

What's new in Smarticle

Layout

Orientation

Animation

Layout

Positioning

Fonts

Colors

Carrier

8:38 PM



< Back

Most Shared

The Changing American Family

Same-sex parents. Cohabiting couples. Voluntary kin. Children with parents in prison. Immigrant-Amer...



Making a Scene

The actors who gave the year's best performances star in one-line films created by the Oscar-winning cine...



★ The Power of a Daily Bout of Exercise

A new study suggests a moderate daily exercise session can blunt the harmful effects of overeating and...



Backlash by the Bay: Tech Riches Alter a City

As the largess from tech companies has flowed into San Francisco, some residents say their workers are driv...



100 Notable Books of 2013

Making a Scene

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★ The Power of a Daily Bout of Exercise

A new study suggests a moderate daily exercise session can blunt the harmful effects of overeating and...












View Controllers

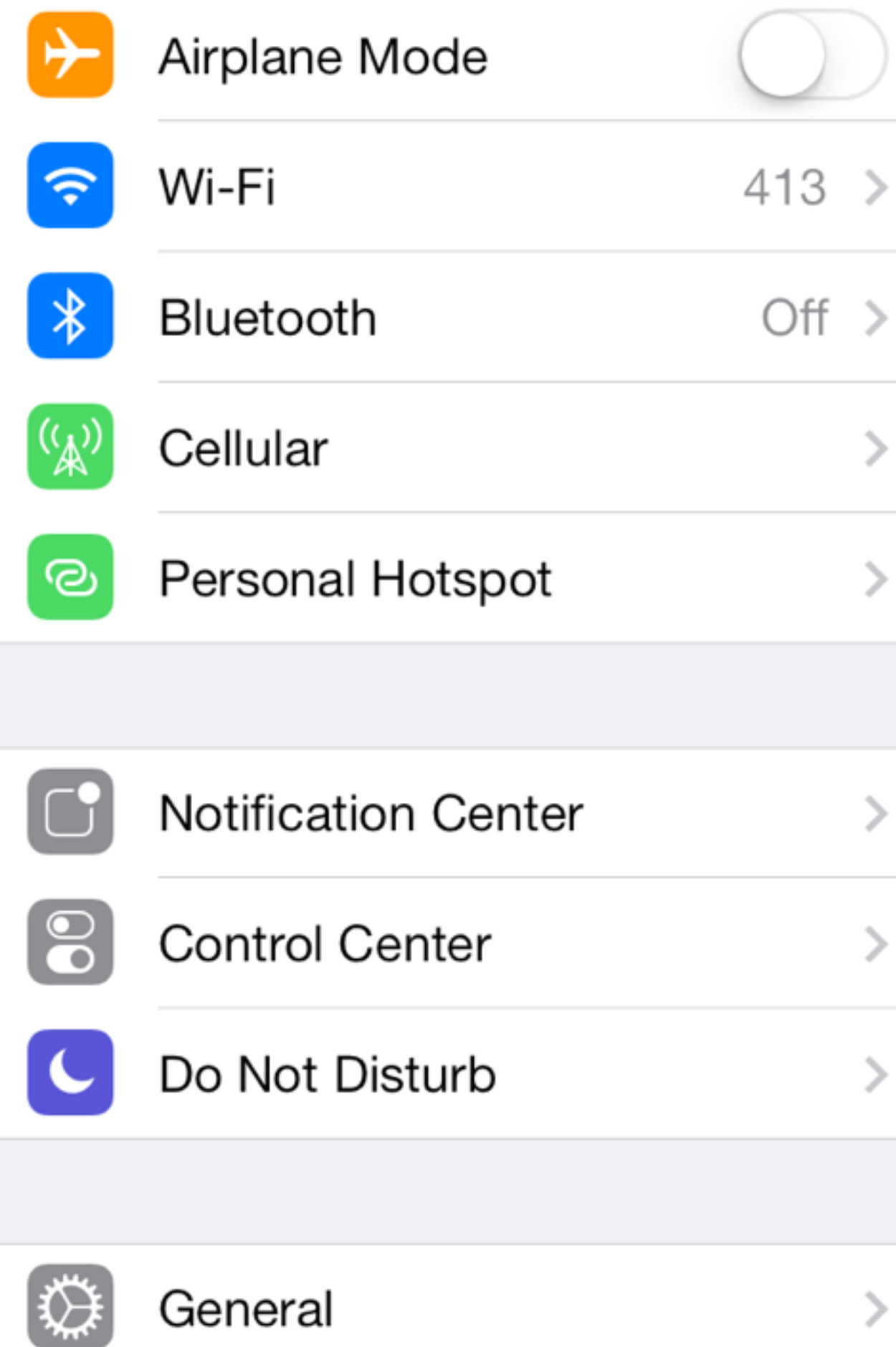
Views

Positioning

Settings

-  Airplane Mode ☐
-  Wi-Fi 413 >
-  Bluetooth Off >
-  Cellular >
-  Personal Hotspot >
-  Notification Center >
-  Control Center >
-  Do Not Disturb >
-  General >










UINavigationController

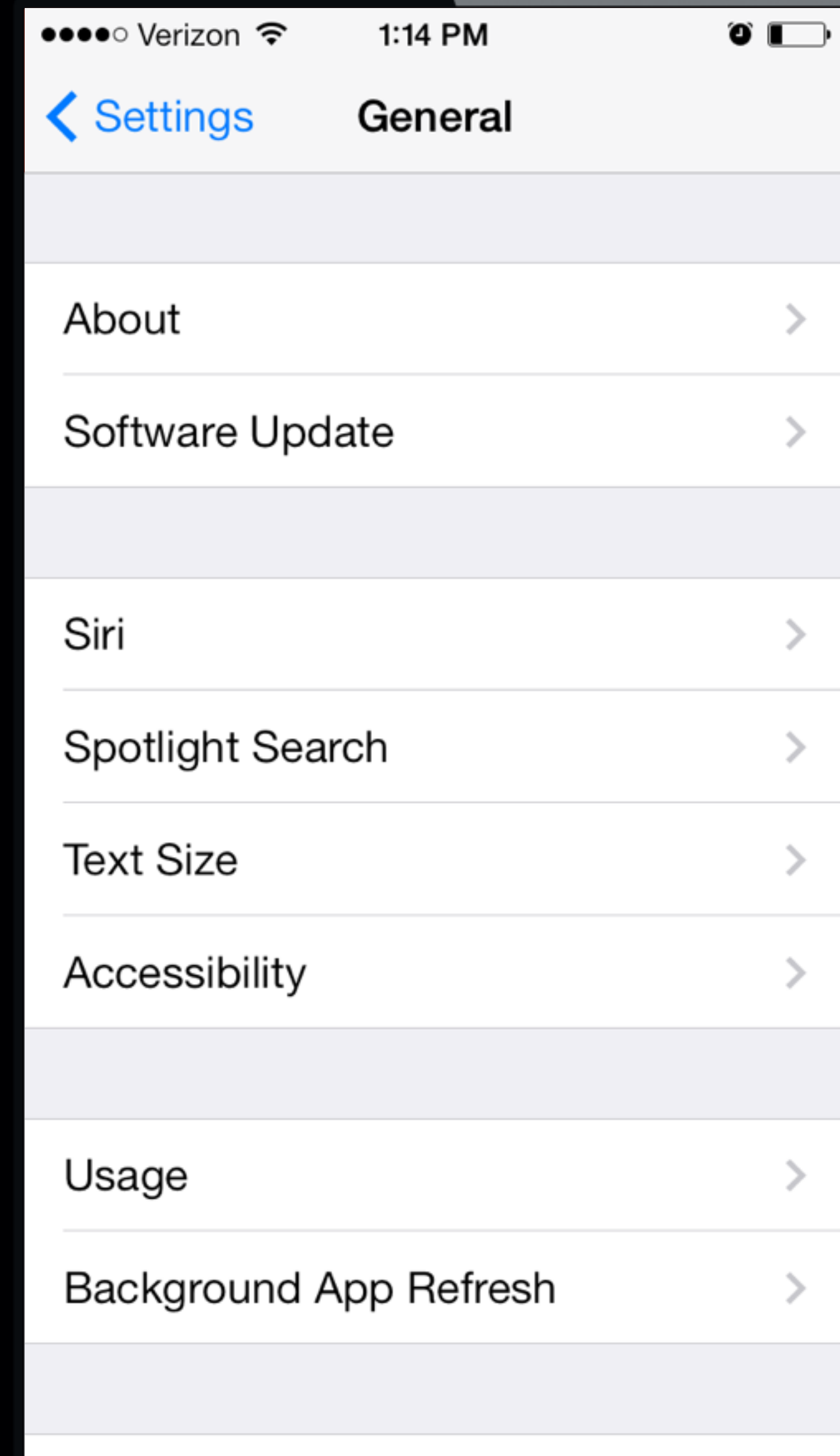
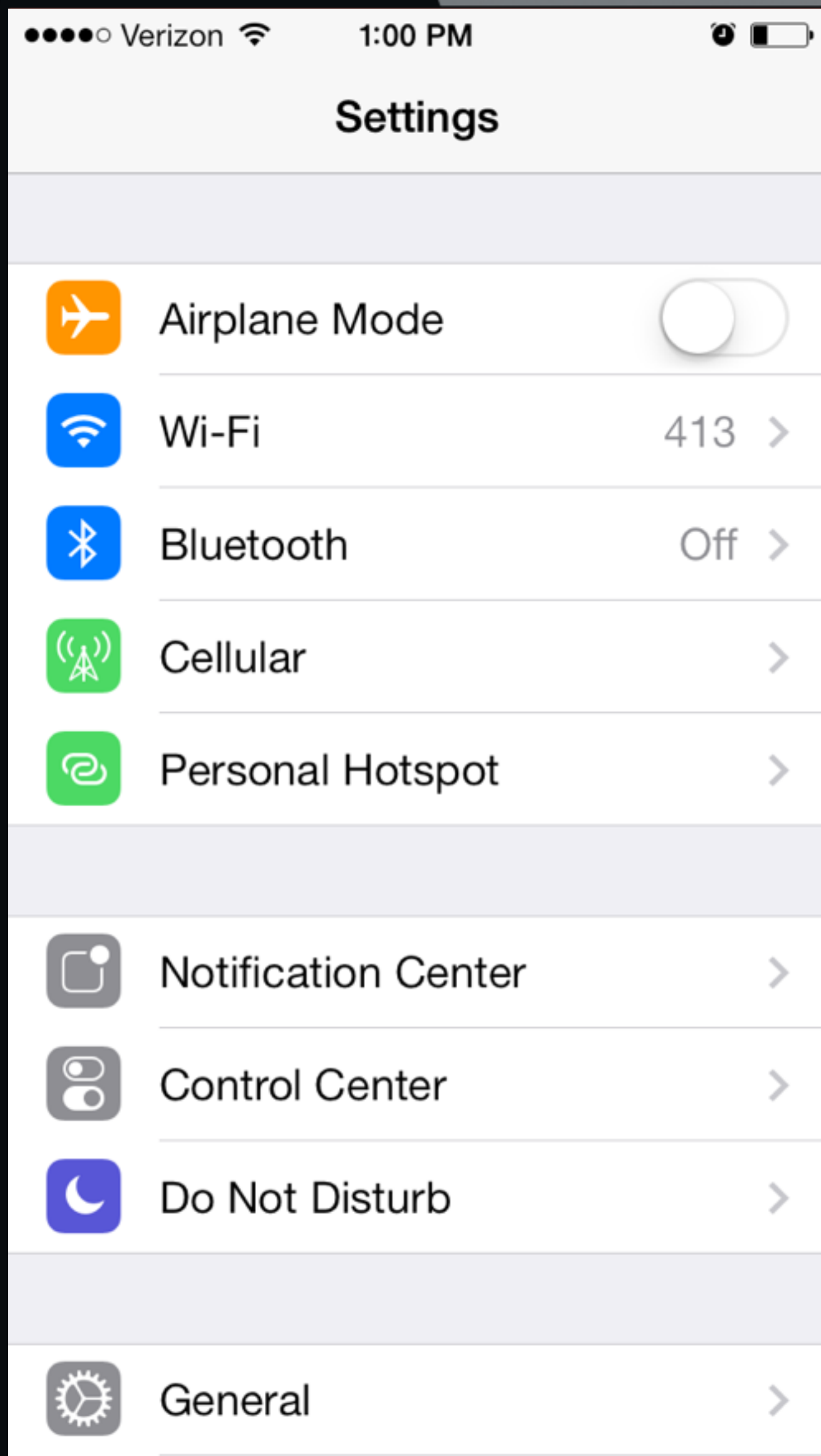


UINavigationController










UIView

Settings

-  Airplane Mode ☐
-  Wi-Fi 413 >
-  Bluetooth Off >
-  Cellular >
-  Personal Hotspot >
-  Notification Center >
-  Control Center >
-  Do Not Disturb >
-  General >

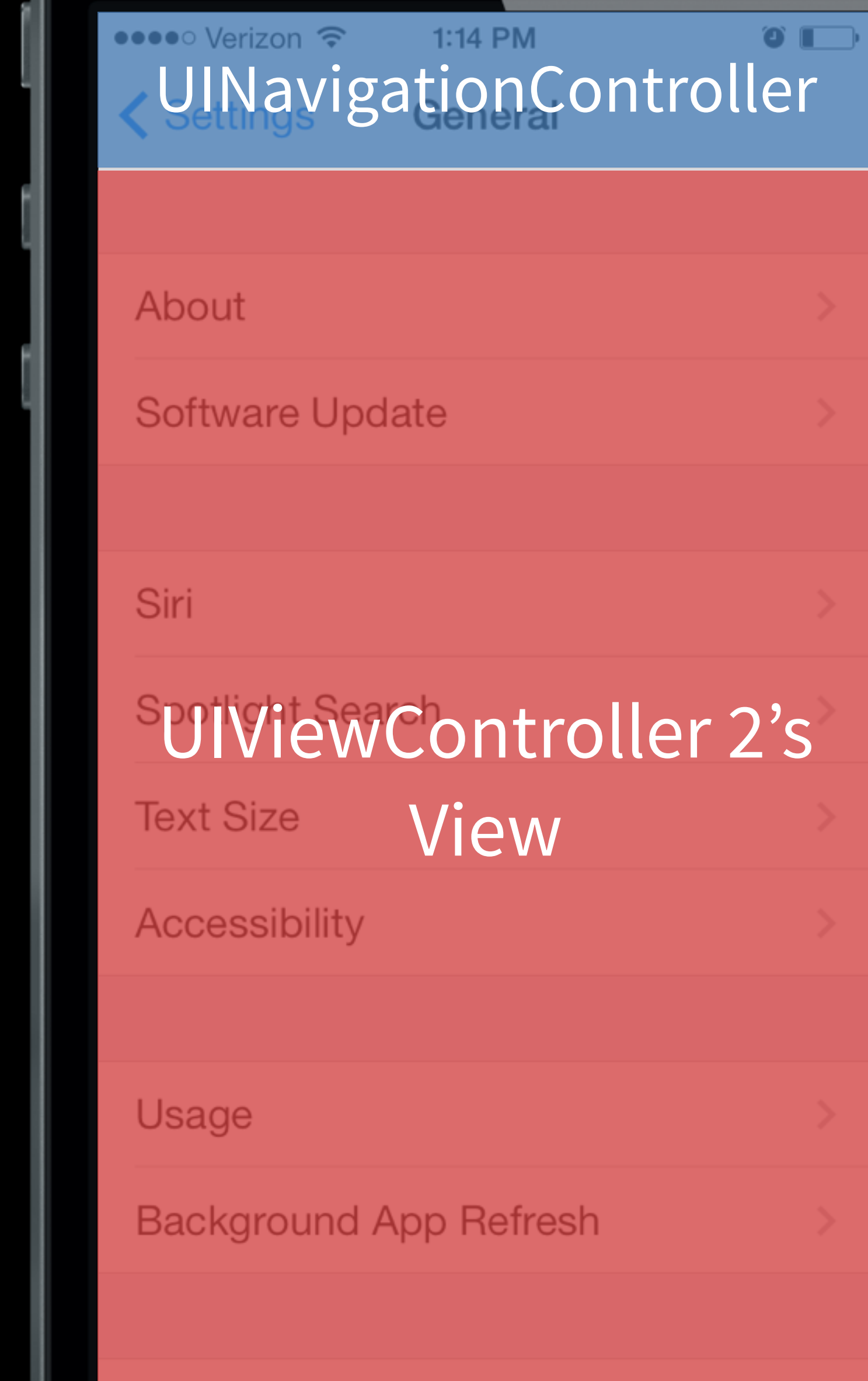
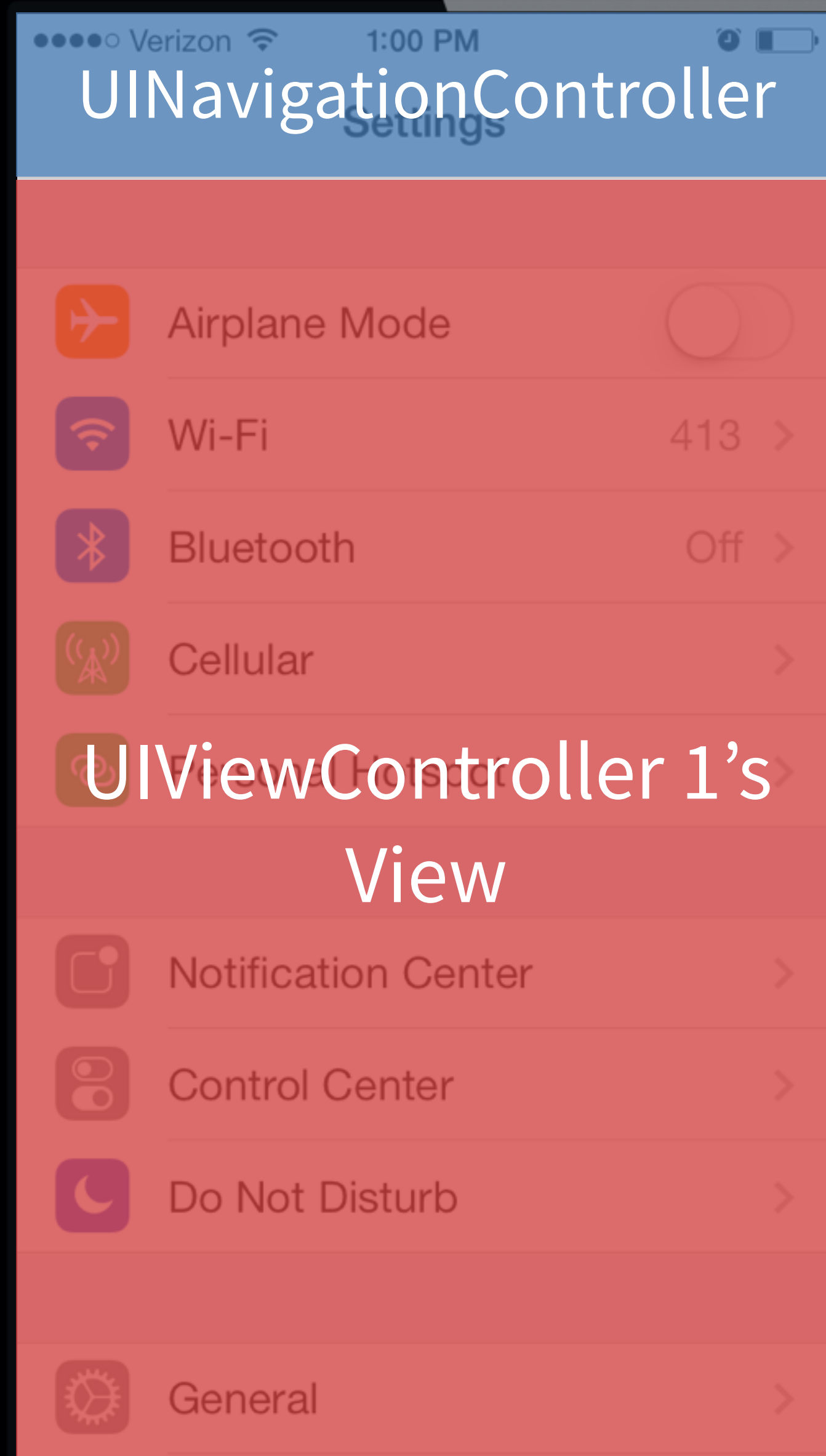


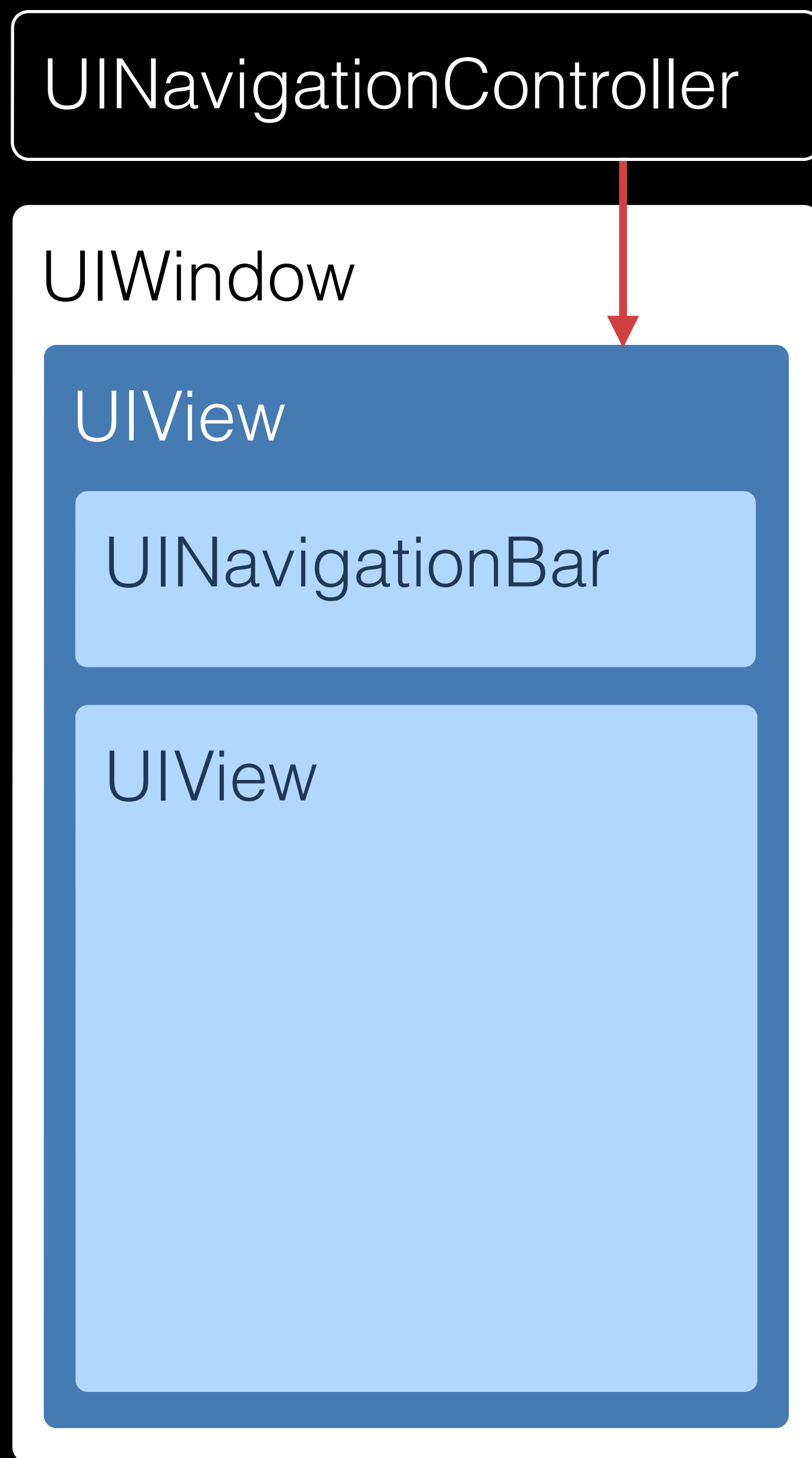
UINavigationController

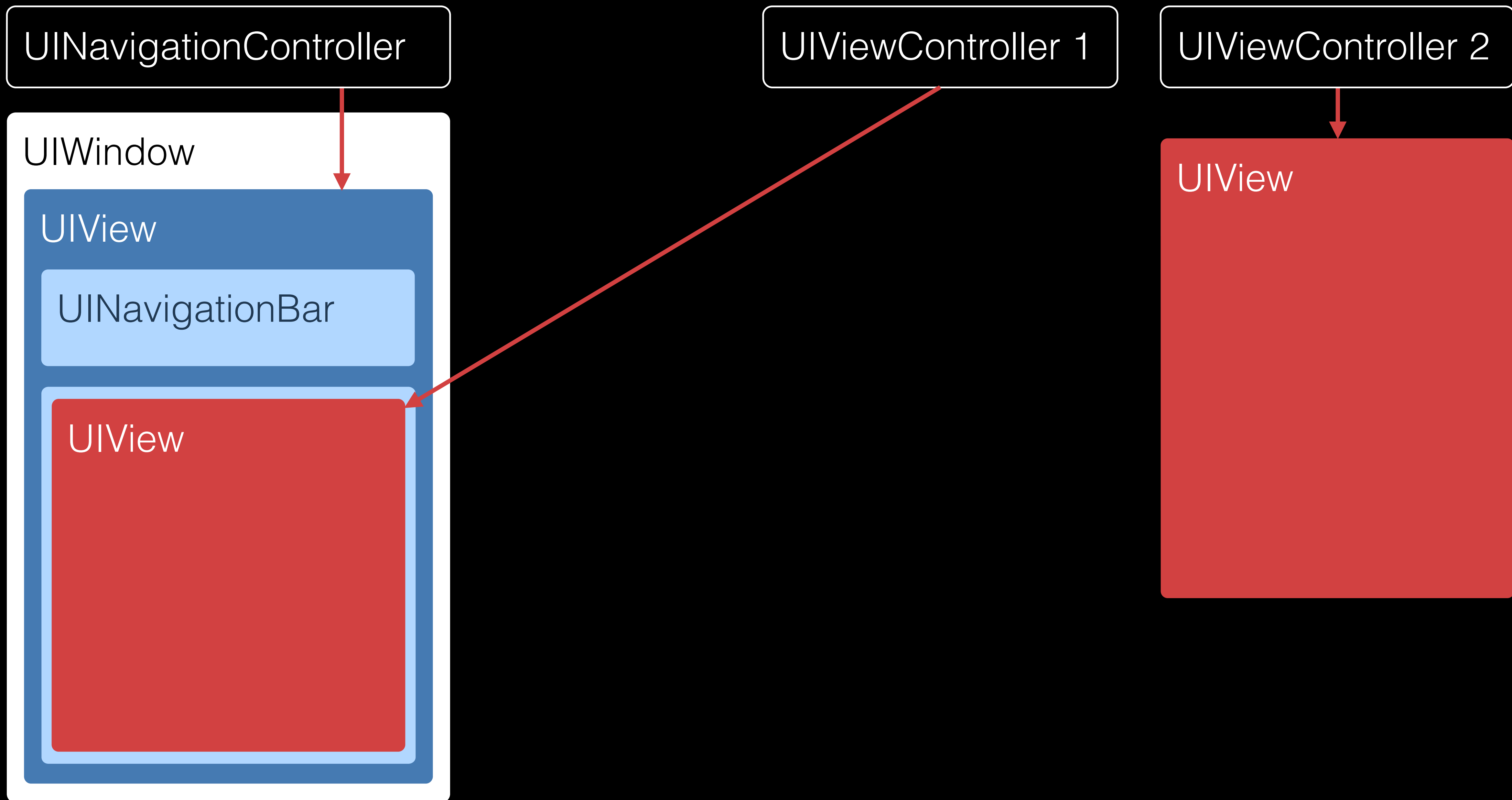
-  Airplane Mode ☐
-  Wi-Fi 413 >
-  Bluetooth Off >
-  Cellular >
-  Personal Hotspot >
-  Notification Center >
-  Control Center >
-  Do Not Disturb >
-  General >

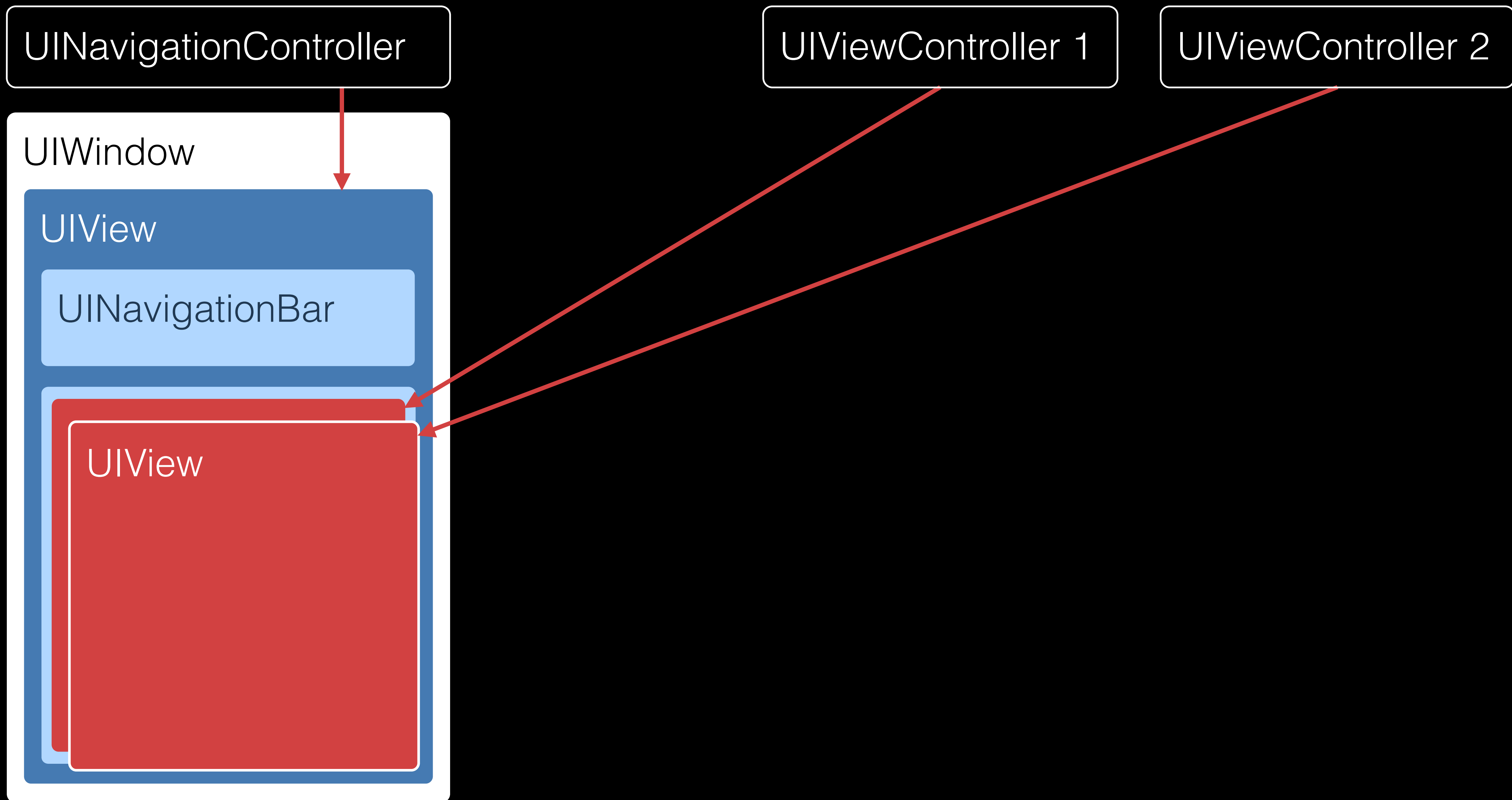
UINavigationController

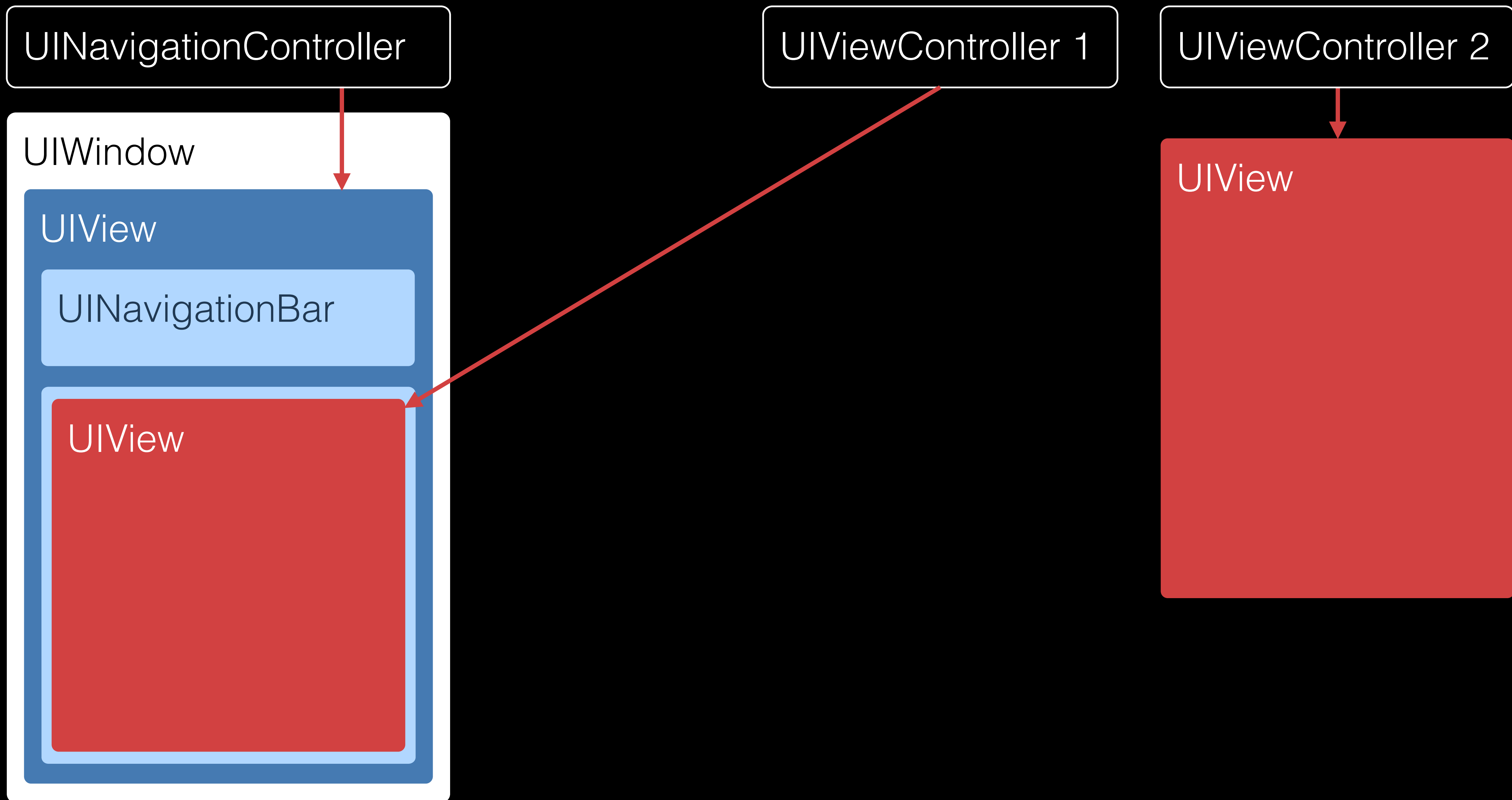
- About >
- Software Update >
- Siri >
- Spotlight Search >
- Text Size >
- Accessibility >
- Usage >
- Background App Refresh >











Loading its view

Mediating between its view and models

Handling transitions

Handling view appearance

Handling rotation events

Saving and loading view state

Handling view appearance

- viewDidLoad
- viewWillAppear:animated
- viewDidAppear:animated
- viewWillDisappear:animated
- viewDidDisappear:animated

- viewDidLoad
- viewWillAppear:animated
- viewDidAppear:animated
- viewWillDisappear:animated
- viewDidDisappear:animated

View Controller Containment

History iTunes Radio

Featured Stations



Holiday Hits - Christmas



Pepsi® Pulse Pop



Guest DJ - Kelly Clarkson

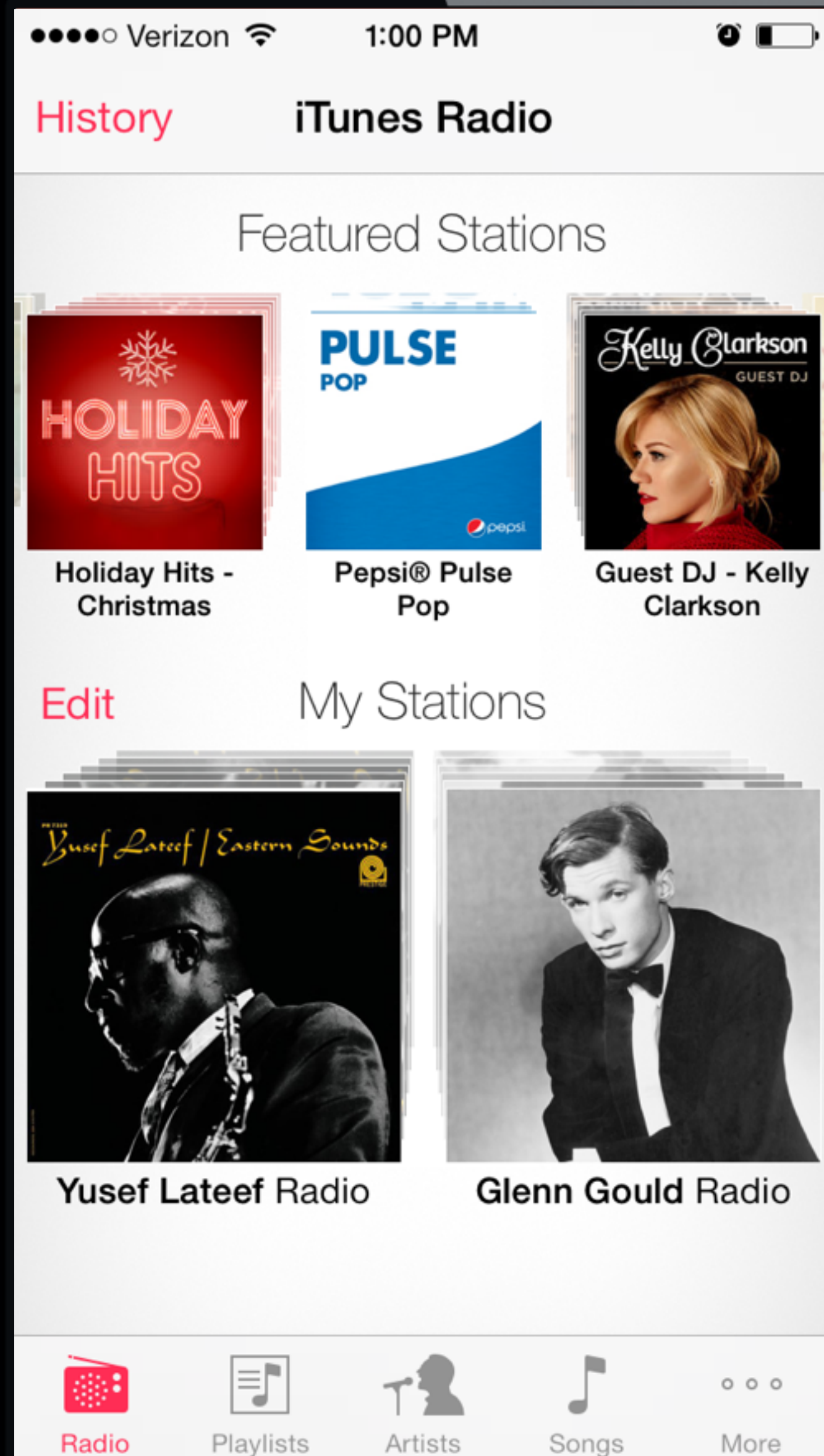
Edit My Stations



Yusef Lateef Radio



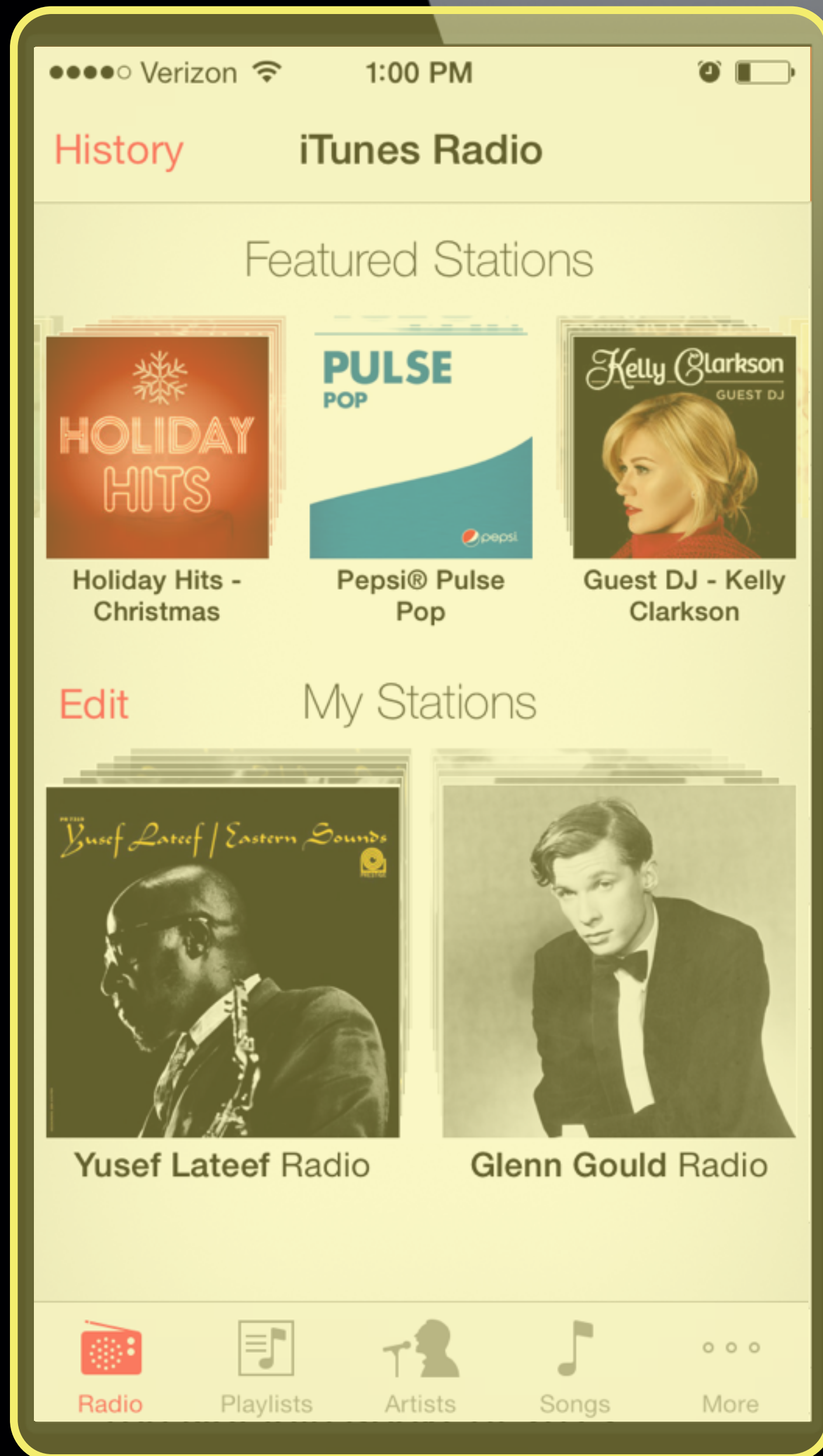
Glenn Gould Radio



UITabBarController

UINavigationController

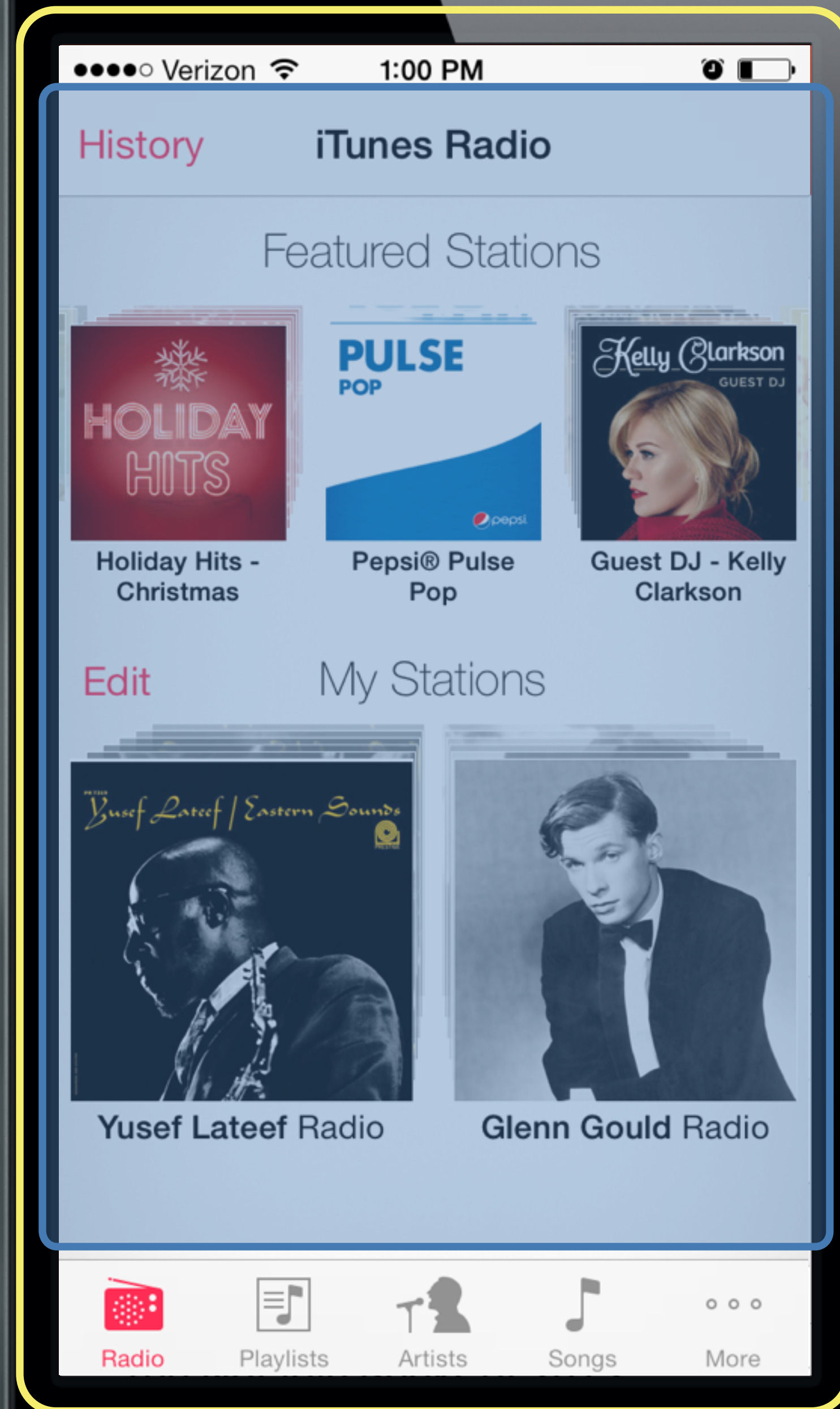
UIViewController



UITabBarController

UINavigationController

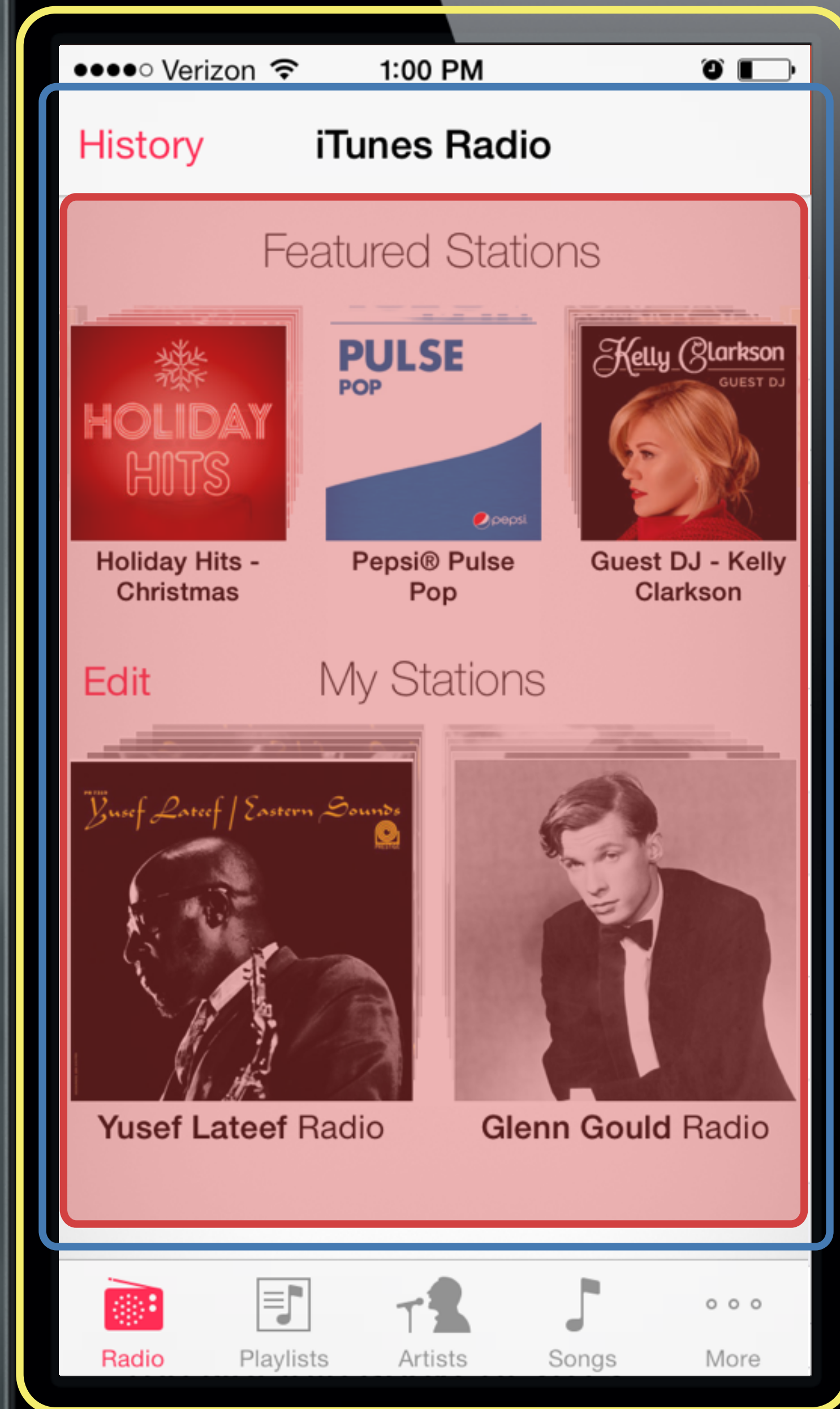
UIViewController



UITabBarController

UINavigationController

UIViewController

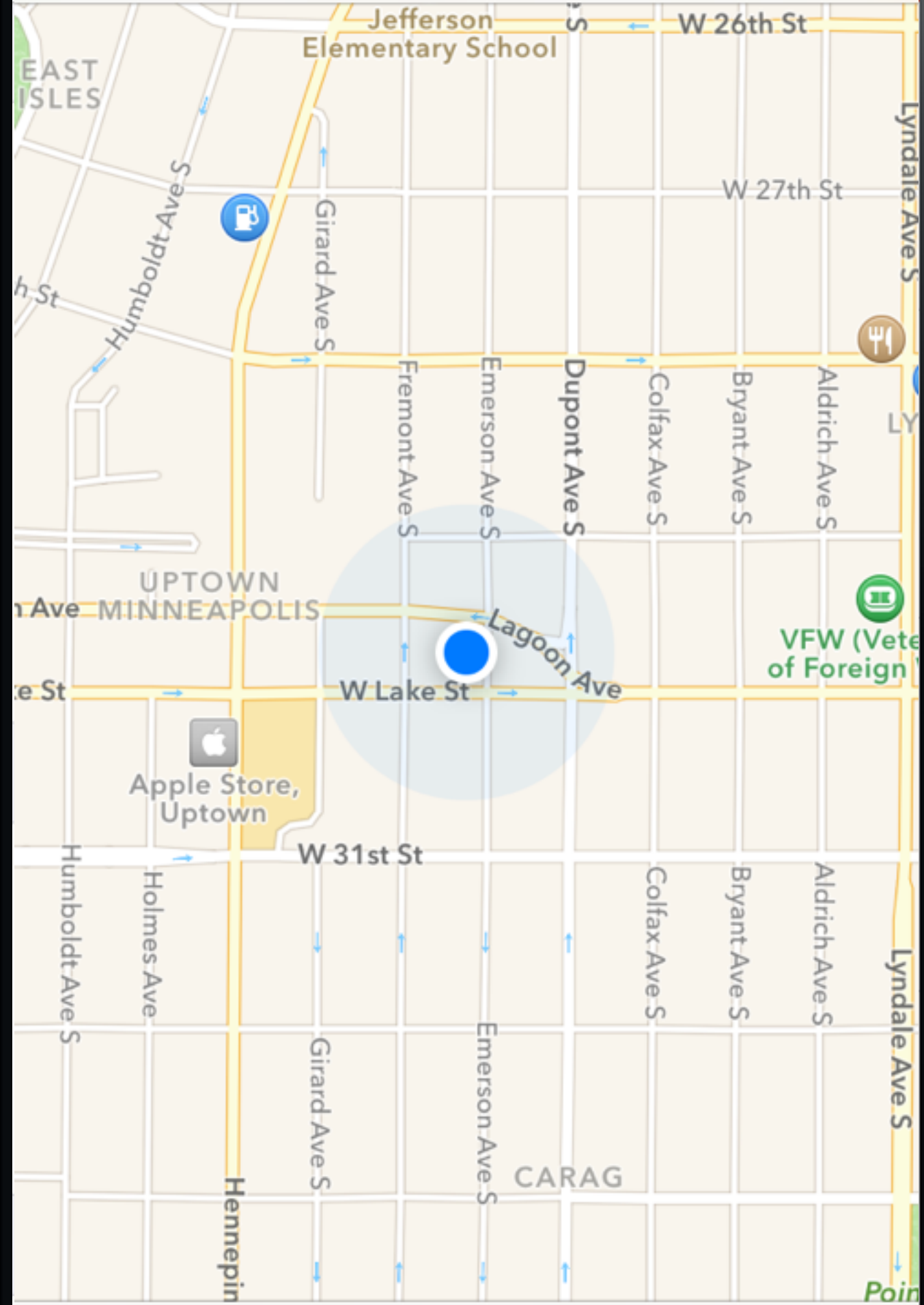


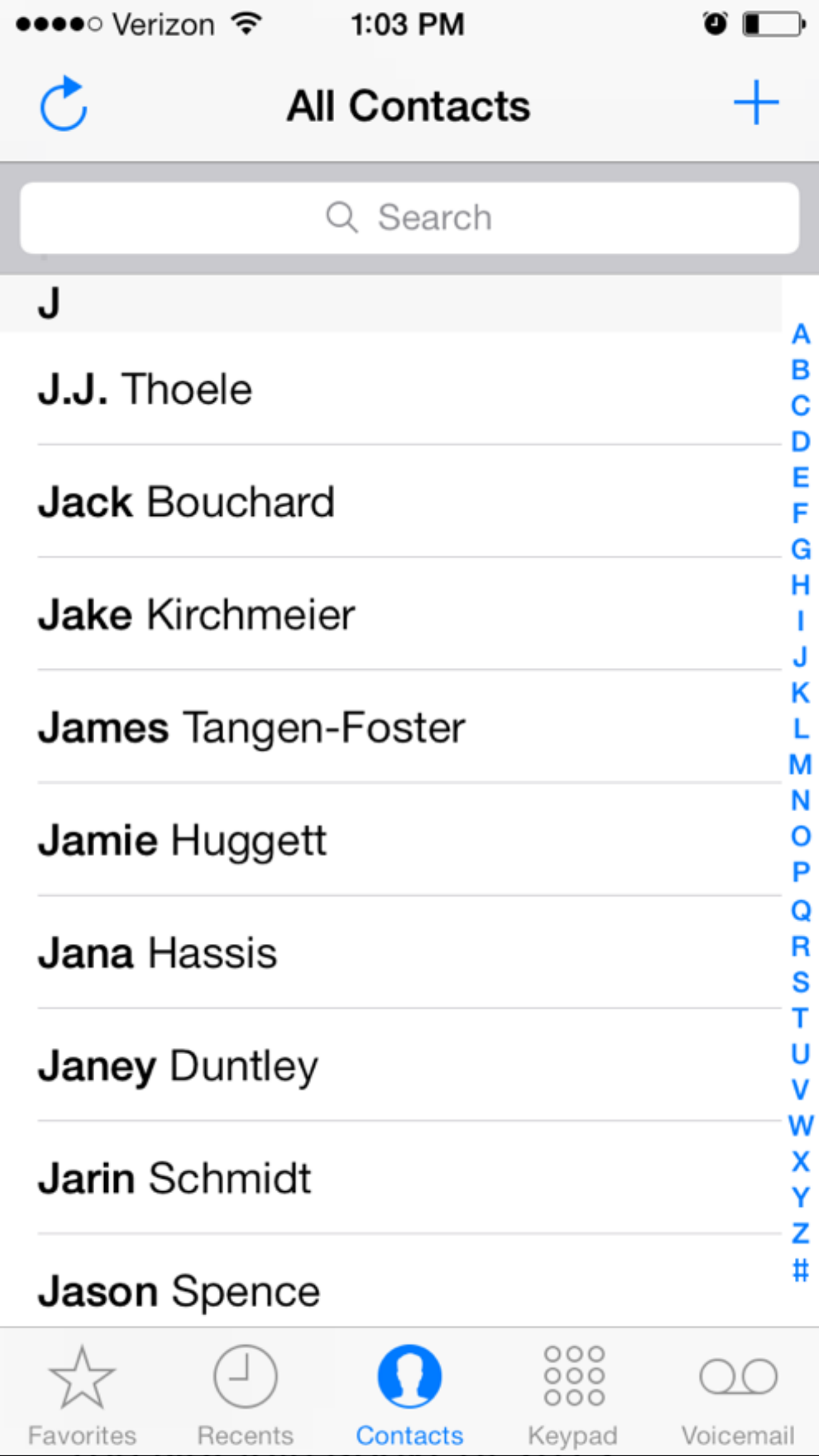
UITabBarController

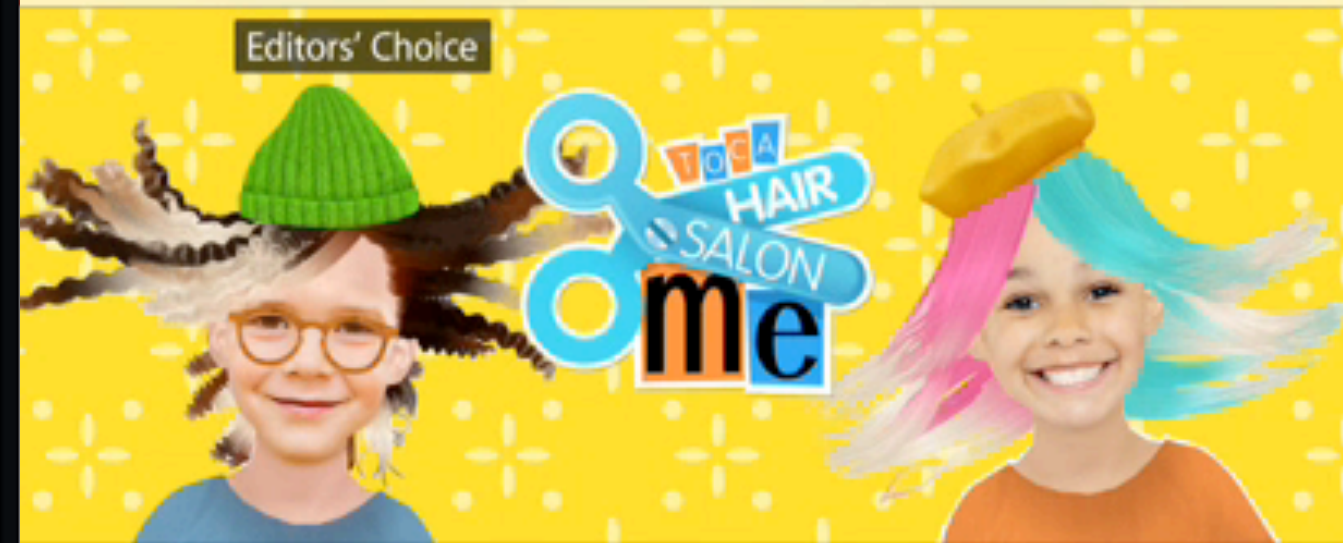
UINavigationController

UIViewController

Search or enter an address







Best New Apps See All >



Apple Store Lifestyle
FREE



Toca Hair Salon Me
Entertain...
\$2.99



The Photo Cookbook...
Food & Dri...
\$3.99



Elf D JibJ
Ente...
FRE

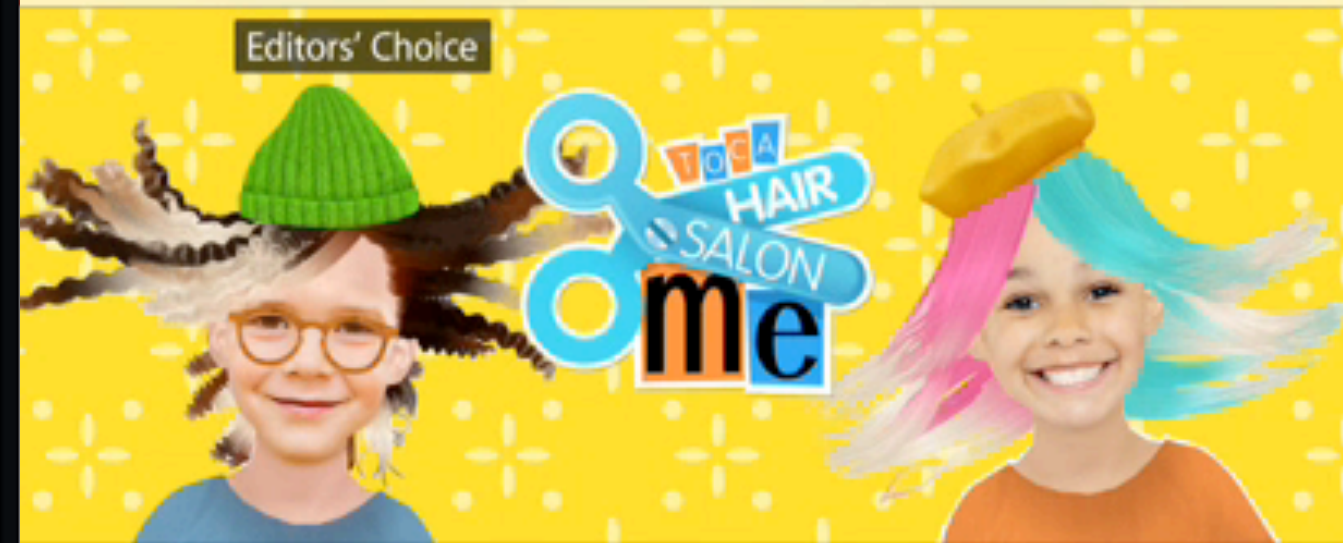


App of the Week



American Red Cross

Philippine Typhoon Relief
Donate Here



Best New Apps See All >



Apple Store
Lifestyle
FREE



Toca Hair
Salon Me
Entertain...
\$2.99



The Photo
Cookbook...
Food & Dri...
\$3.99



Elf D
JibJ
Ente
FRE



App of the Week



American
Red Cross

Philippine Typhoon Relief
Donate Here

UIView

Is a rectangular region

Manages its subviews

Has built-in animation support

Handles touch events

Coordinate System

X

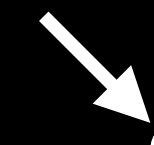
UIView

Y

100 x 100

0, 0

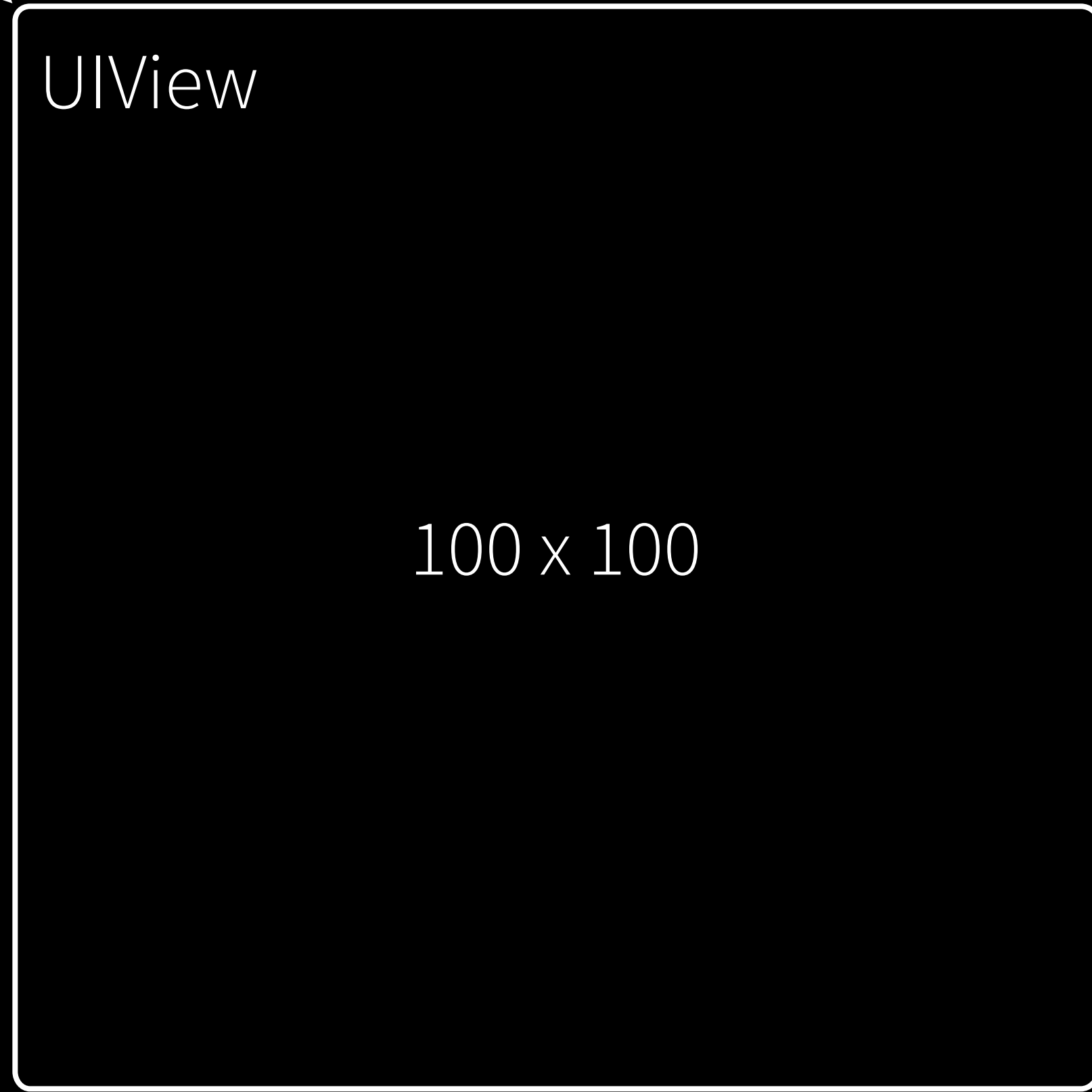
X

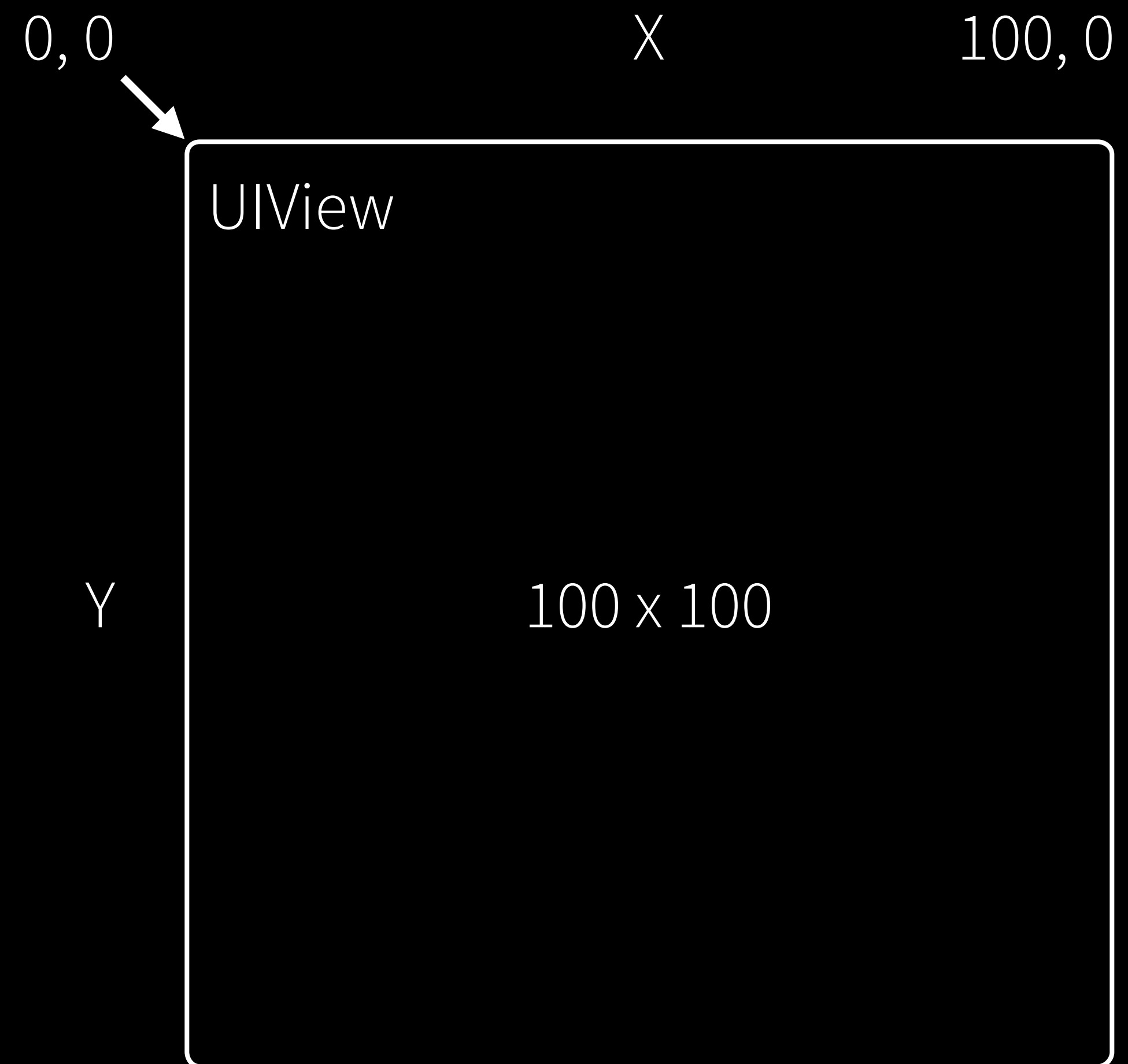


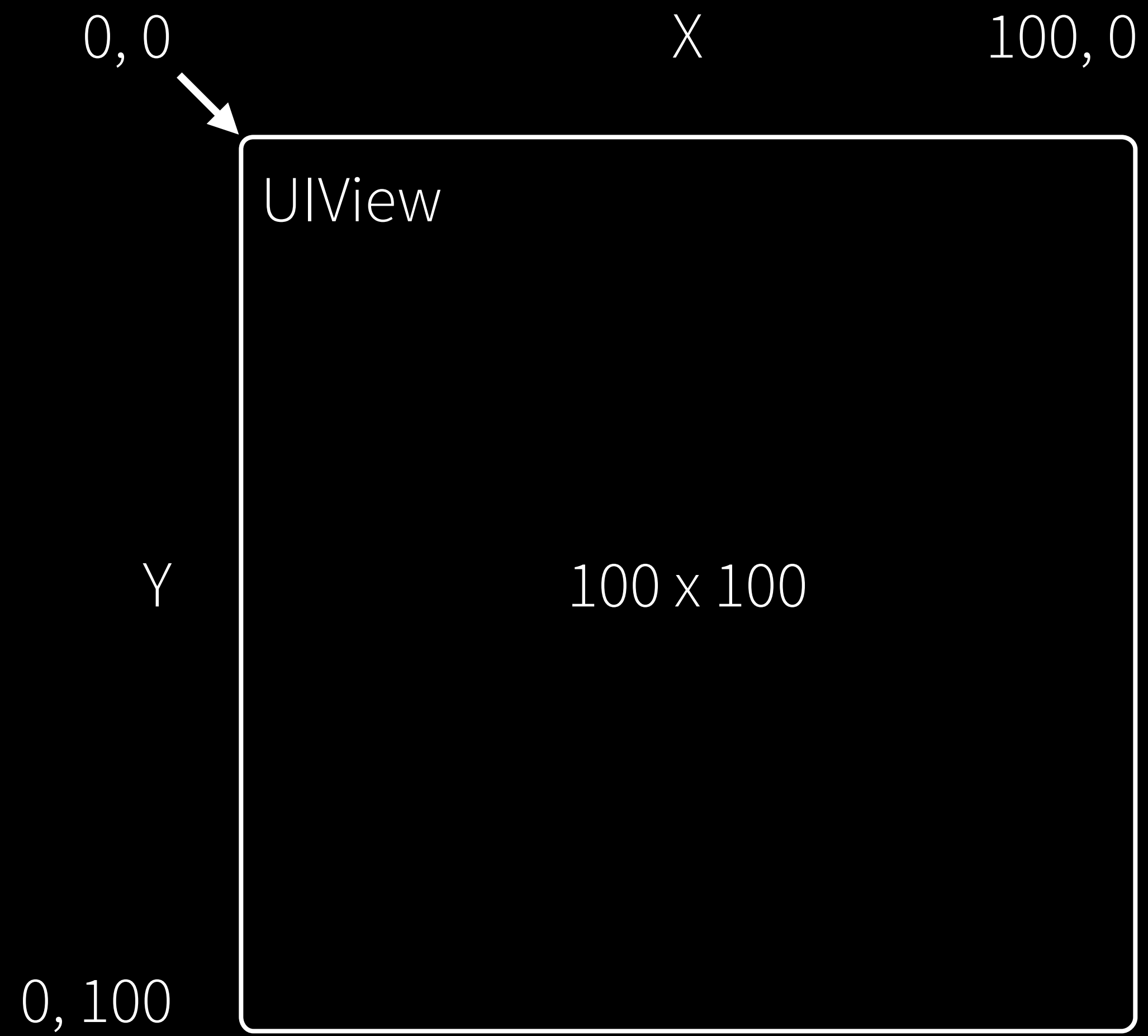
UIView

Y

100 x 100

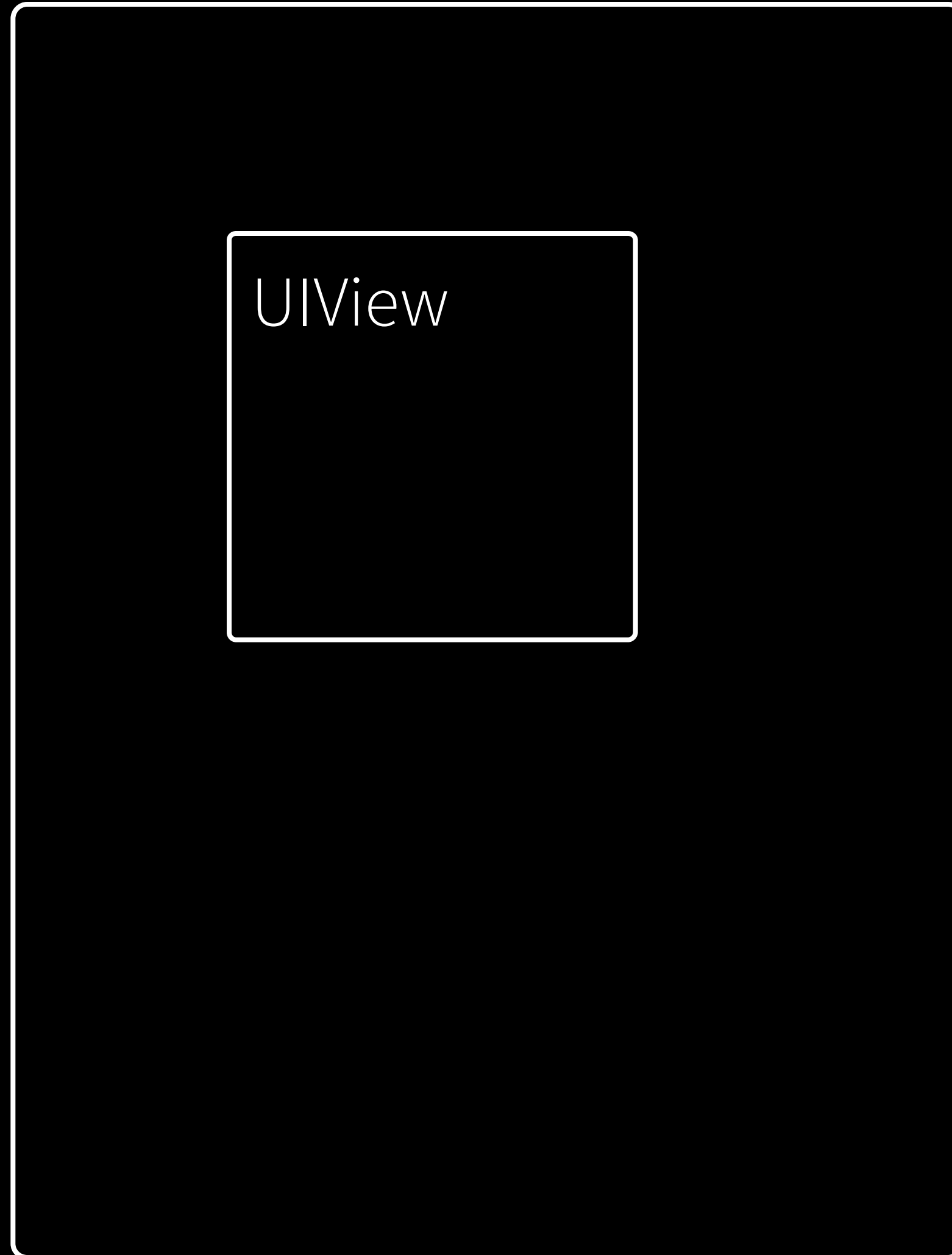






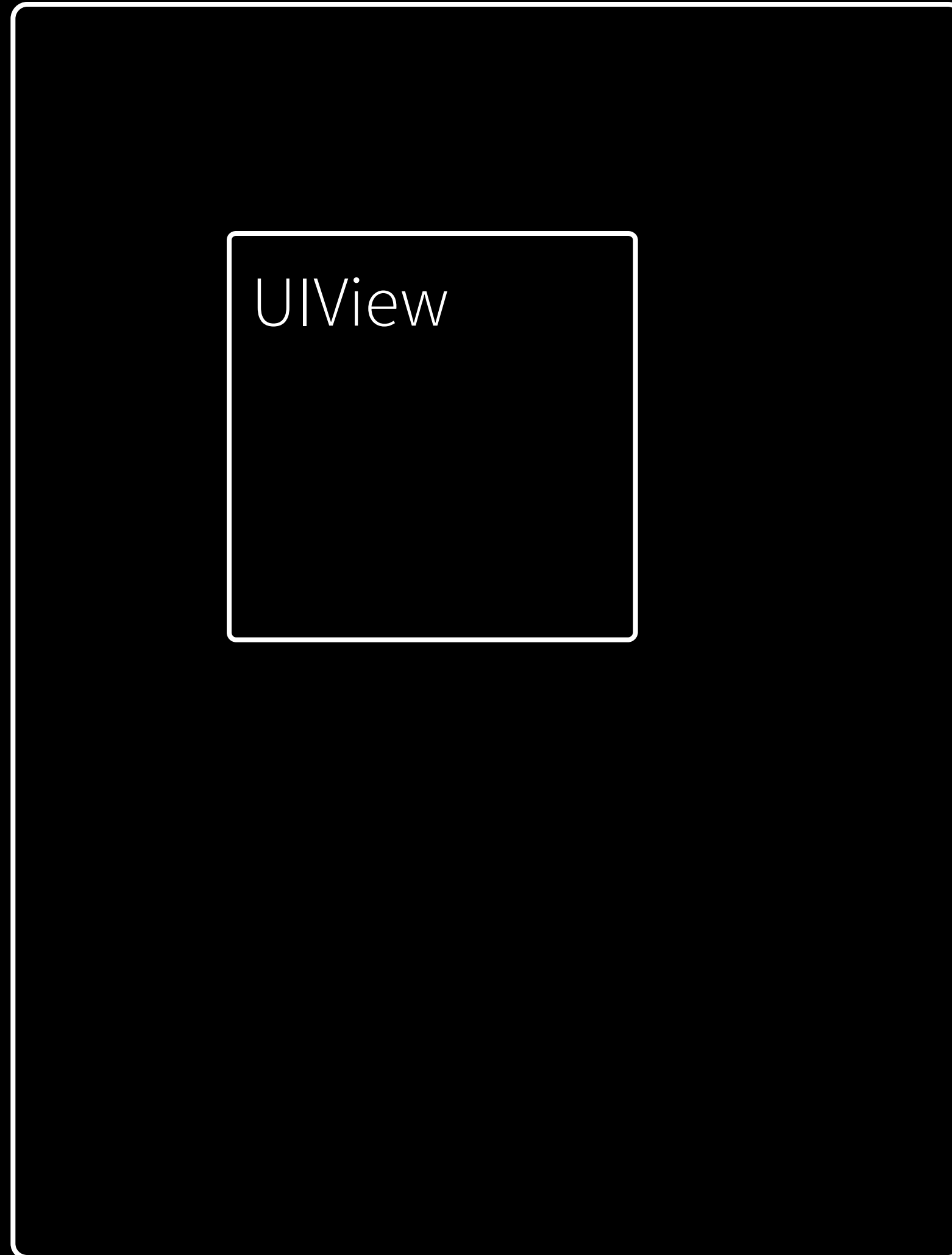
frame & bounds

Superview



frame: (x, y) (width, height)

Superview



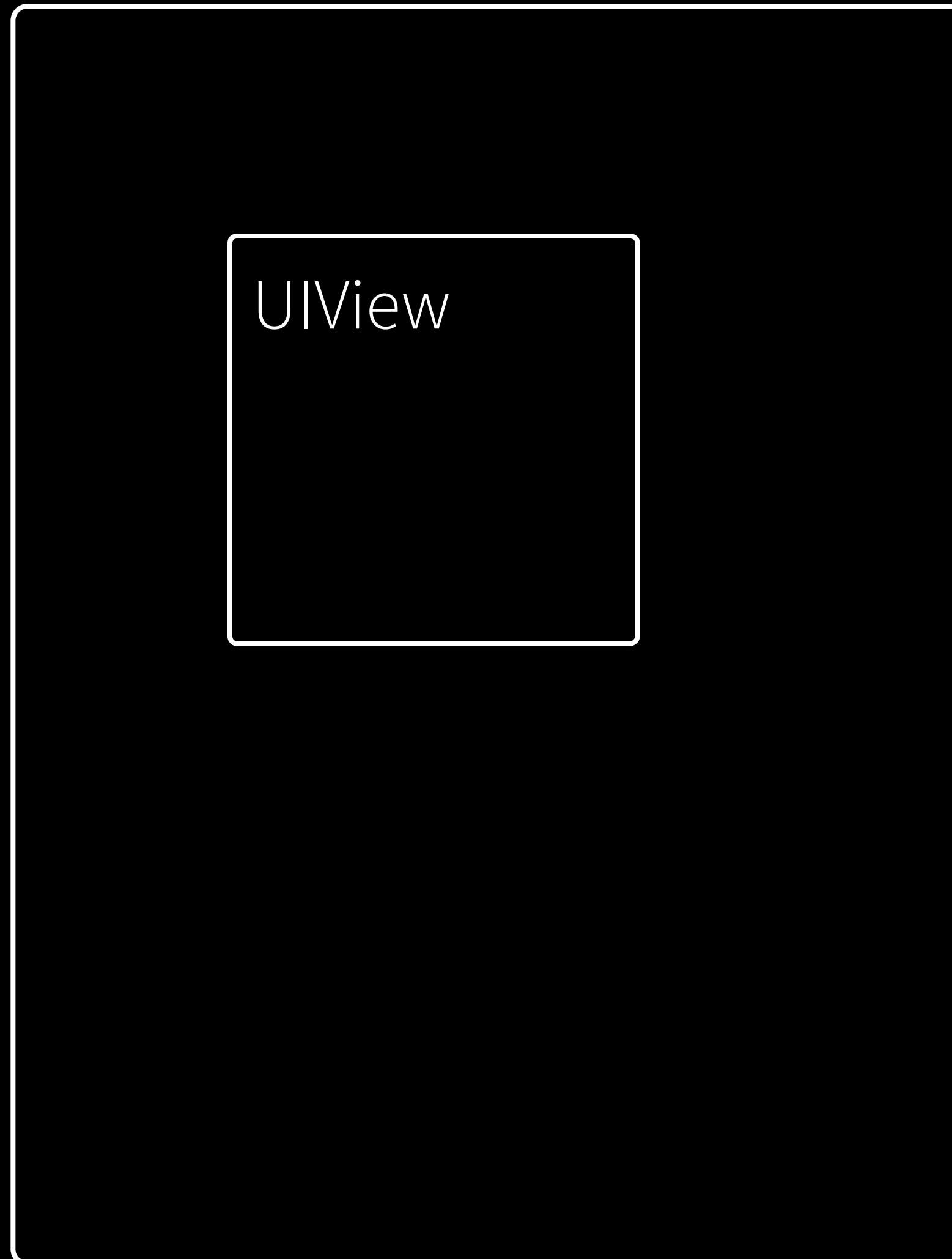
frame: (50.0, 50.0) (width, height)

Superview

UIView

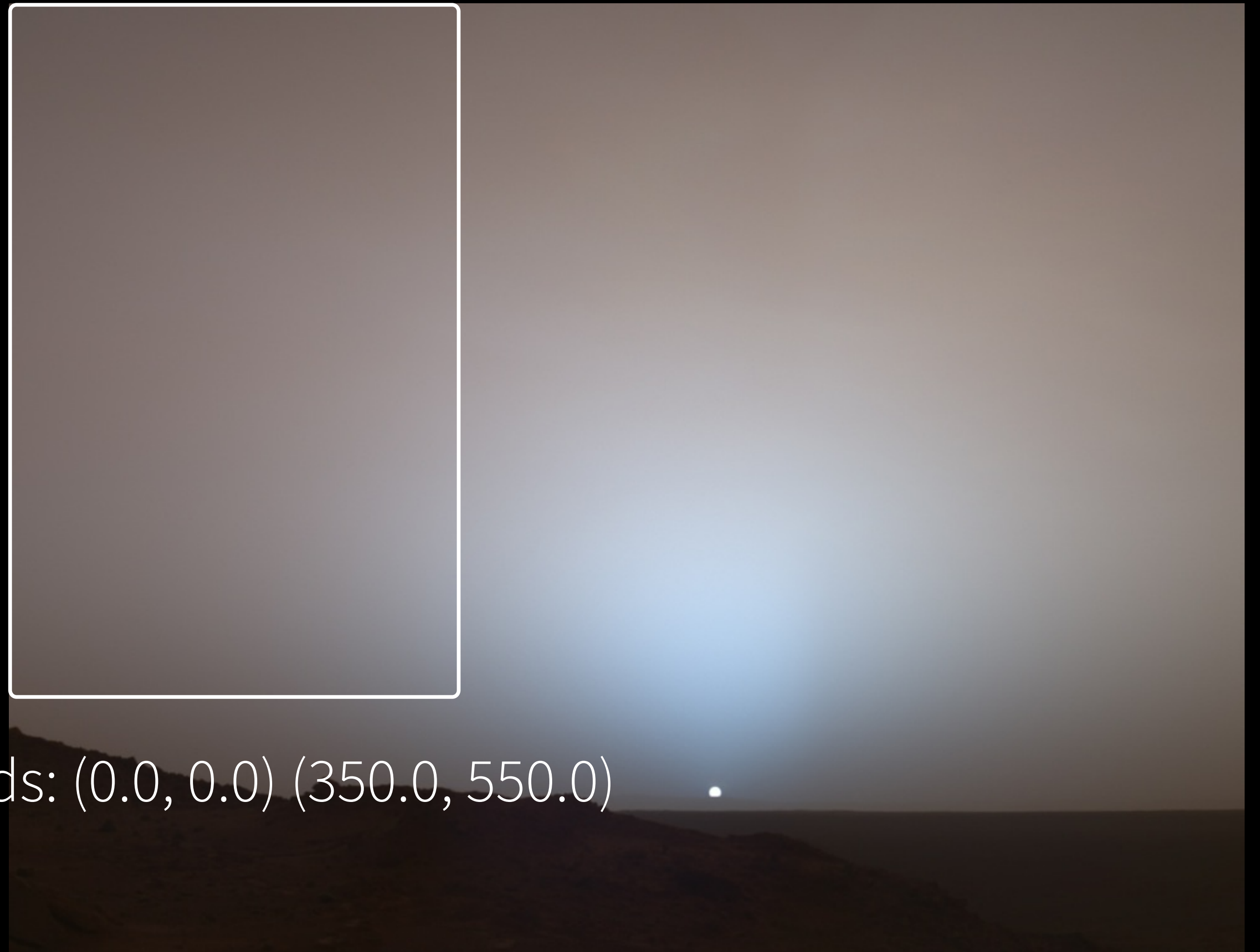
frame: (50.0, 50.0) (100.0, 100.0)

Superview

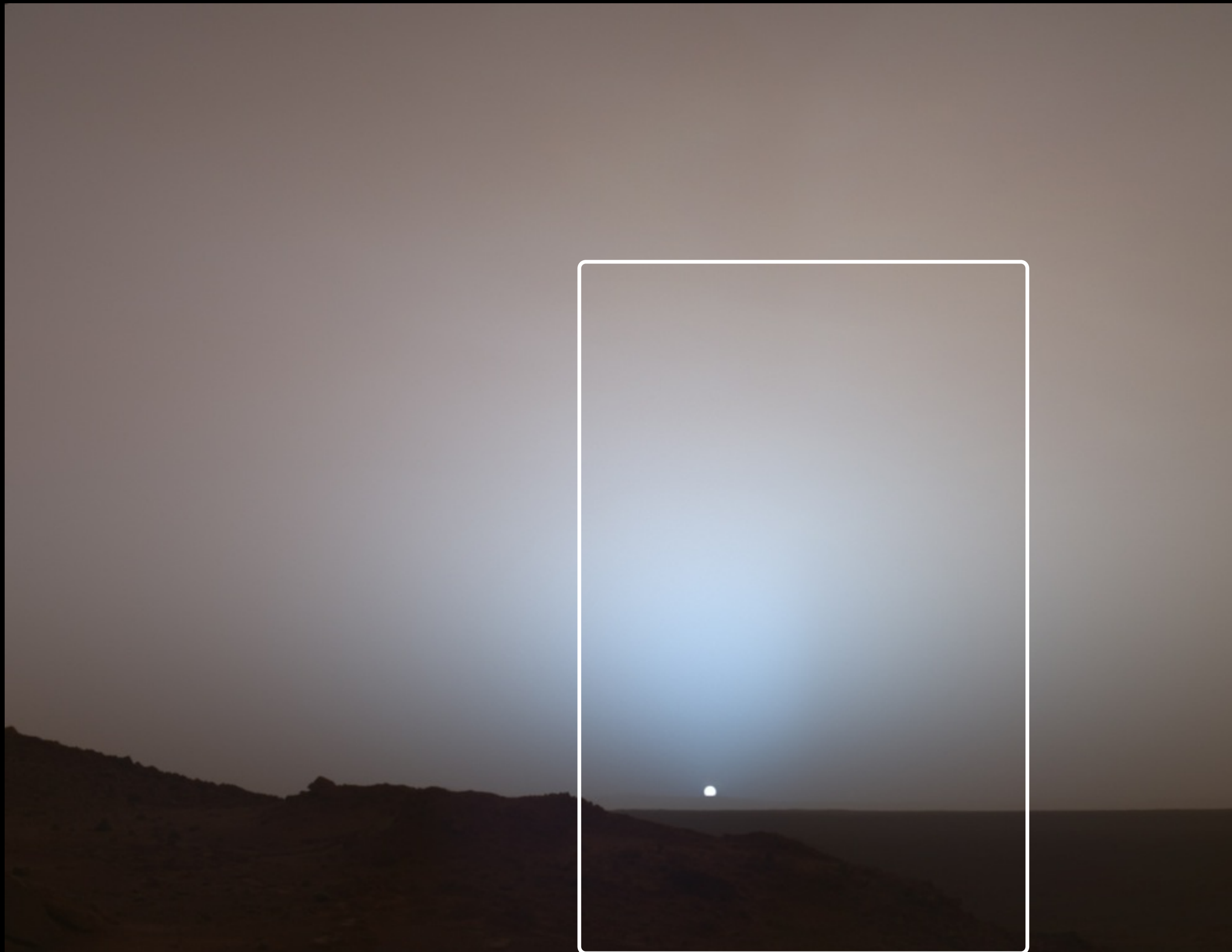


UIView

frame: (50.0, 50.0) (100.0, 100.0)
bounds: (0.0, 0.0) (100.0, 100.0)



bounds: (0.0, 0.0) (350.0, 550.0)

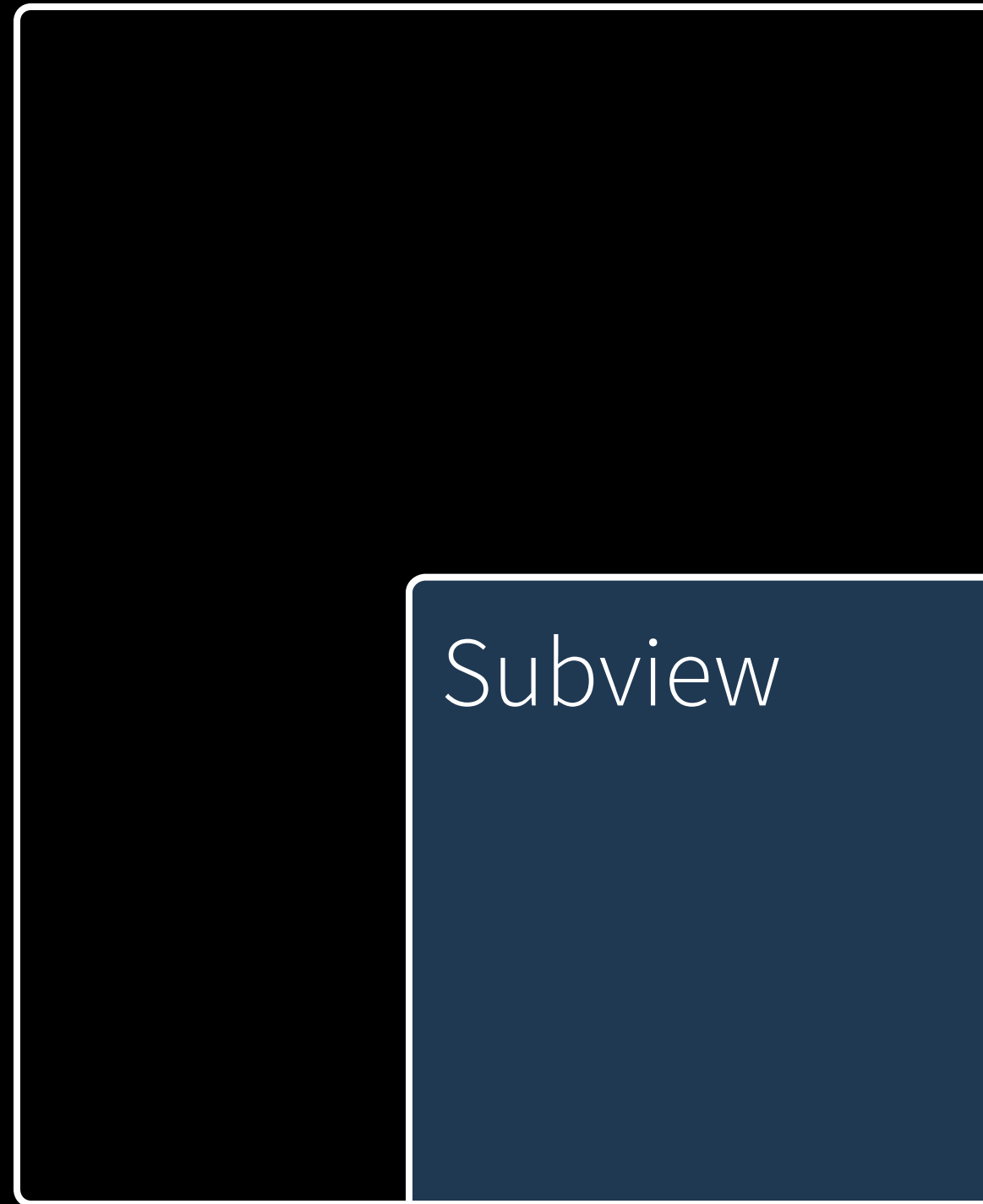


bounds: (450.0, 150.0) (350.0, 550.0)

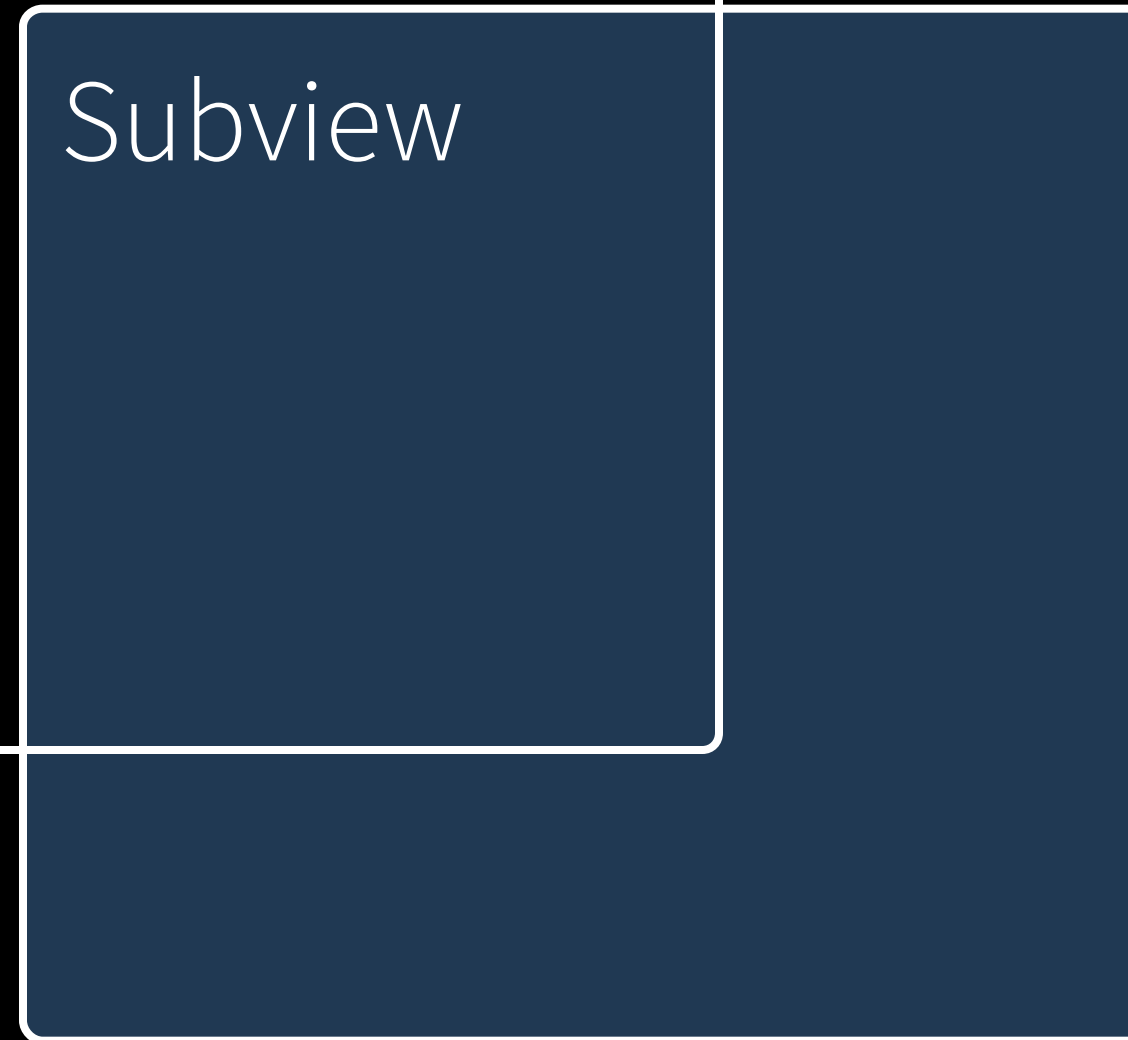
CGRect

CGRectMake(x, y, width, height)

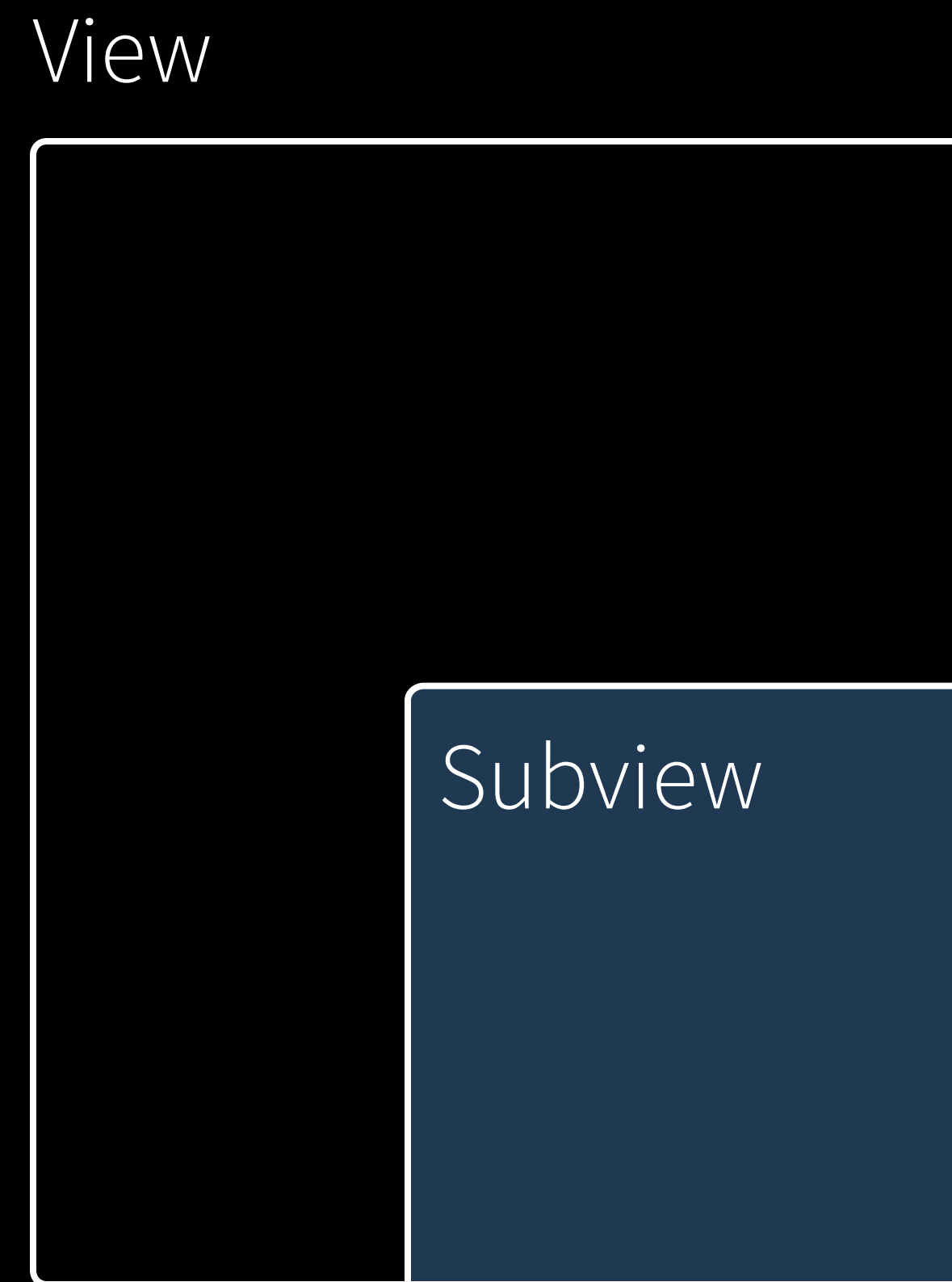
View



Subview



clipsToBounds = YES



Positioning

Springs & Struts

Auto Layout

Springs & Struts

Auto Layout

Springs &
Struts

Auto
Layout

Springs &
Struts

Auto
Layout

Hard-coded

Springs &
Struts

~~Hard-coded~~

Auto
Layout

Content-driven

Springs &
Struts

Auto
Layout

~~Hard-coded~~

Content-driven

Isolated Views

Springs &
Struts

Auto
Layout

~~Hard-coded~~

Content-driven

~~Isolated Views~~

Related Views

Springs &
Struts

Auto
Layout

~~Hard-coded~~

Content-driven

~~Isolated Views~~

Related Views

autoResizingMask

Springs &
Struts

Auto
Layout

~~Hard-coded~~

Content-driven

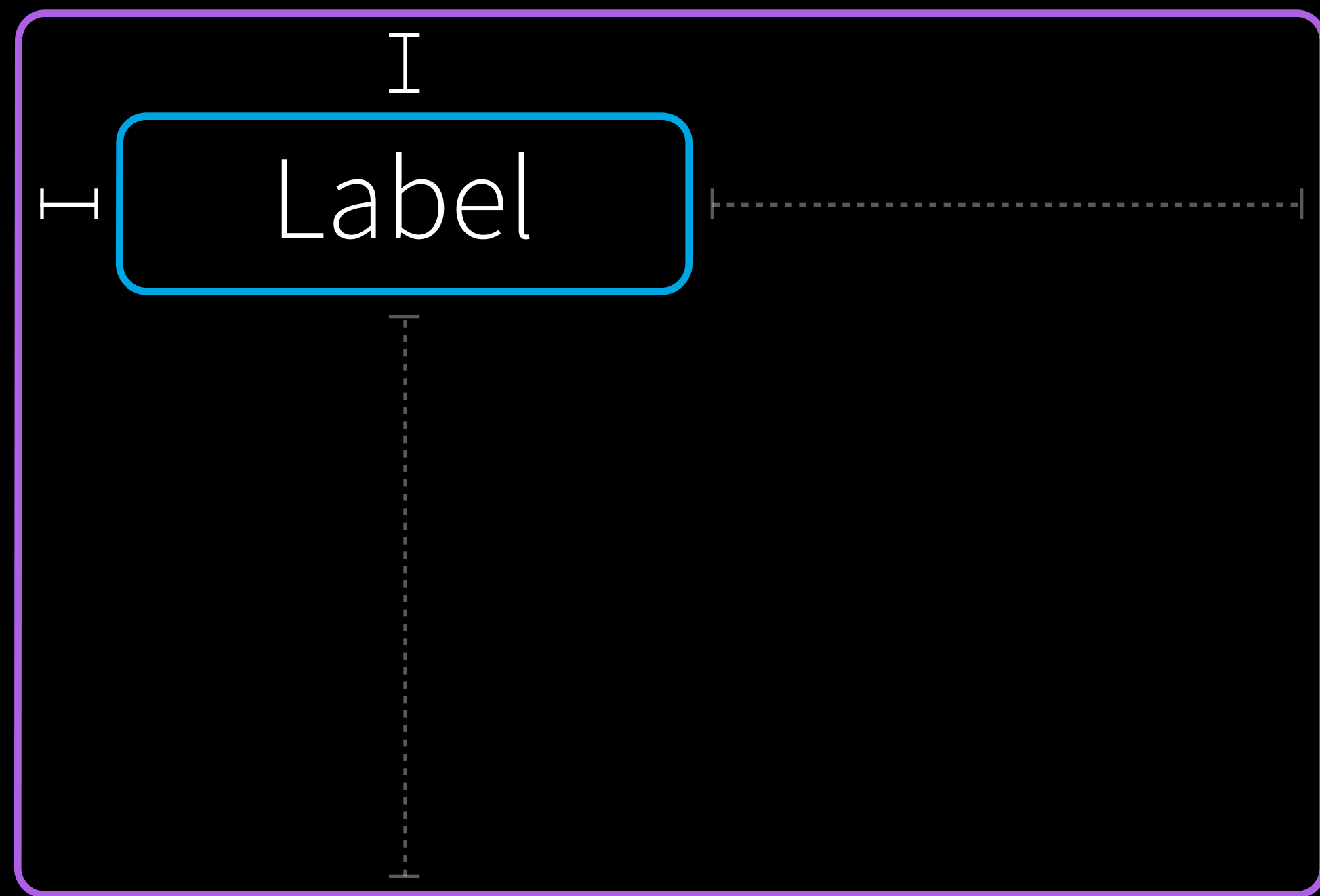
~~Isolated Views~~

Related Views

~~autoResizingMask~~

Constraints

Label





attribute == attribute x multiplier + constant













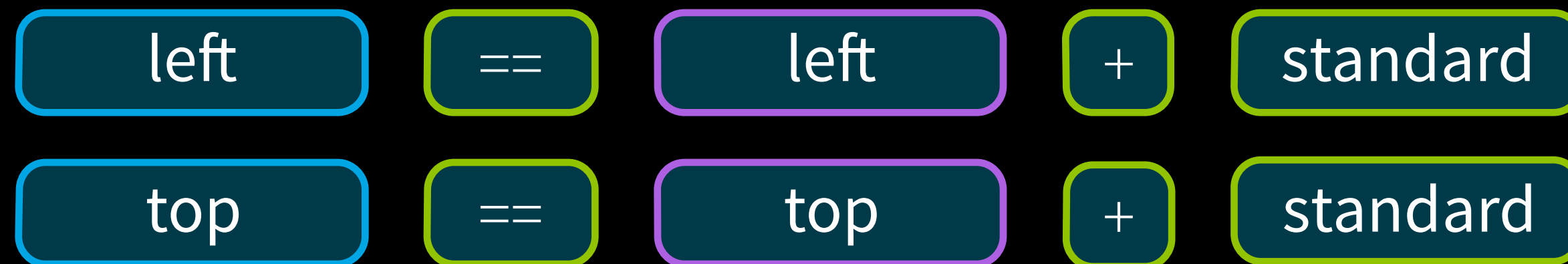






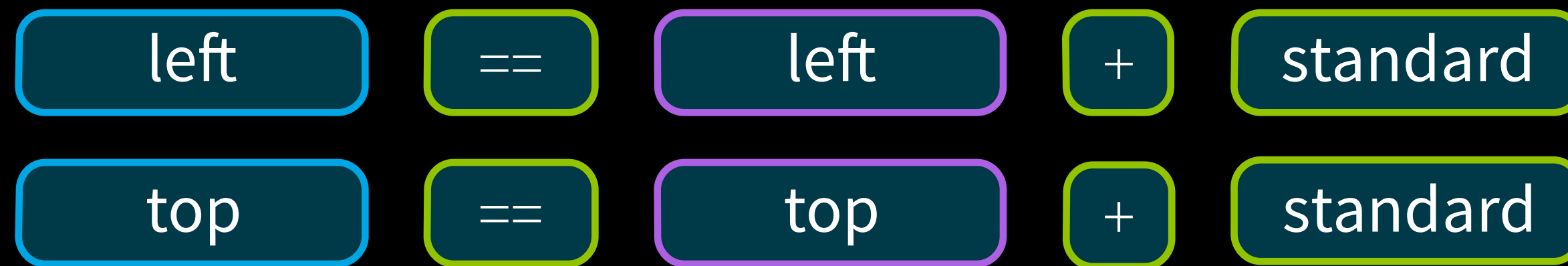






Same behavior as Springs & Struts

No frame necessary



Left	Right	Width	Height
Top	Bottom	Center X	Center Y
Baseline	None		

Leading	Trailing
Left	Right
Top	Bottom
Baseline	None

Width

Height

Center X

Center Y

Label

مخيف

Unsatisfiability

Ambiguity

Intrinsic Content Size

Priorities

How to Specify Constraints

Interface Builder

NSLayoutConstraint

Visual Format Language

Interface Builder

NSLayoutConstraint

```
+ (id)constraintWithItem:(id)view1
    attribute:(NSLayoutAttribute)attr1
    relatedBy:(NSLayoutRelation)relation
    toItem:(id)view2
    attribute:(NSLayoutAttribute)attr2
    multiplier:(CGFloat)multiplier
    constant:(CGFloat)constant;
```




```
[NSLayoutConstraint constraintWithItem:view1
                                attribute:NSLayoutAttributeTop
                                relatedBy:NSLayoutRelationEqual
                                toItem:view2
                                attribute:NSLayoutAttributeTop
                                multiplier:1.0
                                constant:20.0];
```

top == top × 1.0 + 20.0

```
[NSLayoutConstraint constraintWithItem: view1  
                                attribute: NSLayoutAttributeTop  
                                relatedBy: NSLayoutRelationEqual  
                                toItem: view2  
                                attribute: NSLayoutAttributeTop  
                                multiplier: 1.0  
                                constant: 20.0];
```

top == top × 1.0 + 20.0

```
[NSLayoutConstraint constraintWithItem:view1
                                attribute:NSLayoutAttributeTop
                                relatedBy:NSLayoutRelationEqual
                                toItem:view2
                                attribute:NSLayoutAttributeTop
                                multiplier:1.0
                                constant:20.0];
```

top == top × 1.0 + 20.0

```
[NSLayoutConstraint constraintWithItem:view1
                                attribute:NSLayoutAttributeTop
                                relatedBy:NSLayoutRelationEqual
                                toItem:view2
                                attribute:NSLayoutAttributeTop
                                multiplier:1.0
                                constant:20.0];
```



```
[NSLayoutConstraint constraintWithItem:view1
                                attribute:NSLayoutAttributeTop
                                relatedBy:NSLayoutRelationEqual
                                toItem:view2
                                attribute:NSLayoutAttributeTop
                                multiplier:1.0
                                constant:20.0];
```



```
[NSLayoutConstraint constraintWithItem:view1
                                attribute:NSLayoutAttributeTop
                                relatedBy:NSLayoutRelationEqual
                                toItem:view2
                                attribute:NSLayoutAttributeTop
                                multiplier:1.0
                                constant:20.0];
```



```
[NSLayoutConstraint constraintWithItem:view1
                                attribute:NSLayoutAttributeTop
                                relatedBy:NSLayoutRelationEqual
                                toItem:view2
                                attribute:NSLayoutAttributeTop
                                multiplier:1.0
                                constant:20.0];
```

Visual Format Language

[label]-[textField]

|-[label]-|

$V: | - (40) - [1\text{logo}]$

|-(40)-[logo]-[label]-[textField(>=20)]-|

```
[NSLayoutConstraint constraintsWithVisualFormat:@"|-[label]"
                                     options:0
                                     metrics:nil
                                     views:views];
```

```
[NSLayoutConstraint constraintsWithVisualFormat:@"V:|-[label]"
                                     options:0
                                     metrics:nil
                                     views:views];
```

UIAppearance