

What's New in Cocoa Touch

Session 201

Eliza Block, UIKit
Josh Shaffer, UIKit

Productivity

UI refinements

API enhancements

Productivity

UI refinements

API enhancements



Drag and Drop

iPad

9:41 AM

100%

[← Albums](#)

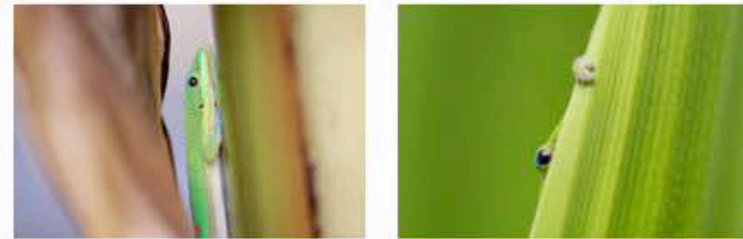
Geckos

[Slideshow](#)

[Select](#)

Geckos

Nov 6, 2015 – Dec 5, 2016



Photos

Memories

Shared

Albums

iPad

9:41 AM

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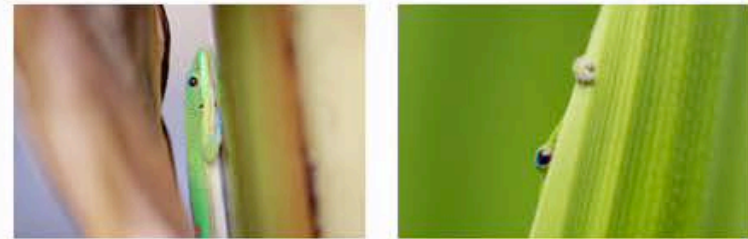
Geckos

[Slideshow](#)

[Select](#)

Geckos

Nov 6, 2015 – Dec 5, 2016



 Photos

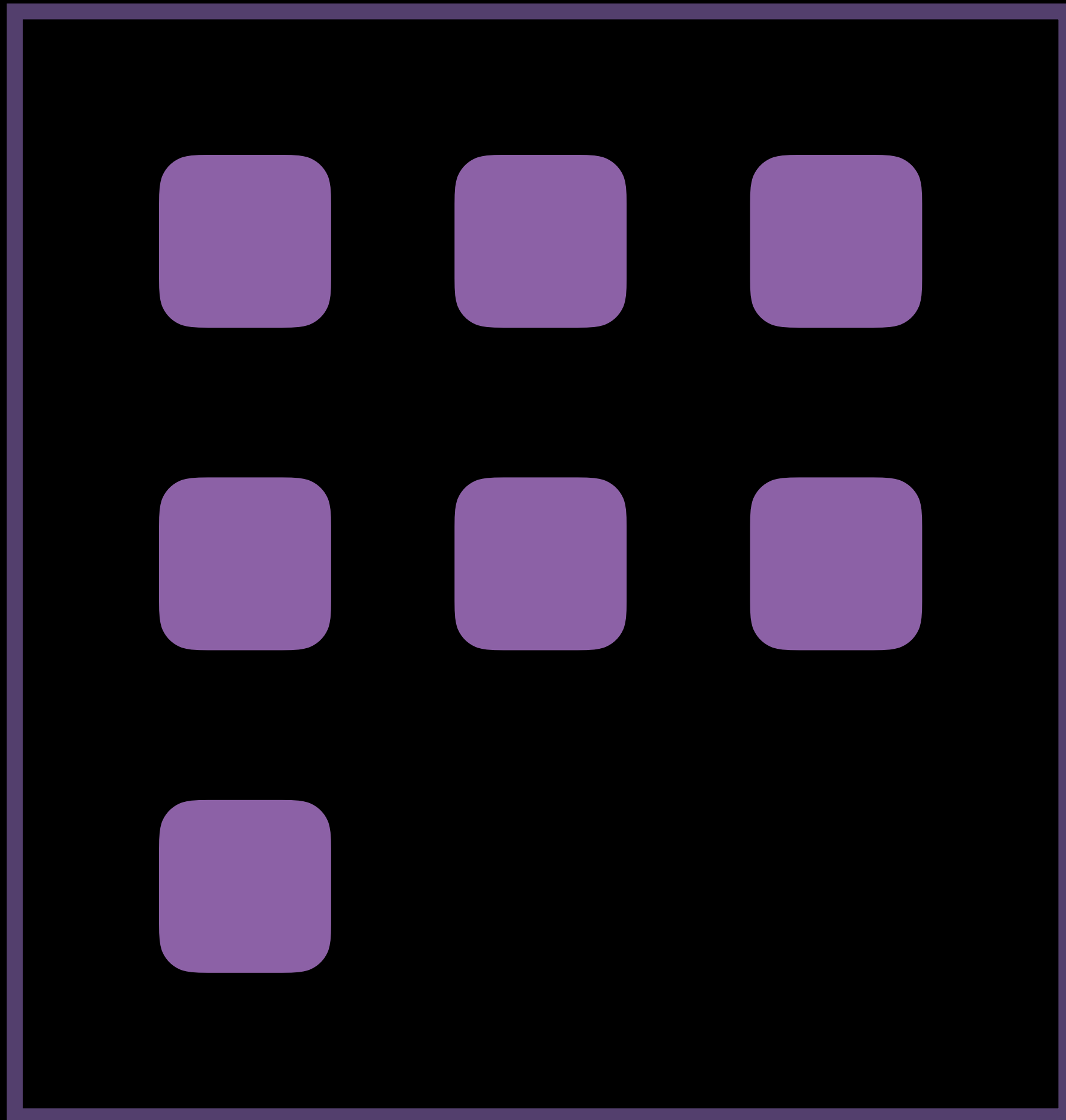
 Memories

 Shared

 Albums

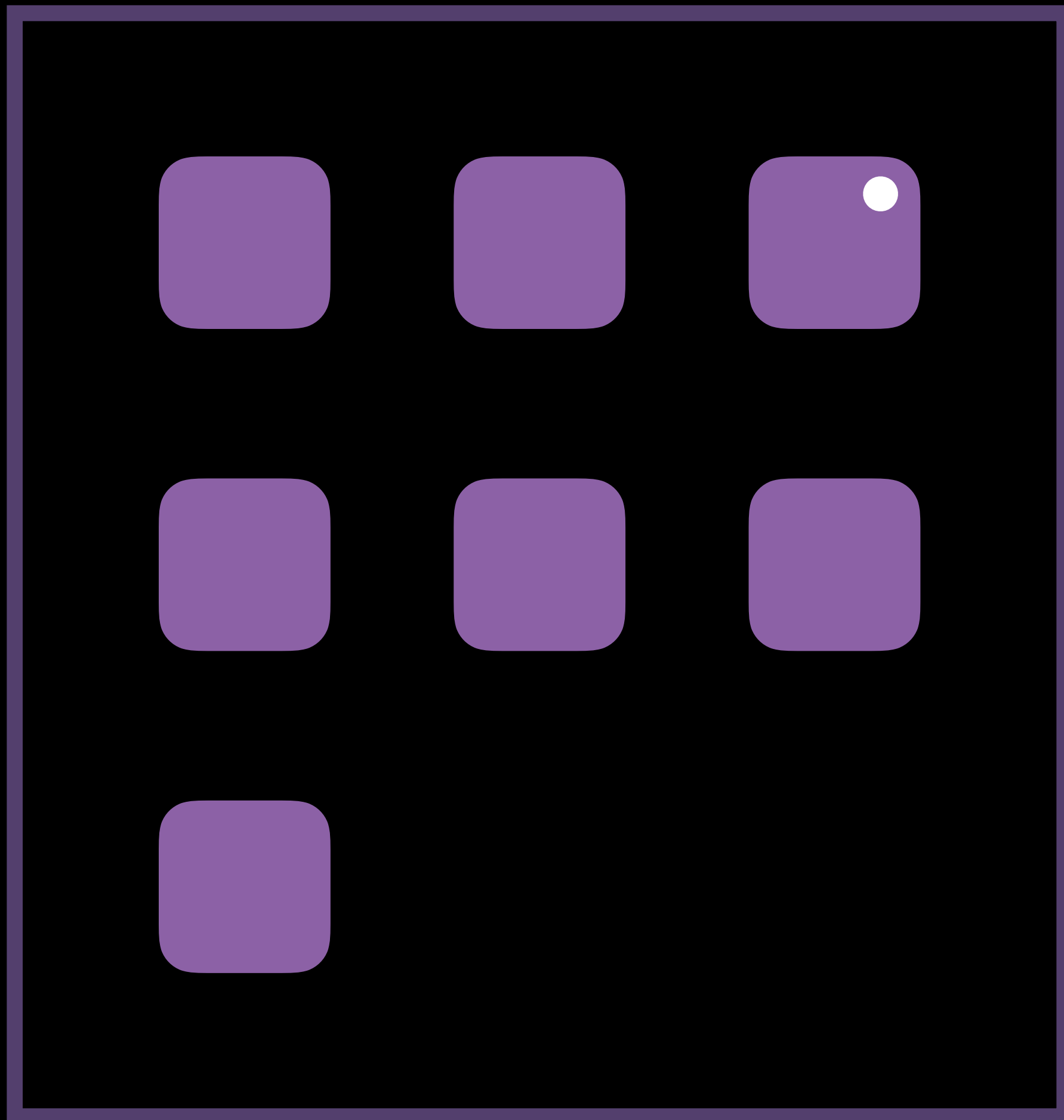
Drag and Drop

Enabling drags



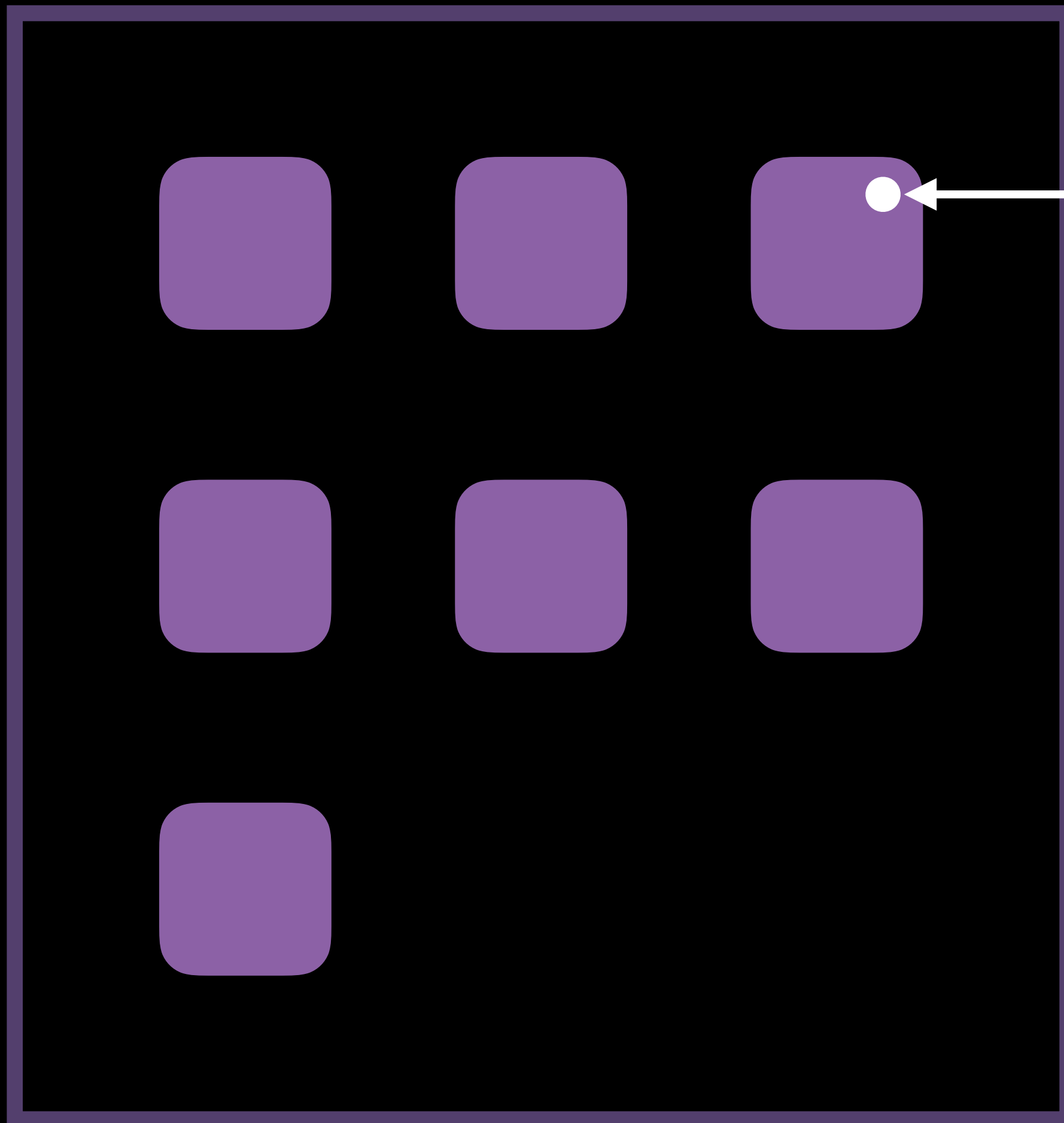
Drag and Drop

Enabling drags



Drag and Drop

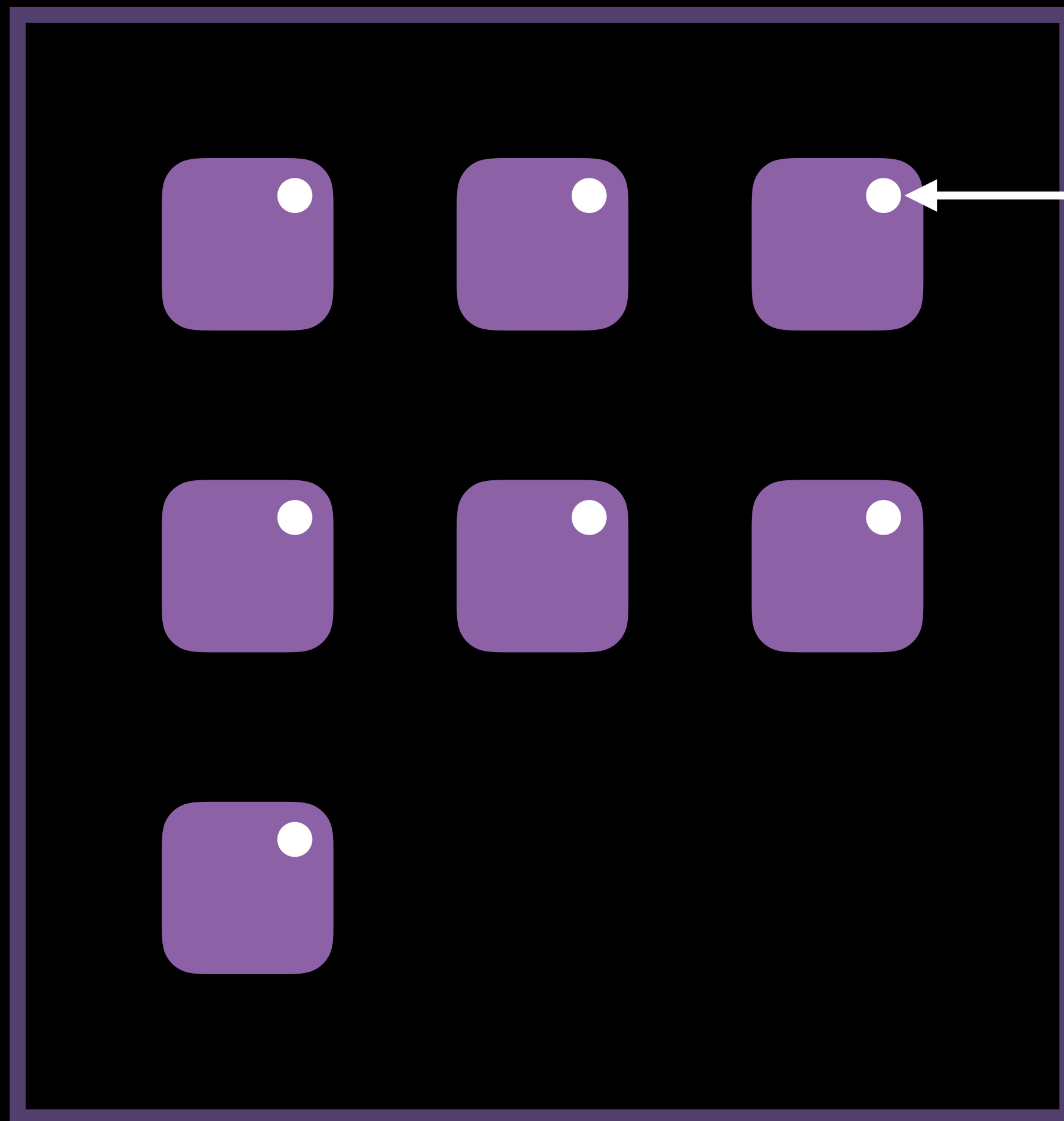
Enabling drags



```
let drag = UIDragInteraction(delegate: self)
iconView.addInteraction(drag)
```

Drag and Drop

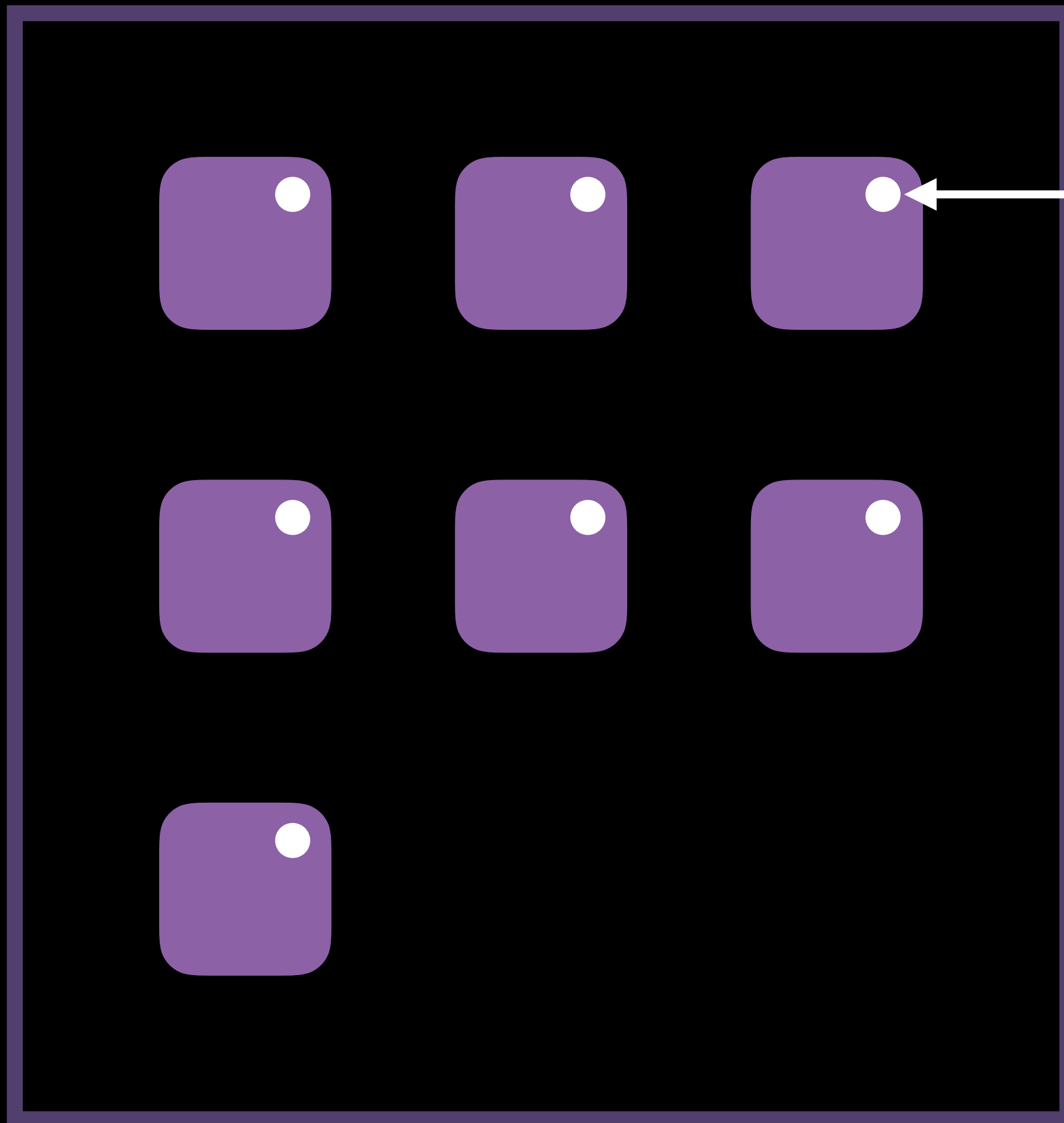
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Drag and Drop

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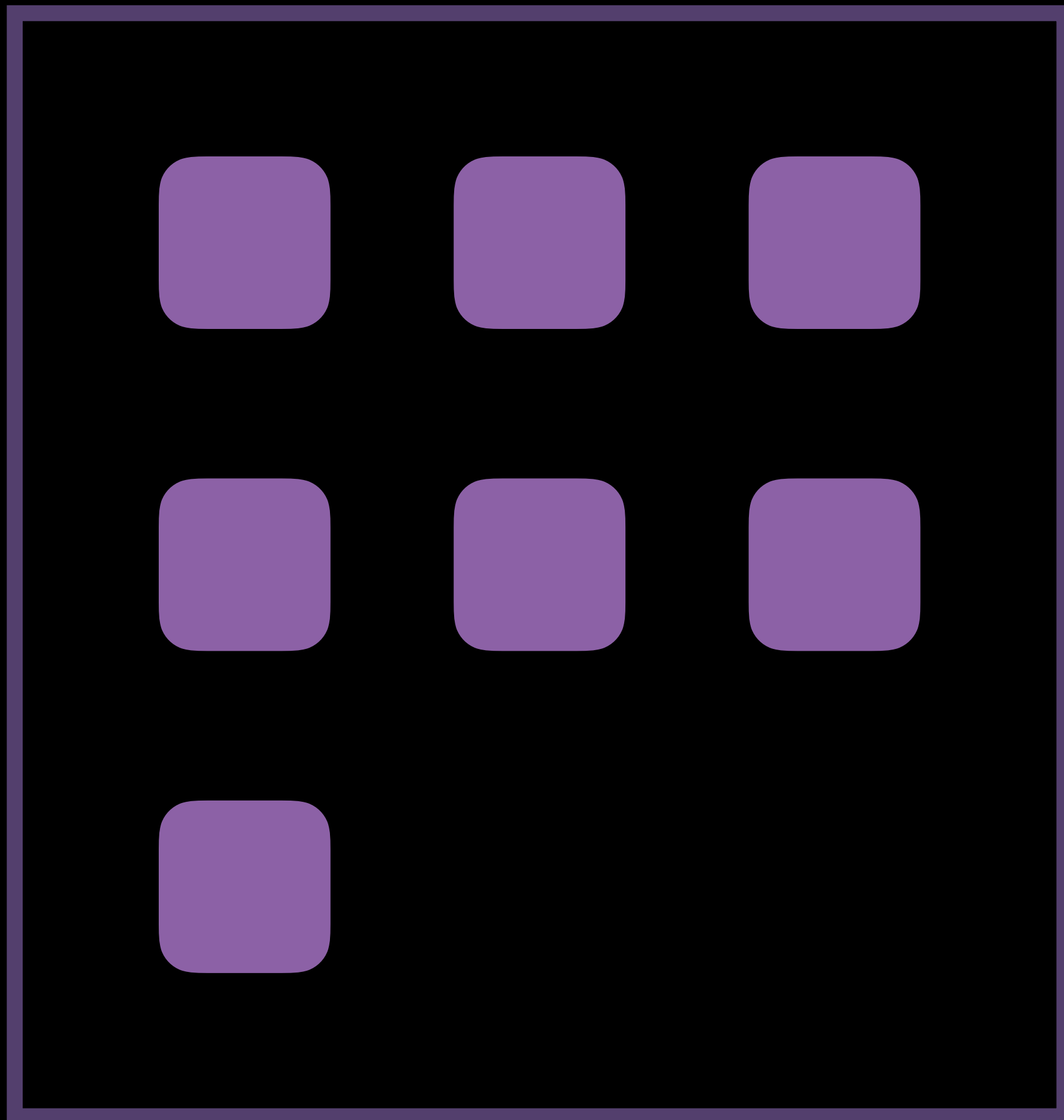
```
let drag = UIDragInteraction(delegate: self)
iconView.addInteraction(drag)
```

UIDragInteractionDelegate

- Provide data for dragged item
- Customize lift animation
- Customize preview

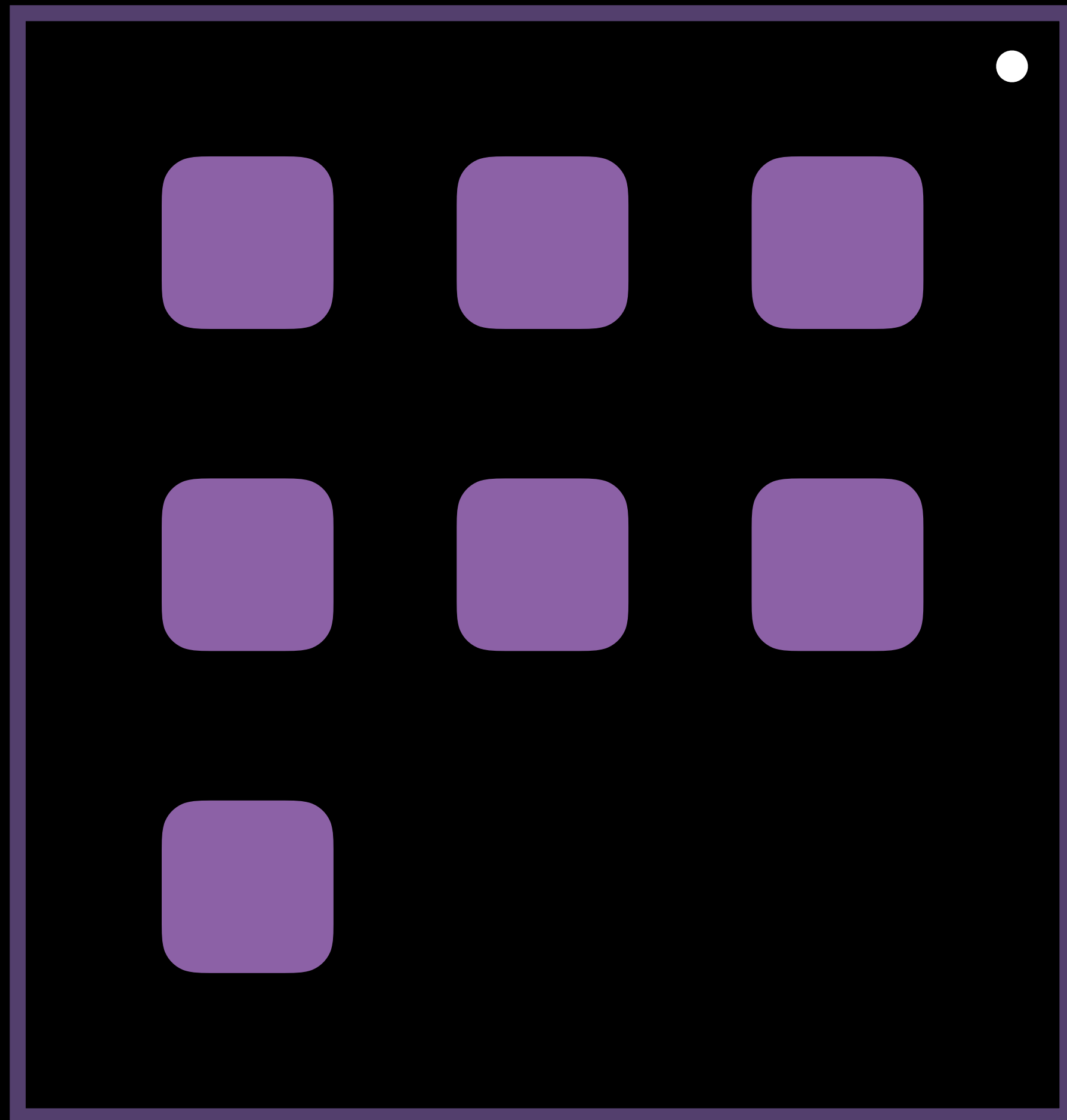
Drag and Drop

Enabling drops



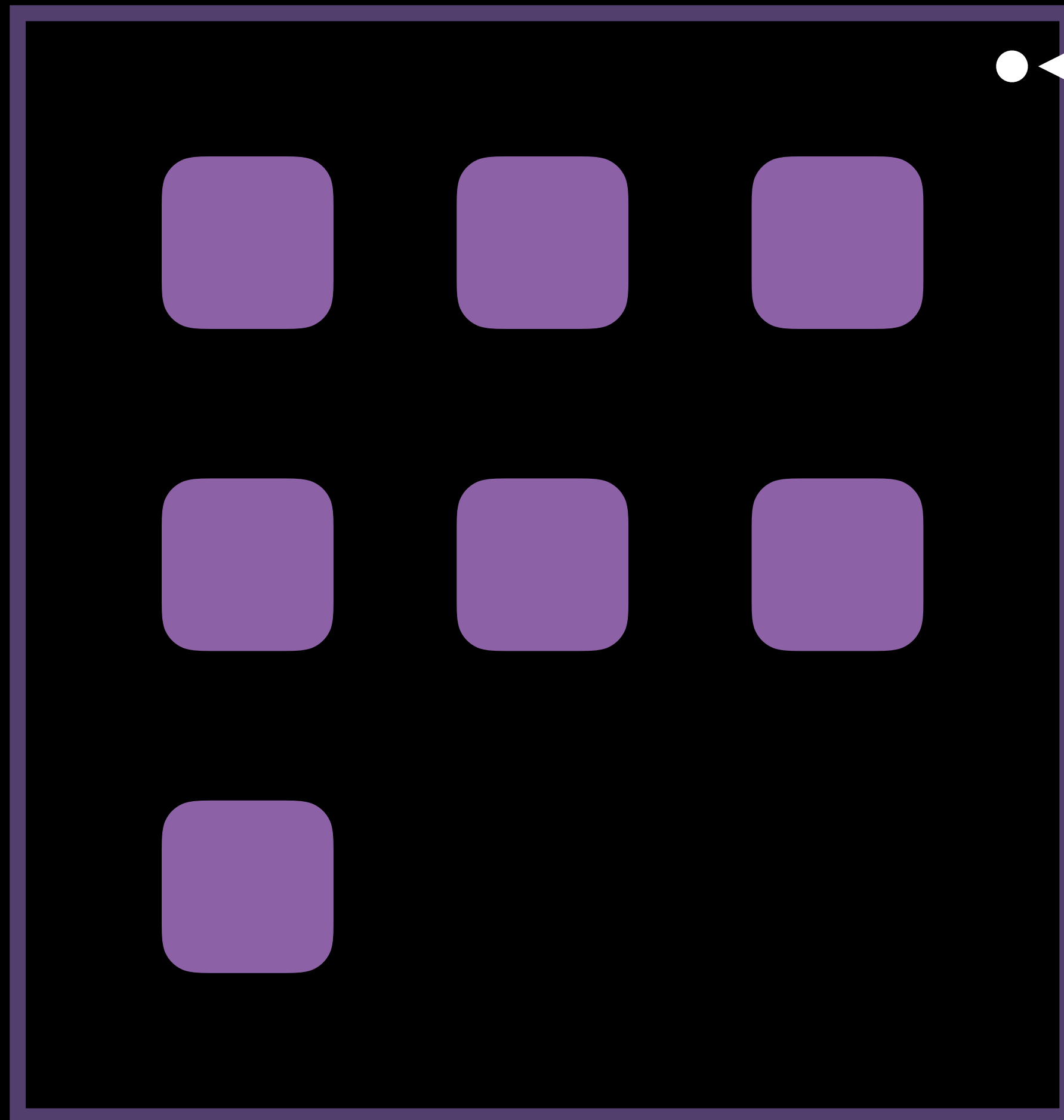
Drag and Drop

Enabling drops



Drag and Drop

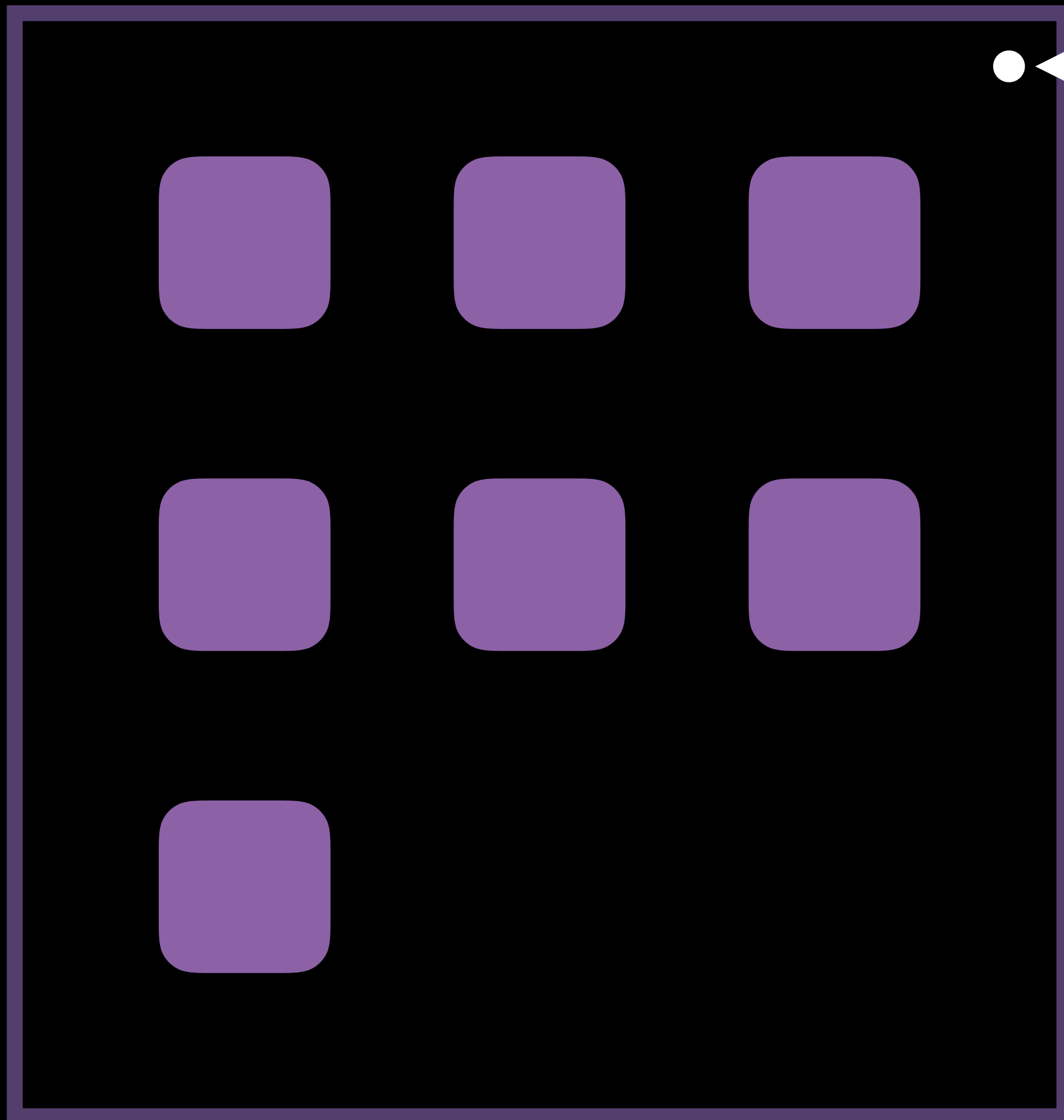
Enabling drops



```
let drop = UIDropInteraction(delegate: self)
iconContainerView.addInteraction(drop)
```

Drag and Drop

Enabling drops



```
let drop = UIDropInteraction(delegate: self)
iconContainerView.addInteraction(drop)
```

UIDropInteractionDelegate

- Update UI as drag moves
- Receive data on drop
- Customize drop animation

Drag and Drop

Easy to adopt

Drag and Drop

Easy to adopt

Built-in support

- TableView, CollectionView, TextView, TextField, WebView

Drag and Drop

Easy to adopt

Built-in support

- TableView, collectionView, TextView, TextField, WebView

Integration with UIPasteConfiguration

Drag and Drop

Easy to adopt

Built-in support

- TableView, collectionView, TextView, TextField, WebView

Integration with UIPasteConfiguration

Introducing Drag and Drop	Hall 3	Tuesday 11:20AM
Mastering Drag and Drop	Executive Ballroom	Wednesday 11:00AM
Drag and Drop with Collection and Table View	Hall 2	Thursday 9:00AM
Data Delivery with Drag and Drop	Hall 2	Thursday 10:00AM

File Management

iPad

9:41 AM

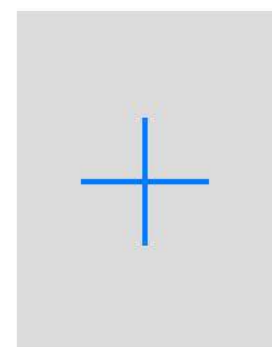
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< Locations

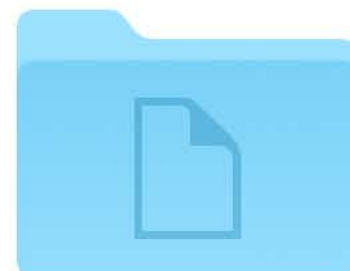
iCloud Drive

+ Select

Search



Create Document



Documents



Keynote



Numbers



Pages

Recents

Browse

File Management

UIDocumentBrowserViewController

File Management

UIDocumentBrowserViewController

```
class UIDocumentBrowserViewController {  
    init(forOpeningFilesWithContentTypes: [String]?)  
    var delegate: UIDocumentBrowserViewControllerDelegate?  
}
```

File Management

UIDocumentBrowserViewController

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Highly customizable

File Management

UIDocumentBrowserViewController

```
class UIDocumentBrowserViewController {  
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Highly customizable

Access to local documents and cloud storage

File Management

UIDocumentBrowserViewController

```
class UIDocumentBrowserViewController {  
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Highly customizable

Access to local documents and cloud storage

Be sure to coordinate file access

File Management

UIDocumentBrowserViewController

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Highly customizable

Access to local documents and cloud storage

Be sure to coordinate file access

- NSFileCoordinator or UIDocument

File Management

UIDocumentBrowserViewController

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class UIDocumentBrowserViewController {  
    init(forOpeningFilesWithContentTypes: [String]?)  
    var delegate: UIDocumentBrowserViewControllerDelegate?  
}
```

Highly customizable

Access to local documents and cloud storage

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- NSFileCoordinator or UIDocument

Productivity

UI refinements

API enhancements

📶

Edit

Messages

🔍 Search

Megan
Hope you have a

Gram
Thinking about yo

Samantha
How's the new pl

Mom
Looking forward t

Update

📶

Mailboxes

✉️ Inbox

★ VIP

● Unread

📎 Attachments

📅 Today

🗑️ Trash

📶

Folders

ICLOUD

All iCloud

Notes

Drawings

Home

Presents

Work

📶

Games

NEW GAME

Injustice 2
When iconic su



New Games W

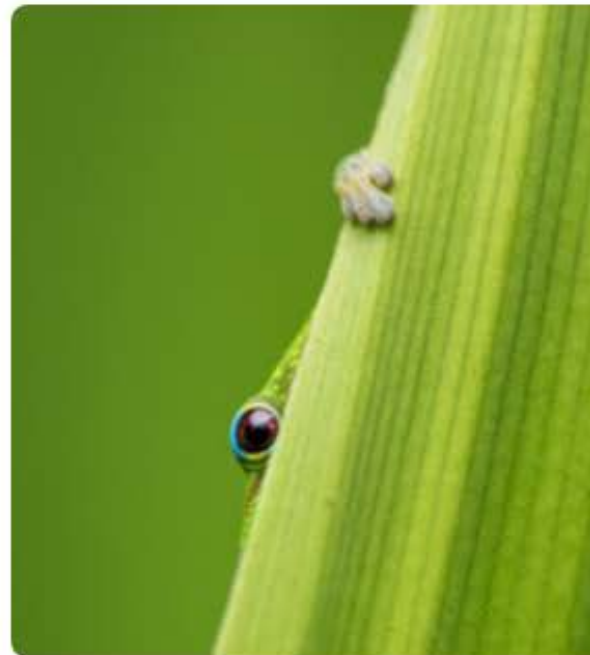
 **Zombie G Survival**
Tour the ap

 **Vignettes**
Pl...

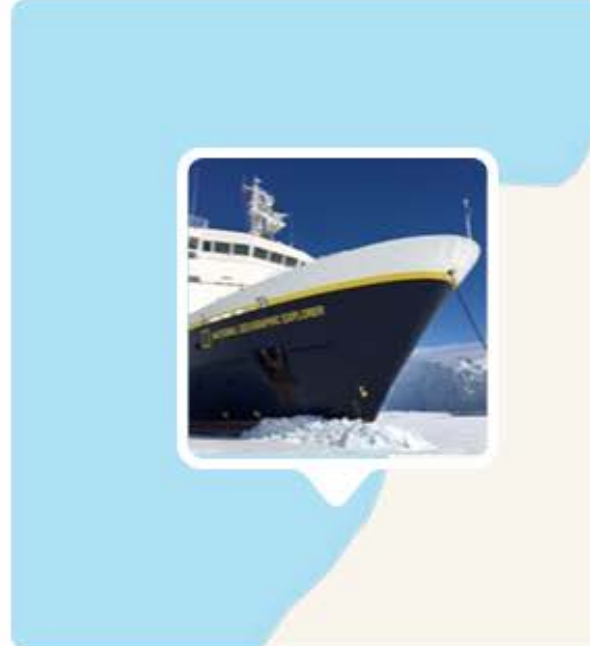
Today Games

📶

Albums



All Photos
33



Places
1


My Albums


Photos Memories


📶 9:41 AM


Settings


🔍 Settings


 **Josh Shaffer**
Apple ID, iCloud, iTu


 Airplane Mode


 Wi-Fi

 Bluetooth

 Cellular

 VPN

 Carrier

 Notifications



9:41 AM

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Settings

🔍 Settings



Josh Shaffer

Apple ID, iCloud, iTunes & App Store



Airplane Mode



Wi-Fi

The Internet >



Bluetooth

On >



Cellular



VPN



Carrier



Notifications





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Settings

Q Settings



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Apple ID, iCloud, iTunes & App Store



Airplane Mode



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Notifications





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Q Settings



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Airplane Mode



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The Internet >



Bluetooth

On >



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Notifications



Enabling Large Titles

```
class UINavigationController {  
    var prefersLargeTitle: Bool  
}
```

Enabling Large Titles

```
class UINavigationController {  
    var prefersLargeTitle: Bool  
}
```

```
class UINavigationControllerItem {  
    var largeTitleDisplayMode: LargeTitleDisplayMode  
}
```

Enabling Unified Search

```
class UINavigationController {  
    var searchController: UISearchController?  
}
```



9:41 AM

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Settings



Josh Shaffer

Apple ID, iCloud, iTunes & App Store



Airplane Mode



Wi-Fi

The Internet



Bluetooth

On



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Notifications



Control Center





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Settings



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Apple ID, iCloud, iTunes & App Store



Airplane Mode



Wi-Fi

The Internet



Bluetooth

On



Cellular



VPN



Carrier



Notifications



Control Center





9:41 AM

100%

[Settings](#)

Notifications

Show Previews

Always >

Notification previews will be shown whether iPhone is locked or unlocked.

NOTIFICATION STYLE



App Store

Badges, Banners >



Calendar

Badges, Sounds, Alerts >



FaceTime

Badges, Sounds, Alerts >



Games

Badges, Sounds, Banners >



Health

Badges >



Home

Badges, Sounds, Banners >



Mail

Badges, Sounds >



Maps >



9:41 AM

100%

[Settings](#)

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Home

Badges, Sounds, Banners



Mail

Badges, Sounds



Maps





9:41 AM

100%

Edit

Mailboxes

 Inbox >

 VIP >

 Unread >

 Attachments >

 Today >

 Trash >

Updated Just Now






9:41 AM

100%


[Edit](#)

Mailboxes

 Inbox >

 VIP >

 Unread >

 Attachments >

 Today >

 Trash >

Updated Just Now











9:41 AM

100%

Edit

Mailboxes

-  Inbox >
-  VIP >
-  Unread >
-  Attachments >
-  Today >
-  Trash >

Updated Just Now











9:41 AM

100%

Mailboxes

Edit

-  Inbox >
-  VIP >
-  Unread >
-  Attachments >
-  Today >
-  Trash >

Updated Just Now










9:41 AM

100%

safeAreaInsets.top

Mailboxes

Edit

-  Inbox >
-  VIP >
-  Unread >
-  Attachments >
-  Today >

-  Trash >

Updated Just Now





9:41 AM

100%

Edit

safeAreaInsets.top

Mailboxes



Inbox



VIP



Unread



Attachments



Today



Trash



Updated Just Now





9:41 AM

100%

Edit

safeAreaInsets.top

Mailboxes



Inbox



VIP



Unread



Attachments



Today



Trash



safeAreaInsets.bottom

Safe Area Insets

```
class UIView {  
  
    // auto layout  
    var safeAreaLayoutGuide: UILayoutGuide { get }  
  
    // manual layout  
    var safeAreaInsets: UIEdgeInsets { get }  
  
    func safeAreaInsetsDidChange()  
  
}
```




9:41 AM

100%

Edit

Mailboxes

Inbox >

VIP >

Unread >

Attachments >

Today >

Trash >

Updated Just Now



 Inbox >

 VIP >

 Unread >

 Attachments >

 Today >

 Trash >



safeAreaInsets.top

 Inbox >

 VIP >

 Unread >

 Attachments >

 Today >

 Trash >

Updated Just Now



Safe Area Insets

```
class UIScrollView {  
  
    var contentInsetAdjustmentBehavior: UIScrollViewContentInsetAdjustmentBehavior  
  
    var adjustedContentInset: UIEdgeInsets { get }  
  
}
```



9:41 AM

100%

Edit



Messages

Megan 8:30 AM >
Hope you have a great flight! See you tonight!

Gram Yesterday >
Thinking about you a lot this week

Samantha Saturday >
How's the new place in San Francisco?

Mom Friday >
Looking forward to seeing you soon!



9:41 AM

100%

Edit



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Swipe Actions

```
class UISwipeActionsConfiguration {  
  
    init(actions: [UIContextualAction])  
  
    var performsFirstActionWithFullSwipe: Bool  
  
}
```

```
class UIContextualAction {  
  
    init(style: Style, title: String?, handler: UIContextualActionHandler)  
  
}
```



9:41 AM

100%

Edit



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Separator Insets

```
class UITableView {  
  
    var separatorInsetReference: UITableViewSeparatorInsetReference  
  
}
```



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Settings

🔍 Settings



Josh Shaffer

Apple ID, iCloud, iTunes & App Store



Airplane Mode



Wi-Fi

The Internet >

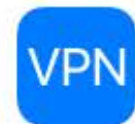


Bluetooth

On >



Cellular



VPN

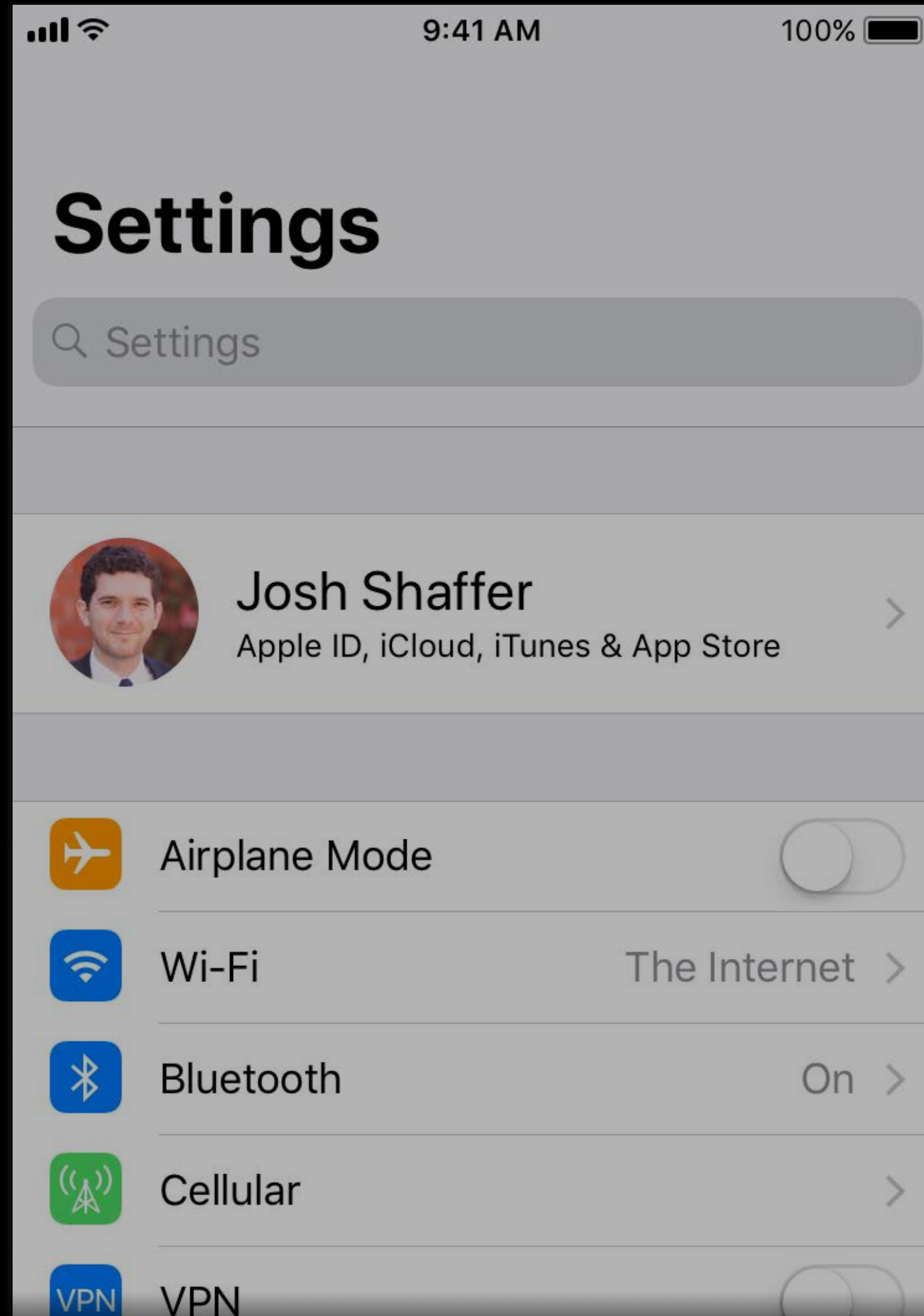


Carrier



Notifications





Updating Your App for iOS 11

Hall 3

Tuesday 4:10PM

Design Studio Shorts 2

Hall 3

Thursday 1:50PM

Productivity

UI refinements

API enhancements

Swift 4 and Foundation

Swift 4 and Foundation

Archiving Swift native types

```
enum Animal {  
    case chicken  
    case cow  
    case sheep  
}
```

```
struct Farm {  
    let name: String  
    let animals: [Animal]  
}
```

Swift 4 and Foundation

Archiving Swift native types

```
enum Animal : Codable {  
    case chicken  
    case cow  
    case sheep  
}
```

```
struct Farm : Codable {  
    let name: String  
    let animals: [Animal]  
}
```

Swift 4 and Foundation

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NSCoding

Swift 4 and Foundation

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NSCoding

JSON

Swift 4 and Foundation

Archiving Swift native types

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    case sheep  
}
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```
struct Farm : Codable {  
    let name: String  
    let animals: [Animal]  
}
```

NSCoding

JSON

Property lists

Swift 4 and Foundation

Key paths

Swift 4 and Foundation

Key paths

New KeyPath type

- Literal syntax
- Getters and setters

Swift 4 and Foundation

Key paths

New KeyPath type

- Literal syntax
- Getters and setters

```
let copresenterNameKeyPath = \Presenter.copresenter.name
```

Swift 4 and Foundation

Key paths

New KeyPath type

- Literal syntax
- Getters and setters

```
let copresenterNameKeyPath = \Presenter.copresenter.name
eliza[keyPath: copresenterNameKeyPath] // "Josh"
```

Swift 4 and Foundation

Key paths

New KeyPath type

- Literal syntax
- Getters and setters

```
let copresenterNameKeyPath = \Presenter.copresenter.name  
eliza[keyPath: copresenterNameKeyPath] // "Josh"  
eliza[keyPath: \.copresenter.name]    // "Josh"
```

Swift 4 and Foundation

Old-fashioned KVO

```
private var myContext = 42

func startObserving() {
    let eliza = ...
    eliza.addObserver(self, forKeyPath: "copresenter", ..., context: &myContext)
}

override func observeValue(forKeyPath keyPath: String?, of object: Any?, ..., context:
UnsafeMutableRawPointer?) {
    if context == &myContext {
        print("Eliza's co-presenter is now \(object?.copresenter.name)")
    } else {
        super.observeValue(forKeyPath: keyPath, of: object, ..., context: context)
    }
}
```



Swift 4 and Foundation

New block-based KVO!

```
var token: NSKeyValueObservation? = nil

func startObserving() {
    let eliza = ...
    token = eliza.observe(\.copresenter) { (object, change) in
        print("Eliza's co-presenter is now \(object.copresenter.name)")
    }
}
```



Swift 4 and Foundation

New block-based KVO!

```
var token: NSKeyValueObservation? = nil

func startObserving() {
    let eliza = ...
    token = eliza.observe(\.copresenter) { (object, change) in
        print("Eliza's co-presenter is now \(object.copresenter.name)")
    }
}
```



Deferring System Gestures



9:41 AM

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9:41 AM

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```
class UIViewController {  
    func preferredScreenEdgesDeferringSystemGestures() -> UIRectEdge  
}
```


Auto Layout

Auto Layout and Scroll View

Frame vs. content

Auto Layout and Scroll View

Frame vs. content

```
class UIScrollView {  
    var contentLayoutGuide: UILayoutGuide { get }  
    var frameLayoutGuide: UILayoutGuide { get }  
}
```







```
imageView.centerXAnchor.constraint(equalTo: scrollView.contentLayoutGuide.centerXAnchor)
```




```
imageView.centerXAnchor.constraint(equalTo: scrollView.contentLayoutGuide.centerXAnchor)  
imageView.centerYAnchor.constraint(equalTo: scrollView.contentLayoutGuide.centerYAnchor)
```

Dynamic Type



9:41 AM

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[← Jun 6](#)

Event Details

[Edit](#)

What's New in Cocoa Touch

San Jose McEnery Convention Center
365 S Market St, San Jose, CA 95113, United States

Tuesday, Jun 6, 2017
from 10:20 AM to 11 AM

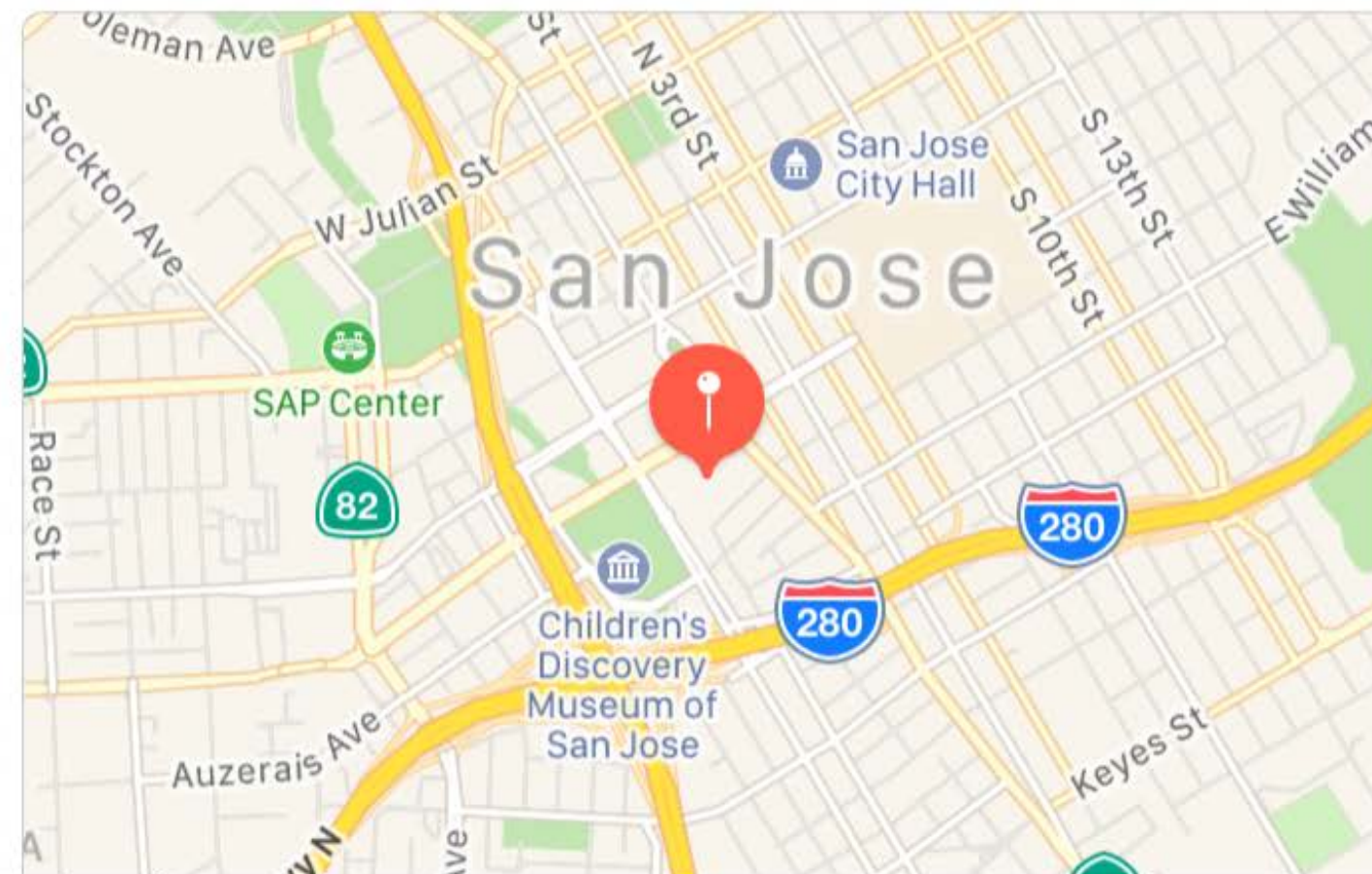
10 AM	What's New in Cocoa Touch San Jose McEnery Con...
11 AM	
Noon	Lunch with Josh Favorite Diner

Calendar

Calendar

Alert

Time to Leave >



[Delete Event](#)



9:41 AM

100%

[← Jun 6](#)

Event Details

[Edit](#)

What's New in Cocoa Touch

San Jose McEnery Convention Center
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Tuesday, Jun 6, 2017
from 10:20 AM to 11 AM



Calendar

Calendar

Alert

Time to Leave >



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[← Jun 6](#)

Event Details

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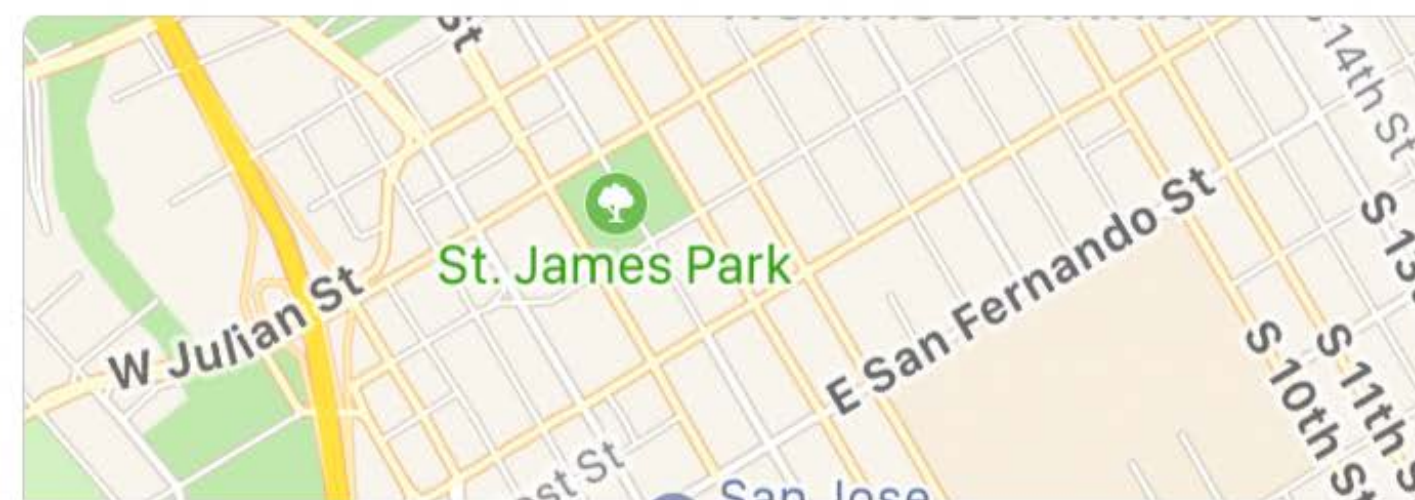


Calendar

Calendar

Alert

Time to Leave >



[Delete Event](#)



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[← Jun 6](#)

Event Details

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What's New in Cocoa Touch

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Tuesday, Jun 6, 2017

from 10:20 AM to 11 AM

TO AM

11 AM

Noon

Calendar

• Calendar

Alert

Time to Leave >

[Delete Event](#)

Dynamic Type

Sizing your text

Dynamic Type

Sizing your text

How do you choose a font appropriate for your user's dynamic type size?

Dynamic Type

Sizing your text

How do you choose a font appropriate for your user's dynamic type size?

Old way

```
let bodyFont = UIFont.preferredFont(forTextStyle: .body)
let titleFont = UIFont.preferredFont(forTextStyle: .title1)
```

Dynamic Type

Sizing your text

How do you choose a font appropriate for your user's dynamic type size?

Old way

```
let bodyFont = UIFont.preferredFont(forTextStyle: .body)
let titleFont = UIFont.preferredFont(forTextStyle: .title1)
```

But what if your app needs a custom font?

Dynamic Type

UIFontMetrics

Dynamic Type

UIFontMetrics

Scale any font

```
let bodyMetrics = UIFontMetrics(forTextStyle: .body)
```

Dynamic Type

UIFontMetrics

Scale any font

```
let bodyMetrics = UIFontMetrics(forTextStyle: .body)

let standardFont = ... // any font you want, for standard type size
```

Dynamic Type

UIFontMetrics

Scale any font

```
let bodyMetrics = UIFontMetrics(forTextStyle: .body)

let standardFont = ... // any font you want, for standard type size
let font = bodyMetrics.scaledFont(for: standardFont)
```

Dynamic Type

UIFontMetrics

Scale any font

```
let bodyMetrics = UIFontMetrics(forTextStyle: .body)

let standardFont = ... // any font you want, for standard type size
let font = bodyMetrics.scaledFont(for: standardFont)
```

Can also scale arbitrary layout values

Dynamic Type

UIFontMetrics

Scale any font

```
let bodyMetrics = UIFontMetrics(forTextStyle: .body)

let standardFont = ... // any font you want, for standard type size
let font = bodyMetrics.scaledFont(for: standardFont)
```

Can also scale arbitrary layout values

```
let titleMetrics = UIFontMetrics(forTextStyle: .title3)

let standardHeight = ... // button height for standard type size
let height = titleMetrics.scaledValue(forValue: standardHeight)
```

Dynamic Type

AutoLayout

Dynamic Type

AutoLayout

Tuesday 12:30pm

Lunch with Josh

Dynamic Type

AutoLayout

Tuesday 12:30pm

Lunch with Josh

Dynamic Type

AutoLayout

Tuesday 12:30pm

Lunch with Josh 

Dynamic Type

AutoLayout

Tuesday 12:30pm

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Lunch with Josh

Dynamic Type

AutoLayout

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Lunch with Josh

Dynamic Type

AutoLayout

Tuesday 12:30pm
Lunch with Josh

Tuesday 12:30pm
Lunch with Josh

Tuesday 12:30pm
Lunch with Josh

```
let topAnchor = topLabel.lastBaselineAnchor  
let bottomAnchor = bottomLabel.firstBaselineAnchor
```

Dynamic Type

AutoLayout

Tuesday 12:30pm
Lunch with Josh

Tuesday 12:30pm
Lunch with Josh

Tuesday 12:30pm
Lunch with Josh

```
let topAnchor = topLabel.lastBaselineAnchor
let bottomAnchor = bottomLabel.firstBaselineAnchor

bottomAnchor.constraintEqualToSystemSpacing(below: topAnchor)
```

Dynamic Type

AutoLayout

Tuesday 12:30pm

Lunch with Josh

Tuesday 12:30pm

Lunch with Josh

Tuesday 12:30pm

Lunch with Josh

```
let topAnchor = topLabel.lastBaselineAnchor
let bottomAnchor = bottomLabel.firstBaselineAnchor

bottomAnchor.constraintEqualToSystemSpacing(below: topAnchor)
```

Dynamic Type

AutoLayout

Works with VFL too

```
NSLayoutConstraint.constraintsWithVisualFormat(  
    "V:|-[topLabel]-[bottomLabel]-|", // '-' gives you system spacing  
    options: [spacingBaselineToBaseline],  
    metrics: nil,  
    views: ...)
```


Dynamic Type

AutoLayout

Works with VFL too

```
NSLayoutConstraint.constraintsWithVisualFormat(  
    "V:|-[topLabel]-[bottomLabel]-|", // '-' gives you system spacing  
    options: [spacingBaselineToBaseline],  
    metrics: nil,  
    views: ...)
```

And with UIStackView

```
stackView.baselineRelativeArrangement = true  
stackView.spacing = .spacingUseSystem
```

Dynamic Type

AutoLayout

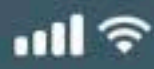
Works with VFL too

```
NSLayoutConstraint.constraintsWithVisualFormat(  
    "V:|-[topLabel]-[bottomLabel]-|", // '-' gives you system spacing  
    options: [spacingBaselineToBaseline],  
    metrics: nil,  
    views: ...)
```

And with UIStackView

```
stackView.baselineRelativeArrangement = true  
stackView.spacing = .spacingUseSystem
```

Password AutoFill



9:41 AM

100%

shiny.

Username

Password

Log In

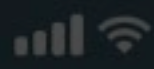


q w e r t y u i o p

a s d f g h j k l

z x c v b n m

123 space return



9:41 AM

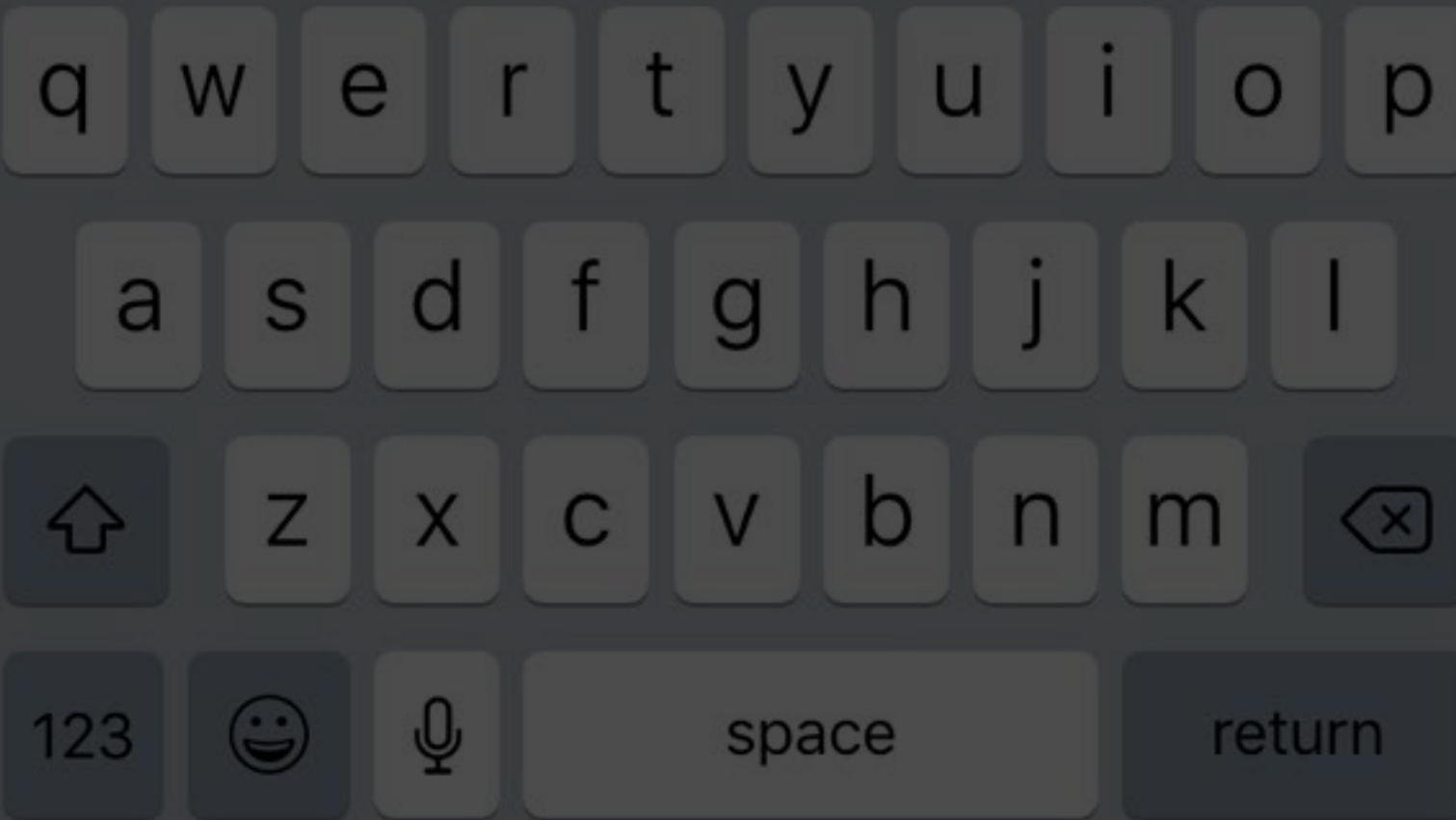
100%

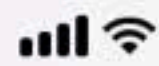
shiny.

Username

Password

Log In





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Cancel

AutoFill Password

Search

apple.com — rmondello
apple.com



bbc.co.uk — rmondello
bbc.co.uk



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bing.com



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weather.com — rmondello
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webkit.org — rmondello
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wikipedia.org — rmondello
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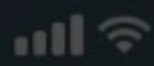
shiny.

Username

Password

Log In





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shiny.

Username

Password

Log In

password for shiny.example.com
rmondello



q w e r t y u i o p

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123 😊 🗣 space return



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shiny.

Username

Password

Log In

password for shiny.example.com
rmondello





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shiny.

Username

Password

Log In



shiny.

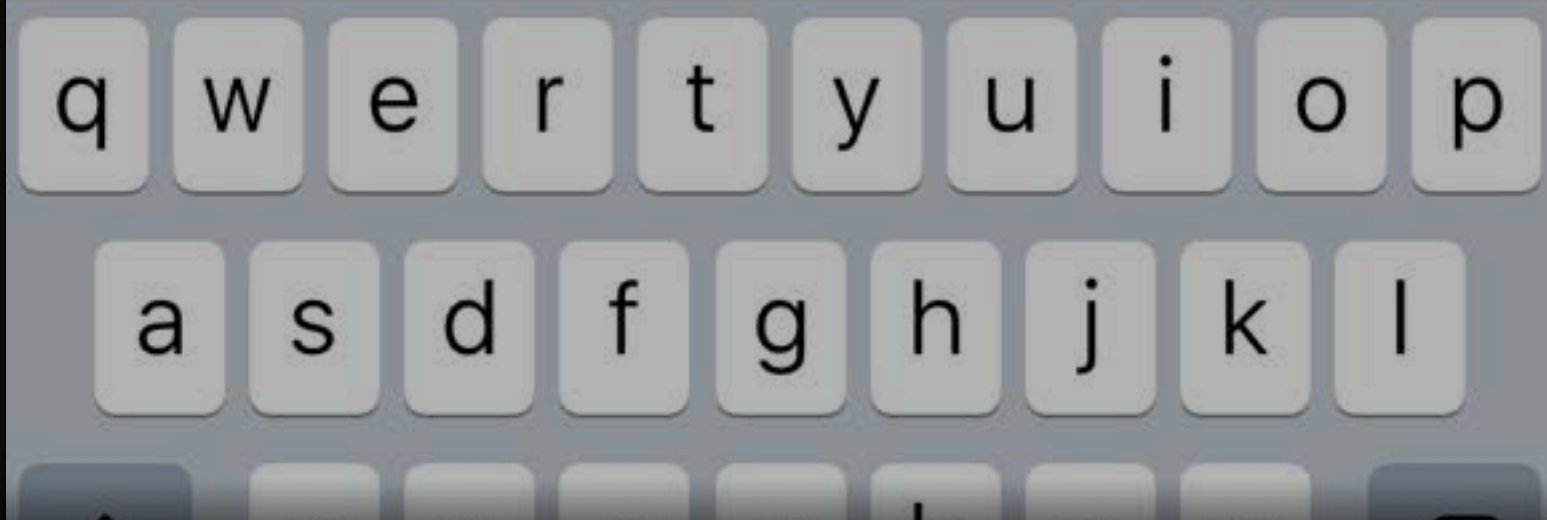
Username

rmondello

Password

.....

Log In



Asset Catalogs

Asset Catalogs

Colors and icons

```
class UIColor {  
    init?(named name: String)  
  
}
```

Asset Catalogs

Colors and icons

```
class UIColor {  
    init?(named name: String)  
}
```

Wide gamut color support

Asset Catalogs

Colors and icons

```
class UIColor {  
    init?(named name: String)  
}
```

Wide gamut color support

Wide gamut colors for icons

Asset Catalogs

Colors and icons

```
class UIColor {  
    init?(named name: String)  
}
```

Wide gamut color support

Wide gamut colors for icons

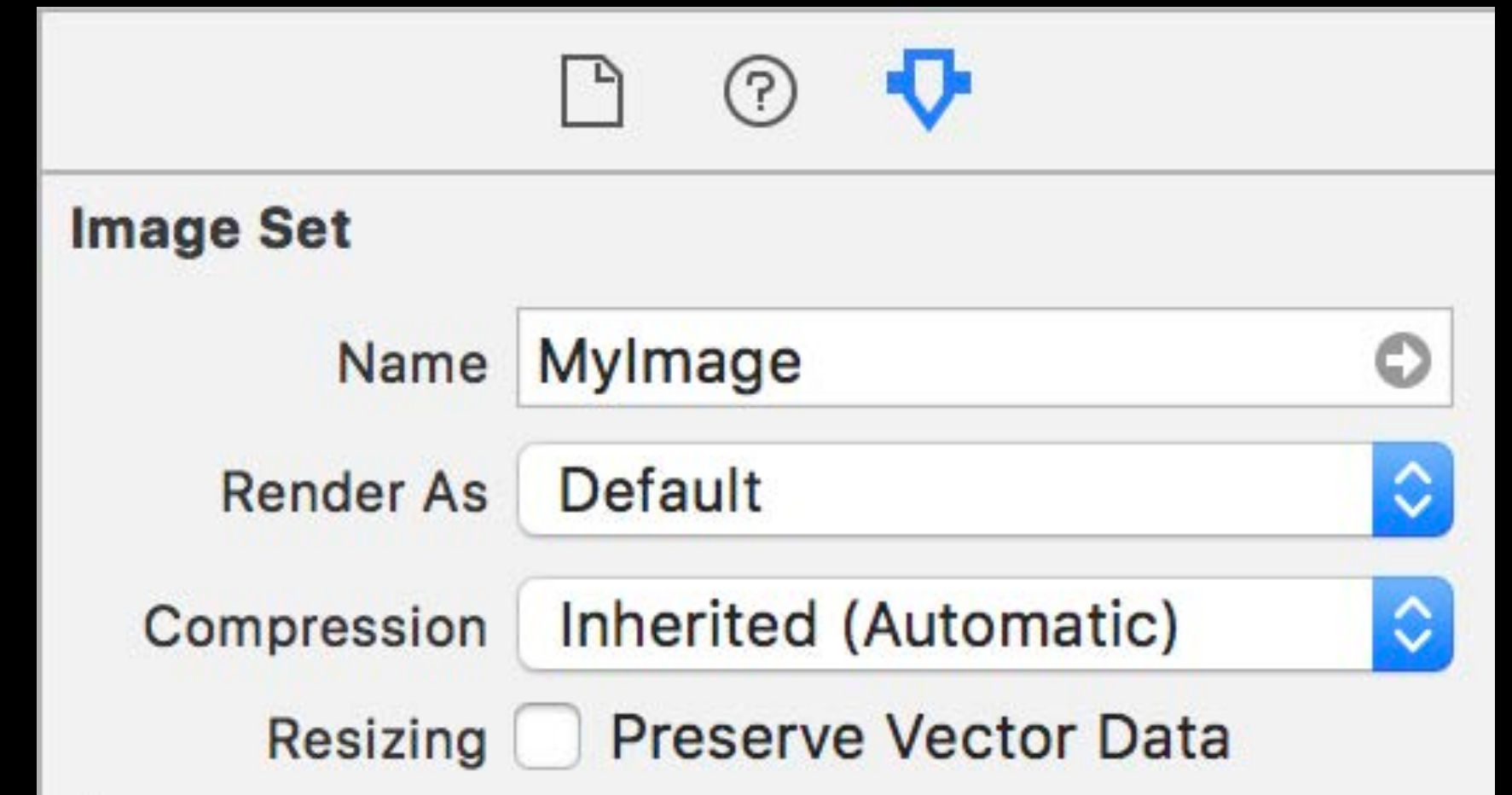
App thinning for icons

Asset Catalogs

PDF-backed images

Asset Catalogs

PDF-backed images

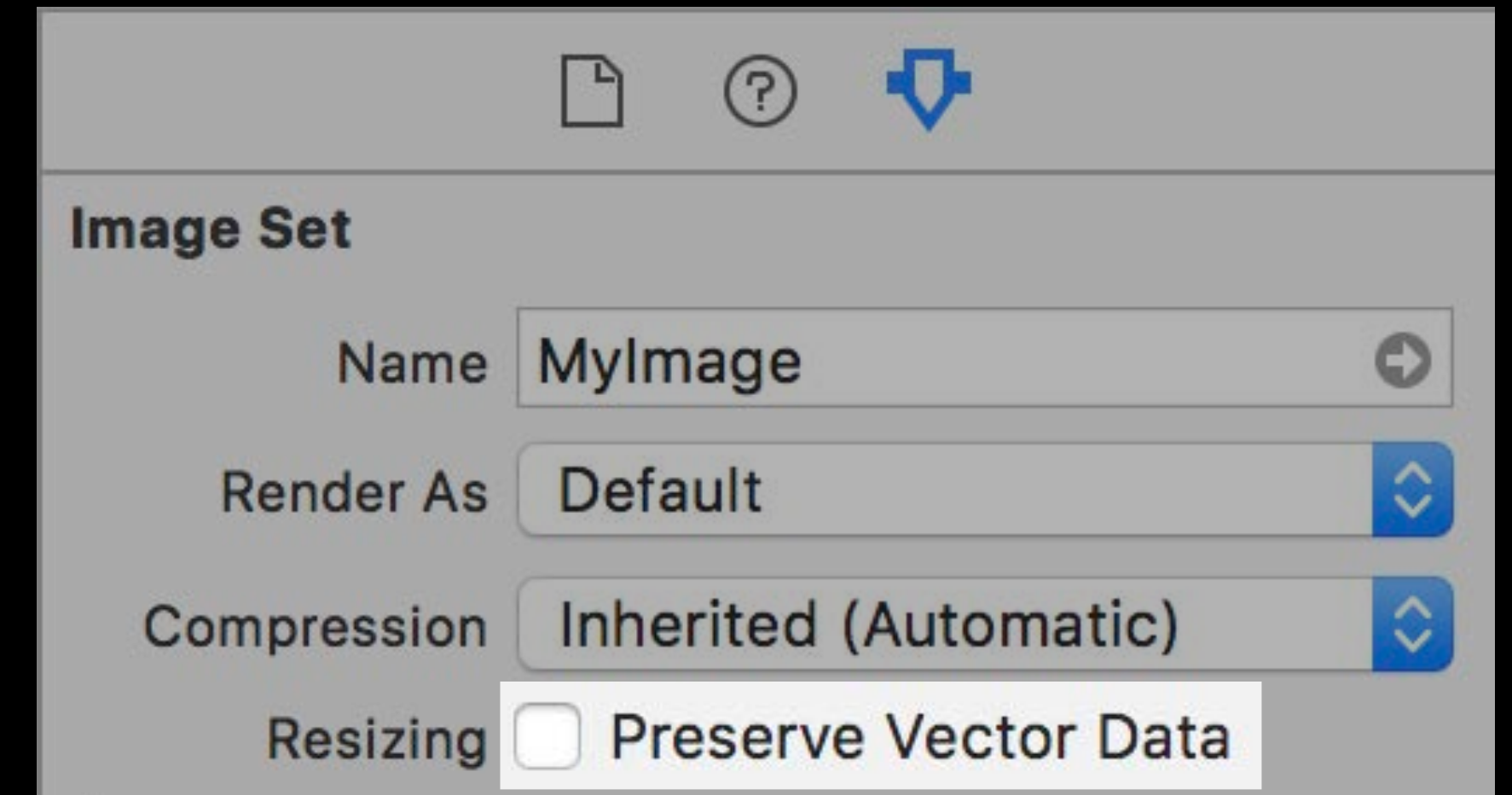


The screenshot shows a configuration panel for an image set. At the top, there are three icons: a document icon, a question mark icon, and a blue shield icon. Below the icons, the panel is titled "Image Set". It contains four settings:

- Name:** A text input field containing "MyImage" with a right-pointing arrow icon.
- Render As:** A dropdown menu with "Default" selected and a blue double-headed arrow icon.
- Compression:** A dropdown menu with "Inherited (Automatic)" selected and a blue double-headed arrow icon.
- Resizing:** A checkbox labeled "Preserve Vector Data" which is currently unchecked.

Asset Catalogs

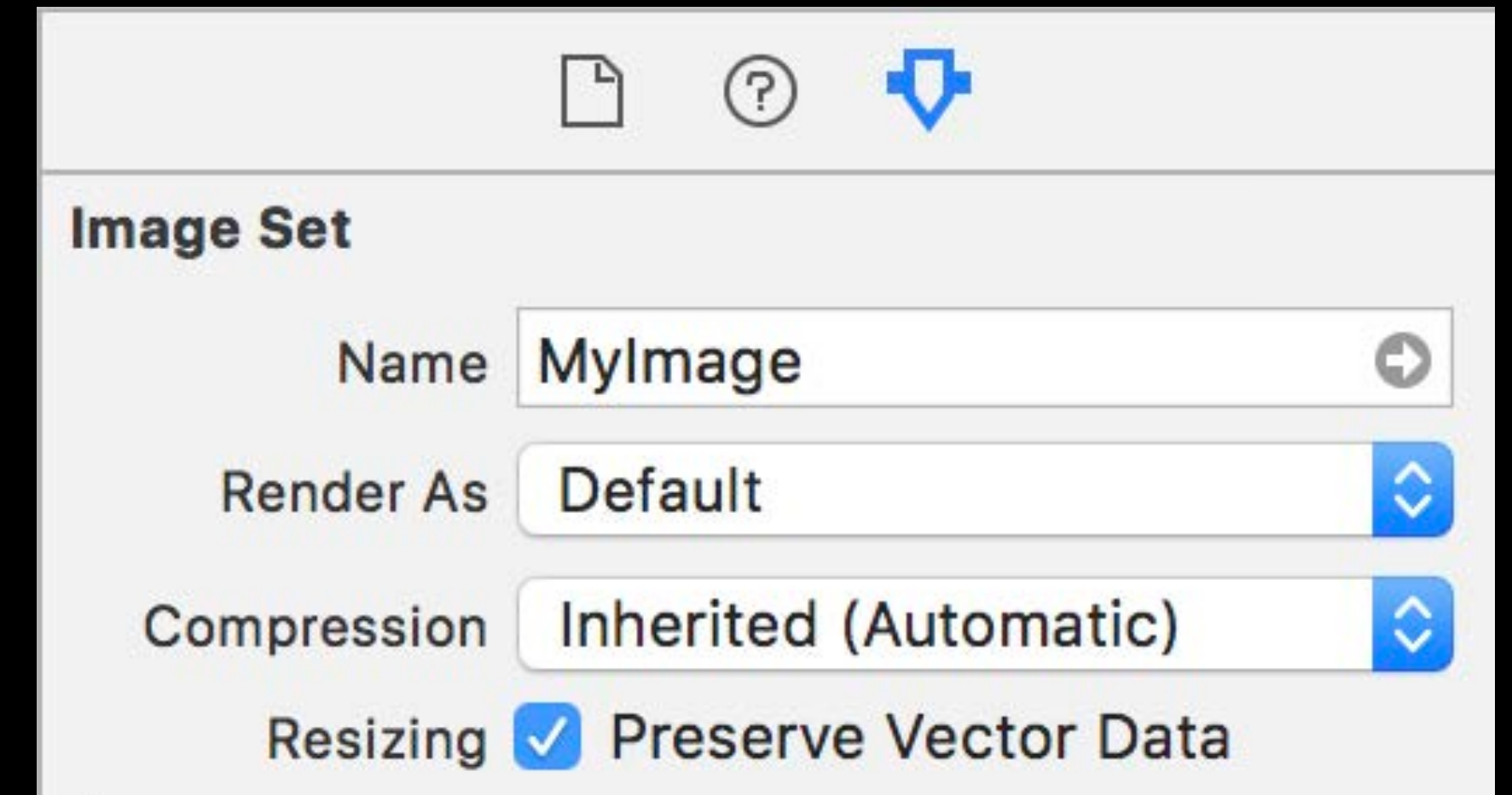
PDF-backed images



Asset Catalogs

PDF-backed images

Preserve vector data if

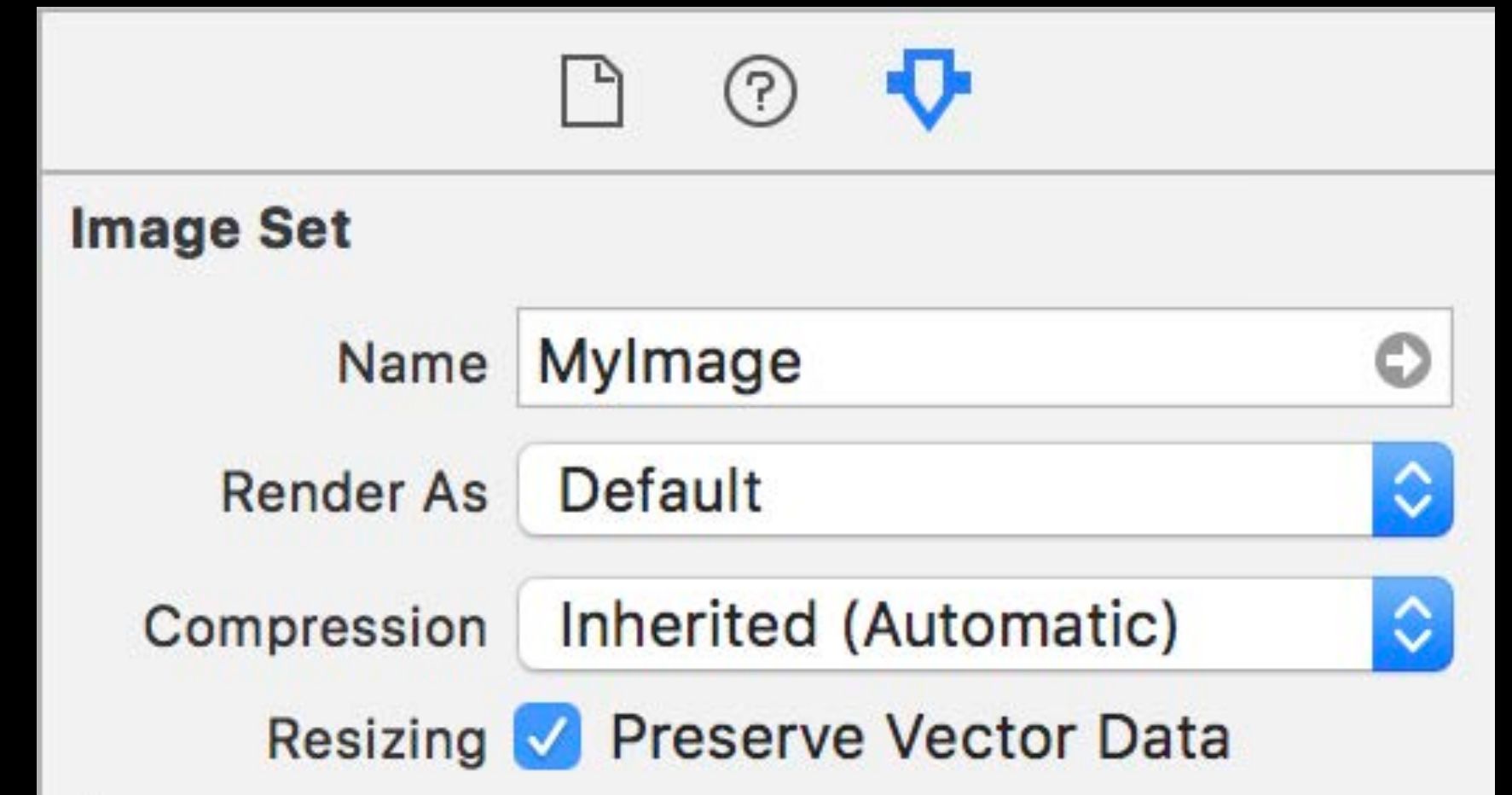


Asset Catalogs

PDF-backed images

Preserve vector data if

- Image used at multiple sizes

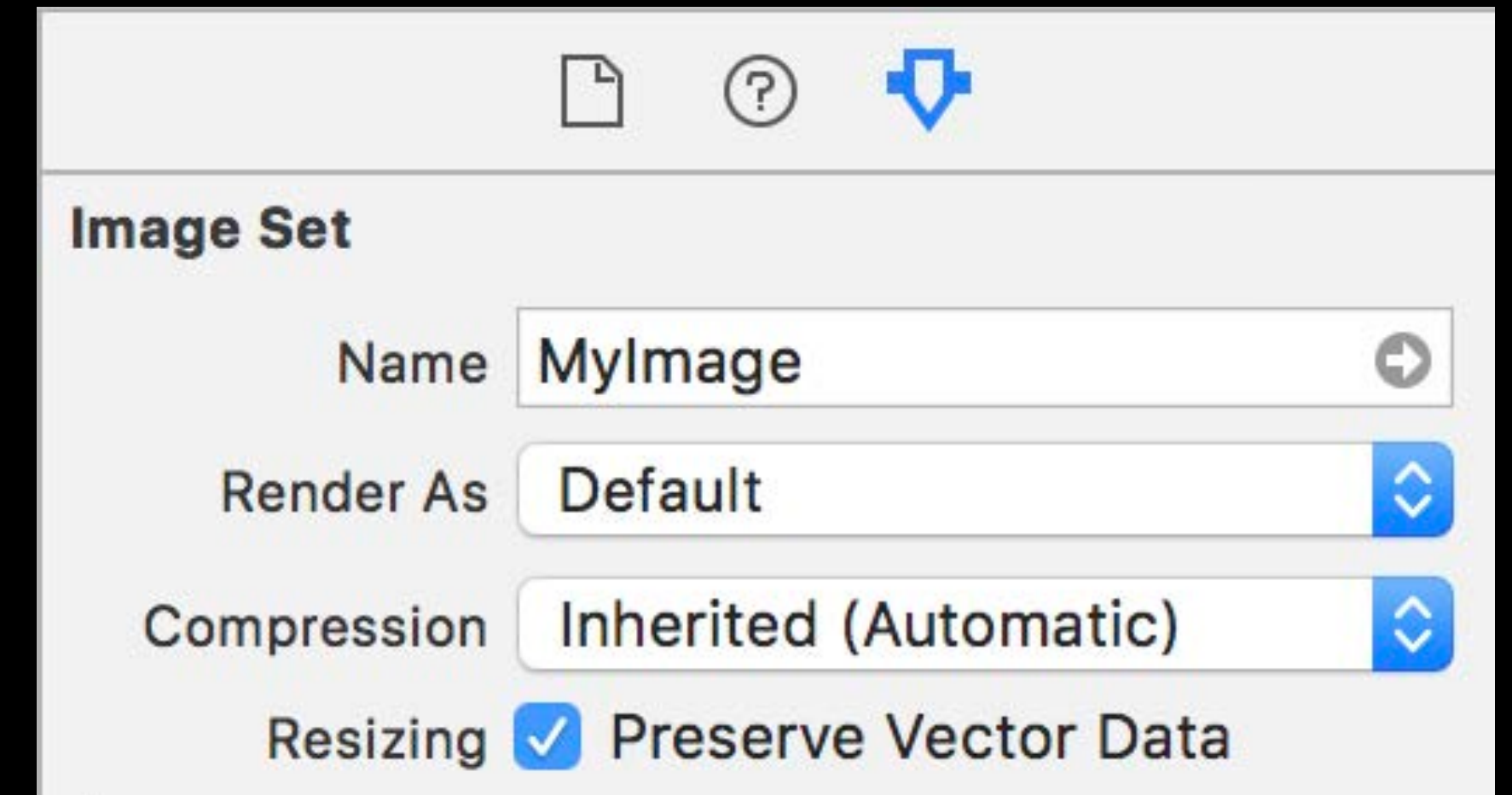


Asset Catalogs

PDF-backed images

Preserve vector data if

- Image used at multiple sizes
- Symbolic glyph that resizes with dynamic type

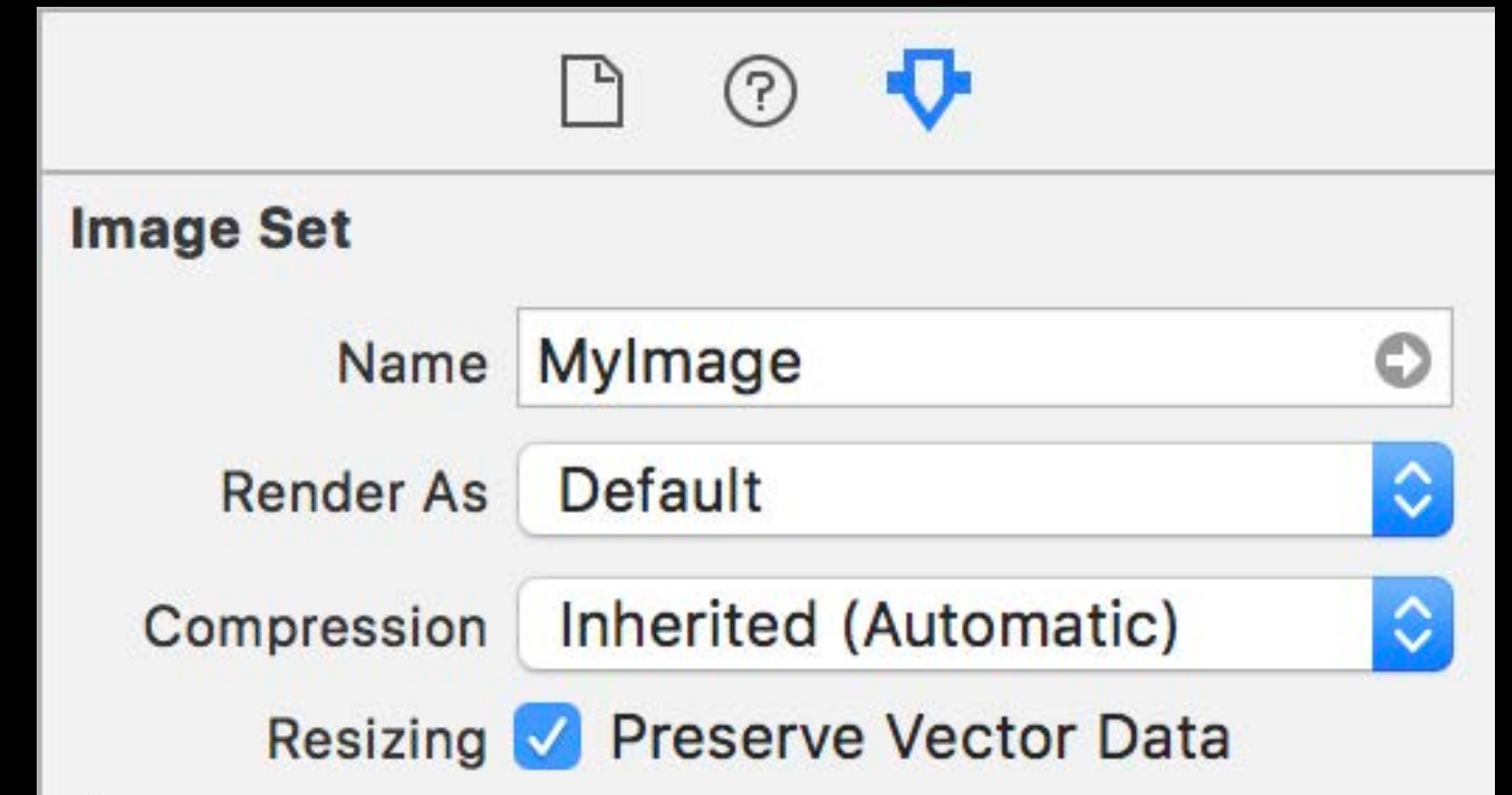


Asset Catalogs

PDF-backed images

Preserve vector data if

- Image used at multiple sizes
- Symbolic glyph that resizes with dynamic type
- Tab bar image





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867-5309

[Add Number](#)

1	2 ABC	3 DEF
4 GHI	5 JKL	6 MNO
7 PQRS	8 TUV	9 WXYZ
*	0 +	#



Favorites



Recents



Contacts



Keypad



Voicemail



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867-5309


Add Number

1 2 ABC 3 DEF

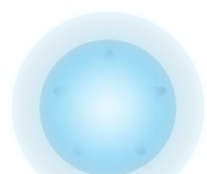
4 GHI 5 JKL 6 MNO

7 PQRS 8 TUV 9 WXYZ

* 0 + #


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PQRS
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9
WXYZ
*
0
+


Contacts



Favorites



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Contacts



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Voicemail

ProMotion

Variable Refresh Rate

Query screen's refresh rate

```
class UIScreen {  
  
    var maximumFramesPerSecond: Int { get }  
  
}
```

Variable Refresh Rate

Best practices for UIKit apps

Variable Refresh Rate

Best practices for UIKit apps

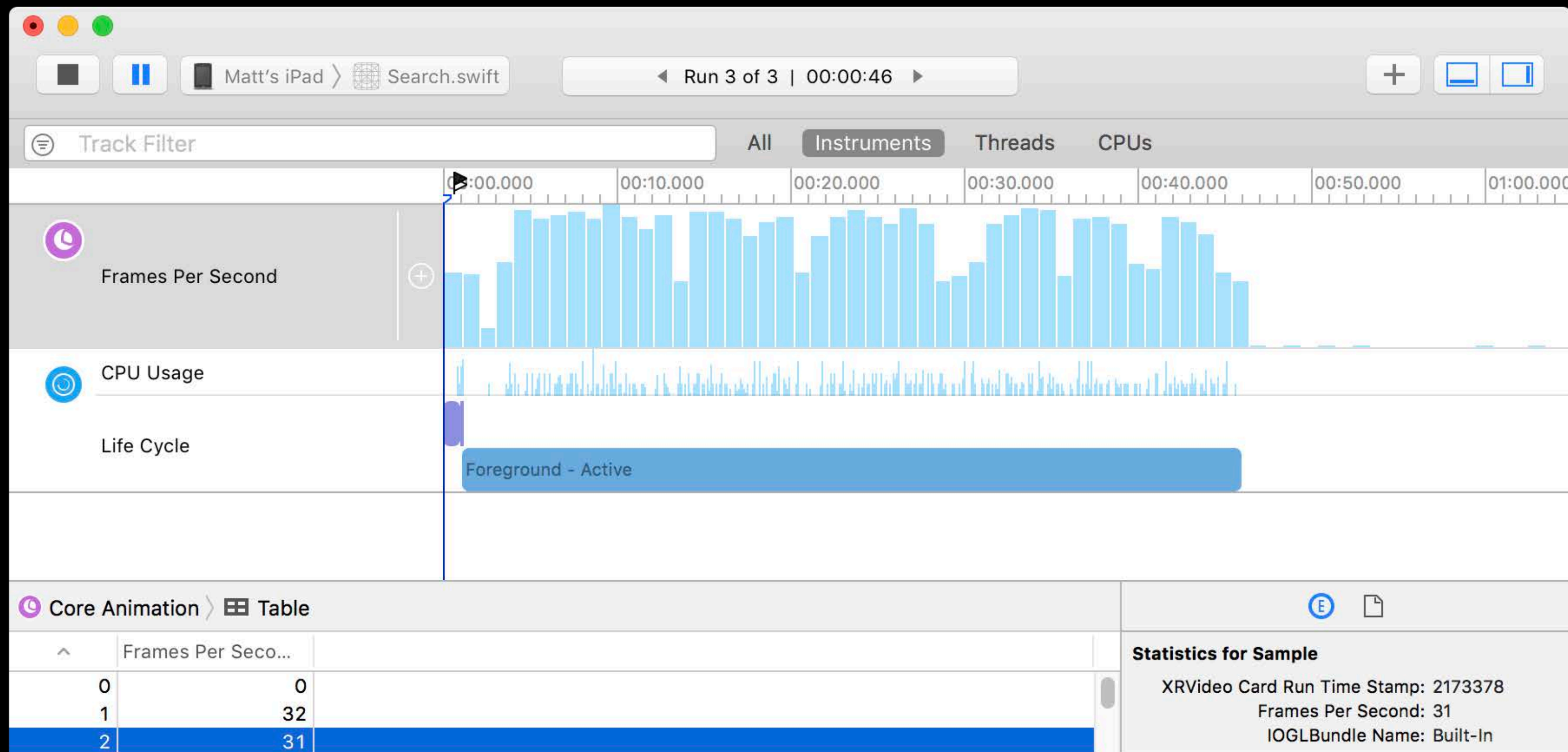
Optimize your app's performance

Variable Refresh Rate

Best practices for UIKit apps

Optimize your app's performance

- Use Instruments to check your frame rate during scrolling and animations



Variable Refresh Rate

Best practices for Metal apps

Variable Refresh Rate

Best practices for Metal apps

Use flexible presentation times to ensure smooth playback

Variable Refresh Rate

Best practices for Metal apps

Use flexible presentation times to ensure smooth playback

Present frames less frequently to conserve power

Variable Refresh Rate

Best practices for Metal apps

Use flexible presentation times to ensure smooth playback

Present frames less frequently to conserve power

Use Xcode's GPU Report feature to inspect performance characteristics

Variable Refresh Rate

Best practices for Metal apps

Use flexible presentation times to ensure smooth playback

Present frames less frequently to conserve power

Use Xcode's GPU Report feature to inspect performance characteristics

What's New

Localization

Settings



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Apple ID, iCloud, iTunes & App Store

Airplane Mode

Wi-Fi The Internet

Bluetooth On

Cellular Data

Personal Hotspot Off

Notifications

Control Center

Do Not Disturb

General

Display & Brightness

General

About >

Software Update >

Handoff >

Multitasking >

Accessibility >

iPad Storage >

Background App Refresh >

Restrictions Off >

Date & Time >

Keyboard >

Language & Region >

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9:41 AM











General

- < About
- < Software Update
- < Handoff
- < Multitasking
- < Accessibility
- < iPad Storage
- < Background App Refresh
- < Off Restrictions
- < Date & Time
- < Keyboard
- < Language & Region

iPad

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Apple ID, iCloud, iTunes & App Store 

- Airplane Mode 
- The Internet Wi-Fi 
- On Bluetooth 
- Cellular Data 
- Off Personal Hotspot 
- Notifications 
- Control Center 
- Do Not Disturb 
- General 
- Display & Brightness 

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- < About
- < Software Update
- < Handoff
- < Multitasking
- < Accessibility
- < iPad Storage
- < Background App Refresh
- < Off Restrictions
- < Date & Time
- < Keyboard
- < Language & Region

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9:41 AM

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- < About
- < Software Update
- < Handoff
- < Multitasking
- < Accessibility
- < iPad Storage
- < Background App Refresh
- < Off Restrictions
- < Date & Time
- < Keyboard
- < Language & Region

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عام

الإعدادات

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App Store و iTunes و iCloud و Apple ID



نمط الطيران

The Internet Wi-Fi

تشغيل Bluetooth

البيانات الخلوية

إيقاف نقطة اتصال شخصية

الإشعارات

مركز التحكم

عدم الإزعاج

< حول

< تحديث البرامج

< Handoff

< تعدد المهام

< إمكانية وصول ذوي الاحتياجات الخاصة

< مساحة تخزين iPad

< تجديد التطبيقات في الخلفية

< إيقاف القيود

< التاريخ والوقت

< لوحة المفاتيح



Settings



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Wi-Fi The Internet

Bluetooth On

Cellular Data

Personal Hotspot Off

Notifications

Control Center

Do Not Disturb

General

Display & Brightness

General

About >

Software Update >

Handoff >

Multitasking >

Accessibility >

iPad Storage >

Background App Refresh >

Restrictions Off >

Date & Time >

Keyboard >

Language & Region >

100%

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General

- < About
- < Software Update
- < Handoff
- < Multitasking
- < Accessibility
- < iPad Storage
- < Background App Refresh
- < Off Restrictions
- < Date & Time
- < Keyboard
- < Language & Region

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- Cellular Data 
- Off Personal Hotspot 
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- Control Center 
- Do Not Disturb 
- General 
- Display & Brightness 

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الإعدادات

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App Store و iTunes و iCloud و Apple ID



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مساحة تخزين iPad

تجديد التطبيقات في الخلفية

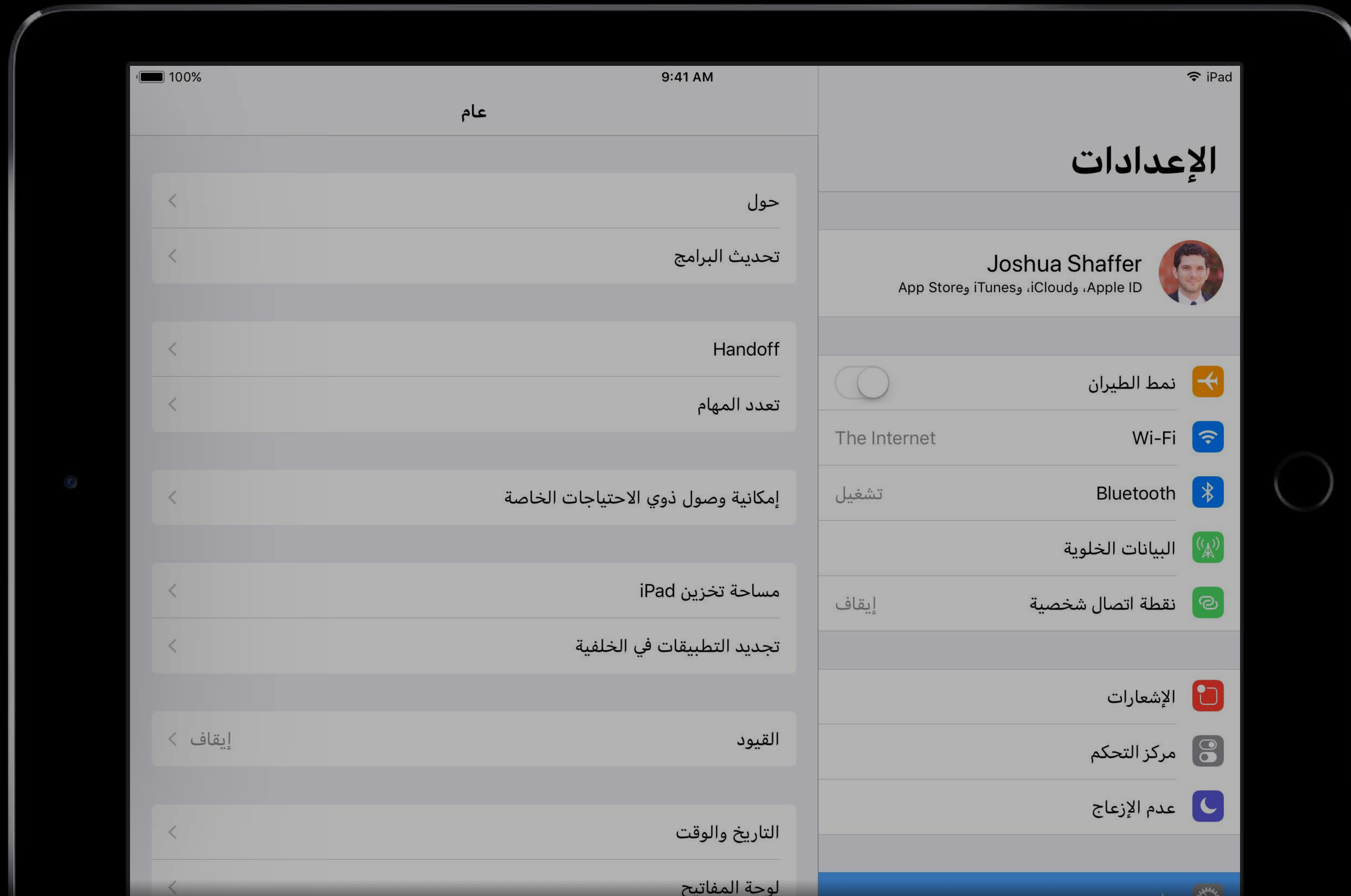
القيود

التاريخ والوقت

لوحة المفاتيح



إيقاف



More Information

<https://developer.apple.com/wwdc17/201>

Related Sessions

[Introducing Drag and Drop](#)

Hall 3

Tuesday 11:20AM

[Mastering Drag and Drop](#)

Executive Ballroom

Wednesday 11:00AM

[Drag and Drop with Collection and Table View](#)

Hall 2

Thursday 9:00AM

[Data Delivery with Drag and Drop](#)

Hall 2

Thursday 10:00AM

[Building Great Document-Based Apps in iOS 11](#)

Hall 2

Thursday 1:50PM

[Updating Your App for iOS 11](#)

Hall 3

Tuesday 4:10PM

[Design Studio Shorts 2](#)

Hall 3

Thursday 1:50PM

Related Sessions

[What's New in Foundation](#)

Hall 2

Wednesday 11:00AM

[Building Apps with Dynamic Type](#)

Executive Ballroom

Friday 1:50PM

[Introducing Password AutoFill for Apps](#)

Grand Ballroom A

Wednesday 9:00AM

[Introducing Metal 2](#)

Executive Ballroom

Tuesday 1:50PM

[What's New in International User Interfaces](#)

WWDC 2016

[Increase Usage of Your App With Proactive Suggestions](#)

WWDC 2016

Labs

UIKit and Drag and Drop Lab

Technology Lab C

Tue 1:50PM–4:10PM

Cocoa Touch Lab

Technology Lab I

Wed 3:10PM–6:00PM

UIKit and Collection View Lab

Technology Lab B

Thur 10:00AM–12:30PM

Cocoa Touch and Haptics Lab

Technology Lab C

Fri 12:00PM–1:50PM

Text and Fonts Lab

Technology Lab H

Thur 1:50PM–3:50PM

Accessibility and Dynamic Type Lab

Technology Lab C

Fri 12:30PM–4:00PM

Safari, WebKit, and AutoFill Lab

Technology Lab D

Wed 10:00AM–12:00PM

Foundation Lab

Technology Lab C

Wed 1:00PM–3:10PM

 **WWDC17**