Programmierung in iOS mit Swift Studiengang MI

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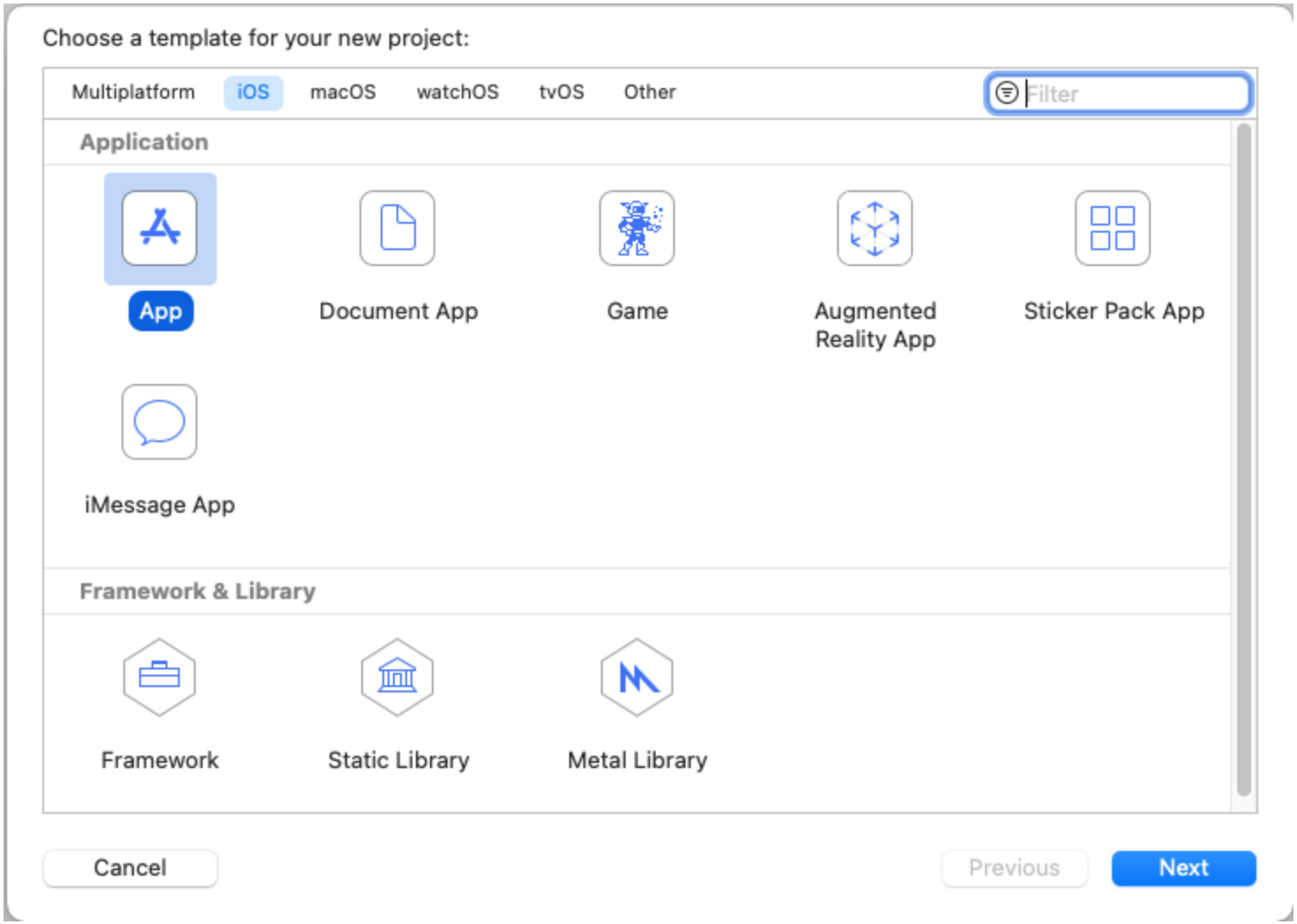
Gliederung

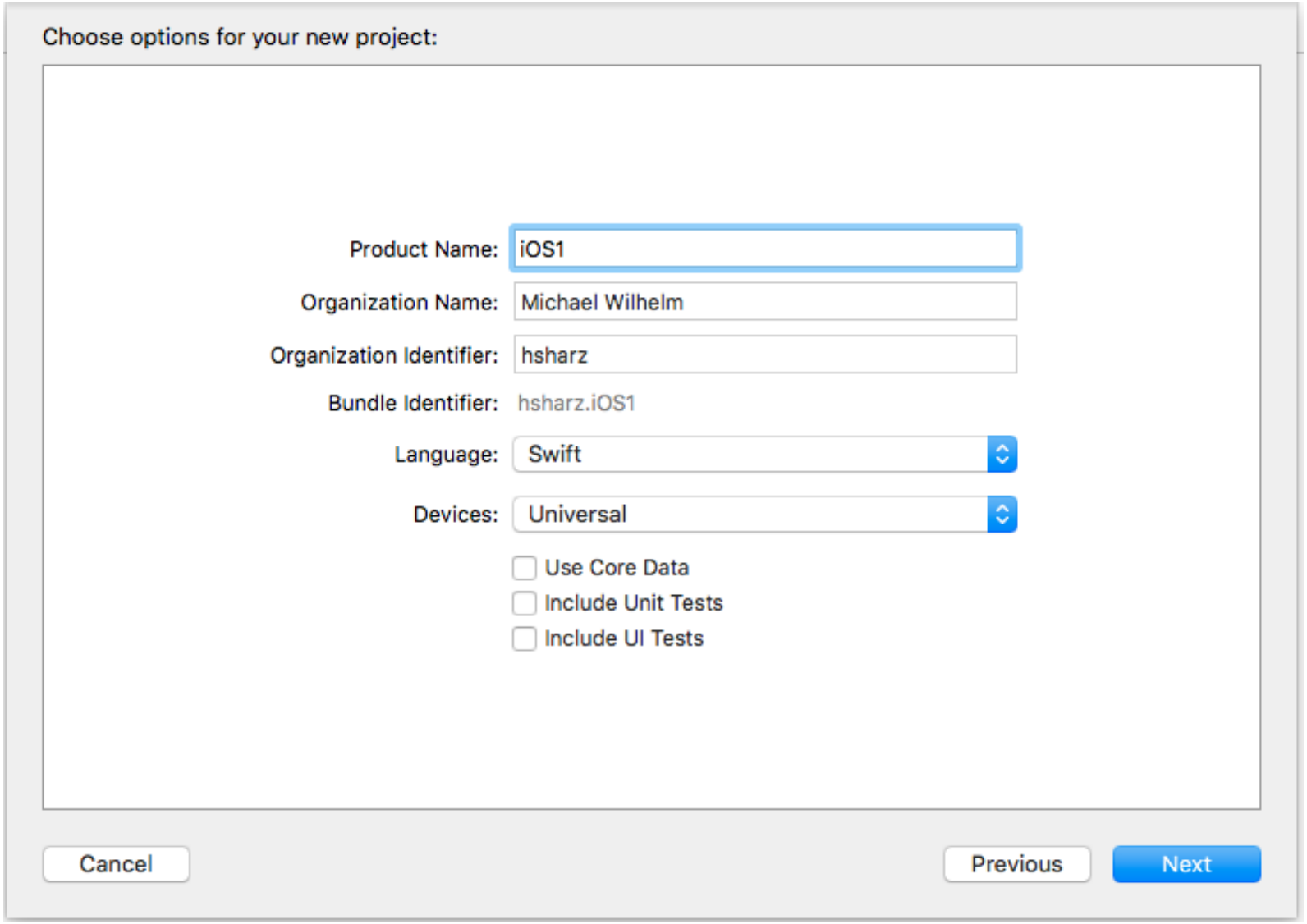
Überblick:

- Einleitung, Geschichte, xcode
- **Sprache**
- **Playground**
- **Grafische Oberfläche**
  - Projekt erstellen
  - UI erstellen
  - UI-Elemente
  - UI-Variablen
  - Action-Methoden (onClick-Events)
  - **Layout-Typen**
  - Core-Daten
  - Sensoren

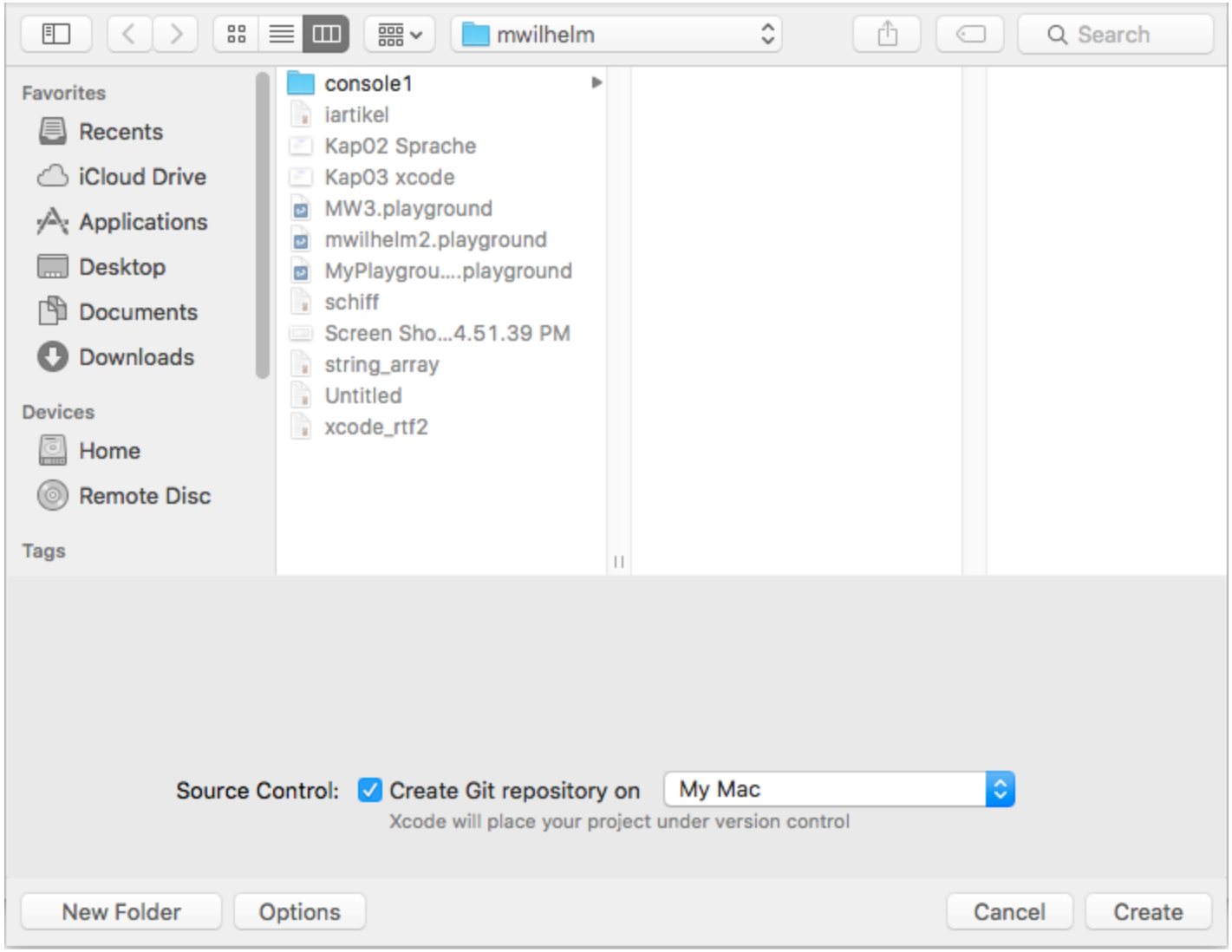
Projekt erstellen: Single View Application



Projekt erstellen: Projektdaten



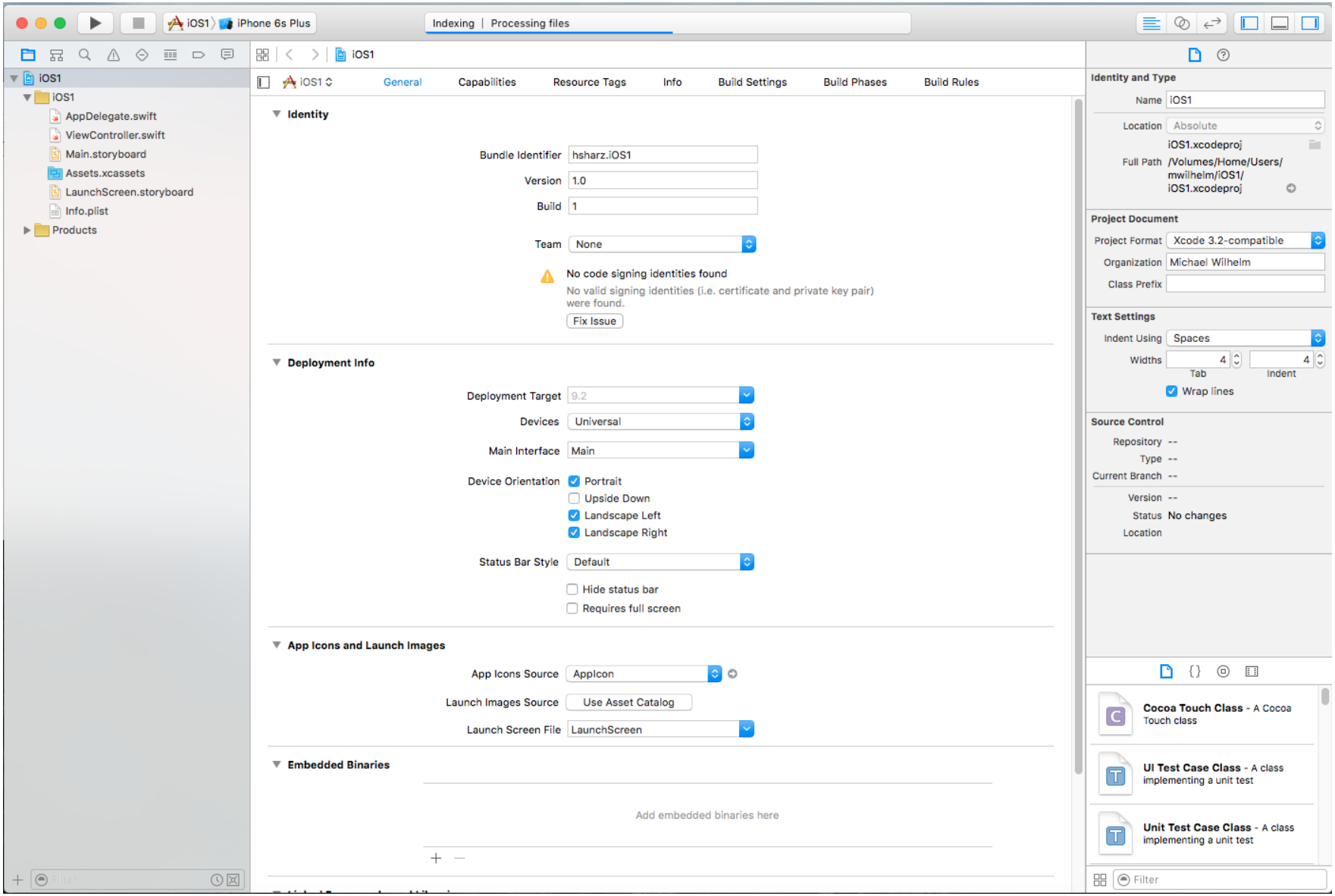
Projekt erstellen: Speicherort



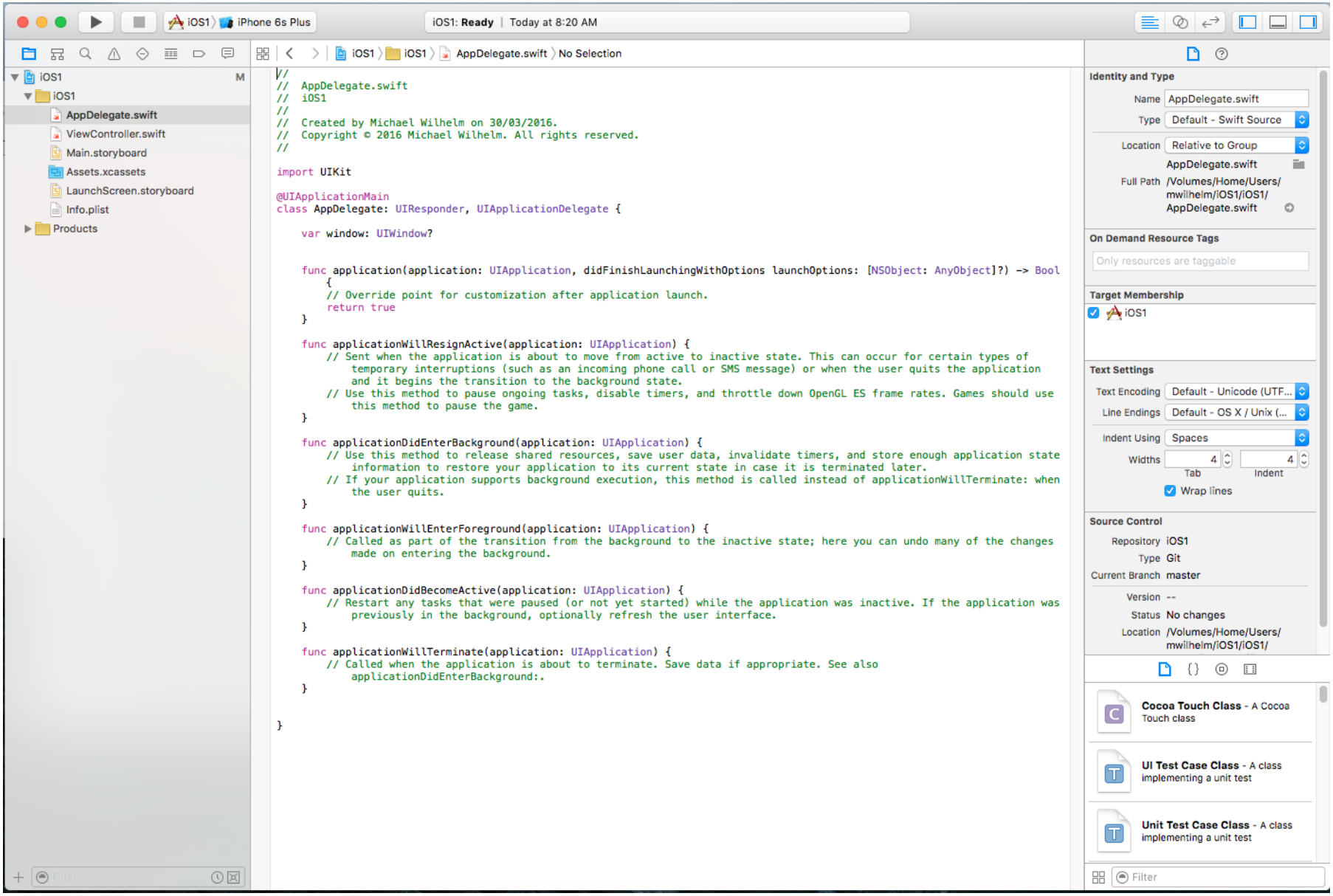
Projektdateien

- AppDelegate.swift
  - Startpunkt der App
- ViewController.swift
  - Beinhaltet den Swift-Code eines UI-Views
- Main.storyboard
  - Verwaltet den View oder die Views, „Controller“
  - Hier kann man die UI-Elemente Einfügen und Bearbeiten
- Assets.xcassets
  - Verwaltet die Logos, Symbole
- LaunchScreen.storyboard
  - Startfenster, Startlogos
  - Localisation, mehrere Sprachen
- Info.pList
  - Property List Files, auch als Speicherung eigener Daten

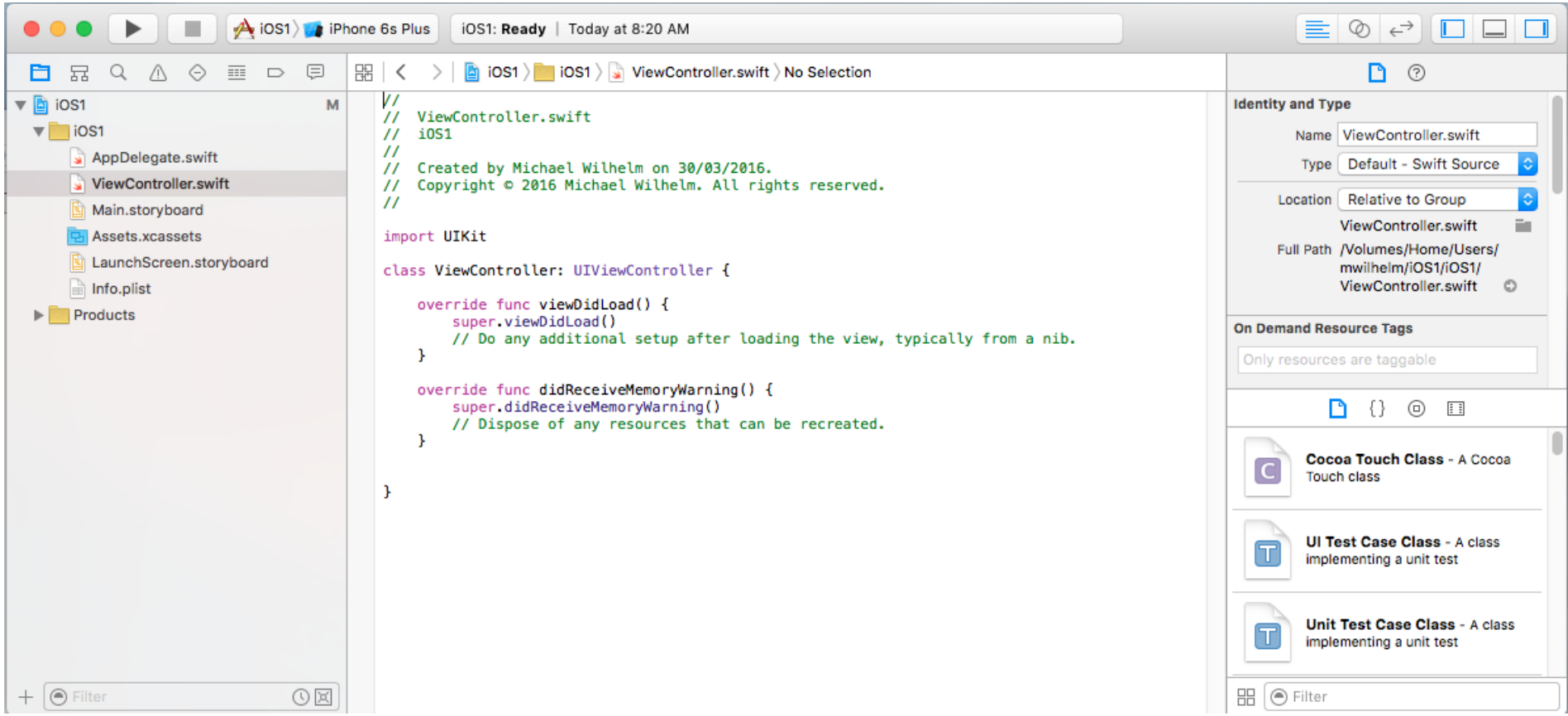
Projekt in xcode: IDE



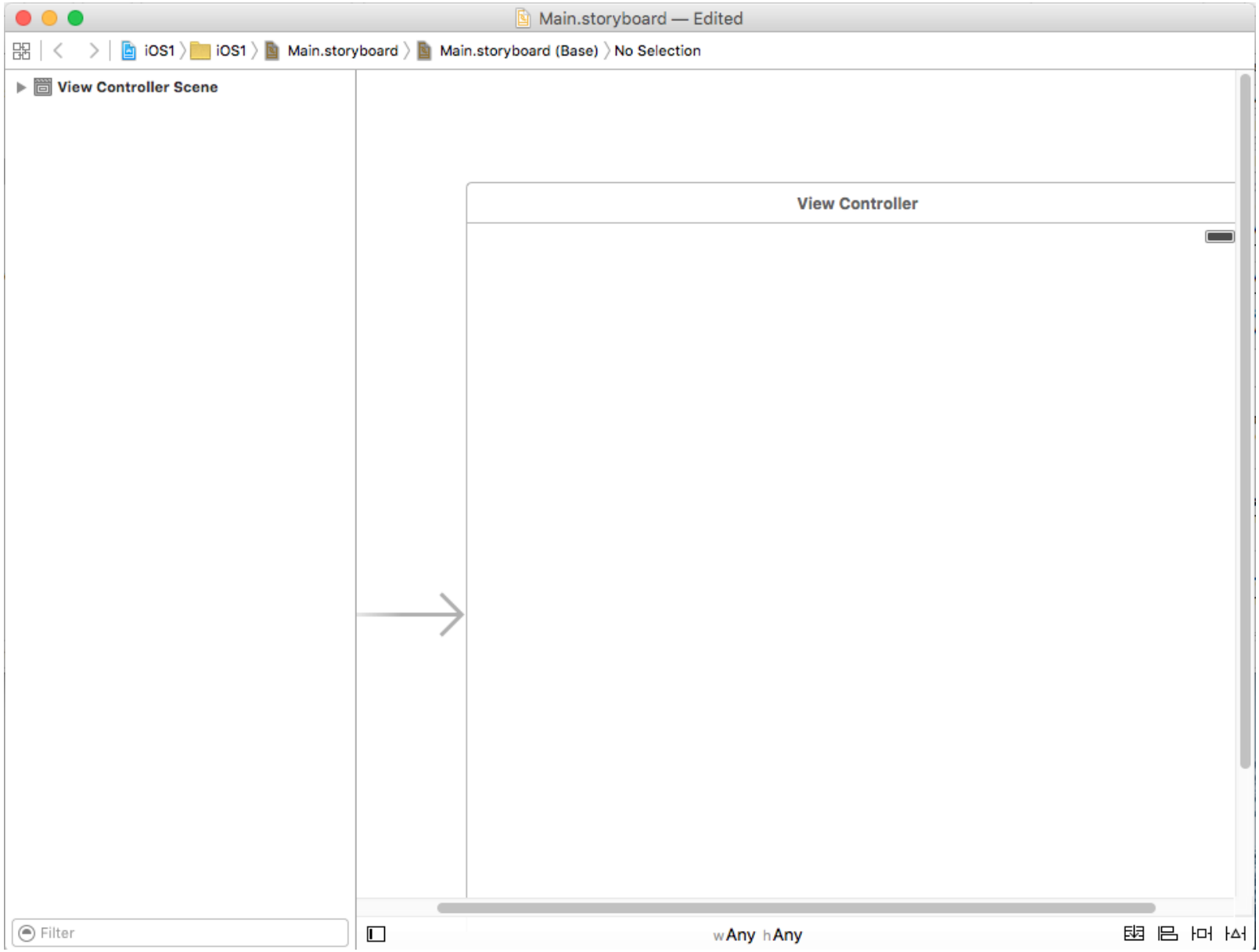
Projekt in xcode: IDE



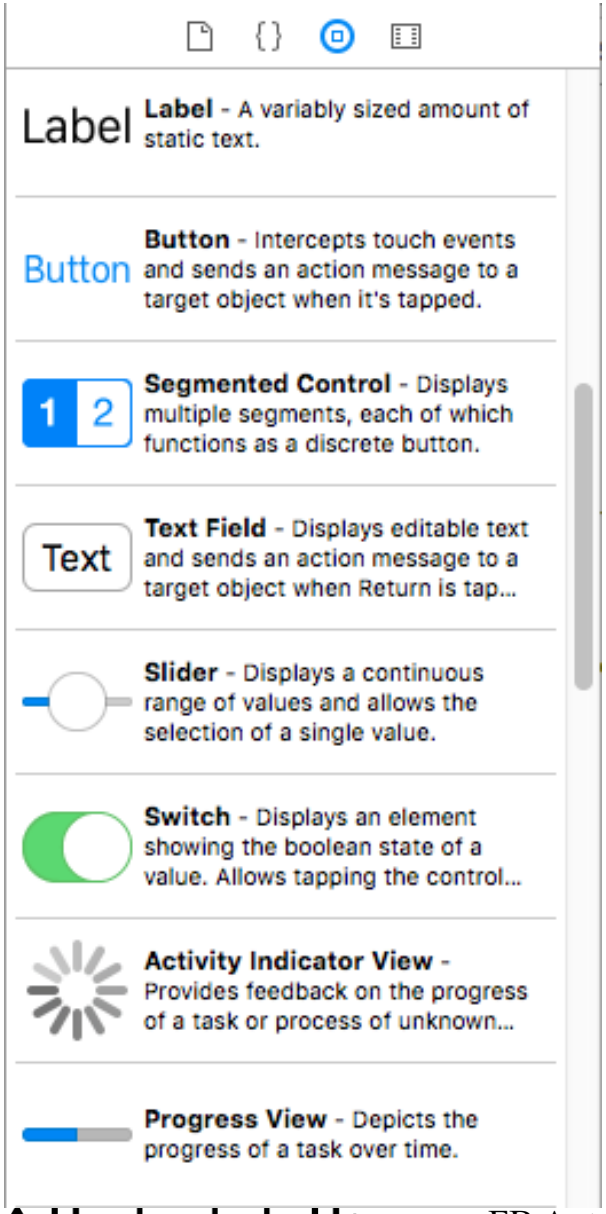
Projekt in xcode: IDE



UI-Oberfläche in xcode: UI-View (noch leer)

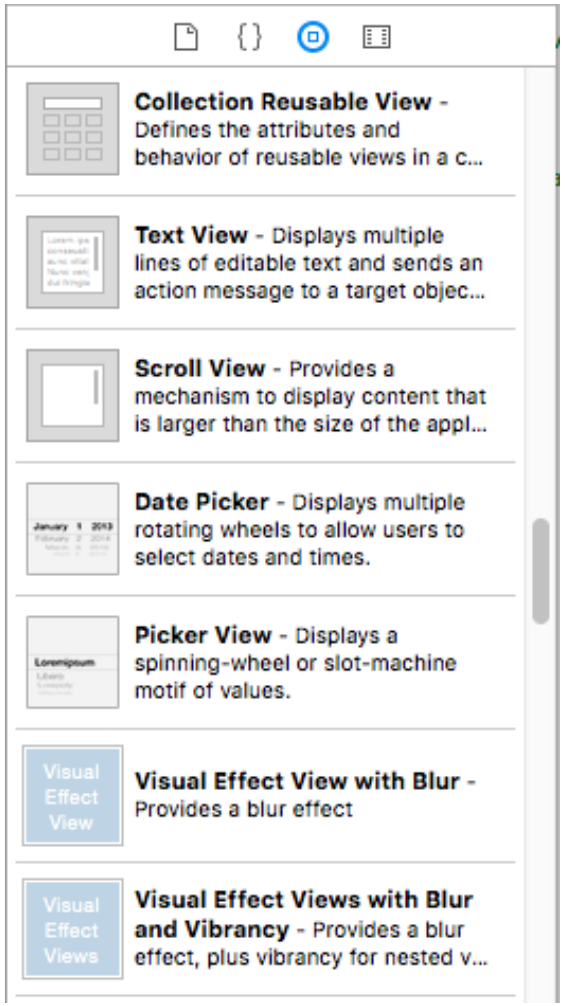


UI-Elemente in xcode: Shift-Cmd+L



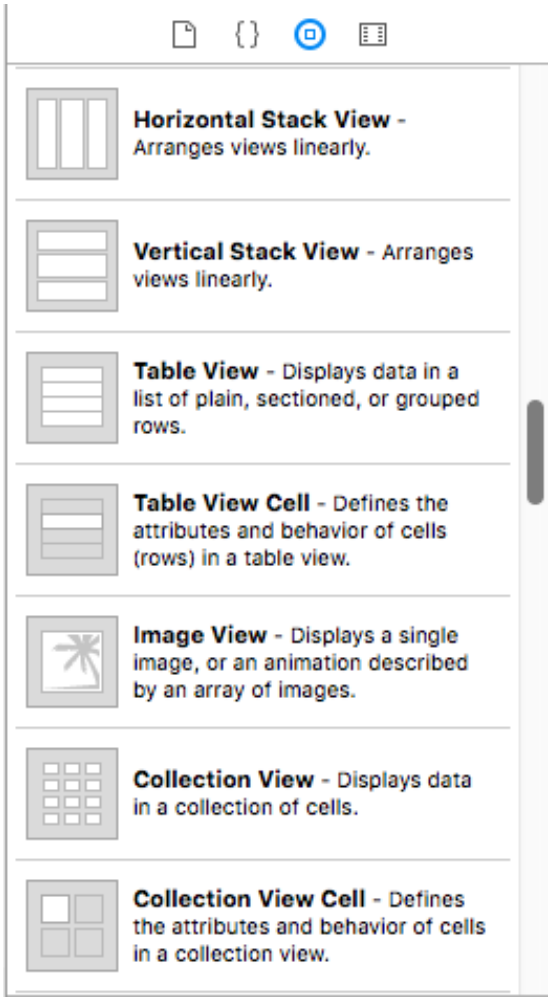
- Label
  - Anzeige von Texten, readonly
- Button
  - onClick-Event
- Segmented Control
  - Mehrere Schalter in einem „JPanel“ (RadioButton)
- Text
  - Texteditor, zeilenweise
- Slider
  - Auswahl aus einem Bereich
- Switch
  - Schalter, Anzeige eines Zustandes (An,Aus)
- Activity Indicator
  - „Ich habe zu tun“
- Progress View
  - Progressbar, Fortschrittsbalken, 0,0 bis 1,0

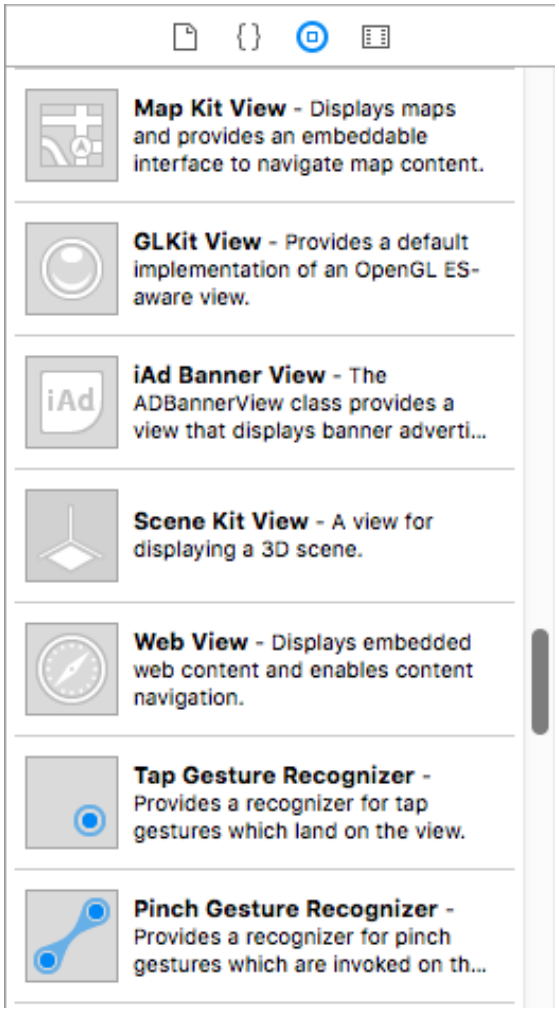
UI-Elemente in xcode: Shift-Cmd+L

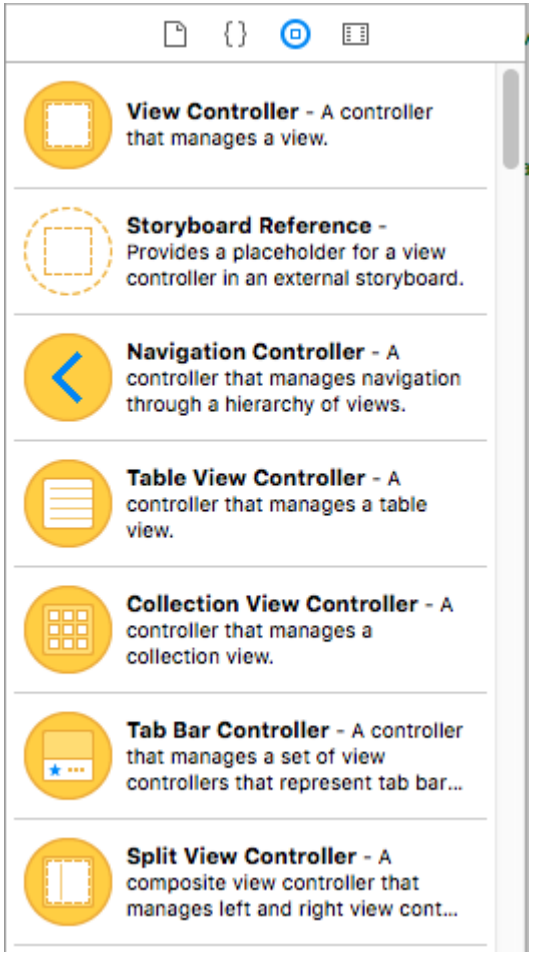


- Text View
  - Texteditor, mehrere Zeilen
- Scroll View
  - Erlaubt das UI-Element zu scrollen
- Date Picker
  - Datum auswählen
- Picker View
  - Jlist aus Java, eine Auswahl aus einer Liste
  - Benutzt einen Delegate, Konstruktor
- Stepper
  - Schalter + und –
- Table View Controller, JTable
- Tab Bar Controller
- SplitView, JPlitPane
- ImageView
- WebView

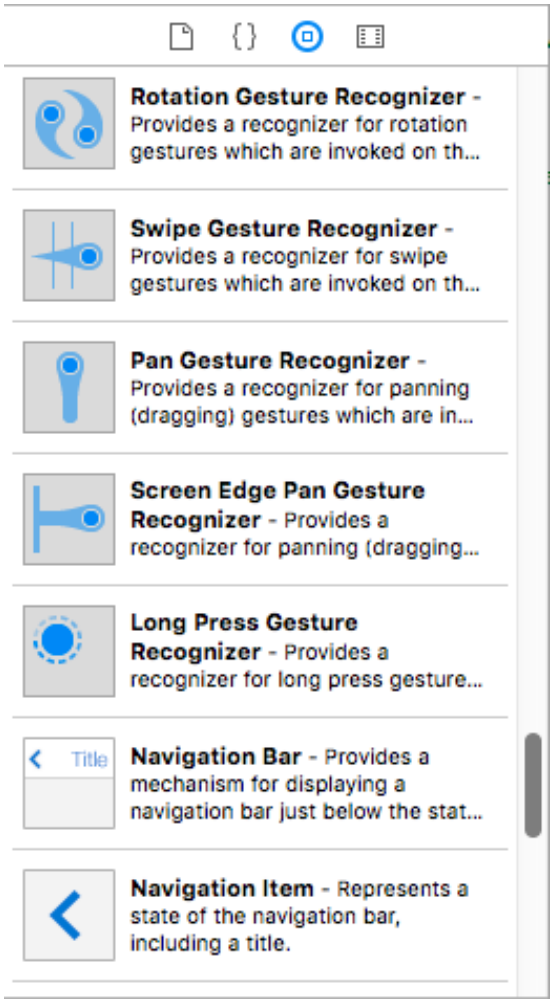
UI-Elemente in xcode: Shift-Cmd+L

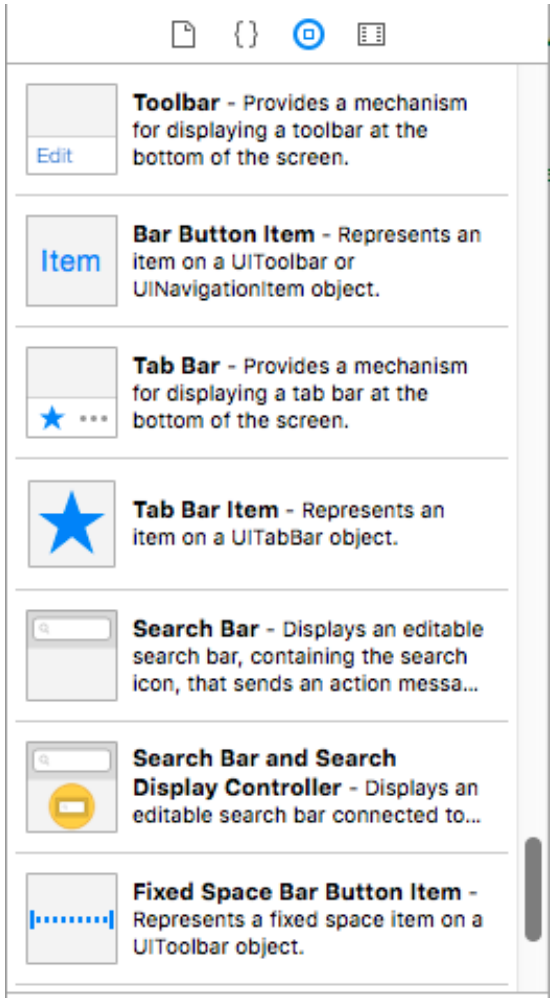


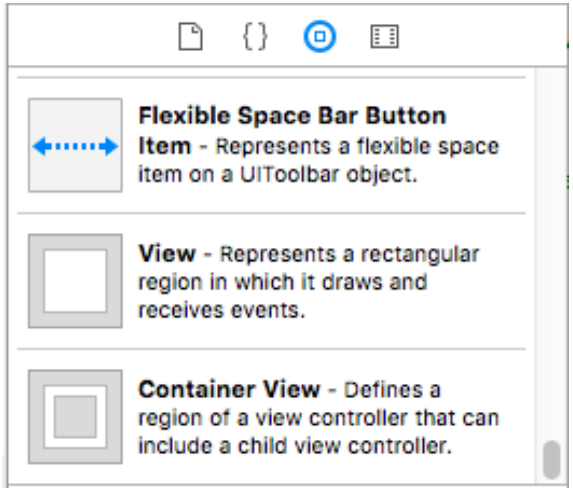


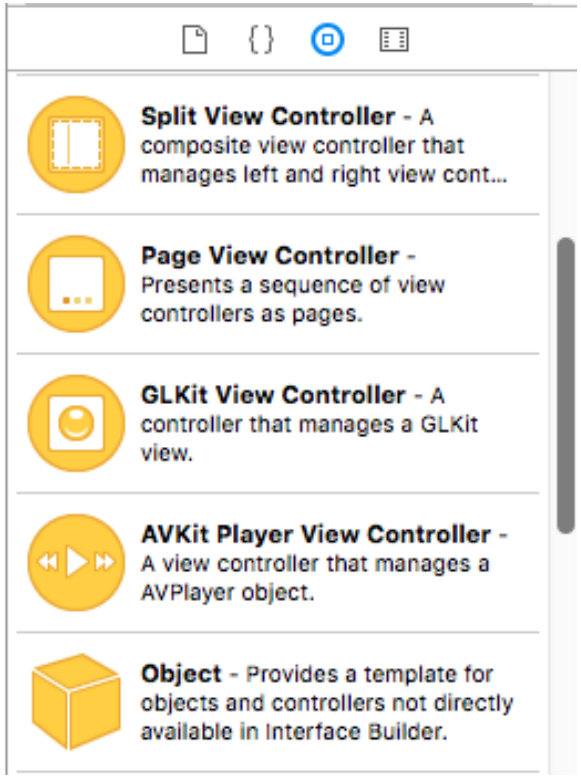


UI-Elemente in xcode

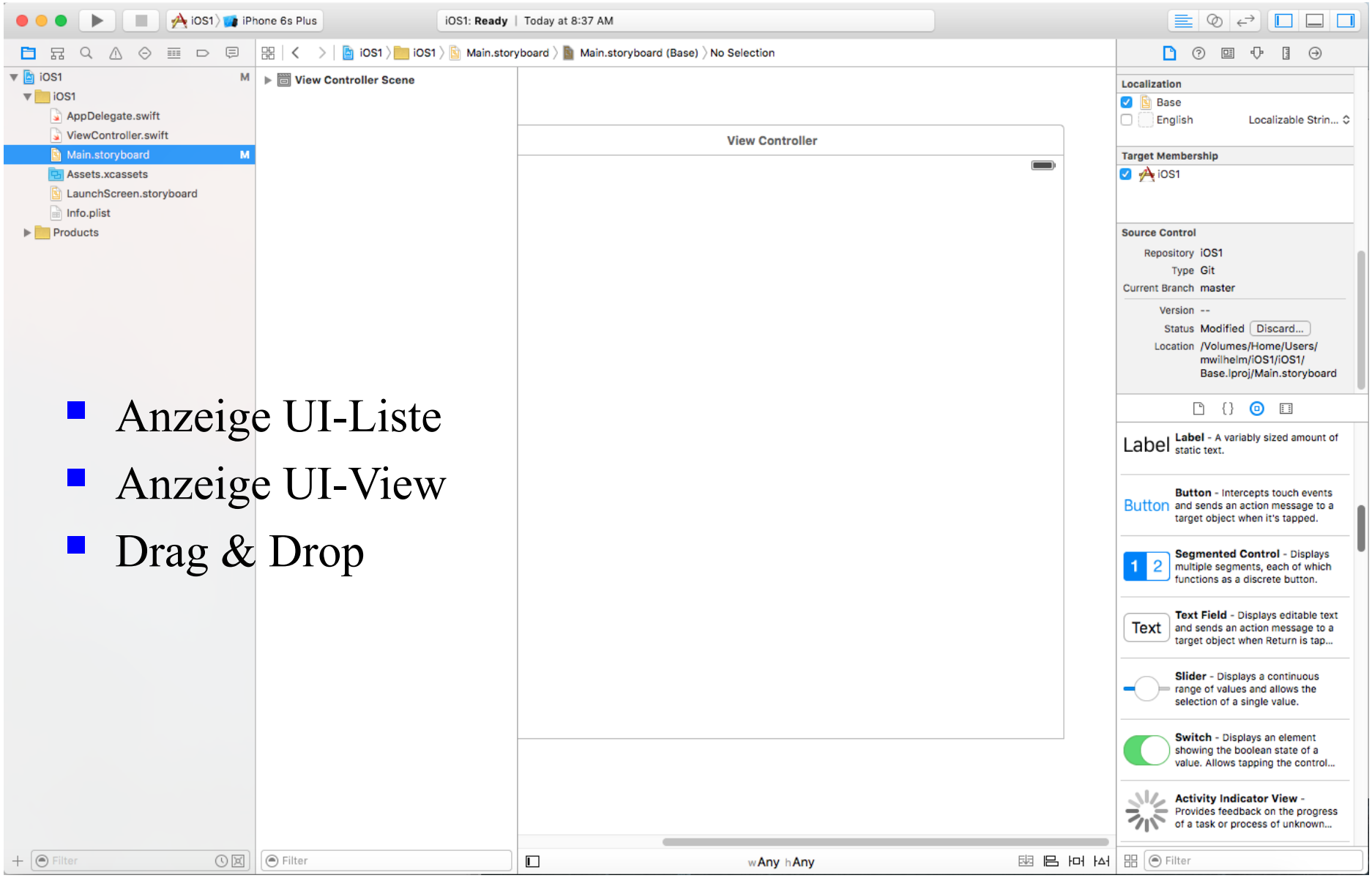








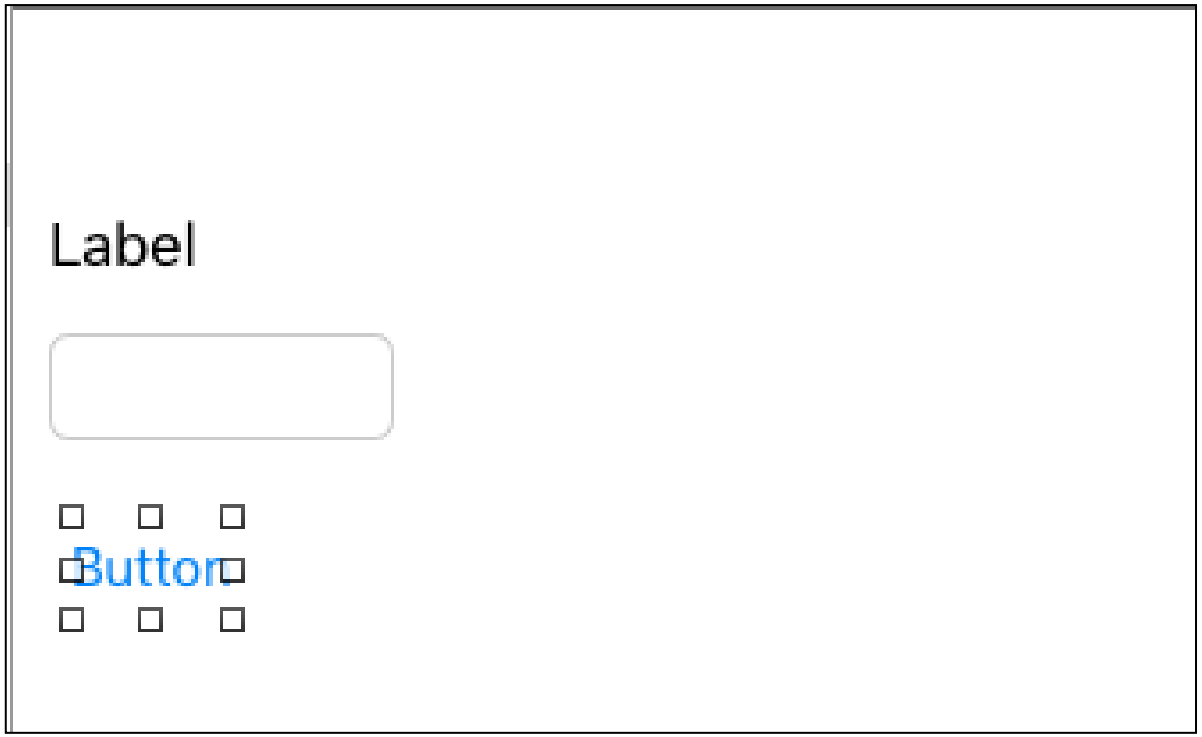
UI-Elemente in den UI-View eintragen



- Anzeige UI-Liste
- Anzeige UI-View
- Drag & Drop

UI-Elemente in den UI-View eintragen

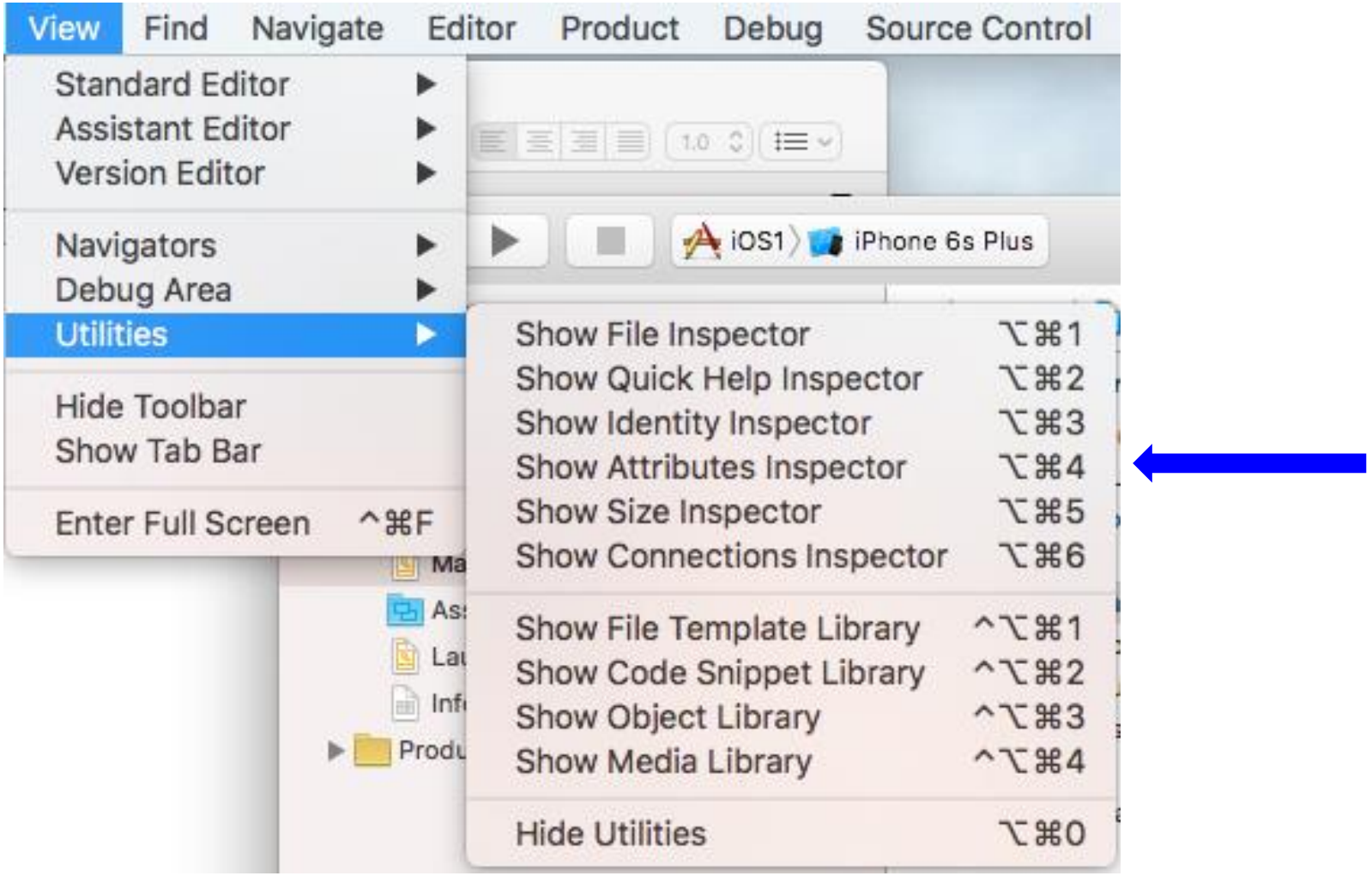
- UI-Elemente mittels Drag & Drop einfügen
- Hier noch ohne Layout



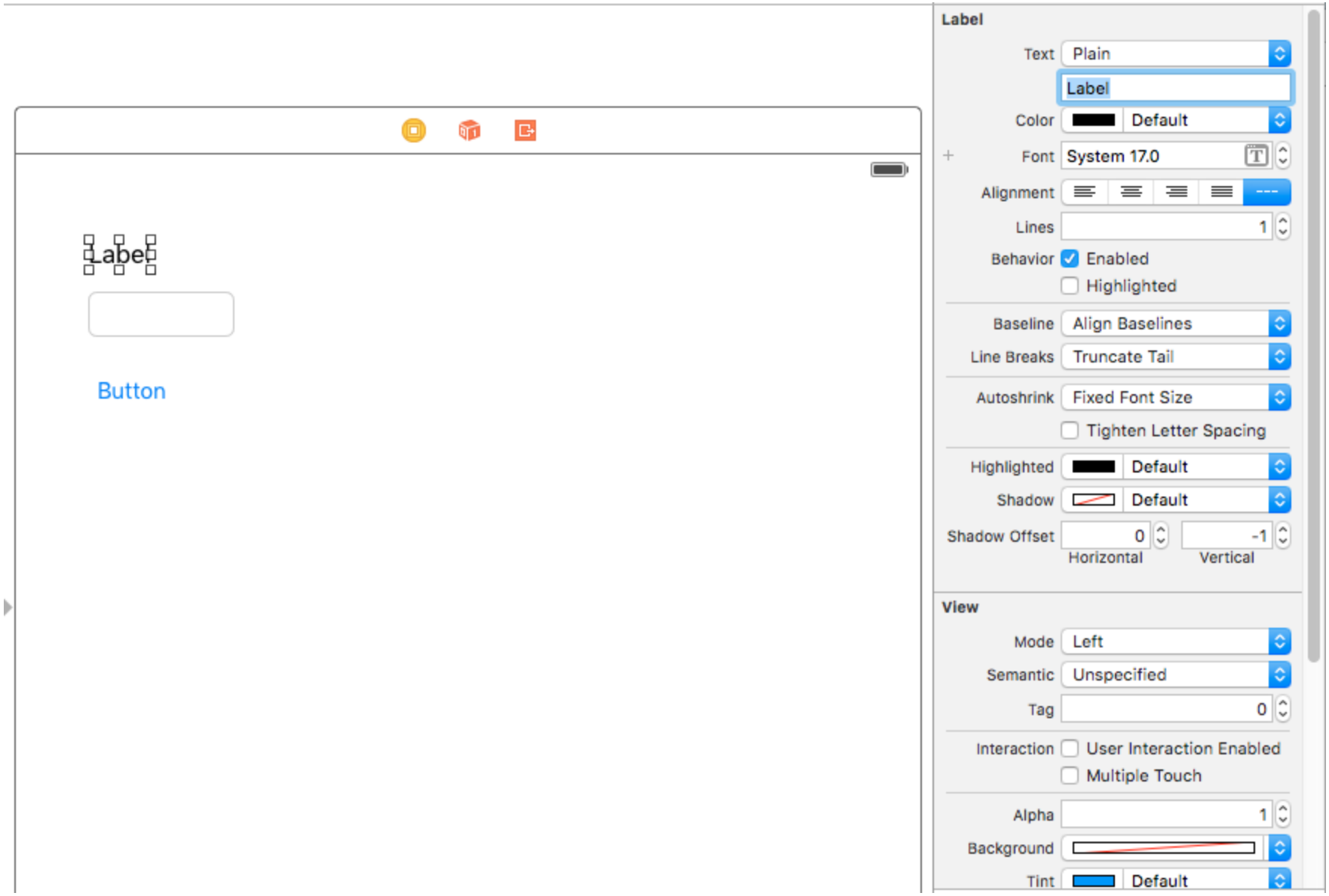
Zielgerät


Select Next Destination ^⌥⌘]
Select Previous Destination ^⌥⌘[
Device
No devices connected to 'My Mac'...
Build Only Device
Generic iOS Device
iOS Simulators
iPad 2
iPad Air
iPad Air 2
iPad Pro
iPad Retina
iPhone 4s
iPhone 5
iPhone 5s
iPhone 6
iPhone 6 Plus
iPhone 6s
iPhone 6s Plus
Add Additional Simulators...

UI-Elemente ändern: Show Attributes Inspector

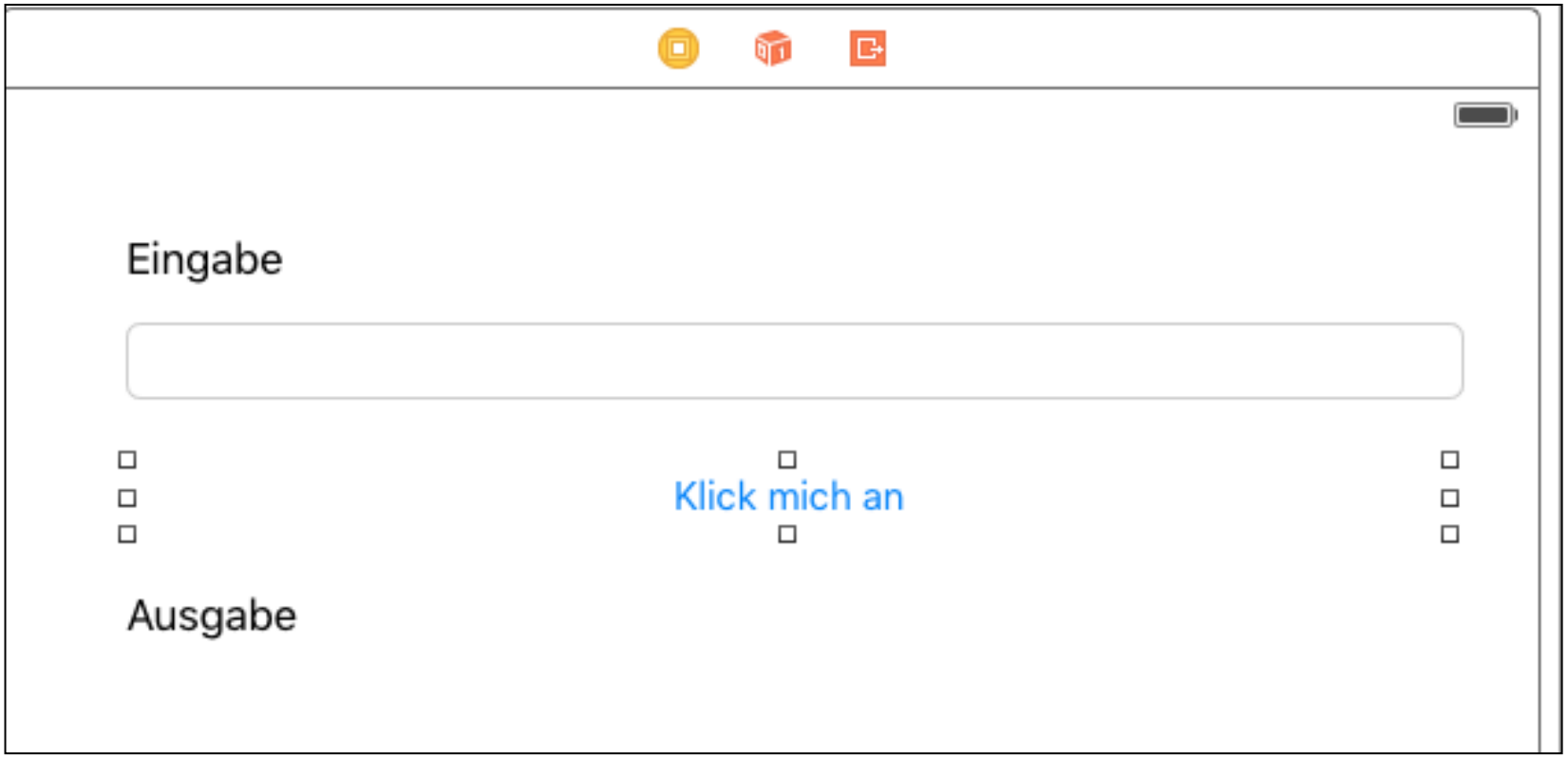


Attribute in UI-Elemente ändern: Name später!

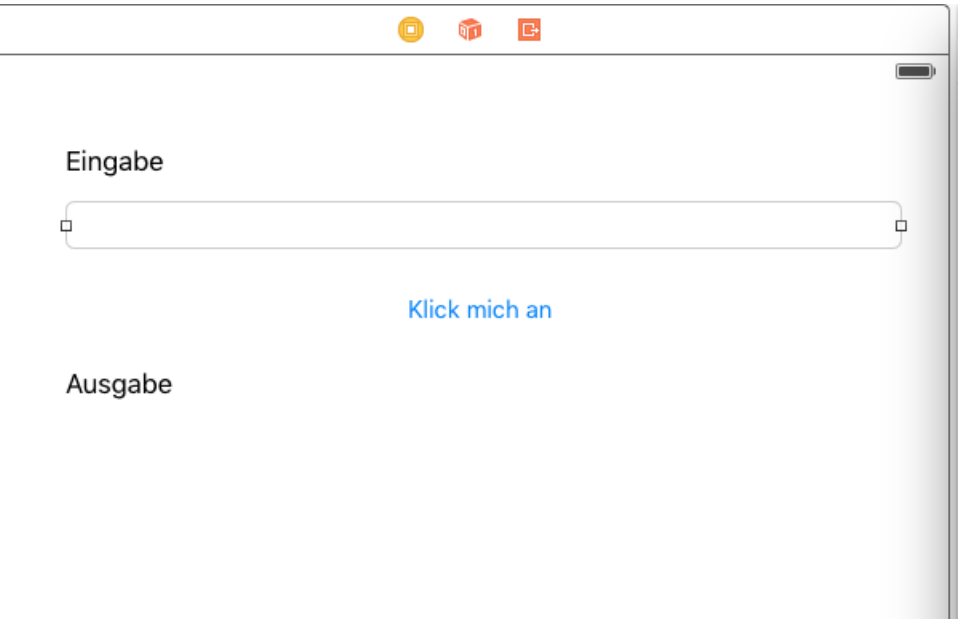


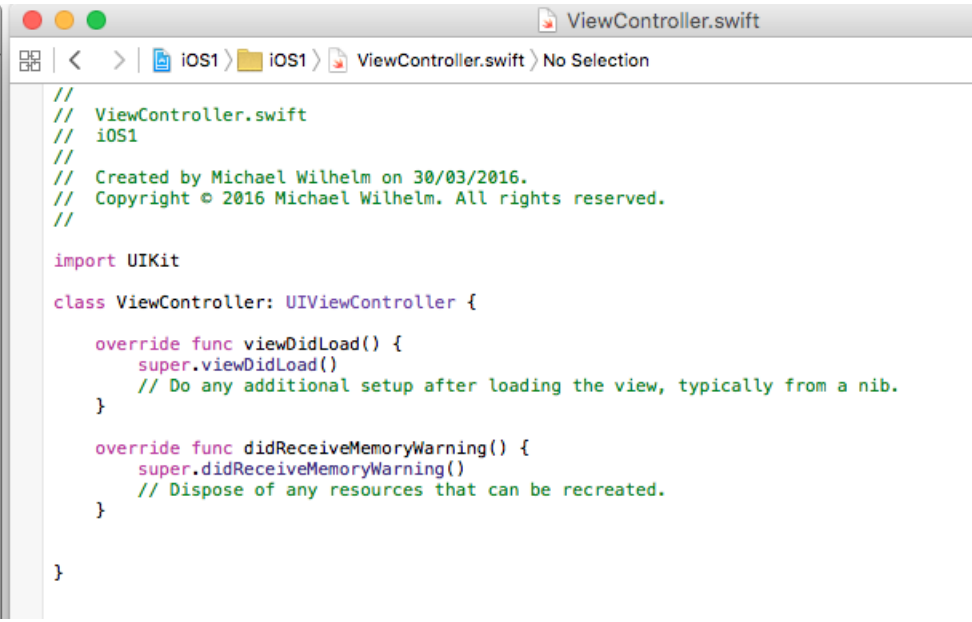
Ändern der Größe / Positionen der UI-Elemente

- UI-Elemente mittels Maus verschieben
- UI-Elemente mittels Maus verkleinern, vergrößern



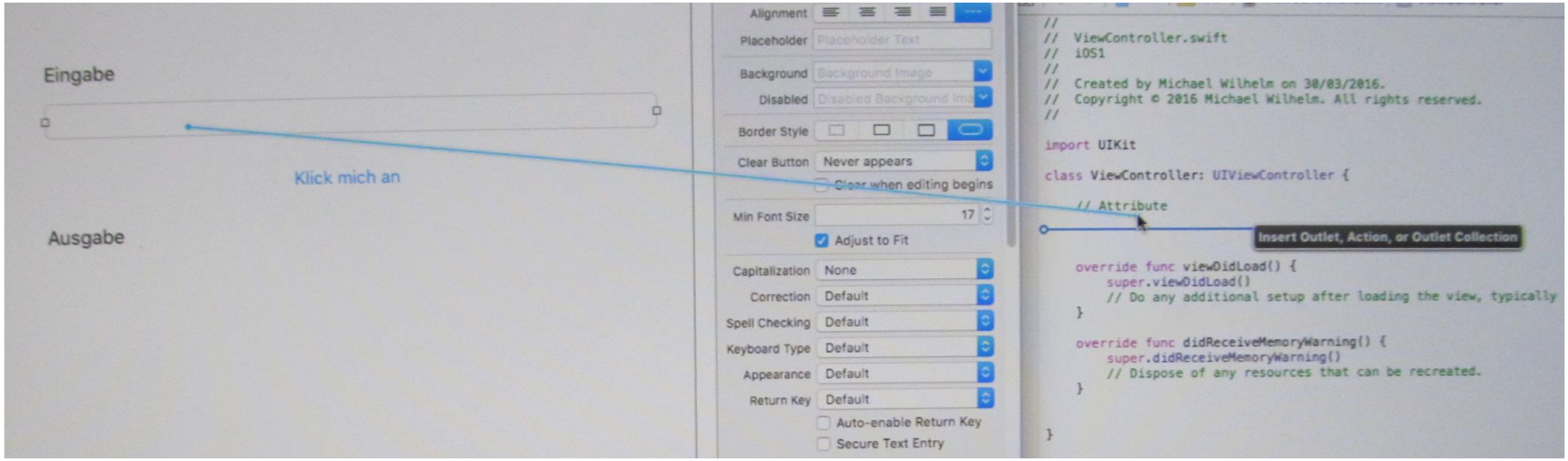
Referenz eines UI-Element in den Quellcode eintragen

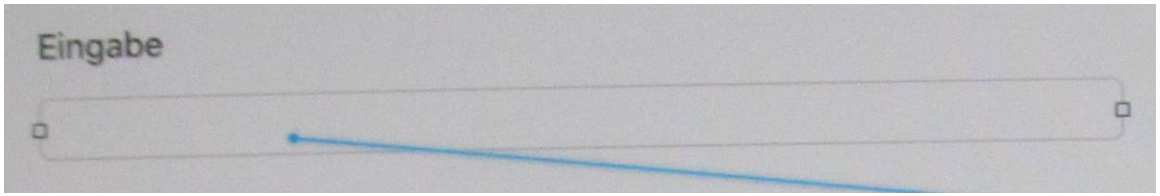


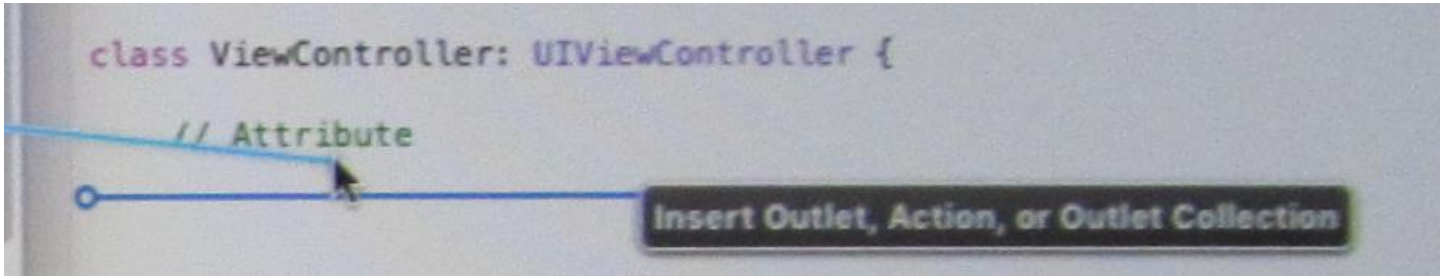


- View und Editor müssen sichtbar sein
- CTRL-Taste drücke
- Linke Maustaste drücken und zum Editor verschieben
- Oben, nach class { „einfügen“

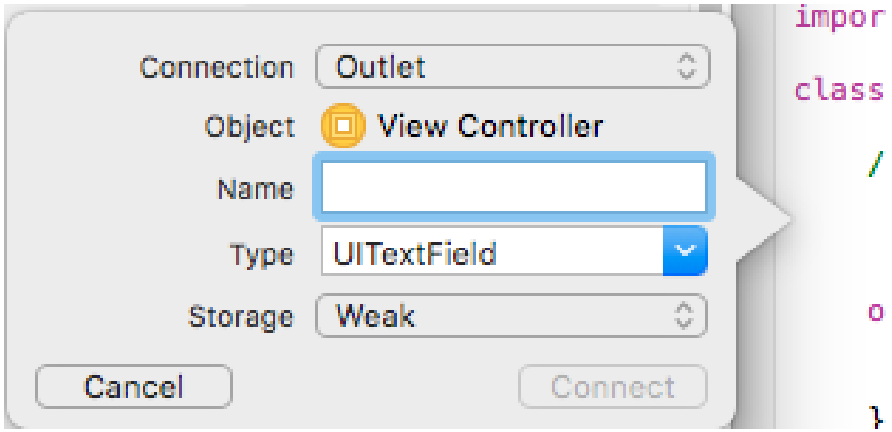
Referenz eines UI-Element in den Quellcode eintragen

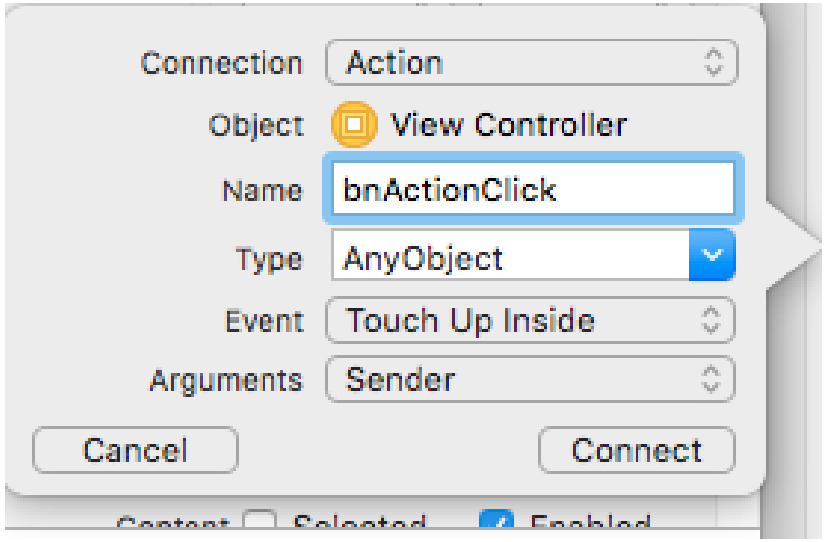


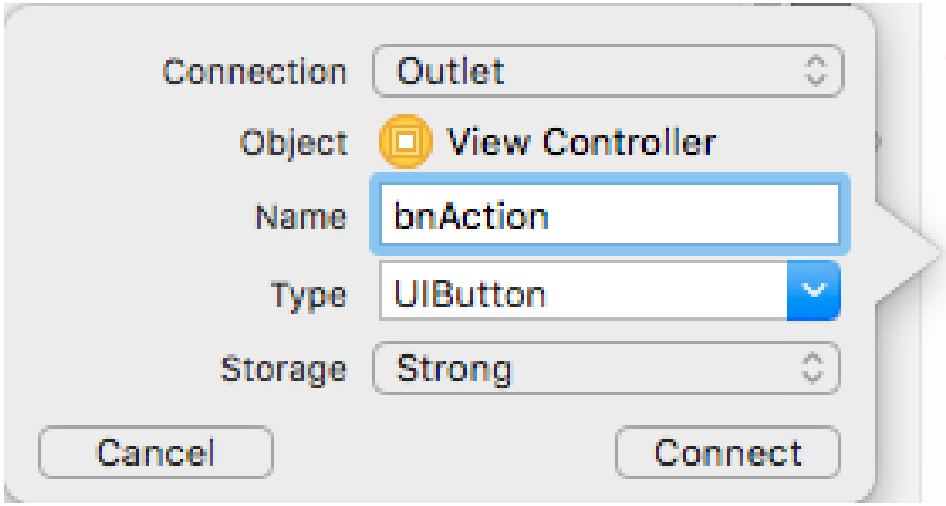


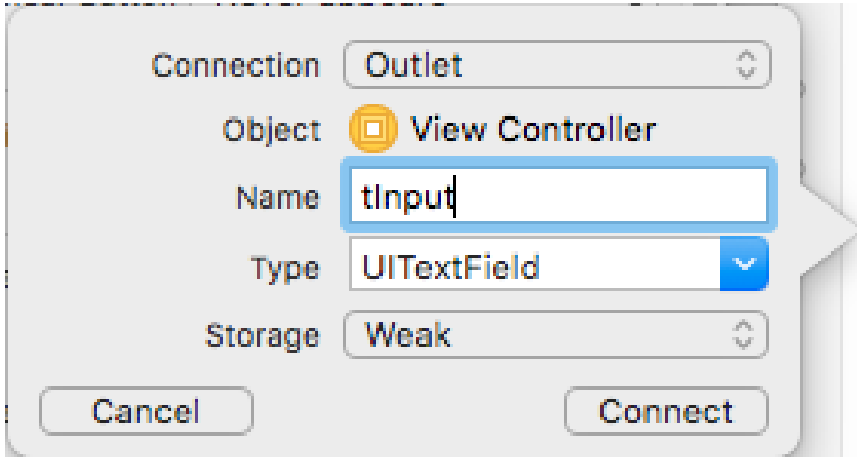


Eintragen der Details des Quellcodes





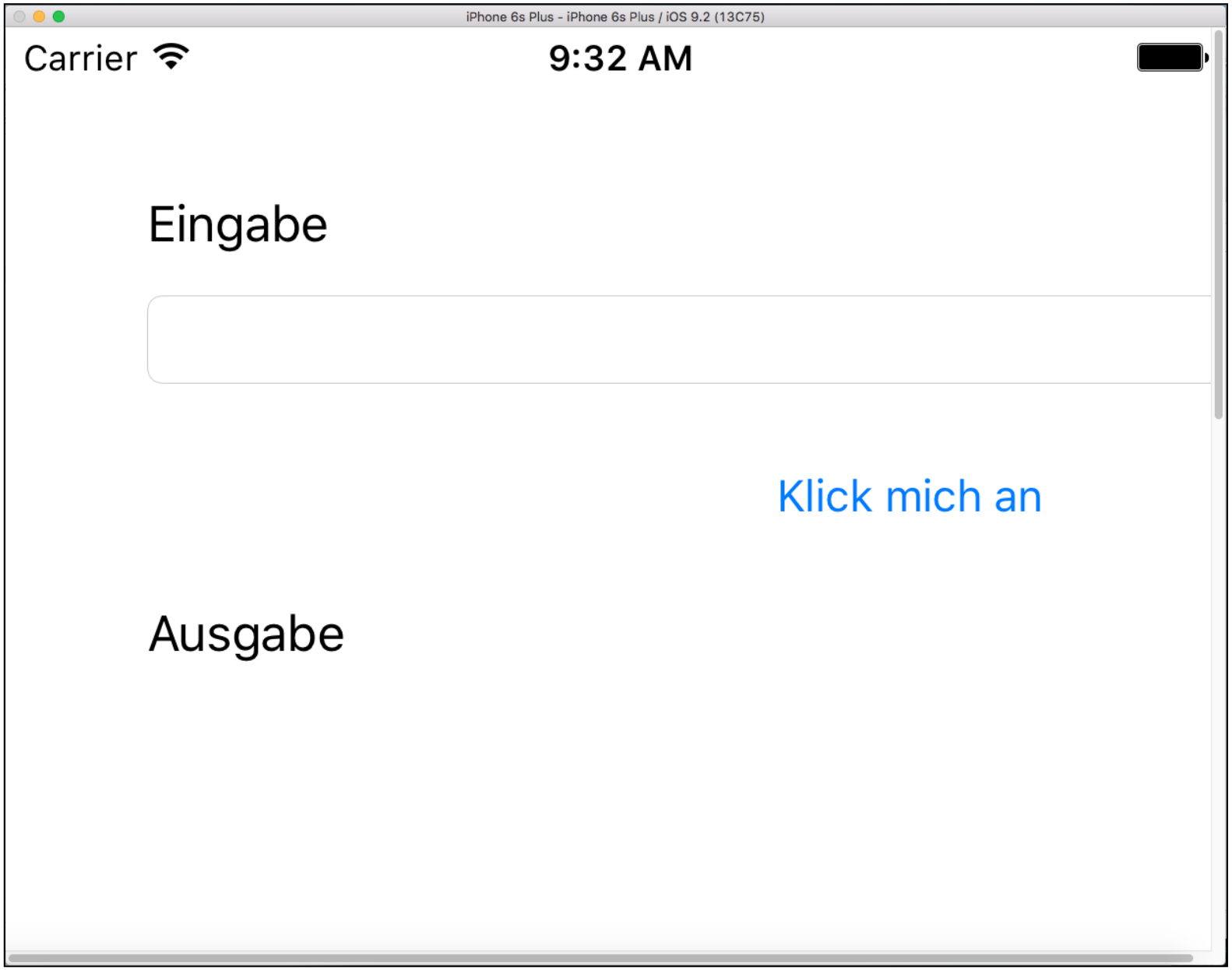


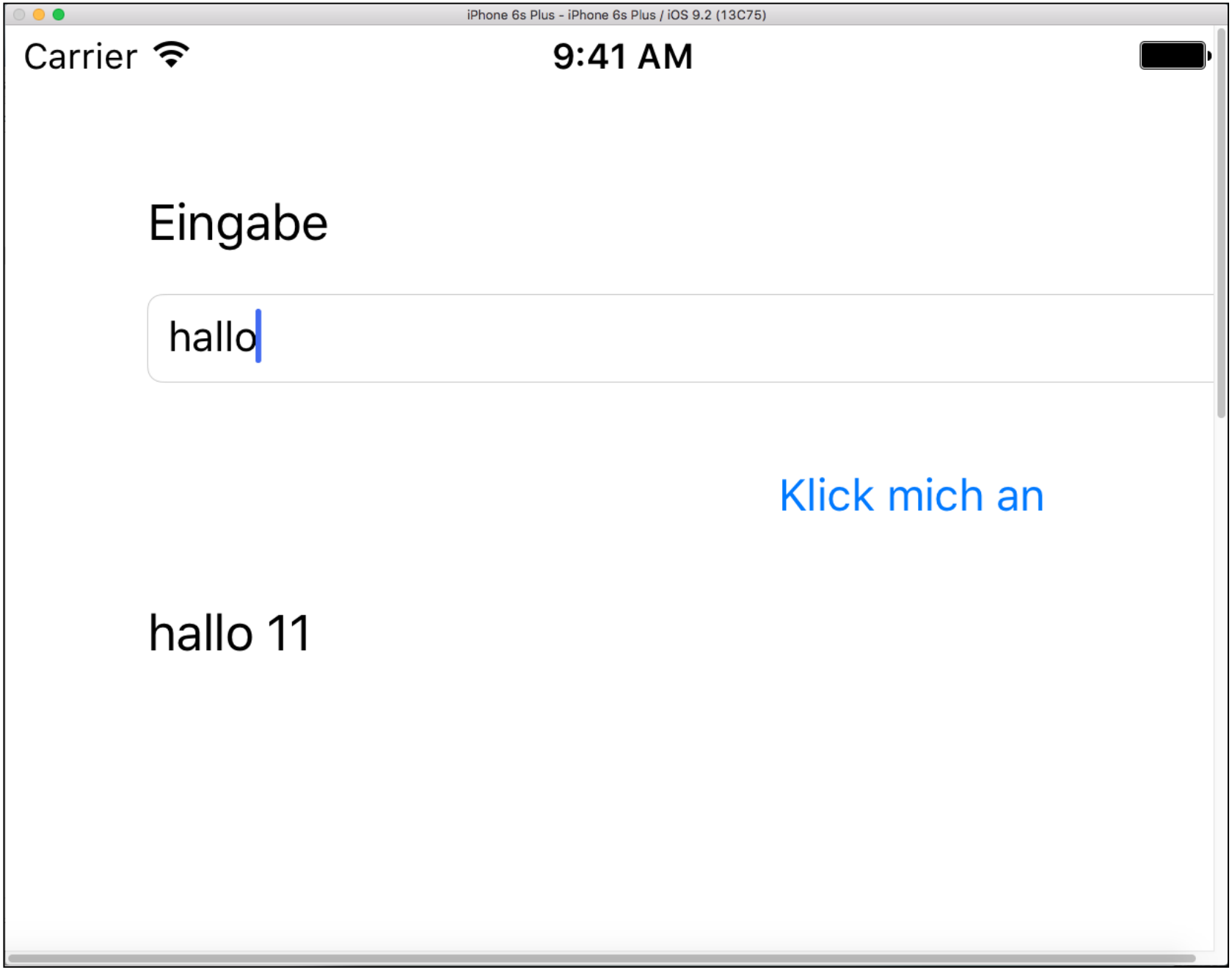


ViewController.swift: class ViewController: UIViewController {

```
// Attribute
var nr:Int32=0
@IBOutlet var bnAction: UITextField!
@IBOutlet var tInput: UITextField!
@IBOutlet var lblOutput: UILabel!
override func viewDidLoad() {      }
override func didReceiveMemoryWarning() {     }

@IBAction func bnActionClick(sender: AnyObject) {
    nr++
    let input:String=tInput.text!
    self.lblOutput.text=input+" "+String(nr)
}
}
```

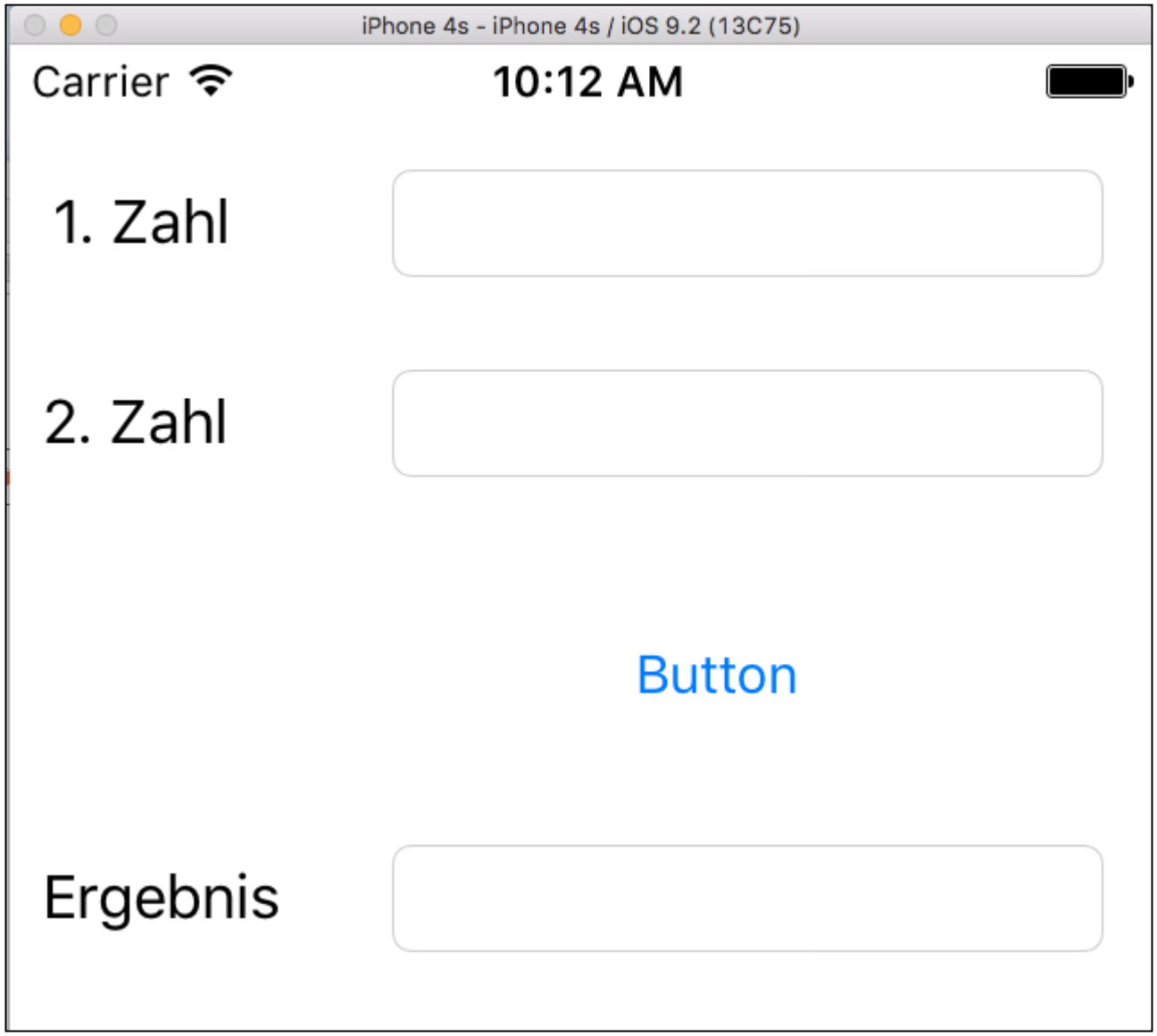

iPhone 6s Plus - iPhone 6s Plus / iOS 9.2 (13C75)
Carrier
9:32 AM
Eingabe
Klick mich an
Ausgabe

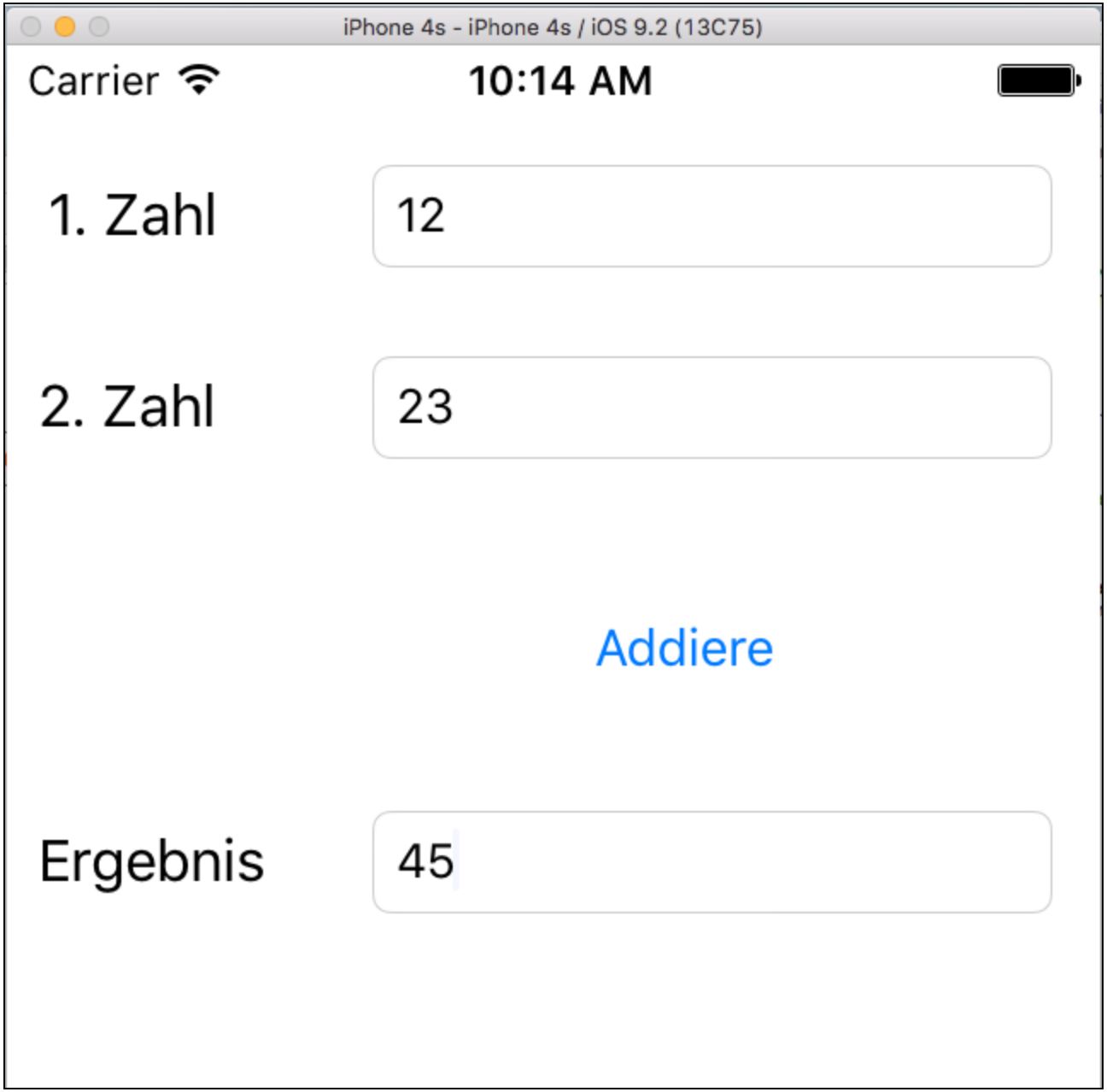

iPhone 6s Plus - iPhone 6s Plus / iOS 9.2 (13C75)
Carrier
9:41 AM
Eingabe
hallo
Klick mich an
hallo 11

1. UI-Aufgabe

- Taschenrechner
  - add
- UI-Elemente
  - Label 1. Zahl
  - TextField 1. Zahl, uiAttribut
  - Label 2. Zahl
  - TextField 2. Zahl, uiAttribut
  - Button
  - Label Ergebnis
  - TextField Ergebnis, uiAttribut
- Methoden
  - bnActionClick

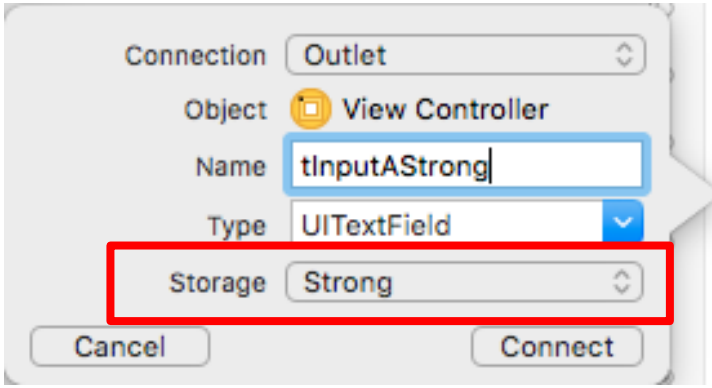
1. UI-Aufgabe: Taschenrechner

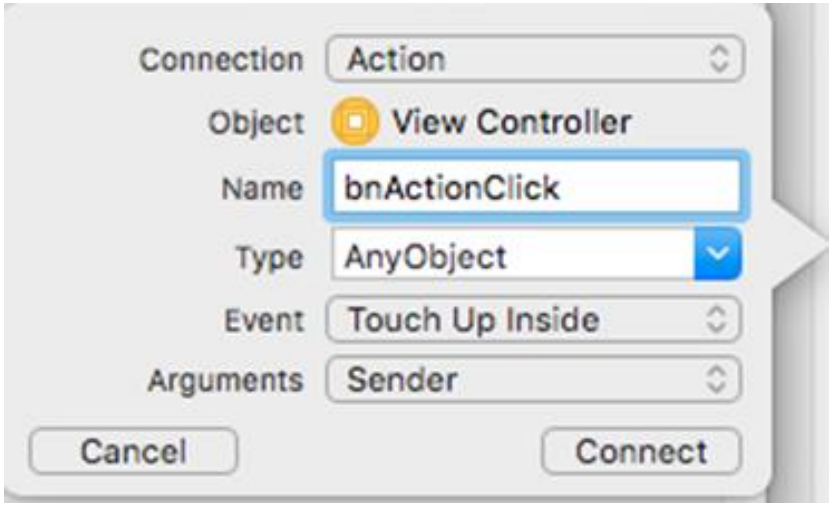



iPhone 4s - iPhone 4s / iOS 9.2 (13C75)
Carrier
10:14 AM
1. Zahl
12
2. Zahl
23
Addiere
Ergebnis
45

1. UI-Aufgabe

- UI-Elemente in den View eintragen
  - UI-Elemente als Referenz eintragen
- Button-Event eintragen

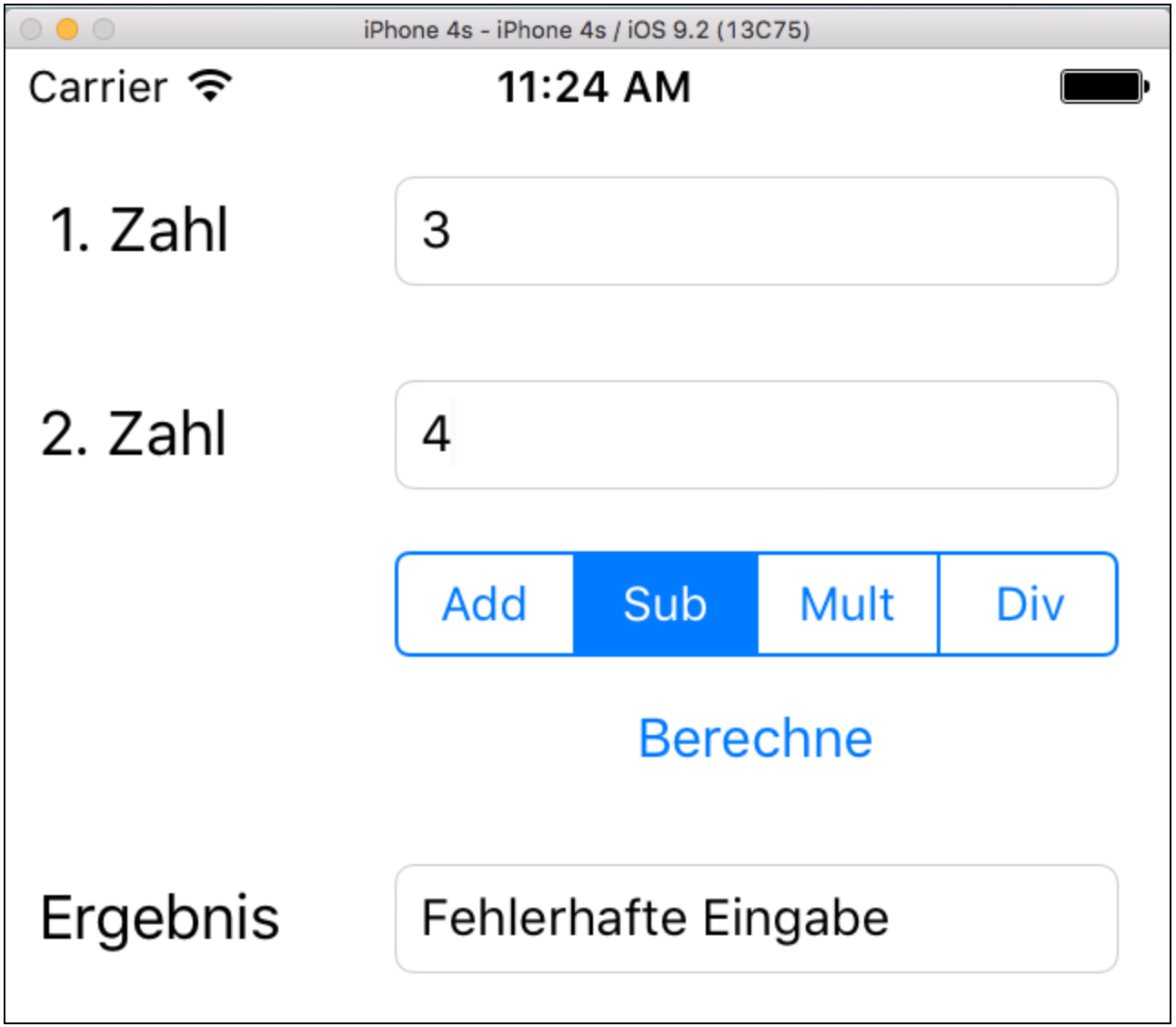




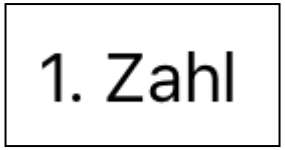
1. UI-Aufgabe: Ablauf

- Ausgabe eines Textes in der Event-Methode
  - tOutputCStrong.text!="Hallo"
- Auswerten der Eingangsdaten
  - let sA:String = tInputAStrong.text!
- Ausgabe
  - tOutputCStrong.text!=String(c)

1. UI-Aufgabe: Erweiterung mit ein SegmentedControl



UI-Element UILabel

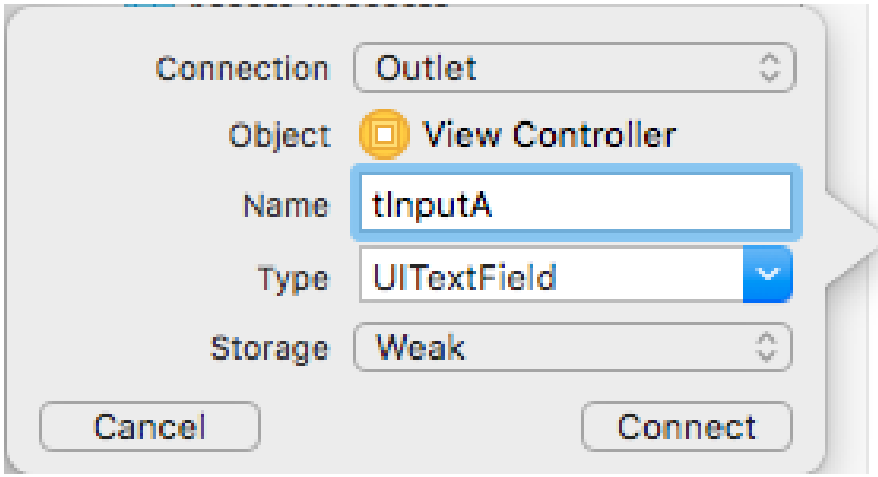


- Attribute
  - text
  - font, size etc.
- Methoden
  - keine

UI-Element UITextField

- Attribute
  - text
  - font, size etc.
- Methoden
  - ValueChanged

Eintragen als Referenz (strong)



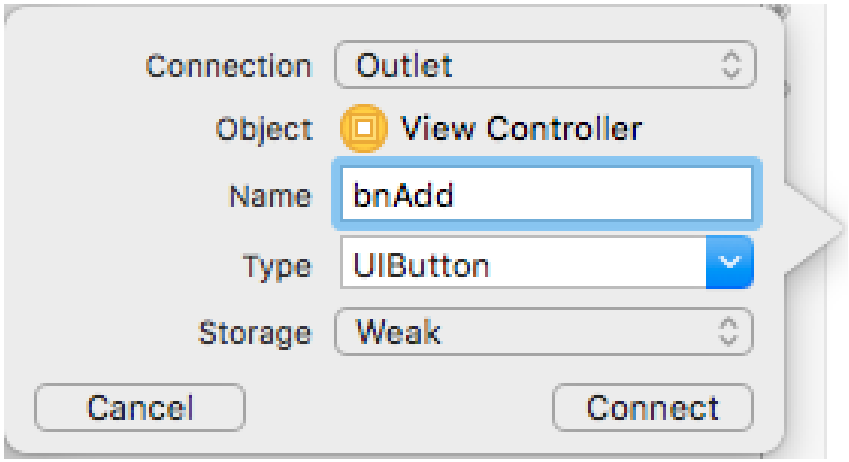
UI-Element UIButton

- Attribute
  - text
  - font, size etc.
- Methoden
  - Touch Up Inside

Action

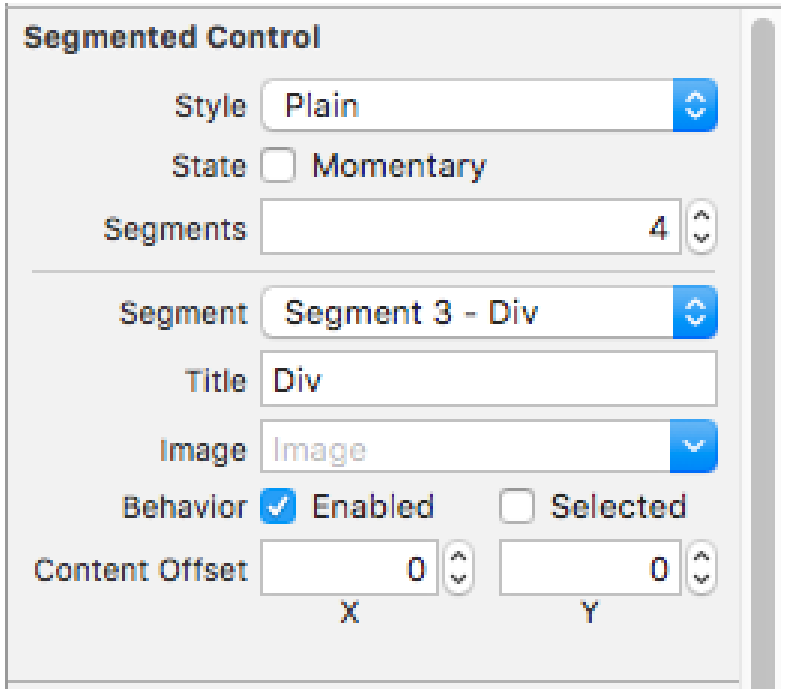
Did End On Exit
Editing Changed
Editing Did Begin
Editing Did End
Primary Action Triggered
Touch Cancel
Touch Down
Touch Down Repeat
Touch Drag Enter
Touch Drag Exit
Touch Drag Inside
Touch Drag Outside
✓ Touch Up Inside
Touch Up Outside
Value Changed

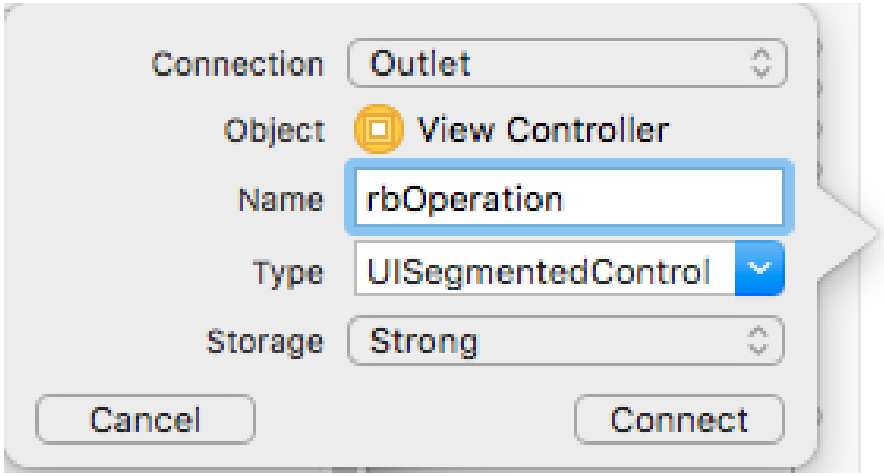
Eintragen als Referenz (strong)



UI-Element UISegmentedControl (RadioButtons)

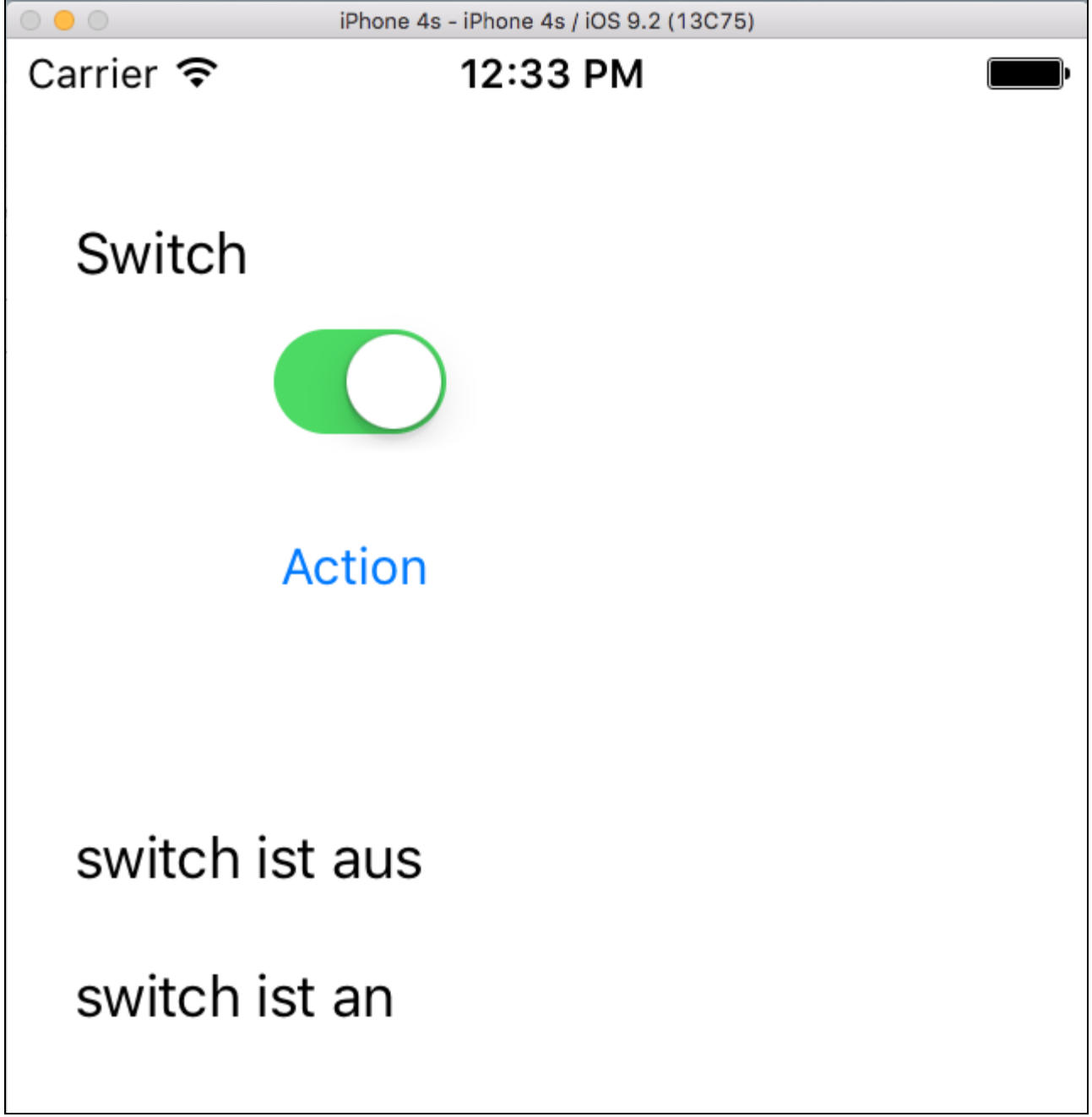
- Attribute
  - Anzahl Buttons
  - text
  - font, size etc.
  - selectedSegmentIndex
- Methoden
  - ChangeValue





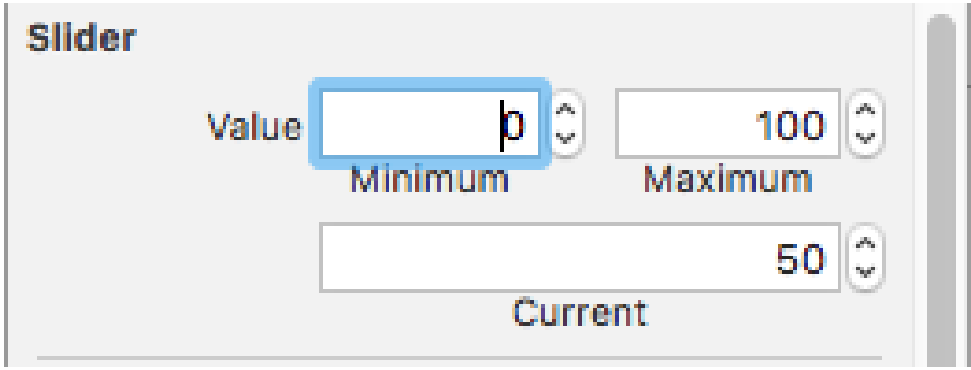
UI-Element UISwitch

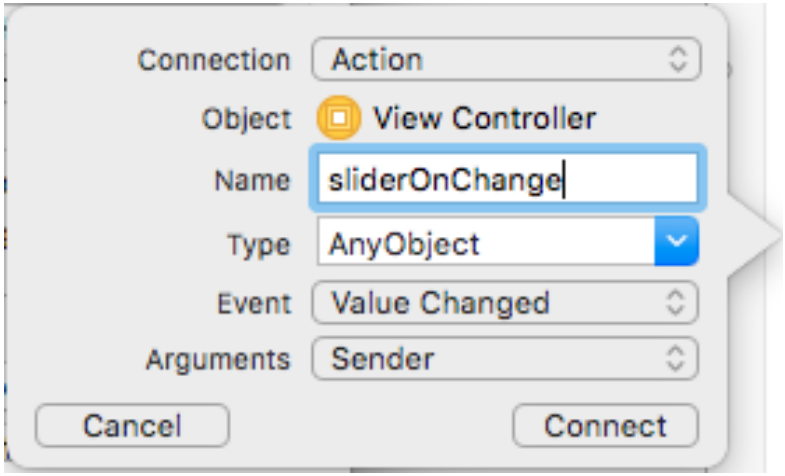
- Attribute
  - on
    - if uiSwitch.on {
    - }
  - font, size etc.
- Methoden
  - ValueChanged

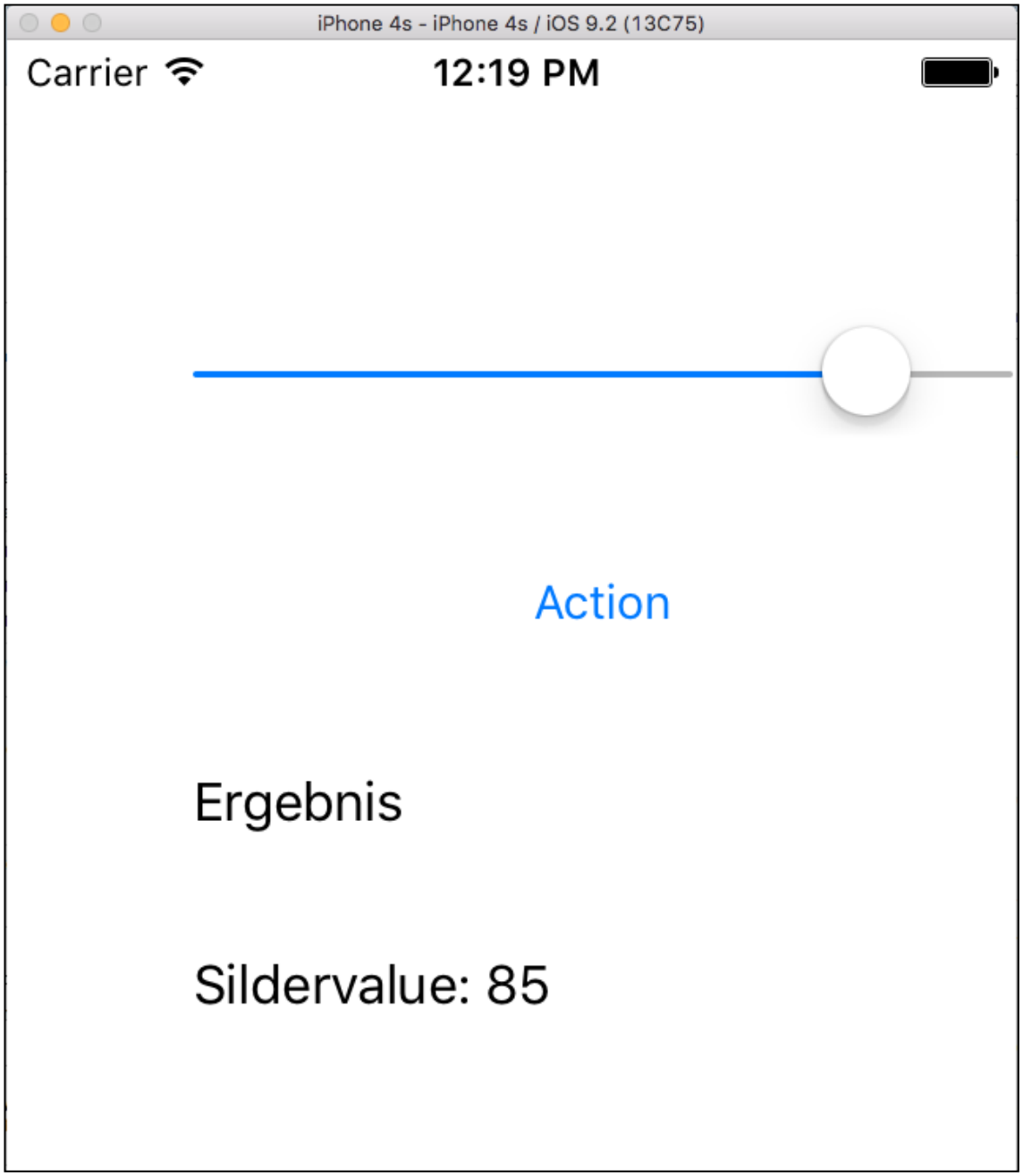

iPhone 4s - iPhone 4s / iOS 9.2 (13C75)
Carrier
12:33 PM
Switch
Action
switch ist aus
switch ist an

UI-Element UISlider

- Attribute
  - font, size etc.
  - minimum
  - maximum
  - value
- Methoden
  - Value Changed

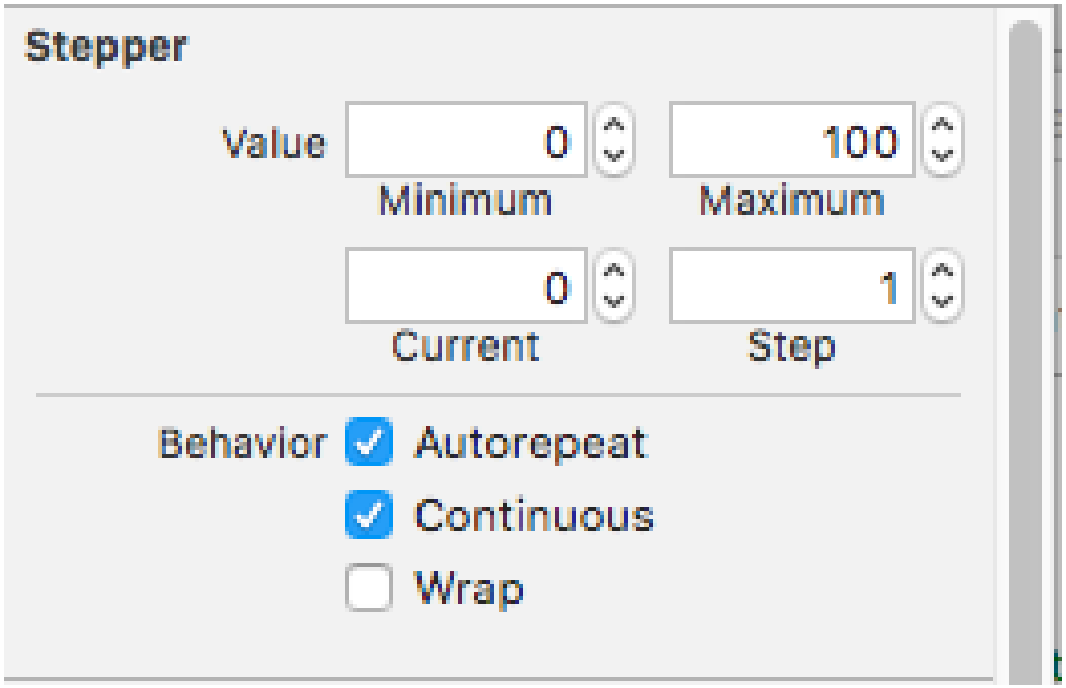


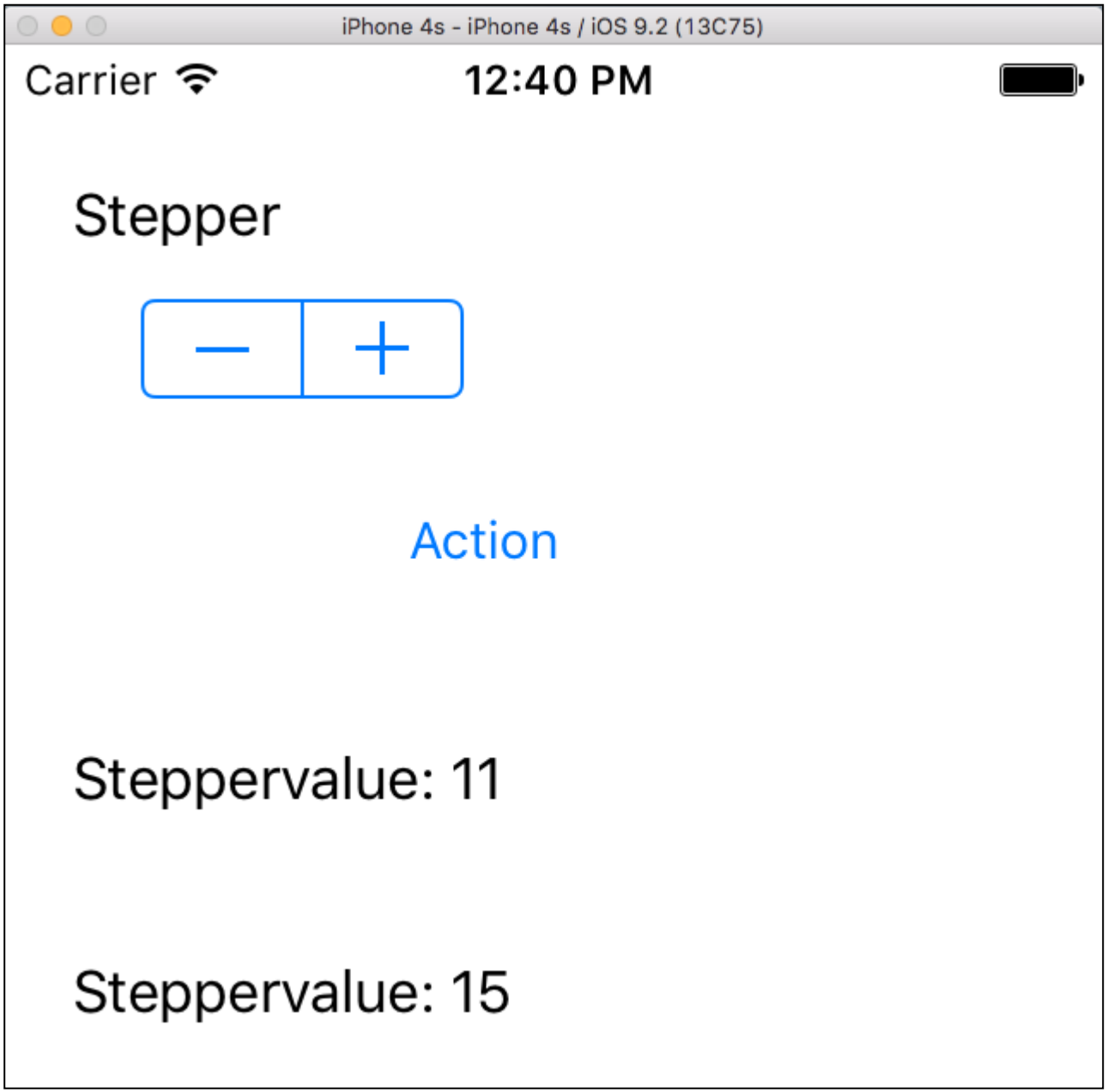



iPhone 4s - iPhone 4s / iOS 9.2 (13C75)
Carrier
12:19 PM
Action
Ergebnis
Sildervalue: 85

UI-Element UIStepper

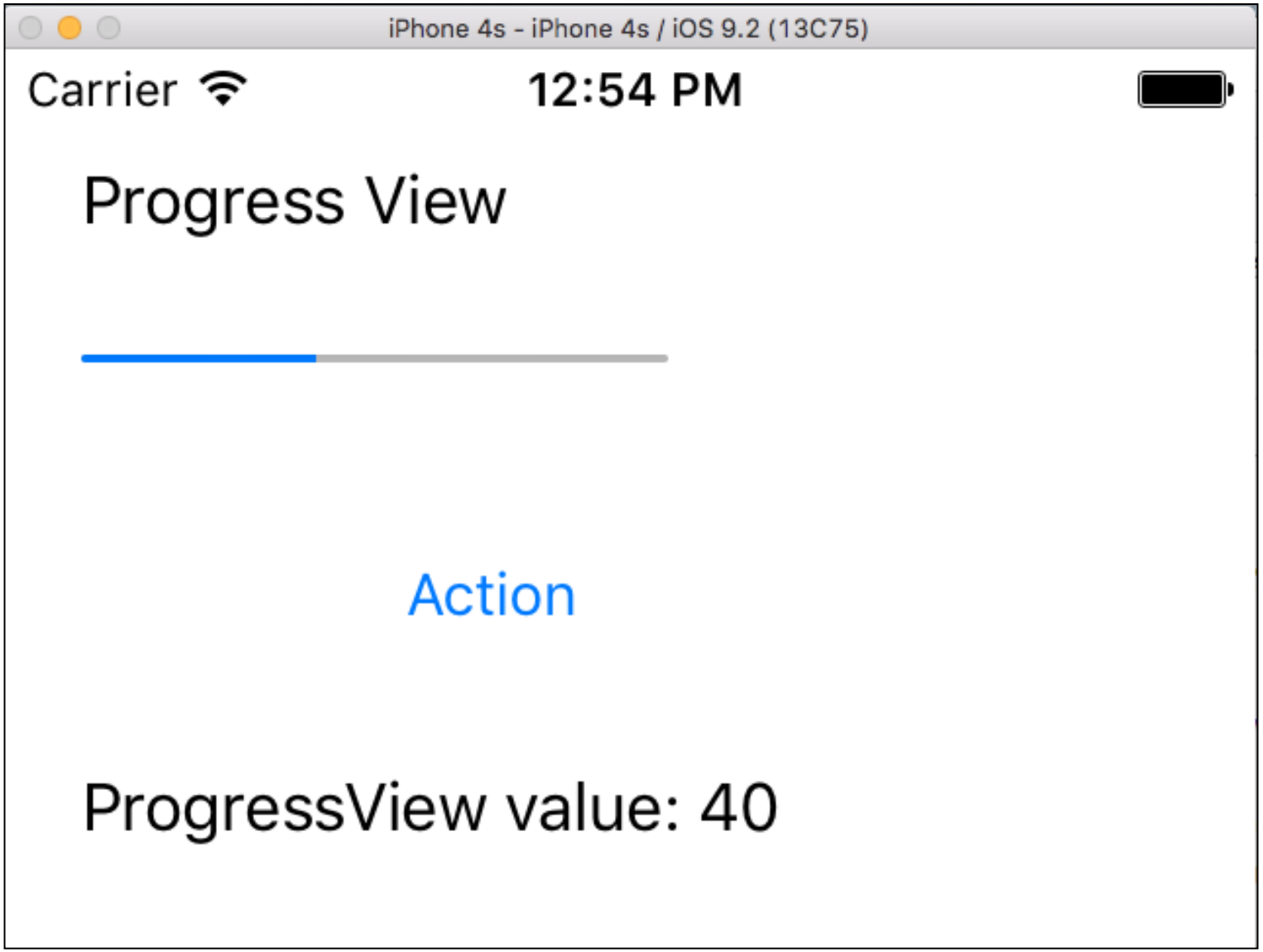
- Attribute
  - font, size etc.
  - minimum
  - maximum
  - value
- Methoden
  - ValueChanged




iPhone 4s - iPhone 4s / iOS 9.2 (13C75)
Carrier
12:40 PM
Stepper
Action
Steppervalue: 11
Steppervalue: 15

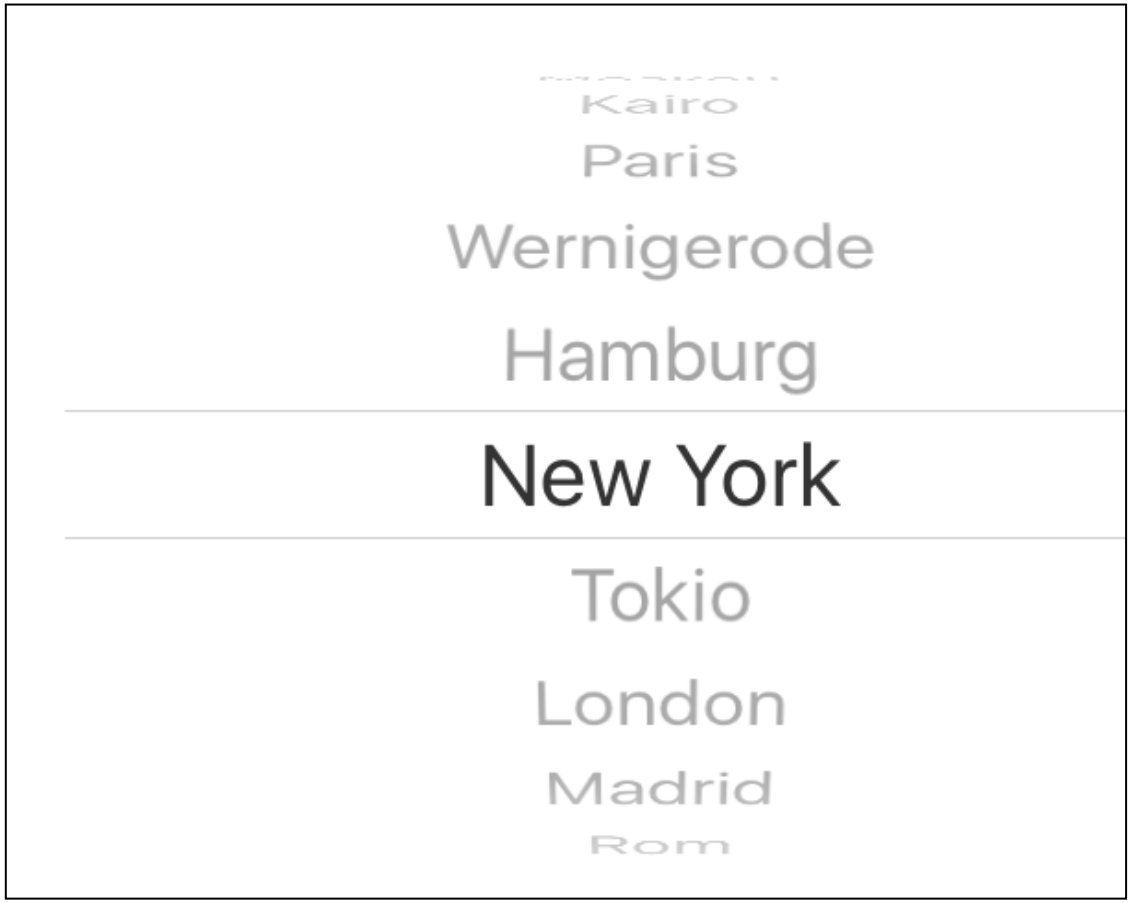
UI-Element UIProgressView

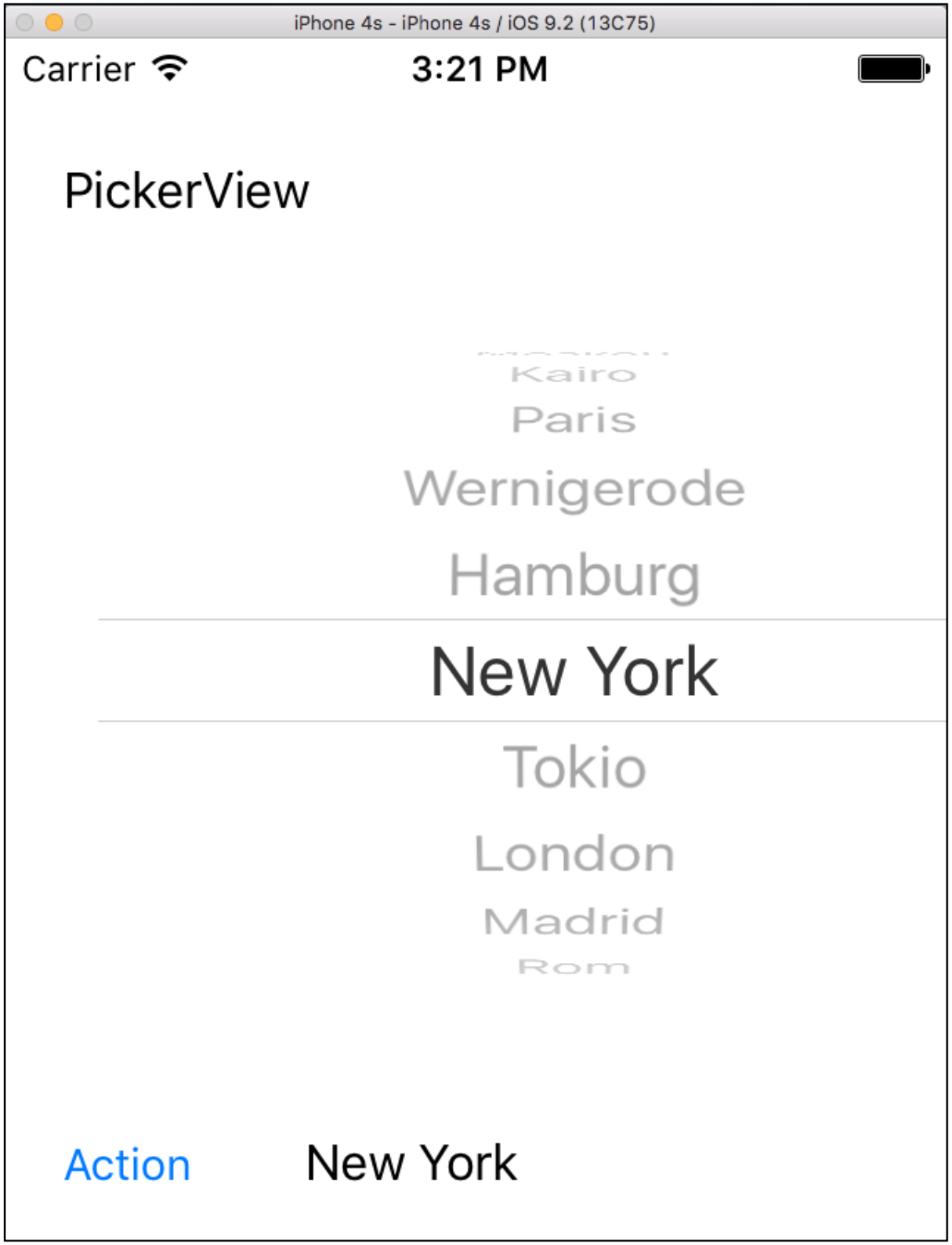
- Attribute
  - font, size etc.
  - minimum immer 0,0
  - maximum immer 1,0
  - value
- Methoden
  - ValueChanged


iPhone 4s - iPhone 4s / iOS 9.2 (13C75)
Carrier
12:54 PM
Progress View
Action
ProgressView value: 40

UI-Element UIPickerView, ca. eine JList

- Attribute
  - font, size etc.
  - delegate
- Methoden
  - ValueChanged
- **Spalten**
  - Es können mehrere Spalten verwaltet werden




iPhone 4s - iPhone 4s / iOS 9.2 (13C75)
Carrier
3:21 PM
PickerView
Kairo
Paris
Wernigerode
Hamburg
New York
Tokio
London
Madrid
Rom
Action
New York

```
class ViewController: UIViewController, UIPickerViewDelegate, ,
UIPickerViewDataSource{
    let staedte = ["Brüssel", "Mailand", "Moskau", "Rom"]
    @IBOutlet var uiPickerView: UIPickerView!
  func numberOfComponentsInPickerView(pickerView:UIPickerView)-> Int{
      return 1
  }

  func pickerView(pickerView:UIPickerView,
                  numberOfRowsInComponent component:Int) -> Int{
      return staedte.count
  }

  func pickerView(pickerView:UIPickerView, titleForRow row:Int,
                  forComponent component:Int) -> String?{
      return staedte[row]
  }
```

```
class ViewController: UIViewController, UIPickerViewDelegate,
UIPickerViewDataSource {

    func pickerView(pickerView: UIPickerView, didSelectRow row: Int,
                    inComponent component: Int) {
        labelErgebnis.text = staedte[row]
    }


    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
        self.uiPickerView.delegate = self
        self.pickerview.dataSource = self
    }
```