WWDC 2022 Recap

What's New in Swift, SwiftUI, Xcode & UIKit

June 23rd, 2022

What's New in Swift

Distributed Actors
Shared code across processes—or devices

- Allows you to treat code running in a different process or device as though it's local code

- All calls to distributed actors are async throws since communication can fail

- Requires ActorSystem for handling cross-process communication

Swift Async Algorithms
Like Combine, but for async/await

- Provides extended functionality for Swift async/await

- Methods for treating AsyncSequences like streams of data over time

- Open source, works on Linux!

- Apple isn't **saying** this replaces Combine, but...
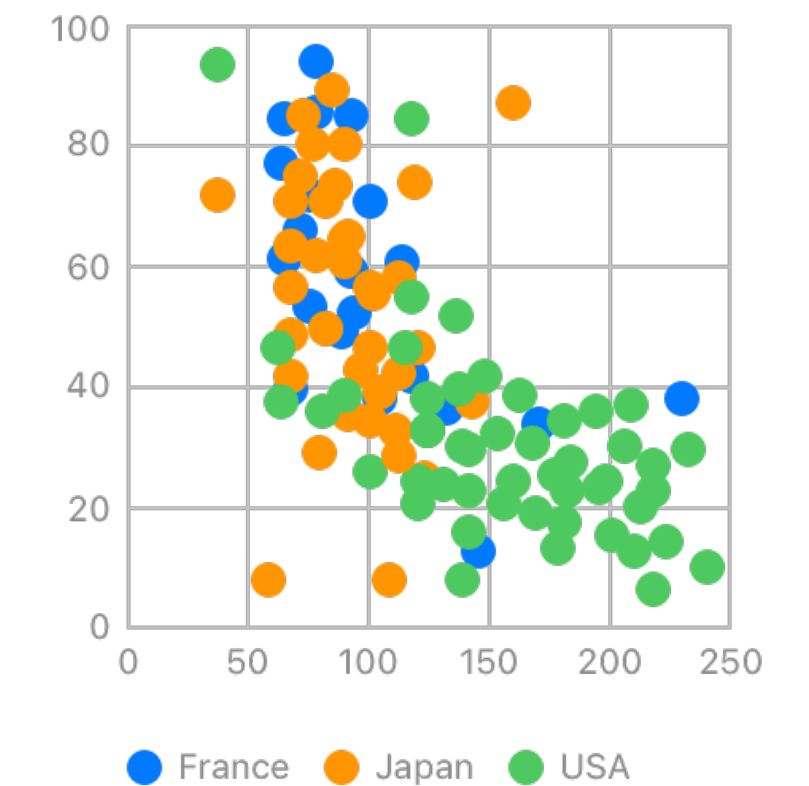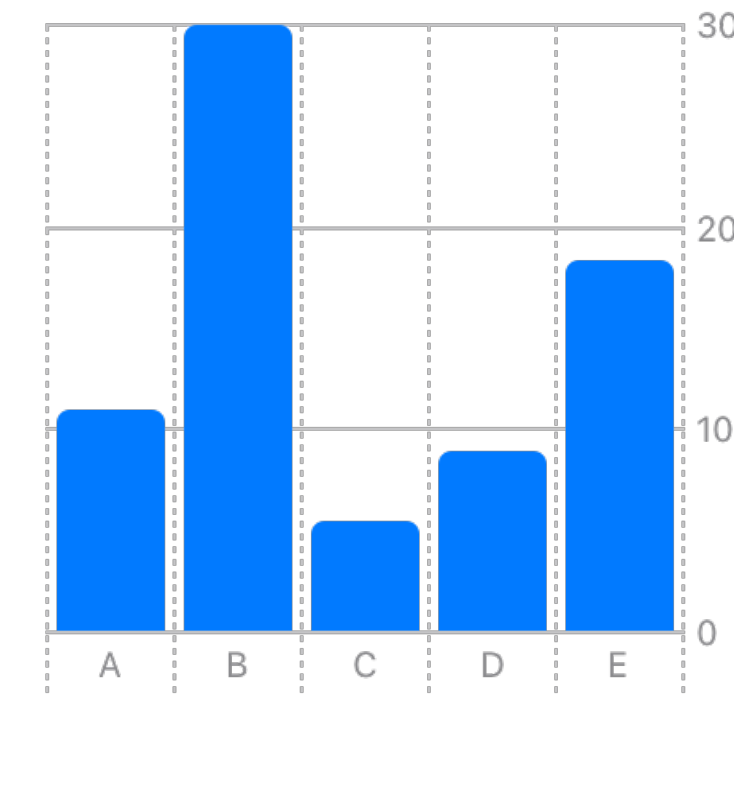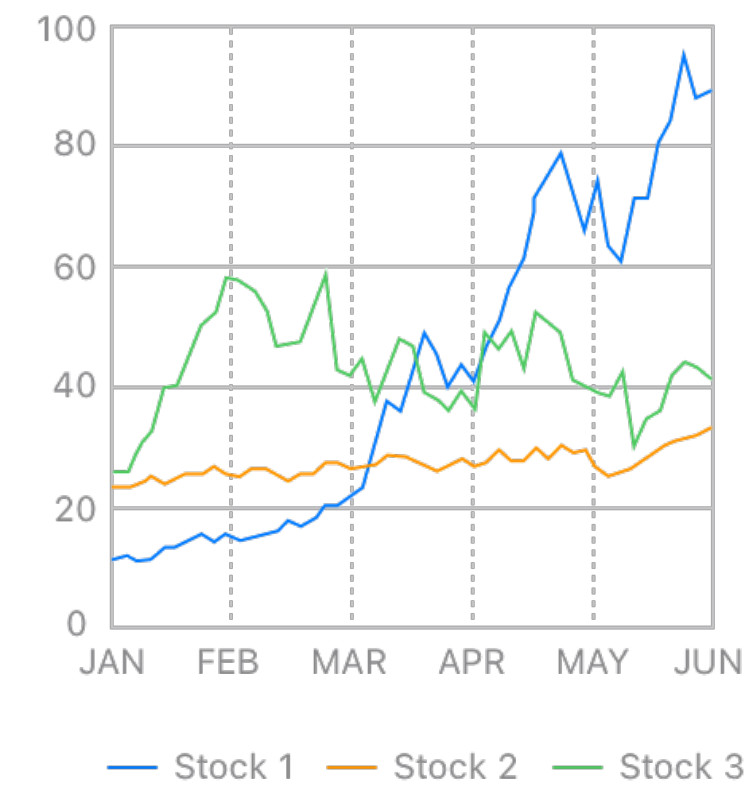
Also...
What's New in Swift

- Regex literals/builders

- New generics behaviors

- Better C++ interoperability

What's New in SwiftUI
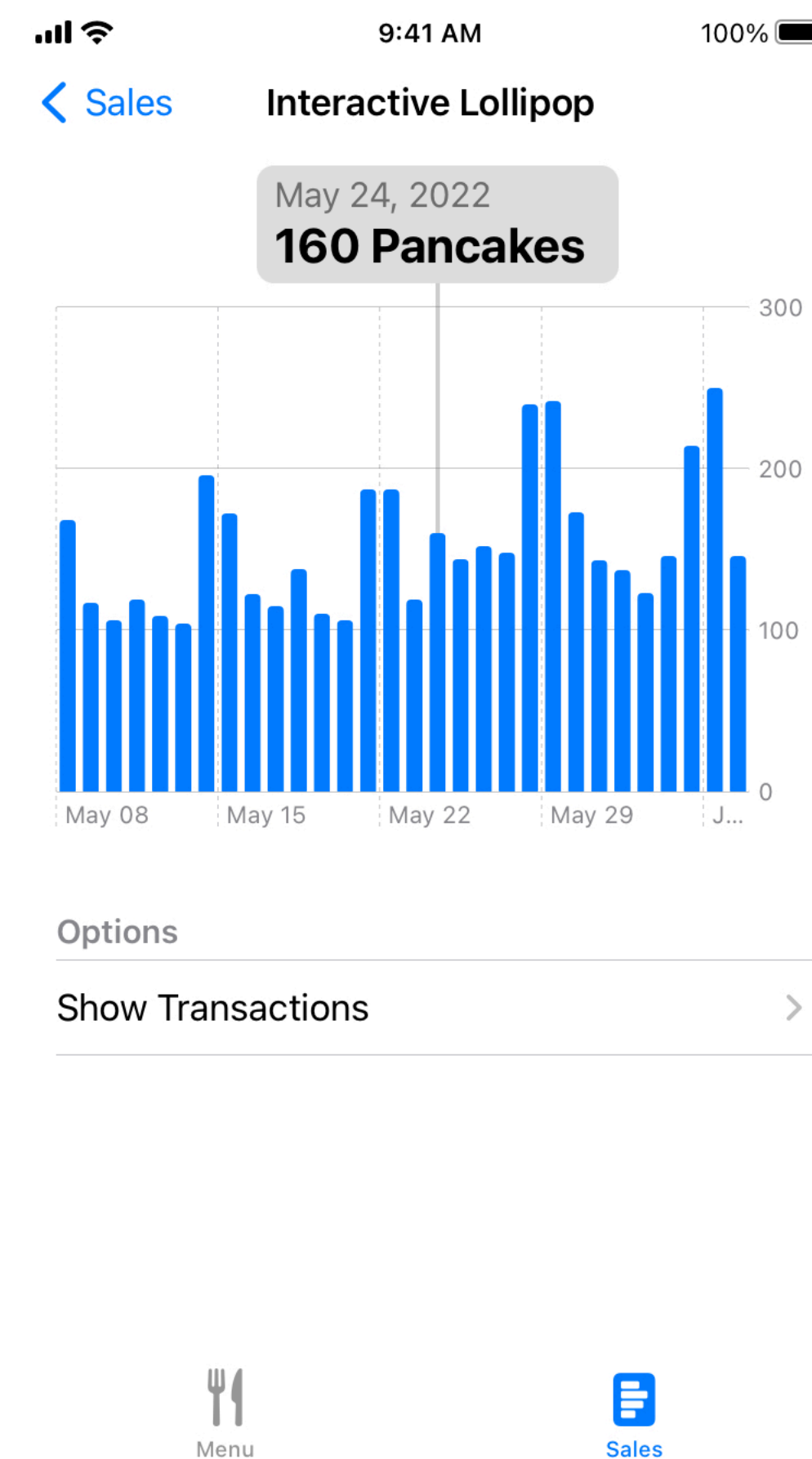
Swift Charts
Declarative charts and graphs

- Supports bar, graph, area, and scatter charts

- Only works with SwiftUI

Swift Charts

Declarative charts and graphs

- Supports bar, graph, area, and scatter charts

- Only works with SwiftUI

- Supports interaction with "lollipops" and "brushing"

- Animation support built-in for displaying changes in data

Swift Charts
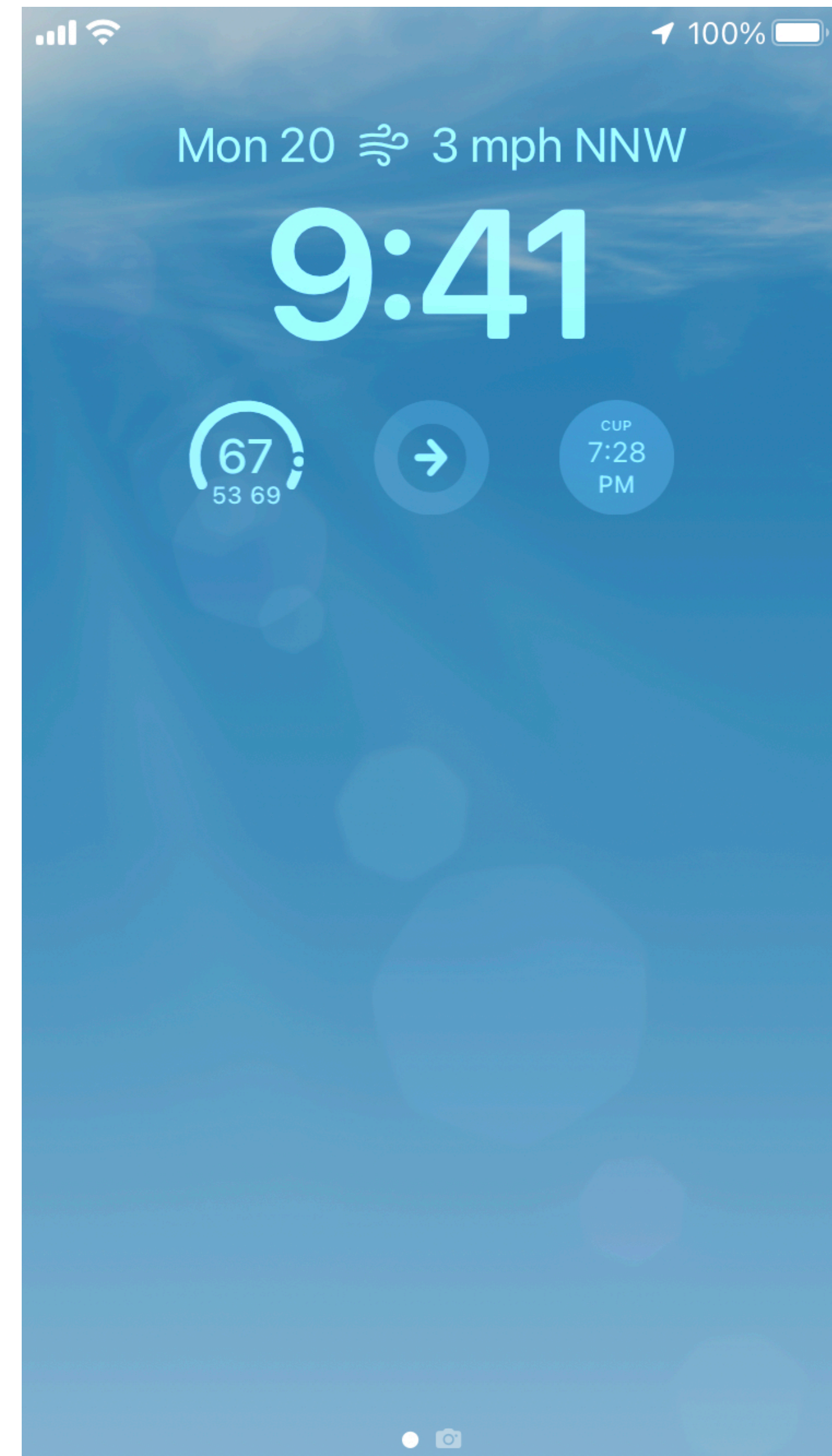**Declarative charts and graphs**

```swift
Chart(SalesData.last30Days, id: \.day) {
  BarMark(
    x: .value("Day", $0.day, unit: .day),
    y: .value("Sales", $0.sales)
  )
}
```

Lock Screen Widgets

Small UI elements on the lock screen

- Addition to existing WidgetKit framework

- Adds new widget types for display on lock screen

- Replaces existing watchOS complication framework

Lock Screen Widgets
Small UI elements on the lock screen

```swift
struct LockScreenWidget: Widget {
    let kind: String = "TodayWidget"

    var body: some WidgetConfiguration {
        StaticConfiguration(kind: kind, provider: Provider()) { entry in
            TodayWidgetEntryView(entry: entry)
        }
        .configurationDisplayName("My Widget")
        .description("This is an example widget.")
        .supportedFamilies([.accessoryInline])
    }
}
```

```swift
struct Provider: TimelineProvider {
    @SharedStorage("TaskList.taskItems") private var items

    func placeholder(in context: Context) -> SimpleEntry {
        SimpleEntry(text: "Hello, world!")
    }

    func getSnapshot(in context: Context, completion: @escaping (SimpleEntry) -> ()) {
        let entry = SimpleEntry(text: items.last)
        completion(entry)
    }

    func getTimeline(in context: Context, completion: @escaping
(Timeline<SimpleEntry>) -> ()) {
        let timeline = Timeline(entries: [SimpleEntry(text: items.last)], policy: .never)
        completion(timeline)
    }
}
```
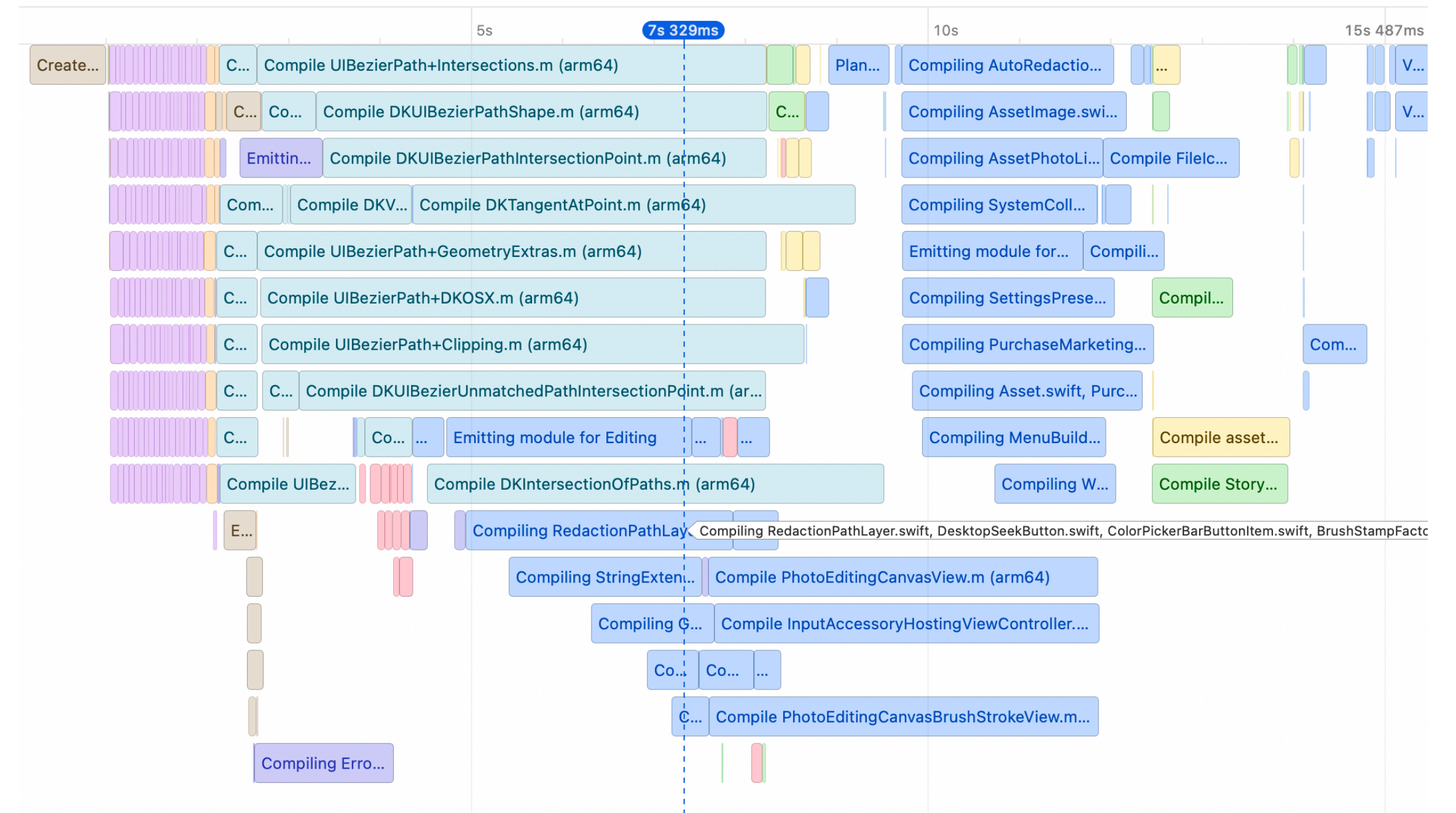
Also...
What's New in SwiftUI

- Custom layouts

- Grid view

- Table view (not that table view)

- SwiftUI preview "variants"

What's New in Xcode

Build Visualization
See why your build is slow

- See all parts of a build and when they ran
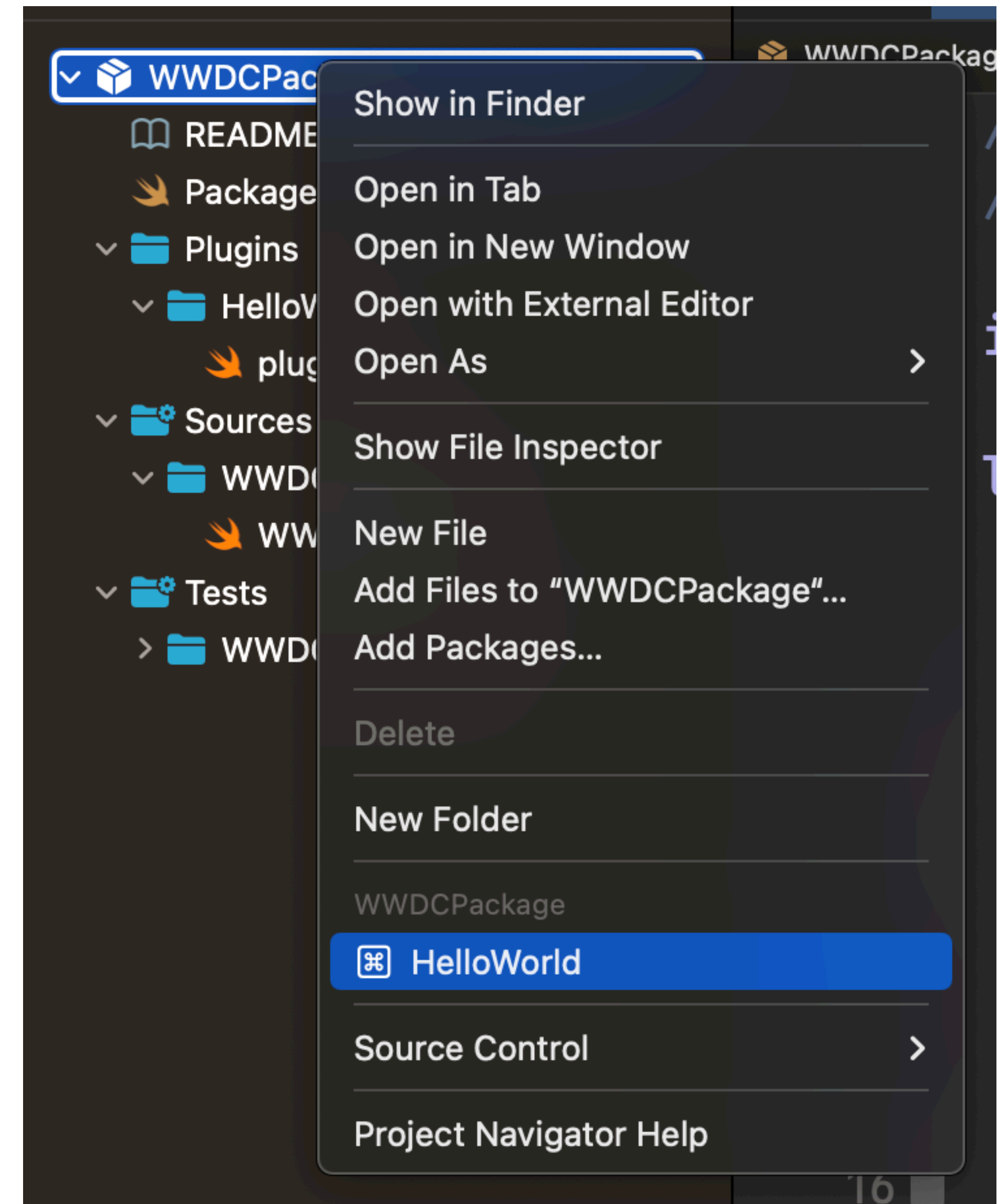
- Taller graph = more parallelized, more of your CPU utilized

- Wider graph = longer build, less CPU used

- Appears as assistant view on build log

Swift Package Plugins

Extend Xcode with your own scripts

- Run commands written in Swift against your codebase

- Two built-in use cases: documentation generation and source formatting

- Or use custom trigger to run other commands

Swift Package Plugins
Extend Xcode with your own scripts

```swift
import PackagePlugin

@main
struct HelloWorld: CommandPlugin {
    func performCommand(context: PackagePlugin.PluginContext,
                        arguments: [String]) async throws {
        print("Hello, world!")
    }
}
```

Also...
What's New in Xcode

- SF Symbols in Xcode Library

- Sticky type/function names

- TestFlight feedback in Xcode

What's New in UIKit

Calendar View

FINALLY

- Display dates

- Add "decorations"

  - Filled circle

  - Image

  - Custom view type

- Single- or multiple-date selection

- Supports all calendar types

June 2022 ›   ‹ ›

SUN	MON	TUE	WED	THU	FRI	SAT
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

iPad External Display
Extending your app to multiple screens

- Support showing different interactive windows on attached displays

- Built on the "scene" architecture

  - If you have existing "application" scenes, they gain external display support by default

- Mostly a design change, not new code support

  - Make sure to handle multiple screen sizes well

Also...
What's New in UIKit

- Custom sheet detents

- Improved async/await support

- UITable/CollectionViewCells now support auto-**re**sizing

What's New in... Everything Else

Live Text Interactions
Work with text in photos and video

- New view controller class DataScannerViewController

  - Detects text & machine-readable codes in video

  - Returns recognized items for handling

- Or provide overlays to static images with ImageAnalyzer

  - Provides system-standard actions, such as e-mail or phone

WeatherKit
DIY Weather Apps

- Weather data SDK provided by Apple

- Works with Swift and REST for other platforms

- 500k API calls for free, costs increase after that

- Replaces existing Dark Sky API

Also...
What's New in Everything Else

- App Intents

- Collaboration APIs

Questions & Requests?