

OHOS UI Components & Layouts



Application Library
Engineering Group

► Today's Session is about

- ▶ View and ViewGroup (Android)
- ▶ Component and ComponentContainer (Open Harmony)
- ▶ Types of Layouts
- ▶ Creating CustomComponent
- ▶ Q & A



View and ViewGroup (Android)

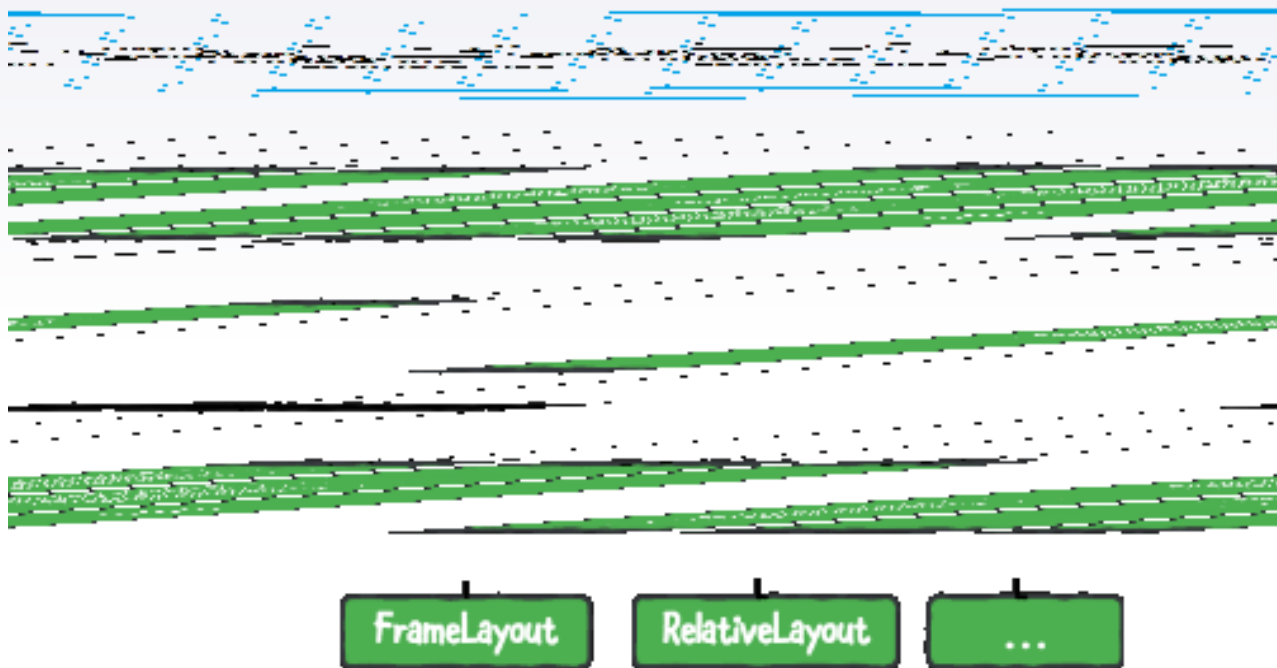
- ▶ **View :**

This class represents the basic building block for Android's user interface. A View occupies a rectangular area on the screen and is responsible for drawing and event handling. View is the base class for all other views and widgets, which are used to create interactive UI components (buttons, text fields, etc.)

- ▶ **ViewGroup:**

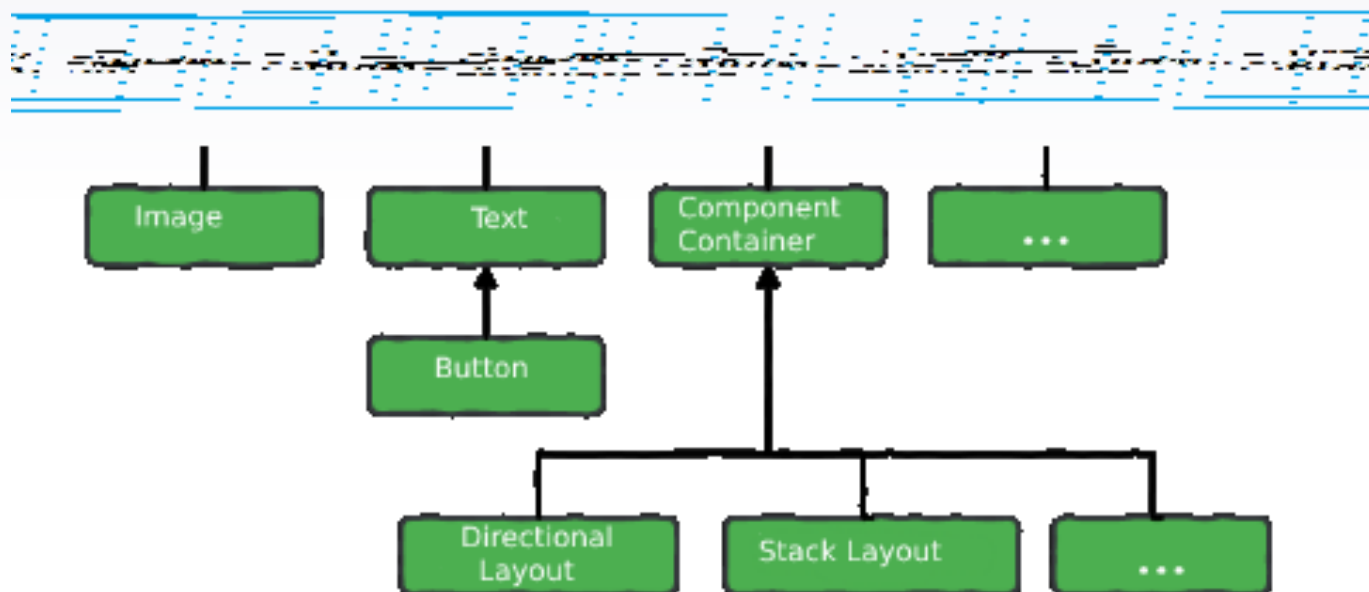
The ViewGroup class is the base class for layouts, which are basically containers that hold other Views (or other ViewGroups).

View Hierarchy (Android)





Component and ComponentContainer Hierarchy (OHOS)



- ohos.agp.components.Component
 - ohos.agp.components.ComponentContainer (implements ohos.agp.components.ComponentParent)
 - ohos.agp.components.AdaptiveBoxLayout
 - ohos.agp.components.DependentLayout
 - ohos.agp.components.DirectionallLayout
 - ohos.agp.components.NestedScrollCoordinator
 - ohos.agp.components.Picker
 - ohos.agp.components.RadioContainer
 - ohos.agp.components.SearchBar
 - ohos.agp.components.ListContainer (implements ohos.agp.components.Text.TextObserver)
 - ohos.agp.components.MagicLayout
 - ohos.agp.components.PositionLayout
 - ohos.agp.components.SlideDrawer
 - ohos.agp.components.StackLayout
 - ohos.agp.components.DatePicker
 - ohos.agp.components.PageFlipper
 - ohos.agp.components.PageSlider
 - ohos.agp.components.ScrollView
 - ohos.agp.components.NestedScrollView
 - ohos.agp.components.TabList
 - ohos.agp.components.TimePicker
 - ohos.agp.components.TableLayout
 - ohos.agp.components.Image
 - ohos.agp.components.IndexBar
 - ohos.agp.components.PageSliderIndicator
 - ohos.agp.components.ProgressBar
 - ohos.agp.components.AbsSlider
 - ohos.agp.components.Rating
 - ohos.agp.components.Slider
 - ohos.agp.components.RoundProgressBar
 - ohos.agp.components.Text
 - ohos.agp.components.Button
 - ohos.agp.components.AbsButton
 - ohos.agp.components.Checkbox
 - ohos.agp.components.RadioButton
 - ohos.agp.components.Switch
 - ohos.agp.components.ToggleButton
 - ohos.agp.components.Clock
 - ohos.agp.components.TabList.Tab
 - ohos.agp.components.TextField

Types of Layouts

ComponentContainers are classified into different types based on how a layout arranges its child components.

- ▶ **Directional Layout**

It extends ComponentContainer. It arranges child components either horizontally or vertically.

- ▶ **Stack Layout**

Provides a layout where components can be overlapped. In general only a single child should be placed inside StackLayout. If multiple child components exist, they will be stacked one above the other and the latest component is displayed on top.

Types of Layouts

- ▶ **DependentLayout**

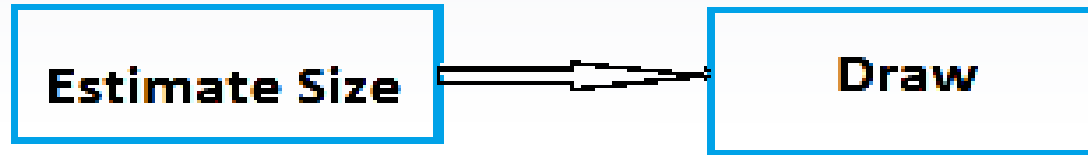
A DependentLayout can contain multiple child components, which specify their positions relative to other components to form the layout.

- ▶ **Table Layout**

Provides a layout for arranging child components in a tabular structure. It provides interfaces for aligning & arranging components with table. The alignment mode, number of rows and columns can be configured.

Creating CustomComponents

- ▶ Every Ability has it's own life cycle similarly Components also have a Life Cycle. A Component which was rendered on the screen must undergo these lifecycle methods to get drawn on the screen correctly.



- ▶ Implement the **Component.EstimateSizeListener** interface, which provides the **onEstimateSize** method to obtain the estimated size and the **setEstimatedSize** method to set the estimated size for the component.
- ▶ Implement the **Component.DrawTask** interface, and execute the draw task using the **onDraw** method. You can use the **Canvas** provided by this method to accurately control the appearance of UI elements.

Creating CustomComponents

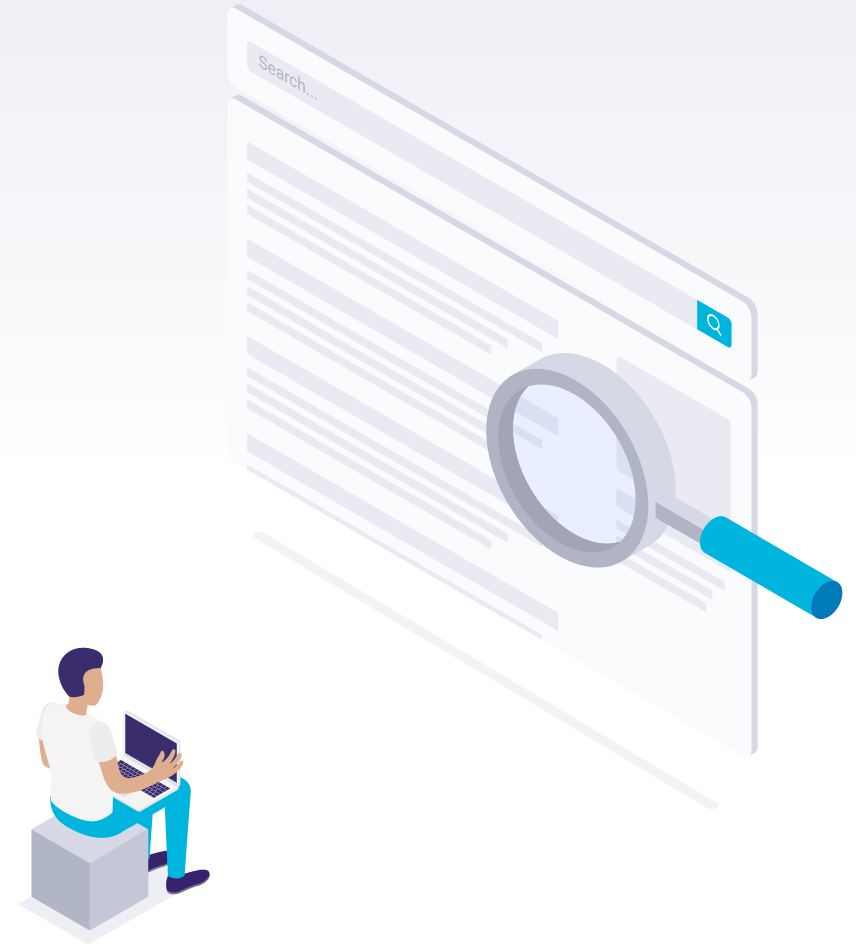
- ▶ Reference:

Android bootstrap library : <https://github.com/Bearded-Hen/Android-Bootstrap>

OHOS Version : <https://gitee.com/openharmony-tpc/ohos-Bootstrap>

THANKS!

Any questions?



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