

Model: GPT-4



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I want to create a macOS application. I have Xcode and I understand Swift and SwiftUI. The application should display a window whose main content is a web view. The web view should show a particular URL and be capable of following links to other pages.

The window should be able to be switched between two modes.

In "Floating" mode, it is a plain macOS window with a title bar that the user can position and size as they like.

In "Docked" mode, the window has no title bar and is positioned so it touches the left screen edge, bottom screen edge, and bottom of the Menu Bar, while having a fixed width of 320 points. In Docked mode, the user cannot resize the window, but they can slide it off the screen so its right edge is just beyond the left edge of the screen, then slide it back on again. A trackpad gesture similar to that of Notification Center, but from the left trackpad edge, slides the window onto the screen. When the window is summoned from beyond the screen edge, it becomes the key window and frontmost. The window is dismissed again by a trackpad gesture anywhere on the screen so long as the window is frontmost. During these gestures, the position of the window is animated interactively. It settles into the fully shown or fully hidden position after the user ends the gesture.

Can you write this application using SwiftUI?

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Creating this application using SwiftUI will require a combination of SwiftUI and AppKit (for window management) since SwiftUI alone does not provide all the required functionality. Here's a high-level breakdown of the steps you need to take to create this application:

- 1 Create a new SwiftUI macOS project in Xcode.
- 2 Create a WebView using WKWebView and make it UIViewRepresentable.
- 3 Create a custom NSWindow class to handle the different modes and trackpad

gestures.

4 Create a custom `NSWindowController` to manage the custom window.
Here's the code you can use as a starting point:

1 Create a `WebView.swift` file:

swift

Copy code

```
import SwiftUI
import WebKit

struct WebView: UIViewRepresentable {
    let url: URL

    func makeCoordinator() -> Coordinator {
        Coordinator(self)
    }

    func makeUIView(context: Context) -> WKWebView {
        let webView = WKWebView()
        webView.navigationDelegate = context.coordinator
        return webView
    }

    func updateUIView(_ uiView: WKWebView, context: Context) {
        let request = URLRequest(url: url)
        uiView.load(request)
    }

    class Coordinator: NSObject, WKNavigationDelegate {
        var parent: WebView

        init(_ parent: WebView) {
            self.parent = parent
        }
    }
}
```

2 Modify your `ContentView.swift`:

swift

Copy code

```
import SwiftUI

struct ContentView: View {
    var body: some View {
        WebView(url: URL(string: "https://example.com")!)
            .edgesIgnoringSafeArea(.all)
    }
}
```

```
}
```

3 Create a CustomWindow.swift file:

swift

Copy code

```
import AppKit

class CustomWindow: NSWindow {
    var dockedMode: Bool = false {
        didSet {
            if dockedMode {
                // Set up Docked mode
            } else {
                // Set up Floating mode
            }
        }
    }

    // Override the necessary methods to handle window resizing, positioning
    and trackpad gestures

    override func awakeFromNib() {
        super.awakeFromNib()
        // Set up the initial window state
    }
}
```

4 Create a CustomWindowController.swift file:

swift

Copy code

```
import AppKit

class CustomWindowController: NSWindowController {
    override func windowDidLoad() {
        super.windowDidLoad()
        if let window = window as? CustomWindow {
            // Configure the custom window
        }
    }
}
```

- 5 In your project's settings, under "General", set the "Main Interface" to "Main" (which should be the default). This will load your Main.storyboard file at launch.
- 6 Open your Main.storyboard file, set the "Window Controller" class to CustomWindowController, and the "Window" class to CustomWindow. Make sure your "Content View" is set to ContentView.

Now you have a basic setup for your macOS application. You'll need to implement the Docked and Floating mode logic inside the CustomWindow class, as well as handling the

trackpad gestures for showing and hiding the window. This might require further customization and AppKit knowledge, as it's beyond the scope of SwiftUI.



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OK, we can use AppKit when we need to.

Next, please show how to set up Docked and Floating modes as I described them.

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To set up Docked and Floating modes as you described, you'll need to update the CustomWindow class in the CustomWindow.swift file. You'll also need to create a new file to handle the trackpad gesture.

1 Modify your CustomWindow.swift file:

swift

Copy code

```
import AppKit

class CustomWindow: NSWindow {
    private var dockedWidth: CGFloat = 320.0
    private var dockedFrame: NSRect {
        let screenFrame = NSScreen.main!.visibleFrame
        return NSRect(x: 0, y: 0, width: dockedWidth, height:
screenFrame.height - NSSStatusBar.system.thickness)
    }

    private var floatingFrame: NSRect?

    var dockedMode: Bool = false {
        didSet {
            if dockedMode {
                setupDockedMode()
            } else {
                setupFloatingMode()
            }
        }
    }
}
```

```

    }
}

private func setupDockedMode() {
    floatingFrame = frame
    styleMask.remove(.resizable)
    setFrame(dockedFrame, display: true, animate: true)
}

private func setupFloatingMode() {
    guard let frame = floatingFrame else { return }
    styleMask.insert(.resizable)
    setFrame(frame, display: true, animate: true)
}

override func awakeFromNib() {
    super.awakeFromNib()
    setupTrackpadGesture()
}

private func setupTrackpadGesture() {
    let swipeGesture = NSEvent.EventTypeSwipeGesture
    trackEvents(matching: swipeGesture.rawValue, handler: { [weak self]
event in
        guard let self = self else { return }

        if event.deltaX > 0 {
            if !self.dockedMode {
                self.dockedMode = true
            }
        } else if event.deltaX < 0 {
            if self.dockedMode {
                self.dockedMode = false
            }
        }
    })
}
}

```

In this version of the CustomWindow class, we added two private functions, `setupDockedMode` and `setupFloatingMode`, to handle the behavior of the Docked and Floating modes. We also added a `setupTrackpadGesture` function to handle the trackpad gestures.

The `setupDockedMode` function removes the resizable style mask from the window and sets the window frame to the docked position. The `setupFloatingMode` function adds

the resizable style mask back and restores the window frame to the previous floating position.

The `setupTrackpadGesture` function sets up a swipe gesture event handler to switch between Docked and Floating modes based on the user's swipe gesture direction. Swiping to the right enables Docked mode, and swiping to the left enables Floating mode.

With these changes, your custom window should now support both Docked and Floating modes with the desired behavior.



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This isn't the right use of the trackpad gesture. The trackpad gesture should not switch between Floating and Docked modes. It is meant to work only in Docked mode. It should change the position of the window so it smoothly and interactively moves between two specific positions, then comes to rest at one of them. In the Presented position, the left edge of the window is adjacent to the left edge of the screen, so that it's visible. In the Dismissed position, the right edge of the window is adjacent to the left edge of the screen, so that it's not visible.

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Apologies for the confusion. To implement the described behavior, you can use a `UIPanGestureRecognizer` to track the user's pan gesture on the trackpad and then move the window interactively.

Modify the `CustomWindow.swift` file to set up the gesture recognizer and handle the interactive window positioning:

swift

Copy code

```
import AppKit
```

```

class CustomWindow: NSWindow {
    private var dockedWidth: CGFloat = 320.0
    private var dockedFrame: NSRect {
        let screenFrame = NSScreen.main!.visibleFrame
        return NSRect(x: 0, y: 0, width: dockedWidth, height:
screenFrame.height - NSStatusBar.system.thickness)
    }

    private var floatingFrame: NSRect?

    var dockedMode: Bool = false {
        didSet {
            if dockedMode {
                setupDockedMode()
            } else {
                setupFloatingMode()
            }
        }
    }

    private func setupDockedMode() {
        floatingFrame = frame
        styleMask.remove(.resizable)
        setFrame(dockedFrame, display: true, animate: true)
    }

    private func setupFloatingMode() {
        guard let frame = floatingFrame else { return }
        styleMask.insert(.resizable)
        setFrame(frame, display: true, animate: true)
    }

    override func awakeFromNib() {
        super.awakeFromNib()
        setupPanGestureRecognizer()
    }

    private func setupPanGestureRecognizer() {
        let panGesture = NSPanGestureRecognizer(target: self, action:
#selector(handlePanGesture))
        contentView?.addGestureRecognizer(panGesture)
    }

    @objc private func handlePanGesture(panGesture: NSPanGestureRecognizer) {
        guard dockedMode else { return }

        let translation = panGesture.translation(in: contentView)

```

```

let windowFrame = frame

switch panGesture.state {
case .began:
    floatingFrame = frame

case .changed:
    var newX = windowFrame.origin.x + translation.x
    newX = min(max(newX, -dockedWidth), 0)
    setFrame(NSRect(x: newX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true)

case .ended, .cancelled:
    let shouldShowWindow = translation.x > 0
    let targetX: CGFloat = shouldShowWindow ? 0 : -dockedWidth
    setFrame(NSRect(x: targetX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true, animate: true)

default:
    break
}
}

```

Here, we replace the `setupTrackpadGesture` function with a `setupPanGestureRecognizer` function that adds a `NSPanGestureRecognizer` to the window's content view. The `handlePanGesture` function is responsible for updating the window's position based on the pan gesture's translation.

When the pan gesture begins, we store the initial window frame. During the gesture, we update the window's position based on the translation along the x-axis, ensuring it stays within the bounds of the screen. Finally, when the gesture ends or is canceled, we determine whether the window should be shown or hidden based on the translation's direction and animate the window to the target position.

With these changes, the window should now smoothly and interactively move between the Presented and Dismissed positions in Docked mode when the user performs a pan gesture on the trackpad.



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OK, that seems right.

Next, when the window is in Docked mode and in the Dismissed position, and the application becomes active such as when the user clicks its Dock icon, I'd like the window to animate to the Presented position. Also, when the trackpad gesture ends and animates the window to the Dismissed position, I'd to activate the most recent application as if the user had typed ⌘-Tab.

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To achieve the desired behavior, you'll need to make a few modifications to the CustomWindow.swift file:

- 1 When the window is in Docked mode and in the Dismissed position, and the application becomes active, animate the window to the Presented position. You can do this by observing the `NSApplication.didBecomeActiveNotification` notification and updating the window's position accordingly.
- 2 When the trackpad gesture ends and animates the window to the Dismissed position, activate the most recent application. You can use the `NSWorkspace.shared.frontmostApplication` property to get the most recent application before your app becomes active, and then activate it using the `NSRunningApplication.activate()` method.

Here's the updated CustomWindow.swift file:

swift

Copy code

```
import AppKit

class CustomWindow: NSWindow {
    private var dockedWidth: CGFloat = 320.0
    private var dockedFrame: NSRect {
        let screenFrame = NSScreen.main!.visibleFrame
        return NSRect(x: 0, y: 0, width: dockedWidth, height:
screenFrame.height - NSSStatusBar.system.thickness)
    }

    private var floatingFrame: NSRect?
    private var previousFrontmostApp: NSRunningApplication?

    var dockedMode: Bool = false {
        didSet {
```

```

        if dockedMode {
            setupDockedMode()
        } else {
            setupFloatingMode()
        }
    }
}

private func setupDockedMode() {
    floatingFrame = frame
    styleMask.remove(.resizable)
    setFrame(dockedFrame, display: true, animate: true)
}

private func setupFloatingMode() {
    guard let frame = floatingFrame else { return }
    styleMask.insert(.resizable)
    setFrame(frame, display: true, animate: true)
}

override func awakeFromNib() {
    super.awakeFromNib()
    setupPanGestureRecognizer()
    setupApplicationObserver()
}

private func setupPanGestureRecognizer() {
    let panGesture = NSPanGestureRecognizer(target: self, action:
#selector(handlePanGesture))
    contentView?.addGestureRecognizer(panGesture)
}

private func setupApplicationObserver() {
    NotificationCenter.default.addObserver(self, selector:
#selector(applicationDidBecomeActive), name:
NSNotification.didBecomeActiveNotification, object: nil)
}

@objc private func applicationDidBecomeActive() {
    guard dockedMode, frame.origin.x < 0 else { return }
    setFrame(dockedFrame, display: true, animate: true)
}

@objc private func handlePanGesture(panGesture: NSPanGestureRecognizer) {
    guard dockedMode else { return }

    let translation = panGesture.translation(in: contentView)

```

```

let windowFrame = frame

switch panGesture.state {
case .began:
    floatingFrame = frame
    previousFrontmostApp = NSWorkspace.shared.frontmostApplication

case .changed:
    var newX = windowFrame.origin.x + translation.x
    newX = min(max(newX, -dockedWidth), 0)
    setFrame(NSRect(x: newX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true)

case .ended, .cancelled:
    let shouldShowWindow = translation.x > 0
    let targetX: CGFloat = shouldShowWindow ? 0 : -dockedWidth
    setFrame(NSRect(x: targetX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true, animate: true)

    if !shouldShowWindow, let previousApp = previousFrontmostApp {
        previousApp.activate(options: [])
    }

default:
    break
}

```



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Please continue.

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}

As previously mentioned, we added the `setupApplicationObserver` function to observe the `NSApplication.didBecomeActiveNotification` notification. The `applicationDidBecomeActive` function checks if the window is in Docked mode and if it's in the Dismissed position (i.e., `frame.origin.x < 0`), and if so, animates the window to the Presented position.

We also modified the `handlePanGesture` function to store the most recent application before your app becomes active. We added a `previousFrontmostApp` property to keep track of the most recent application. When the pan gesture ends, and the window animates to the Dismissed position, we activate the previously stored frontmost application.

With these changes, the window should animate to the Presented position when the application becomes active while in Docked mode and Dismissed position. Additionally, when the trackpad gesture ends and animates the window to the Dismissed position, the most recent application should be activated, simulating the `⌘-Tab` behavior.



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Is there a simpler way to reveal the most recent application? For instance, can I get this application to resign and become no longer frontmost, and leave the activation of another app up to macOS?

1 / 1

Yes, you can achieve this by using the `NSApp.hide(_:)` method to hide your application, and macOS will automatically activate the most recent application. You don't need to store the previous frontmost application in this case.

Here's the updated `CustomWindow.swift` file:

swift

Copy code

```

import AppKit

class CustomWindow: NSWindow {
    private var dockedWidth: CGFloat = 320.0
    private var dockedFrame: NSRect {
        let screenFrame = NSScreen.main!.visibleFrame
        return NSRect(x: 0, y: 0, width: dockedWidth, height:
screenFrame.height - NSSStatusBar.system.thickness)
    }

    private var floatingFrame: NSRect?

    var dockedMode: Bool = false {
        didSet {
            if dockedMode {
                setupDockedMode()
            } else {
                setupFloatingMode()
            }
        }
    }

    private func setupDockedMode() {
        floatingFrame = frame
        styleMask.remove(.resizable)
        setFrame(dockedFrame, display: true, animate: true)
    }

    private func setupFloatingMode() {
        guard let frame = floatingFrame else { return }
        styleMask.insert(.resizable)
        setFrame(frame, display: true, animate: true)
    }

    override func awakeFromNib() {
        super.awakeFromNib()
        setupPanGestureRecognizer()
        setupApplicationObserver()
    }

    private func setupPanGestureRecognizer() {
        let panGesture = NSPanGestureRecognizer(target: self, action:
#selector(handlePanGesture))
        contentView?.addGestureRecognizer(panGesture)
    }

    private func setupApplicationObserver() {

```

```

NotificationCenter.default.addObserver(self, selector:
#selector(applicationDidBecomeActive), name:
NSApplication.didBecomeActiveNotification, object: nil)
}

@objc private func applicationDidBecomeActive() {
    guard dockedMode, frame.origin.x < 0 else { return }
    setFrame(dockedFrame, display: true, animate: true)
}

@objc private func handlePanGesture(panGesture: NSPanGestureRecognizer) {
    guard dockedMode else { return }

    let translation = panGesture.translation(in: contentView)
    let windowFrame = frame

    switch panGesture.state {
    case .began:
        floatingFrame = frame

    case .changed:
        var newX = windowFrame.origin.x + translation.x
        newX = min(max(newX, -dockedWidth), 0)
        setFrame(NSRect(x: newX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true)

    case .ended, .cancelled:
        let shouldShowWindow = translation.x > 0
        let targetX: CGFloat = shouldShowWindow ? 0 : -dockedWidth
        setFrame(NSRect(x: targetX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true, animate: true)

        if !shouldShowWindow {
            NSApp.hide(nil)
        }

    default:
        break
    }
}
}

```

We removed the `previousFrontmostApp` property and its usage. In the `handlePanGesture` function, when the pan gesture ends, and the window animates to the Dismissed position, we call `NSApp.hide(nil)` to hide the application. macOS will automatically activate the most recent application.

With these changes, the window should now reveal the most recent application when

animating to the Dismissed position.



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Hiding the application is indeed simpler, but it makes the app disappear immediately. Can I activate that behavior only after the dismissal animation completes? For a UIKit view I could use a CATransaction, but is that true for a window frame animation in AppKit?

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Yes, you can use a CATransaction to add a completion block that will be called after the dismissal animation completes. To do this, you need to wrap the setFrame(_:display:animate:) call with CATransaction.begin() and CATransaction.commit() and set a completion block using CATransaction.setCompletionBlock(_:).

Here's the updated CustomWindow.swift file:

swift

Copy code

```
import AppKit

class CustomWindow: NSWindow {
    private var dockedWidth: CGFloat = 320.0
    private var dockedFrame: NSRect {
        let screenFrame = NSScreen.main!.visibleFrame
        return NSRect(x: 0, y: 0, width: dockedWidth, height:
screenFrame.height - NSSStatusBar.system.thickness)
    }

    private var floatingFrame: NSRect?

    var dockedMode: Bool = false {
        didSet {
```

```

        if dockedMode {
            setupDockedMode()
        } else {
            setupFloatingMode()
        }
    }
}

private func setupDockedMode() {
    floatingFrame = frame
    styleMask.remove(.resizable)
    setFrame(dockedFrame, display: true, animate: true)
}

private func setupFloatingMode() {
    guard let frame = floatingFrame else { return }
    styleMask.insert(.resizable)
    setFrame(frame, display: true, animate: true)
}

override func awakeFromNib() {
    super.awakeFromNib()
    setupPanGestureRecognizer()
    setupApplicationObserver()
}

private func setupPanGestureRecognizer() {
    let panGesture = NSPanGestureRecognizer(target: self, action:
#selector(handlePanGesture))
    contentView?.addGestureRecognizer(panGesture)
}

private func setupApplicationObserver() {
    NotificationCenter.default.addObserver(self, selector:
#selector(applicationDidBecomeActive), name:
NSNotification.didBecomeActiveNotification, object: nil)
}

@objc private func applicationDidBecomeActive() {
    guard dockedMode, frame.origin.x < 0 else { return }
    setFrame(dockedFrame, display: true, animate: true)
}

@objc private func handlePanGesture(panGesture: NSPanGestureRecognizer) {
    guard dockedMode else { return }

    let translation = panGesture.translation(in: contentView)

```



```

let windowFrame = frame

switch panGesture.state {
case .began:
    floatingFrame = frame

case .changed:
    var newX = windowFrame.origin.x + translation.x
    newX = min(max(newX, -dockedWidth), 0)
    setFrame(NSRect(x: newX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true)

case .ended, .cancelled:
    let shouldShowWindow = translation.x > 0
    let targetX: CGFloat = shouldShowWindow ? 0 : -dockedWidth

    CATransaction.begin()
    CATransaction.setCompletionBlock {
        if !shouldShowWindow {
            NSApp.hide(nil)
        }
    }
    setFrame(NSRect(x: targetX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true, animate: true)
    CATransaction.commit()

default:
    break
}
}

```

We wrapped the setFrame(_:display:animate:) call in the .ended and .cancelled cases with CATransaction.begin() and CATransaction.commit() and added a completion block using CATransaction.setCompletionBlock(_:). In the completion block, we call NSApp.hide(nil) only if the window should be dismissed.

With these



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If the dismissal animation becomes cancelled because the user started the pan gesture again, the app should not hide. It should hide only if the animation completes. Is a change needed to achieve that? If so, let's make that change.

Separately, let's make these improvements:

- Methods that begin with "setup" should instead begin with "setUp" because they refer to the compound verb, "set up," not the noun, "setup."
- Let's use an enum type to represent the Floating and Docked modes instead of a Bool.

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To prevent the app from hiding when the dismissal animation is canceled due to the user starting the pan gesture again, you can use a flag to track whether the pan gesture is in progress. We'll update the `handlePanGesture` function to set this flag when the gesture begins and ends. In the `CATransaction` completion block, we'll check if the pan gesture is in progress and only hide the app if it's not.

Additionally, I've made the requested changes to the naming conventions and introduced an enum type for the window modes. Here's the updated `CustomWindow.swift` file:

swift

Copy code

```
import AppKit

class CustomWindow: NSWindow {
    private var dockedWidth: CGFloat = 320.0
    private var dockedFrame: NSRect {
        let screenFrame = NSScreen.main!.visibleFrame
        return NSRect(x: 0, y: 0, width: dockedWidth, height:
screenFrame.height - NSSearchBar.system.thickness)
    }

    private var floatingFrame: NSRect?

    enum WindowMode {
        case floating, docked
    }

    var mode: WindowMode = .floating {
        didSet {

```

```

        switch mode {
        case .docked:
            setUpDockedMode()
        case .floating:
            setUpFloatingMode()
        }
    }
}

private func setUpDockedMode() {
    floatingFrame = frame
    styleMask.remove(.resizable)
    setFrame(dockedFrame, display: true, animate: true)
}

private func setUpFloatingMode() {
    guard let frame = floatingFrame else { return }
    styleMask.insert(.resizable)
    setFrame(frame, display: true, animate: true)
}

override func awakeFromNib() {
    super.awakeFromNib()
    setUpPanGestureRecognizer()
    setUpApplicationObserver()
}

private func setUpPanGestureRecognizer() {
    let panGesture = NSPanGestureRecognizer(target: self, action:
#selector(handlePanGesture))
    contentView?.addGestureRecognizer(panGesture)
}

private func setUpApplicationObserver() {
    NotificationCenter.default.addObserver(self, selector:
#selector(applicationDidBecomeActive), name:
NSApplication.didBecomeActiveNotification, object: nil)
}

@objc private func applicationDidBecomeActive() {
    guard mode == .docked, frame.origin.x < 0 else { return }
    setFrame(dockedFrame, display: true, animate: true)
}

private var panGestureInProgress: Bool = false

@objc private func handlePanGesture(panGesture: NSPanGestureRecognizer) {

```

```

guard mode == .docked else { return }

let translation = panGesture.translation(in: contentView)
let windowFrame = frame

switch panGesture.state {
case .began:
    panGestureInProgress = true
    floatingFrame = frame

case .changed:
    var newX = windowFrame.origin.x + translation.x
    newX = min(max(newX, -dockedWidth), 0)
    setFrame(NSRect(x: newX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true)

case .ended, .cancelled:
    panGestureInProgress = false
    let shouldShowWindow = translation.x > 0
    let targetX: CGFloat = shouldShowWindow ? 0 : -dockedWidth

    CATransaction.begin()
    CATransaction.setCompletionBlock {
        if !shouldShowWindow, !self.panGestureInProgress {
            NSApp.hide(nil)
        }
    }
    setFrame(NSRect(x: targetX, y: windowFrame.origin.y, width:
dockedWidth, height: windowFrame.height), display: true, animate: true)
    CATransaction.commit()

```



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Please continue.

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Certainly, here's the continuation of the updated CustomWindow.swift file:

swift

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```
        default:
            break
    }
}
```

Now, the app will only hide if the dismissal animation completes and the pan gesture is not in progress. The other requested changes have been applied, including using an enum for window modes and updating the method names to use "setUp" instead of "setup."

With these changes, the application should now work as expected, allowing the user to interactively show and hide the window in Docked mode using a trackpad gesture, and animating to the Presented position when the application becomes active.



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Because I'm presenting an `NSWindow` and not using SwiftUI's window presentation, I think I should use `NSApplicationDelegate` at the top level rather than SwiftUI's `App` type. Do you agree? Or is it simple enough to present an `NSWindow` either way?

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You are correct. Since you are using an `NSWindow` and not using SwiftUI's window presentation, it makes sense to use `NSApplicationDelegate` at the top level. This approach gives you more control over the window and its behavior, which is necessary for the specific requirements you've mentioned.

Here's how you can set up your application using `NSApplicationDelegate`:

- 1 Create a new `AppDelegate.swift` file:

swift

Copy code

import Cocoa

```
class AppDelegate: NSObject, NSApplicationDelegate {  
    var window: CustomWindow!  
  
    func applicationDidFinishLaunching(_ notification: Notification) {  
        let windowSize = CGSize(width: 800, height: 600)  
        let windowRect = NSRect(x: 0, y: 0, width: windowSize.width, height:  
windowSize.height)  
        window = CustomWindow(contentRect: windowRect, styleMask:  
[.titled, .closable, .miniaturizable, .resizable], backing: .buffered, defer:  
false)  
        window.makeKeyAndOrderFront(nil)  
        window.center()  
    }  
  
    func applicationWillTerminate(_ notification: Notification) {  
        // Insert code here to tear down your application  
    }  
}
```

- 2 Update the main.swift file to set the AppDelegate as the delegate of the NSApplication instance:

swift

Copy code

import Cocoa

```
let app = NSApplication.shared  
let appDelegate = AppDelegate()  
  
app.delegate = appDelegate  
app.run()
```

With these changes, your application will now use NSApplicationDelegate at the top level instead of SwiftUI's App type. This approach will provide you with more control over the window and its behavior.



I'll use the @main attribute on the AppDelegate class instead of updating main.swift as you described. This should have the desired effect.

1 / 1

Yes, using the @main attribute on the AppDelegate class is a more modern and cleaner approach, and it will work perfectly for your purpose. Here's the updated AppDelegate.swift file with the @main attribute:

swift

Copy code

```
import Cocoa

@main
class AppDelegate: NSObject, NSApplicationDelegate {
    var window: CustomWindow!

    func applicationDidFinishLaunching(_ notification: Notification) {
        let windowSize = CGSize(width: 800, height: 600)
        let windowRect = NSRect(x: 0, y: 0, width: windowSize.width, height:
windowSize.height)
        window = CustomWindow(contentRect: windowRect, styleMask:
[.titled, .closable, .miniaturizable, .resizable], backing: .buffered, defer:
false)
        window.makeKeyAndOrderFront(nil)
        window.center()
    }

    func applicationWillTerminate(_ notification: Notification) {
        // Insert code here to tear down your application
    }
}
```

You can now remove the main.swift file from your project as it's no longer needed. The @main attribute will automatically generate the necessary entry point for your application, and your AppDelegate class will be used as the delegate for the NSApplication instance.



1 / 1

I need to show my ContentView in my CustomWindow. The Main storyboard shows the window and "window content" relationship to a view controller, but the view controller cannot take a SwiftUI view there in the storyboard. I think NSHostingController is the tool I need. How do I use it to solve this problem?

1 / 1

You're correct, NSHostingController is the right tool for embedding a SwiftUI view inside an NSWindow. To achieve this, you can create an instance of NSHostingController with your SwiftUI ContentView and set it as the contentViewController of your CustomWindow.

Here's how you can update the AppDelegate class to use an NSHostingController to display your SwiftUI ContentView:

1 Import SwiftUI:

swift

Copy code

```
import Cocoa
import SwiftUI // Add this line
```

2 Create an NSHostingController instance with your ContentView and set it as the contentViewController of your CustomWindow in the applicationDidFinishLaunching method:

swift

Copy code

```
func applicationDidFinishLaunching(_ notification: Notification) {
    let windowSize = CGSize(width: 800, height: 600)
    let windowRect = NSRect(x: 0, y: 0, width: windowSize.width, height:
windowSize.height)
    window = CustomWindow(contentRect: windowRect, styleMask:
[.titled, .closable, .miniaturizable, .resizable], backing: .buffered, defer:
false)

    // Create an NSHostingController with your ContentView
    let contentView = ContentView()
    let hostingController = NSHostingController(rootView: contentView)
```



```
// Set the hostingController as the contentViewController of the window
window.contentViewController = hostingController

window.makeKeyAndOrderFront(nil)
window.center()
}
```

With these changes, your CustomWindow will display the SwiftUI ContentView using an NSHostingController. This approach allows you to seamlessly integrate SwiftUI views within your AppKit-based macOS application.



1 / 1

Is it appropriate to do that content view controller setup in the CustomWindowController instead?

1 / 1

Yes, it is appropriate to set up the content view controller within the CustomWindowController instead of the AppDelegate. Doing so allows for better separation of concerns, making the code more modular and easier to maintain.

To implement this, follow these steps:

- 1 Create a new Swift file named CustomWindowController.swift.
- 2 Define the CustomWindowController class, subclassing NSWindowController, and import both AppKit and SwiftUI:

swift

Copy code

```
import AppKit
import SwiftUI

class CustomWindowController: NSWindowController {
    override func windowDidLoad() {
        super.windowDidLoad()
    }
}
```

```

        // Create an NSHostingController with your ContentView
        let contentView = ContentView()
        let hostingController = NSHostingController(rootView: contentView)

        // Set the hostingController as the contentViewController of the
window
        window?.contentViewController = hostingController
    }
}

```

3 Update the AppDelegate class to use the CustomWindowController:

swift

Copy code

```

import Cocoa
import SwiftUI

@main
class AppDelegate: NSObject, NSApplicationDelegate {
    var windowController: CustomWindowController!

    func applicationDidFinishLaunching(_ notification: Notification) {
        let windowSize = CGSize(width: 800, height: 600)
        let windowRect = NSRect(x: 0, y: 0, width: windowSize.width, height:
windowSize.height)
        let customWindow = CustomWindow(contentRect: windowRect, styleMask:
[.titled, .closable, .miniaturizable, .resizable], backing: .buffered, defer:
false)

        windowController = CustomWindowController(window: customWindow)
        windowController.windowDidLoad()
        customWindow.makeKeyAndOrderFront(nil)
        customWindow.center()
    }

    func applicationWillTerminate(_ notification: Notification) {
        // Insert code here to tear down your application
    }
}

```

Now, the content view controller setup is done within the CustomWindowController class, leading to a cleaner and more modular architecture.



1 / 1

Since the main storyboard creates the window controller and the window, I think I can omit the window controller and window setup from the AppDelegate type. I'd like to also set up the hosting controller in the storyboard, but since it's a SwiftUI generic I can't do that in Interface Builder. So instead I'll remove the content view controller from the storyboard and leave it to the window controller to set up.

1 / 1

Yes, you can use the main storyboard to create the window controller and the window, and then set up the hosting controller in the CustomWindowController class.

To achieve this, follow these steps:

- 1 Remove the windowController property and the applicationDidFinishLaunching method from the AppDelegate class:

swift

Copy code

```
import Cocoa

@main
class AppDelegate: NSObject, NSApplicationDelegate {
    func applicationWillTerminate(_ notification: Notification) {
        // Insert code here to tear down your application
    }
}
```

- 2 In the main storyboard, make sure the window controller's class is set to CustomWindowController.
- 3 Remove the content view controller from the storyboard.
- 4 Set up the hosting controller in the CustomWindowController class:

swift

Copy code

```
import AppKit
import SwiftUI

class CustomWindowController: NSWindowController {
    override func windowDidLoad() {
```

```

        super.windowDidLoad()

        // Create an NSHostingController with your ContentView
        let contentView = ContentView()
        let hostingController = NSHostingController(rootView: contentView)

        // Set the hostingController as the contentViewController of the
window
        window?.contentViewController = hostingController
    }
}

```

Now, the main storyboard creates the window controller and the window, and the CustomWindowController class sets up the hosting controller for the SwiftUI view. This approach leverages the storyboard while still allowing you to use SwiftUI for your content view.



1 / 1

The WebView type can't be UIViewRepresentable because I'm on macOS and not using UIKit.

1 / 1

Apologies for the confusion. For macOS, you should use NSViewRepresentable instead of UIViewRepresentable to create a SwiftUI wrapper for the WKWebView. Here's the updated code for the WebView type:

swift

Copy code

```

import SwiftUI
import WebKit

struct WebView: NSViewRepresentable {
    let url: URL

    func makeNSView(context: Context) -> WKWebView {

```

```

    let webView = WKWebView()
    webView.navigationDelegate = context.coordinator
    return webView
}

func updateNSView(_ nsView: WKWebView, context: Context) {
    let request = URLRequest(url: url)
    nsView.load(request)
}

func makeCoordinator() -> Coordinator {
    Coordinator()
}

class Coordinator: NSObject, WKNavigationDelegate {
    // Implement delegate methods as needed
}
}

```

Now, the WebView struct uses NSViewRepresentable and works with AppKit on macOS. You can use this SwiftUI wrapper to integrate a WKWebView into your SwiftUI view hierarchy.



1 / 1

A warning in my Main storyboard says the window controller requires a content view controller. Do I just need to give it an empty one and then replace it when the CustomWindowController sets up?

1 / 1

You can safely ignore the warning in the storyboard since you are setting the content view controller programmatically in the CustomWindowController. However, if you prefer to eliminate the warning, you can add an empty view controller in the storyboard and replace it with the NSHostingController during the windowDidLoad() method in your CustomWindowController.

To add an empty view controller in the storyboard:

- 1 Open your Main.storyboard.
- 2 Drag a new "View Controller" object from the Object Library onto the canvas.
- 3 Control-drag from the window controller's "Window Content" relationship to the empty view controller.

Now, the warning should disappear. In your CustomWindowController, you will still set the content view controller programmatically using the `NSHostingController` in the `windowDidLoad()` method:

swift

Copy code

```
override func windowDidLoad() {
    super.windowDidLoad()

    // Create an NSHostingController with your ContentView
    let contentView = ContentView()
    let hostingController = NSHostingController(rootView: contentView)

    // Set the hostingController as the contentViewController of the window
    window?.contentViewController = hostingController
}
```

By doing this, you're effectively replacing the empty view controller added in the storyboard with the `NSHostingController` when the window is loaded.



1 / 1

What responsibilities belong to a custom `NSWindow` class and what responsibilities belong to a custom `NSWindowController` subclass? Should any code move from `CustomWindow` to `CustomWindowController` in this case?

1 / 1

An `NSWindow` subclass is generally responsible for defining the custom appearance and behavior of the window itself. This could include setting custom title bars, handling

custom window resizing behavior, and modifying the window's appearance.

An `NSWindowController` subclass, on the other hand, is responsible for managing the window and its content, including loading the window from a nib file or a storyboard, handling window-related events, and updating the window's content view or content view controller.

In your case, the `CustomWindow` class is mostly responsible for handling the Docked and Floating modes and the related window behavior. The `CustomWindowController` class is responsible for setting up the content view controller (i.e., the `NSHostingController` with the `ContentView`).

Currently, the responsibilities are well-separated between the `CustomWindow` and `CustomWindowController`. The `CustomWindow` handles the window-related behavior, while the `CustomWindowController` takes care of setting up the content view controller.

There is no need to move any code from `CustomWindow` to `CustomWindowController` in this case, as the separation of responsibilities is already appropriate.



1 / 1

OK. Next, let's add Menu Bar items to choose Docked or Floating mode.

1 / 1

To add Menu Bar items for switching between Docked and Floating modes, you can follow these steps:

- 1 Open your `Main.storyboard`.
- 2 Select the "Menu" object in the canvas, which is the Menu Bar of your application.
- 3 Add a new menu item (e.g., "Window Mode") to the Menu Bar by dragging a "Menu Item" object from the Object Library and dropping it on the Menu Bar.
- 4 Control-drag from the new "Window Mode" menu item to create a submenu.

swift

Copy code

```
@IBAction func switchWindowMode(_ sender: NSMenuItem) {  
    if let window = self.window as? CustomWindow {  
        let mode: CustomWindow.WindowMode = sender.tag ==  
0 ? .docked : .floating  
        window.switchTo(mode: mode)  
        updateMenuItems()  
    }  
}
```

With these changes, you now have Menu Bar items for choosing between Docked and Floating modes, and the selected mode will be indicated with a checkmark. The window mode will change accordingly when a user selects one of the menu items.



1 / 1

The pan gesture recognizer doesn't do what I want. I want to use a two-finger trackpad swipe, not a click and drag. Like scrolling, but not in a scroll view.

1 / 1

I apologize for the confusion. To use a two-finger trackpad swipe, you can utilize an NSEvent monitor with the .swipe event type. You can set up the event monitor in your CustomWindow class, and handle the swipe gestures accordingly.

Here's how to set up a two-finger trackpad swipe gesture in your CustomWindow:

- 1 First, add a new method called setUpSwipeGestureMonitor() to your CustomWindow class:

swift

Copy code

```
private func setUpSwipeGestureMonitor() {  
    NSEvent.addLocalMonitorForEvents(matching: .swipe) { [weak self] event in  
        guard let self = self else { return event }  
    }
```

```

        // Handle swipe events
        switch event.deltaX {
        case 1: // Swipe left
            if self.currentMode == .docked && self.presentationState
== .presented {
                self.dismiss(animated: true)
            }
        case -1: // Swipe right
            if self.currentMode == .docked && self.presentationState
== .dismissed {
                self.present(animated: true)
            }
        default:
            break
        }

        return event
    }
}

```

2 Call `setUpSwipeGestureMonitor()` in your CustomWindow's init method:

swift

Copy code

```

init(contentRect: NSRect, styleMask: NSWindow.StyleMask, backing:
NSWindow.BackingStoreType, defer flag: Bool) {
    super.init(contentRect: contentRect, styleMask: styleMask, backing:
backing, defer: flag)

    // Call the method to set up the swipe gesture monitor
    setUpSwipeGestureMonitor()
}

```

Now, your CustomWindow should respond to two-finger trackpad swipe gestures. When the user swipes left, it will dismiss the window if it's in Docked mode and presented. When the user swipes right, it will present the window if it's in Docked mode and dismissed.



1 / 1

To be clear, I still want to keep the window motion interactive with the gesture.

I apologize for the oversight. To make the window motion interactive with a two-finger swipe gesture on the trackpad, you can use an `NSEvent` monitor with the `.scrollWheel` event type. This will allow you to track the continuous `deltaX` and `deltaY` values as the user swipes on the trackpad.

Here's how to set up an interactive two-finger trackpad swipe gesture in your `CustomWindow`:

- 1 Add a new property `accumulatedDeltaX` to store the accumulated horizontal scroll delta:

swift

Copy code

```
private var accumulatedDeltaX: CGFloat = 0
```

- 2 Modify the `setUpSwipeGestureMonitor()` method (or create a new method) to handle `.scrollWheel` events:

swift

Copy code

```
private func setUpInteractiveSwipeGestureMonitor() {
    NSEvent.addLocalMonitorForEvents(matching: .scrollWheel) { [weak self]
event in
    guard let self = self else { return event }

    if event.phase.contains(.began) {
        self.accumulatedDeltaX = 0
    }

    if event.phase.contains(.changed) {
        self.accumulatedDeltaX += event.scrollingDeltaX

        let threshold: CGFloat = 30
        let deltaX = min(max(self.accumulatedDeltaX, -threshold),
threshold)
        let progress = deltaX / threshold

        if self.currentMode == .docked {
            switch self.presentationState {
            case .presented:
                if progress <= 0 {
                    self.updatePresentation(progress: 1 + progress)
                }
            case .dismissed:
```

```

        if progress >= 0 {
            self.updatePresentation(progress: progress)
        }
    }
}

if event.phase.contains(.ended) || event.phase.contains(.cancelled) {
    if self.currentMode == .docked {
        if self.accumulatedDeltaX <= -30 {
            self.dismiss(animated: true)
        } else if self.accumulatedDeltaX >= 30 {
            self.present(animated: true)
        } else {
            switch self.presentationState {
            case .presented:
                self.present(animated: true)
            case .dismissed:
                self.dismiss(animated: true)
            }
        }
    }
}

return event
}
}

```

- 3 Call `setUpInteractiveSwipeGestureMonitor()` in your `CustomWindow`'s `init` method:

swift

Copy code

```

init(contentRect: NSRect, styleMask: NSWindow.StyleMask, backing:
NSWindow.BackingStoreType, defer flag: Bool) {
    super.init(contentRect: contentRect, styleMask: styleMask, backing:
backing, defer: flag)

    // Call the method to set up the interactive swipe gesture monitor
    setUpInteractiveSwipeGestureMonitor()
}

```

Now, your `CustomWindow` should respond to interactive two-finger trackpad swipe gestures. The window motion will follow the swipe gesture, and when the user lifts their fingers, the window will animate to the presented or dismissed position based on the accumulated `deltaX` value.



1 / 1

Show me that presentation state enumeration?

1 / 1

Here's the `PresentationState` enumeration for your `CustomWindow` class. It represents the current presentation state of the window when in Docked mode, with two cases: `presented` and `dismissed`.

swift

Copy code

```
enum PresentationState {  
    case presented  
    case dismissed  
}
```

You can add this enumeration to your `CustomWindow` class and use it to track and update the presentation state accordingly.



1 / 1

I liked the effects we planned for the `NSPanGestureRecognizer`. Can you use those effects and trigger them with the scroll wheel event instead?

1 / 1

Of course! To achieve the same effects as with the `NSPanGestureRecognizer` but trigger them with the scroll wheel event, you can modify the `setUpInteractiveSwipeGestureMonitor()` method. We'll keep track of the accumulated

horizontal scroll delta and update the presentation progress accordingly.

Here's the updated `setUpInteractiveSwipeGestureMonitor()` method for your `CustomWindow` class:

swift

Copy code

```
private func setUpInteractiveSwipeGestureMonitor() {
    NSEvent.addLocalMonitorForEvents(matching: .scrollWheel) { [weak self]
event in
    guard let self = self else { return event }

    if self.currentMode == .docked {
        if event.phase.contains(.began) {
            self.accumulatedDeltaX = 0
            self.beginInteractivePresentation()
        }

        if event.phase.contains(.changed) {
            self.accumulatedDeltaX += event.scrollingDeltaX
            let progress = max(min(self.accumulatedDeltaX /
self.contentView!.frame.width, 1), 0)
            self.updateInteractivePresentation(progress: progress)
        }

        if event.phase.contains(.ended) ||
event.phase.contains(.cancelled) {
            let completionThreshold: CGFloat = 0.3
            let completionProgress = self.accumulatedDeltaX /
self.contentView!.frame.width

            if completionProgress < -completionThreshold {
                self.finishInteractivePresentation()
            } else if completionProgress > completionThreshold {
                self.cancelInteractivePresentation()
            } else {
                switch self.presentationState {
                case .presented:
                    self.cancelInteractivePresentation()
                case .dismissed:
                    self.finishInteractivePresentation()
                }
            }
        }
    }
}
```

```
        return event
    }
}
```

This method sets up an event monitor for `.scrollWheel` events and uses the scroll delta to update the presentation progress interactively. The effects will be similar to those of the `NSPanGestureRecognizer`, but they will be triggered by the scroll wheel event instead.



1 / 1

Show implementations for `beginInteractivePresentation`, `updateInteractivePresentation`, `finishInteractivePresentation`, and `cancelInteractivePresentation`?

1 / 1

Sure! Here are the implementations for `beginInteractivePresentation`, `updateInteractivePresentation`, `finishInteractivePresentation`, and `cancelInteractivePresentation` methods in your `CustomWindow` class:

swift

Copy code

```
private func beginInteractivePresentation() {
    contentView?.layer?.speed = 0
}

private func updateInteractivePresentation(progress: CGFloat) {
    contentView?.layer?.timeOffset = CFTimeInterval(progress)
}

private func finishInteractivePresentation() {
    // Resume the animation and set the completion speed
    contentView?.layer?.speed = 1
    contentView?.layer?.timeOffset = 0

    // Animate to the dismissed state
    animateWindowToDismissedState { [weak self] in
```

```

        self?.presentationState = .dismissed
        self?.contentView?.layer?.speed = 1
        self?.contentView?.layer?.timeOffset = 0
    }
}

private func cancelInteractivePresentation() {
    // Resume the animation and set the completion speed
    contentView?.layer?.speed = 1
    contentView?.layer?.timeOffset = 0

    // Animate to the presented state
    animateWindowToPresentedState { [weak self] in
        self?.presentationState = .presented
        self?.contentView?.layer?.speed = 1
        self?.contentView?.layer?.timeOffset = 0
    }
}

```

These methods handle the interactive presentation when the user swipes with two fingers on the trackpad. The `beginInteractivePresentation()` method pauses the animation at the beginning of the interaction, the `updateInteractivePresentation(progress:)` method updates the animation progress, and the `finishInteractivePresentation()` and `cancelInteractivePresentation()` methods resume the animation and animate the window to the dismissed or presented state, respectively.



1 / 1

I've got the scroll gesture working pretty well. The `WebView` does not show any content, though I think it should be loading. Do I need to respond to delegate events in the `Coordinator` or what?

1 / 1

If the `WebView` is not showing any content, there could be a few reasons. First, make sure that the URL you're trying to load is valid and accessible. If the URL is correct,

you might want to check if the WebView is loaded properly and the correct frame size is set.

To help you diagnose the issue, you can implement the WKNavigationDelegate methods in the Coordinator to handle errors or log the progress of the navigation.

1 Conform to the WKNavigationDelegate protocol:

swift

Copy code

```
class Coordinator: NSObject, WKNavigationDelegate {
```

2 Set the delegate of the WKWebView to the Coordinator:

swift

Copy code

```
func makeNSView(context: Context) -> WKWebView {
    let webView = WKWebView()
    webView.navigationDelegate = context.coordinator
    webView.load(URLRequest(url: url))
    return webView
}
```

3 Implement the delegate methods in the Coordinator:

swift

Copy code

```
func webView(_ webView: WKWebView, didFinish navigation: WKNavigation!) {
    print("WebView didFinish navigation")
}

func webView(_ webView: WKWebView, didFail navigation: WKNavigation!,
    withError error: Error) {
    print("WebView didFail navigation with error: \
(error.localizedDescription)")
}

func webView(_ webView: WKWebView, didFailProvisionalNavigation navigation:
    WKNavigation!, withError error: Error) {
    print("WebView didFailProvisionalNavigation with error: \
(error.localizedDescription)")
}
```

These delegate methods will help you identify if there's an issue with the navigation or if an error occurs while loading the content. If you see any error messages or unexpected behavior, this information should help you diagnose and fix the issue.



1 / 1

I had to configure the outgoing connections capability.

How can I prevent a WKWebView from scrolling horizontally?

1 / 1

To prevent a WKWebView from scrolling horizontally, you can inject some JavaScript code to disable horizontal scrolling by setting the overflow-x CSS property of the body element to hidden.

To do this, you can implement the WKNavigationDelegate method `webView(_:didFinish:)` in the Coordinator class:

1 Conform to the WKNavigationDelegate protocol:

swift

Copy code

```
class Coordinator: NSObject, WKNavigationDelegate {
```

2 Set the delegate of the WKWebView to the Coordinator:

swift

Copy code

```
func makeNSView(context: Context) -> WKWebView {  
    let webView = WKWebView()  
    webView.navigationDelegate = context.coordinator  
    webView.load(URLRequest(url: url))  
    return webView  
}
```

3 Implement the `webView(_:didFinish:)` delegate method in the Coordinator:

swift

Copy code

```
func webView(_ webView: WKWebView, didFinish navigation: WKNavigation!) {  
    let script = "document.body.style.overflowX = 'hidden';"  
    webView.evaluateJavaScript(script) { _, error in  
        if let error = error {  
            print("Error evaluating JavaScript: \  
(error.localizedDescription)")  
        }  
    }  
}
```

```
}  
}
```

This will inject the JavaScript code into the web page after it has finished loading, which disables horizontal scrolling. Note that this method will only affect the body element; if there are other elements on the page that have horizontal scrolling enabled, you might need to target those elements individually or use a more general approach to disable scrolling for all elements.



1 / 1

In UIKit I would be able to disable horizontal scrolling in the UIScrollView associated with the WKWebView. Is there an equivalent on macOS?

1 / 1

Yes, on macOS you can achieve the same effect by disabling horizontal scrolling in the NSScrollView associated with the WKWebView. However, it requires using a bit of AppKit as WKWebView's scroll view is not directly exposed like in UIKit.

Here's how you can disable horizontal scrolling in the WKWebView on macOS:

1 First, create an extension for WKWebView to access its underlying NSScrollView:

swift

Copy code

```
import WebKit  
  
extension WKWebView {  
    var scrollView: NSScrollView? {  
        return self.subviews.first(where: { $0 is NSScrollView }) as?  
        NSScrollView  
    }  
}
```

2 Then, in the makeNSView(context:) function of your WebView, disable horizontal scrolling after creating the WKWebView instance:

swift

Copy code

```
func makeNSView(context: Context) -> WKWebView {
    let webView = WKWebView()
    webView.navigationDelegate = context.coordinator
    webView.load(URLRequest(url: url))

    // Disable horizontal scrolling
    webView.scrollView?.hasHorizontalScroller = false
    webView.scrollView?.horizontalScrollElasticity = .none

    return webView
}
```

This will disable horizontal scrolling in the WKWebView on macOS by accessing its associated NSScrollView and modifying its properties.



1 / 1

When I receive the scroll event, can I bubble up a similar event without the horizontal portion of the scroll action?

1 / 1

Yes, you can create a new scroll event without the horizontal portion of the original scroll event and then pass it up the responder chain. You can do this by subclassing WKWebView and overriding the scrollWheel(with:) method.

Here's an example:

1 Create a subclass of WKWebView:

swift

Copy code

```
import WebKit

class CustomWKWebView: WKWebView {
    override func scrollWheel(with event: NSEvent) {
        let deltaY = event.scrollingDeltaY
    }
}
```

```

        let newEvent = NSEvent.scrollEvent(with: event.type,
                                           location: event.locationInWindow,
                                           modifierFlags:
event.modifierFlags,

                                           timestamp: event.timestamp,
                                           windowNumber: event.windowNumber,
                                           context: event.context,
                                           deltaX: 0.0, // Disable horizontal
scrolling

                                           deltaY: deltaY,
                                           phase: event.phase,
                                           momentumPhase:
event.momentumPhase,

                                           deviceDeltaX: 0.0,
                                           deviceDeltaY: event.deviceDeltaY,
                                           scrollCount: event.scrollCount)

        if let newEvent = newEvent {
            super.scrollWheel(with: newEvent)
        } else {
            super.scrollWheel(with: event)
        }
    }
}

```

- 2 Update the makeNSView(context:) function in your WebView to use the new CustomWKWebView class:

swift

Copy code

```

func makeNSView(context: Context) -> CustomWKWebView {
    let webView = CustomWKWebView()
    webView.navigationDelegate = context.coordinator
    webView.load(URLRequest(url: url))
    return webView
}

```

This will create a new scroll event with the horizontal scrolling portion disabled and pass it up the responder chain, while preserving the original vertical scrolling behavior.




```
event.scrollCount)

        // Use the new event if it's created successfully, otherwise use
the original event
        return newEvent ?? event
    }
}
}
```

This will create a new scroll event with the horizontal scrolling portion disabled and return it to the system, while preserving the original vertical scrolling behavior.



1 / 1

There's no such function as `NSEvent.scrollEvent`.

1 / 1

Apologies for the confusion. I made a mistake in my previous response. Instead of creating a new `NSEvent`, you can modify the `deltaX` value directly using the `NSEvent.eventNumber` property, which is the only writable property of an `NSEvent`. Here's how to do it:

- 1 Create a dictionary in your `CustomWindow` class to store the original `deltaX` values:

swift

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```
class CustomWindow: NSWindow {
    // ...
    private var originalDeltaX = [Int: CGFloat]()
    // ...
}
```

- 2 In the `addLocalMonitorForEvents` closure, store the original `deltaX` value and return the event with `deltaX` set to 0:

swift

Copy code

```
NSEvent.addLocalMonitorForEvents(matching: .scrollWheel) { [weak self]
```

```

(event) -> NSEvent? in
    self?.originalDeltaX[event.eventNumber] = event.scrollingDeltaX

    // Create a new event with deltaX set to 0
    let newEvent = event.withDeltaX(0.0)
    return newEvent
}

```

3 Create an extension for NSEvent that allows you to modify the deltaX value:
 swift

Copy code

```

import AppKit

extension NSEvent {
    func withDeltaX(_ newDeltaX: CGFloat) -> NSEvent {
        guard let event = NSEvent.mouseEvent(with: self.type,
                                                location: self.locationInWindow,
                                                modifierFlags:
self.modifierFlags,
                                                timestamp: self.timestamp,
                                                windowNumber: self.windowNumber,
                                                context: self.context,
                                                eventNumber: self.eventNumber,
                                                clickCount: self.clickCount,
                                                pressure: self.pressure) else
        { return self }

        // Set the new deltaX value
        event.deltaX = newDeltaX
        event.deltaY = self.deltaY
        event.deltaZ = self.deltaZ

        return event
    }
}

```

Now, when you receive a scroll event in CustomWindow, the horizontal scroll portion (deltaX) will be set to 0, effectively disabling horizontal scrolling.