

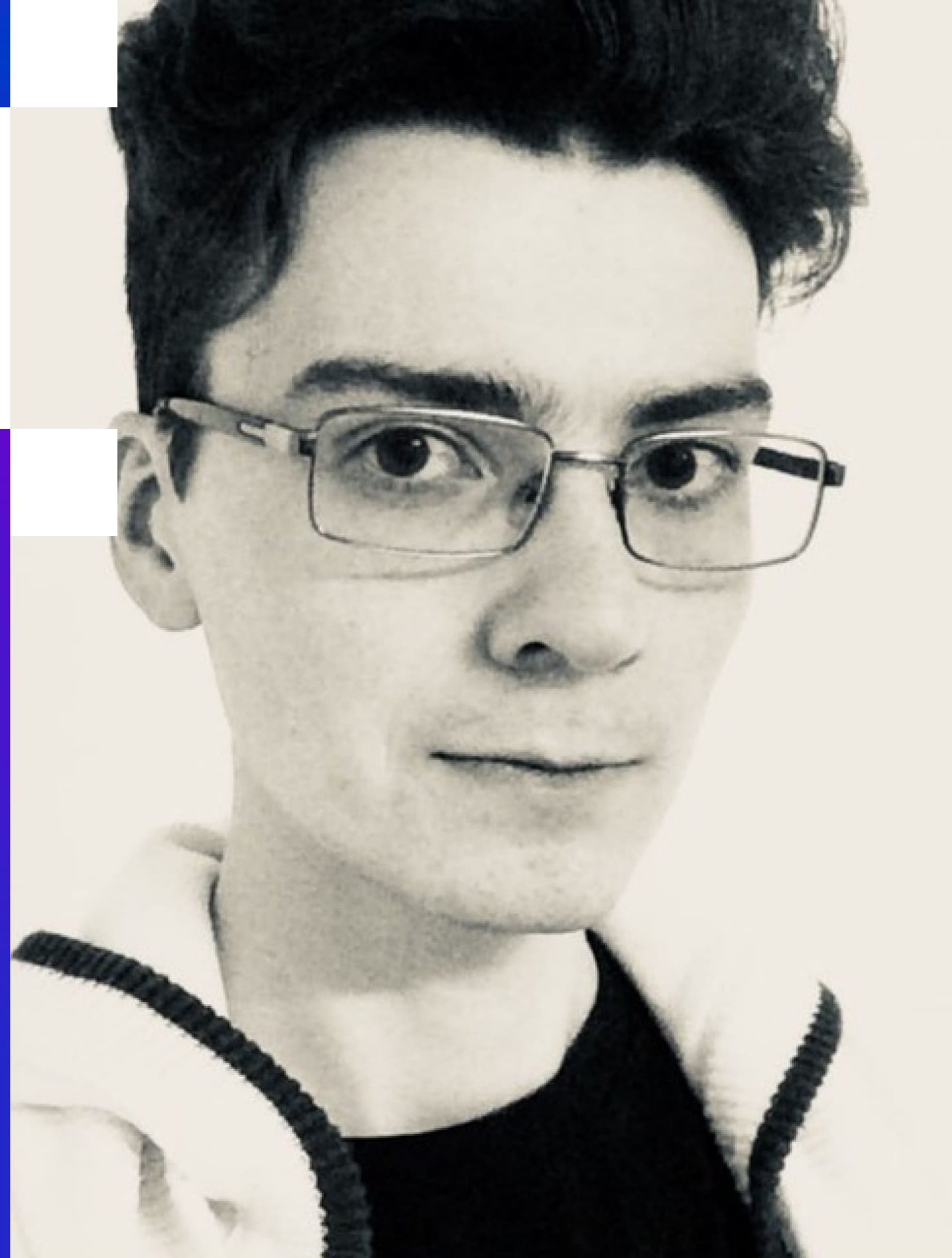


iOS Crew
22-26 ноября

Анимации

Григорий Бернгардт
Surf

Воркшоп:
Advanced анимации с CALayer



Core Animation

UIKit / AppKit

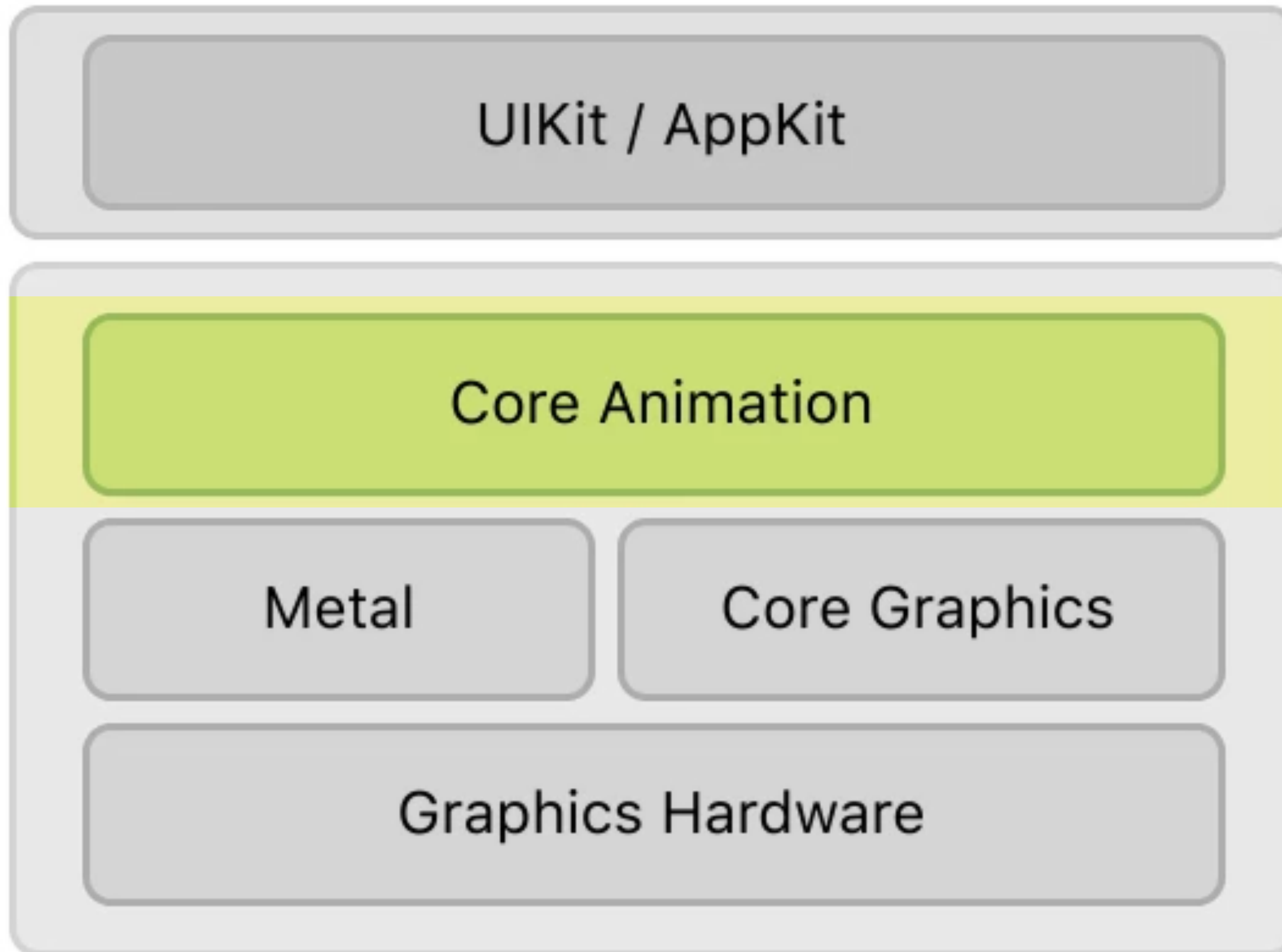
Core Animation

Metal

Core Graphics

Graphics Hardware

Core Animation



Александр Канчурин

Простота и скрытая мощь **UIView.animate**



Георгий Остроброд

Металлический и анимированный **GUI**

Core Animation

UIKit / AppKit

Core Animation

Metal

Core Graphics

Graphics Hardware



What is CoreAnimation

- 🖼️ Static

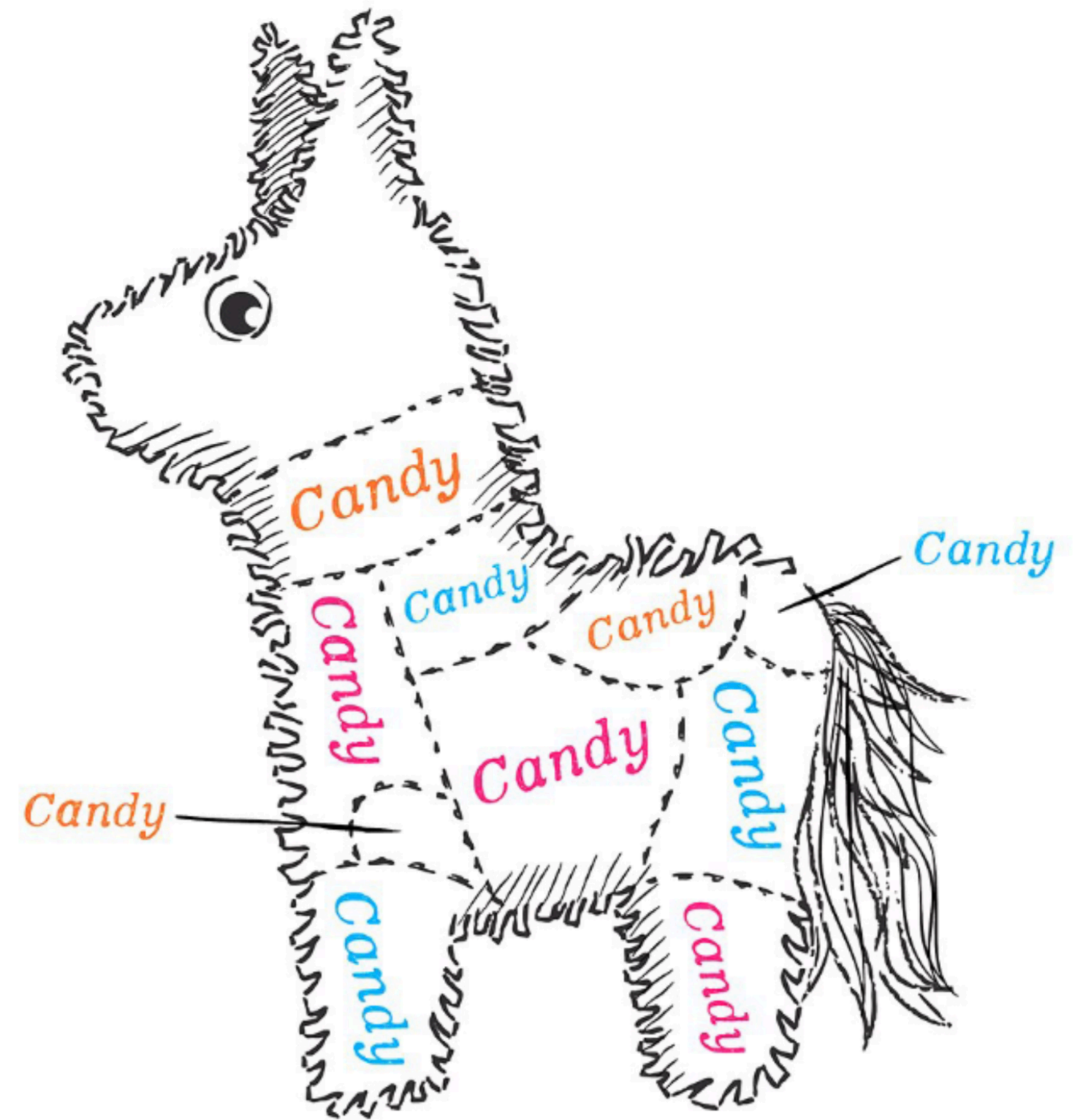
Layer trees and rendering pipeline

CALayer CALayerDelegate CAConstraint CALayoutManager
CAConstraintLayoutManager CATextLayer CAShapeLayer
CAGradientLayer CAEmitterLayer CAEmitterCell CAScrollLayer
CATiledLayer CATransformLayer CAReplicatorLayer CAMetalLayer
CAEAGLLayer CAOpenGLLayer CADisplayLink

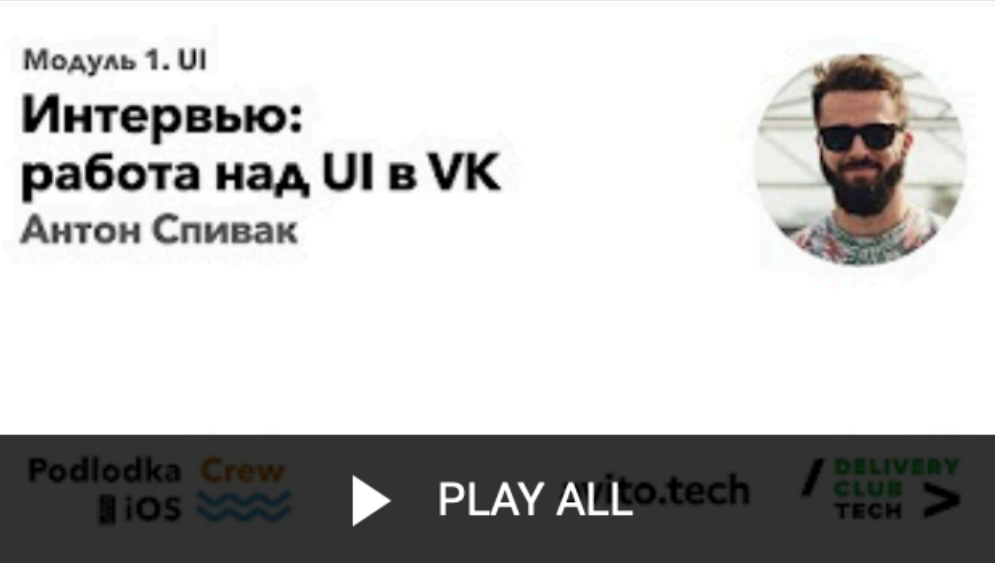
- 🚀 Dynamic

Animations and timing

CAAction CATransform CAAAnimation CAAAnimationDelegate
CAPropertyAnimation CATransition CAValueFunction
CAAnimationGroup CATransaction CABasicAnimation
CAKeyframeAnimation CASpringAnimation CACurrentMediaTime
CAMediaTimingFunction CAMediaTiming



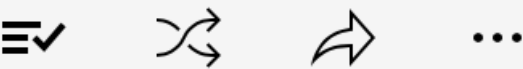
Static



Podlodka iOS Crew #2

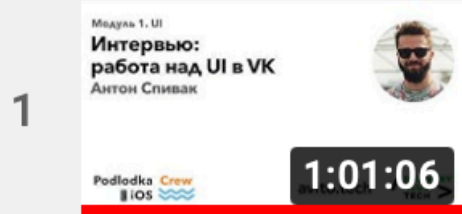
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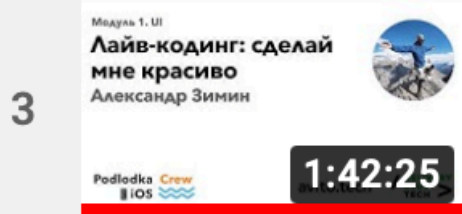
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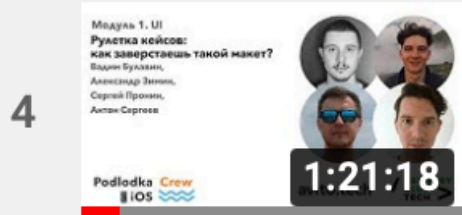
Разбор типичных интерфейсных проблем современных приложений / Никита Прокопов

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Лайв-кодинг: сделай мне красиво / Александр

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Рулетка кейсов: как заверстаешь такой макет?

Podlodka



Доклад: устройство UI в iOS / Антон Сергеев, Андрей Рычков

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Дизайн система — когда, зачем и как? / Александр Андрюхин/Денис Кириллов/Евгений Киреев/Антон Спивак

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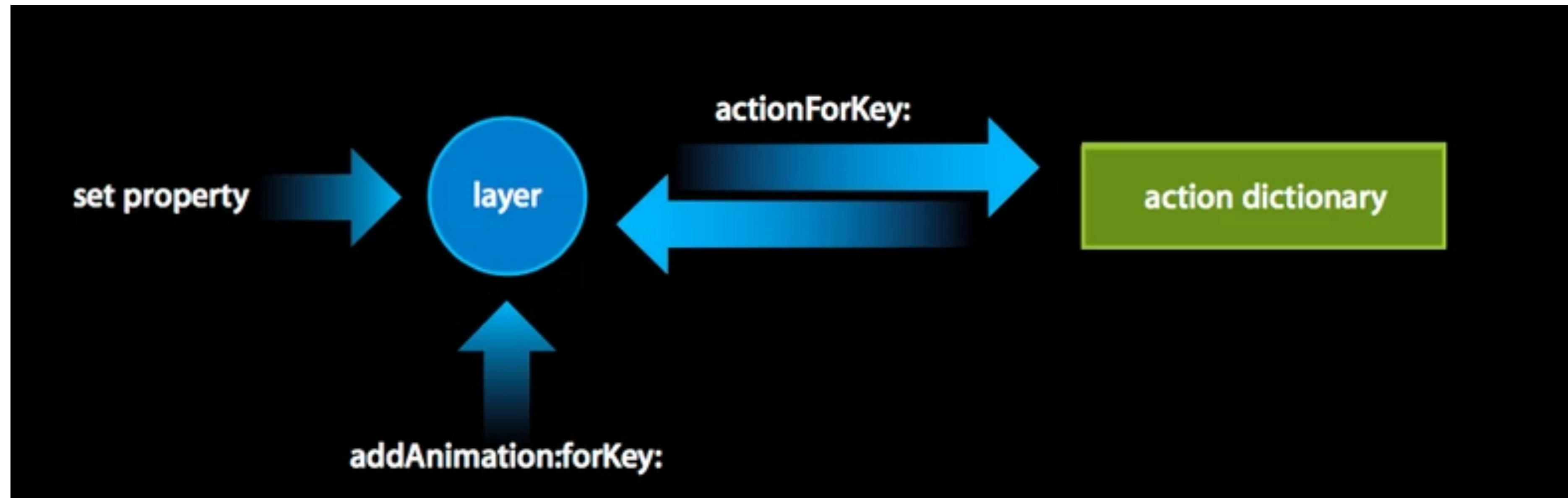
Лайвкодинг: Реализуем макет на SwiftUI / Вадим Булавин

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Agenda

- Implicit  Explicit Animations
-  Property animations
- Timing 
- Groups 

CAAction

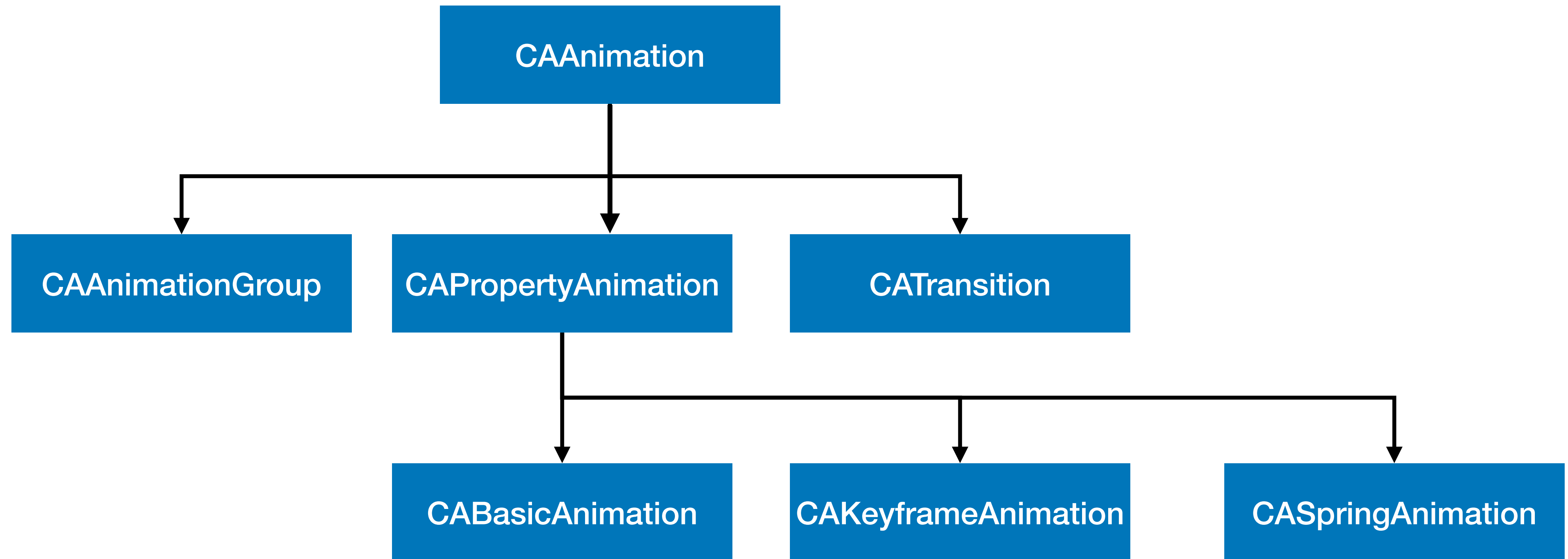


Implicit & Explicit

Явные и неявные анимации в СА

- Что такое неявные анимации
- Транзакции
- UIView и ее backing layers
- CAAction

CAAnimation

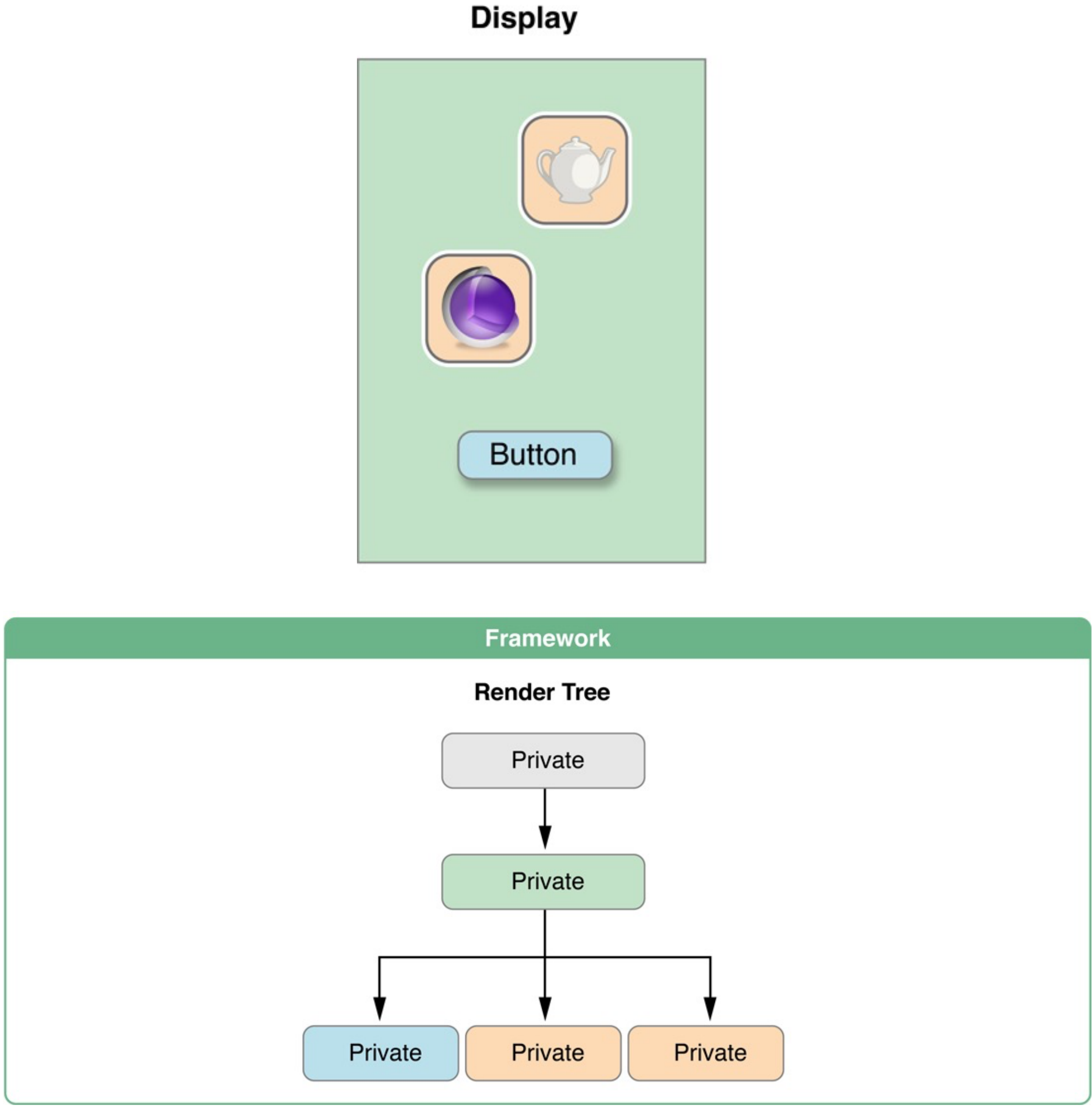
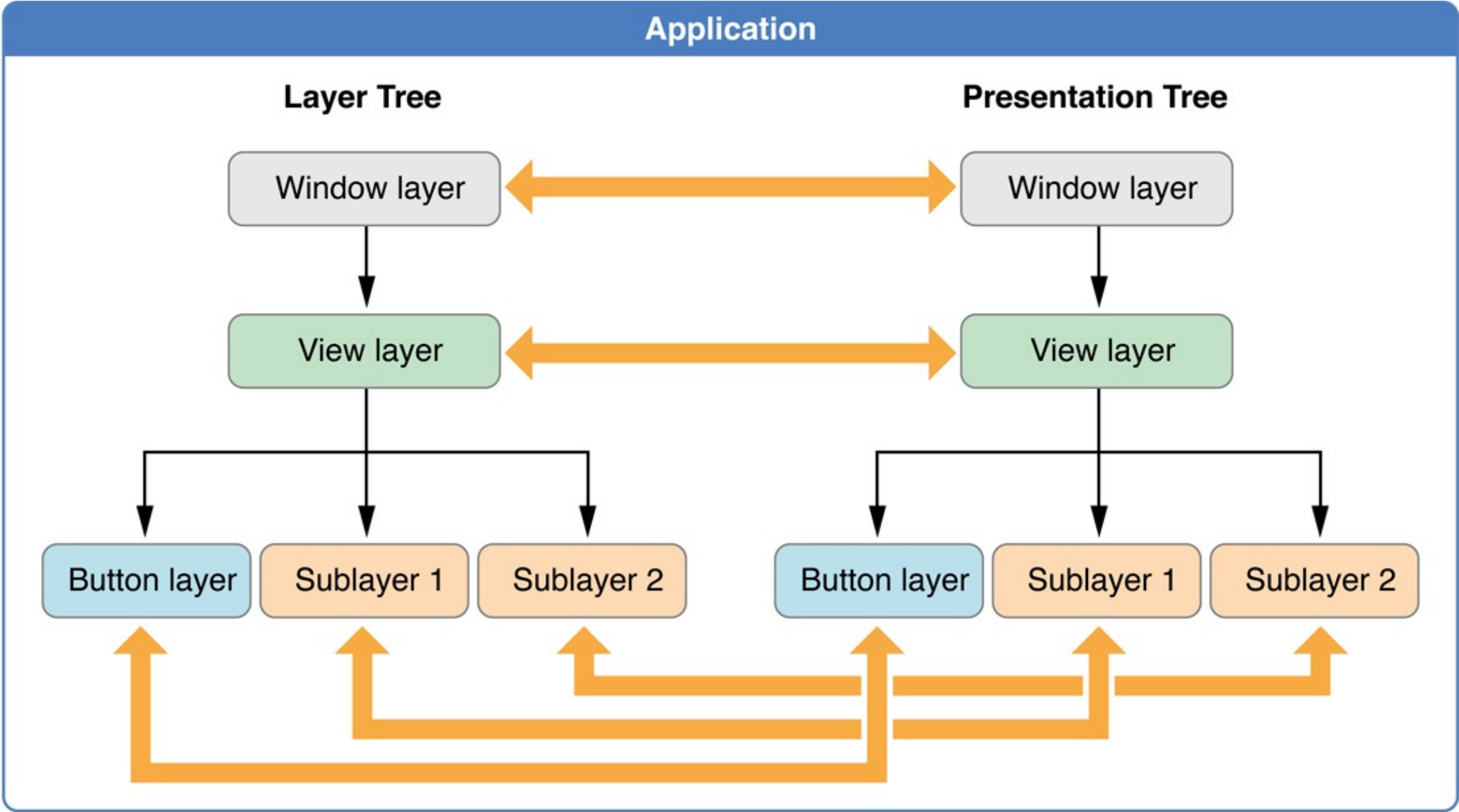


Animatable properties

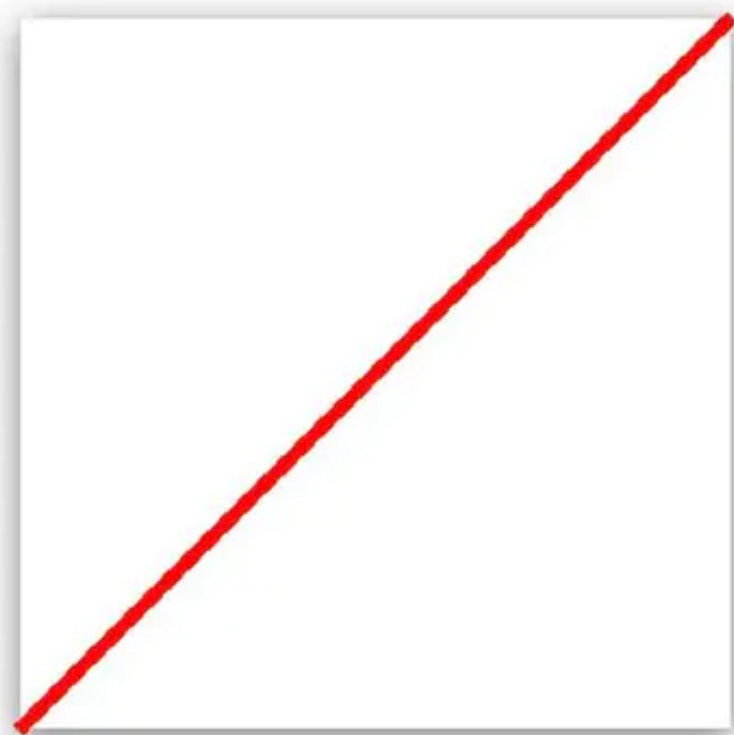
CALayer

Appearance	Content	Filters	Geometry	Transformations
opacity	contents	filters	bounds	transform
isHidden	contentsRect	compositingFilters	position	sublayerTransform
backgroundColor	contentsCenter	backgroundFilters	zPosition	transform.rotation
cornerRadius			anchorPoint	transform.rotation.x
borderWidth			anchorPointZ	transform.rotation.y
borderColor				transform.rotation.z
shadowColor				transform.scale
shadowOffset				transform.scale.x
shadowOpacity				transform.scale.y
shadowRadius				transform.scale.z
shadowPath				transform.translation
masksToBounds				transform.translation.x
isDoubleSided				transform.translation.y
				transform.translation.z

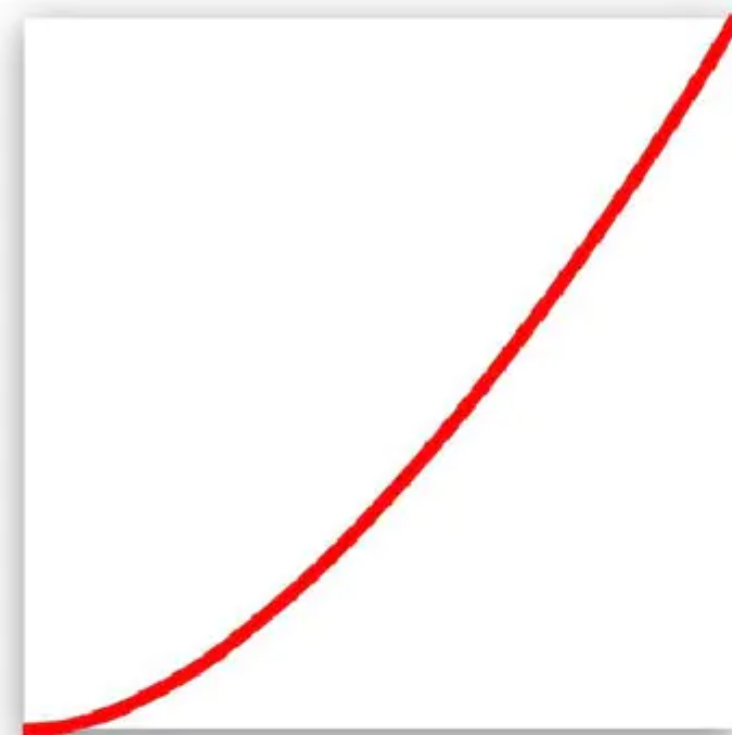
Presentation & model



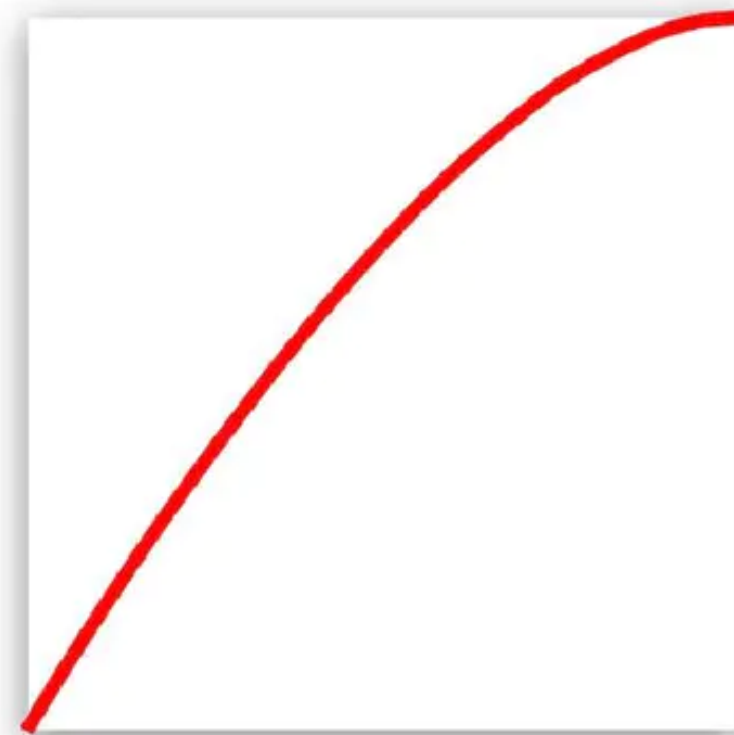
TimingFunction



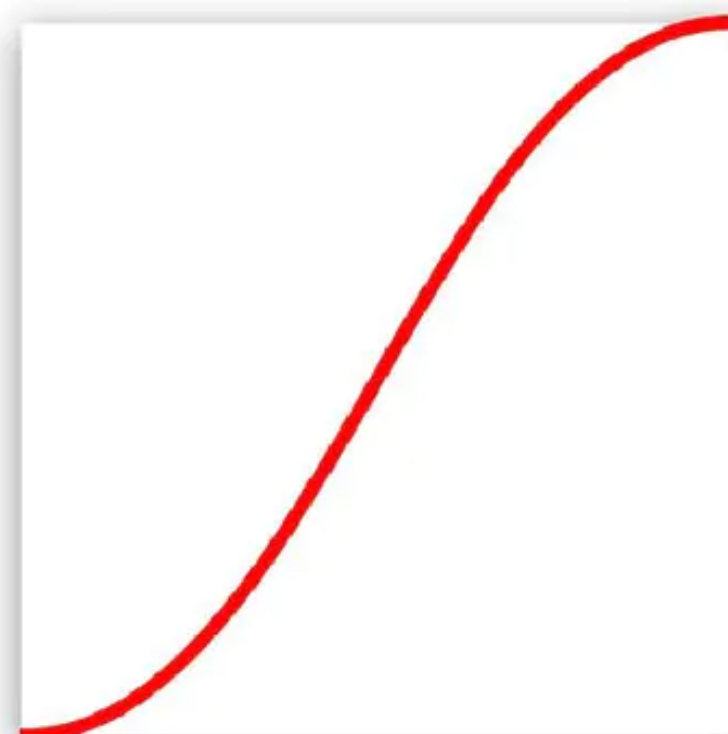
kCAMEdiaTimingFunctionLinear



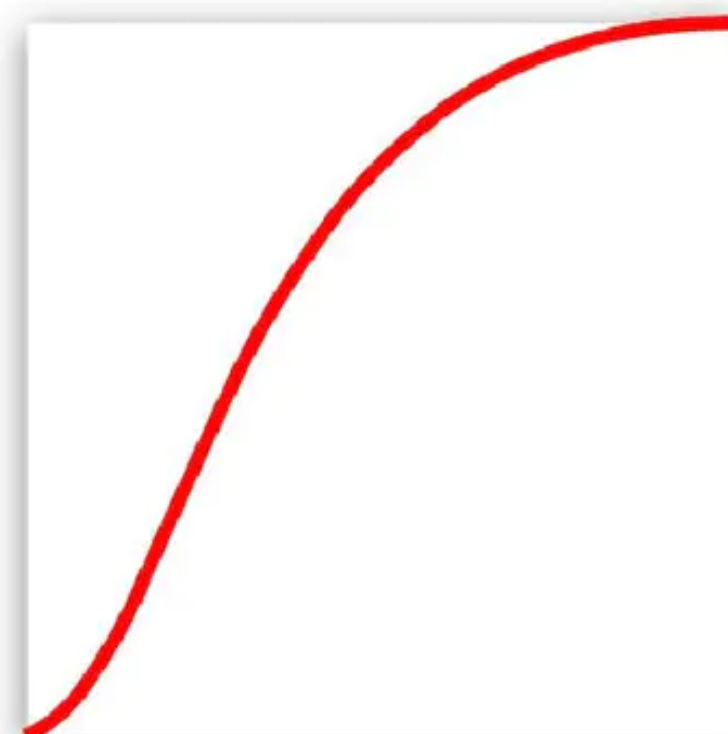
kCAMEdiaTimingFunctionEaseIn



kCAMEdiaTimingFunctionEaseOut



kCAMEdiaTimingFunctionEaseInEaseOut



kCAMEdiaTimingFunctionDefault



Basic Animation

- `CAPROPERTYAnimation`
- `CABASICAnimation`
- Presentation & model layers
- Timing functions
- `CAAnimationDelegate`

CALayer

- CAShapeLayer
- CAGradientLayer
- CATextLayer
- CAReplicatorLayer
- CATransformLayer
- CATiledLayer
- CAScrollLayer
- CAEmitterLayer
- CAMetalLayer

CALayer

- **CAShapeLayer**
 - CAGradientLayer
 - CATextLayer
 - **CATransformLayer**
 - **CAReplicatorLayer**
 - CATiledLayer
 - CAScrollLayer
 - CAEmitterLayer
- CAMetalLayer
- 
- 

Animatable properties

CALayer subclasses

CAGradientLayer

colors

locations

endPoint

startPoint

CAShapeLayer

path

fillColor

lineDashPhase

lineWidth

miterLimit

strokeColor

strokeStart

strokeEnd

CATextLayer

fontSize

foregroundColor

Animatable properties

CALayer subclasses

CAGradientLayer

colors

locations

endPoint

startPoint

CAShapeLayer

path

fillColor

lineDashPhase

lineWidth

miterLimit

strokeColor

strokeStart

strokeEnd

CATextLayer

fontSize

foregroundColor

...



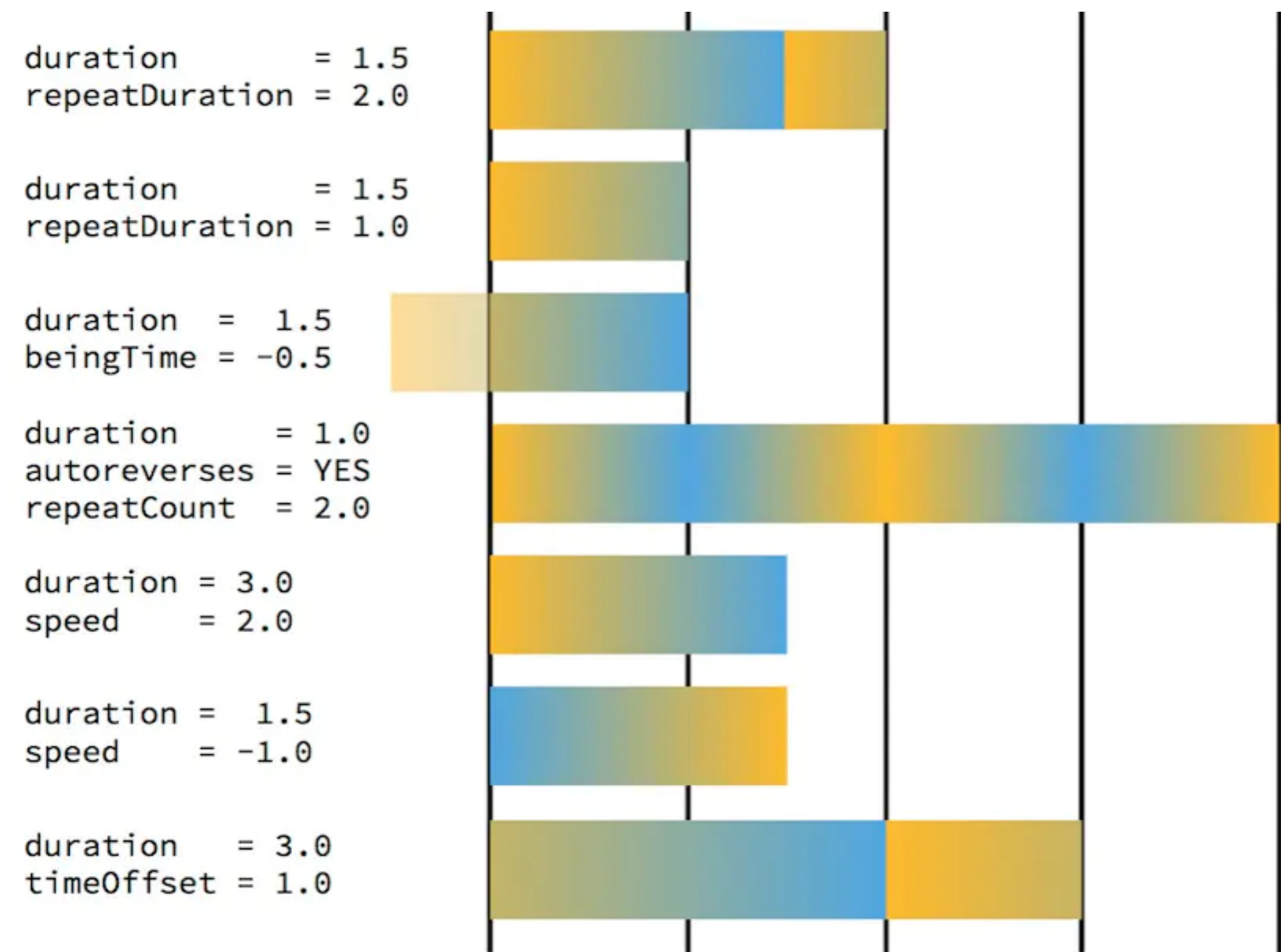
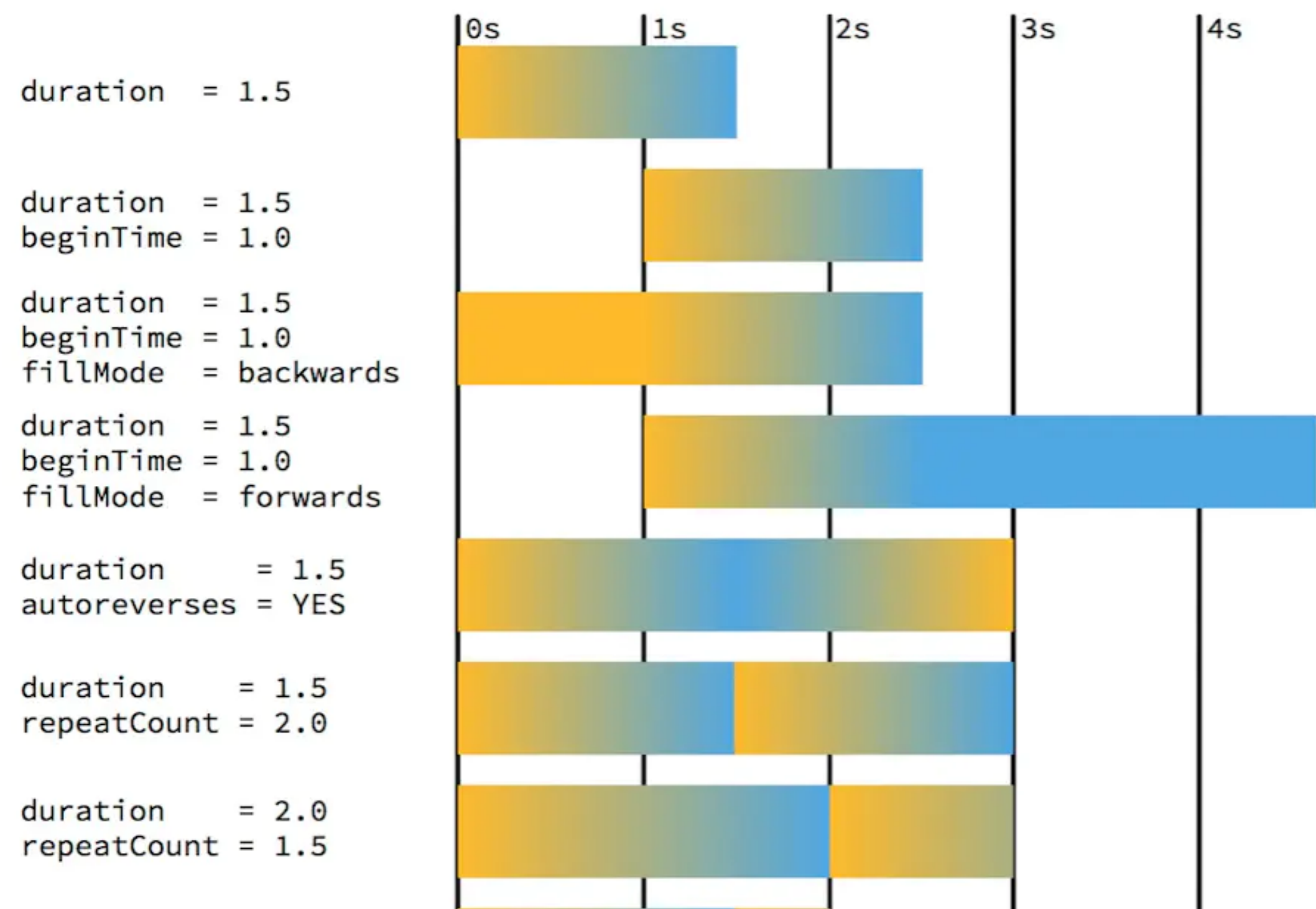
```
var fillColor: CGColor?
```

The color used to fill the shape's path. Animatable.

Keyframe Animations

- CAKeyframeAnimation
- CAShapeLayer и анимирование path
- Движение вдоль пути
- Сдвиг старта анимации

CAMediaTiming



Timing

На примере сферы

- CATransformLayer
- CALayer timing: duration, speed, timeOffset, beginTime

Groups

На примере репликаций

- `CAReplicatorLayer`
- `CAAnimationGroup`