

QUEM BOTOU SWIFT NA MINHA VI?



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

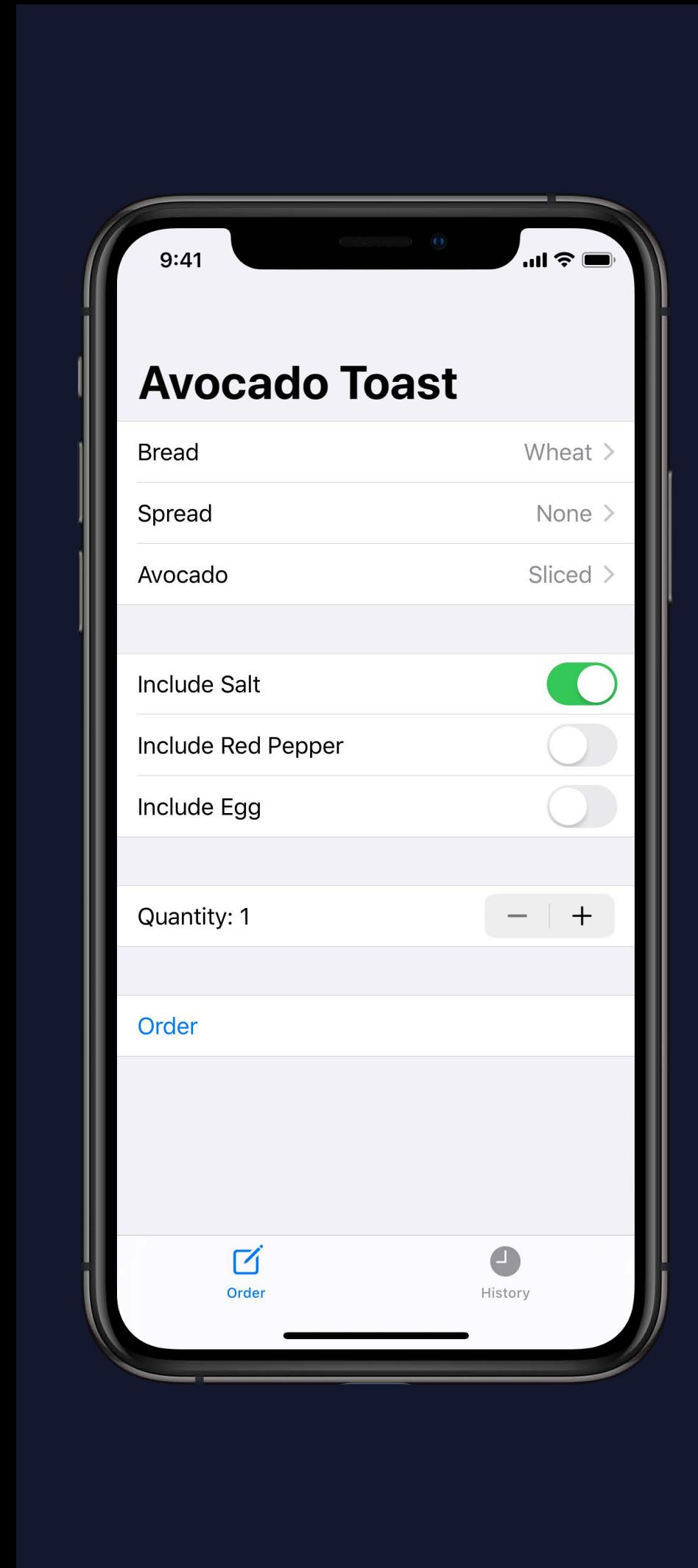
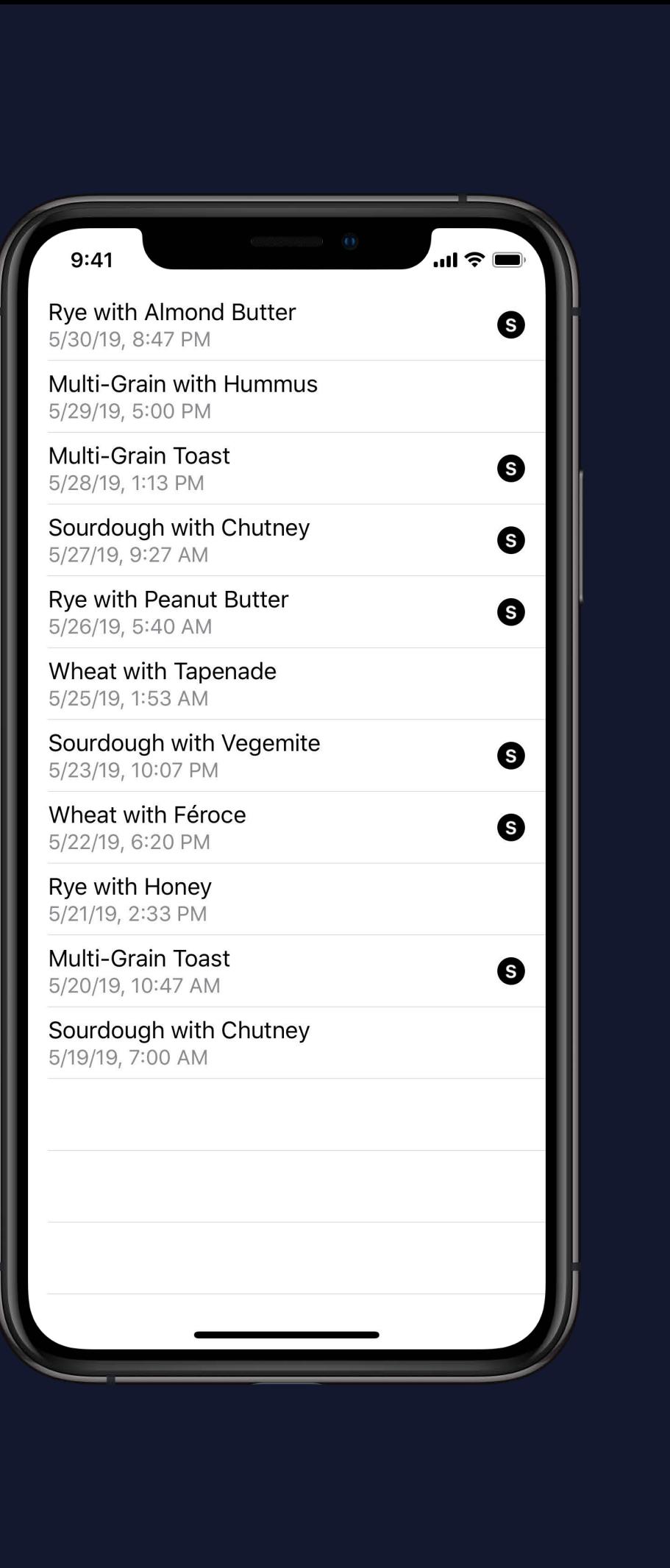
SWIFTUI

- 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.and.pencil")
                        Text("New Order")
                    }
                OrderHistory()
                    .tabItemLabel {
                        Image(systemName: "clock")
                        Text("History")
                    }
            }
        }
    }
}
```



ALEM DO BASICO

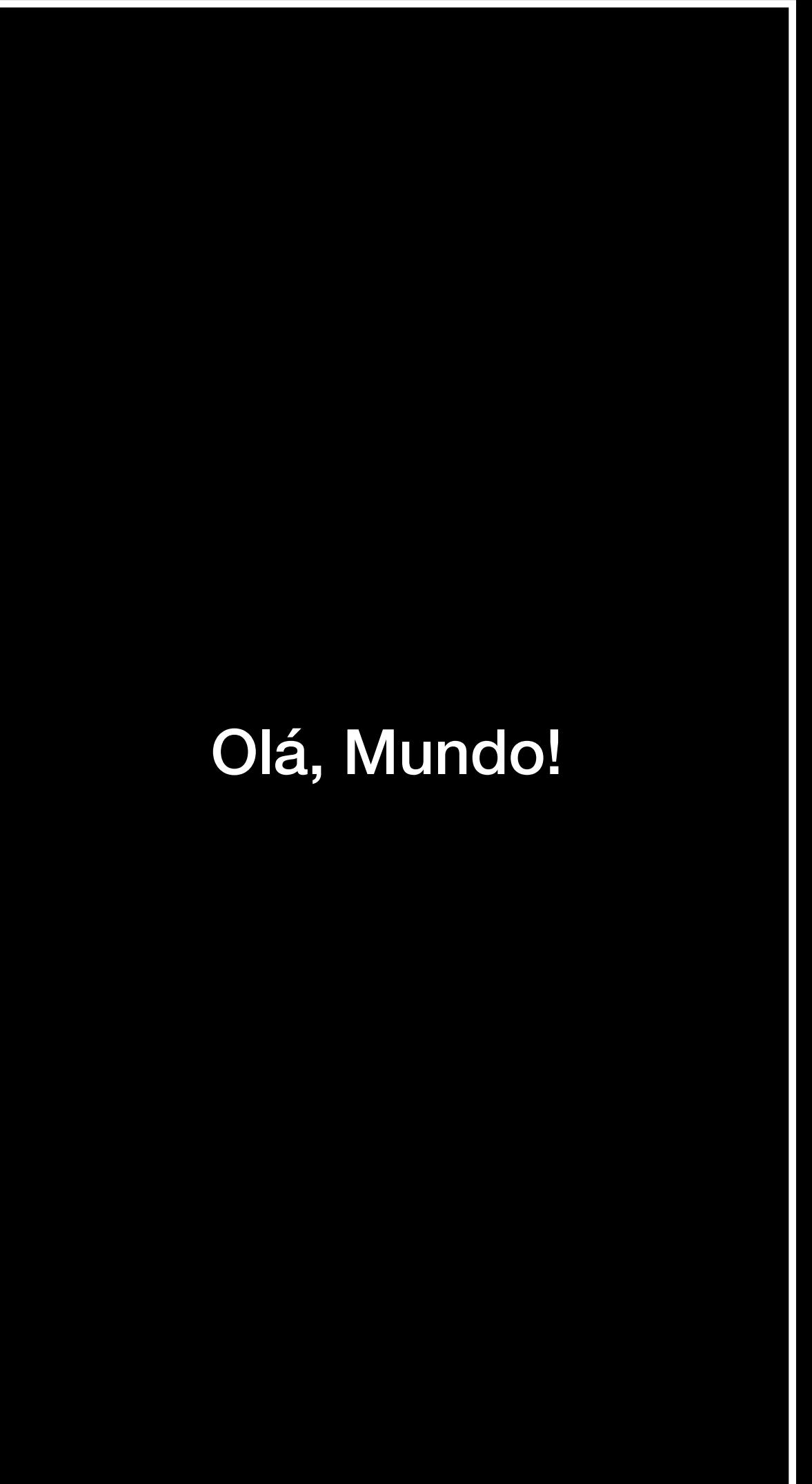
- Layout System
- Geometry Reader
- Environment
- Preferences

AYOUT SYSTEM

Layout é decidir o tamanho das coisas na tela

AYOUT SYSTEM

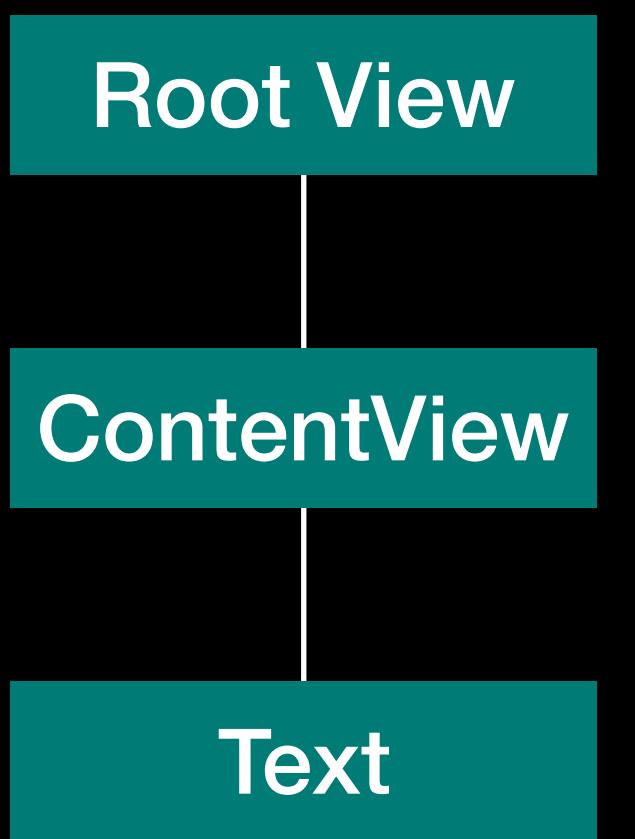
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    var body: some View {  
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    }  
}
```



Olá, Mundo!

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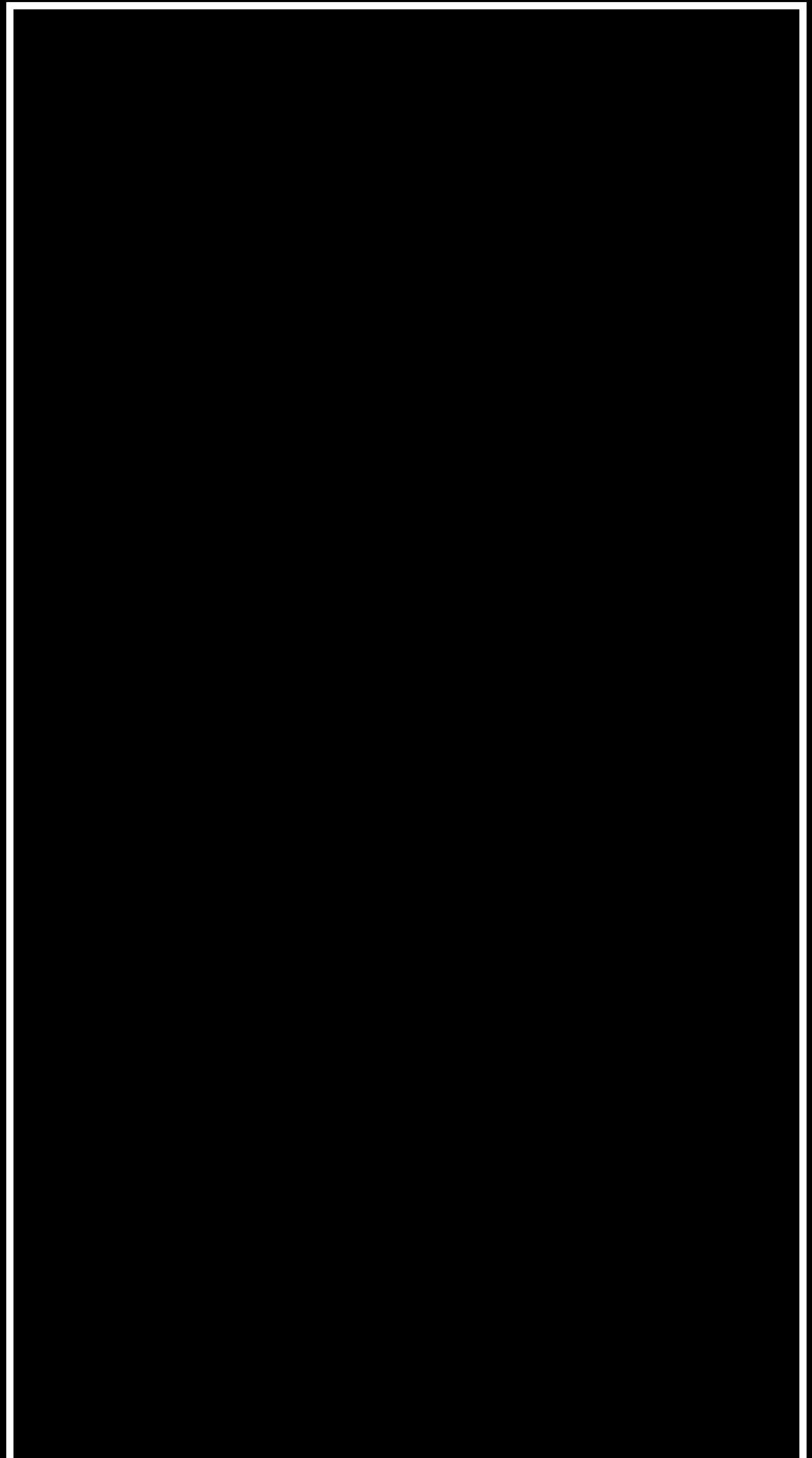
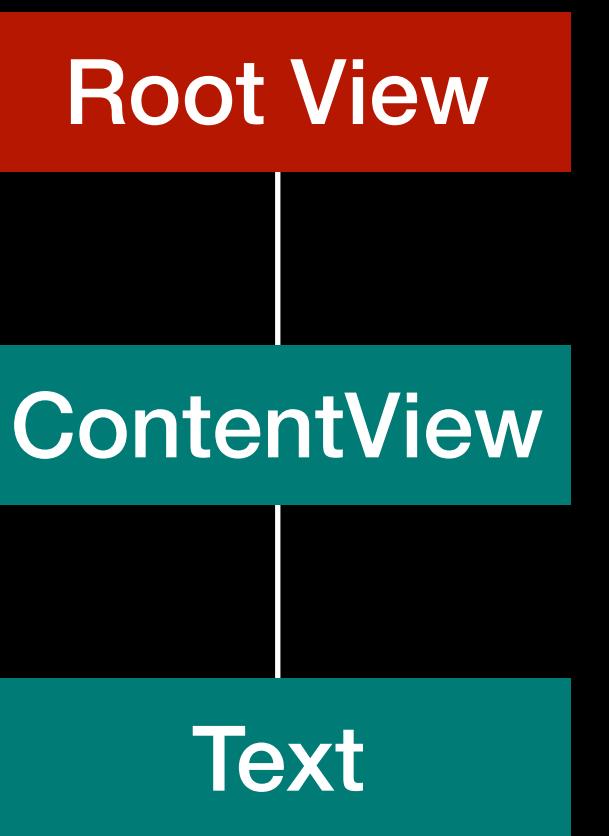
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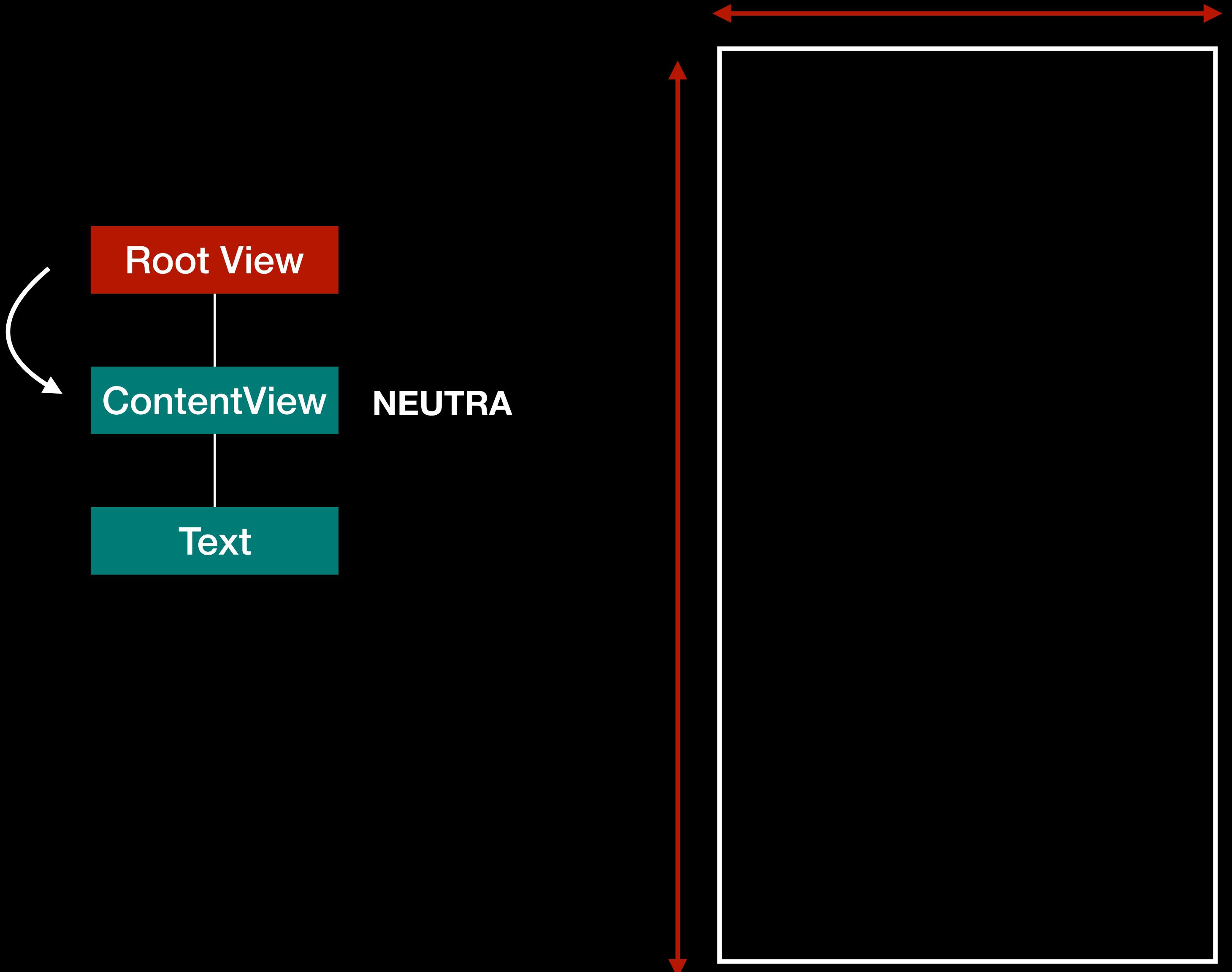
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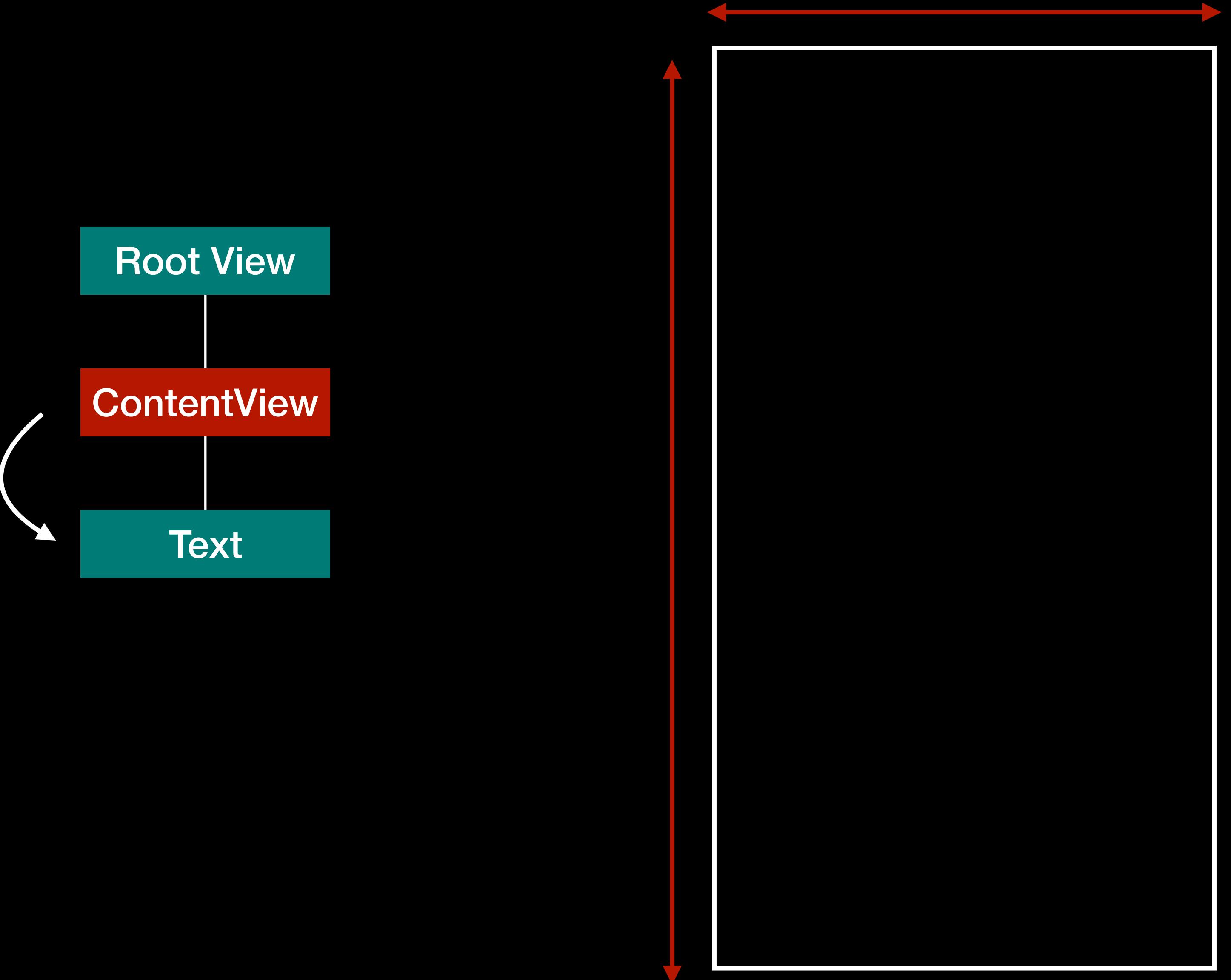
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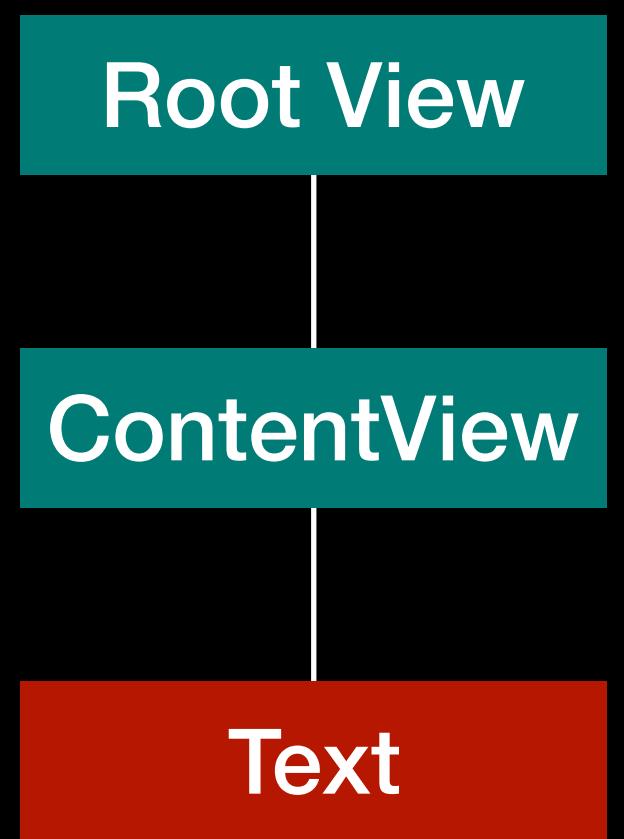
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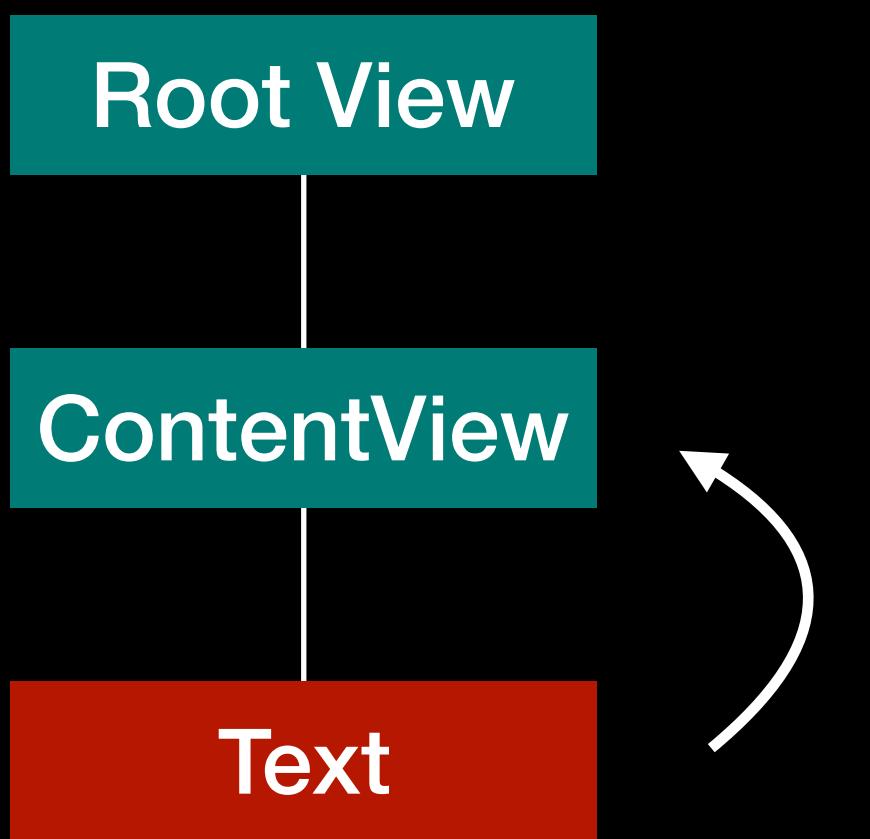


Olá, Mundo!



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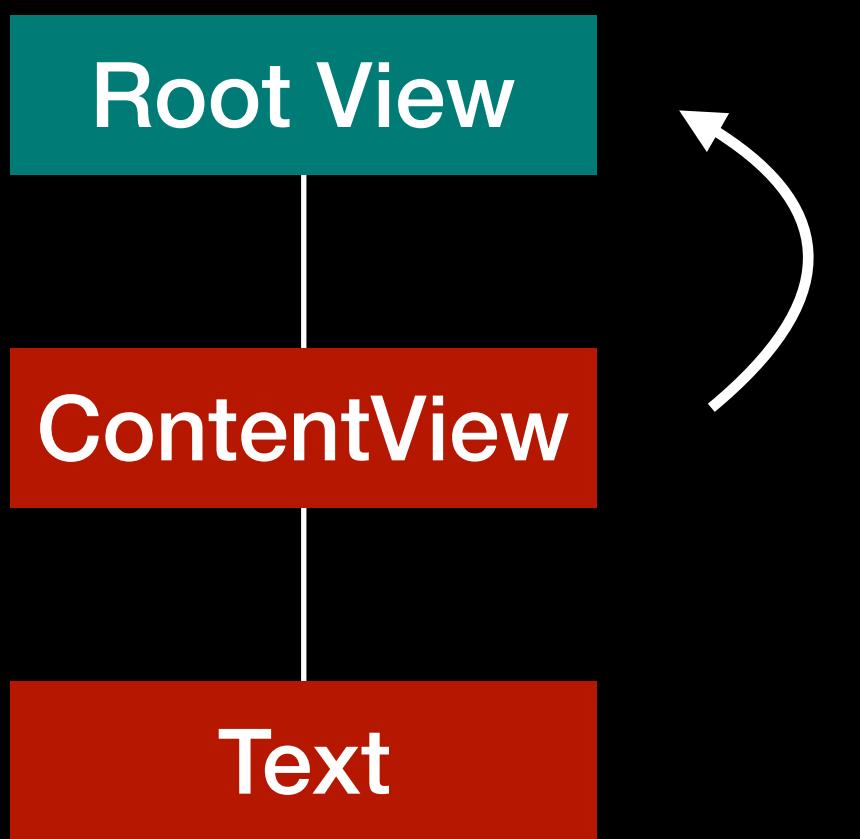
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Olá, Mundo!

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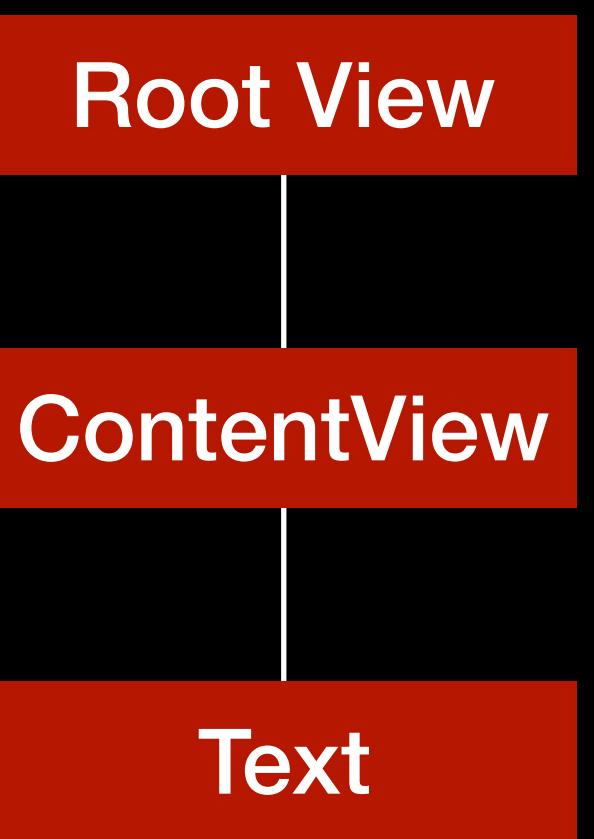
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LAYOUT SYSTEM

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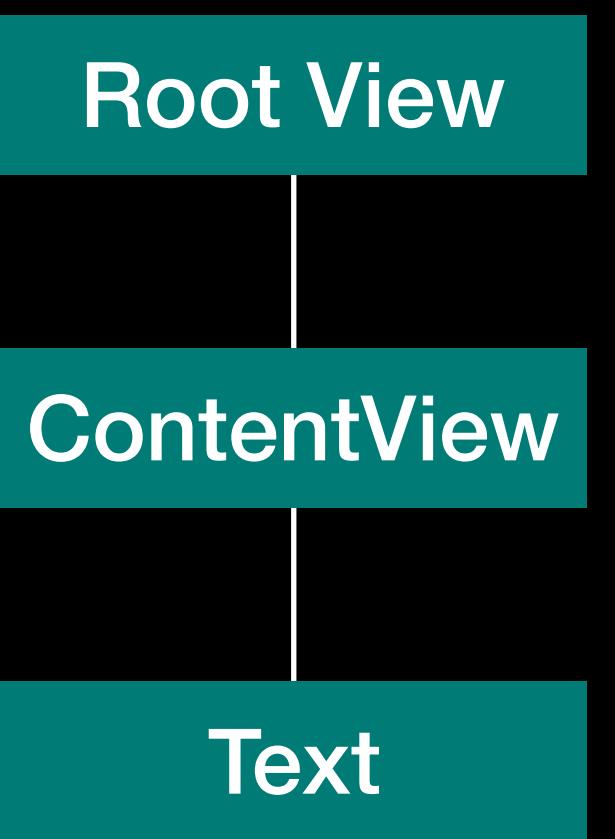
**Não existe maneira de forçar um
tamanho no seu filho.**

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

Pense em guias, sugestões para os filhos

AYOUT SYSTEM

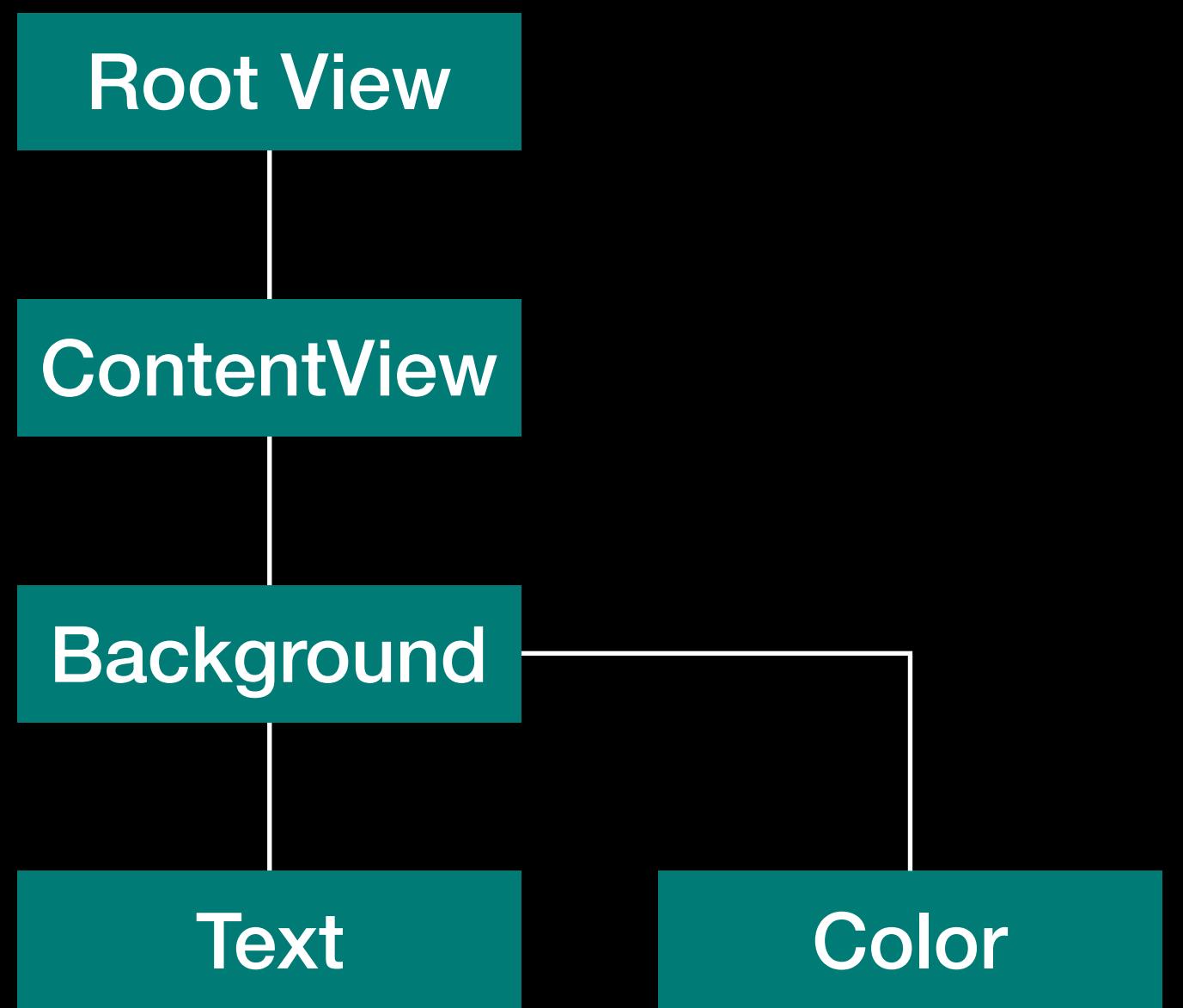
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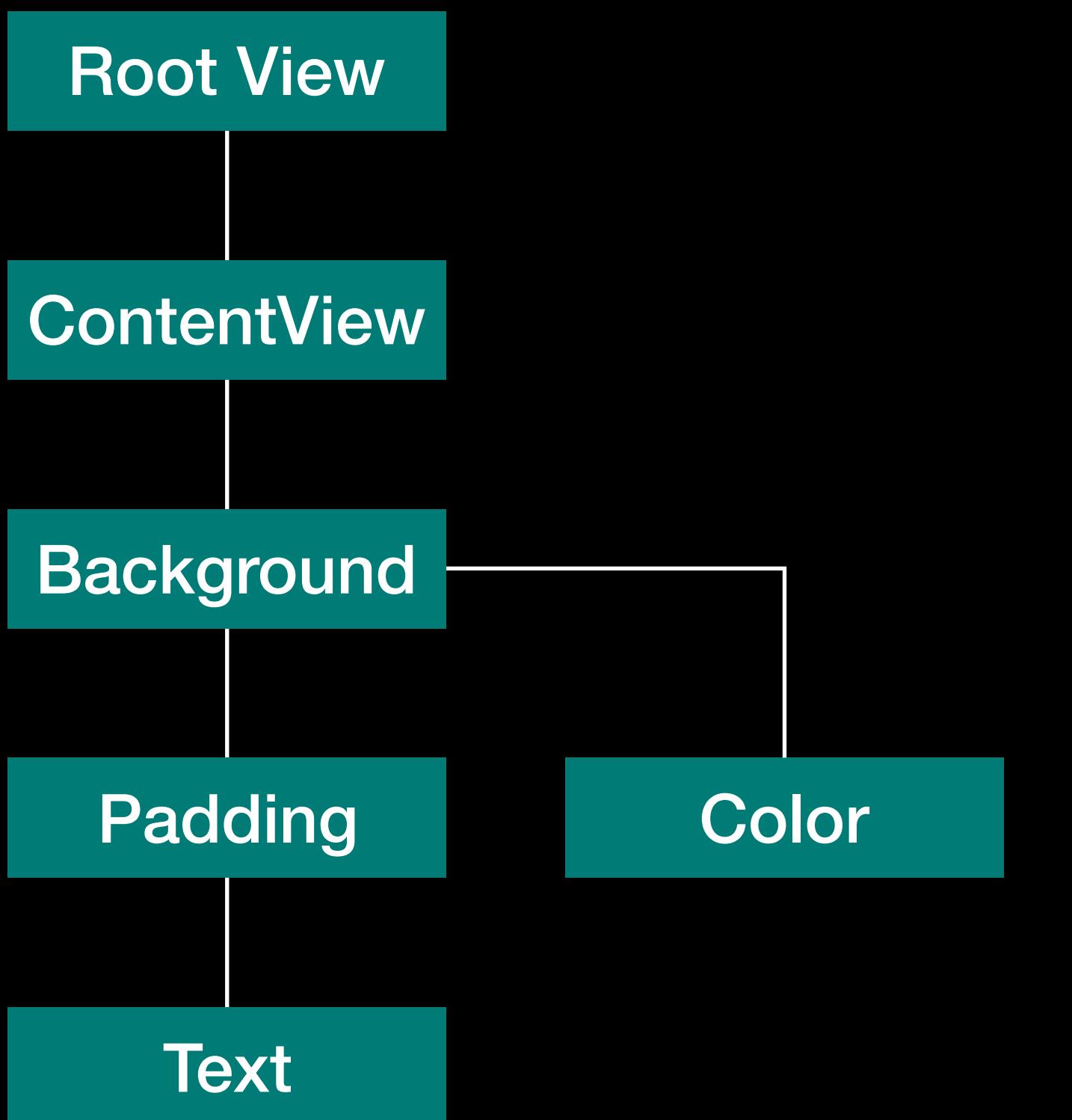
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struct ContentView: View {  
    var body: some View {  
        Text("Olá, Mundo!")  
            .background(Color.purple)  
    }  
}
```



Olá, Mundo!

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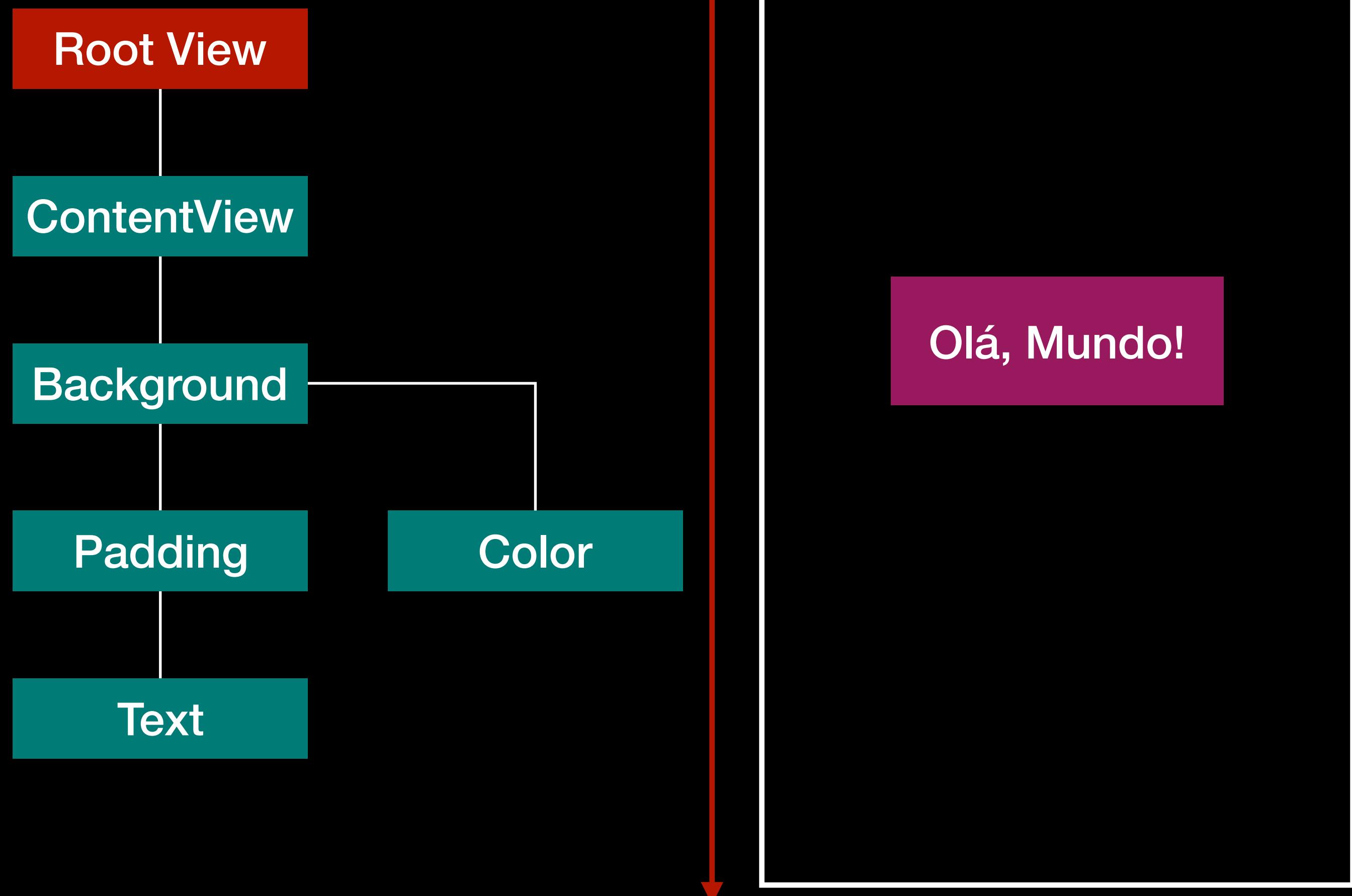
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struct ContentView: View {  
    var body: some View {  
        Text("Olá, Mundo!")  
            .padding(16)  
            .background(Color.purple)  
    }  
}
```



Olá, Mundo!

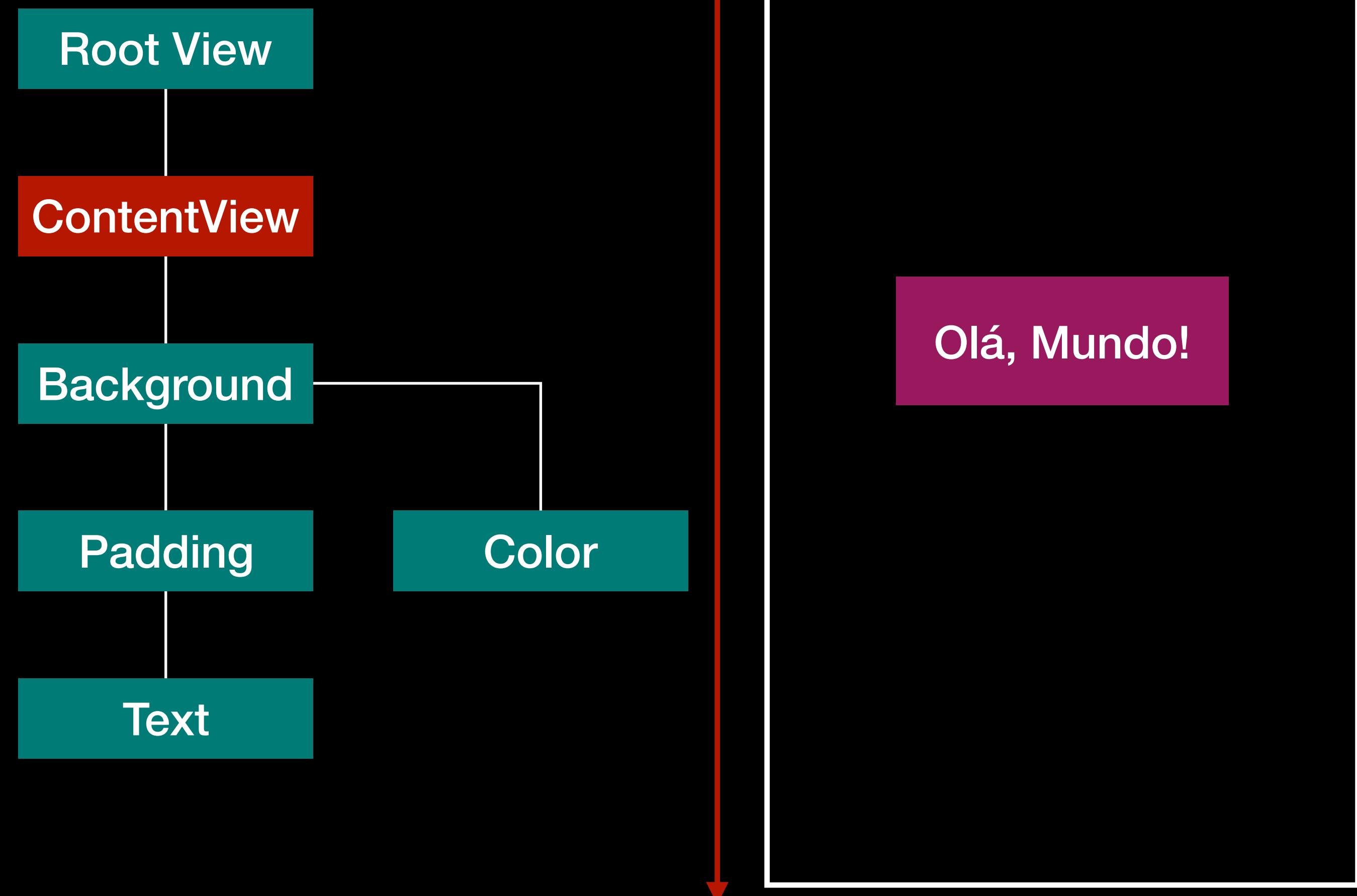
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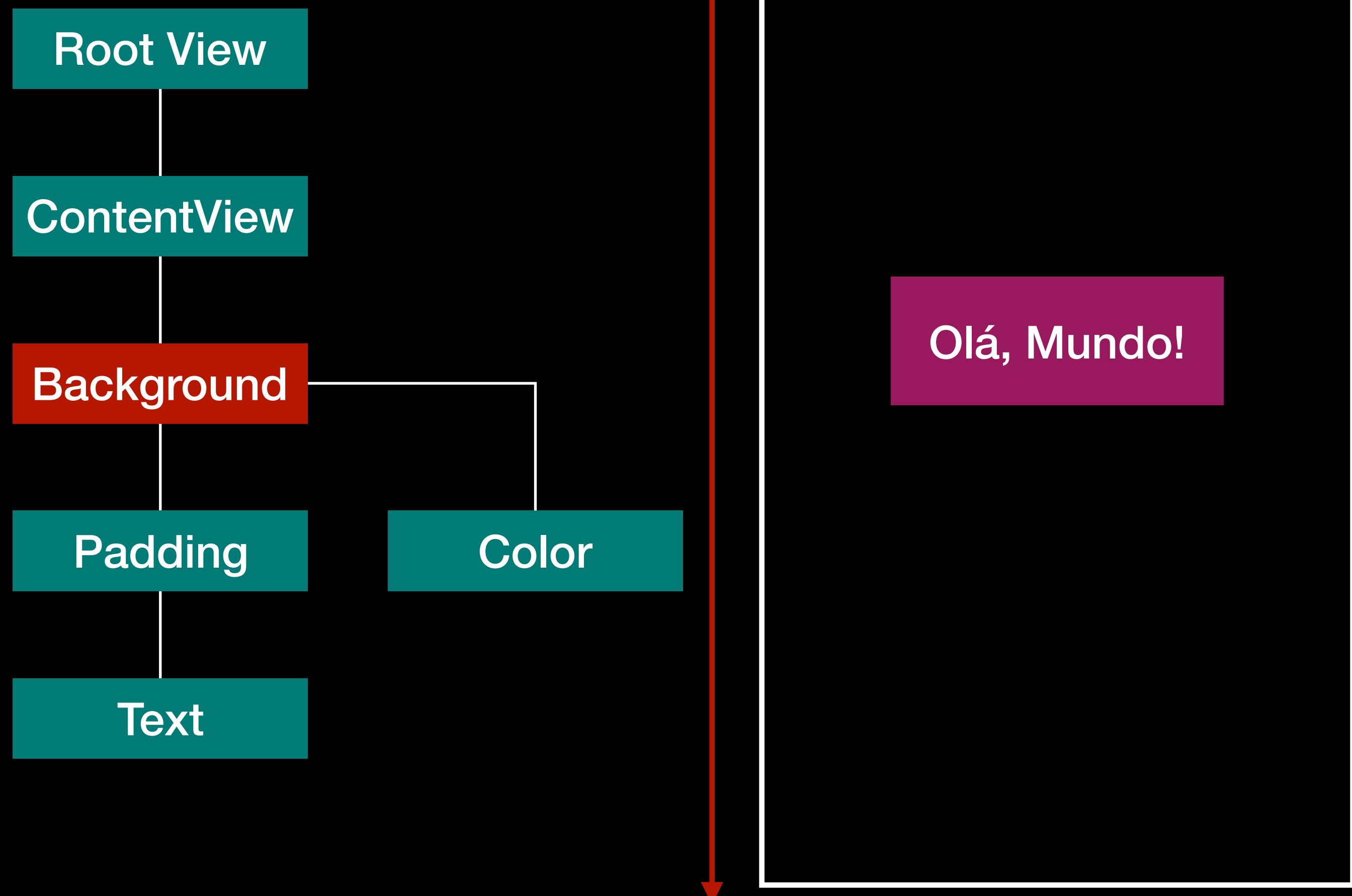
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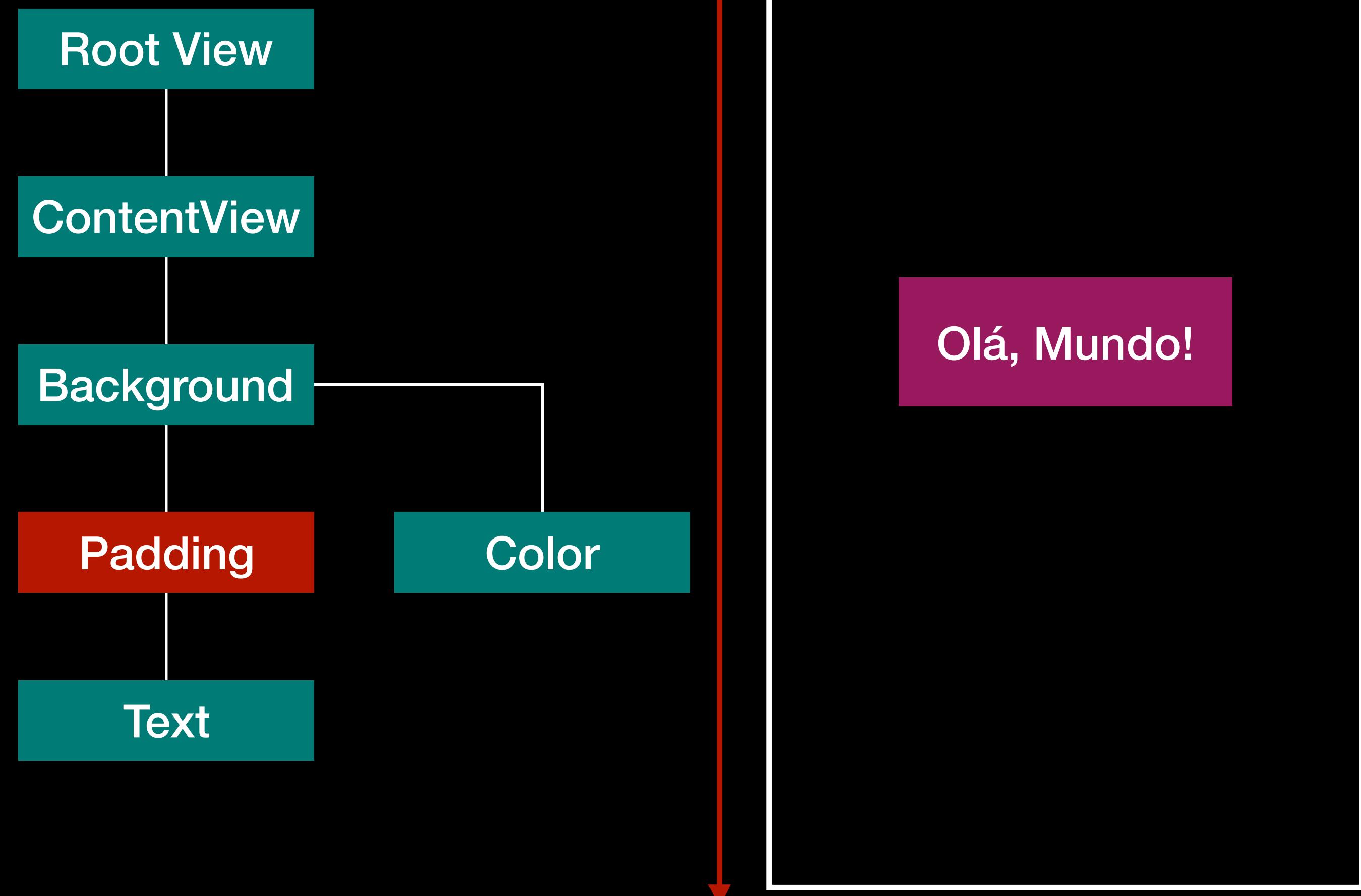
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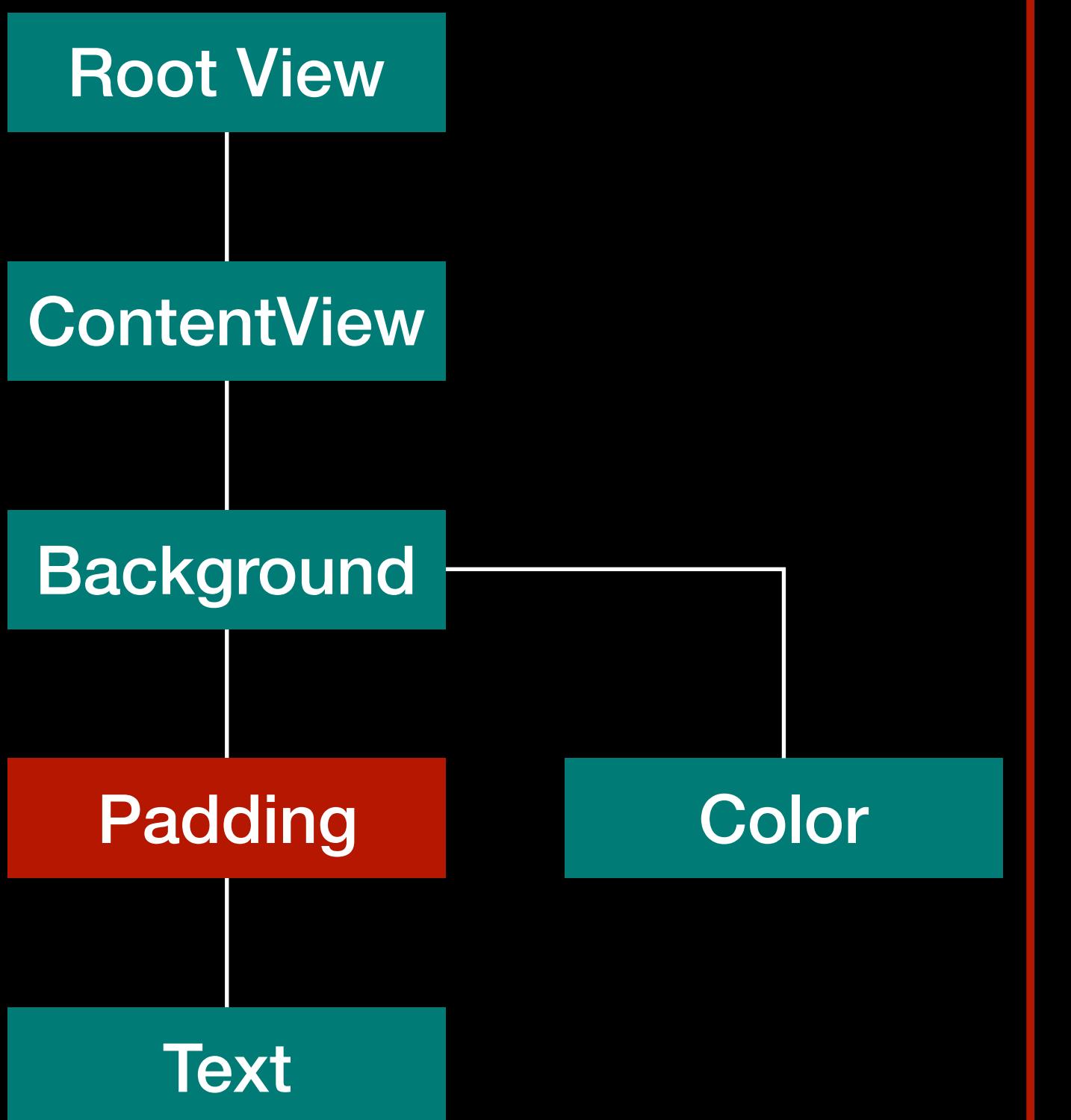
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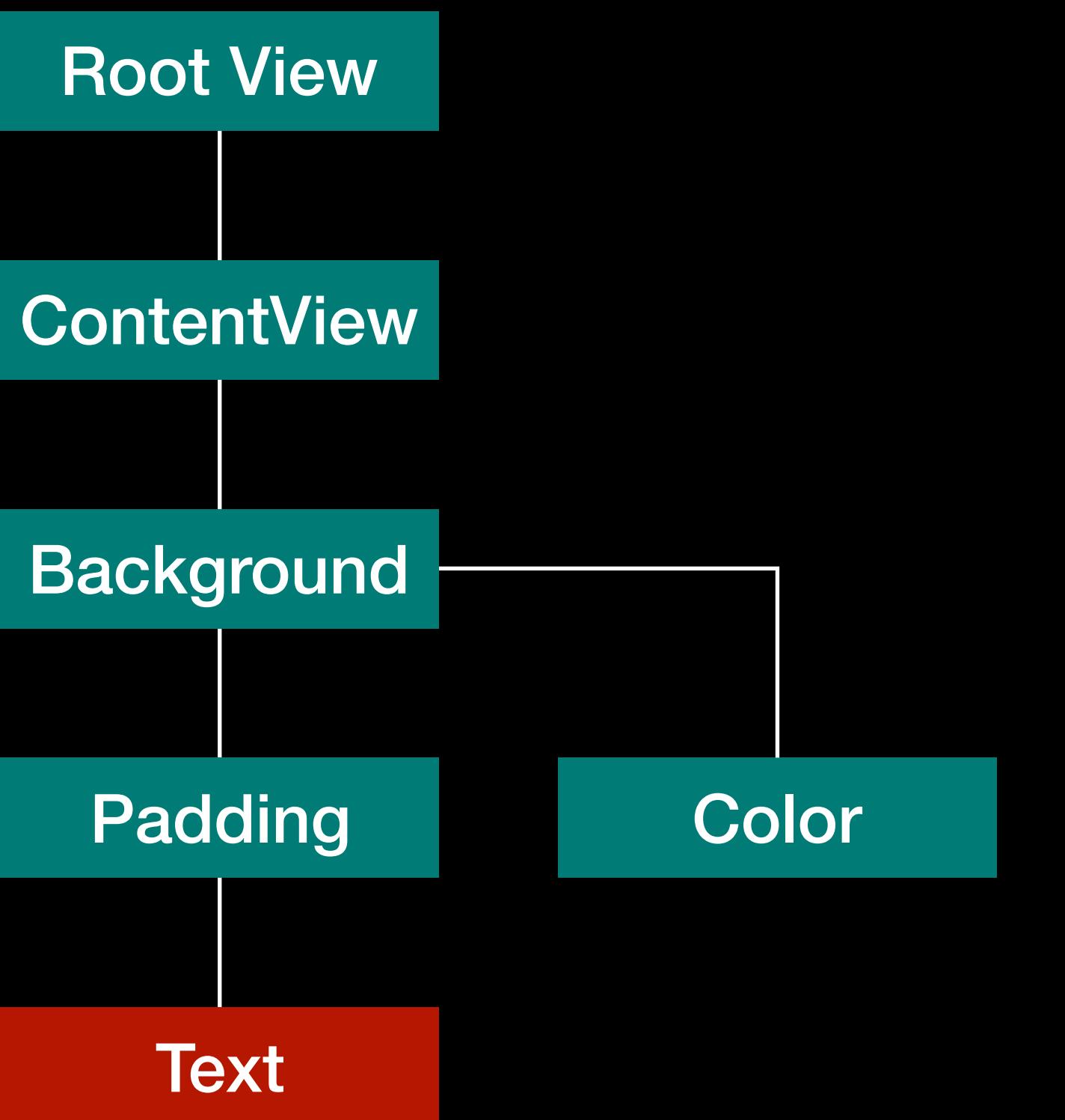
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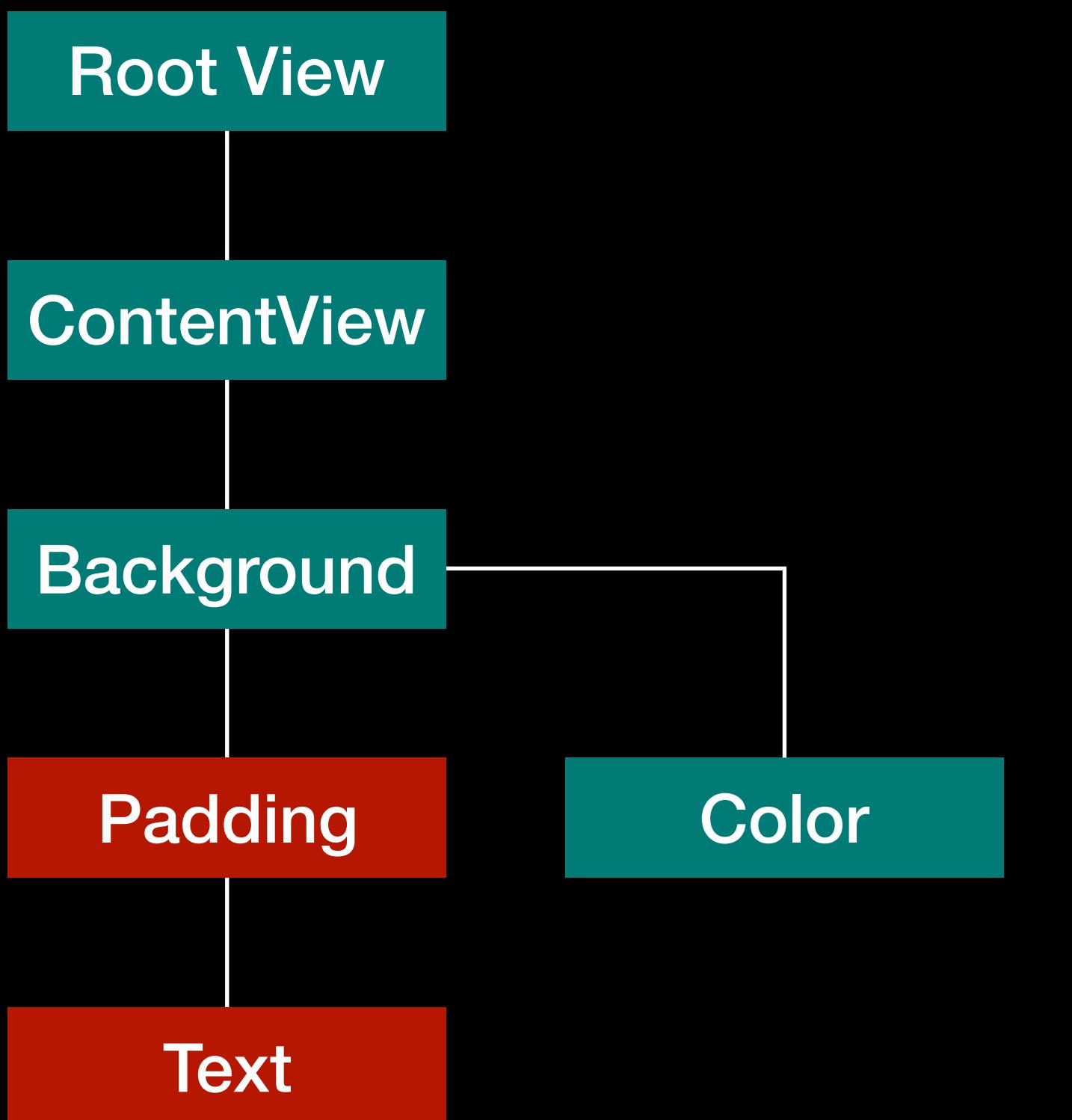
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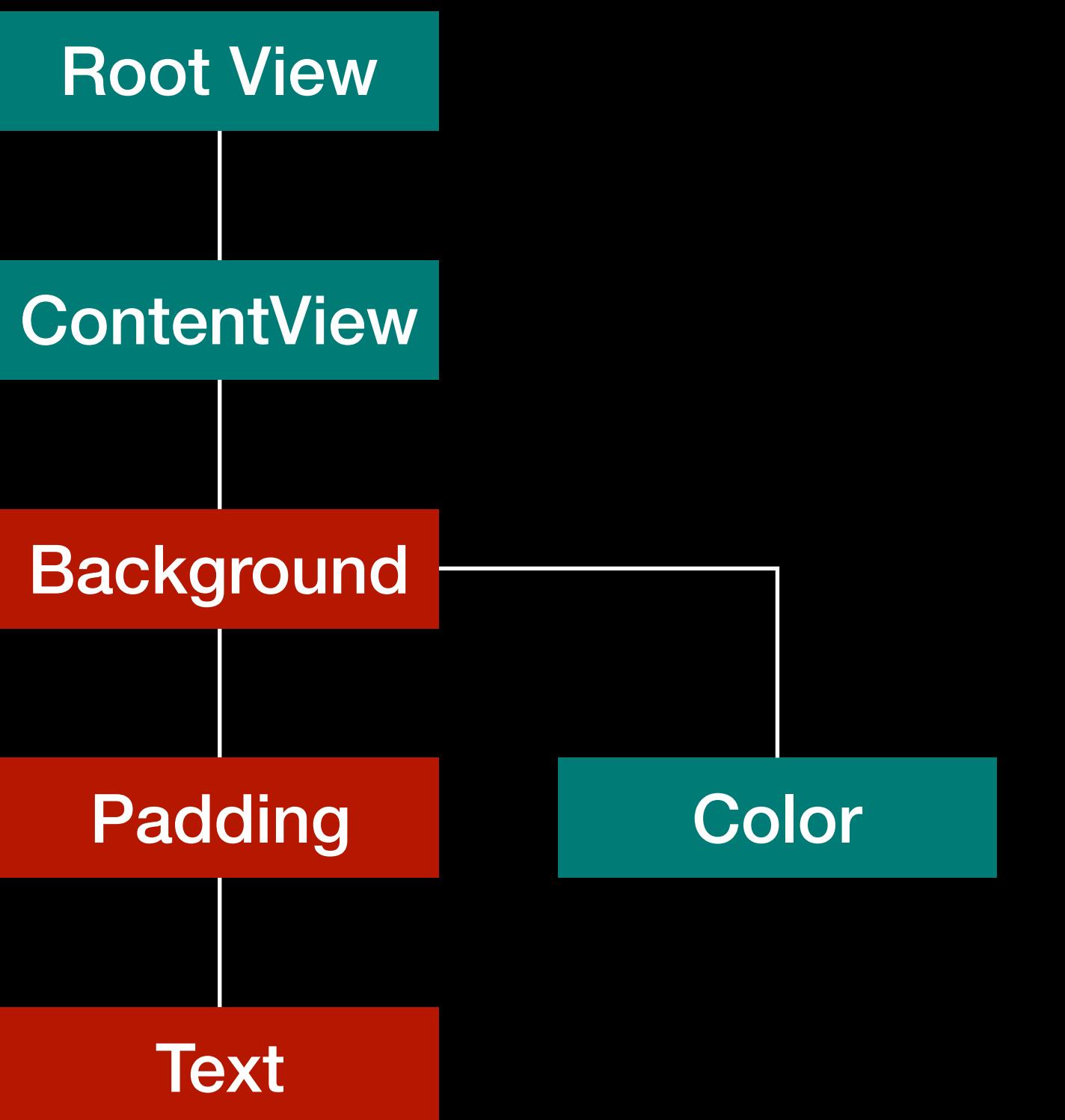
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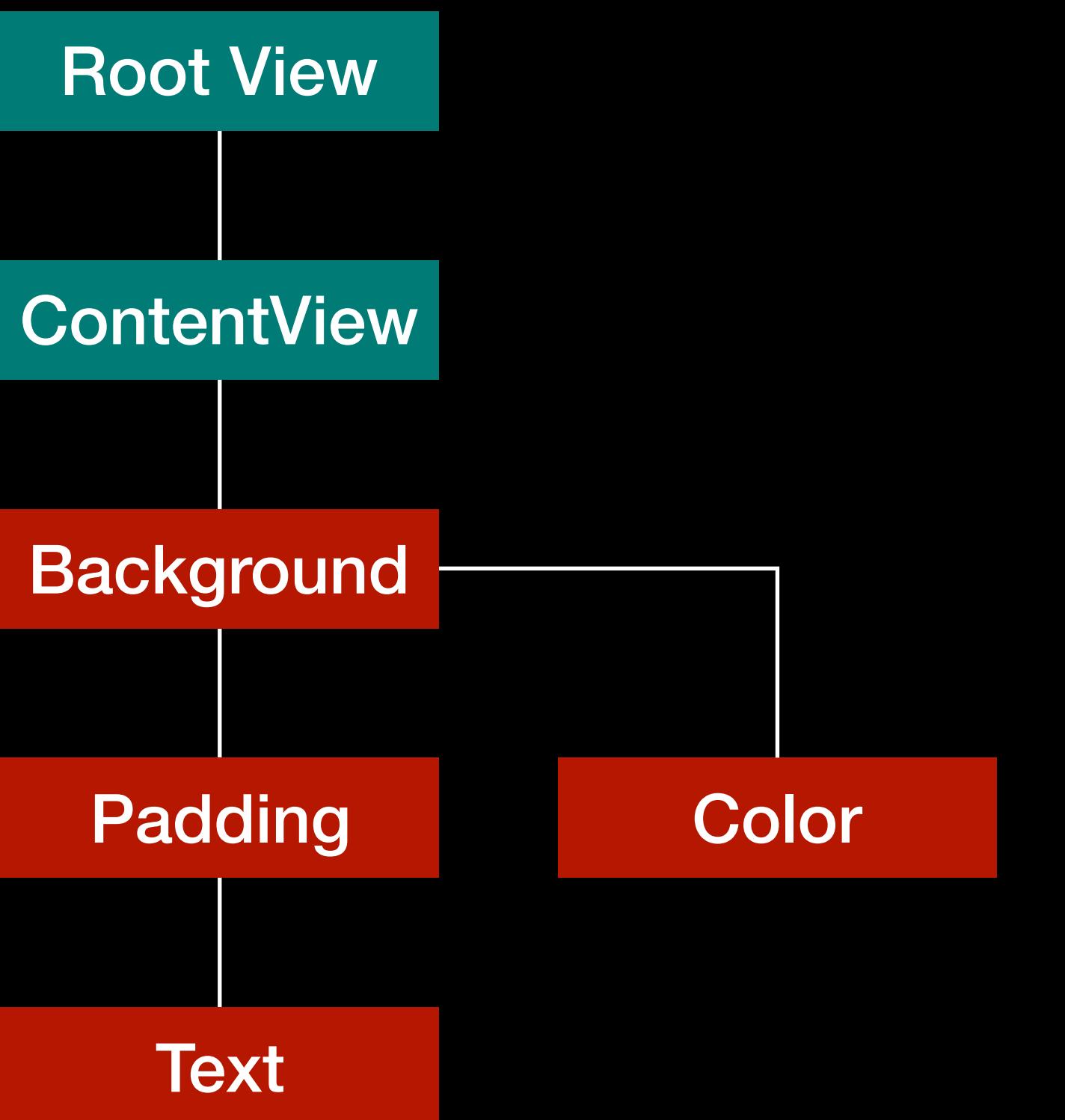
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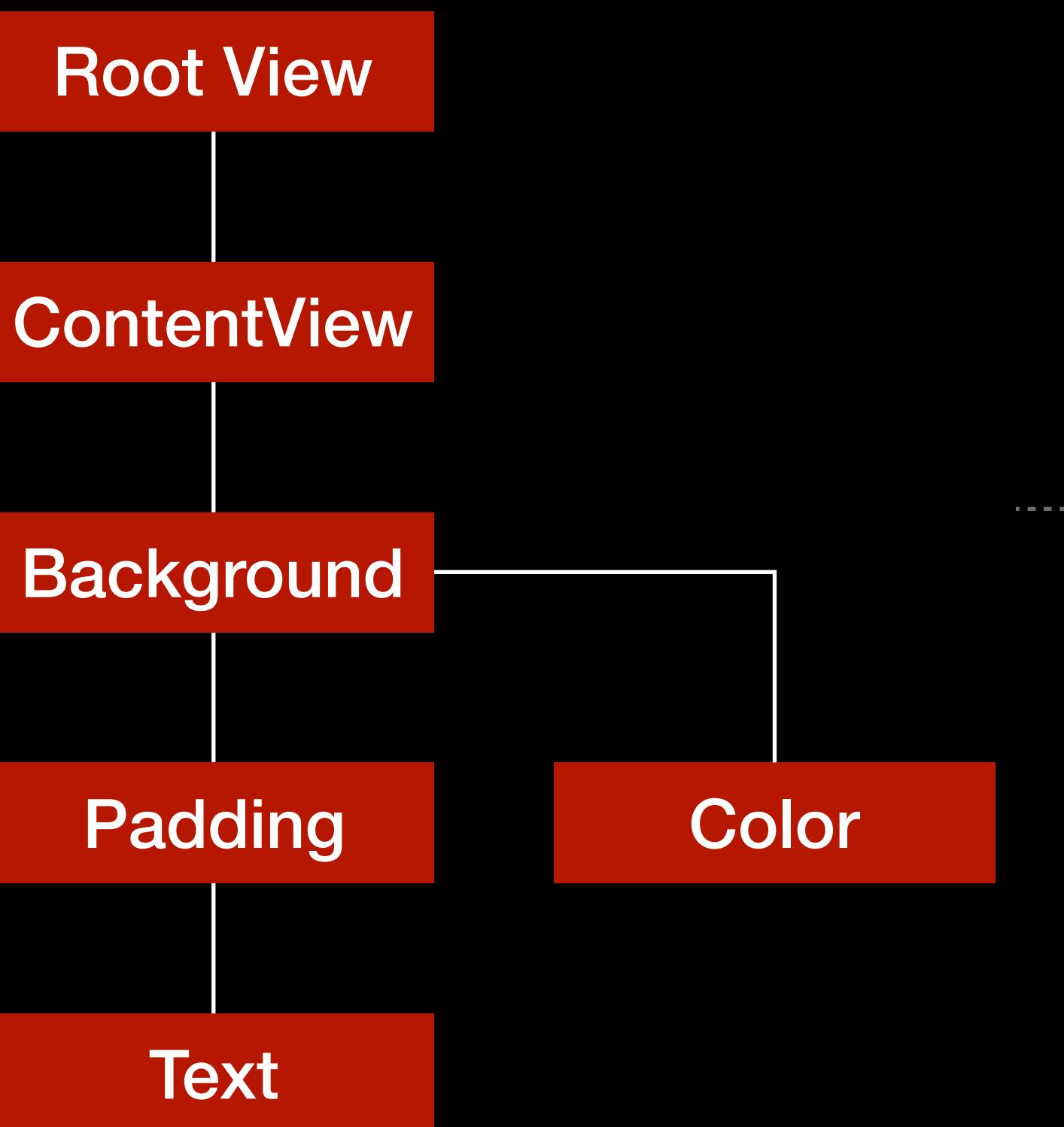
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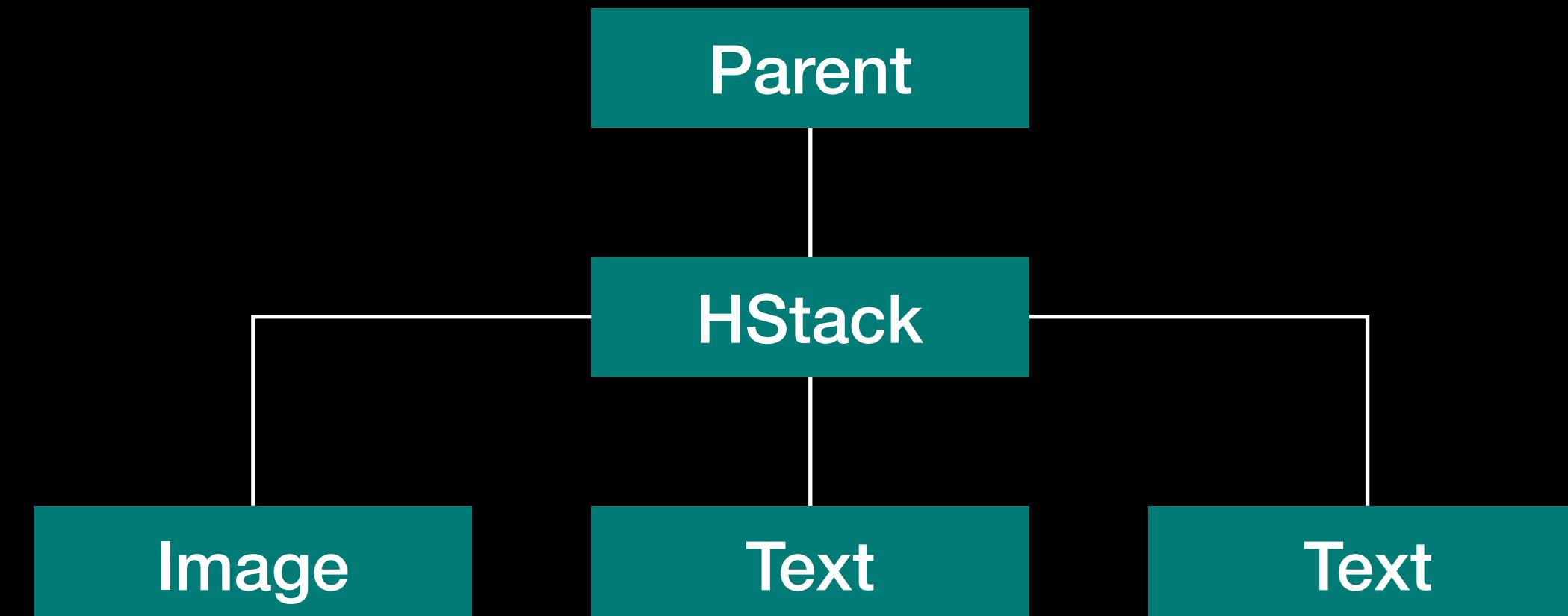
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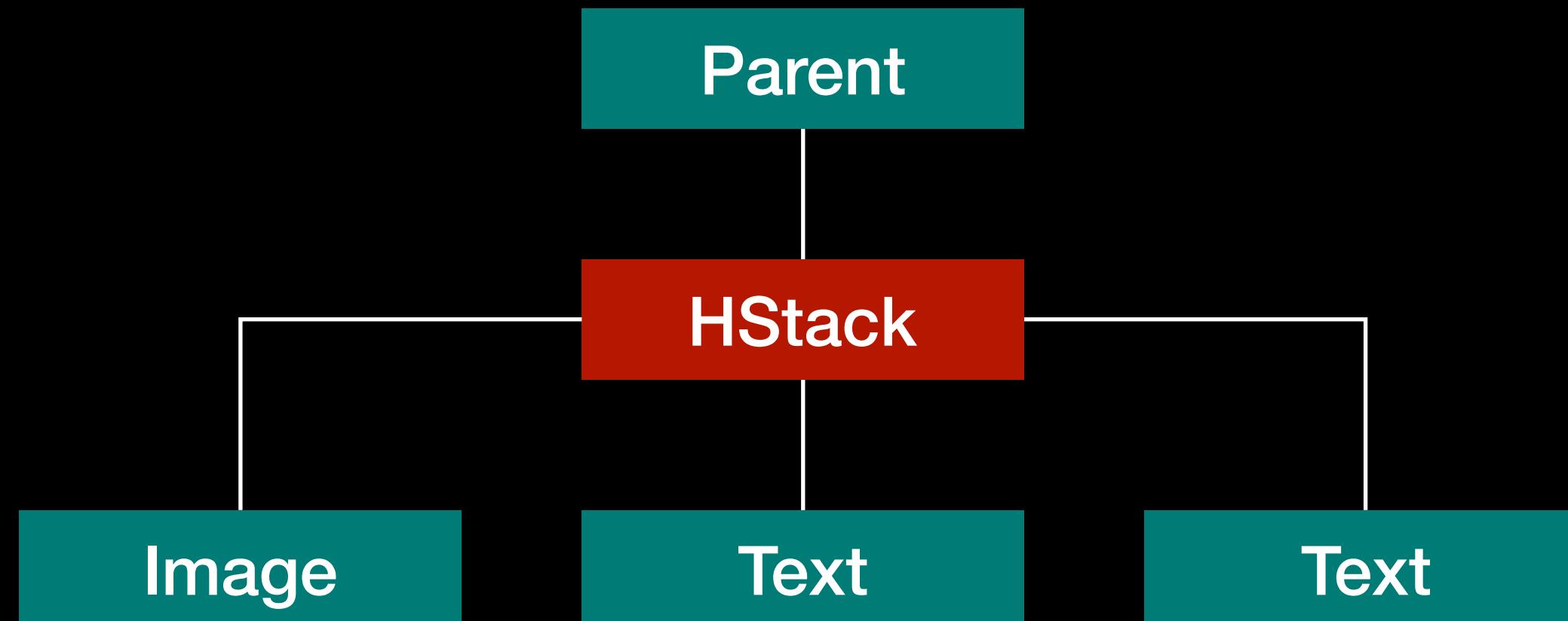
AYOUT SYSTEM

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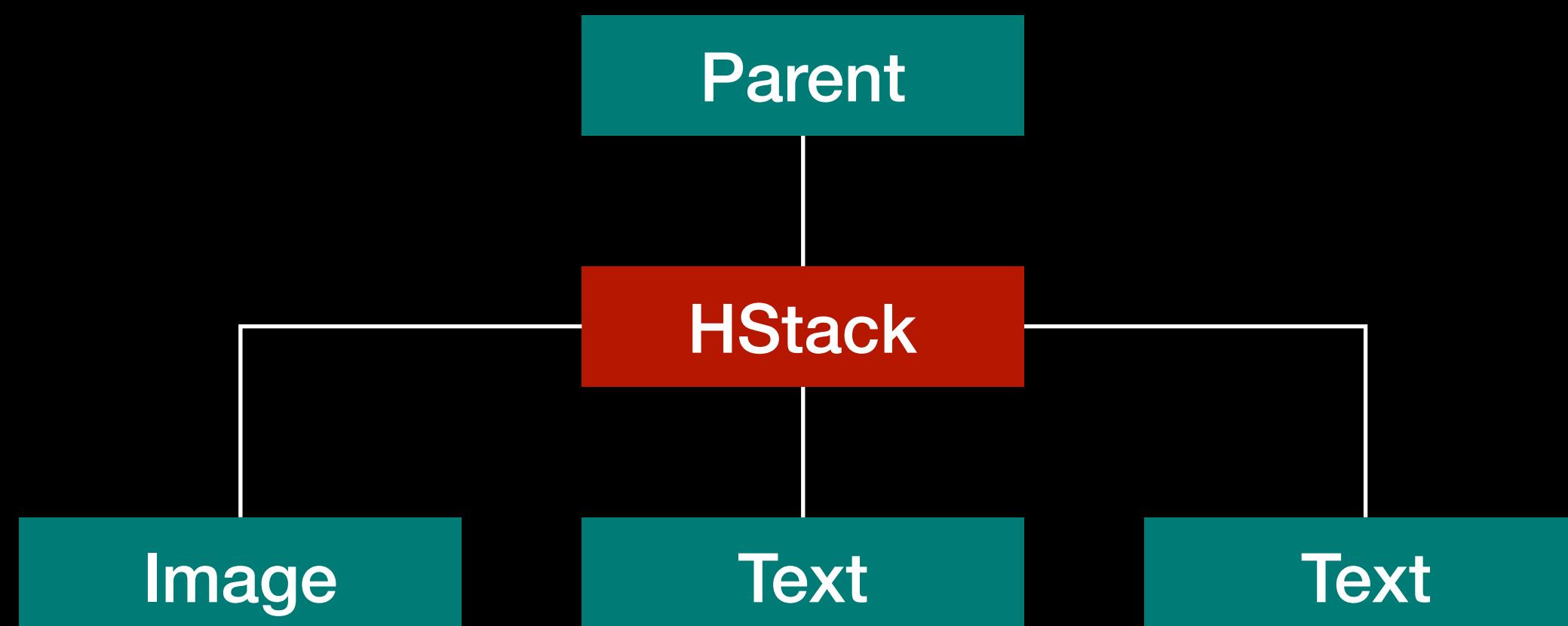
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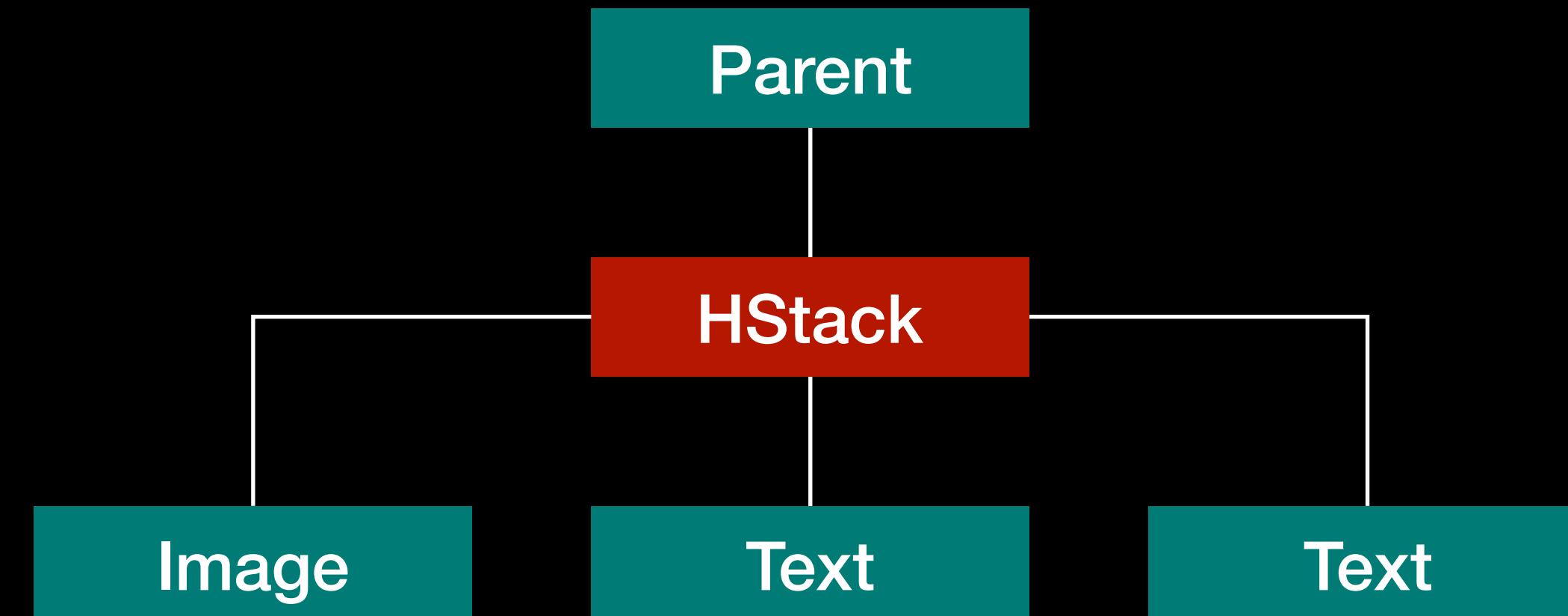
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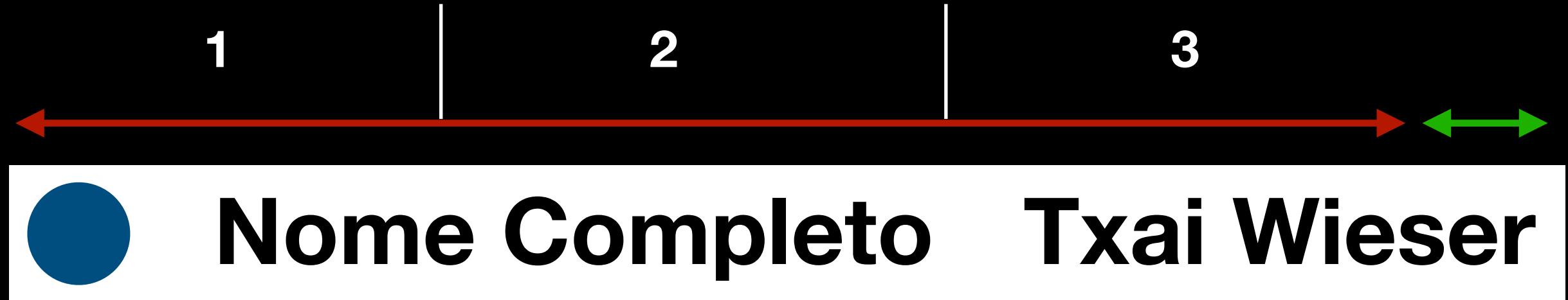


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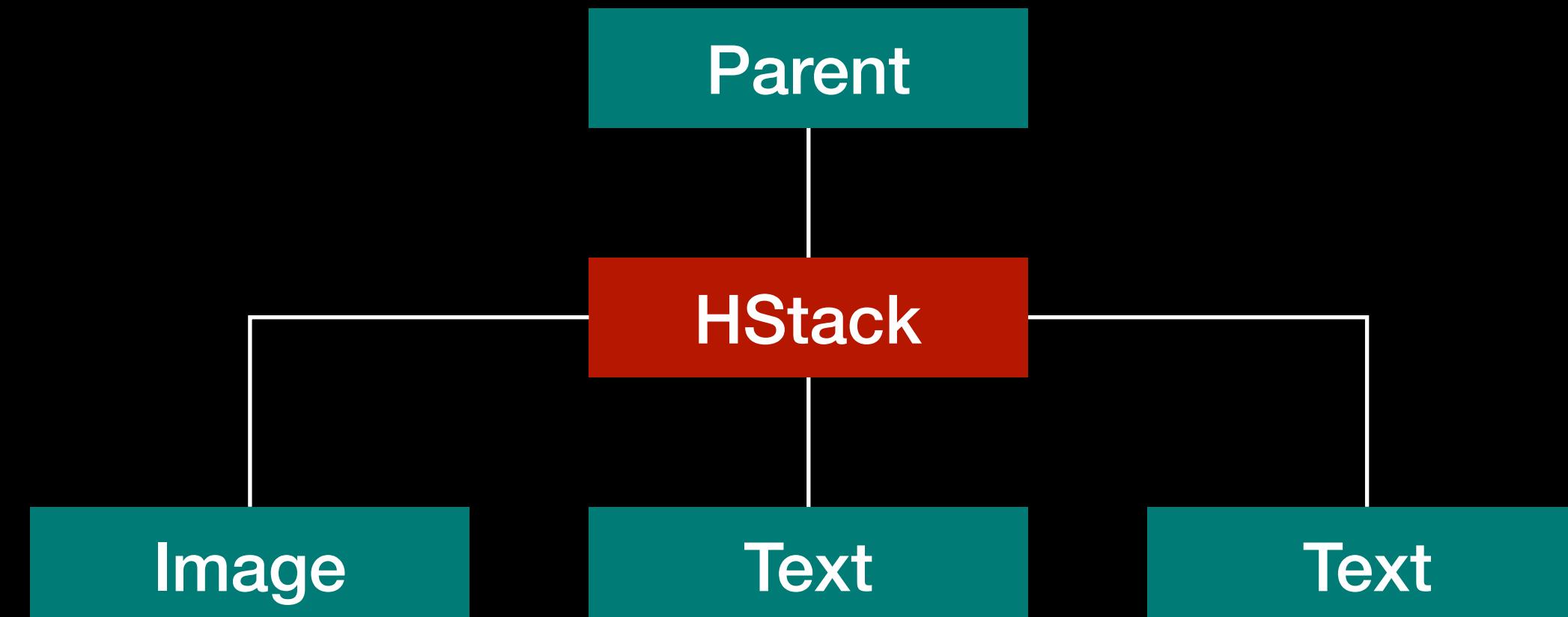
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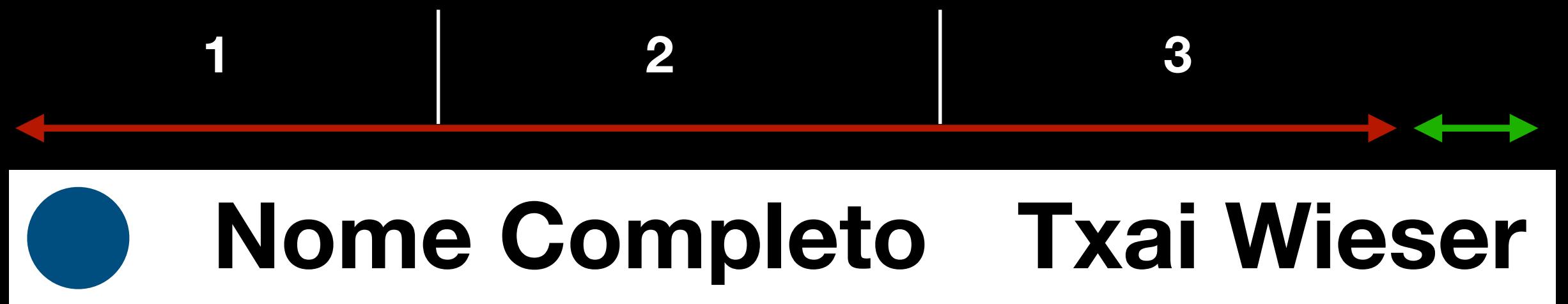
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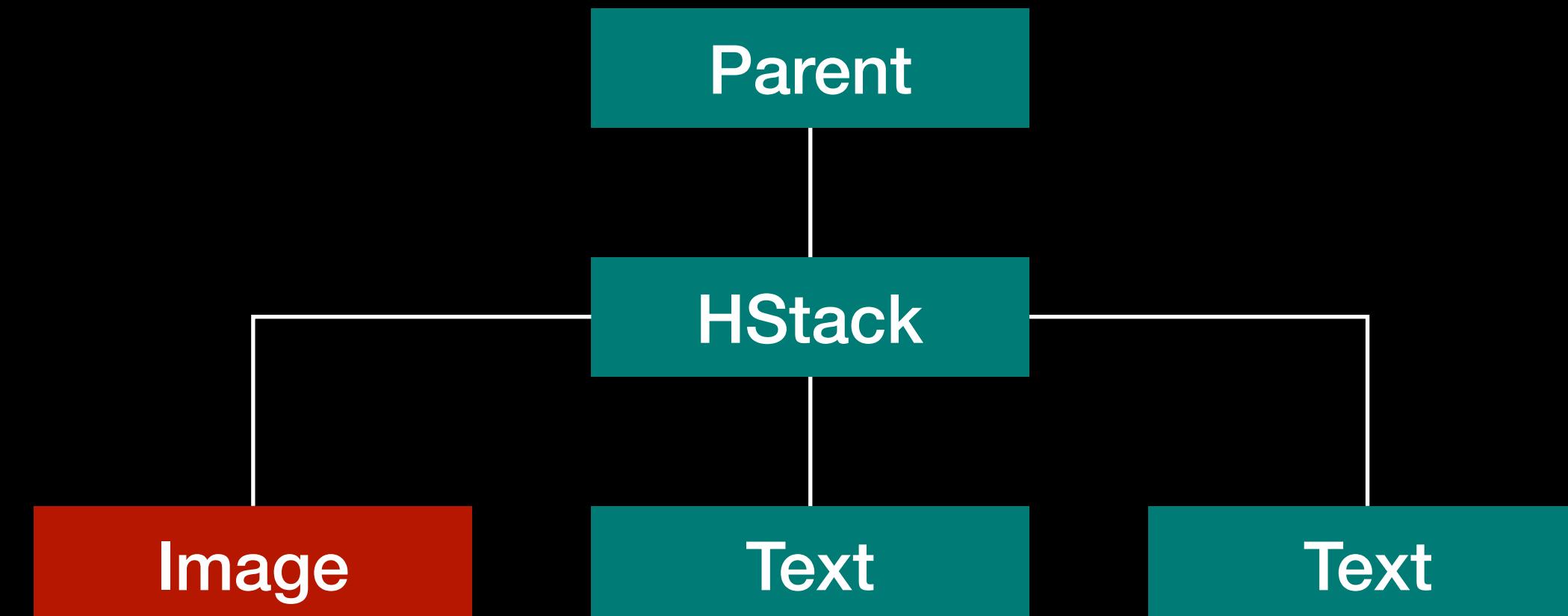
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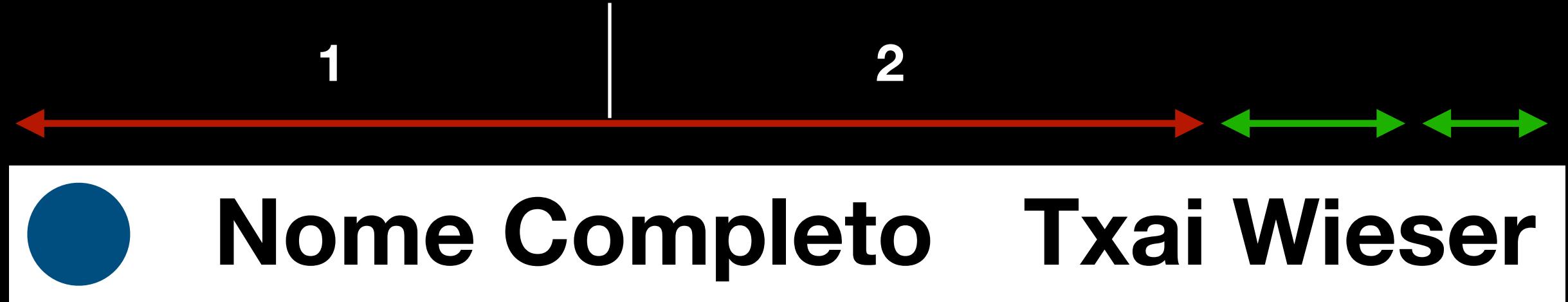
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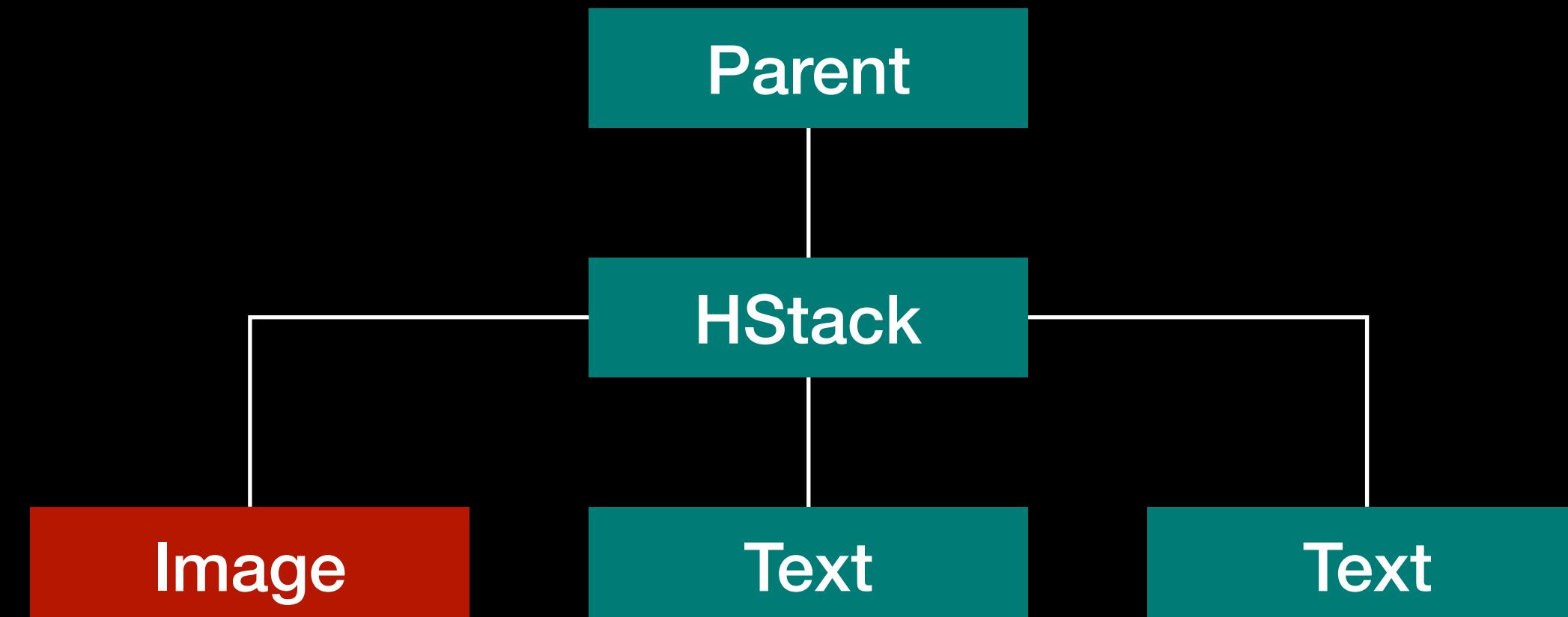
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AYOUT SYSTEM



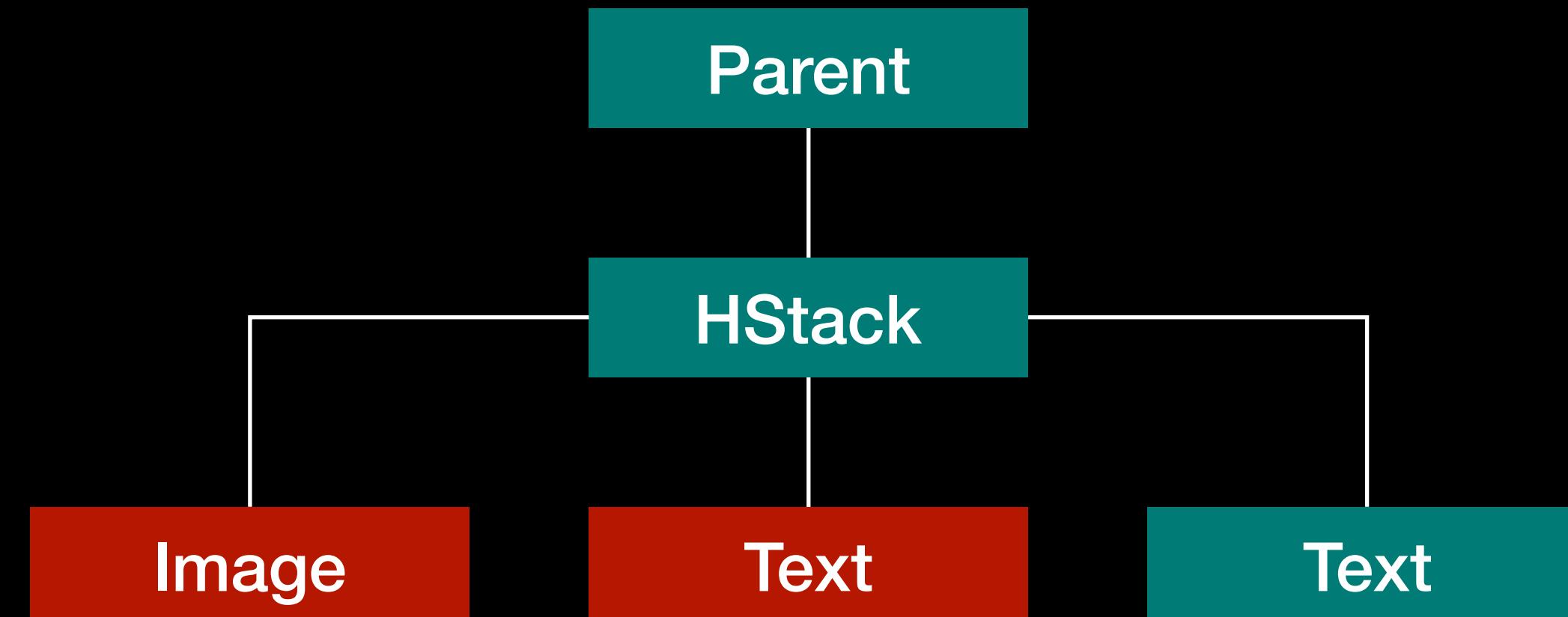
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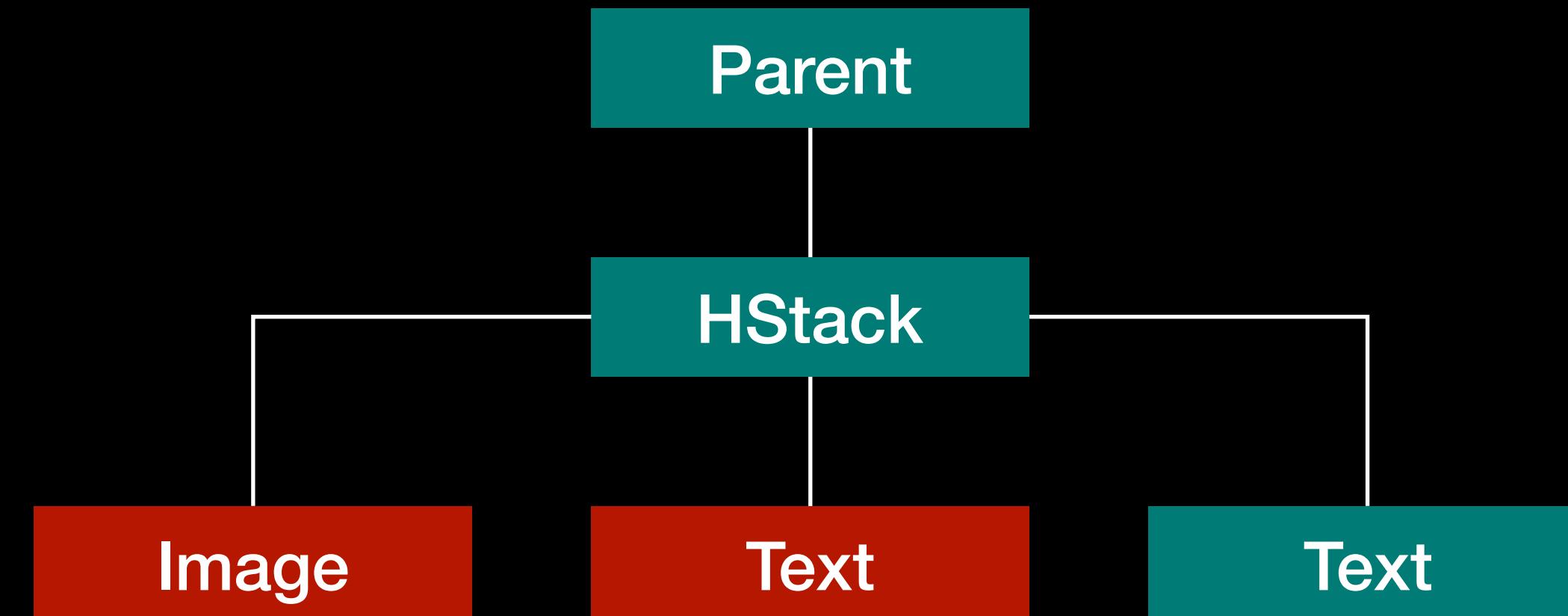


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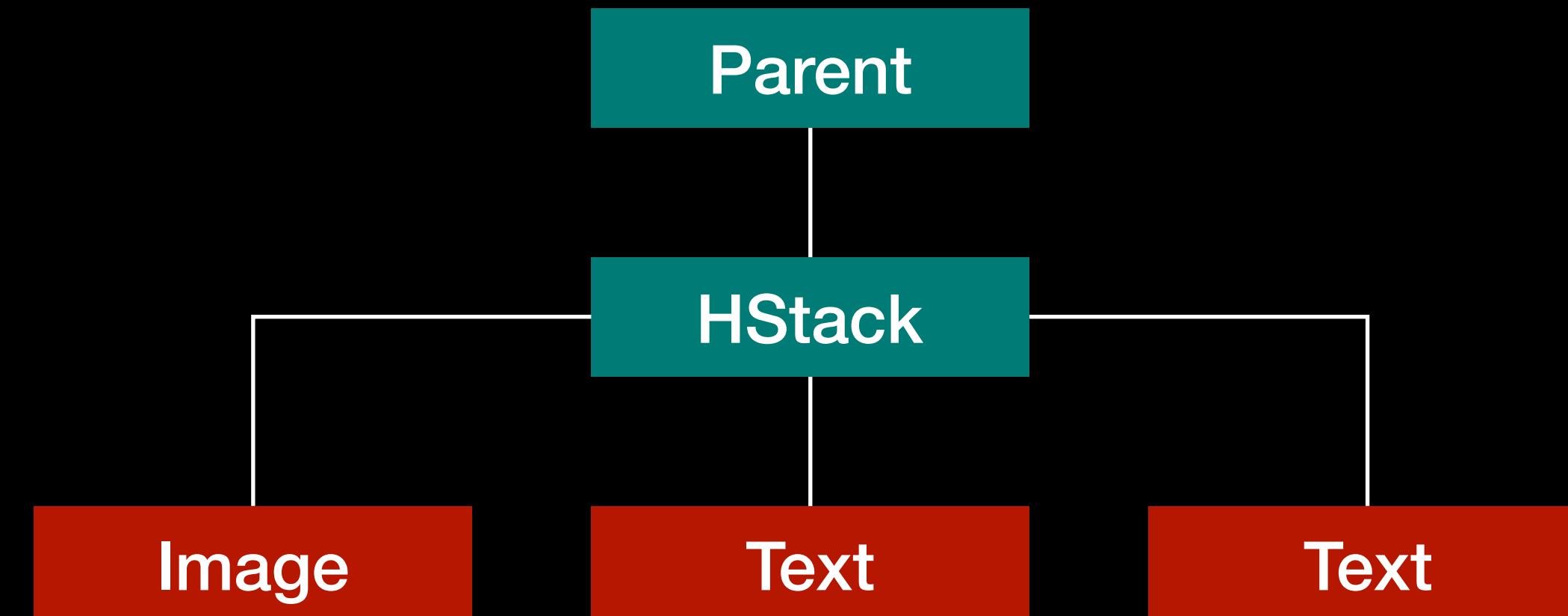
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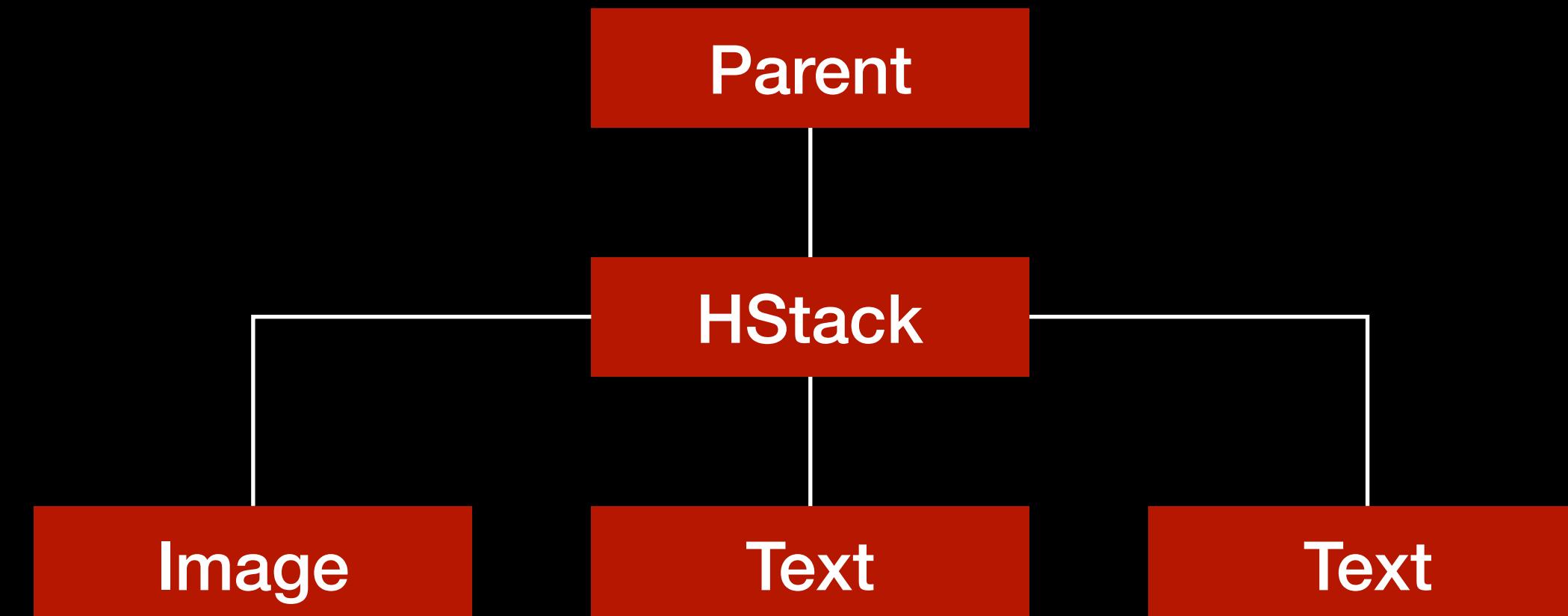
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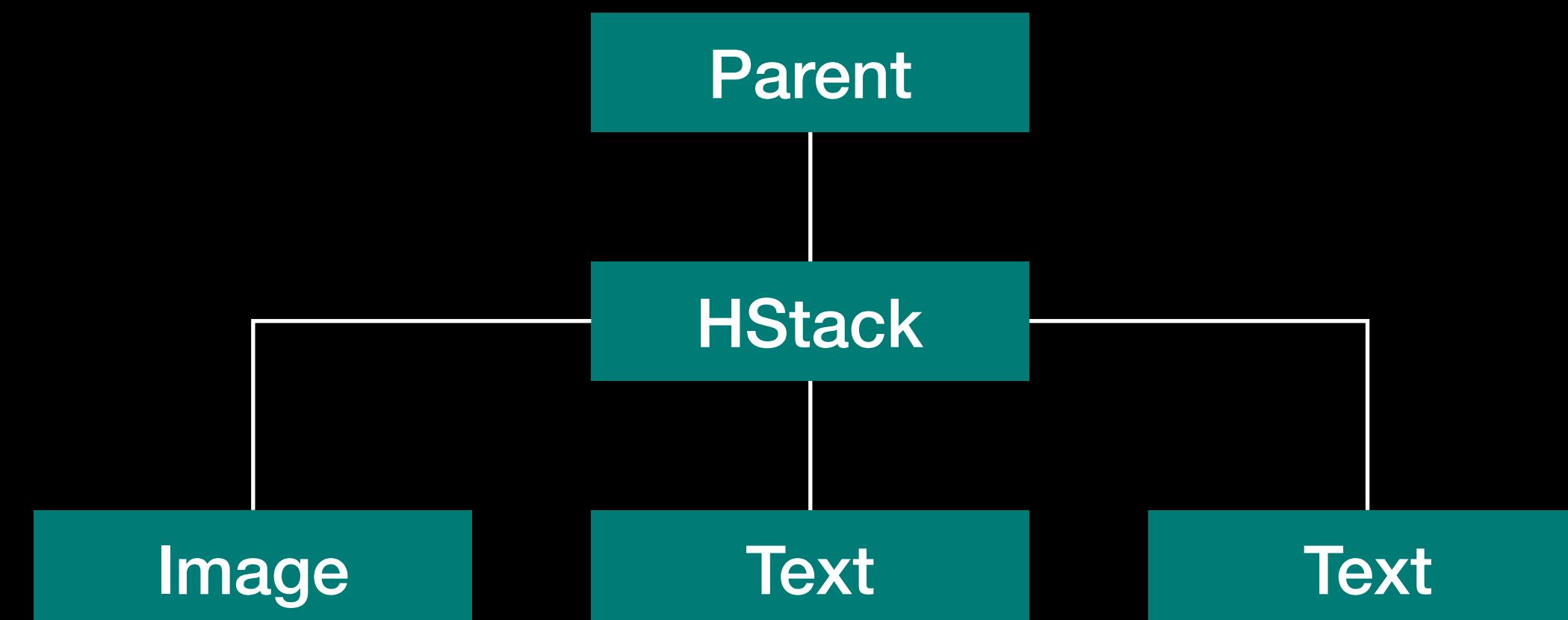
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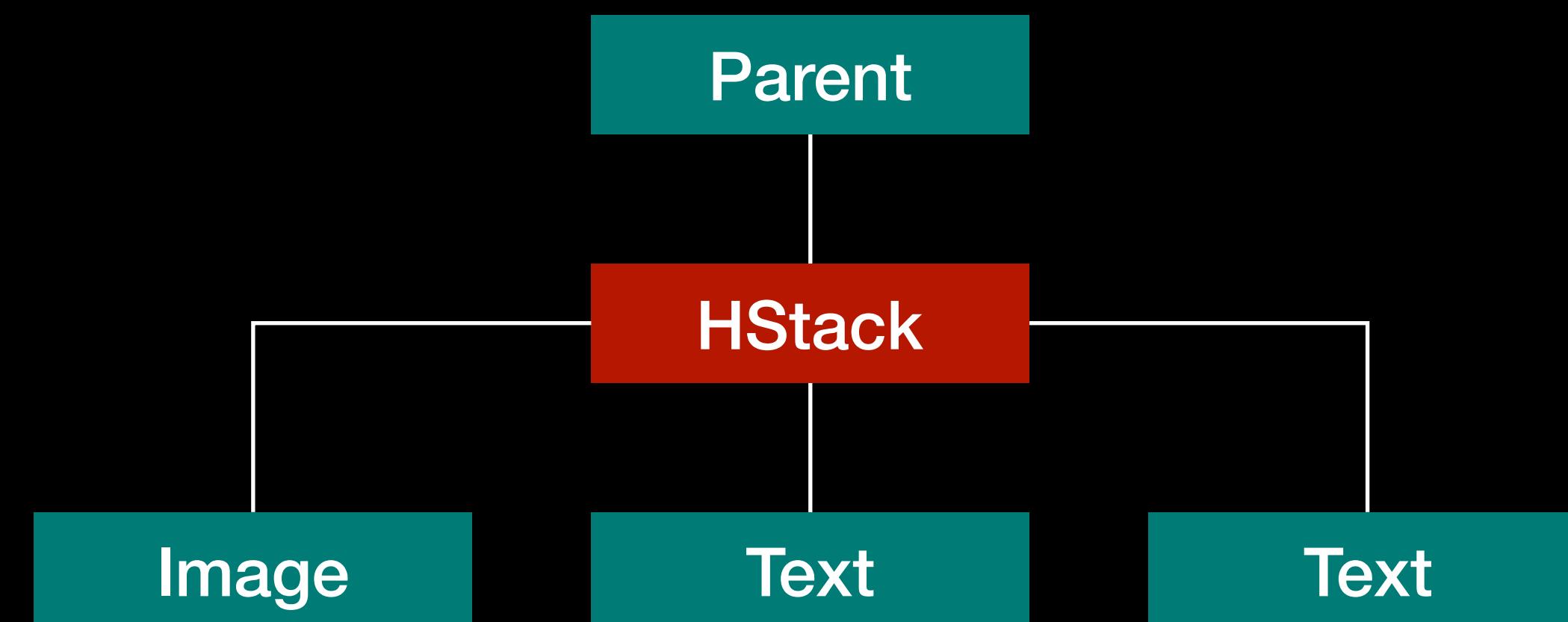
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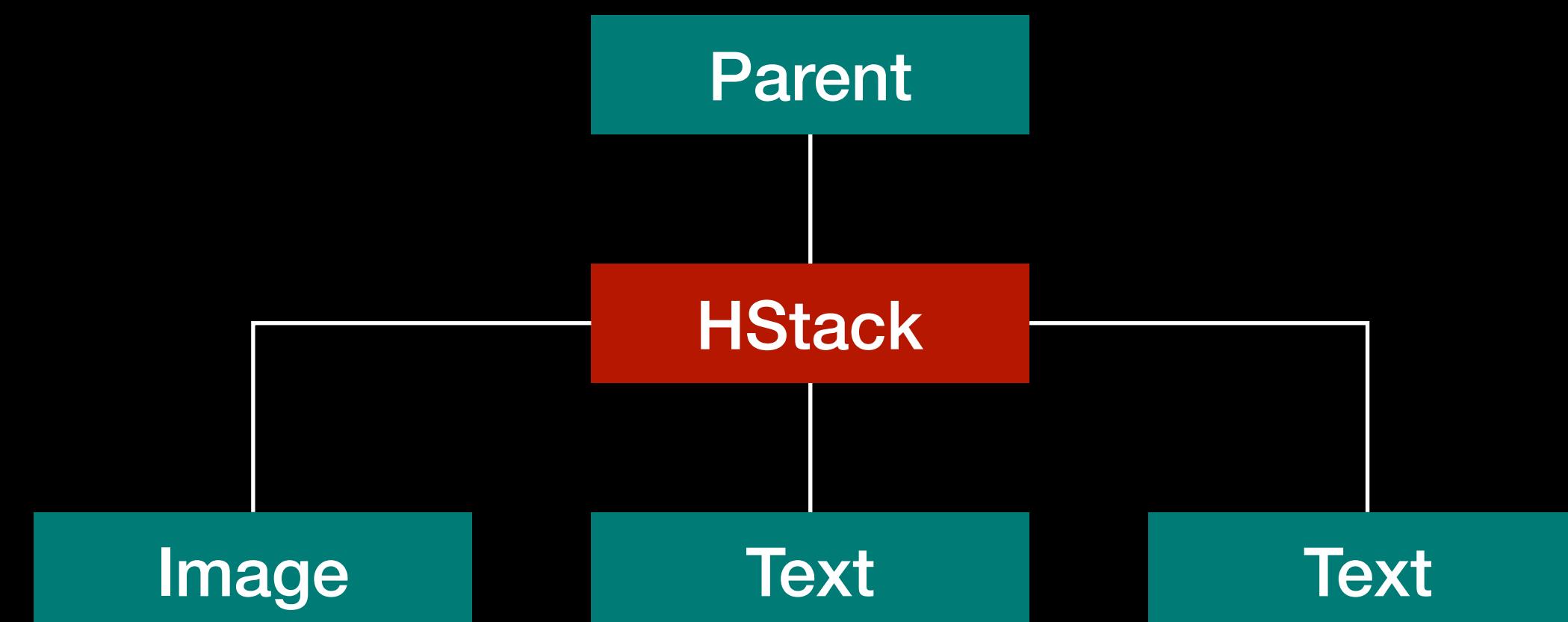
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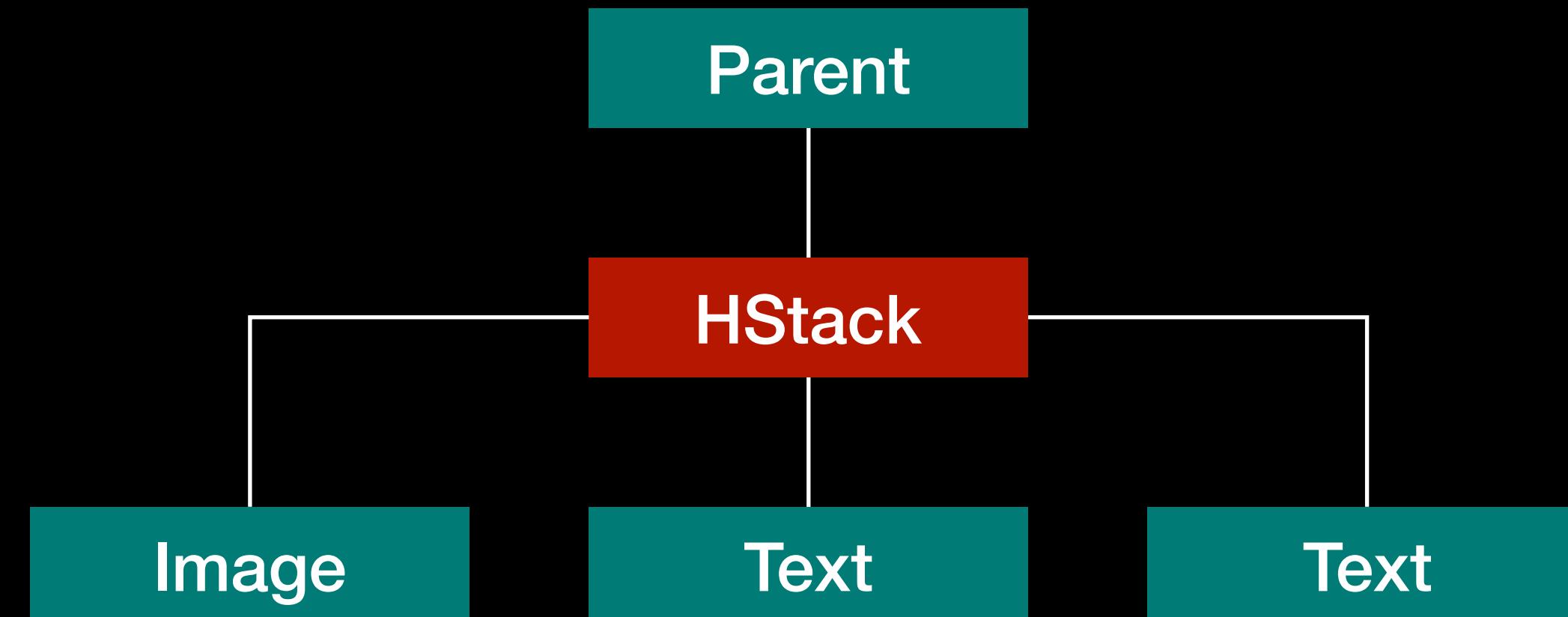
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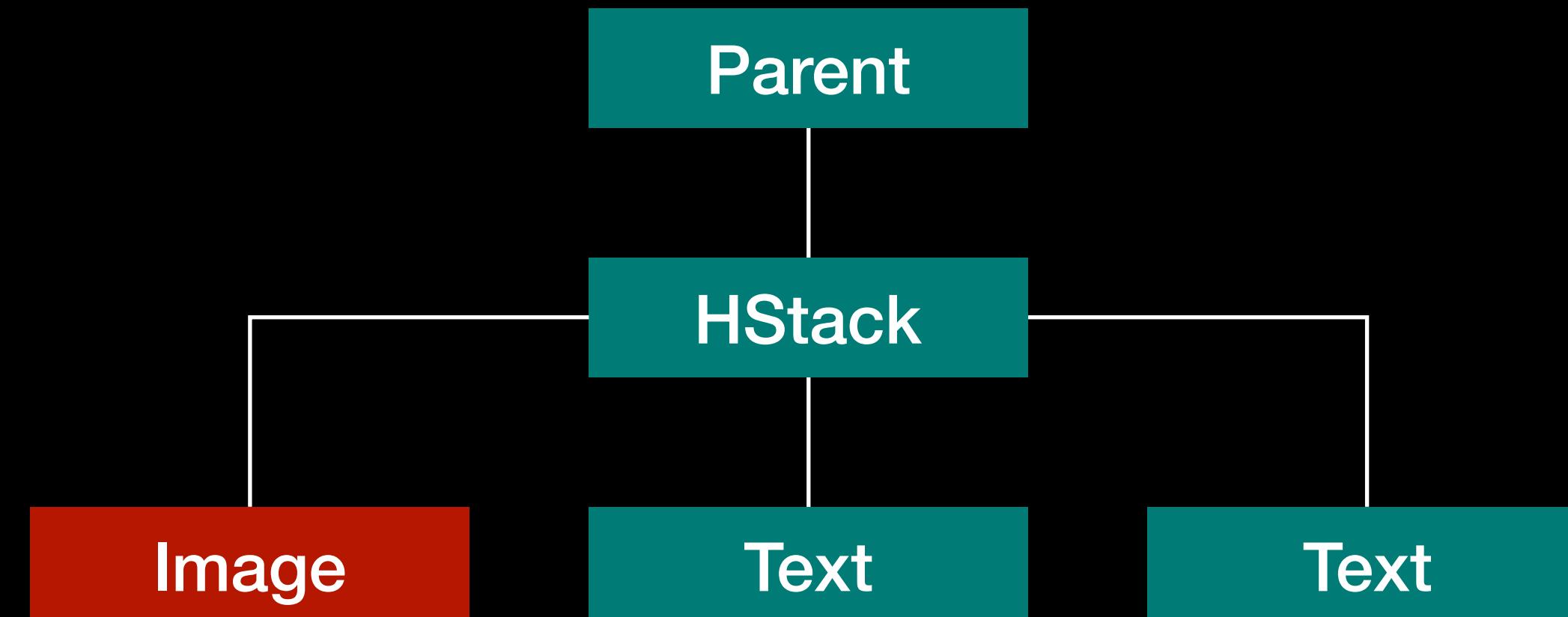
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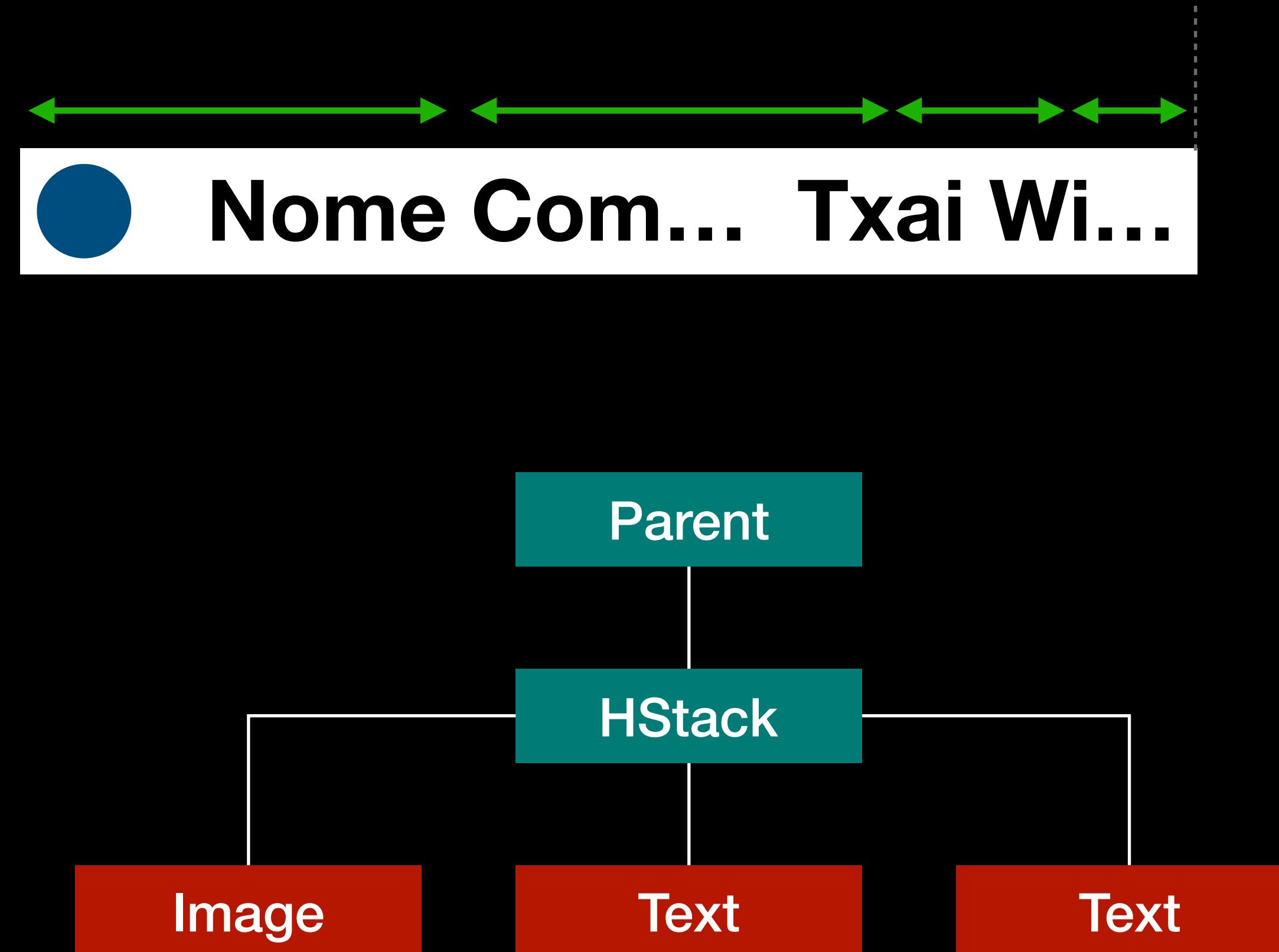


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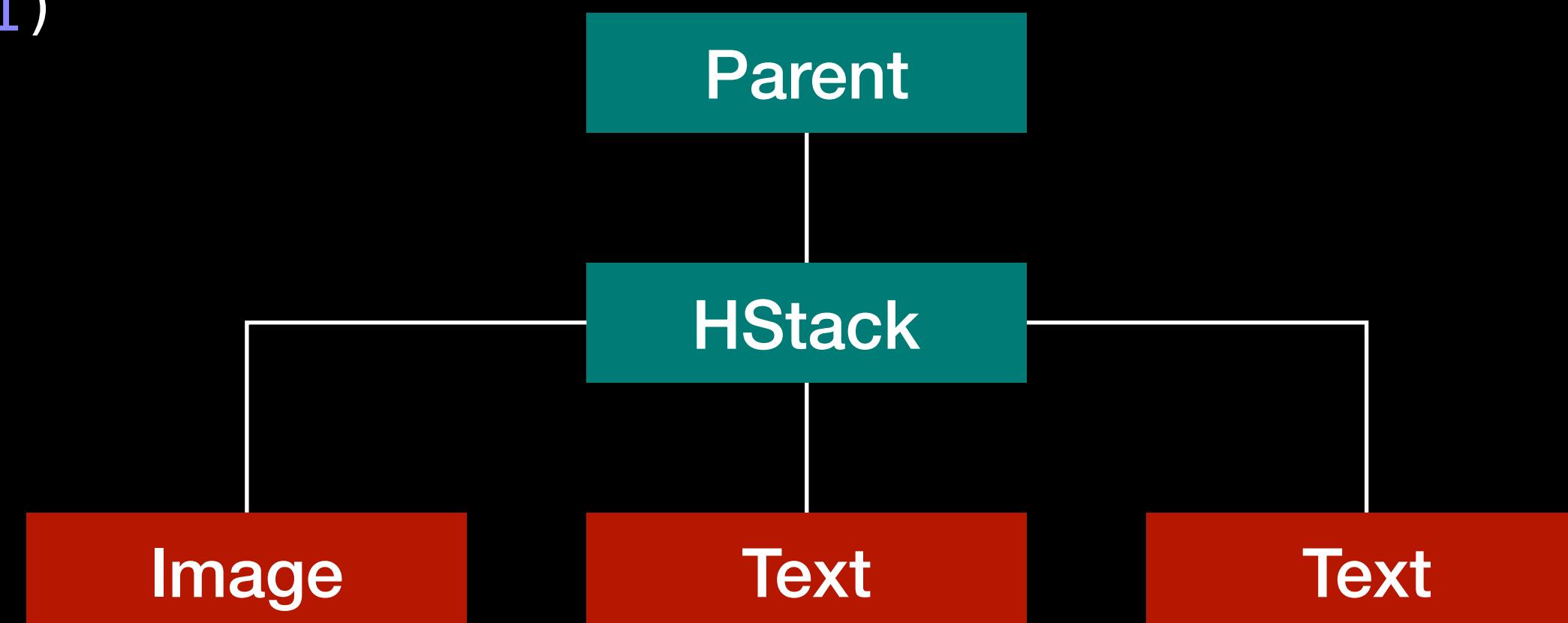
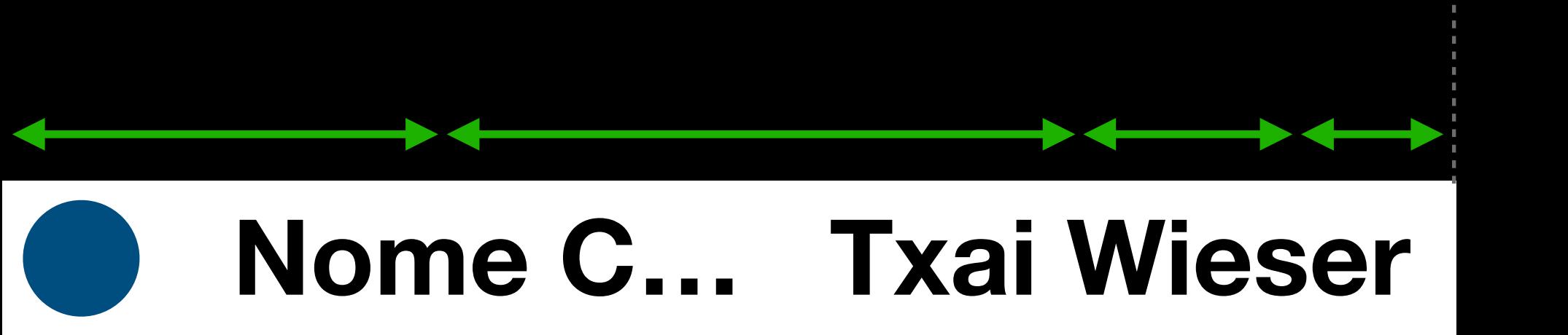
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AYOUT SYSTEM

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



AYOUT SYSTEM

GEOMETRY READER

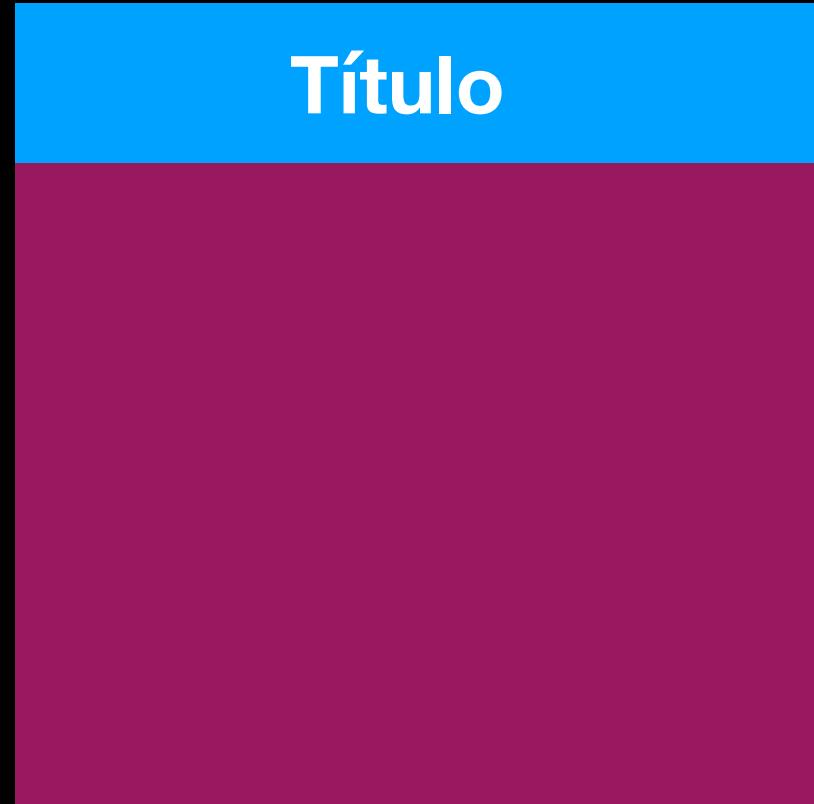
GEOOMETRY READER

```
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)  
    }  
}
```



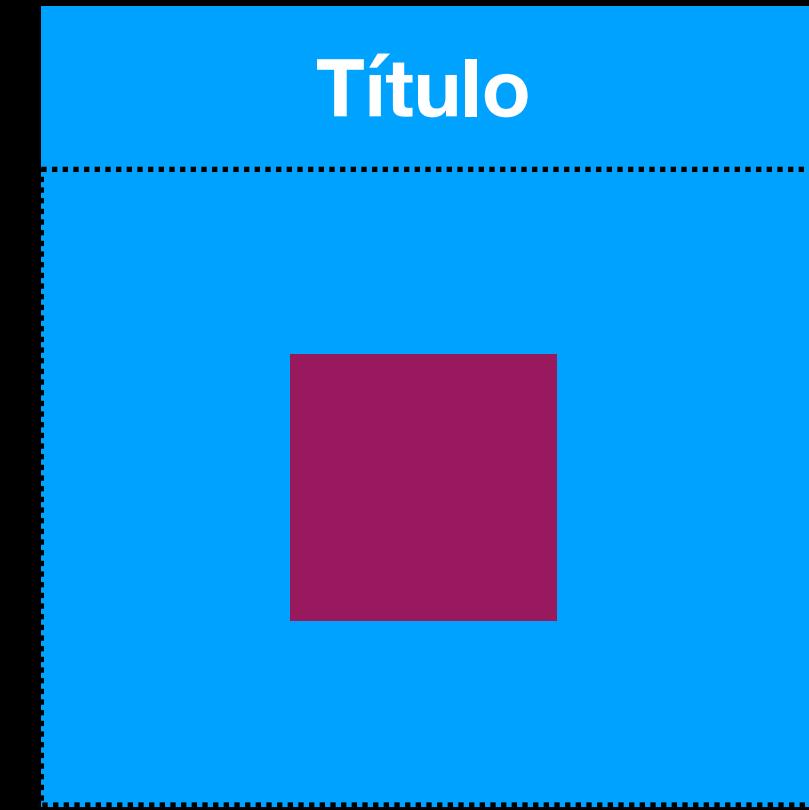
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    }  
}  
  
struct CustomView: View {  
  
    var body: some View {  
        Rectangle()  
        .fill(Color.purple)  
        .frame(width: CGFloat?, height: CGFloat?) ←—————  
    }  
}
```



GEOOMETRY READER

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        .background(Color.blue)  
    }  
}  
  
struct CustomView: View {  
  
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        Rectangle()  
            .fill(Color.purple)  
            .frame(width: 50, height: 50) ←—————  
    }  
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```



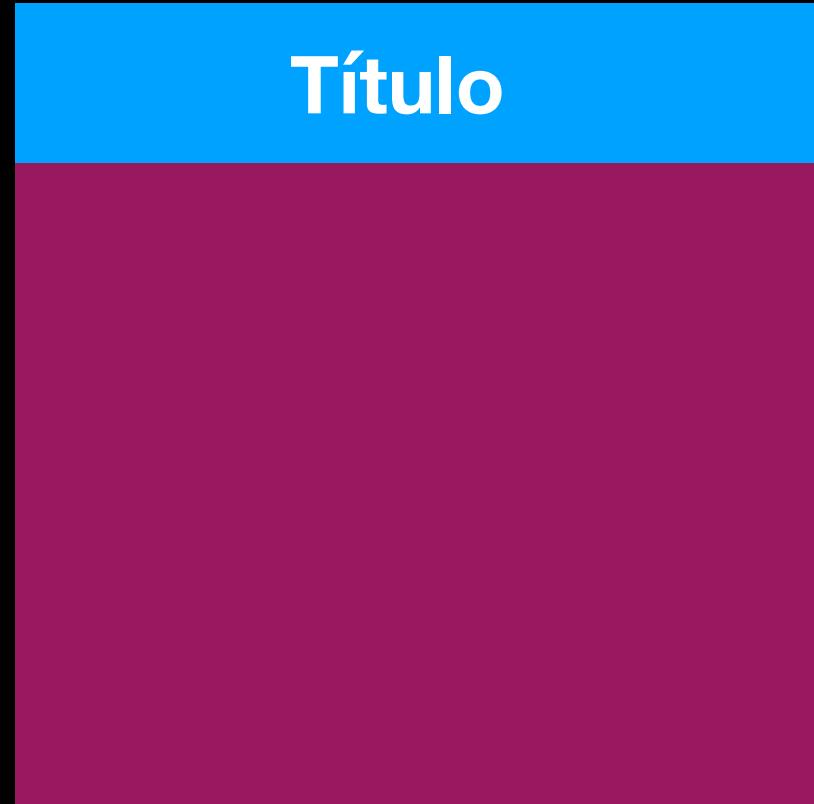
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struct ContentView : View {  
  
    var body: some View {  
        VStack {  
            Text("Header")  
            CustomView()  
        }  
        .frame(width: 300, height: 200)  
        .background(Color.blue)  
    }  
}  
  
struct CustomView: View {  
  
    var body: some View {  
        Rectangle()  
        .fill(Color.purple)  
        .frame(width: 400, height: 200) ←—————  
    }  
}
```



GEOOMETRY 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?) ←—————  
    }  
}
```



GEOOMETRY 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

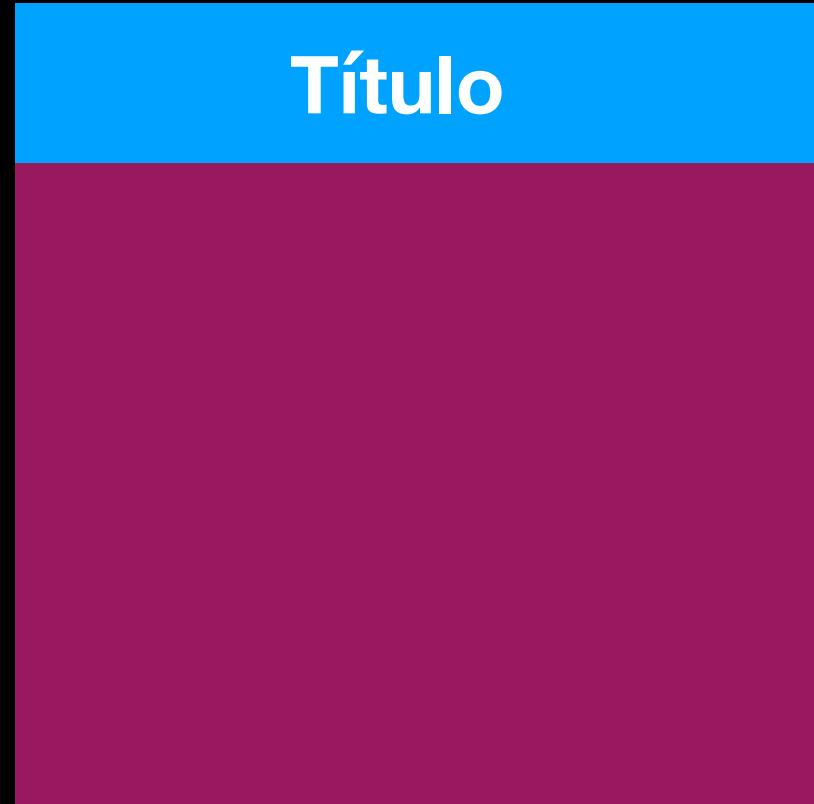
    @inlinable public init(@ViewBuilder content: @escaping (GeometryProxy) -> Content)
    ...
}

/// 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
}
```

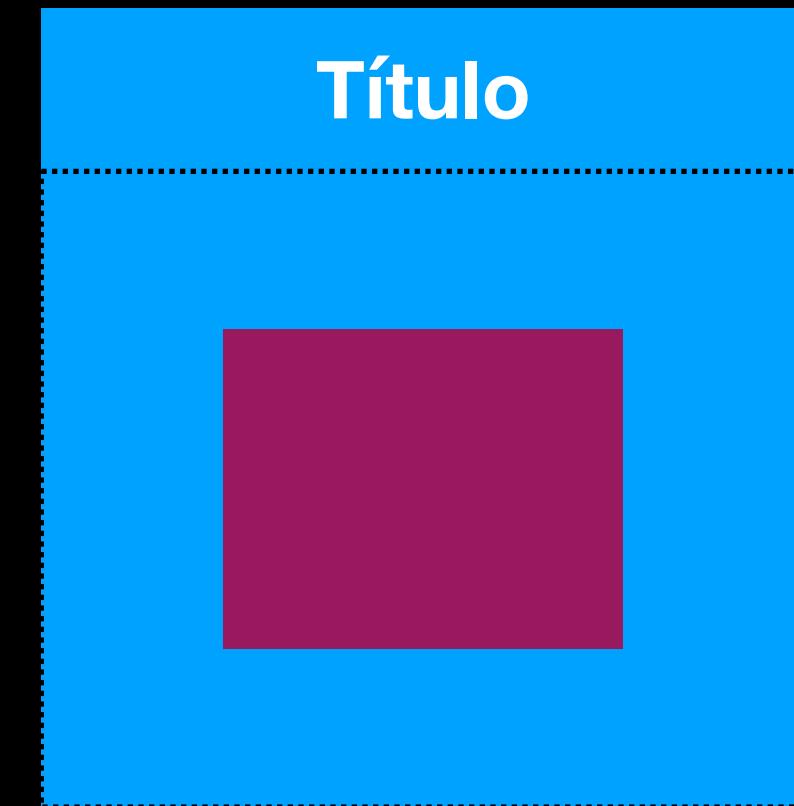
GEOOMETRY READER

```
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?) ←—————  
    }  
}
```



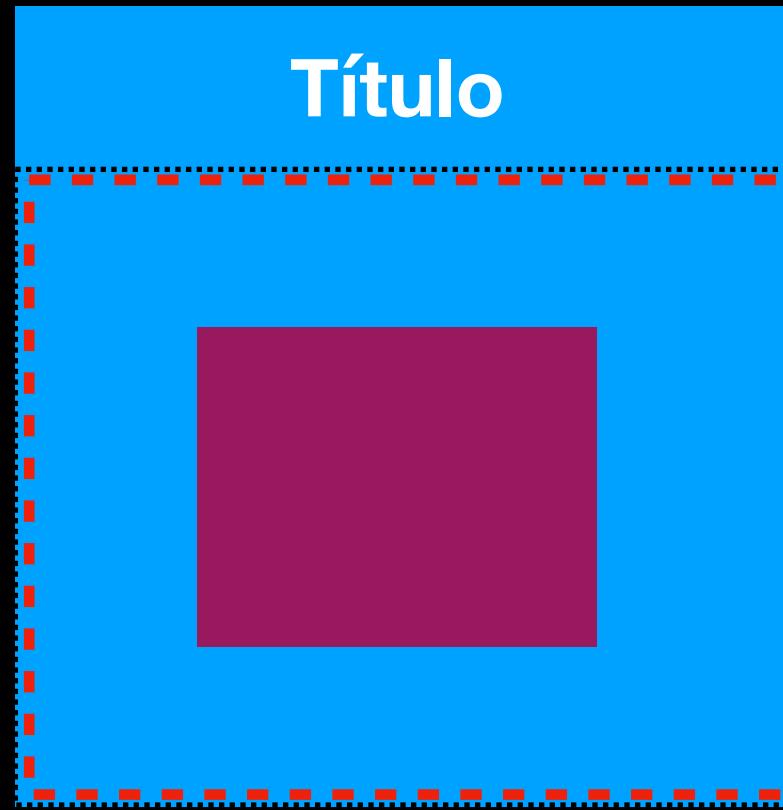
GEOOMETRY READER

```
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  
                )  
        }  
    }  
}
```



GEOOMETRY 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

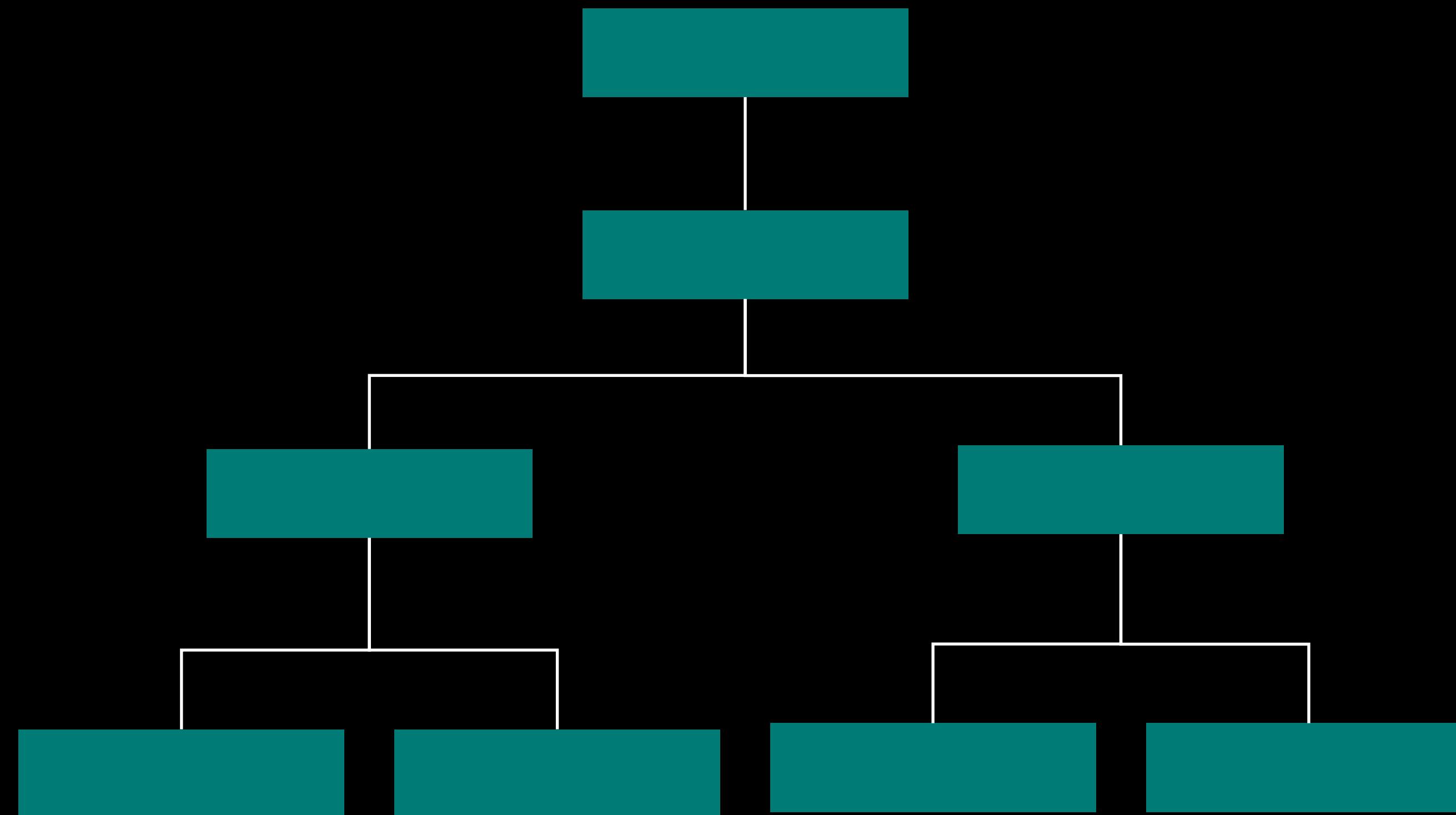
Views em SwiftUI são como receitas

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

GEOMETRY READER

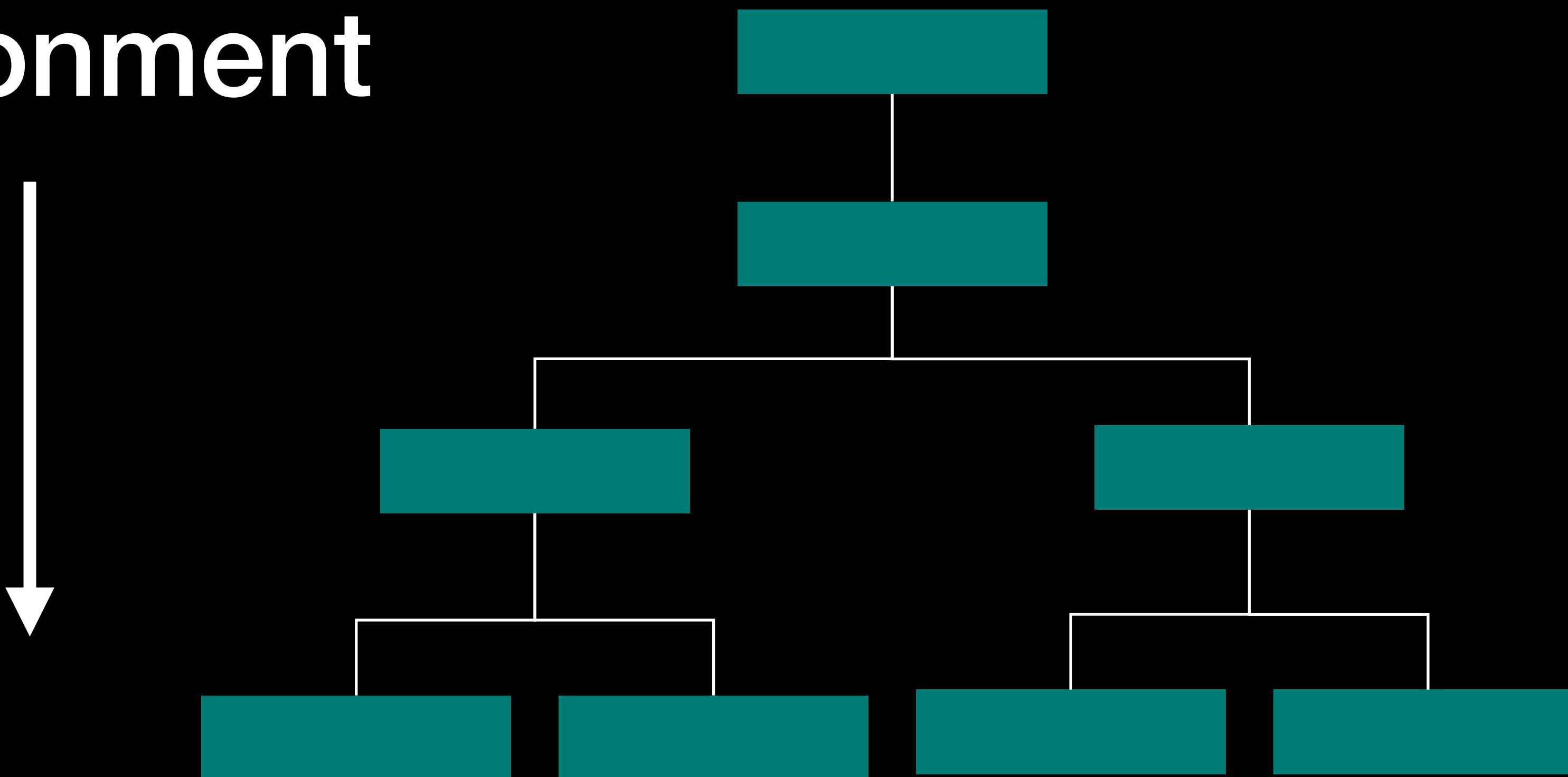
FLUXO DE DADOS

FLUXO DE DADOS



FLUXO DE DADOS

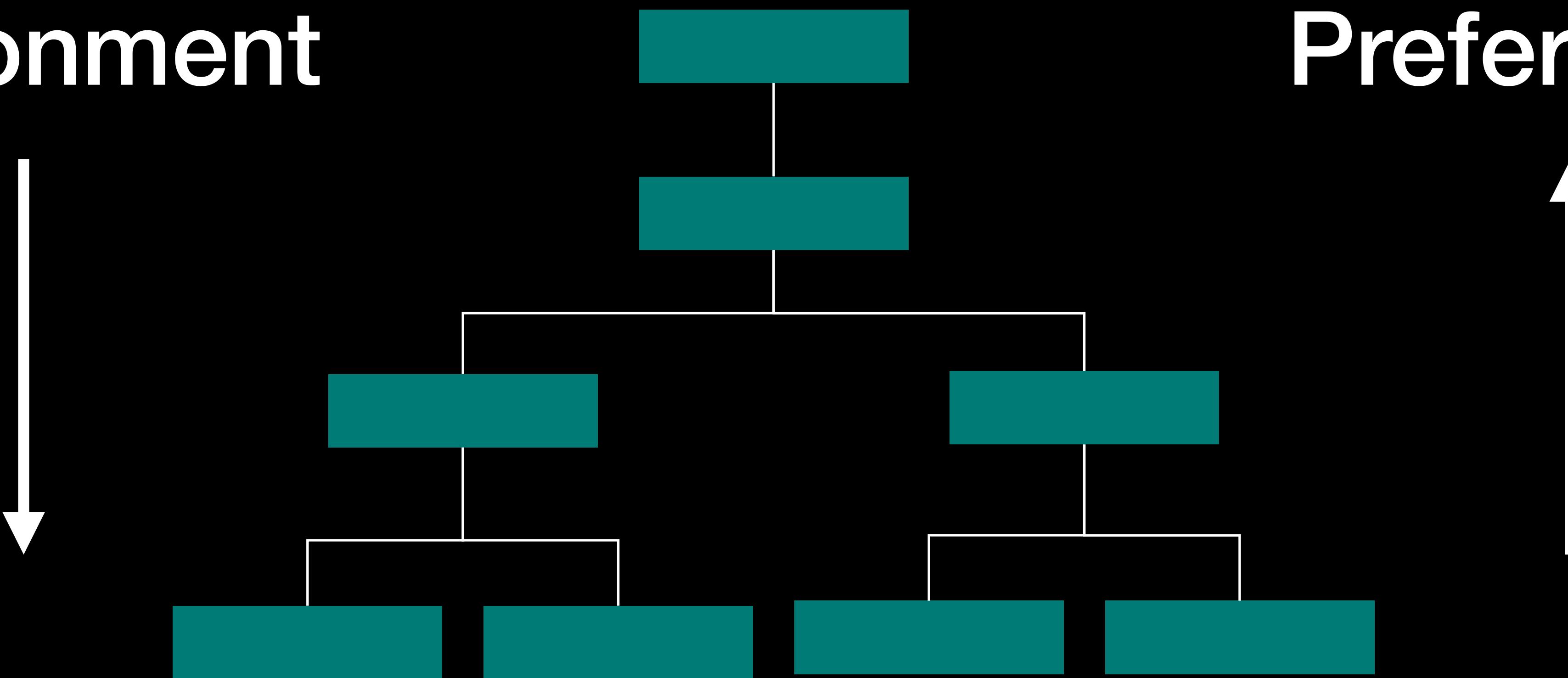
Environment



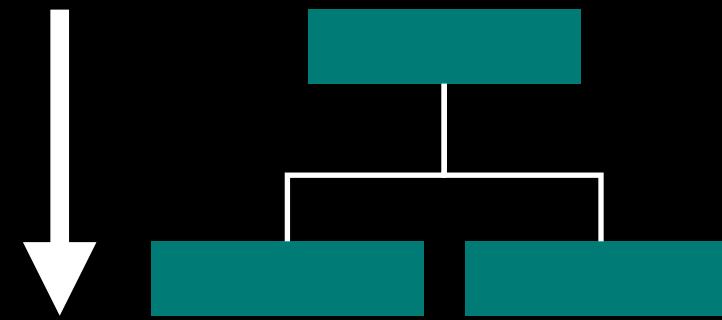
FLUXO DE DADOS

Environment

Preferences

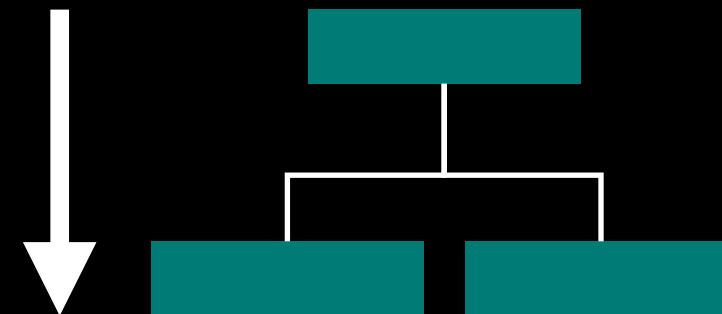


ENVIRONMENT



ENVIRONMENT

Conjunto de informações passadas
de uma view para seus filhos.

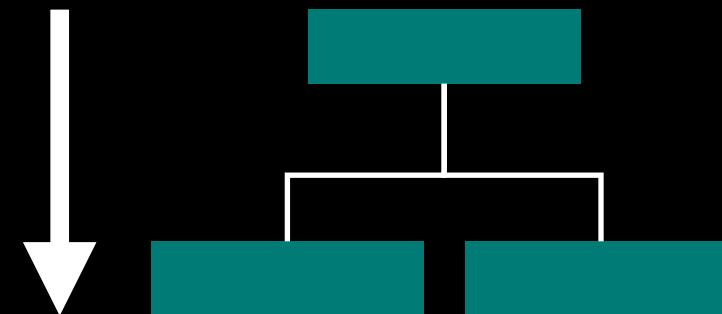


ENVIRONMENT

```
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

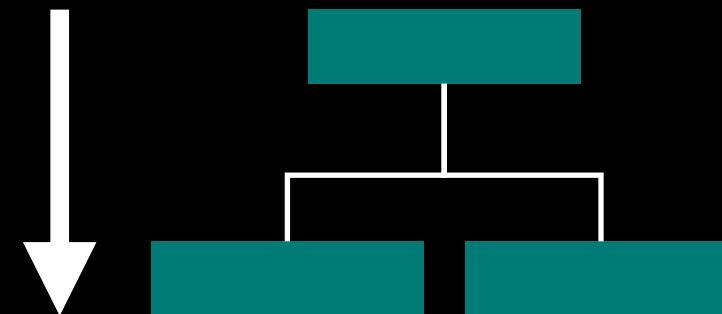
Detail
Info



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)  
            ←  
        }  
    }  
}
```





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)  
        ←  
    }  
}
```

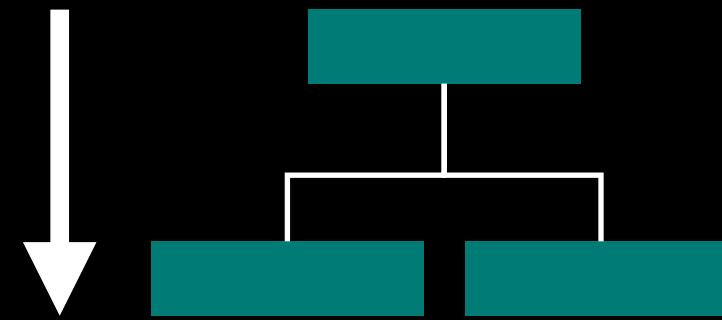
Title
Subtitle

Detail
Info

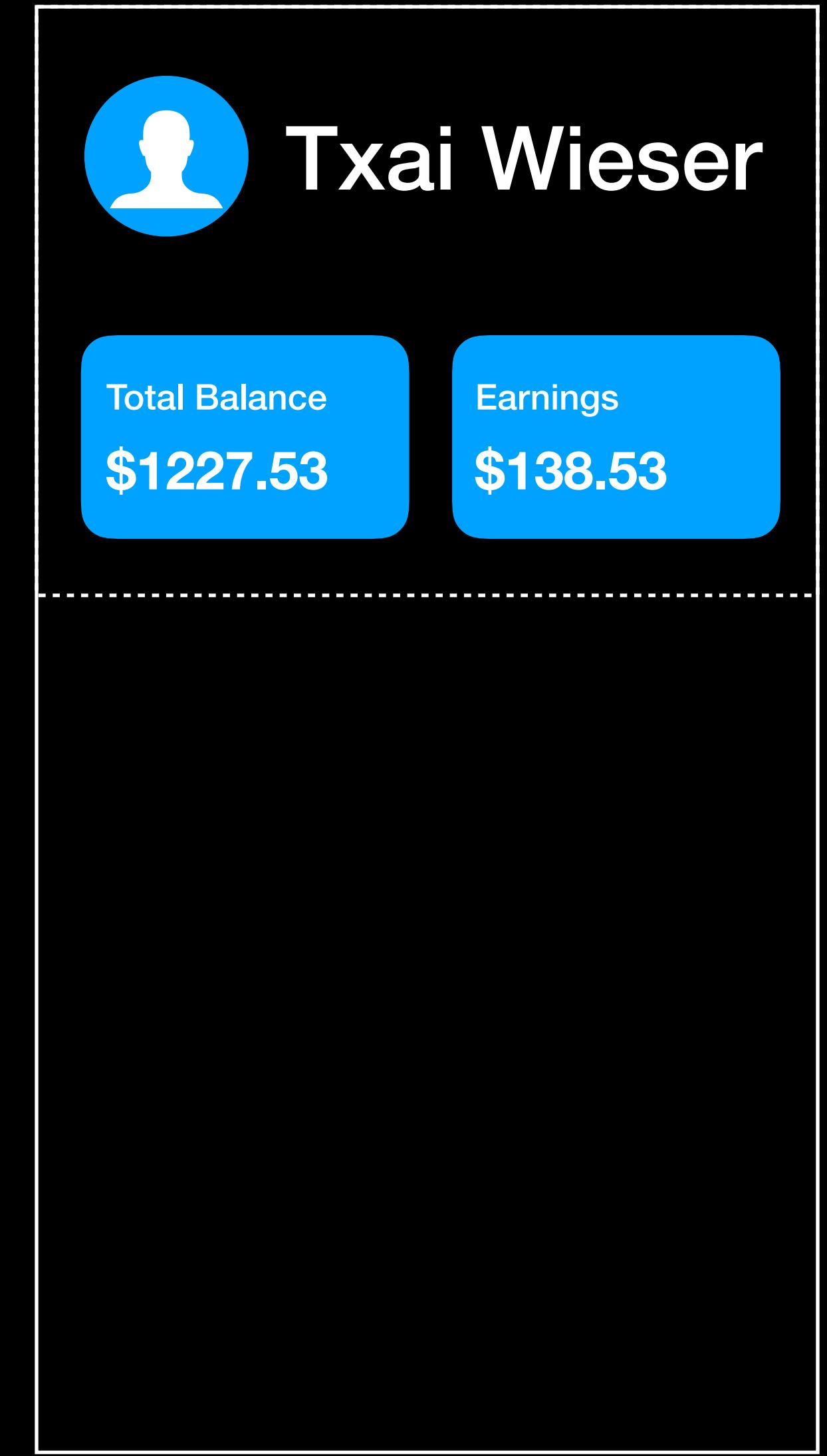


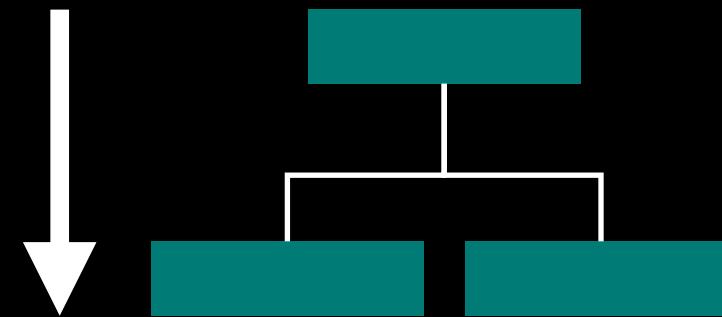
ENVIRONMENT

```
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>  
    ...  
}
```

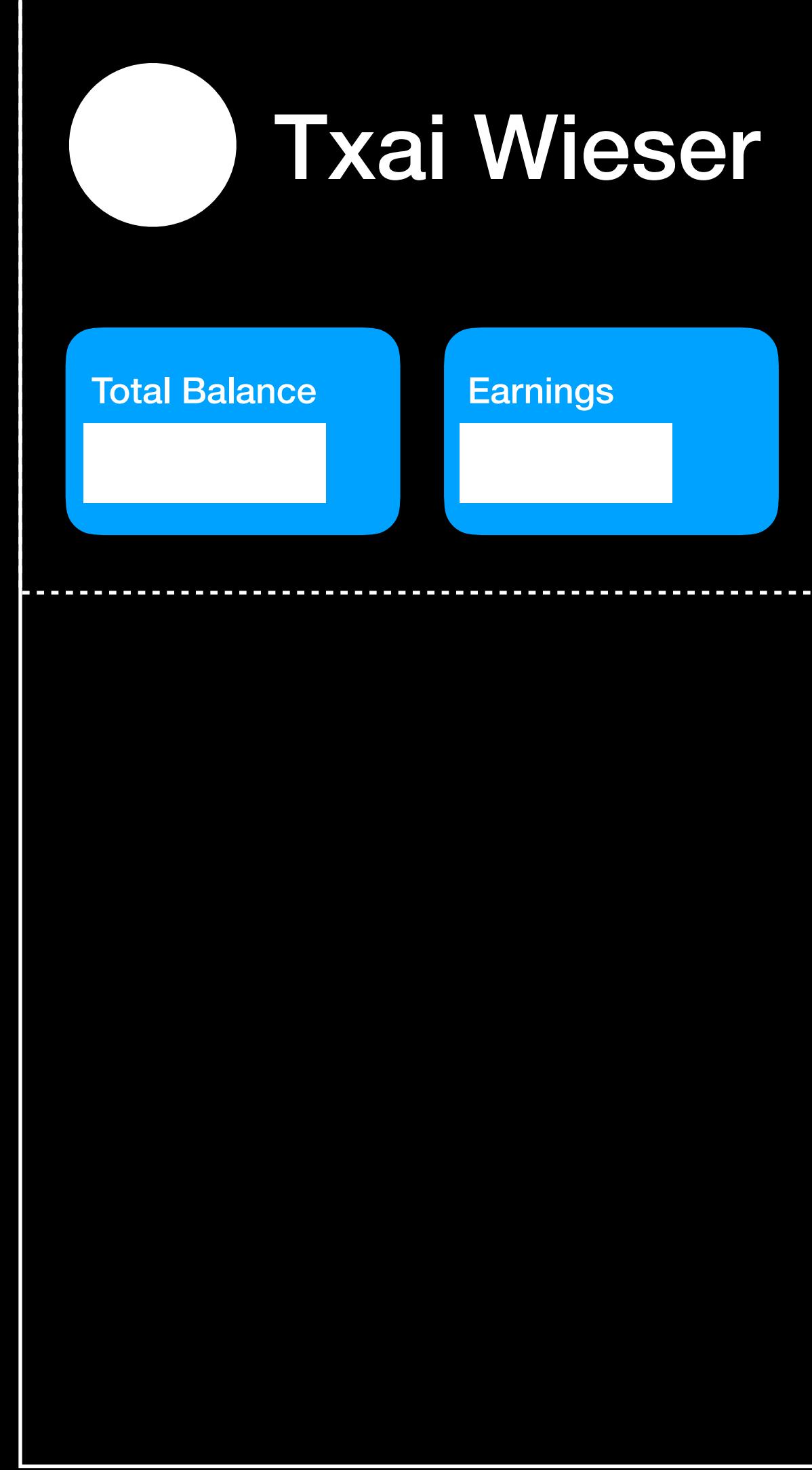


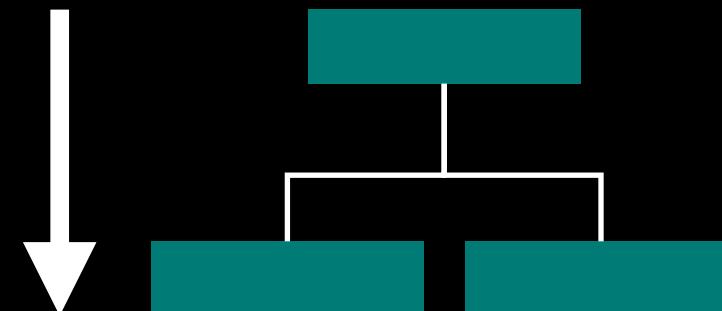
ENVIRONMENT





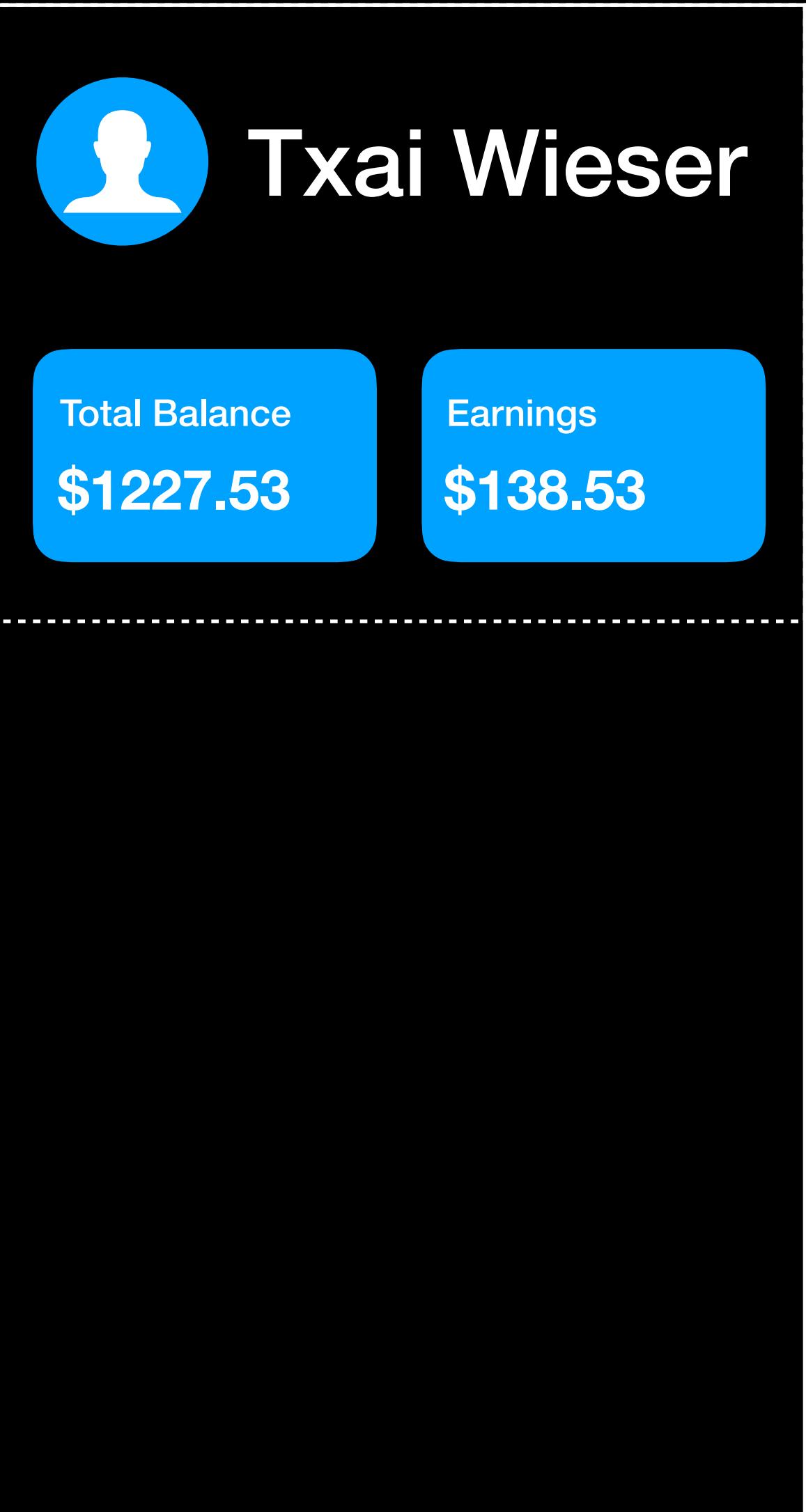
ENVIRONMENT



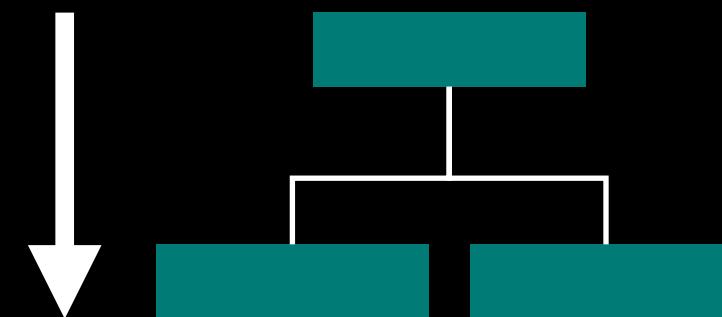


ENVIRONMENT

```
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 }  
    }  
}
```



ENVIRONMENT



```
// SceneDelegate.swift

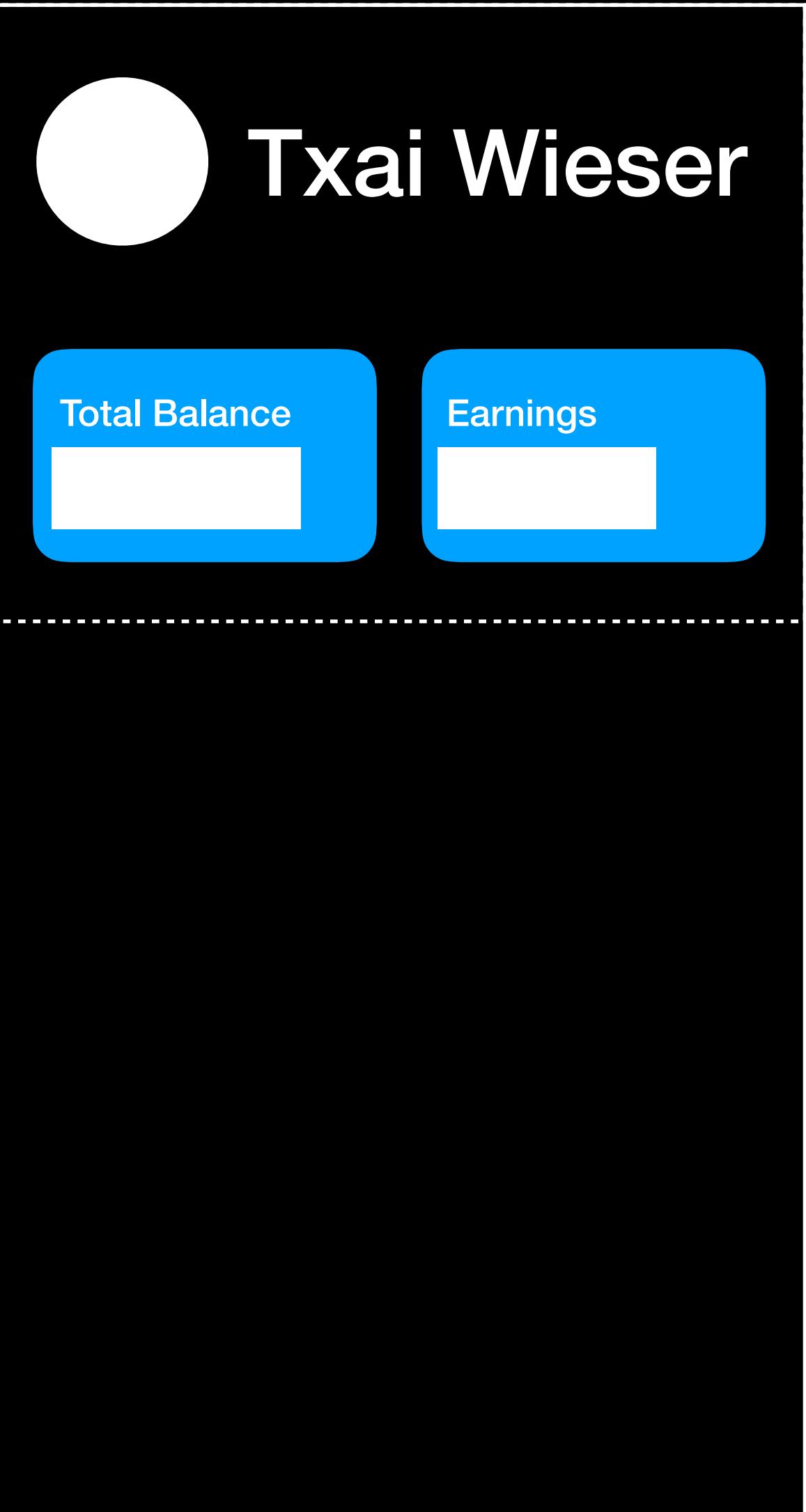
let appView = AppView()

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

// CurrencyLabel.swift

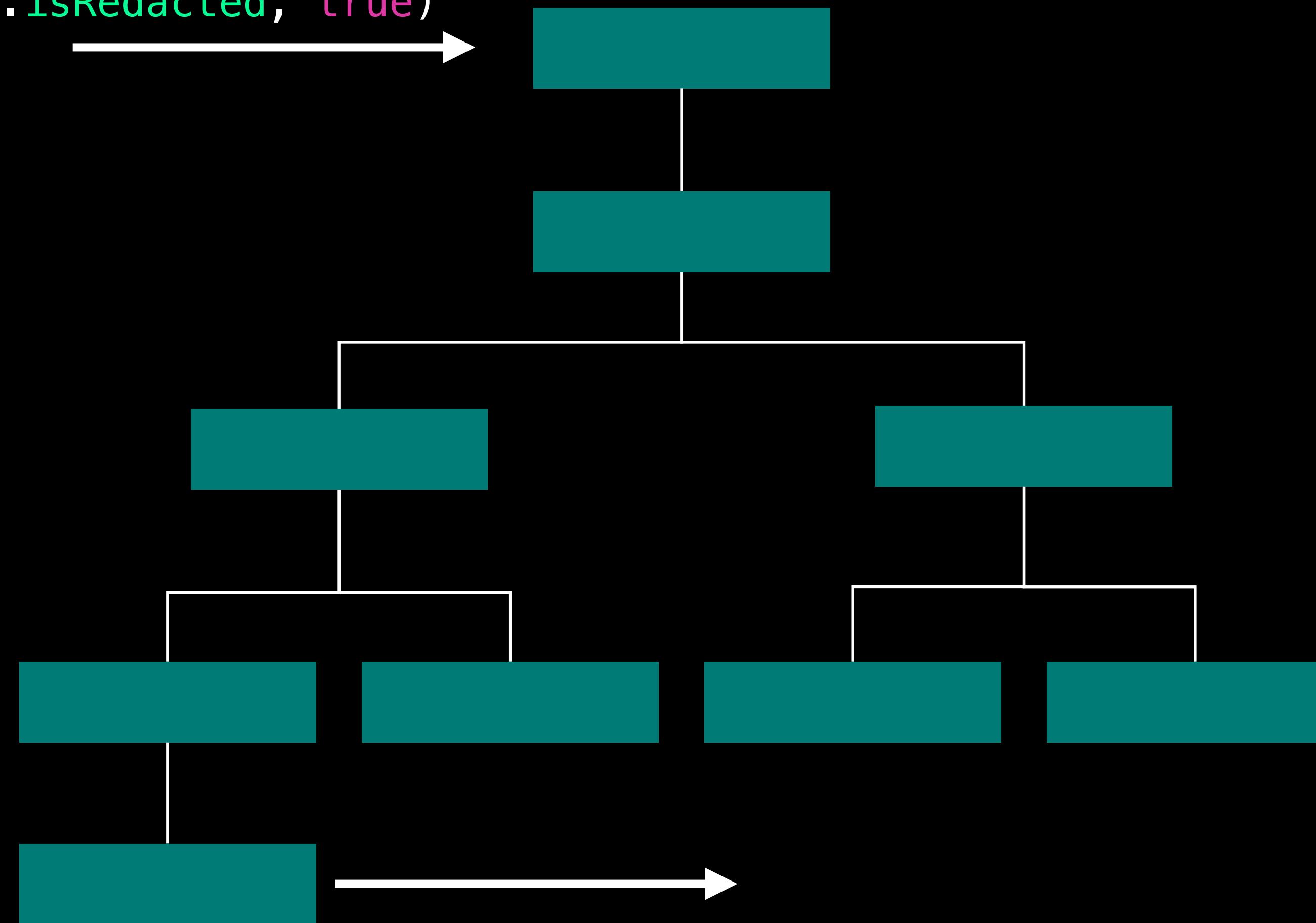
struct CurrencyLabel: View {
    var value: String
    @Environment(\.isRedacted) private var isRedacted

    var body: some View {
        Text(value)
            .overlay(isRedacted ? Color.primary : Color.clear)
    }
}
```



ENVIRONMENT

```
appView.environment(\.isRedacted, true)
```

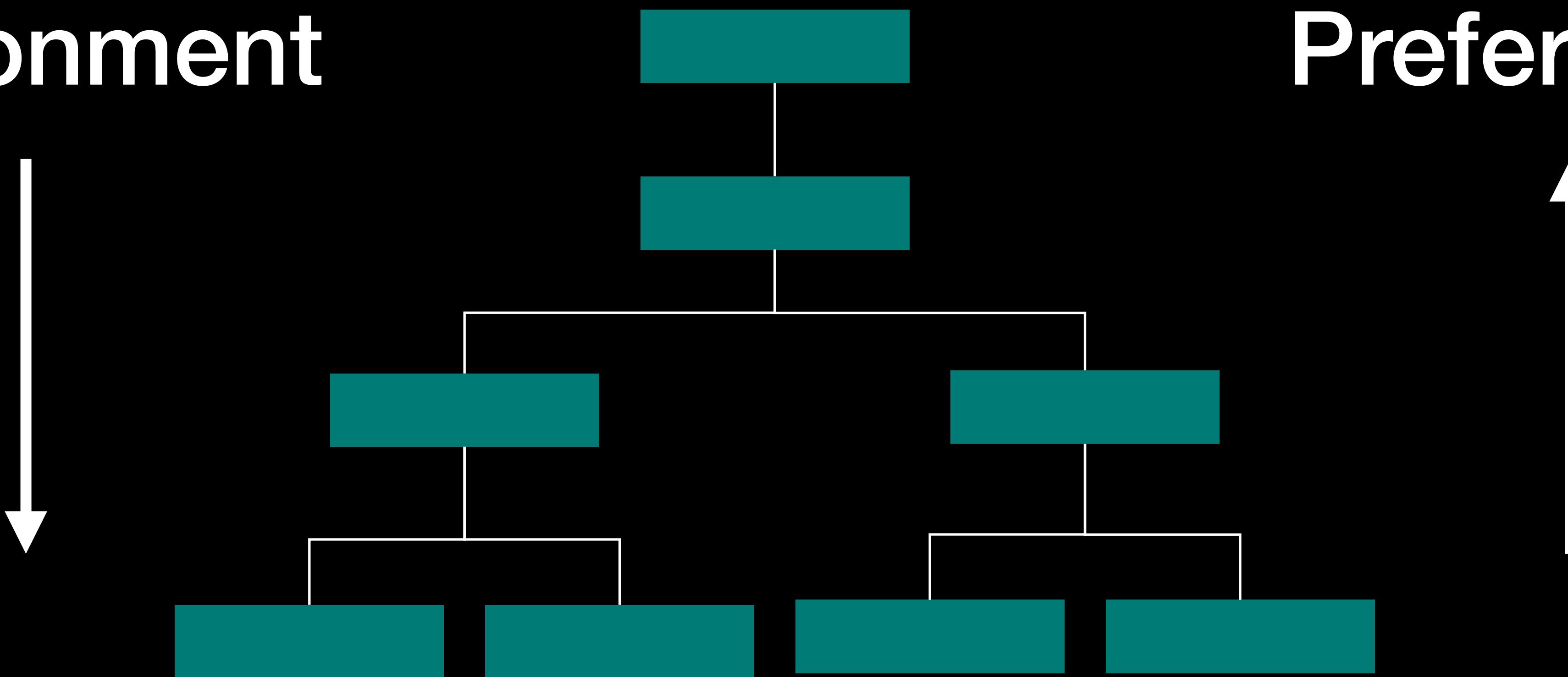


```
@Environment(\.isRedacted) private var isRedacted
```

FLUXO DE DADOS

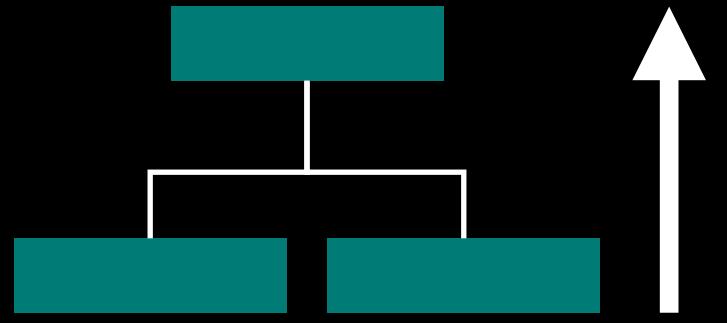
Environment

Preferences



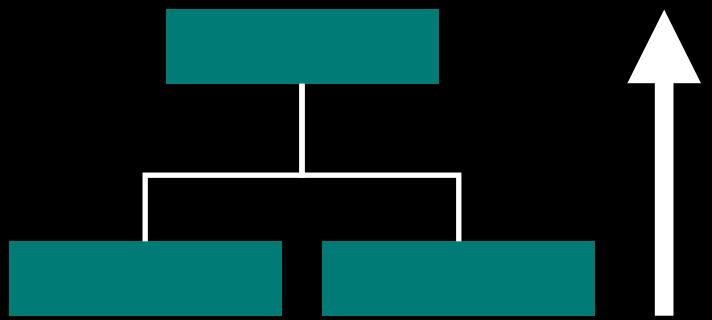
PREFERENCES

PREFERENCES

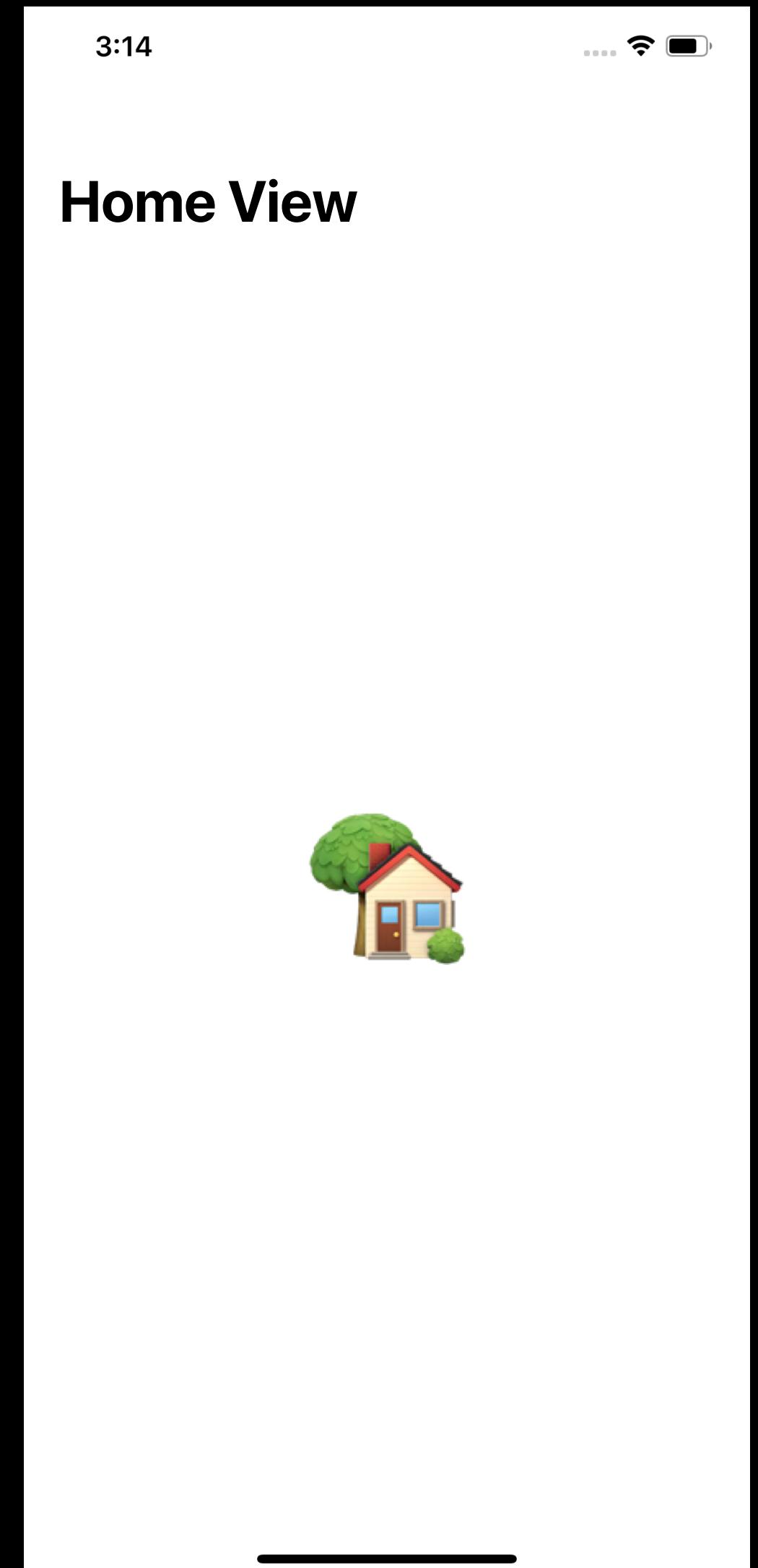


Mecanismo para uma view expressar suas preferencias para seus ascendentes.

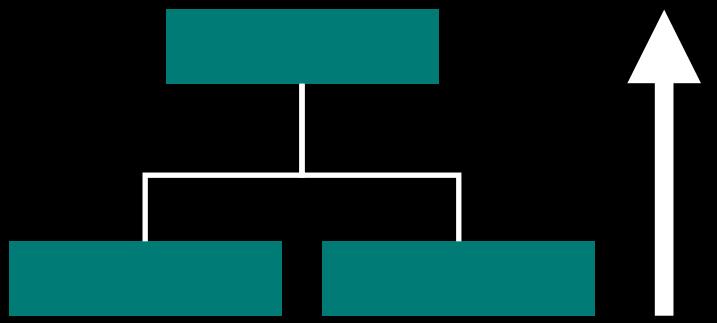
PREFERENCES



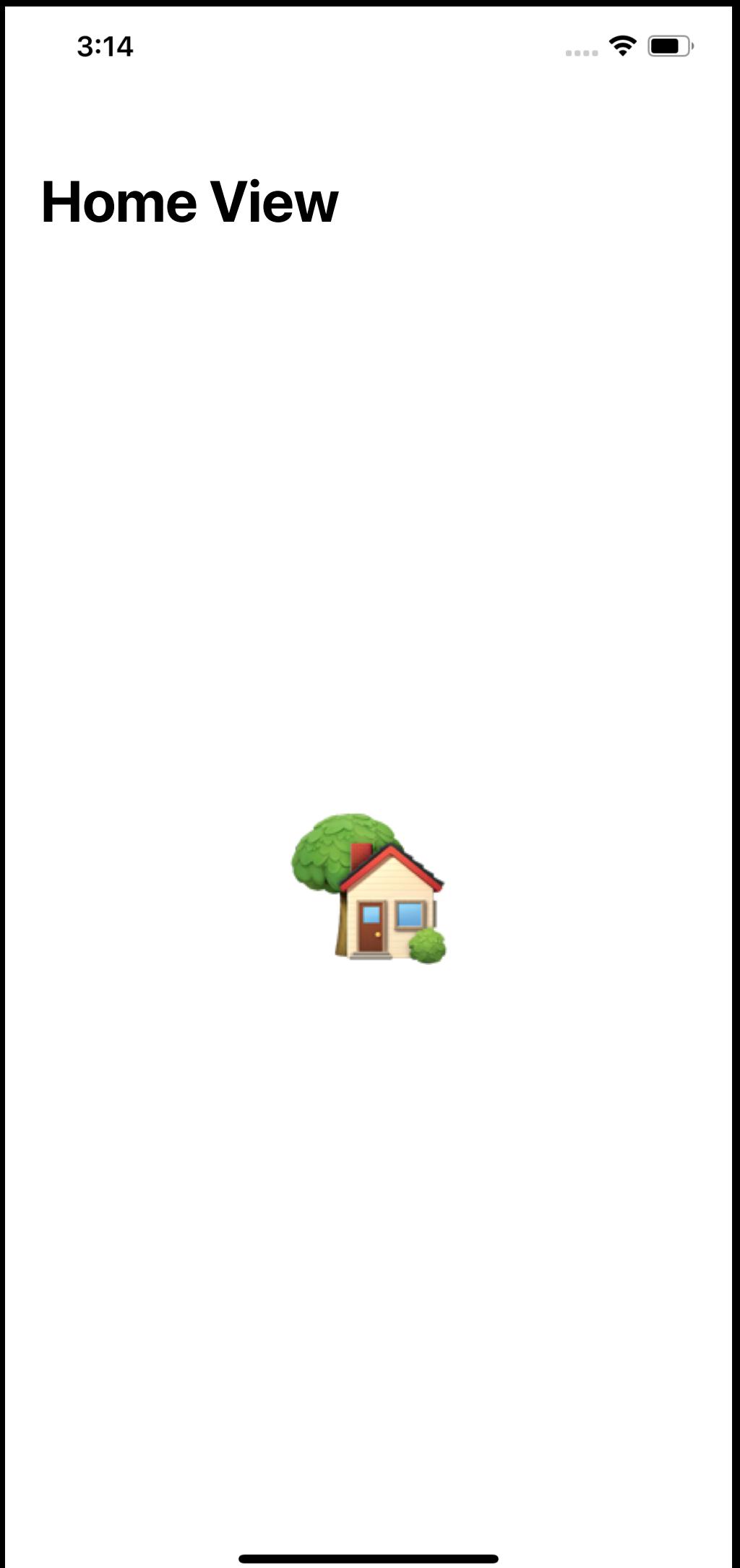
```
struct ContentView: View {  
    var body: some View {  
        NavigationView {  
            HomeView()  
        }  
    }  
}  
  
struct HomeView: View {  
    var body: some View {  
        Text("🏠")  
            .navigationBarTitle("Home View")  
    }  
}
```



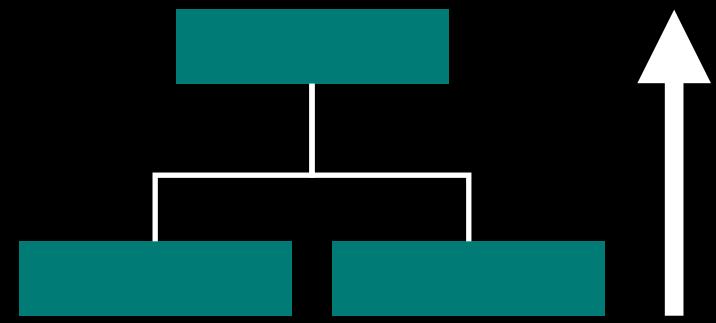
PREFERENCES



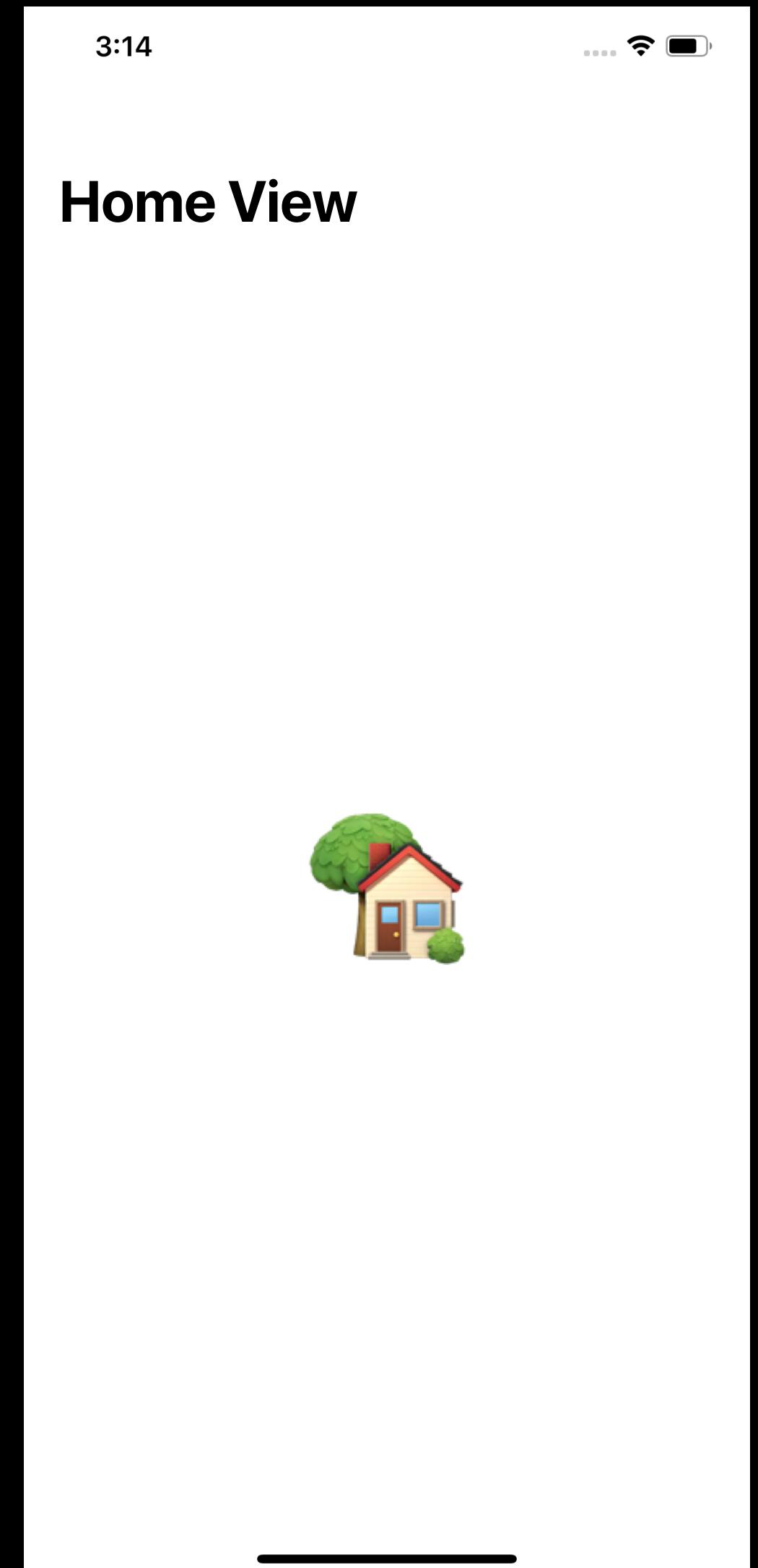
```
struct ContentView: View {  
    var body: some View {  
        NavigationView {  
            HomeView()  
        }  
    }  
}  
  
struct HomeView: View {  
    var body: some View {  
        Text("🏠")  
            .navigationBarTitle("Home View") ←—————  
    }  
}
```



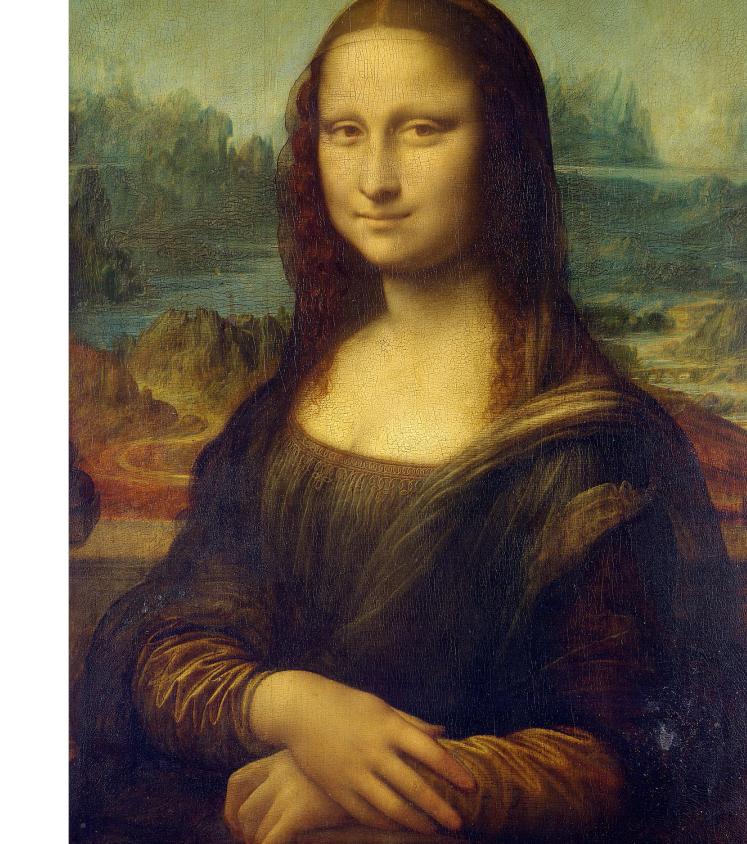
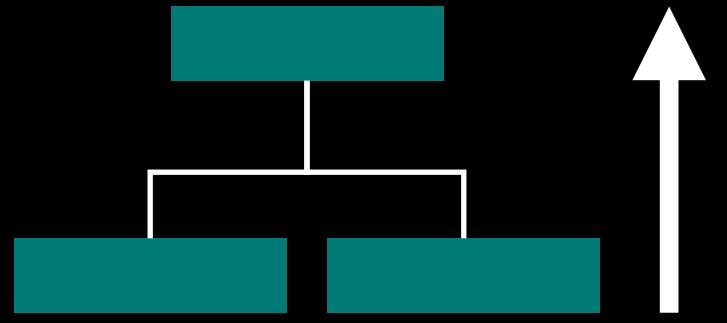
PREFERENCES



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

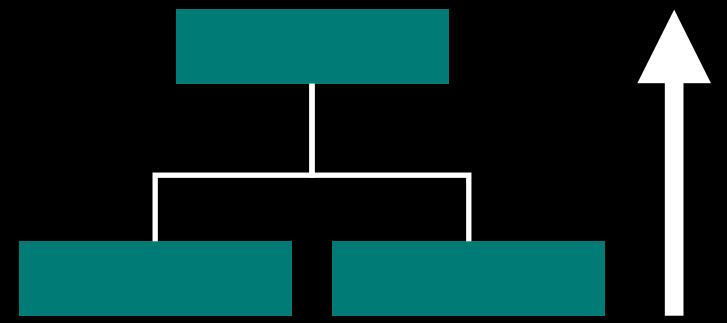


PREFERENCES



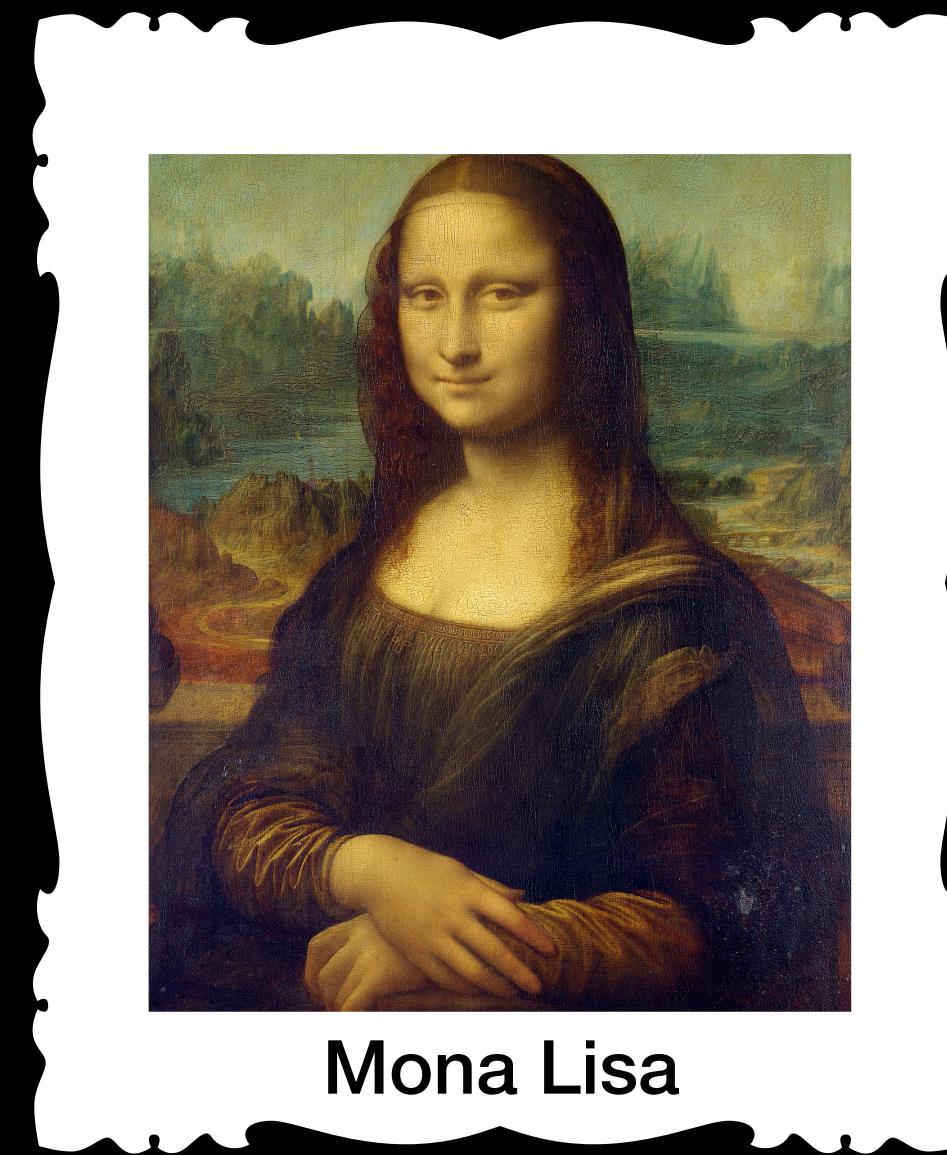
Mona Lisa

PREFERENCES

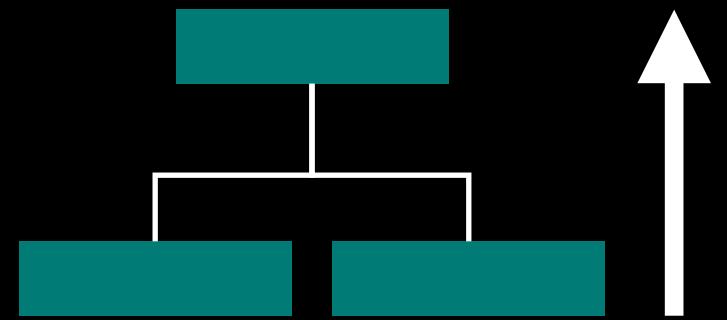


```
struct ContentView: View {  
    var body: some View {  
        PictureFrame {  
            Monalisa()  
        }  
    }  
}  
  
struct Monalisa: View {  
    var body: some View {  
        Image("monalisa.png")  
            .pictureTitle("Mona Lisa")  
    }  
}
```

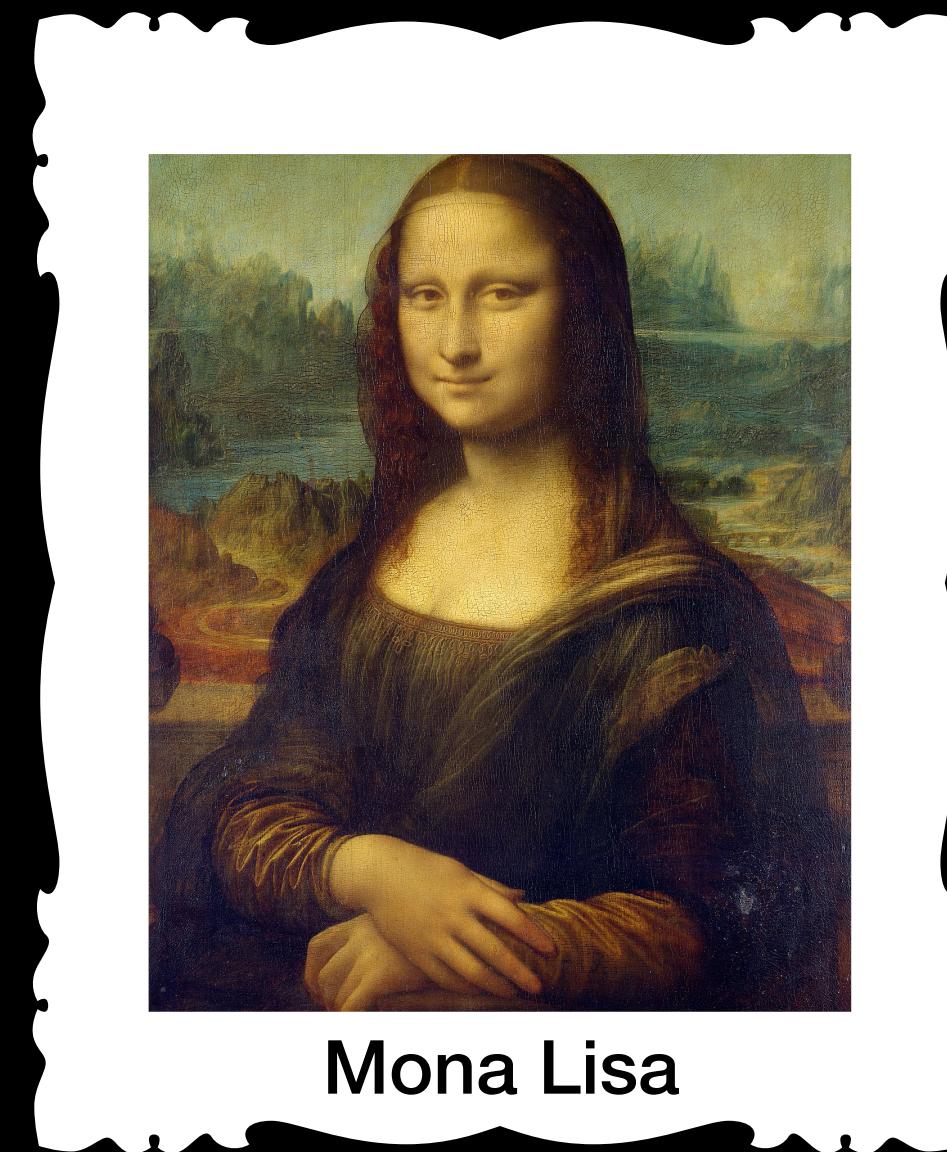
Two green arrows point from the code snippets to the corresponding parts of the diagram: one from the 'Monalisa()' call to the 'Monalisa' image, and another from the 'pictureTitle("Mona Lisa")' call to the title text below it.



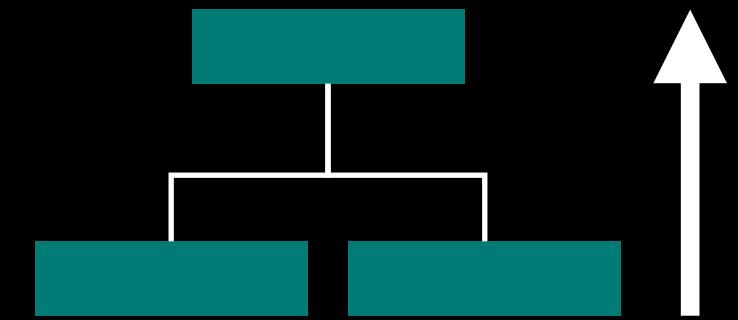
PREFERENCES



```
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"  
            )  
    }  
}
```

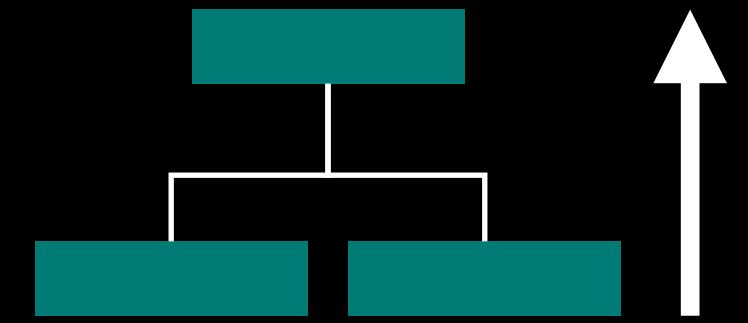


PREFERENCES



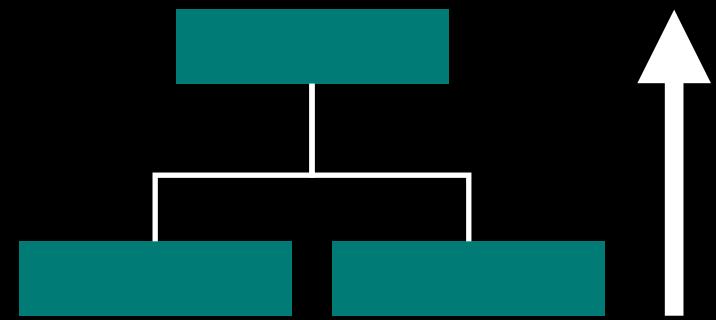
```
extension View {  
  
    /// Returns a view producing `value` as the value of preference  
    /// `Key` seen by its ancestors.  
    @inlinable public func preference<K>(key _: K.Type = K.self, value: K.Value)  
        -> some View where K : PreferenceKey  
  
}
```

PREFERENCES

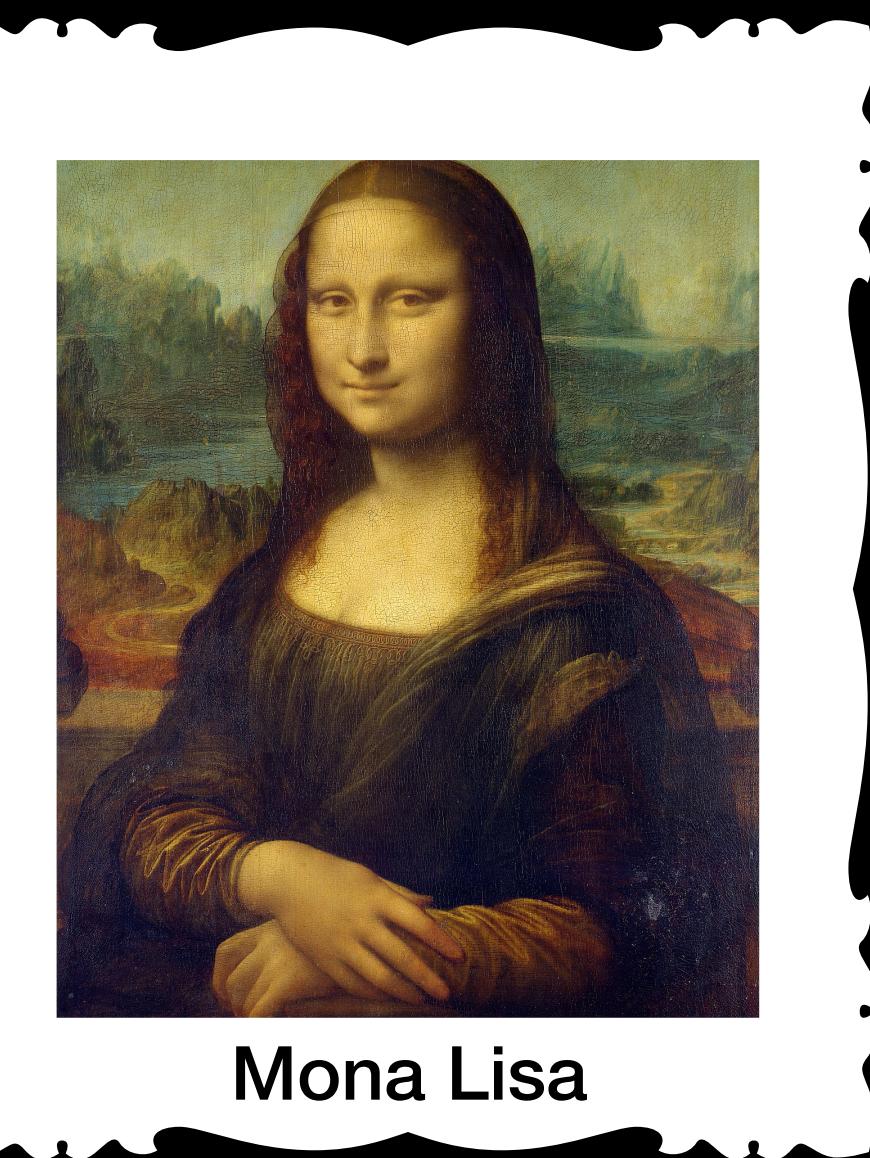


```
struct TitlePrefKey: PreferenceKey {  
    typealias Value = String?  
  
    static var defaultValue: Value = nil  
  
    static func reduce(value: inout Value, nextValue: () -> Value) {  
        value = nextValue()  
    }  
}
```

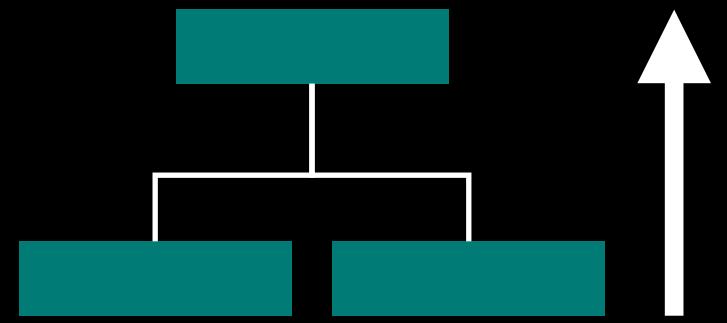
PREFERENCES



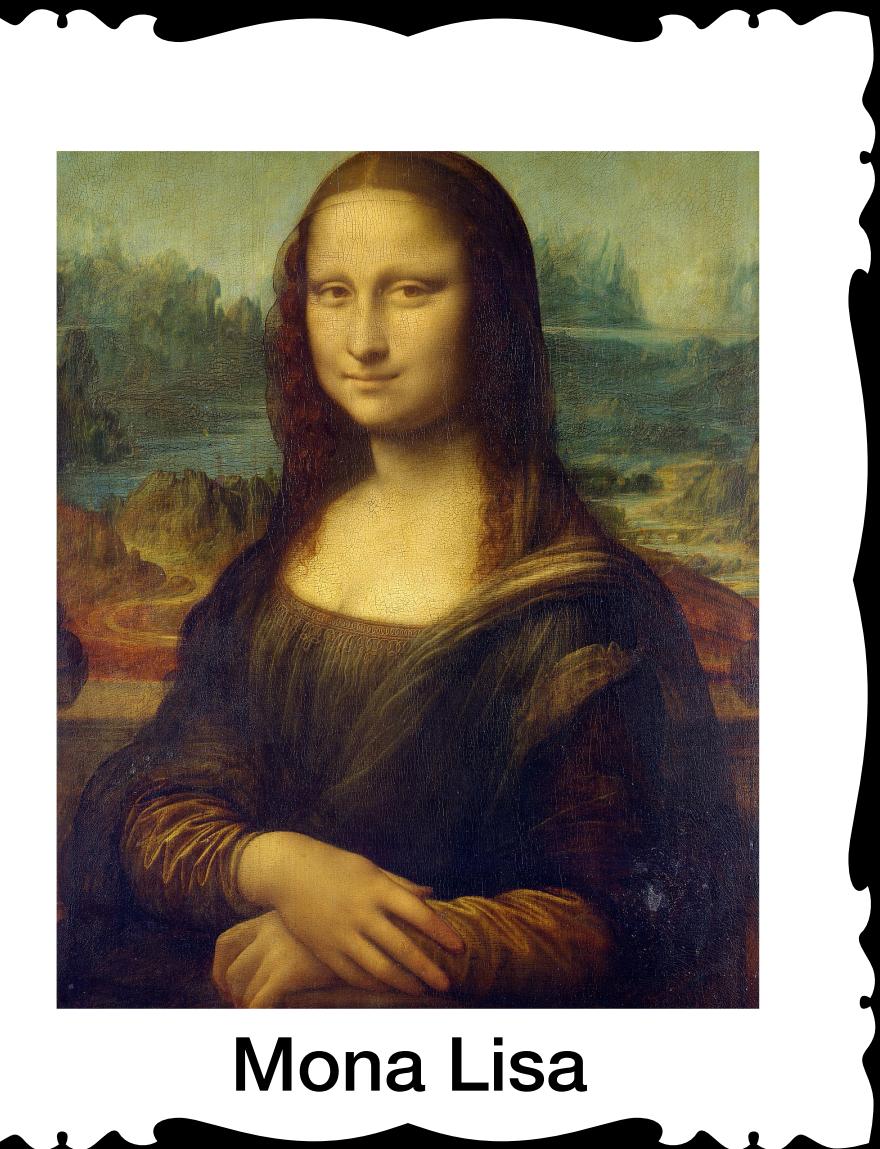
```
struct ContentView: View {  
    var body: some View {  
        PictureFrame {  
            Monalisa()  
        }  
    }  
}  
  
struct Monalisa: View {  
    var body: some View {  
        Image("monalisa.png")  
            .preference(  
                key: TitlePrefKey.self, ←  
     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



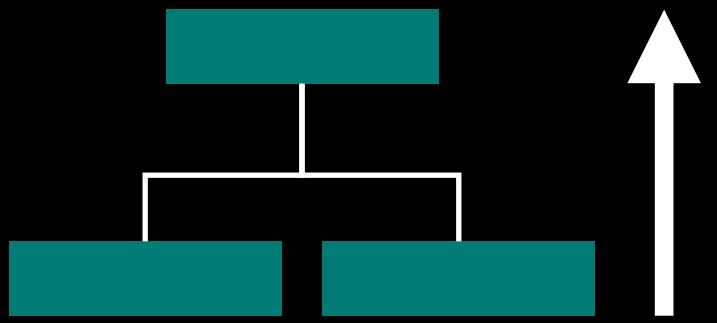
PREFERENCES



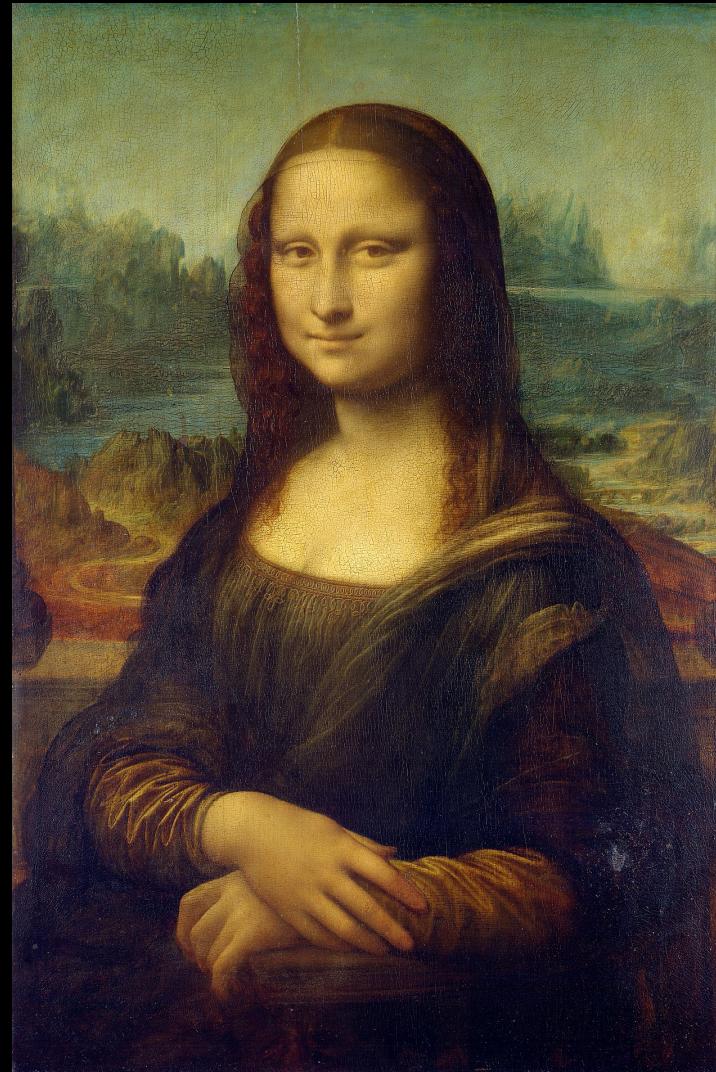
```
struct ContentView: View {  
    var body: some View {  
        PictureFrame {  
            Monalisa()  
        }  
    }  
}  
  
struct Monalisa: View {  
    var body: some View {  
        Image("monalisa.png")  
            .preference(  
                key: TitlePrefKey.self,  
       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



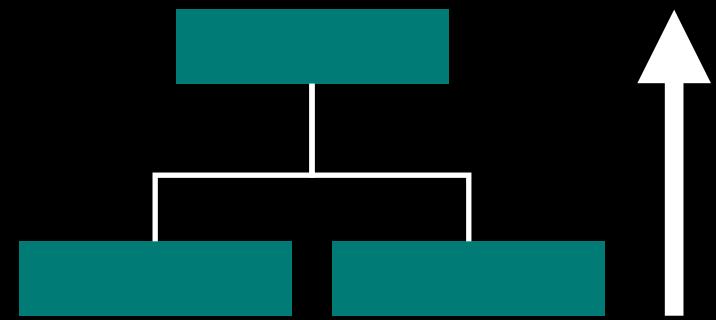
PREFERENCES



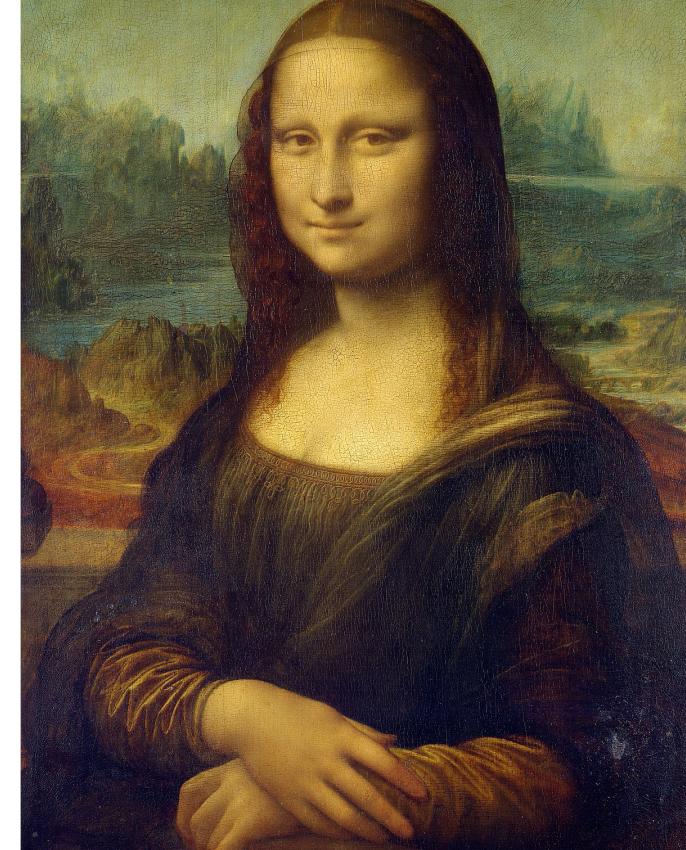
```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    var body: some View {  
        VStack {  
            content()  
        }  
    }  
}
```



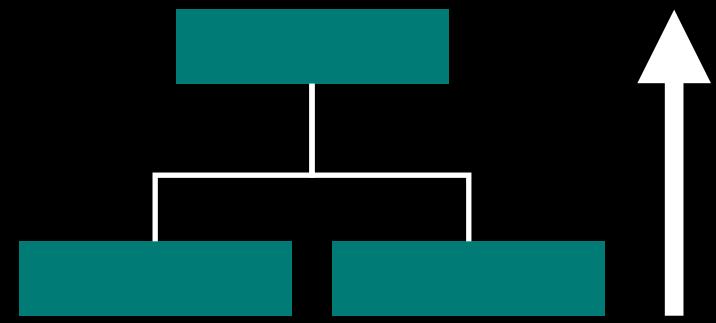
PREFERENCES



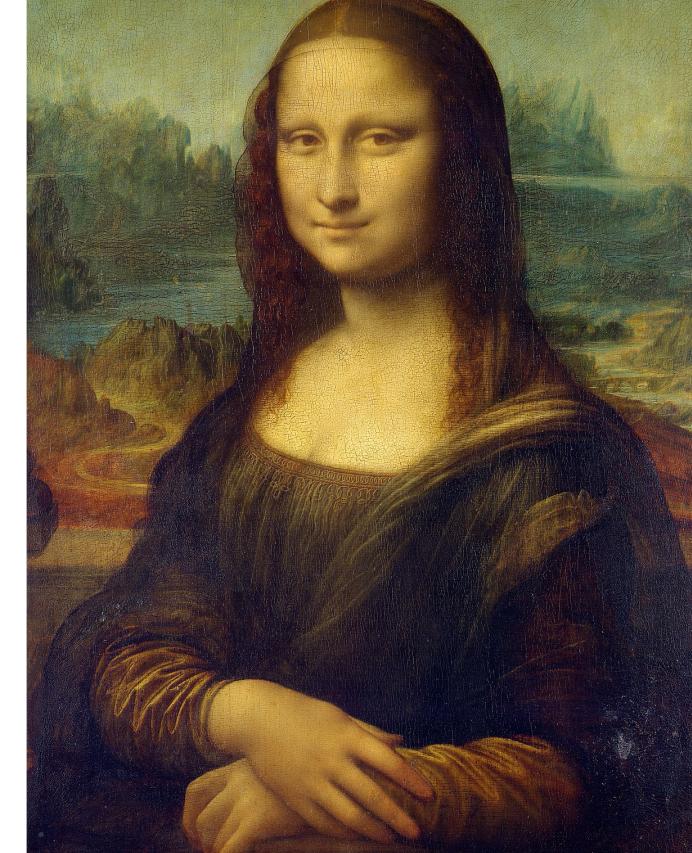
```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    var body: some View {  
        VStack {  
            content()  
            .overlay(  
                Image("frame.png")  
            )  
        }  
    }  
}
```



PREFERENCES

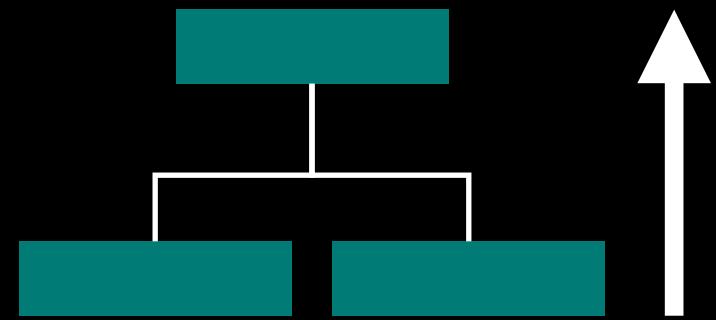


```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    var body: some View {  
        VStack {  
            content()  
            .overlay(  
                Image("frame.png")  
            )  
            .onPreferenceChange(TitlePrefKey.self) { preference in 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

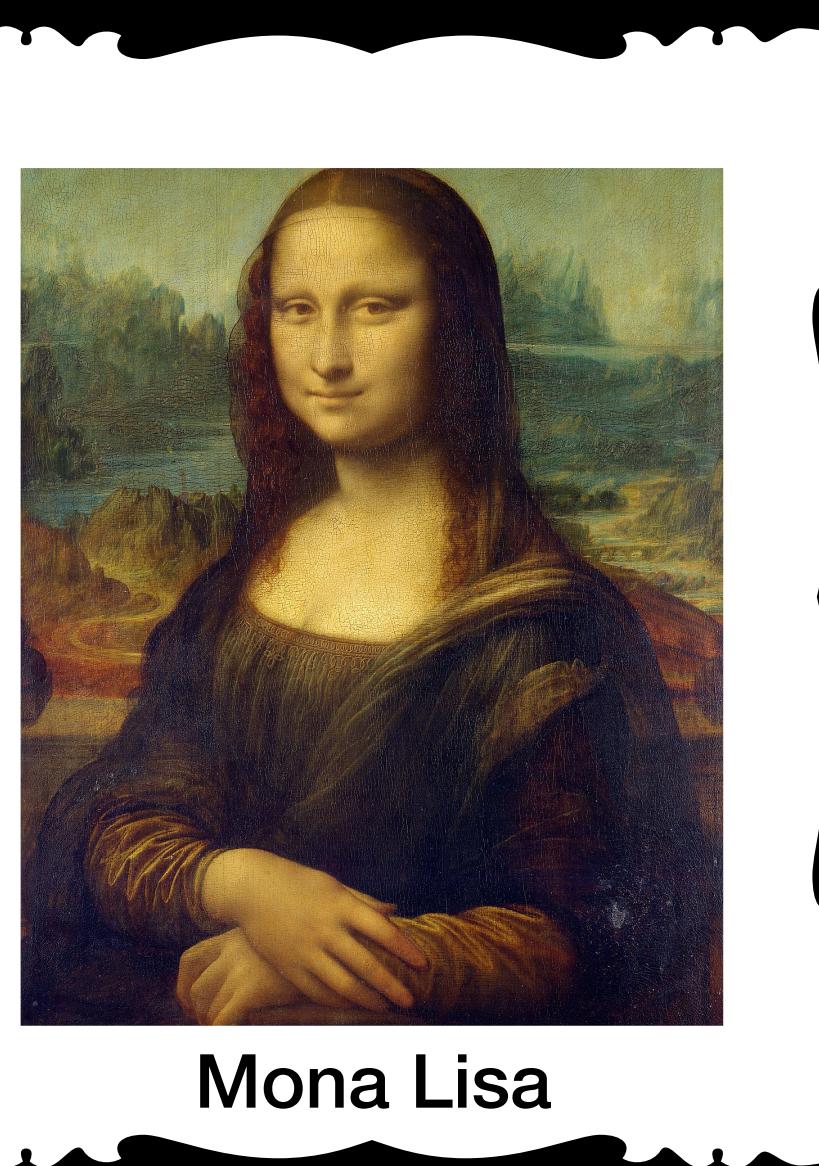


Mona Lisa

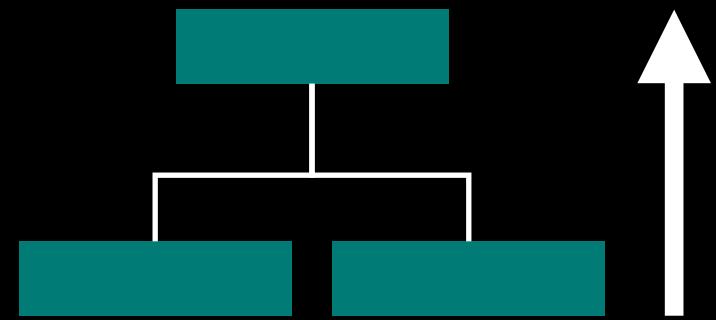
PREFERENCES



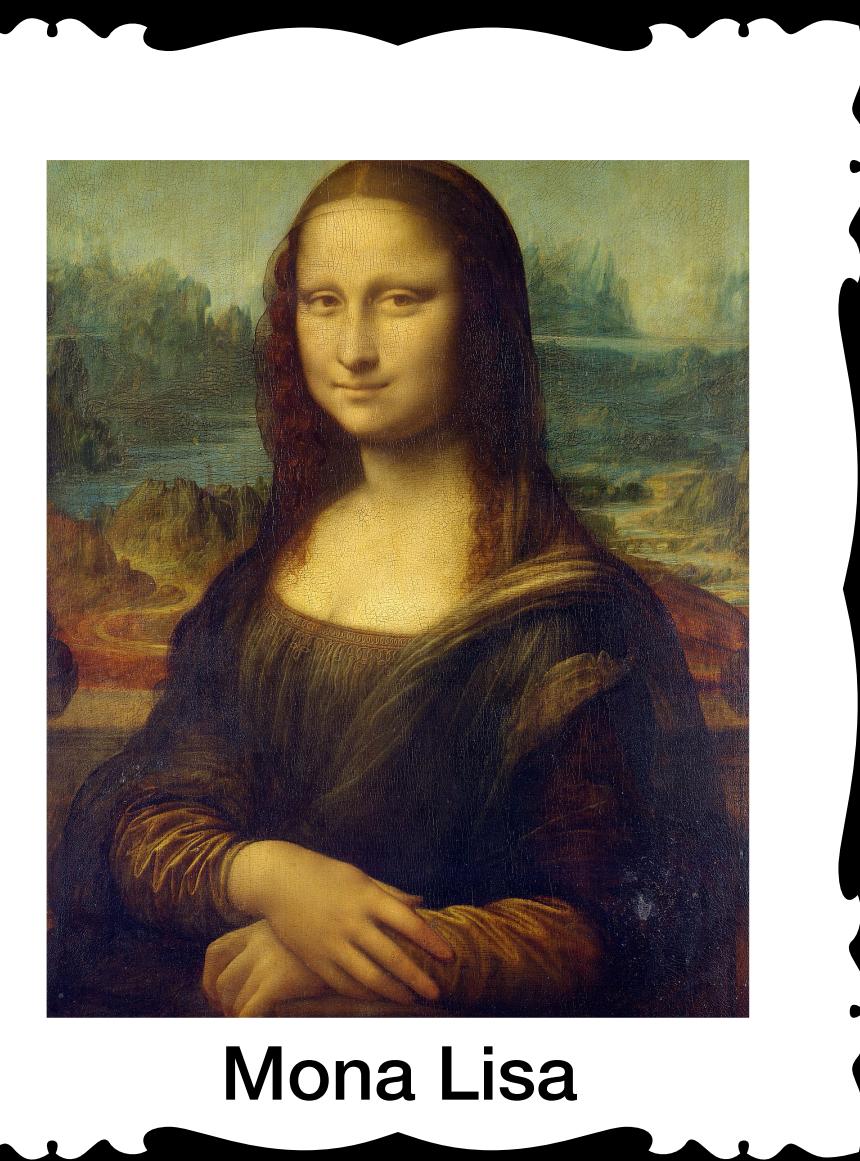
```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    @State private var title: String?  
  
    var body: some View {  
        VStack {  
            content()  
                .overlay(  
                    Image("frame.png")  
                )  
            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



PREFERENCES

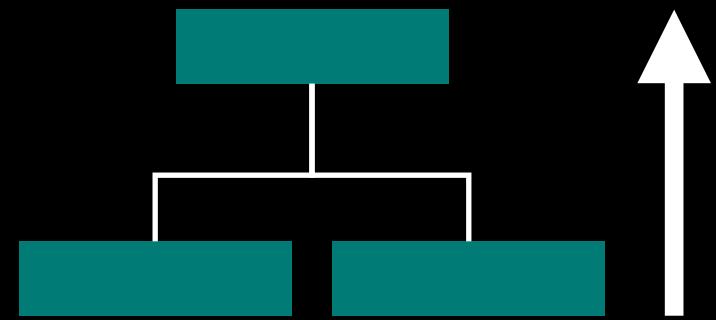


```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    @State private var title: String?  
  
    var body: some View {  
        VStack {  
            content()  
                .overlay(  
                    Image("frame.png")  
                )  
                .onPreferenceChange(TitlePrefKey.self) { preference in  
                    self.title = preference  
                }  
                .overlay(  
                    VStack {  
                        Spacer()  
                        Text(title ?? "Obra sem nome")  
                    }  
                )  
        }  
    }  
}
```

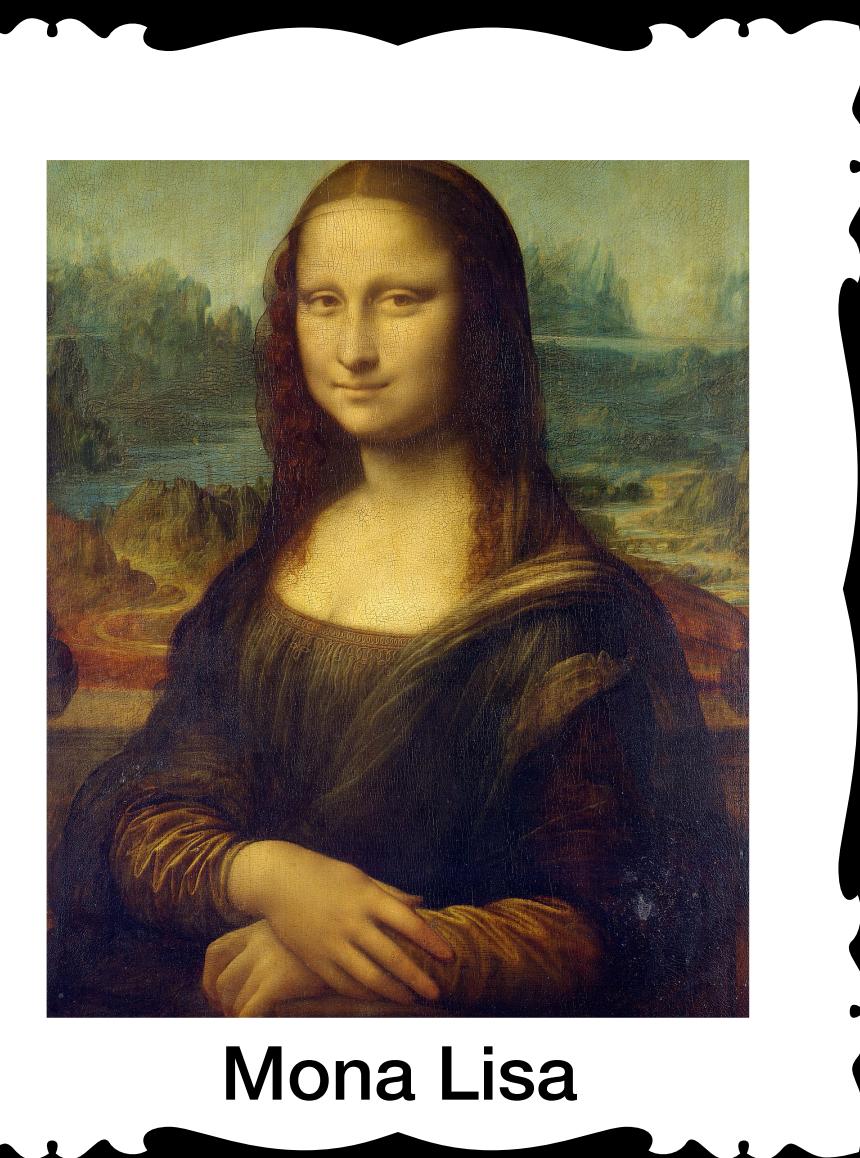


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PREFERENCES

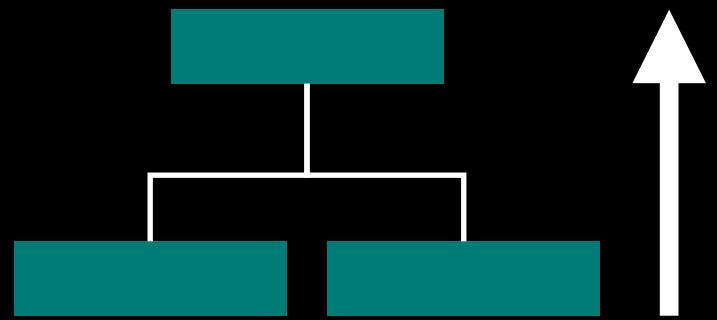


```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    @State private var title: String? ← green arrow  
  
    var body: some View {  
        VStack {  
            content()  
            .overlay(  
                Image("frame.png")  
            )  
            .onPreferenceChange(TitlePrefKey.self) { preference in  
                self.title = preference  
            }  
            .overlay(  
                VStack {  
                    Spacer()  
                    Text(title ?? "Obra sem nome")  
                }  
            )  
        }  
    }  
}
```

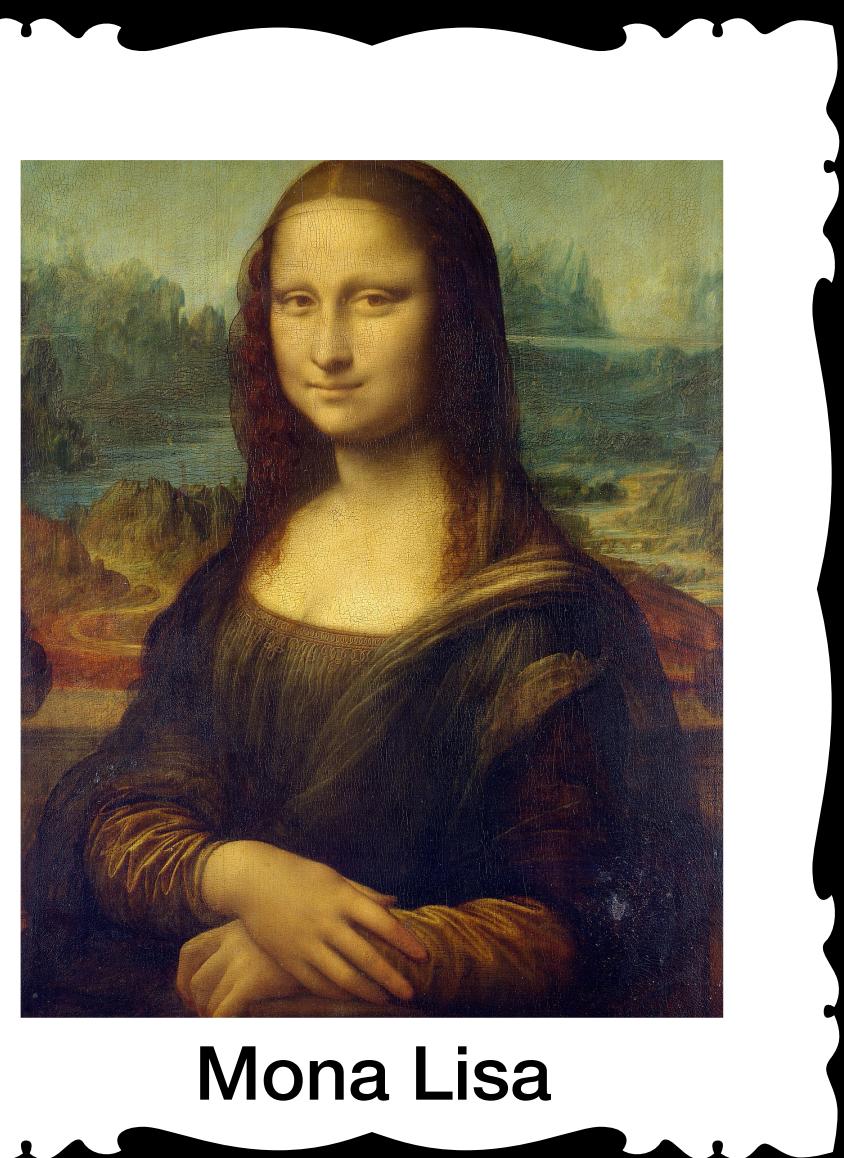


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PREFERENCES

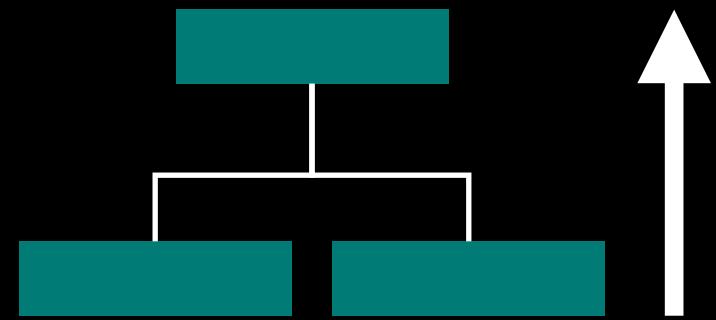


```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    @State private var title: String?  
  
    var body: some View {  
        VStack {  
            content()  
            .overlay(  
                Image("frame.png")  
            )  
            .overlayPreferenceValue(TitlePrefKey.self) { title in  
                VStack {  
                    Spacer()  
                    Text(title ?? "Obra sem nome")  
                }  
            }  
        }  
    }  
}
```

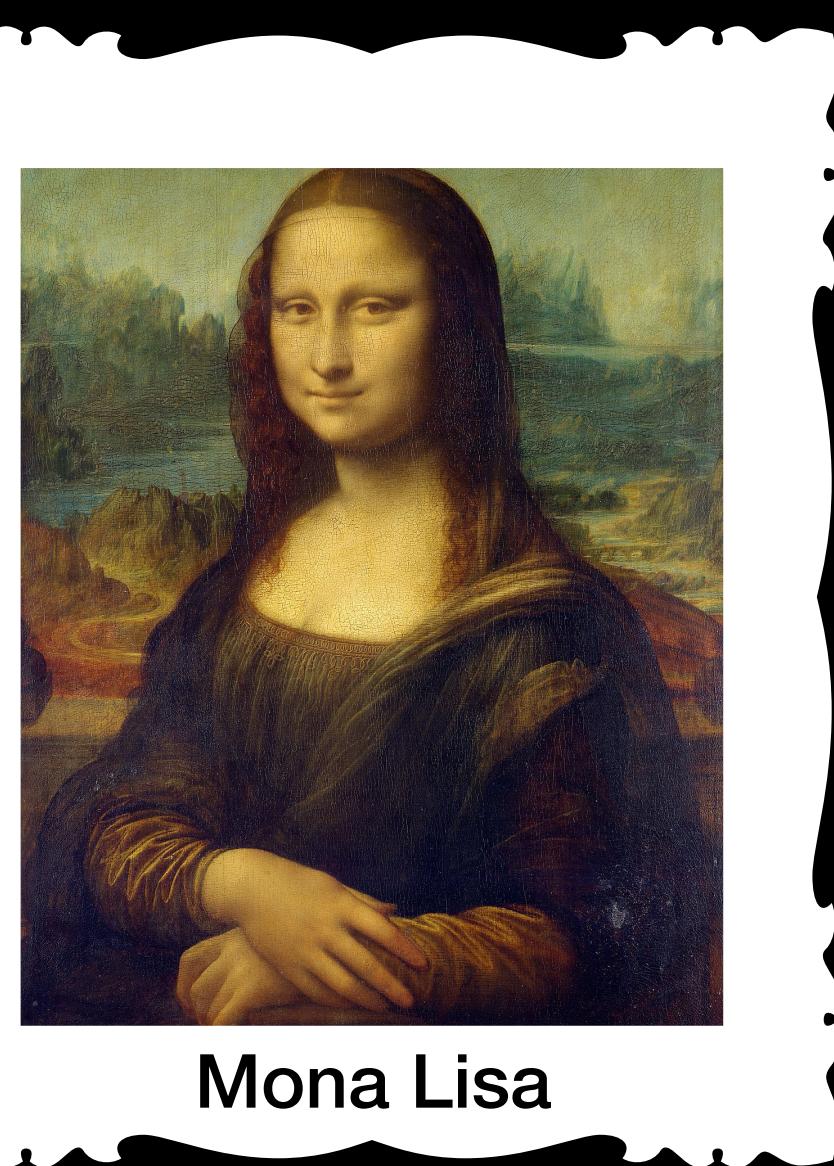


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PREFERENCES

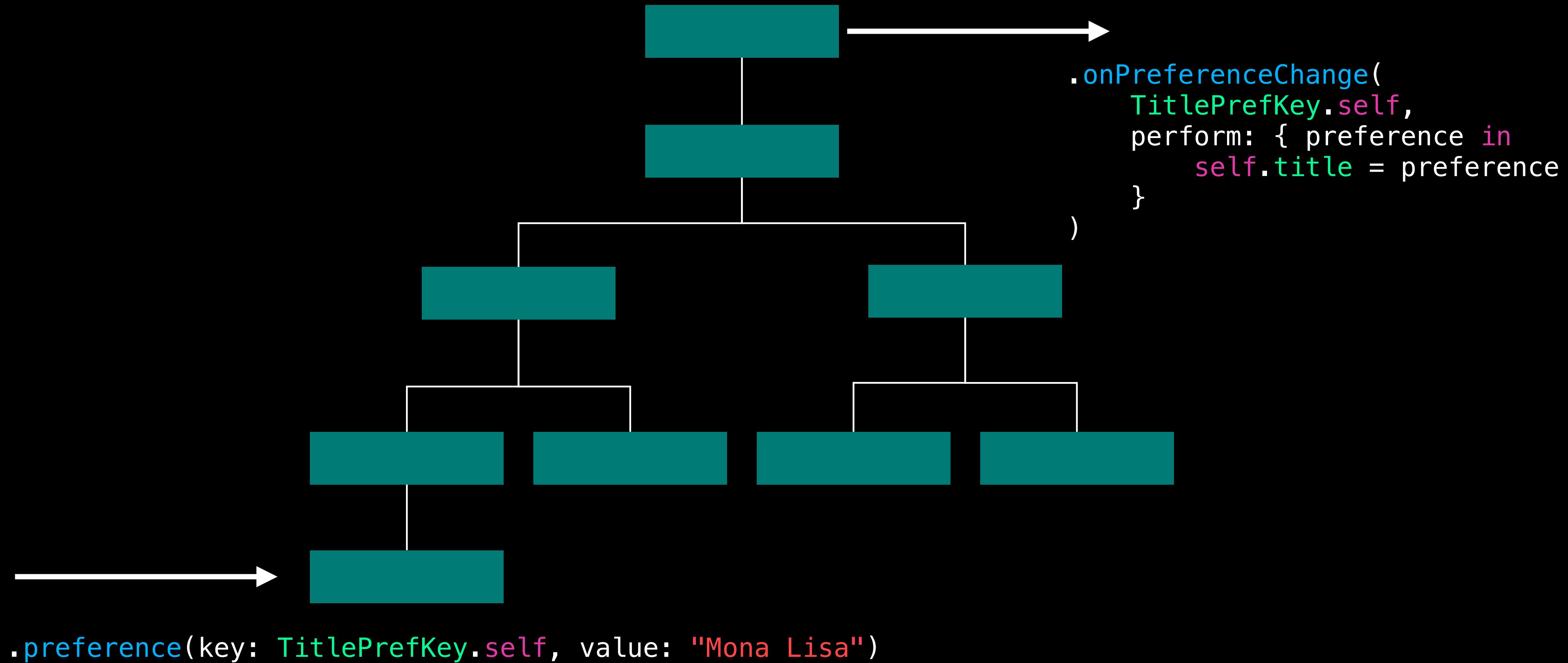


```
struct PictureFrame<Content: View>: View {  
    let content: () -> Content  
  
    var body: some View {  
        VStack {  
            content()  
                .overlay(  
                    Image("frame.png")  
                )  
                .overlayPreferenceValue>TitlePrefKey.self) { title in  
                    VStack {  
                        Spacer()  
                        Text(title ?? "Obra sem nome")  
                    }  
                }  
        }  
    }  
}
```



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PREFERENCES



PREFERENCES

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!



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