

Mobile programming e multimedia

Sviluppo mobile
su piattaforma iOS

moku



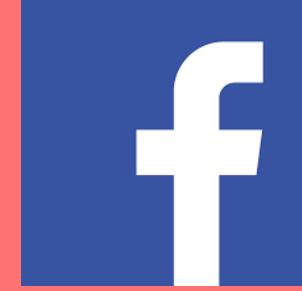
UNIVERSITÀ
DEGLI STUDI
DI PADOVA

Human-centered design and software development

Creative Engineering



<https://moku.io>



<https://www.facebook.com/moku.io>



<https://www.linkedin.com/company/moku/>

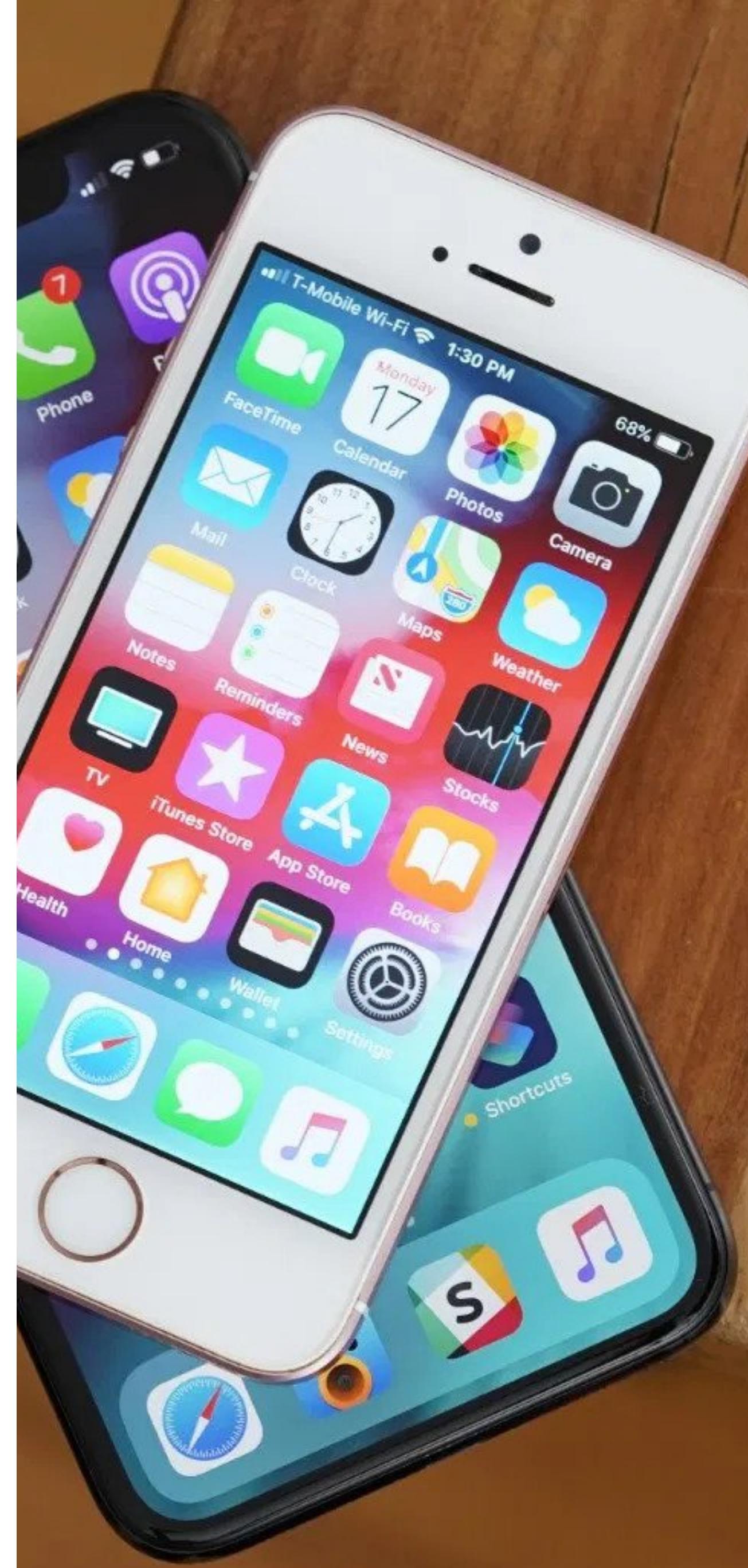
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Sommario

- 01. Ecosistema
- 02. Storia
- 03. Architettura
- 04. Sviluppo
- 05. UI & UX
- 06. Persistenza
- 07. Extra
- 08. Demo

Ecosistema

iOS



Sistema operativo Apple per
iPhone, iPod Touch e iPad*

iOS - AppStore

	1. Boss Games + Get In-App Purchases	3. Billionaire Games + Get In-App Purchases	4. UNKILLED Games + Get In-App Purchases	5. YAHTZEE® With Buddies Games + Get In-App Purchases	6. Agar.io Games + Get In-App Purchases	7. MADDEN NFL Mobile Games + Download In-App Purchases	8. PAC-MAN 256 - Endless Arca... Games + Download In-App Purchases	9. Buddyman: Ninja Kick 2 Games Get In-App Purchases	10. Seashine Games + Get In-App Purchases	11. Flick Kick Football Games + Get In-App Purchases
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	14. Catch the Mask Games + Get In-App Purchases		15. The Walking Dead: Road to... Games + Get In-App Purchases		16. Block it Games + Get In-App Purchases		20. Fit the Fat Games + Get In-App Purchases		21. Buddyman: Independence... Games + Get In-App Purchases		22. Galaxy Alliance Games + Get In-App Purchases
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	25. Crossy Road - Endless Arca... Games + Download In-App Purchases		26. Candy Crush Saga Games + Get In-App Purchases		27. Casino Games + Get In-App Purchases		32. Cooking Fever Games + Get In-App Purchases		33. World Craft - Dream Island Games + Get In-App Purchases
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	36. Despicable Me: Minion Rush Games + Get In-App Purchases		37. Jenga Games + Get In-App Purchases		38. Aerox Games + Get In-App Purchases		39. Spinny Circle Games + Get In-App Purchases		40. 1010! Games + Get In-App Purchases		41. Covet Fashion - The... Games + Get In-App Purchases		42. Criminal Case Games + Get In-App Purchases		43. Fallout Shelter Games + Download In-App Purchases		44. Game of War - Fire Age Games + Get In-App Purchases
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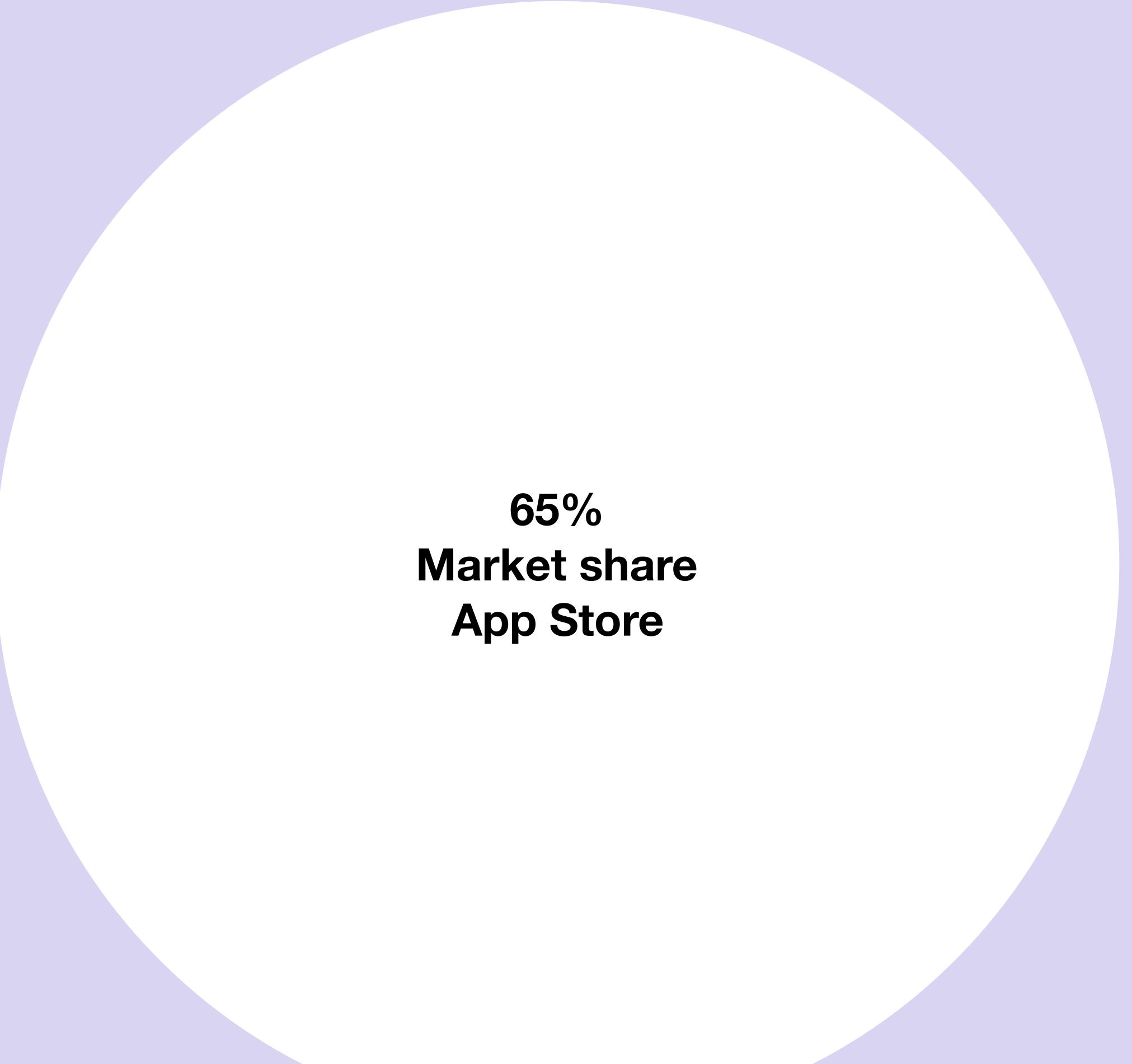


iOS -

Perché sviluppare per
iOS



13%
Market share
Smartphone



65%
Market share
App Store

Storia

iOS - Un po' di storia



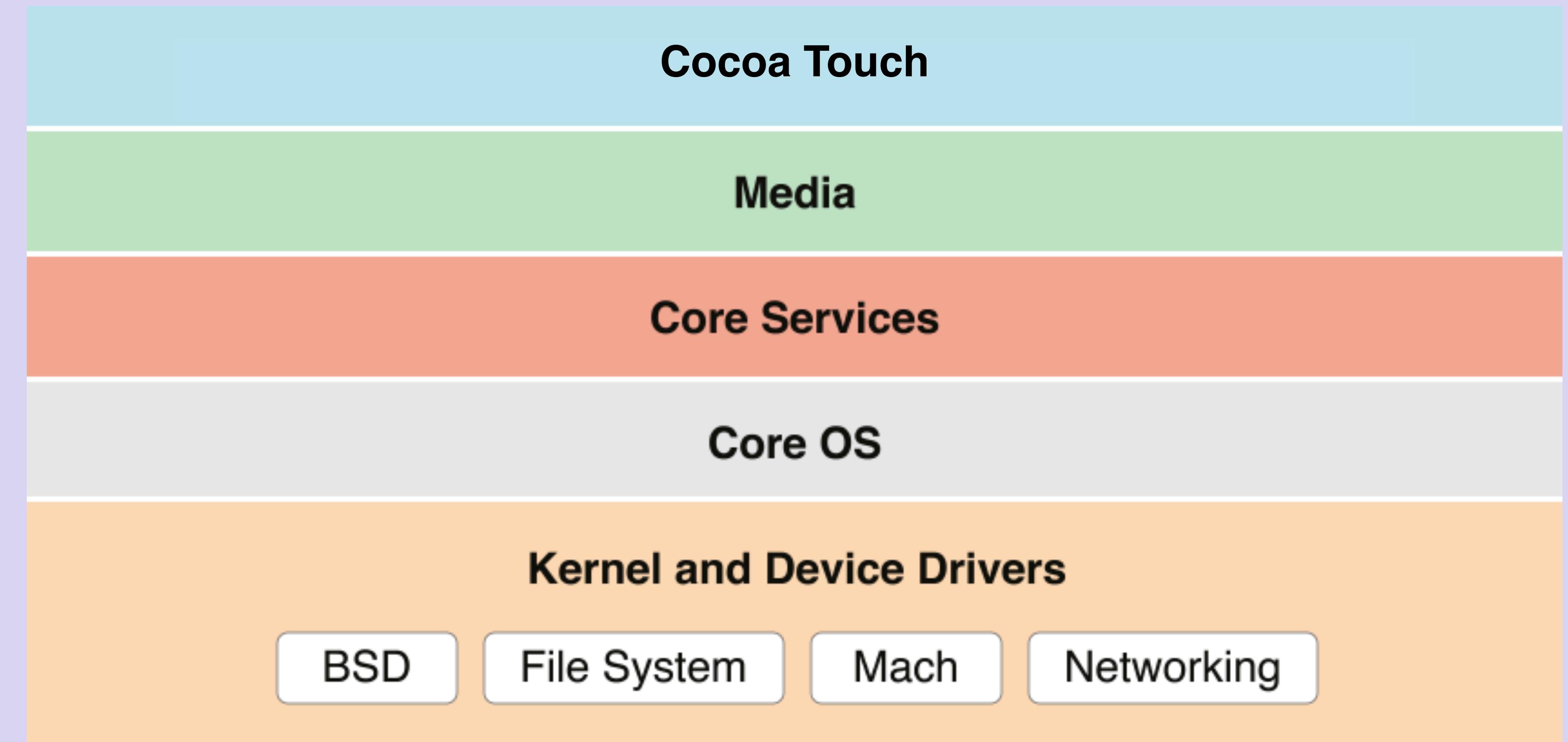
iPhone OS 1.0

iOS - Un po' di storia

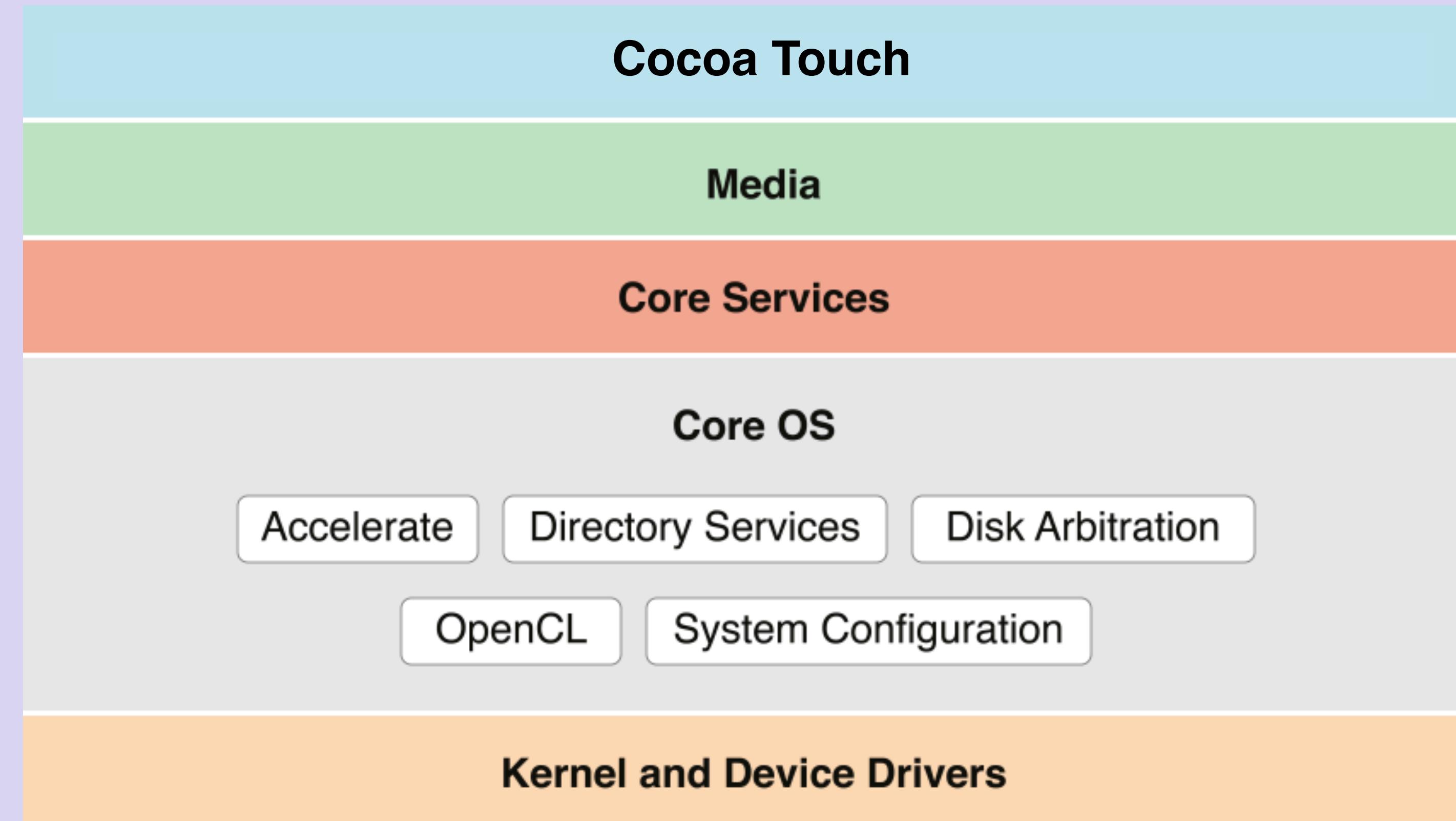


Architettura

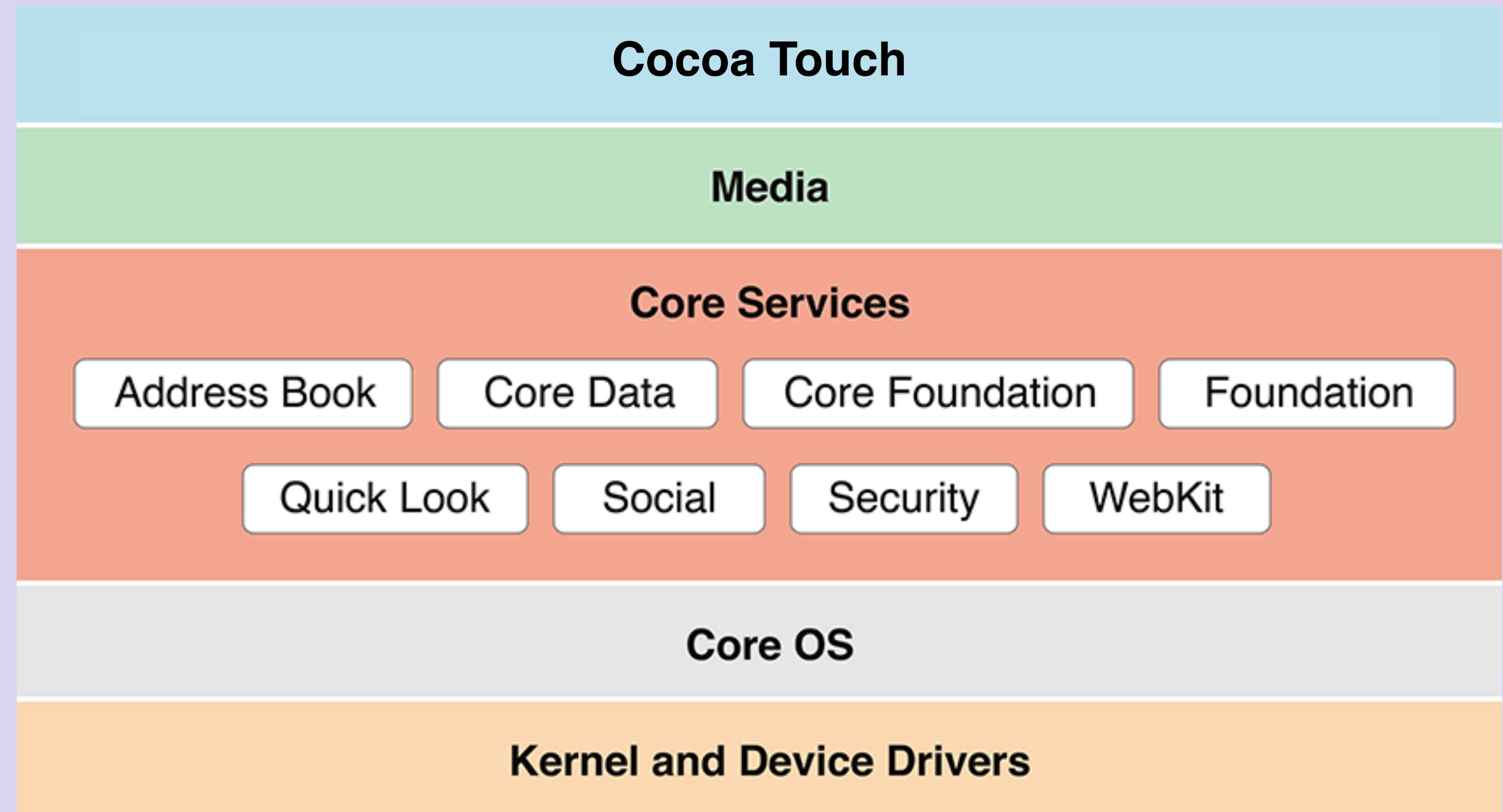
iOS - Cosa c'è dentro?



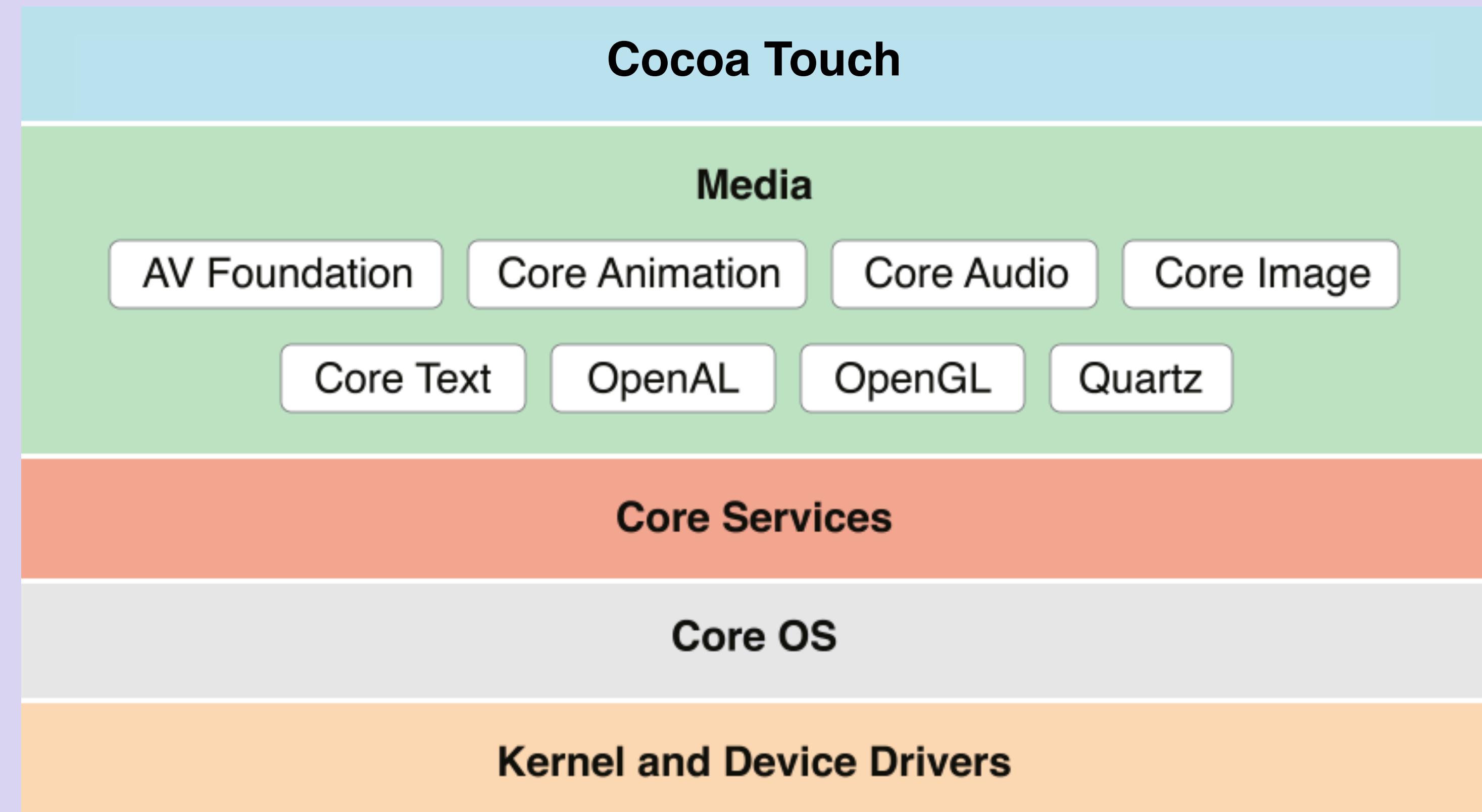
iOS - Cosa c'è dentro?



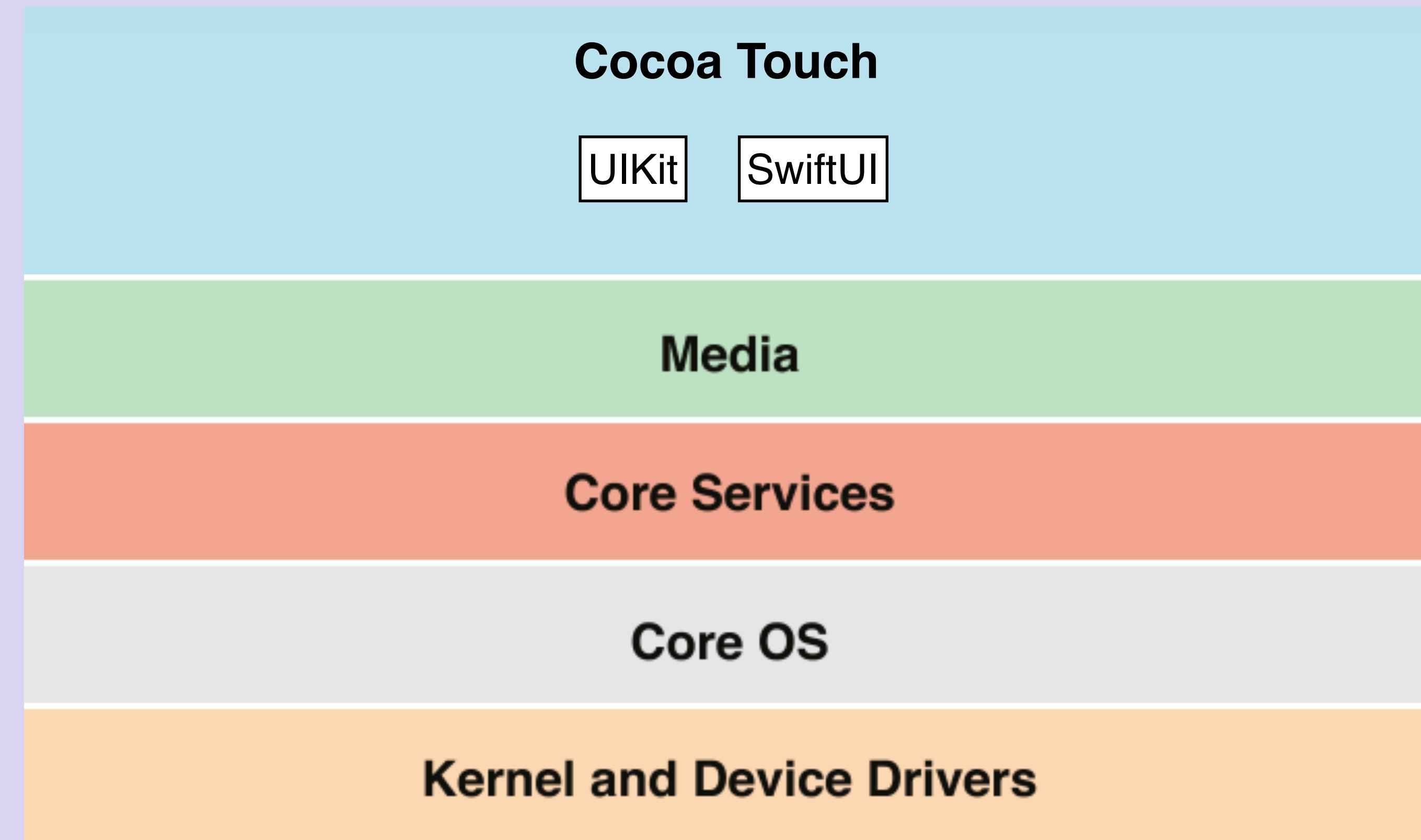
iOS - Cosa c'è dentro?



iOS - Cosa c'è dentro?

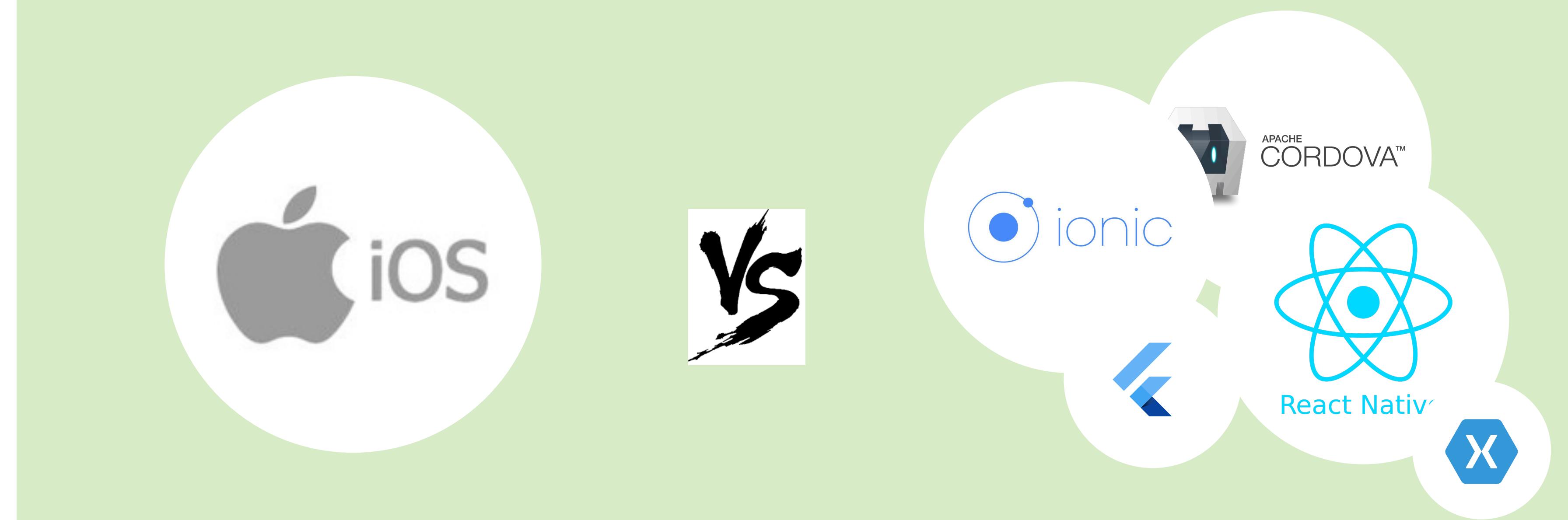


iOS - Cosa c'è dentro?



Sviluppo

Sviluppo - Nativo vs ibrido



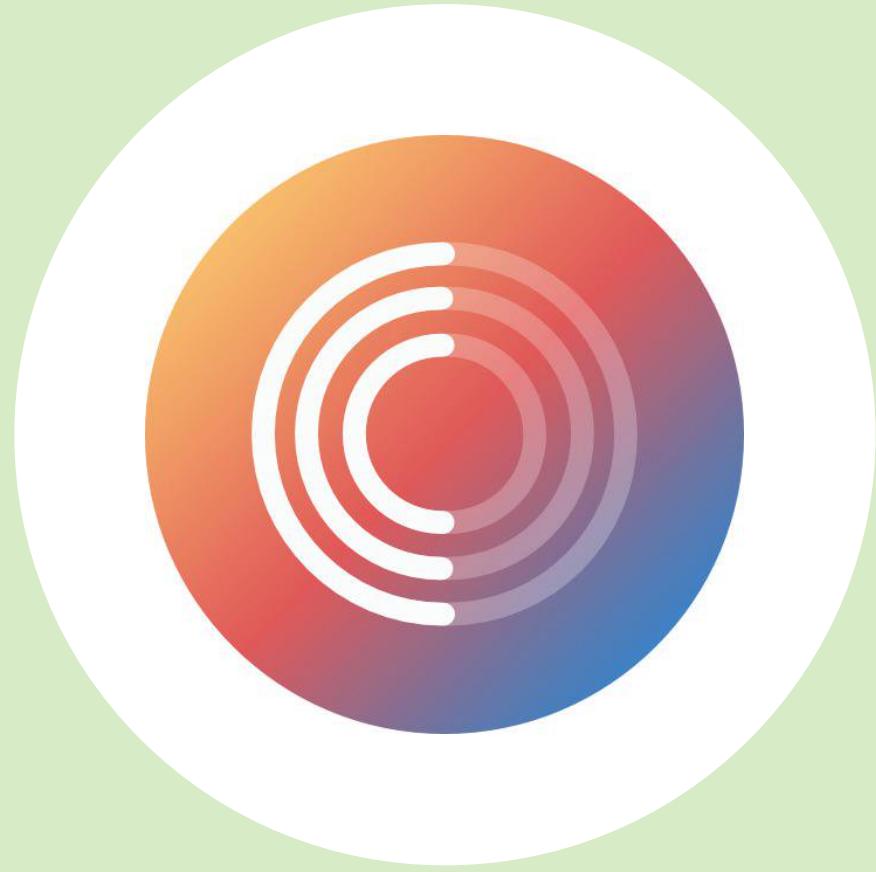
Codice ad hoc e creazione di app distinte
Totale accesso ad hardware e API
Documentazione chiara e precisa
Miglior user experience
Prestazioni superiori
Maggior community di supporto

Multiplattaforma
Soluzioni abbastanza stabili
Accesso a gran parte dell'hardware
Resa grafica e performance inferiori
Componente nativa comunque necessaria

Sviluppo - Strumenti di sviluppo



Sviluppo - Package managers



Sviluppo -
Objective-C

Nato negli anni 80
Estensione del C ed
influenzato da Smalltalk



Miglioramenti prestazioni a run-time



Supporto 64-bit

Migliore sintassi
Garbage collection

Sviluppo - Objective-C 2.0



```
#import "ViewController.h"

@interface ViewController : UIViewController

@end

@implementation ViewController
UILabel *promptLabel;
UILabel *helloWorldLabel;
UIButton *btnGo;
UITextView *txtInput;

- (void)viewDidLoad
{
    promptLabel = [[UILabel alloc] initWithFrame:CGRectMake(0, 20, 320, 40)];
    promptLabel.text = @"Enter your name:";

    txtInput = [[UITextView alloc] initWithFrame:CGRectMake(0, 60, 320, 40)];
    txtInput.text = @"Laurence";

    btnGo = [UIButton buttonWithType:UIButtonTypeRoundedRect];
    btnGo.frame = CGRectMake(0, 100, 320, 40);
    [btnGo setTitle:@"Click me!" forState:UIControlStateNormal];
    [btnGo addTarget:self action:@selector(updateHW) forControlEvents:UIControlEventTouchUpInside];

    helloWorldLabel = [[UILabel alloc] initWithFrame:CGRectMake(0, 160, 320, 40)];
    helloWorldLabel.text = @"Hello, World :";

    [self.view addSubview:promptLabel];
    [self.view addSubview:txtInput];
    [self.view addSubview:btnGo];
    [self.view addSubview:helloWorldLabel];

    [super viewDidLoad];
    // Do any additional setup after loading the view, typically from a nib.
}

-(void)updateHW
{
    NSString *name = txtInput.text;
    helloWorldLabel.text = [NSString stringWithFormat:@"Hello, World %@", name];
}
```

Sviluppo -
Swift



Presentato da Apple nel 2014

Open source
Meno verboso

Forte tipizzazione
Migliori controlli a
compile-time

Sviluppo - Swift



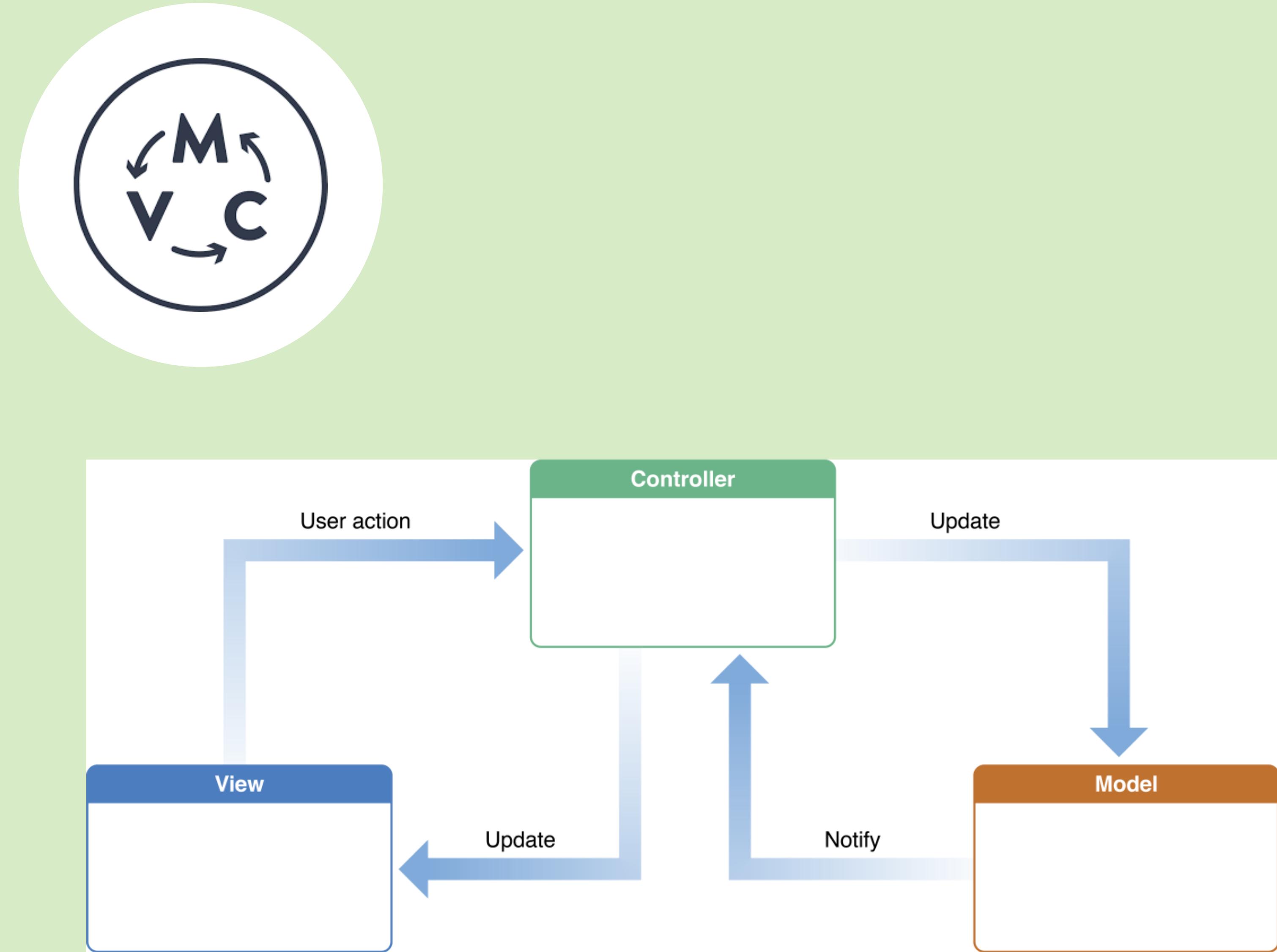
```
import UIKit

var parola = "anna"
var parolaInvertita:String

parolaInvertita = String(parola.characters.reversed())

if parolaInvertita == parola {
    print("La parola \(parola) è palindroma\n")
} else {
    print("La parola \(parola) NON è palindroma\n")
}
```

Sviluppo - Design Pattern MVC

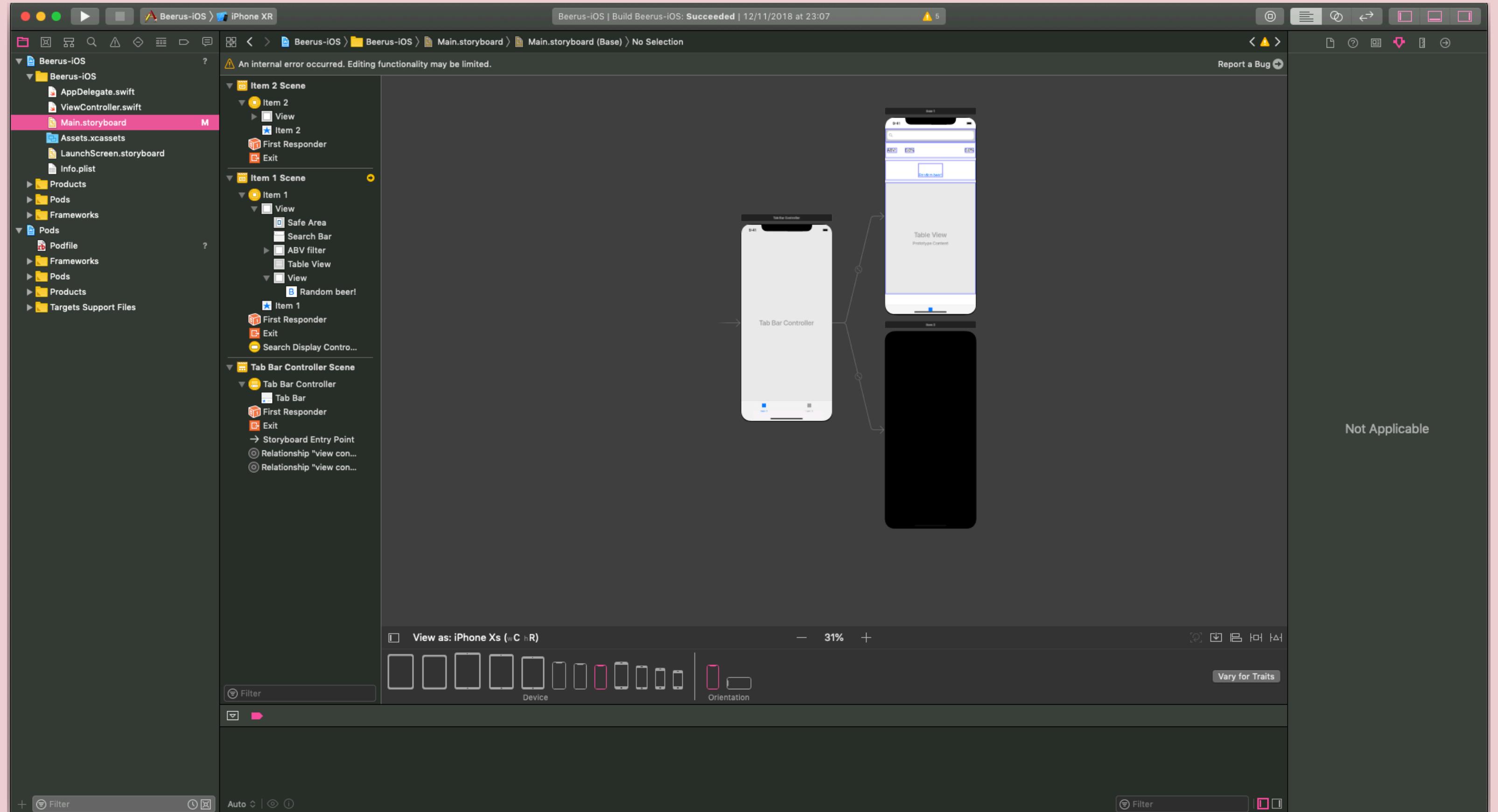


Sviluppo -
Test, development and
security

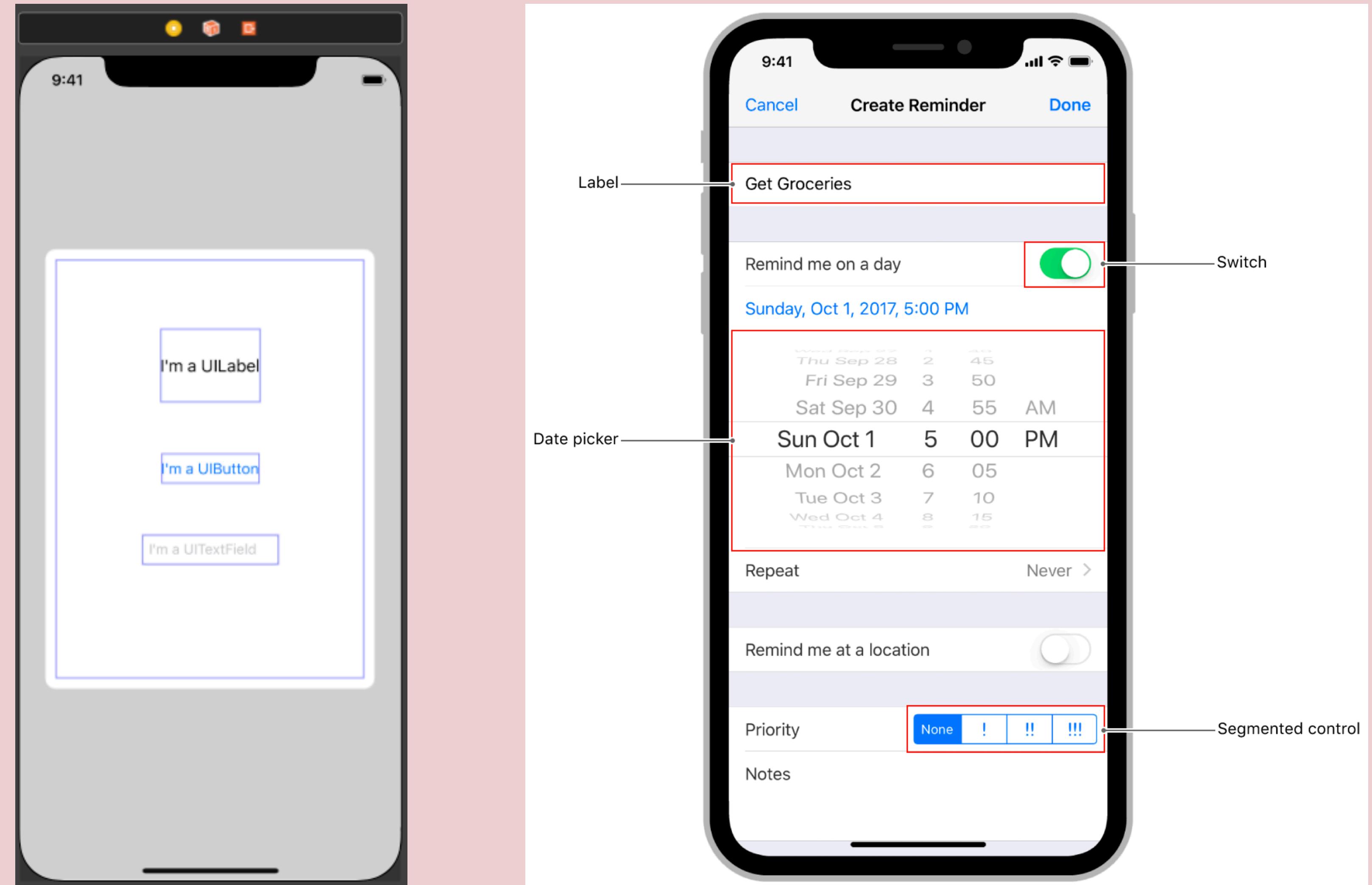


UI & UX

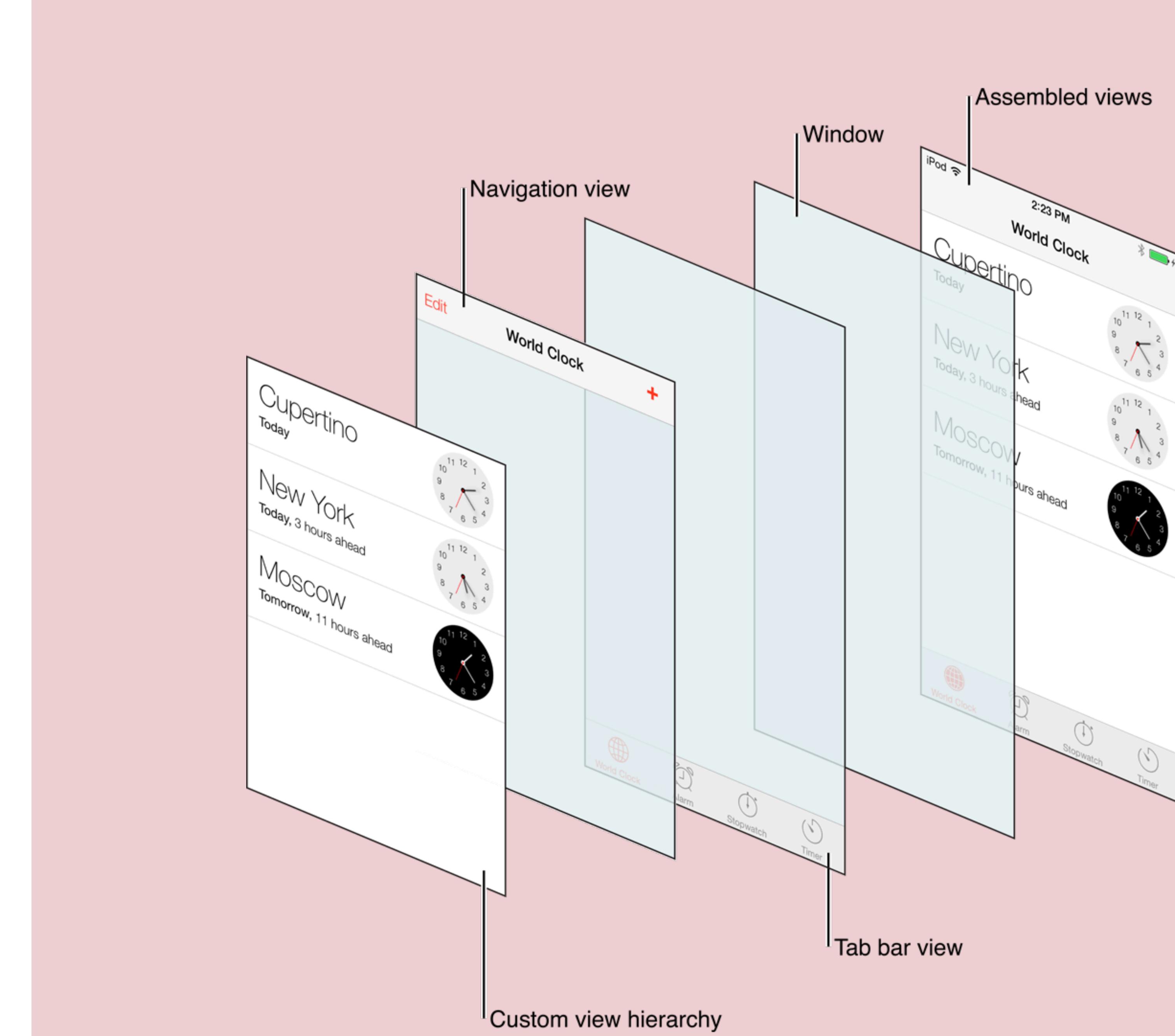
Gestione elementi UI & UX - Storyboard



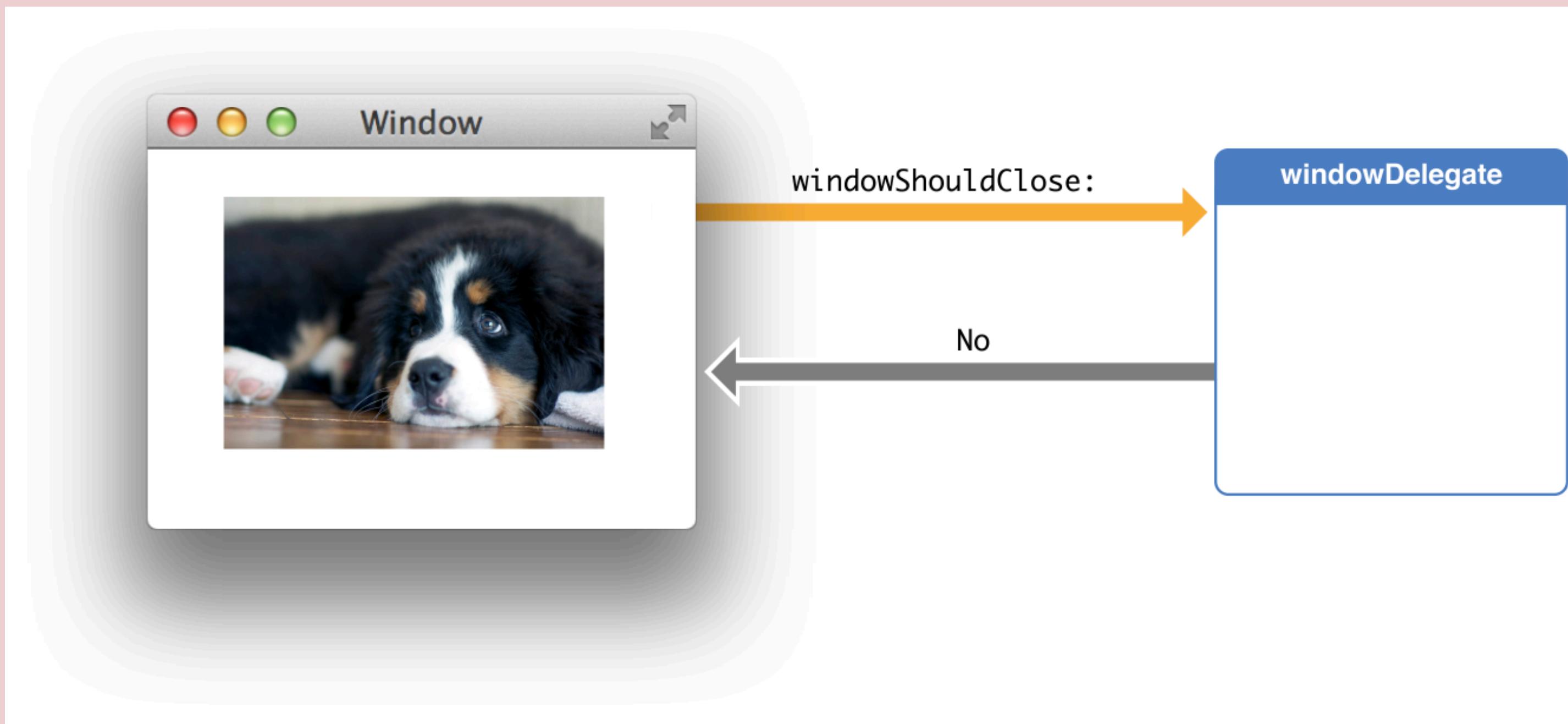
Elementi UI & UX - UIView



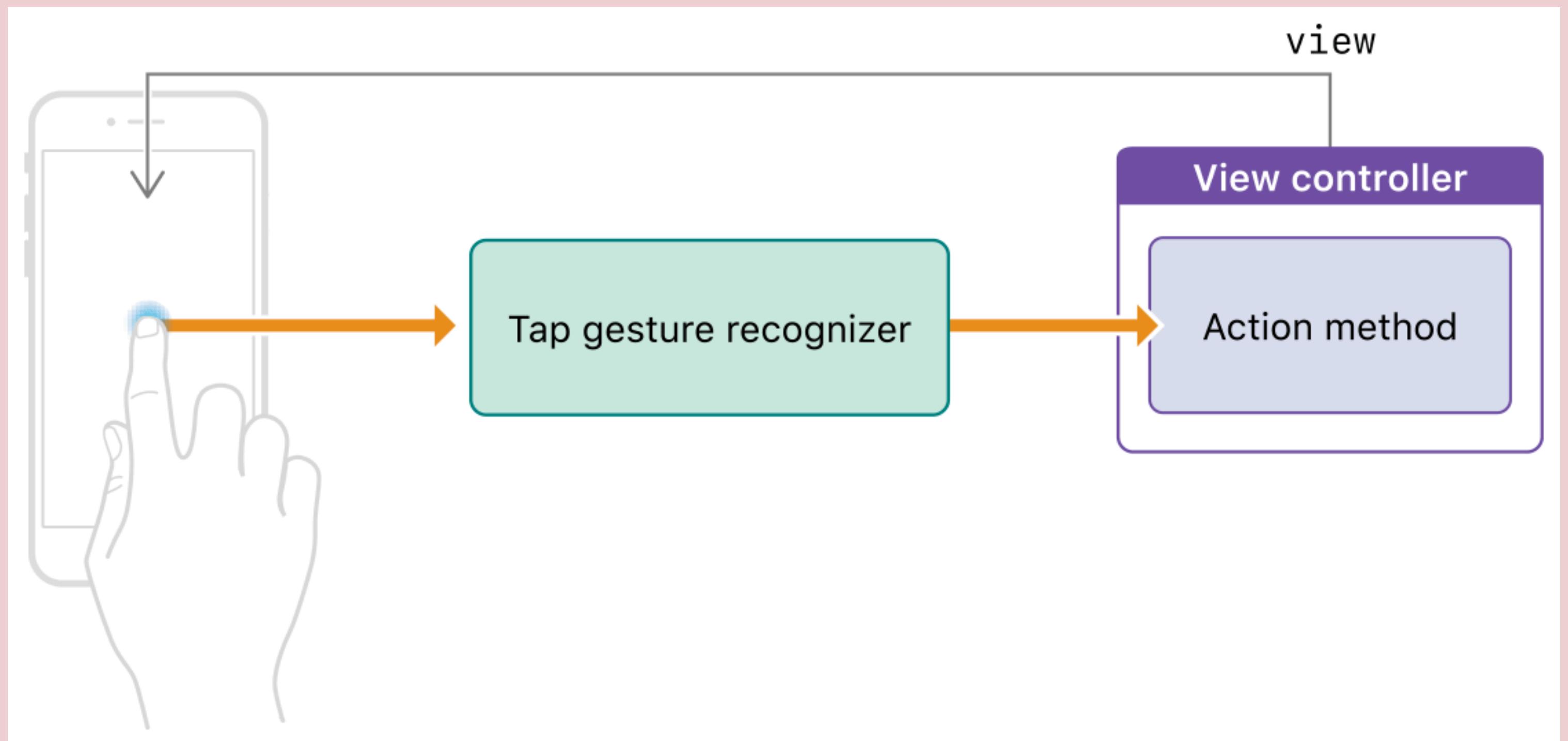
Elementi UI & UX - UIViewController



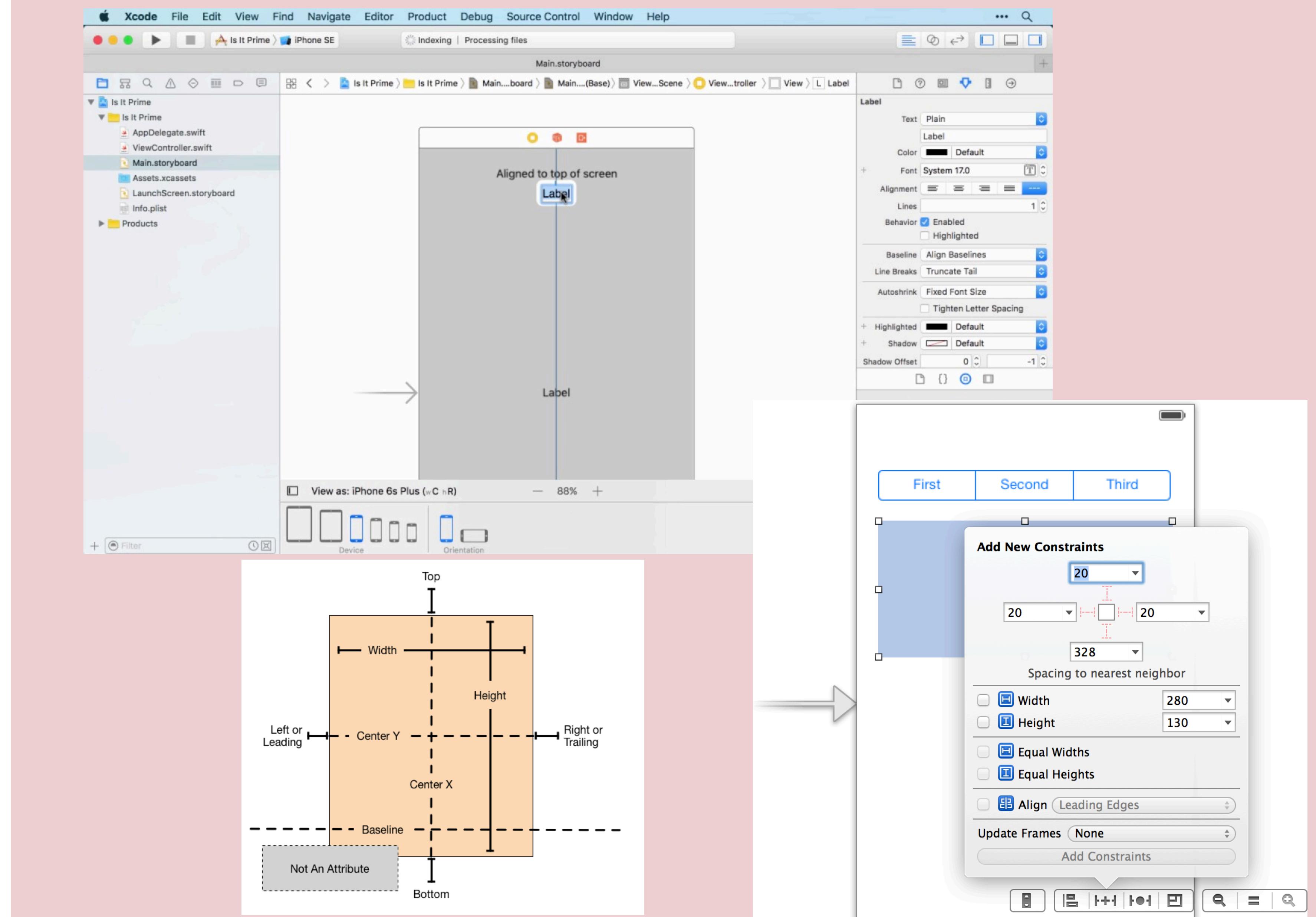
Sviluppo - Design Pattern Delegate



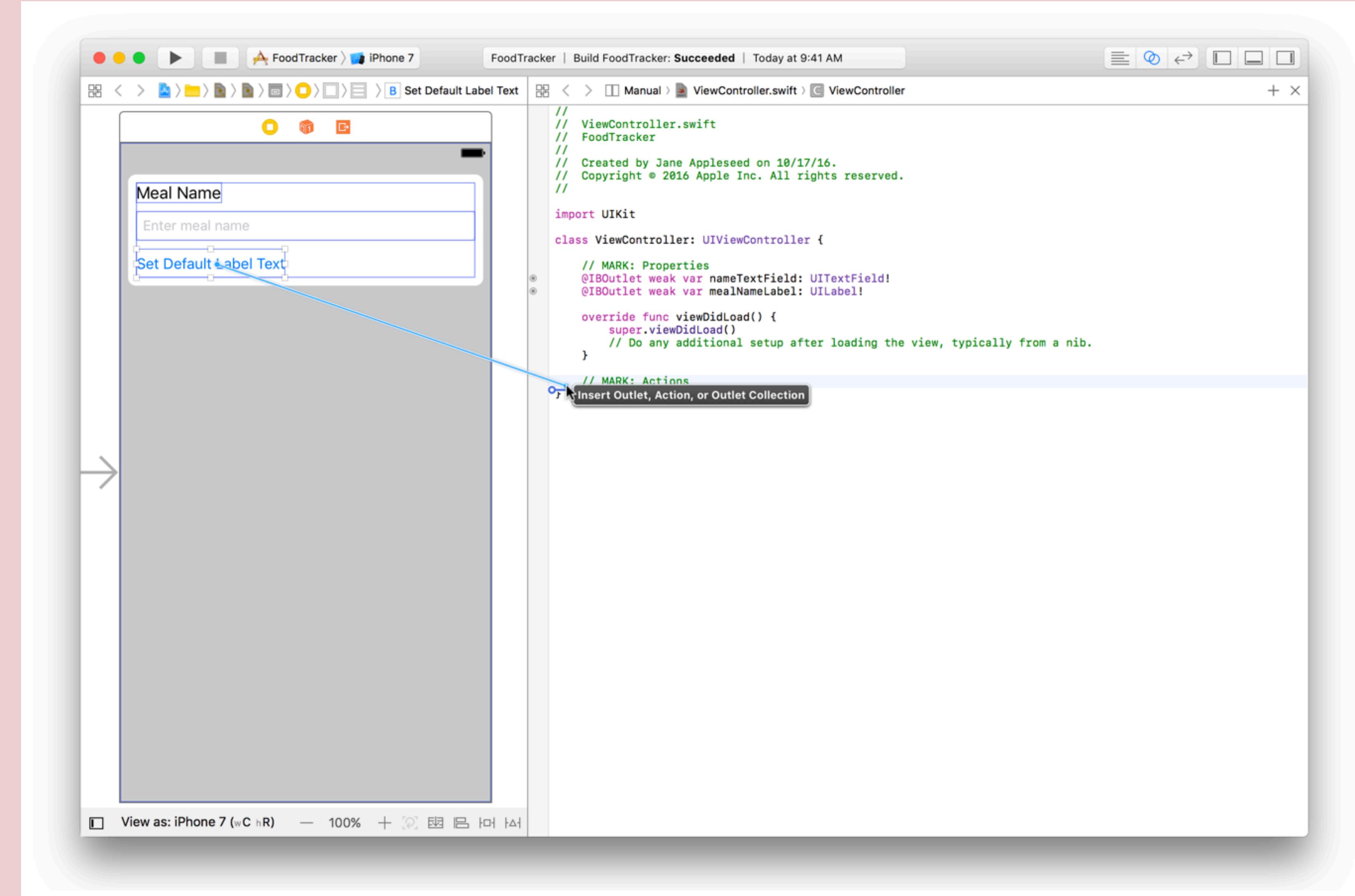
Elementi UI & UX - gestures recognizers



Elementi UI & UX - Autolayout



Gestione elementi UI & UX - Actions & Outlets



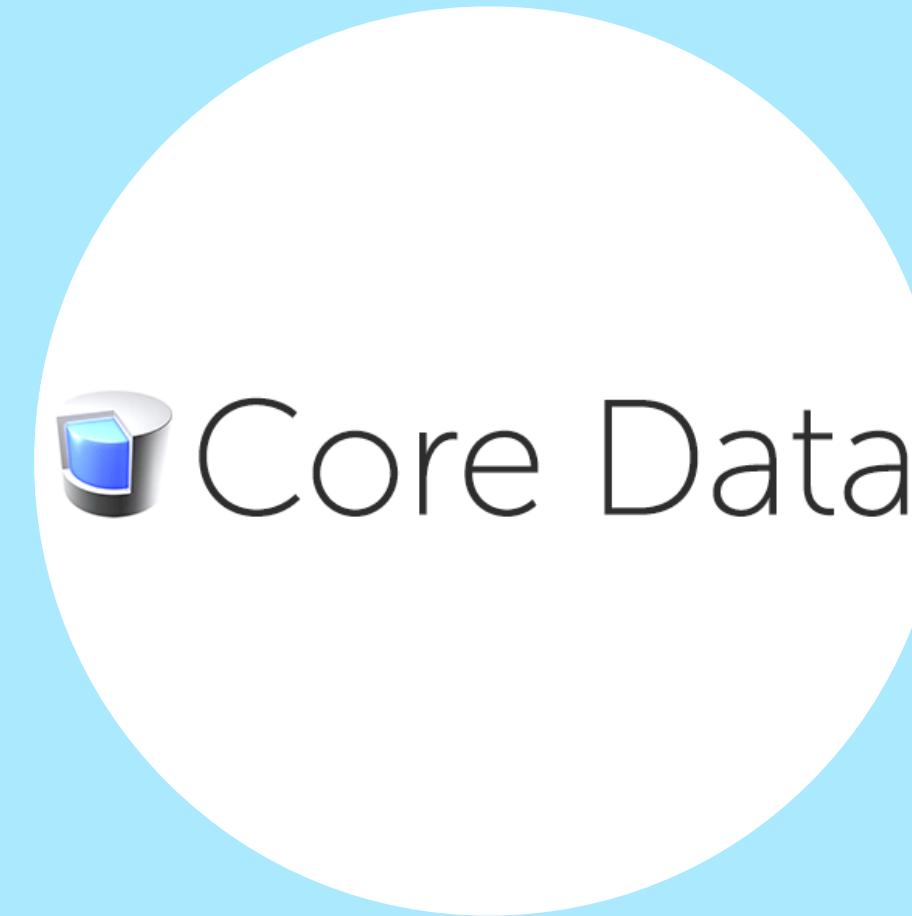
Gestione elementi UI & UX - Librerie terze parti

The diagram consists of a central white circle containing the text "SDWebImage" and a red square icon, surrounded by twelve smaller white circles, each containing a different library or application screenshot:

- Top Left:** A teal square containing the "Lottie" logo.
- Top Center:** A screenshot of an iPhone displaying a progress bar with various modes listed: Indeterminate mode, With label, With details label, Determinate mode, Annular determinate mode, Text only, Custom view, With action button, Mode switching, On window,NSURLSession, and Determinate with NSProgress.
- Top Right:** A screenshot of an iPhone displaying a weather app interface with multiple cards showing weather data for New York City.
- Middle Left:** A screenshot of an iPhone displaying a cooking recipes app interface with cards for "Tasty Burgers" and "Spicy Pizza".
- Middle Center:** A screenshot of a calendar for July 2016, showing the 9th circled in purple.
- Middle Right:** A screenshot of a radar chart titled "RadarChart series covered by bubbles indicates the value" with data points for Party A through Party G.
- Bottom Left:** A screenshot of a map application showing a stadium and surrounding areas.
- Bottom Center:** A screenshot of a mobile application interface showing a navigation bar and several cards.
- Bottom Right:** A screenshot of a mobile application interface showing a navigation bar and several cards.
- Right Side:** A large white circle containing the "Holo" logo, which features stylized letters H, O, L, O in blue, green, orange, and yellow with a splash effect.
- Bottom Right:** A screenshot of a mobile application interface showing a navigation bar and several cards.

Persistenza

Persistenza e networking - Core Data



Core Data

Gestione layer model

Query, inserimento, cancellazioni dati DB

Semplificazione costruzione e
gestione del modello

Persistenza e networking -
Realm



Alternativa open-source a
Core Data

Semplificazione per lo sviluppatore

Amazon, Google, Netflix
ed altri giganti del settore

Persistenza e networking - Realm



Java Swift Objective-C JavaScript Xamarin

```
class Dog: Object {
    @objc dynamic var name = ""
    @objc dynamic var age = 0
}

let dog = Dog()
dog.name = "Rex"
dog.age = 1

let realm = try! Realm()
try! realm.write {
    realm.add(dog)
}

let pups = realm.objects(Dog.self).filter("age < 2")
```

Extra





Kit di Apple

Demo



Tutto il codice di questa demo è presente su GitHub:

github.com/moku-io/demo-unipd

moku

davide@moku.io

Bibliografia

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- <https://developer.apple.com/swift/>
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- <https://www.jetbrains.com/objc/>

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- <https://www.sketchapp.com/>
- <https://marvelapp.com/>
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- <https://fastlane.tools/>
- <https://swift.org/package-manager/>
- <https://developer.apple.com/documentation/sirikit>
- <https://developer.apple.com/documentation/coreml>
- <https://developer.apple.com/documentation/arkit>
- <https://developer.apple.com/documentation/homekit>
- <https://developer.apple.com/documentation/healthkit>
- <https://developer.apple.com/documentation/watchkit>

Risorse utili

- <https://developer.apple.com/>
- <https://www.raywenderlich.com/>
- <https://itunes.apple.com/us/course/developing-ios-11-apps-with-swift/id1309275316>
- <https://nshipster.com/>
- <https://www.appcoda.com/>
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- <https://littlebitsofcocoa.com/>