Creating a Custom View

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What to Expect from This Module

Custom Views

Adding a Custom View with Android Studio

Creating the View Appearance

Calculating Drawing Positioning

Performing View Drawing

Custom Views

Views can be customized

- Most view classes can be extended

- Add new methods to simplify your common usage scenarios

- Override existing methods to provide custom view behavior

Custom Views

Fully customized views

- Generally extend the View class directly
- You take full control of appearance
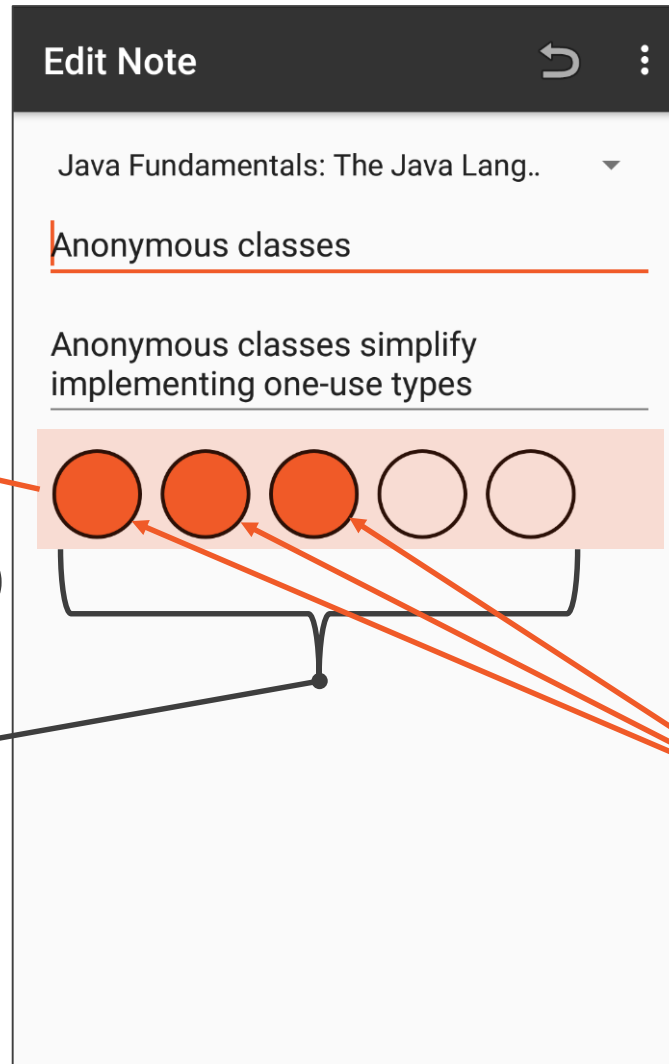- You customize behavior
- You can include customized events, etc.

Add a Custom View to Our App

ModuleStatusView

setModuleStatus(boolean[])

Number of Modules

Completed Modules

Edit Note

Java Fundamentals: The Java Lang..

Anonymous classes

Anonymous classes simplify implementing one-use types

View Appearance

Appearance created by drawing

- Must draw all aspects

The drawing issues that we must address

- When
- Where
- What
- How

When to Draw

Override onDraw method
- Called whenever UI needs rendering
- Perform view's drawing behavior
- Receives a Canvas reference

Where to Draw

Canvas

- Provides a surface for drawing

Positioning individual items

- Each item is positioned within canvas
- Positioning is expressed in pixels

What to Draw

Canvas
- Includes variety of drawing methods

Text
- drawText

Bitmaps
- drawBitmap

Geometries
- drawLine, drawSquare, drawCircle
- Many, many more

How to Draw

Paint

- Specifies color
- Specifies other characteristics
- Anti-aliasing enabled in most cases

How to Draw

Common text paint characteristics
- Size, spacing, alignment , etc.
- Effects like underline & strike-thru
- Typeface

Paint class includes text helper methods
- Measuring text size, etc.

TextPaint class extends Paint
- Includes a few additional fields
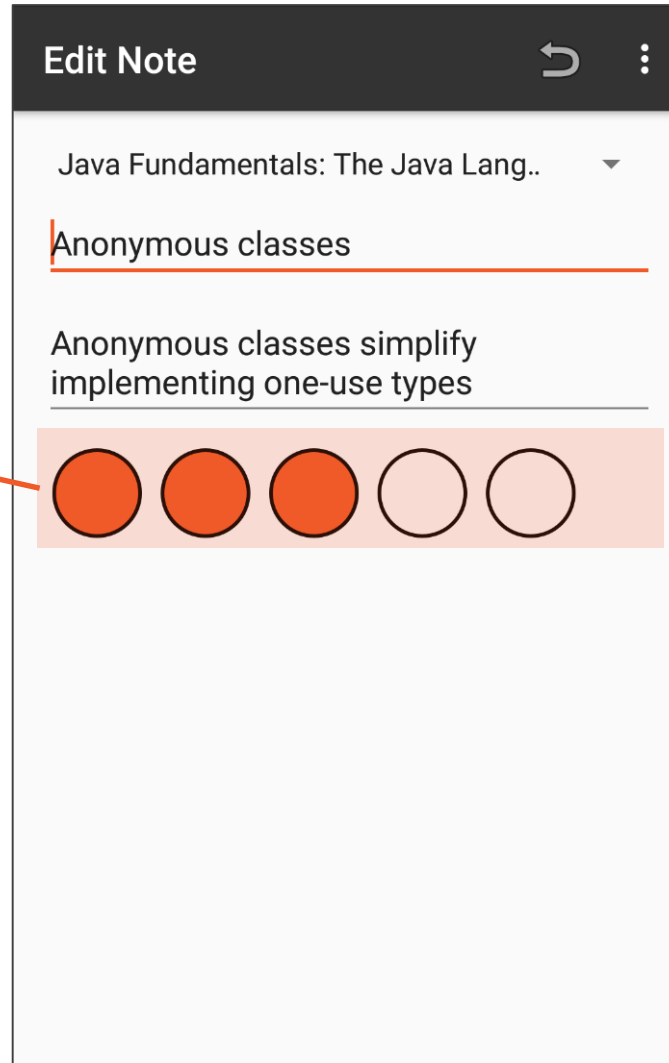- Most of the work of drawing text is handled by the Paint class

How to Draw

Common geometry paint characteristics
- Paint with fill and/or stroke style
- Stroke path width
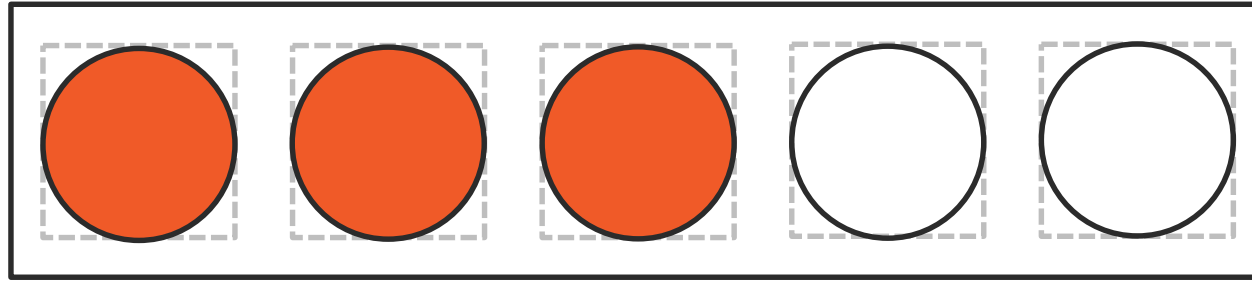- Stroke path effects like dash, etc.

Planning Our View Appearance

ModuleStatusView

Planning Our View Appearance

Where	**What**	**How**
Shape size: 144px	Circle	Paint outline
Spacing: 33px		Style: Stroke
Module rectangles		Color: Black
		Stroke width: 6px
		Paint fill
		Style: Fill
		Color: Orange

Summary

Views can be customized
- Most view classes can be extended
- Add/override methods for your needs

Fully customized views
- Normally extend View class directly
- You take full control of behavior
- You take full control of appearance

Summary

Override View onDraw method

- Called when view needs to be drawn

- Receives a Canvas reference

Canvas class

- Addresses where & what to draw

- Serves as target of drawing

- Drawing positioned within Canvas

- Provides methods for drawing text, bitmaps, and geometries

Summary

Paint class

- Indicates how to draw

- Specify color and other characteristics

- Anti-aliasing enabled in most cases