

iOS7

Animations & Dynamics

Before iOS7

UIView

```
[UIView animateWithDuration:1.0 delay:0.1 options:UIViewAnimationOptionCurveLinear animations:^
{
    self.view.frame = CGRectMake(0, 200, self.view.frame.size.width, self.view.frame.size.height);
}
completion:^(BOOL finished)
{
    self.view.userInteractionEnabled = true;
}
];
```

Before iOS7

Core Animation

```
CABasicAnimation *fullRotation = [CABasicAnimation animationWithKeyPath:@"transform.rotation"];  
[fullRotation setFromValue:[NSNumber numberWithFloat:0]];  
[fullRotation setToValue:[NSNumber numberWithFloat:((360*M_PI)/180)]];  
[fullRotation setDuration:0.5f];  
  
[[self.view layer] addAnimation:fullRotation forKey:@"transform.rotation"];
```

iOS7

spring effects

```
[UIView animateWithDuration:2.0 delay:0.0 usingSpringWithDamping:0.8 initialSpringVelocity:0.5
options:UIViewAnimationOptionCurveEaseInOut animations:^
{
    self.view.frame = CGRectMake(0, 200, _view.frame.size.width, _view.frame.size.height);
}
completion:^(BOOL finished)
{
}
];
```

iOS7

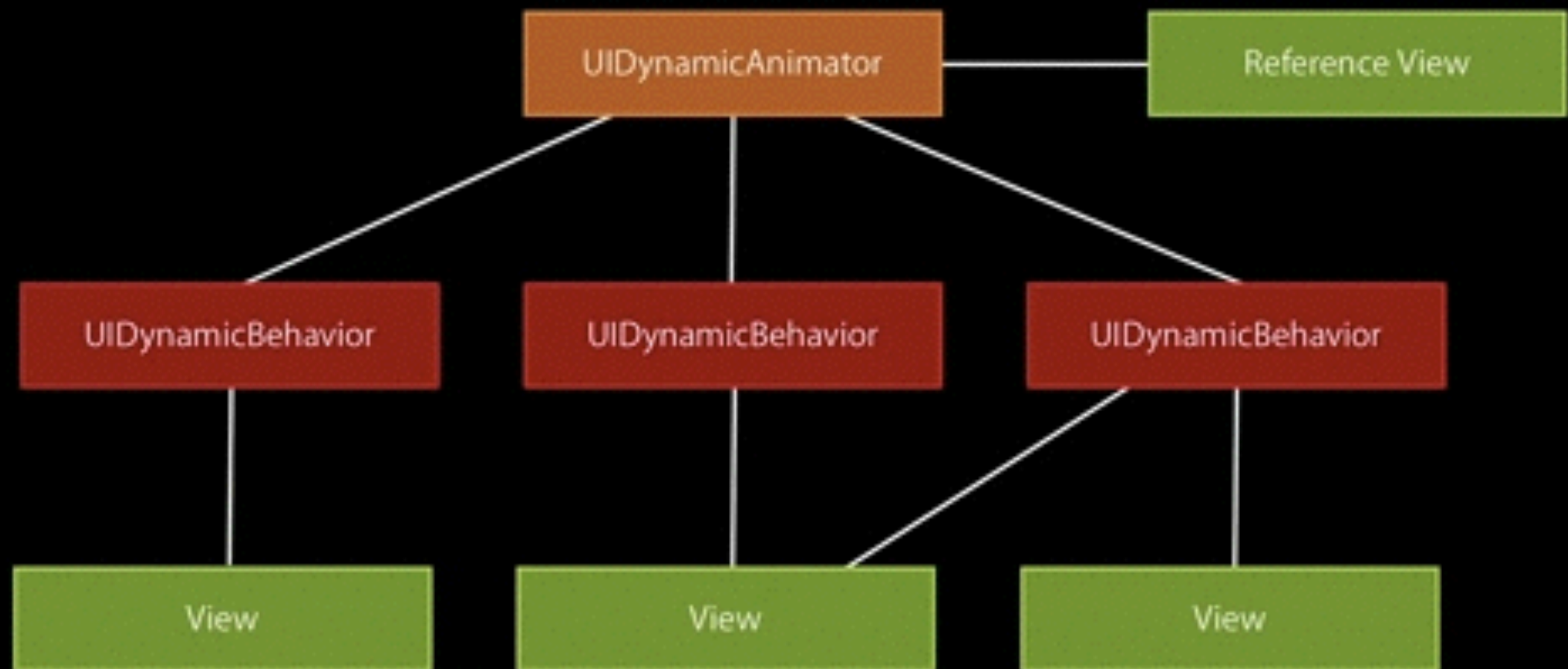
keyframe animation

```
[UIView animateKeyframesWithDuration:1.0 delay:0.0 options:UIViewKeyframeAnimationOptionCalculationModeCubic animations:^
{
    [UIView addKeyframeWithRelativeStartTime:0.0 relativeDuration:0.5 animations:^(
        _redSquare.transform = CGAffineTransformMakeRotation(M_PI * -1.5);
    )];
    [UIView addKeyframeWithRelativeStartTime:0.3 relativeDuration:0.5 animations:^(
        _redSquare.transform = CGAffineTransformMakeRotation(M_PI * 0.8);
    )];
    [UIView addKeyframeWithRelativeStartTime:0.6 relativeDuration:0.5 animations:^(
        _redSquare.transform = CGAffineTransformMakeRotation(M_PI * 1.6);
    )];
} completion:^(BOOL finished) {
    //Completion Block
}];
```

UIKit Dynamics

- Real world inspired interactions
- Physics based
- Designed for UI (SpriteKit for games)
- Combine animations, interactions

Architecture



Declarative

- High level
- Custom units: points/s² (gravity: 1000 p/s²)
- Composable, Subclassable
- Predefined, combined behaviors
 - gravity, collision, attachments, forces etc...

Examples

WWDC 2013

<https://developer.apple.com/videos/wwdc/2013/>

[https://github.com/davidkovaccs/
budapest.mobile.uikit.dynamics](https://github.com/davidkovaccs/budapest.mobile.uikit.dynamics)

Transitions

- Navigation bar
 - Back button to title, title to back button
 - Interactive Swipe from left to right
- Collection View
 - Data Hierarchy (Calendar, Photo Collections)
- Custom, interactive transitions



2014

JAN.

1 2 3 4 5
6 7 8 9 10 11 12
13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

FEBR.

1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28

MÁRC.

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31

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AUG.

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SZEPT.

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OKT.

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13 14 15 16 17 18 19
20 21 22 23 24 25 26
27 28 29 30 31

NOV.

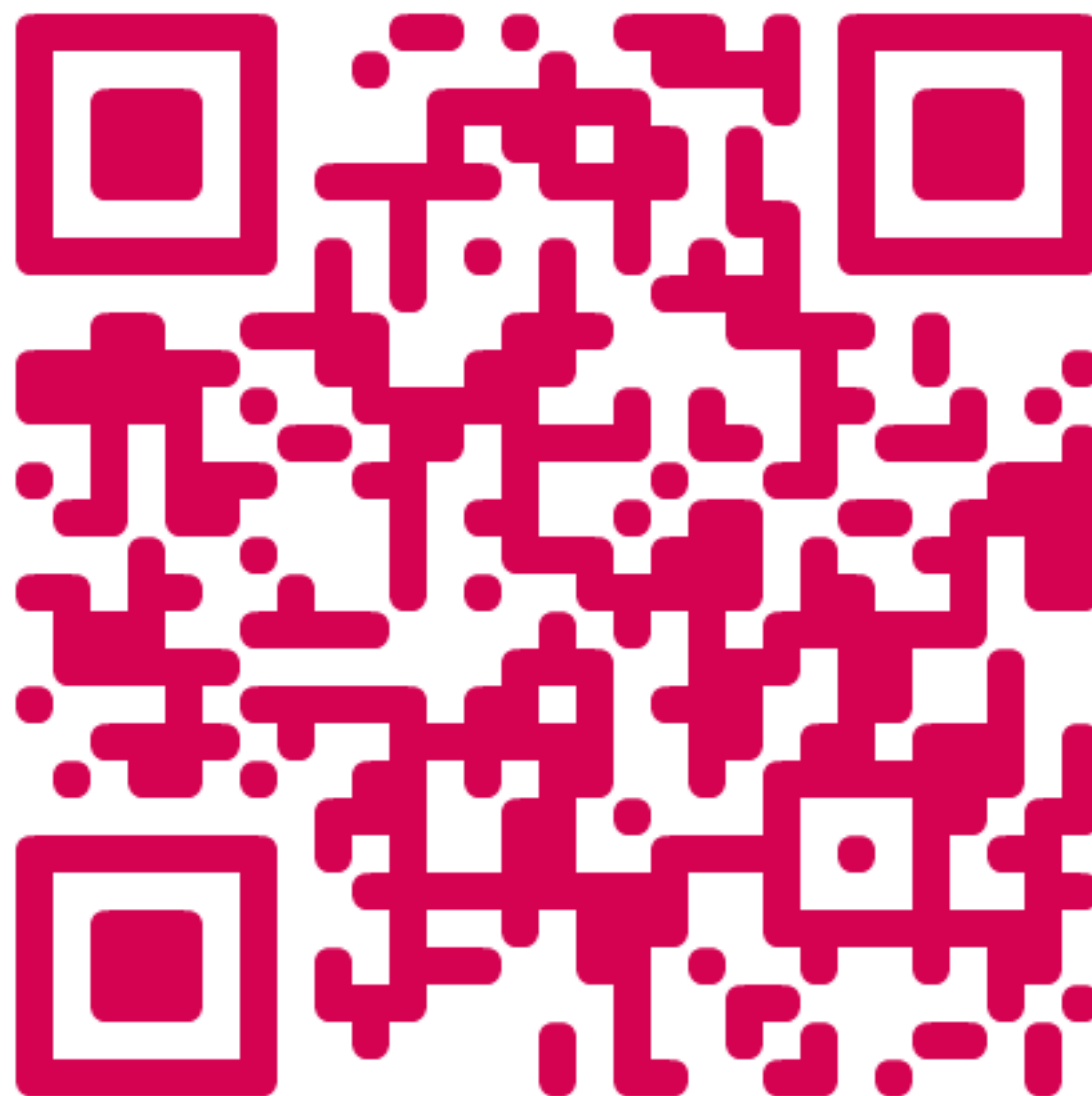
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30

DEC.

1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31

Summary

- Content comes first
- Interactive transitions
- Use physics to give your content life
- Make an illusion like the app can be part of the real world



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