Deep Dish Swift 2023

DeckUI: Coding your next presentation... in Swift?

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~~Josh Holtz~~

*The part of "Josh Holtz" will be played by Zach Brass

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fastlane

RevenueCat

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Introducing...


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DeckUI

What is DeckUI?

- A custom Swift DSL to make slide decks
- Distributed as a Swift Package
- Develop your slide deck in Xcode with Swift
- It's a side project that other people took too far
- It's open source!

Why is DeckUI?

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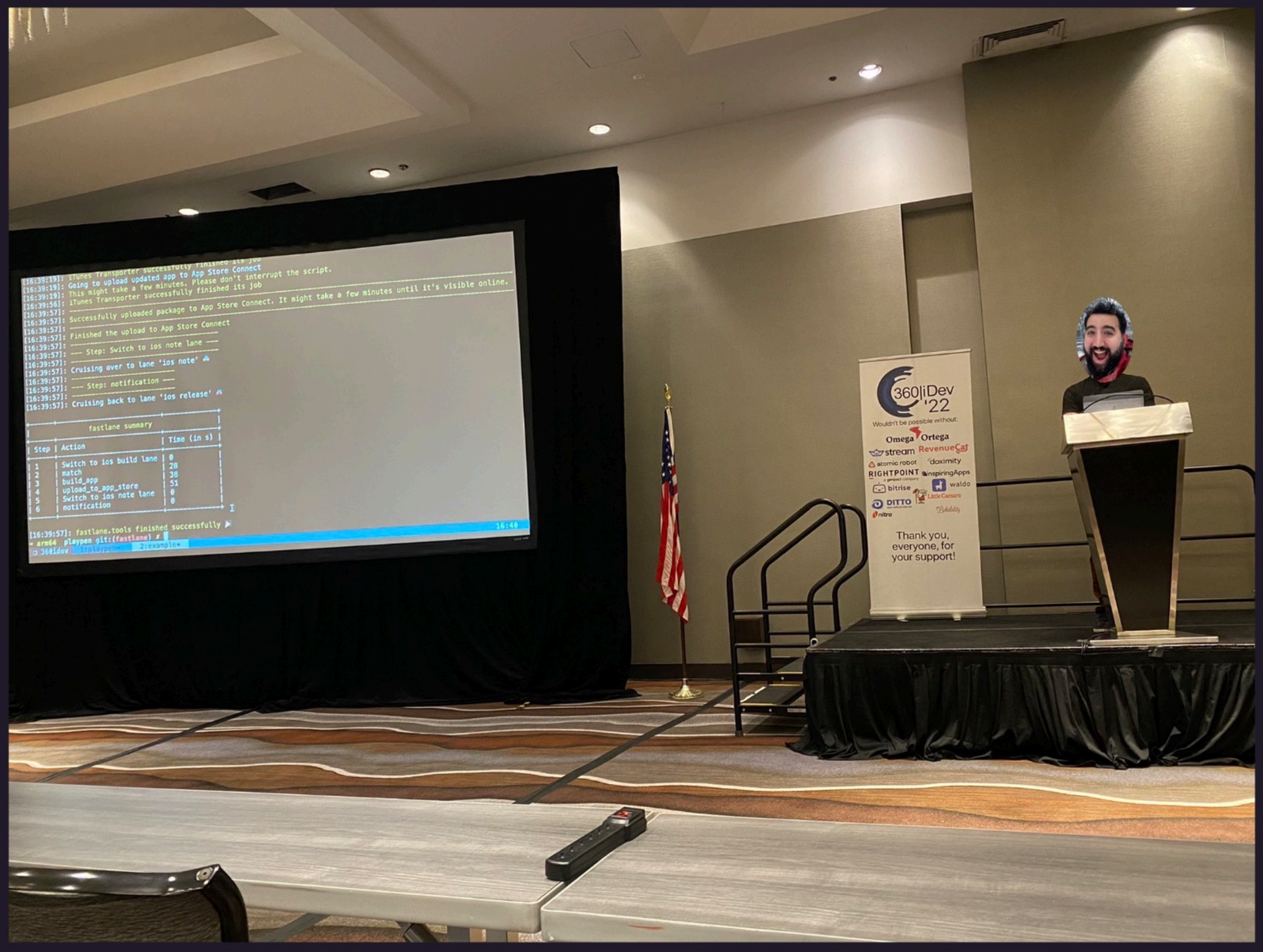
[16:39:19]: iTunes Transporter successfully finished its job
[16:39:19]: Going to upload updated app to App Store Connect
[16:39:19]: This might take a few minutes. Please don't interrupt the script.
[16:39:56]: iTunes Transporter successfully finished its job
[16:39:57]: Successfully uploaded package to App Store Connect. It might take a few minutes until it's visible online.
[16:39:57]: Finished the upload to App Store Connect
[16:39:57]: --- Step: Switch to ios note lane ---
[16:39:57]: Cruising over to lane 'ios note' 🚁
[16:39:57]: --- Step: notification ---
[16:39:57]: Cruising back to lane 'ios release' 🚁
fastlane summary
Step | Action | Time (in s)
1 | Switch to ios build lane | 0
2 | match | 28
3 | build_app | 30
4 | upload_to_app_store | 51
5 | Switch to ios note lane | 0
6 | notification | 0
[16:39:57]: fastlane.tools finished successfully 🎉
360|iDev '22
Wouldn't be possible without:
Omega Ortega
stream RevenueCat
atomic robot
doximity
RIGHTPOINT
InspiringApps
bitrise
waldo
DITTO
LittleCaesars
nitro
Thank you, everyone, for your support!

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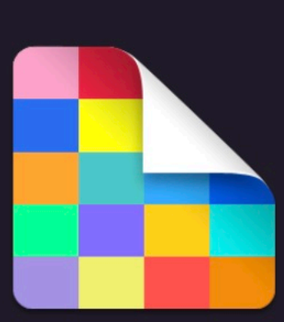
Deckset




Presentation.md
UNREGISTERED
Presentation.md
1 # Headline indicates a first level title.
2
3 ## Subheader a second level title.
4
5 ---
6
7 # Here is a new slide
Line 7, Column 22
Tab Size: 4
Markdown

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Swift!

What's possible?

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Center alignment

Slides can be center aligned

Top alignment

Slides also be top aligned

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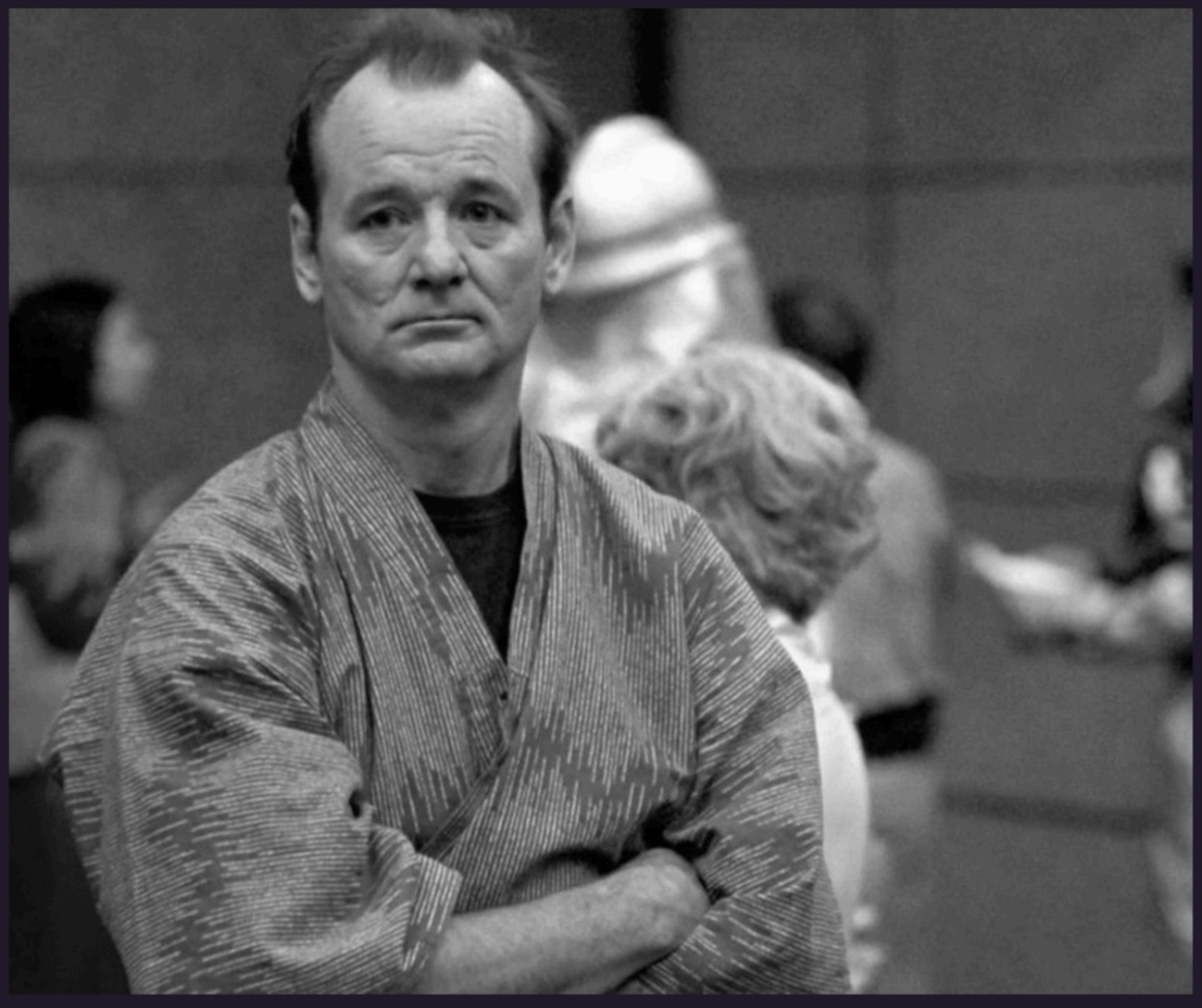
Images



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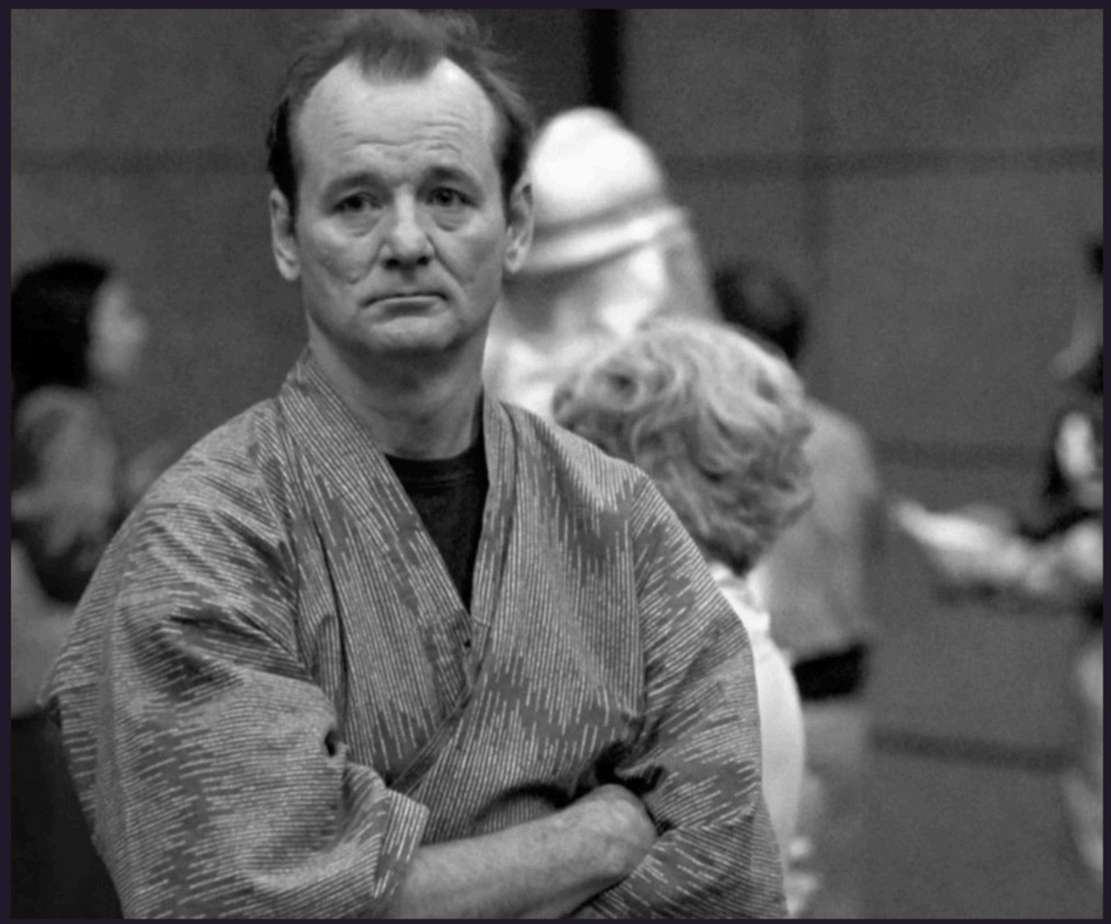
Videos

Multiple Columns

1, 2, or more

- Bill
- Murray
- Image
- 👉



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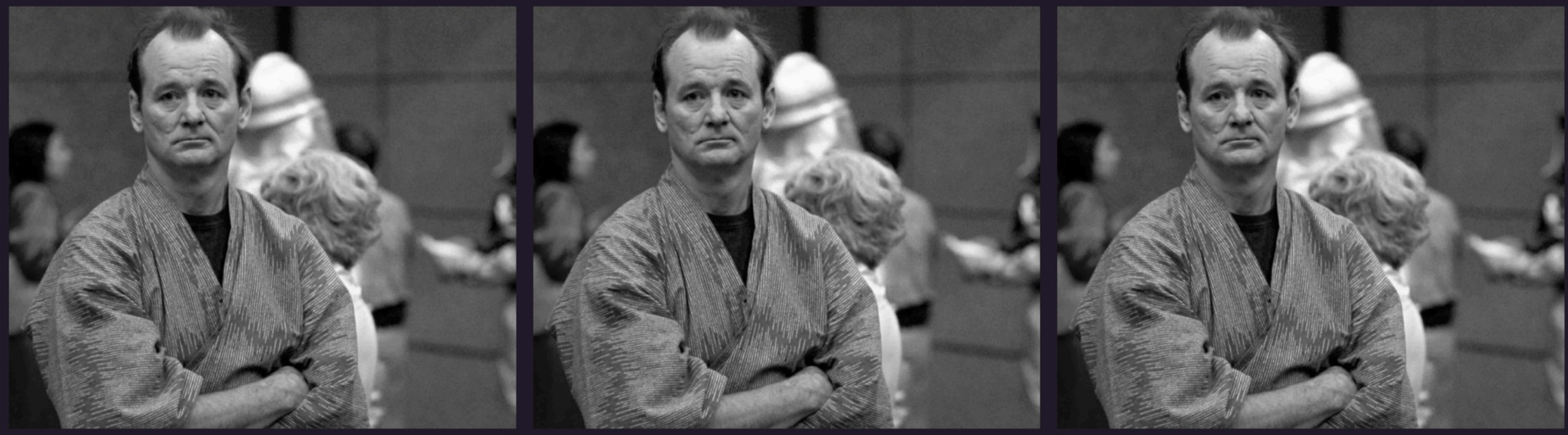
3 Bill Murraies

Don't know the plural of Murray



You can theme slides

Or entire presentations

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Code Blocks

```
struct CounterView: View {
    @State var count = 0

    var body: some View {
        Button {
            self.count += 1
        } label: {
            Text("Press me - \(self.count)")
                .font(.system(size: 60))
                .padding(.horizontal, 40)
                .padding(.vertical, 20)
                .foregroundColor(.white)
                .overlay(
                    RoundedRectangle(cornerRadius: 25)
                    .stroke(Color.white, lineWidth: 2)
                )
        }.buttonStyle(.plain)
    }
}
```

Sweet, how do I do this?

Here's a basic DeckUI Deck and how to present it

```
import SwiftUI
import DeckUI

struct ContentView: View {

    var deck: Deck {
        Deck(title: "SomeConf 2023") {
            Slide(alignment: .center) {
                Title("Welcome to DeckUI")
            }

            Slide {
                Title("Slide 2")
                Words("Some useful content")
                Media(.assetImage("murray"))
            }
        }
    }

    var body: some View {
        Presenter(deck: self.deck)
    }
}
```

- Create a `Deck` with multiple `Slides`
- Each Slide contains `ContentItems`
- Create `Presenter` and pass a Deck
- `Presenter` is a SwiftUI View to present a `Deck`

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Welcome to DeckUI

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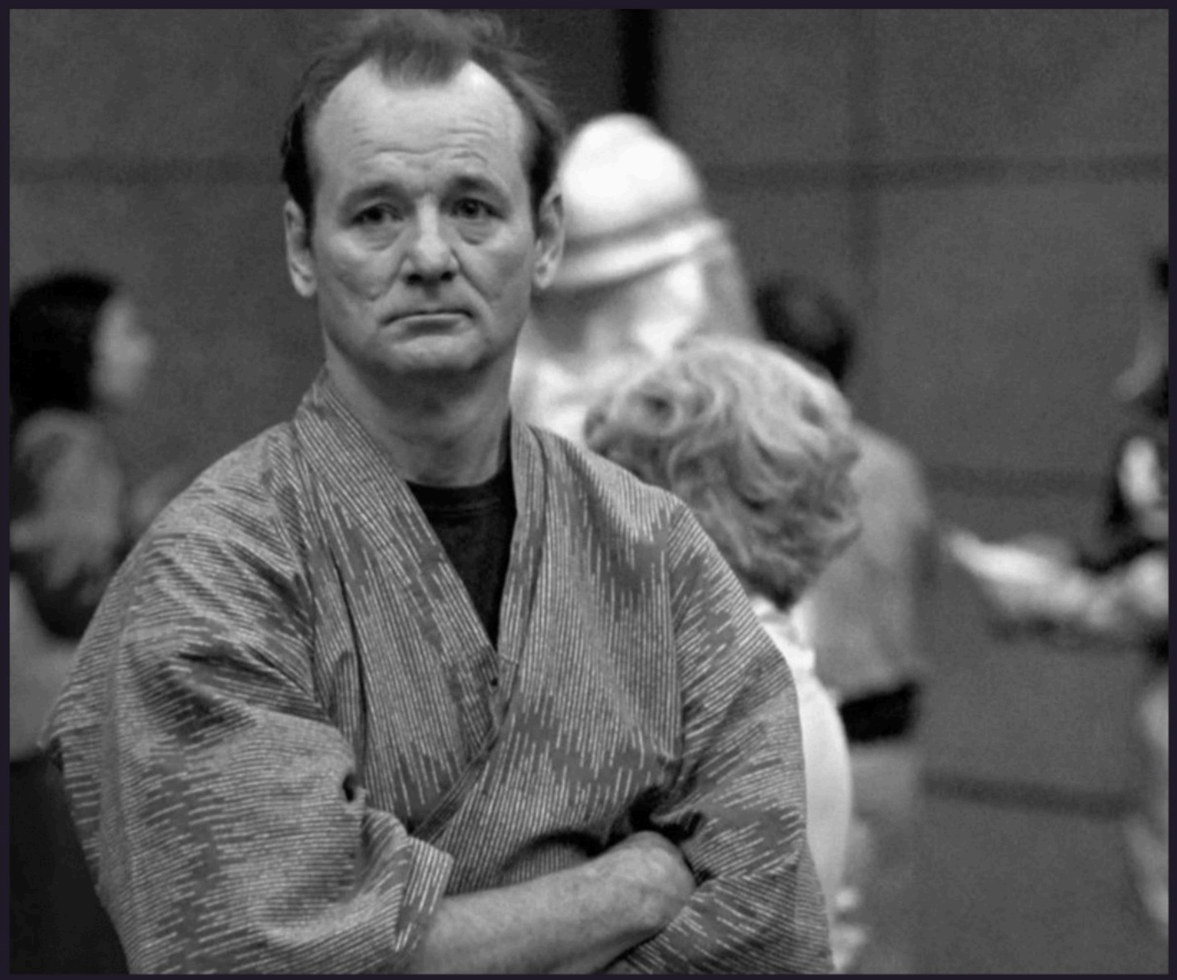
Slide 2

Some useful content



Bullets

```
Slide {
    Bullets {
        Words("")
        Words("")
        Words("")
    }

    Bullets(style: .dash) {
        Words("")
        Words("")
        Words("")
    }
}
```

- Bullets take `Words`
- Default to circle/bullet
- Can change style

Media

```
Slide {
    Media(.assetImage(""))
    Media(.bundleImage(""))
    Media(.remoteImage(URL(string: ""))!)
    Media(.bundleVideo(""))

}
```

- Three image sources
- Video was just added

Columns

```
Slide {
    Columns {
        Column {
            Bullets {
                Words("Left")
                Words("is")
                Words("cool")
            }
        }
        Column {
            Bullets {
                Words("Right")
                Words("is")
                Words("cooler")
            }
        }
    }
}
```

- Split slide into 1 to many columns
- Each column takes ContentItems, just like a slide

Change theme

On Deck or Slide

```
extension Theme {
    public static let venonat: Theme = Theme(
        background: Color(hex: "#624a7b"),
        title: Foreground(
            color: Color(hex: "#ff5a5a"),
            font: Font.system(size: 80,
                              weight: .bold,
                              design: .default)
        ),
        subtitle: Foreground(
            color: Color(hex: "#a48bbd"),
            font: Font.system(size: 50,
                              weight: .light,
design: .default).italic()
        ),
        body: Foreground(
            color: Color(hex: "#FFFFFF"),
            font: Font.system(size: 50,
                              weight: .regular,
                              design: .default)
```

```
// Set theme on presenter
var body: some View {
    Presenter(deck: self.deck, theme: .venonat)
}

// Or on individual slide
Slide(theme: .venonat) {
    Title("Some slide")
}
```

Code

```
Slide {
    Code(.swift) {
    """
    Slide {
        Words("Your code goes here")
    }
    """
    }
}
```

- Easily drop in your code
- Up and down arrows highlight lines
- Syntax highlighting in Swift

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What's coming soon?

Presenter notes view

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iOS and iPadOS support

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Markdown ~~and~~ *attributed* **strings**

But wait... DeckUI kinda looks like SwiftUI!

Spoiler alert, not a coincidence

```
extension ContentView {
    var deck: Deck {
        Deck(title: "SomeConf 2023") {
            Slide(alignment: .center) {
                Title("Welcome to DeckUI")
            }

            Slide {
                Title("Slide 2")
                Words("Some useful content")
                Media(.assetImage("murray"))
            }
        }
    }
}
```

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Domain-Specific Language

What is a DSL?

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Have you used...

- SQL
- HTML
- CSS

Have you used...

- Cocoapods
- jQuery
- SwiftUI
- RegexBuilder

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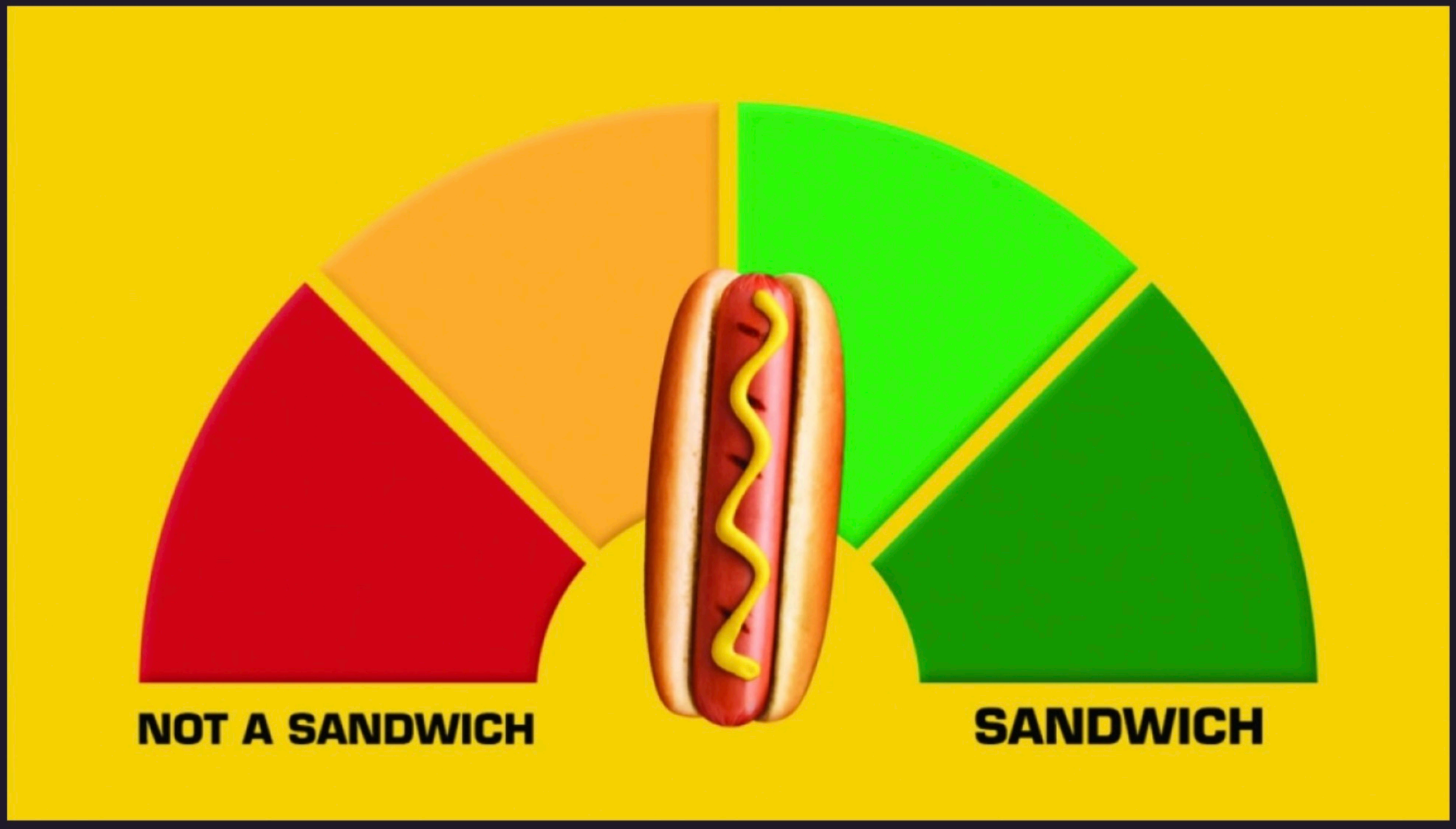

How do they work in Swift?

And why does it look so much like SwiftUI?

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Result Builders

Making Swift code look funky since 2019

```
Deck(title:"Sample") {
    Slide {}
    Slide {}
    Slide {}
    Slide {}
}
```

What are these curly braces doing?

```
Deck.init(title:"Sample", slides: {
    Slide {}
    Slide {}
    Slide {}
    Slide {}
})

public struct Deck {
    public init(title: String, theme: Theme = .dark, @SlideArrayBuilder slides: @escaping () -> [Slide]) {
        ...
    }
}
```

```
Deck.init(title:"Sample", slides: {
    Slide {}
    Slide {}
    Slide {}
    Slide {}
    return ??
})

public struct Deck {
    public init(title: String, theme: Theme = .dark, @SlideArrayBuilder slides: @escaping () -> [Slide]) {
        ...
    }
}
```

```
Deck.init(title:"Sample", slides: {
    let s1 = Slide {}
    let s2 = Slide {}
    let s3 = Slide {}
    let s4 = Slide {}
    return SlideArrayBuilder.buildBlock(s1, s2, s3, s4)
})

public struct Deck {
    public init(title: String, theme: Theme = .dark, @SlideArrayBuilder slides: @escaping () -> [Slide]) {
        ...
    }
}
@resultBuilder
public enum SlideArrayBuilder {
    public static func buildBlock(_ components: Slide...) -> [Slide] {
        return [components]
    }
}
```

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HAHAHA

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NO.

```
Deck(title:"Sample") {
    Slide {}
    if (someCondition) {
        Slide {}
        Slide {}
    }
    Slide {}
}
```

```
Deck.init(title:"Sample", slides: {
    let s1 = Slide {}
    var s2: Slide?
    var s3: Slide?
    if (someCondition) {
        s2 = Slide {}
        s3 = Slide {}
    }
    let s4 = Slide {}
    return SlideArrayBuilder.buildBlock(s1, s2, s3, s4)
})

public struct Deck {
    public init(title: String, theme: Theme = .dark, @SlideArrayBuilder slides: @escaping () -> [Slide]) {
        ...
    }
}
@resultBuilder
public enum SlideArrayBuilder {
    public static func buildBlock(_ components: Slide...) -> [Slide] {
        return [components]
    }
}
```

Result builders remove some language features by default

```
Deck.init(title:"Sample", slides: {
    let s1 = Slide {}
    let s2: [Slide]
    if (someCondition) {
        let s2_1 = Slide {}
        let s2_2 = Slide {}
        let s2_block = SlideArrayBuilder.buildBlock(s2_1, s2_2)
        s2 = SlideArrayBuilder.buildOptional(s2_block)
    } else {
        s2 = SlideArrayBuilder.buildOptional(nil)
    }
    let s3 = Slide {}
    return SlideArrayBuilder.buildBlock(s1, s2, s3)
})

@resultBuilder
public enum SlideArrayBuilder {
    public static func buildBlock(_ components: Slide...) -> [Slide] {
        return [components]
    }
    public static func buildOptional(_ component: [Slide]?) -> [Slide] {
        return component ?? []
    }
}
```

```
Deck.init(title:"Sample", slides: {
    let s1 = Slide {}
    let s2: [Slide]
    if (someCondition) {
        let s2_1 = Slide {}
        let s2_2 = Slide {}
        let s2_block = SlideArrayBuilder.buildBlock(s2_1, s2_2)
        s2 = SlideArrayBuilder.buildOptional(s2_block)
    } else {
        s2 = SlideArrayBuilder.buildOptional(nil)
    }
    let s3 = Slide {}
    return SlideArrayBuilder.buildBlock(s1, s2, s3)
})

@resultBuilder
public enum SlideArrayBuilder {
    public static func buildBlock(_ components: [Slide]...) -> [Slide] {
        return components.flatMap { $0 }
    }
    public static func buildOptional(_ component: [Slide]?) -> [Slide] {
        return component ?? []
    }
}
```

```
Deck.init(title:"Sample", slides: {
    let s1 = SlideArrayBuilder.buildExpression(Slide {})
    let s2: [Slide]
    if (someCondition) {
        let s2_1 = SlideArrayBuilder.buildExpression(Slide {})
        let s2_2 = SlideArrayBuilder.buildExpression(Slide {})
        let s2_block = SlideArrayBuilder.buildBlock(s2_1, s2_2)
        s2 = SlideArrayBuilder.buildOptional(s2_block)
    } else {
        s2 = SlideArrayBuilder.buildOptional(nil)
    }
    let s3 = SlideArrayBuilder.buildExpression(Slide {})
    return SlideArrayBuilder.buildBlock(s1, s2, s3)
})

@resultBuilder
public enum SlideArrayBuilder {
    public static func buildBlock(_ components: [Slide]...) -> [Slide] {
        return components.flatMap { $0 }
    }
    public static func buildOptional(_ component: [Slide]?) -> [Slide] {
        return component ?? []
    }
    public static func buildExpression(_ expression: Slide) -> [Slide] {
        return [expression]
    }
}
```

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```
Deck(title:"Sample") {
    Slide {}
    if (someCondition) {
        Slide {}
        Slide {}
    }
    Slide {}
}

@resultBuilder
public enum SlideArrayBuilder {
    public static func buildBlock(_ components: [Slide]...) -> [Slide] {
        return components.flatMap { $0 }
    }
    public static func buildOptional(_ component: [Slide]?) -> [Slide] {
        return component ?? []
    }
    public static func buildExpression(_ expression: Slide) -> [Slide] {
        return [expression]
    }
}
```

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Method	Enables
buildArray	for..in
buildEither(first:), buildEither(second:)	if-else
buildExpression(Void)	Empty closures
buildExpression(Array)	Array variables
buildLimitedAvailability	#available

So what do I do once I make a result builder?

Whatever you want

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SwiftUI works the same way

ViewBuilder is a result builder!

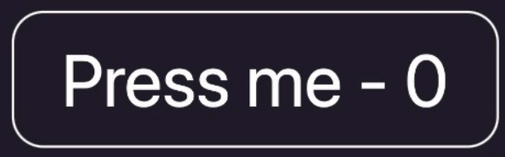
So why not just use SwiftUI?

Domain specificity

So why not just use SwiftUI? You can!

```
Slide {
    RawView {
        CounterView()
    }
}
struct CounterView: View {
    @State var count = 0

    var body: some View {
        Button {
            self.count += 1
        } label: {
            Text("Press me - \(self.count)")
                .font(.system(size: 60))
                .padding(.horizontal, 40)
                .padding(.vertical, 20)
                .foregroundColor(.white)
                .overlay(
                    RoundedRectangle(cornerRadius: 25)
                    .stroke(Color.white, lineWidth: 2)
                )
        }.buttonStyle(.plain)
    }
}
```



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Let's turn up the heat a bit

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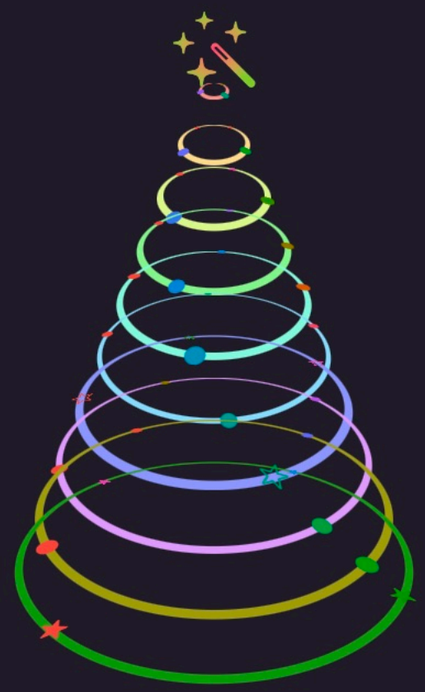

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Why you should use DeckUI

Why you should use DeckUI

- Your demos are right in the deck
- Way better than live coding
- If you like coding more than WYSIWYG editors
- You can use Git!
- Your presentation is an app!

Why you shouldn't use DeckUI

Or at least a few caveats if you want to use it

- Your presentation is an app
- Doesn't distribute very well
- Only on Apple platforms
- You'll have to drop down to SwiftUI a LOT
- Feature set is limited

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It VERY alpha stage

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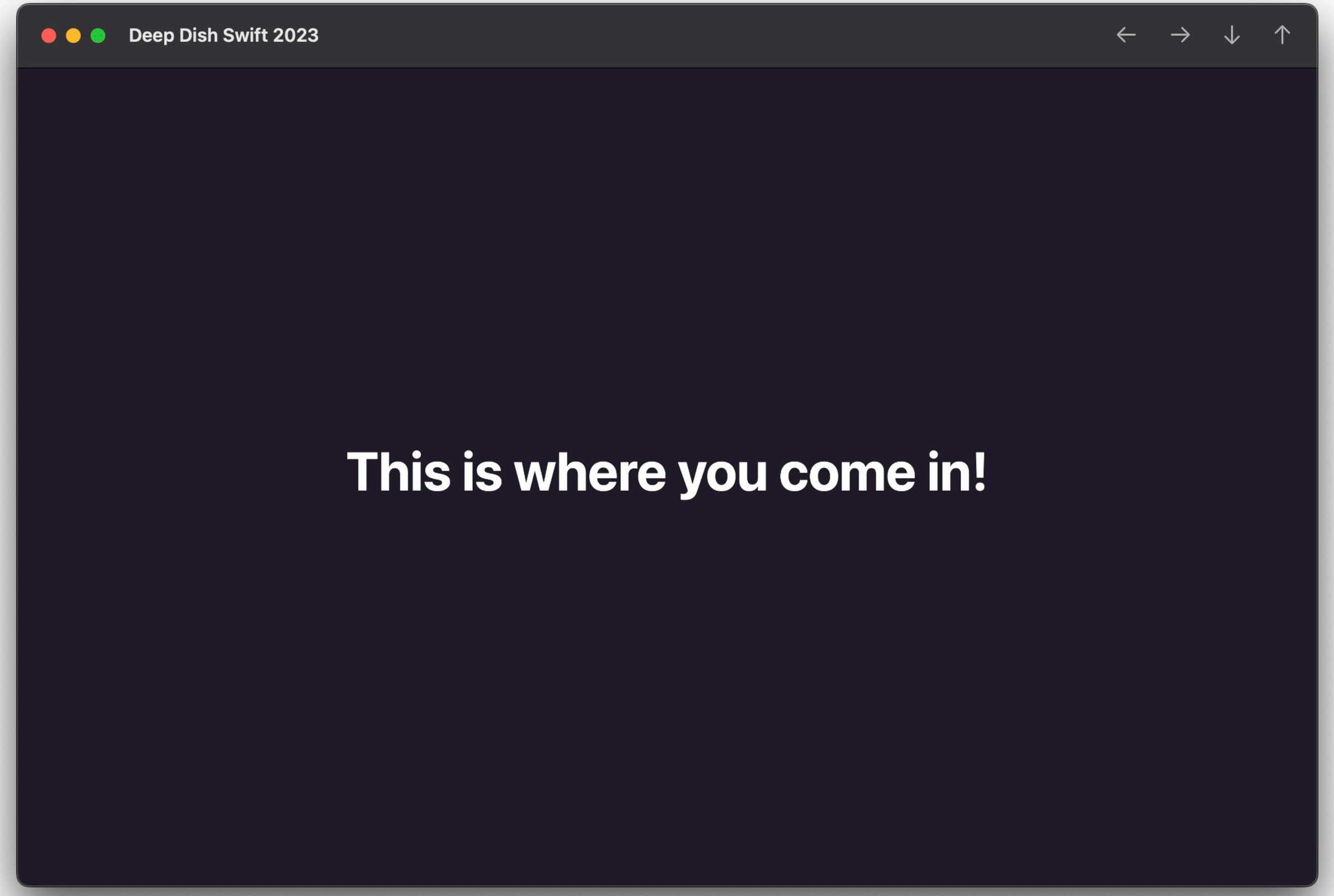
#MakeBenProothiFamous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This is where you come in!

Wishlist

- More customization of `Words`
- Nested `Bullets`
- Better slide transitions (Magic Move?)
- Animations within a slide
- DeckUI packages and plugins through Swift Package Manager
- Syntax highlighting beyond Swift
- Improvements to presenter notes view
- Generate things other than SwiftUI under the hood
- Whatever else you want to build, we want to hear it!

Thank you!

https://github.com/joshdholtz/deckui