Modernizing Your UI for iOS 13

David Duncan, iOS System Experience
Flexible UI
Bars
Presentations
Search
Gestures
Menus
Flexible UI
Launch Storyboards
Launch Storyboards
Launch Images
Be Resizable
Be Resizable
BeResizable
Actions

Adopt Launch Storyboards
Support any size
Support Split Screen Multitasking

Required April 2020
Bars
New Bar Appearance

Free when you link against iOS 13

Appearance Customization
let appearance = UINavigationBarAppearance()

appearance.configureWithOpaqueBackground()

appearance.titleTextAttributes = [.foregroundColor: myAppLabelColor]
appearance.largeTitleTextAttributes = [.foregroundColor: myAppLabelColor]

navigationBar.standardAppearance = appearance
let appearance = UINavigationBarAppearance()

appearance.configureWithOpaqueBackground()

appearance.titleTextAttributes = [.foregroundColor: myAppLabelColor]
appearance.largeTitleTextAttributes = [.foregroundColor: myAppLabelColor]

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appearance.configureWithOpaqueBackground()

appearance.titleTextAttributes = [.foregroundColor: myAppLabelColor]
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navigationBar.standardAppearance = appearance
```swift
let appearance = UINavigationBarAppearance()
appearance.configureWithOpaqueBackground()
appearance.titleTextAttributes = [.foregroundColor: myAppLabelColor]
appearance.largeTitleTextAttributes = [.foregroundColor: myAppLabelColor]
navigationBar.standard Appearance = appearance
```
// Customizing

<table>
<thead>
<tr>
<th>Cancel</th>
<th>WWDC 2019</th>
<th>Done</th>
</tr>
</thead>
</table>

.standradAppearance
Customizing

.compactAppearance

<table>
<thead>
<tr>
<th>Cancel</th>
<th>WWDC 2019</th>
<th>Done</th>
</tr>
</thead>
</table>


// Customizing

.scrollEdgeAppearance

Cancel  Done

WWDC 2019
// Customizing

.buttonAppearance Cancel WWDC 2019 Done .doneButtonAppearance
Customizing Bars

UIToolbar: UIToolbarAppearance

UITabBar: UITabBarAppearance
// Customizing

.stackedLayoutAppearance

.ininlineLayoutAppearance

.compactInlineLayoutAppearance
let appearance = navigationBar.standardAppearance.copy()

// Configure whatever else you want

navigationItem.standardAppearance = appearance
let appearance = navigationBar.standardAppearance.copy()

// Configure whatever else you want

navigationItem.standardAppearance = appearance
let appearance = navigationBar.standardAppearance.copy()

// Configure whatever else you want

navigationItem.standardAppearance = appearance
let appearance = navigationBar.standardAppearance.copy()

// Configure whatever else you want

navigationItem.standardAppearance = appearance
Presentations

Russell Ladd
<table>
<thead>
<tr>
<th>Group</th>
<th>Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Jane Appleseed</td>
</tr>
<tr>
<td>B</td>
<td>Emily Bergendahl</td>
</tr>
<tr>
<td>D</td>
<td>Allen Buchinski</td>
</tr>
<tr>
<td>D</td>
<td>Kat Dawson</td>
</tr>
<tr>
<td>D</td>
<td>Kevin Dolan</td>
</tr>
<tr>
<td>E</td>
<td>Aled Evans</td>
</tr>
<tr>
<td>F</td>
<td>Amy Frost</td>
</tr>
<tr>
<td>K</td>
<td>Allish Kimber</td>
</tr>
</tbody>
</table>
Sheets
UIModalPresentationStyle.pageSheet
UIModalPresentationStyle.pageSheet
.formSheet
Hey Kat,

So we’re all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (yikes) to get everything set up.

The rest of the crew will be getting in around 6:30 - 7:00. Would you mind picking up some coffee and bagels for them? I’m sure everyone will appreciate some nosh and caffeine.

We’ll be meeting up on the north side of the parking lot (across the street from the residence). Traffic shouldn’t be too bad. It’s typically light on Friday. You should bring some money to pay for the parking permit.

It’s going to be great! See ya in a couple days. Holler if you need anything in the meantime.

Best, Jane.
Photo Shoot

To: Kat Dawson

Subject: Photo Shoot

Hey Kat,

So we’re all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (please) to get everything set up.

The rest of the crew will be getting in around 8:30 - 7:00. Would you mind picking up some coffee and bagels for them? I’m sure everyone will appreciate some nosh and caffeine.

We’ll be meeting up on the north side of the parking lot (across the street from the residences). Traffic shouldn’t be too bad. It’s typically light on Friday. You should bring some money to pay for the parking permit.

It’s going to be great! See ya in a couple days. Holler if you need anything in the meantime.

Best, Jane.
Photo Shoot

To: Kat Dawson

Subject: Photo Shoot

Hey Kat,

So we’re all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (Pacific) to get everything set up.

The rest of the crew will be getting in around 6:30 – 7:00. Would you mind picking up some coffee and bagels for them? I’m sure everyone will appreciate some nosh and caffeine.

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Best, Jane.
Photo Shoot

To: Kat Dawson

Subject: Photo Shoot

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Best, Jane.
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To: Kat Dawson

Subject: Photo Shoot

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The rest of the crew will be getting in around 6:30 - 7:00. Would you mind picking up some coffee and bagels for them? I'm sure everyone will appreciate some nosh and caffeine.

We'll be meeting up on the north side of the parking lot (across the street from the residence). Traffic shouldn't be too bad. It's typically light on Friday. You should bring some money to pay for the parking permit.

It's going to be great. Can't wait.

Best, Jane.
Photo Shoot

To: Kat Dawson

Cc/Bcc:

Subject: Photo Shoot

Hey Kat,

So we’re all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (yikes) to get everything set up.

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Best, Jane.
UIModalPresentationStyle .pageSheet .formSheet
UIModalPresentationStyle.automatic
  .pageSheet
  .formSheet
class MyViewController: UIViewController {

    func pickPhoto() {
        let imagePicker = UIImagePickerController()
        imagePicker.sourceType = .photoLibrary
        present(imagePicker, animated: true)
    }

    func presentCamera() {
        let camera = UIImagePickerController()
        camera.sourceType = .camera
        present(camera, animated: true)
    }
}
class MyViewController: UIViewController {

    func pickPhoto() {
        let imagePicker = UIImagePickerController()
        imagePicker.sourceType = .photoLibrary
        present(imagePicker, animated: true)
    }

    func presentCamera() {
        let camera = UIImagePickerController()
        camera.sourceType = .camera
        present(camera, animated: true)
    }
}
class MyViewController: UIViewController {

    func pickPhoto() {
        let imagePicker = UIImagePickerController()
        imagePicker.sourceType = .photoLibrary
        present(imagePicker, animated: true)
    }

    func presentCamera() {
        let camera = UIImagePickerController()
        camera.sourceType = .camera
        present(camera, animated: true)
    }
}
class MyViewController: UIViewController {

    func showOptions() {
        let optionsVC = MyOptionsViewController()
        present(optionsVC, animated: true)
    }

    func showCustomCamera() {
        let cameraVC = MyCameraViewController()
        present(cameraVC, animated: true)
    }
}
class MyViewController: UIViewController {

    func showOptions() {
        let optionsVC = MyOptionsViewController()
        present(optionsVC, animated: true)
    }

    func showCustomCamera() {
        let cameraVC = MyCameraViewController()
        present(cameraVC, animated: true)
    }
}
class MyViewController: UIViewController {

    func showOptions() {
        let optionsVC = MyOptionsViewController()
        present(optionsVC, animated: true)
    }

    func showCustomCamera() {
        let cameraVC = MyCameraViewController()
        present(cameraVC, animated: true)
    }
}
class MyViewController: UIViewController {

    func showOptions() {
        let optionsVC = MyOptionsViewController()
        present(optionsVC, animated: true)
    }

    func showCustomCamera() {
        let cameraVC = MyCameraViewController()
        cameraVC.modalPresentationStyle = .fullScreen
        present(cameraVC, animated: true)
    }
}
```swift
class MyViewController: UIViewController {

func showOptions() {
    let optionsVC = MyOptionsViewController()
    optionsVC.modalPresentationStyle = .popover
    present(optionsVC, animated: true)
}
}
```
class MyViewController: UIViewController {

    func showOptions() {
        let optionsVC = MyOptionsViewController()
        optionsVC.modalPresentationStyle = .popover
        present(optionsVC, animated: true)
    }
}
Photo Shoot
Today at 8:21 PM

Hey Kat,

So we’re all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (yikes) to get everything set up.

The rest of the crew will be getting in around 6:30 – 7:00. Would you mind picking up some coffee and bagels for them? I’m sure everyone will appreciate some nosh and caffeine.

We’ll be meeting up on the north side of the parking lot (across the street from the residence). Traffic shouldn’t be too bad. It’s typically light on Friday. You should bring some money to pay for the parking permit.

It’s going to be great! See ya in a couple days. Holler if you need anything in the meantime.

Best, Jane.
Photo Shoot
Today at 9:17 PM

Hey Kat,

So we're all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (yikes) to get everything set up.

The rest of the crew will be getting in around 6:30 - 7:00. Would you mind picking up some coffee and bagels for them? I'm sure everyone will appreciate some nosh and caffeine.

We'll be meeting up on the north side of the parking lot (across the street from the residence). Traffic shouldn't be too bad. It's typically light on Fridays. You should bring some money to pay for the parking permit.

It's going to be great! See ya in a couple days. Holler if you need anything in the meantime.

Best, Jane.
Re: Photo Shoot

To: Jane Applesed <j.applesed@icloud.com>

Subject: Re: Photo Shoot

On Jun 2, 2019, at 8:17 PM, Jane Applesed <j.applesed@icloud.com> wrote:

Hey Kat,

So we're all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (yikes) to get everything set up.

The rest of the crew will be getting in around 6:30 - 7:00. Would you mind picking up some coffee and bagels for them? I'm sure everyone will appreciate some nourishment and caffeine.

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It's going to be great! See you in a couple days. Holler if you need anything in the meantime.

Best, Jane.
Re: Photo Shoot

To: Jane Appleseed

Subject: Re: Photo Shoot

On Jun 2, 2019, at 8:17 PM, Jane Appleseed <j.appleseed@icloud.com> wrote:

Hey Kat,

So we're all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (yikes) to get everything set up.

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Best, Jane.
Photo Shoot

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On Jun 2, 2019, at 8:17 PM, Jane Appleseed <j.appleseed@icloud.com> wrote:

Hey Kat,

So we’re all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 PM (yikes) to get everything set up.

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It’s going to be great! See ya in a couple days. Holler if you need anything in the meantime.

Best, Jane.
Re: Photo Shoot

To: Jane Appleseed

Subject: Re: Photo Shoot

No problem!

On Jun 2, 2019, at 8:17 PM, Jane Appleseed <j.appleseed@icloud.com> wrote:

Hey Katy,

So we're all set for the photo shoot next week! Erica will be supervising the shoot of course. Andy will be getting there on the early side, around 5:30 AM (yikes) to get everything set up.

The rest of the crew will be getting in around 6:30 - 7:00. Would you mind picking up some coffee and bagels for them? I'm sure everyone will appreciate some nourishment.

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Best, Jane.
class EmailController: UIViewController, UIAdaptivePresentationControllerDelegate {

    func draftDidChange() {
        isModalInPresentation = draft.hasChanges
    }

    func presentationControllerDidAttemptToDismiss(_: UIPresentationController) {
        // Present action sheet
    }
}
class EmailController: UIViewController, UIAdaptivePresentationControllerDelegate {

    func draftDidChange() {
        isModalInPresentation = draft.hasChanges
    }

    func presentationControllerDidAttemptToDismiss(_: UIPresentationController) {
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    func draftDidChange() {
        isModalInPresentation = draft.hasChanges
    }

    func presentationControllerDidAttemptToDismiss(_: UIPresentationController) {
        // Present action sheet
    }
}
User Begins Pulling

`presentedViewController.isModalInPresentation` → True

User Releases with Intent

`presentationController-DidAttemptToDismiss`
User Begins Pulling

presentedViewController.isModalInPresentation

- False
  - presentationController.DidAttemptToDismiss

- True
  - presentationController.ShouldDismiss
    - False
      - presentationController.DidAttemptToDismiss
    - True
      - presentationController.WillDismiss
        - presentationController.DidDismiss

User Releases with Intent
User Begins Pulling

presentedViewController
  .isModalInPresentation

User Releases with Intent

presentationController-
  DidAttemptToDismiss

presentationController-
  ShouldDismiss

presentationController-
  WillDismiss

presentationController-
  DidDismiss

User Begins Pulling

presentedViewController
  .isModalInPresentation

User Releases with Intent

presentationController-
  DidAttemptToDismiss

presentationController-
  ShouldDismiss

presentationController-
  WillDismiss

presentationController-
  DidDismiss
Share Extensions

Principal View Controller

• Set `isModalInPresentation`

• Respond to `presentationControllerDidAttemptToDismiss`
Share Extensions

Principal View Controller

• Set `isModalInPresentation`

• Respond to `presentationControllerDidAttemptToDismiss`
Share Extensions

Principal View Controller
• Set `isModalInPresentation`
• Respond to `presentationControllerDidAttemptToDismiss`
Share Extensions

Principal View Controller

• Set `isModalInPresentation`

• Respond to `.presentationControllerDidAttemptToDismiss`
Appearance Callbacks

Full Screen

- **Presenting View Controller**:
  - `viewWillDisappear`
  - `viewDidDisappear`
  - `viewWillAppear`
  - `viewDidAppear`

- **Presented View Controller**:
  - `viewWillAppear`
  - `viewDidAppear`
  - `viewWillDisappear`
  - `viewDidDisappear`
Appearance Callbacks
Page and Form Sheet

Presentation

presentingViewController
viewWillDisappear
viewDidDisappear
viewWillAppear
viewDidAppear

presentedViewController
viewWillAppear
viewDidAppear
viewWillDisappear
viewDidDisappear
UIWindow

Private UIKit View(s)

rootViewController.view
Updating Your App

Use sheets

Implement the modal flow
Search

Kyle Sluder
Search for “Ailish”

Top Hits

Ailish Kimber
Re: Financial report for Q1
Hey guys, I’m attaching the latest version to th...

Ailish Kimber
Lunch Thursday?
Hey Simon, Are you free for lunch on Thursday...

People

Ailish Kimber
Sender contains: Ailish

Subjects

Subject contains: Ailish
Search for “Ailish”

Top Hits

- **Ailish Kimber**
  - Re: Financial report for Q1
  - Hey guys, I'm attaching the latest version to t...

- **Ailish Kimber**
  - Thursday
  - Lunch Thursday?
  - Hey Simon, Are you free for lunch on Thursday...

People

- Ailish Kimber
- Sender contains: Ailish

Subjects

- Subject contains: Ailish
Search for “Ailish”

Top Hits

1. Ailish Kimber  Thursday
   Re: Financial report for Q1
   Hey guys, I’m attaching the latest version to t...

2. Ailish Kimber  Thursday
   Lunch Thursday?
   Hey Simon, Are you free for lunch on Thursda...

People

- Ailish Kimber
- Sender contains: Ailish

Subjects

- Subject contains: Ailish
Search for “Ailish”

Top Hits

- Ailish Kimber
  - Re: Financial report for Q1
  - Hey guys, I’m attaching the latest version to t...

- Ailish Kimber
  - Thursday

- Ailish Kimber
  - Thursday

- Lunch Thursday?
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People

- Ailish Kimber
- Sender contains: Ailish

Subjects

- Subject contains: Ailish

Updated Just Now
2 Unread
Search for “Ailish”

Top Hits
- Ailish Kimber
  Re: Financial report for Q1
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People
- Ailish Kimber
- Sender contains: Ailish

Subjects
- Subject contains: Ailish

Updated Just Now
2 Unread
func loadView() {

    let searchController = UISearchController(searchResultsController: /*...*/)

    // Don’t automatically show the cancel button or scope bar
    searchController.automaticallyShowsCancelButton = false
    searchController.automaticallyShowsScopeBar = false

    // Customize appearance of the search text field
    let searchField = searchController.searchBar.textField
    searchField.textColor = UIColor(named: "MyPinkColor")
    searchField.font = UIFont(name: "American Typewriter", size: 18)

    /* ... */
}

func loadView() {

    let searchController = UISearchController(searchResultsController: /*...*/)

    // Don’t automatically show the cancel button or scope bar
    searchController.automaticallyShowsCancelButton = false
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    /* ... */
}

Alish & Jared
Financial report for Q1
Hi Simon, The numbers are lining up for me... are you using the latest version of the statement?

Alish Kimber
Lunch Thursday?
Hey Simon, Are you free for lunch on Thursday? Pete Betancourt is in town and would like to qu...

Allen Buchinski
Re: Vacation photos
Flight back was great. Slept like a baby! Here are the photos: See you again soon! Allen Sent fro...
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Suggested Searches

- Unread Messages
- Flagged Messages
- Messages from VIPs
- Messages with Attachments
func loadView() {

    let searchController = UISearchController(searchResultsController: /*...*/)

    // Show the search results controller as soon as search is activated
    searchController.showsSearchResultsController = true

    self.navigationItem.searchController = searchController

    /* ... */
}
func loadView() {

    let searchController = UISearchController(searchResultsController: /*...*/)

    // Show the search results controller as soon as search is activated
    searchController.showsSearchResultsController = true

    self.navigationItem.searchController = searchController

    /* ... */
}

Alish & Jared
Financial report for Q1

Hi Simon, The numbers are lining up for me... are you using the latest version of the statement?...
Search Tokens

Available on any UISearchTextField

Copy, Paste

Drag and Drop
Search Tokens

Available on any UISearchBarTextField

Copy, Paste

Drag and Drop
Tokens and Text

Tokens always precede text

Can be selected and deleted

Mixed selections allowed
Tokens and Text

Tokens always precede text

Can be selected and deleted

Mixed selections allowed
Tokens and Text

Tokens always precede text

Can be selected and deleted

Mixed selections allowed
Tokens and Text

Tokens always precede text

Can be selected and deleted

Mixed selections allowed
Creating Tokens

```swift
let selectedText = field.textIn(field.selectedTextRange) // "beach"
let token = UISearchToken(icon: nil, text: selectedText)
field.replaceTextualPortion(of: field.selectedTextRange, with: token, at: field.tokens.count)
```
Creating Tokens

```swift
let selectedText = field.textIn(field.selectedTextRange) // "beach"
let token = UISearchToken(icon: nil, text: selectedText)
field.replaceTextualPortion(of: field.selectedTextRange, with: token, at: field.tokens.count)
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Creating Tokens

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let token = UISearchToken(icon: nil, text: selectedText)

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Creating Tokens

```swift
let selectedText = field.textIn(field.selectedTextRange) // "beach"
let token = UISearchToken(icon: nil, text: selectedText)
field.replaceTextualPortion(of: field.selectedTextRange, with: token, at: field.tokens.count)
```
Creating Tokens

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let token = UISearchToken(icon: nil, text: selectedText)
field.replaceTextualPortion(of: field.selectedTextRange, with: token, at: field.tokens.count)
```
Ranges and Positions
Ranges and Positions

UIFontPosition
Ranges and Positions

UITextPosition

beach
Ranges and Positions

.begiinningOfDocument

beach

.endOfDocument
Ranges and Positions

.beginningOfDocument

.beach

.endOfDocument
Ranges and Positions

.textualRange

🔍 North Goa beach
Ranges and Positions

`textualRange.start`

`search North Goa beach`

`textualRange.end`
Updating Your App

Take control with UISearchBarController

Customize appearance using UISearchBarTextField

Adopt UISearchBarToken

Check out the sample project
Gestures

James Magahern
Selection gestures in custom text views

Multiple selection gestures in tables and collections

Editing gestures
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UITextInteraction

Three lines of code

Editable and non-editable text interactions

Use `UITextInput` protocol to control selection UI
// Adding `UITextInteractions` to Your App

// Create selection interaction with type `.editable` or `nonEditable`
let selectionInteraction = UITextViewInteraction(for: .editable)

// Assign `textInput` property to your view that implements the `UITextInput` protocol
selectionInteraction.textInput = textView

// Add the interaction to the view
textView.addInteraction(selectionInteraction)
Selection gestures in custom text views
Multiple selection gestures in tables and collections
Editing gestures
Sketches and Ideas

WiFi Thermostat for XION Arcade
- Use PICO-8 as the computer since it already has a screen, WiFi, and exposed GPIO ports.
- There can be a special button on the XION control panel (iPad) for controlling the heat.
- Use the temperature sensor from the hacker box
- Use the electronic relay to control the switch
- The one currently installed is probably a line voltage thermostat
Multiple Selection

Your app might need to adapt:

- "Select" turns into "Cancel" or "Done"
- Show action buttons
- Disable UI
Adopting Multiple Selection Gestures

Only two delegate methods to implement

UITableView and UICollectionView
Adopting Multiple Selection Gestures

Only two delegate methods to implement

UITableView and UICollectionView

```swift
optional func tableView(_ tableView: UITableView,
shouldBeginMultipleSelectionInteractionAtIndexPath indexPath: IndexPath) -> Bool

optional func tableView(_ tableView: UITableView,
didBeginMultipleSelectionInteractionAtIndexPath indexPath: IndexPath)
```
Adopting Multiple Selection Gestures

Only two delegate methods to implement

UITableView and UICollectionView

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Selection gestures in custom text views
Multiple selection gestures in tables and collections
Editing gestures
server

Connects to command and control server for remote access
server

Connects to command and control server for remote access
When toggling the temperature, make sure to wait for some time for the room to cool down before shutting it off again. Some goes for turning back on.
When toggling the temperature, make sure to wait for some time for the room to cool down before shutting it off again. Some goes for turning back on.
Editing Gestures in iOS 13

Frees your app from adding additional UI

Unified across the entire system

Great for drawing apps

Completely free if you use UndoManager
// Working With or Without Productivity Gestures

public protocol UIResponder {
    public var editingInteractionConfiguration: UIEditingInteractionConfiguration
}

public enum UIEditingInteractionConfiguration {
    case `default` // System behavior, default
    case none       // Disable
}
Updating Your App

System selection gestures in your custom text view

Boost productivity with multiple selection gestures

Stop shaking your iPad
Menus

Mohammed Jisrawi
UIKitContextMenuInteraction
UIContextMenuInteraction

Rich previews
Complex hierarchies
  Nested sub-menus
In-line sections
UIContextMenuInteraction

Rich previews
Complex hierarchies
  Nested sub-menus
In-line sections
Consistent Gestures

3D Touch
Haptic Touch
Long press
Secondary click
Consistent Gestures

- 3D Touch
- Haptic Touch
- Long press
- Secondary click
UI_Menu and UI_Action
Hierarchical menu construction system

UIMenus are composable
UI_Menu and UI_Action

UIAction("Share")

UIAction("Delete")
UIMenu and UIAction

- UIAction("Share")
- UIAction("Delete")
- UIMenu("Edit...")
  - UIAction("Copy")
  - UIAction("Duplicate")
  - UIAction("Delete")
Groceries
Stuff to buy

Share
Edit...
Delete
// Create a UIContextMenuInteraction with Some Delegate
let interaction = UIContextMenuInteraction(delegate: self)

// Attach It to Our View
menuSourceView.addInteraction(interaction)
UIContextMenuInteractionDelegate

```swift
func contextMenuInteraction(interaction: UIContextMenuInteraction,
configurationForMenuAtLocation location: CGPoint) -> UIContextMenuConfiguration?
```

One required method

Return a `UIContextMenuConfiguration` to start

Return nil to prevent interaction
UIContextMenuConfiguration

class UIContextMenuConfiguration: NSObject {

    // ...

    convenience init(identifier: NSCopying?,
        previewProvider: UIContextMenuContentPreviewProvider?,
        actionProvider: UIContextMenuActionProvider?)
}
let actionProvider = (suggestedActions: [UIMenuElement]) -> UIMenu? {

    let editMenu = UIMenu(title: "Edit…", children: [
        UIAction(title: "Copy") { ... },
        UIAction(title: "Duplicate") { ... }
    ])

    return UIMenu(children: [
        UIAction(title: "Share") { ... },
        editMenu,
        UIAction(title: "Delete", style: .destructive) { ... }
    ])
}

return UIContextMenuConfiguration(identifier: "unique-ID" as NSCopying,
    previewProvider: nil,
    actionProvider: actionProvider)
let actionProvider = (suggestedActions: [UIMenuElement]) -> UIMenu? {

    let editMenu = UIMenu(title: "Edit…", children: [
        UIAction(title: "Copy") { ... },
        UIAction(title: "Duplicate") { ... }
    ])

    return UIMenu(children: [
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        editMenu,
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  ])
}

return UIContextMenuConfiguration(identifier: "unique-ID" as NSCopying,
  previewProvider: nil,
  actionProvider: actionProvider)
Above and Beyond

Animation customization

Set source and destination

UITargetedPreview and UITargetedDragPreview
Above and Beyond

Animation customization

Set source and destination

UITargetedPreview and UITargetedDragPreview
UITableView and UICollectionView

Optional func tableView(_ tableView: UITableView, contextMenuConfigurationForRowAtIndexPath indexPath: IndexPath, point: CGPoint) -> UIContextMenuConfiguration?
UITableView and UICollectionView

_polished default animations_

Custom presentation and dismiss

// UITableViewDataSource

```swift
optional func tableView(_ tableView: UITableView, contextMenuConfigurationForRowAtIndexPath indexPath: IndexPath, point: CGPoint) -> UIContextMenuConfiguration?
```
Peek and Pop

UIViewControllerPreviewing
Peek and Pop

- `UIViewControllerPreviewing` (×)
- `UIContextMenuInteraction` (√)
Updating Your App

Replace long-press driven menus

Adopt it alongside Drag and Drop
Ready to Launch

Make your app flexible

Give your app a modern look

Build a great search experience

Make your app powerful
More Information

developer.apple.com/wwdc19/224