



Designing Apps with Interface Builder

Rob Marini
Interface Builder Engineer

What a Year It's Been...



Roadmap

Building Universal Applications

- Universal or independent apps
- Organizing your project
- Adopting iPad features
- Adopting iOS 4 features

Roadmap

Building Universal Applications

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Universal Apps

One app, everywhere

- Build upon existing customer base
- Exposure to a larger audience
- Single App Store review



Independent Apps

One source base, two apps

- Highly platform specific
- Per-device pricing
- Reduced weight for resource intensive apps



“Universal Apps are far more appealing to users than apps that target just one platform”

Vishal Kapur, iTeleport

<http://blog.iteleportmobile.com/the-case-for-universal-apps>

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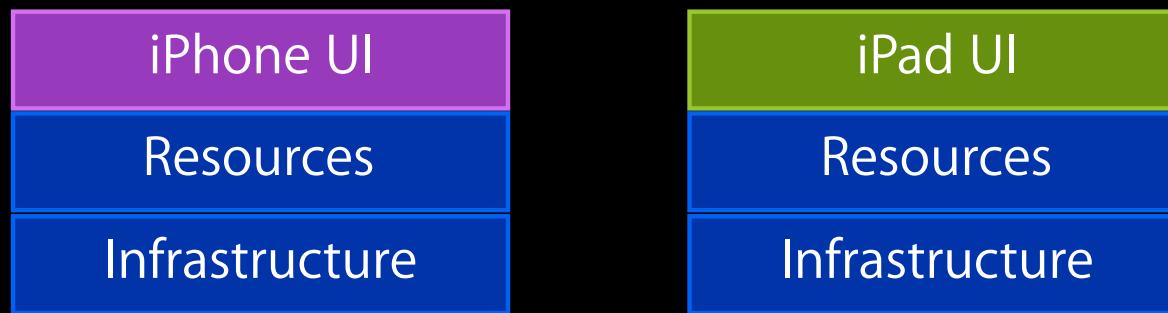
Independent Application Architecture



Independent Application Architecture

iPhone UI	iPad UI
Resources	Resources
Infrastructure	Infrastructure

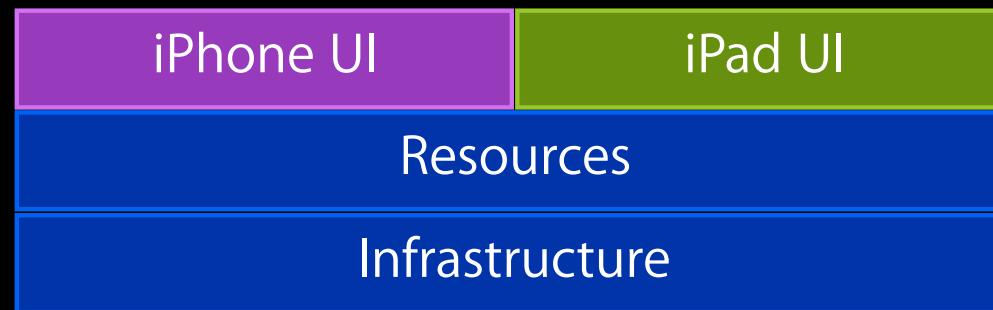
Independent Application Architecture



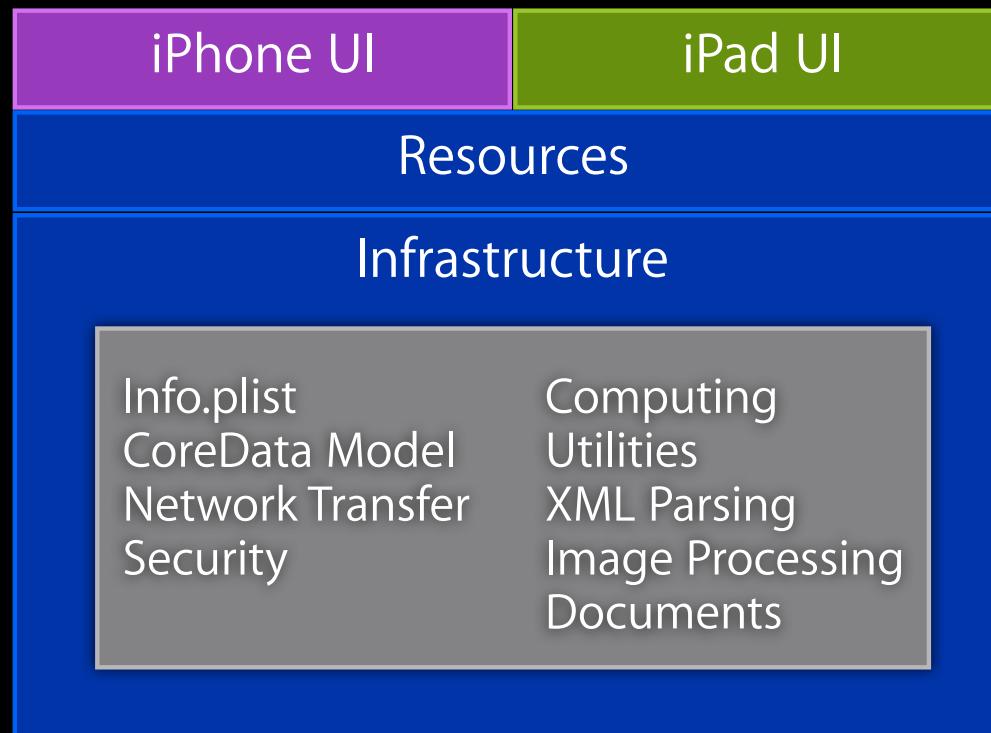
Independent Application Architecture

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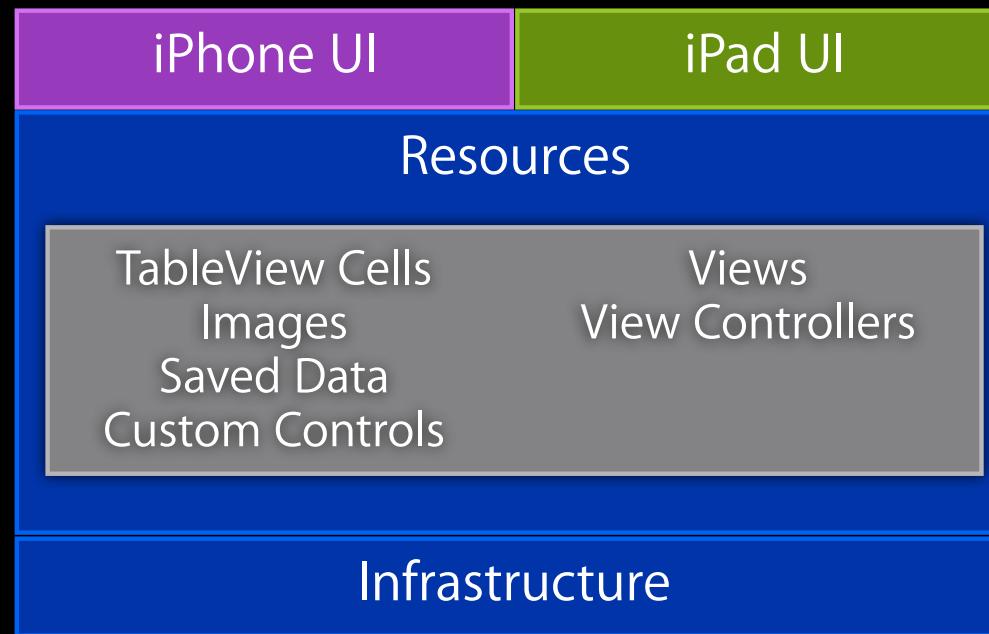
Architecture of a Universal App



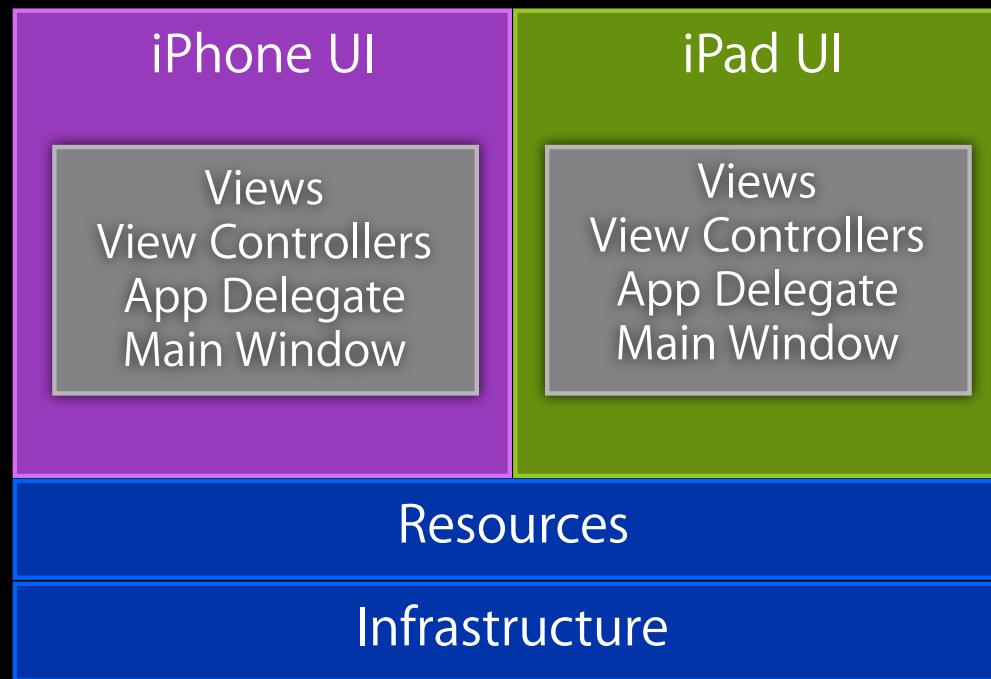
Architecture of a Universal App



Architecture of a Universal App



Architecture of a Universal App



When to Use Per-Platform Classes

Organizing your project

- Serve a specific purpose for each platform
- Highly customized for particular device capabilities
- Ensure it only executes on target platform

When to Use Shared Classes

Organizing your project

- Very little or no platform dependent code
- Minor behavior differences keyed off runtime checks

Roadmap

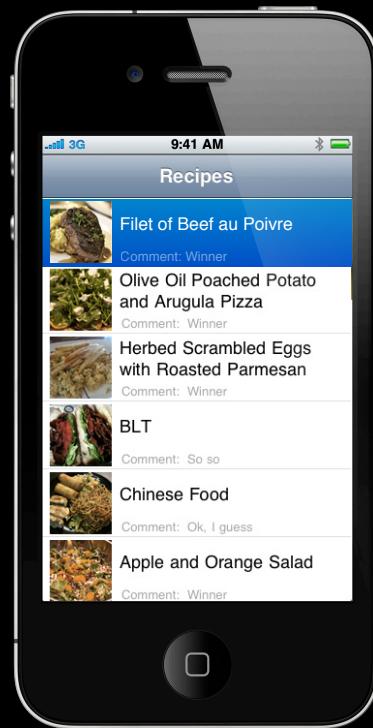
Building Universal Applications

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The Recipes Application

iPhone version

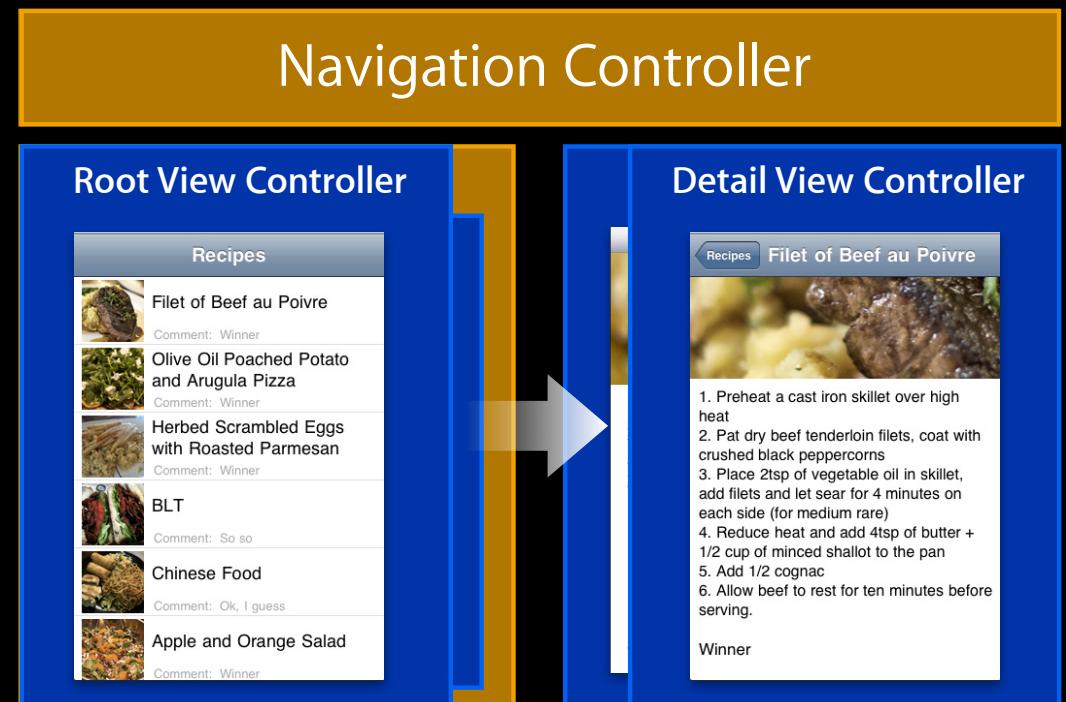
- Navigation based application



The Recipes Application

iPad version

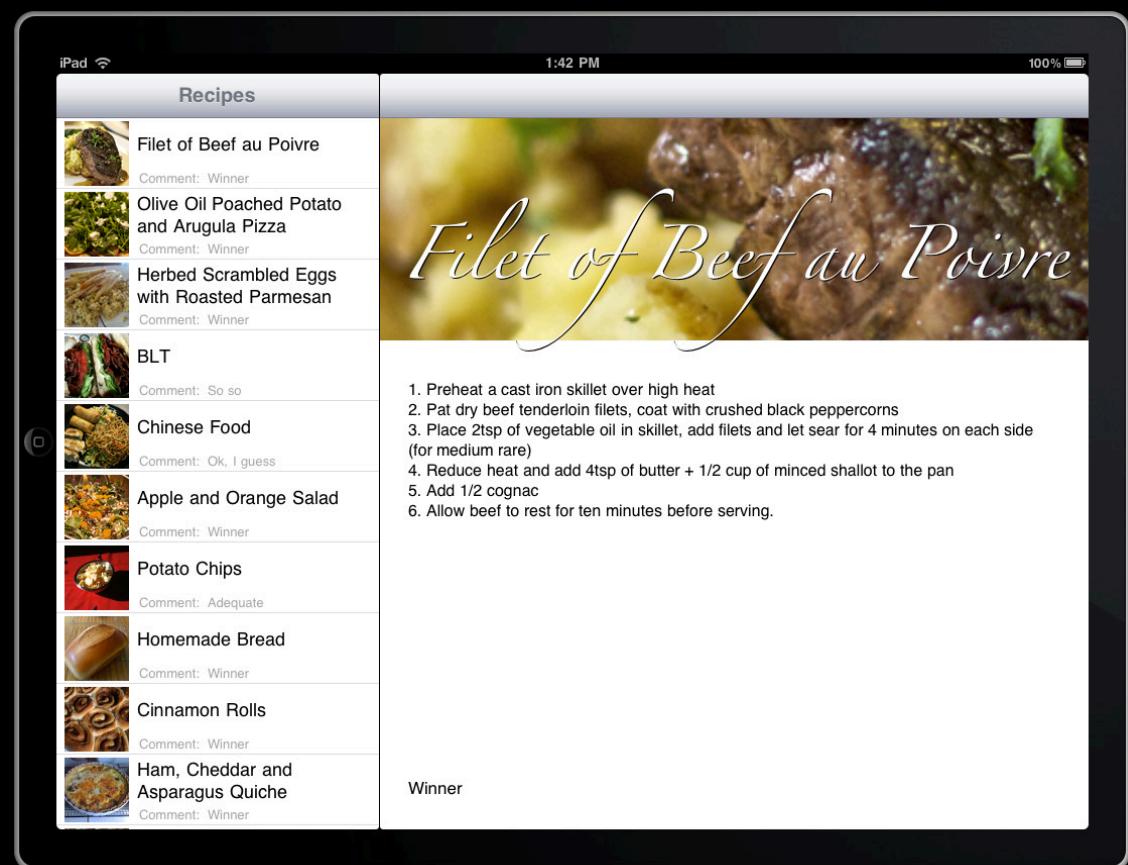
- Navigation application



The Recipes Application

iPad version

- Split view application



The Recipes Application Breakdown

Shared

- RecipeObject
- RecipeTableViewCell
- RecipeTableViewController
- Navigation Controller

Per-Platform

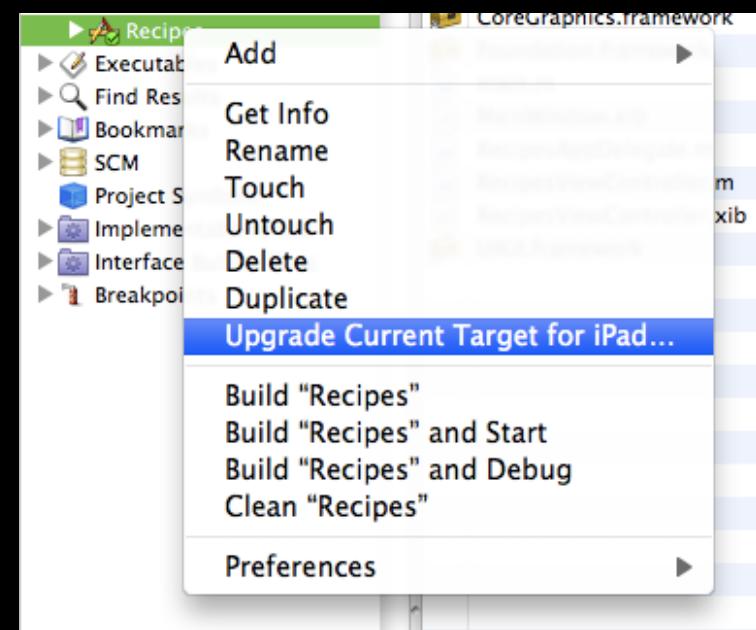
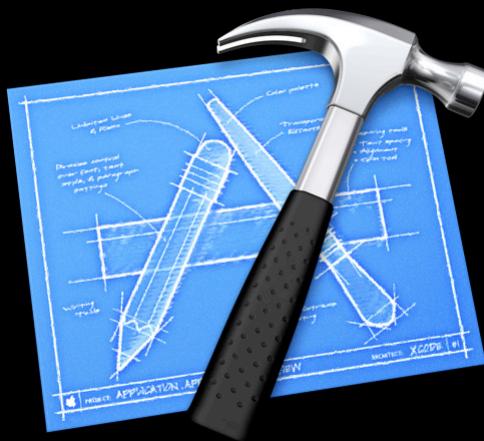
- MainWindow
- RecipeAppDelegate
- RecipeDetailViewController

iPad Only

- Split View Controller

Adopting iPad Features

Upgrading a target



Adopting iPad Features

Upgrade a target

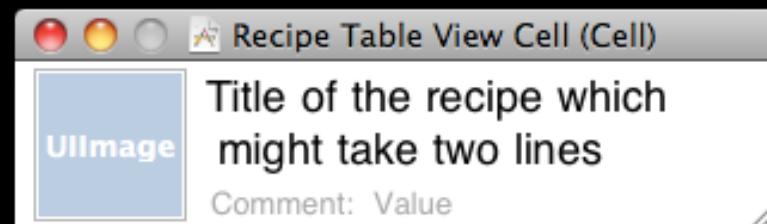
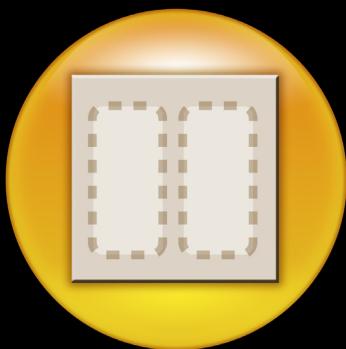
- Upgrade XIBs one at a time in Interface Builder
- Batch process using command line



Adopting iPad Features

Rethinking the user interface

- Adopt new UI paradigms
- Consider what views can be shared between platforms



Demo

Making an application universal

Recap

What we just showed you

- Upgrading an iPhone target to be universal
- Adopting new technologies tailored for iPad
- Adding iPad-specific features while continuing to support iPhone

Adopting iOS 4 Features

Barry Langdon-Lassagne
Interface Builder Engineer

Roadmap

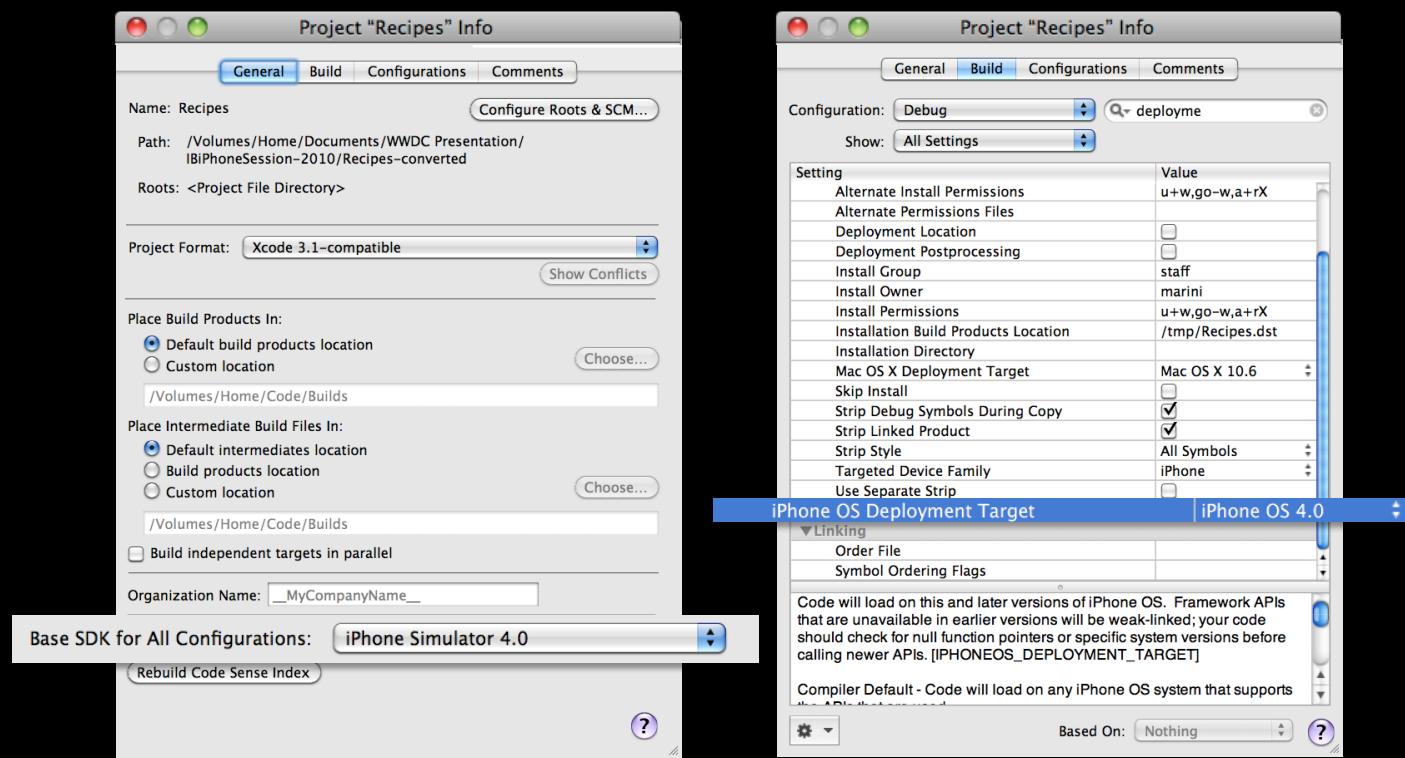
Building Universal Applications

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Maintaining Compatibility

Deployment target and base SDK

- Range of versions



Device and Version Runtime Checks

Maintaining compatibility

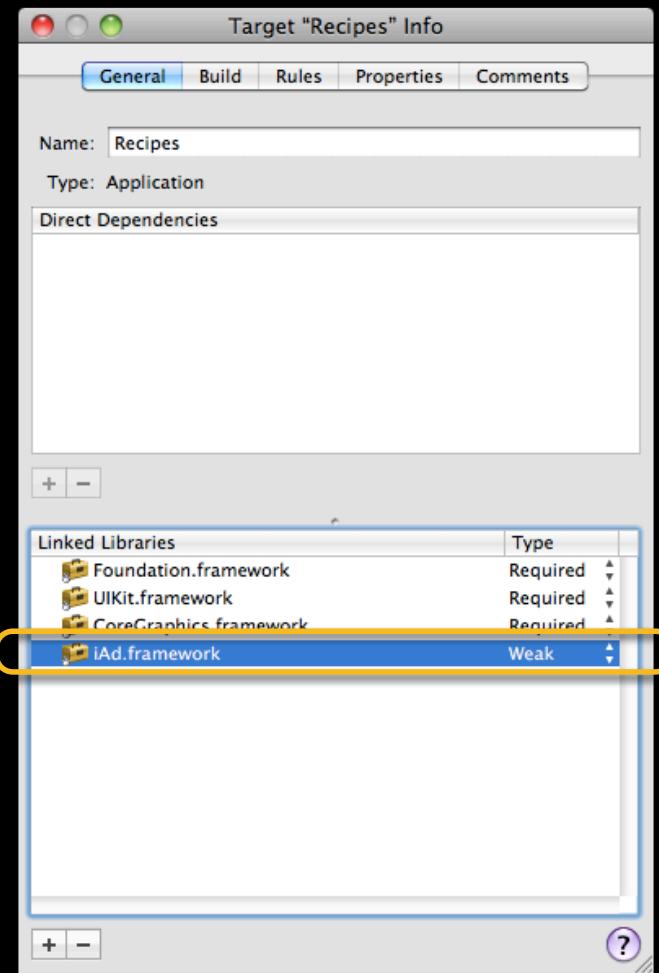
- `-[UIDevice userInterfaceIdiom]`

- `NSClassFromString()`
- `-[NSObject respondsToSelector:]`

- `-[UIDevice systemVersion]`

Maintaining Compatibility

Weak linking frameworks



iOS 4 and Interface Builder



What we'll be doing to our Universal App

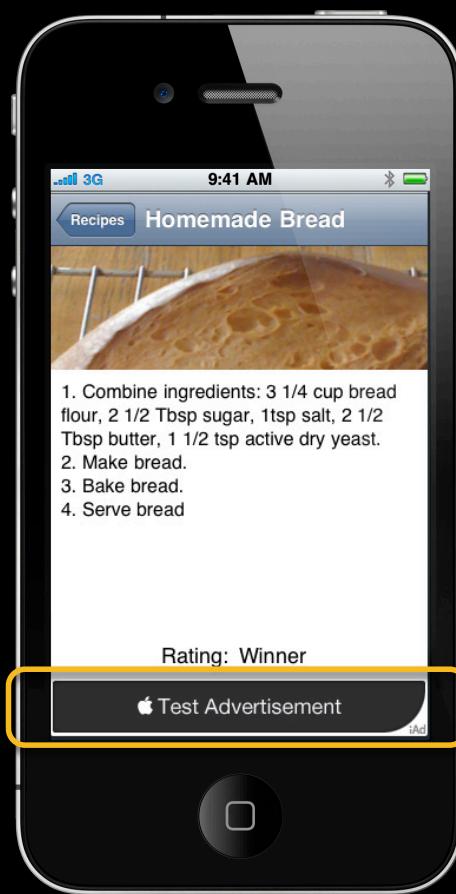
- Adding iAd support
- Migrating to UINib
- Leveraging IBOutletCollection
- UI automation testing

Adding iAd Support

Integrating new UI Elements

iOS 4

- Drag and drop in Interface Builder
- Weak link the framework
- Add code to handle rotation

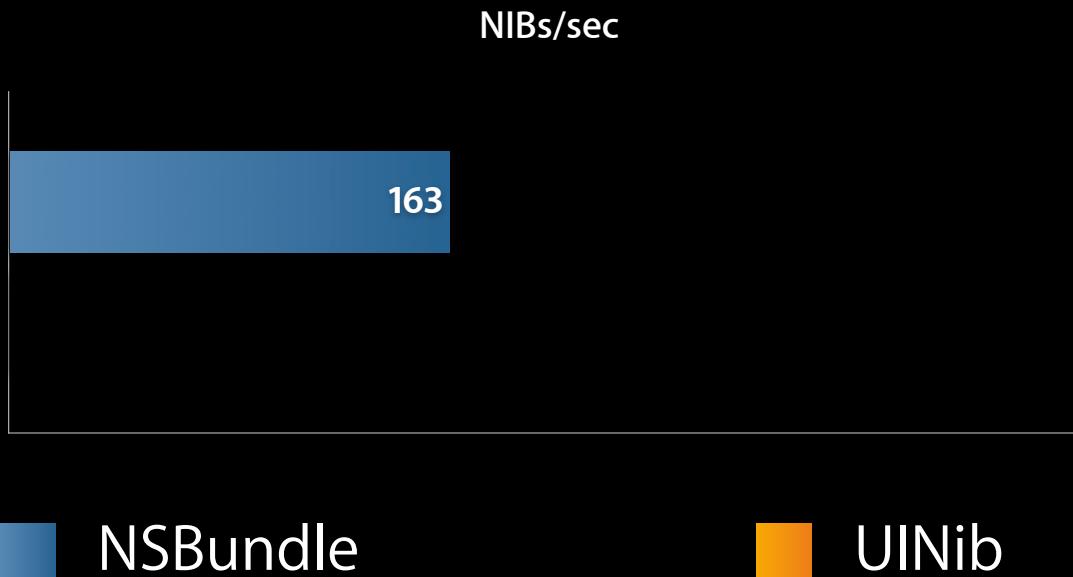


Migrating to UINib

Performance enhancement



- High-performance loading of frequently reused NIB data
 - Load twice as many NIBs in the same time

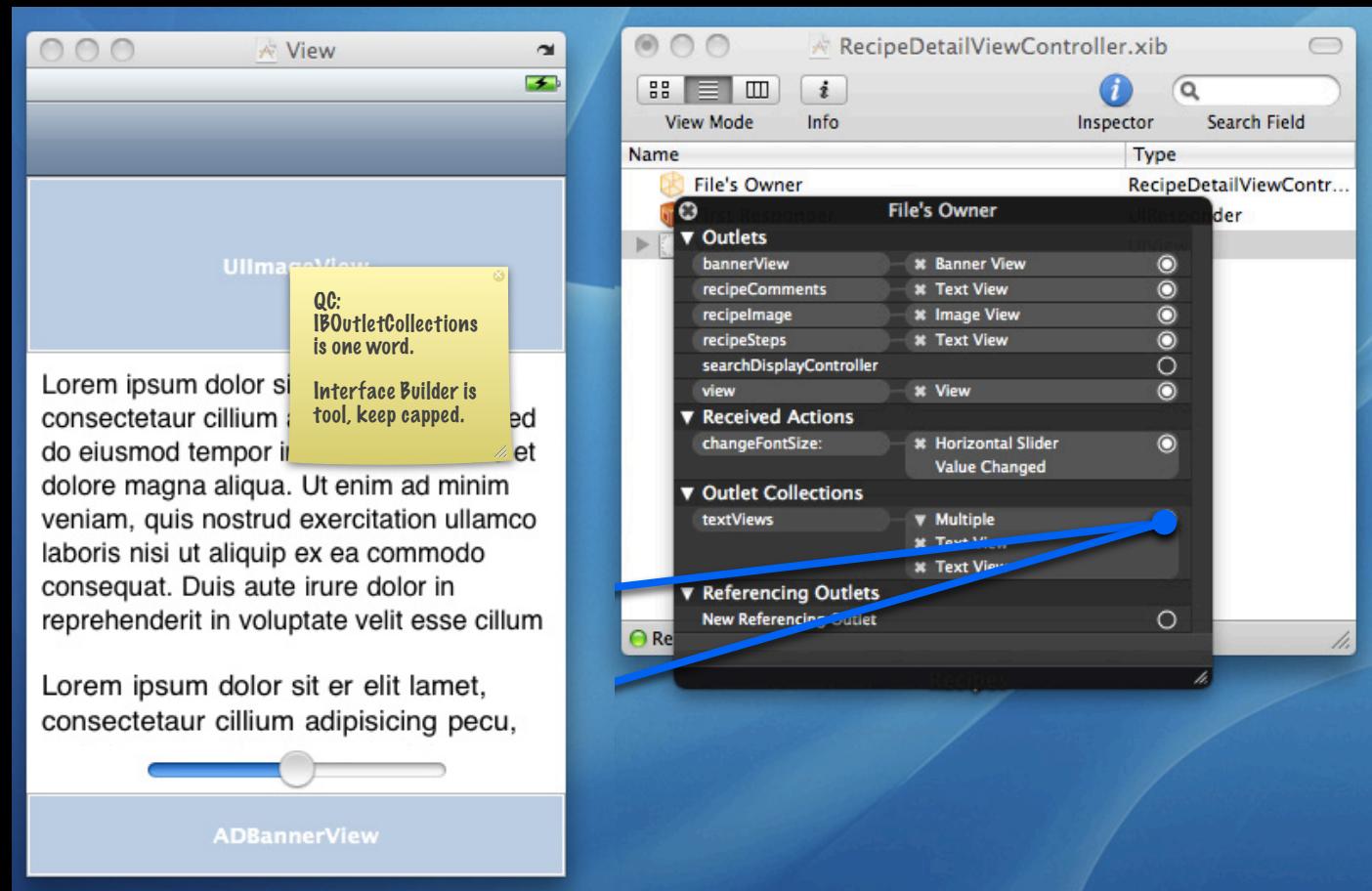


Leveraging IBOutletCollections

Integrating new features



- New type of Interface Builder outlet
- Refer to multiple UI elements simultaneously



Leveraging `IBOutletCollection`

Integrating new features

- Outlets

```
IBOutlet UILabel *label;
```

Leveraging `IBOutletCollections`

Integrating new features

- Outlet Collections

```
IBOutletCollection<UILabel> NSArray *labels;
```

Leveraging IBOutletCollections

Integrating new features

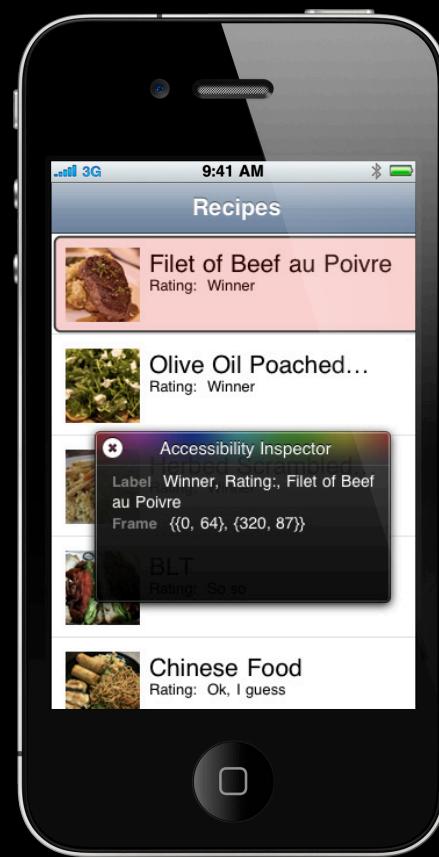
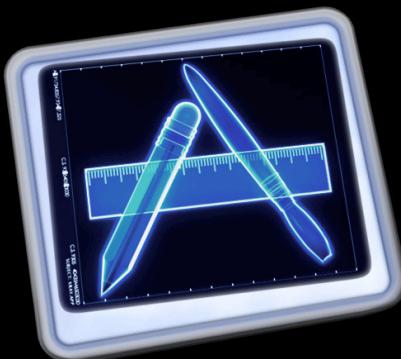
- Outlet Collections

```
IBOutletCollection(id) NSArray *objects;
```

UI Automation Testing

iOS 4

- Run from Instruments
- Based on JavaScript
- Uses accessibility traits set in Interface Builder



Demo

Adding iOS 4 features to our Universal App

Recap

What we just showed you

- iAd
- UINib
- Outlet collections
- Accessibility and UI automation testing

Key Points from Today's Session

- Update your app to be Universal
- Integrate new features
- Maintain compatibility

Related Sessions

Automating User Interface Testing with Instruments	Marina Wednesday 2:00PM
Using Interface Builder in Xcode 4	Pacific Heights Thursday 4:30PM
Integrating Ads with iAd (Repeat)	Pacific Heights Friday 9:00AM

Labs

Automated User Interface Testing Lab	Developer Tools Lab A Thursday 9:00AM
Xcode for iPhone Development Lab	Developer Tools Lab B Tuesday 3:15PM

More Information

Michael Jurewitz

Developer Tools Evangelist

jurewitz@apple.com

Documentation

iOS 4 Release Notes

<http://developer.apple.com/iphone>

Apple Developer Forums

<http://devforums.apple.com>



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