WWDC 2022 Recap What's New in Swift, SwiftUl, Xcode & UlKit

June 23rd, 2022

What's New in Swift



Distributed Actors Shared code across processes—or devices

- code
- All calls to distributed actors are async throws since communication can fail
- Requires ActorSystem for handling cross-process communication

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

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...



What's New in Swift

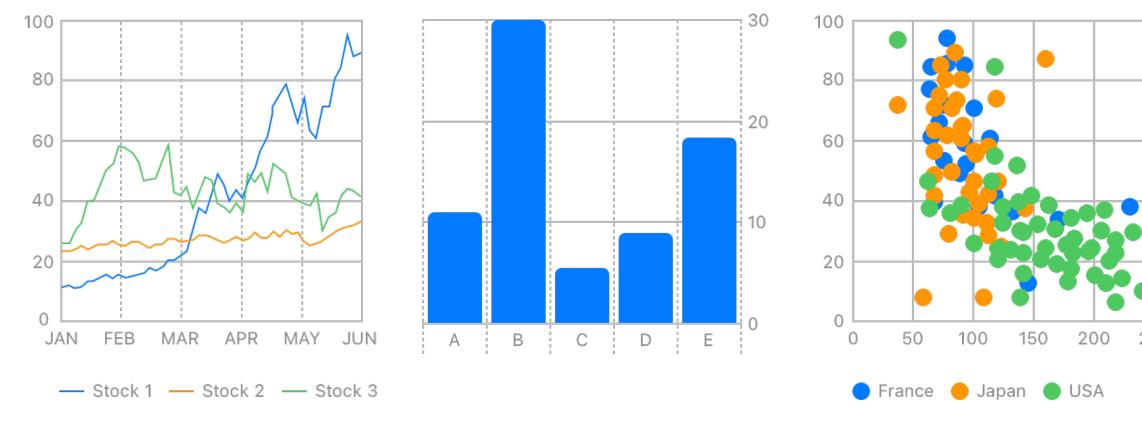
- Regex literals/builders
- New generics behaviors
- Better C++ interoperability

What's New in SwiftUl



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

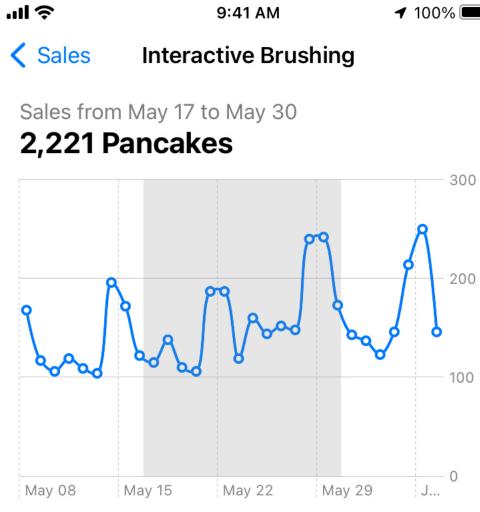


Options

| Show Transactions | |
|-------------------|--|
|-------------------|--|

Menu





Details

| May 17, 2022, sales: 115 | |
|--------------------------|-------|
| May 18, 2022, sales: 138 | |
| May 19, 2022, sales: 110 | |
| May 20, 2022, sales: 106 | |
| May 21, 2022, sales: 187 | |
| May 22, 2022, sales: 187 | |
| May 23, 2022, sales: 119 | |
| May 24, 2022, sales: 160 | |
| May 25, 2022, sales: 144 | |
| May 26, 2022, sales: 152 | |
| May 27, 2022, sales: 148 | |
| May 28, 2022, sales: 240 | |
| May 29, 2022, sales: 242 | |
| Ψſ | |
| Menu | Sales |

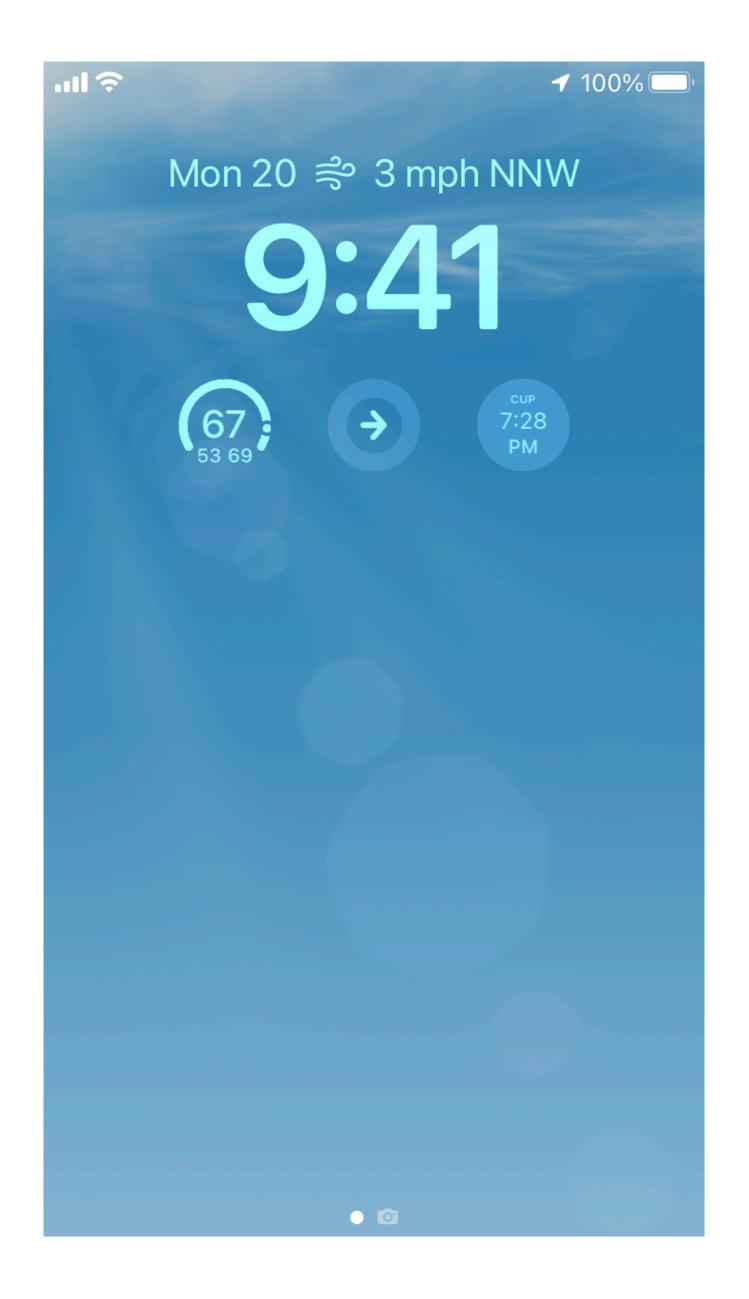
Swift Charts Declarative charts and graphs

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

```
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])
    }
}
```

```
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)
    }
```



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

| | 5s 7s 329ms | 10s 15s 48 |
|-----------------------------------|--|--|
| Create Compile UIBezierPath+Inter | sections.m (arm64) | Compiling AutoRedactio |
| C Co Compile DKUIBezier | rPathShape.m (arm64) | Compiling AssetImage.swi |
| Emittin Compile DKUIBezie | erPathIntersectionPoint.m (arm64) | Compiling AssetPhotoLi Compile FileIc |
| Com Compile DKV Compil | e DKTangentAtPoint.m (arm64) | Compiling SystemColl |
| C Compile UIBezierPath+Geor | metryExtras.m (arm64) | Emitting module for Compili |
| C Compile UIBezierPath+DKO | SX.m (arm64) | Compiling SettingsPrese Compil |
| C Compile UIBezierPath+Clip | ping.m (arm64) | Compiling PurchaseMarketing Com |
| C C Compile DKUIBezierUr | nmatchedPathIntersectionPdint.m (ar | Compiling Asset.swift, Purc |
| C En | nitting module for Editing | Compiling MenuBuild Compile asset |
| Compile UIBez | pile DKIntersectionOfPaths.m (arm64) | Compiling W Compile Story |
| E | Compiling RedactionPathLay Compiling RedactionPathLayer. | swift, DesktopSeekButton.swift, ColorPickerBarButtonItem.swift, BrushStamp |
| | Compiling StringExten Compile PhotoEditingCar | nvasView.m (arm64) |
| | Compiling G Compile InputAccessory | HostingViewController |
| | Co Co | |
| | ¢ Compile PhotoEditingCar | nvasBrushStrokeView.m |
| Compiling Erro | | |



Facto

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

| V VWDCPac | Show in Finder | WWDCPackag |
|--|---|------------|
| Package Plugins HelloV | Open in Tab Open in New Window Open with External Edite | or |
| pluç Sources WWD | Open As Show File Inspector | |
| > WW > WWD | New File Add Files to "WWDCPac Add Packages | kage" |
| | Delete | |
| | New Folder WWDCPackage | |
| | HelloWorld Source Control | > |
| | Project Navigator Help | 16 |

Swift Package Plugins **Extend Xcode with your own scripts**

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





What's New in Xcode

- SF Symbols in Xcode Library
- Sticky type/function names
- TestFlight feedback in Xcode

What's New in Ulkit



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
 - default
- Mostly a design change, not new code support
 - Make sure to handle multiple screen sizes well

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



What's New in UlKit

- Custom sheet detents
- Improved async/await support
- UITable/CollectionViewCells now support auto-resizing

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

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



What's New in Everything Else

• App Intents

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Collaboration APIs

Questions & Requests?

