

Extending Views



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ANDROID ARCHITECT

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Overview



Intro to extending views

Customizing existing views

Intro to the canvas

Considerations when extending views



Intro to Extending Views



Basic Components

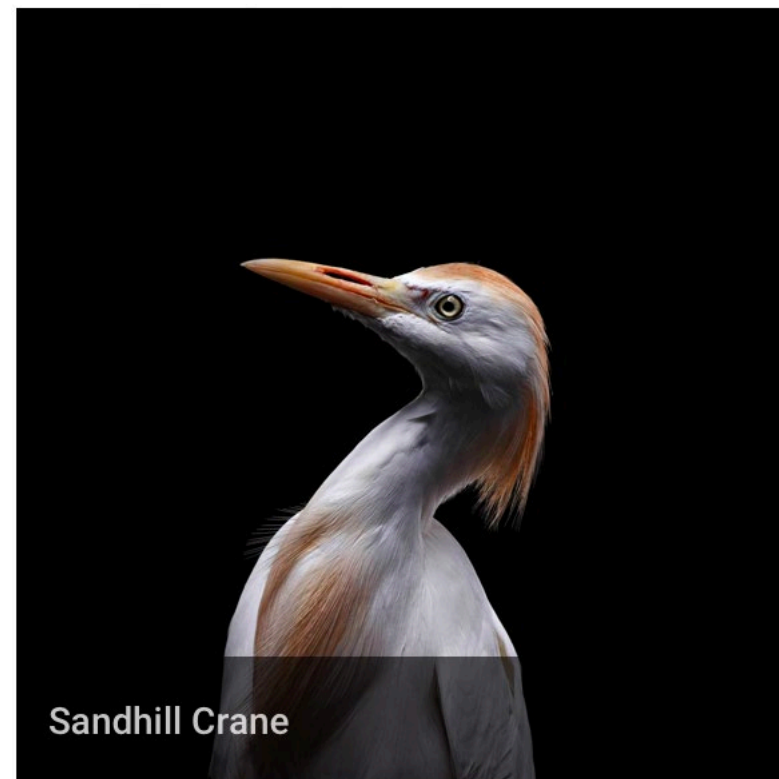
Label

SHOW

Label

|Input text


255





Sandhill Crane




Compound Components











Basic Components

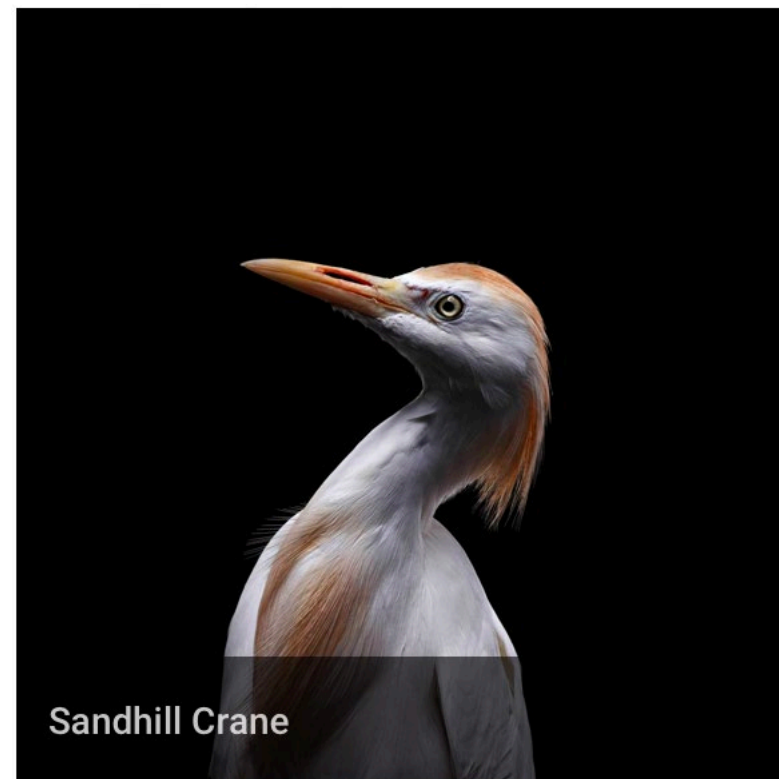
Label

SHOW

Label

|Input text

255



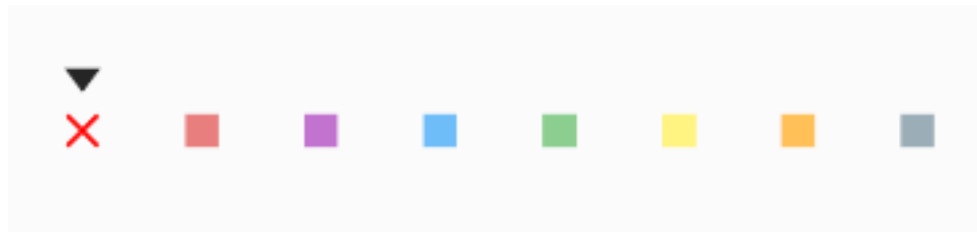
Sandhill Crane



Extending Views



Extending Views



Extending Views

Basic Component



Customized Component



Compound Component

<  >  Enabled



Iteration

Compound Component



Subclassed Custom View

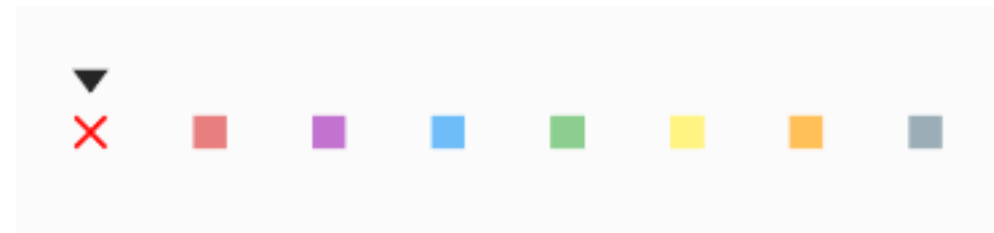


Compound Component vs. Subclass

Compound Component

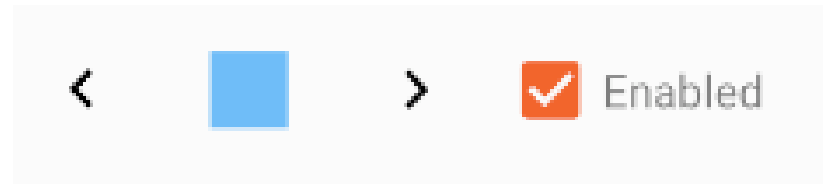


Subclassed Custom View



Compound Component vs. Subclass

Compound Component

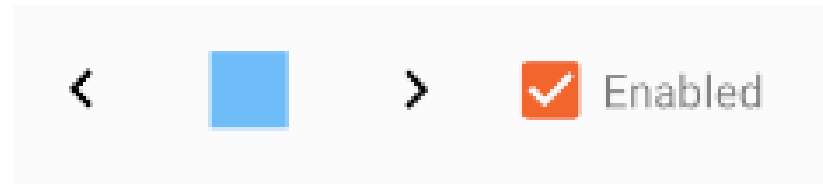


Subclassed Custom View



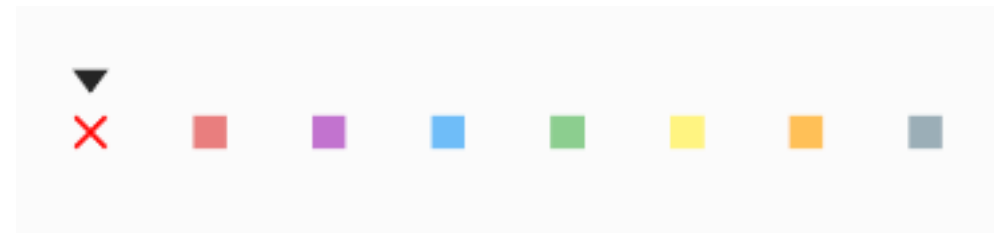
Compound Component vs. Subclass

Compound Component



Extend ViewGroup

Subclassed Custom View



Extend View



Extending a View

More customization

Simpler than creating a view from scratch



Customizing Existing Views



<Live Coding>



Intro to the Canvas



Canvas



Paint



Custom Drawing



Override onDraw

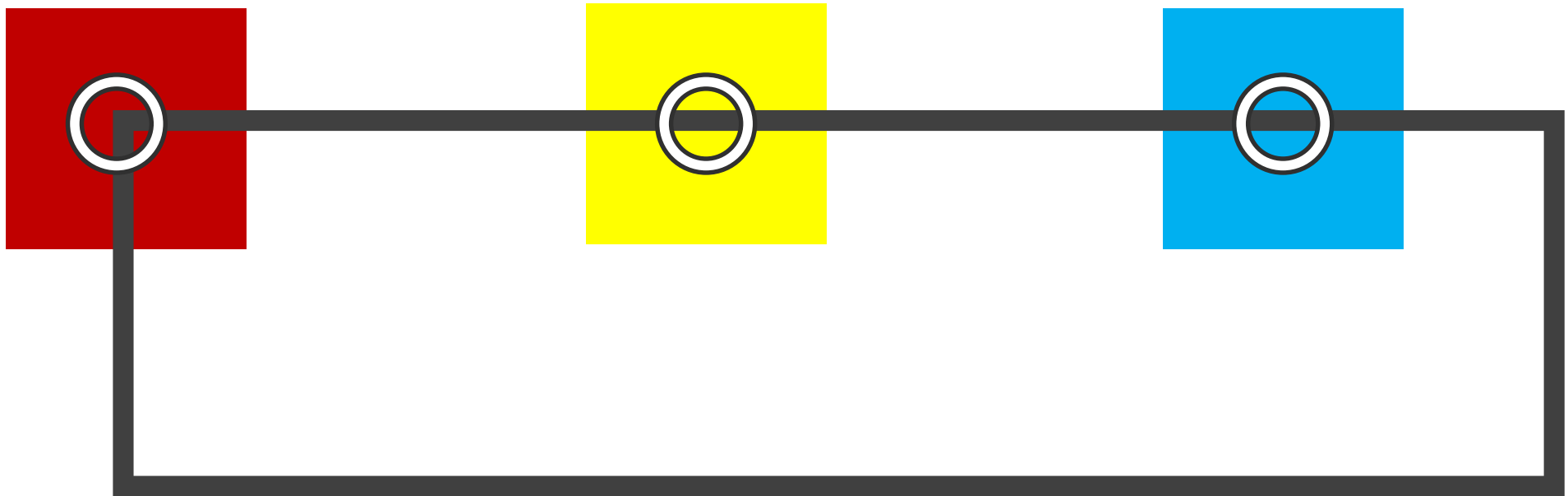
```
override fun onDraw(canvas: Canvas?) {  
    super.onDraw(canvas)  
    // ...  
}
```



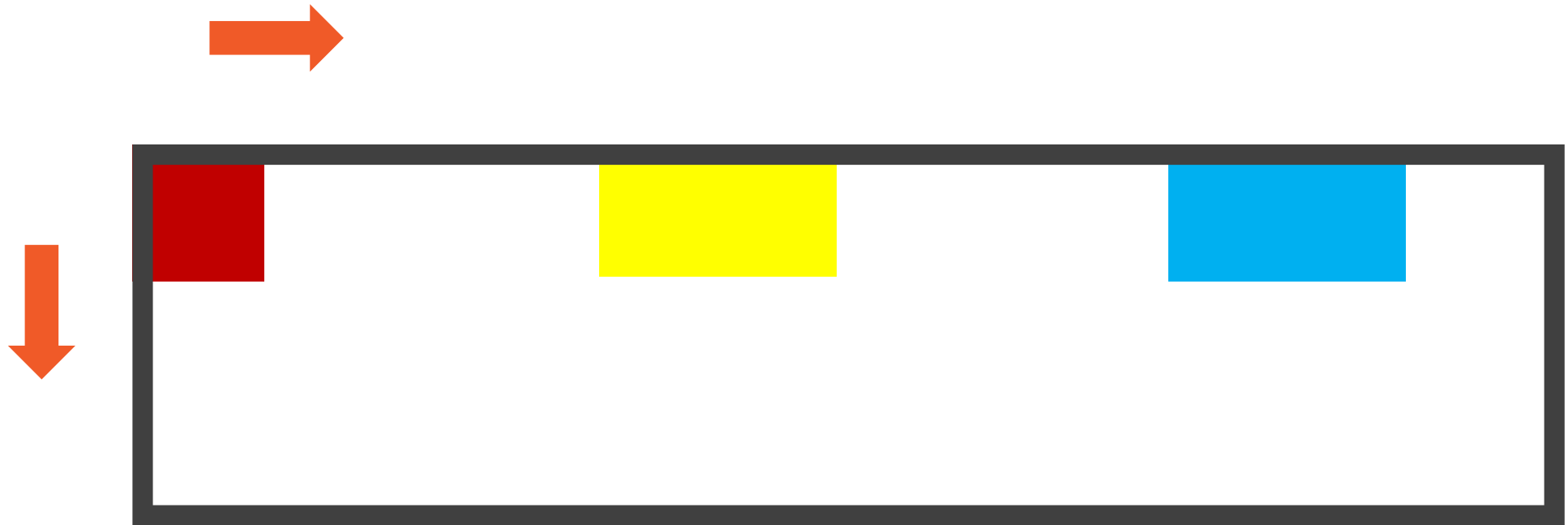
<Live Coding>



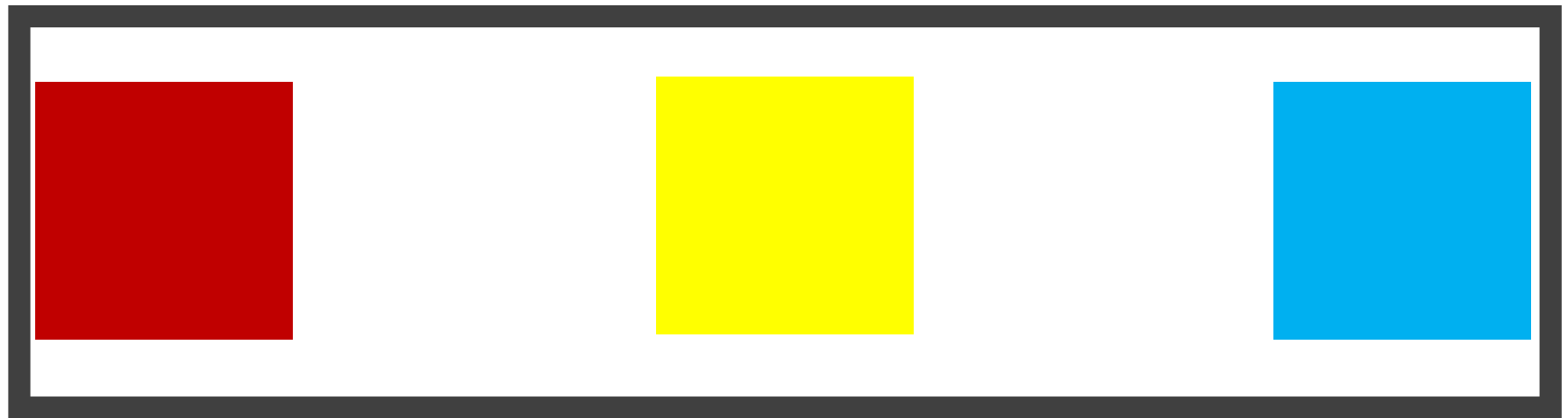
Clipping



Clipping



Clipping



<Live Coding>



Considerations When Extending Views



Performance



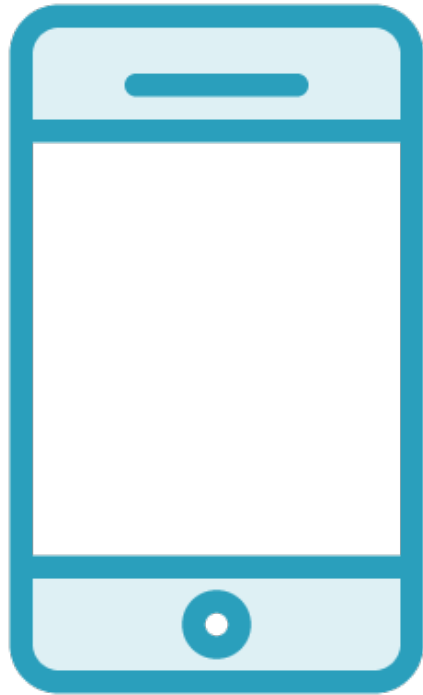
Optimization



<Live Coding>



Screen Size



<Live Coding>



DP



DIP



Density-Independent Pixels



Physical Pixels

160 dpi device



1 pixel



Physical Pixels

160 dpi device



480 dpi device



Density-Independent Pixels

160 dpi device



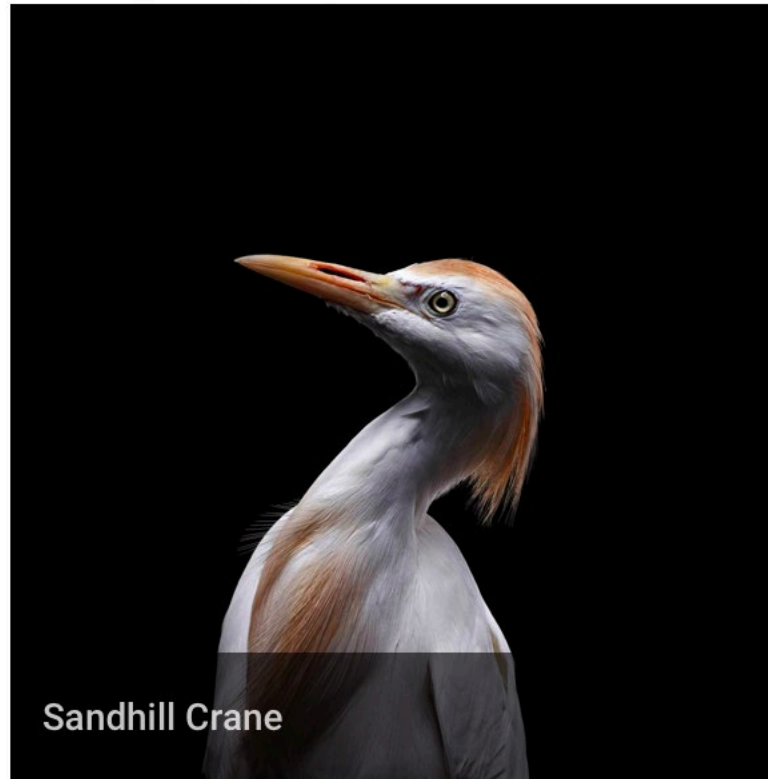
480 dpi device



<Live Coding>



Reusable



Extending Views

Benefits

Take advantage of existing functionality

Don't have to worry about measuring

Limitations

Hard to stray too far from parent view

Sometimes parent methods and fields aren't exposed



Summary



Intro to extending views

Customizing existing views

Intro to the canvas

Considerations when extending views



Next Up: Creating Custom Views

