

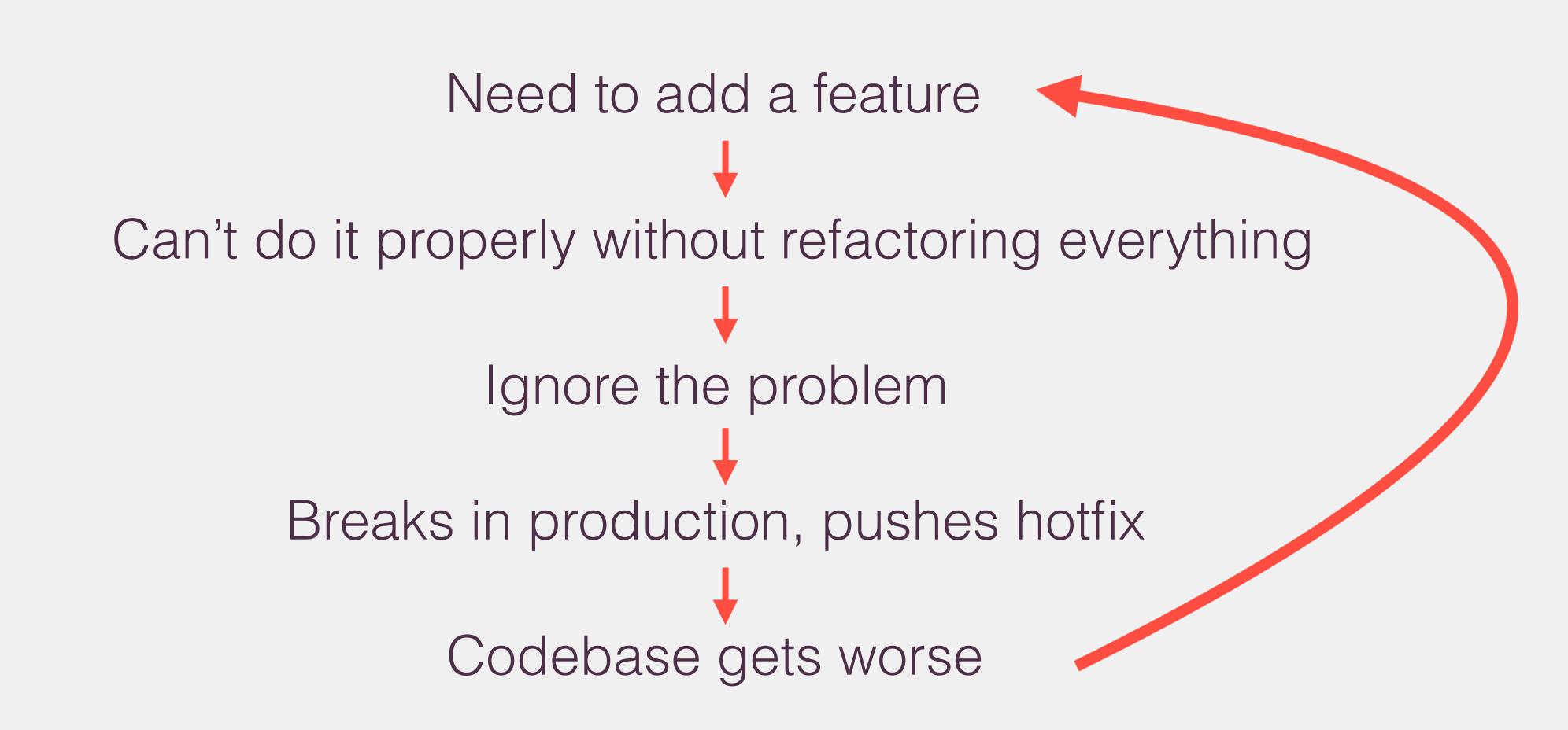


Avoiding Release Anxiety in iOS Bruno Rocha



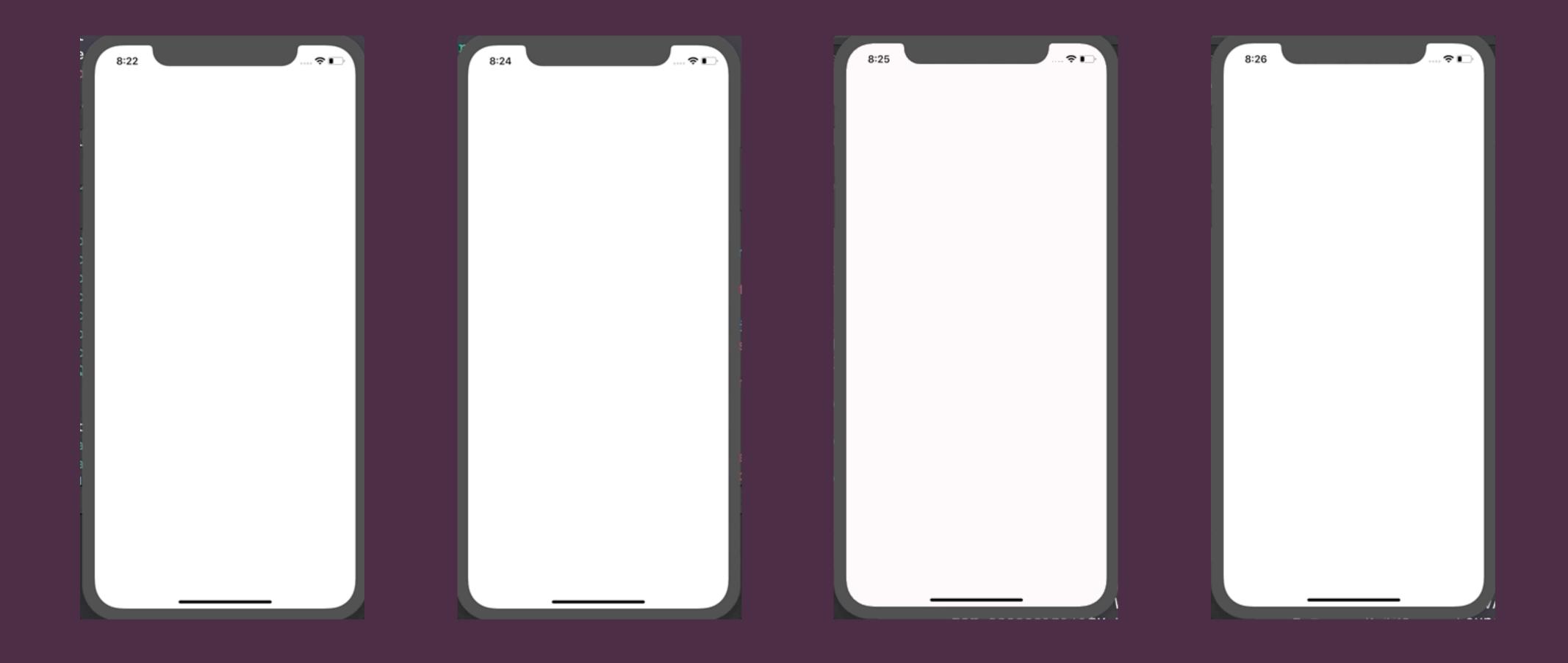
The information in this document is not confidential to the person to whom it is addressed, so feel free to disclose it to any other person. It may be reproduced in whole or in part, allowing you to disclose this information without the prior consent of the directors of iFood. It has been used as support material for an oral presentation and, therefore, it does not represent a complete record of the topics presented in the mentioned presentation.







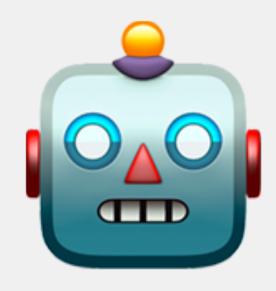
Avoiding Release Anxiety Testing efficiently





Rapiddo's Releases

Covering critical flows with UI Tests



~1 critical hotfix every 2 weeks



2 critical hotfixes in 2 years

Testing efficiently

Block-based UI Testing

```
func testRechargeFlow() {
     = app.tables.staticTexts["Recarga"].waitForExistence(timeout: 0.2)
    app.tables.staticTexts["Recarga"].tap()
    let phoneField = app.textFields["(XX) XXXXX-XXXX"]
    phoneField.tap()
    phoneField.clearAndTypeText("123")
    let rechargeButton = app.buttons["Salvar e recarregar meu celular"]
    expect(rechargeButton.isEnabled) == false
    phoneField.clearAndTypeText("19999999999")
    expect(rechargeButton.isEnabled) == true
    closeKeyboard()
    expect(self.app.navigationBars["Escolha o valor da recarga"].exists) == true
    let productCell = app.collectionViews.cells["R$1"]
    let secondProductCell = app.collectionViews.cells["R$2"]
    let choosePaymentMethodButton = app.buttons["Escolher forma de pagamento"]
    expect(productCell.isSelected) == false
    expect(secondProductCell.isSelected) == false
    expect(choosePaymentMethodButton.isEnabled) == false
    productCell.tap()
    expect(productCell.isSelected) == true
    expect(secondProductCell.isSelected) == false
    expect(choosePaymentMethodButton.isEnabled) == true
    secondProductCell.tap()
    expect(productCell.isSelected) == false
    expect(secondProductCell.isSelected) == true
    expect(choosePaymentMethodButton.isEnabled) == true
    choosePaymentMethodButton.tap()
    expect(self.app.navigationBars["Concluir compra"].exists) == true
```

```
func exploreProfileScreen() {
    app.buttons["PROFILE"].tap()
    expectToBe(atScreen: "PROFILE_VIEW")
    // Test the profile screen
    app.tapBackButton()
                                                        func testHomeTabsWithNoAccount() {
                          func testHomeTabs() {
                                                            app.add(argument: User.firstLaunch)
                               app.launch()
                                                            app.launch()
                                                            exploreOnboarding()
                               exploreProfile()
                                                            exploreAccountCreation()
                               exploreRestaurantL
                                                            testHomeTabs()
func exploreRestaurantList() {
                                                      func exploreRestaurantMenu() {
   app.buttons["RESTAURANTS"].tap()
                                                          app.cells["MOCK_RESTAURANT_1"].tap()
   expectToBe(atScreen: "RESTAURANTS_VIEW")
                                                          expectToBe(atScreen: "RESTAURANT_MENU_VIEW")
                                                          // Test the restaurant menu
    // Test the restaurants list
                                                          exploreDishDetails()
   exploreRestaurantMenu()
                                                          app.tapBackButton()
   app.tapBackButton()
```

```
public enum MockFlags {
    public enum Environment: MockFlagsConditionable {
        case isUITest

extension XCUIApplication {
        func add(argument flag: MockFlagsConditionable) {
            self.launchArguments.append(featureFlag.rawValue)
        }
    }
}
```

```
extension MockFlagsConditionable {
    fileprivate var condition: Bool {
        return CommandLine.arguments.contains(self.rawValue)
    }
}
```

```
return flag.condition
}
```

Testing efficiently

Typesafe Mocks and Protocols

```
protocol Mockable {
    associatedtype MockValue
    var mockedValue: MockValue { get }
extension HTTPRequest where Self: Mockable {
    typealias MockValue = Response
extension UserBalanceRequest: Mockable {
    var mockedValue: UserBalanceResponse {
        return UserBalanceResponse(balance: hasArgument(User.noBalance) ? 0 : 1_000_000)
```

```
protocol HTTPClient: AnyObject {
   func send<R: HTTPRequest>(_ resource: R) -> Promise<R.Value>
}
```

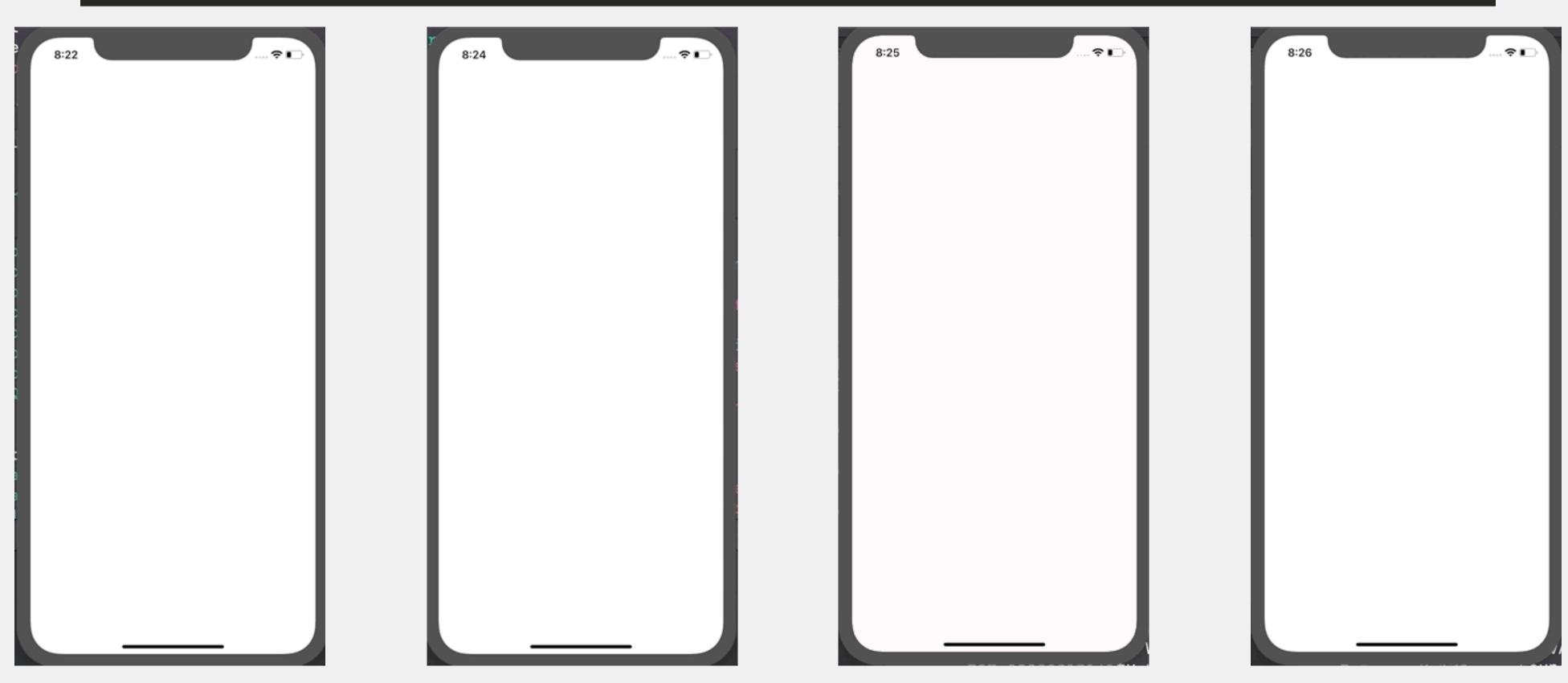
```
final class URLSessionHTTPClient: HTTPClient {
  func send<R: HTTPRequest>(_ resource: R) -> Promise<R.Value> {
      // Perform a real request
  }
}
```

```
final class MockClient: HTTPClient {
    func send<R: HTTPRequest>(_ request: R) -> Promise<R.Response> {
       guard let value = (request as? Mockable)?.mockedValue else {
            Logger.log("Request \(request) has no mocked version!")
            return Promise(error: HTTPError.generic)
        return Promise(value: value)
```

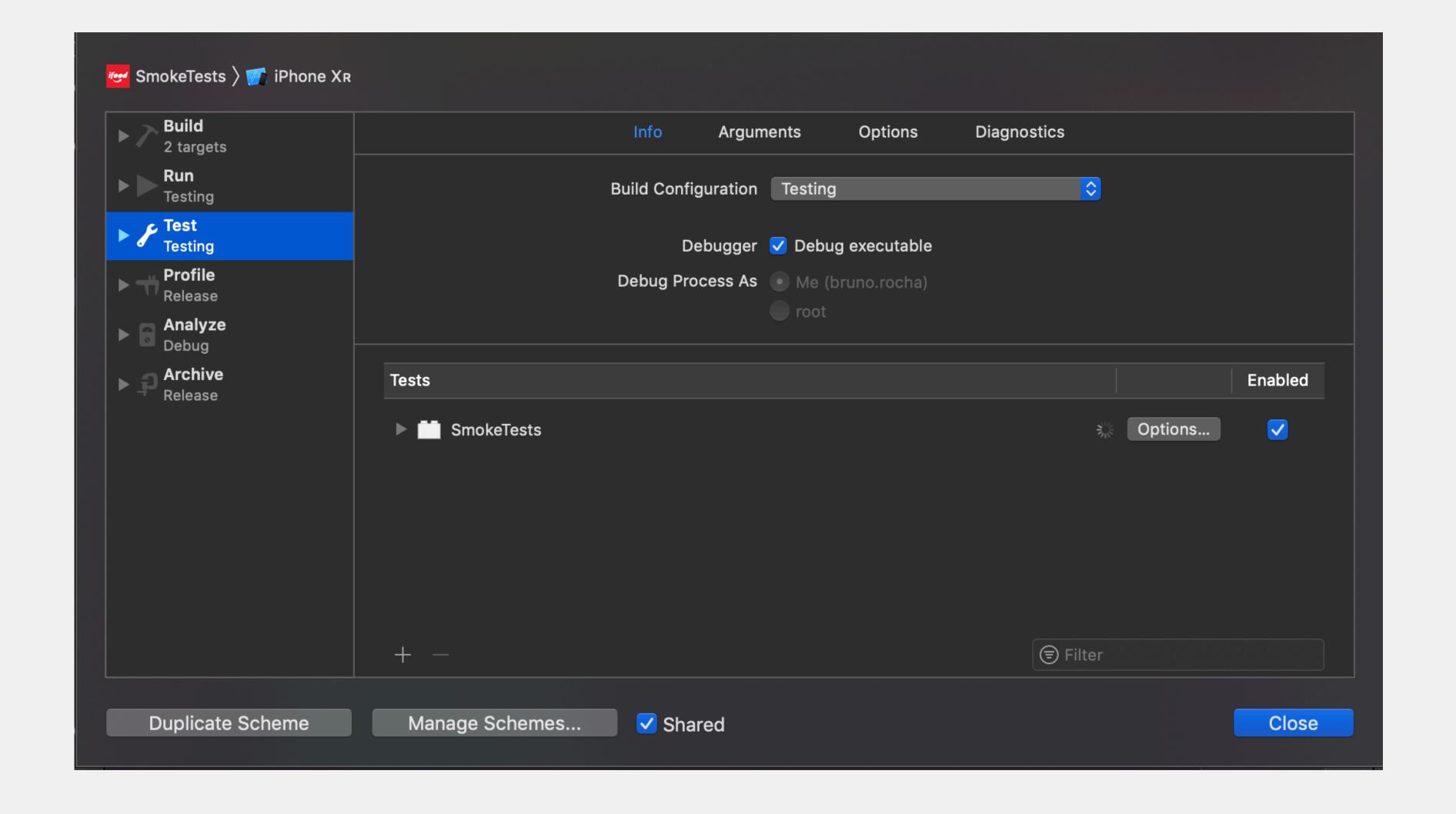


```
enum HTTPClientFactory {
    static func iFood() -> HTTPClient {
        if Environment.current == .mock {
            return MockClient()
        let configuration = URLSessionConfiguration.default
        configuration.timeoutIntervalForResource = 15
        let session = URLSession(configuration: configuration)
        let client = URLSessionHTTPClient(baseURL: Environment.current.baseURL,
                                          session: session)
        client.set(defaultHeaders: ["Cache-Control": "no-cache"])
        return client
```

```
@UIApplicationMain
class AppDelegate: UIResponder, UIApplicationDelegate {
    fileprivate let client = HTTPClientFactory.iFood()
    fileprivate let persistence = PersistenceFactory.create()
    fileprivate let geolocationProvider = GeolocationProviderFactory.create()
    //...
```



Mocks!= Real APIs



Smoke Tests

UI Tests that run on real APIs, triggered by backend changes.

UI Testing Pro

• CI works == User's app works

Avoiding Release Anxiety

Reduce margin of error





Q Search docs...

DOCS ISSUES GITHUB

A high-performance build tool

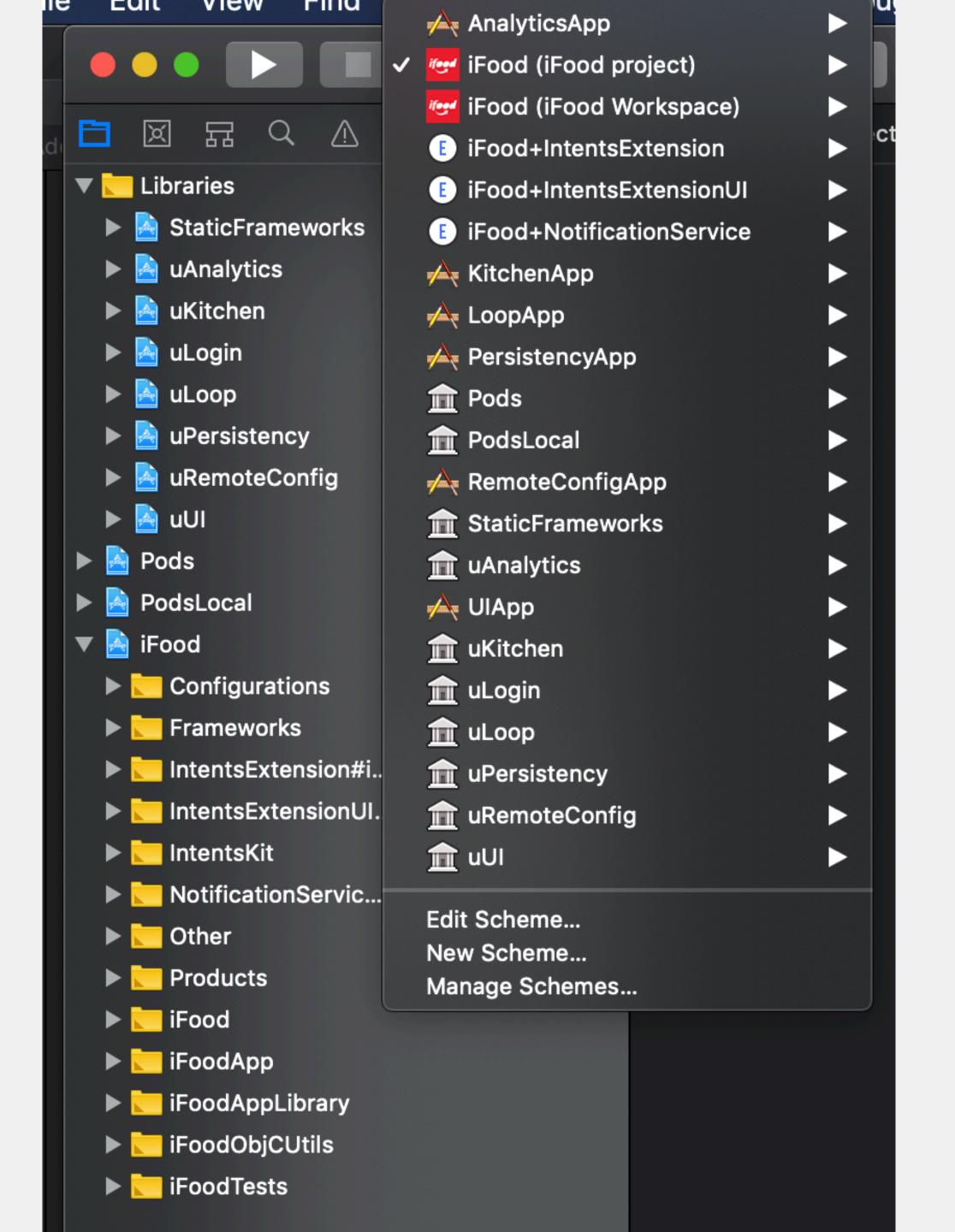
GETTING STARTED

GITHUB

```
$ buck build buck
[-] PARSING BUILD FILES...FINISHED 0.6s
[+] BUILDING...9.7s
[=> IDLE
```

Buck is a build system developed and used by Facebook. It encourages the creation of small, reusable modules consisting of code and resources, and supports a variety of languages on many platforms.

```
apple_binary(
    name = "iFoodBinary",
    visibility = [
        "//iFood:",
        "//iFood/...",
    configs = app_binary_configs("iFood"),
    swift_version = SWIFT_VERSION,
    srcs = [
        "BuckSupportFiles/Dummy.swift",
    deps = [
        ":iFoodLibrary",
```





Buck is not for beginners!

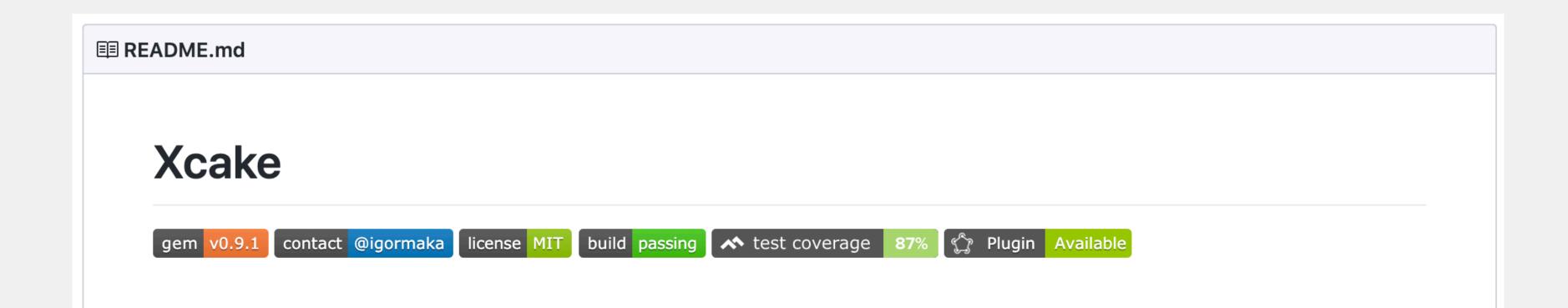


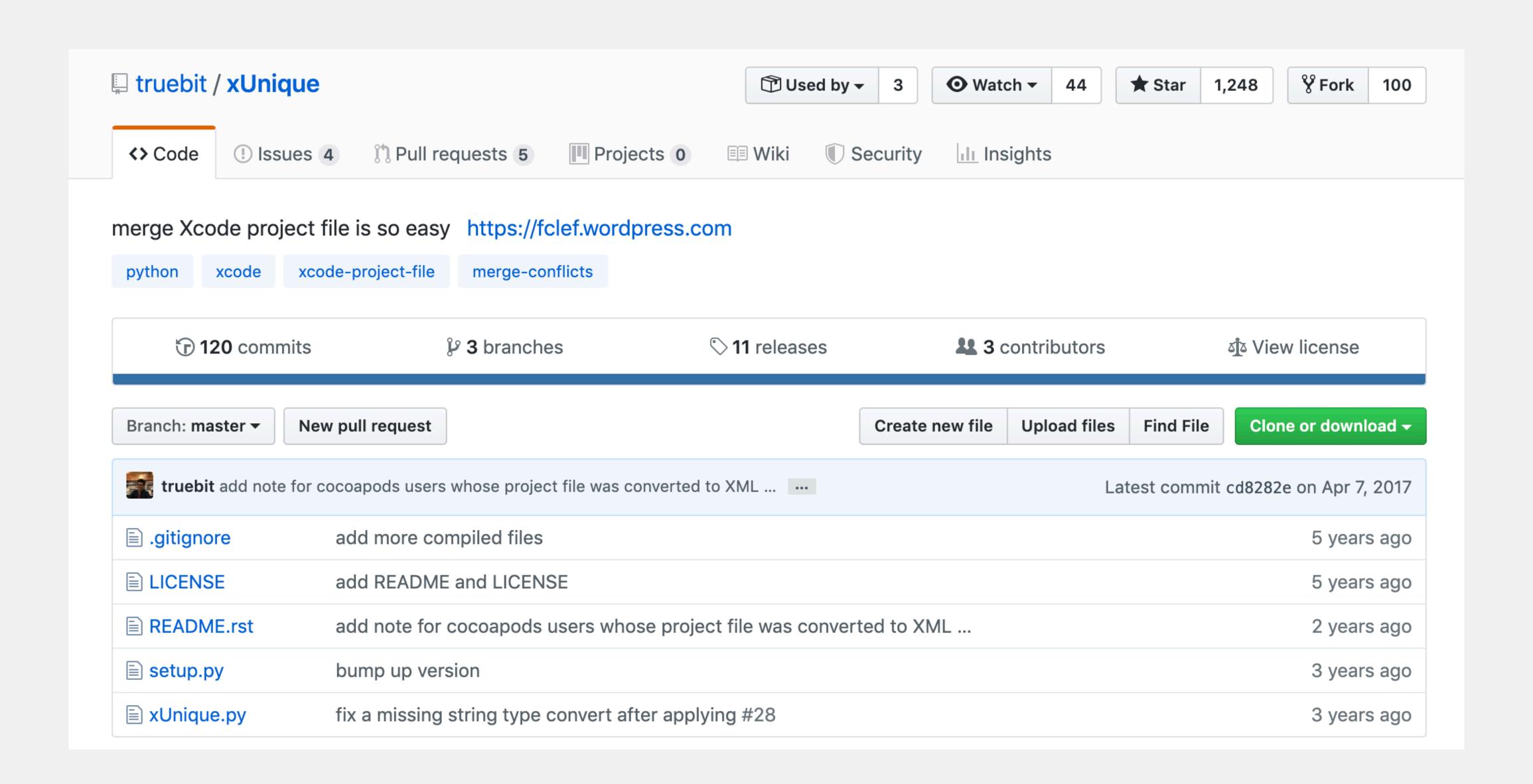


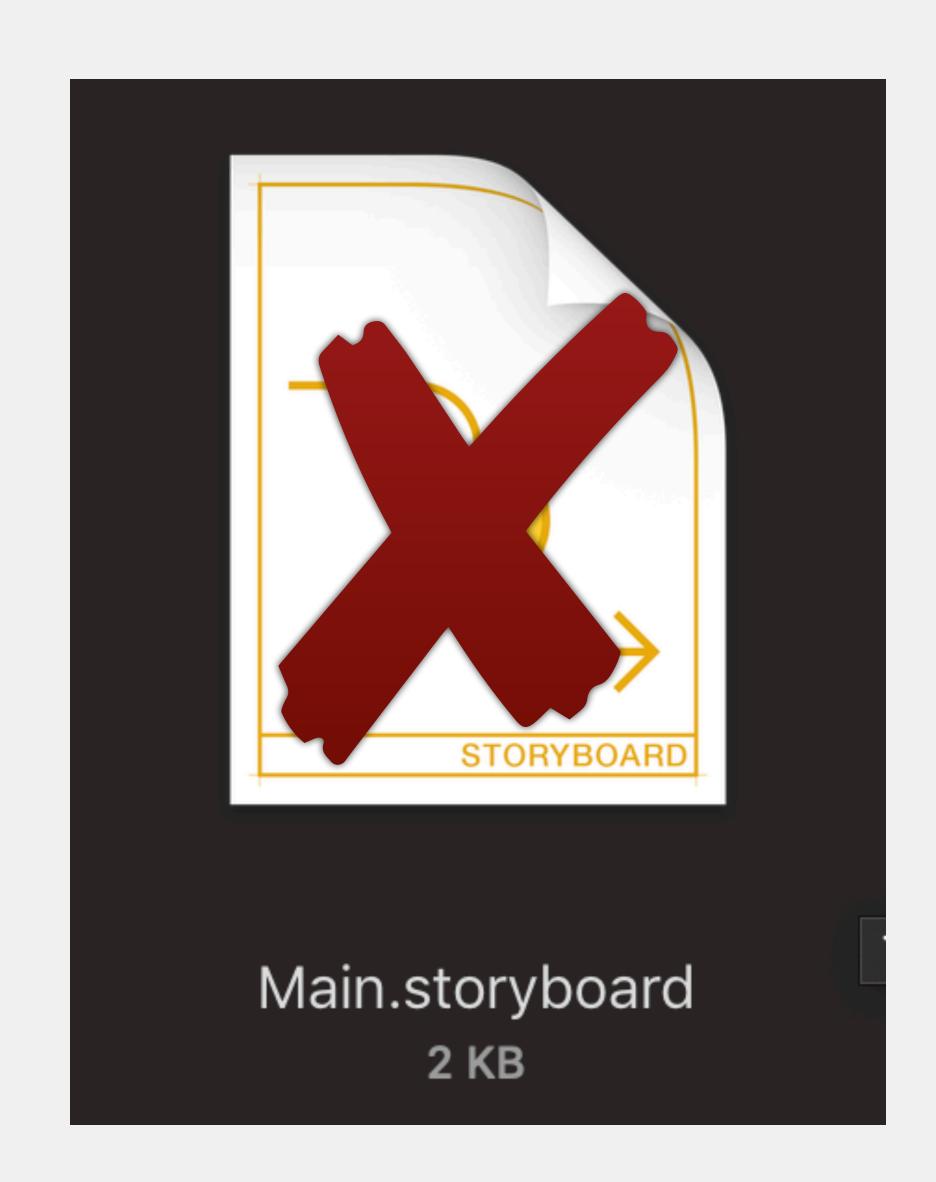


Tuist is a command line tool that helps you generate, maintain and interact with Xcode projects.

It's open source and written in Swift.

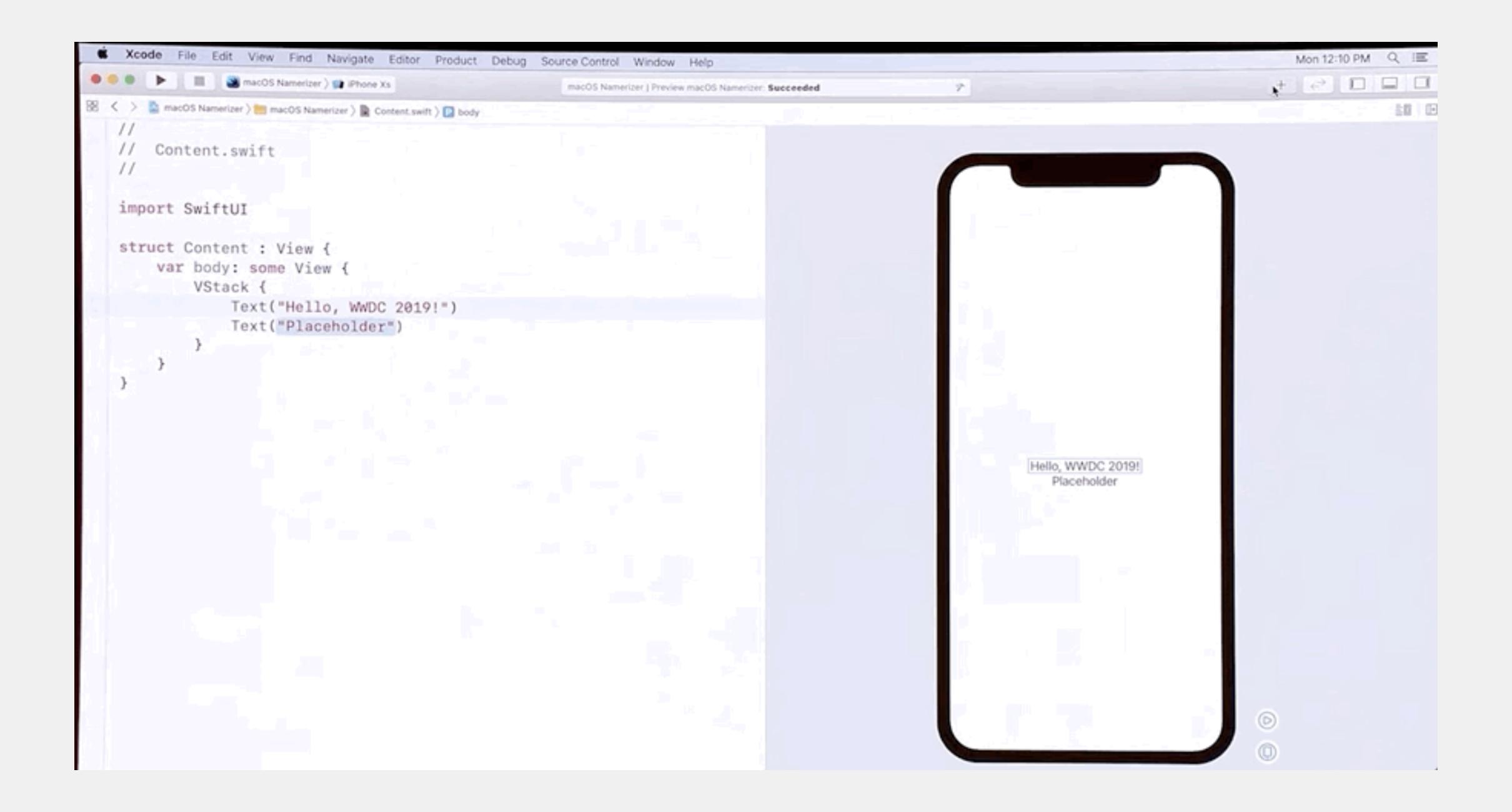






```
<tableViewController id="Bef-YD-UQO" customClass="ABTestViewController" customModule="iFood" customModuleProvider="target" sceneMemberI
    <tableView key="view" clipsSubviews="YES" contentMode="scaleToFill" alwaysBounceVertical="YES" dataMode="prototypes" style="plain"
        <rect key="frame" x="0.0" y="0.0" width="375" height="667"/>
        <autoresizingMask key="autoresizingMask" widthSizable="YES" heightSizable="YES"/>
        <color key="backgroundColor" white="1" alpha="1" colorSpace="custom" customColorSpace="genericGamma22GrayColorSpace"/>
        ototypes>
            <tableViewCell clipsSubviews="YES" contentMode="scaleToFill" preservesSuperviewLayoutMargins="YES" selectionStyle="default"</pre>
                <rect key="frame" x="0.0" y="28" width="375" height="80"/>
                <autoresizingMask key="autoresizingMask"/>
                <tableViewCellContentView key="contentView" opaque="NO" clipsSubviews="YES" multipleTouchEnabled="YES" contentMode="cen
                    <rect key="frame" x="0.0" y="0.0" width="375" height="79.5"/>
                    <autoresizingMask key="autoresizingMask"/>
                    <subviews>
                        <label opaque="NO" userInteractionEnabled="NO" contentMode="left" horizontalHuggingPriority="251" verticalHuggi</pre>
                            <rect key="frame" x="20" y="18" width="265" height="20"/>
                            <fontDescription key="fontDescription" name="SulSans-Medium" family="Sul Sans" pointSize="16"/>
                            <color key="textColor" red="0.2470588235" green="0.24313725489999999" blue="0.24313725489999999" alpha="1"</pre>
                            <nil key="highlightedColor"/>
                        </label>
                        <label opaque="NO" userInteractionEnabled="NO" contentMode="left" horizontalHuggingPriority="251" verticalHuggi</pre>
                            <rect key="frame" x="20" y="43.5" width="265" height="18"/>
                            <fontDescription key="fontDescription" name="Menlo-Regular" family="Menlo" pointSize="15"/>
                            <nil key="textColor"/>
                            <nil key="highlightedColor"/>
                        </label>
                        <label opaque="NO" userInteractionEnabled="NO" contentMode="left" horizontalHuggingPriority="252" horizontalCom</pre>
                            <rect key="frame" x="292.5" y="30" width="62.5" height="20"/>
                            <color key="backgroundColor" red="1" green="1" blue="1" alpha="1" colorSpace="calibratedRGB"/>
                            <constraints>
                                <constraint firstAttribute="height" constant="20" id="hjR-CZ-bAk"/>
                            </constraints>
                            <fontDescription key="fontDescription" name="SulSans-Bold" family="Sul Sans" pointSize="9"/>
                            <color key="textColor" red="0.65098039220000004" green="0.63529411759999999" blue="0.62352941179999999" alp</pre>
                            <nil key="highlightedColor"/>
                            <userDefinedRuntimeAttributes>
                                <userDefinedRuntimeAttribute type="number" keyPath="cornerRadius">
                                    <integer key="value" value="3"/>
                                </userDefinedRuntimeAttribute>
                                <userDefinedRuntimeAttribute type="color" keyPath="borderColor">
                                    <color key="value" red="0.65098039220000004" green="0.63529411759999999" blue="0.62352941179999999"
```

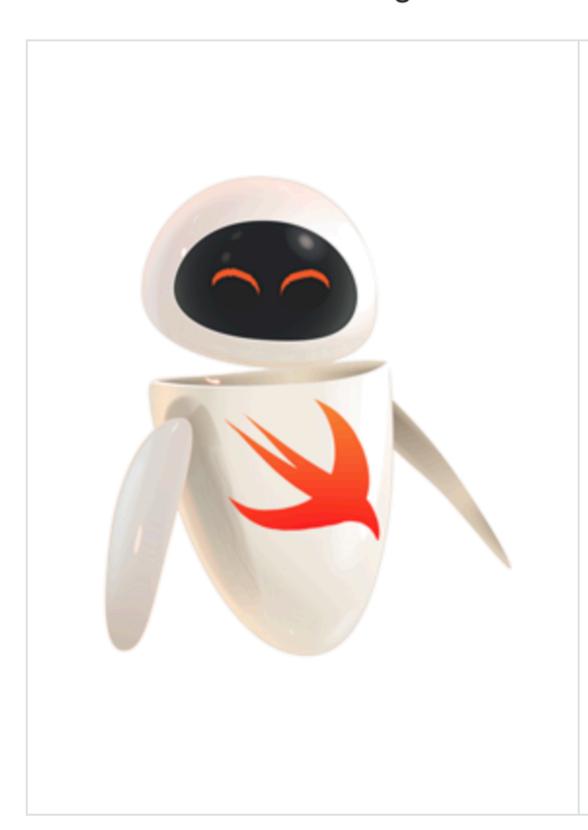
```
private func setup() {
    backgroundColor = Style.Colors.snowGray
    setupTableView()
    setupEmptyStateView()
    setupLoadingView()
private func setupTableView() {
    addSubview(tableView)
    constrain(tableView, self) { view, superview in
        view.edges == superview.edges
private func setupEmptyStateView() {
    addSubview(emptyStateView)
    constrain(emptyStateView, self) { view, superview in
        view.edges == superview.edges
private func setupLoadingView() {
    addSubview(loadingView)
    constrain(loadingView, self) { view, superview in
        view.edges == superview.edges
```



SwiftGen



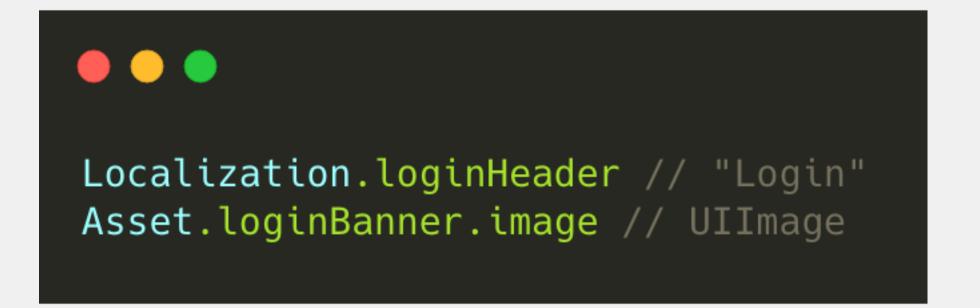
SwiftGen is a tool to auto-generate Swift code for resources of your project:



- Installation
- Usage
- Choosing your template
- Additional documentation

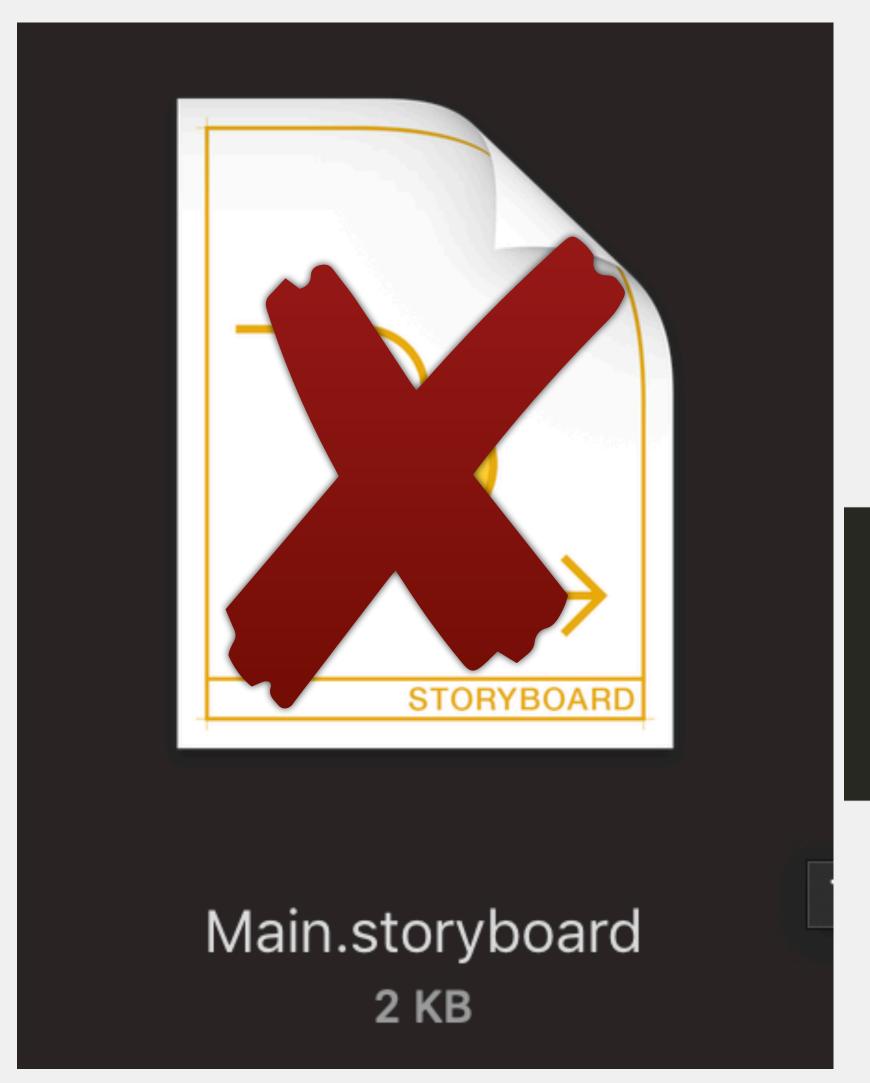
Then generate constants for:

- Assets Catalogs
- Colors
- Core Data
- Fonts
- Interface Builder files
- JSON and YAML files
- Plists
- Localizable strings



```
add_badge(dark: true)
increment_build_number(build_number: number_of_commits)
increment_version_number(version_number: enterprise_version_number)
```







add_badge(dark: true)
increment_build_number(build_number: number_of_commits)
increment_version_number(version_number: enterprise_version_number)

Reduce margin of error

CI/CD Damage Control

	All checks have passed 5 successful checks	Hide all checks
~	ci/bitrise/f8cd86a115fcad49/pr — Passed - ifood-consumer-ios	Required Details
~	codecov/changes — No unexpected coverage changes found.	Details
~	codecov/patch — Coverage not affected when comparing 0fe13cbe122bc0	Details
~	codecov/project — 32.12% (+0.01%) compared to 0fe13cb	Details
~	danger/danger — All green. Woo!	

CI Pipeline for PRs

- 1. Clone
- 2. Install Dependencies
- 3. make ci
- 4. bundle exec danger
- 5. gen_xcode
- 6. test_components
- 7. test_ifood
- 8. test_ui
- 9. run_ifood (just check if the app can be installed)

Danger

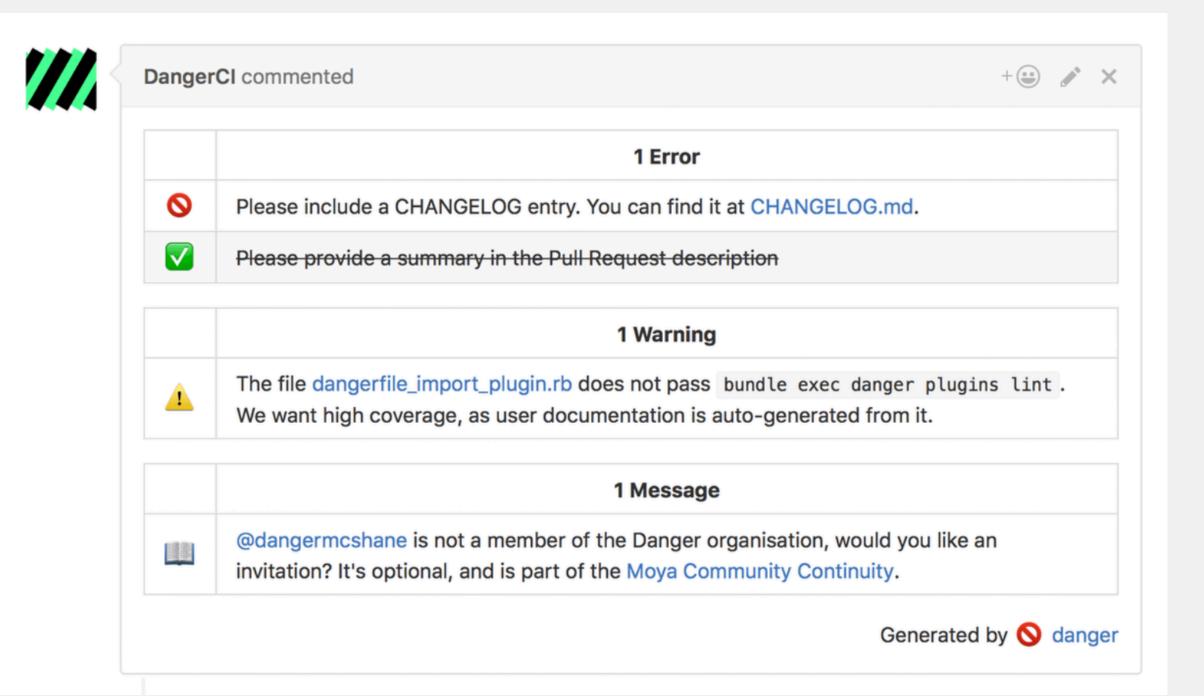
Danger runs during your CI process, and gives teams the chance to automate common code review chores.

This provides another logical step in your build, through this Danger can help lint your rote tasks in daily code review.

You can use Danger to codify your teams norms. Leaving humans to think about harder problems.

She does this by leaving messages inside your PRs based on rules that you create with the Ruby scripting language.

Over time, as rules are adhered to, the message is amended to reflect the current state of the code review.



rapiddo-bot commented 36 minutes ago







vtsbot c

mastei

2.3.1

- Addin
- Makir

2.3.0

Adde

OSCIO

	2 Warnings		
<u> </u>	Please consider adding a CHANGELOG entry. Mark your PR as [TRIVIAL] if your change isn't important.		
<u> </u>	Please consider modifying the project's unit/UI tests to reflect your changes. Mark your PR as [TRIVIAL] if your change isn't important.		

5 Messages	
Affects CoreArchitecture	
Affects CoreUI	
Affects Main	
Unit Tests: Executed 43 tests, with 0 failures (0 unexpected) in 1.981 (2.037) seconds	
UI Tests: Executed 6 tests, with 0 failures (0 unexpected) in 79.440 (79.452) seconds	

SwiftLint found issues

Warnings

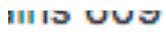
File	Line	Reason
RewardsDashboardPresenter.swift	19	TODOs should be resolved (- Styleguide).
RewardsDashboardViewController.swift	12	TODOs should be resolved (- Styleguide).

Generated by 🚫 Danger











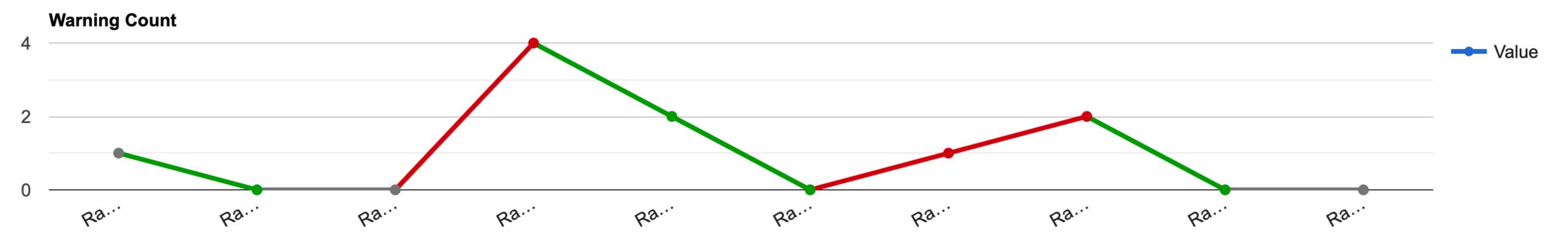


Botty McBotface APP 8:54 PM

SwiftInfo results for MyApp 1.10.11:



ina ciza grow by 1 86 MR (12 20 MR)



tag v2.3.1

SwiftInfo is a CLI tool that extracts, tracks and analyzes metrics that are useful for Swift apps. Besides the default tracking options that are shipped with the tool, you can also customize SwiftInfo to track pretty much anything that can be conveyed in a simple swift script.

By default SwiftInfo will assume you're extracting info from a release build and send the final results to Slack, but it can be used to extract info from individual pull requests as well with the danger-SwiftInfo danger plugin.



100

rapiddo-bot commented 2 minutes ago



1 Message

SwiftInfo results for Rapiddo 2.0.3 (243) - Release:



Test Count: *Increased* by 1 (96)

Longest Test: -[RapiddoUlTests.RechargeUlTests testRechargeFlow] (7.263 secs)

Generated by O Danger





iFoodinho APP 10:21 PM

SwiftInfo results for iFood 8.51.0 (8.51.0.1) -Release:



ipa size **grew** by 207.92 MB (607.67 MB)

Narning count: Unchanged. (7)

Dependency Count grew by 1 (27)







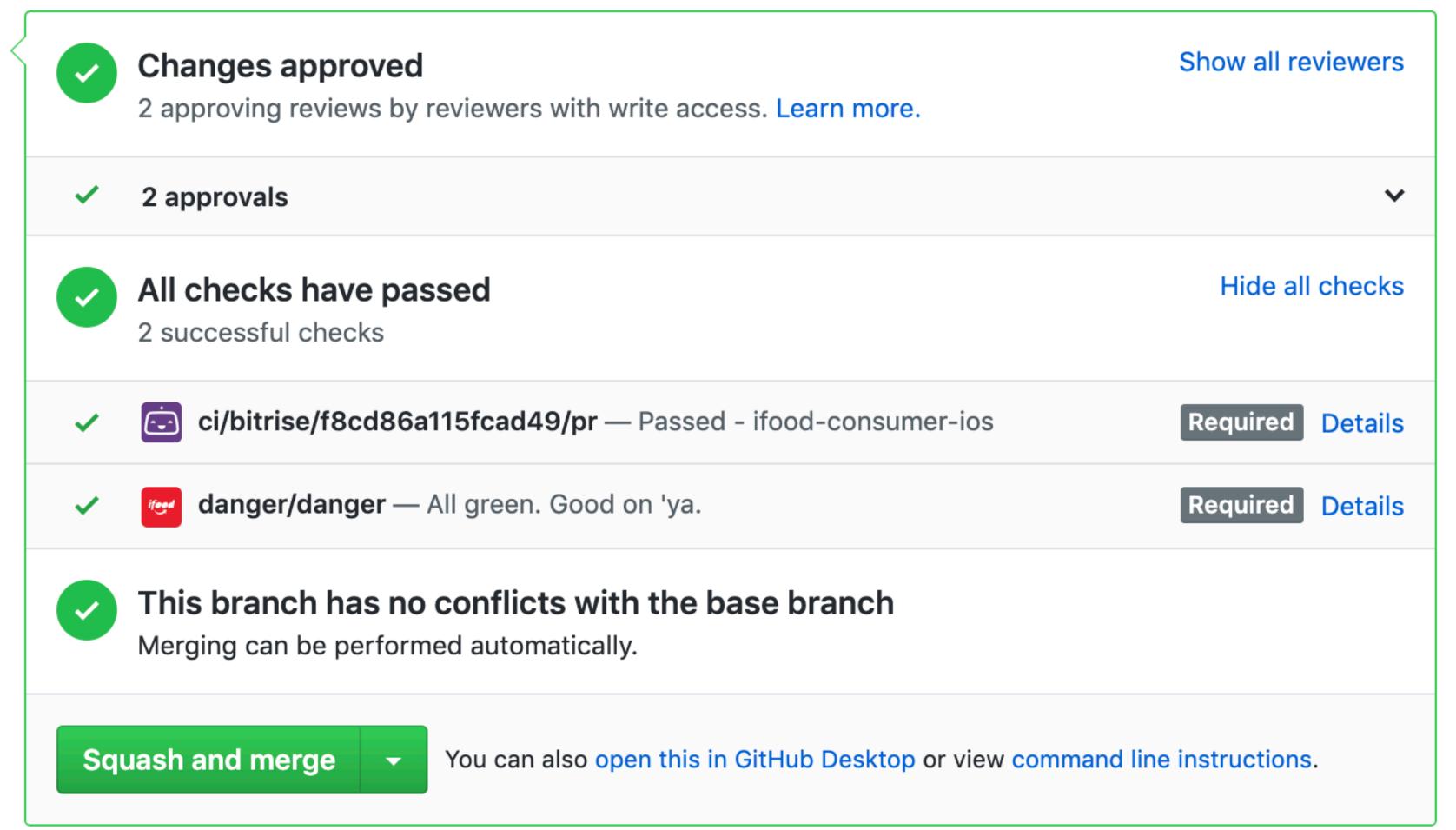






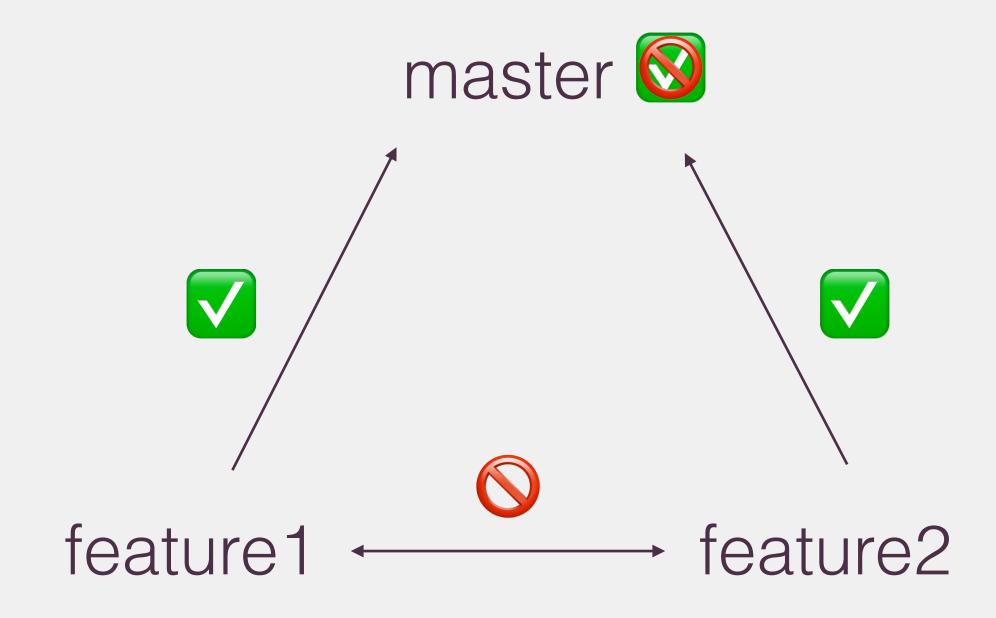
25 replies

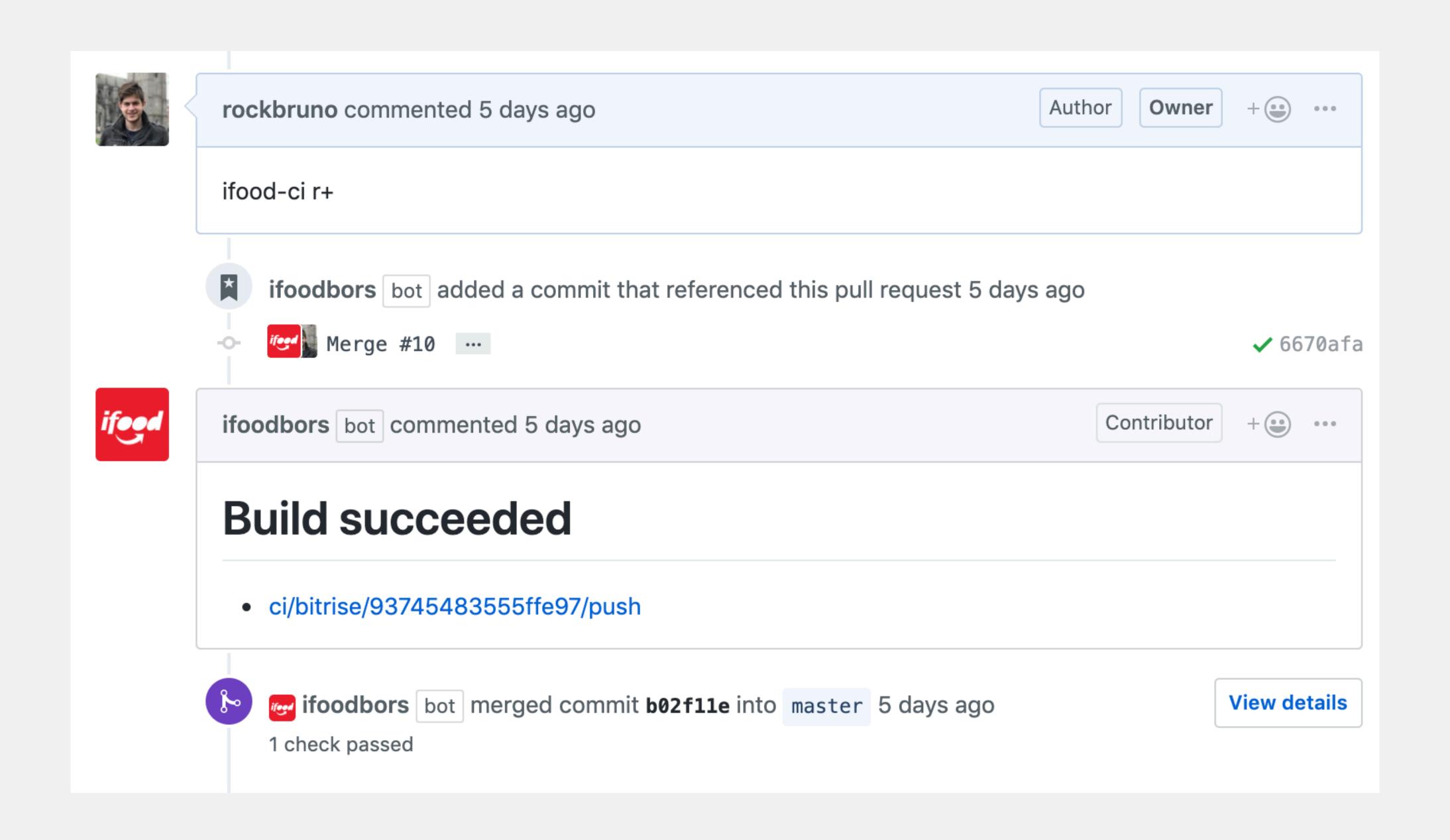






CI/CD Damage Control





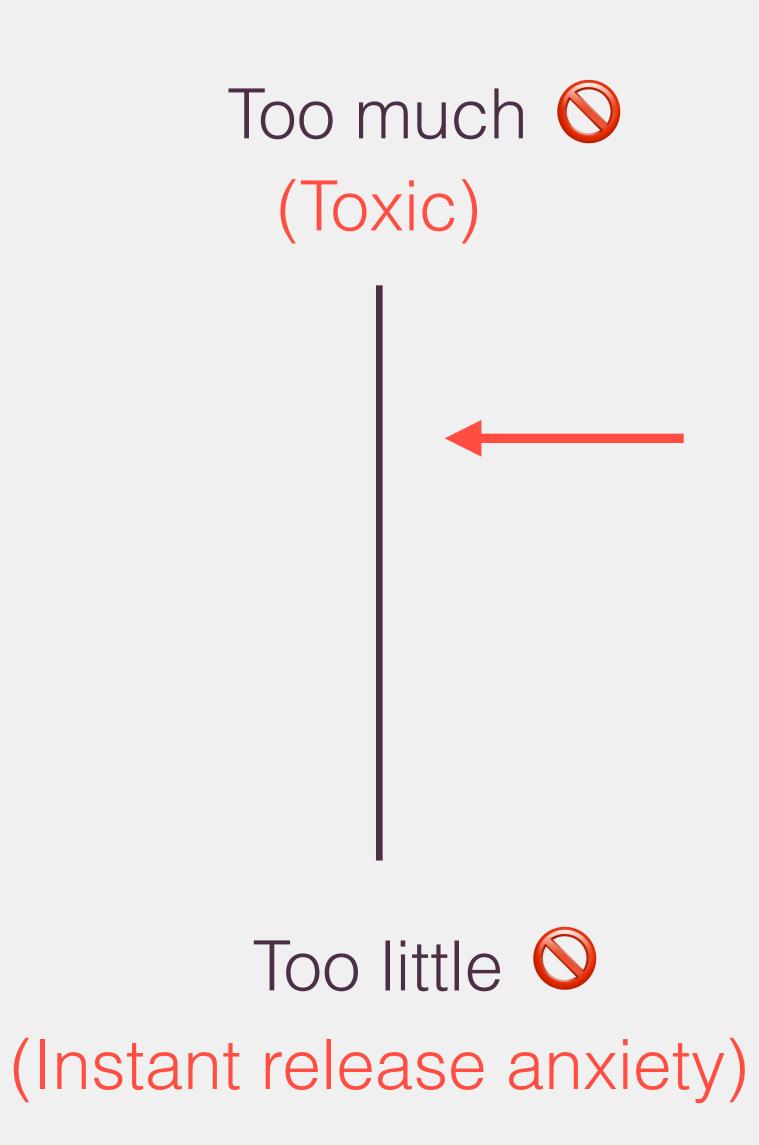
Avoiding Release Anxiety Teams

Communication

Teams

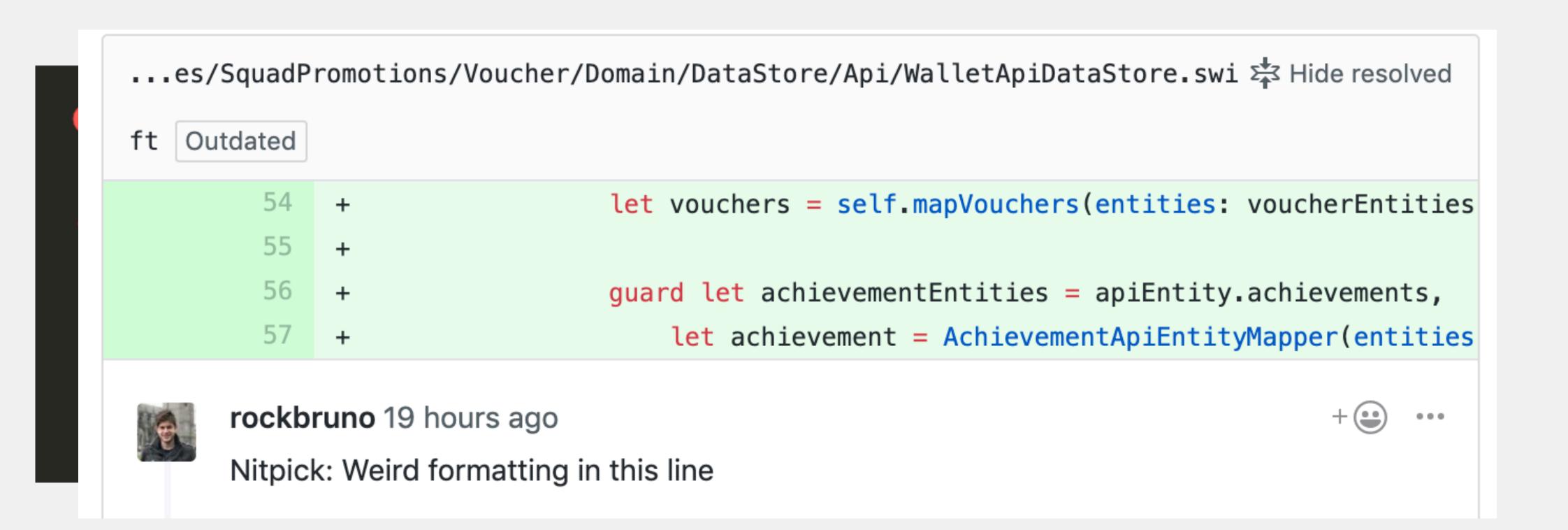
Code Review

Review exigency



Review Guidelines

- 1. Check if it follows the project's style
- 2. Check if it works (is clearly unit tested)
- 3. Don't be a dick



Value your team's relationship over nitpicking non-critical details

Review Etiquette

```
func isUserSubscribed() -> Bool {
   if let subscription = currentSubscription() {
      return subscription.isActive
   } else {
      return false
   }
}
```

You should **guard** instead of **if** here.

We could use guard instead of if here.

Use guard instead of if here.

Review Etiquette

Questions instead of demands

Do this.

What do you think of this?

Review Etiquette: Being reviewed

- 1. Explain why the change was needed
- 2. Understand the reviewer's perspective
- 3. Don't merge if you're not confident it works

What should be reviewed?

Teams Style Guide

Not having a Style Guide can mean:

- 1. Every component is different
- 2. Changing squads has a learning curve
- 3. Code review becomes hard
- 4. "Legacy" code plagues the app



Style Guide Pros

- 1. All code feels it was written by you
- 2. Changing others' code is easy
- 3. Code review is easier/faster

The MovilePay iOS Style Guide

If you are a MovilePay employee, you can find documentation that explains how the project iself works in the main repository's README.

Creating new screens in MovilePay

We use MVVM-C (Model View View Model with Coordinators) as our architecture with our own Coordinator implementation (which you can find documentation for in the main project's README)

Swift Style Guide

This style guide is based on Apple's excellent Swift standard library style and also incorporates feedback from usage across multiple Swift projects within Google. It is a living document and the basis upon which the formatter is implemented.

The Official raywenderlich.com Swift Style Guide.

Updated for Swift 4.2

This style guide is different from others you may see, because the focus is centered on readability for print and the web. We created this style guide to keep the code in our books, tutorials, and starter kits nice and consistent — even though we have many different authors working on the books.

Our overarching goals are clarity, consistency and brevity, in that order.

Style Guide Topics

Architecture

MyScreenCoordinator

In MVVM-C, The Coordinator is the object responsible for handling screen transitions. It retains its inner UIViewController and delegates it in order to know when to transition to another Coordinator.

```
import UIKit

final class MyScreenCoordinator: Coordinator {
    init(client: HTTPClient, persistence: Persistence) {
        let viewModel = MyScreenViewModel(client: client, persistence: persistence)
        let viewController = MyScreenViewController(viewModel: viewModel)
        super.init(rootViewController: viewController)
        viewController.delegate = self
    }
}

extension MyScreenCoordinator: MyScreenViewControllerDelegate {
    func continue() {
        let coordinator = NextCoordinator()
            push(coordinator, animated: true)
    }
}
```

If your screen needs to retain or pass a MovilePayDelegate delegate forward, you should use MovilePayCoordintor instead as it holds an unowned reference to the delegate.

Style Guide Topics

Clean Code & Naming

Naming

Promote Clear Usage

- Include all the words needed to avoid ambiguity for a person reading code where the name is used.
 - ▼ LESS DETAIL

For example, consider a method that removes the element at a given position within a collection.

```
extension List {
  public mutating func remove(at position: Index) -> Element
}
employees.remove(at: x)
```

If we were to omit the word at from the method signature, it could imply to the reader that the method searches for and removes an element equal to x, rather than using x to indicate the position of the element to remove.

```
employees.remove(x) // unclear: are we removing x?
```

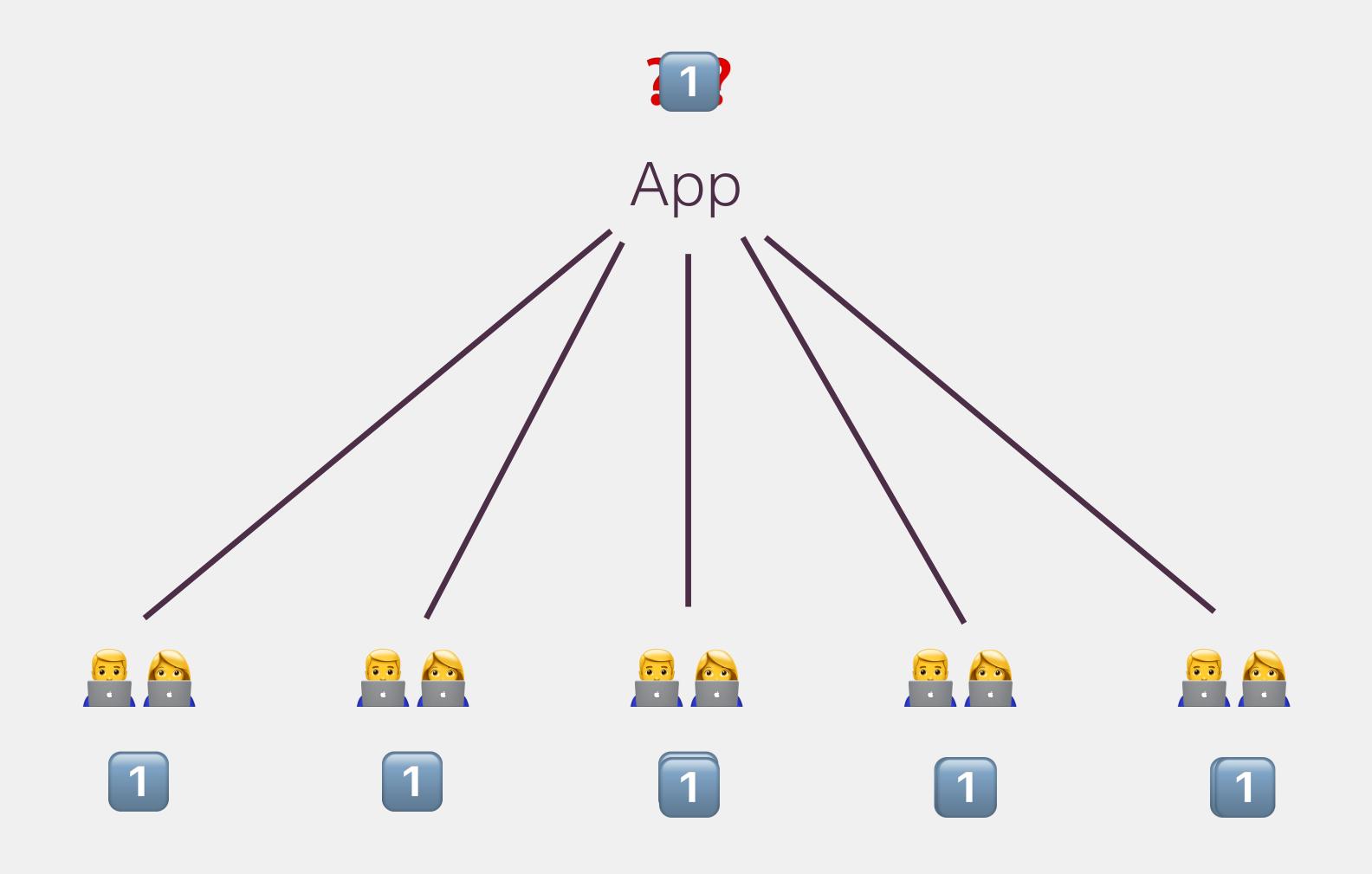
Style Guide Topics

Desired Usage of Compiler Syntax Sugar

```
var closure = foo(completionHandler: {
  // Bad
})
var closure = foo {
  // Good
```

Style Guides are Incremental





"But I don't have time!"



Q Search docs...

DOCS ISSUES GITHUB

A high-performance build tool

GETTING STARTED

GITHUB

```
$ buck build buck
[-] PARSING BUILD FILES...FINISHED 0.6s
[+] BUILDING...9.7s
[=> IDLE
```

Buck is a build system developed and used by Facebook. It encourages the creation of small, reusable modules consisting of code and resources, and supports a variety of languages on many platforms.

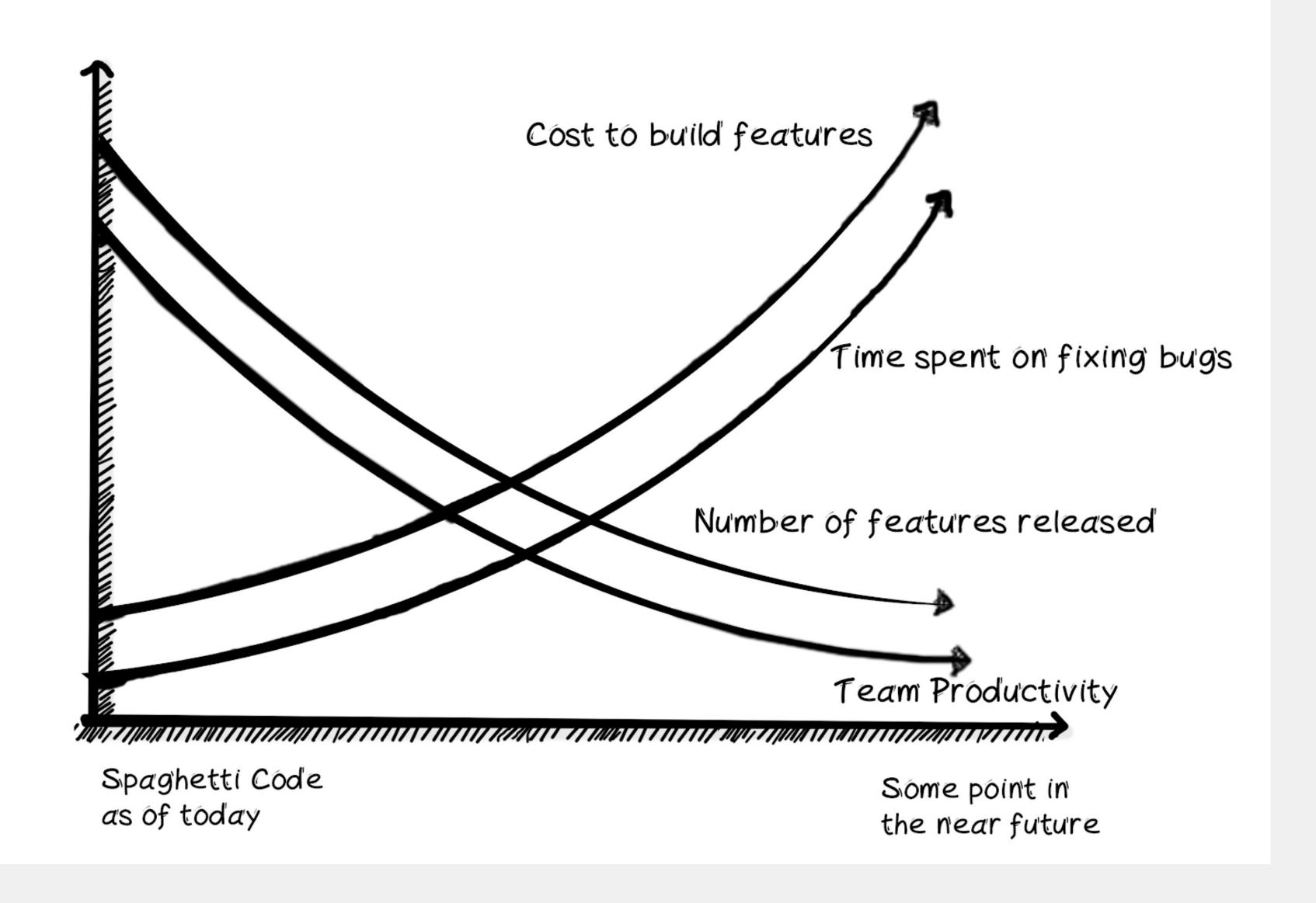
iFood with Xcode

- 1. CI taking over 20 minutes to run
- 2. Infinite xcodeproj conflicts
- 3. Xcode failing to build due to swiftc argument size
- 4. Multiple bugs in production as tests from the inner Monorepo modules aren't checked in CI

iFood with Buck

- 1. Local/CI builds can take only a few seconds to run thanks to Buck HTTP Cache
- 2. Creating new Monorepo modules is just a matter of creating the folders
- 3. Little to no conflicts thanks to Buck project generation
- 4. The main targets run the tests from all modules thanks to project generation

Reasons to Refactor



Your health





Obrigado!



swiftrocks.com



@rockthebruno