Handling Custom View Positioning and Sizing

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What to Expect from This Module

Custom View Placement and Positioning

Managing Padding within a Custom View

Indicating Custom View Measurements

Making Measurements Adaptable

Adapting Drawing to Size Variations

Placing a Custom View on a Layout

Custom views used much like built-in views

- Normally placed in a layout resource
- Contained within container a view

Can use class name as element name

- Must use package-qualified name

Can use the “view” element

- Specify class name with “class” attribute
- Must package-qualify class name

Custom View Positioning

Positioning of the custom view itself

- Controlled by the container view that contains the custom view

Positioning within the custom view

- Custom view controls content position
- Responsible to handle padding
- Padding values available from getPaddingXXX methods

Indicating View Measurements

View must provide measurements

- Override onMeasure method
- Calculate desired measurements
- Need to fit within constraints

onMeasure parameters

- Width and height constraints
- Each received as encoded integer
- Use View.MeasureSpec class methods to access contained values

Indicating View Measurements

Resolving desired vs. constrained values

- Use resolveSizeAndState method
- Returns appropriate value based on desired size working within constraints

Specifying measurements

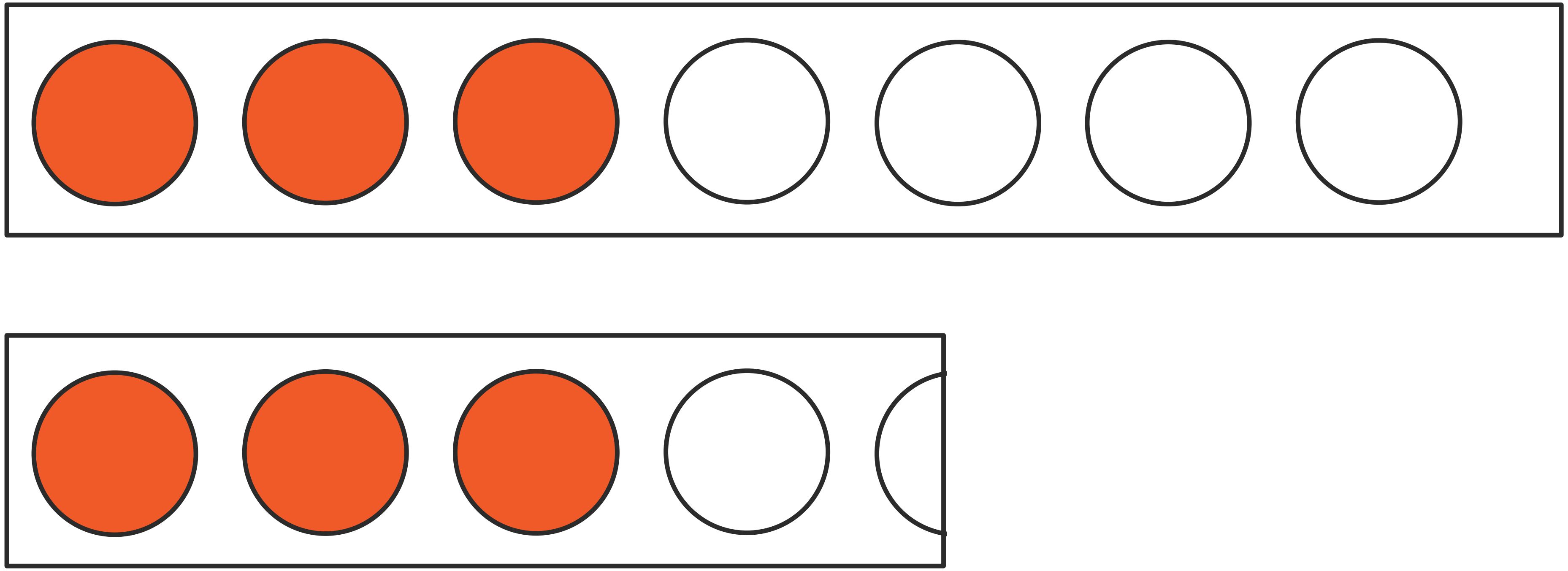
- Call setMeasuredDimension
- Pass in view width and height

View Measurement Adaptability

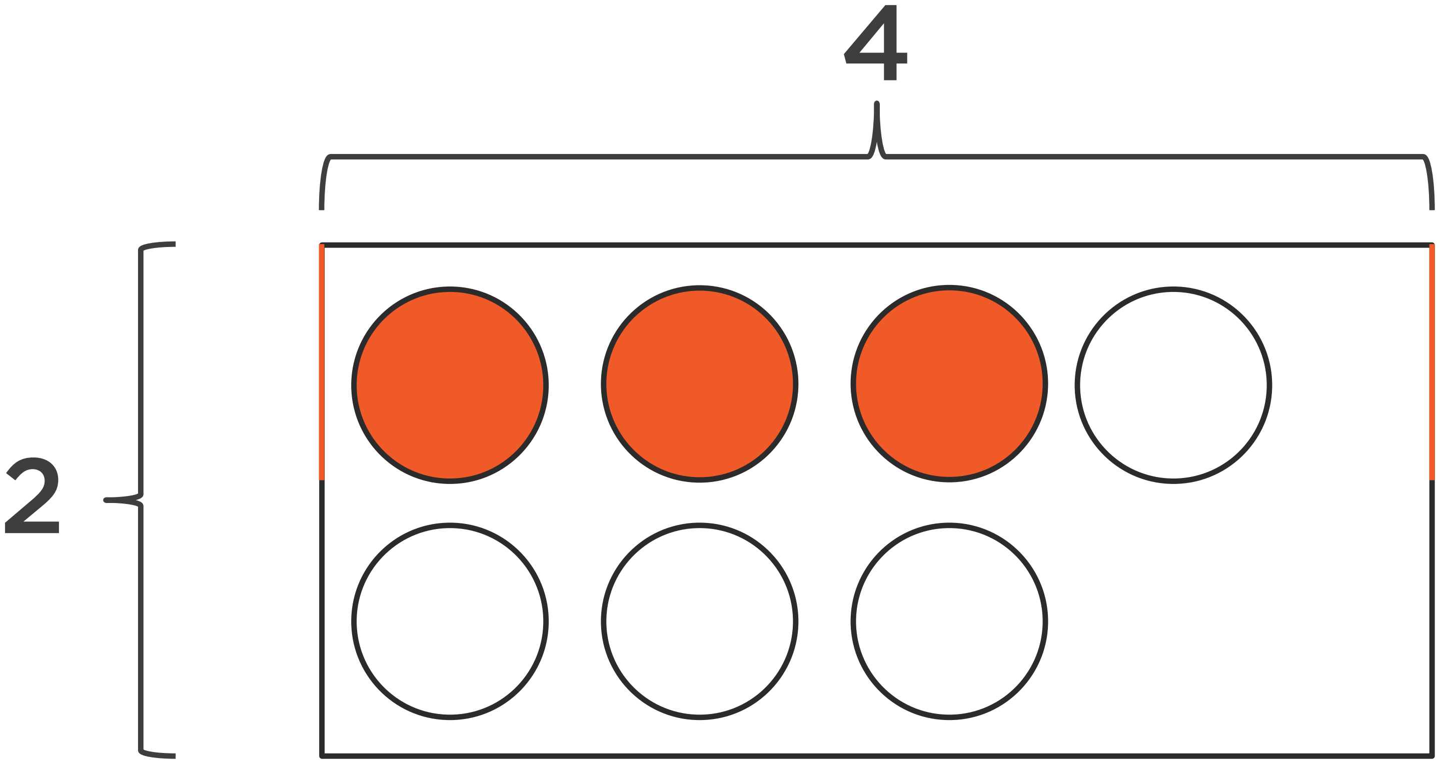
Make measurements reasonably adaptable

- View size often constrained
- Can just accept being clipped
- Can indicate that a subset is displayed
- Can shrink size of contained drawing
- Can wrap

View Measurement Adaptability



View Measurement Adaptability



View Measurement Adaptability

Measurement & placement is a negotiation

- Often requires multiple passes
- Container views generally due their best to accommodate desired measurements

View Measurement Adaptability

onMeasure method

- May get called several times
- Avoid drawing position details
- Focus on calculating overall width and height measurements

onSizeChanged method

- Called when size is determined/changed
- Calculate drawing positions here

Summary

Custom views used much like built-in views

- Normally placed in a layout resource
- Tag an be package-qualified class name
- Can use “view” tag with “class” attribute

Positioning of custom view itself

- Controlled by view’s container

Positioning within custom view

- Custom view controls content positioning
- Responsible to handle padding

Summary

View must provide measurements

- Override onMeasure method
- Must fit within size constraints
- Must specify measurements by calling setMeasuredDimension method

Measurement & placement is a negotiation

- We indicate desired size in onMeasure
- onSize receives size to use

Summary

Measurement & placement is a negotiation

- We indicate desired size in onMeasure
- onSize receives size to use