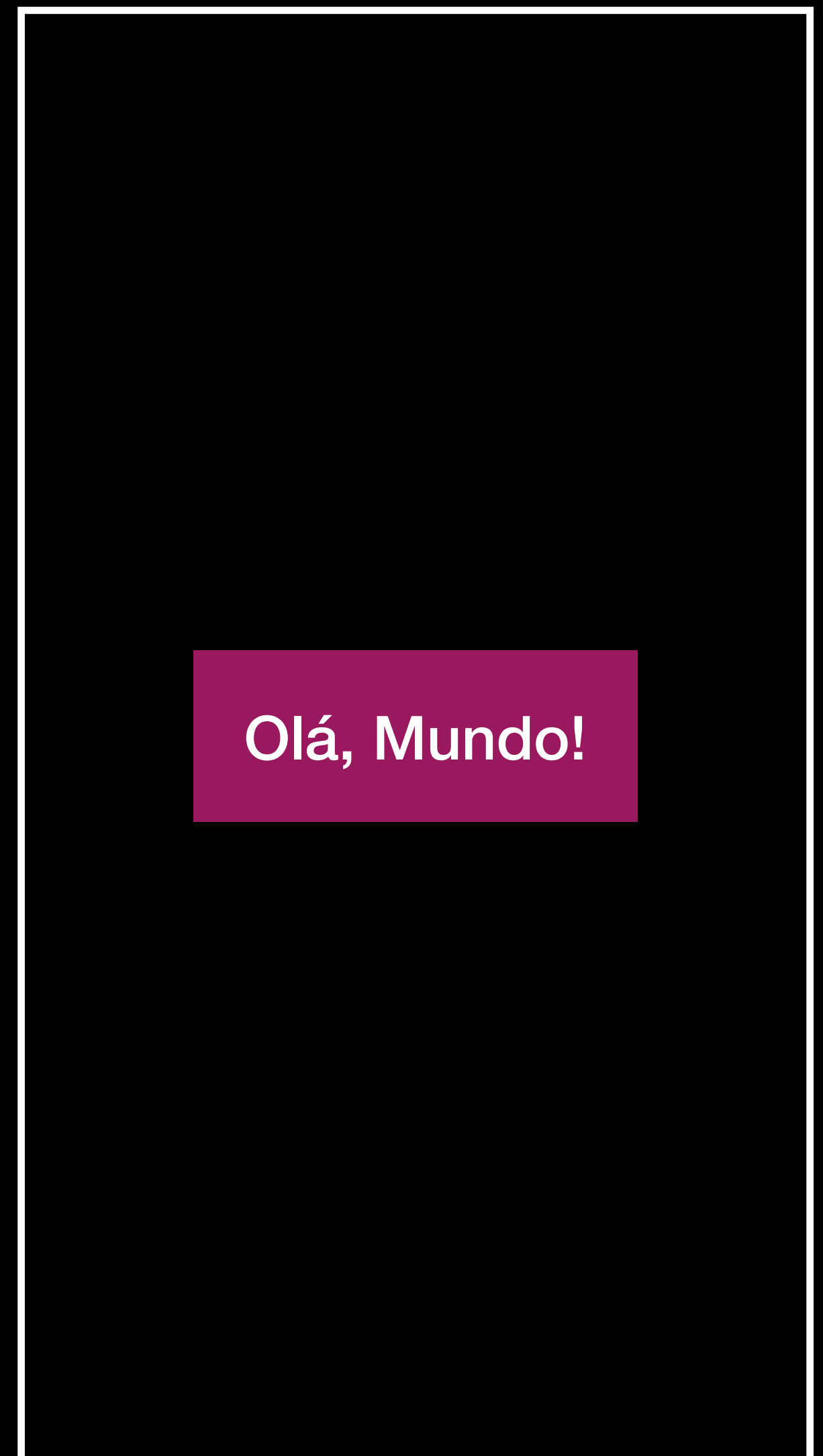
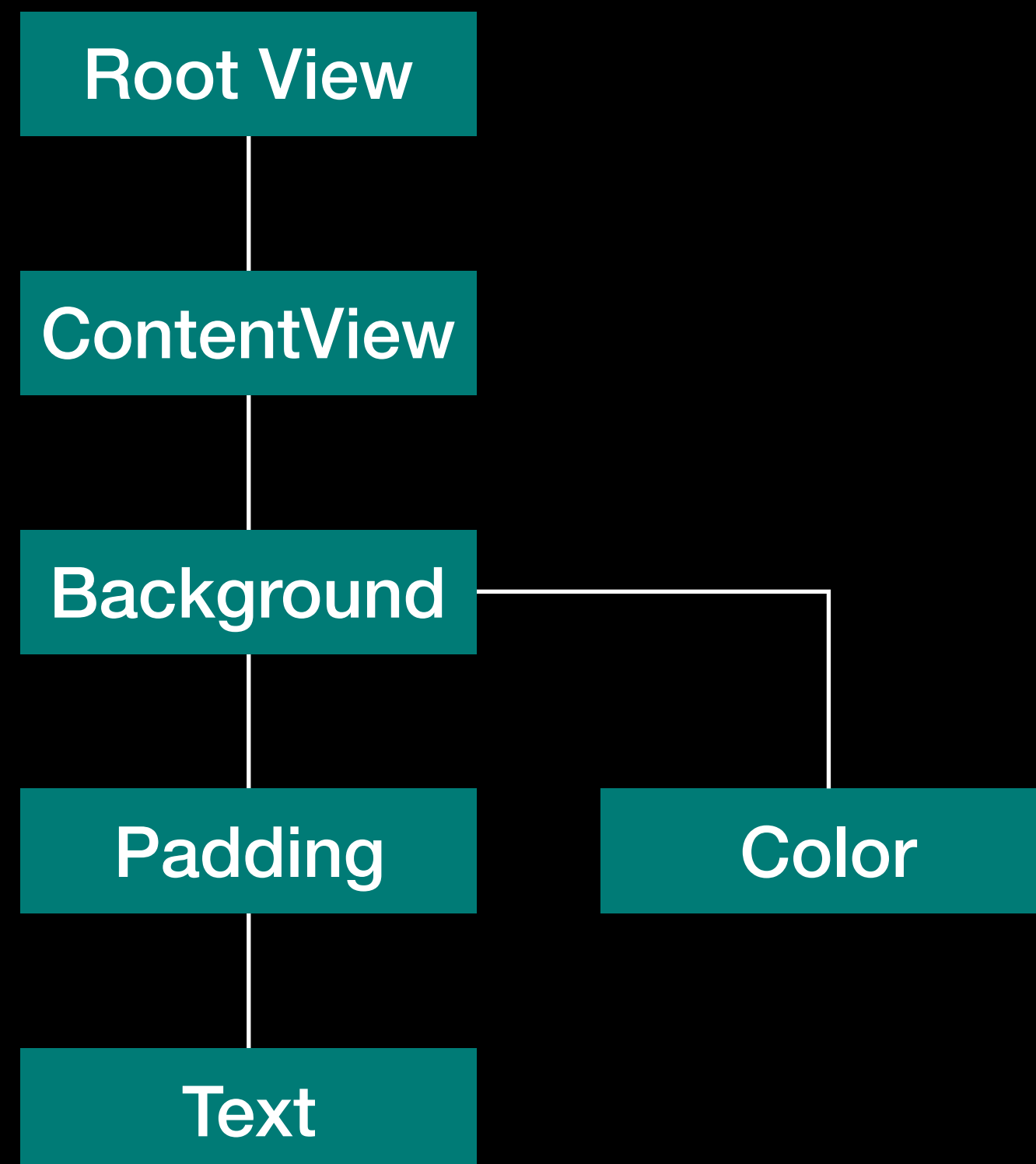
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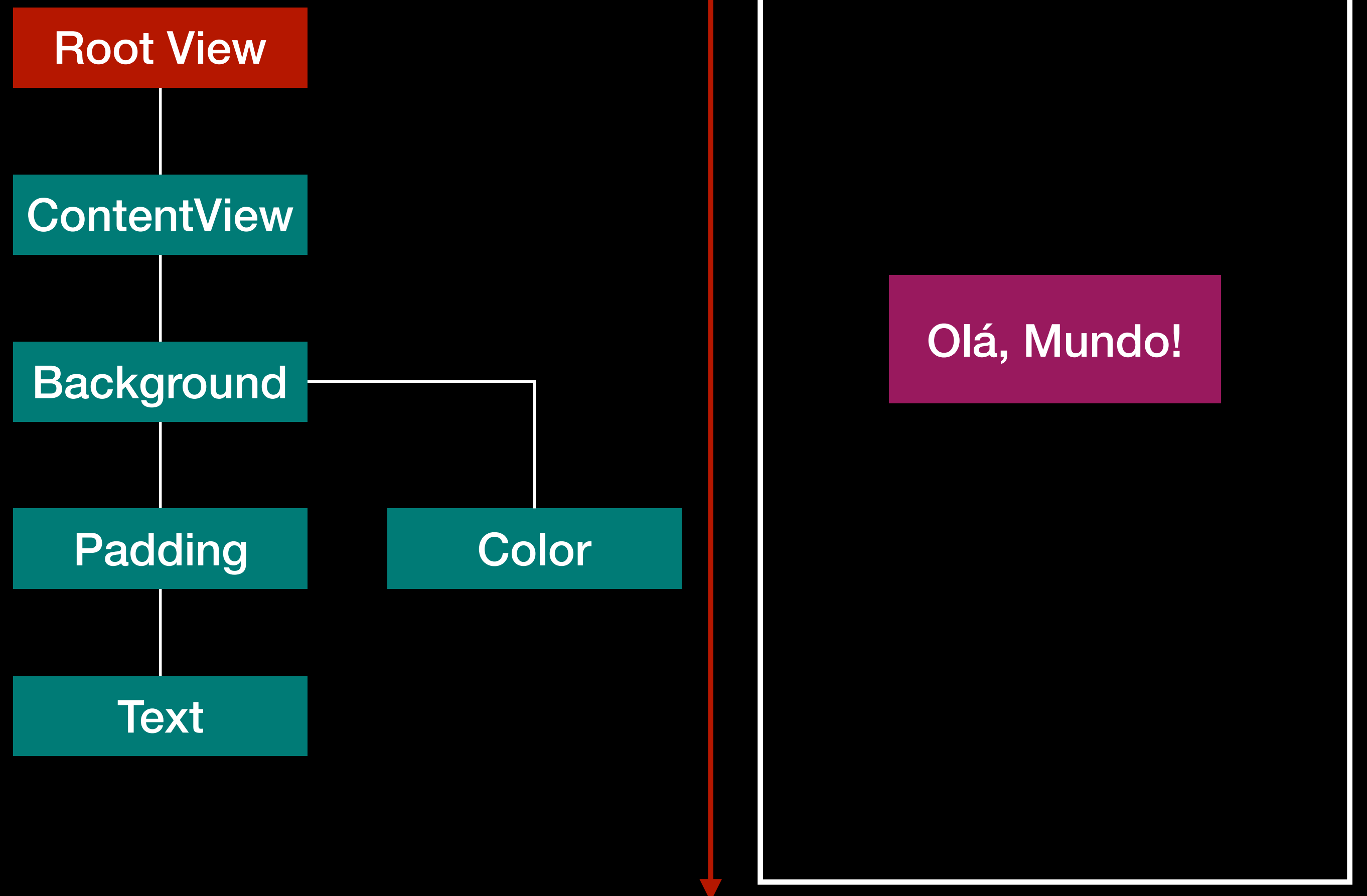
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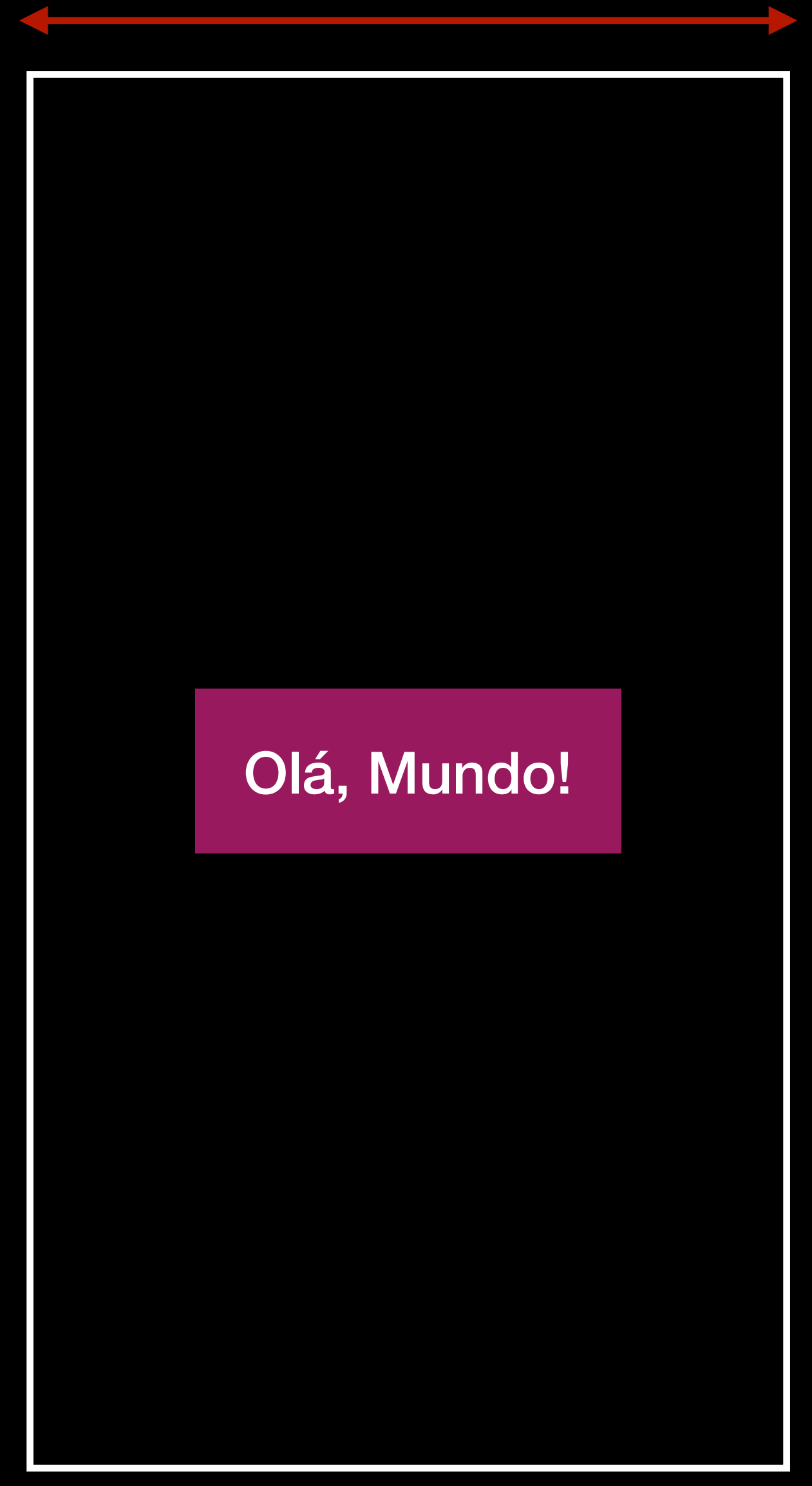
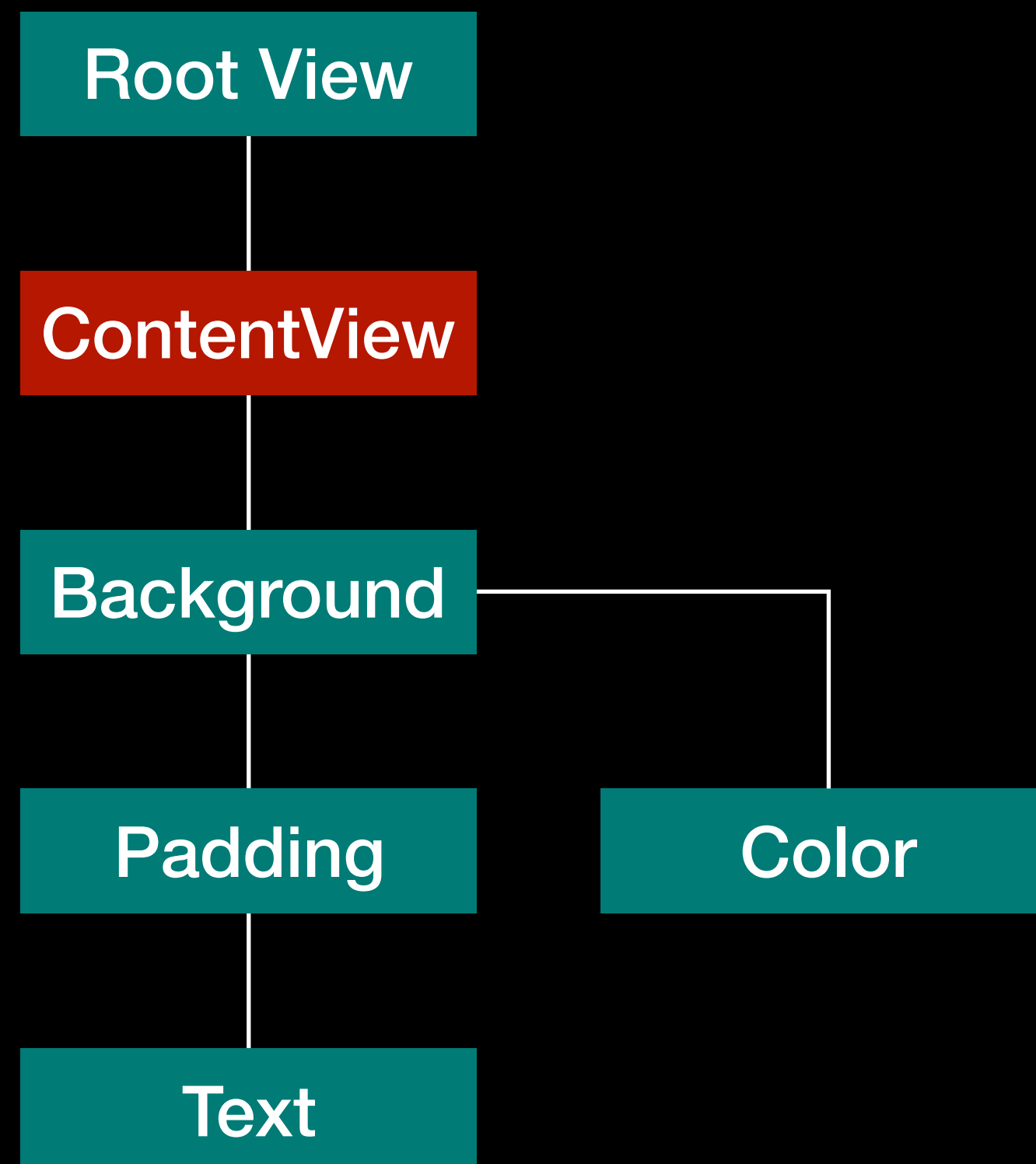
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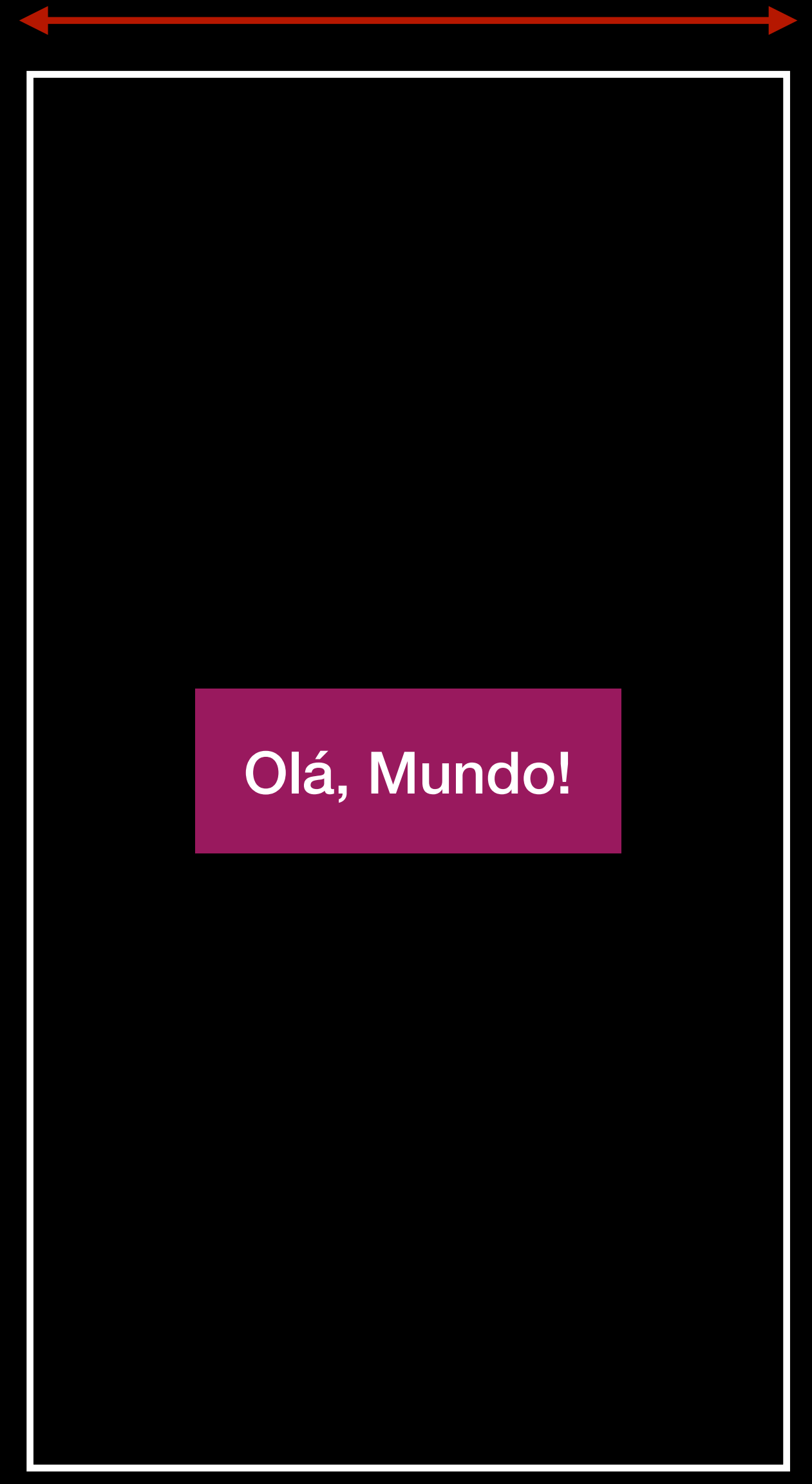
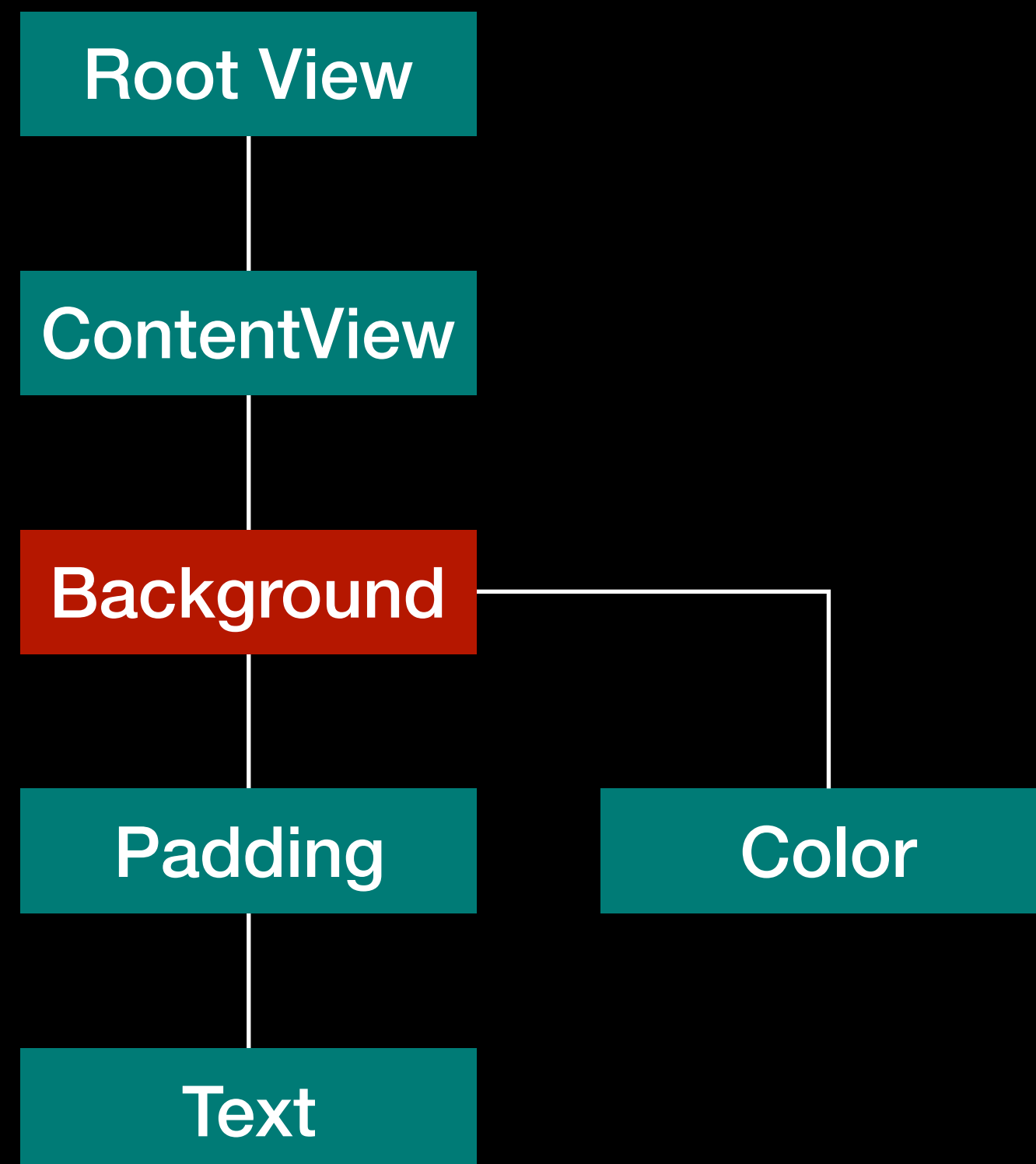
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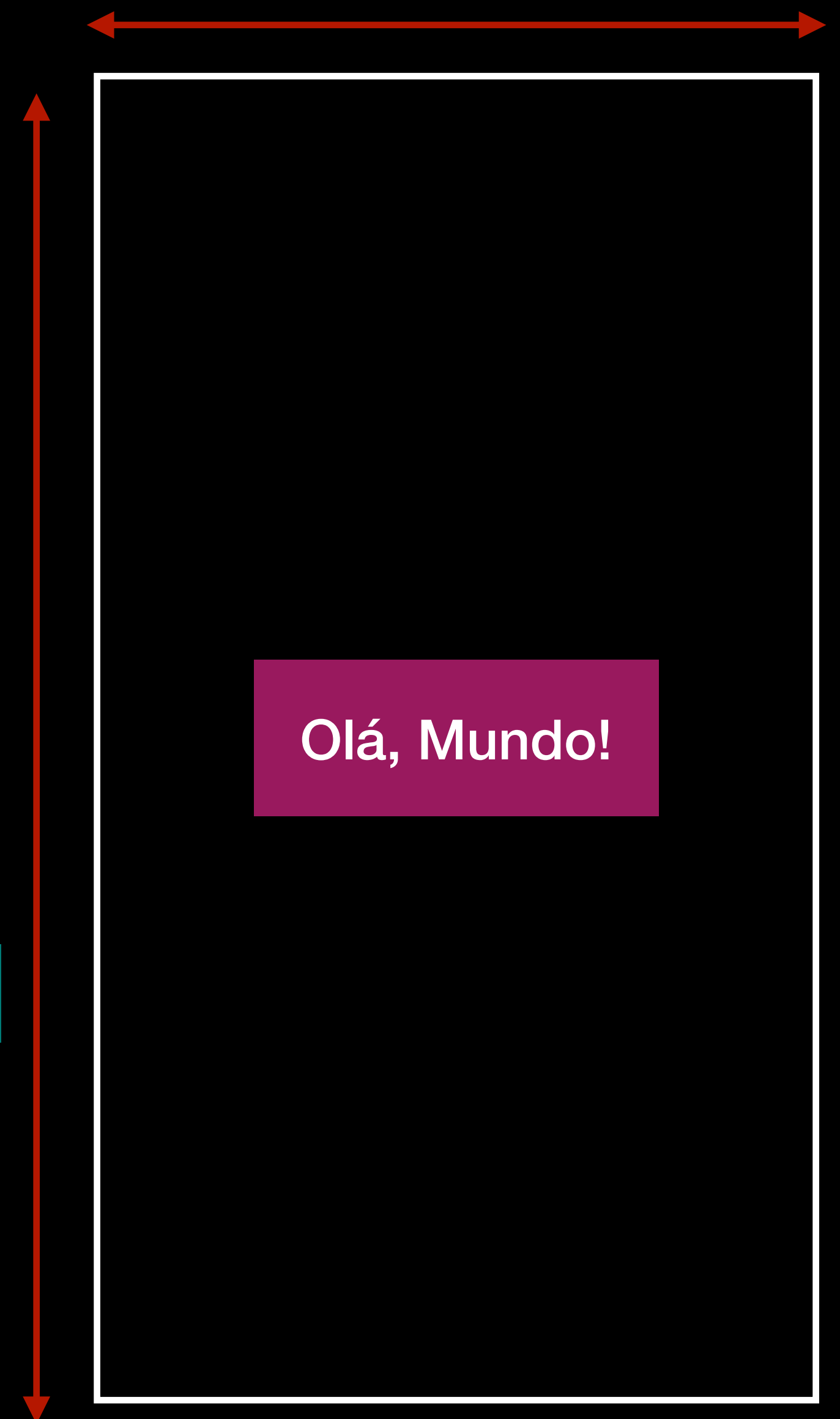
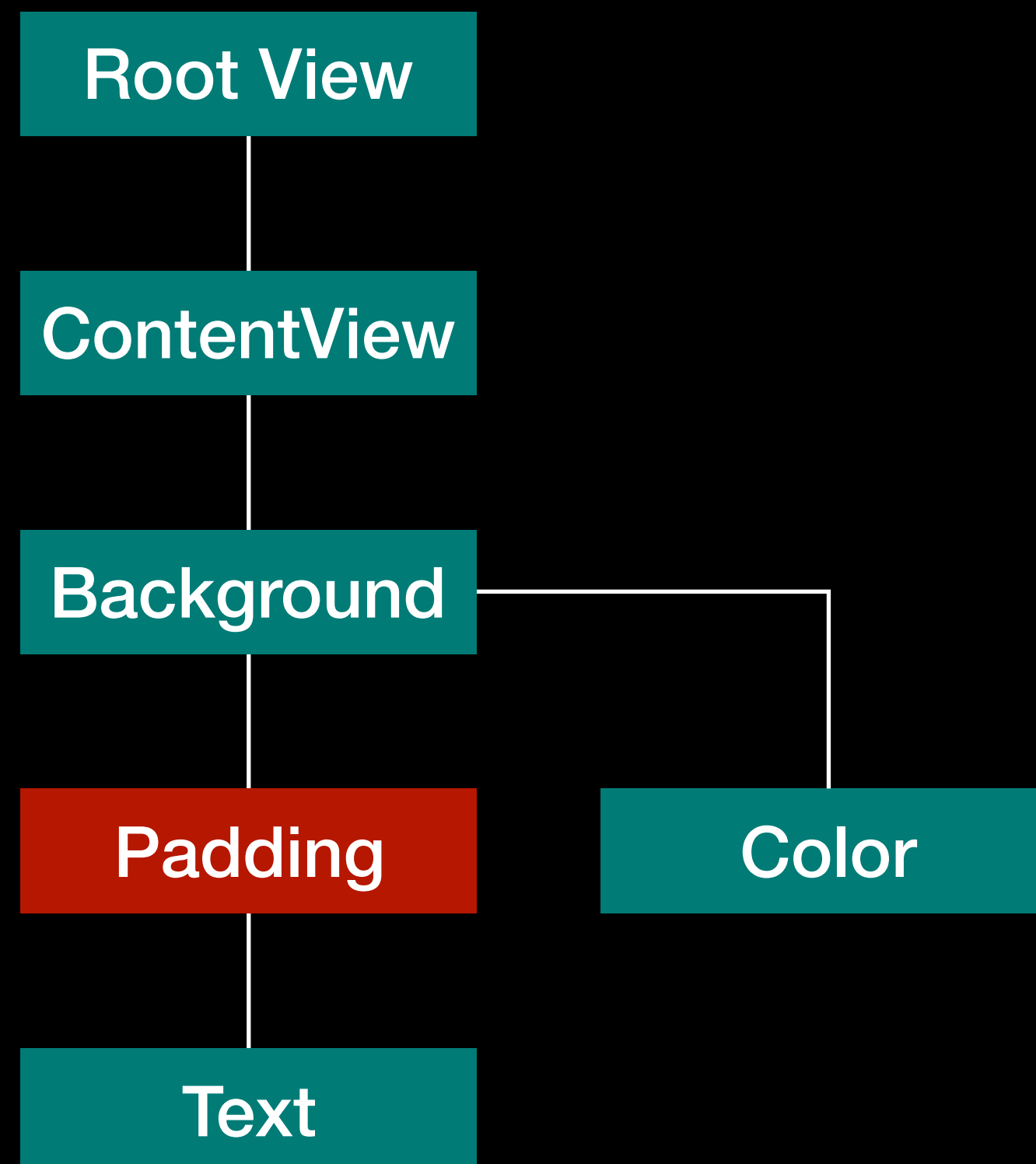
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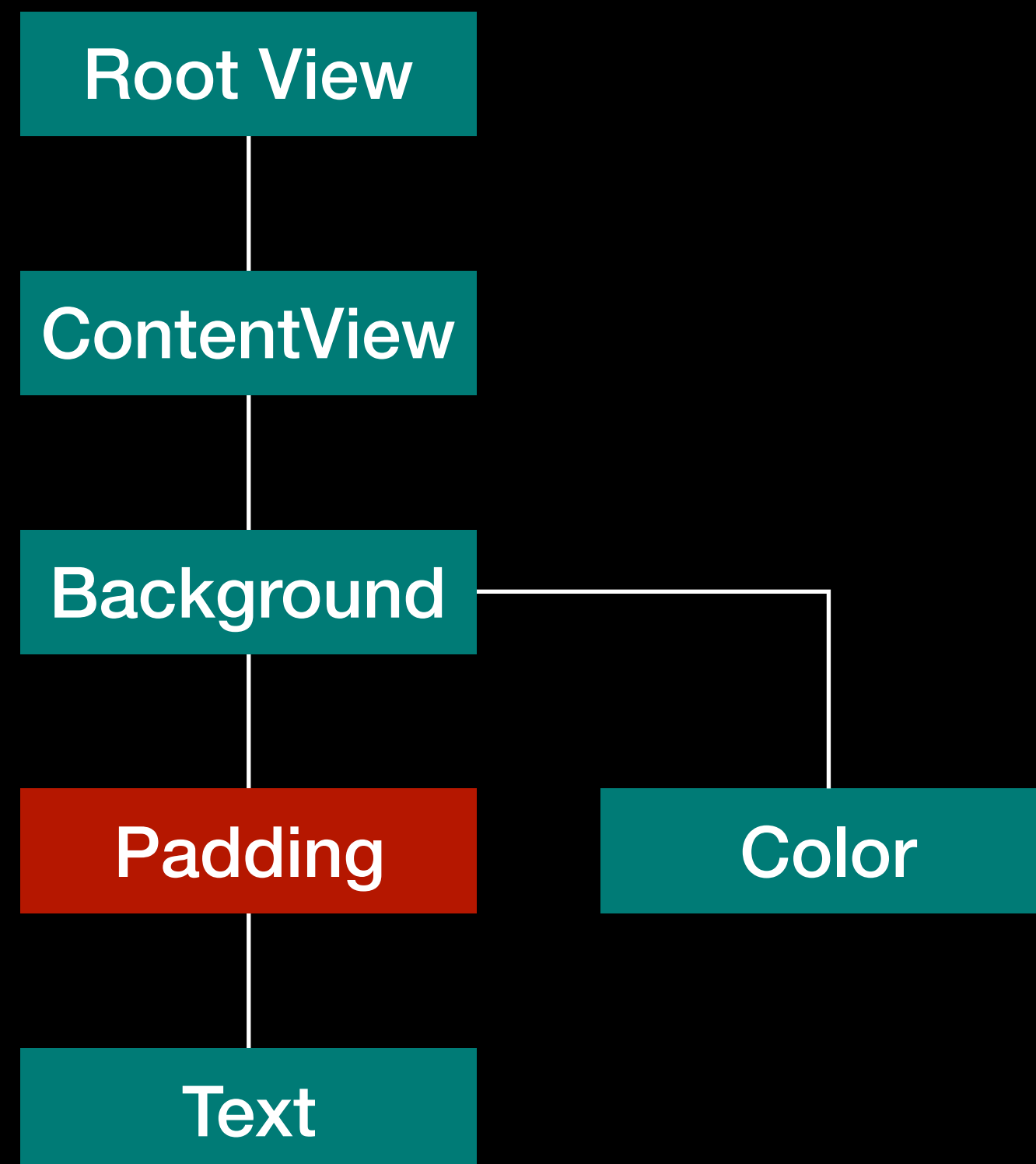
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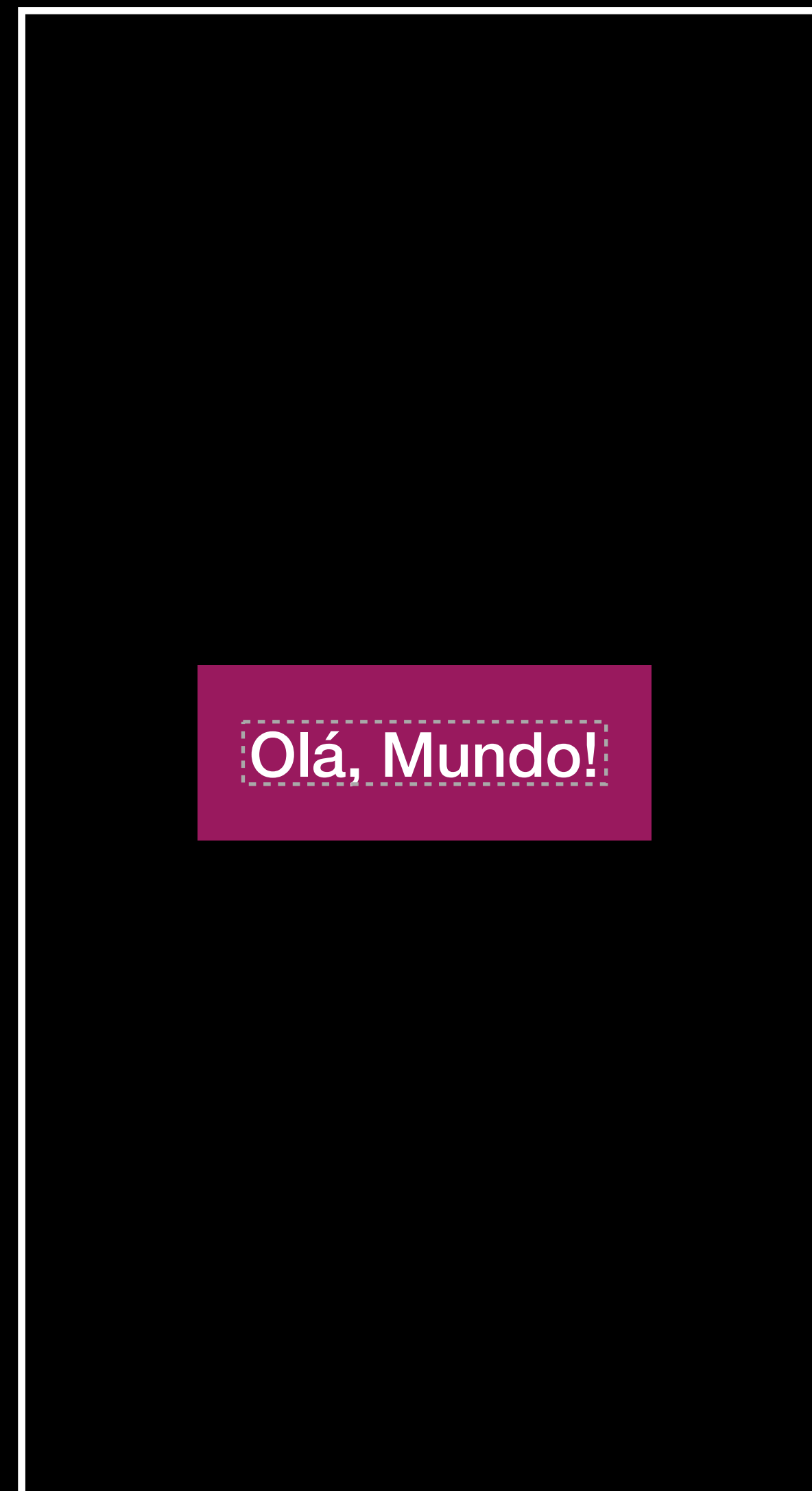
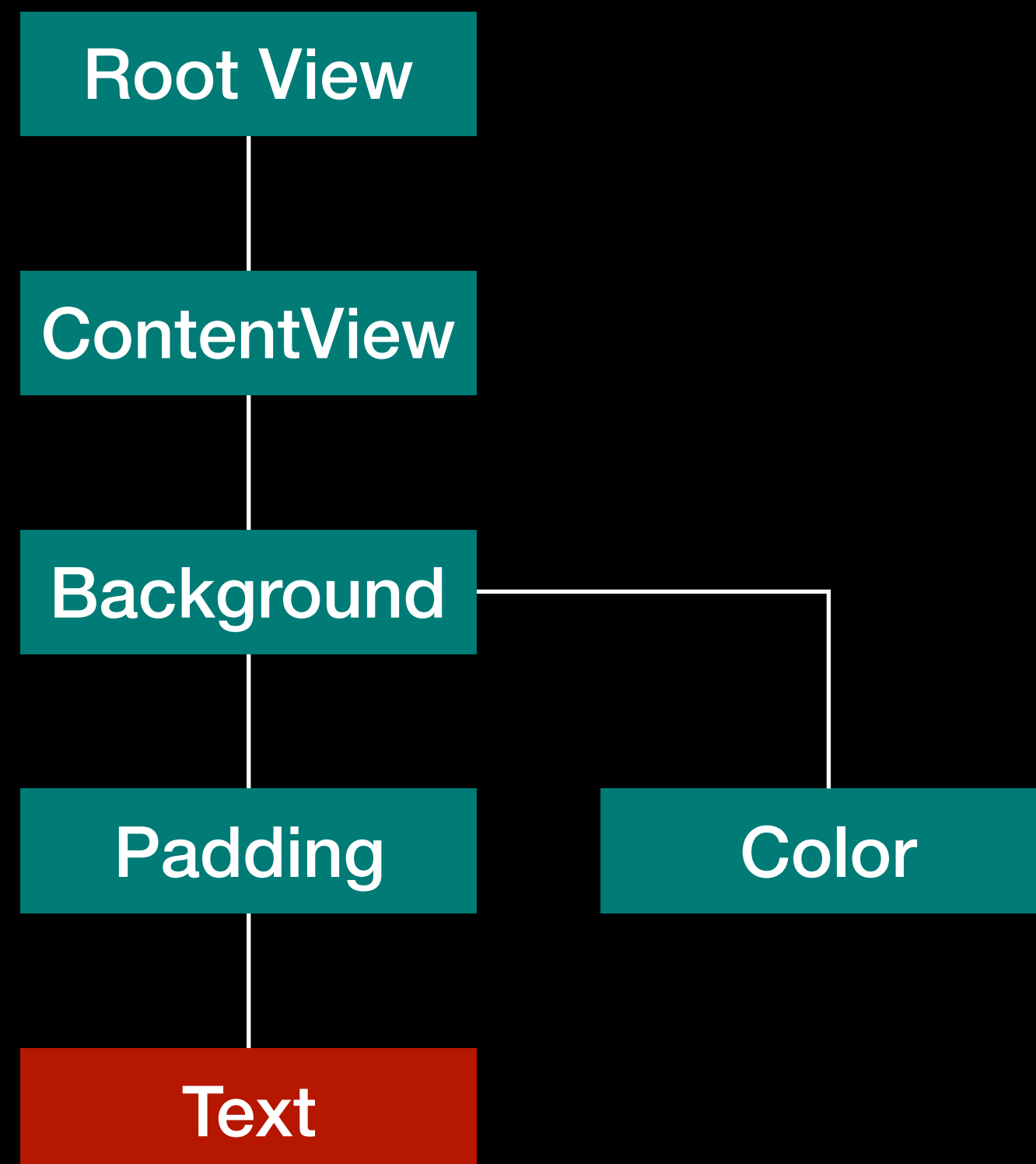
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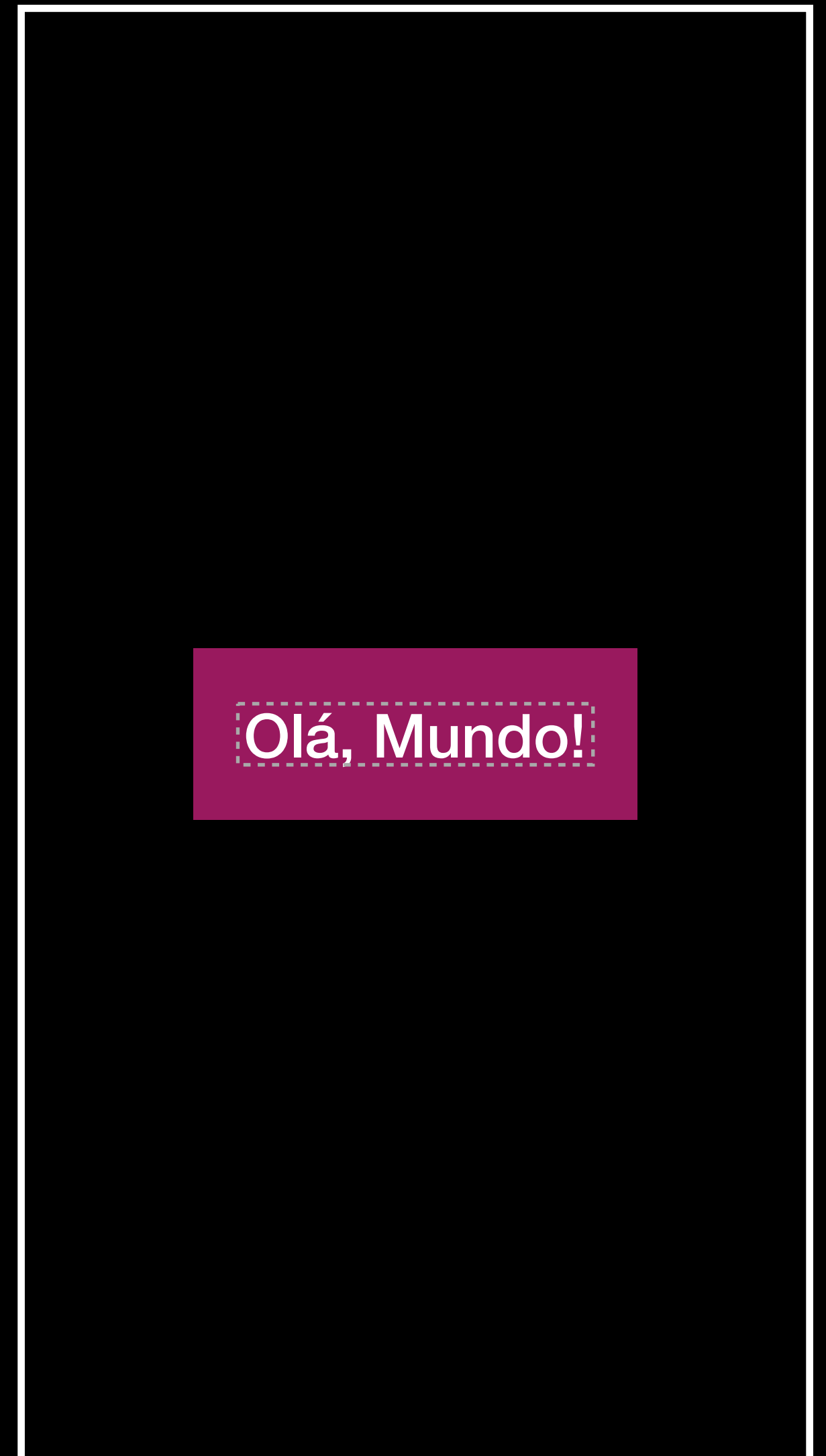
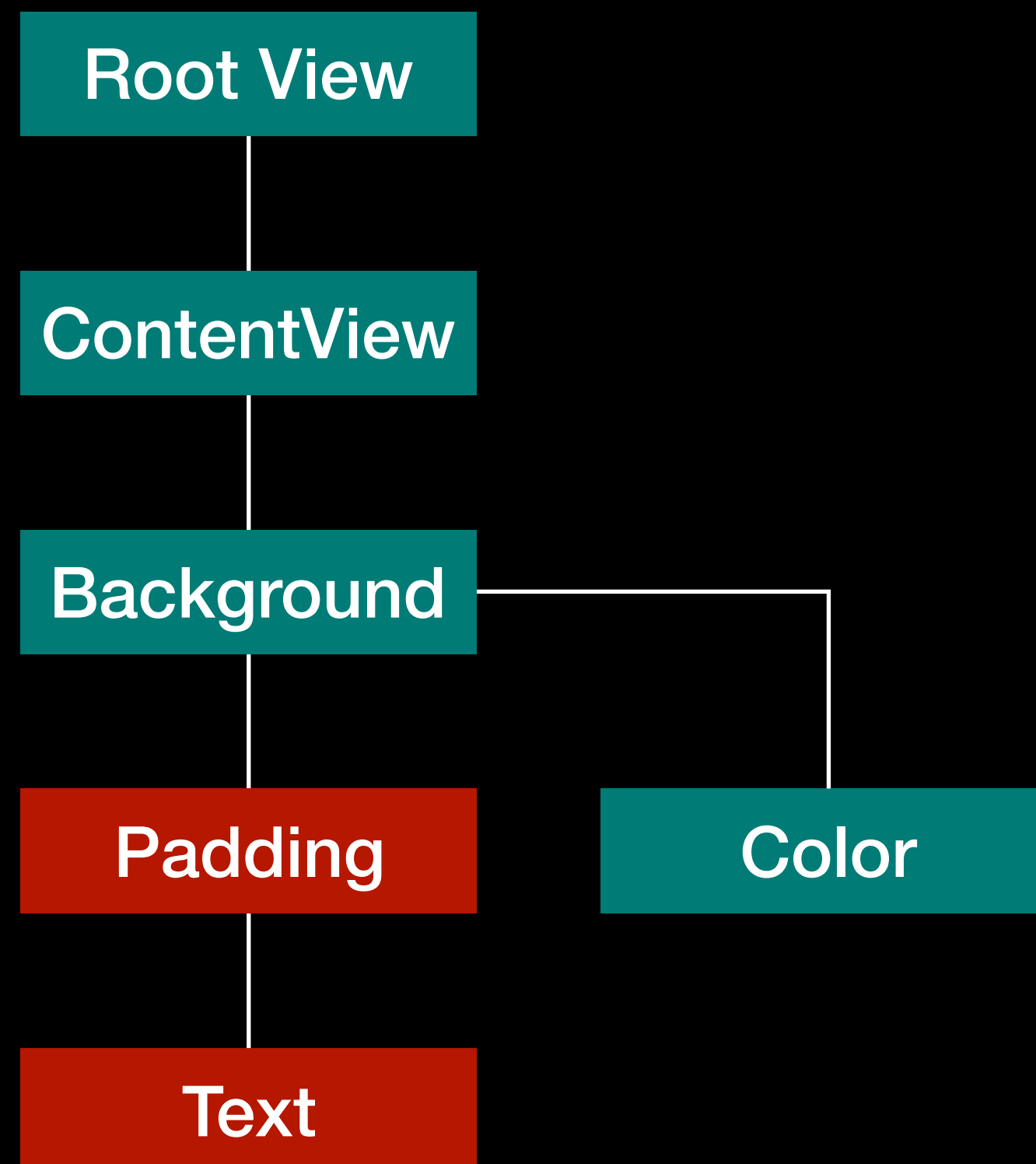
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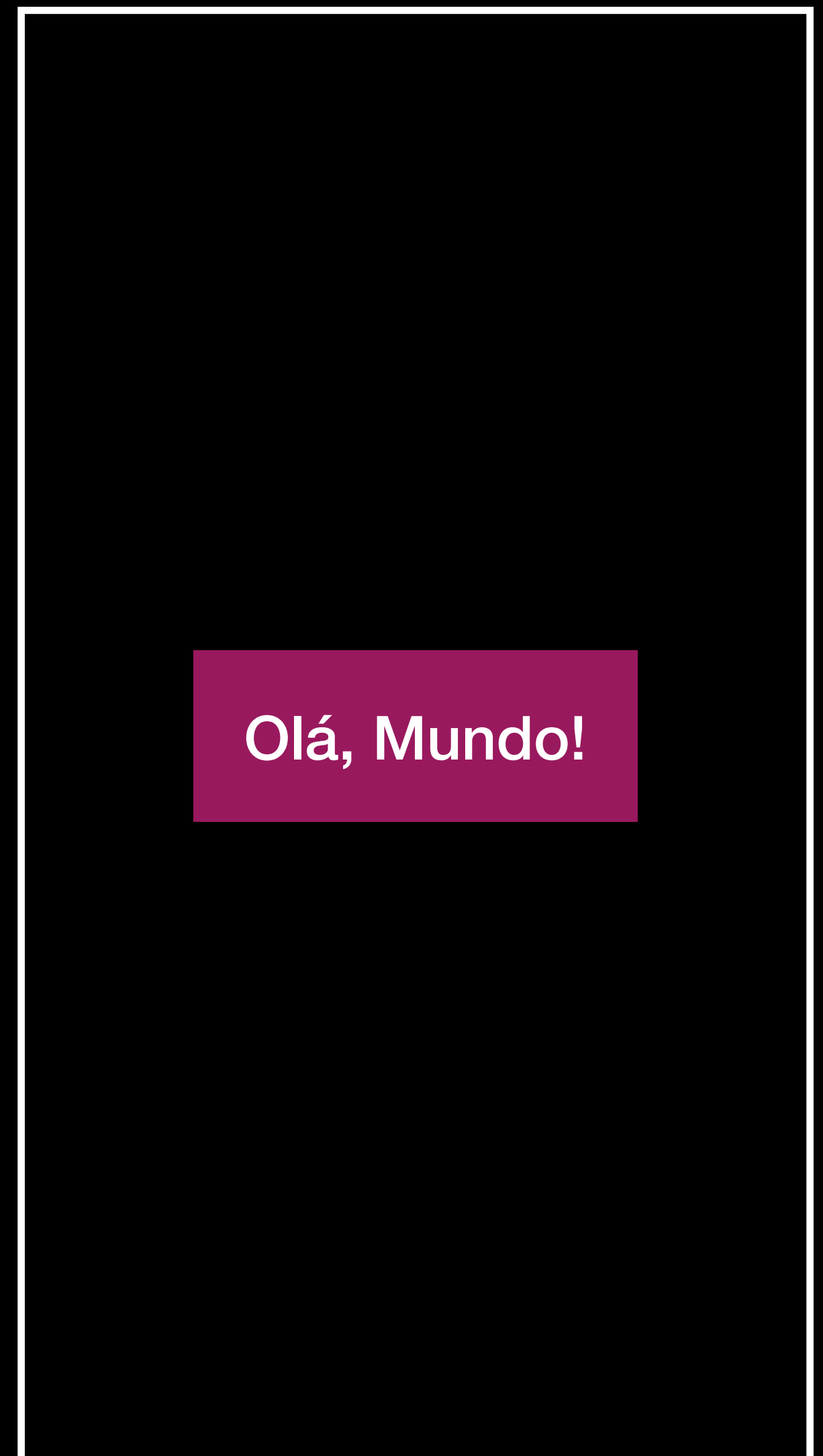
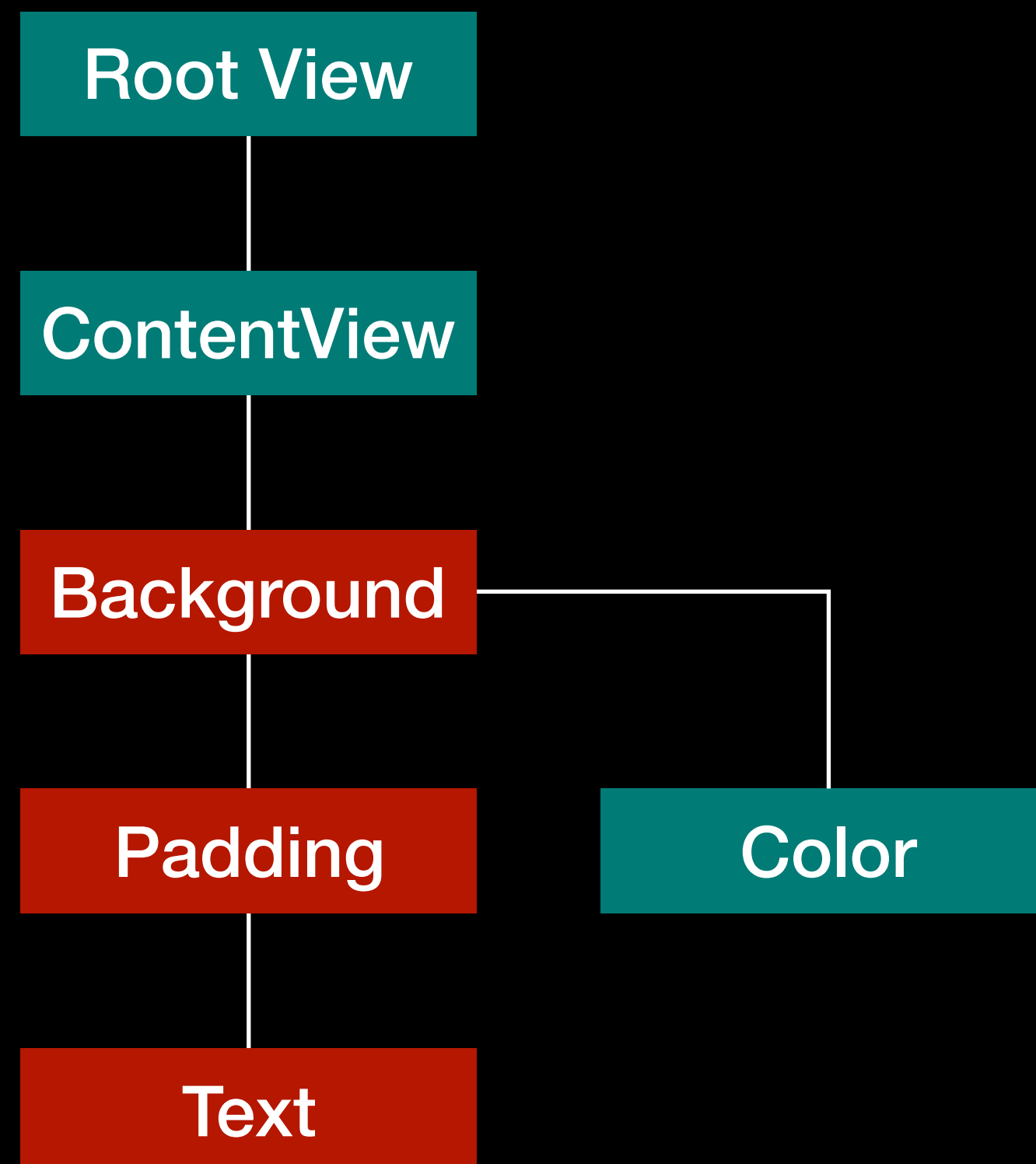
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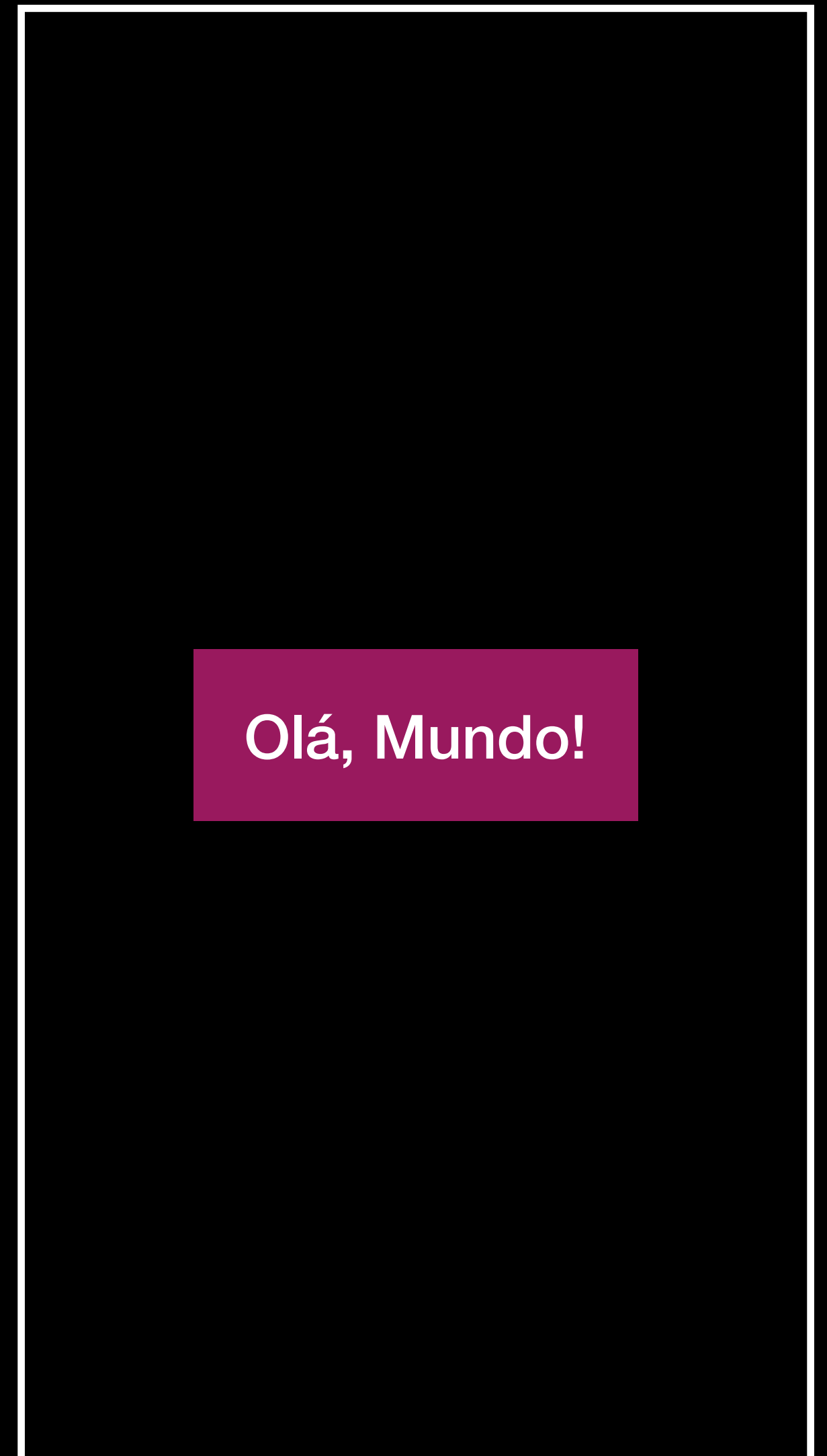
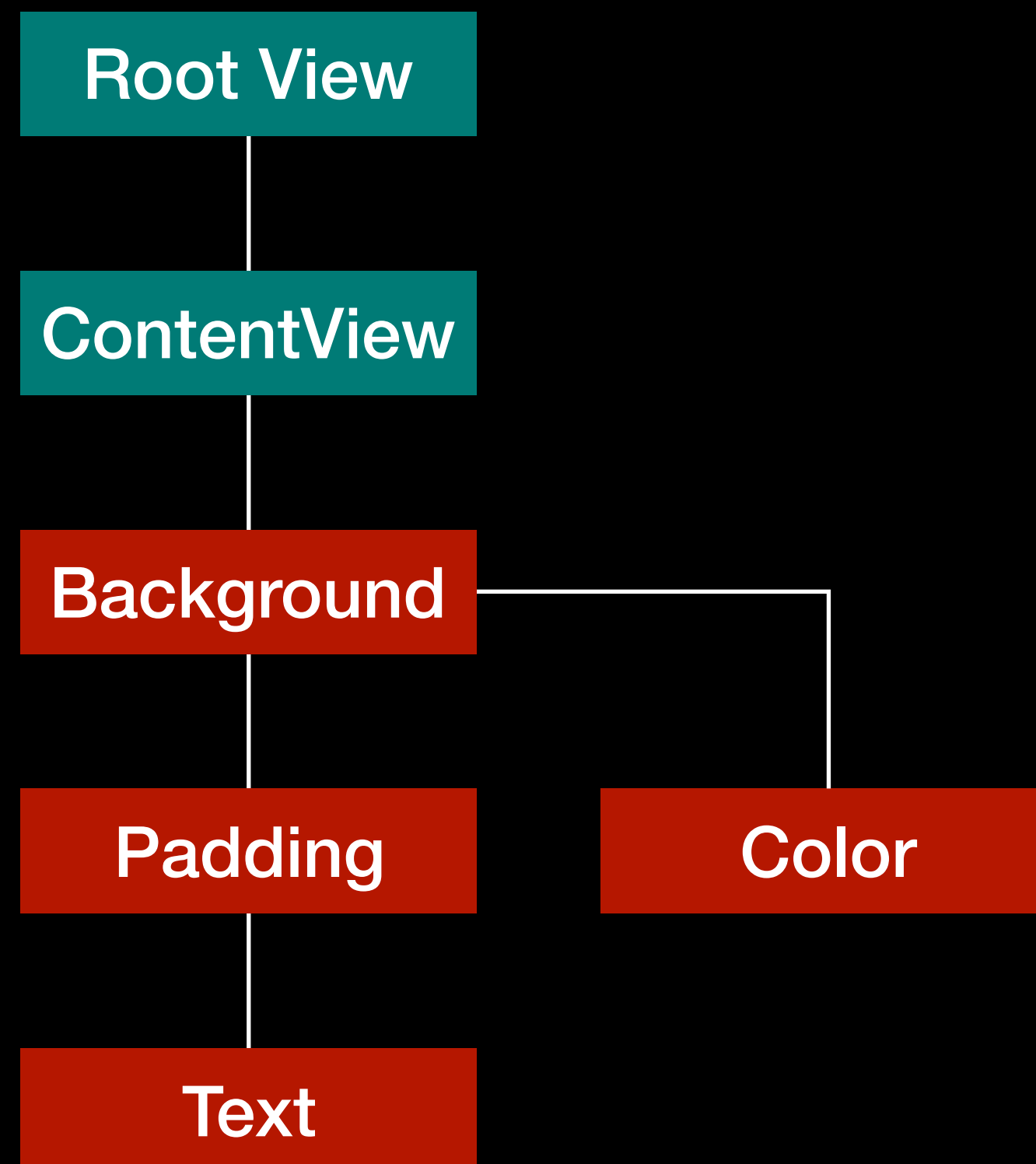
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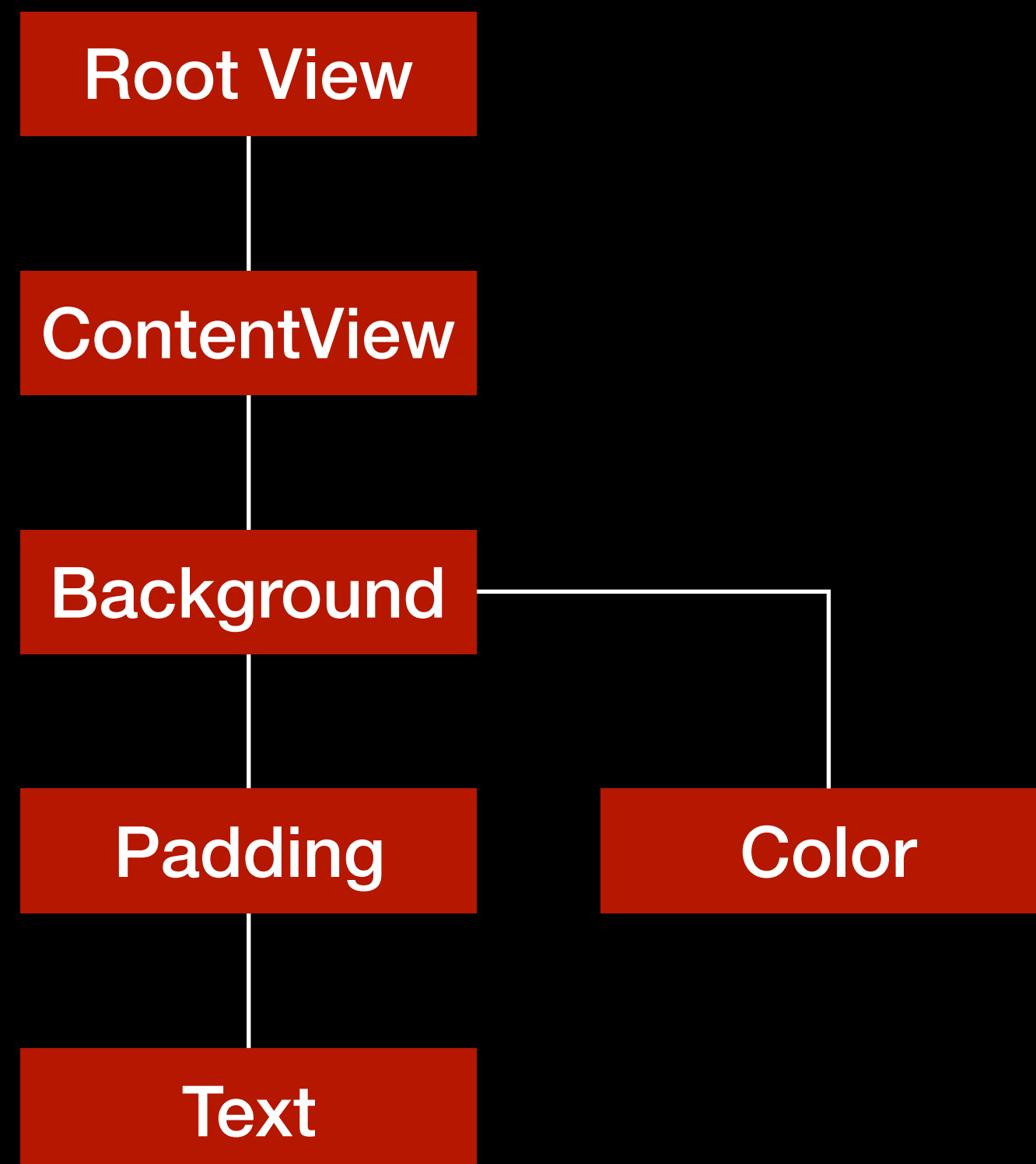
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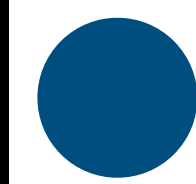


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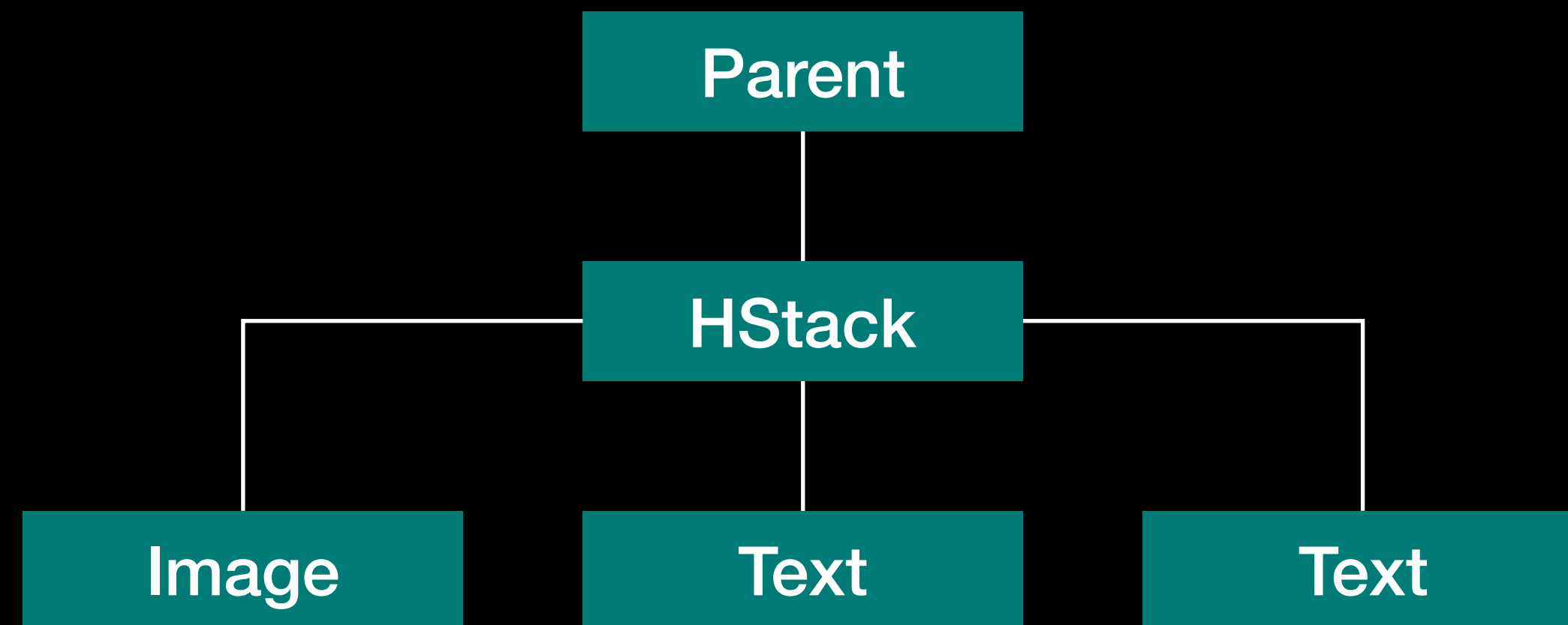


LAYOUT SYSTEM



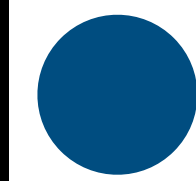
Nome Completo Txai Wieser

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HStack {  
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  Text("Nome Completo")  
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}  
  .lineLimit(1)
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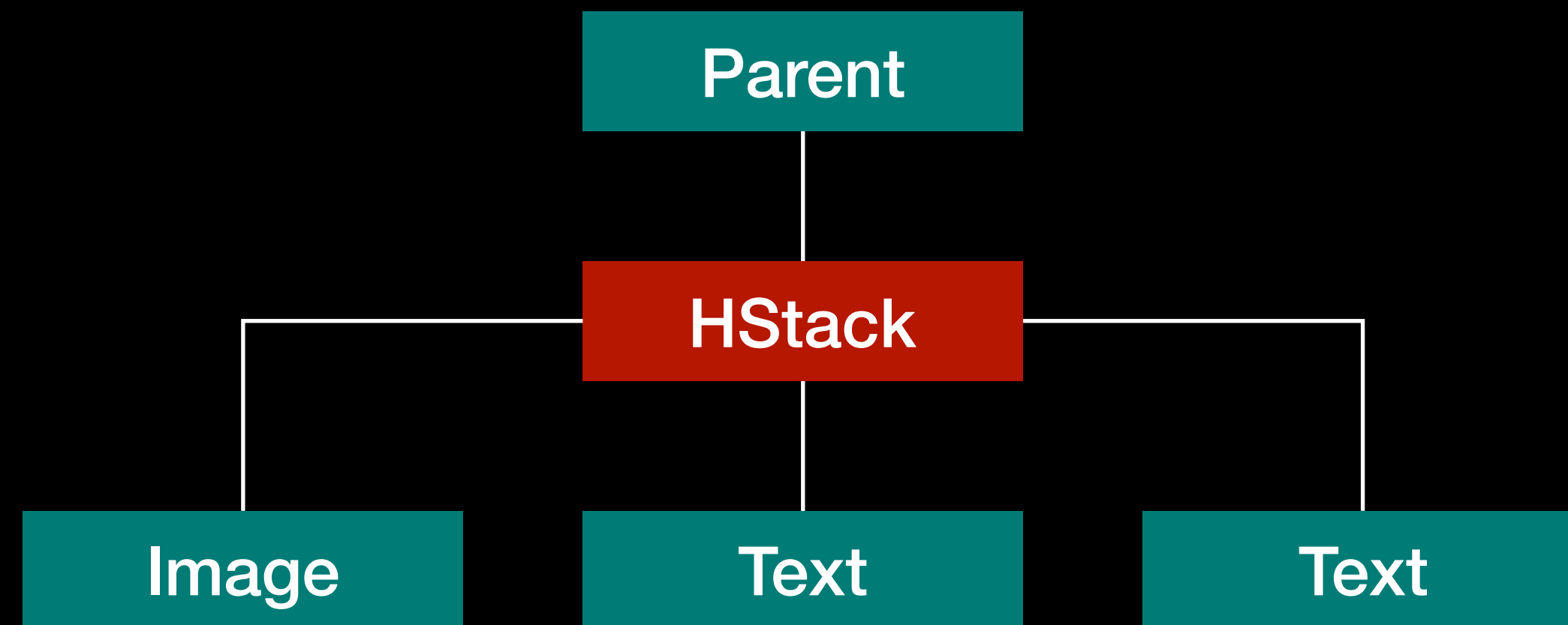


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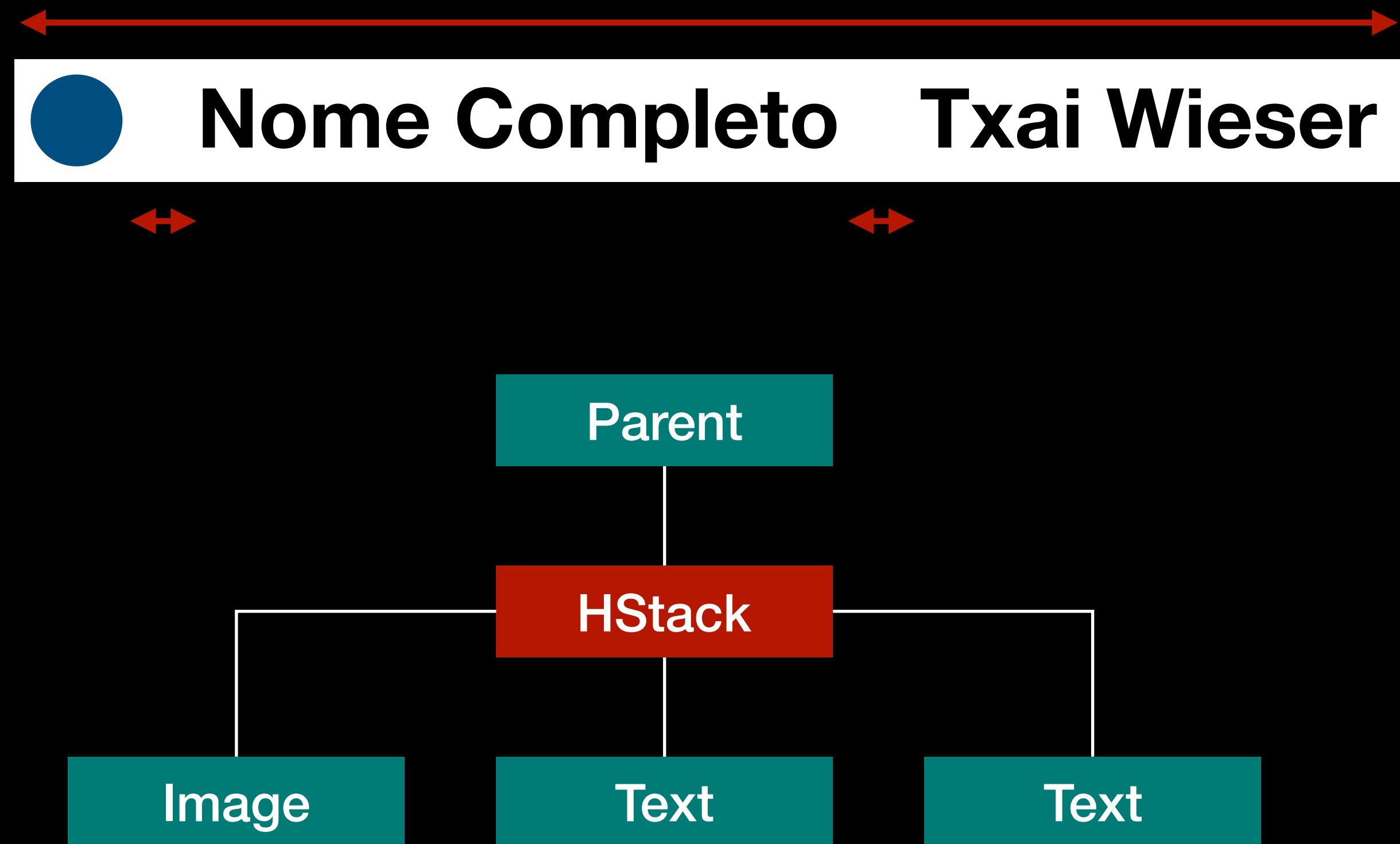


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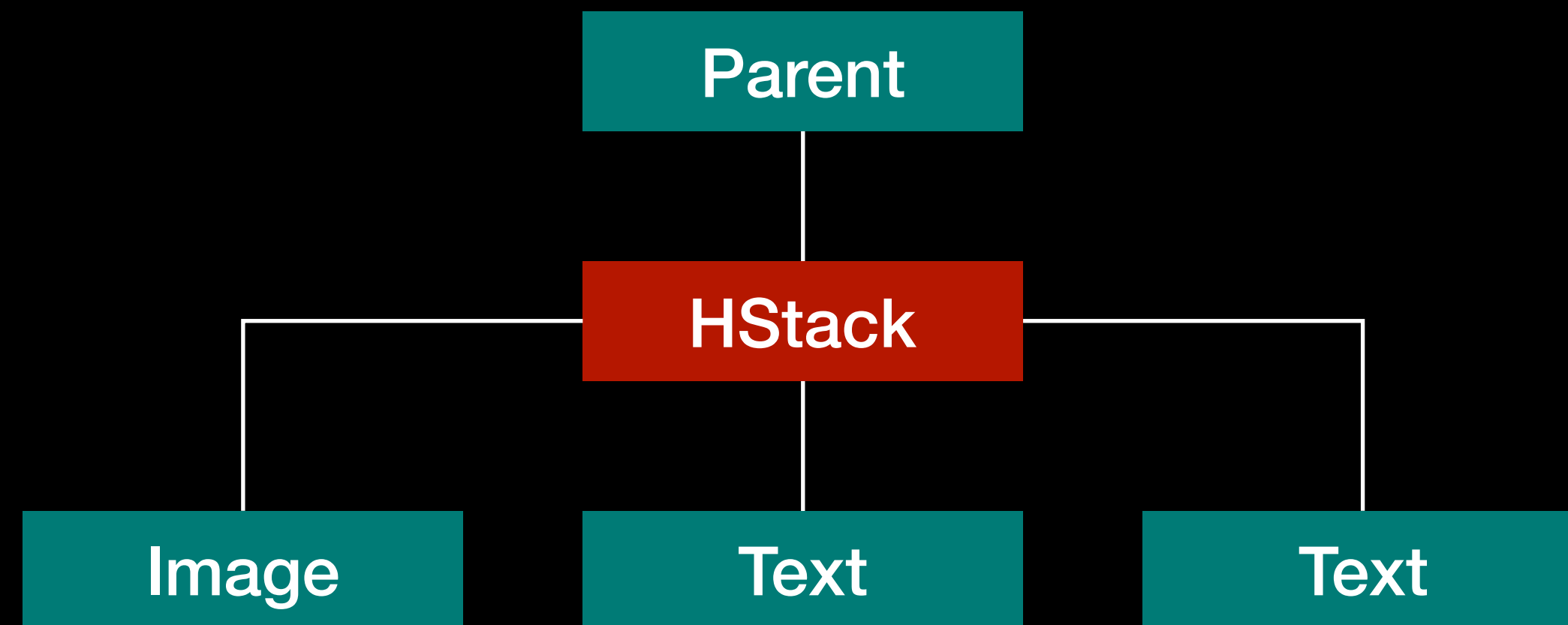
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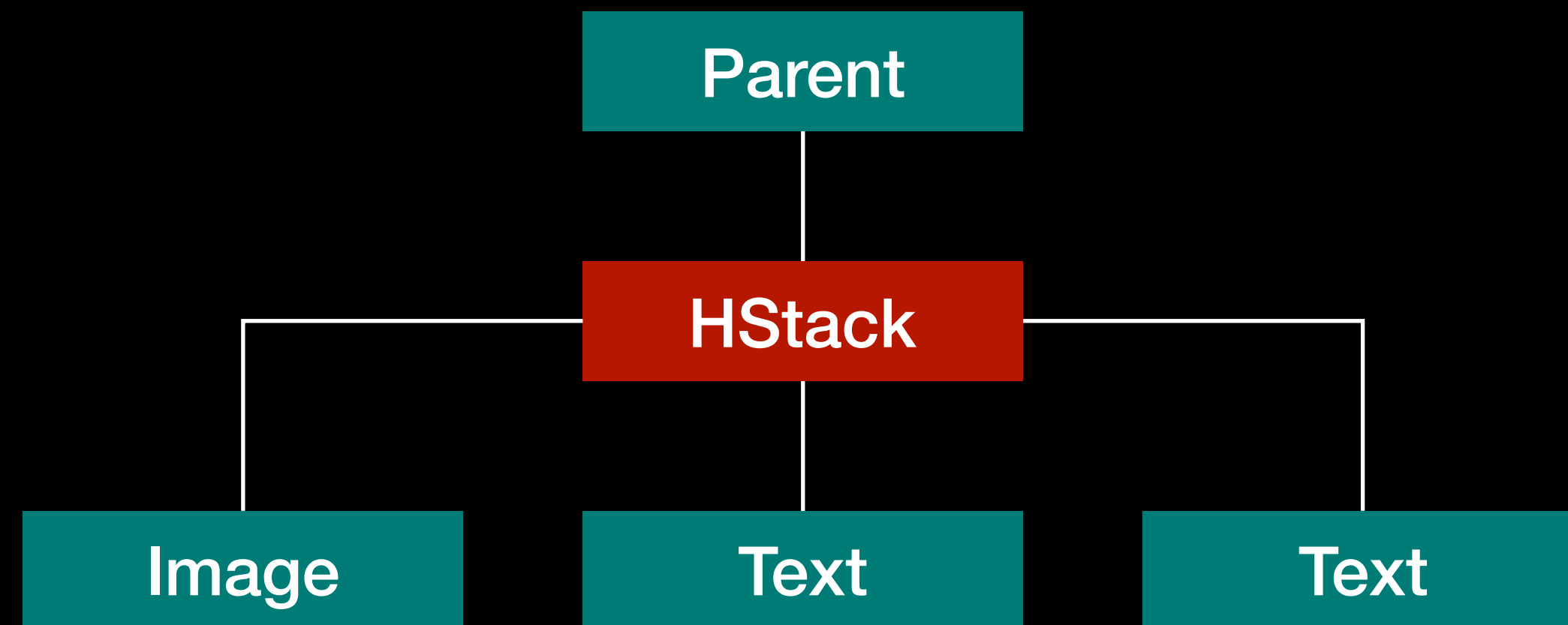
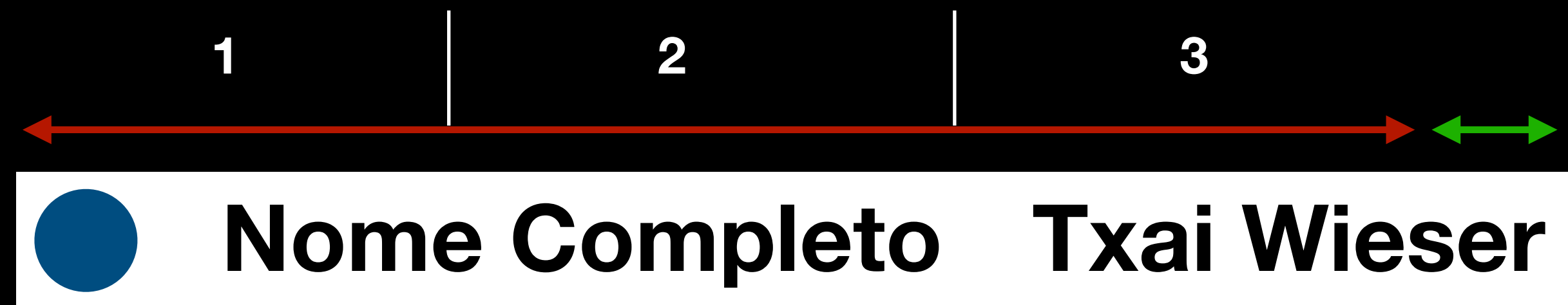
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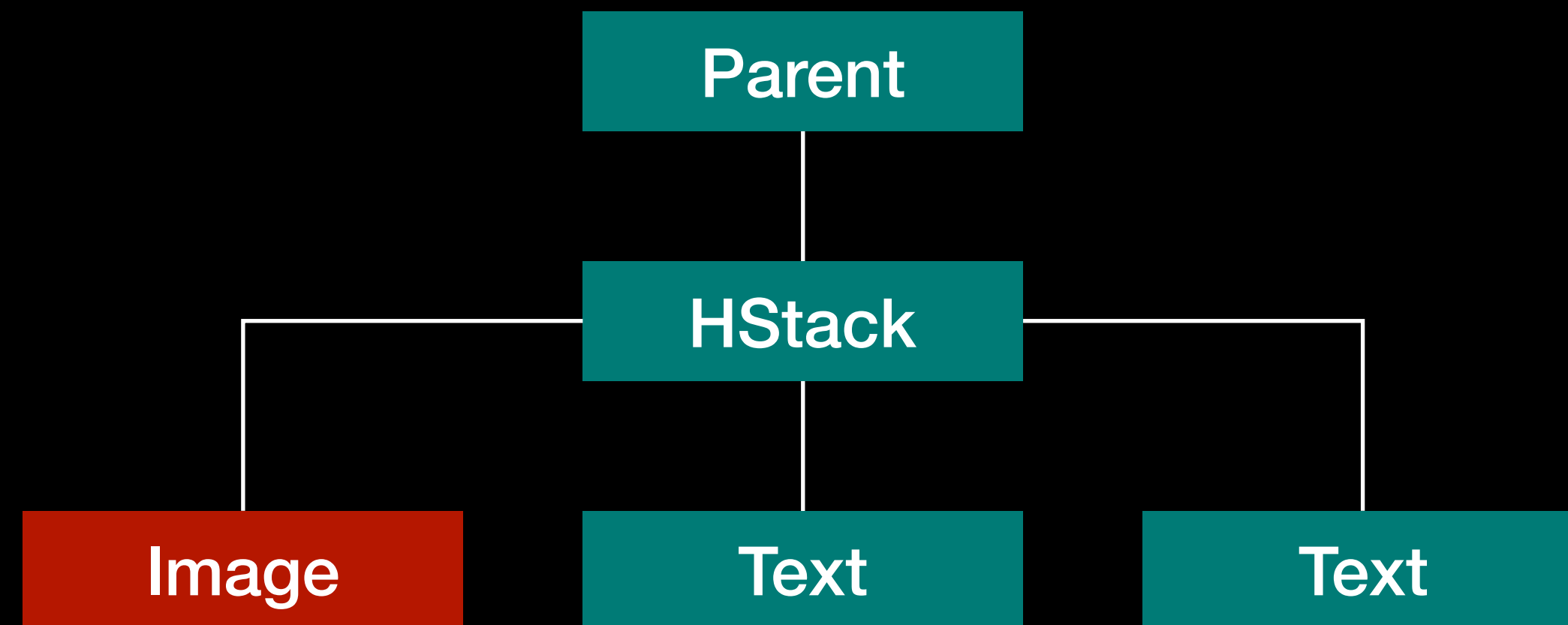
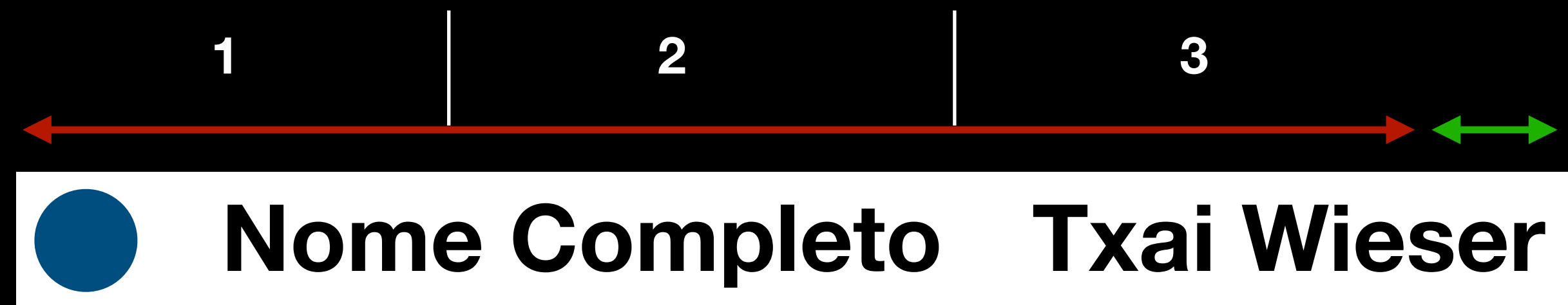
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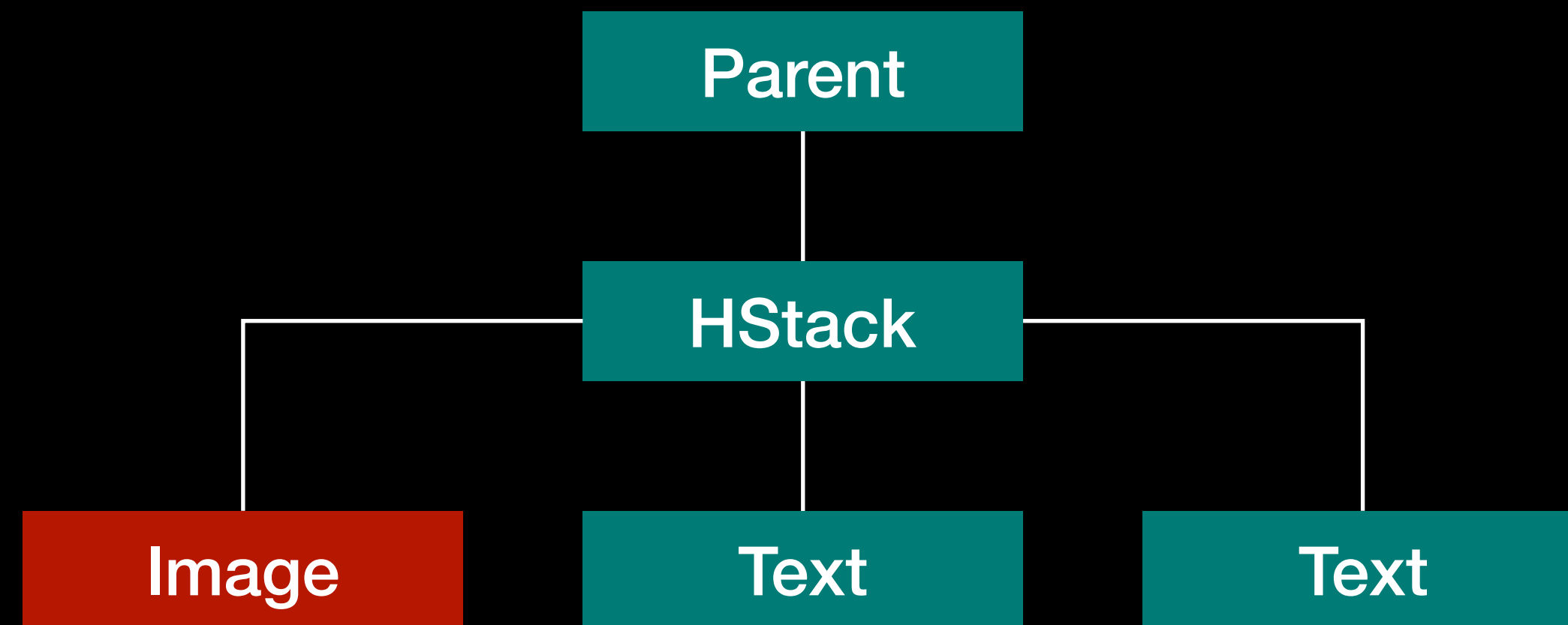
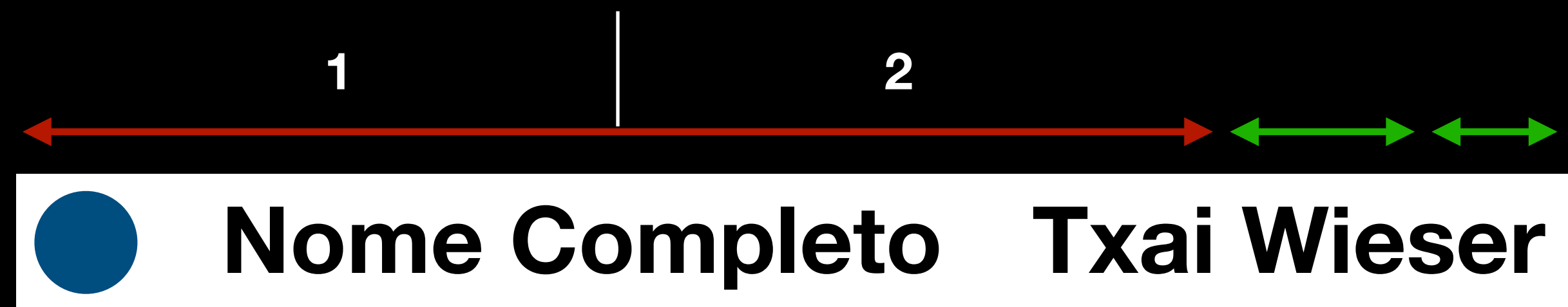
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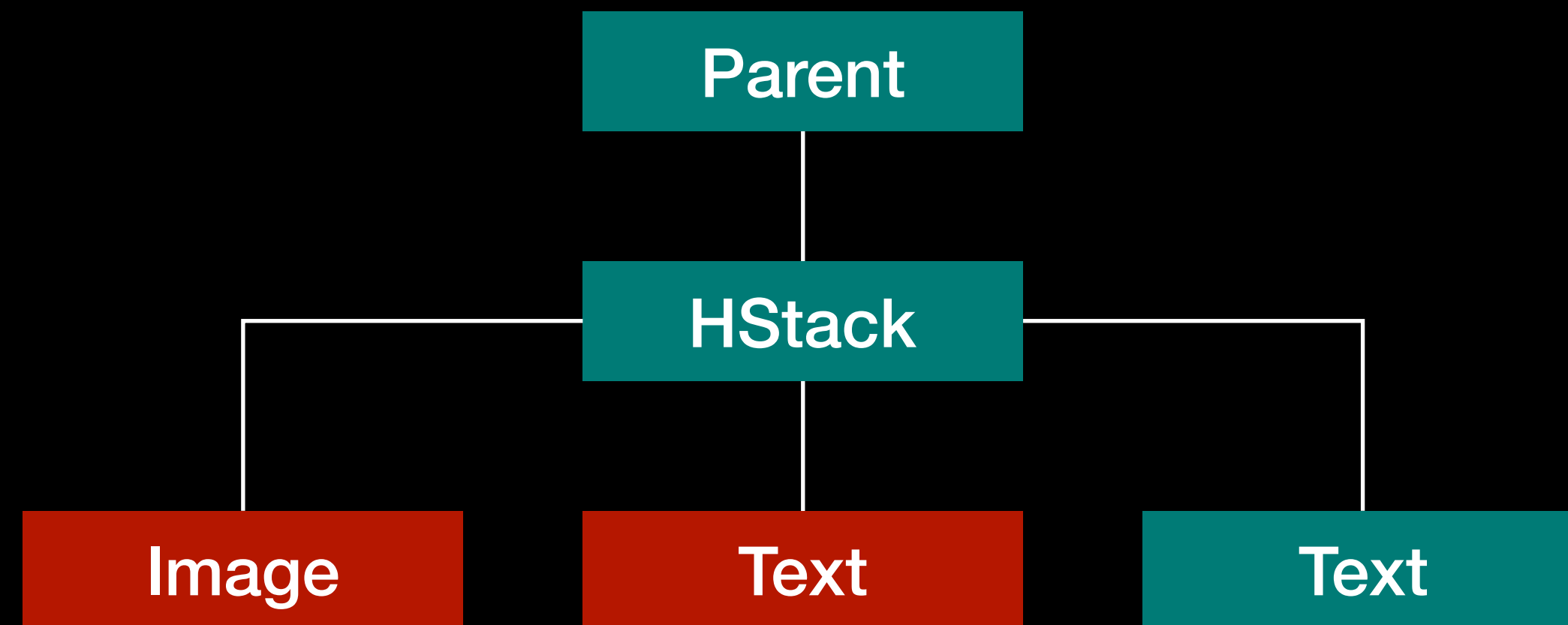
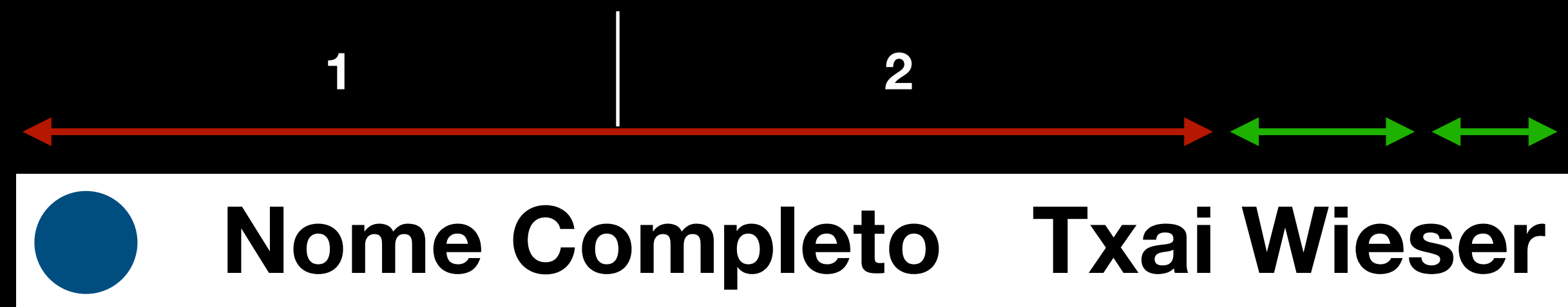
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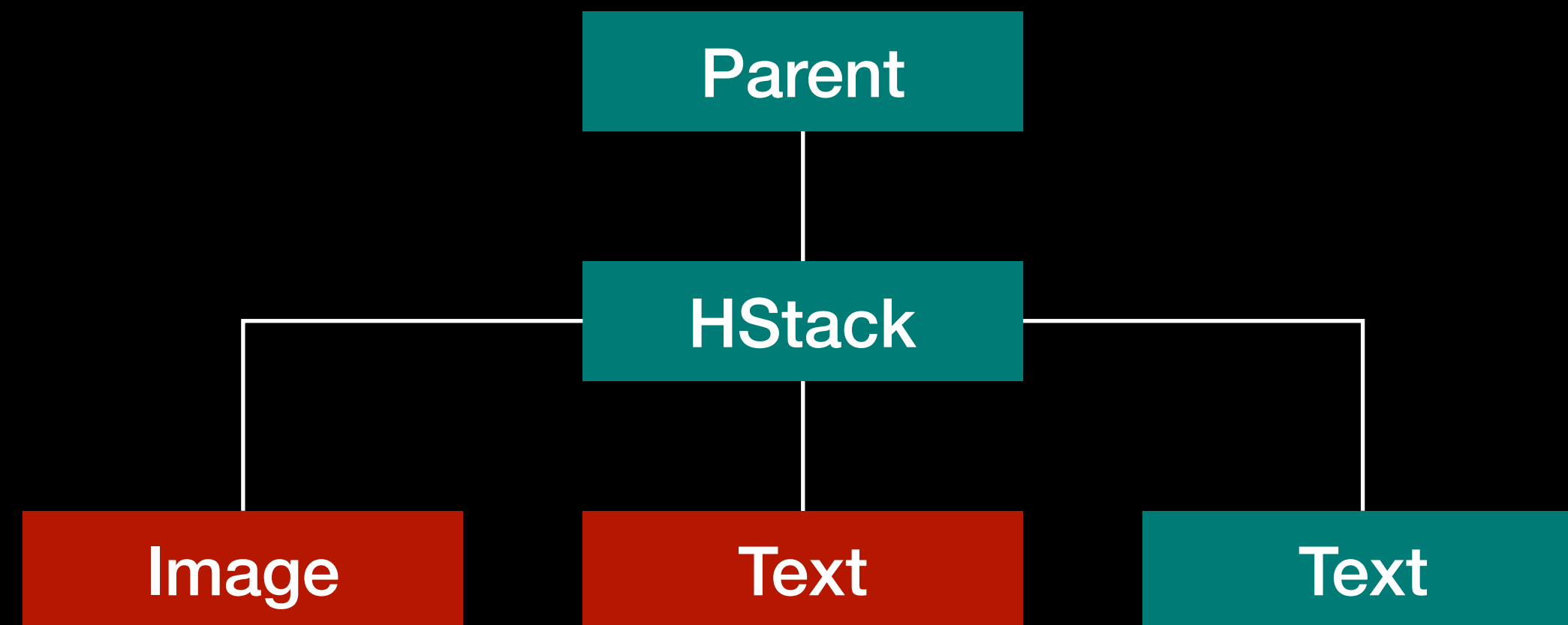
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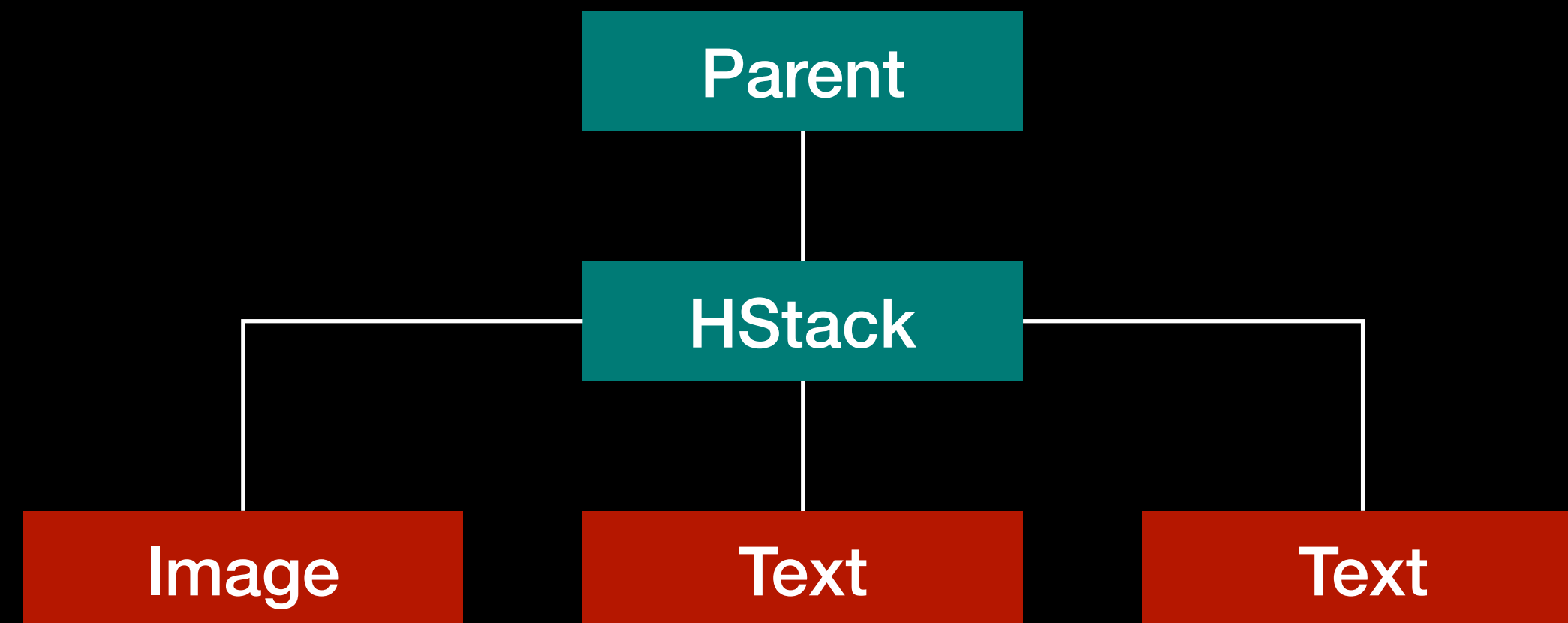
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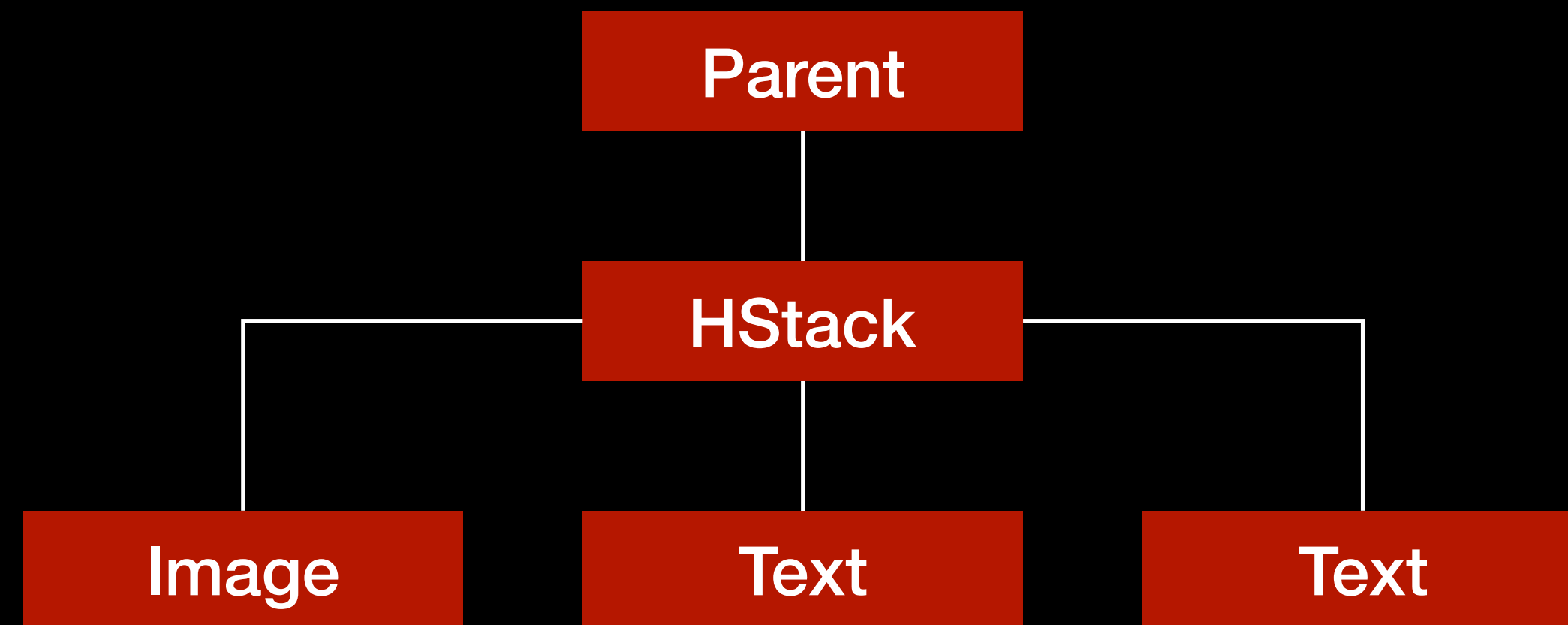
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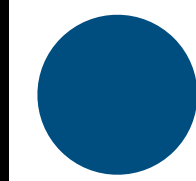
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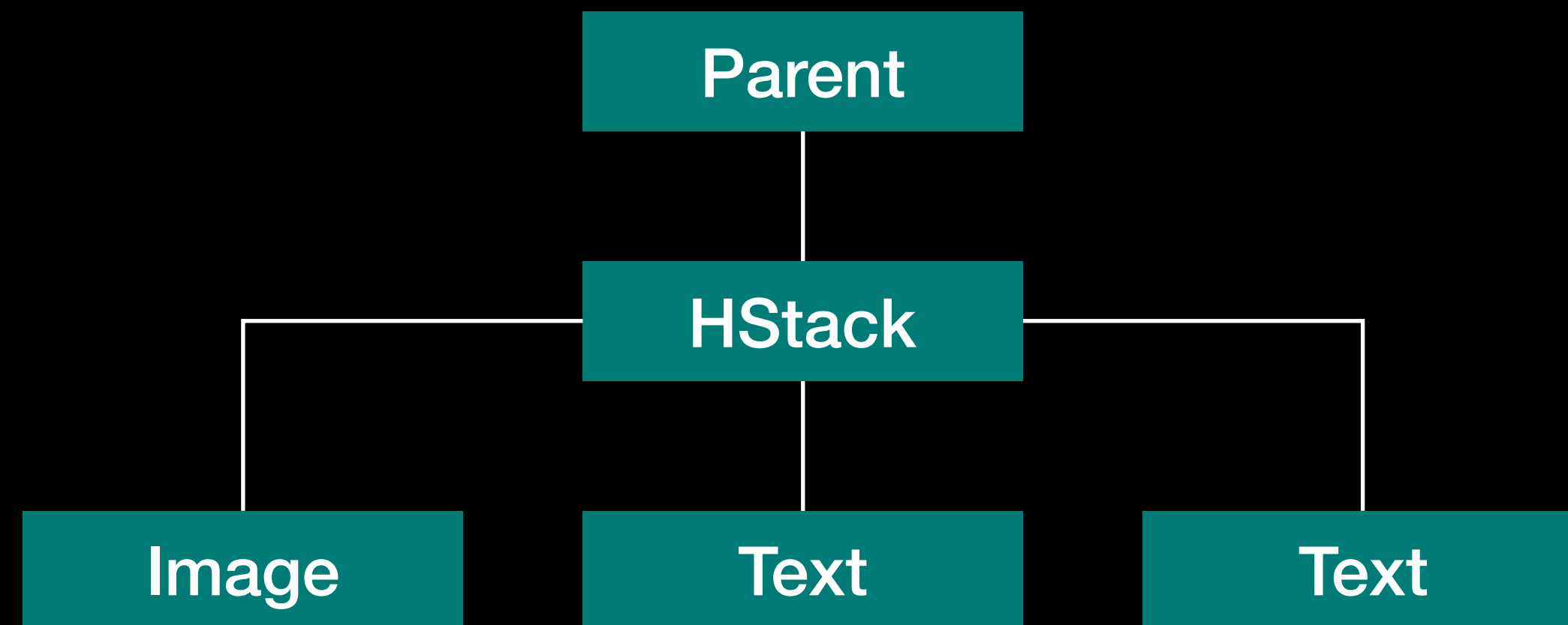


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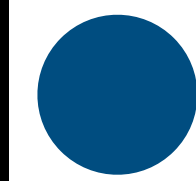


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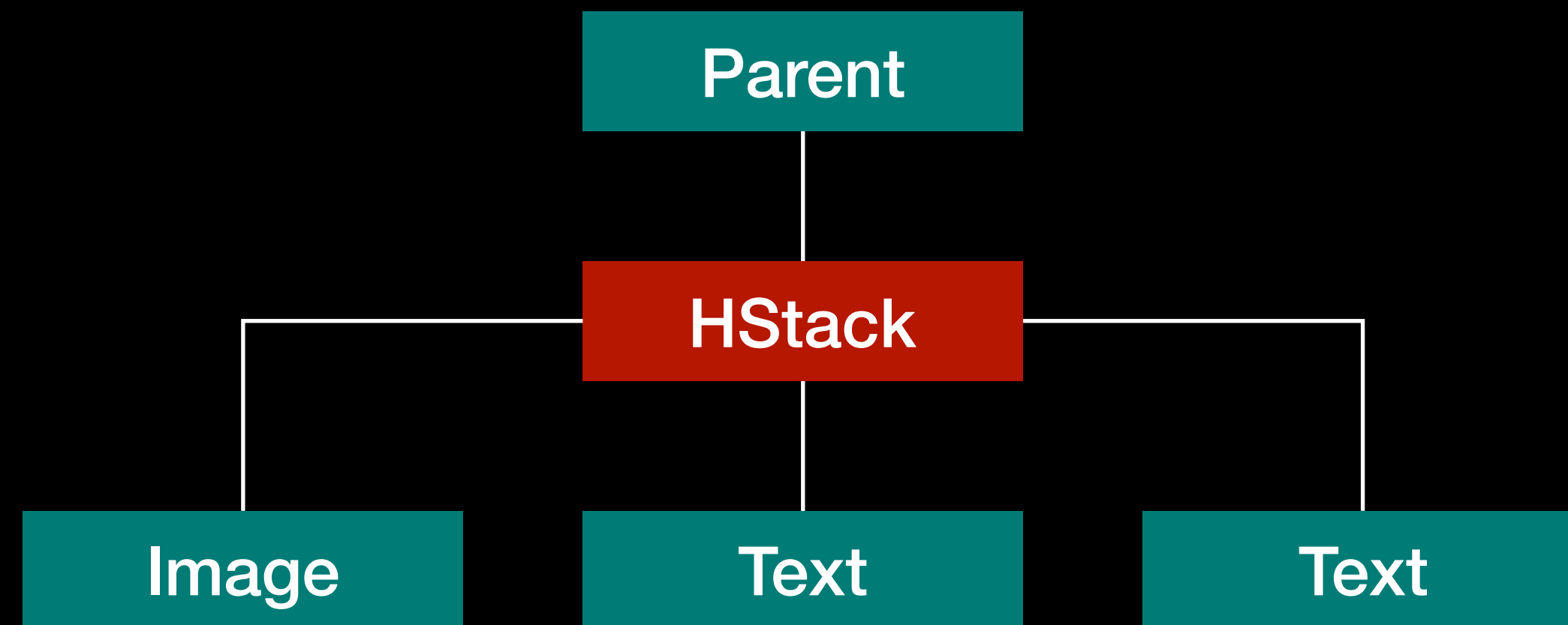


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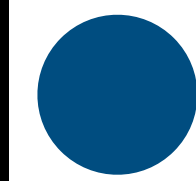


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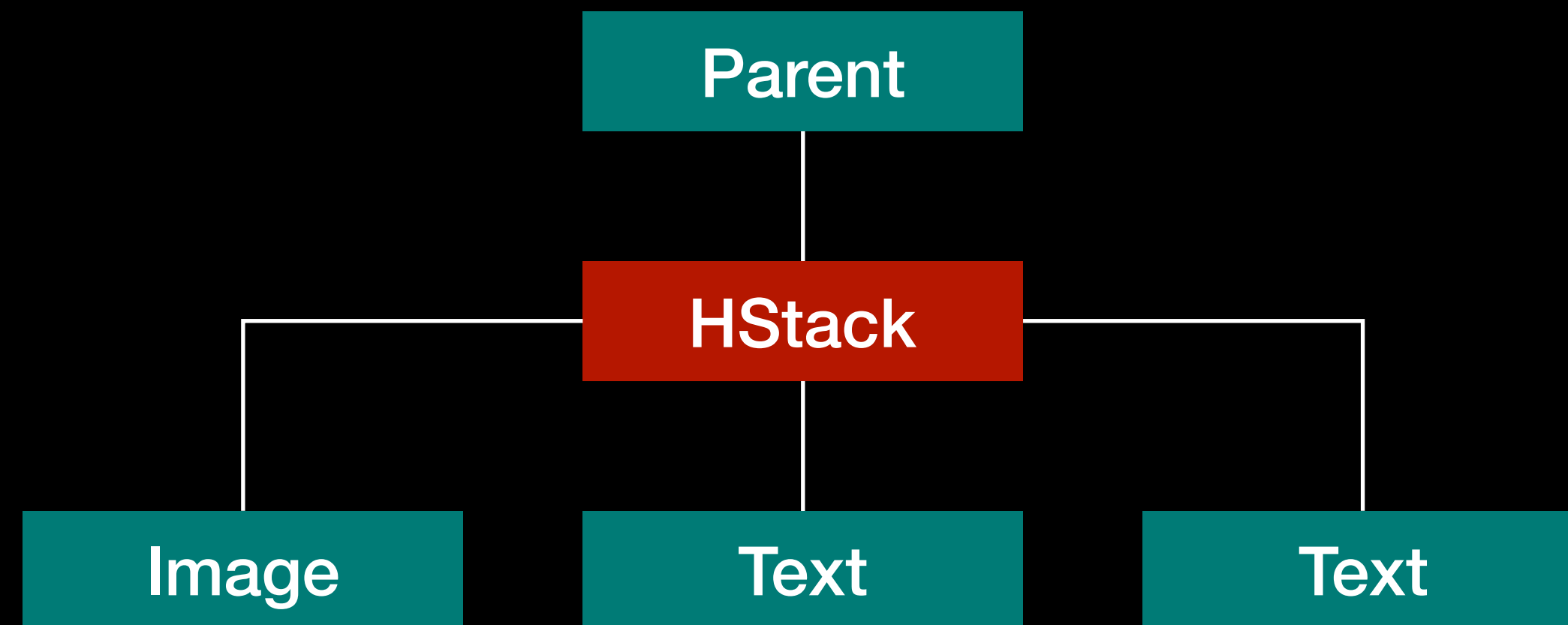
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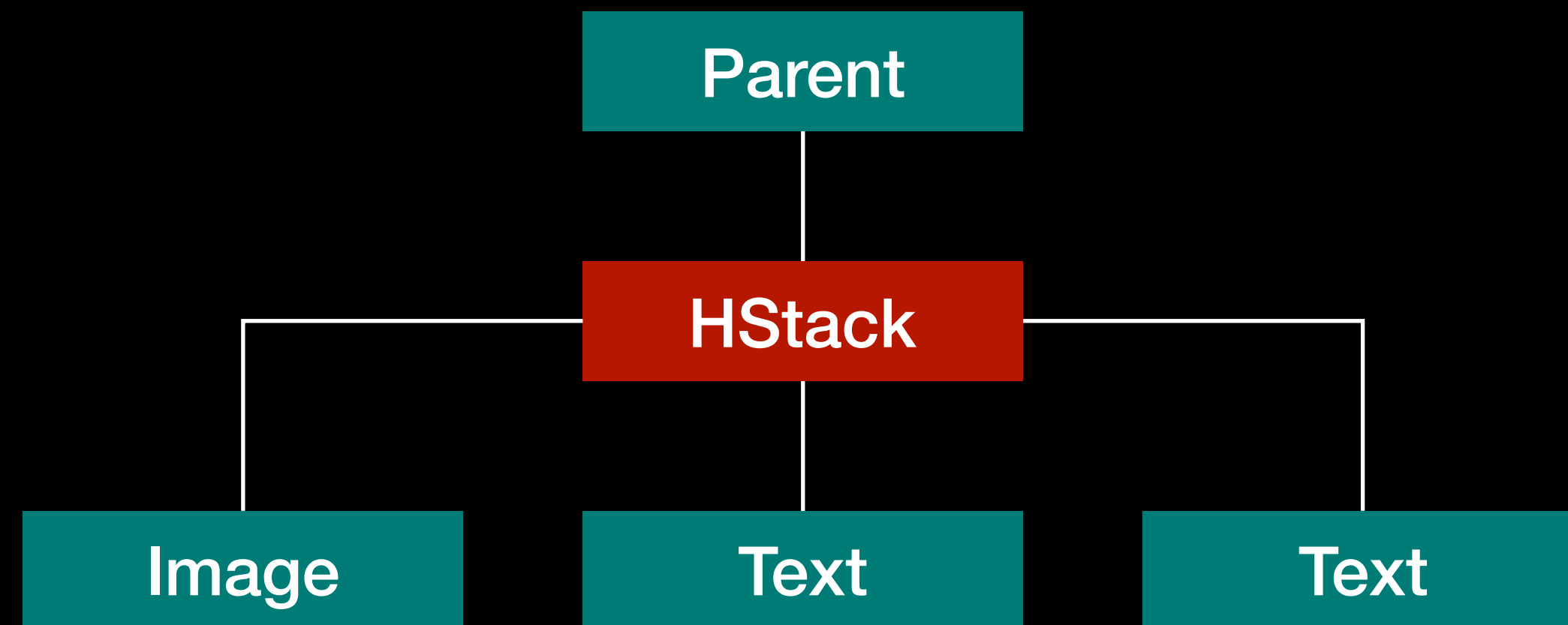
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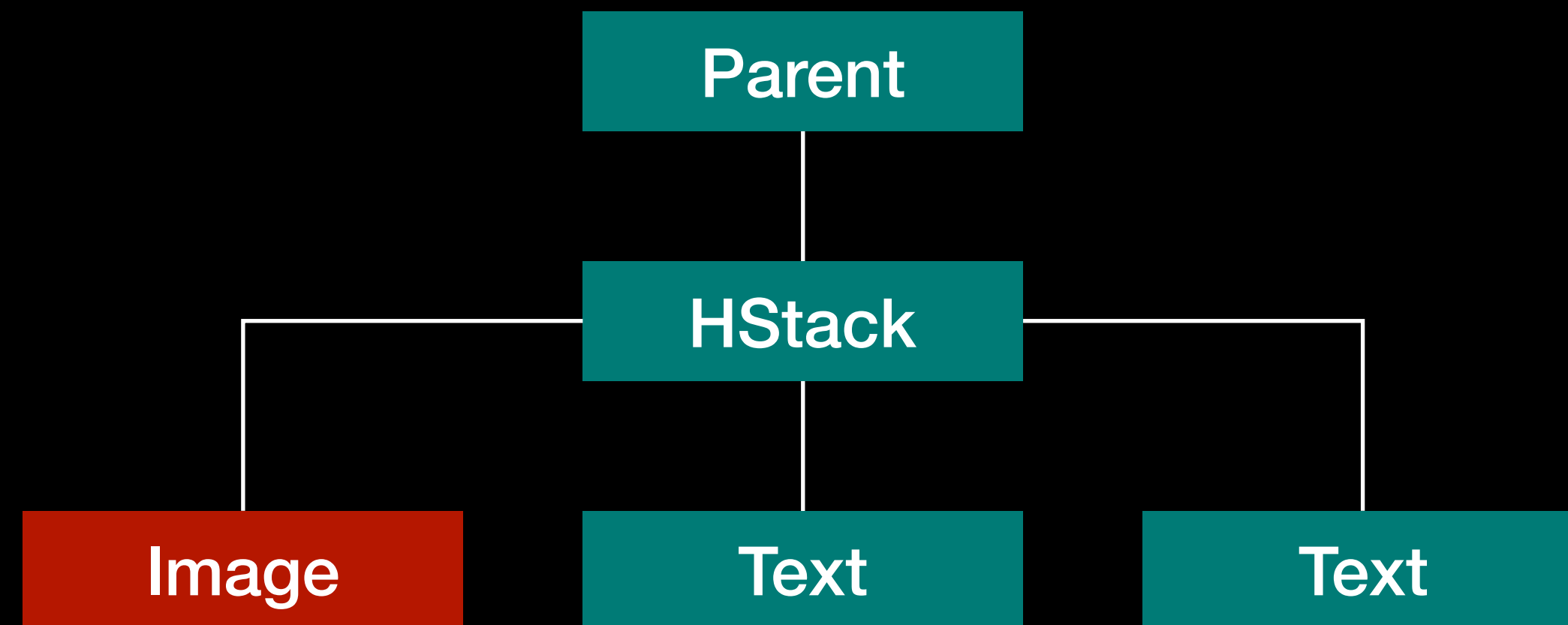
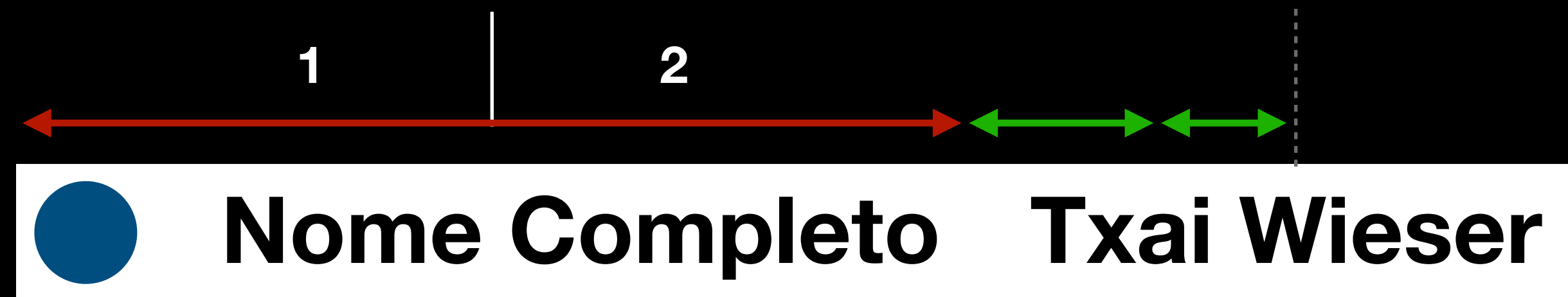
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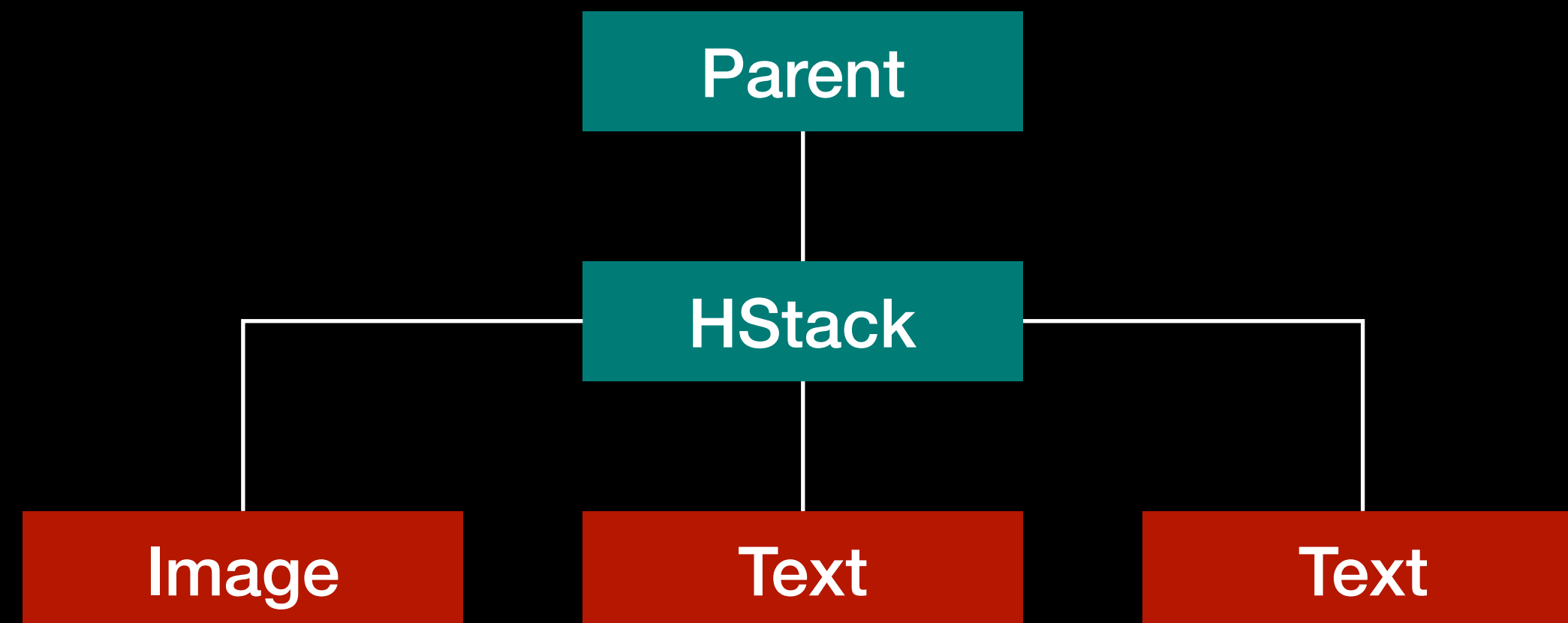
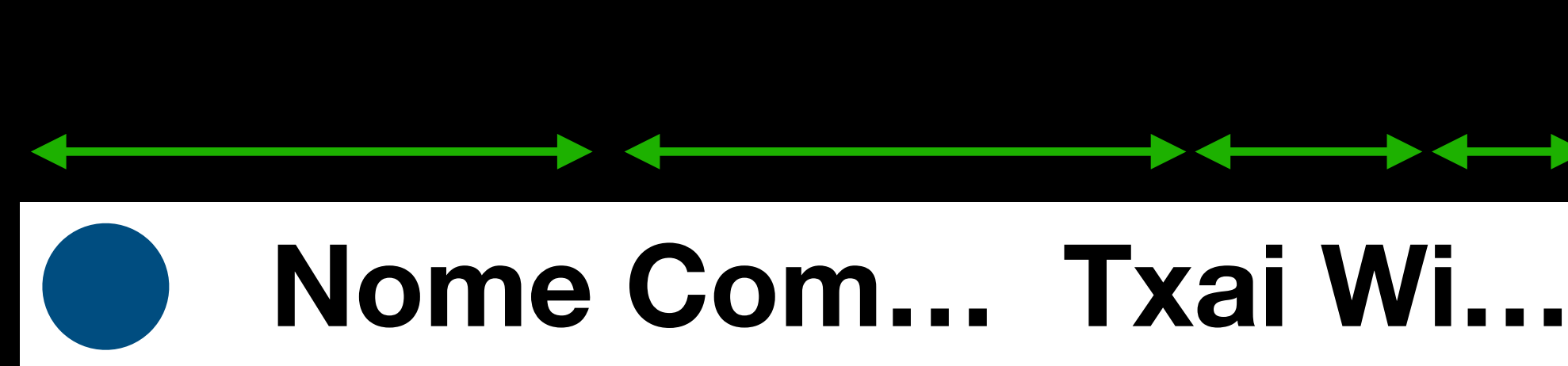
LAYOUT SYSTEM

```
HStack {  
  Image("icon") // 30x30  
  Text("Nome Completo")  
  Text("Txai Wieser")  
}  
.lineLimit(1)
```



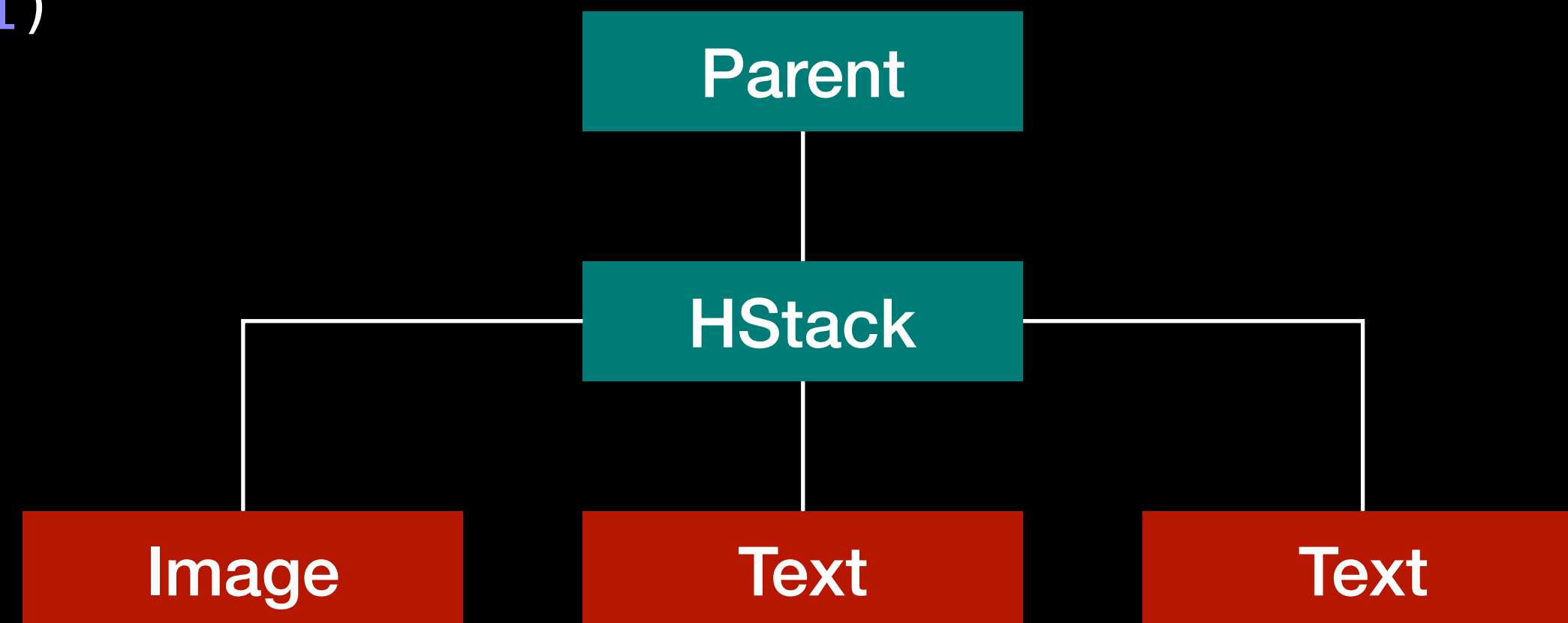
LAYOUT SYSTEM

```
HStack {  
  Image("icon") // 30x30  
  Text("Nome Completo")  
  Text("Txai Wieser")  
}  
.lineLimit(1)
```



LAYOUT SYSTEM

```
HStack {  
  Image("icon") // 30x30  
  Text("Nome Completo")  
  Text("Txai Wieser").layoutPriority(1)  
}  
.lineLimit(1)
```



LAYOUT SYSTEM

GEOMETRY READER

GEOMETRY READER

```
struct ContentView : View {  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}  
  
struct CustomView: View {  
    var body: some View {  
        Rectangle()  
        .fill(Color.purple)  
    }  
}
```



GEOMETRY READER

```
struct ContentView : View {  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}
```

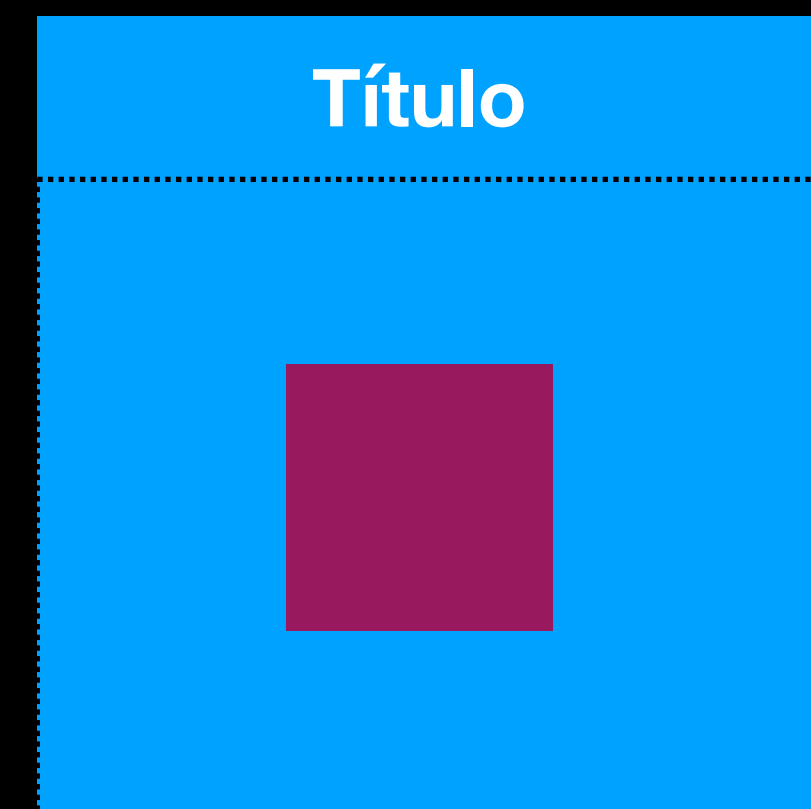
```
struct CustomView: View {  
    var body: some View {  
        Rectangle()  
            .fill(Color.purple)  
            .frame(width: CGFloat?, height: CGFloat?)  
    }  
}
```



GEOMETRY READER

```
struct ContentView : View {  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}
```

```
struct CustomView: View {  
    var body: some View {  
        Rectangle()  
        .fill(Color.purple)  
        .frame(width: 50, height: 50)  
    }  
}
```



GEOMETRY READER

```
struct ContentView : View {  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}
```

```
struct CustomView: View {  
    var body: some View {  
        Rectangle()  
        .fill(Color.purple)  
        .frame(width: 400, height: 200)  
    }  
}
```



GEOMETRY READER

```
struct ContentView : View {  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}
```

```
struct CustomView: View {  
    var body: some View {  
        Rectangle()  
        .fill(Color.purple)  
        .frame(width: CGFloat?, height: CGFloat?)  
    }  
}
```



GEOMETRY READER

```
/// A container view that defines its content as a function of its own
/// size and coordinate space. Returns a flexible preferred size to its
/// parent layout.
public struct GeometryReader<Content>: View where Content : View {

    public var content: (GeometryProxy) -> Content

    @inlinable public init(@ViewBuilder content: @escaping (GeometryProxy) -> Content)
    ...
}

/// Acts as a proxy for access to the size and coordinate space (for
/// anchor resolution) of the container view.
public struct GeometryProxy {
    /// The size of the container view.
    public var size: CGSize { get }

    ...
    /// The container view's bounds rectangle converted to a defined
    /// coordinate space.
    public func frame(in coordinateSpace: CoordinateSpace) -> CGRect
}
```

GEOMETRY READER

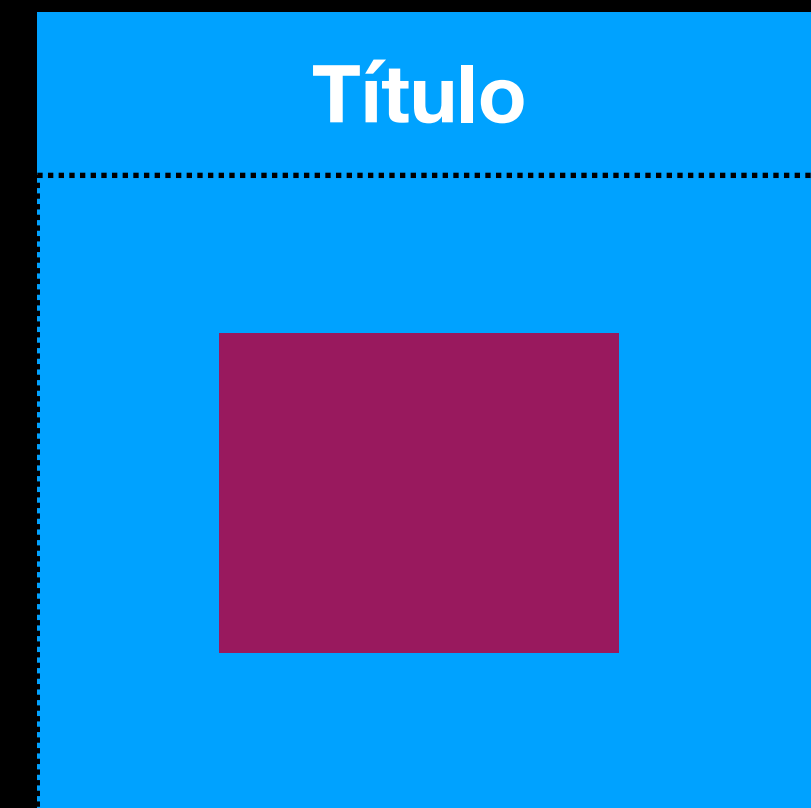
```
struct ContentView : View {  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}
```

```
struct CustomView: View {  
    var body: some View {  
        Rectangle()  
        .fill(Color.purple)  
        .frame(width: CGFloat?, height: CGFloat?)  
    }  
}
```



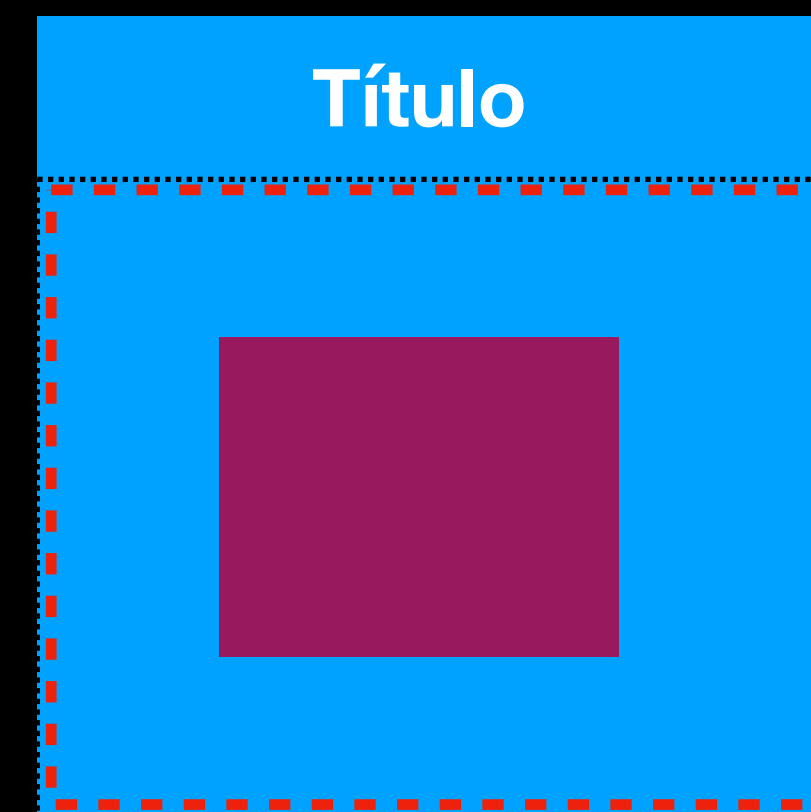
GEOMETRY READER

```
struct ContentView : View {  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}  
  
struct CustomView: View {  
    var body: some View {  
        GeometryReader { geometry in  
            Rectangle()  
                .fill(Color.purple)  
                .frame(  
                    width: geometry.size.width/2,  
                    height: geometry.size.height/2  
                )  
        }  
    }  
}
```



GEOMETRY READER

```
struct ContentView : View {  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}  
  
struct CustomView: View {  
    var body: some View {  
        GeometryReader { geometry in  
            Rectangle()  
                .fill(Color.purple)  
                .frame(  
                    width: geometry.size.width/2,  
                    height: geometry.size.height/2  
                )  
        }  
    }  
}
```



Views em SwiftUI são como receitas

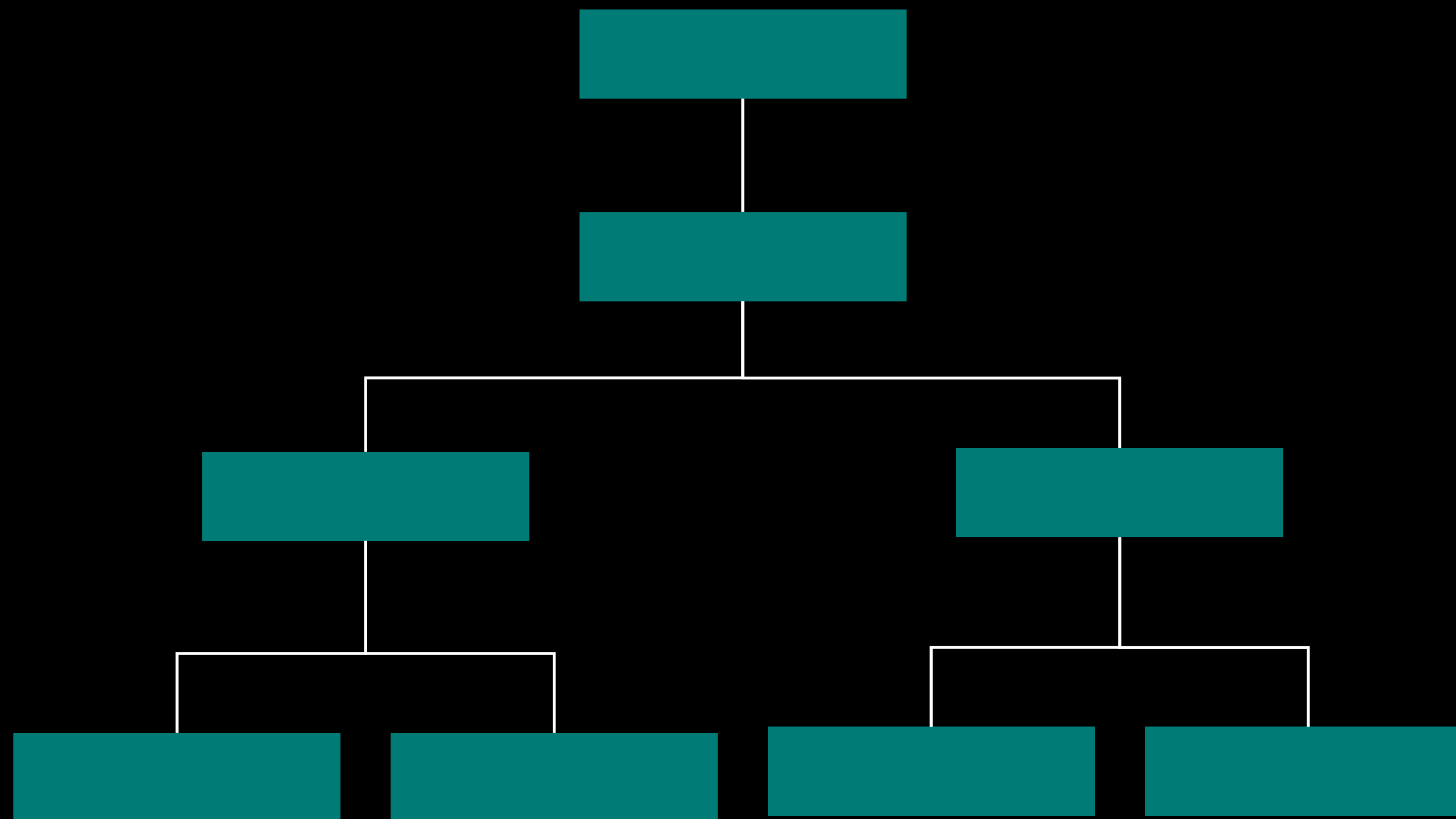
Views em SwiftUI são como receitas

Não meça o **tamanho** de uma view, mas sim inclua um **medidor** na receita.

GEOMETRY READER

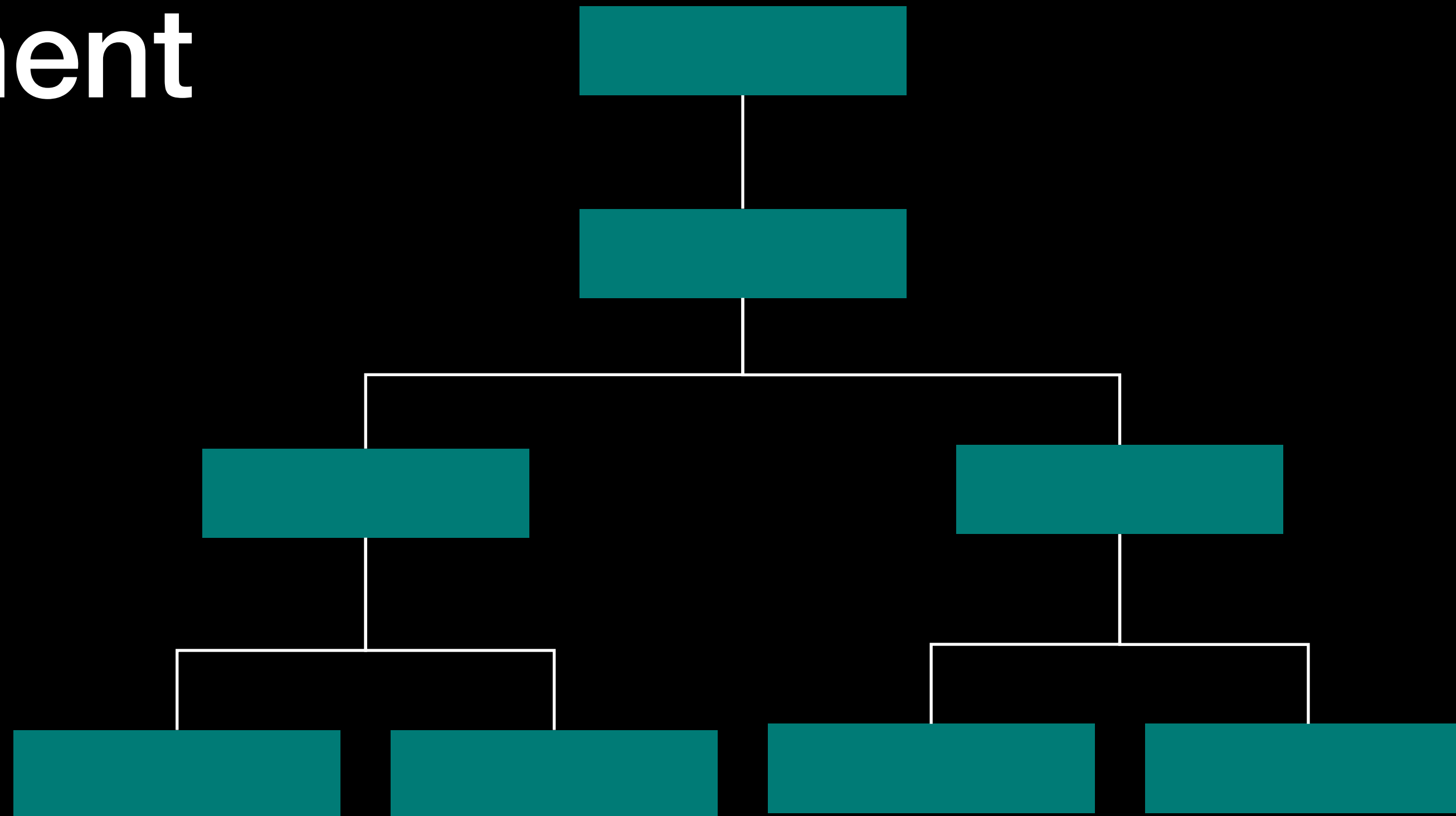
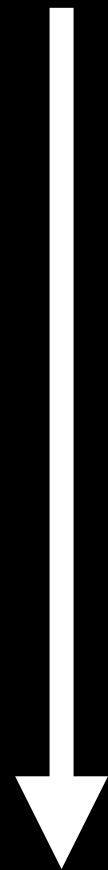
FLUXO DE DADOS

FLUXO DE DADOS



FLUXO DE DADOS

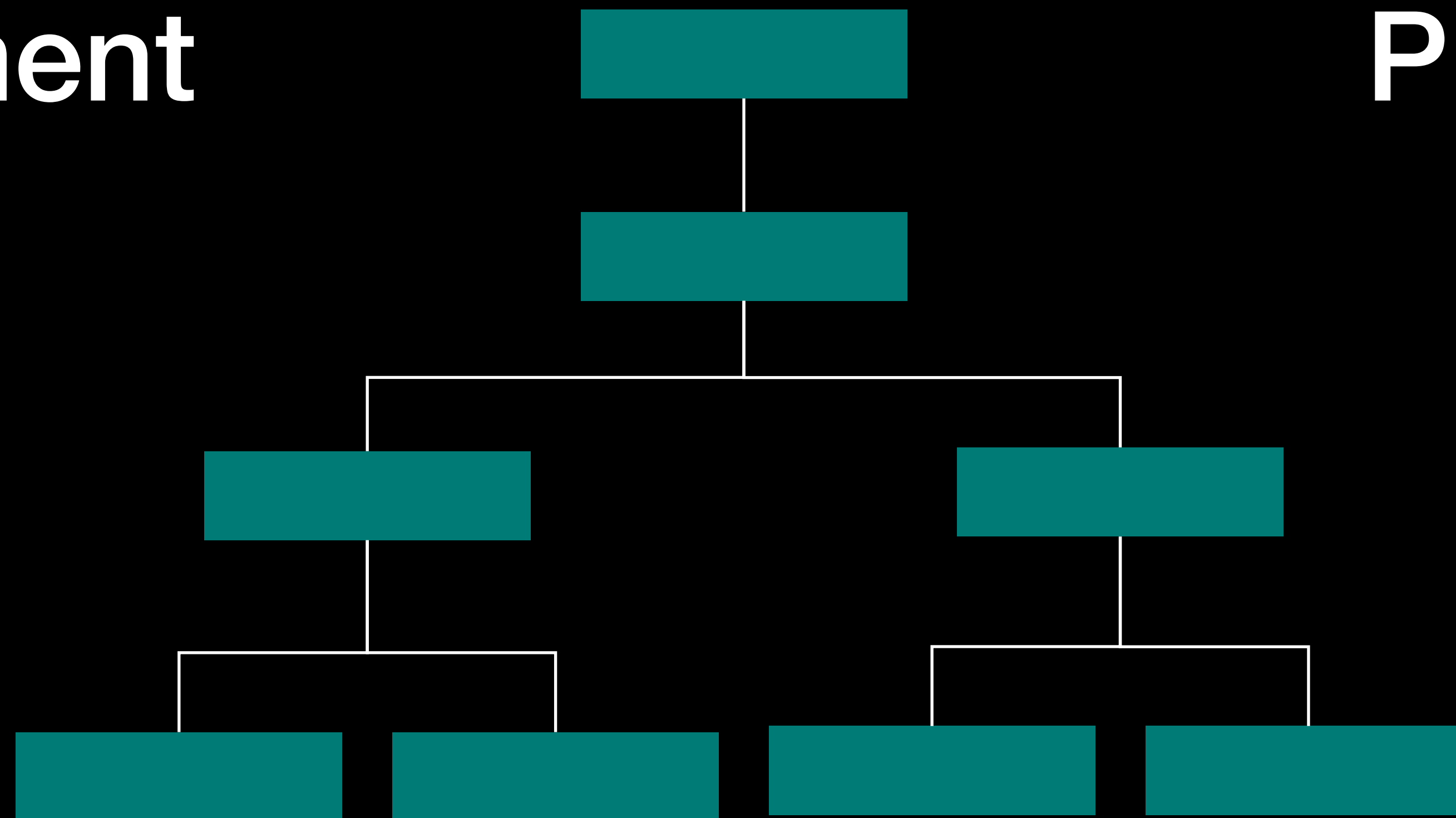
Environment



FLUXO DE DADOS

Environment

Preferences

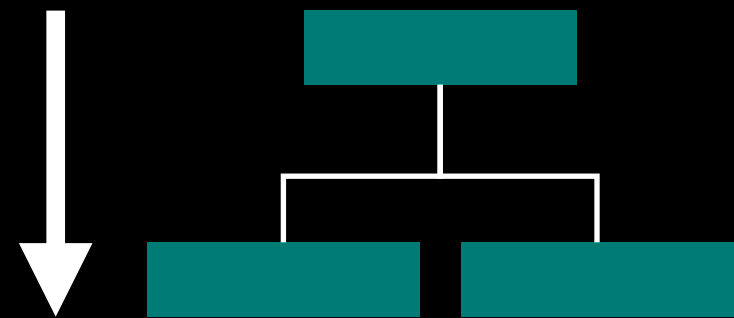


ENVIRONMENT



ENVIRONMENT

Conjunto de informações passadas de uma view para seus filhos.



ENVIRONMENT

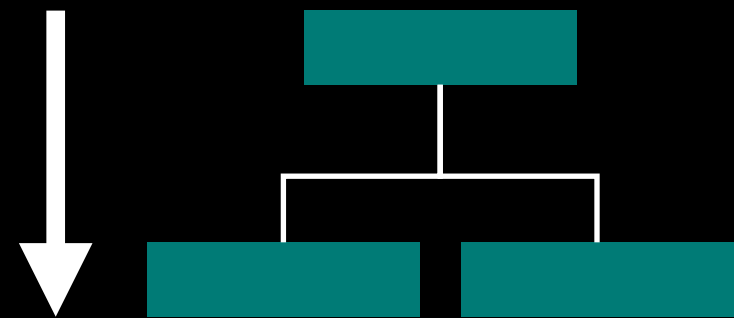
```
struct ContentView: View {  
    var body: some View {  
        VStack {  
            HStack {  
                Text("Title")  
                Spacer()  
                Text("Detail")  
            }  
            .font(.headline)  
  
            HStack {  
                Text("Subtitle")  
                Spacer()  
                Text("Info")  
            }  
            .font(.subheadline)  
        }  
        .lineLimit(1)  
    }  
}
```

Title

Subtitle

Detail

Info



ENVIRONMENT

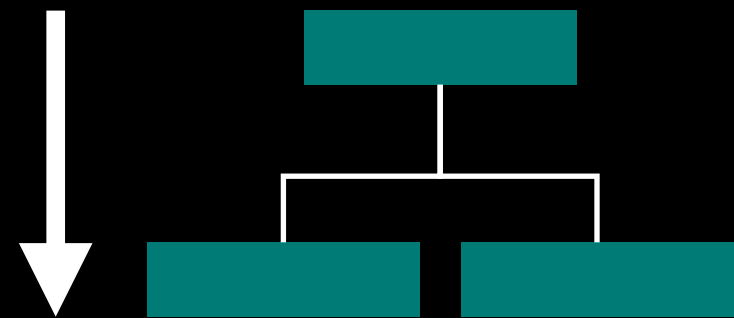
```
struct ContentView: View {  
    var body: some View {  
        VStack {  
            HStack {  
                Text("Title")  
                Spacer()  
                Text("Detail")  
            }  
            .font(.headline) ←  
  
            HStack {  
                Text("Subtitle")  
                Spacer()  
                Text("Info")  
            }  
            .font(.subheadline) ←  
        }  
        .lineLimit(1) ←  
    }  
}
```

Title

Subtitle

Detail

Info

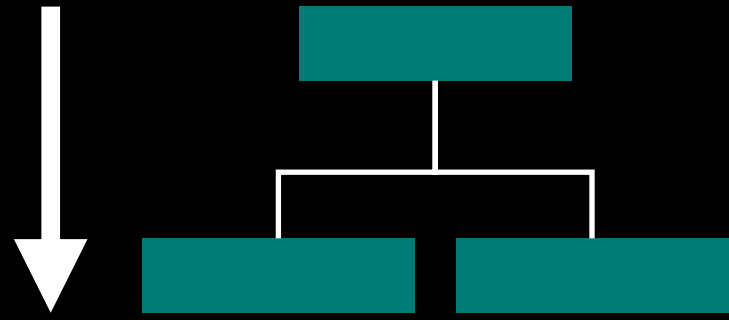


ENVIRONMENT

```
struct ContentView: View {  
    var body: some View {  
        VStack {  
            HStack {  
                Text("Title")  
                Spacer()  
                Text("Detail")  
            }  
            .environment(\.font, .headline) ←  
  
            HStack {  
                Text("Subtitle")  
                Spacer()  
                Text("Info")  
            }  
            .environment(\.font, .subheadline) ←  
        }  
        .environment(\.lineLimit, 1) ←  
    }  
}
```

Title
Subtitle

Detail
Info



ENVIRONMENT

```
extension EnvironmentValues {  
    public var isEnabled: Bool  
    public var font: Font?  
    public var lineLimit: Int?  
    public var layoutDirection: LayoutDirection  
    public var colorScheme: ColorScheme  
  
    public var disableAutocorrection: Bool?  
    public var sizeCategory: ContentSizeCategory  
    public var managedObjectContext: NSManagedObjectContext  
  
    public var displayScale: CGFloat  
    public var imageScale: Image.Scale  
    public var locale: Locale  
    public var calendar: Calendar  
    public var timeZone: TimeZone  
  
    public var horizontalSizeClass: UserInterfaceSizeClass?  
    public var verticalSizeClass: UserInterfaceSizeClass?  
  
    public var editMode: Binding<EditMode>?  
    public var presentationMode: Binding<PresentationMode>  
  
    ...  
}
```



ENVIRONMENT



Txai Wieser

Total Balance

\$1227.53

Earnings

\$138.53

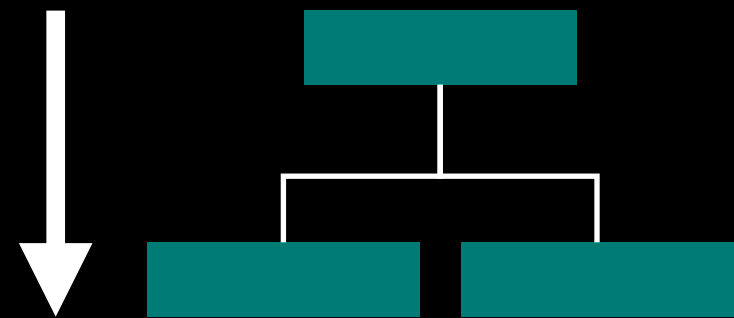


ENVIRONMENT

Txai Wieser

Total Balance

Earnings



ENVIRONMENT

```
struct RedactInfo: EnvironmentKey {  
    typealias Value = Bool  
    static let defaultValue: Value = false  
}  
  
extension EnvironmentValues {  
    var isRedacted: Bool {  
        get { return self[RedactInfo.self] }  
        set { self[RedactInfo.self] = newValue }  
    }  
}
```



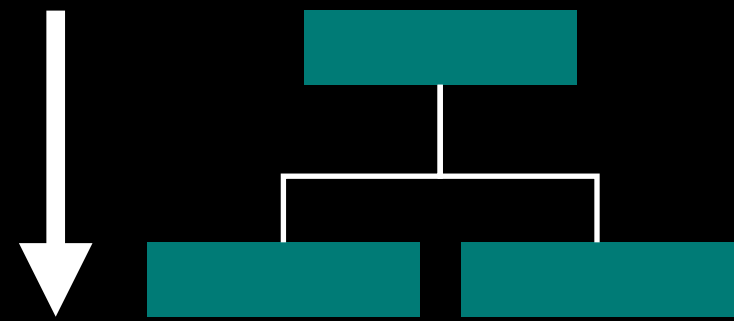
Txai Wieser

Total Balance

\$1227.53

Earnings

\$138.53



ENVIRONMENT

```
// SceneDelegate.swift
```

```
let appView = AppView()
```

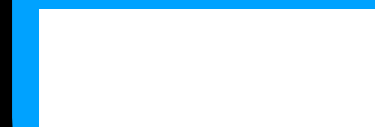
```
UIHostingController(  
    rootView: appView.environment(\.isRedacted, true)  
)
```

```
// CurrencyLabel.swift
```

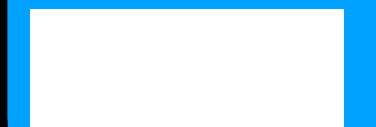
```
struct CurrencyLabel: View {  
    var value: String  
    @Environment(\.isRedacted) private var isRedacted  
  
    var body: some View {  
        Text(value)  
            .overlay(isRedacted ? Color.primary : Color.clear)  
    }  
}
```



Total Balance

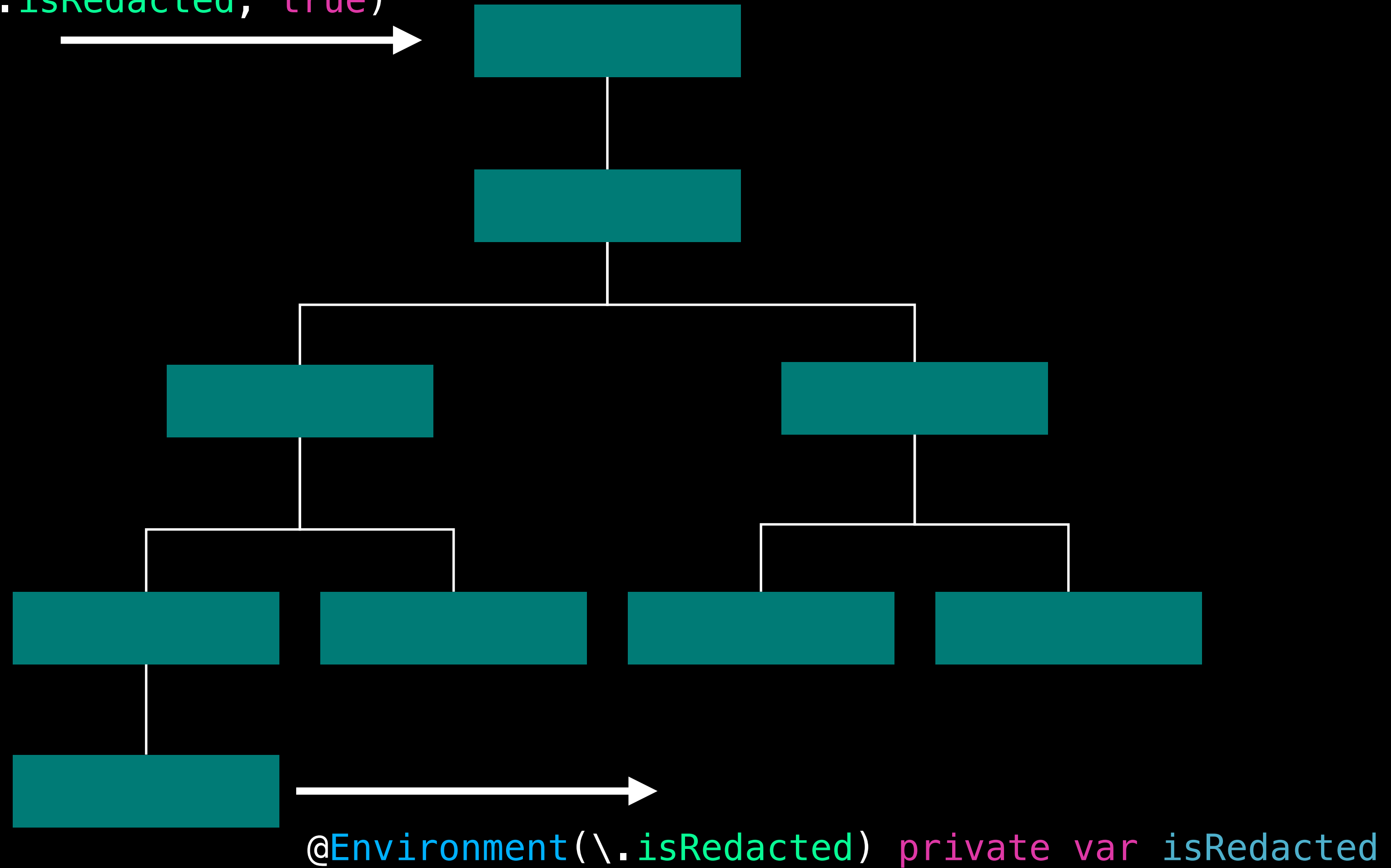


Earnings



ENVIRONMENT

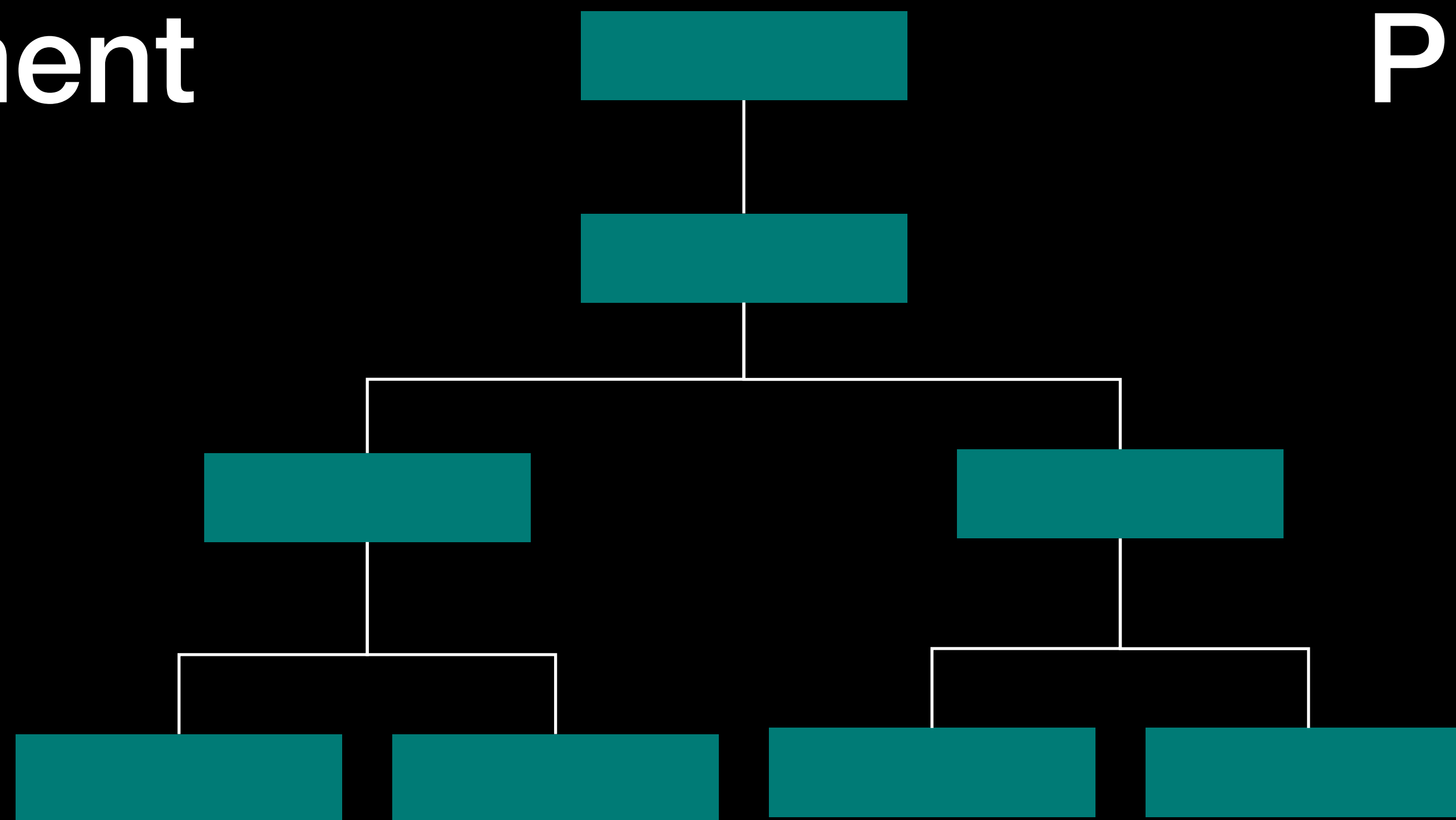
appView.environment(\.isRedacted, true)



FLUXO DE DADOS

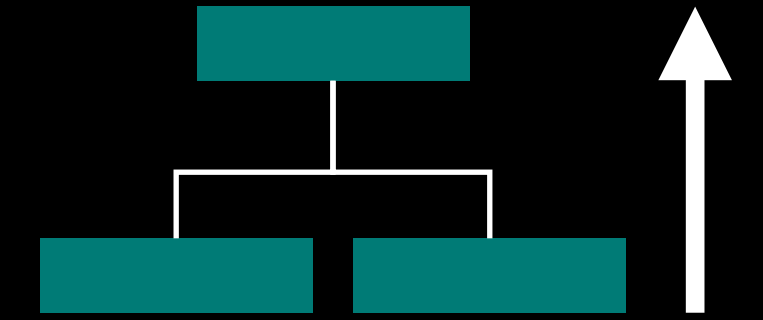
Environment

Preferences



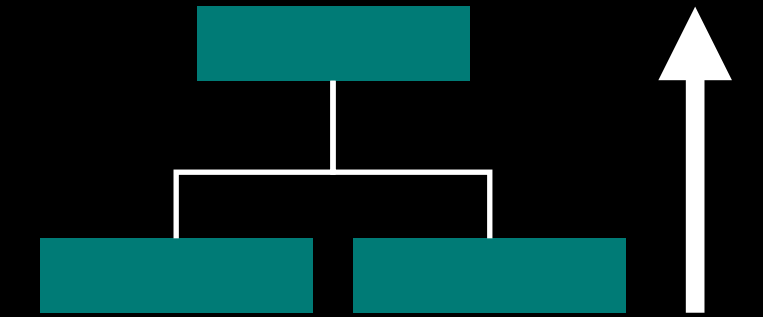
PREFERENCES

PREFERENCES



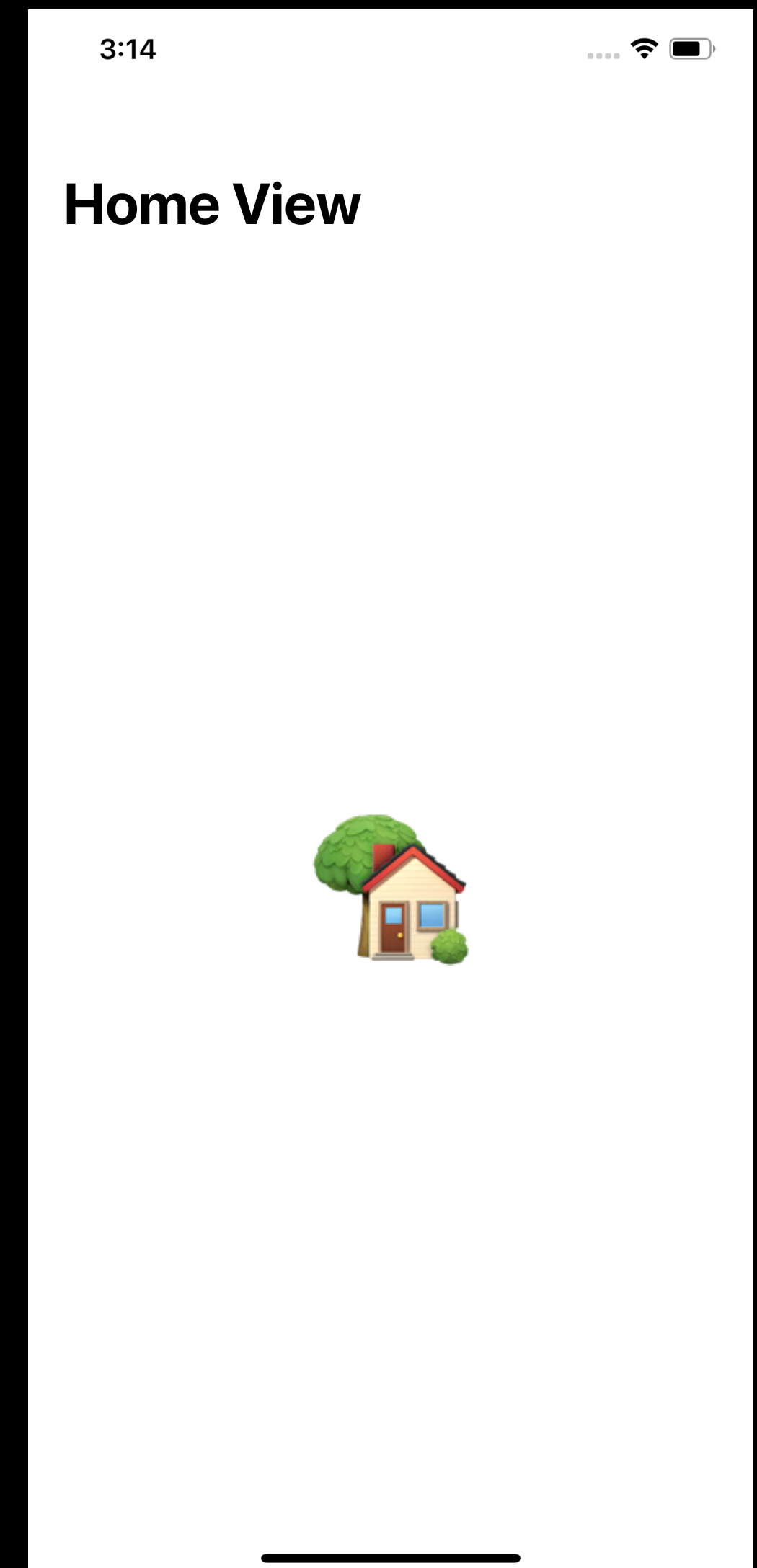
Mecanismo para uma view expressar suas preferencias para seus ascendentes.

PREFERENCES

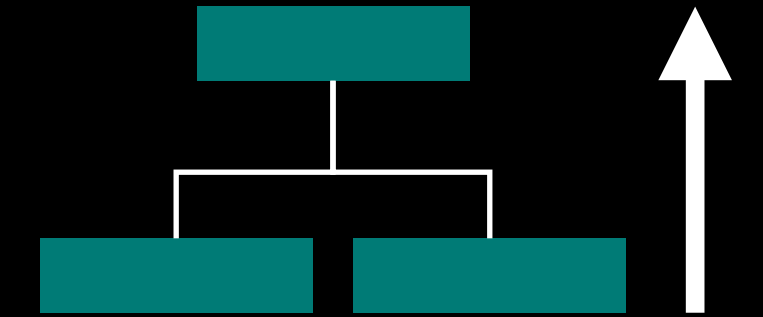


```
struct ContentView: View {
    var body: some View {
        NavigationView {
            HomeView()
        }
    }
}

struct HomeView: View {
    var body: some View {
        Text("🏠")
        .navigationBarTitle("Home View")
    }
}
```

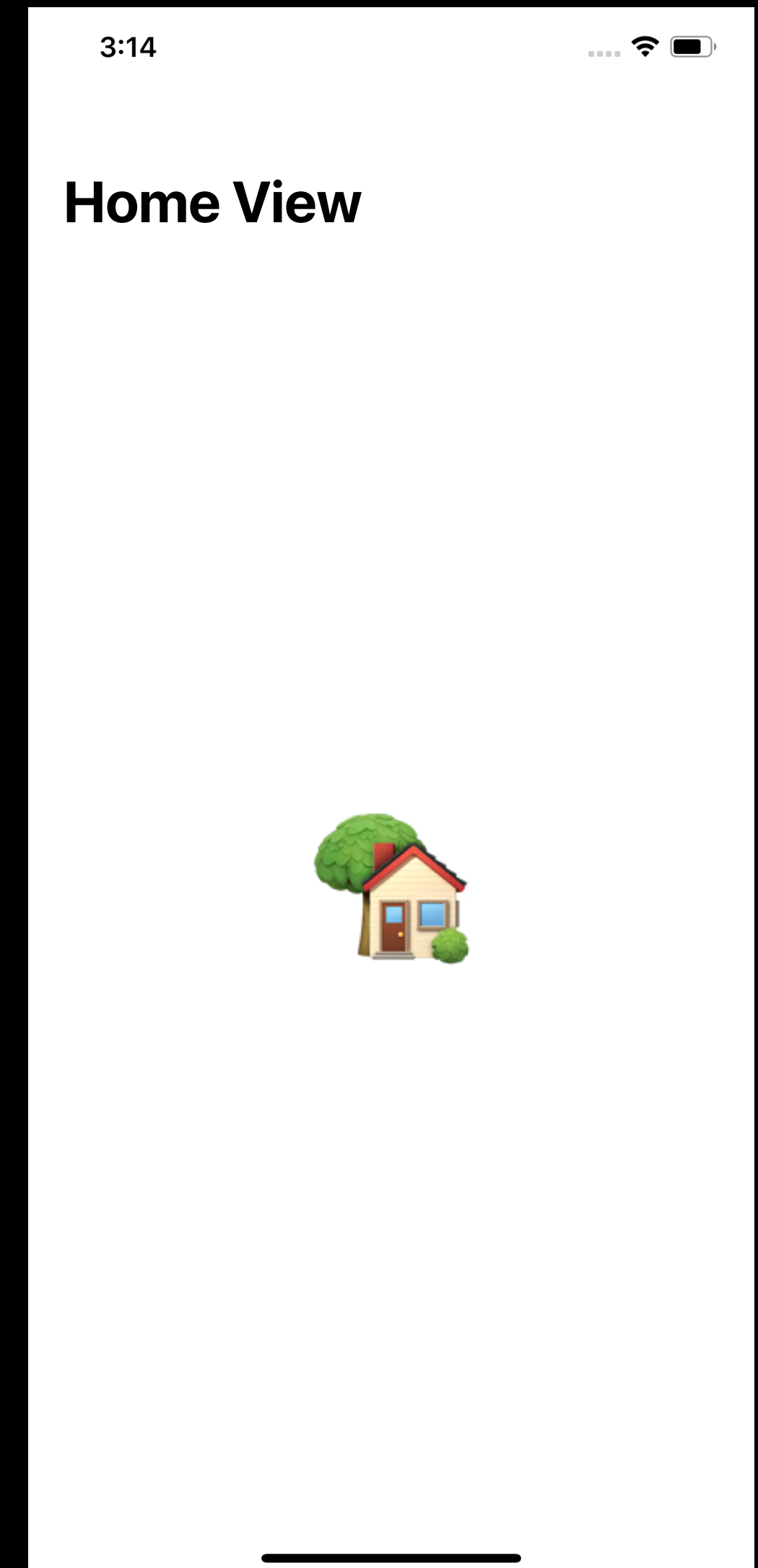


PREFERENCES

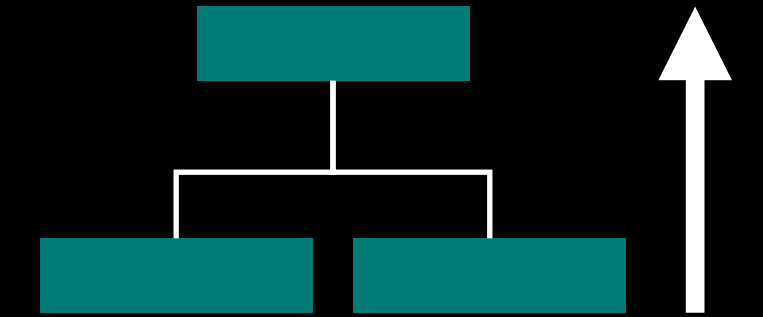


```
struct ContentView: View {  
    var body: some View {  
        NavigationView {  
            HomeView()  
        }  
    }  
}
```

```
struct HomeView: View {  
    var body: some View {  
        Text("🏠")  
        .navigationBarTitle("Home View")  
    }  
}
```

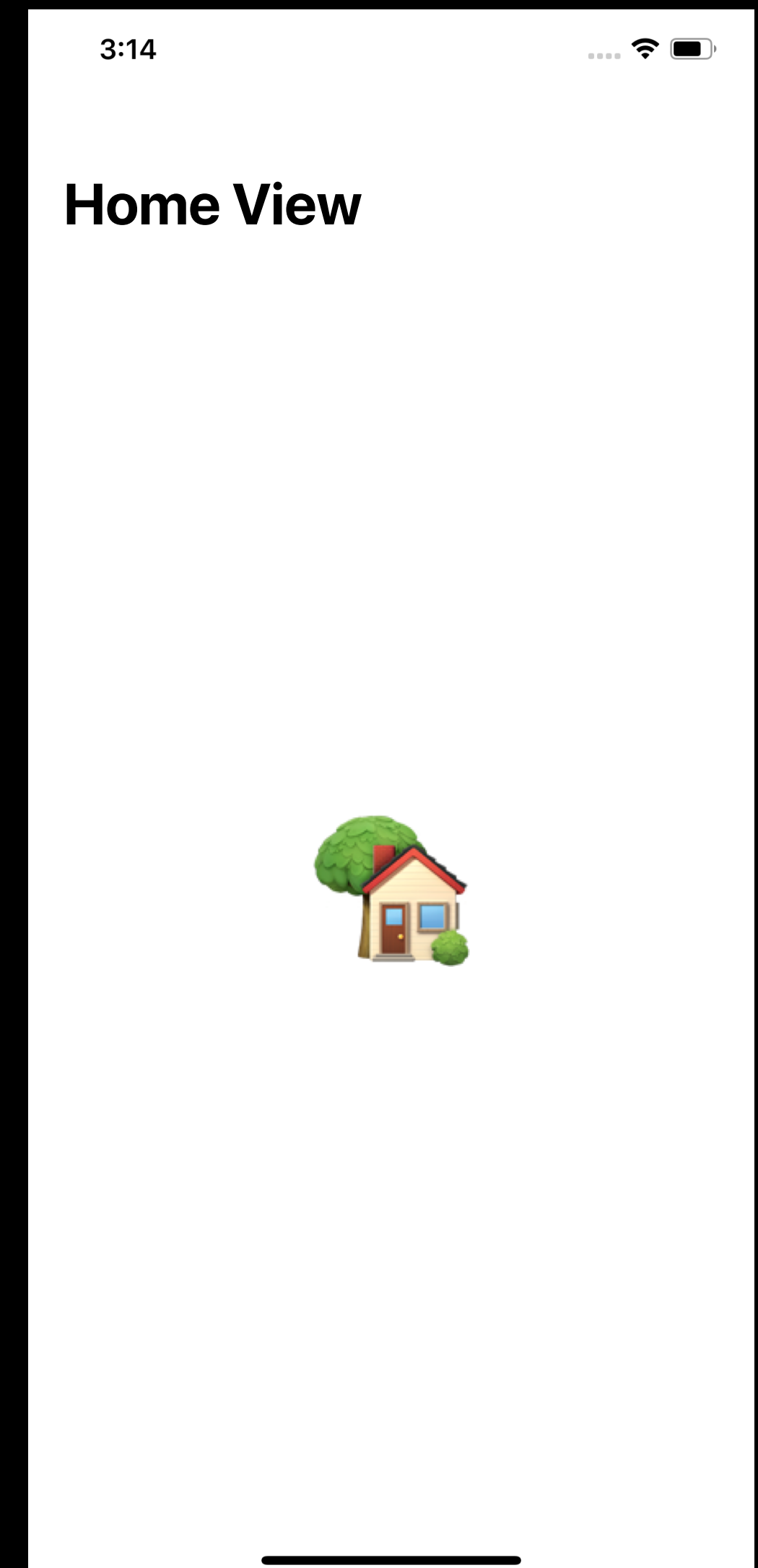


PREFERENCES

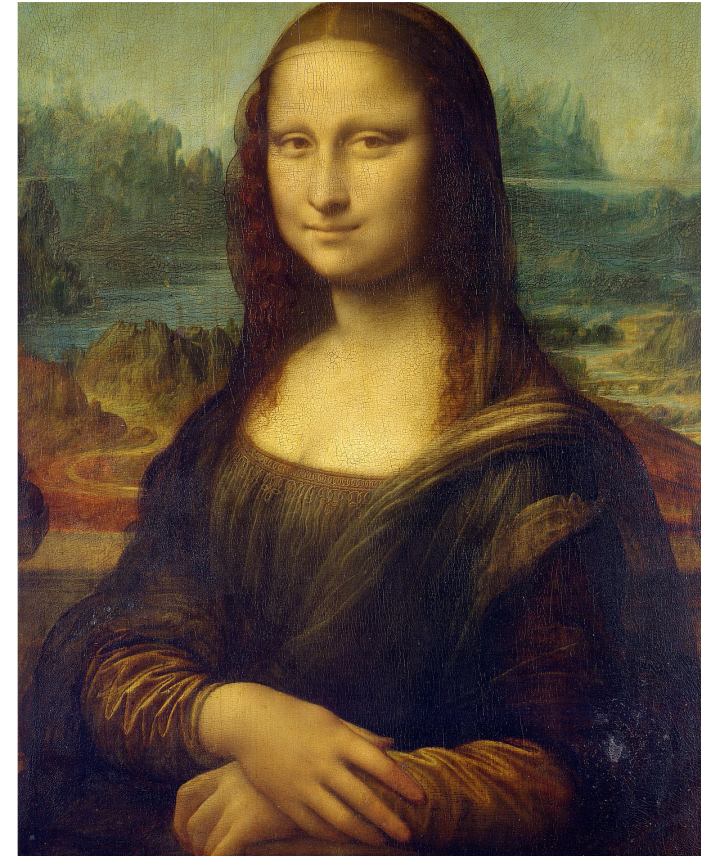
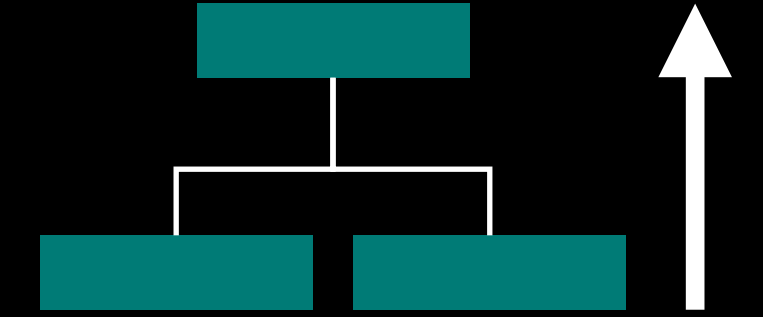


```
struct ContentView: View {
    var body: some View {
        NavigationView {
            HomeView()
        }
    }
}

struct HomeView: View {
    var body: some View {
        Text("🏠")
        .preference(
            key: NavigationBarTitlePreferenceKey.self,
            value: "Home View"
        )
    }
}
```

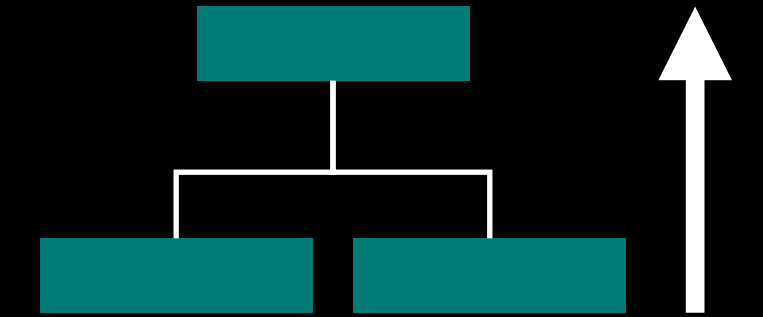


PREFERENCES



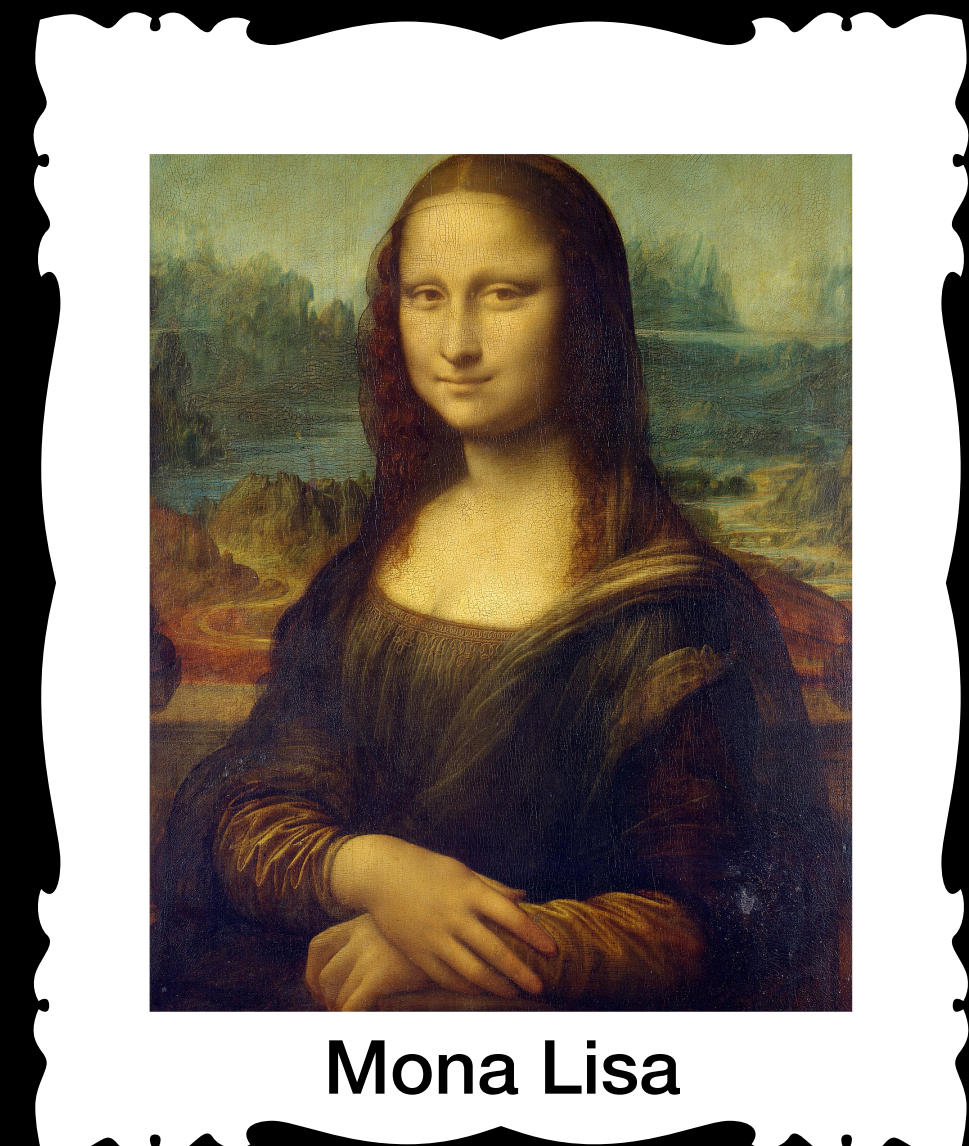
Mona Lisa

PREFERENCES

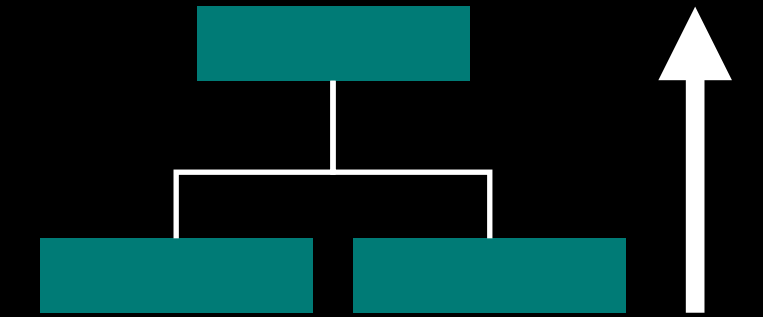


```
struct ContentView: View {  
    var body: some View {  
        PictureFrame {  
            Monalisa()  
        }  
    }  
}
```

```
struct Monalisa: View {  
    var body: some View {  
        Image("monalisa.png")  
            .pictureTitle("Mona Lisa")  
    }  
}
```



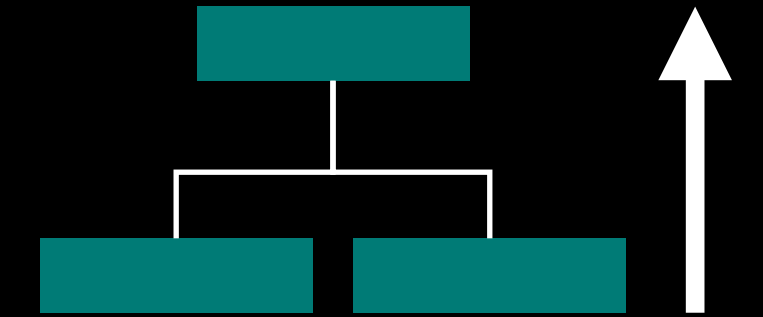
PREFERENCES



```
struct ContentView: View {  
    var body: some View {  
        PictureFrame {  
            MonaLisa()  
        }  
    }  
}  
  
struct MonaLisa: View {  
    var body: some View {  
        Image("monalisa.png")  
        .preference(  
            key: TitlePrefKey.self,  
            value: "Mona Lisa"  
        )  
    }  
}
```

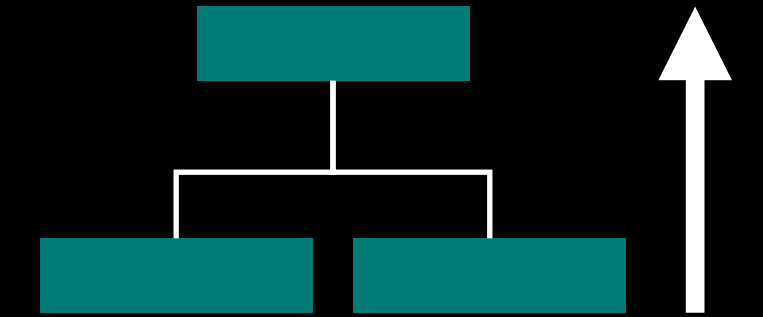


PREFERENCES



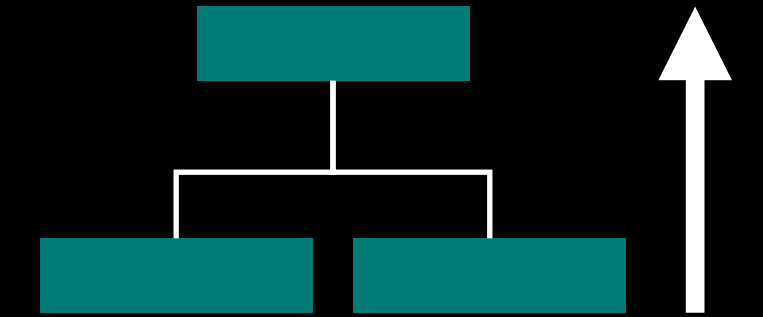
```
extension View {  
    /// Returns a view producing `value` as the value of preference  
    /// `Key` seen by its ancestors.  
    @inlinable public func preference<K>(key _: K.Type = K.self, value: K.Value)  
    -> some View where K : PreferenceKey  
}
```


PREFERENCES



```
struct TitlePrefKey: PreferenceKey {  
    typealias Value = String?  
  
    static var defaultValue: Value = nil  
  
    static func reduce(value: inout Value, nextValue: () -> Value) {  
        value = nextValue()  
    }  
}
```


PREFERENCES

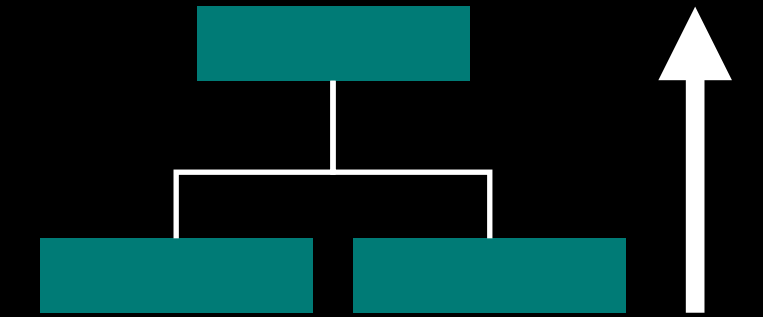


```
struct ContentView: View {
    var body: some View {
        PictureFrame {
            MonaLisa()
        }
    }
}

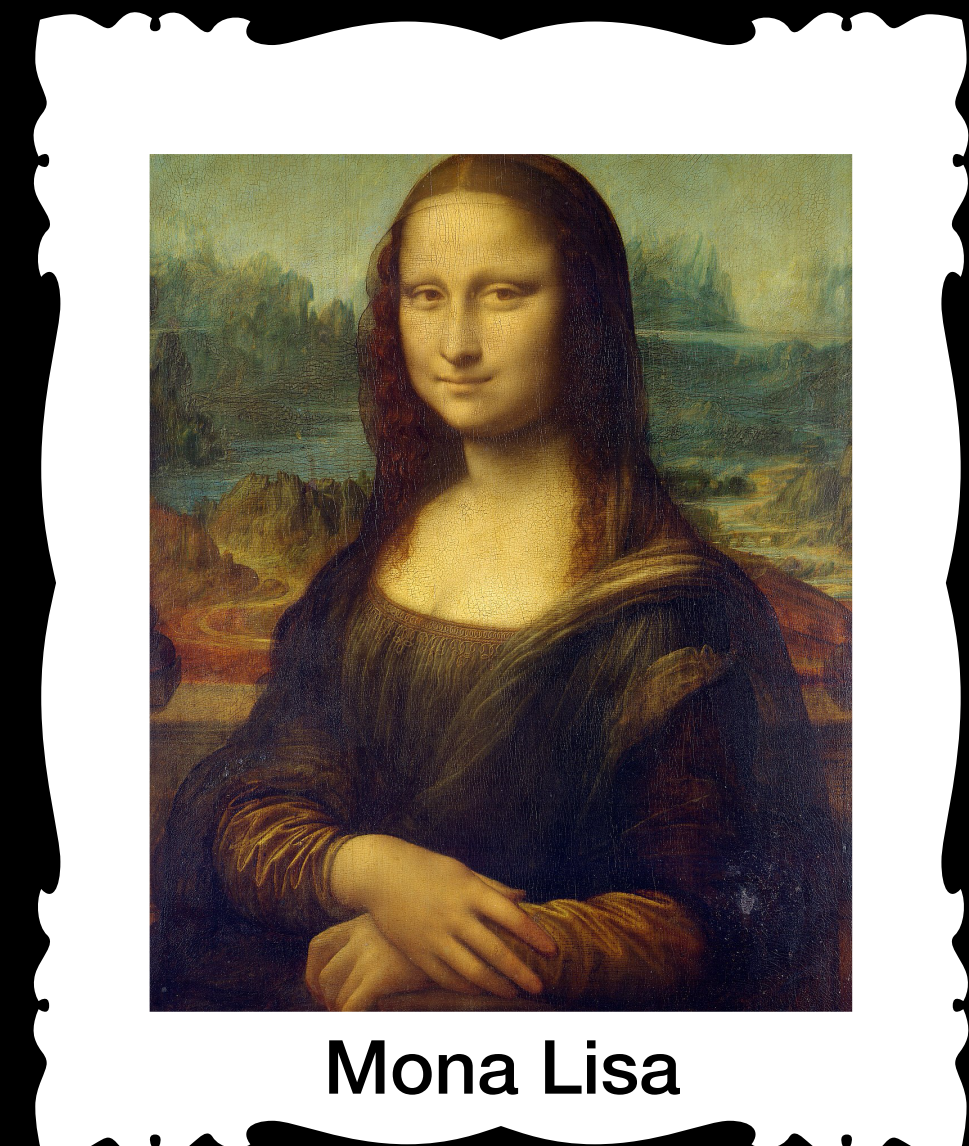
struct MonaLisa: View {
    var body: some View {
        Image("monalisa.png")
            .preference(
                key: TitlePrefKey.self,
                value: "Mona Lisa"
            )
    }
}
```



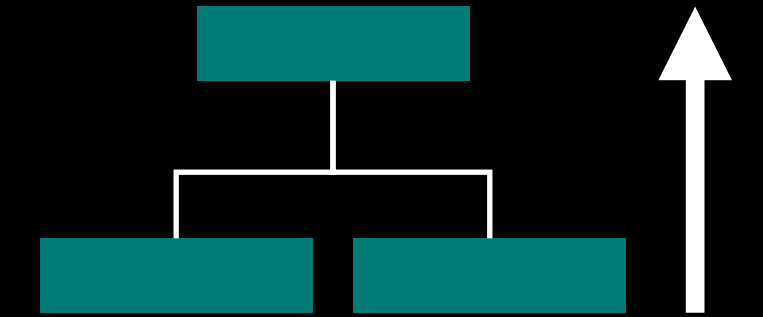
PREFERENCES



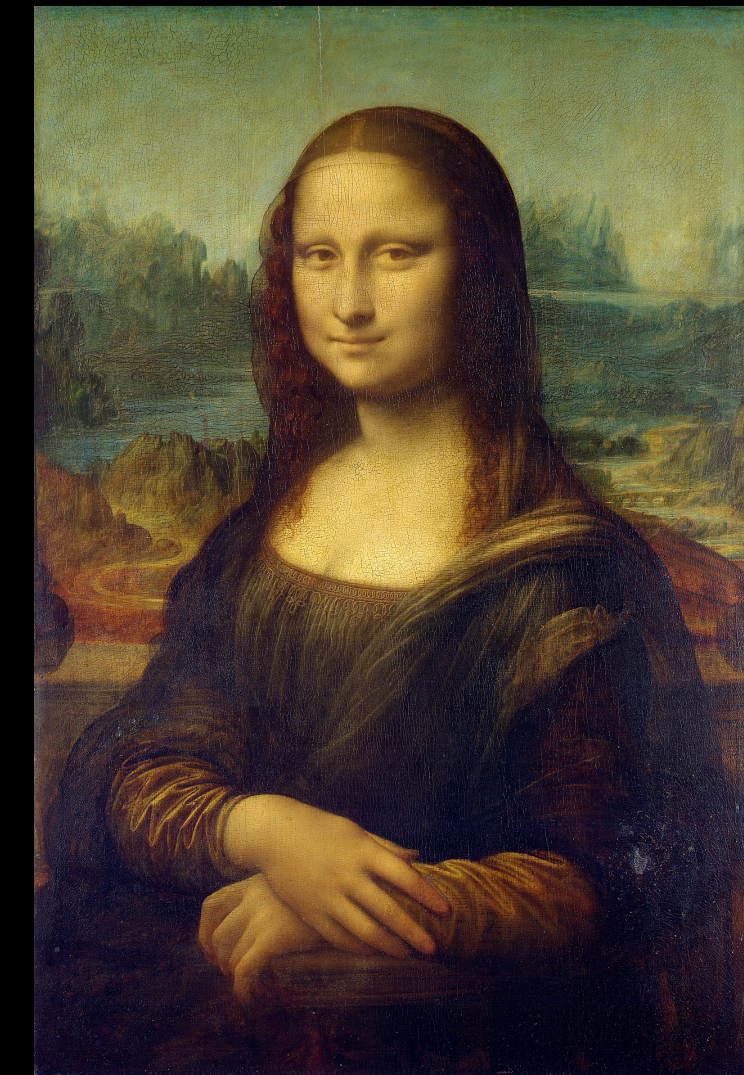
```
struct ContentView: View {  
    var body: some View {  
        PictureFrame {  
            MonaLisa()  
        }  
    }  
}  
  
struct MonaLisa: View {  
    var body: some View {  
        Image("monalisa.png")  
        .preference(  
            key: TitlePrefKey.self,  
            value: "Mona Lisa"  
        )  
    }  
}
```



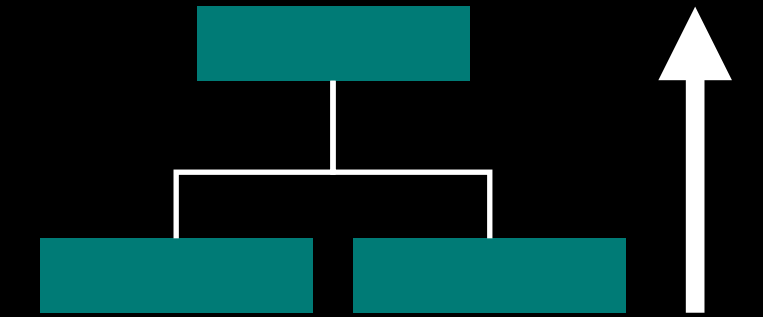
PREFERENCES



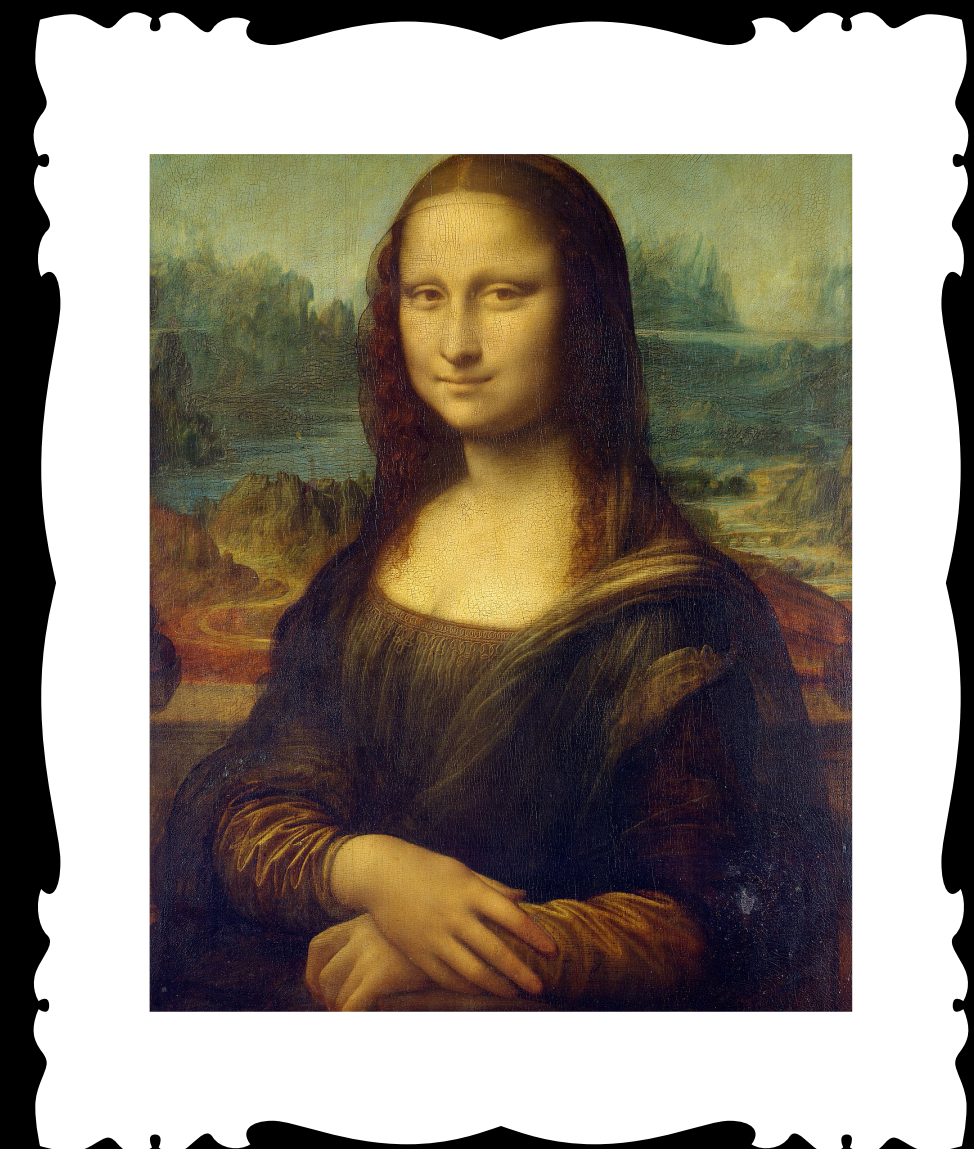
```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    var body: some View {  
        VStack {  
            content()  
        }  
    }  
}
```



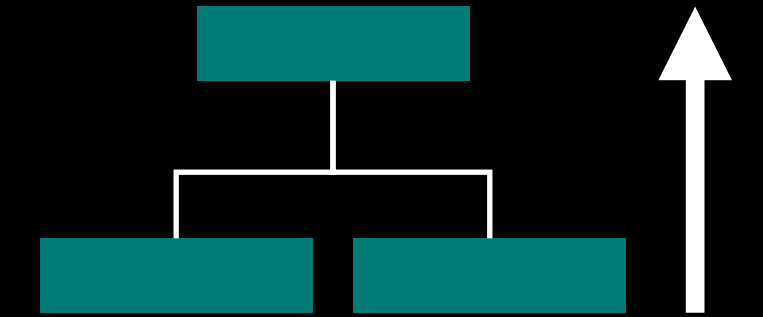
PREFERENCES



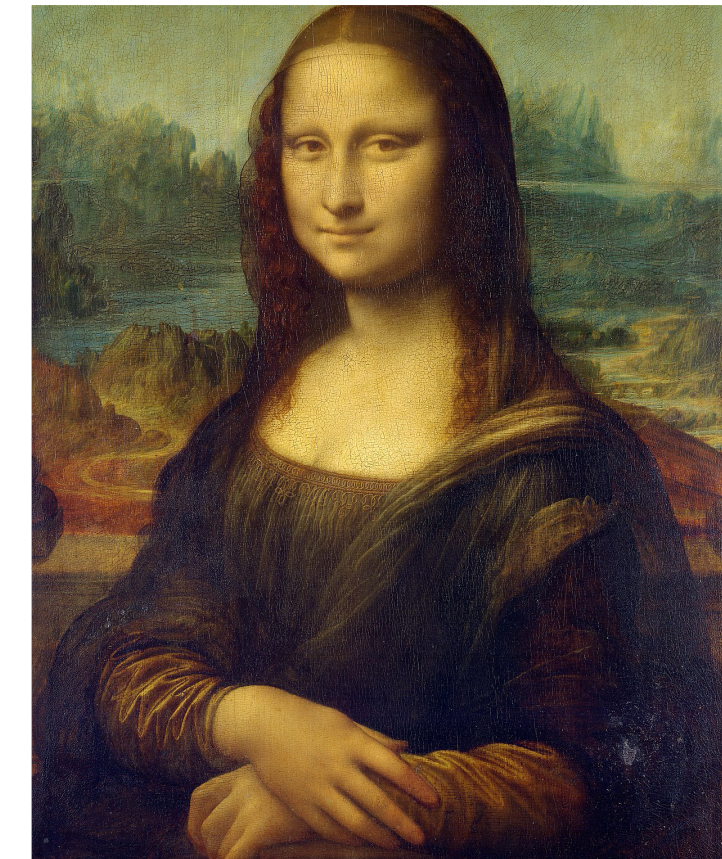
```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    var body: some View {  
        VStack {  
            content()  
                .overlay(  
                    Image("frame.png")  
                )  
        }  
    }  
}
```



PREFERENCES

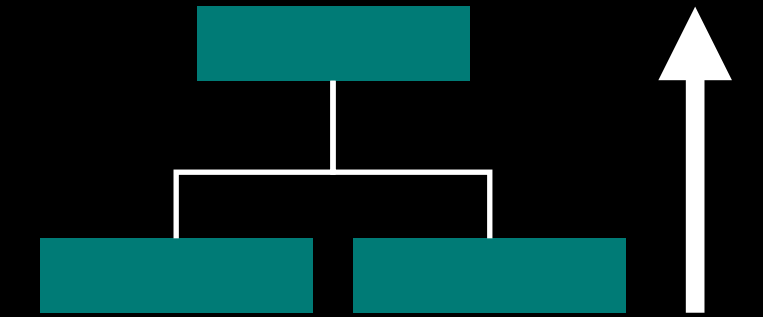


```
struct PictureFrame<Content: View>: View {  
  let content: () -> Content  
  
  var body: some View {  
    VStack {  
      content()  
      .overlay(  
        Image("frame.png")  
      )  
      .onPreferenceChange(TitlePrefKey.self) { preference in  
      }  
    }  
  }  
}
```



Mona Lisa

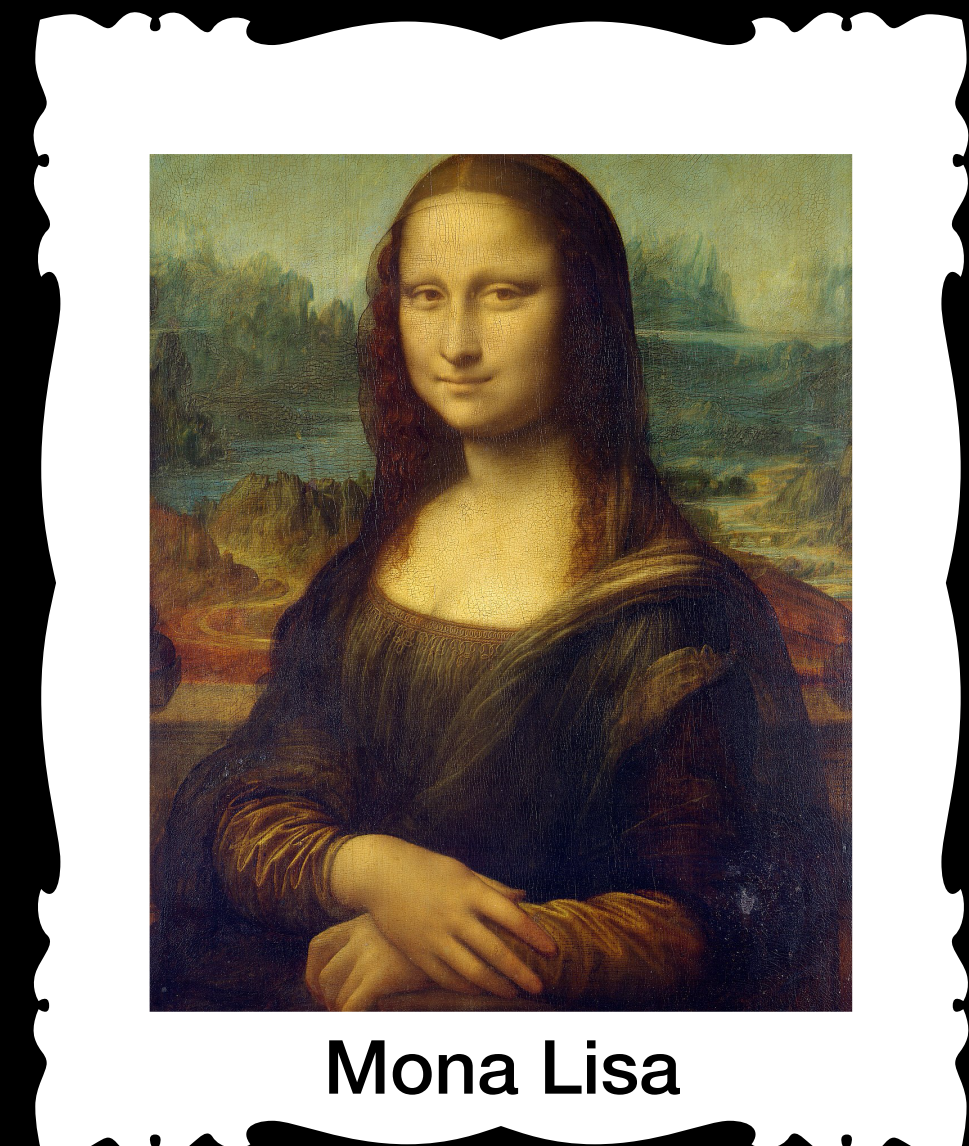
PREFERENCES



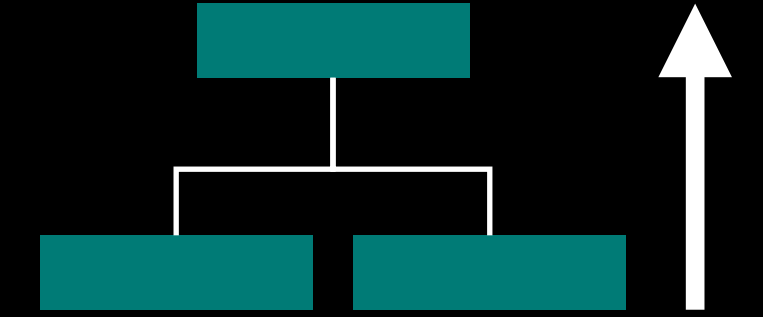
```
struct PictureFrame<Content: View>: View {
  let content: () -> Content

  @State private var title: String?

  var body: some View {
    VStack {
      content()
        .overlay(
          Image("frame.png")
        )
        .onPreferenceChange(TitlePrefKey.self) { preference in
          self.title = preference
        }
    }
  }
}
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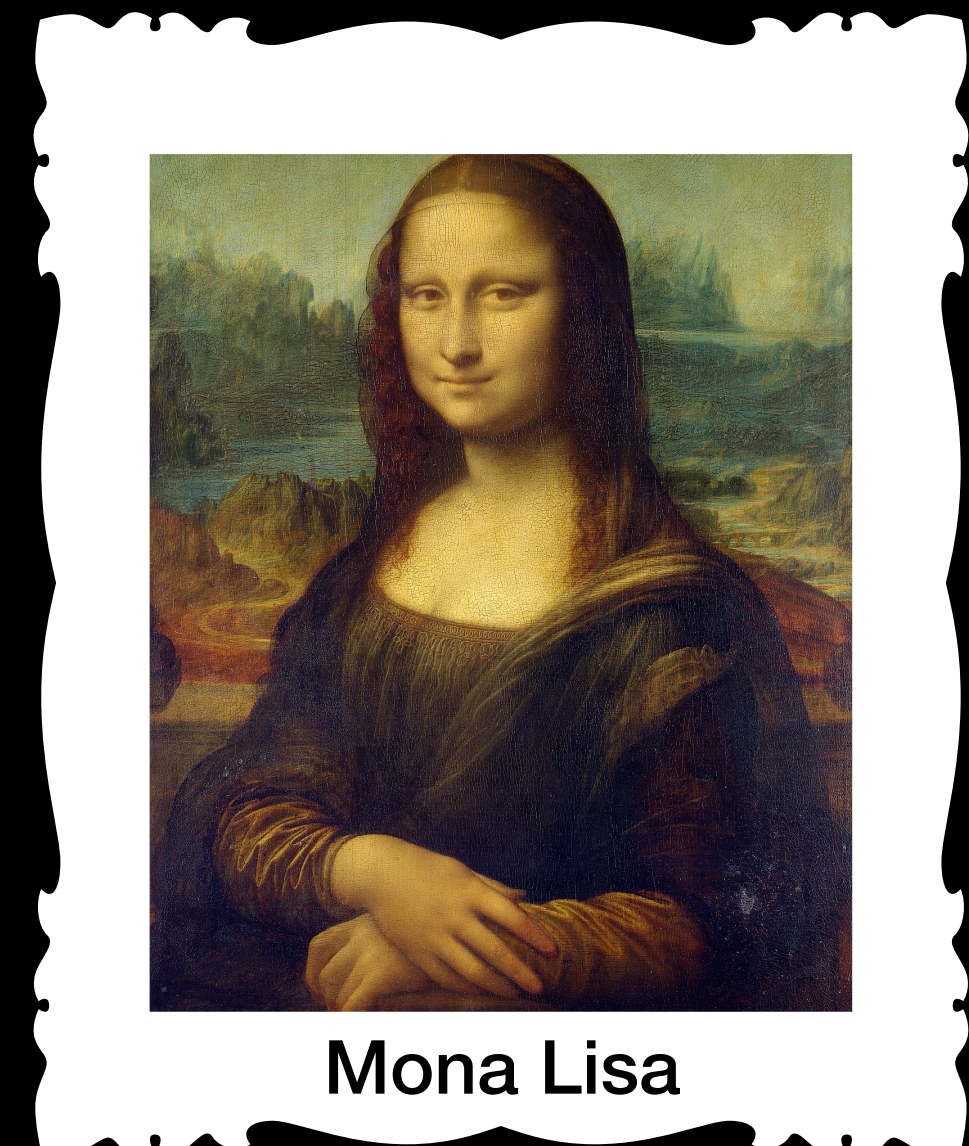
PREFERENCES



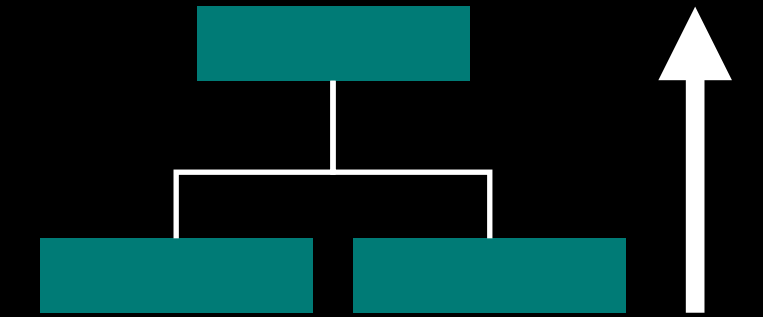
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  var body: some View {
    VStack {
      content()
        .overlay(
          Image("frame.png")
        )
        .onPreferenceChange(TitlePrefKey.self) { preference in
          self.title = preference
        }
        .overlay(
          VStack {
            Spacer()
            Text(title ?? "Obra sem nome")
          }
        )
    }
  }
}
```



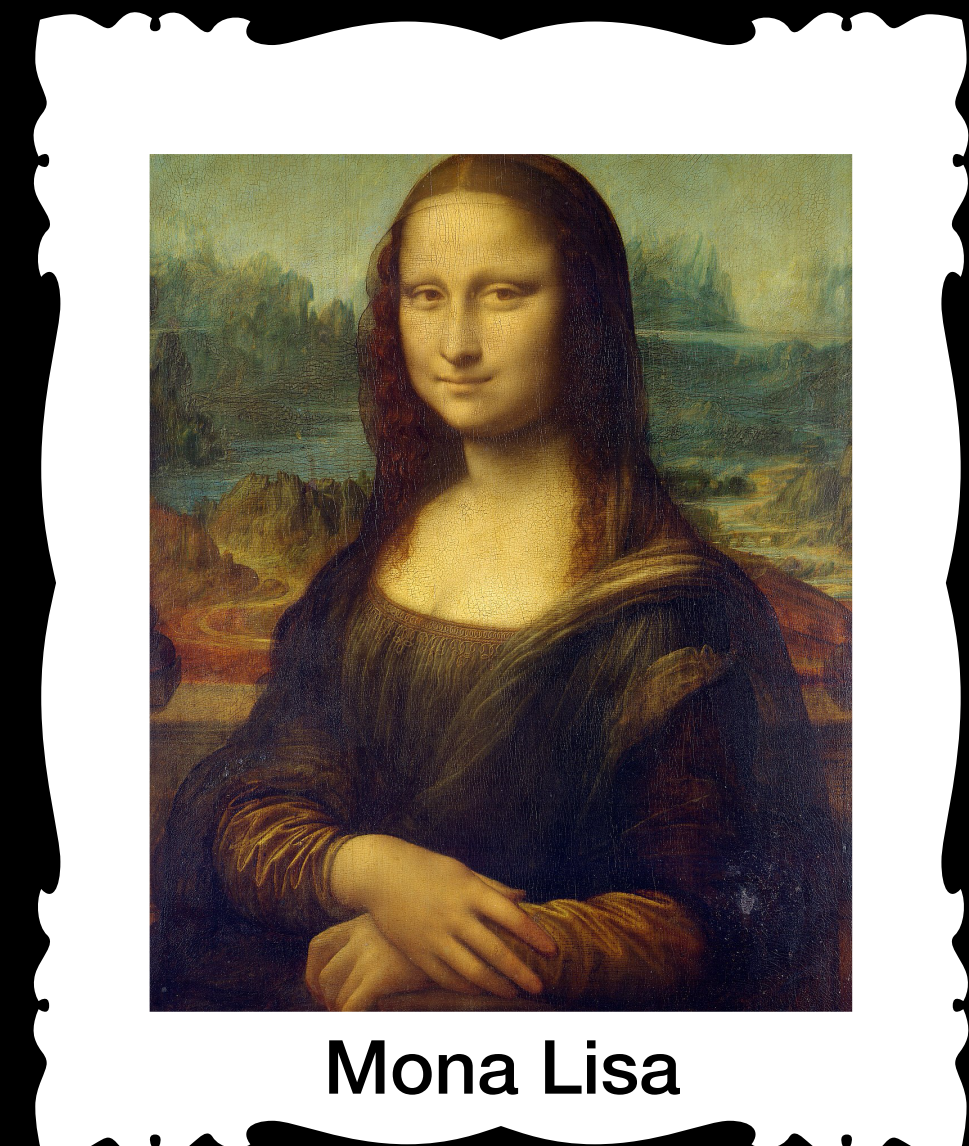
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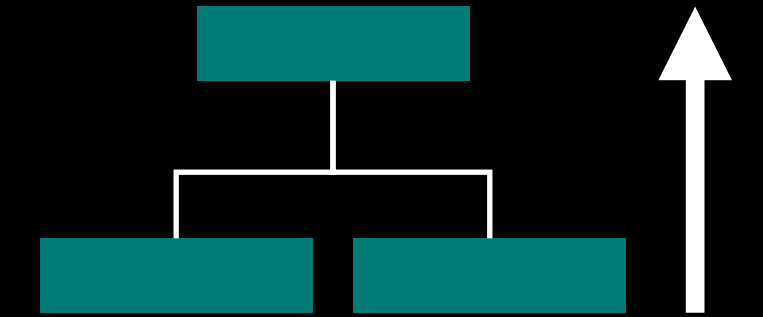
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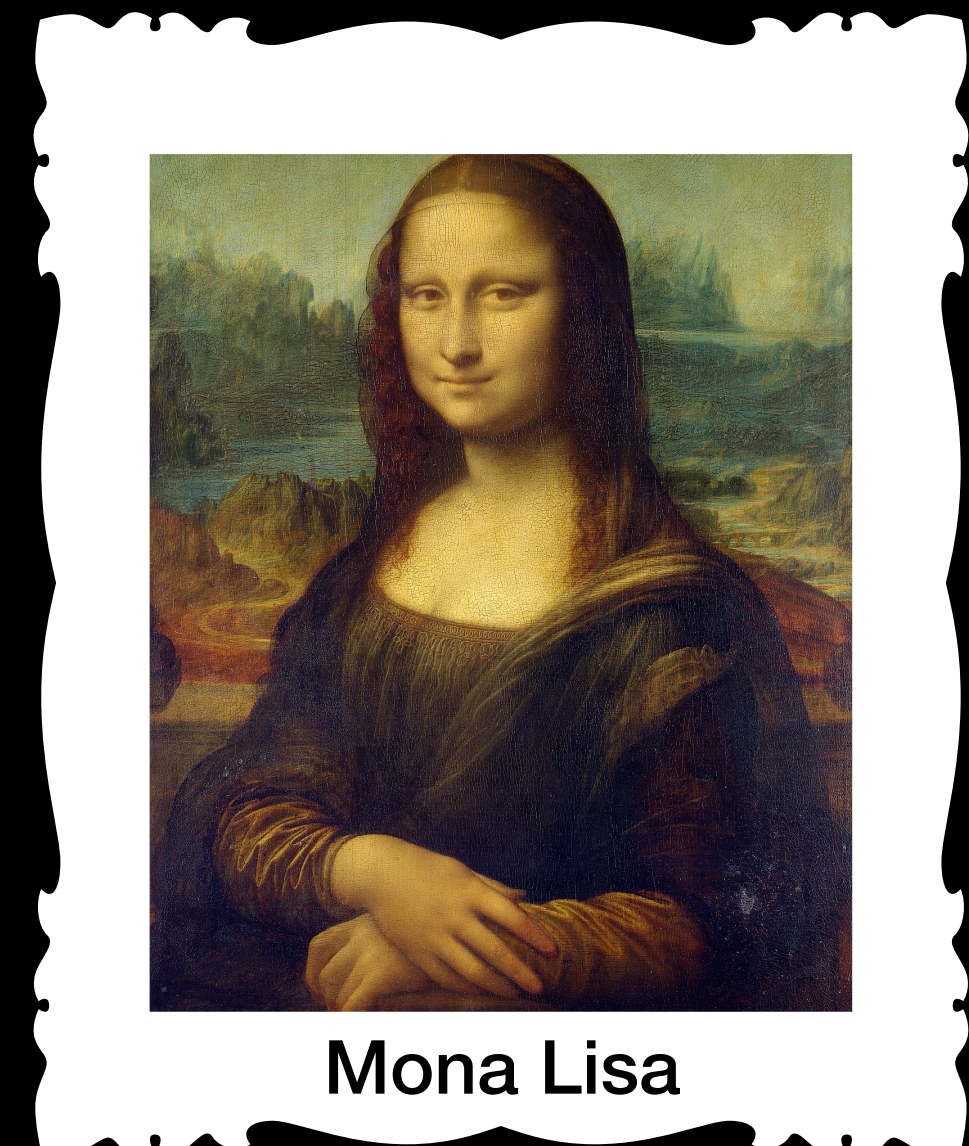
PREFERENCES



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        .overlayPreferenceValue(TitlePrefKey.self) { title in
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            Spacer()
            Text(title ?? "Obra sem nome")
          }
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    }
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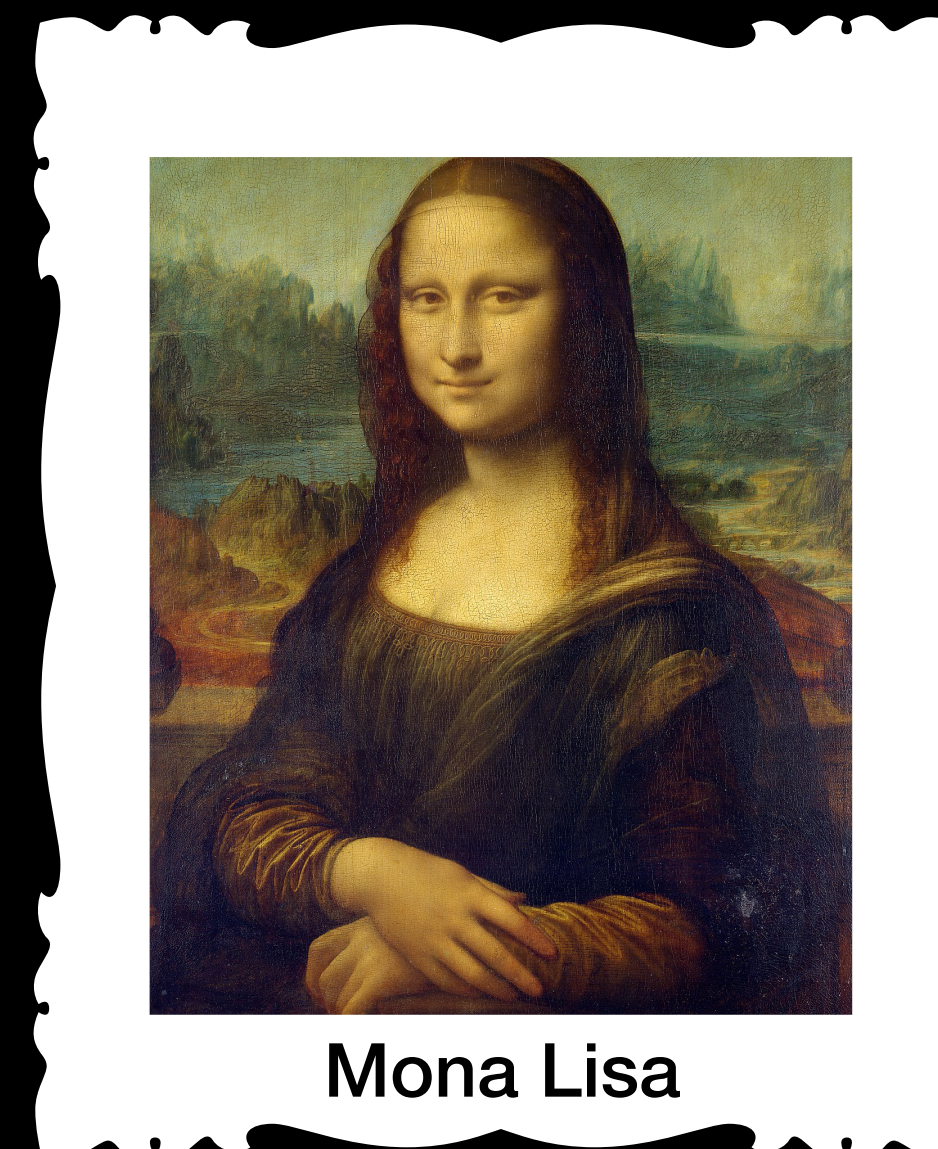


PREFERENCES

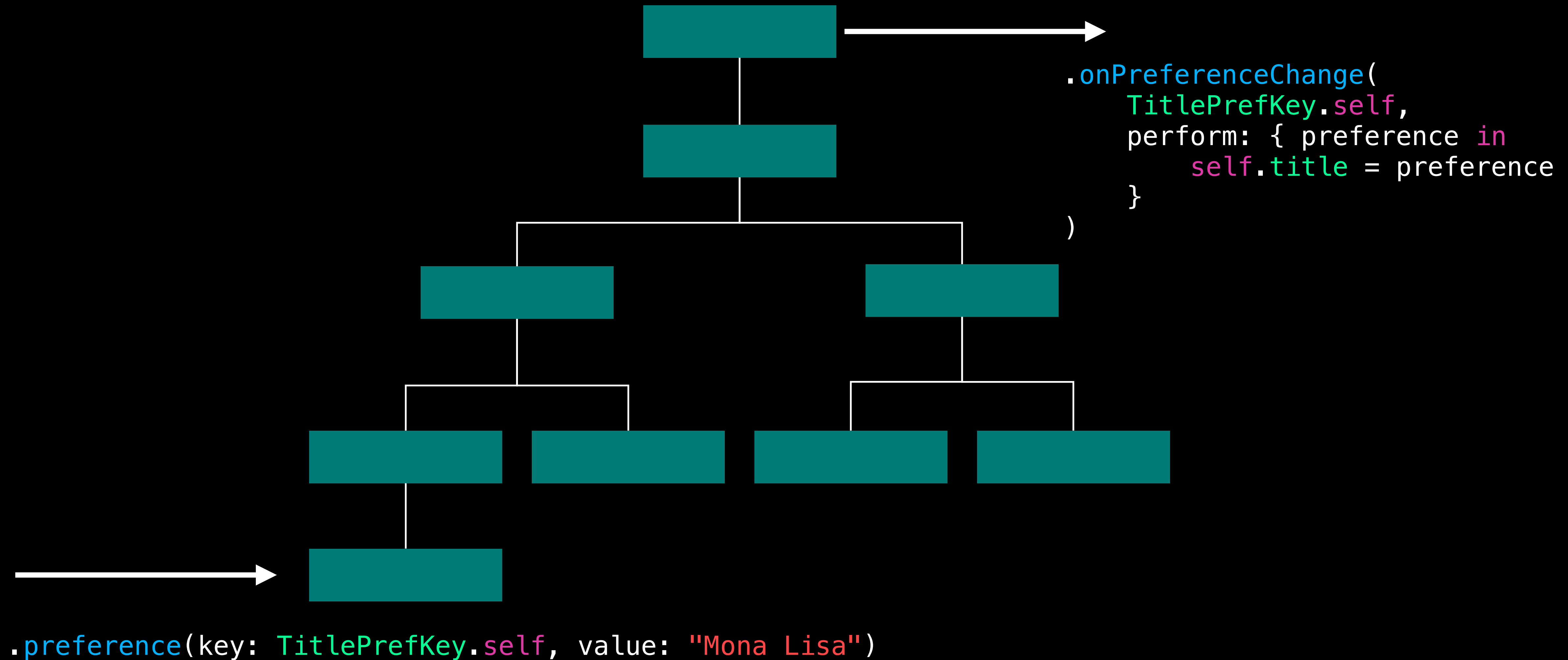


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      }
    }
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}
```



PREFERENCES



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RESUMO

RESUMO

- ✦ O **menor** caminho para construir **ótimos** apps para **todos** dispositivos.
- ✦ **Layout** é decidir o **tamanho** das coisas na tela
- ✦ Não existe maneira de **forçar** um tamanho no seu **filho**.
 1. Pai **propõem** um tamanho ao filho
 2. Filho **escolhe** seu próprio tamanho
 3. Pai posiciona filho na **coordenada** do pai
- ✦ **Views** são como **receitas**, use as ferramentas para expressar o que deve ser feito durante o layout.
- ✦ **Environment** é o mecanismo para uma view passar informações para seus filhos.
- ✦ **Preferences** é o mecanismo para uma view passar informações para seus pais.

Muito Obrigado!

@txaiwieser

Twitter | Github | LinkedIn | Slack



Muito Obrigado!

Perguntas, dicas e sugestões!



@txaiwieser

Twitter | Github | LinkedIn | Slack