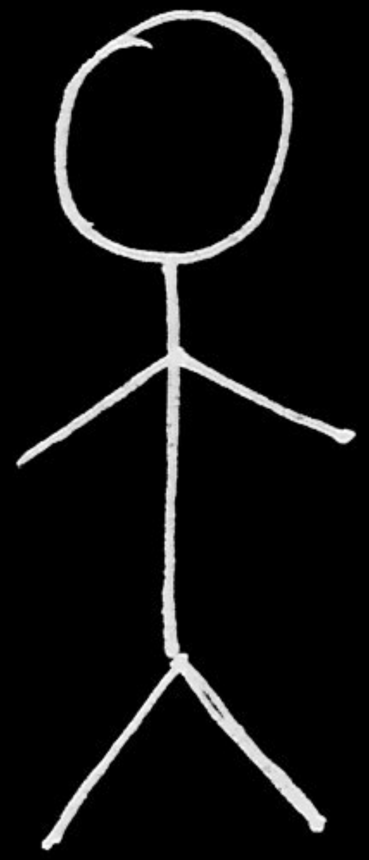
Developer Tools

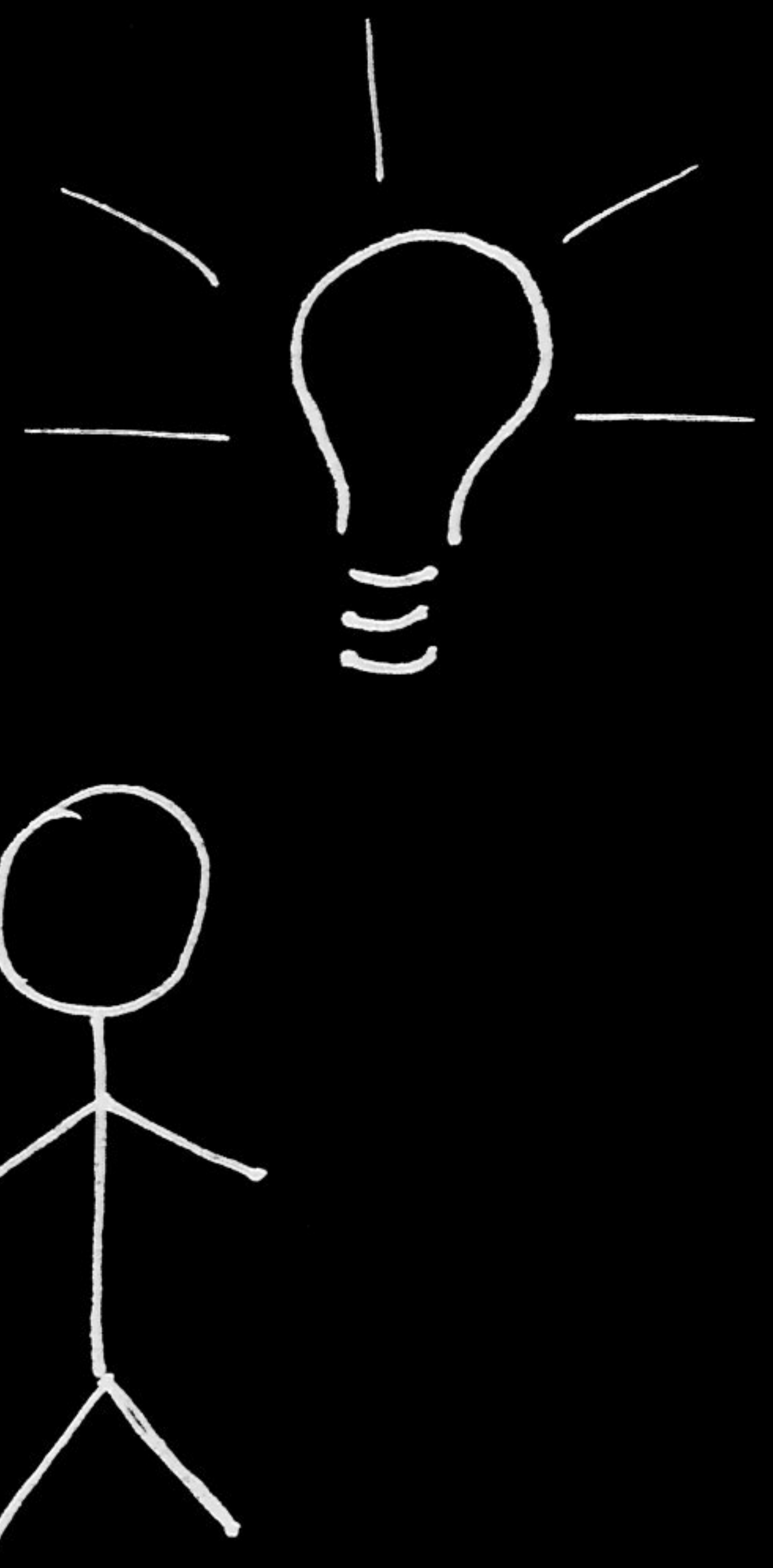
#WWDC15

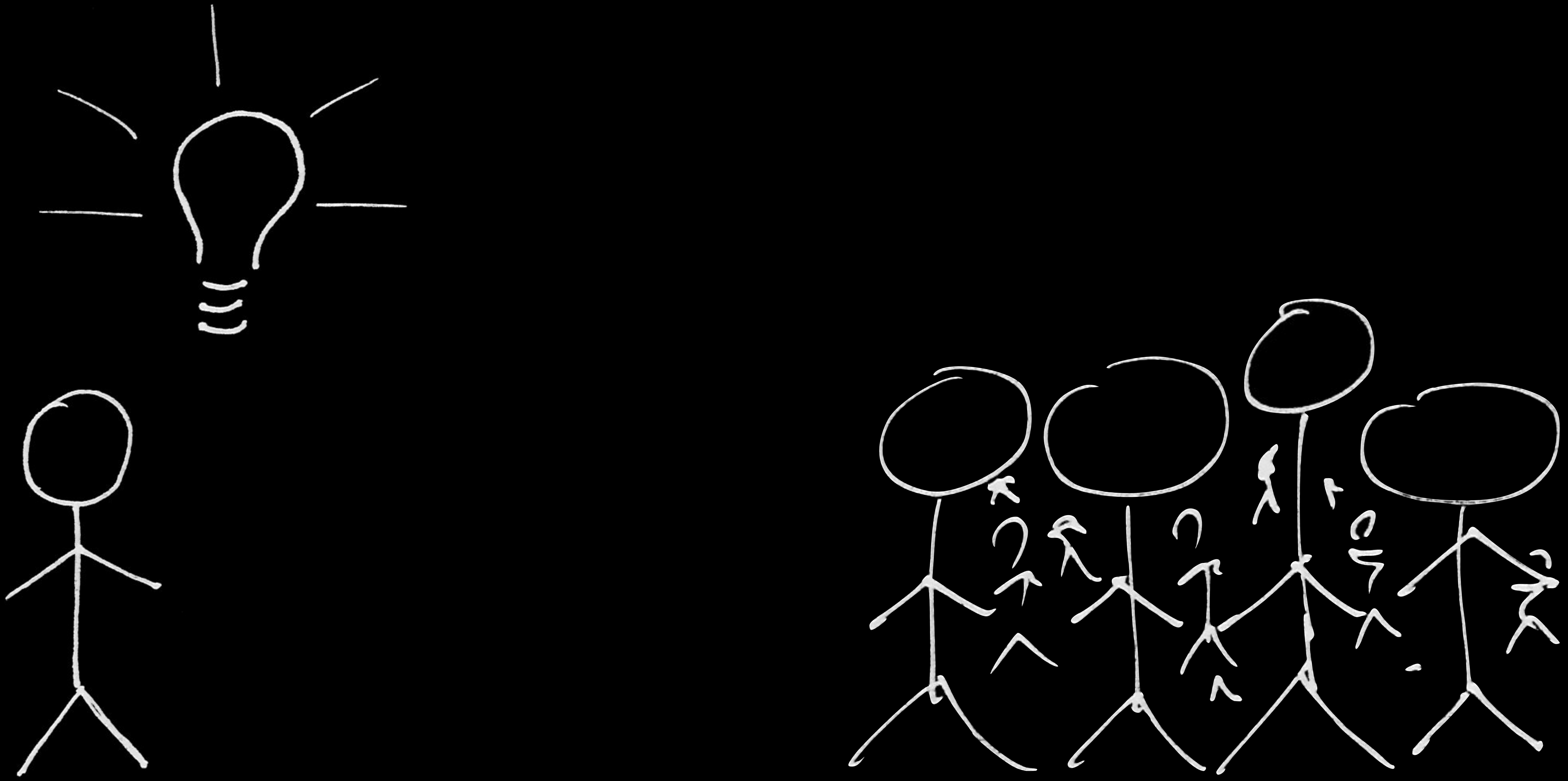
Implementing UI Designs in Interface Builder

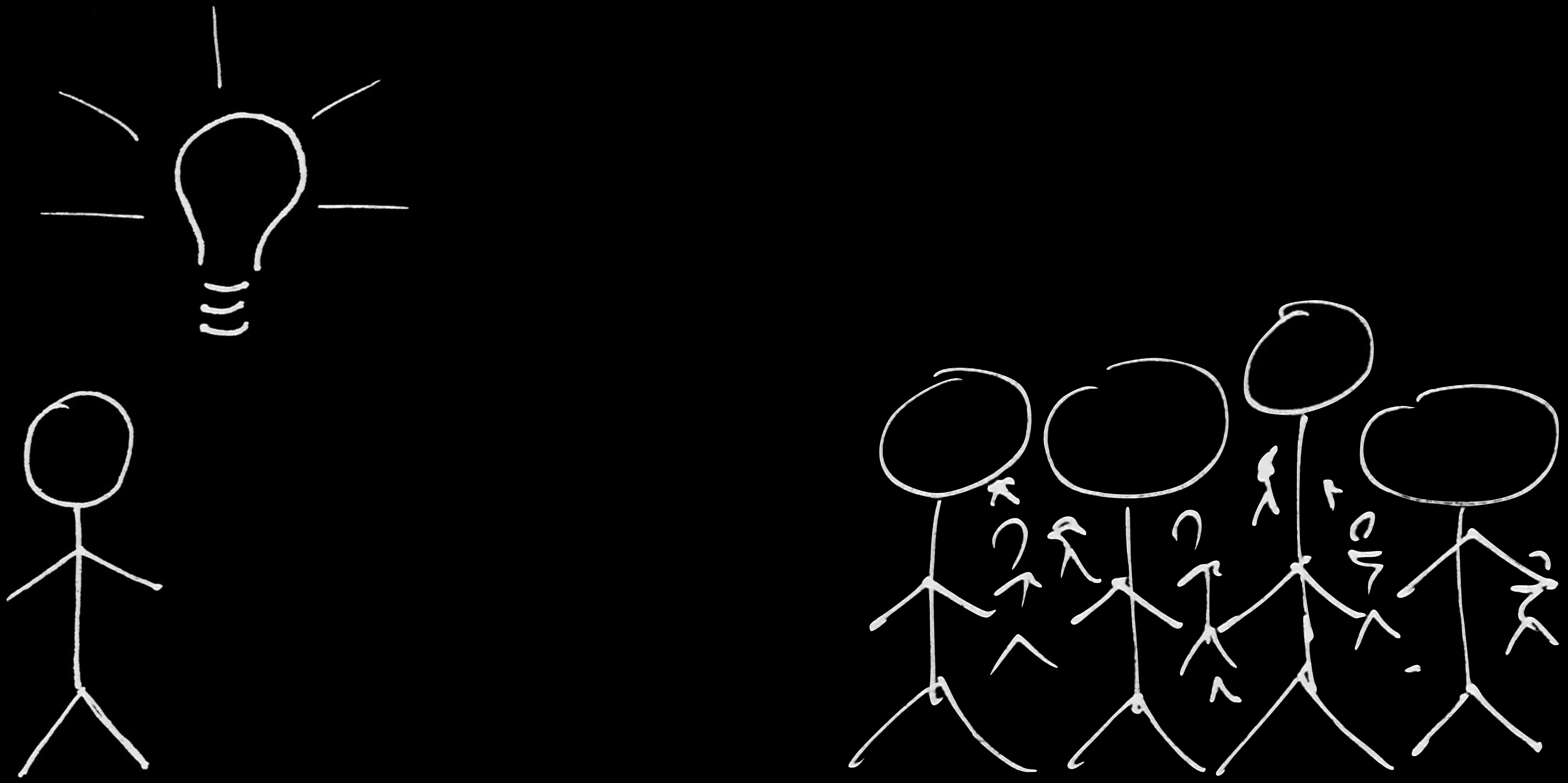
Session 407

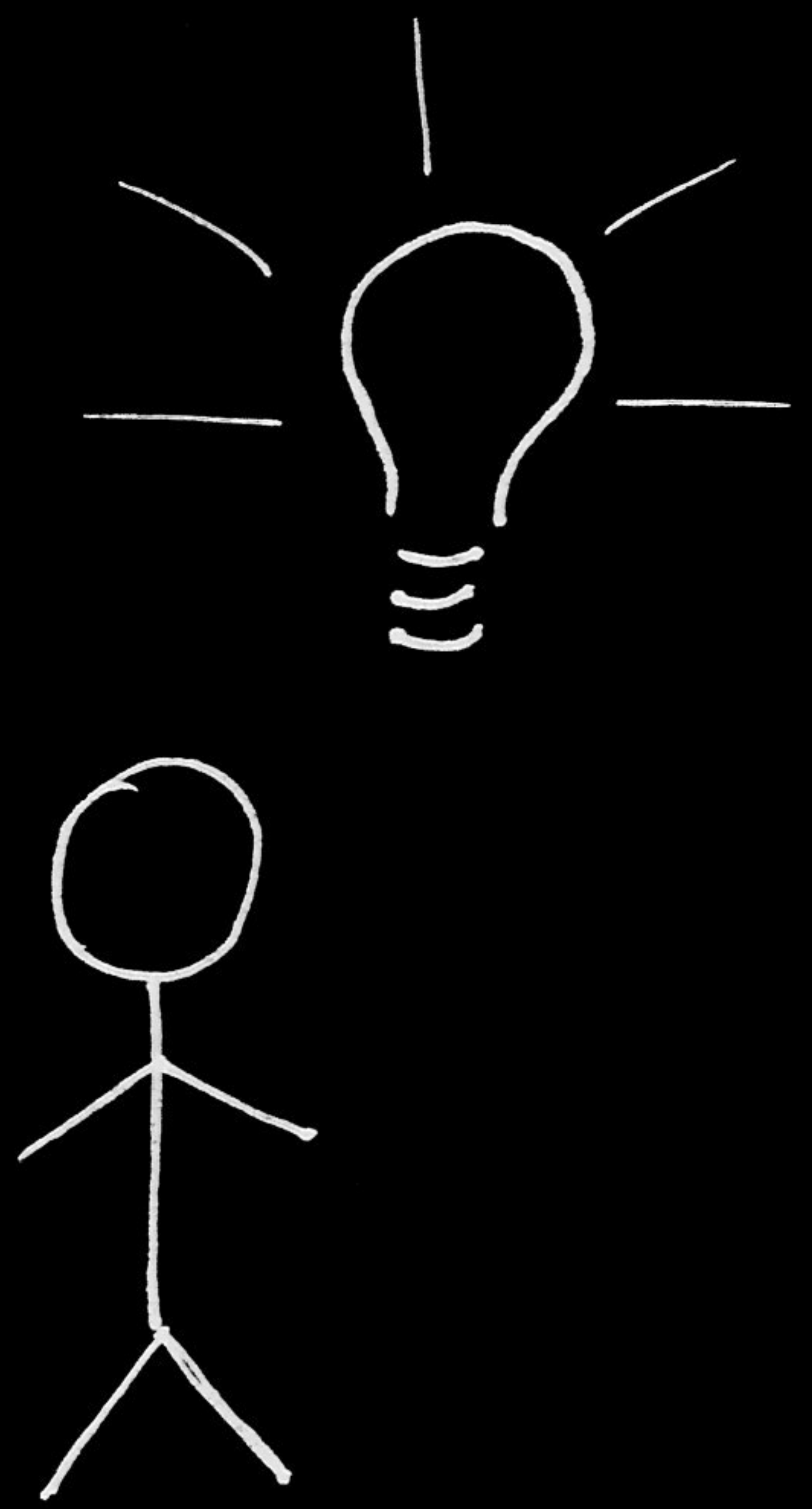
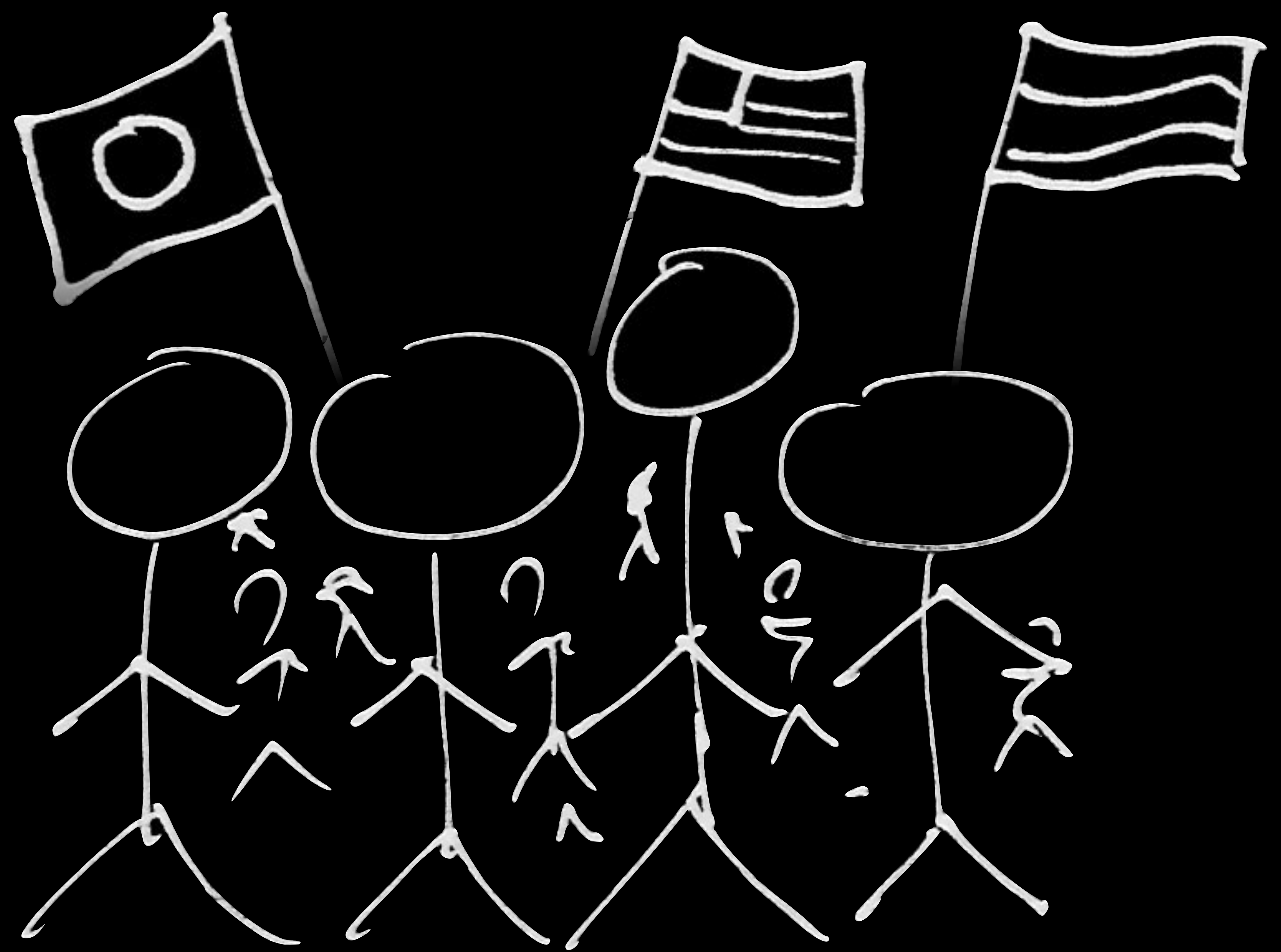
Kevin Cathey Interface Builder Engineer
Tony Ricciardi Interface Builder Engineer

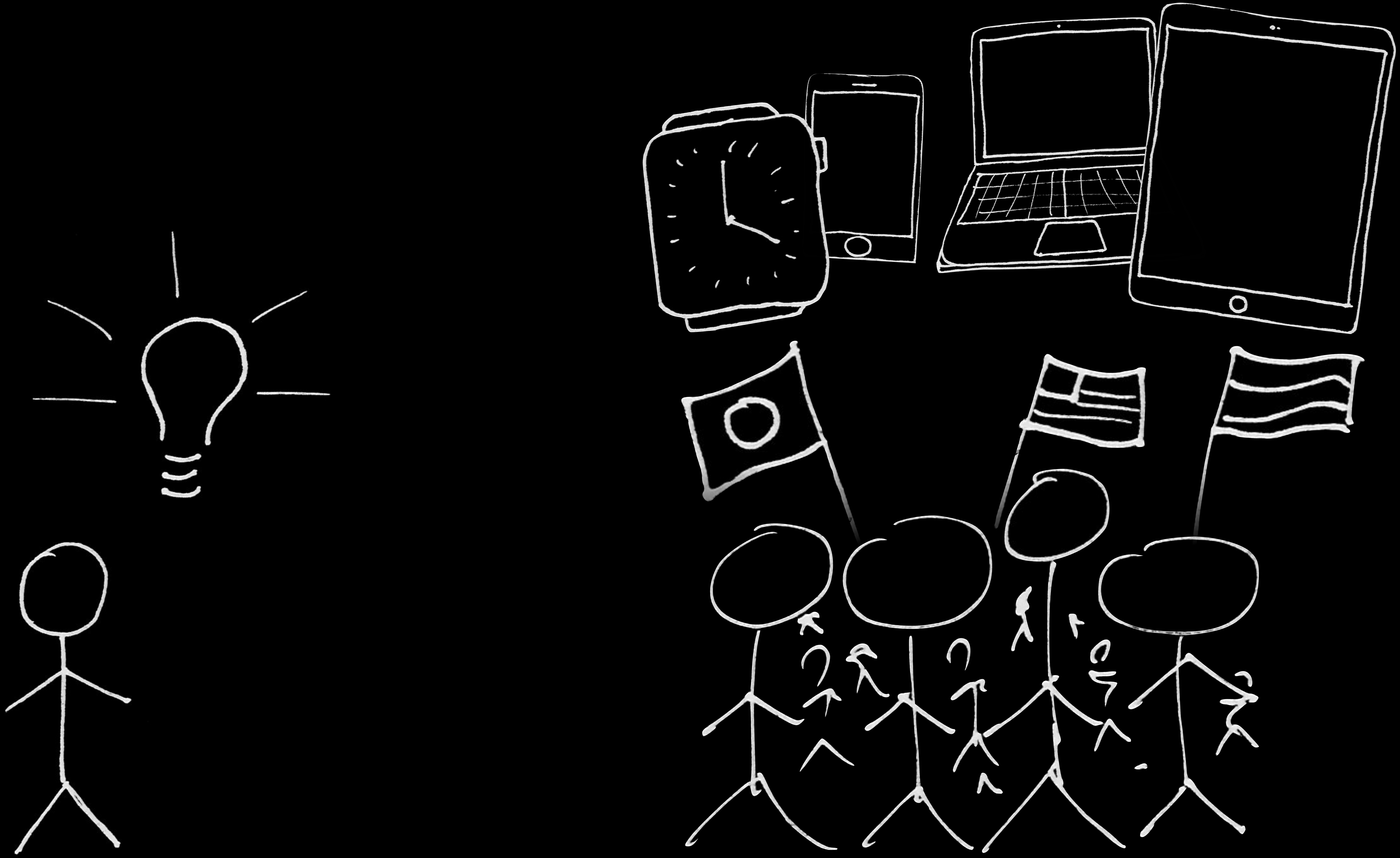


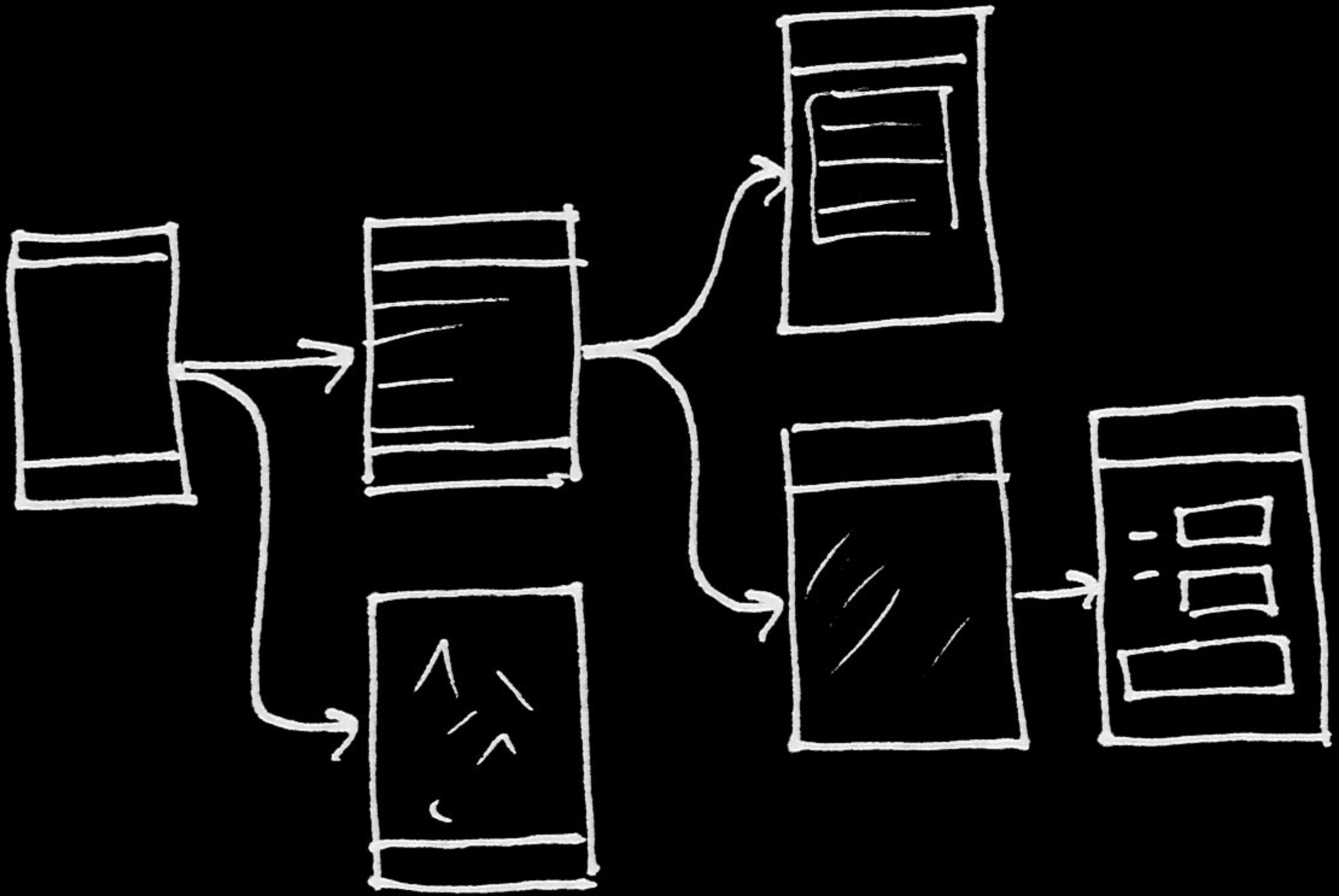


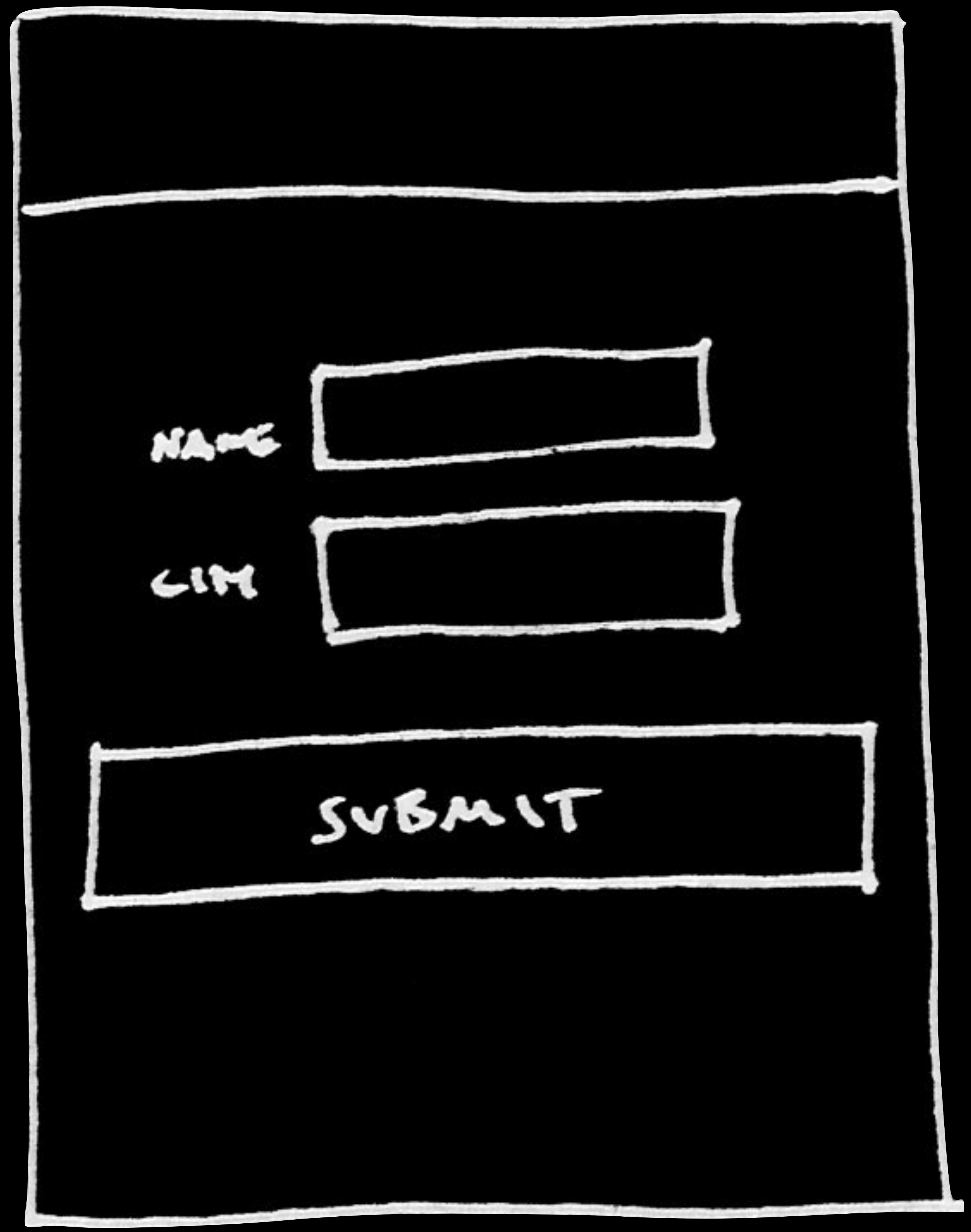


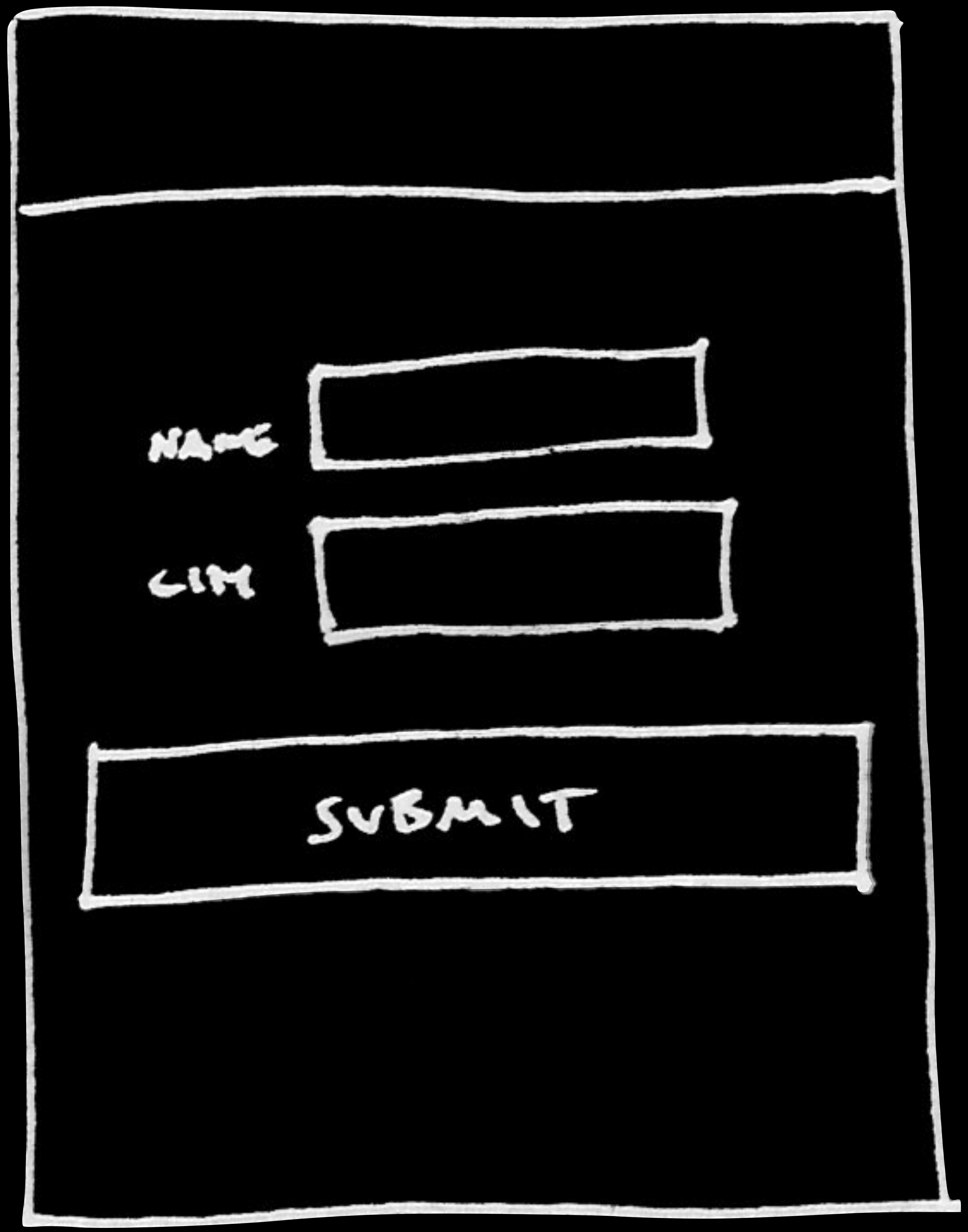


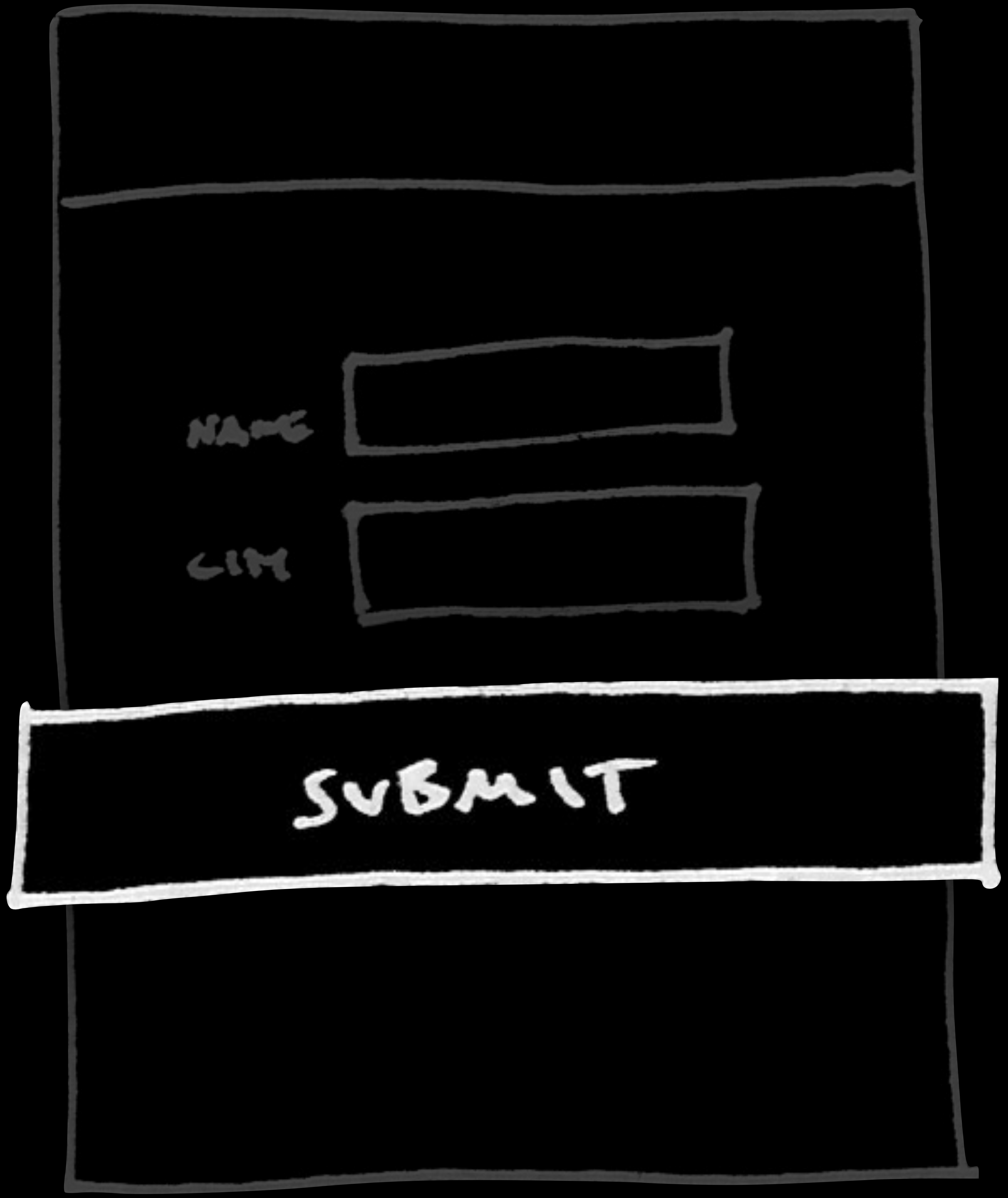








NAME
CITY
SUBMIT


NAME
CIM
SUBMIT


NAME
CITY
SUBMIT

Design Time

Design Time

Build Time

Design Time

Build Time

Run Time

Design Time

Build Time

Run Time

Demo

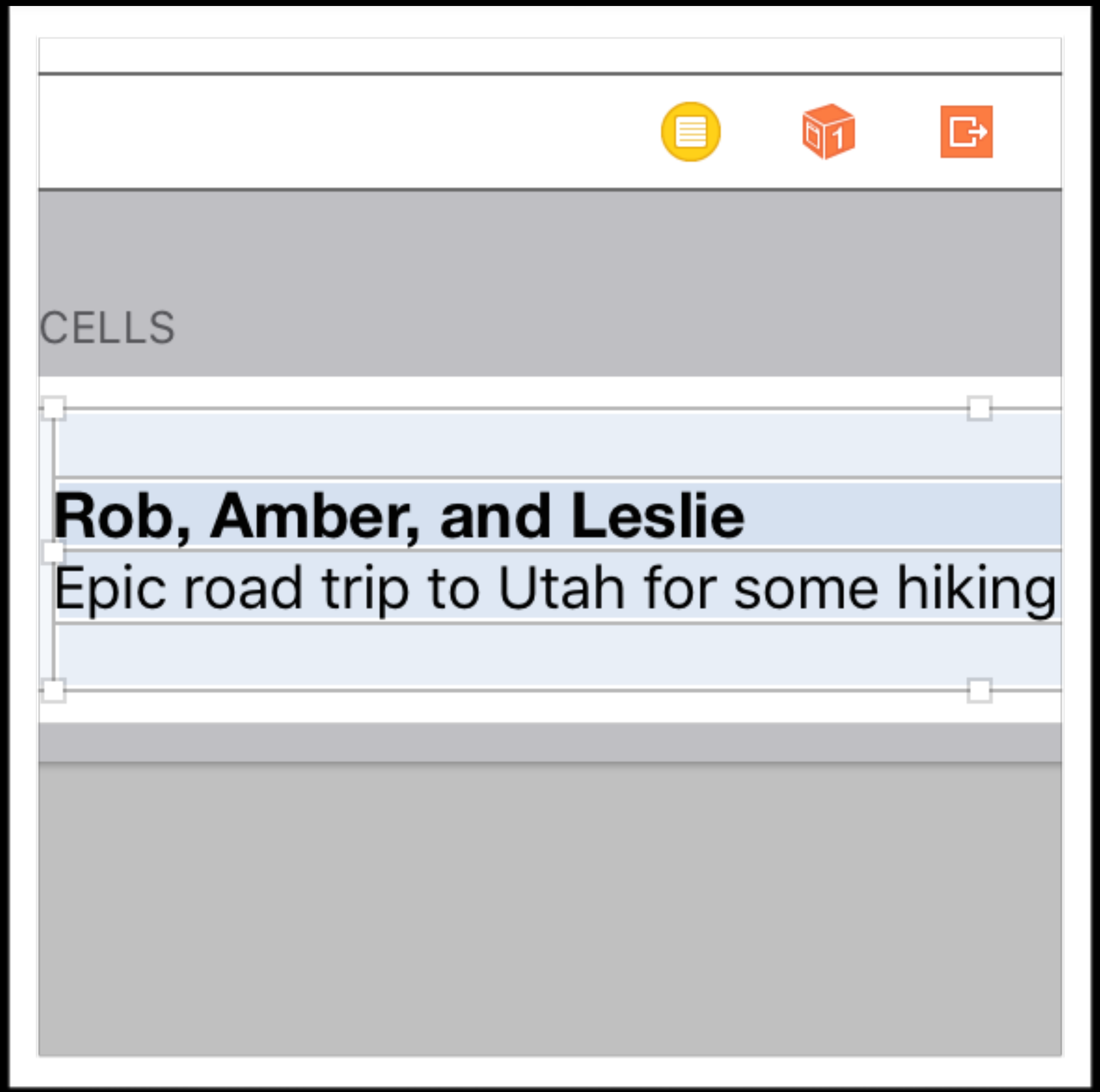
Design Time — Best Practices, Tips and Tricks

Takeaways

Best practices

Takeaways

Best practices


CELLS

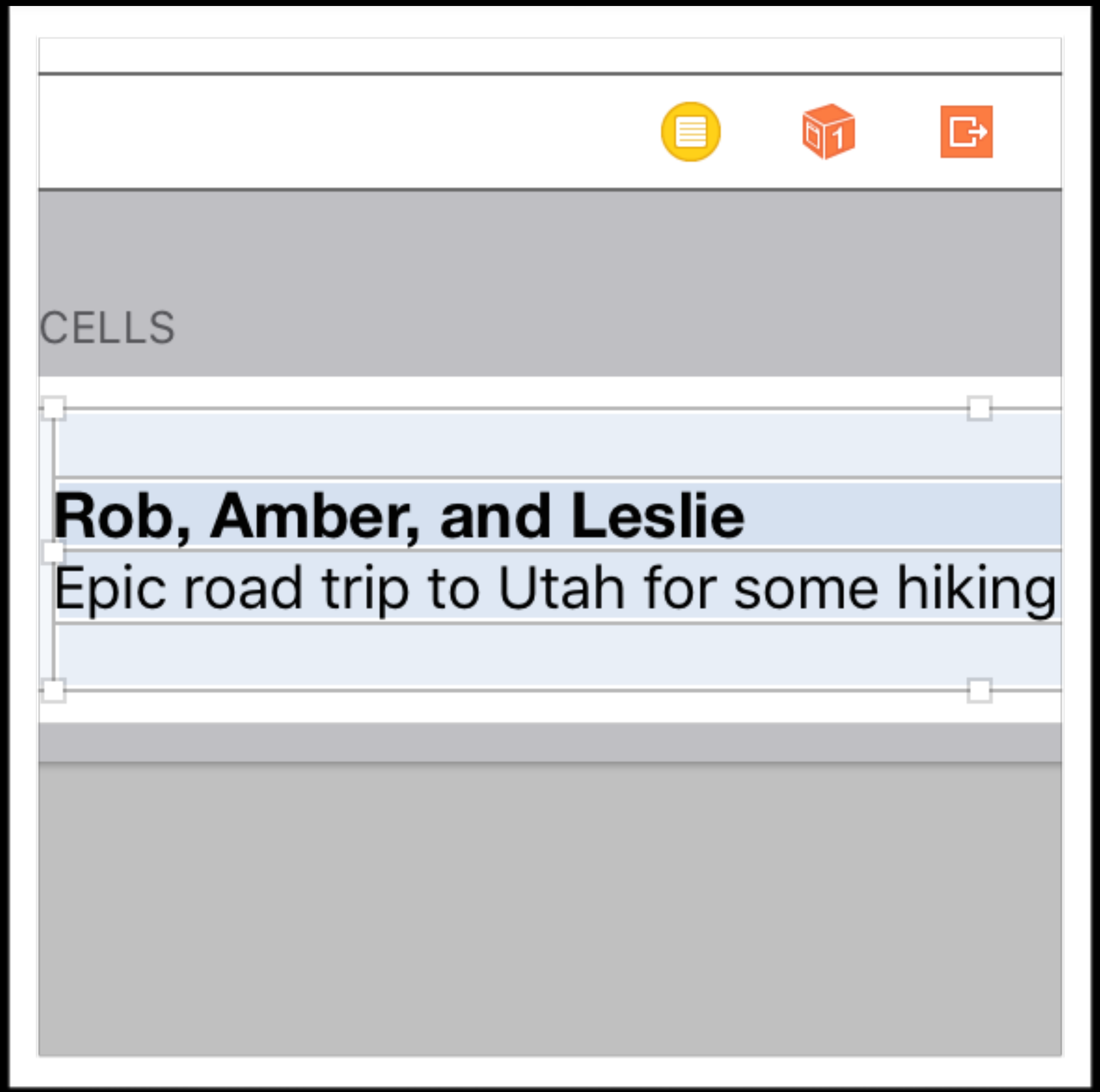
Rob, Amber, and Leslie

Epic road trip to Utah for some hiking

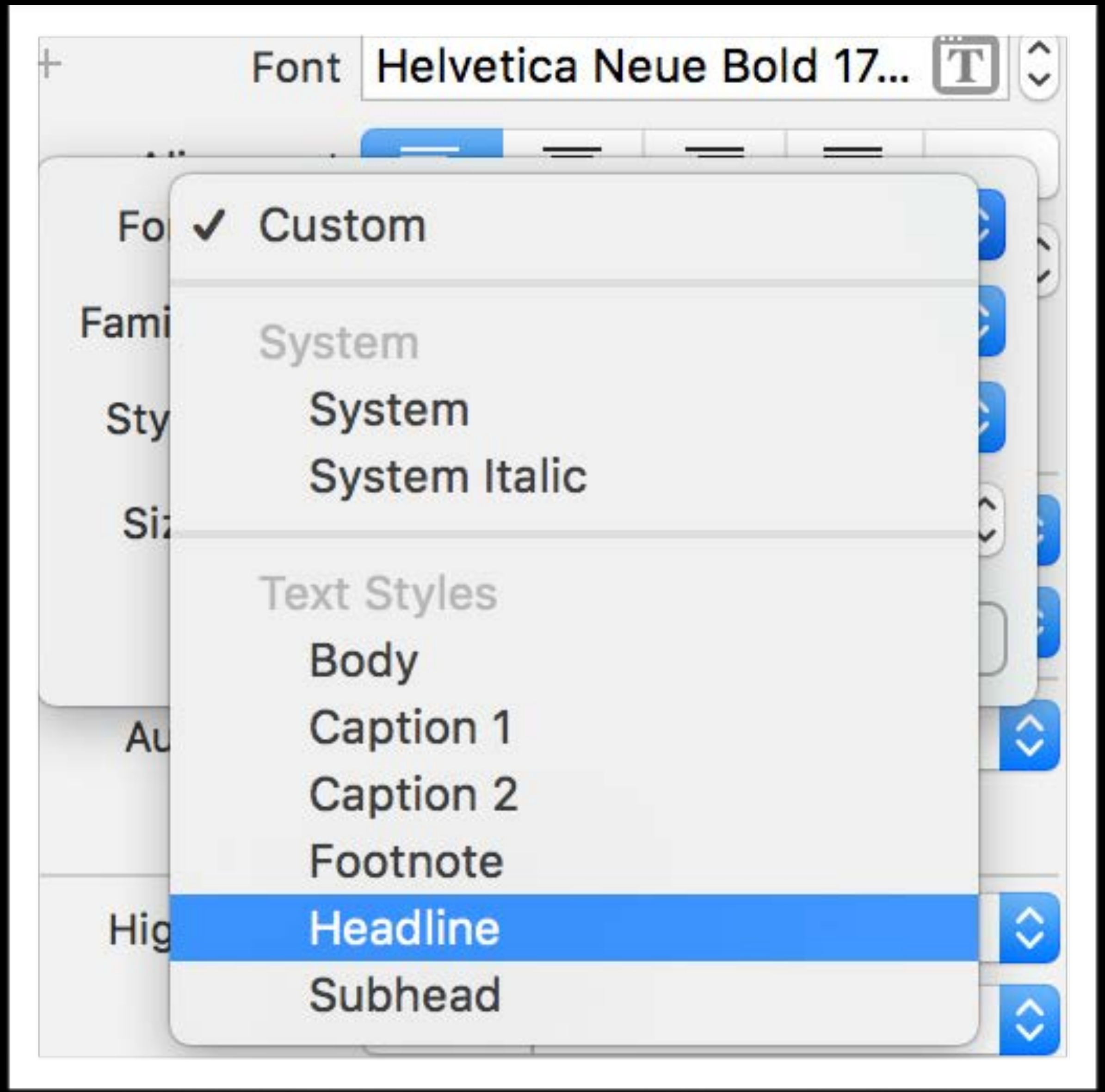
Stack Views

Takeaways

Best practices



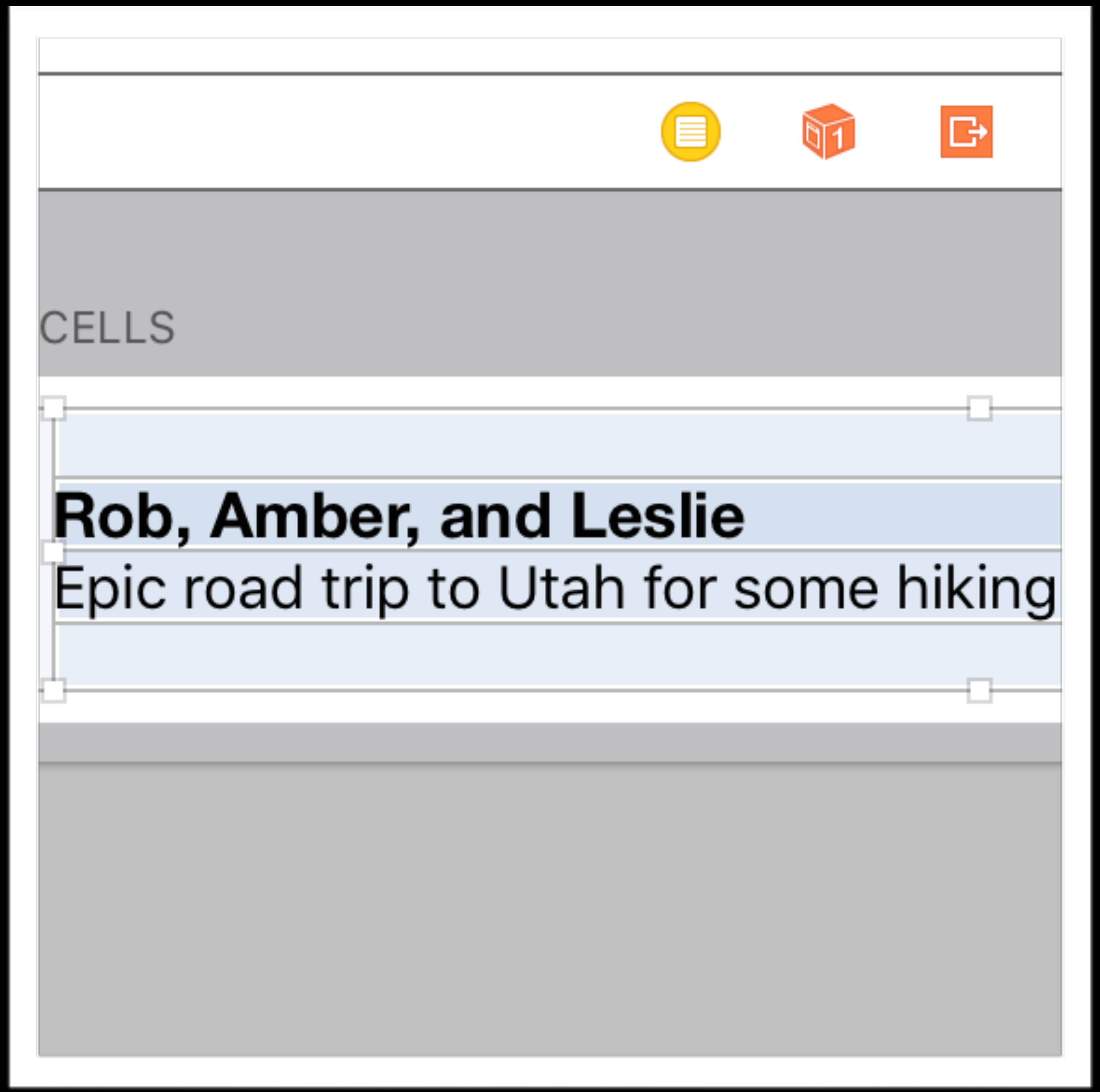
Stack Views



Dynamic Type

Takeaways

Best practices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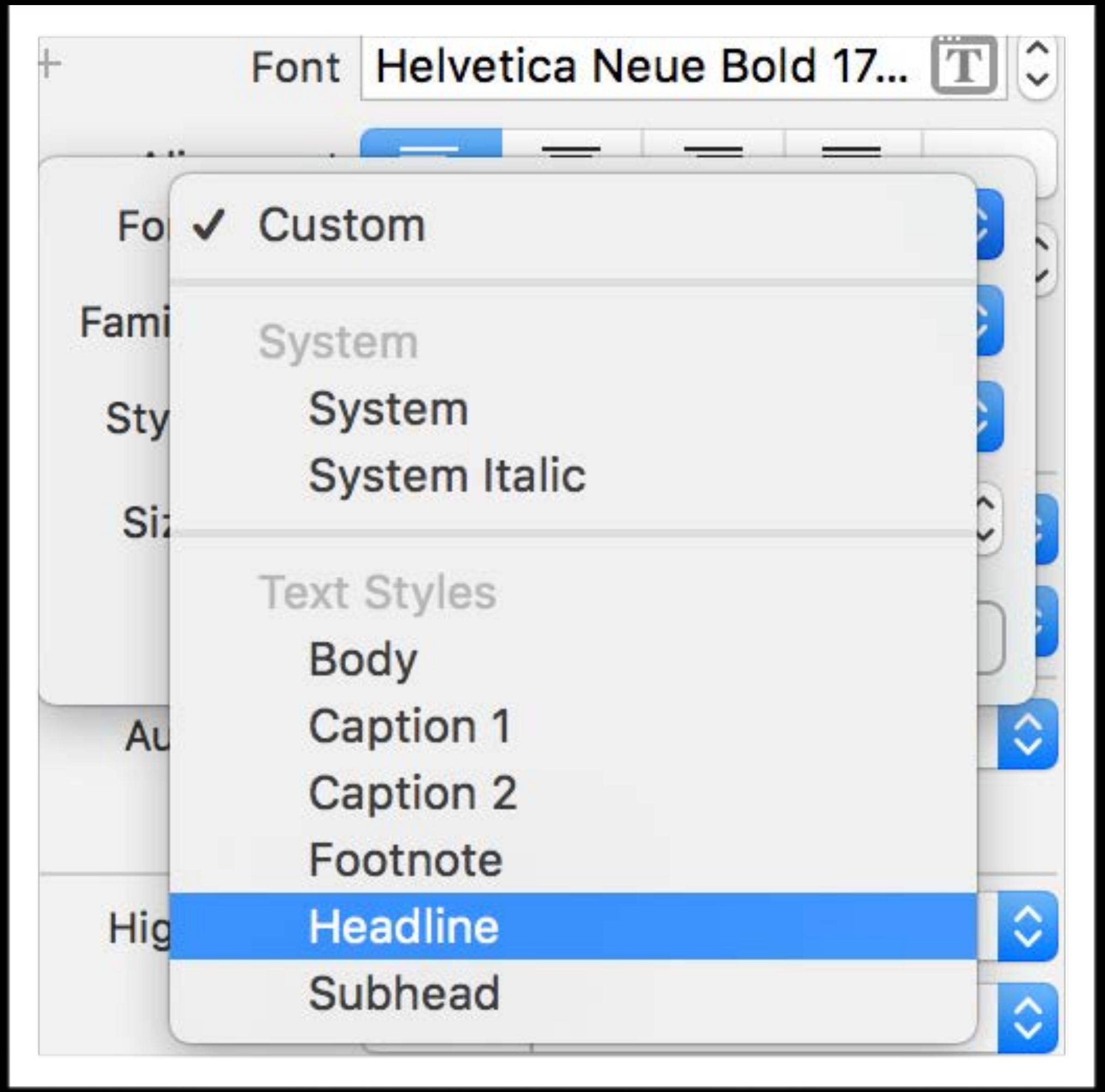
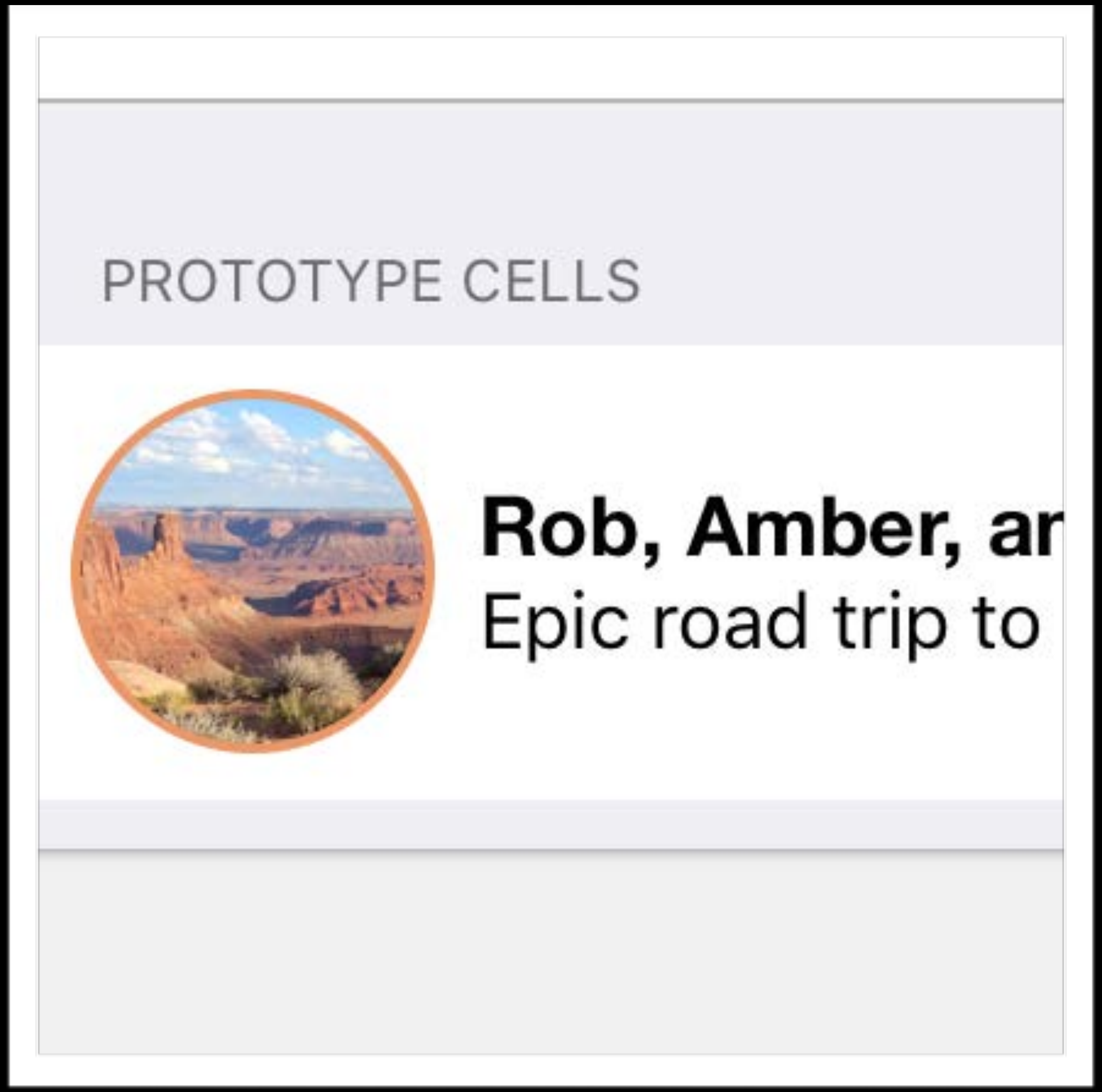

Font Helvetica Neue Bold 17...

Dynamic Type


PROTOTYPE CELLS

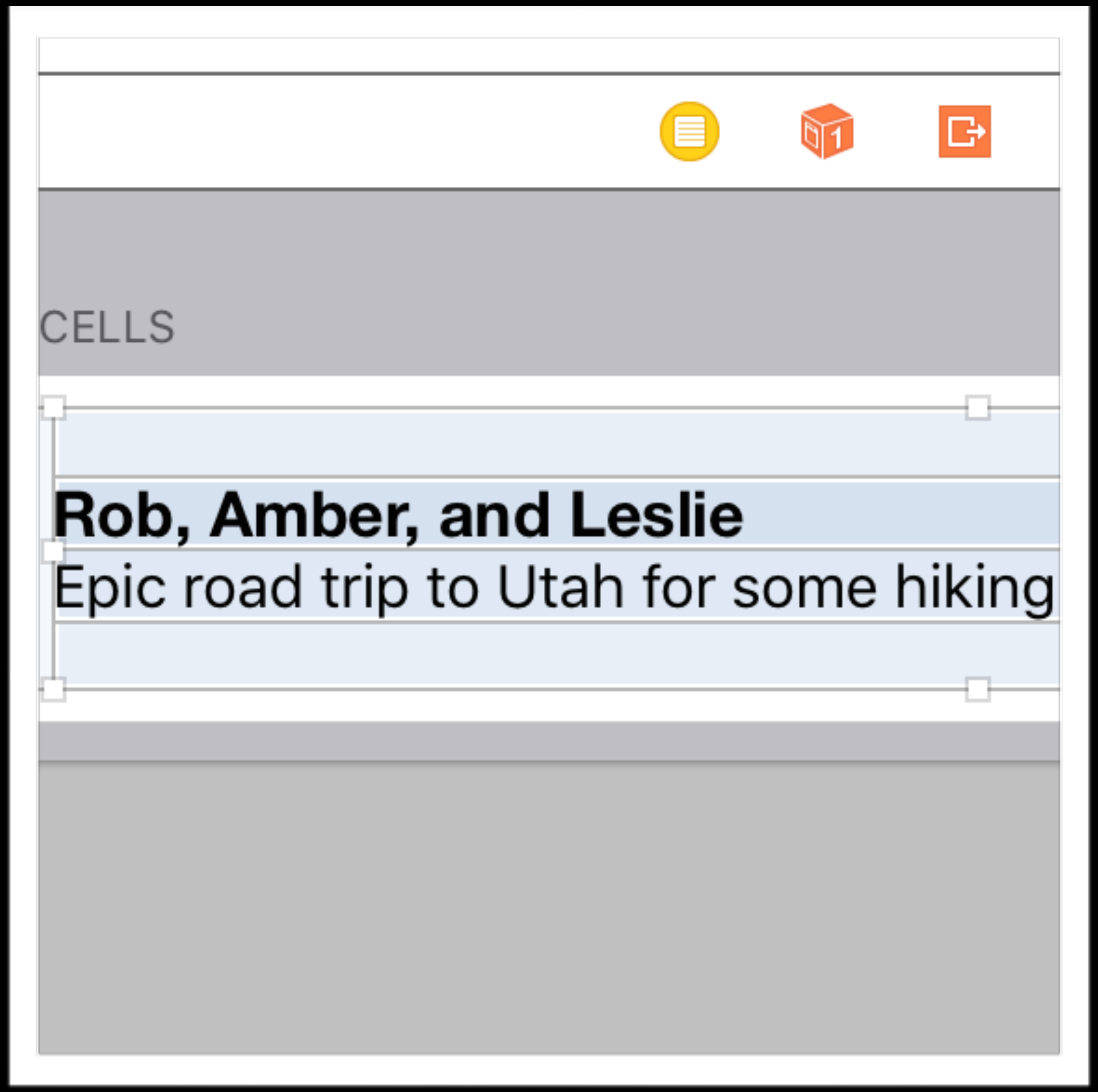
Rob, Amber, ar

Epic road trip to

Designables

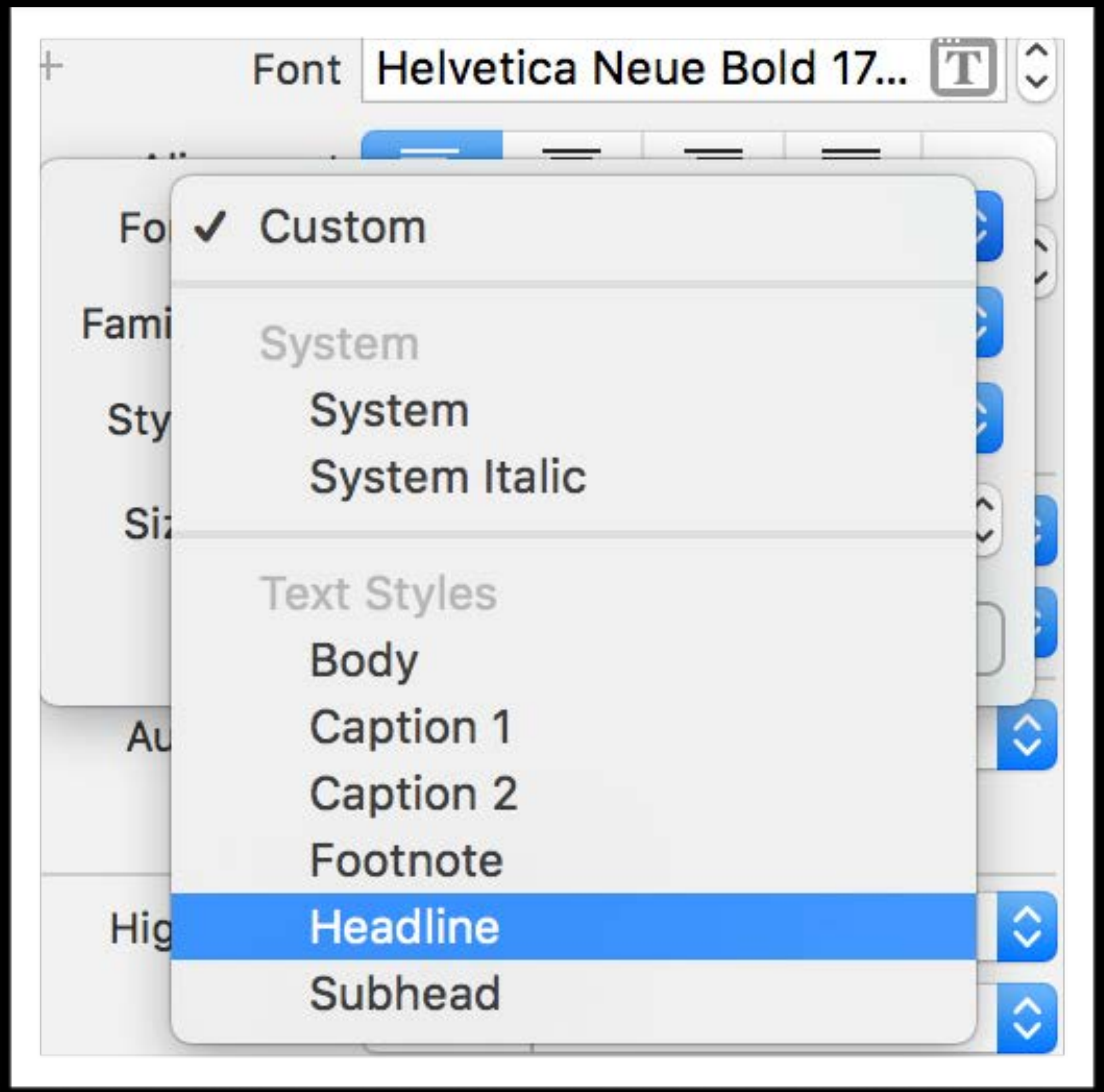
Takeaways

Best practices



Rob, Amber, and Leslie
Epic road trip to Utah for some hiking

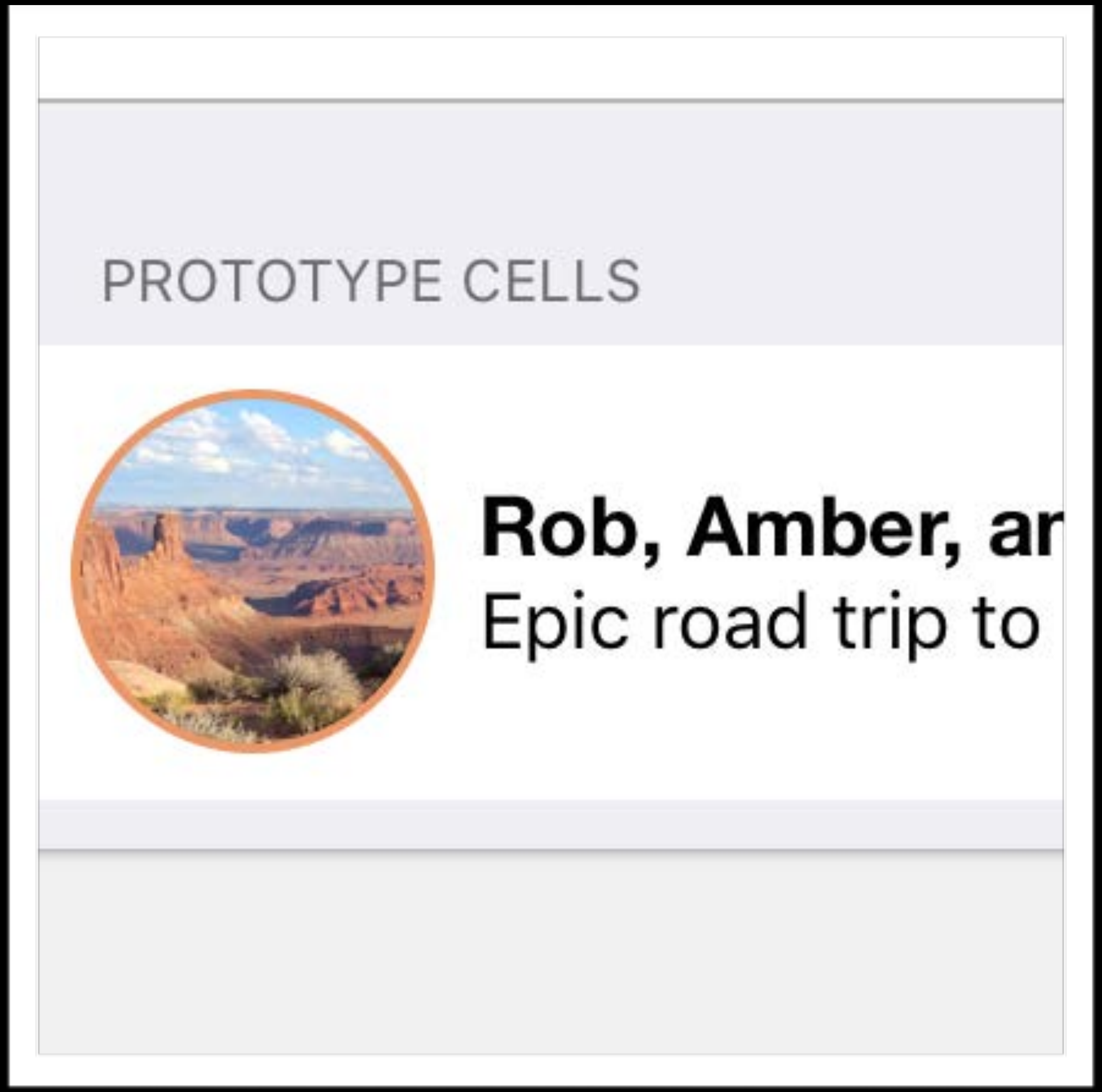
Stack Views



Font Helvetica Neue Bold 17...

✓ Custom
System
System Italic
Body
Caption 1
Caption 2
Footnote
Headline
Subhead

Dynamic Type



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Designables

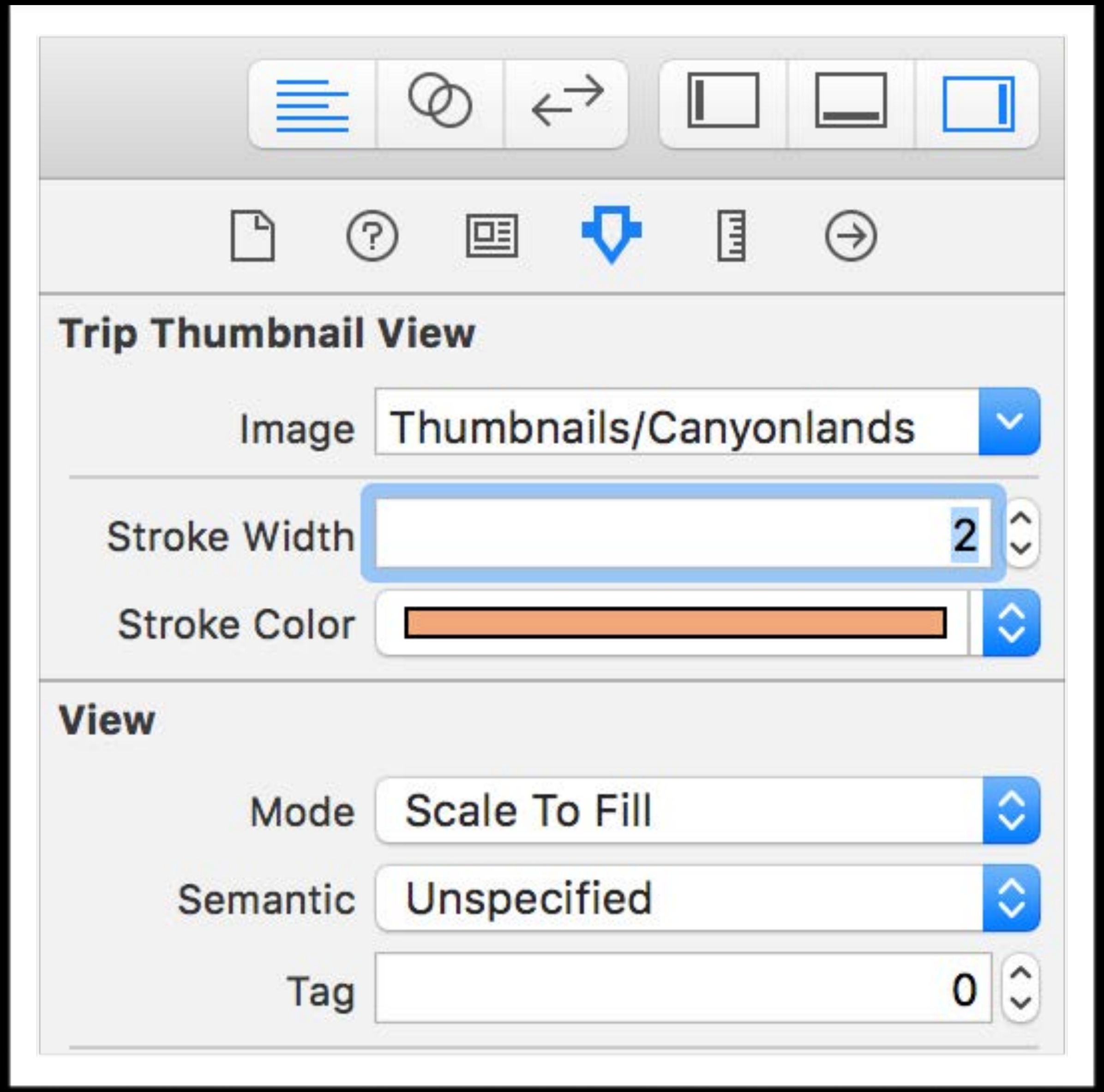

Trip Thumbnail View

Image Thumbnails/Canyonlands
Stroke Width 2
Stroke Color

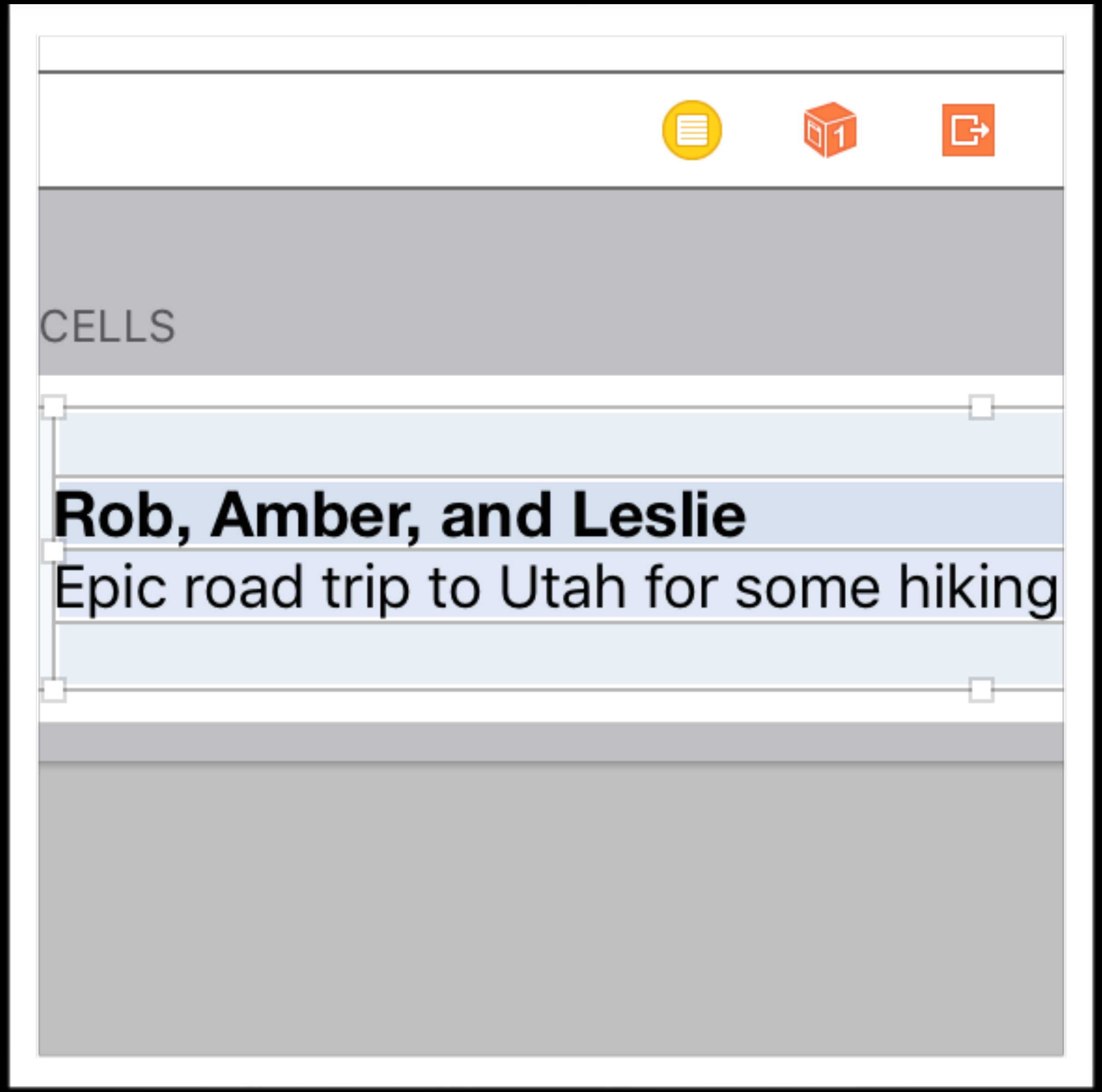
View

Mode Scale To Fill
Semantic Unspecified
Tag 0

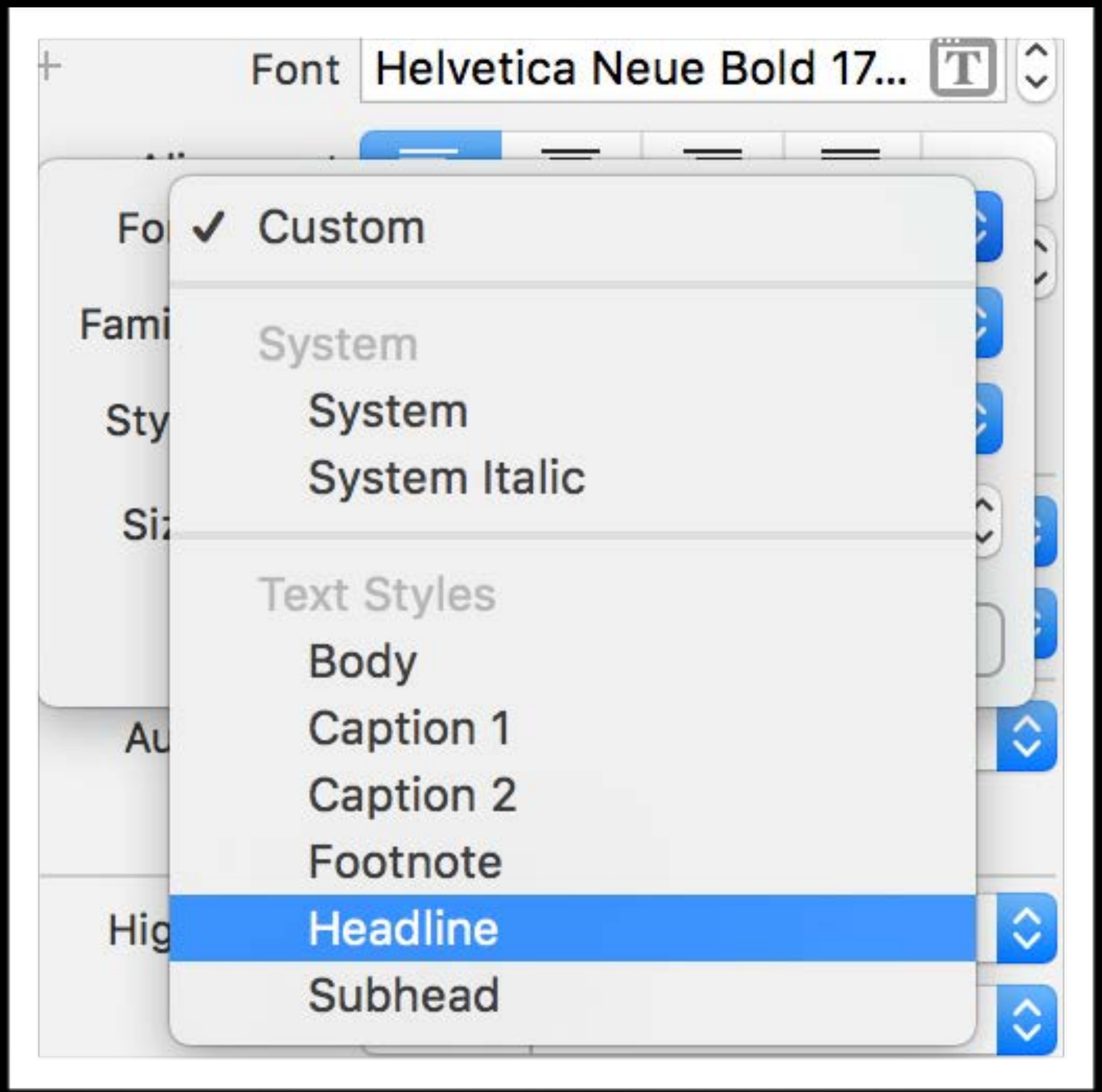
Inspectables

Takeaways

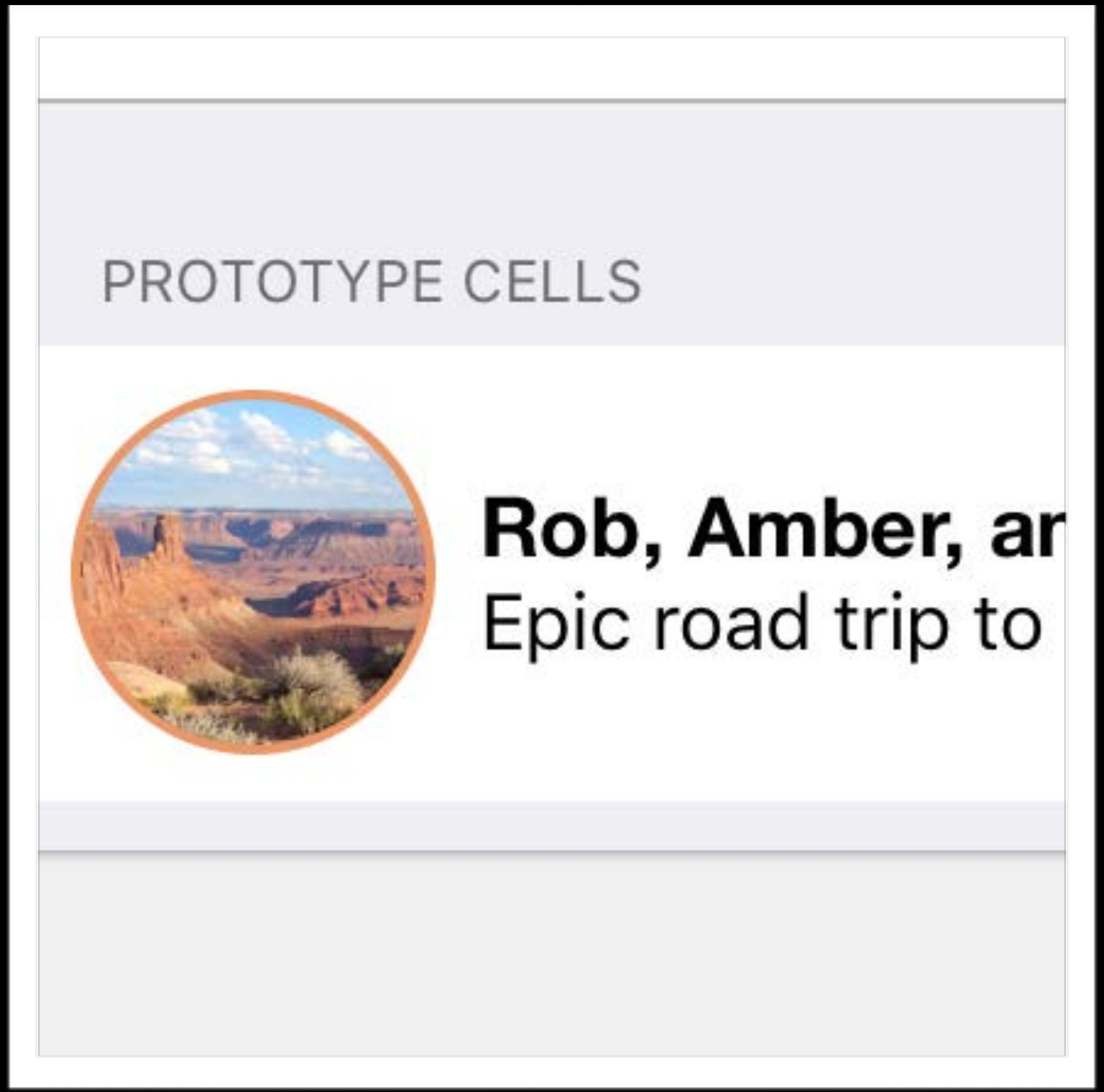
Best practices



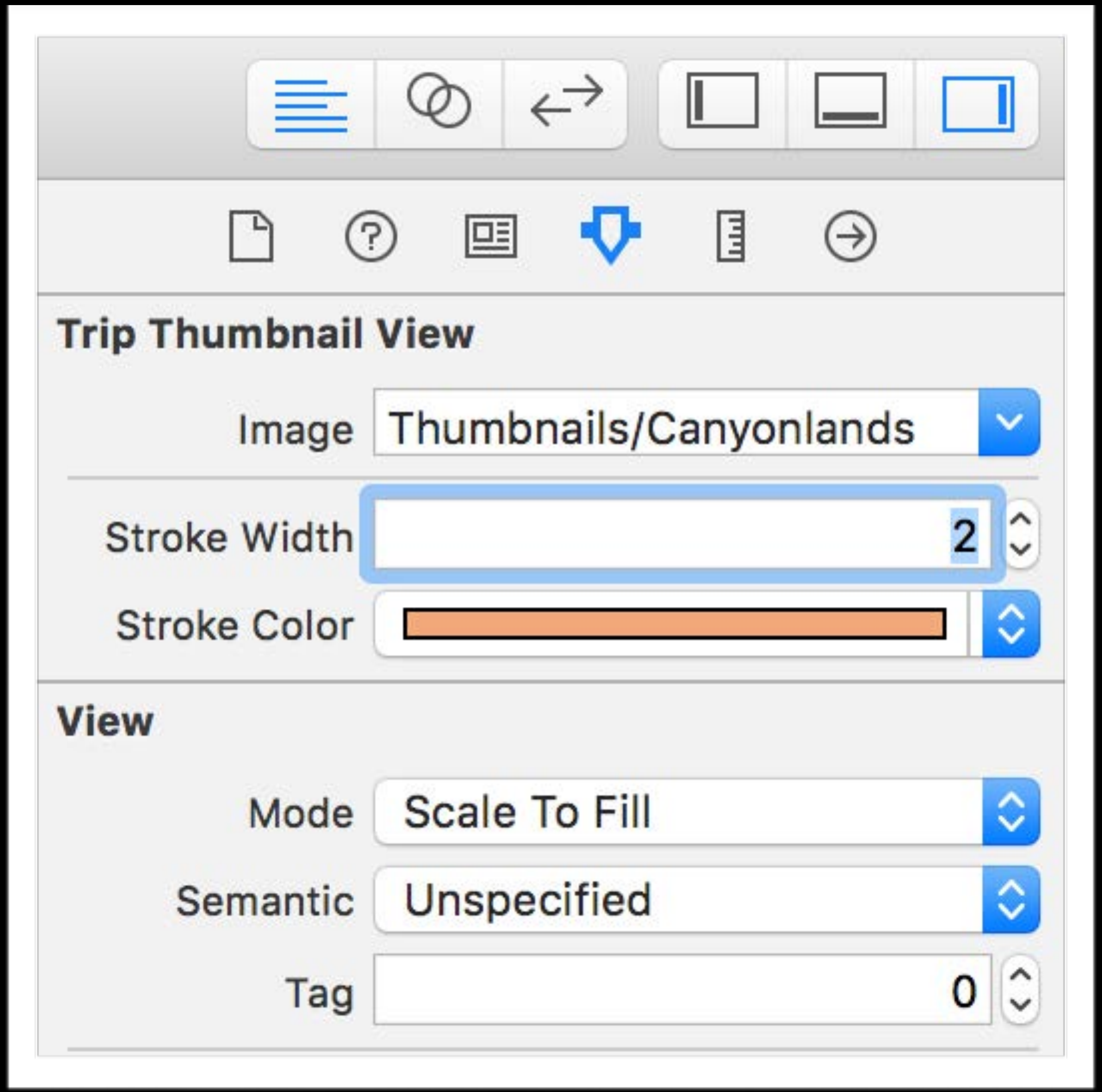
Stack Views



Dynamic Type



Designables



Trip Thumbnail View

Image: Thumbnails/Canyonlands

Stroke Width: 2

Stroke Color: 🟧

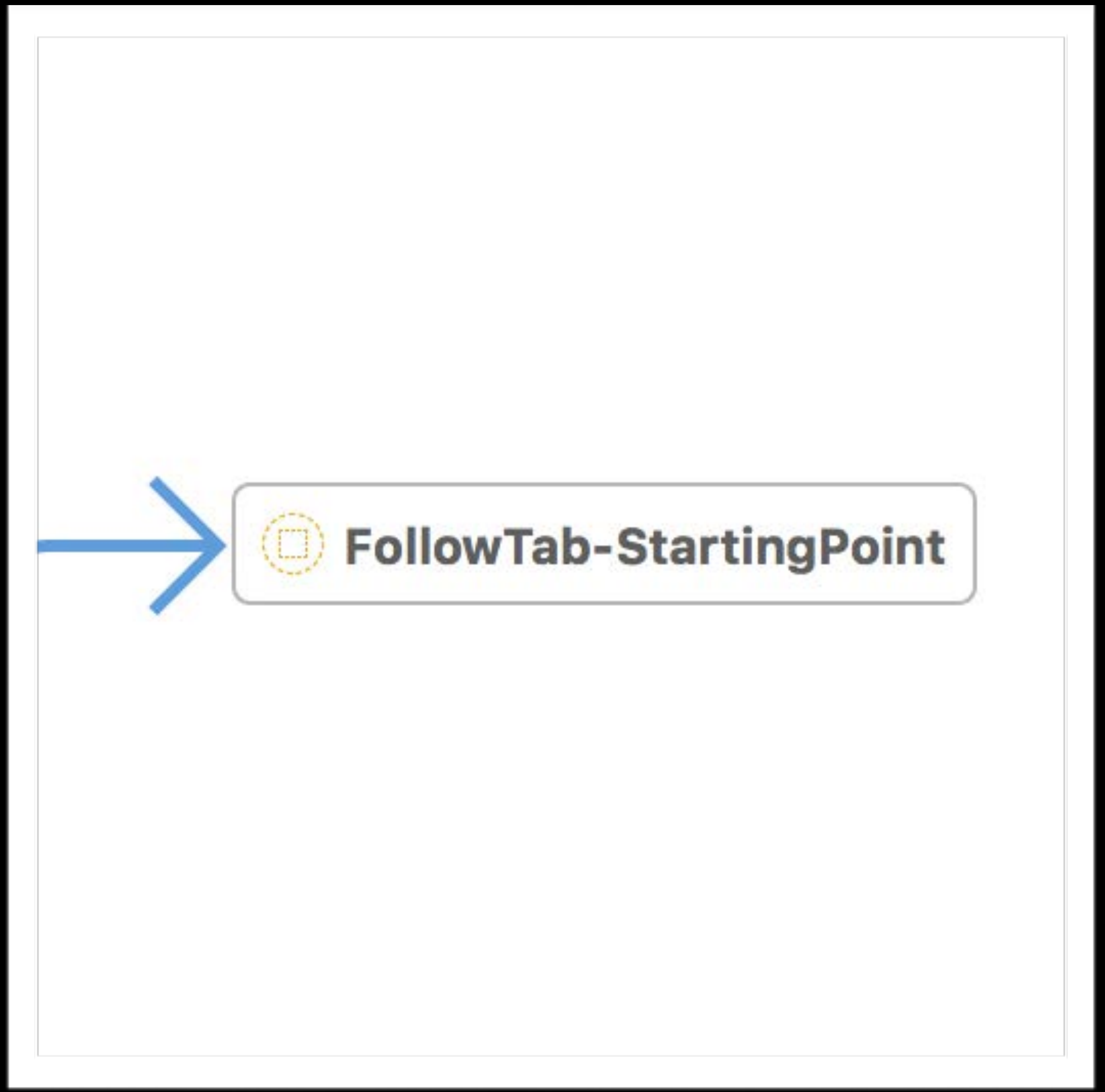
View

Mode: Scale To Fill

Semantic: Unspecified

Tag: 0

Inspectables



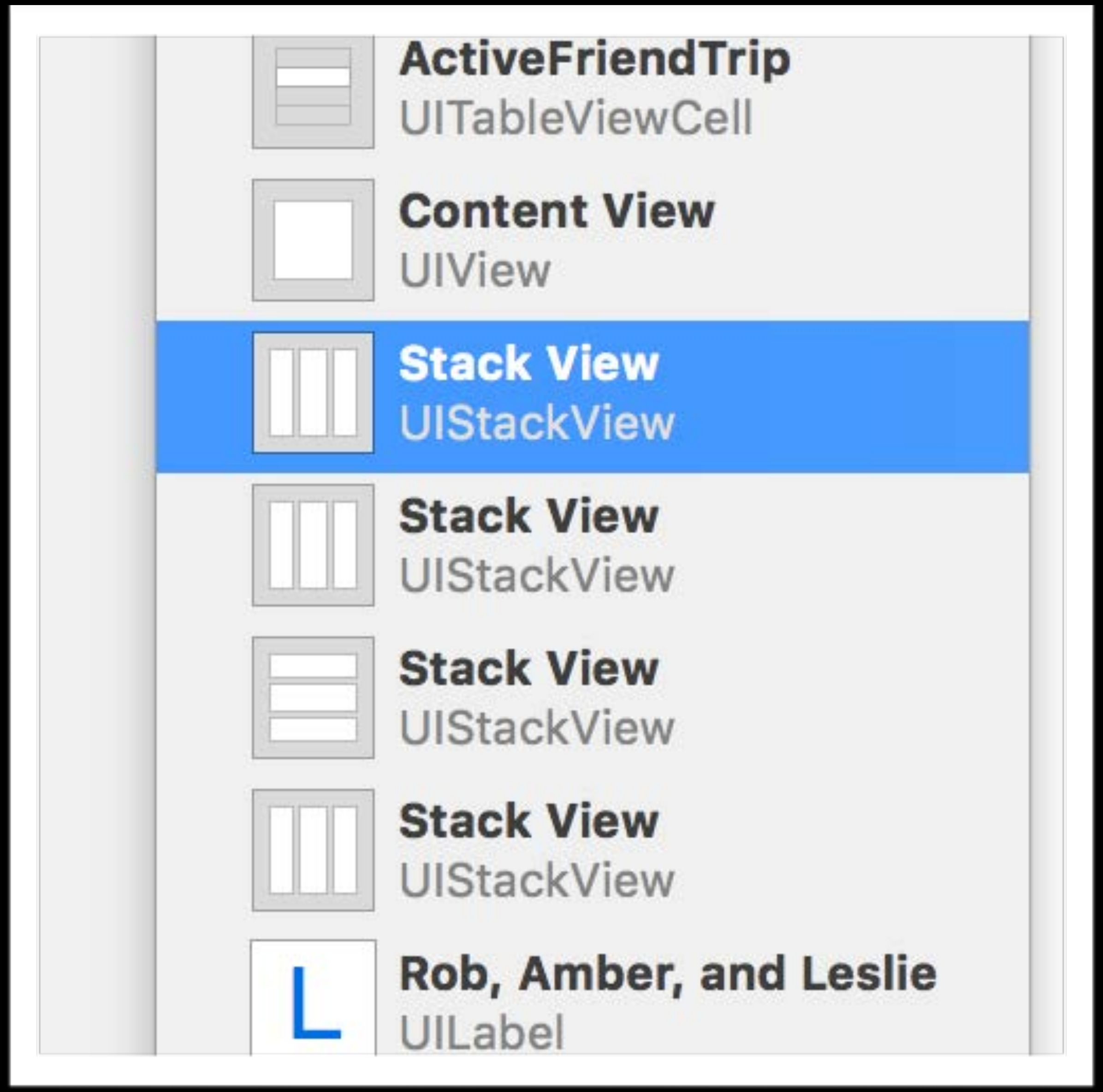
Storyboard References

Takeaways

Tips and tricks

Takeaways

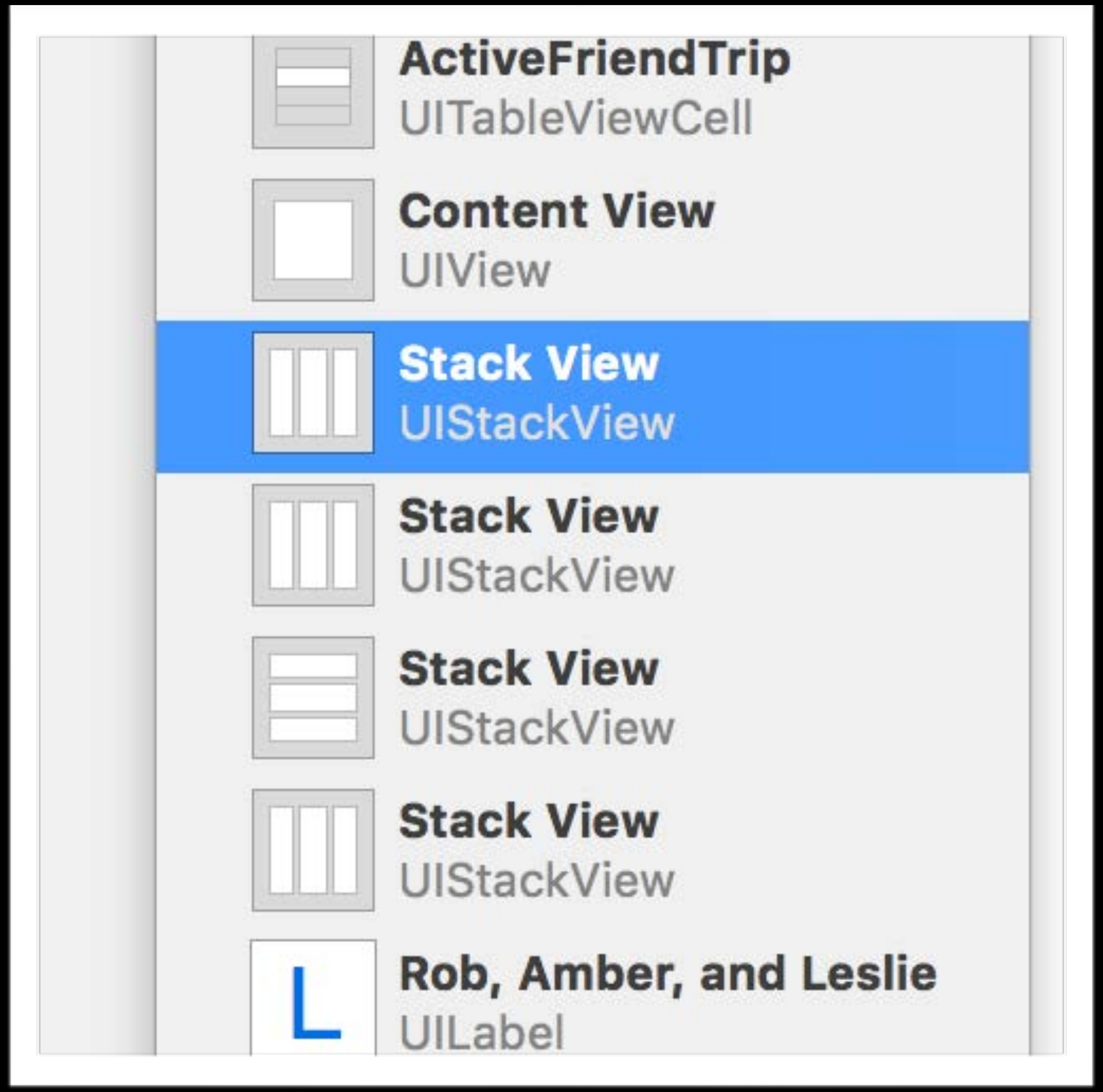
Tips and tricks


ActiveFriendTrip
UITableViewCell
Content View
UIView
Stack View
UIStackView
Stack View
UIStackView
Stack View
UIStackView
Stack View
UIStackView
Rob, Amber, and Leslie
UILabel

Fast Selection

Takeaways

Tips and tricks



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UITableViewCell
Content View
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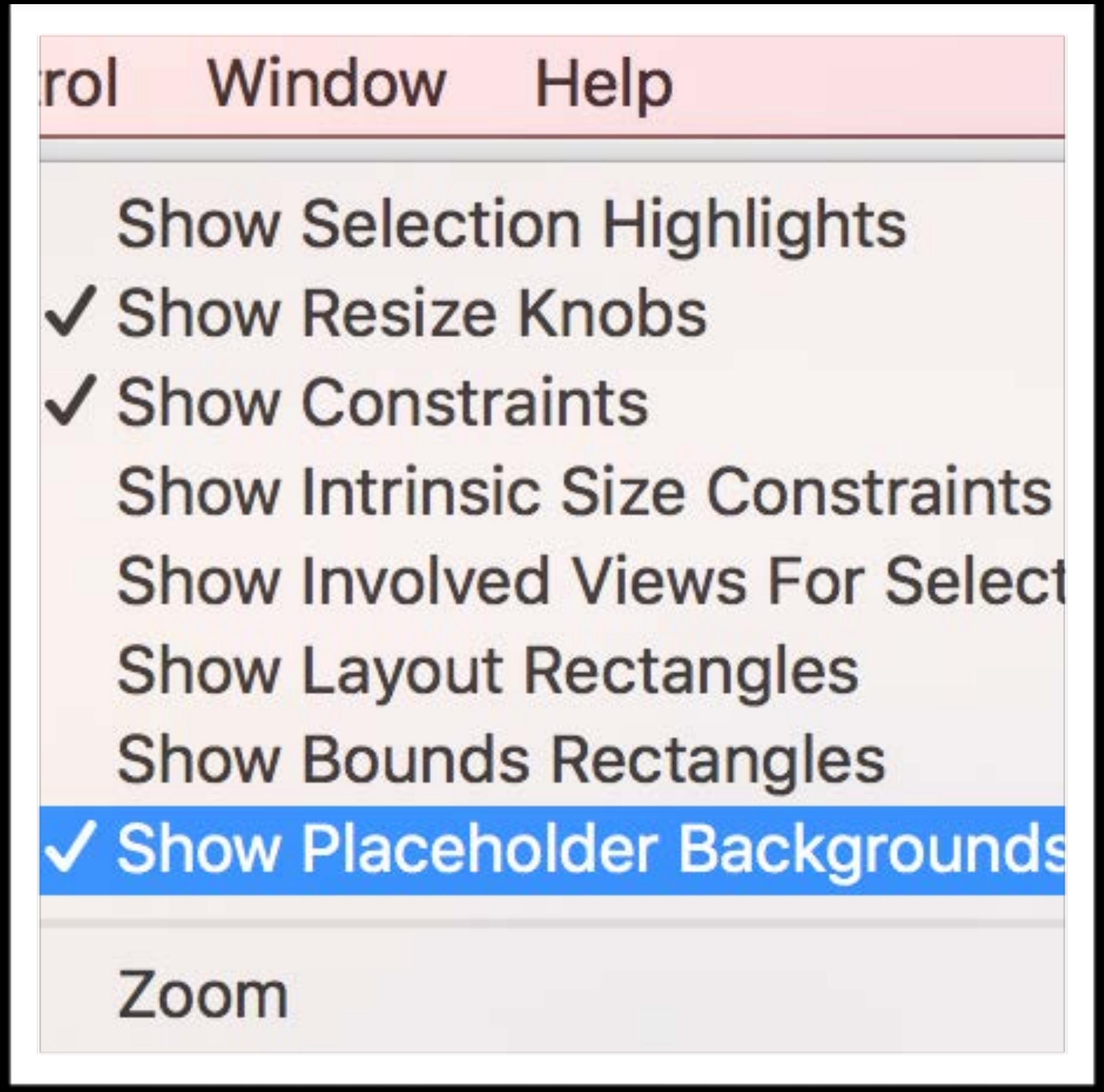


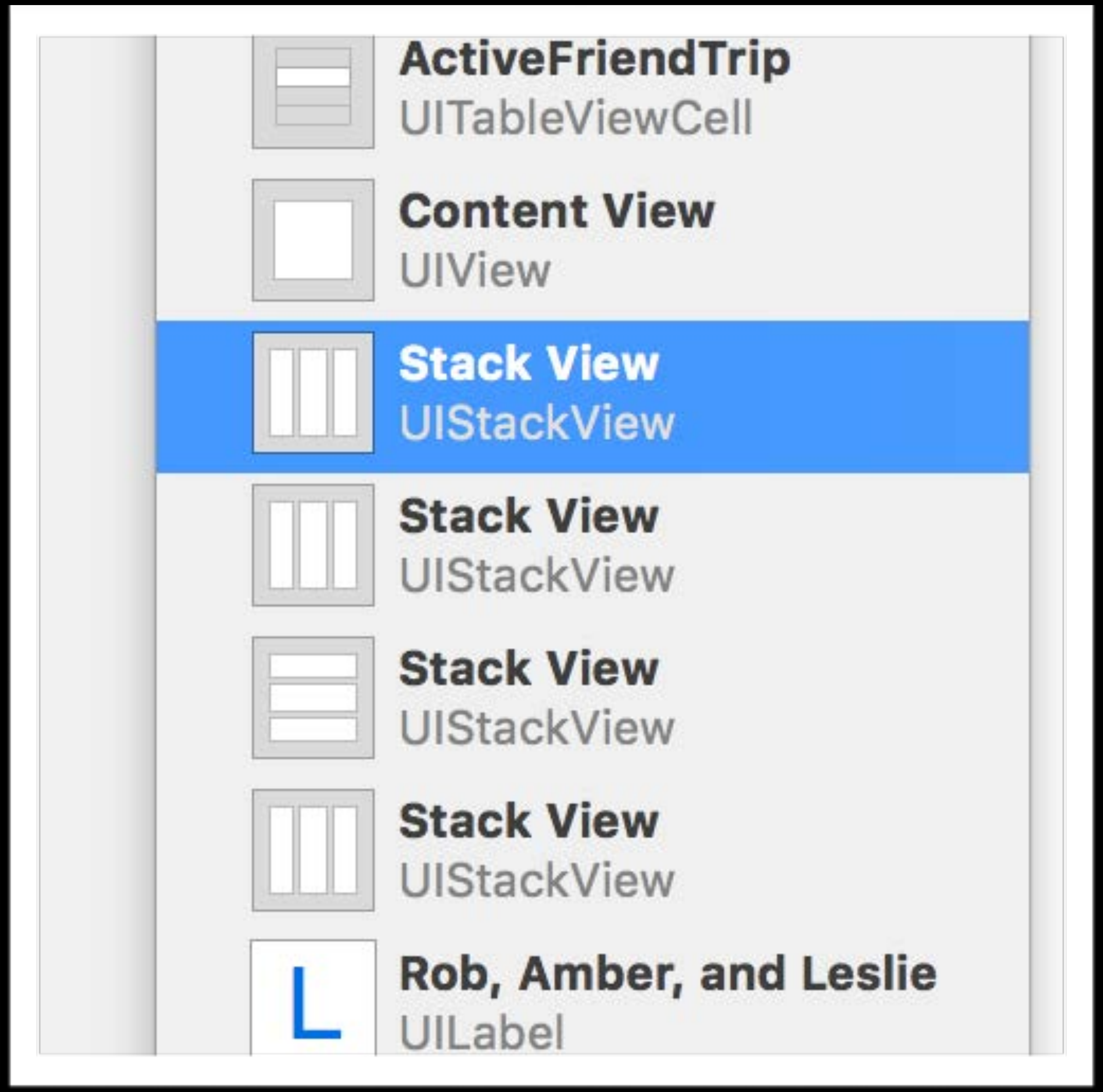
rol Window Help

Show Selection Highlights
✓ Show Resize Knobs
✓ Show Constraints
Show Intrinsic Size Constraints
Show Involved Views For Select
Show Layout Rectangles
Show Bounds Rectangles
✓ Show Placeholder Backgrounds
Zoom

Canvas Customizations

Takeaways

Tips and tricks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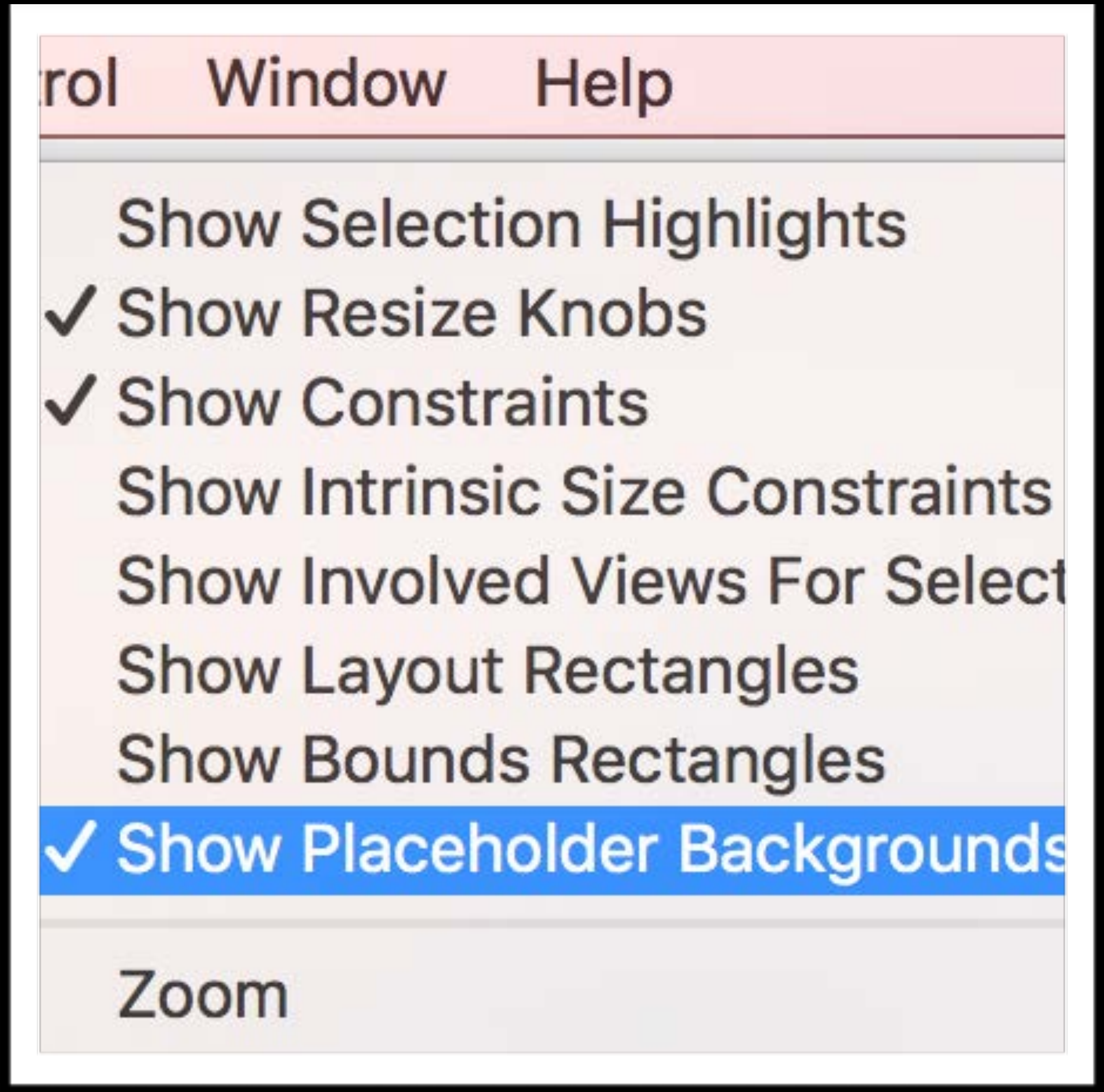

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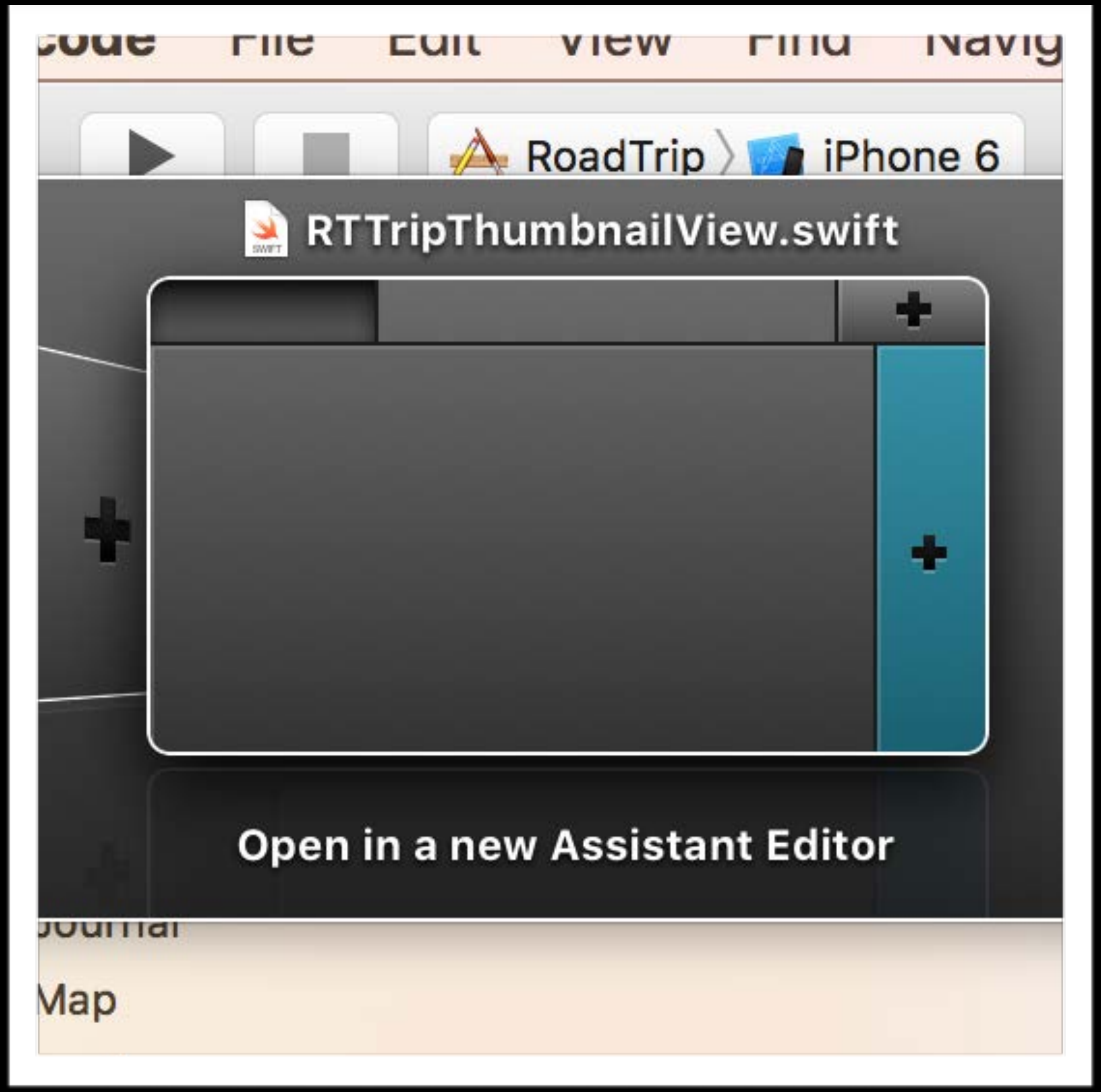
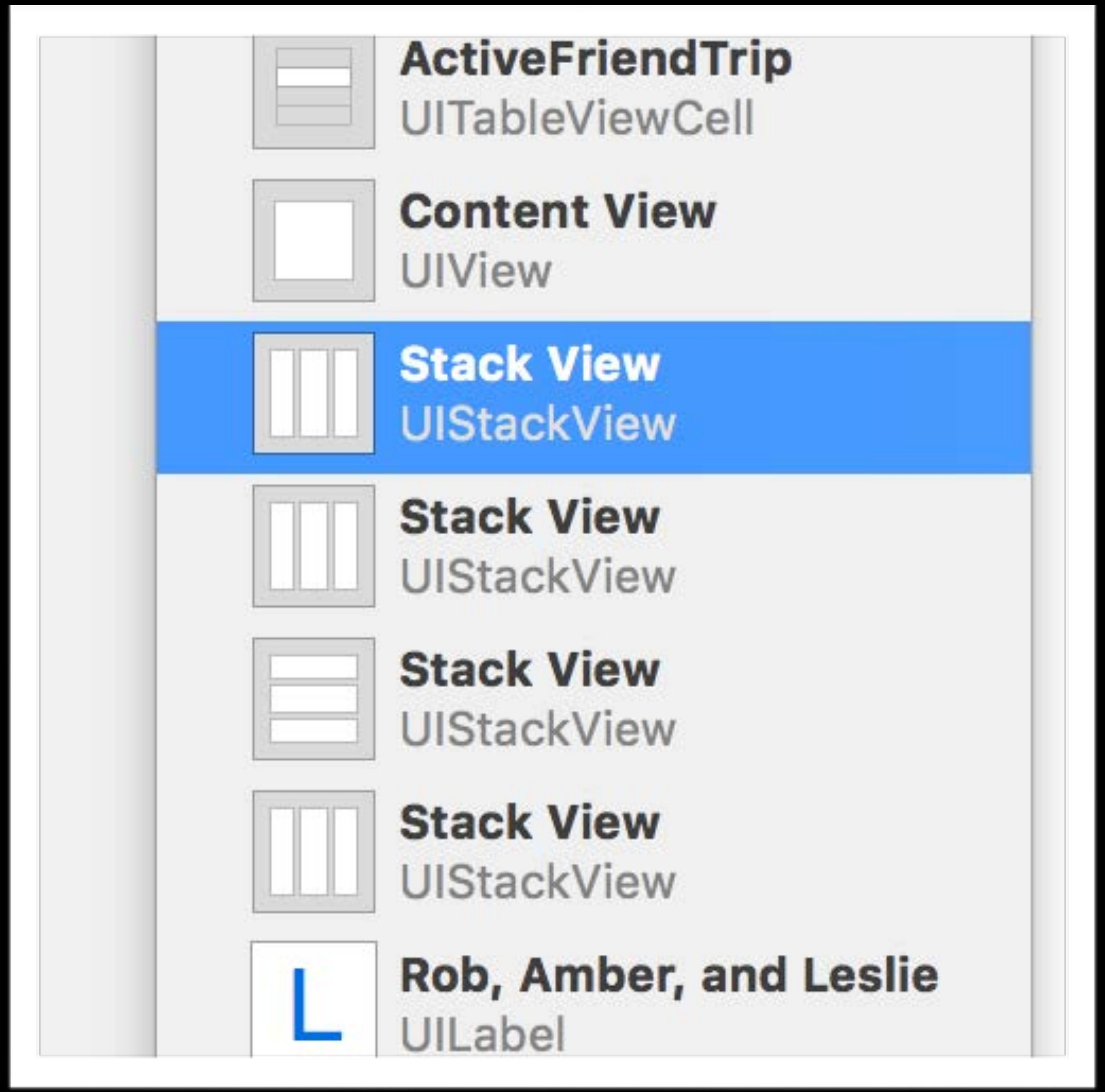
Canvas Customizations



Advanced Navigation

Takeaways

Tips and tricks



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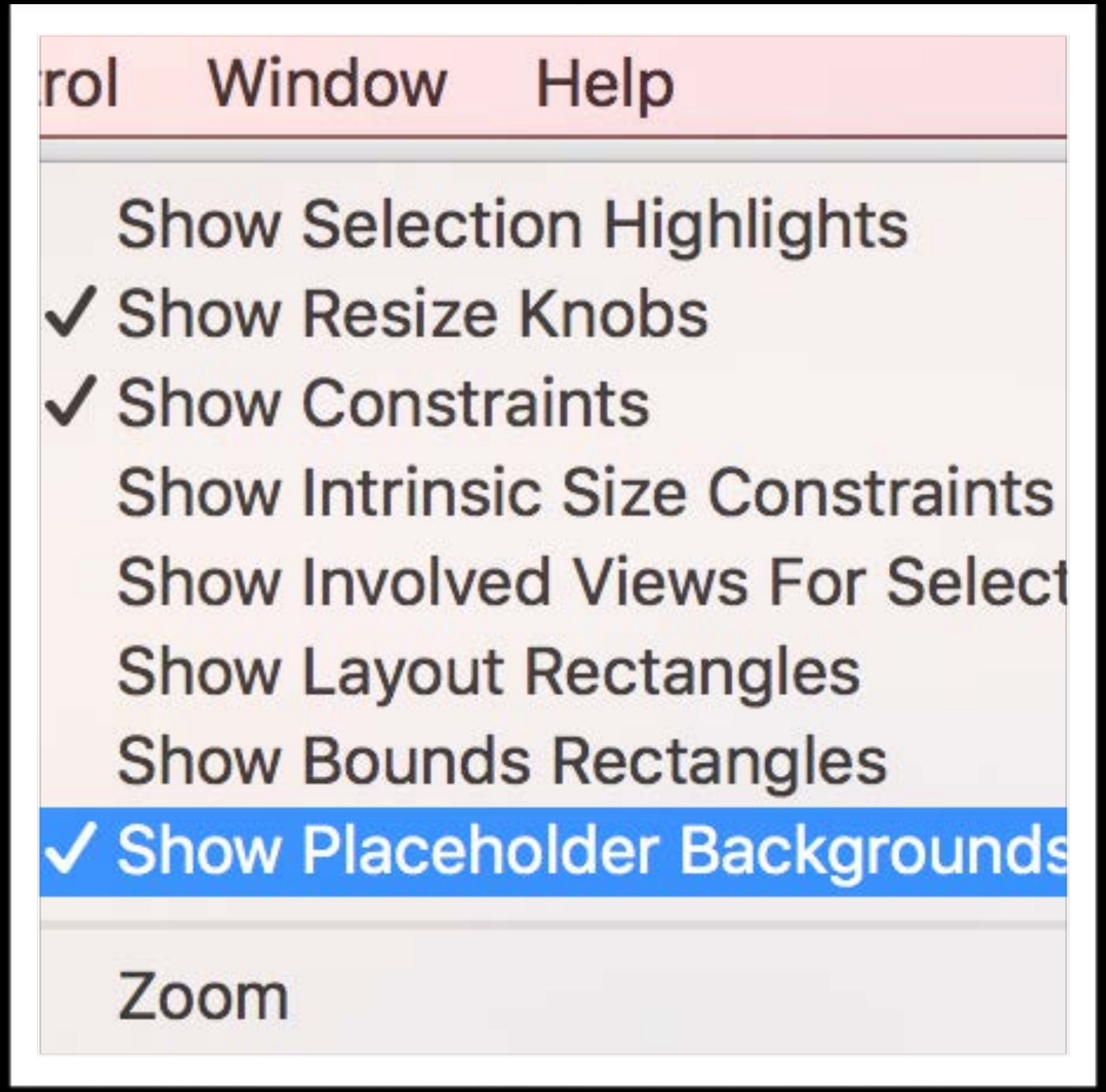

rol
Window
Help
Show Selection Highlights
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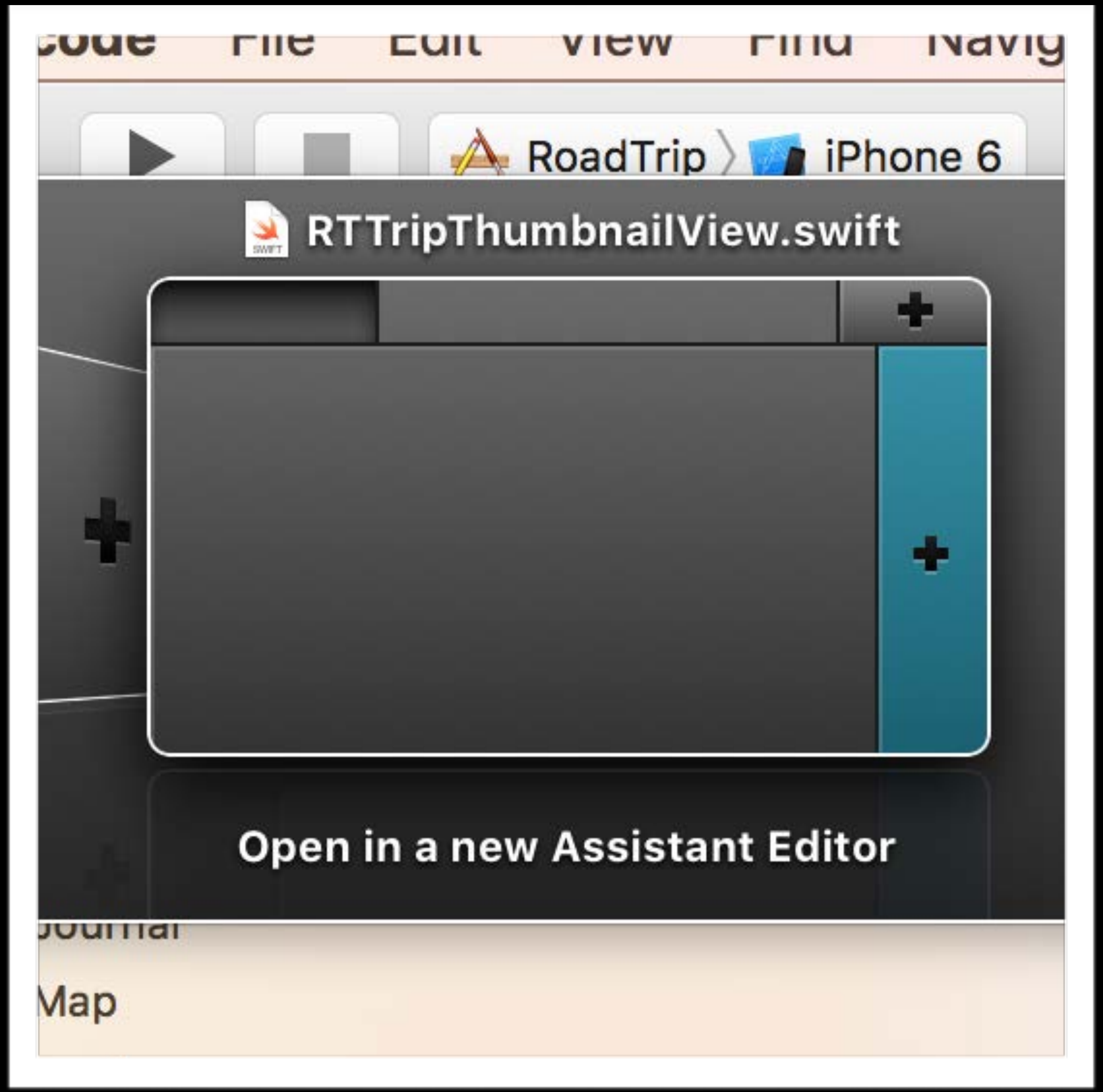
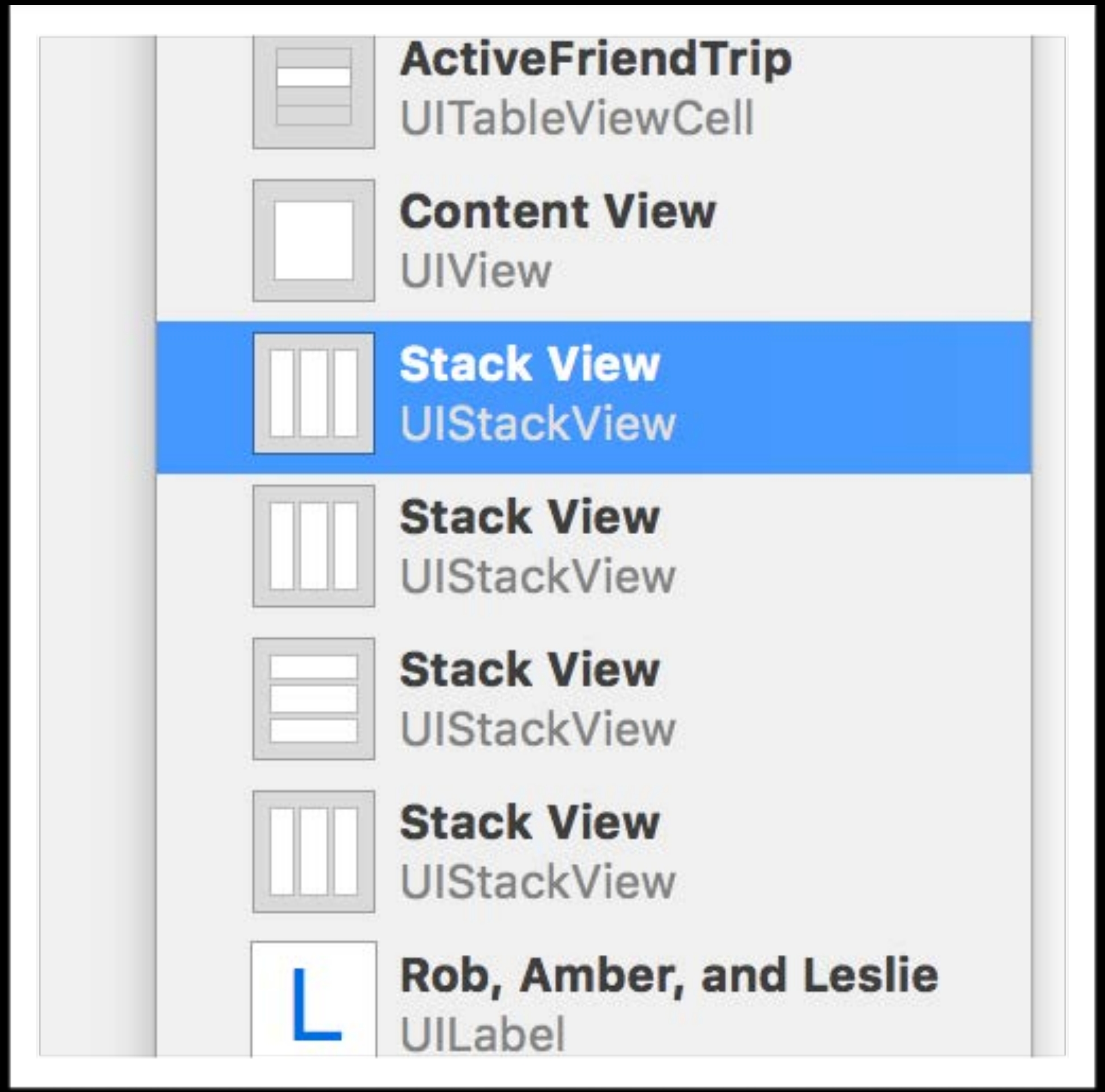


Advanced Navigation

Multiple Bar Items

Takeaways

Tips and tricks


ActiveFriendTrip
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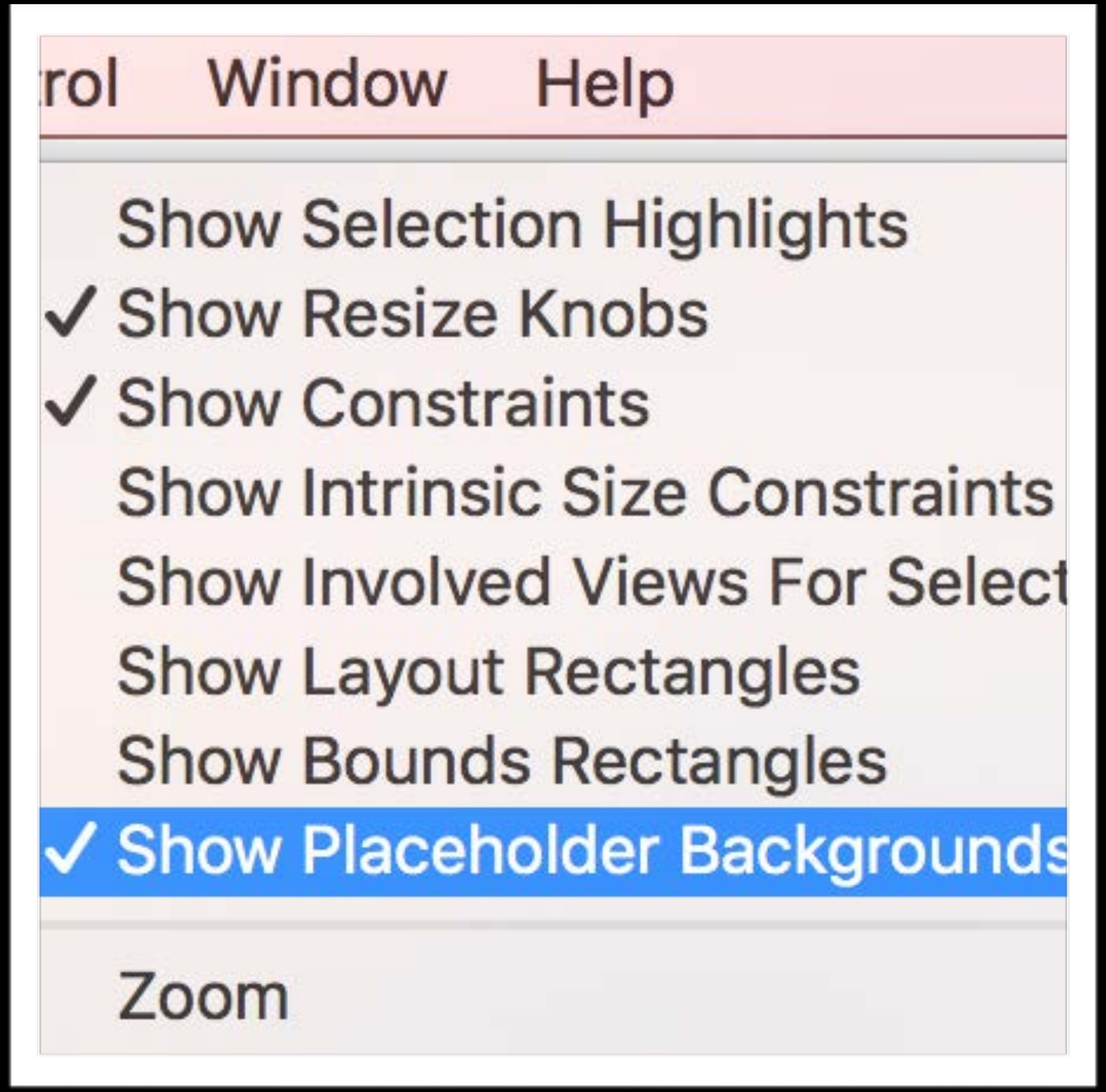
rol
Window
Help
Show Selection Highlights
✓ Show Resize Knobs
✓ Show Constraints
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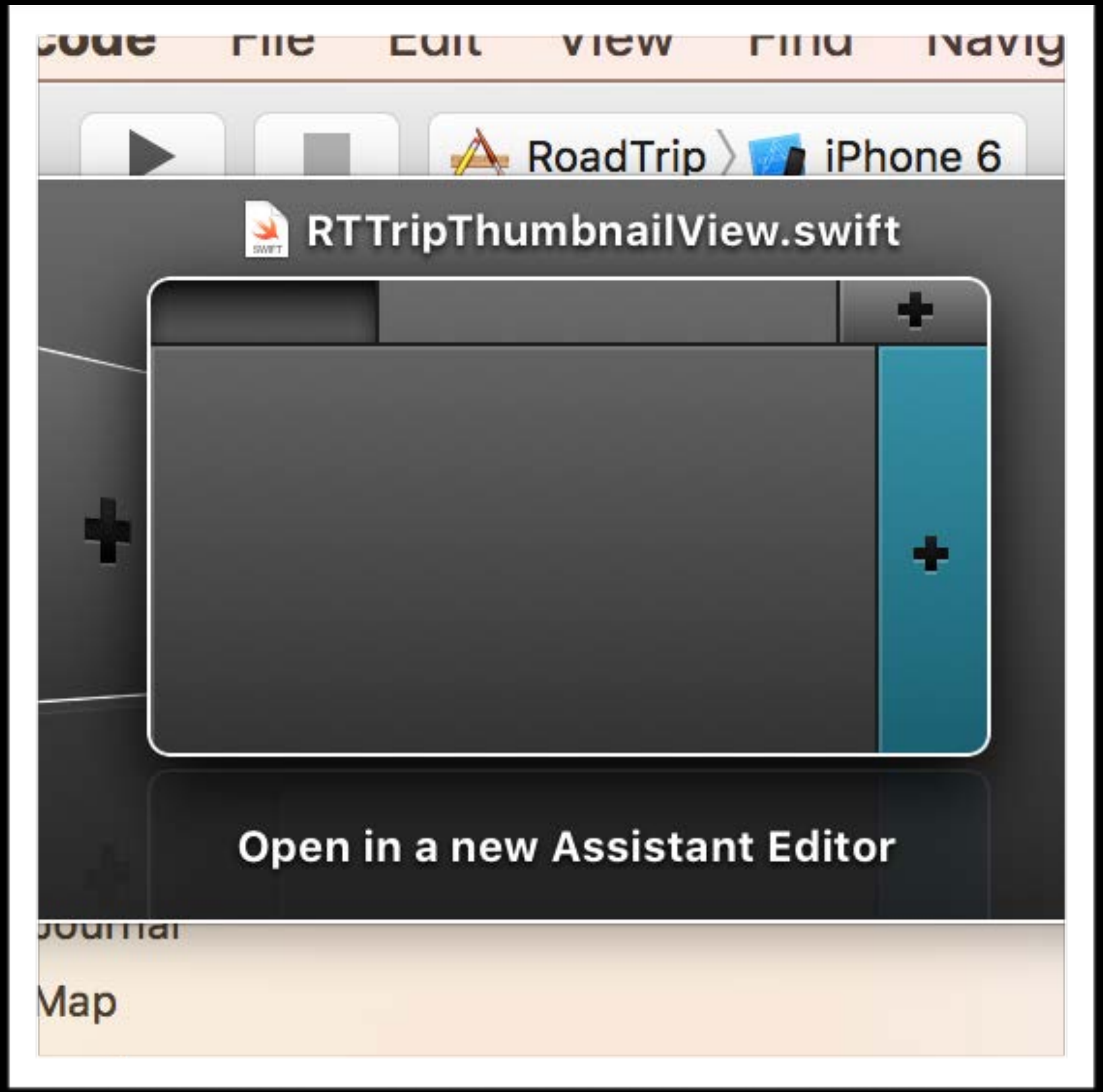
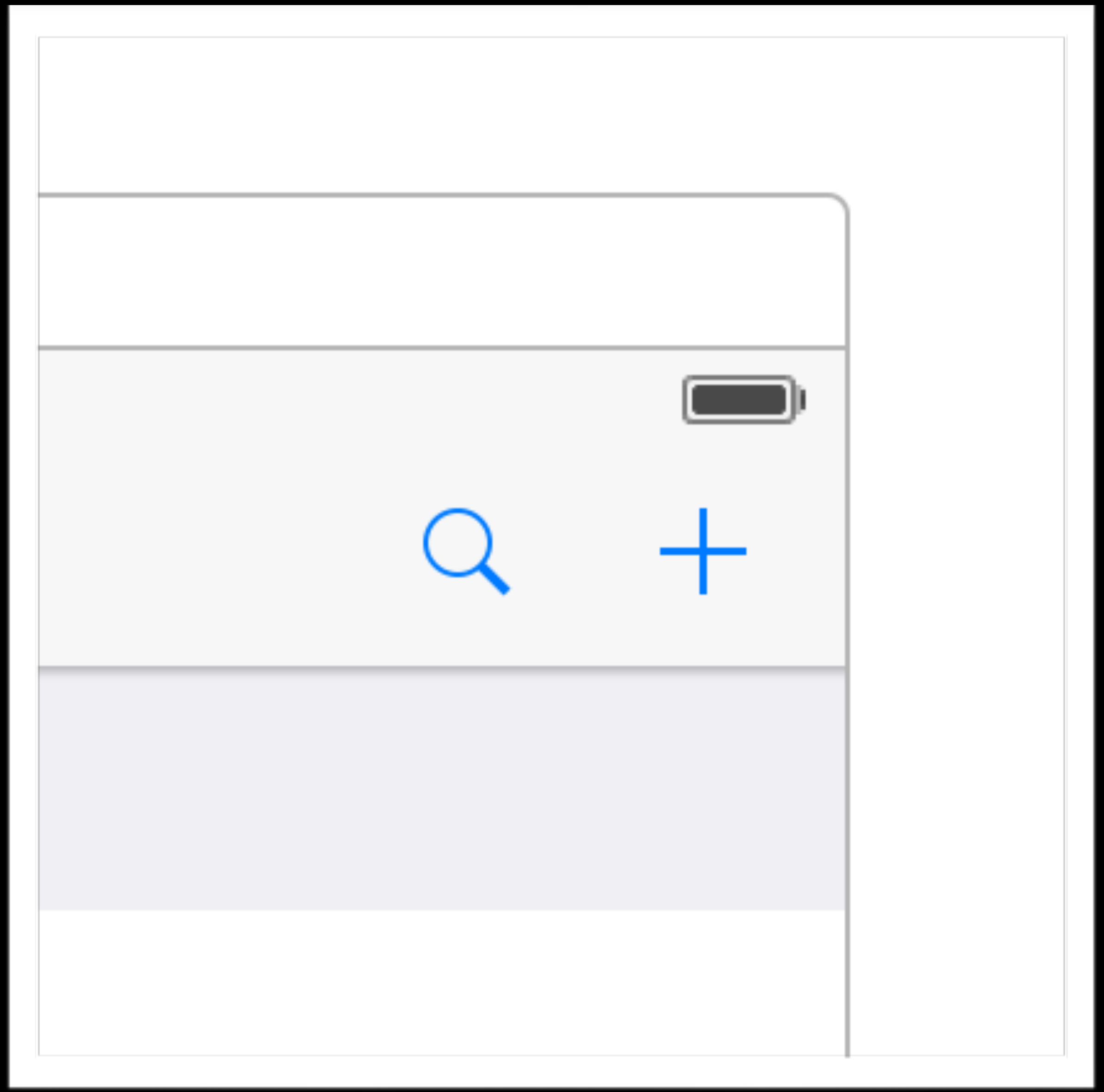
Zoom

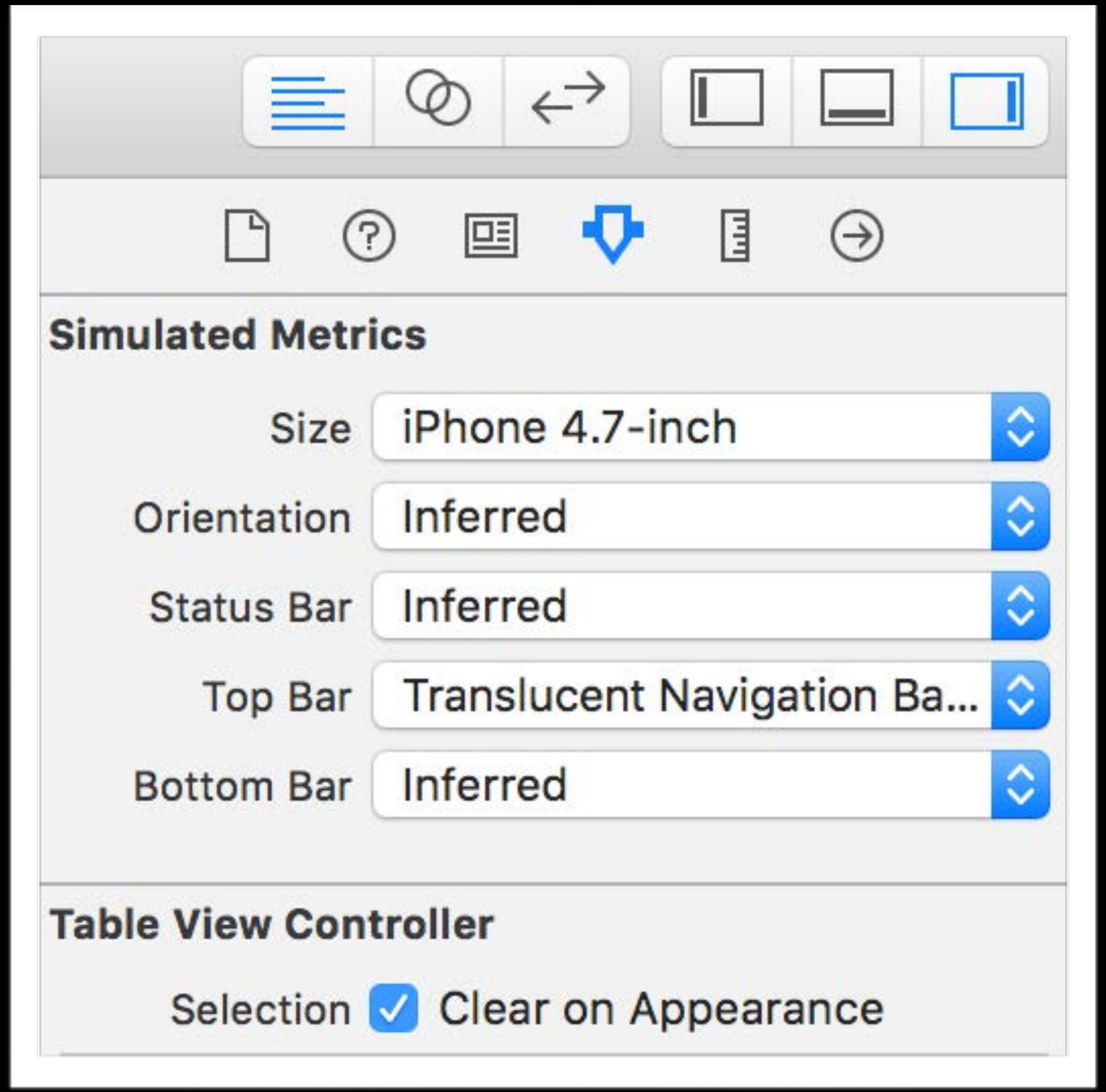
Canvas Customizations



Advanced Navigation



Multiple Bar Items


Simulated Metrics

Size	iPhone 4.7-inch
Orientation	Inferred
Status Bar	Inferred
Top Bar	Translucent Navigation Ba...
Bottom Bar	Inferred

Table View Controller

Selection ✓ Clear on Appearance

Simulated Metrics

Design Time

Build Time

Run Time

Design Time

Build Time

Run Time

Design Time

Build Time

Run Time

Design Time

XML Documents

Build Time

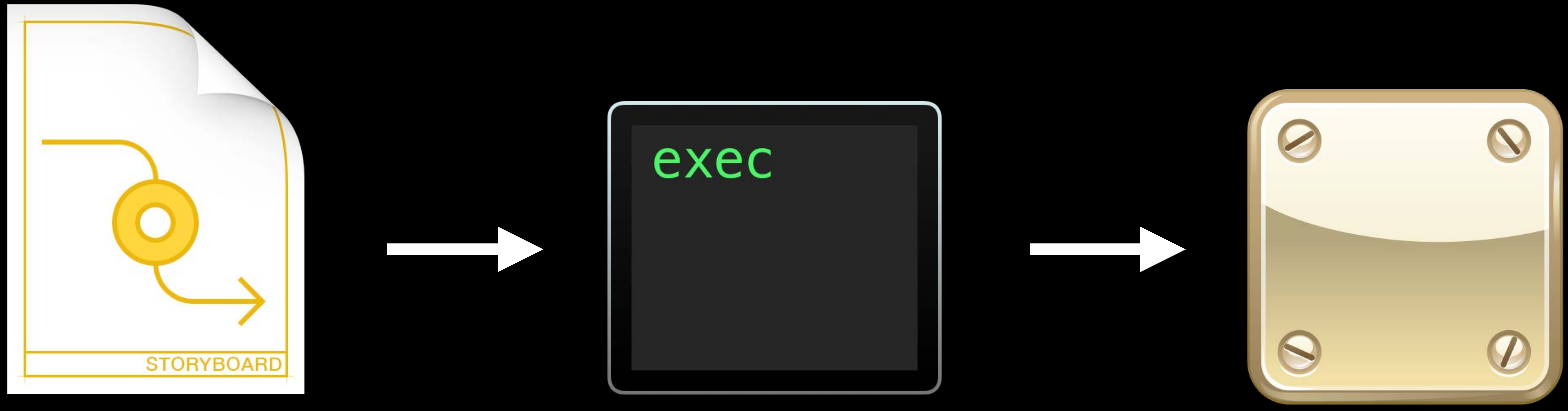
Run Time

STORYBOARD
exec

Design Time
XML Documents

Build Time
ibtool

Run Time



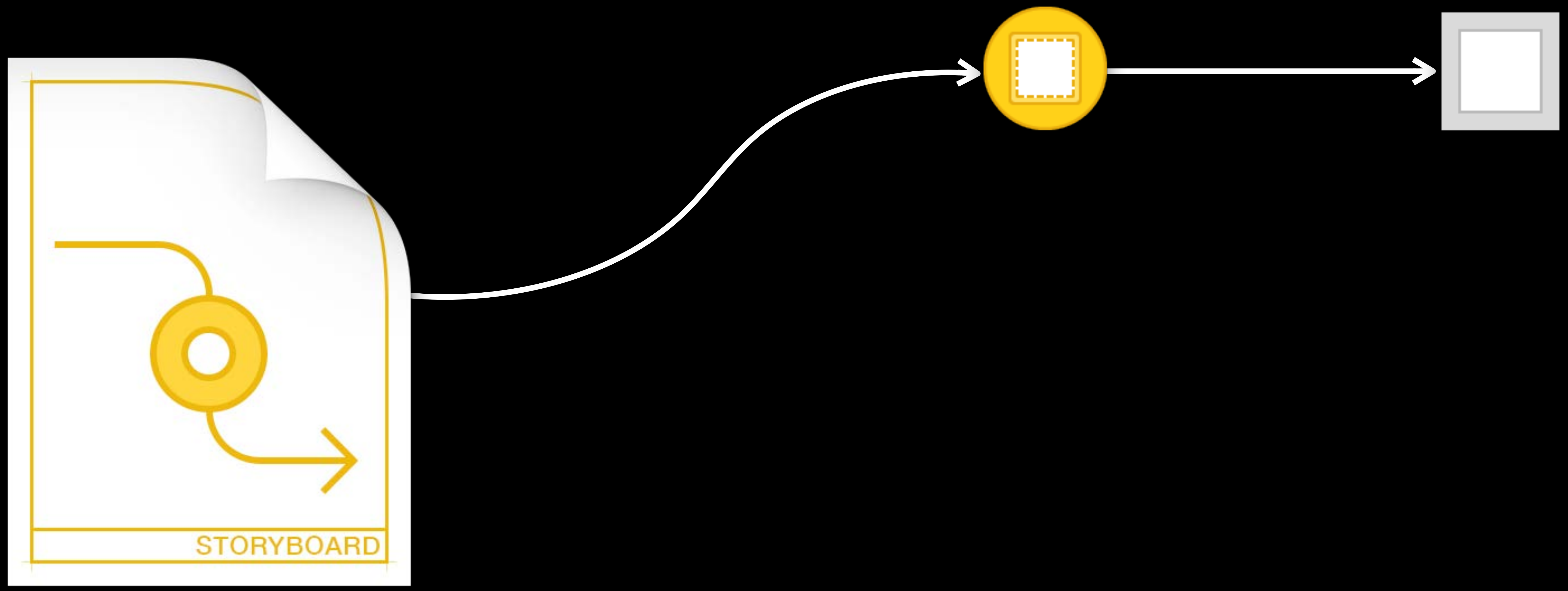
Design Time
XML Documents

Build Time
ibtool

Run Time
Nib Files

Compiling Storyboards

Compiling Storyboards



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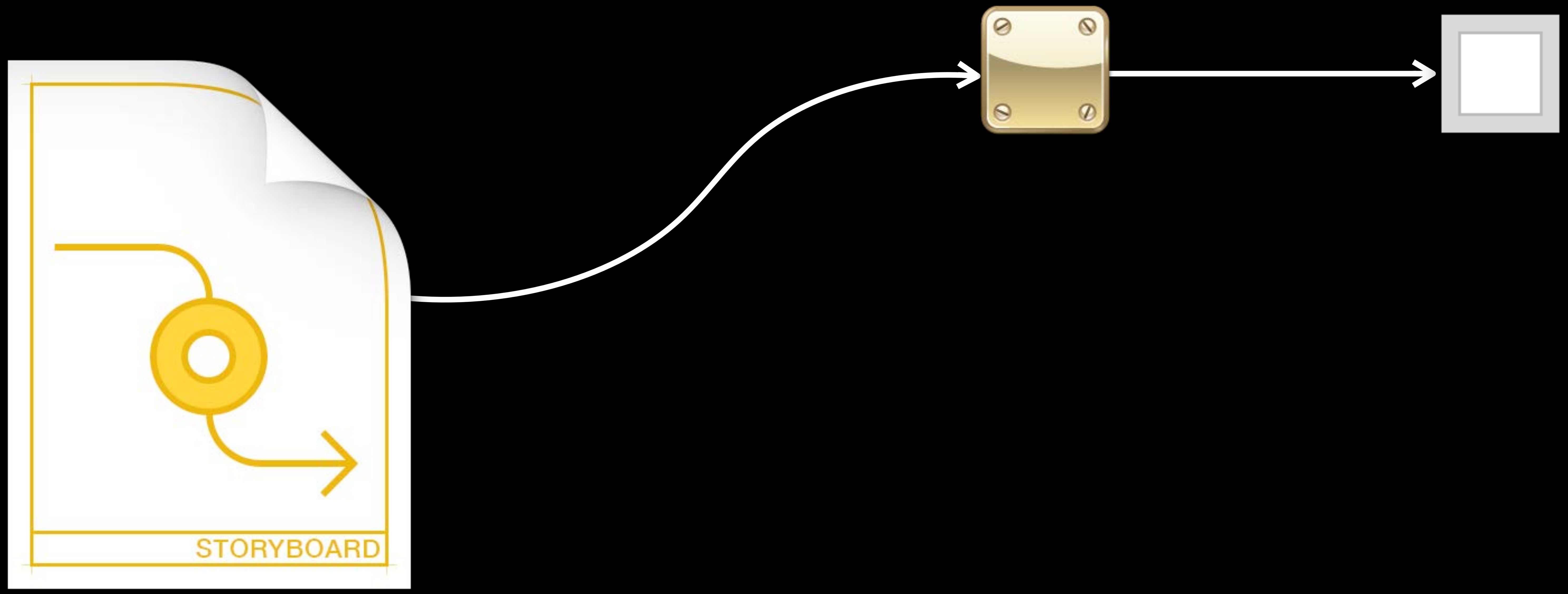

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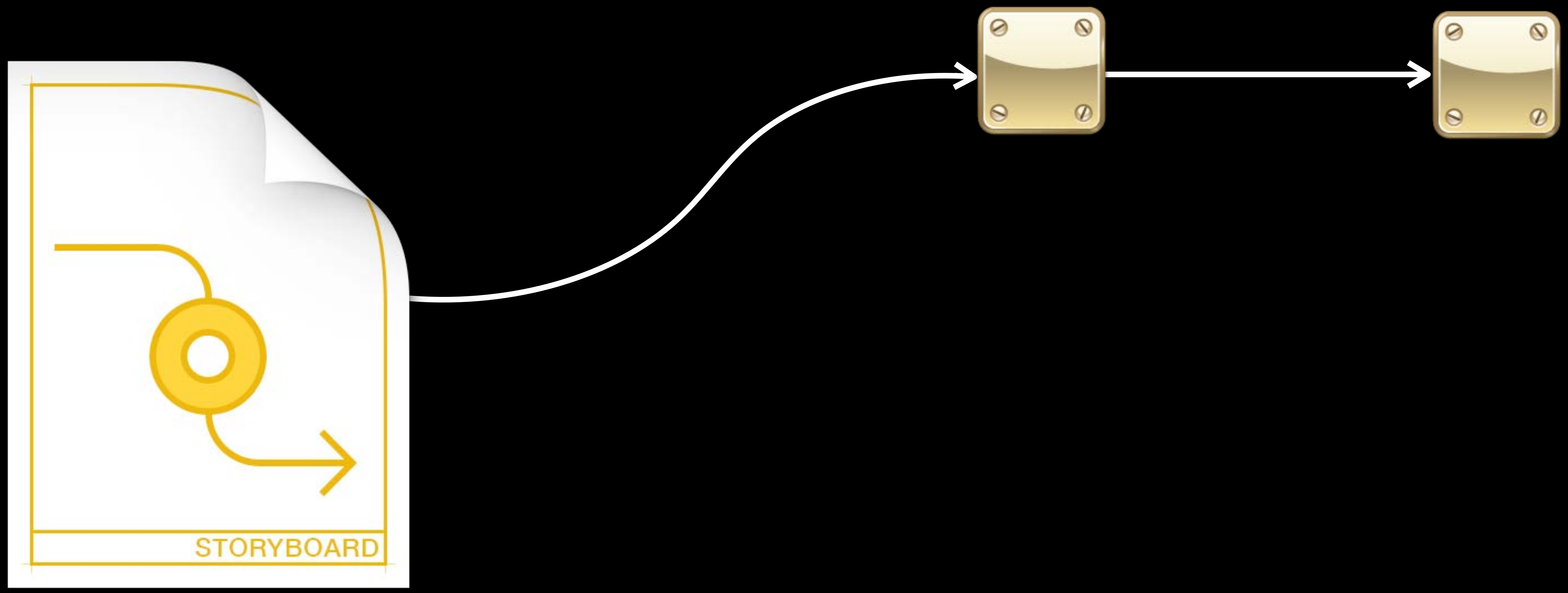

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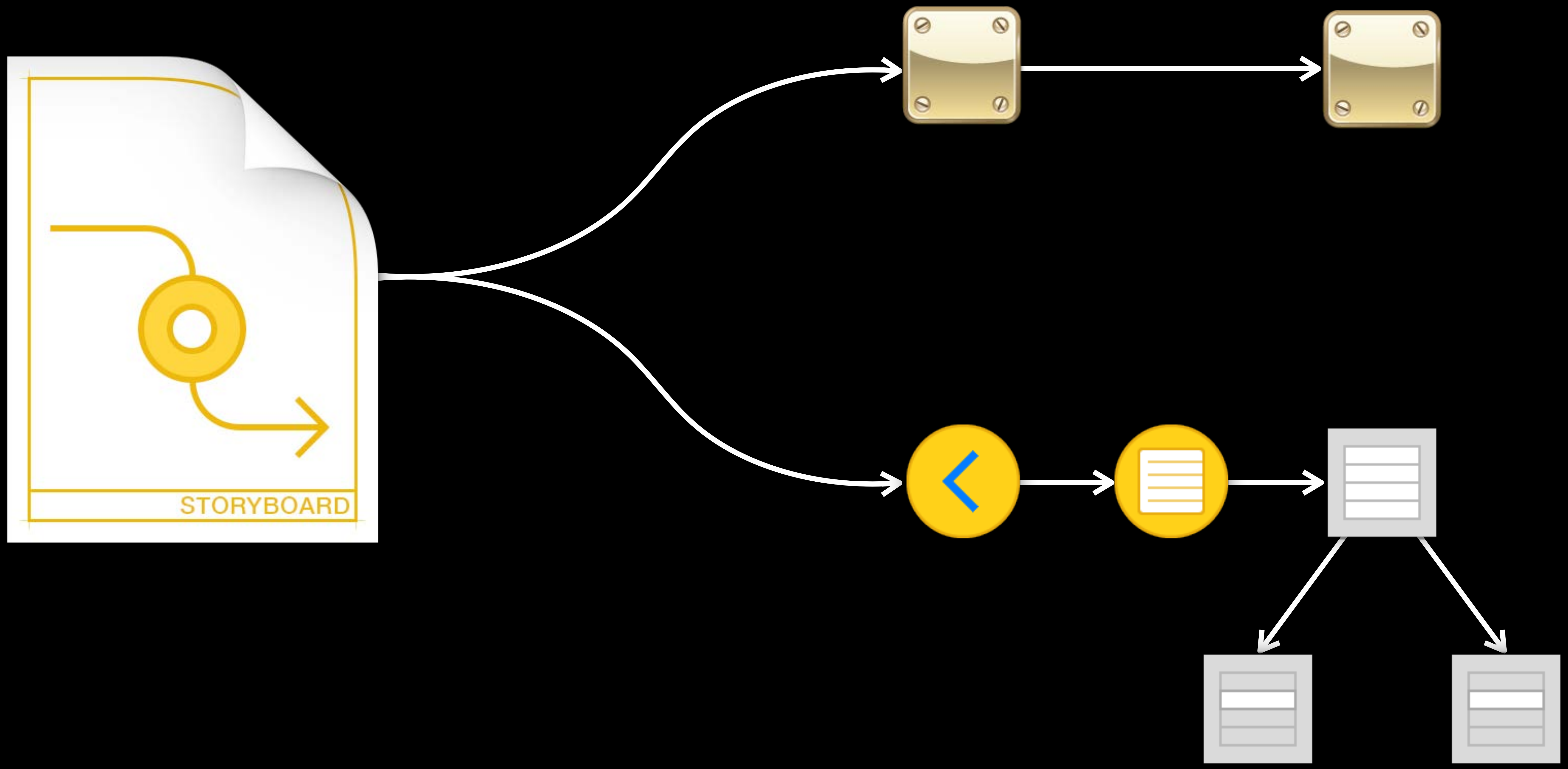

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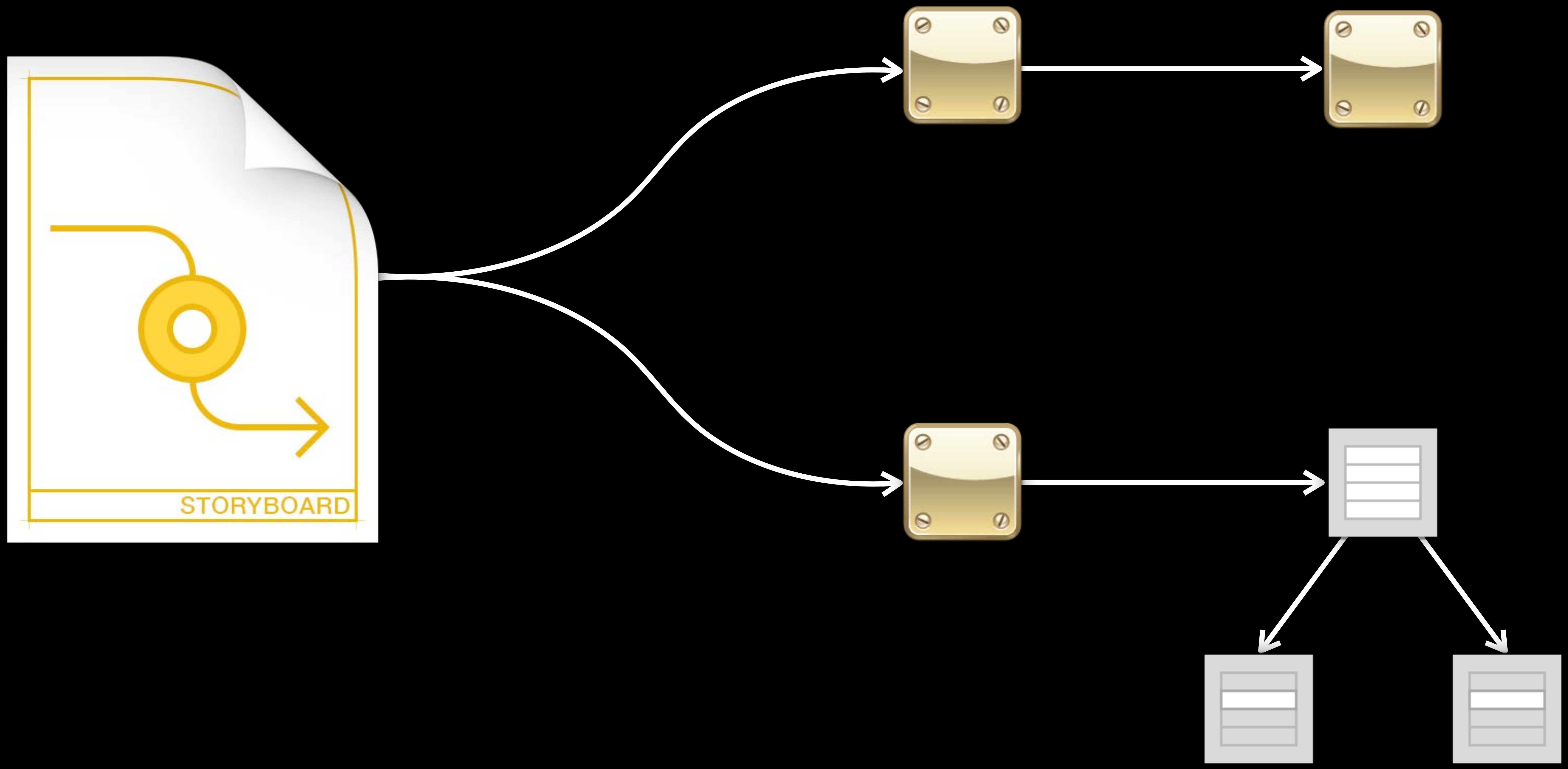

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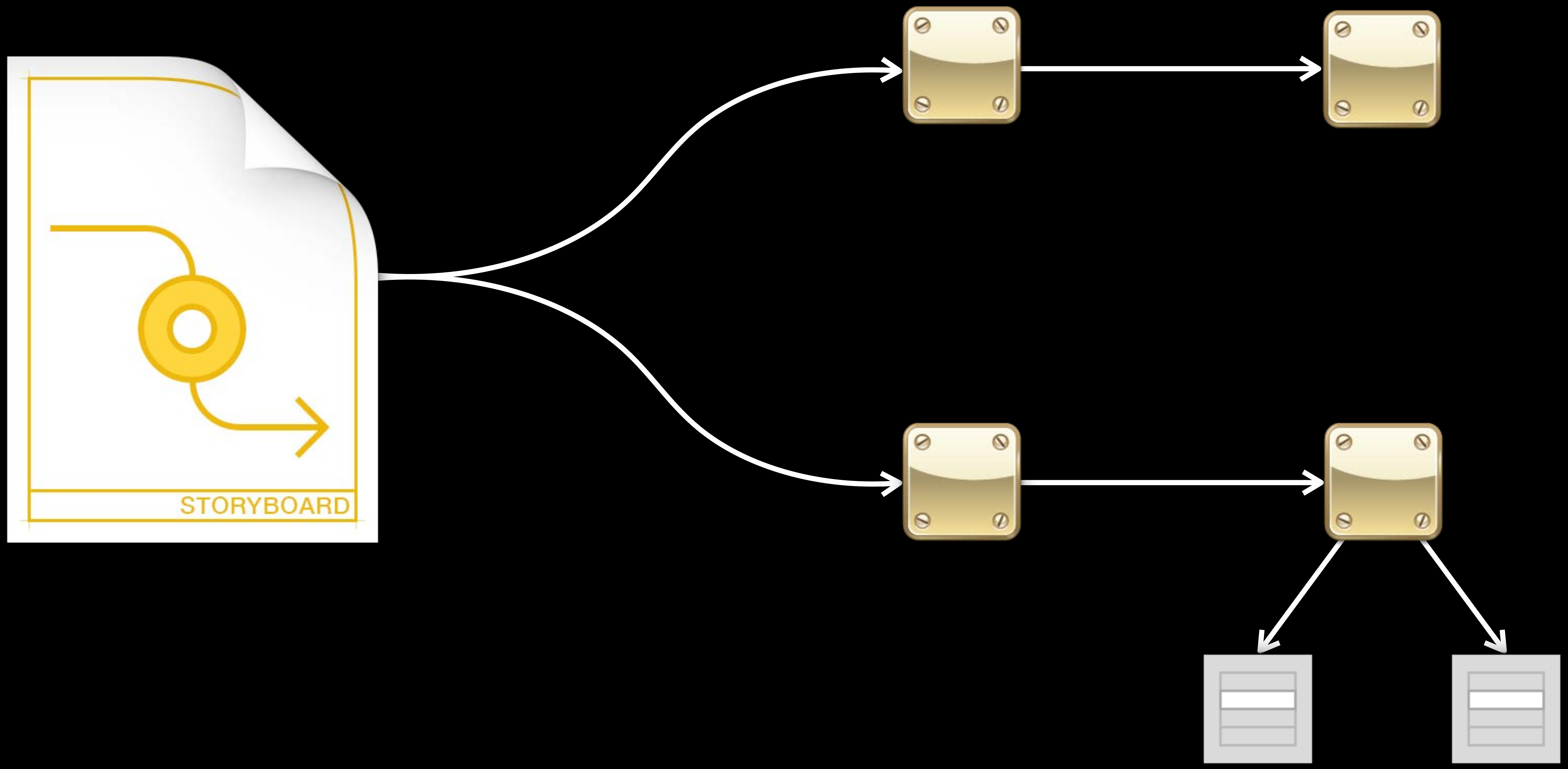

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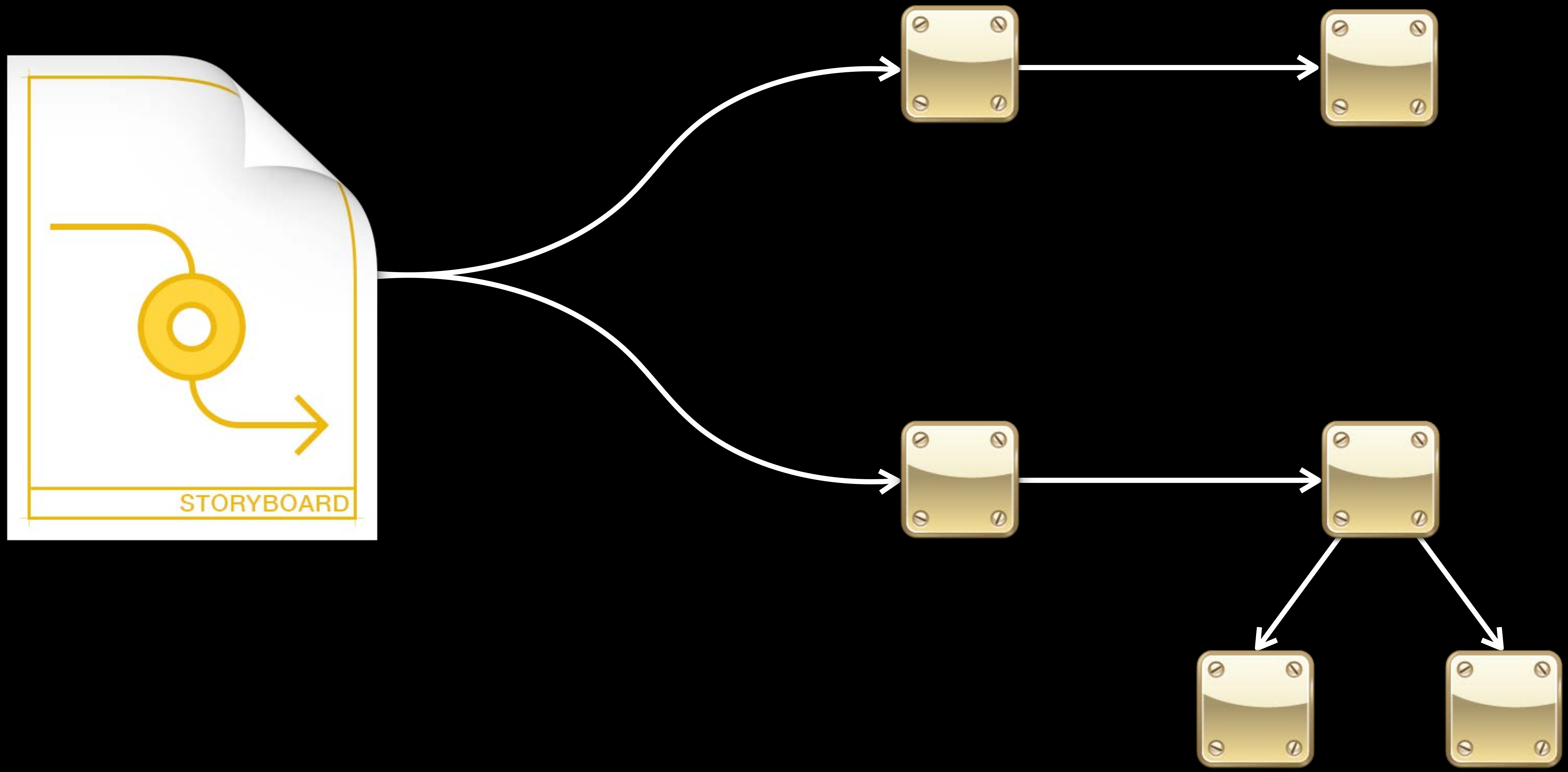
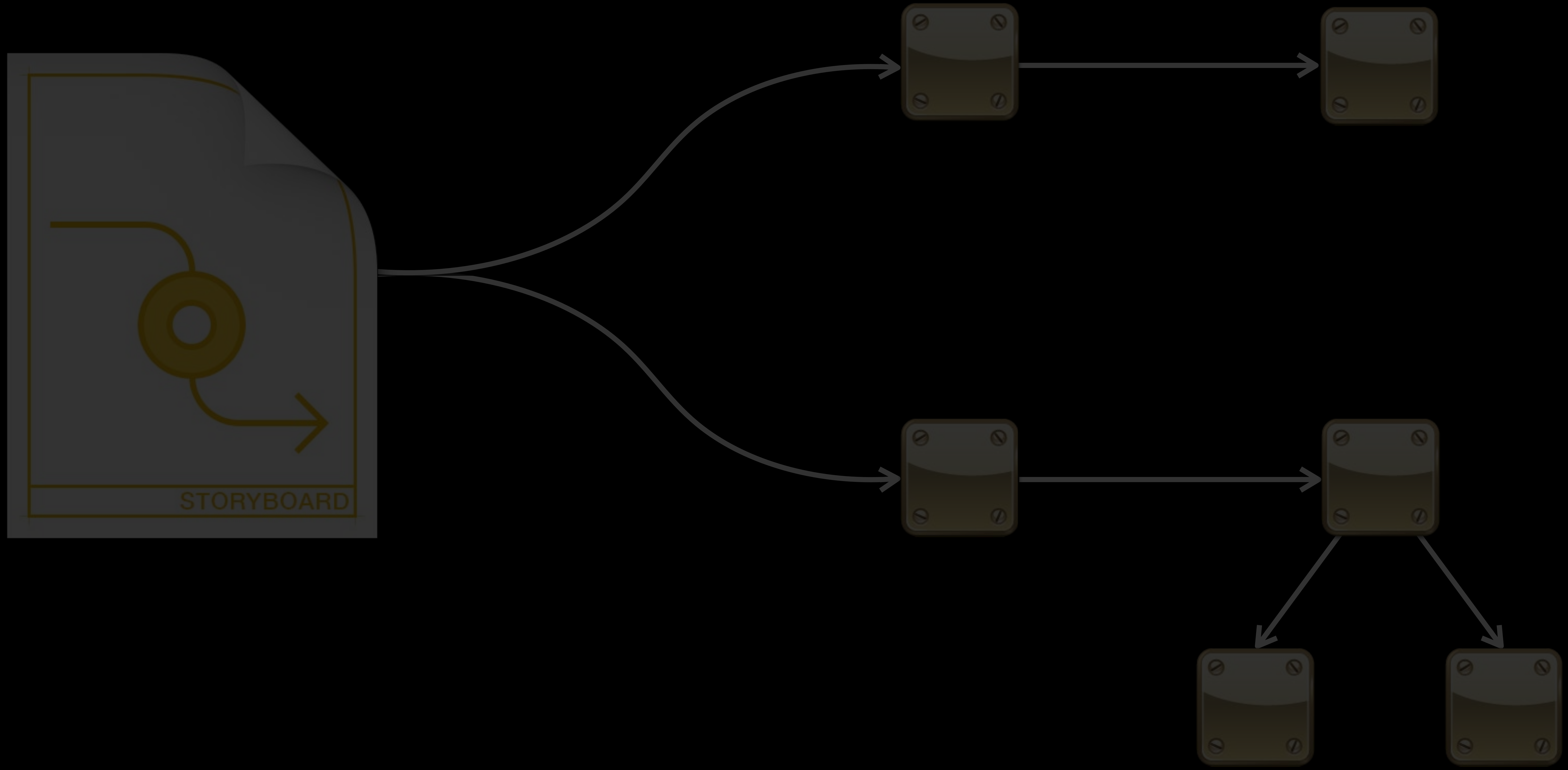
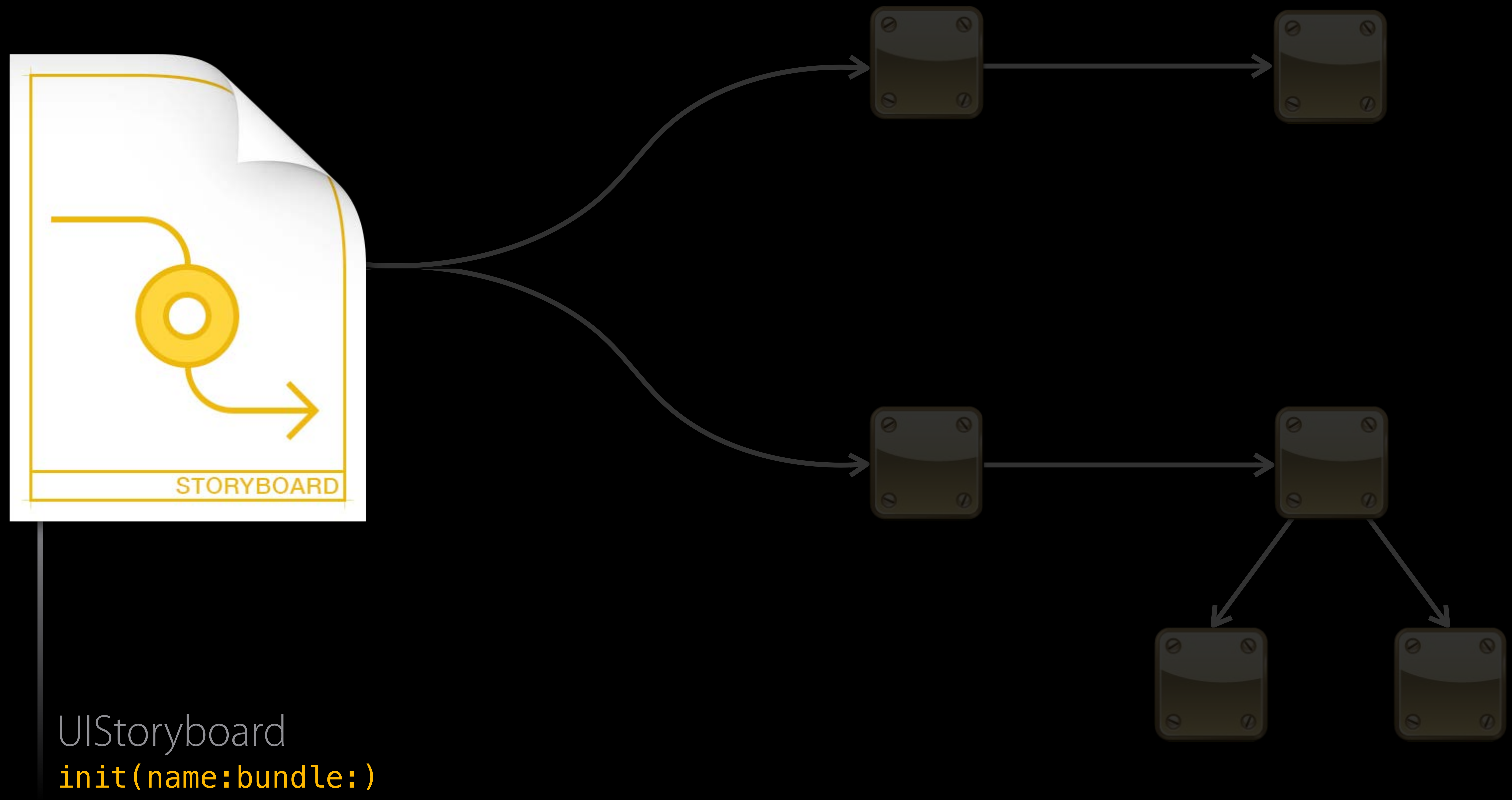


Loading Storyboards At Run Time



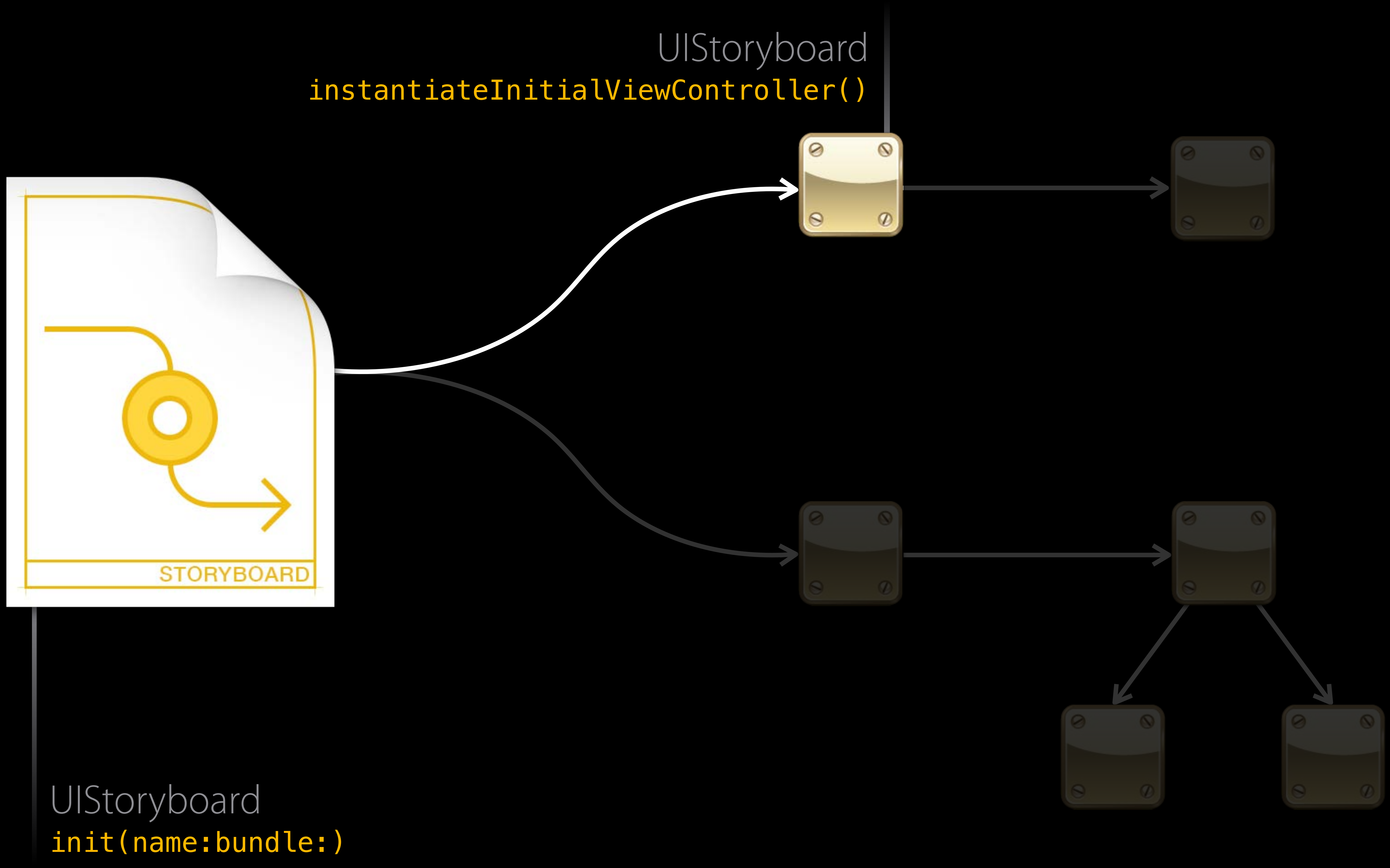
Loading Storyboards At Run Time



UIStoryboard

`init(name:bundle:)`

Loading Storyboards At Run Time



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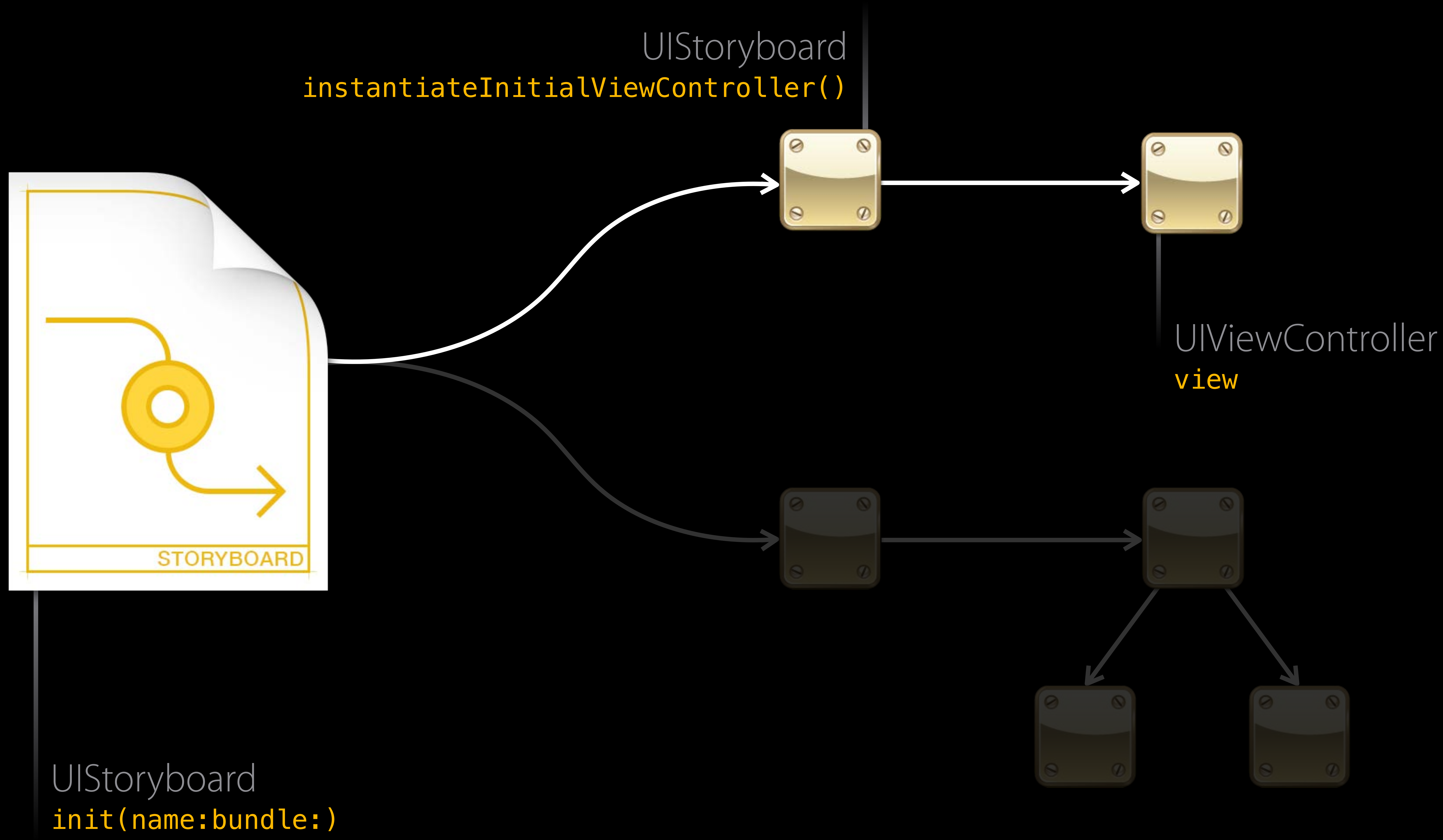

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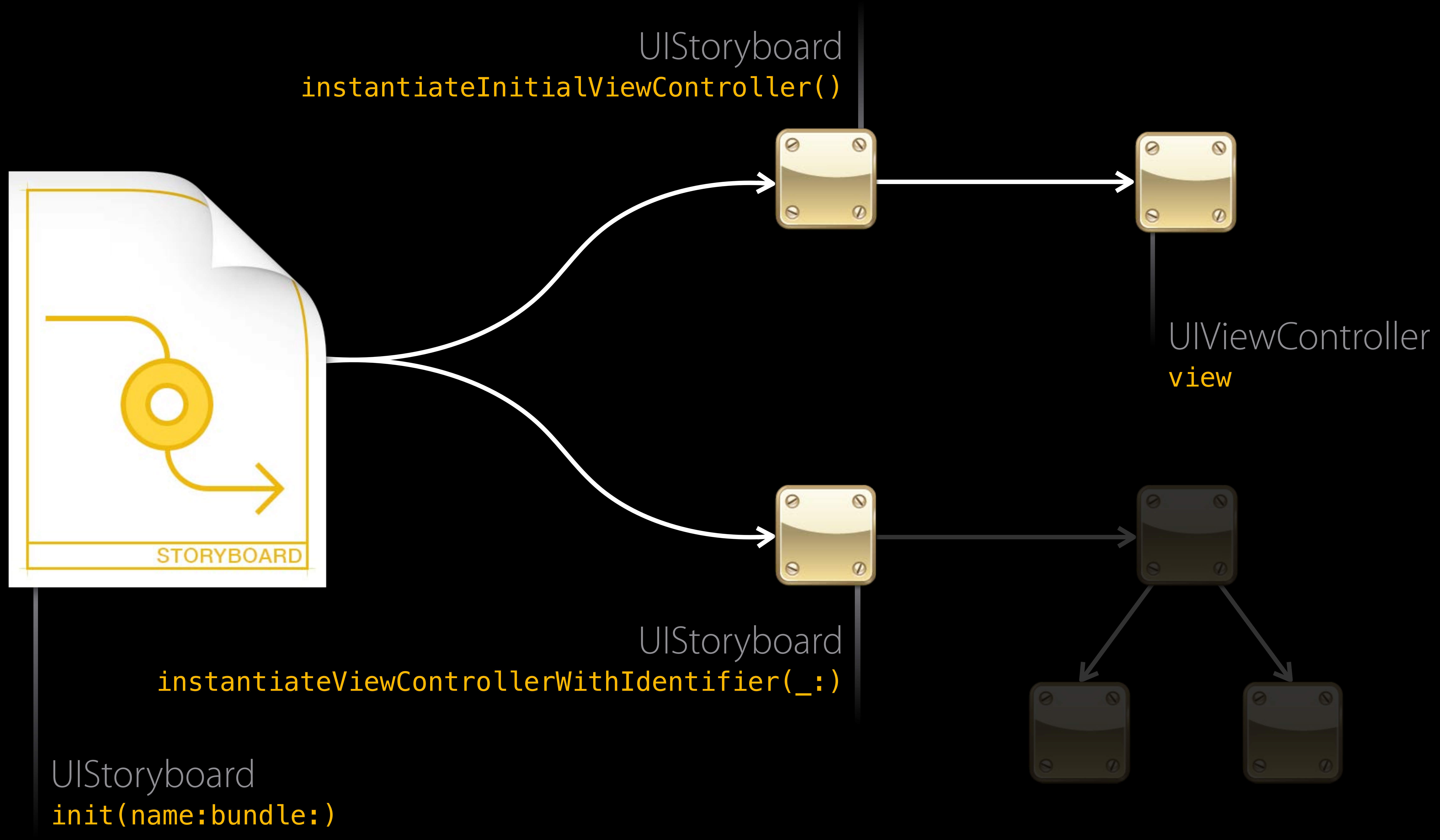

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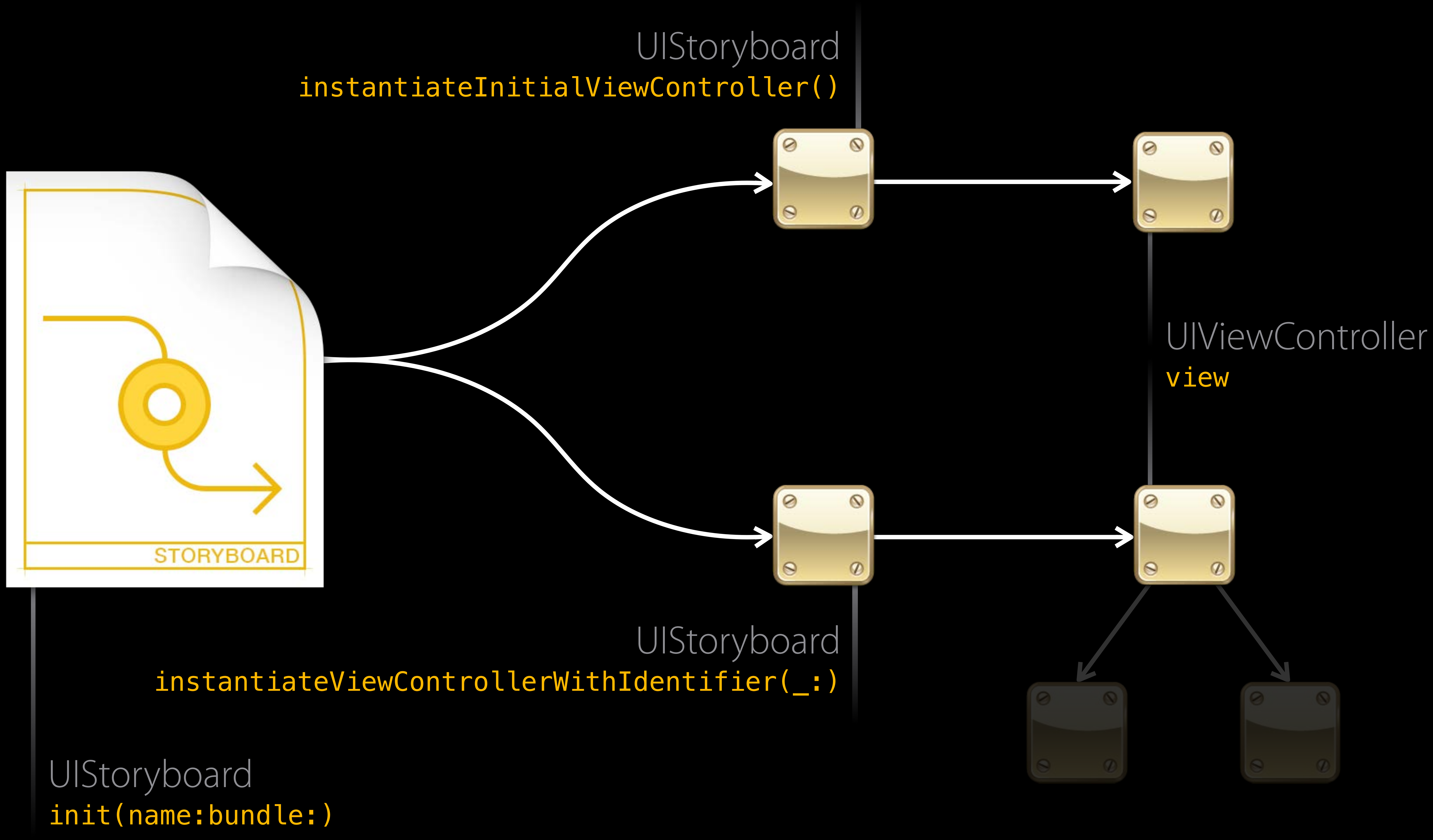

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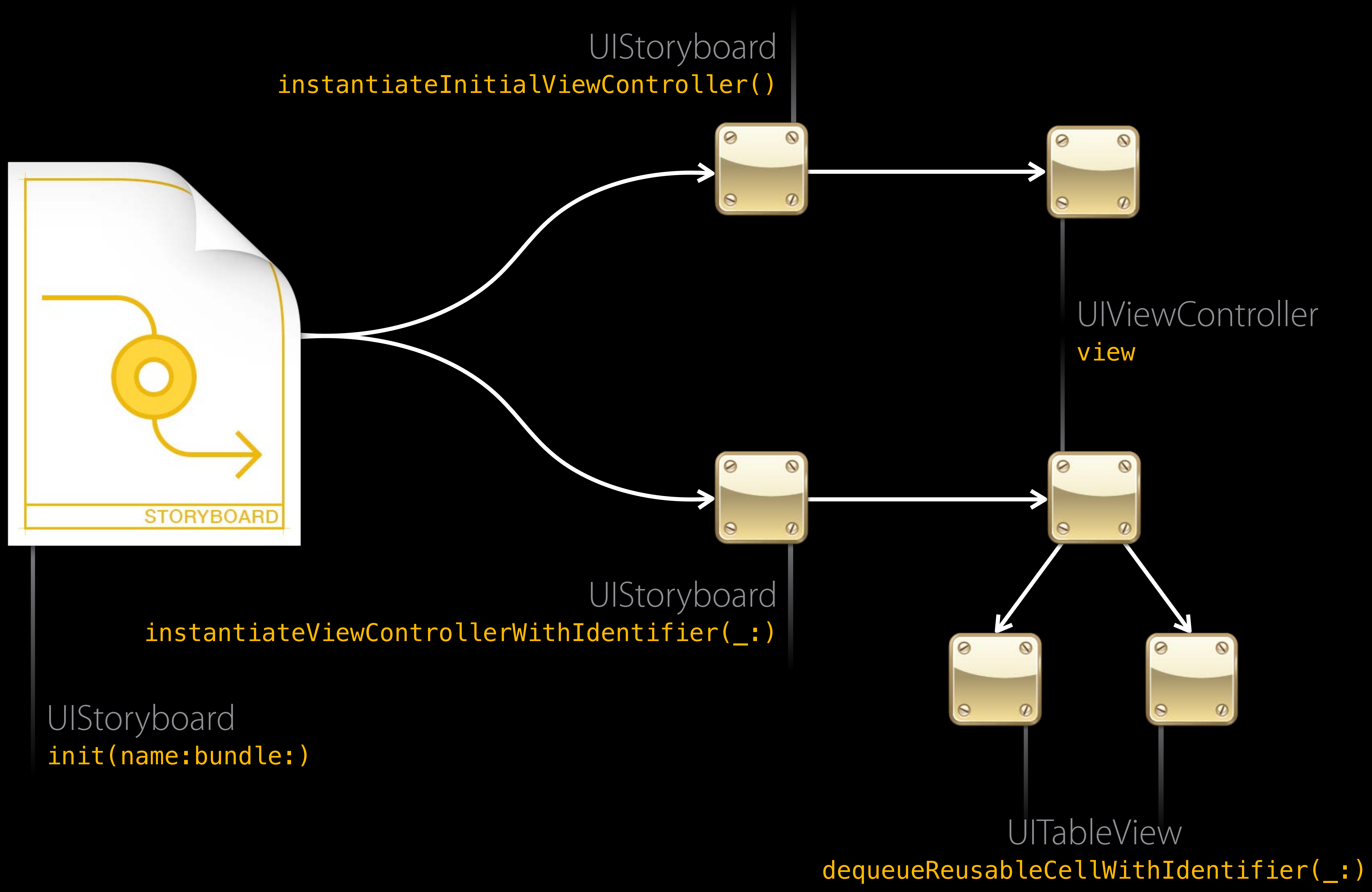
UIStoryboard
instantiateInitialViewController()
UIViewController
view
STORYBOARD
UIStoryboard
instantiateViewControllerWithIdentifier(_:)
UIStoryboard
init(name:bundle:)
UITableView
dequeueReusableCellWithIdentifier(_:)

Takeaways

Takeaways

Performance. Nib files loaded on demand.

Takeaways

Performance. Nib files loaded on demand.

Reuse. Nib files enable reuse.

Takeaways

Performance. Nib files loaded on demand.

Reuse. Nib files enable reuse.

Life cycle. Know when objects are created.

Design Time

Build Time

Run Time

Design Time

Build Time

Run Time

Design Time

Build Time

Run Time

Design Time

Build Time

Run Time

Interface Builder at Run Time

Tony Ricciardi

Design Time

Build Time

Run Time

Design Time

Build Time

Run Time

Run Time

Connections

API

Adaptability

Run Time

Connections

API

Adaptability

Run Time

Connections

API

Adaptability

Run Time

Connections

API

Adaptability

Connections

```
class AccountViewController : UIViewController {

    @IBOutlet var usernameLabel: UILabel!

    override func viewDidLoad() {
        usernameLabel.text = username
    }

    var username: String? {
        didSet {
            usernameLabel?.text = username
        }
    }
}
}
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Connections

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```

Connections

```
class LoginViewController : UIViewController {

    @IBAction func toggledAutoLoginSwitch(sender: UISwitch) {
        UserSettings.autoLogin = sender.on
    }

    @IBAction func tappedLoginButton() {
        if attemptLogin() {
            performSegueWithIdentifier("unwindAfterLogin", sender: nil)
        } else {
            performSegueWithIdentifier("presentLoginError", sender: nil)
        }
    }

}
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Connections

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```
class LoginViewController : UIViewController {

    @IBAction func toggledAutoLoginSwitch(sender: UISwitch) {
        UserSettings.autoLogin = sender.on
    }

    @IBAction func tappedLoginButton() {
        if attemptLogin() {
            performSegueWithIdentifier("unwindAfterLogin", sender: nil)
        } else {
            performSegueWithIdentifier("presentLoginError", sender: nil)
        }
    }

}
```

API

```
UIStoryboard:
    init(name:bundle:)
    func instantiateInitialViewController()
    func instantiateViewControllerWithIdentifier(_:)

UIViewController:
    var storyboard: UIStoryboard? { get }
```

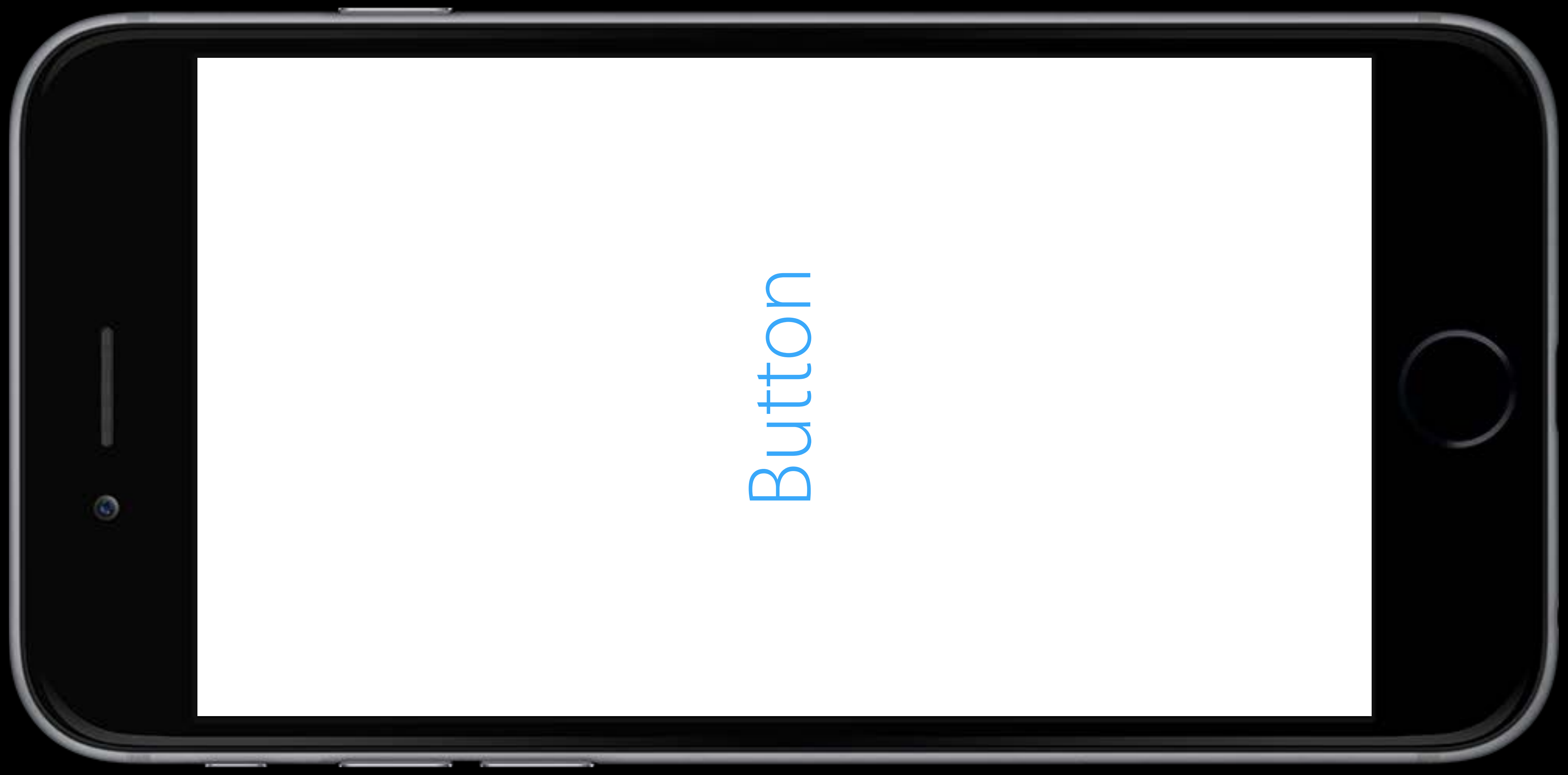
API

```
UIViewController:
    func prepareForSegue(_:sender:)
    func performSegueWithIdentifier(_:sender:)
    func shouldPerformSegueWithIdentifier(_:sender:) -> Bool
    func unwindForSegue(_:towardsViewController:)

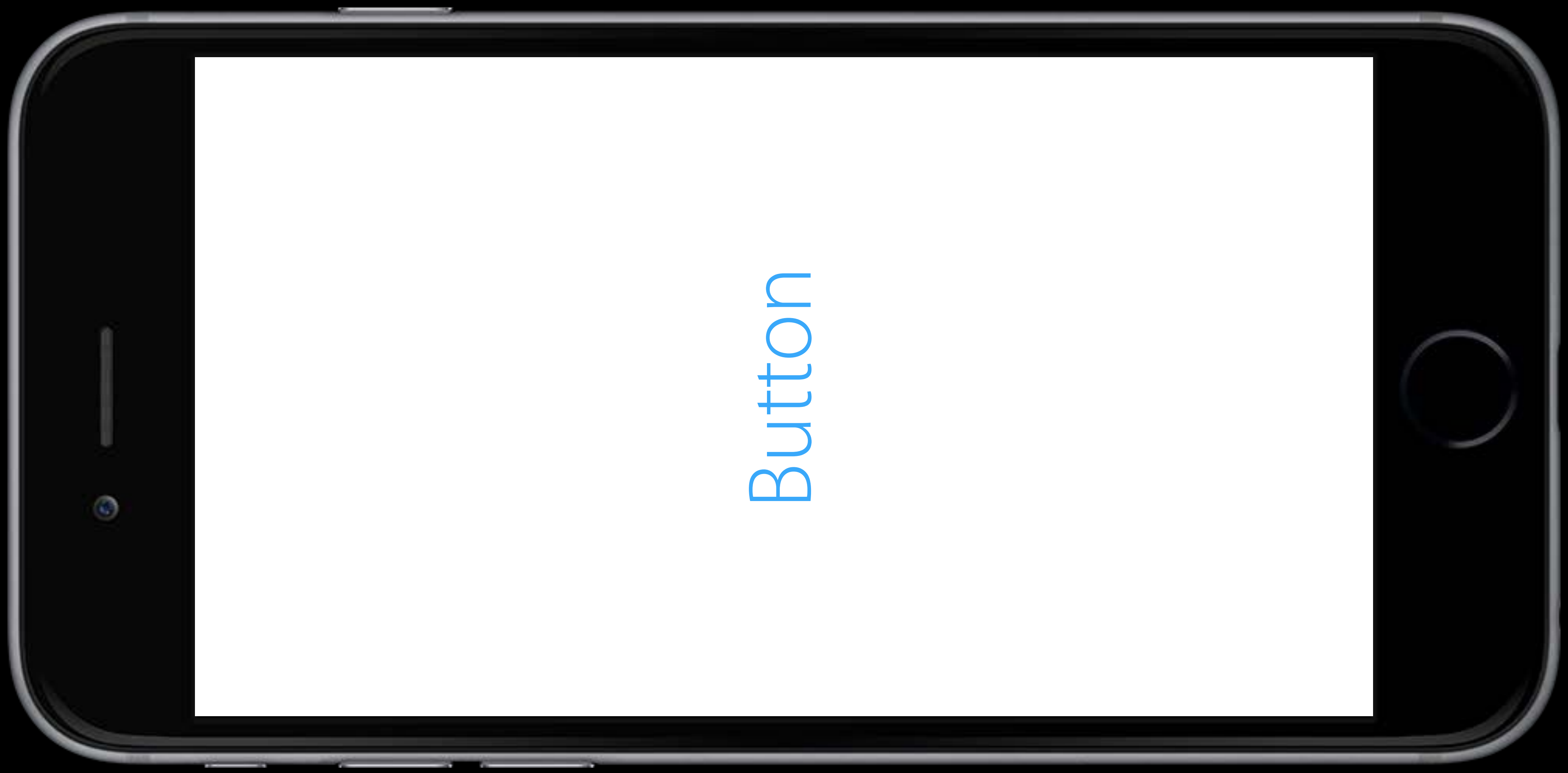
UIStoryboardSegue:
    func perform()
```

Adaptability

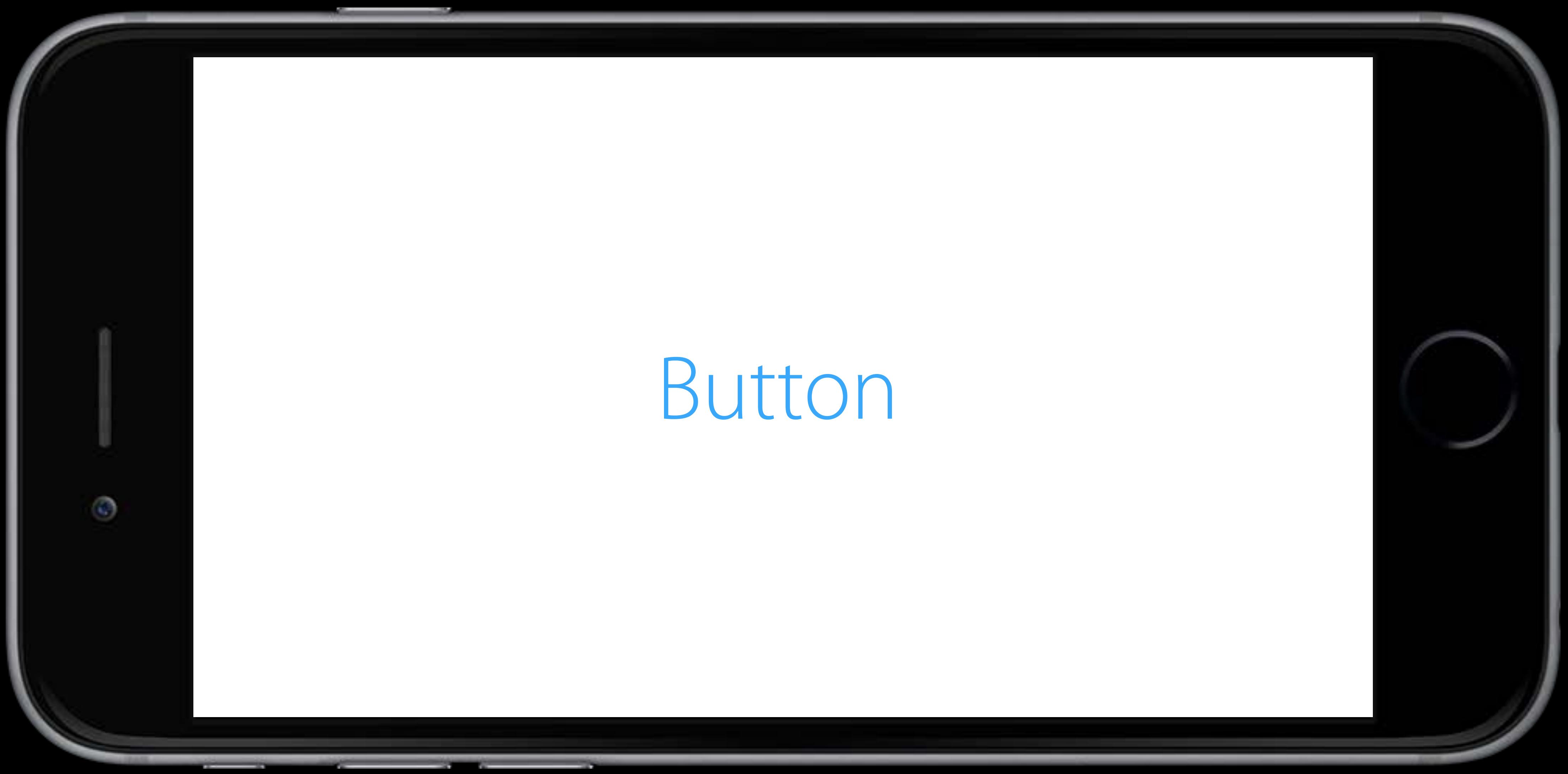
Adaptability



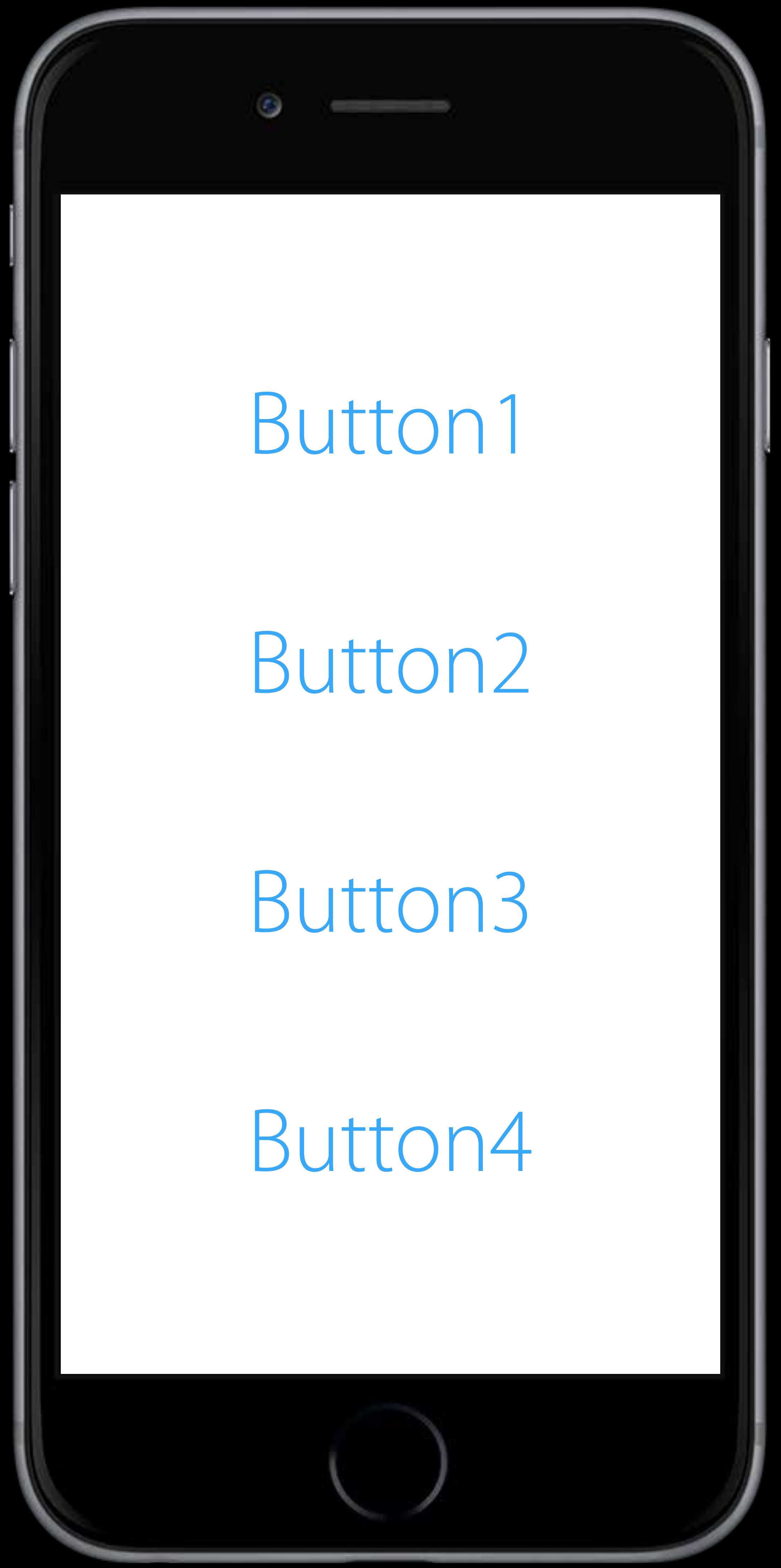
Adaptability



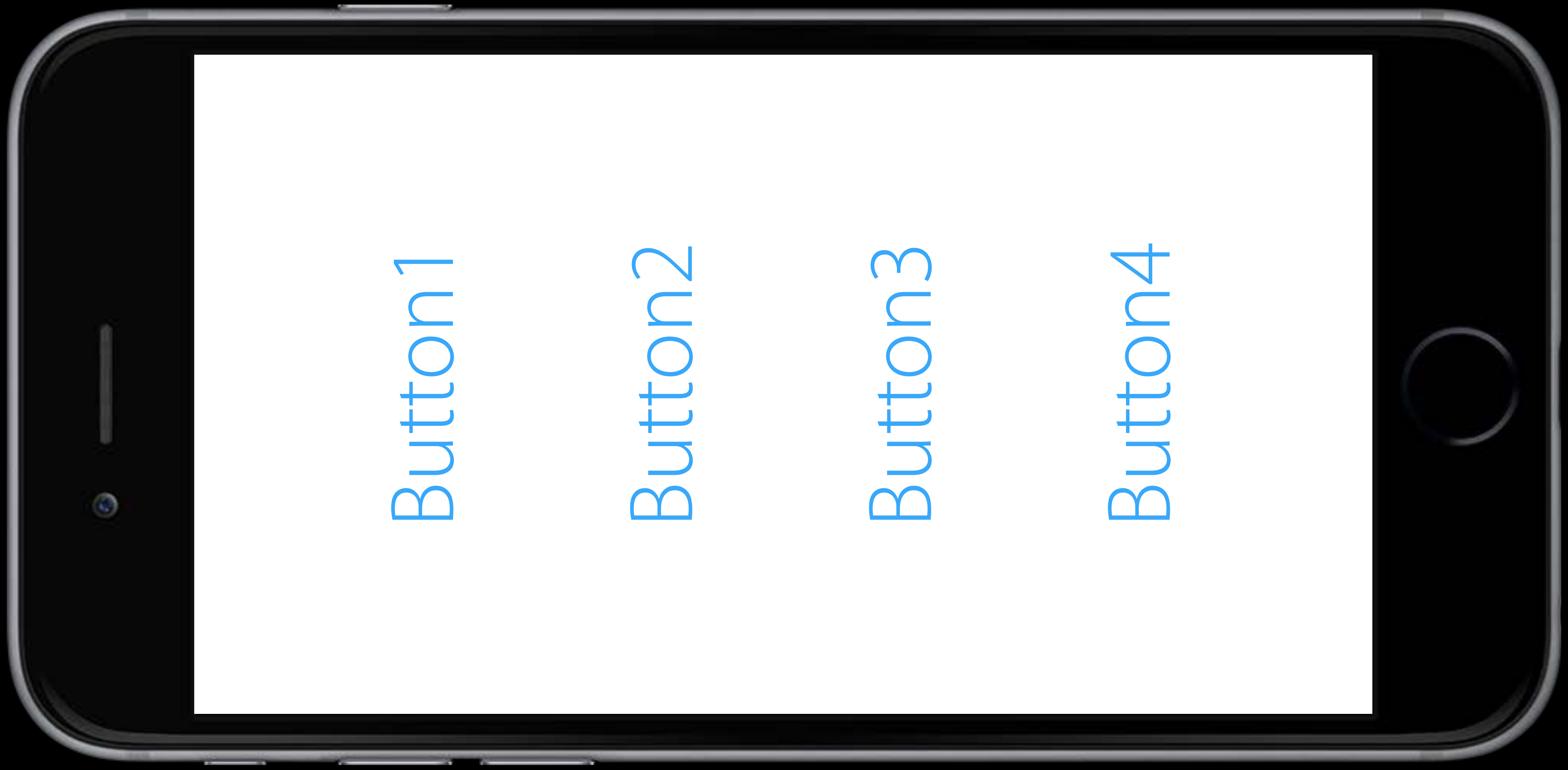
Adaptability



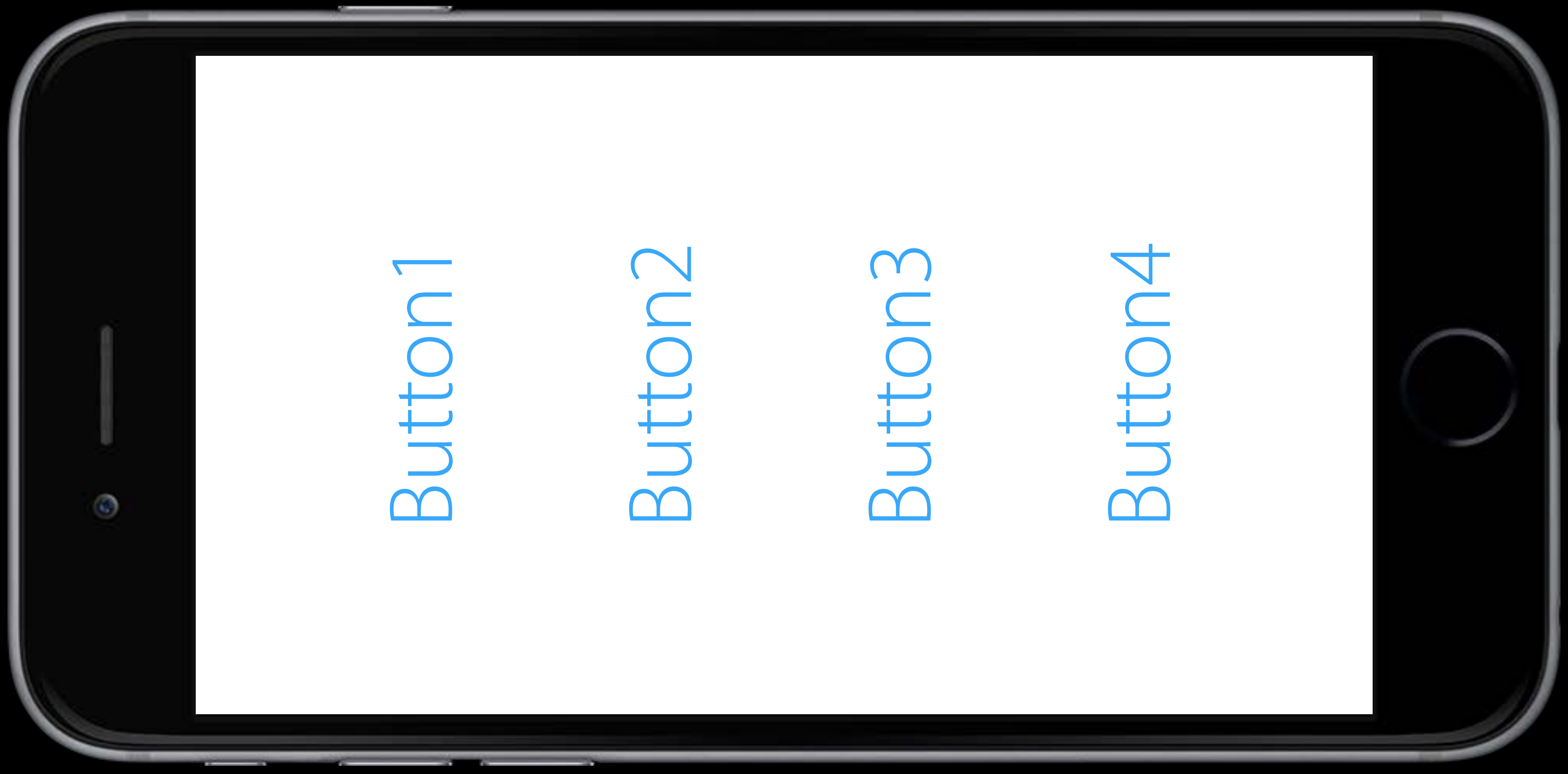
Adaptability



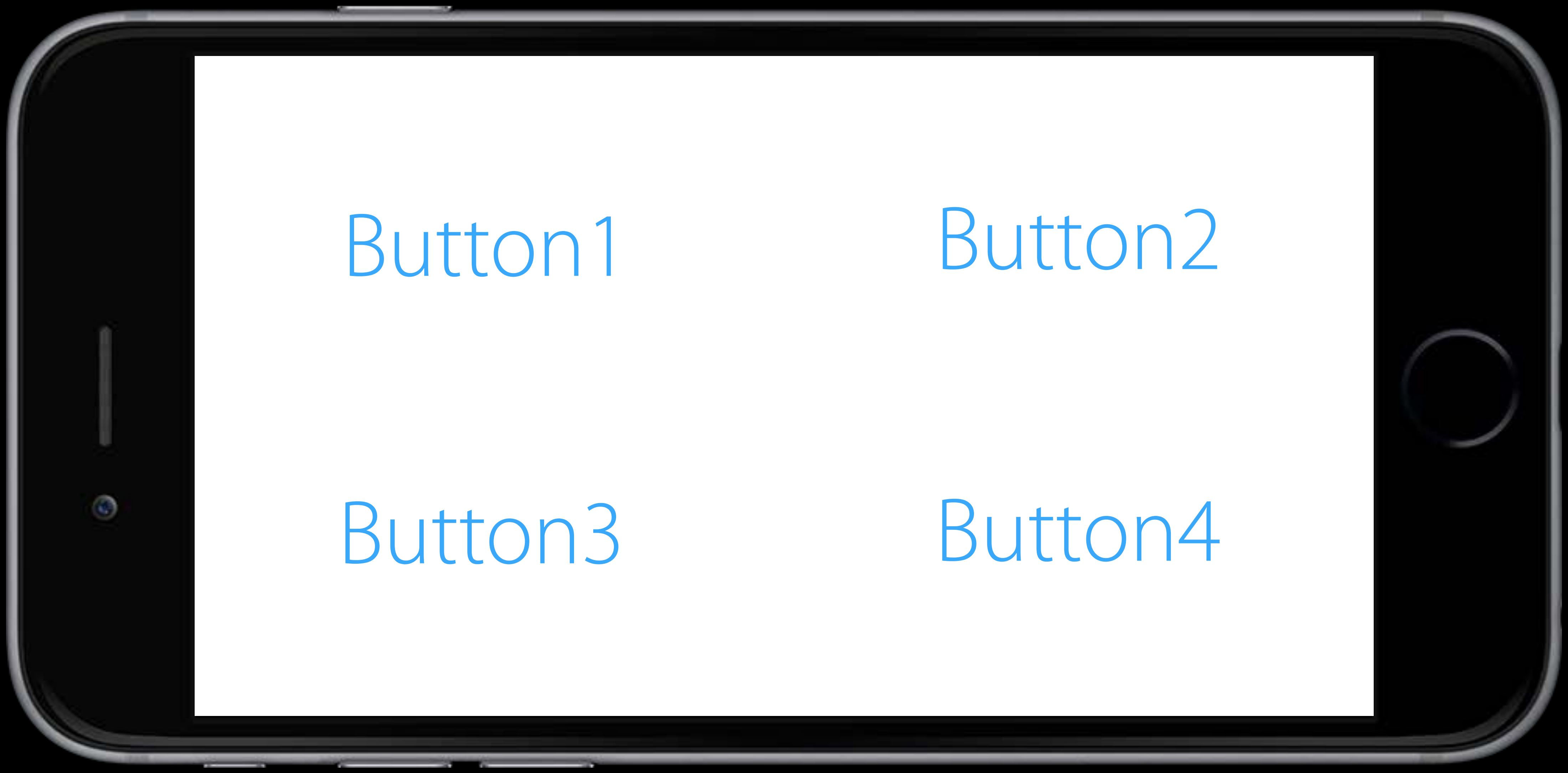
Adaptability



Adaptability



Adaptability



Connections

API

Adaptability

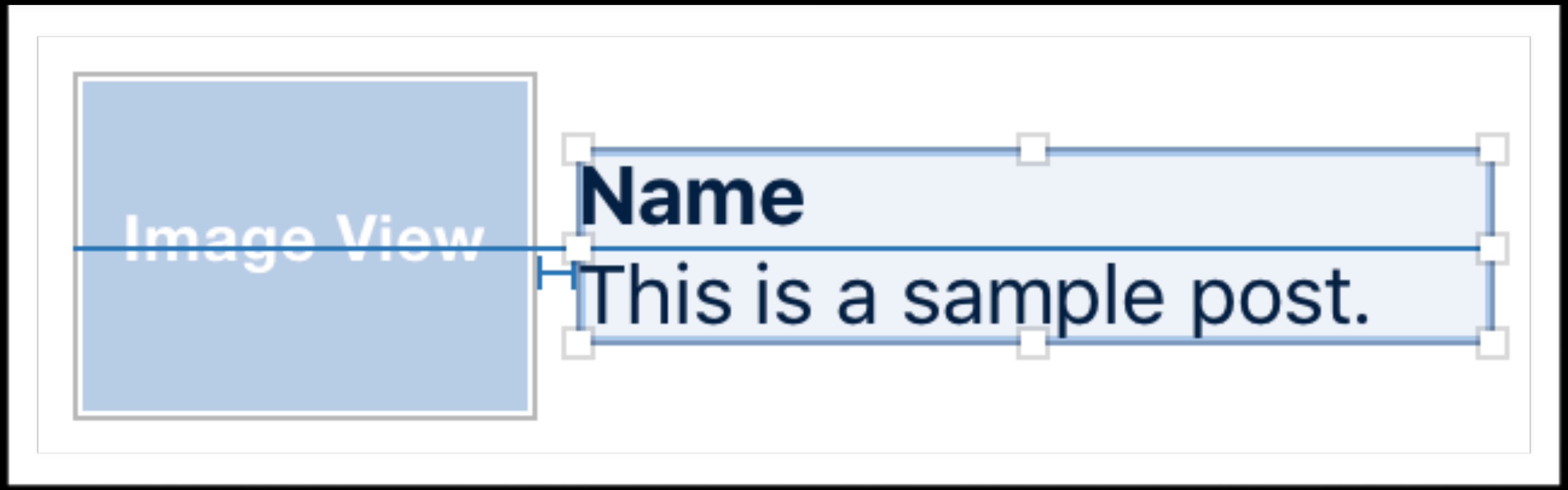
Demo

Interface Builder at Run Time

Summary

Summary

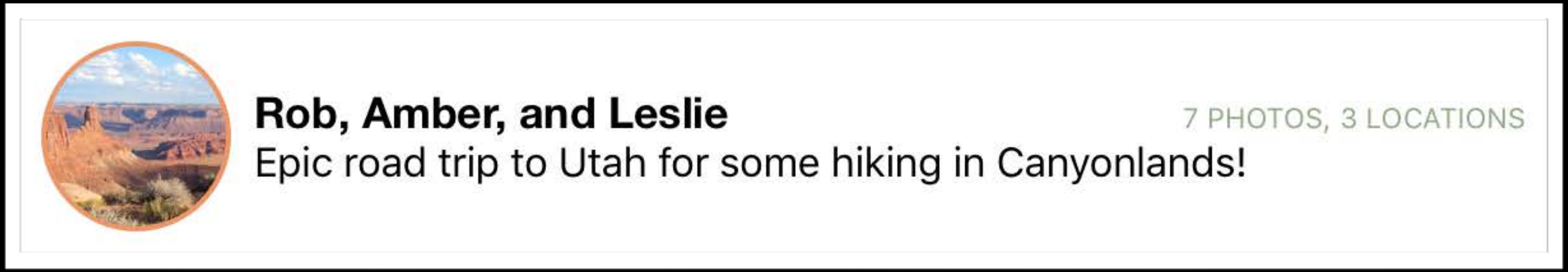
Design a flexible UI with constraints and stack views



Summary

Design a flexible UI with constraints and stack views

Rapidly iterate with designable views


Rob, Amber, and Leslie

7 PHOTOS, 3 LOCATIONS

Epic road trip to Utah for some hiking in Canyonlands!

Summary

Design a flexible UI with constraints and stack views

Rapidly iterate with designable views

Modularize your UI with Storyboard References

Summary

Design a flexible UI with constraints and stack views

Rapidly iterate with designable views

Modularize your UI with Storyboard References

Reuse content with the storyboard API

```
instantiateViewControllerWithIdentifier(_:)
```

Summary

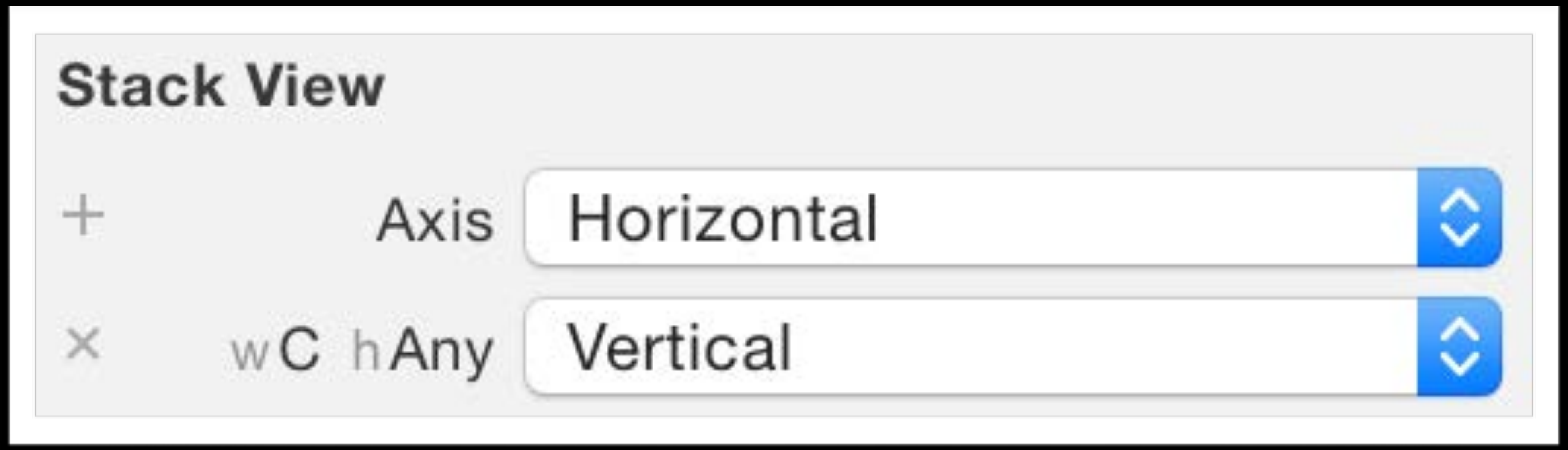
Design a flexible UI with constraints and stack views

Rapidly iterate with designable views

Modularize your UI with Storyboard References

Reuse content with the storyboard API

Make your UI adaptive with Size Classes


Stack View

+	Axis	Horizontal
×	wC hAny	Vertical

More Information

Apple Developer Forums
http://developer.apple.com/forums

Stefan Lesser
Developer Tools Evangelist
slesser@apple.com

Related Sessions

What's New in Storyboards	Mission	Thursday 9:00AM
Mysteries of Auto Layout, Part 1	Presidio	Thursday 11:00AM
Mysteries of Auto Layout, Part 2	Presidio	Thursday 1:30PM
Building Adaptive Apps with UIKit		WWDC14
Taking Control of Auto Layout in Xcode		WWDC13

Related Labs

Interface Builder and Auto Layout	Developer Tools Lab C	Thursday 2:30PM

WWDC15