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Desarrollo de Apps para iOS

Primera Demo: Hola Mundo

IWEB 2015-2016
Santiago Pavón

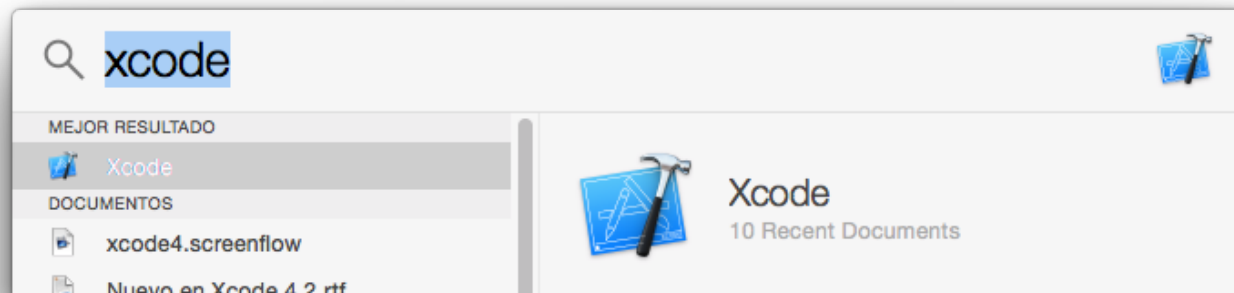
ver: 2015.09.07

Contenido

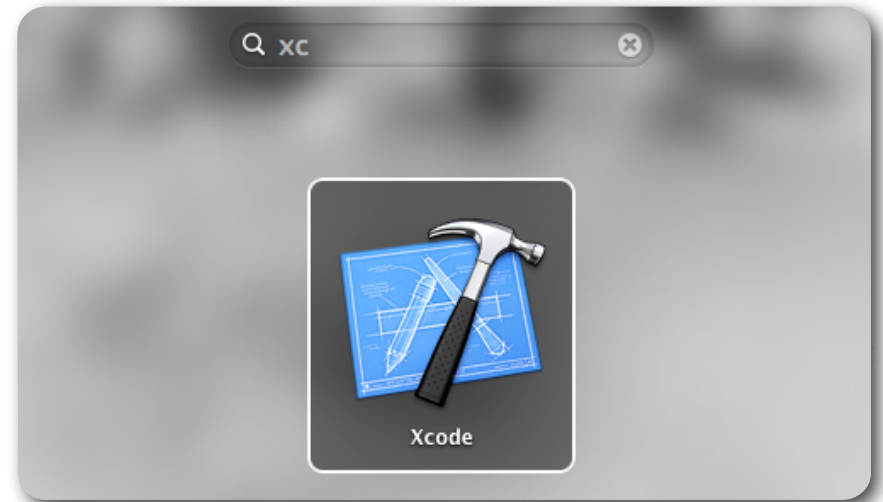
- Familiarizarse con el entorno Xcode:
 - editor, simulador, depurador, ...
- Crear una app sencilla:
 - GUI: botones, etiquetas, mapas, ...
 - Conceptos: IBOutlet, IBAction

Lanzar Xcode

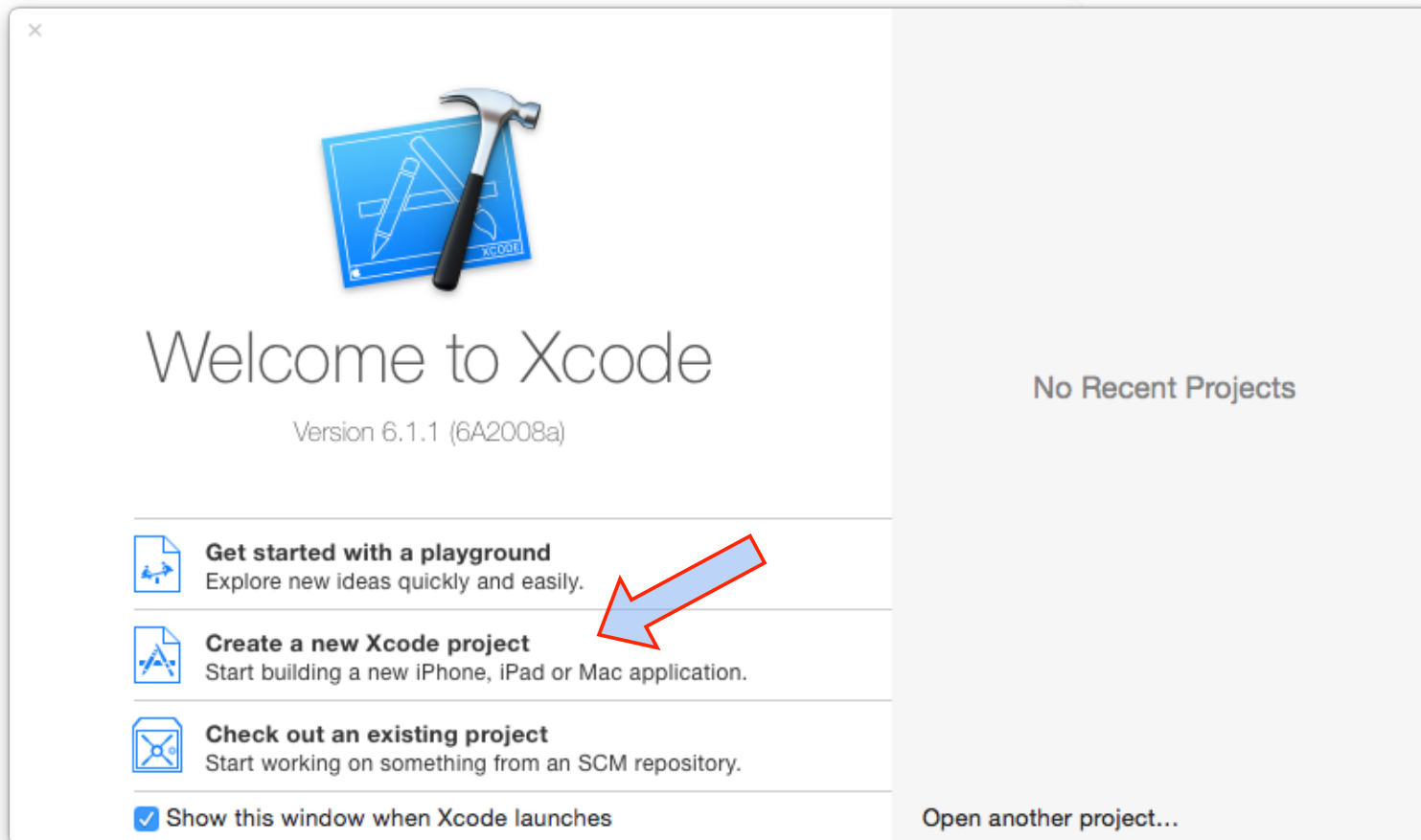
- Buscarlo con Spotlight (⌘-Espacio)



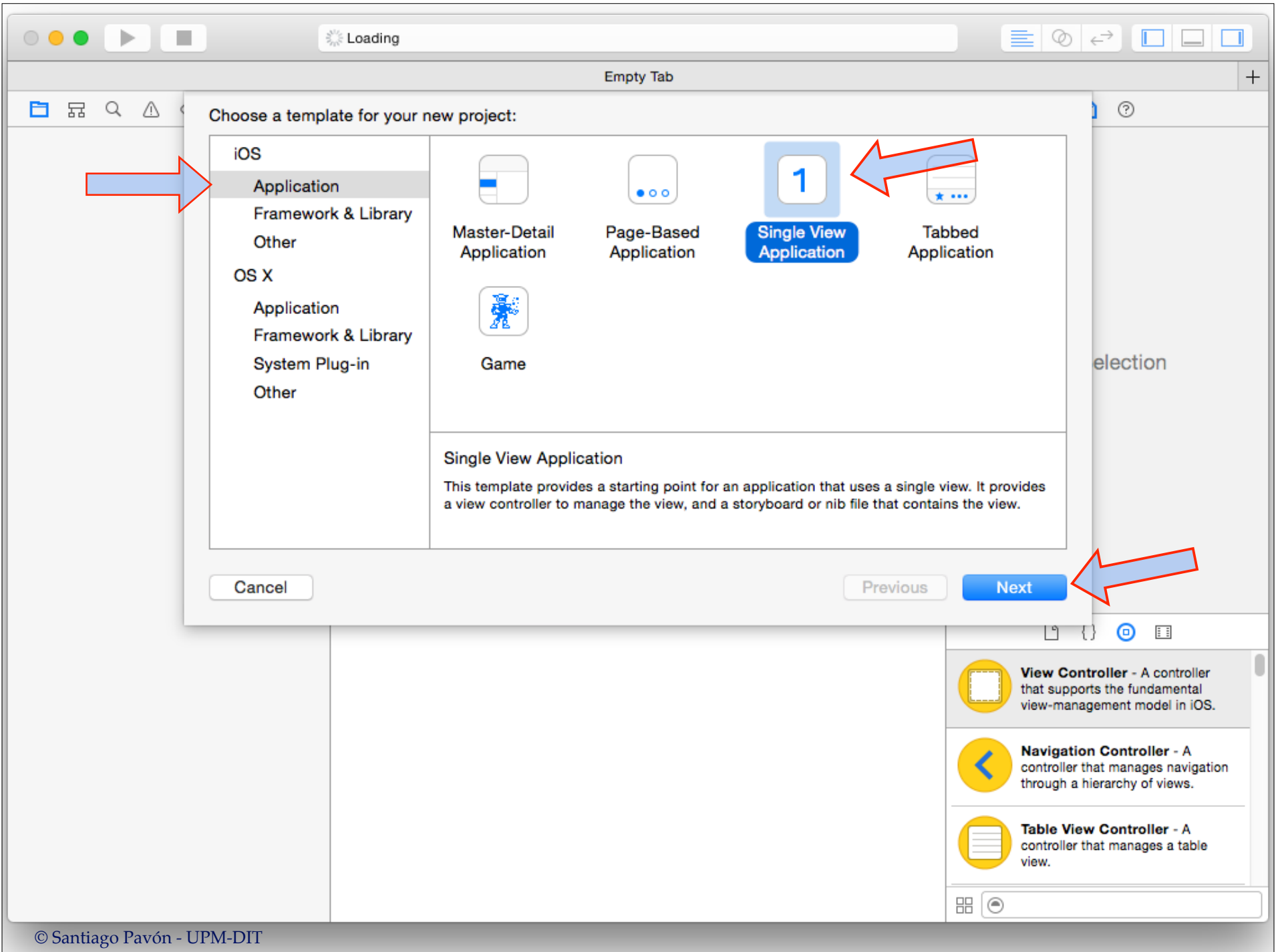
- Buscarlo con Launchpad:

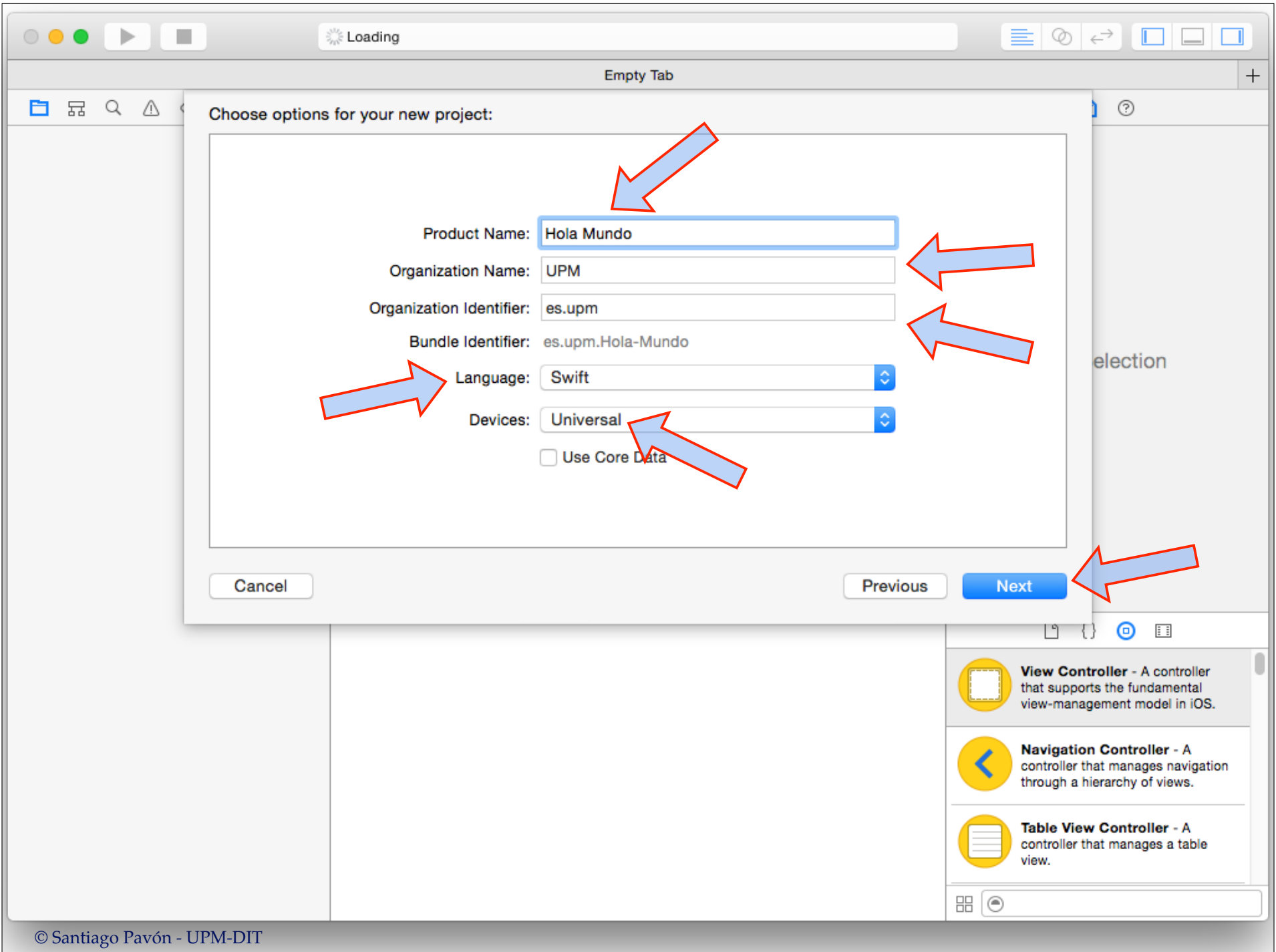


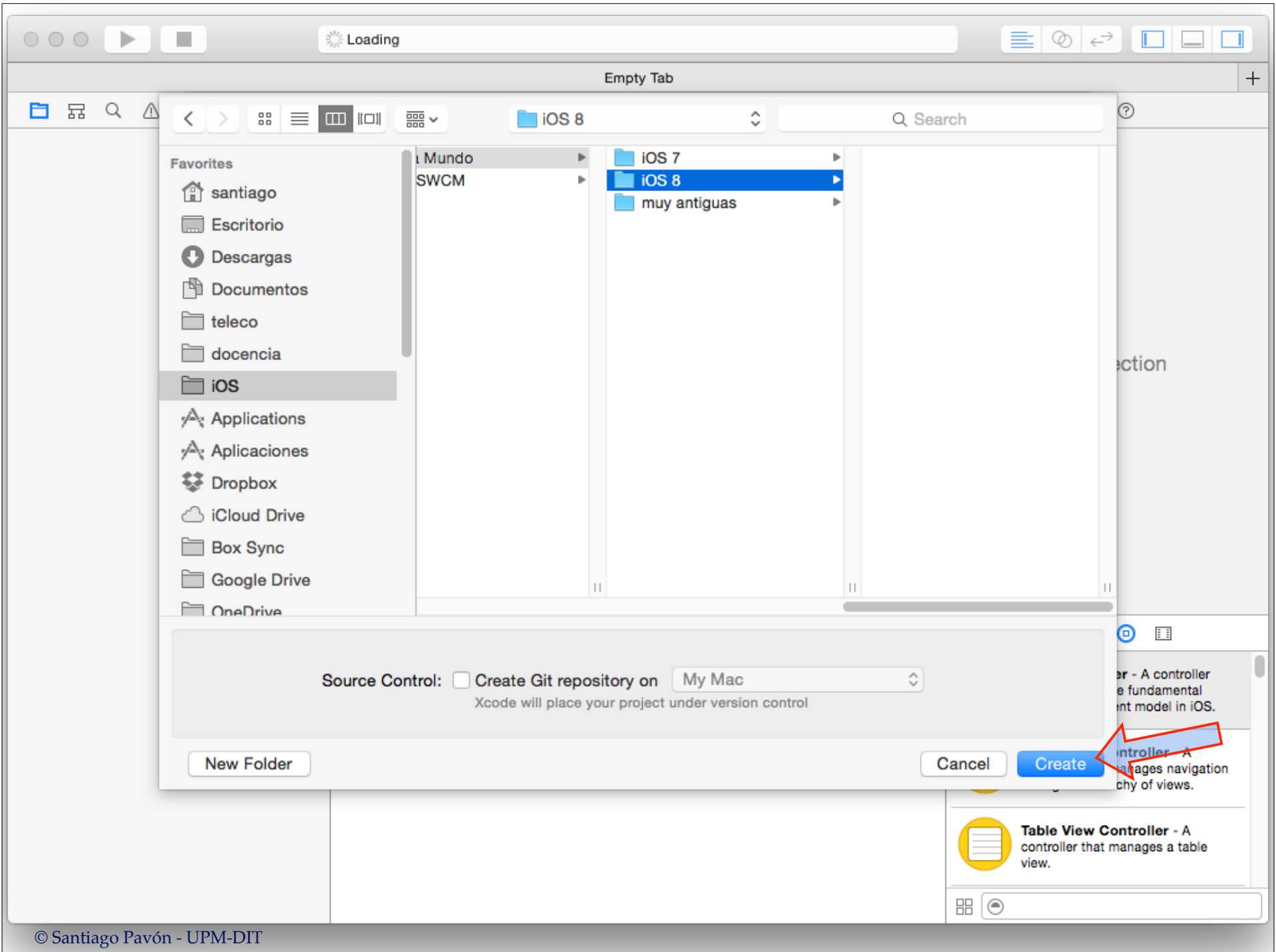
Crear Nuevo Proyecto

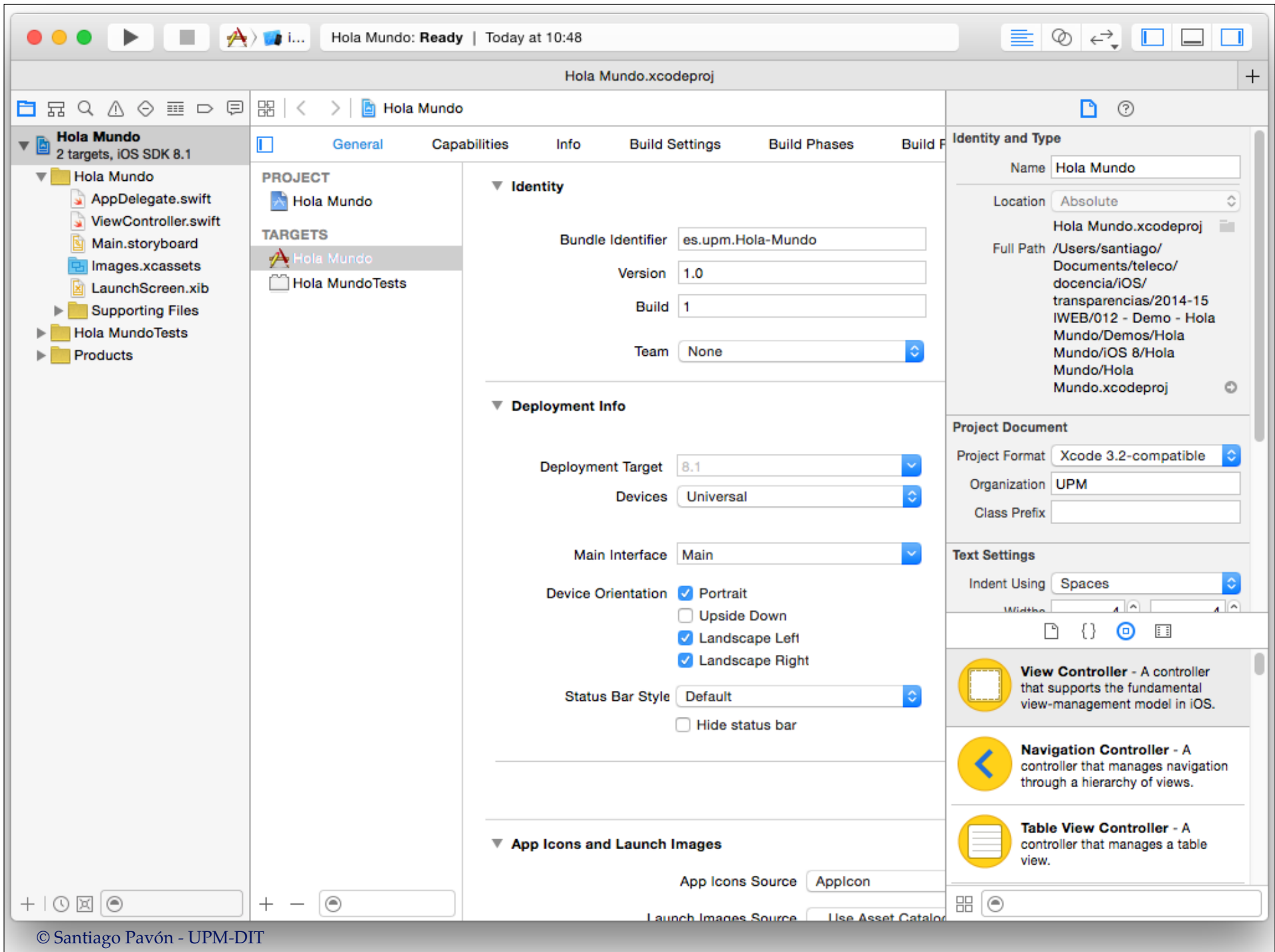


También: **Menú File > New > New Project**



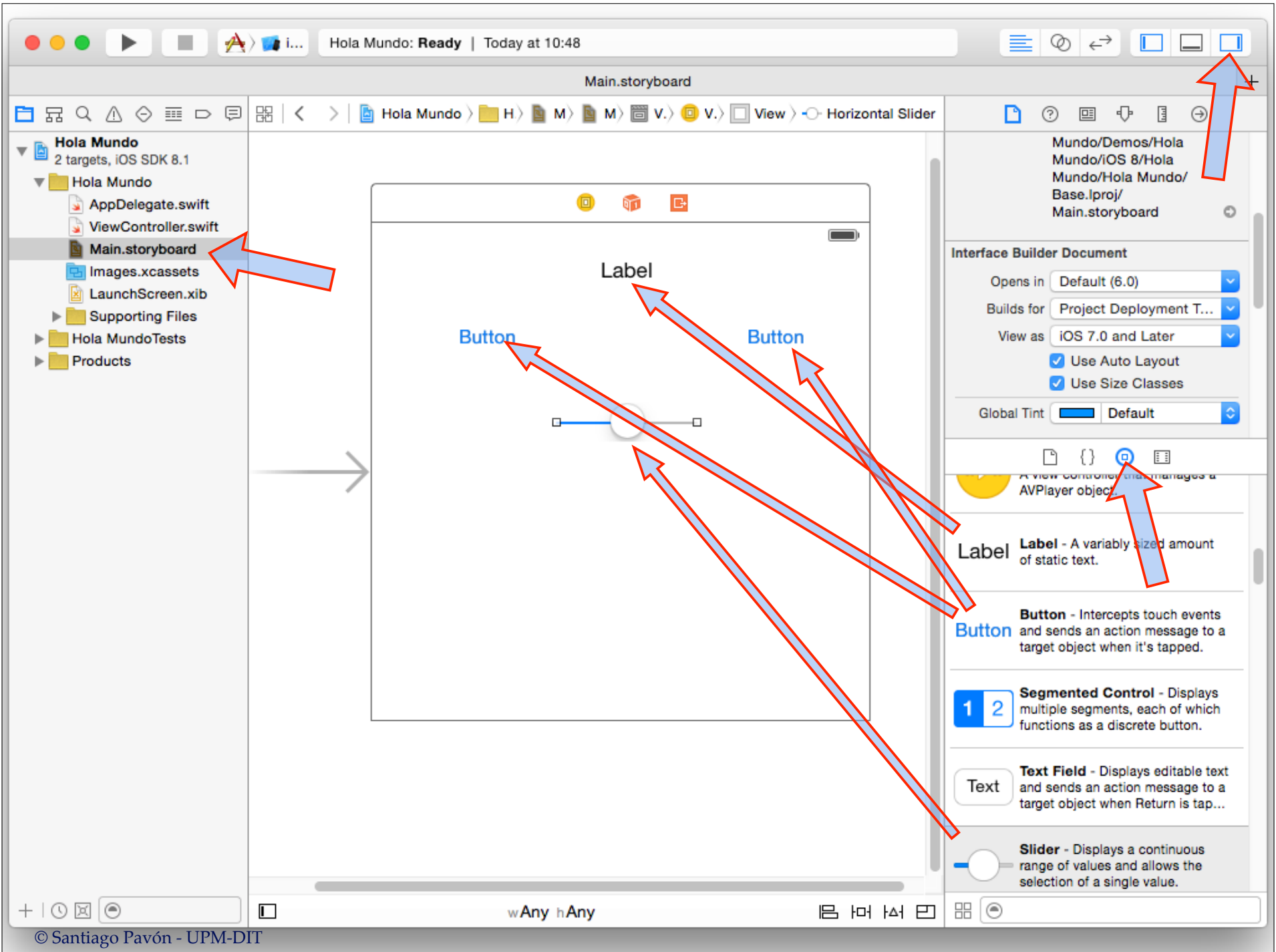






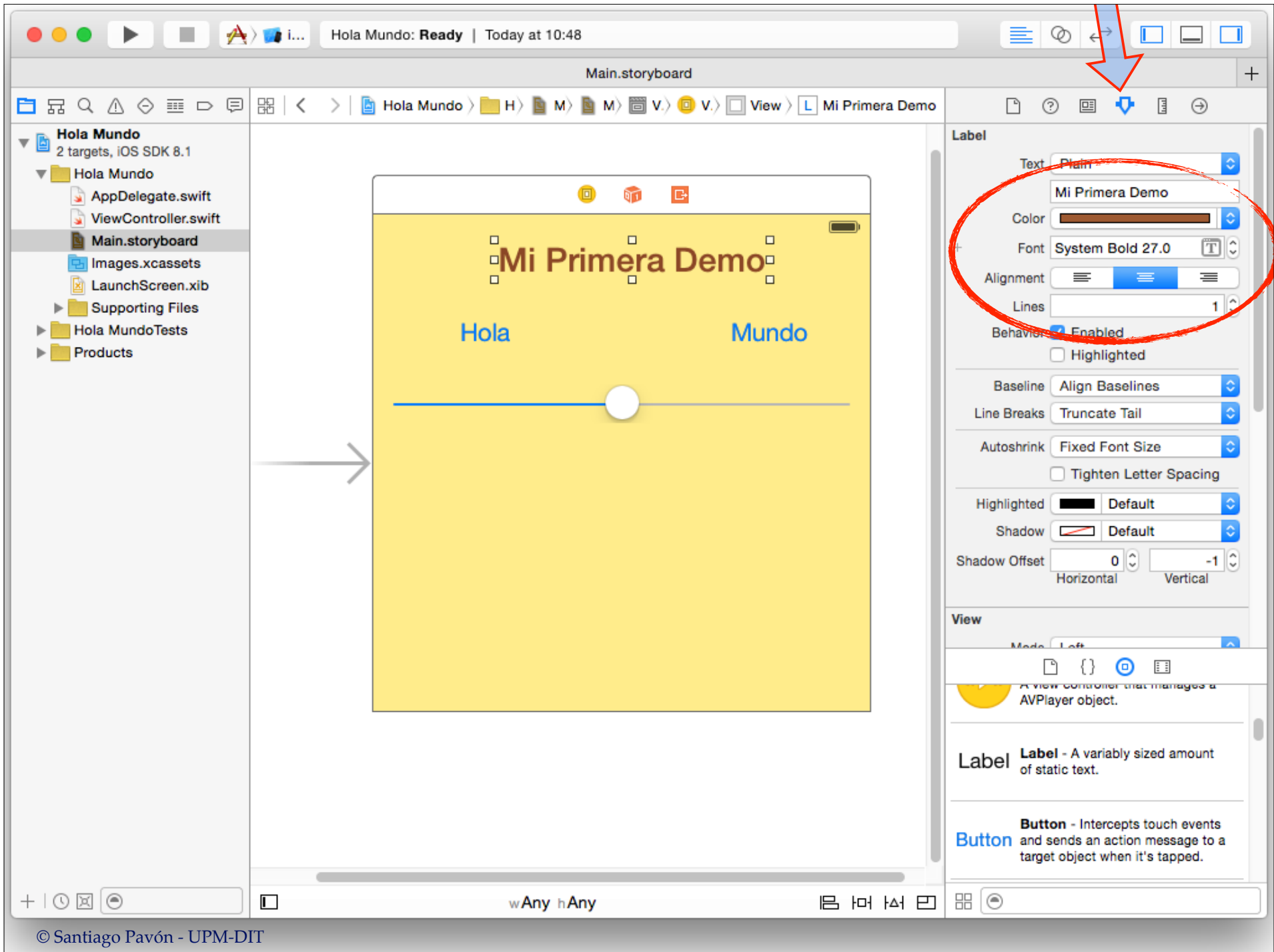
Crear GUI

- Click en el fichero **Main.storyboard**
 - Se abre en el editor (Interface Builder)
- Mostrar el inspector.
 - Seleccionar la Librería de Objetos
- Desde la Librería de Objetos arrastrar hasta la vista del ViewController:
 - una UILabel
 - dos UIButton
 - un UISlider



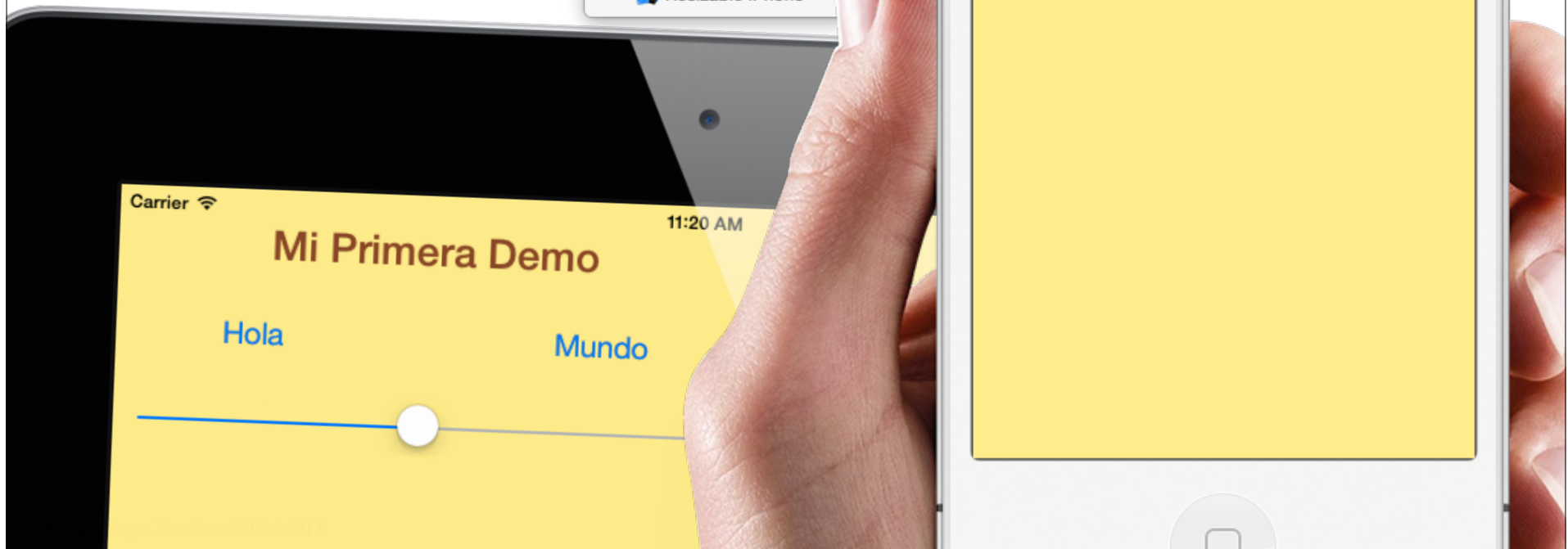
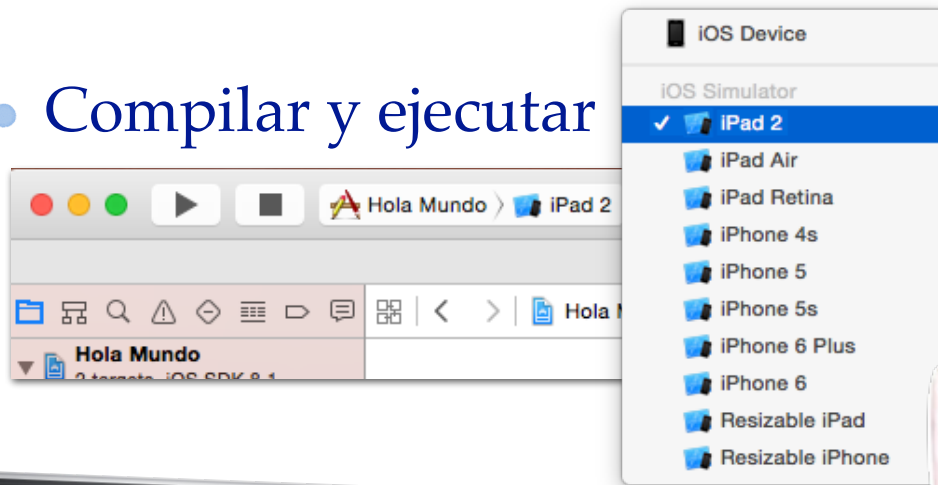
Cambiar atributos

- Seleccionar cada una de las views añadidas y cambiar su aspecto usando el inspector.
 - O de forma interactiva en el editor (Interface Builder).



Probarlo

- Compilar y ejecutar



Autolayout

The image shows the Xcode interface for editing a storyboard. The main canvas displays a yellow view controller titled "Mi Primera Demo" with two labels, "Hola" and "Mundo", and a slider below them. A context menu is open over the "Add Missing Constraints" option, listing actions for "Selected Views" and "All Views in View Controller". A red circle highlights the "Add Missing Constraints" icon in the bottom toolbar. A red arrow points to the storyboard icon in the top toolbar, and another red arrow points to the "Add Missing Constraints" icon in the bottom toolbar. A third red arrow points to the "Button" description in the right-hand sidebar.

Finished running Hola Mundo on iPhone 6

Main.storyboard

Hola Mundo > H > M > M > View Controller Scene > View Controller

Hola Mundo
2 targets, iOS SDK 8.1

- Hola Mundo
 - AppDelegate.swift
 - ViewController.swift
 - Main.storyboard
 - Images.xcassets
 - LaunchScreen.xib
 - Supporting Files
 - Hola MundoTests
 - Products

Mi Primera Demo

Hola Mundo

Selected Views

- Update Frames ⌘⇧=
- Update Constraints ⌘⇧=
- Add Missing Constraints ⌘⇧=
- Reset to Suggested Constraints ⌘⇧=
- Clear Constraints

All Views in View Controller

- Update Frames ⌘⇧=
- Update Constraints ⌘⇧=
- Add Missing Constraints ⌘⇧=
- Reset to Suggested Constraints ⌘⇧=
- Clear Constraints

wAny hAny

Label Label - A variably sized amount of static text.

Button Button - Intercepts touch events and sends an action message to a target object when it's tapped.

Comportamiento

- Añadiremos a la clase ViewController:
 - un **IBOutlet** para la Label
 - es una propiedad que apunta a la UILabel creada.
 - dos **IBActions** para atender pulsaciones de los botones
 - son los métodos que se ejecutarán al pulsar los botones.
 - una **IBAction** para atender cambios en el Slider.
 - es el método que se ejecutará al mover el slider.

¿Qué es IBOutlet?

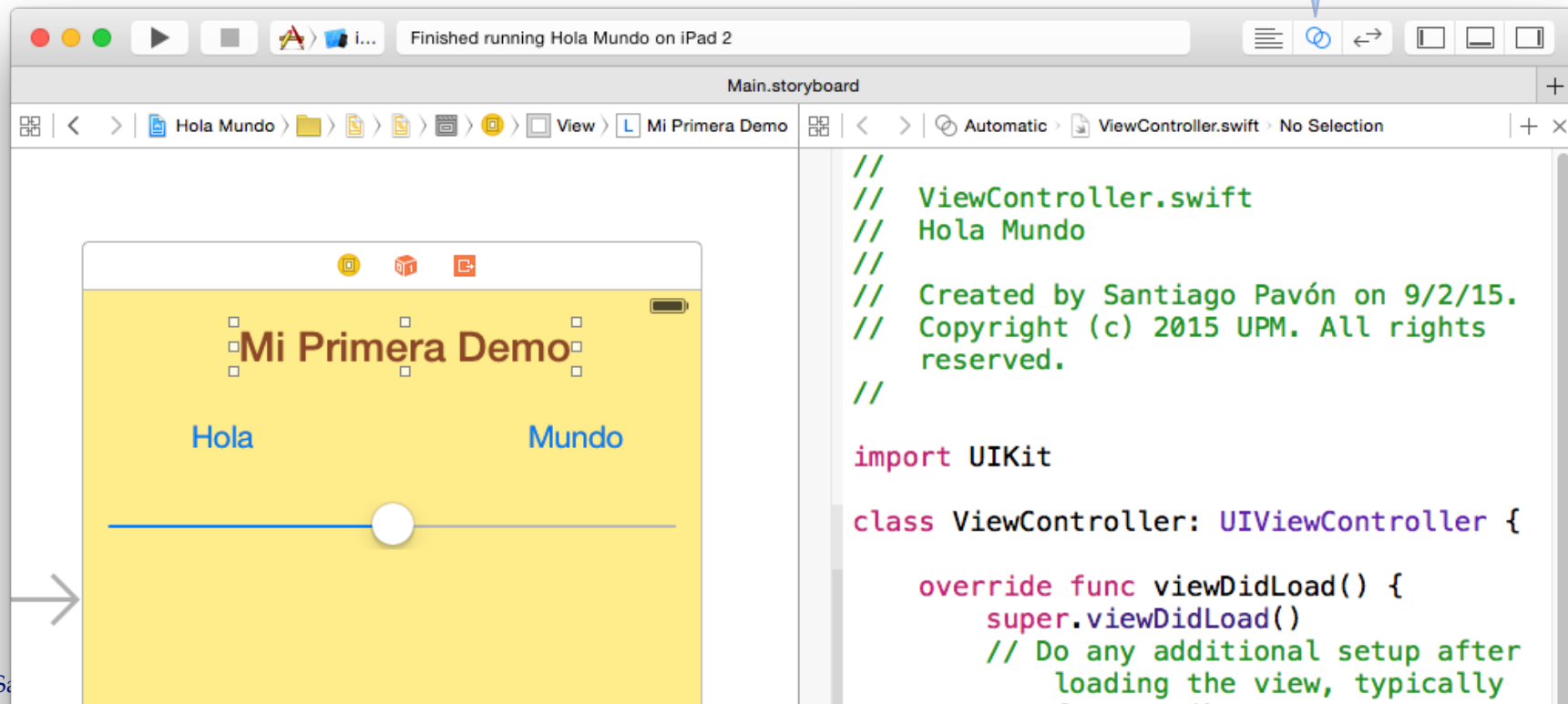
- Es una marca que reconoce Interface Builder
 - Indica que la propiedad marcada con IBOutlet apunta a un objeto que se ha creado con el Interface Builder.
 - No vamos a crear el objeto mediante código.
 - Usaremos Interface Builder para conectar la propiedad y el objeto.
- Crearemos IBOutlets para los elementos creados con IB que queramos manipular desde el código.
 - Para manipularlos necesitamos una propiedad que los apunte.

¿Qué es IBAction?

- Es una marca que reconoce el Interface Builder
 - Indica que el método marcado con IBAction puede ser la acción que ejecutará algún control.
 - La conexión entre el control y la acción se hace sin necesidad de usar código.
 - Usaremos Interface Builder para conectar el control y el método.

Crear IBOutlet para la Etiqueta

Seleccionar Assistant Editor:
Izquierda: El storyboard
Derecha: El fichero ViewController.swift




Finished running Hola Mundo on iPad 2

Main.storyboard

Hola Mundo > Mi Primera Demo

ViewController.swift > ViewController



```
// Copyright (c) 2015 IBM. All rights reserved.
//

import UIKit

class ViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after
        // loading the view, typically
        // from a nib.
    }

    override func
    didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that
        // can be recreated.
    }
}
```

Control+B1

wAny hAny

Finished running Hola Mundo on iPad 2

Main.storyboard

Hola Mundo > Mi Primera Demo

Automatic > ViewController.swift > ViewController

Mi Primera Demo

Hola

Connection: Outlet
Object: View Controller
Name: msg
Type: UILabel
Storage: Weak

Cancel Connect

```
// Copyright (c) 2015 UPM. All rights reserved.
//
import UIKit

class ViewController: UIViewController {

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }

}
```


wAny hAny

Finished running Hola Mundo on iPad 2

Main.storyboard

Hola Mundo > Mi Primera Demo

Automatic > ViewController.swift > ViewController



```
// Copyright (c) 2015 UPM. All rights reserved.
//
import UIKit
class ViewController: UIViewController {
    @IBOutlet weak var msg: UILabel!

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after loading the view, typically from a nib.
    }

    override func didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that can be recreated.
    }
}
```

wAny hAny

Crear IBActions para los Controles

The image shows the Xcode interface with a storyboard and a Swift file. The storyboard, titled 'Main.storyboard', displays a yellow view with the text 'Mi Primera Demo' and 'Mundo', and a 'Hola' button. A red arrow labeled 'Control+B1' points from the button to the Swift code on the right. The Swift code defines a ViewController class with an IBOutlet for a UILabel named 'msg' and two overridden methods: viewDidLoad() and didReceiveMemoryWarning().

```
class ViewController: UIViewController {  
  
    @IBOutlet weak var msg: UILabel!  
  
    override func viewDidLoad() {  
        super.viewDidLoad()  
        // Do any additional setup after  
        loading the view, typically  
        from a nib.  
    }  
  
    override func  
        didReceiveMemoryWarning() {  
        super.didReceiveMemoryWarning()  
        // Dispose of any resources that  
        can be recreated.  
    }  
}
```

Finished running Hola Mundo on iPad 2

Main.storyboard

Hola Mundo > H. > M. > M. > V. > V. > View > B. Hola

Automatic > ViewController.swift > ViewController

```
// Created by Santiago Pavón on 07/11/15.
// Copyright (c) 2015 UPM. All rights reserved.
//

import UIKit

class ViewController: UIViewController {

    @IBOutlet weak var msg: UILabel!

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after
        // loading the view, typically
        // from a nib.
    }

    override func
    didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that
        // can be recreated.
    }
}
```

Connection: Action
Object: View Controller
Name: holaPressed
Type: UIButton
Event: Touch Up Inside
Arguments: Sender

Cancel Connect

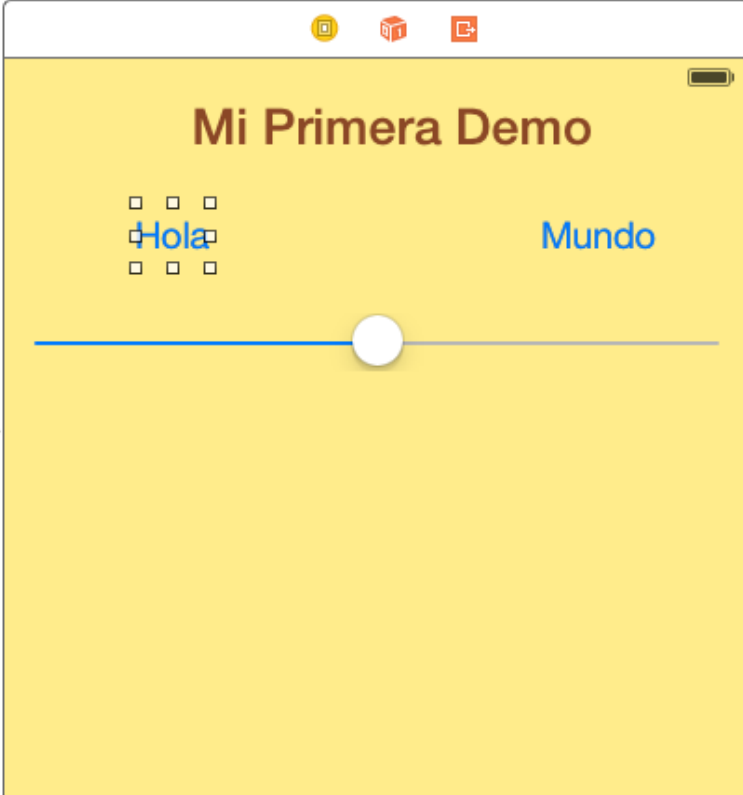
wAny hAny

Finished running Hola Mundo on iPad 2

Main.storyboard

Hola Mundo > H. > M. > M. > V. > V. > View > B Hola

Automatic > ViewController.swift > ViewController



```
// Created by Santiago Pavon on 9/2/15.
// Copyright (c) 2015 UPM. All rights
// reserved.
//

import UIKit

class ViewController: UIViewController {

    @IBOutlet weak var msg: UILabel!

    override func viewDidLoad() {
        super.viewDidLoad()
        // Do any additional setup after
        // loading the view, typically
        // from a nib.
    }

    override func
    didReceiveMemoryWarning() {
        super.didReceiveMemoryWarning()
        // Dispose of any resources that
        // can be recreated.
    }

    @IBAction func holaPressed(sender:
    UIButton) {
    }

}
```

wAny hAny

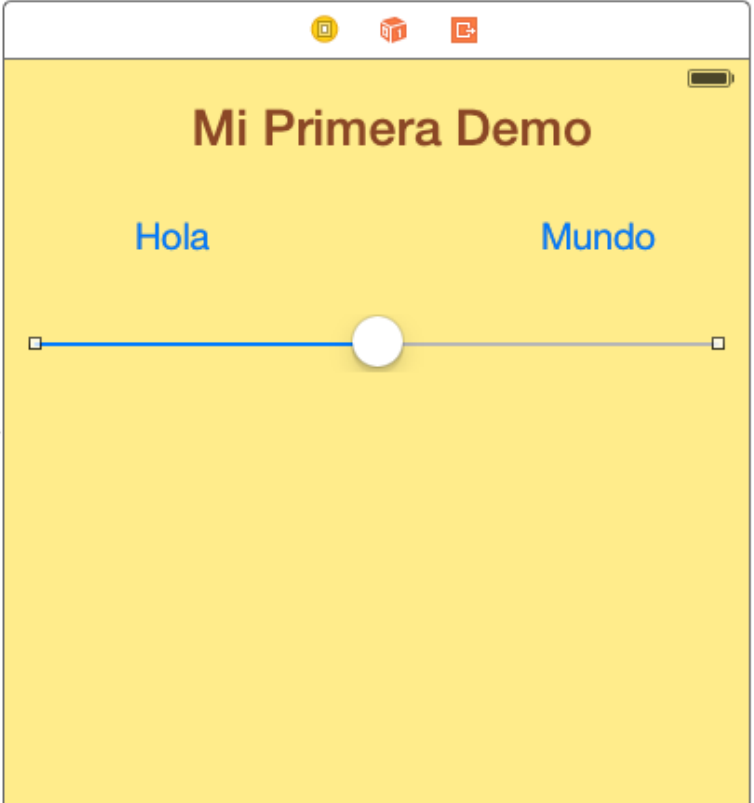
- Repetimos los mismo con el botón mundo y con el slider.

Finished running Hola Mundo on iPad 2

Main.storyboard

Hola Mundo > View > Horizontal Slider

ViewController.swift > ViewController



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

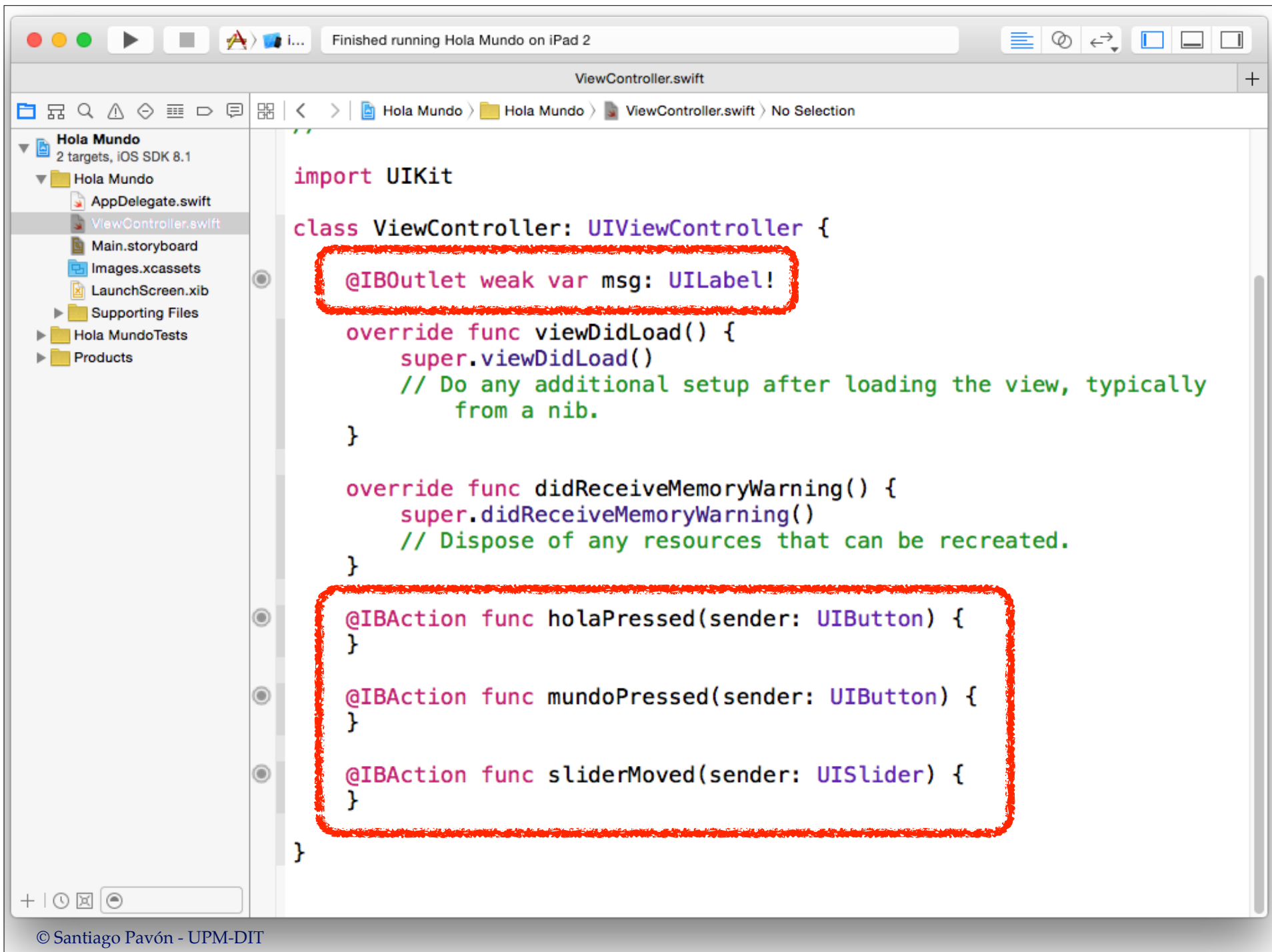
override func
didReceiveMemoryWarning() {
    super.didReceiveMemoryWarning()
    // Dispose of any resources that
    can be recreated.
}

@IBAction func holaPressed(sender:
UIButton) {
}

@IBAction func mundoPressed(sender:
UIButton) {
}

@IBAction func sliderMoved(sender:
UISlider) {
}
}
```

wAny hAny



Conectar IBOutlet y IBAction

- Existen varias formas de conectar los Outlets y Actions:
 - En las transparencias anteriores hemos conectado los outlets y las Actions usando Ctrl+Botón1 desde un elemento del IB hasta el fichero .swift.
 - Seleccionamos IBOutlet para crear una propiedad.
 - Seleccionamos IBAction para crear un método.
- Otras formas de conectar:
 - Seleccionando algún control en el IB, y conectando los eventos desde el inspector de conexiones.
 - En el modo asistente, desde el editor con el código del fichero swift, hasta los elementos en el editor IB.
 - Usando los círculos situados en margen izquierdo del editor de código.
 - Desde los menús popup que muestran los elementos en el editor IB.
 - Usando Ctrl-Botón1 entre elementos en el editor IB.
 - etc...

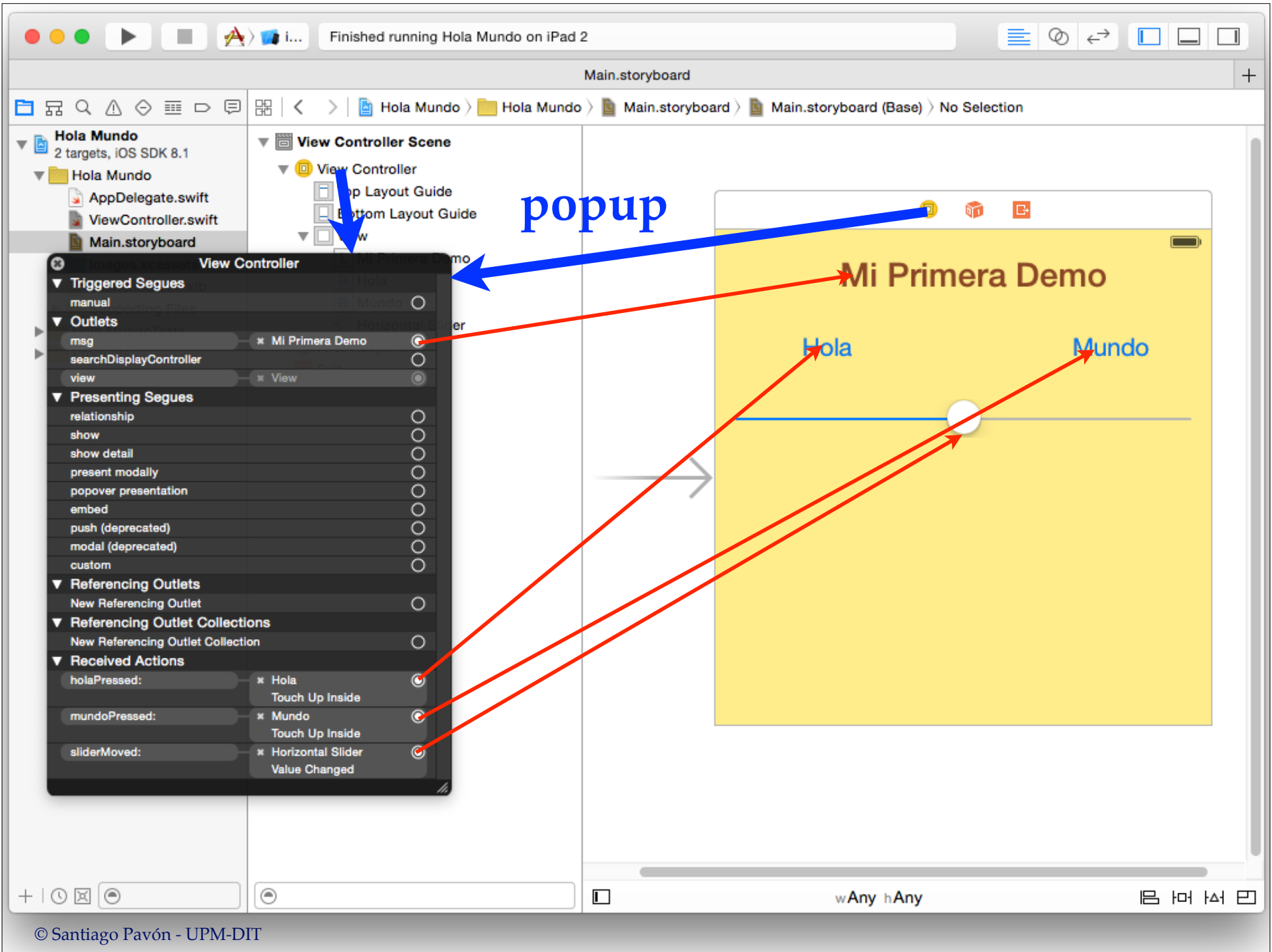
Finished running Hola Mundo on iPad 2

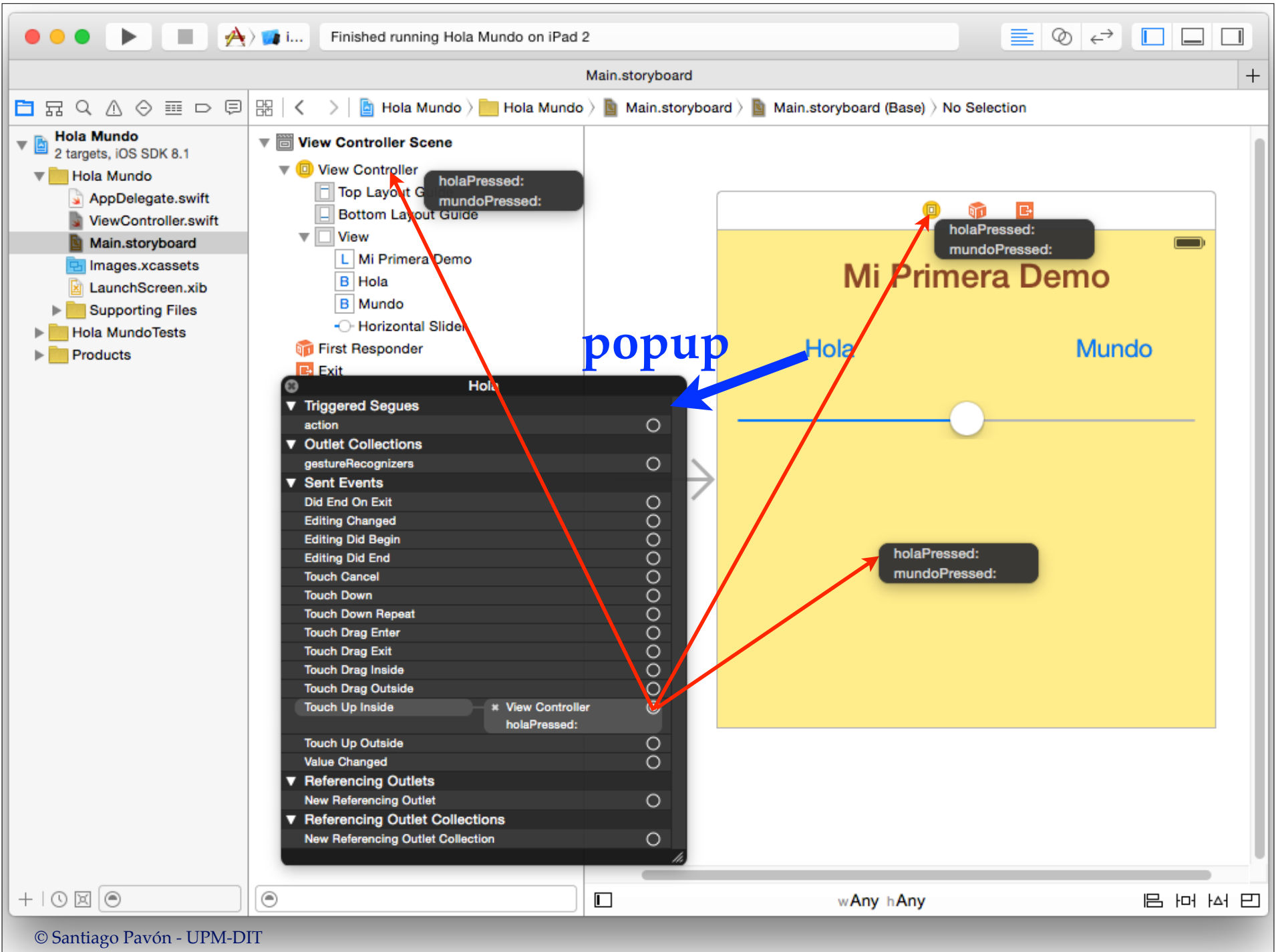
Main.storyboard

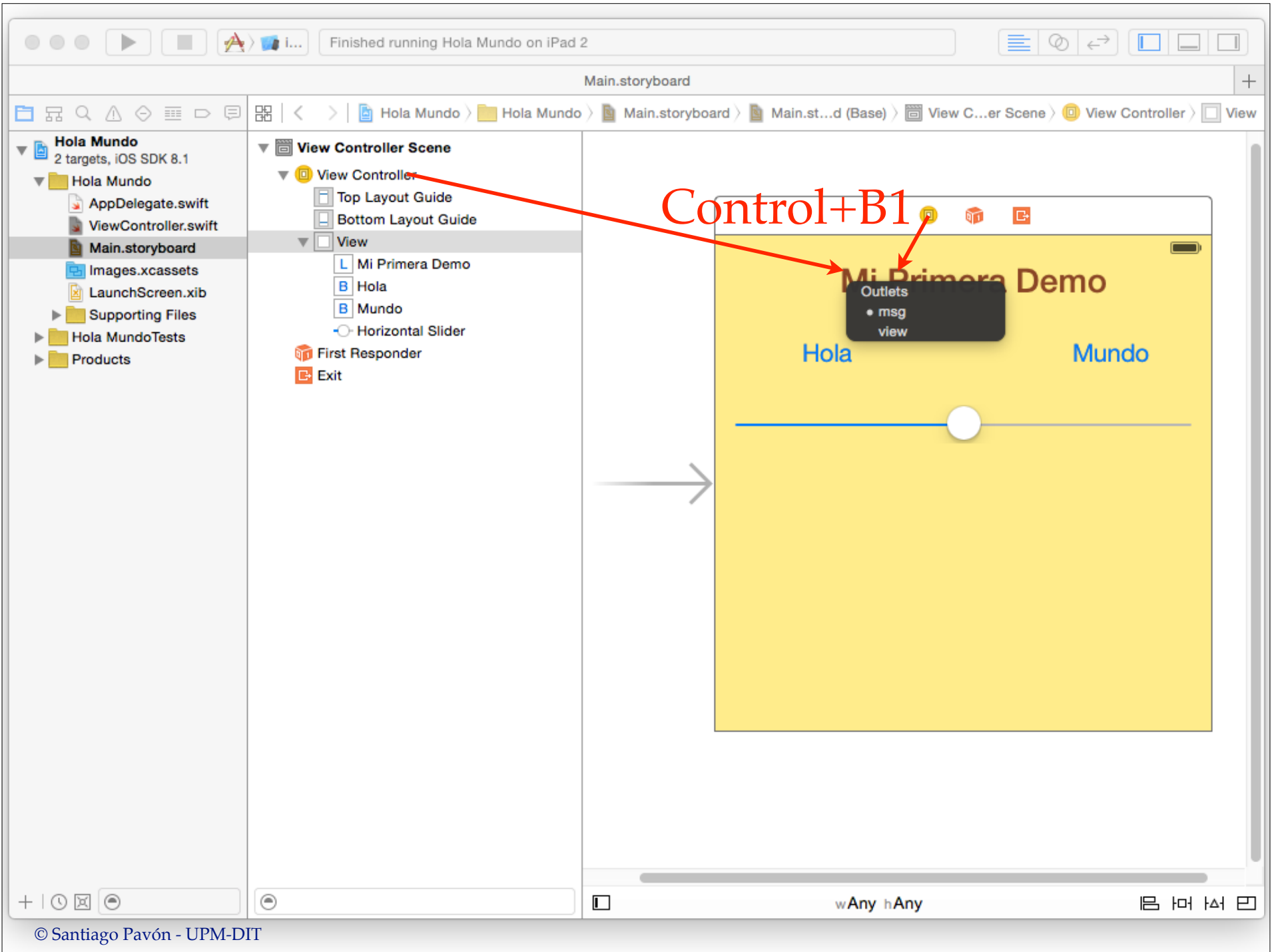
Hola Mundo > H > M > M > V > View Controller > View Automatic > ViewController.swift > viewDidLoad()

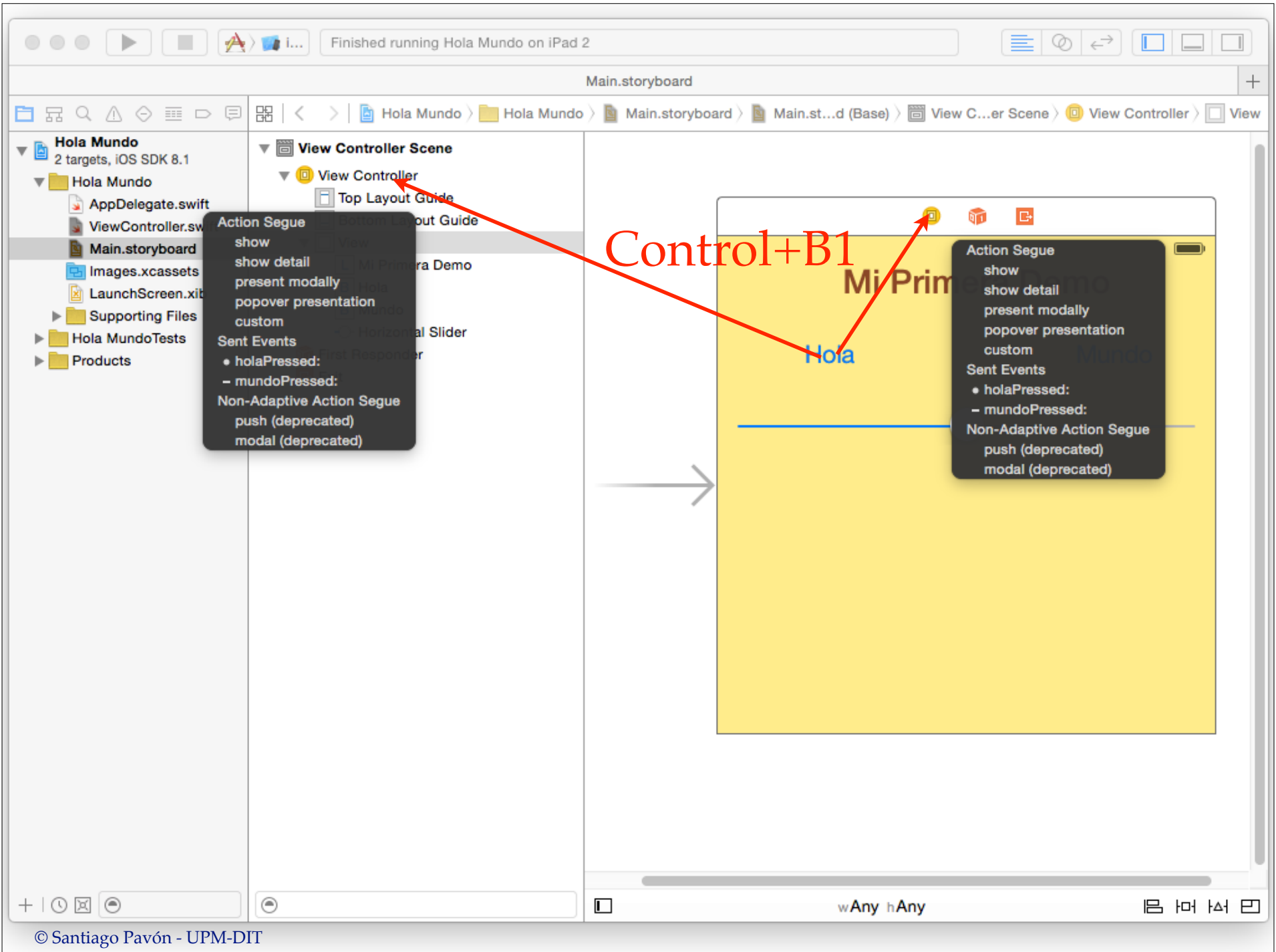
```
@IBOutlet weak var msg: UILabel!  
  
override func viewDidLoad() {  
    super.viewDidLoad()  
    // Do any additional setup after  
    // loading the view, typically  
    // from a nib.  
}  
  
override func  
    didReceiveMemoryWarning() {  
        super.didReceiveMemoryWarning()  
        // Dispose of any resources that  
        // can be recreated.  
}  
  
@IBAction func holaPressed(sender:  
    UIButton) {  
}  
  
@IBAction func mundoPressed(sender:  
    UIButton) {  
}  
  
@IBAction func sliderMoved(sender:  
    UISlider) {  
}  
}
```

wAny hAny



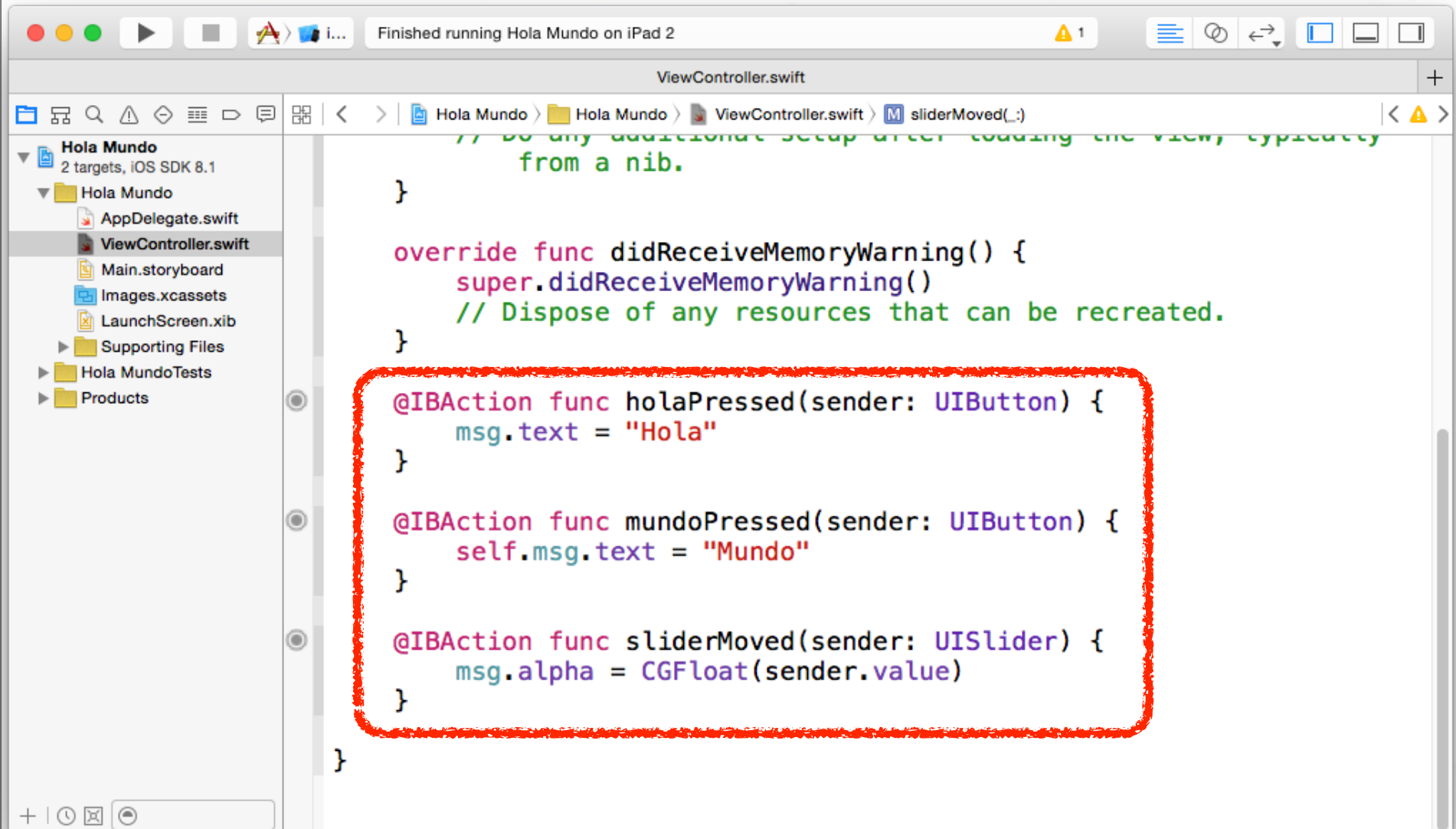






Control+B1

El Código de los Métodos



```
ViewController.swift
// Do any additional setup after loading the view, typically
// from a nib.
}

override func didReceiveMemoryWarning() {
    super.didReceiveMemoryWarning()
    // Dispose of any resources that can be recreated.
}

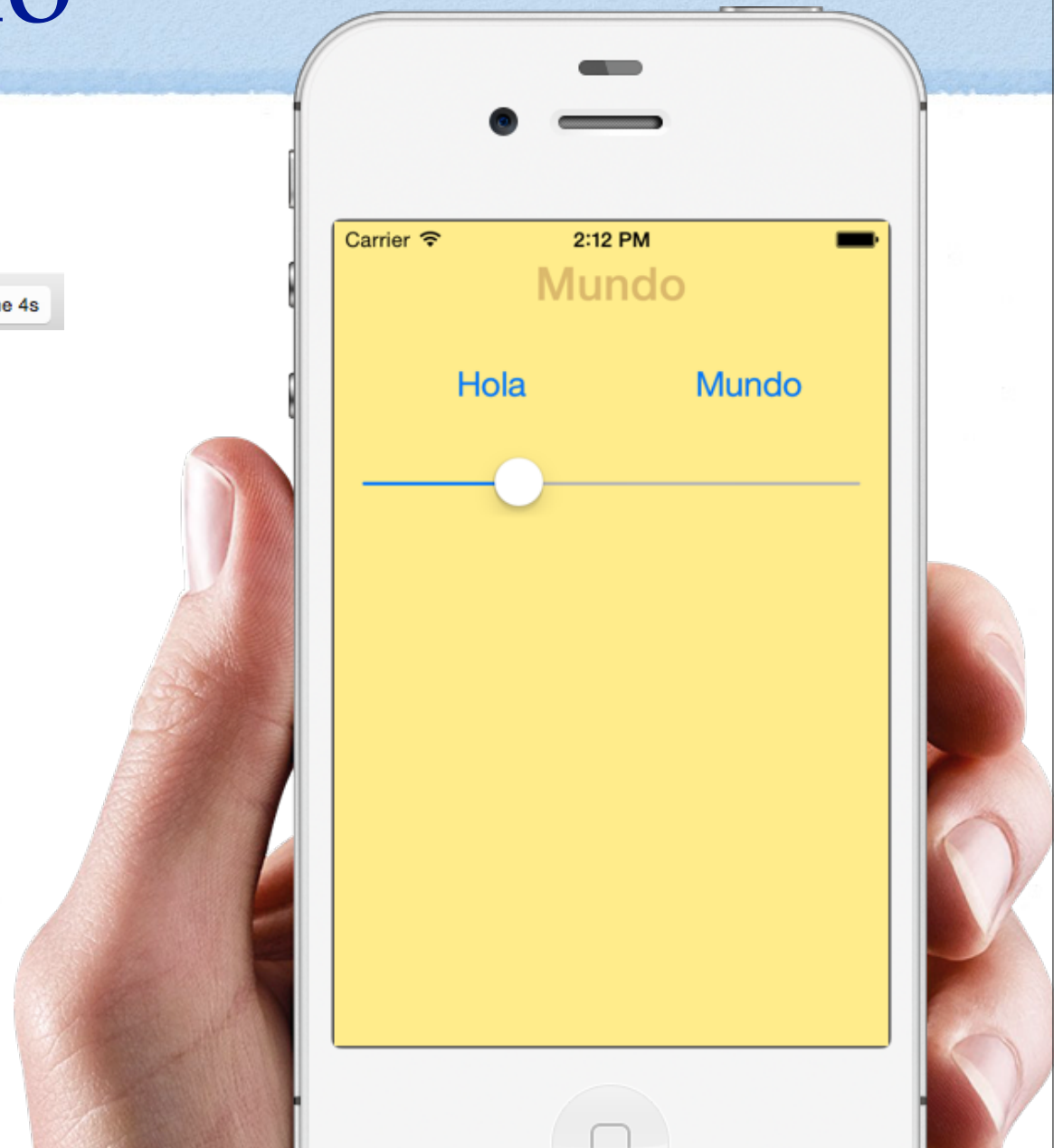
@IBAction func holaPressed(sender: UIButton) {
    msg.text = "Hola"
}

@IBAction func mundoPressed(sender: UIButton) {
    self.msg.text = "Mundo"
}

@IBAction func sliderMoved(sender: UISlider) {
    msg.alpha = CGFloat(sender.value)
}
}
```

Probarlo

- Compilar y ejecutar



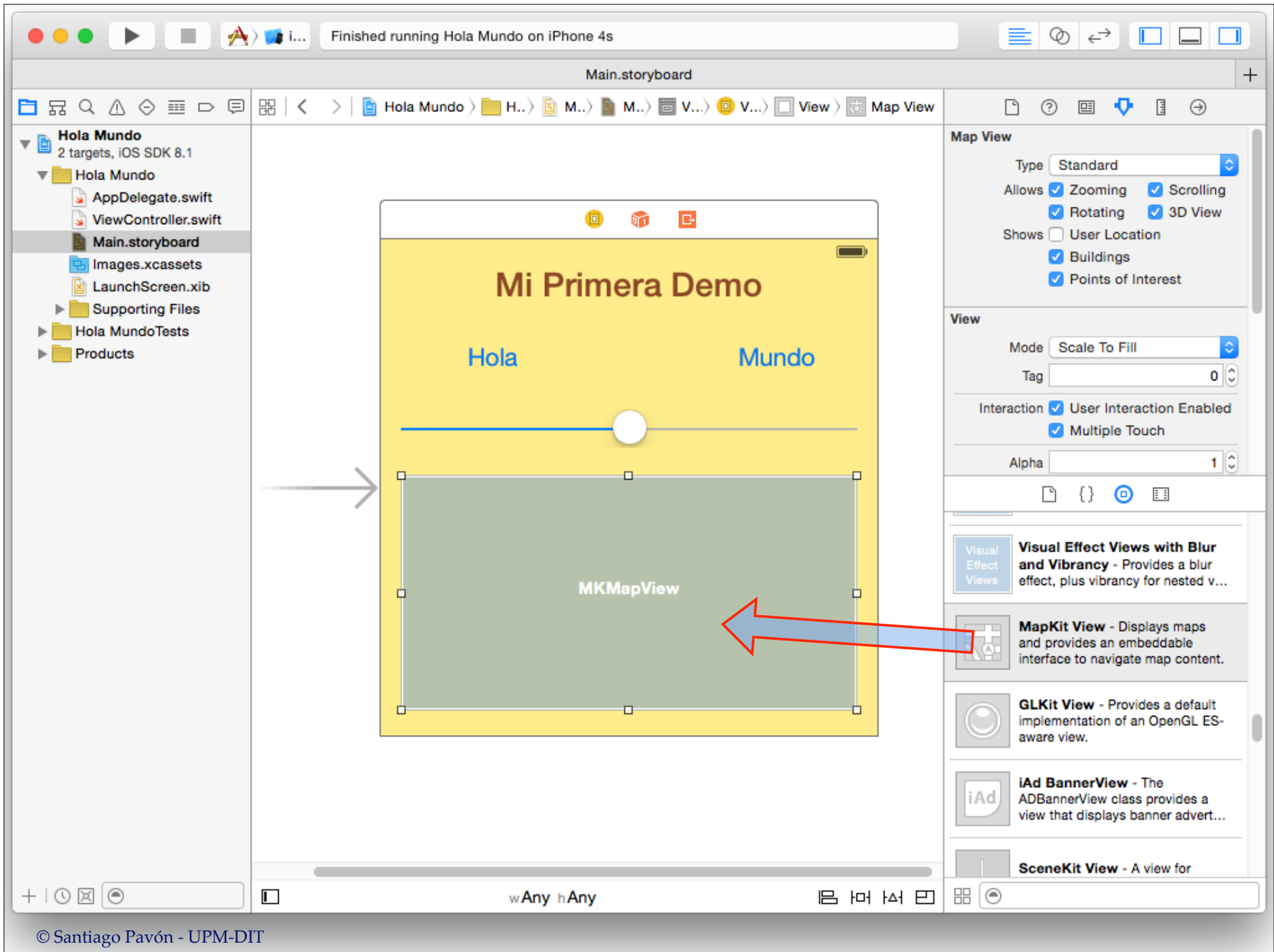
MKMapView

Ver el mundo

Si la aplicación se llama **Hola Mundo**, entonces quiero ver el mundo.

- Desde la librería de objetos añadimos un `MKMapView` a la vista.





Teleco

- Al pulsar el botón **Mundo** quiero ver donde está Teleco en el mapa.
- Creamos un outlet al mapa y lo conectamos.
 - Ya sabemos hacerlo.
 - Es igual que con la UILabel.
- Desde **mundoPressed** ponemos las coordenadas de Teleco en el mapa.
- Hay que importar el framework MapKit:

```
import MapKit
```



Finished running Hola Mundo on iPhone 4s

Main.storyboard

Hola Mundo > H > M > M > V > V > View > Map View

Automatic > ViewController.swift > No Selection

Mi Primera Demo

Hola

MKMapView

Connection: Outlet
Object: View Controller
Name: map
Type: MKMapView
Storage: Weak

Cancel Connect

```
//  
import UIKit  
import MapKit  
class ViewController: UIViewController {  
    @IBOutlet weak var msg: UILabel!  
    @IBOutlet weak var map: MKMapView!  
    override func viewDidLoad() {  
        super.viewDidLoad()  
        // Do any additional setup after  
        // loading the view, typically  
        // from a nib.  
    }  
    override func  
    didReceiveMemoryWarning() {  
        super.didReceiveMemoryWarning()  
        // Dispose of any resources that  
        // can be recreated.  
    }  
    @IBAction func holaPressed(sender:  
        UIButton) {  
        msg.text = "Hola"  
    }  
}
```

wAny hAny

Control+B1

Finished running Hola Mundo on iPhone 4s

ViewController.swift

```
import UIKit
import MapKit

class ViewController: UIViewController {

    @IBOutlet weak var msg: UILabel!

    @IBOutlet weak var map: MKMapView!

    override func viewDidLoad() { ... }

    override func didReceiveMemoryWarning() { ... }

    @IBAction func holaPressed(sender: UIButton) {
        msg.text = "Hola"
    }

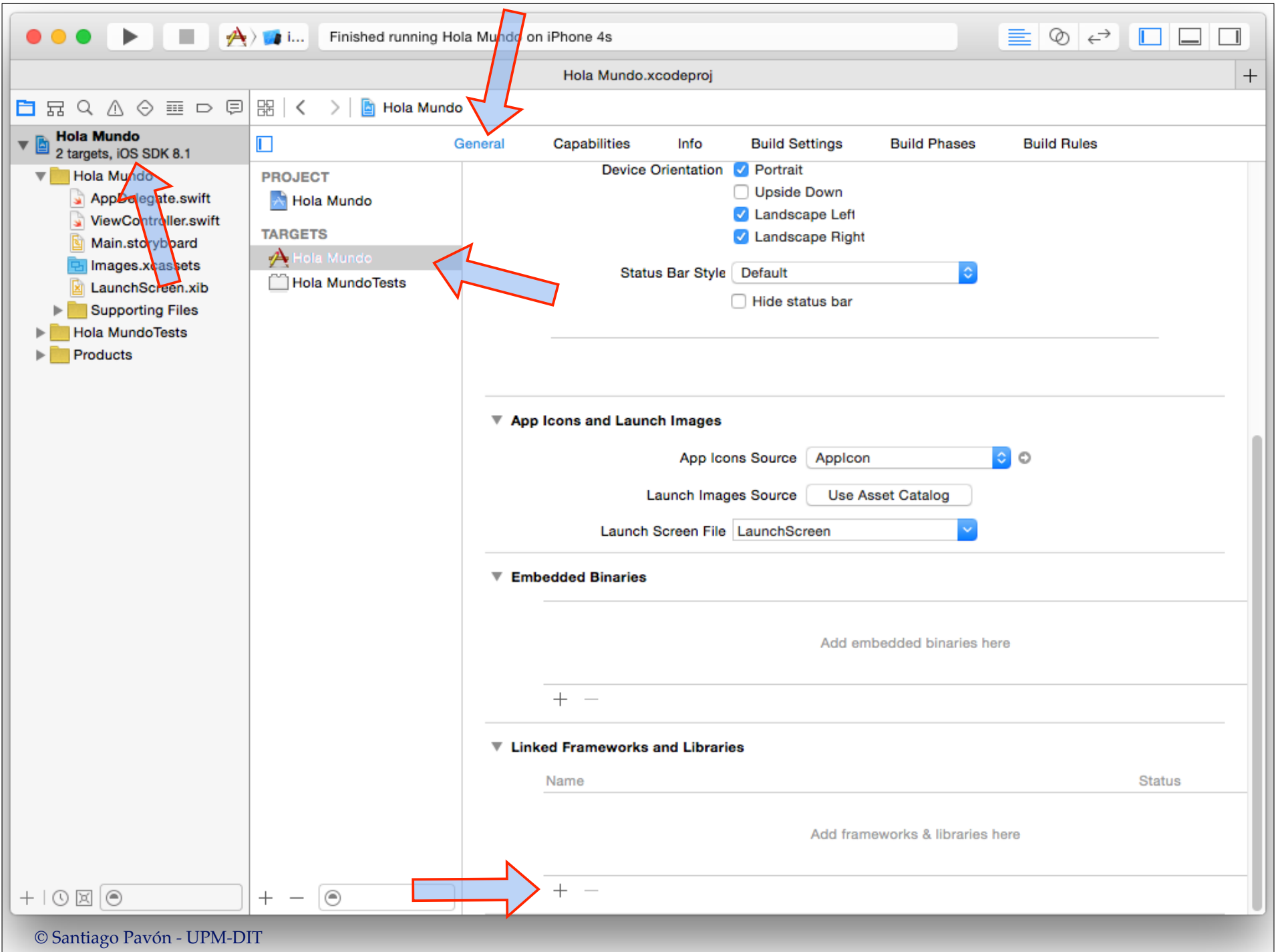
    @IBAction func mundoPressed(sender: UIButton) {
        self.msg.text = "Mundo"

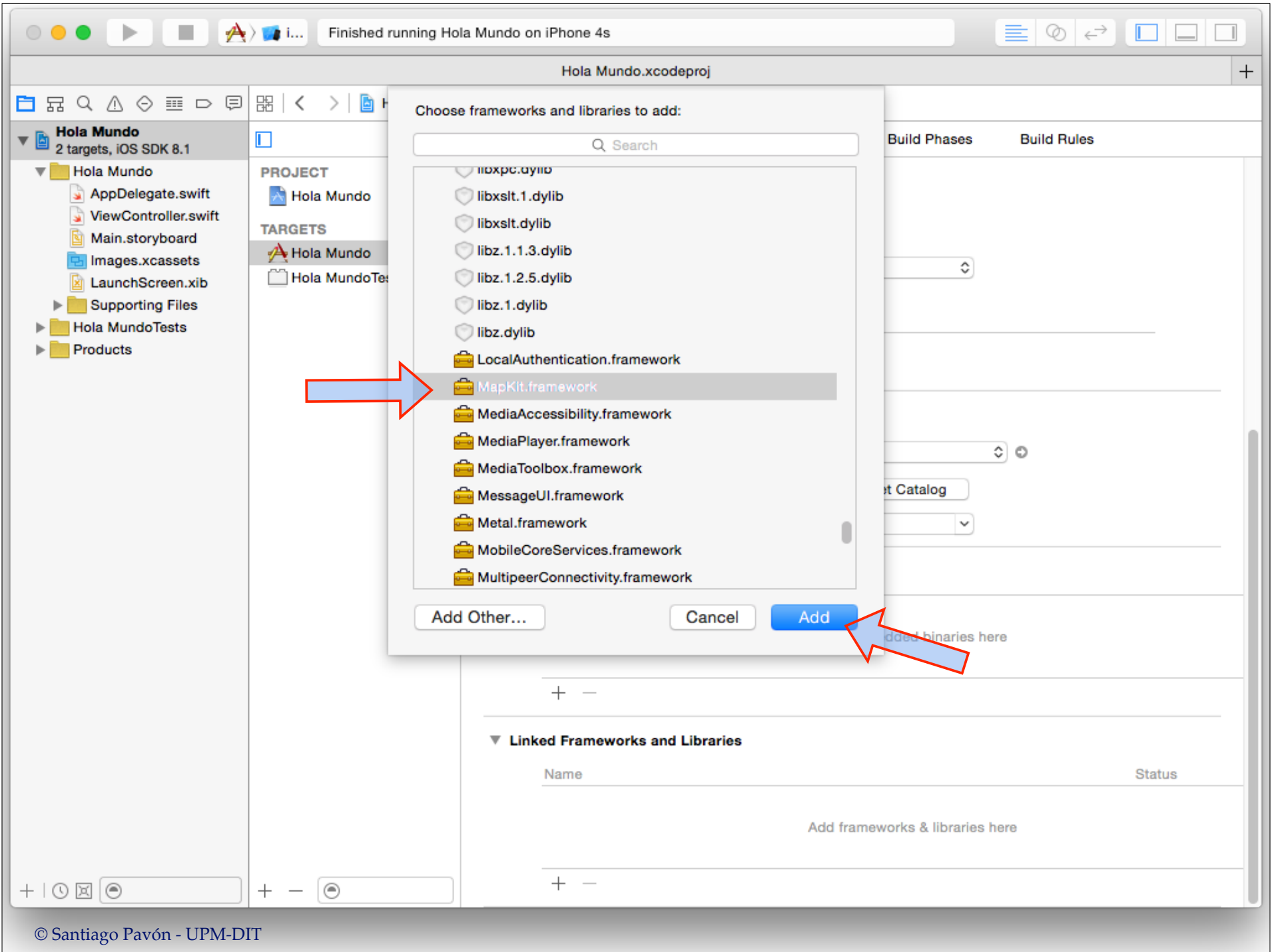
        let center = CLLocationCoordinate2DMake(40.452445, -3.726162)
        let span = MKCoordinateSpanMake(0.004, 0.004)
        let reg = MKCoordinateRegionMake(center, span)
        map.setRegion(reg, animated: true)
    }

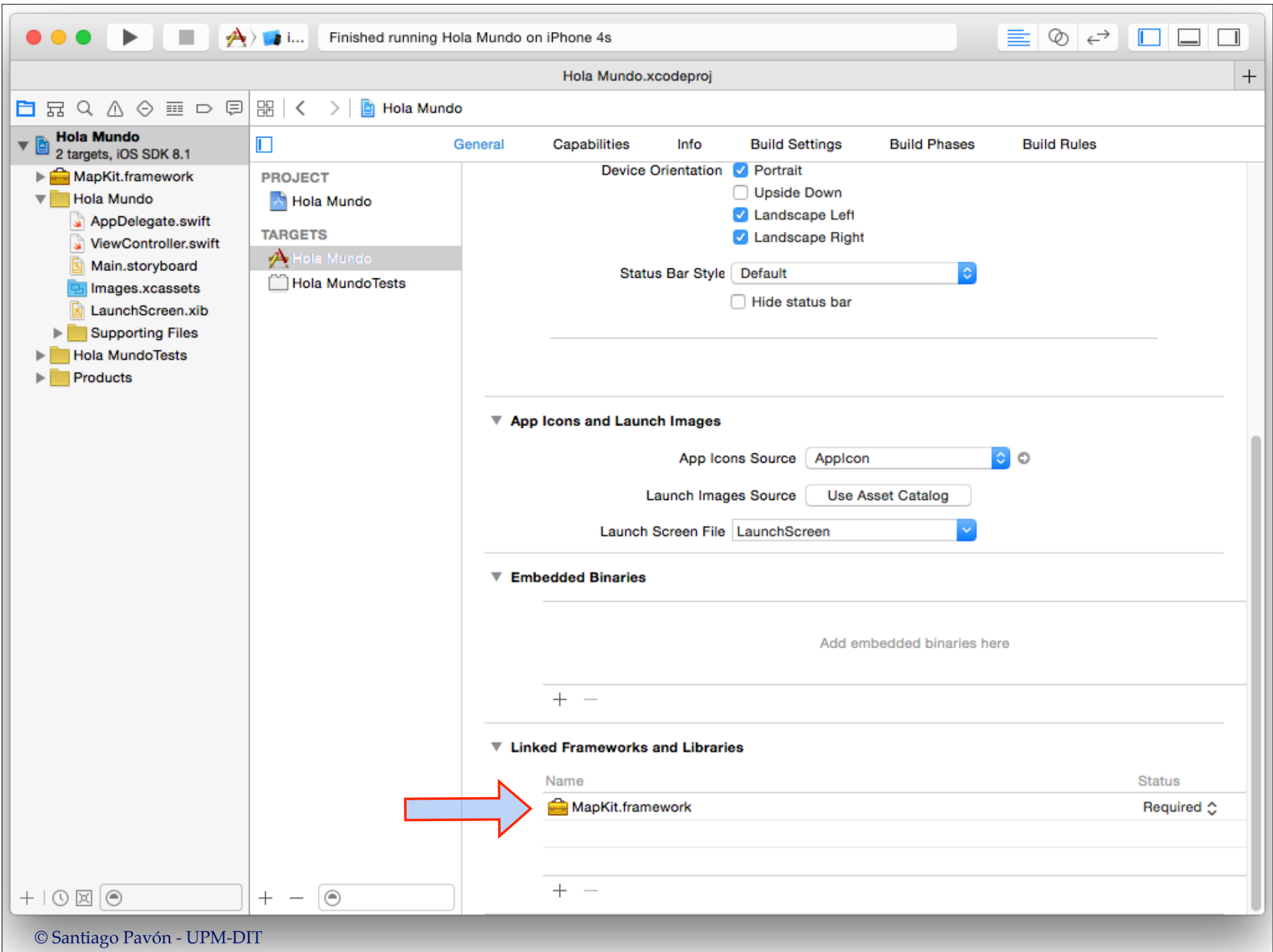
    @IBAction func sliderMoved(sender: UISlider) {
        msg.alpha = CGFloat(sender.value)
    }
}
```

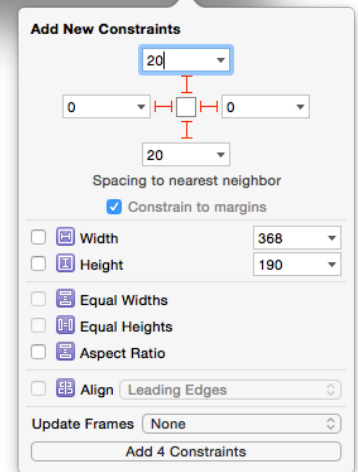
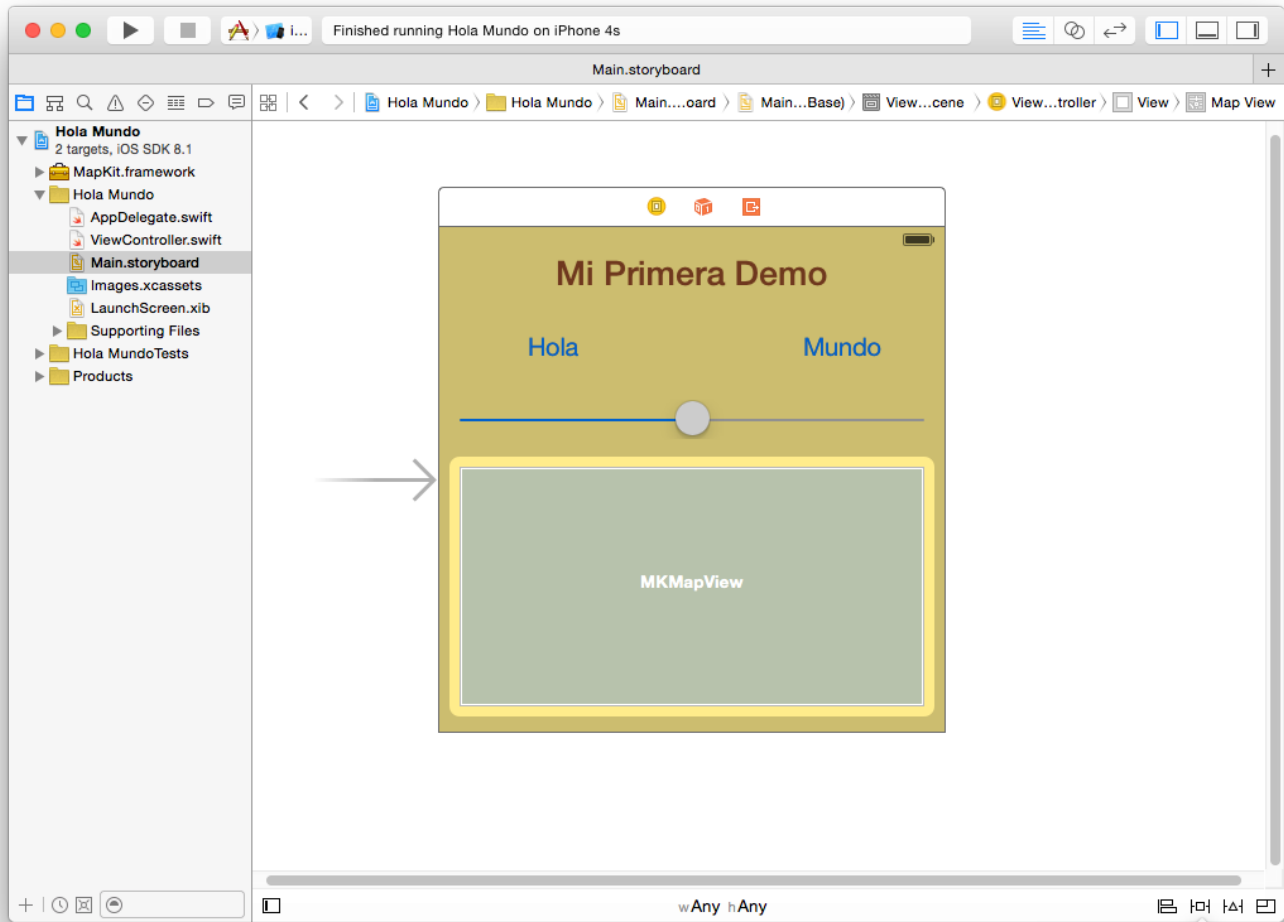
+ | ⌚ | 🗑️ | 🔍

- Al incluir la sentencia **import MapKit** en el fichero `ViewController.swift`:
 - Se importan las cabeceras del framework **MapKit**, haciendo que el tipo **MKMapView** sea conocido.
 - Al construir el ejecutable de la aplicación, se enlaza con el framework **MapKit**.
- Nota: sin la sentencia **import**, el framework **MapKit** debería añadirse al proyecto manualmente.









Autolayout

Práctica 1

- Hacer la demo Hola Mundo con los siguientes cambios:
 - Al pulsar el botón Hola:
 - El slider debe ajustarse a 0.5
 - El mapa debe configurarse en modo híbrido.
 - Al pulsar el botón Mundo:
 - El mapa debe configurarse en modo satélite.
 - Añadir otro botón para mostrar las pirámides de Egipto.

