

First Edition

A SwiftUI Kickstart

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Introducing the SwiftUI User Interface Framework

Editors Cut

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Introducing The SwiftUI
User Interface Framework

by Daniel H Steinberg

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Bindings

In this section we use @Bindings to modify a value that someone else owns. In this example we use a Picker to choose how much we increment currentValue by when we tap the right and left arrows.

Set up

Introduce an Int named increment that we'll set with a Picker.

Because increment can change, it must be wrapped with @State. We initialize increment to 10.

03/06/Action/Action/ContentView.swift

```
struct ContentView {
   @State private var currentValue = 0
   @State private var increment = 10
}
```

Modify back and forward to use increment.

03/06/Action/Action/ContentView.swift

```
extension ContentView {
  private func back() {
    currentValue -= increment
  }
  private func forward() {
    currentValue += increment
  }
}
```

Run the app. The arrows should increment currentValue by 10 for now.

Add a picker

A Picker is a SwiftUI component that is bound to an Int.

We'll did into the details at the end of this chapter but for now you need to know that a property wrapper such as @State wraps a value. In the case of increment there is increment which is an Int and \$increment which in this case is a Binding<Int>.

Here's how we use it in our picker.

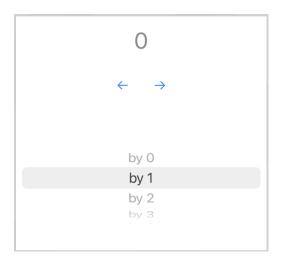
03/06/Action/Action/ContentView.swift

```
extension ContentView: View {
  var body: some View {
    VStack {
      IntDisplay(value: currentValue)
      HStack {
        SymbolButton("arrow.left",
                     action: back)
          .padding()
        SymbolButton("arrow.right",
                     action: forward)
          .padding()
      Picker("Choose the increment",
             selection: $increment){
        ForEach(0..<5) {index in
          Text("by \(index)")
        }
      .padding()
 }
```

The selection parameter is what we use to connect the Picker to the Int it is bound to. Here we pass \$increment which allows it to change the value of increment automatically.

The choices in a Picker are 0, 1, ... one less than the number of possible choices. In other words, just like the indices in an array. The ForEach returns a different View that will be presented in our Picker and for each index in that range we return a Text that contains "by" followed by the index.

The result looks like this.



Note that the row with "by 1" is selected because 1 is the default value for increment.

We need to make some changes.

Picker style

We can change the picker style from being a scroll type to a segmented button type like this.

03/06/Action/Action/ContentView.swift

```
extension ContentView: View {
 var body: some View {
    VStack {
      IntDisplay(value: currentValue)
      HStack {
        SymbolButton("arrow.left",
                      action: back)
          .padding()
        SymbolButton("arrow.right",
                      action: forward)
          .padding()
      }
      Picker("Choose the increment",
             selection: $increment){
        ForEach(0..<5) {index in</pre>
          Text("by \(index)")
        }
      .pickerStyle(SegmentedPickerStyle())
      .padding()
    }
 }
}
```

With that simple change we've dramatically changed the look. Note that "by 1" is still the initial selection.



Let's make some more changes so that our increments aren't necessarily consecutive Ints.

Improving increment

I'd like the choices for the increment to be 1, 2, 3, 5, and 10 with 1 being the default value.

Introduce an array with these values and change out bound property to be their index.

03/06/Action/Action/ContentView.swift

```
let increments = [1, 2, 3, 5, 10]
struct ContentView {
   @State private var currentValue = 0
   @State private var incrementIndex = 0
}
```

Of course we need to adjust back and forward.

03/06/Action/Action/ContentView.swift

```
extension ContentView {
  private func back() {
    currentValue -= increments[incrementIndex]
  }
  private func forward() {
    currentValue += increments[incrementIndex]
  }
}
```

Finally, we need to adjust our Picker. It is now bound to incrementIndex, the range is defined to be the indices or the array,

and the displayed value for each button is the corresponding element of the array.

03/06/Action/Action/ContentView.swift

```
extension ContentView: View {
  var body: some View {
    VStack {
      IntDisplay(value: currentValue)
      HStack {
        SymbolButton("arrow.left",
                     action: back)
          .padding()
        SymbolButton("arrow.right",
                     action: forward)
          .padding()
      }
      Picker("Choose the increment",
             selection: $incrementIndex){
        ForEach(increments.indices) {index in
          Text("by \(increments[index])")
        }
      .pickerStyle(SegmentedPickerStyle())
      .padding()
    }
  }
}
```

The labels for the picker and how it is used changes. Underneath the values for each selection is still 0..<5, we've just changed their effect on the app.



Run the app and use the picker to choose the value by which we increment and everything works as it should.

In the next section let's extract our Picker and explore another example of bindings.