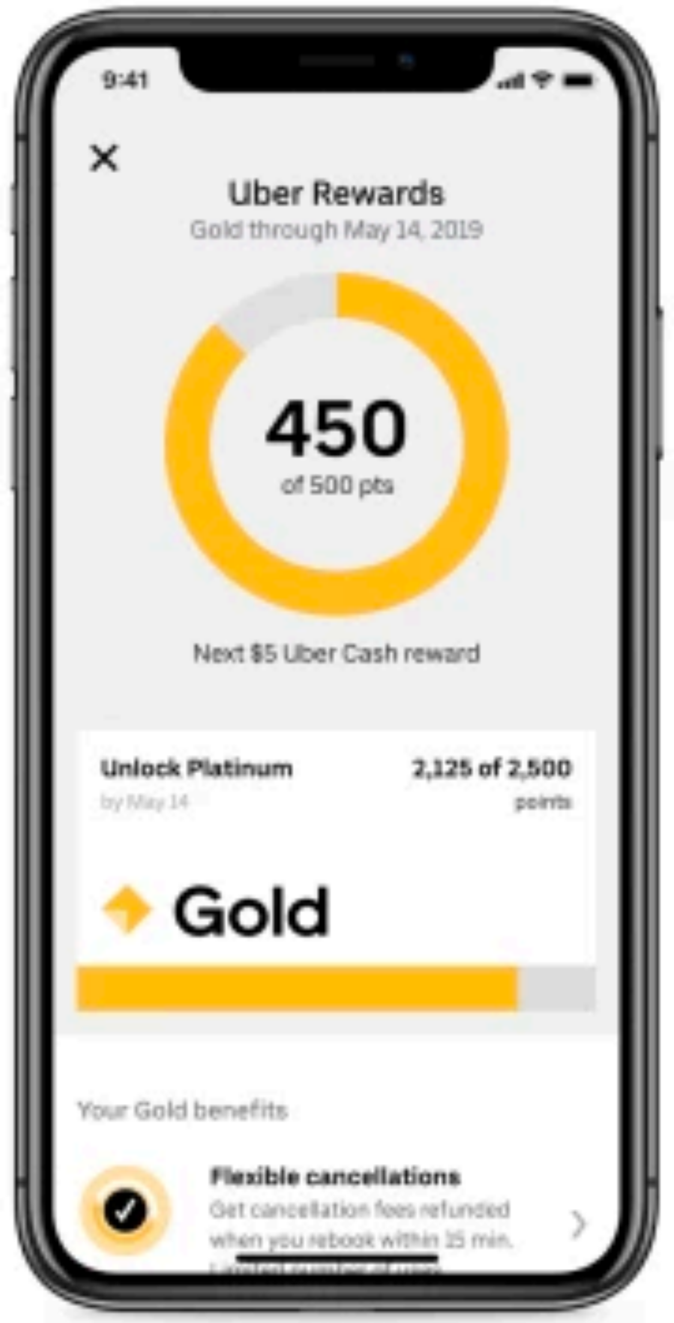
Move fast and don’t break things

Yury

iOS Lead @Uber Rewards Team



9:41

Uber Rewards

Gold through May 14, 2019

450

of 500 pts

Next $5 Uber Cash reward

Unlock Platinum 2,125 of 2,500 points

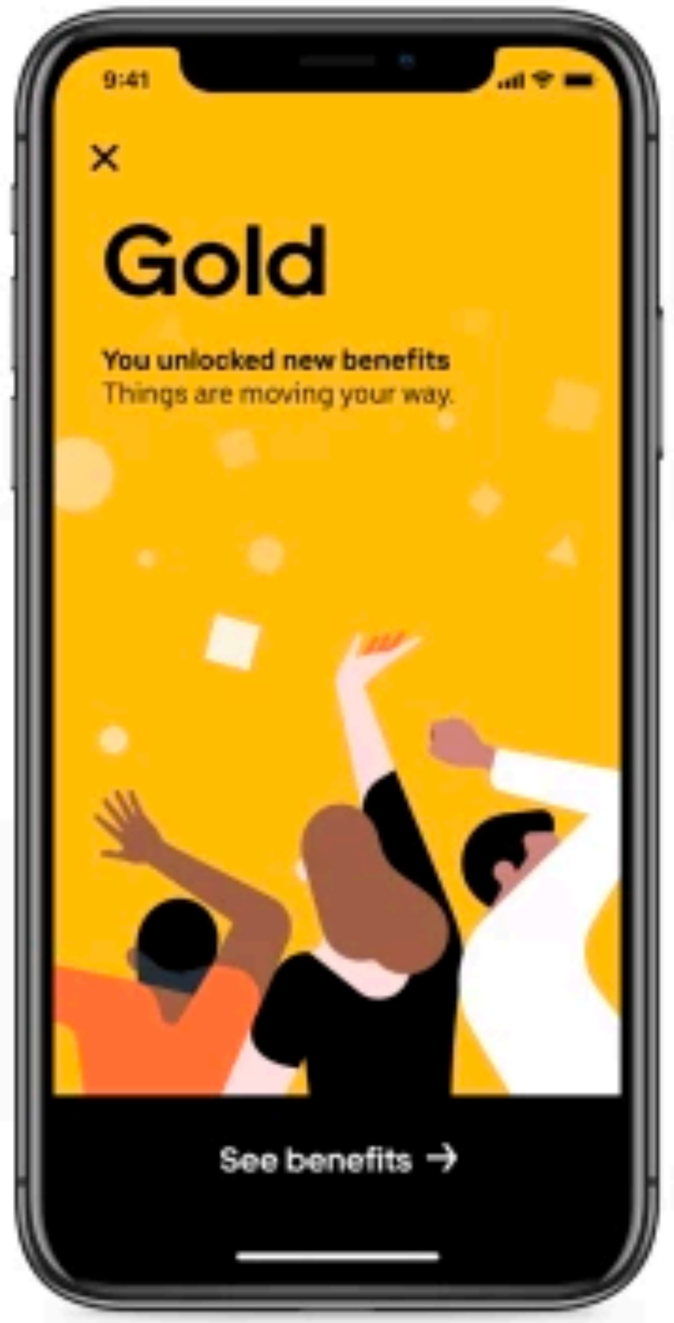
by May 14

Gold

Your Gold benefits

Flexible cancellations

Get cancellation fees refunded when you rebook within 15 min.



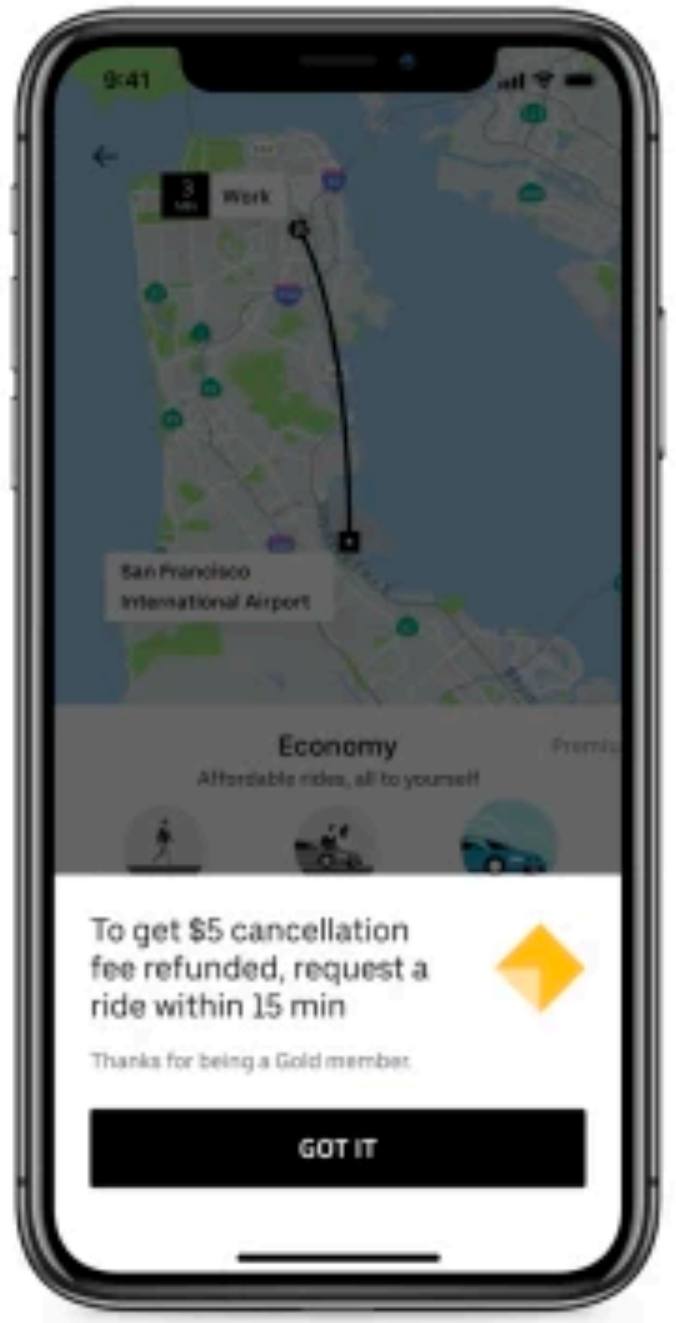
9:41

Gold

You unlocked new benefits

Things are moving your way.

See benefits →



9:41

Economy

Affordable rides, all to yourself

To get $5 cancellation fee refunded, request a ride within 15 min

Thanks for being a Gold member.

GOT IT

Uber

Uber
Eats

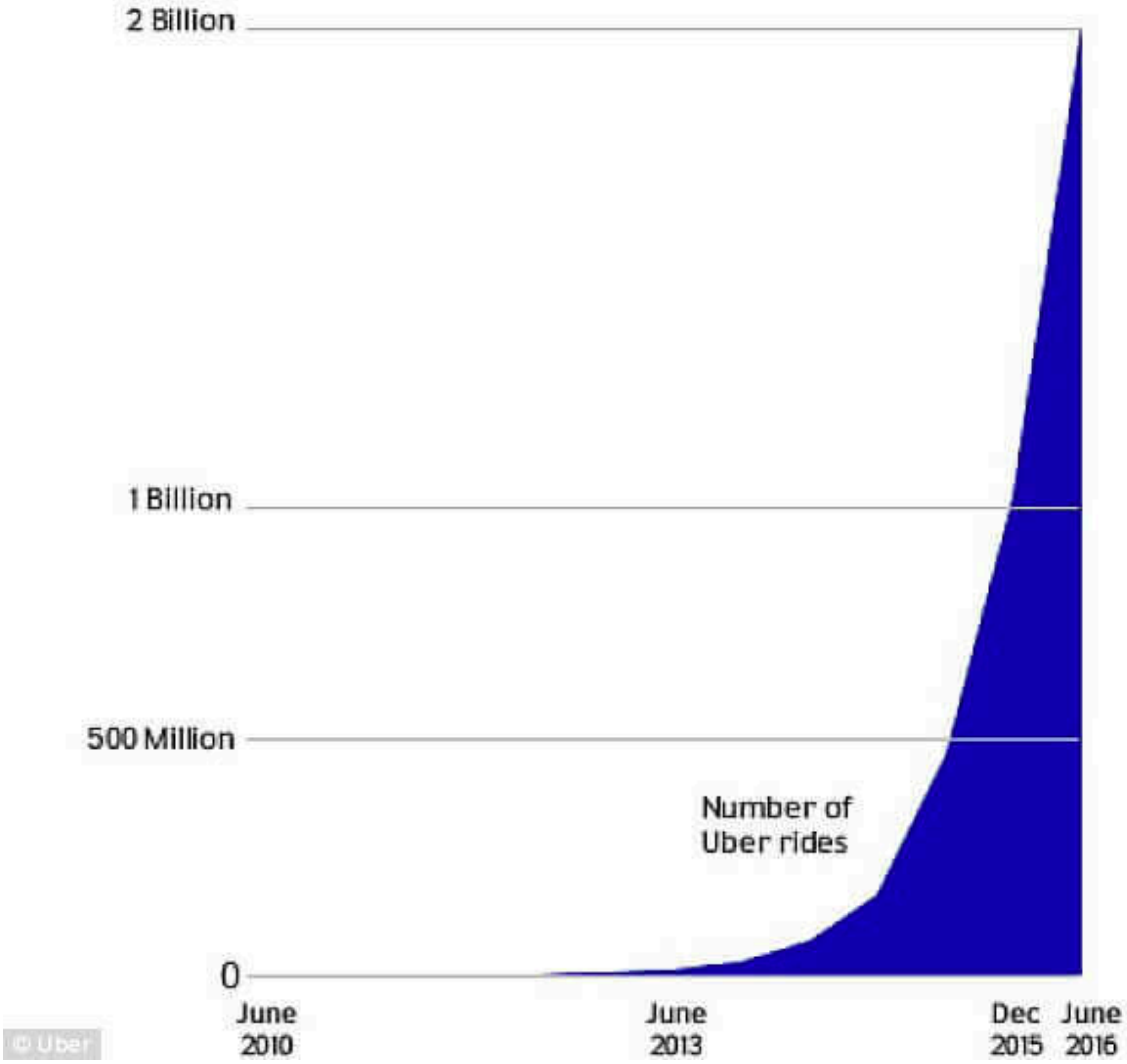
UBER Elevate

UBER FREIGHT

Uber
ATG

JUMP

Uber


2 Billion
1 Billion
500 Million
0
Number of
Uber rides
June
2010
June
2013
Dec
2015
June
2016
© Uber

- 100+ Engineers

- 100+ Engineers
- High velocity

- 100+ Engineers
- High velocity
- 99.99% Crashless sessions

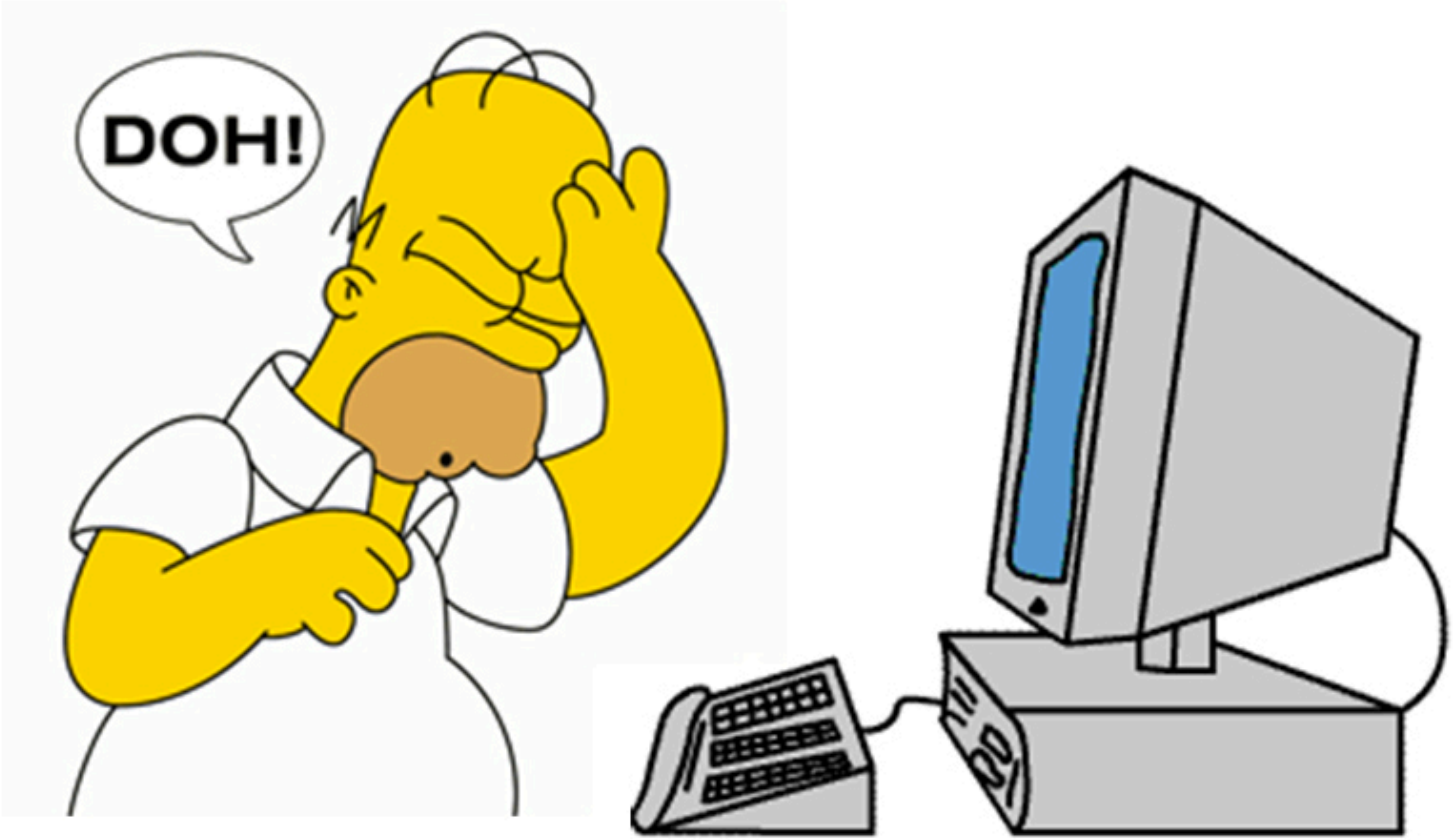
25

Times a day

Agenda

- **Manual Testing @Uber**
- Snapshot Tests
- Feature Flags and A/B Testing
- Plugins
- Git Flow
- RIBs Architecture

Manual Testing @Uber



20,000+

Employee As A Tester

Agenda

- Manual Testing @Uber
- **Snapshot Tests**
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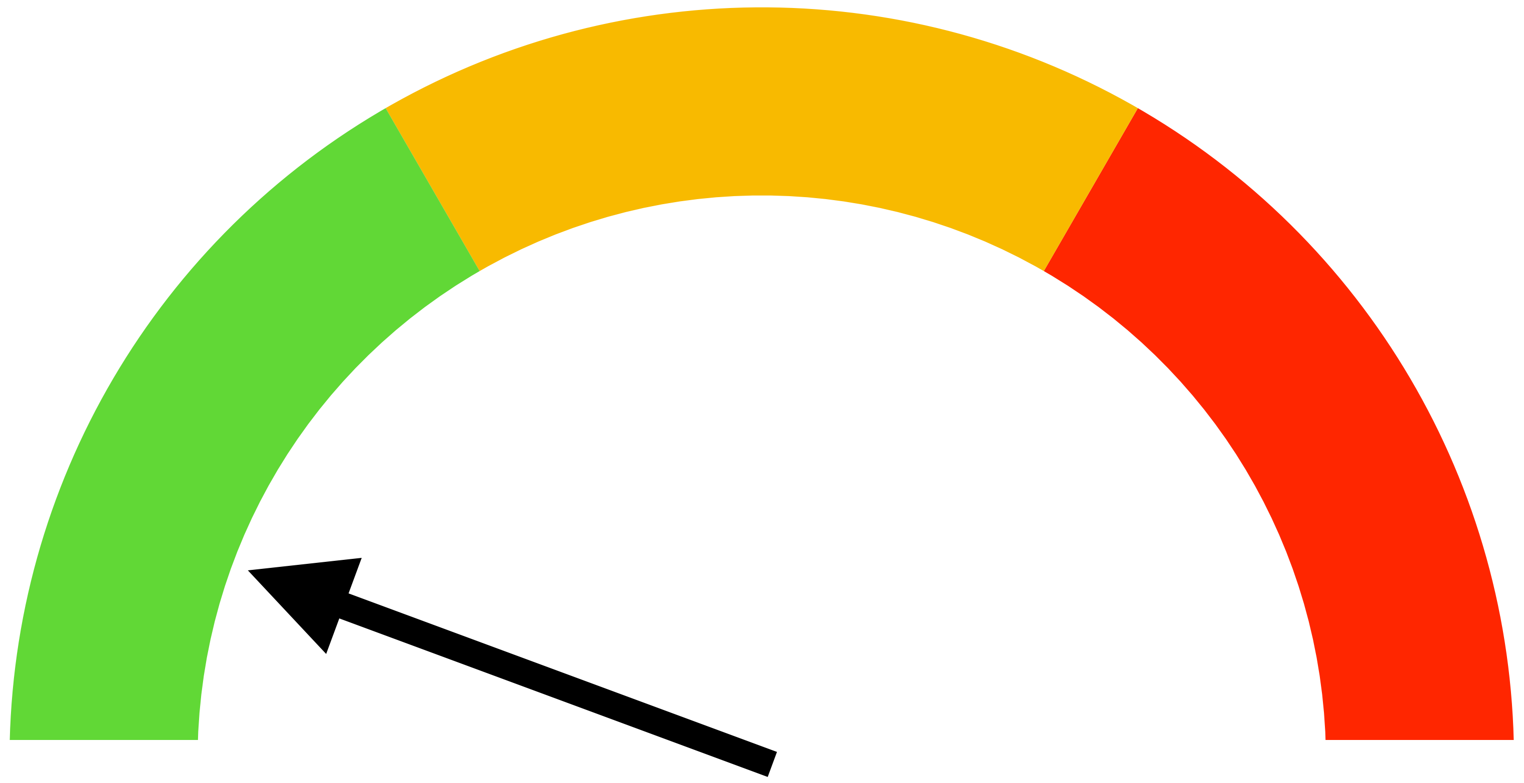
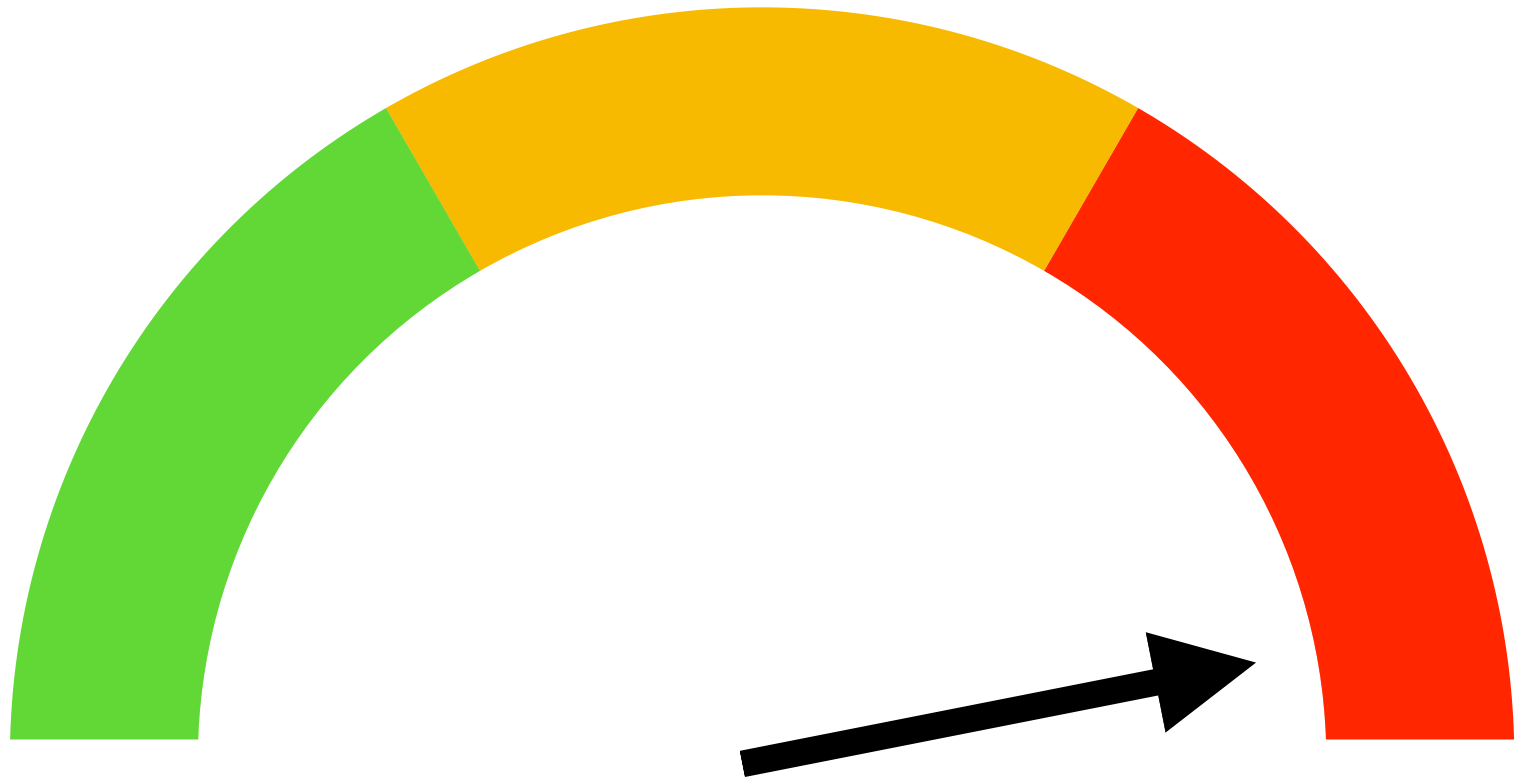
Snapshot Tests



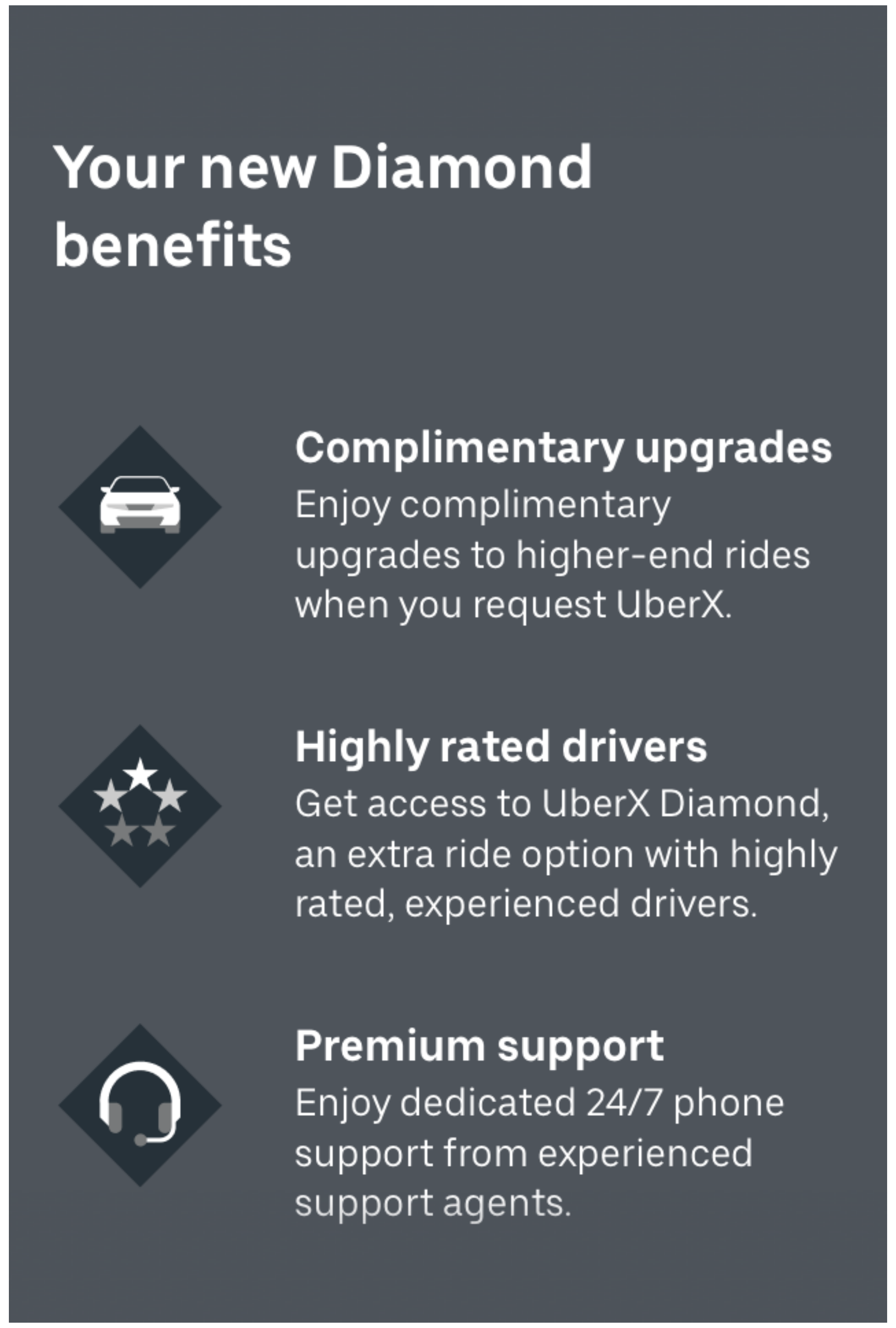
Adoption



Value

```
class SomeViewSnapshotTests: SnapshotTestCase {

    override func setUp() {
        super.setUp()
        recordMode = true
    }

    // MARK: - Tests

    func test() {
      let view = SomeView()
      snapshotVerify(view)
   }
}
```

```swift
class SomeViewSnapshotTests: SnapshotTestCase {

    override func setUp() {
        super.setUp()
        recordMode = true
    }

    // MARK: - Tests

    func test() {
      let view = SomeView()
      snapshotVerify(view)
   }
}
```



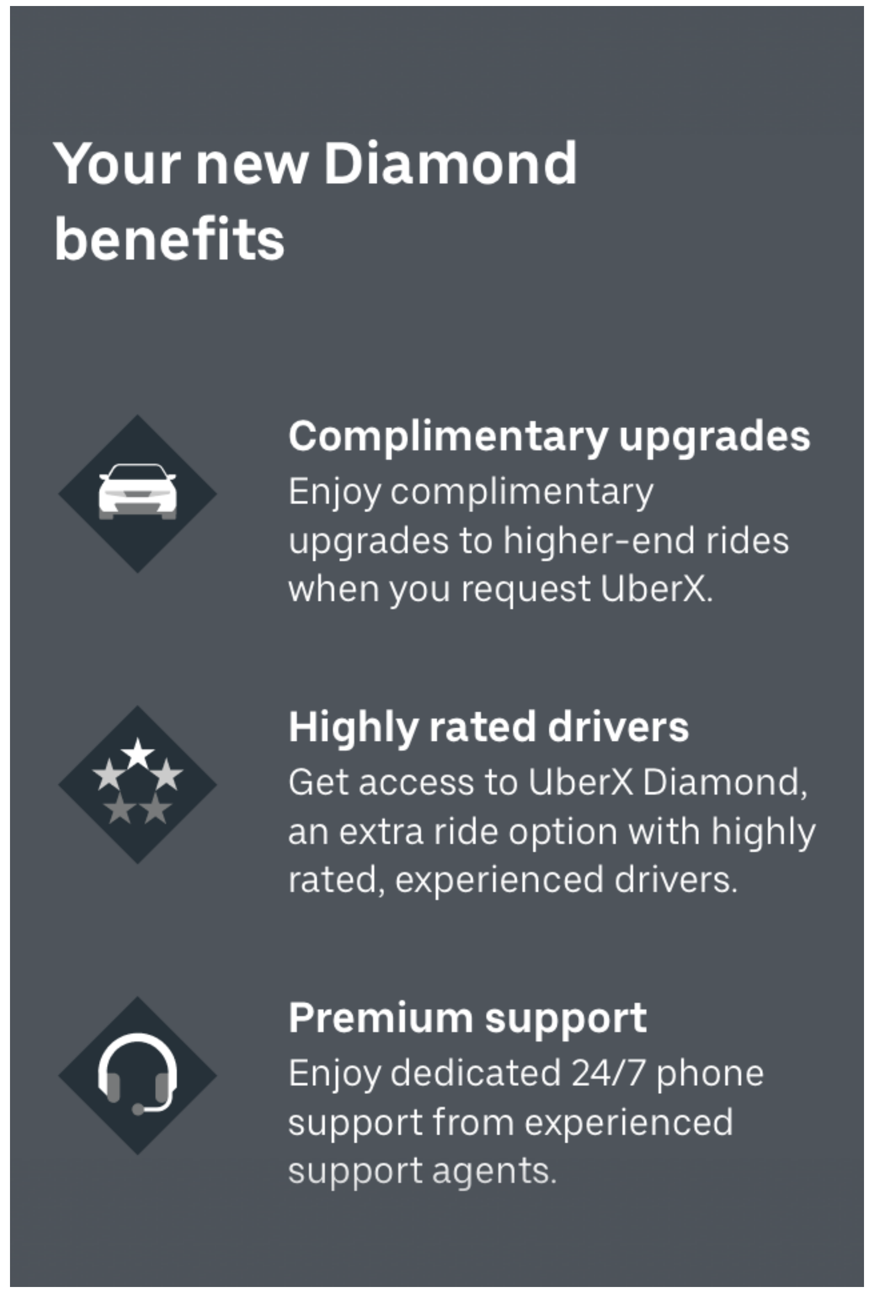
Your new Diamond benefits

Complimentary upgrades
Enjoy complimentary upgrades to higher-end rides when you request UberX.

Highly rated drivers
Get access to UberX Diamond, an extra ride option with highly rated, experienced drivers.

Premium support
Enjoy dedicated 24/7 phone support from experienced support agents.

iPhone 4



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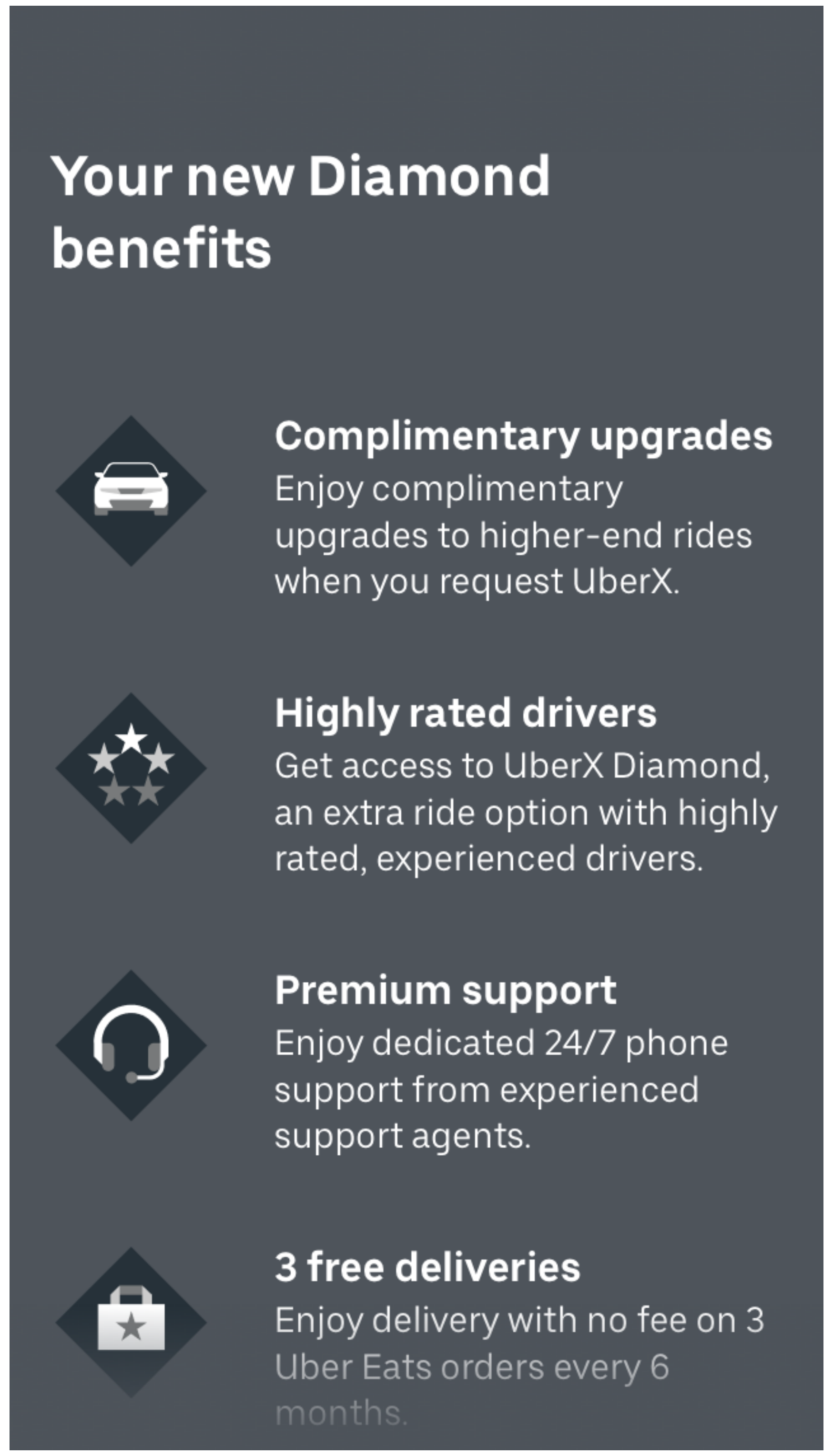
iPhone 5



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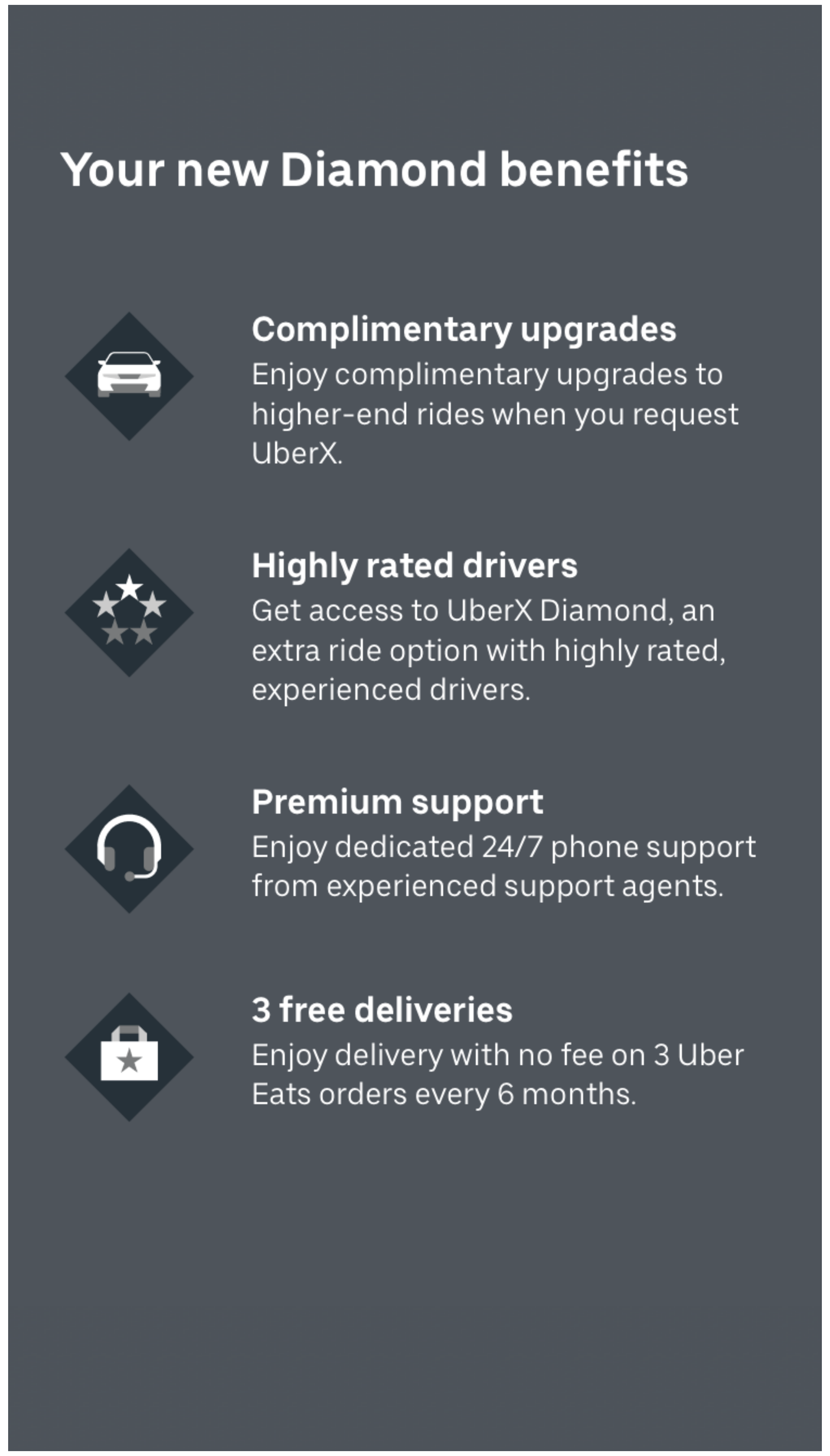
3 free deliveries
Enjoy delivery with no fee on 3 Uber Eats orders every 6 months.

iPhone 6



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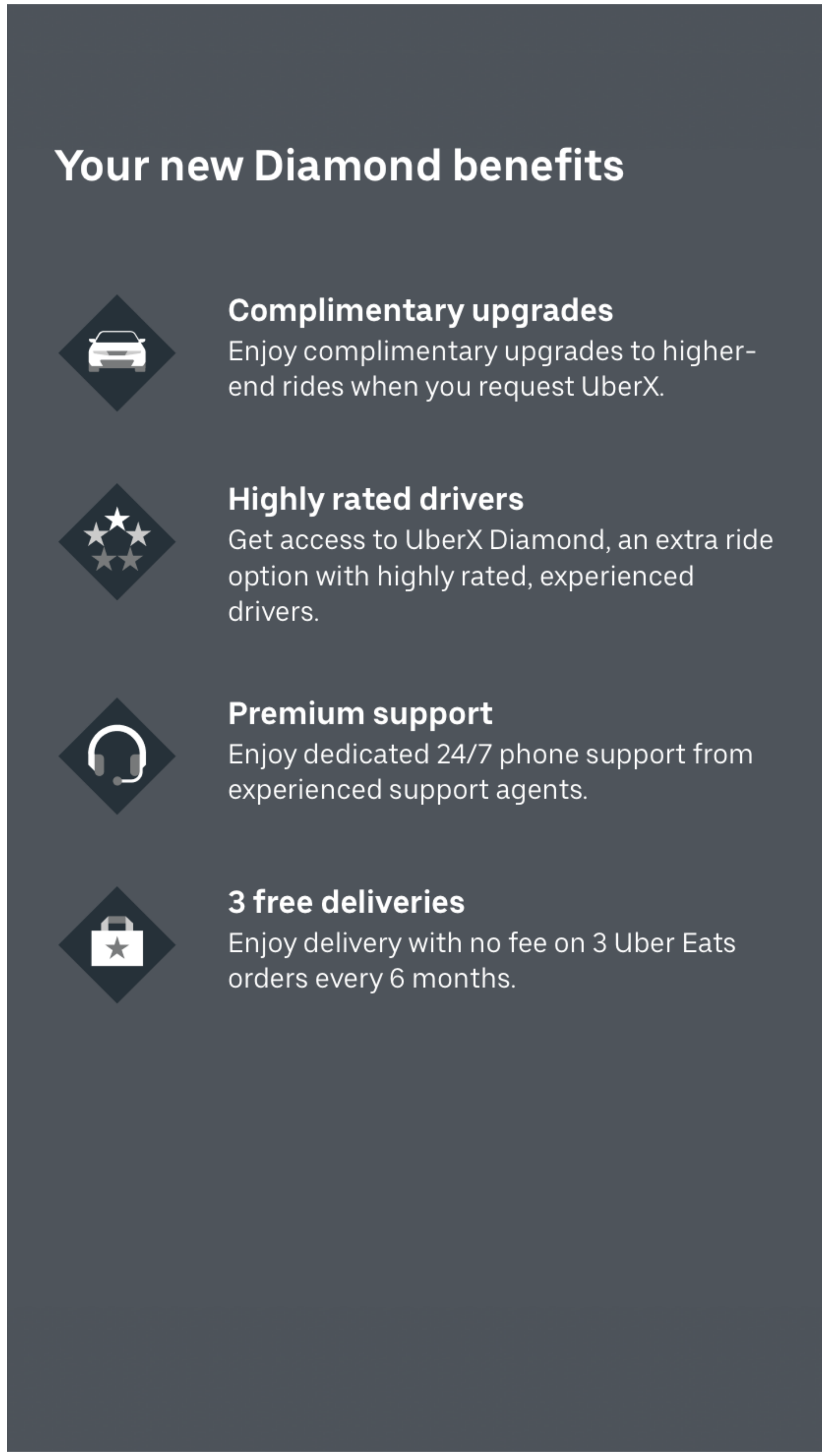
iPhone 6+



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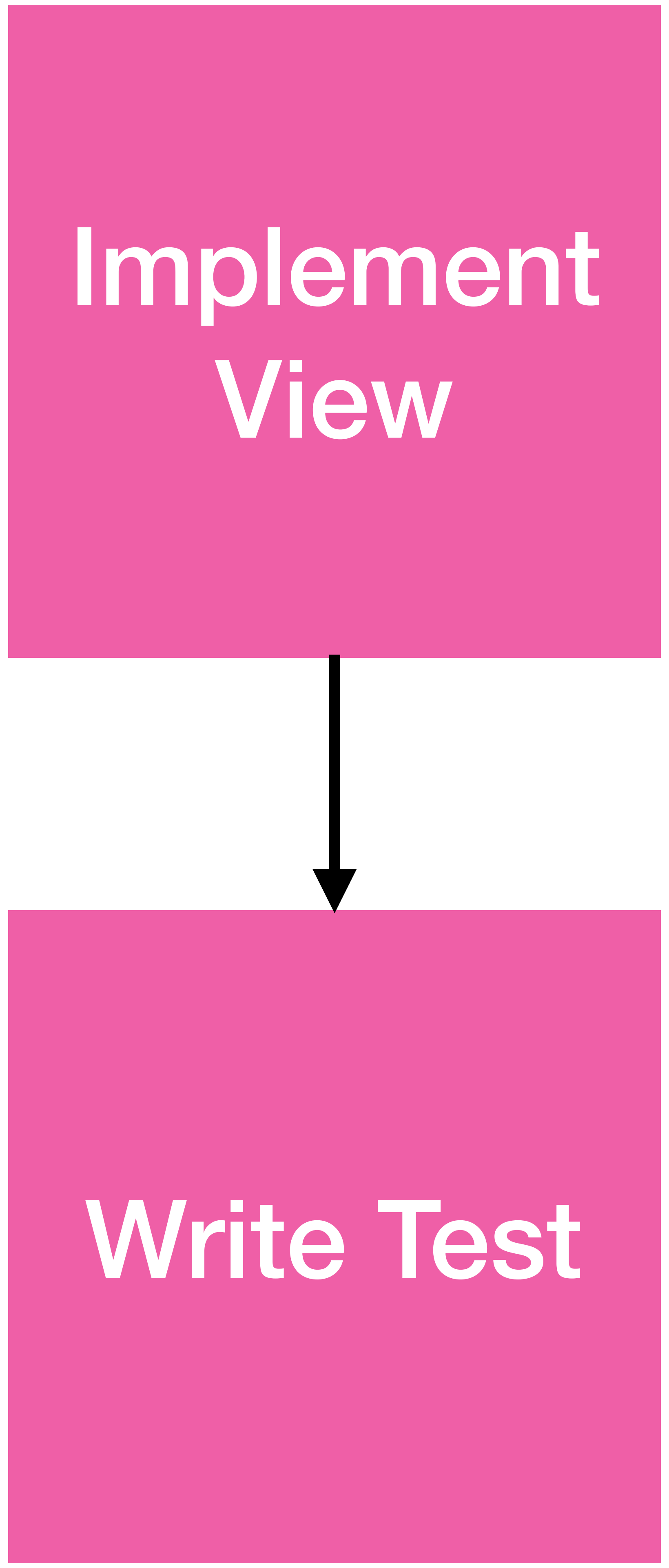
Snapshot Driven Development

Implement View

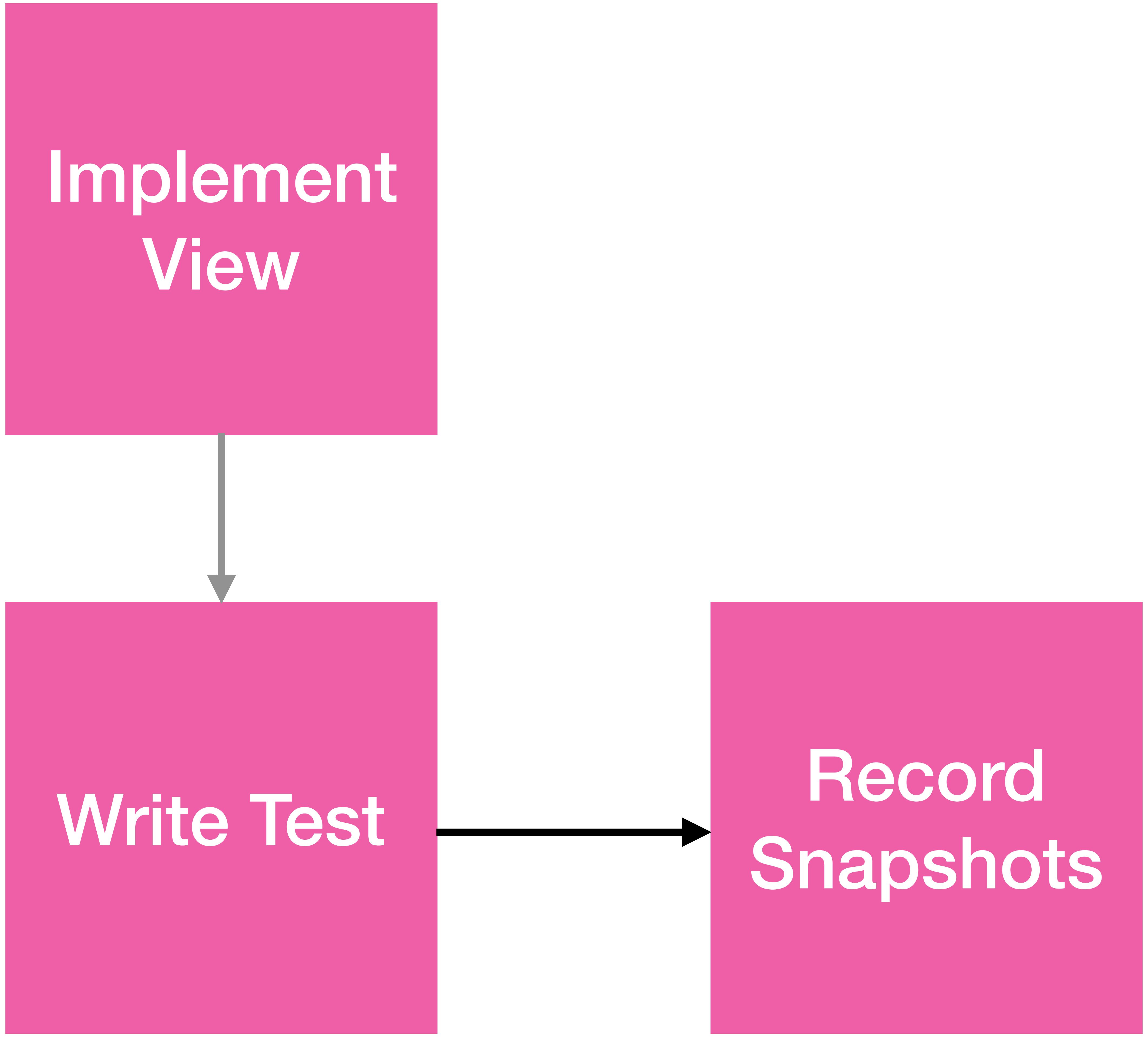
Snapshot Driven Development



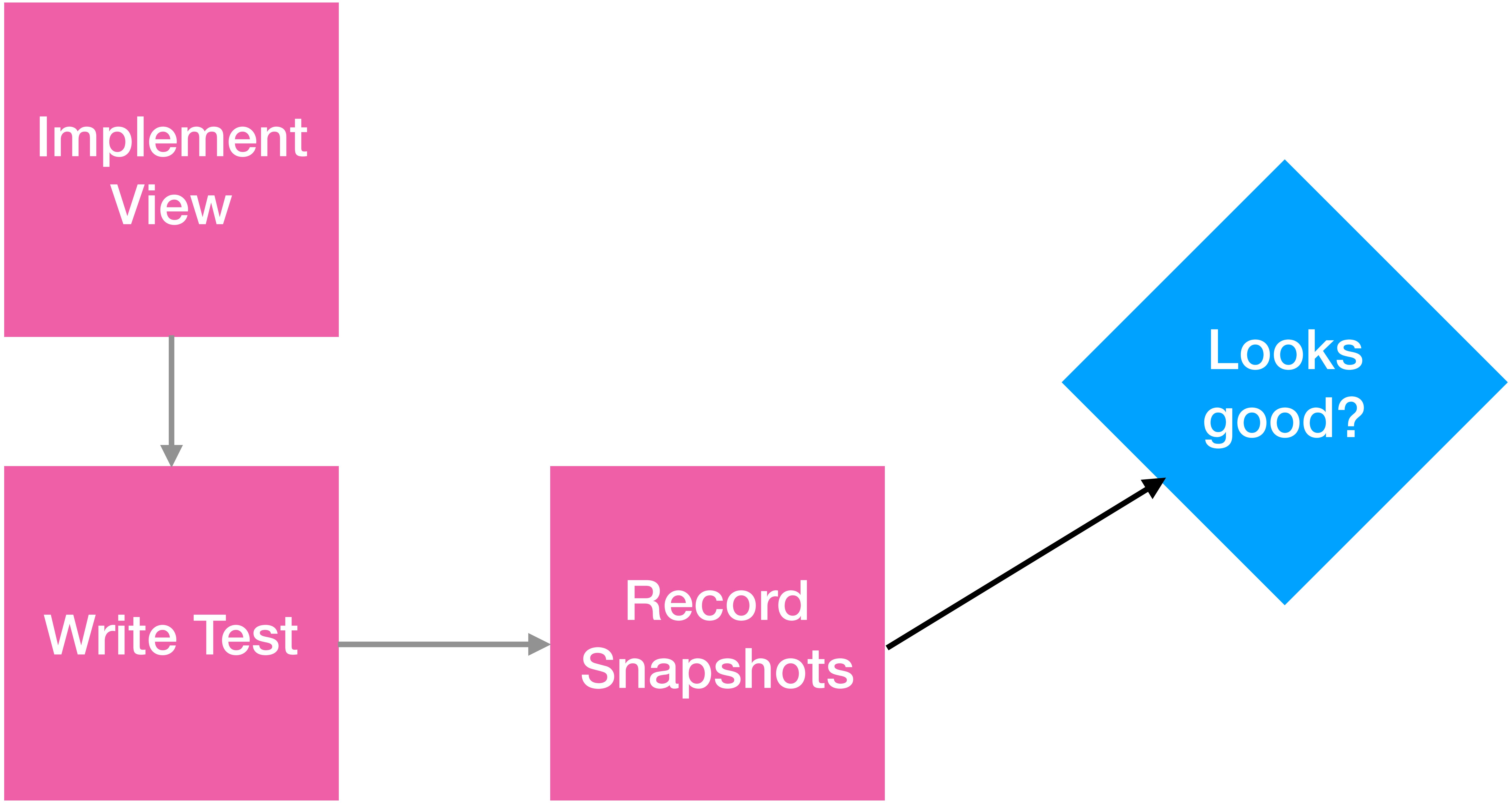
Implement View

Write Test

Snapshot Driven Development



Snapshot Driven Development



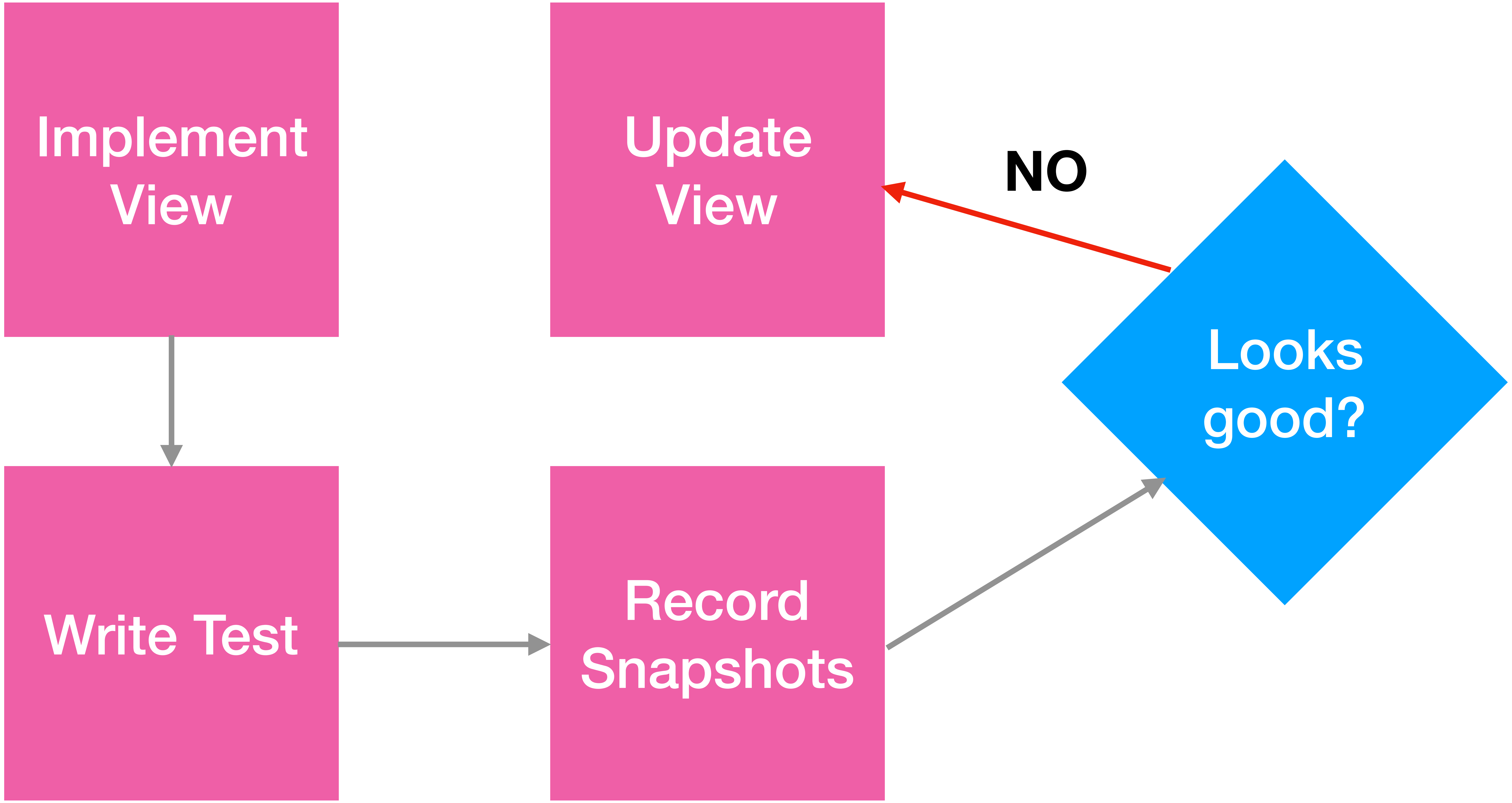
Implement View

Write Test

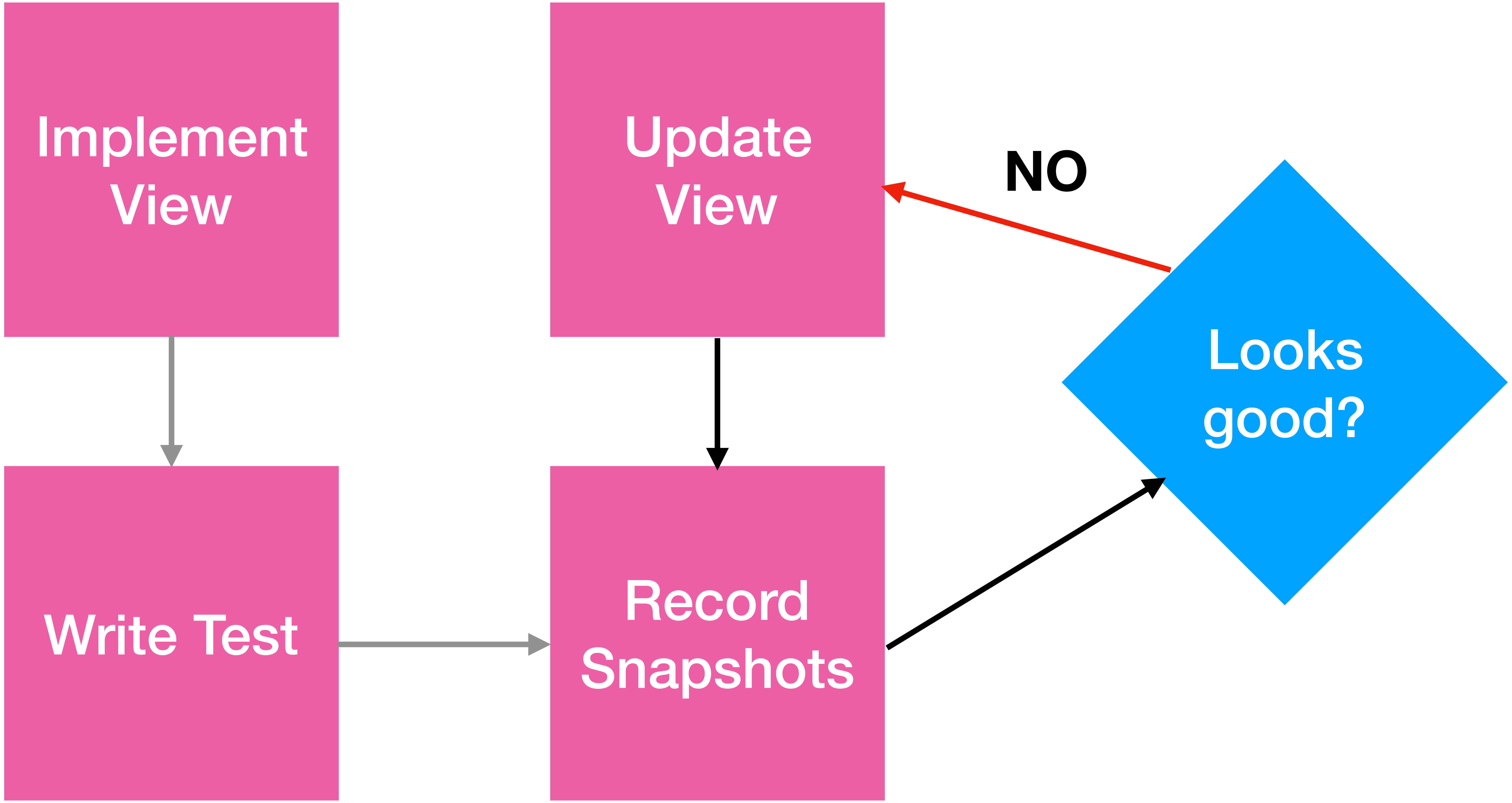
Record Snapshots

Looks good?

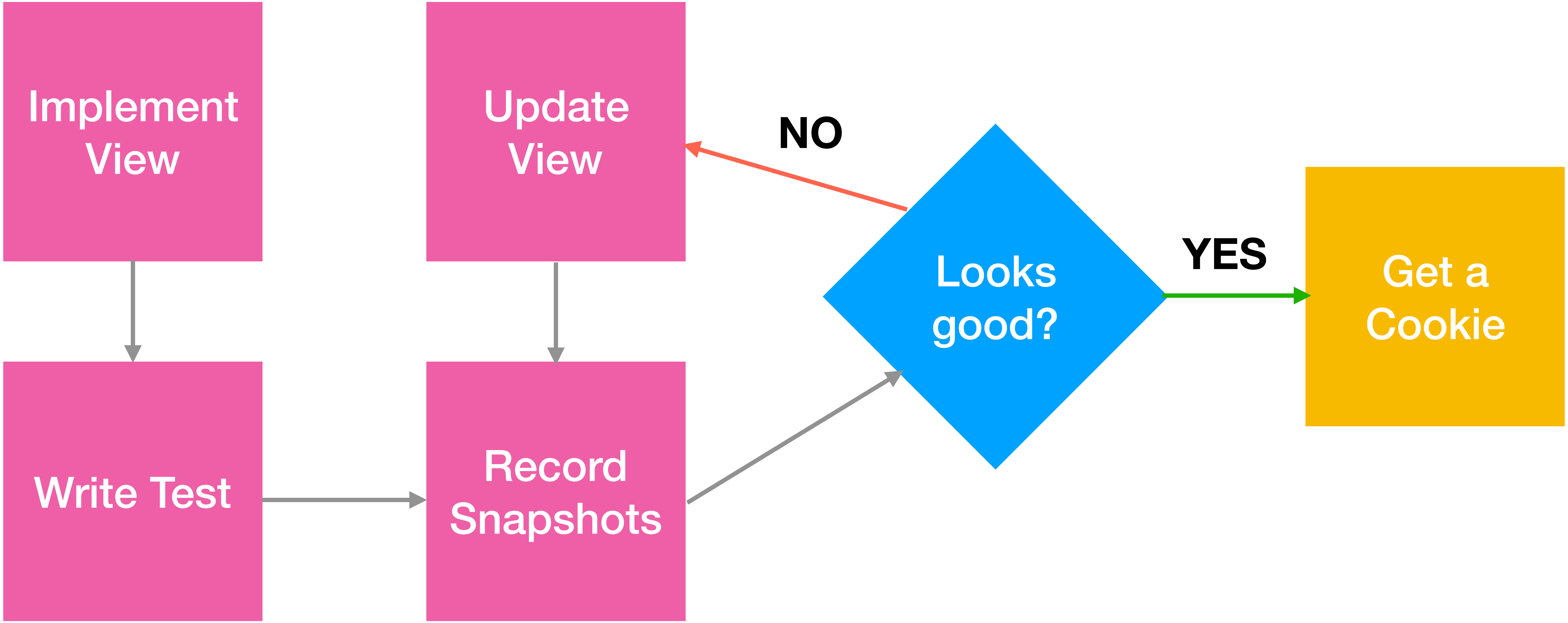
Snapshot Driven Development



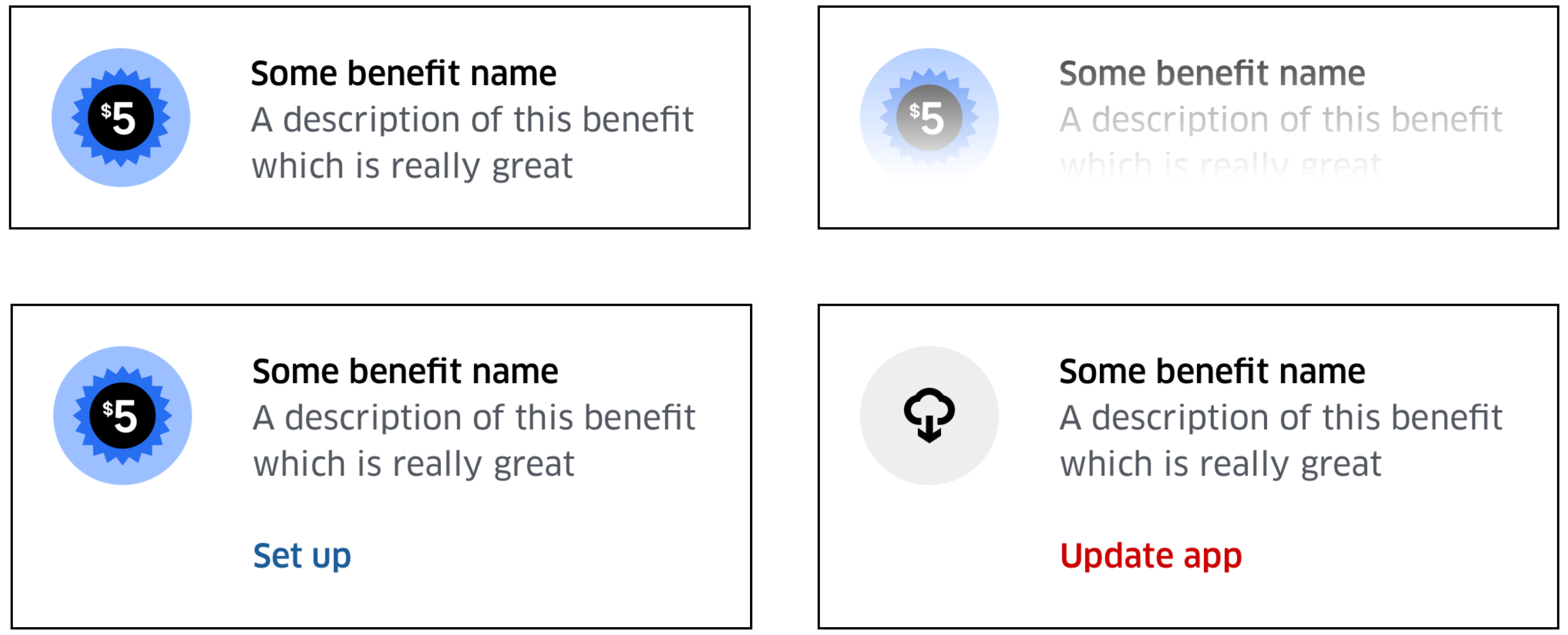
Snapshot Driven Development



Snapshot Driven Development



All States



Some benefit name
A description of this benefit which is really great

Some benefit name
A description of this benefit which is really great

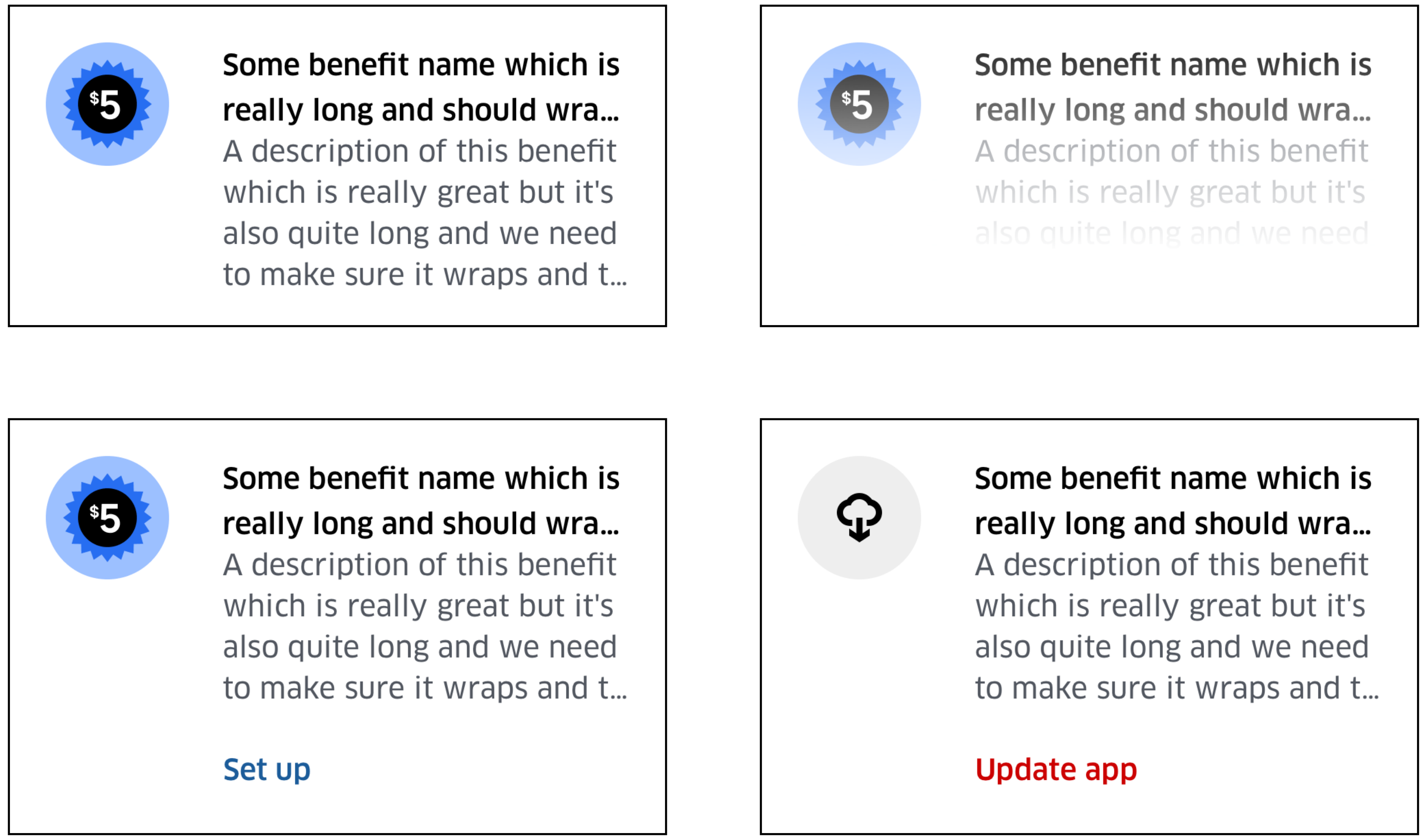
Some benefit name
A description of this benefit which is really great

Set up

Some benefit name
A description of this benefit which is really great

Update app

+ Edge Cases



Some benefit name which is really long and should wra...
A description of this benefit which is really great but it's also quite long and we need to make sure it wraps and t...

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Set up

Some benefit name which is really long and should wra...
A description of this benefit which is really great but it's also quite long and we need to make sure it wraps and t...

Update app

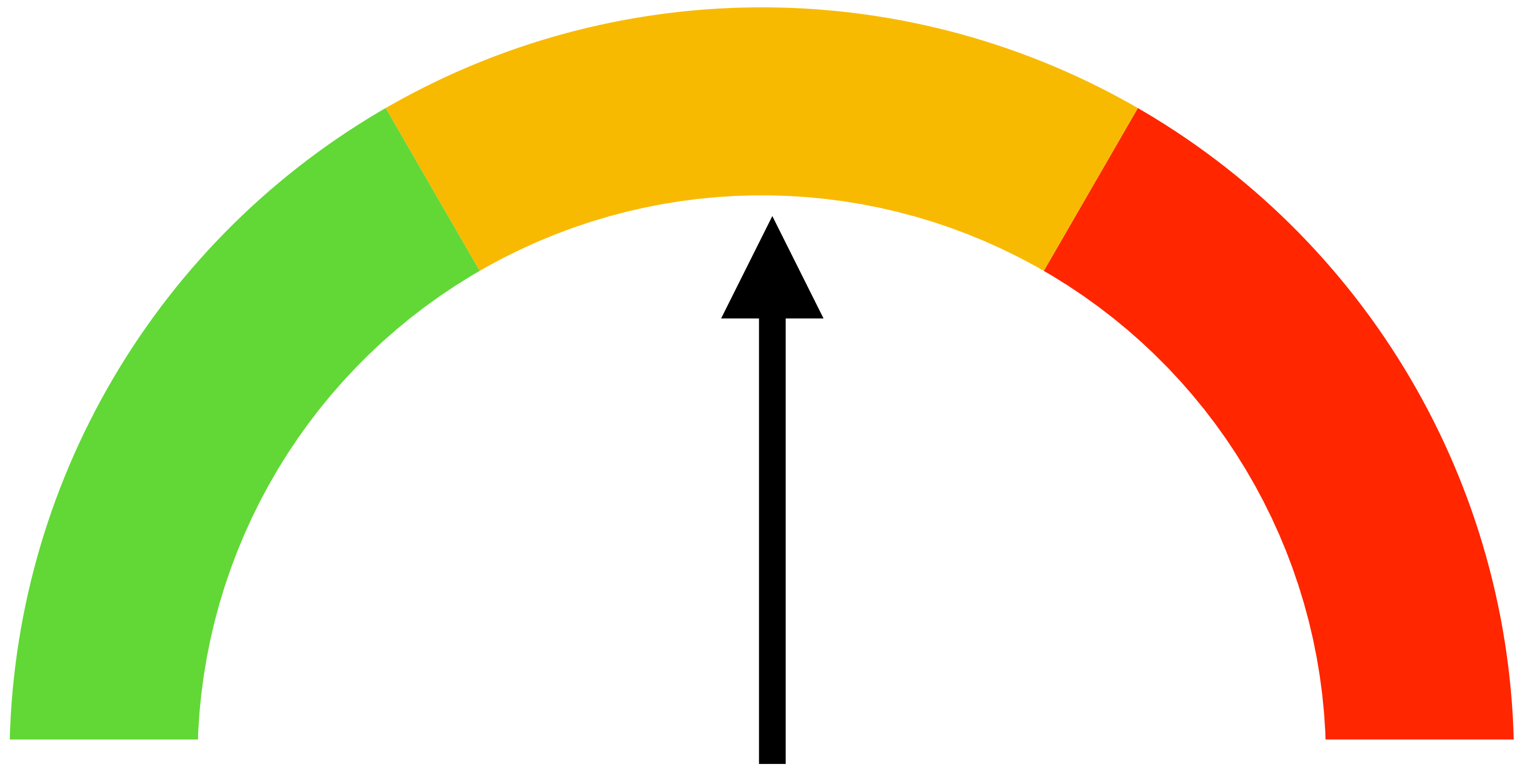
Quickstart Guide

1. https://github.com/uber/ios-snapshot-test-case
2. Add Framework to Tests Target
3. Define Snapshot Images Folder
4. …
5. Write Tests!

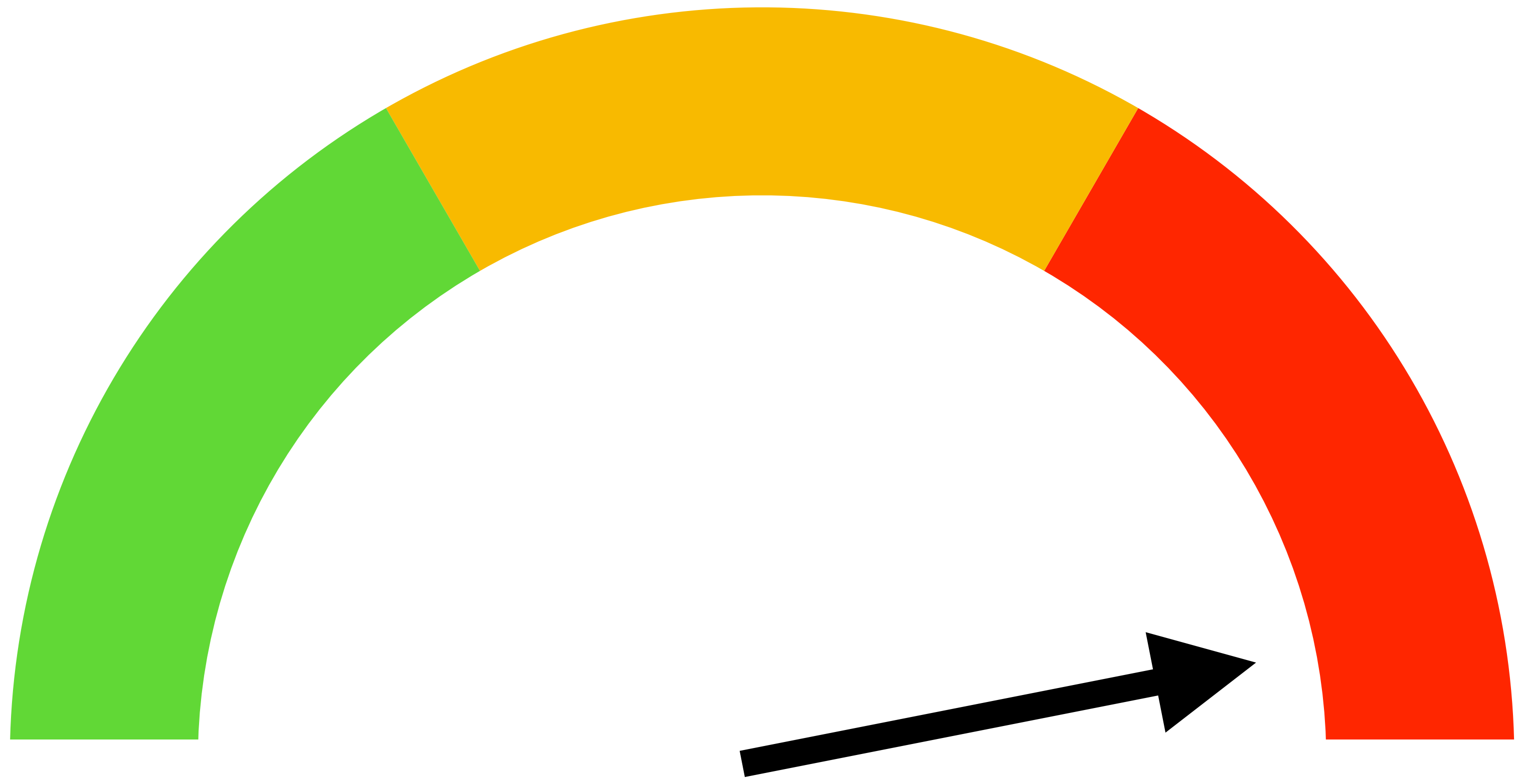
Agenda

- Manual Testing @Uber
- Snapshot Tests
- **Feature Flags and A/B Testing**
- Plugins
- Git Flow
- RIBs Architecture

Feature Flags

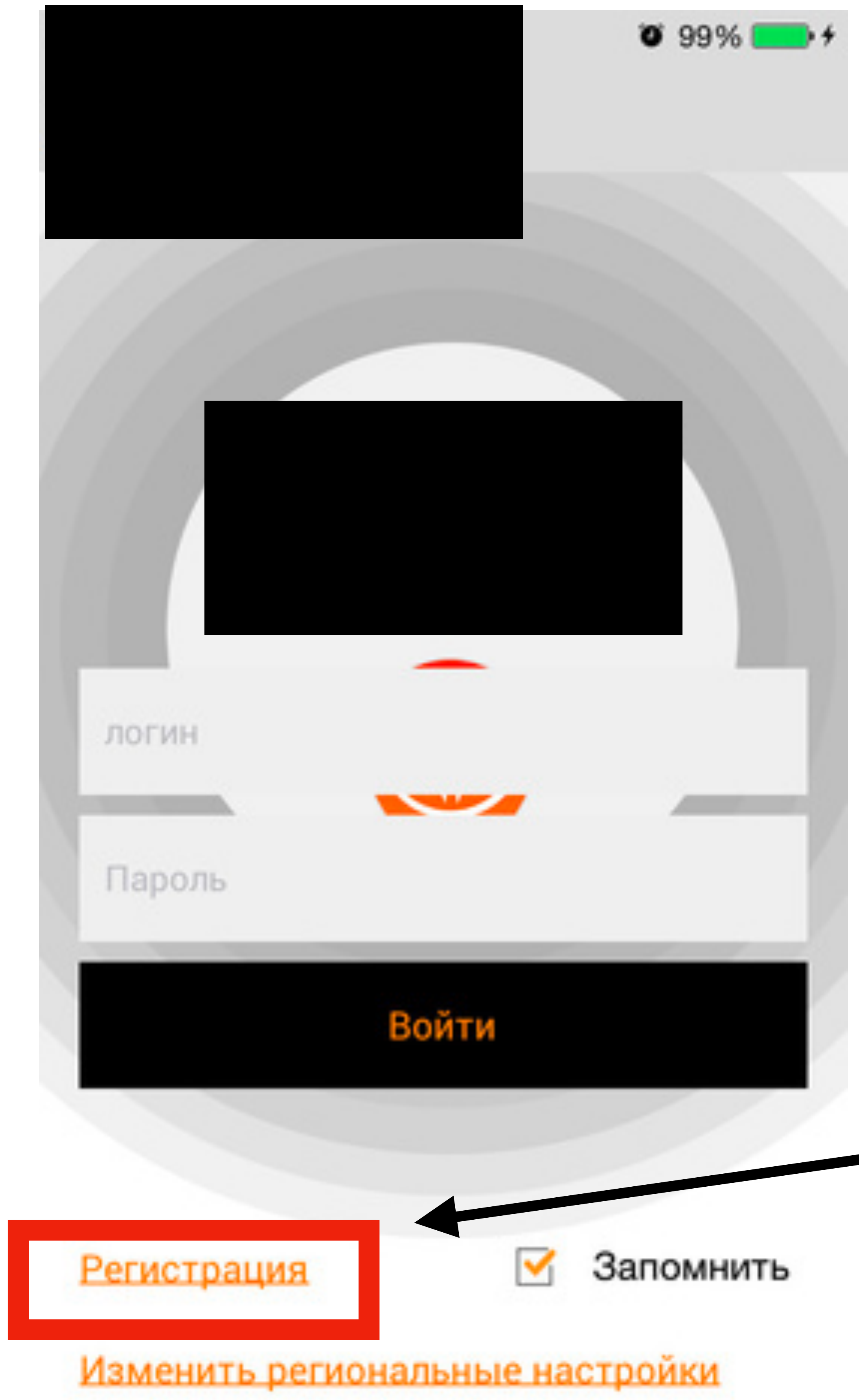


Adoption



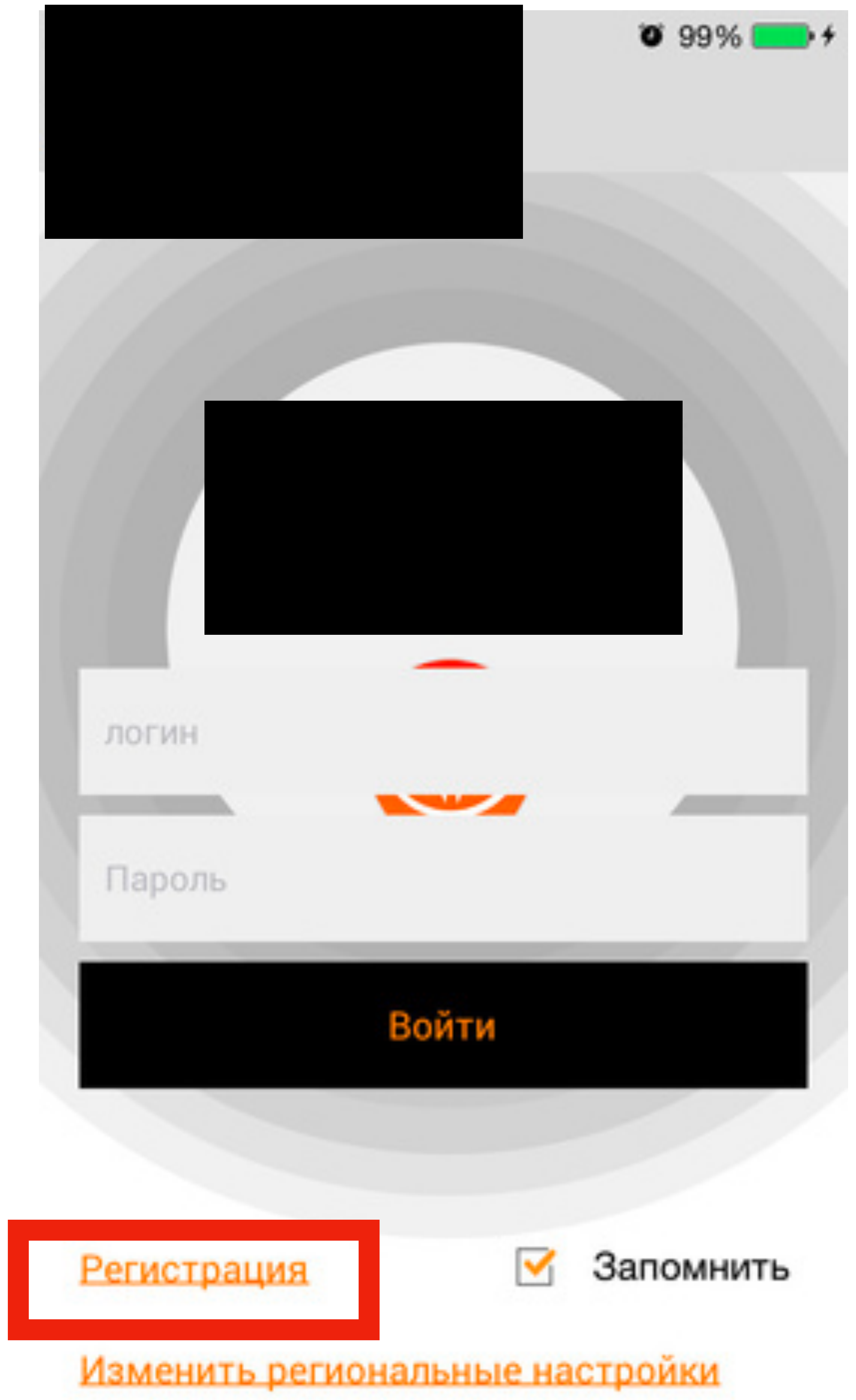
Value

[redacted]



[redacted]

Sign Up



[redacted]

99%

[redacted]

логин

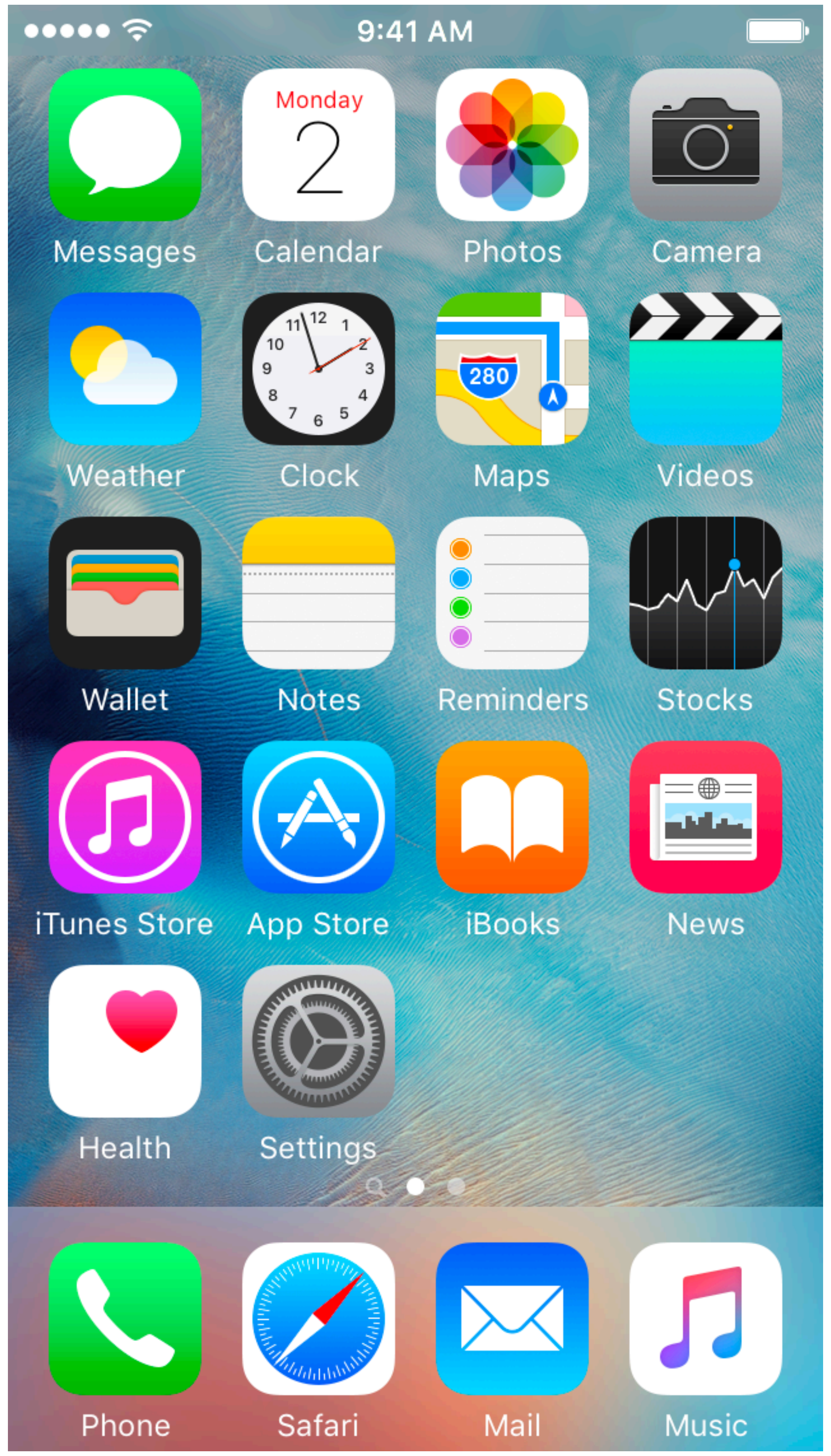
Пароль

Войти

Регистрация

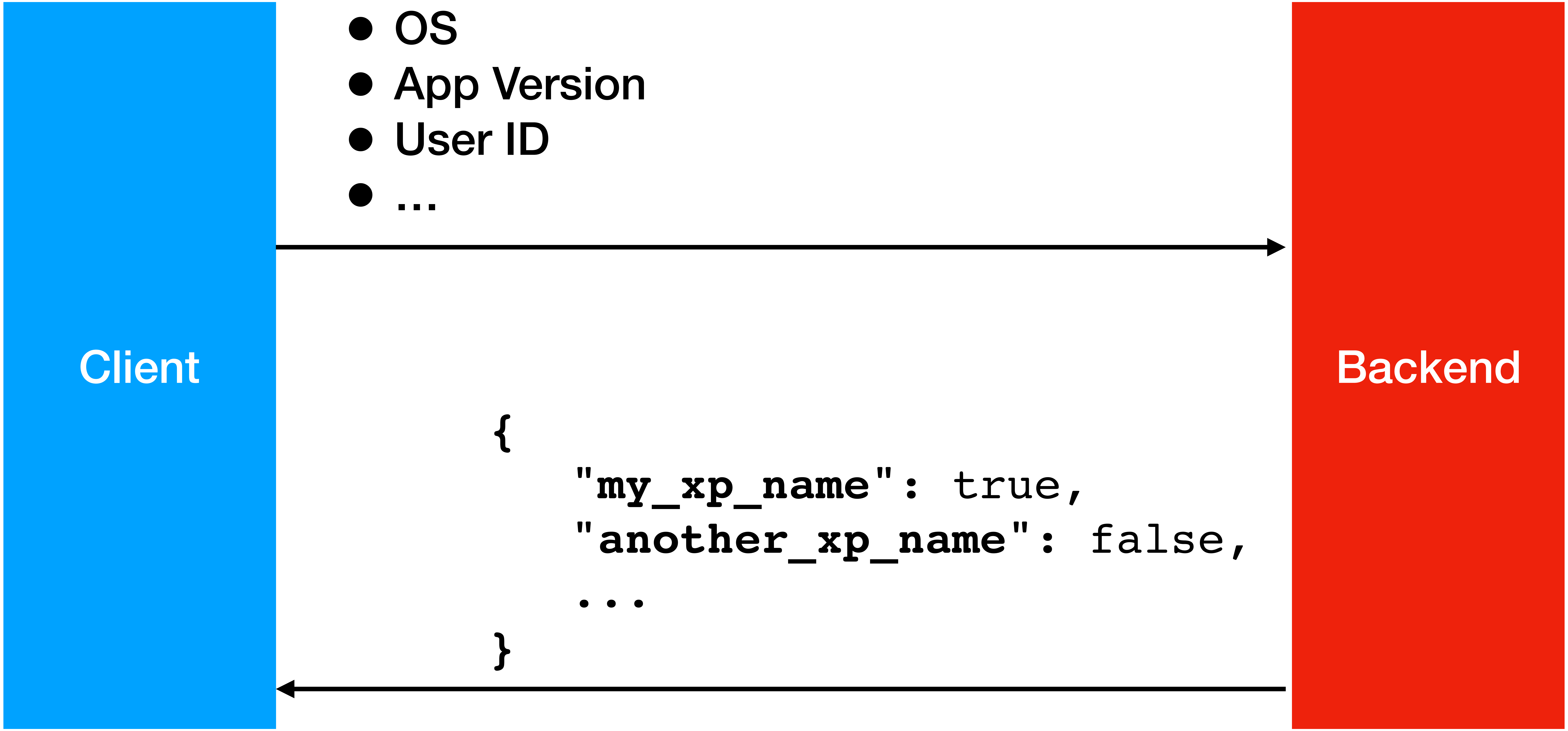
☑ Запомнить

Изменить региональные настройки



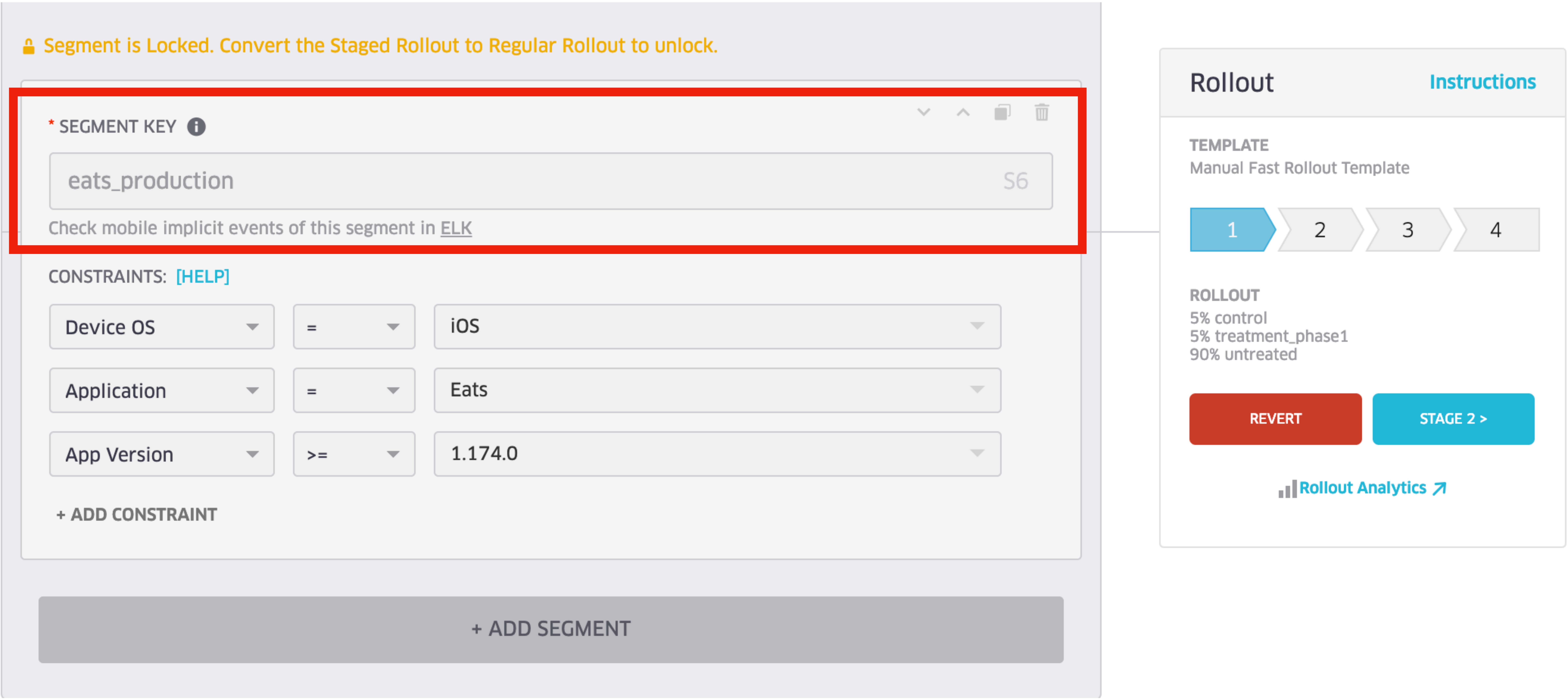
```
if flagEnabled {
    /* new code */
} else {
    /* old code */
}
```

```
if cachedExperiments.isTreated(forExperiment:
ExperimentNamesModule.my_xp_name) {
   /* new code */
} else {
   /* old code */
}

...

public enum ExperimentNamesModule: String,
ExperimentKeying {
    /// Eng flag to do something meaningful
    case my_xp_name
}
```



- OS
- App Version
- User ID
- ...

```
{
    "my_xp_name": true,
    "another_xp_name": false,
    ...
}
```



Segment is Locked. Convert the Staged Rollout to Regular Rollout to unlock.

* SEGMENT KEY

eats_production S6

Check mobile implicit events of this segment in ELK

CONSTRAINTS: [HELP]

Device OS	=	iOS
Application	=	Eats
App Version	>=	1.174.0

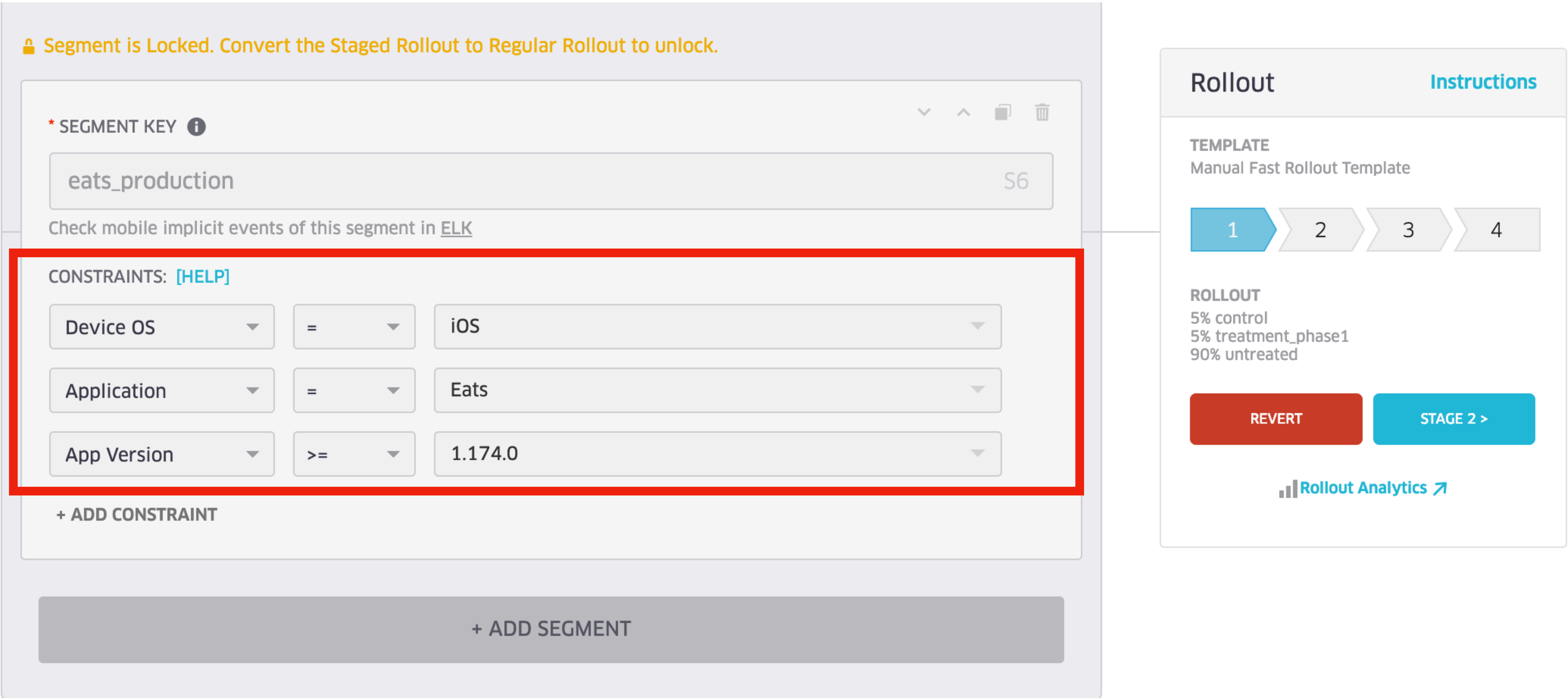
Rollout

TEMPLATE

Manual Fast Rollout Template

ROLLOUT

5% control
5% treatment_phase1
90% untreated



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CONSTRAINTS: [HELP]

Device OS	=	iOS
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App Version	>=	1.174.0

+ ADD CONSTRAINT

+ ADD SEGMENT

Rollout

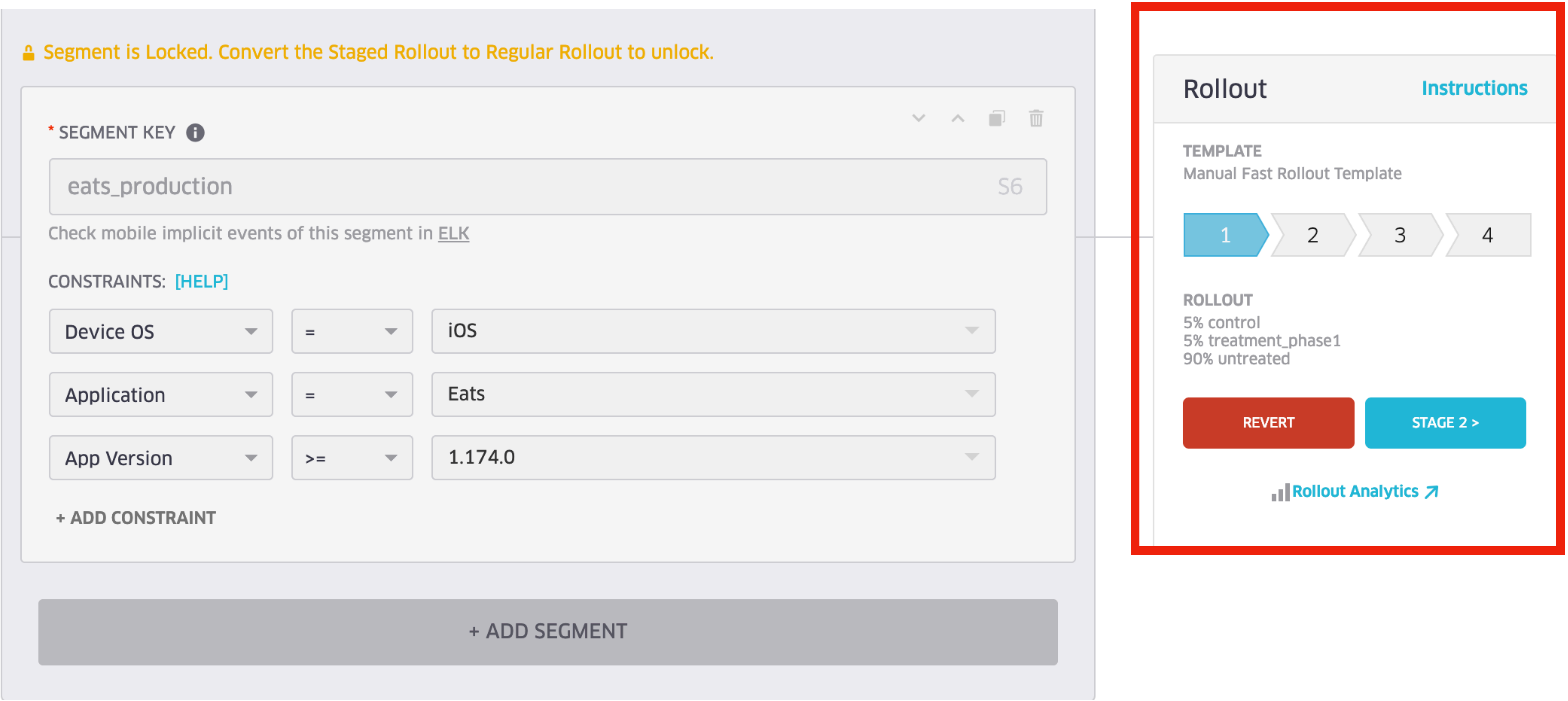
Instructions

TEMPLATE

Manual Fast Rollout Template

ROLLOUT

5% control
5% treatment_phase1
90% untreated



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CONSTRAINTS: [HELP]

Device OS	=	iOS
Application	=	Eats
App Version	>=	1.174.0

+ ADD CONSTRAINT

+ ADD SEGMENT

Rollout Instructions

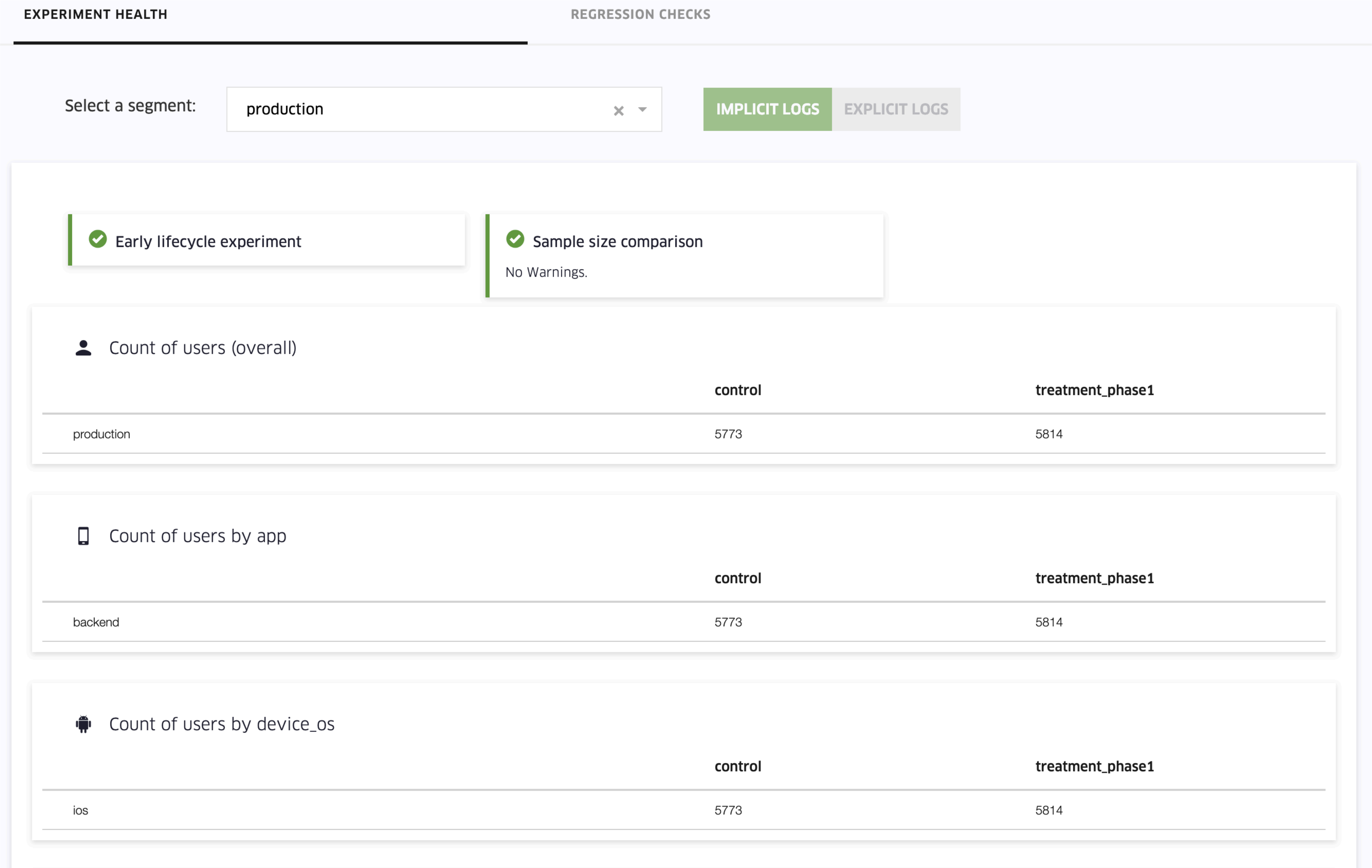
TEMPLATE
Manual Fast Rollout Template

1 2 3 4

ROLLOUT
5% control
5% treatment_phase1
90% untreated

REVERT STAGE 2 >

Rollout Analytics ↗



Select a segment: production

✓ Early lifecycle experiment

✓ Sample size comparison

No Warnings.

Count of users (overall)

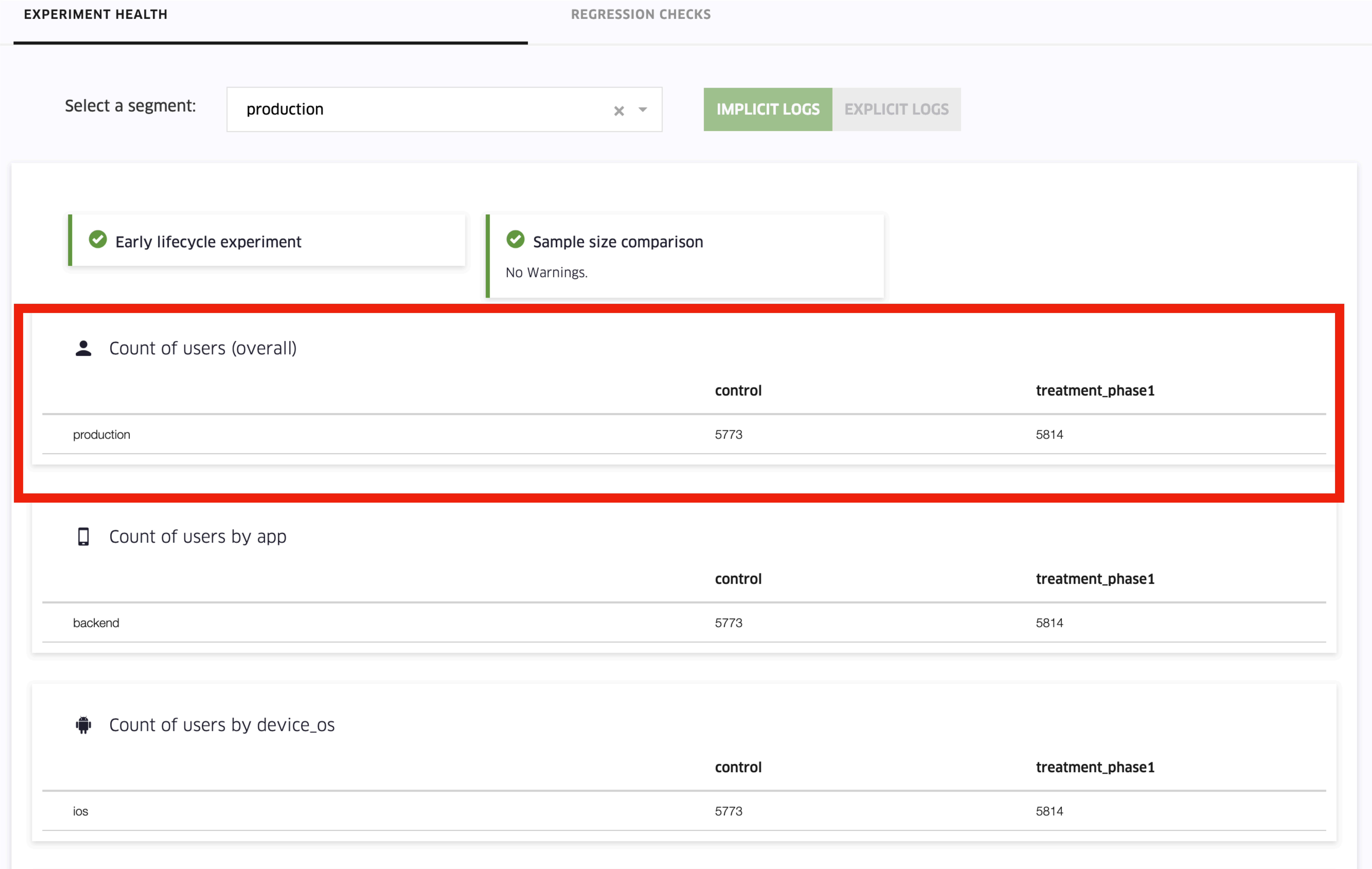
	control	treatment_phase1
production	5773	5814

Count of users by app

	control	treatment_phase1
backend	5773	5814

Count of users by device_os

	control	treatment_phase1
ios	5773	5814



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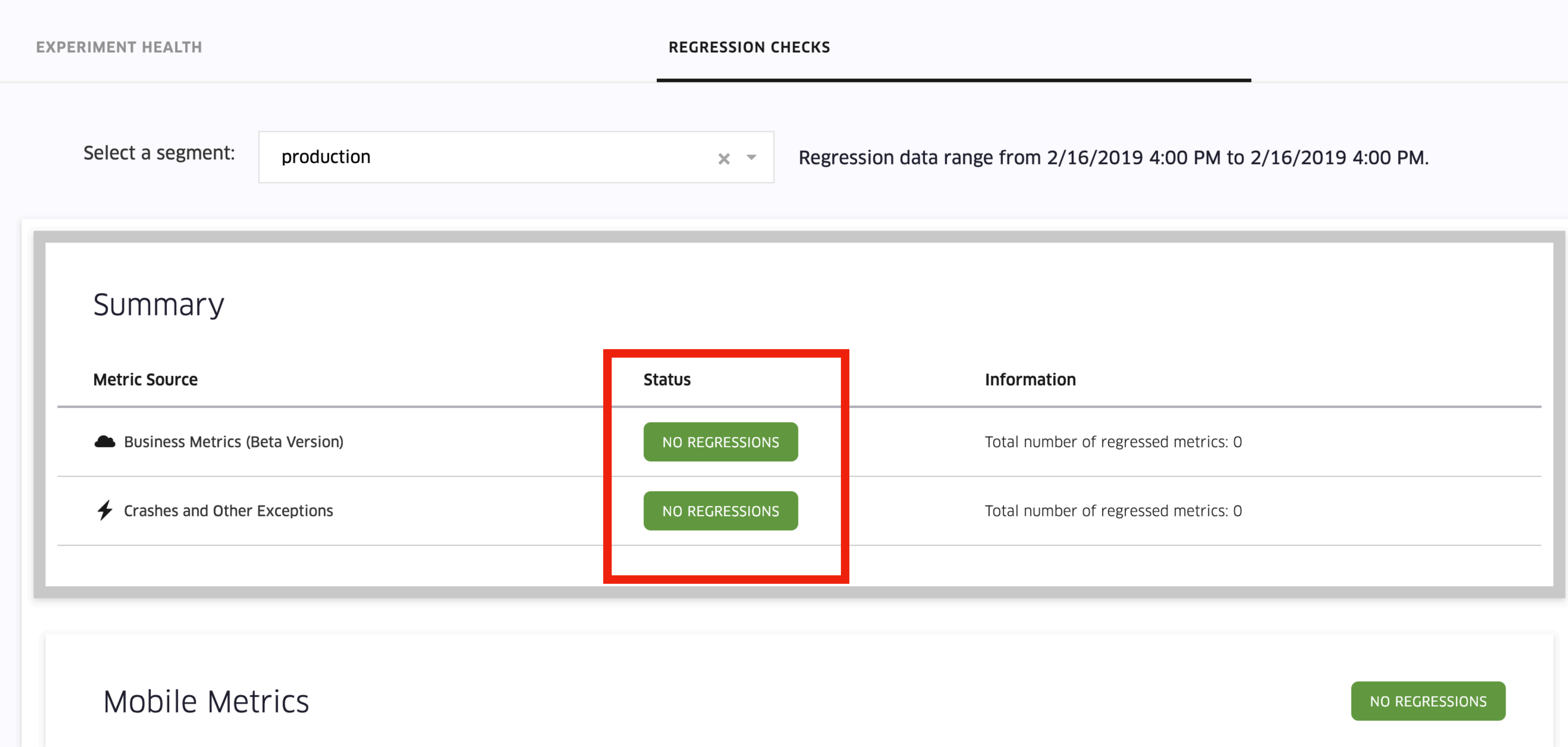

Select a segment: production

Regression data range from 2/16/2019 4:00 PM to 2/16/2019 4:00 PM.

Summary

Metric Source	Status	Information
☁ Business Metrics (Beta Version)	NO REGRESSIONS	Total number of regressed metrics: 0
⚡ Crashes and Other Exceptions	NO REGRESSIONS	Total number of regressed metrics: 0

Mobile Metrics

NO REGRESSIONS

```
if flagEnabled {
    /* new code */
} else {
    /* old code */
}
```

→

```
/* new code */
```

100% Production Rollout + 2-6 weeks

```
if cachedExperiments.isTreated(forExperiment:
ExperimentNamesModule.my_xp_name_disable) {
   /* old code */
} else {
   /* new code */
}

..

public enum ExperimentNamesModule: String, ExperimentKeying {

    /// Eng flag to do something meaningful
    case my_xp_name

    /// Kill switch to disable my xp
    case my_xp_name_disable
}
```

Summary

- All changes must be Feature Flagged

Summary

- All changes must be Feature Flagged
- Responsible rollout

Summary

- All changes must be Feature Flagged
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- Optimistic feature flags is generally a bad practice

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- All changes must be Feature Flagged
- Responsible rollout
- Optimistic feature flags is generally a bad practice
- Clean up after reasonable time

Agenda

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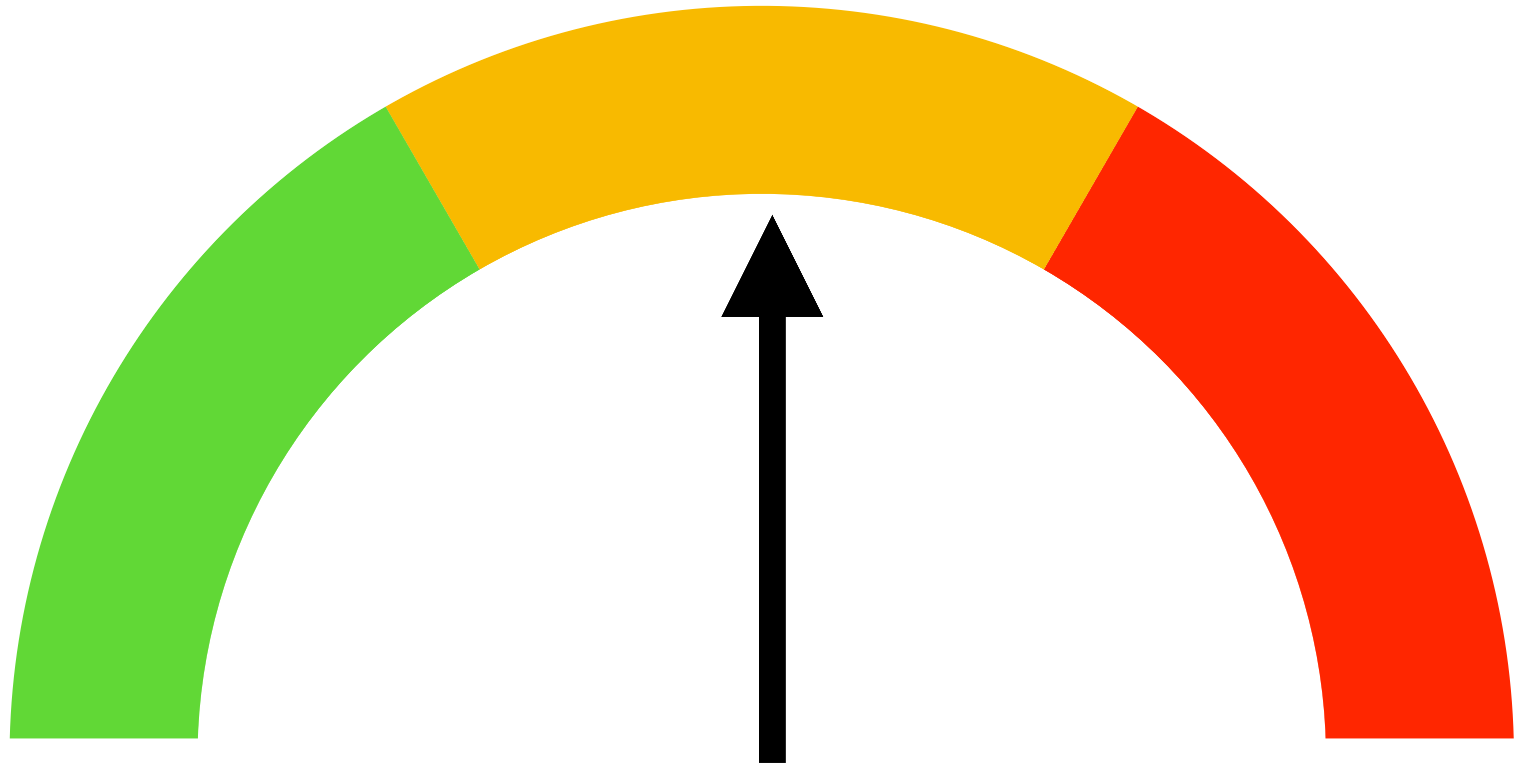
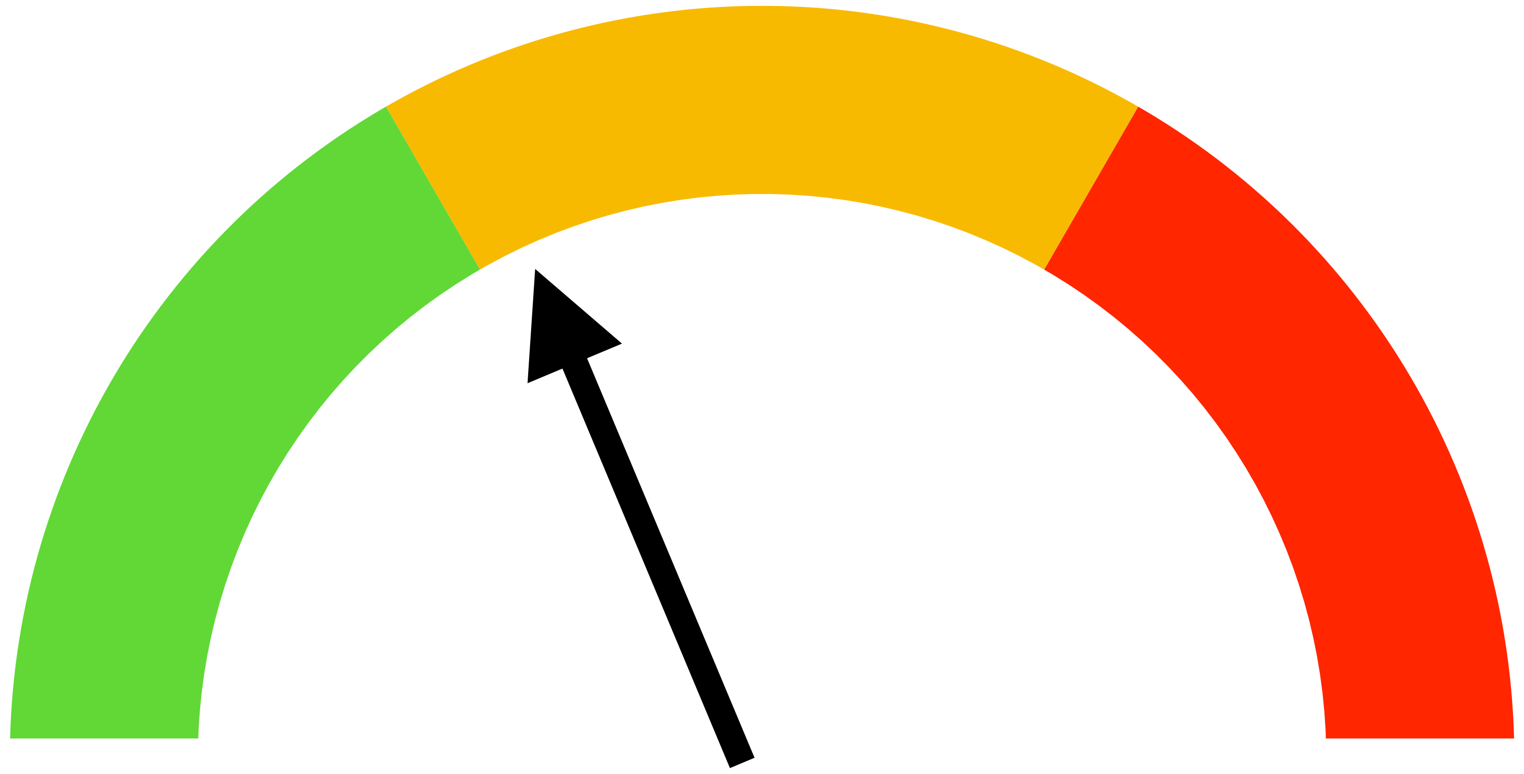
Plugins

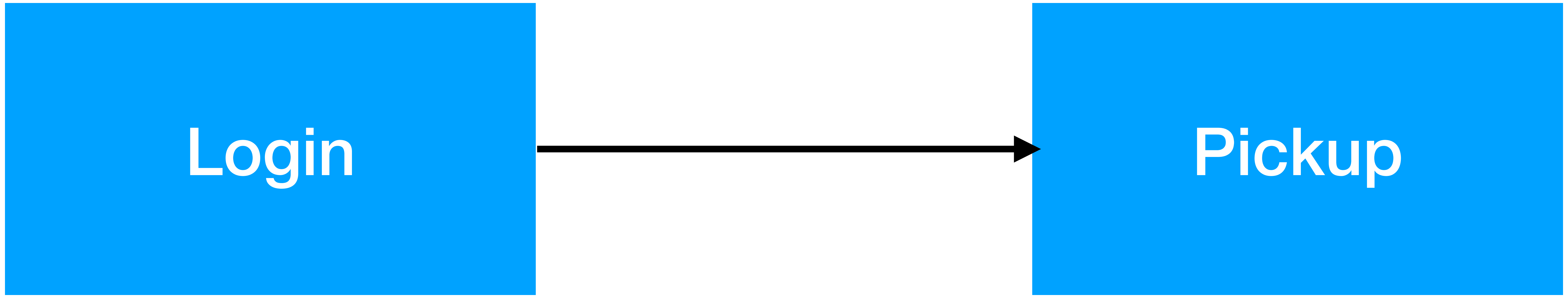


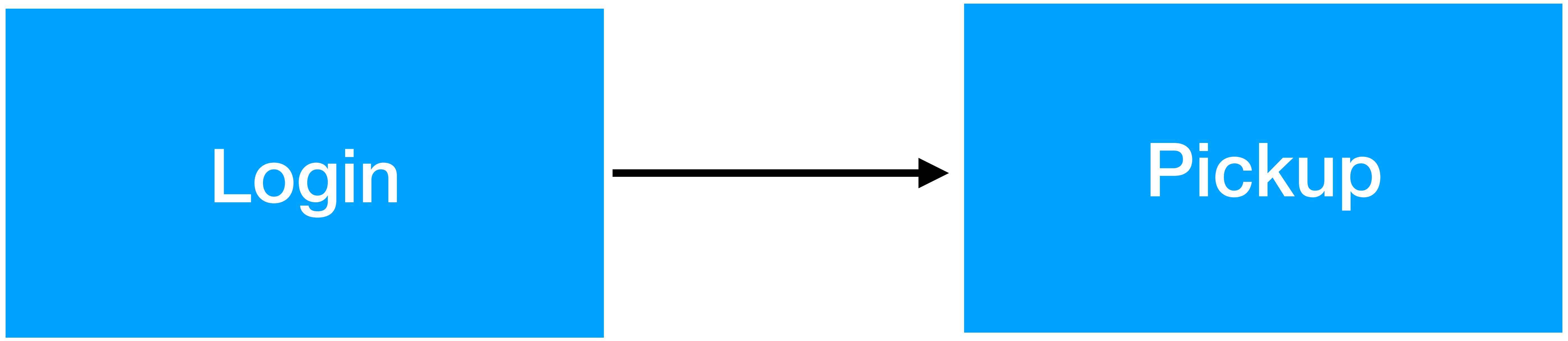
Adoption



Value

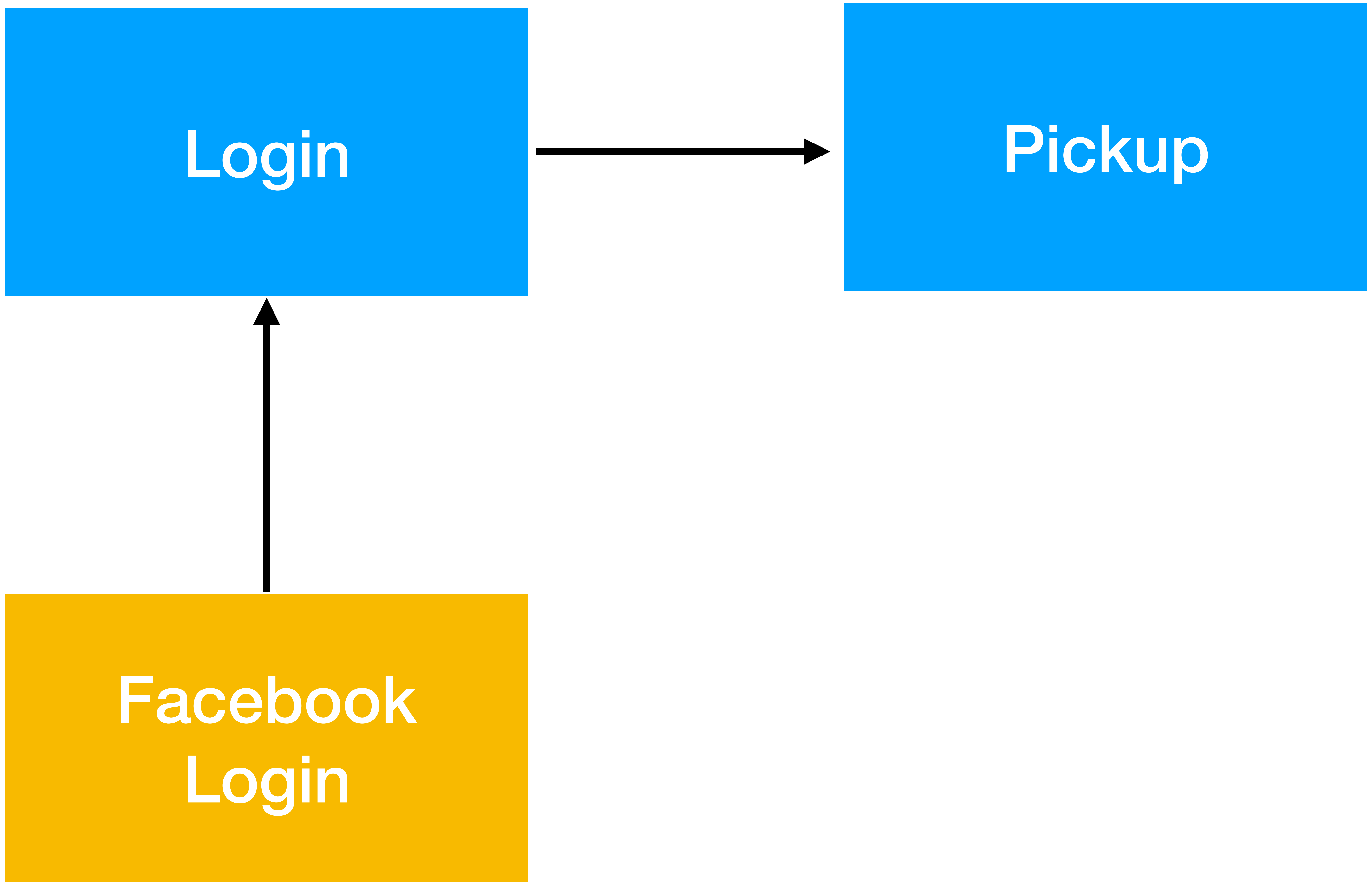
Core Flow





Login

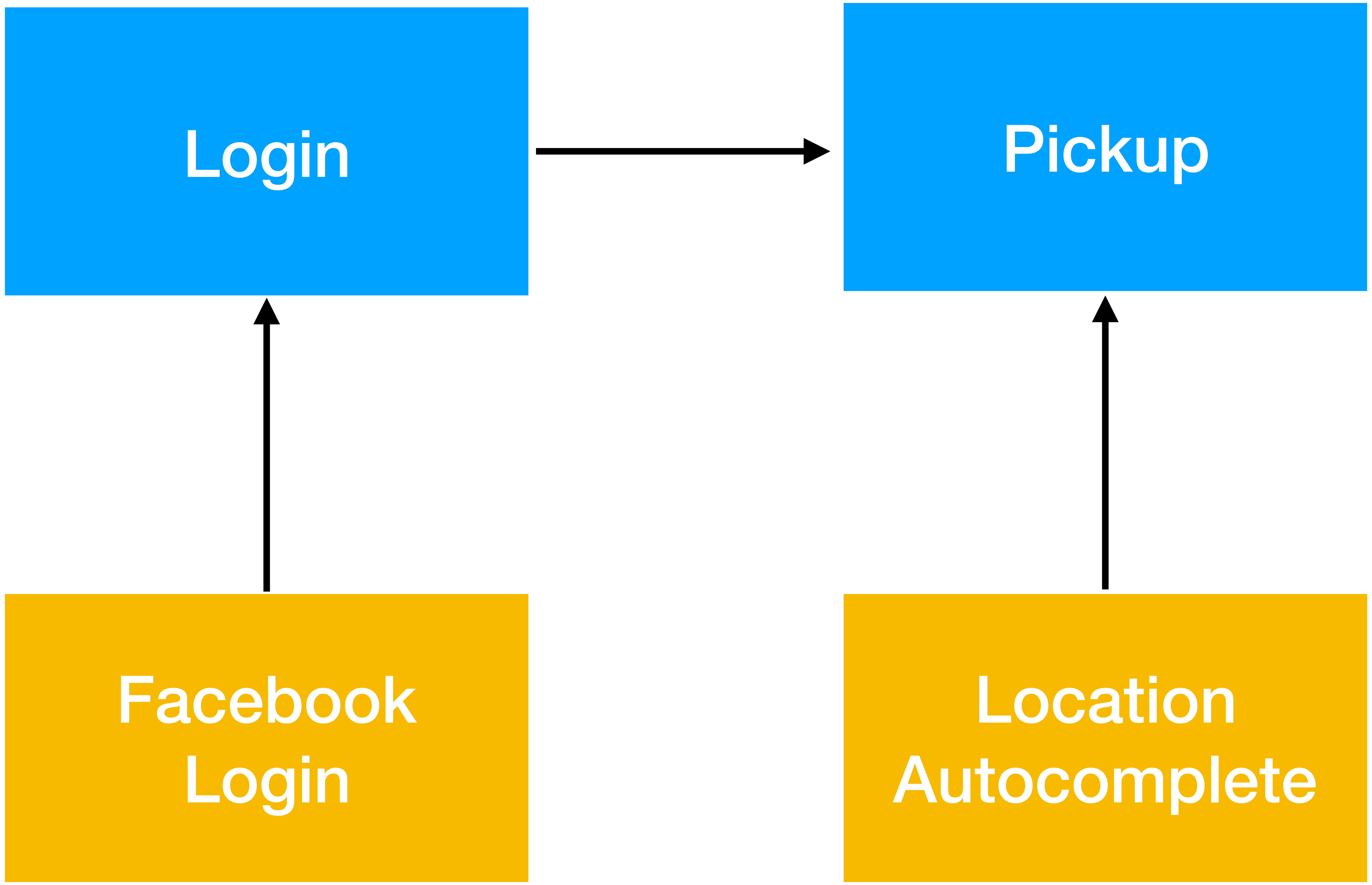
Pickup



Login

Pickup

Facebook Login

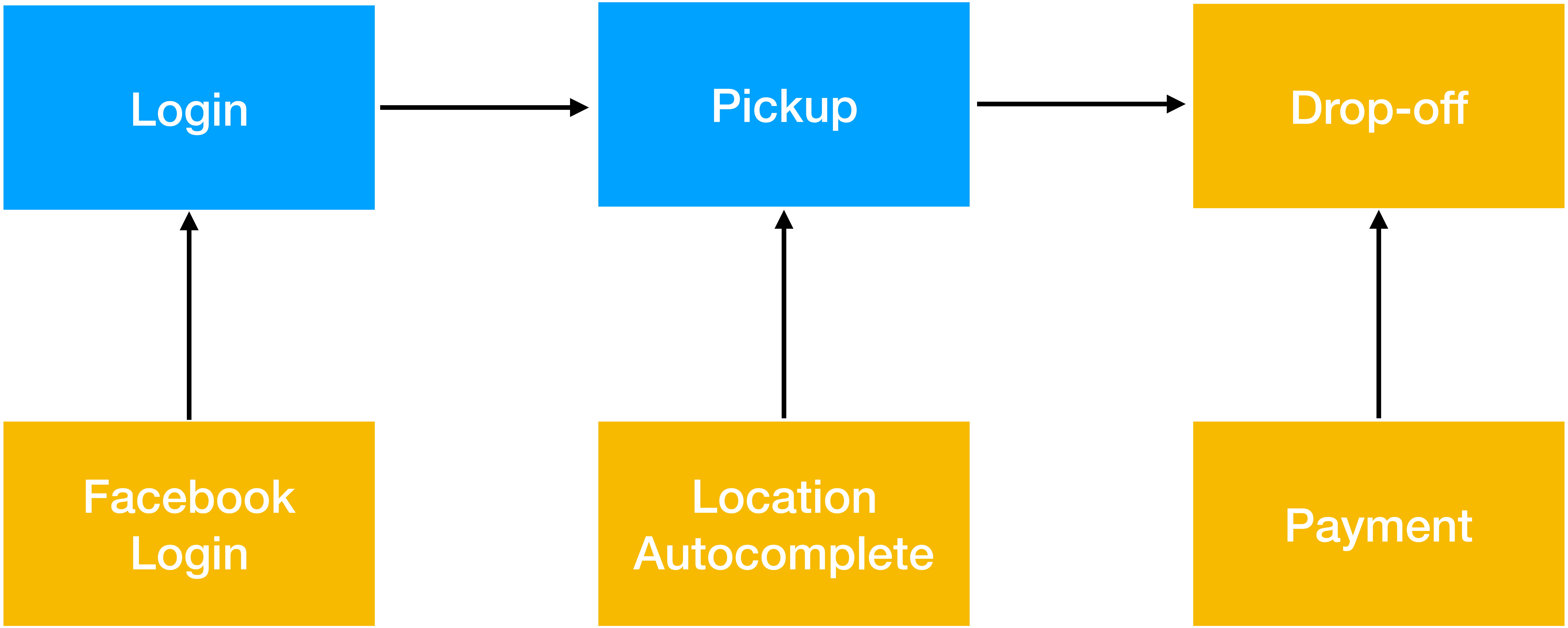


Login

Pickup

Facebook Login

Location Autocomplete



Login

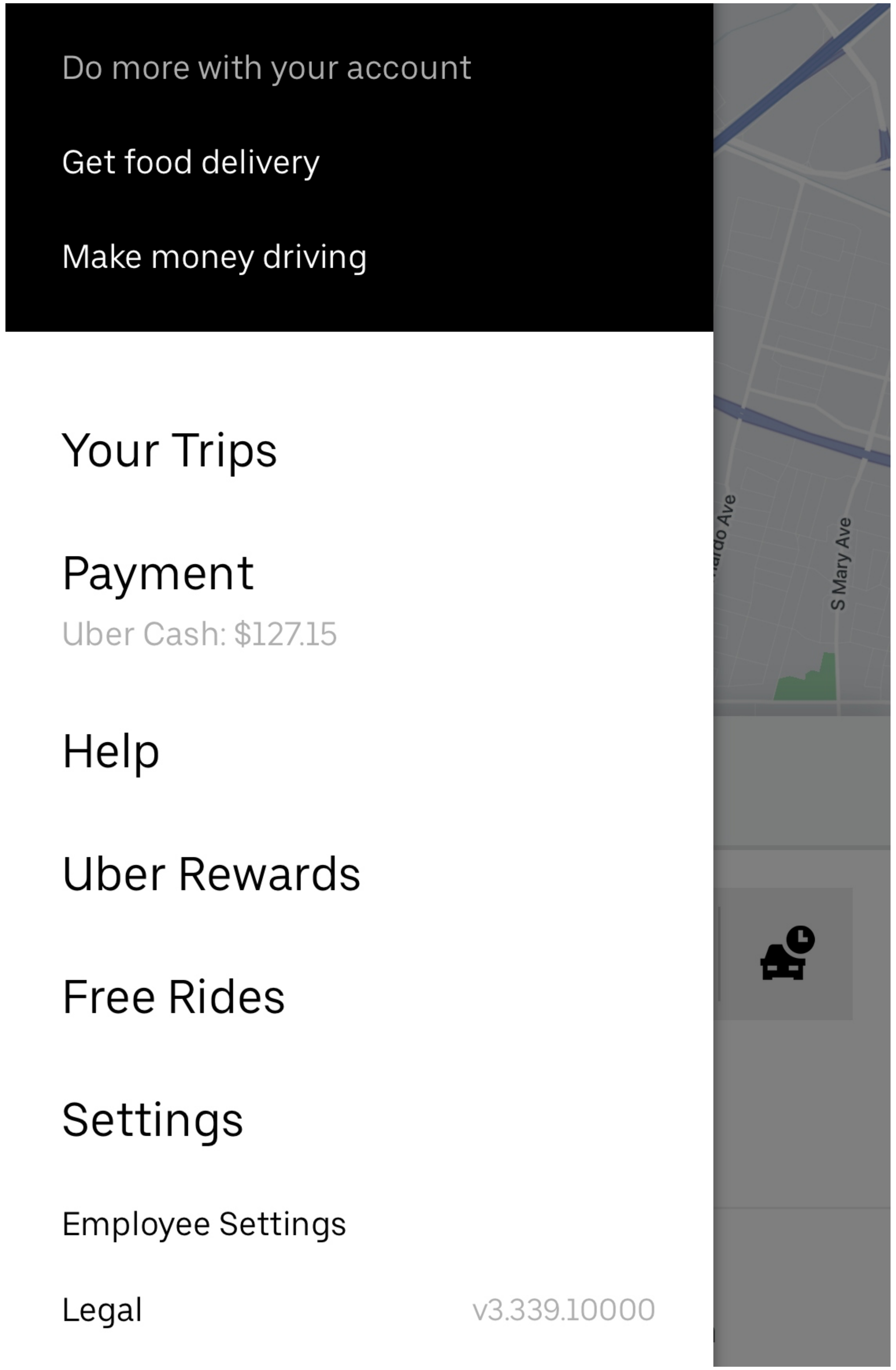
Pickup

Drop-off

Facebook Login

Location Autocomplete

Payment



Do more with your account

Get food delivery

Make money driving

Your Trips

Payment

Uber Cash: $127.15

Help

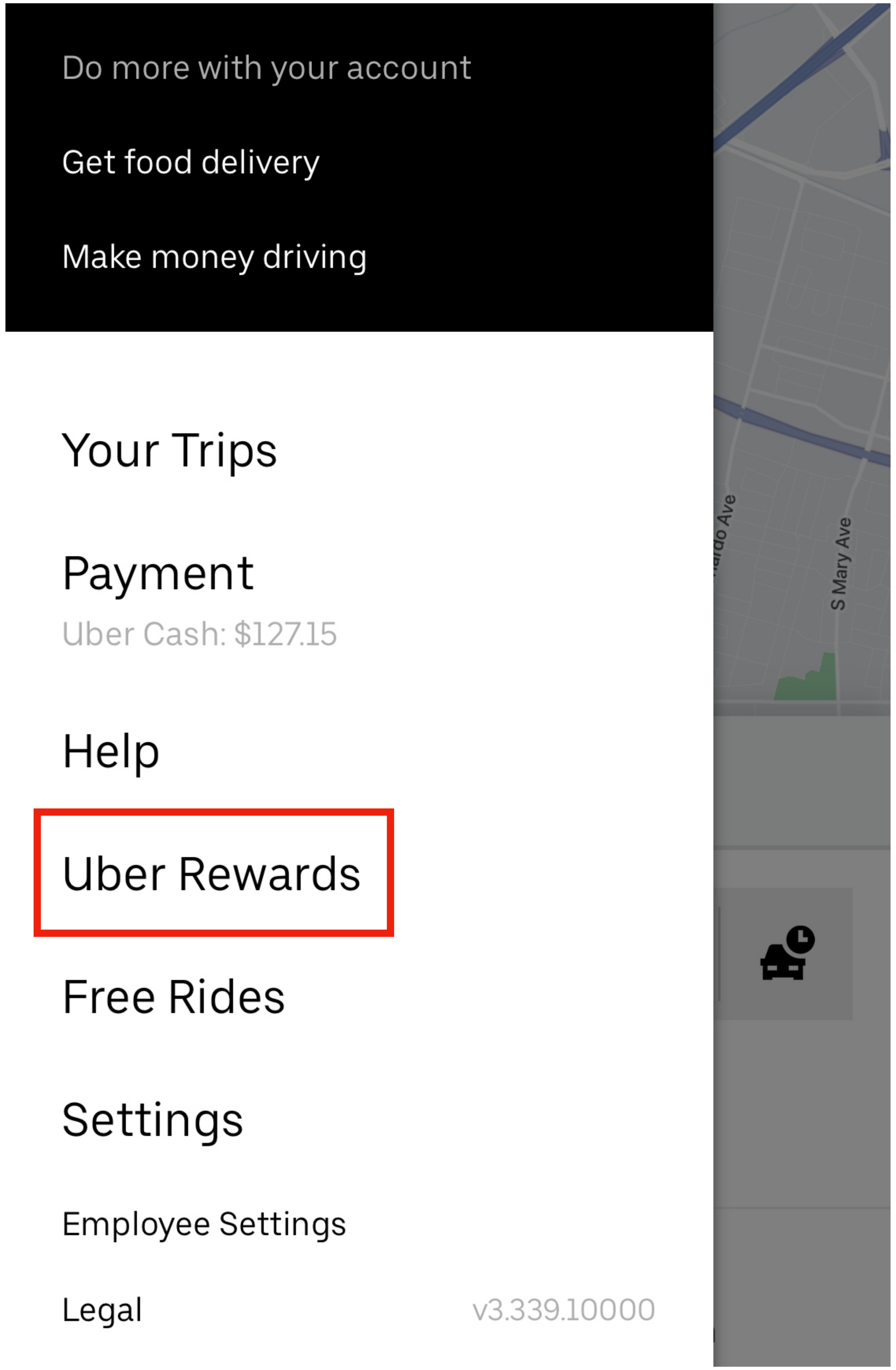
Uber Rewards

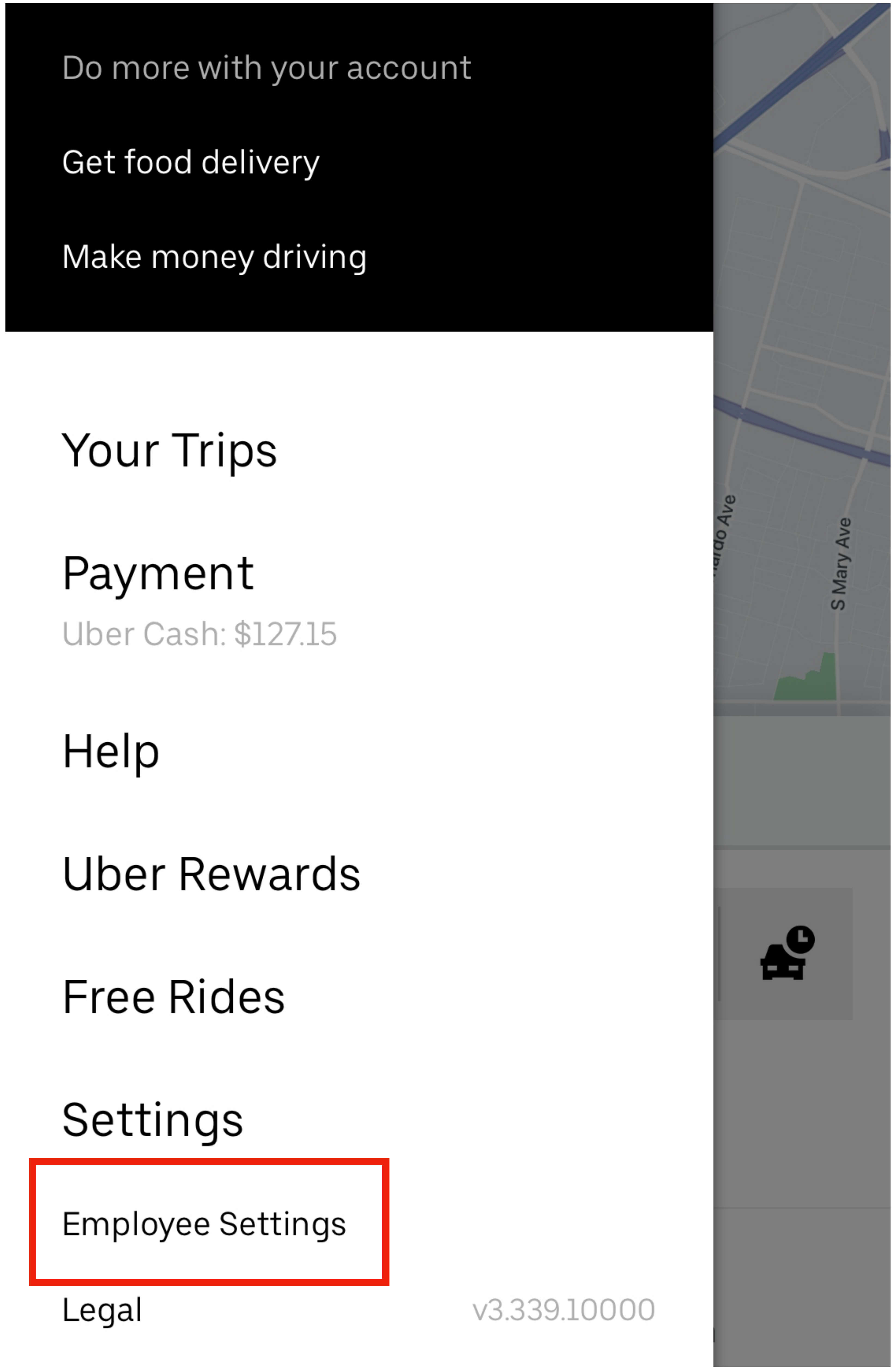
Free Rides

Settings

Employee Settings

Legal v3.339.10000


Do more with your account
Get food delivery
Make money driving
Your Trips
Payment
Uber Cash: $127.15
Help
Uber Rewards
Free Rides
Settings
Employee Settings
Legal
v3.339.10000
S Mary Ave



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Your Trips

Payment

Uber Cash: $127.15

Help

Uber Rewards

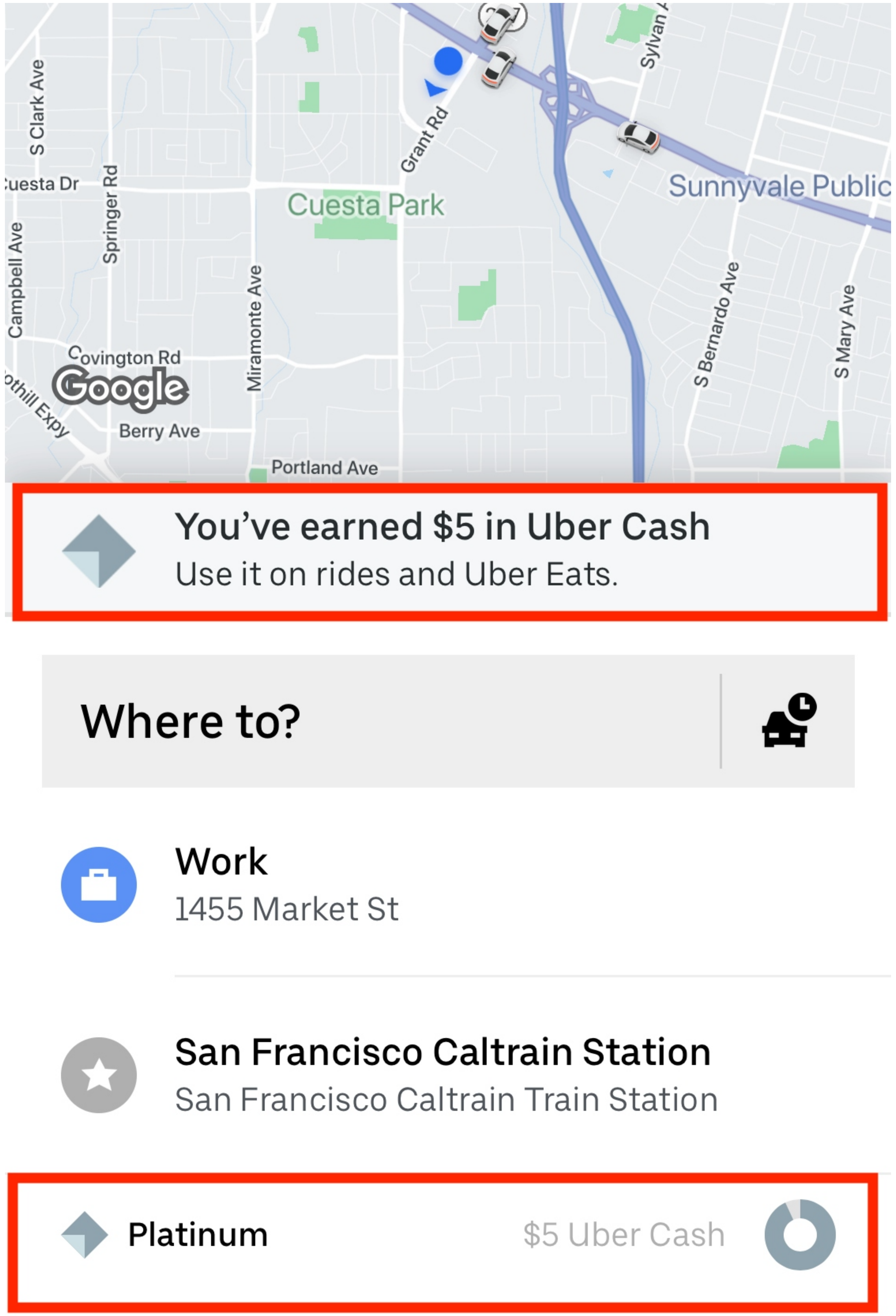
Free Rides

Settings

Employee Settings

Legal

v3.339.10000



You’ve earned $5 in Uber Cash

Use it on rides and Uber Eats.

Where to?

Work

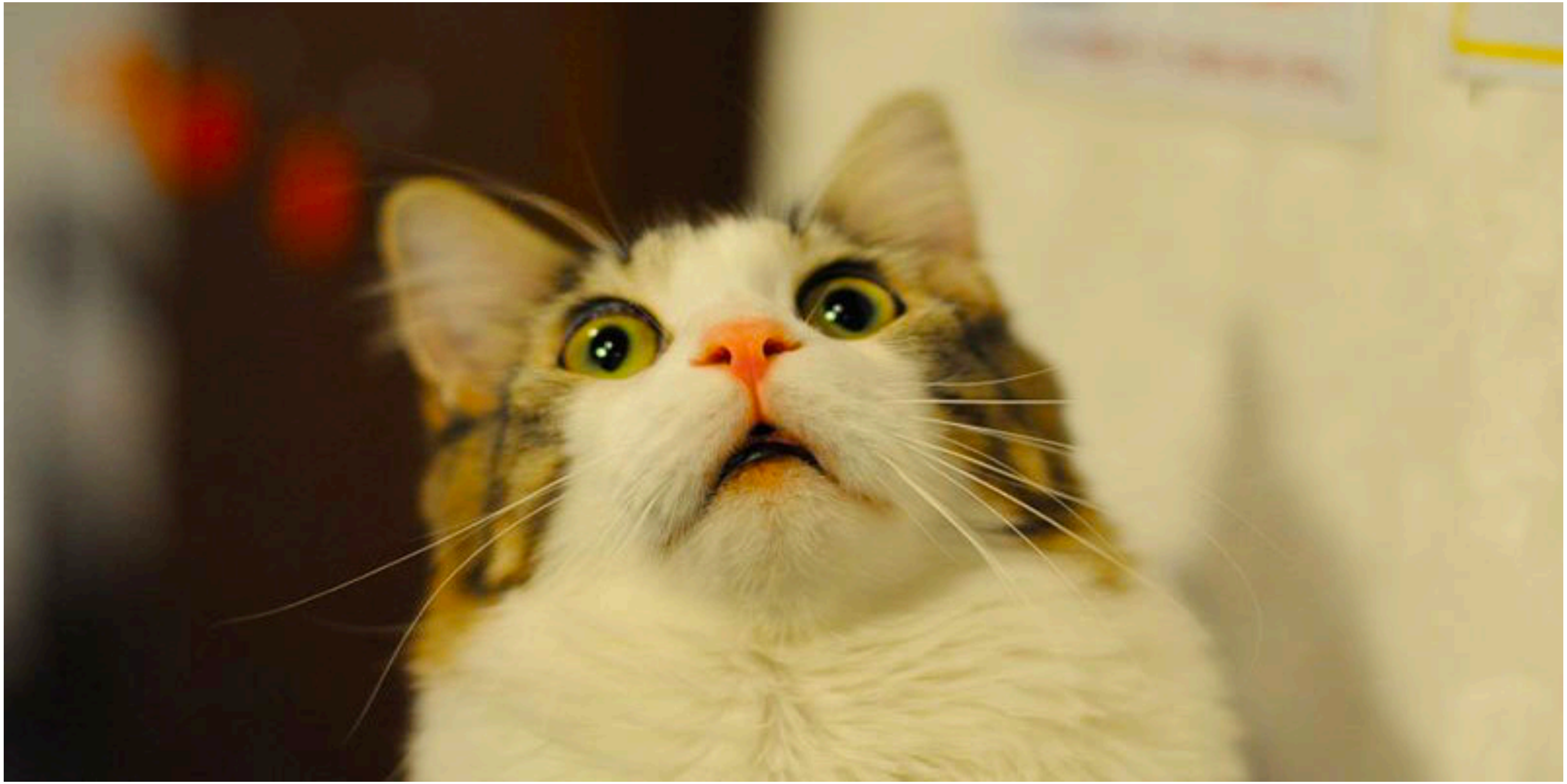
1455 Market St

San Francisco Caltrain Station

San Francisco Caltrain Train Station

Platinum $5 Uber Cash

HARDCORE WARNING



```swift
/// @CreateMock
public protocol SamplePluginPointing {
    func createPlugins(withContext context: SampleContext) -> ObjectTypeToBuild
}
```

```swift
/// @CreateMock
public protocol SamplePluginPointing {
    func createPlugins(withContext context: SampleContext) -> ObjectTypeToBuild
}

/// @CreateMock
public protocol SampleContext {
    var contextVar: SomeType { get }
}
```

```
/// @CreateMock
public protocol SamplePluginPointing {
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}

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public protocol SampleContext {
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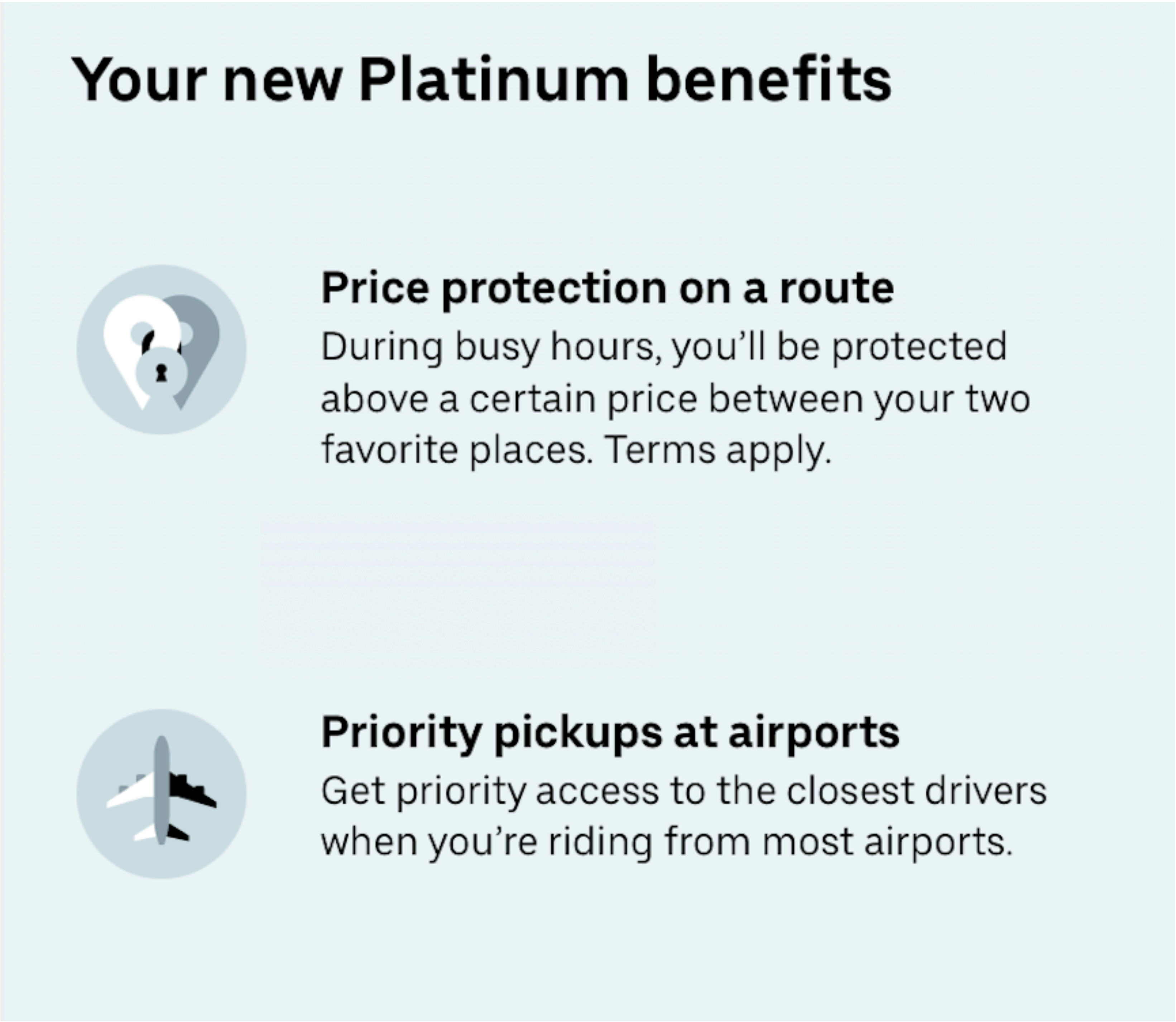
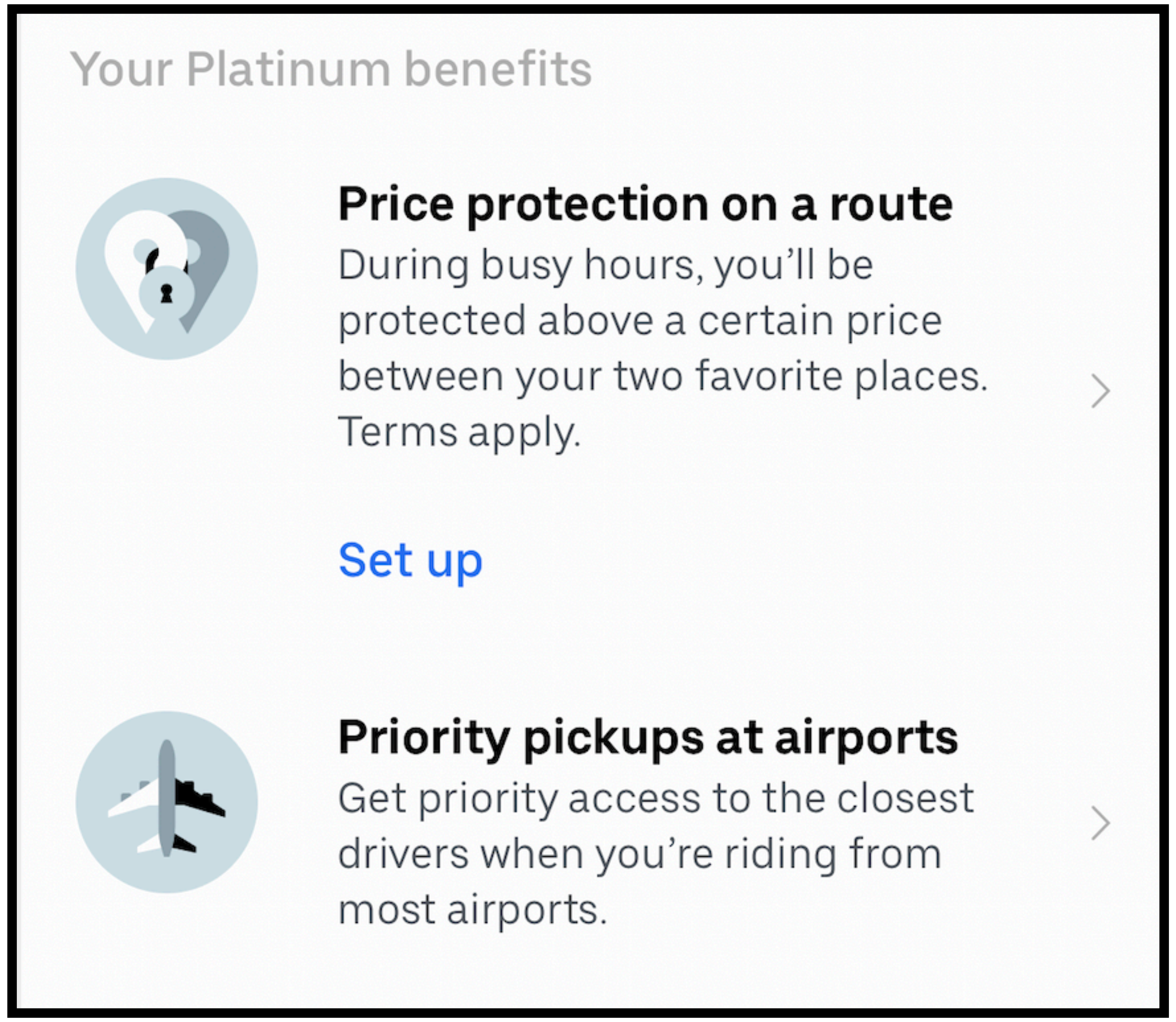


Your new Platinum benefits

Price protection on a route
During busy hours, you'll be protected above a certain price between your two favorite places. Terms apply.

Priority pickups at airports
Get priority access to the closest drivers when you're riding from most airports.



Your Platinum benefits

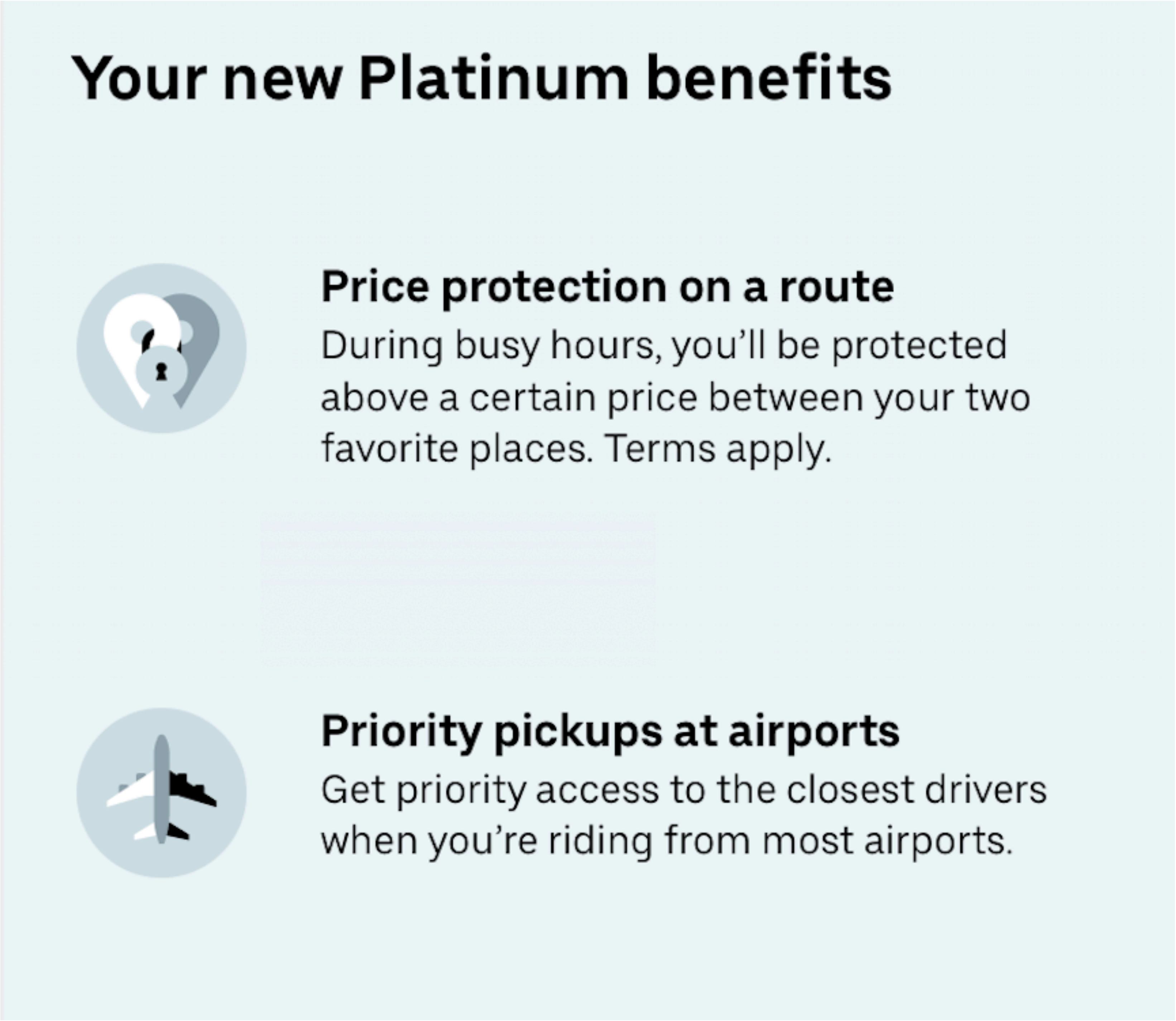
Price protection on a route
During busy hours, you'll be protected above a certain price between your two favorite places. Terms apply.

Set up

Priority pickups at airports
Get priority access to the closest drivers when you're riding from most airports.

```
/// @CreateMock
public protocol SamplePluginPointing {
    func createPlugins(withContext context: SampleContext) -> ObjectTypeToBuild
}

/// @CreateMock
public protocol SampleContext {
    var contextVar: SomeType { get }
}
```



Your new Platinum benefits

Price protection on a route
During busy hours, you'll be protected above a certain price between your two favorite places. Terms apply.

Priority pickups at airports
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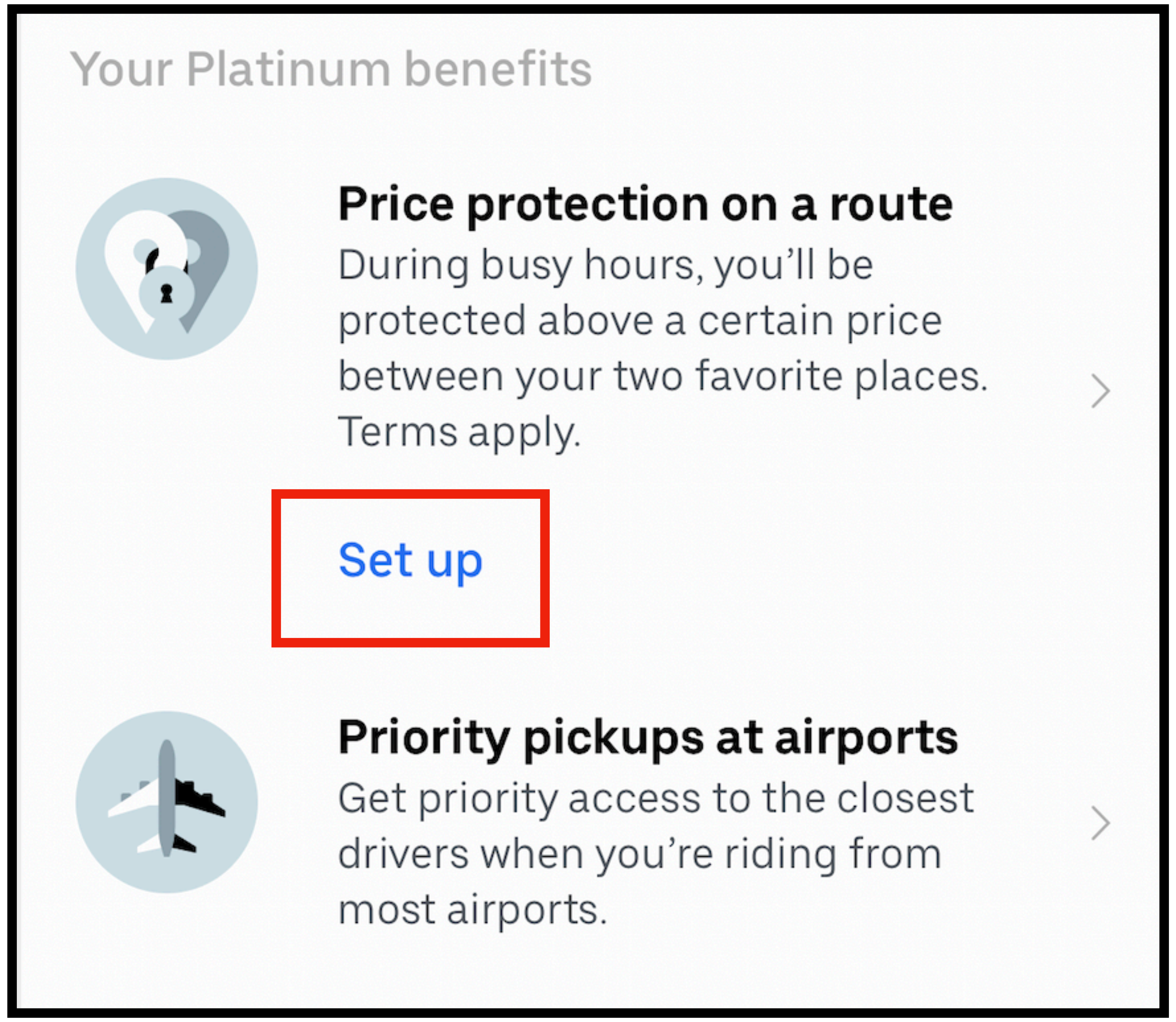

Your Platinum benefits

Price protection on a route
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Set up

Priority pickups at airports
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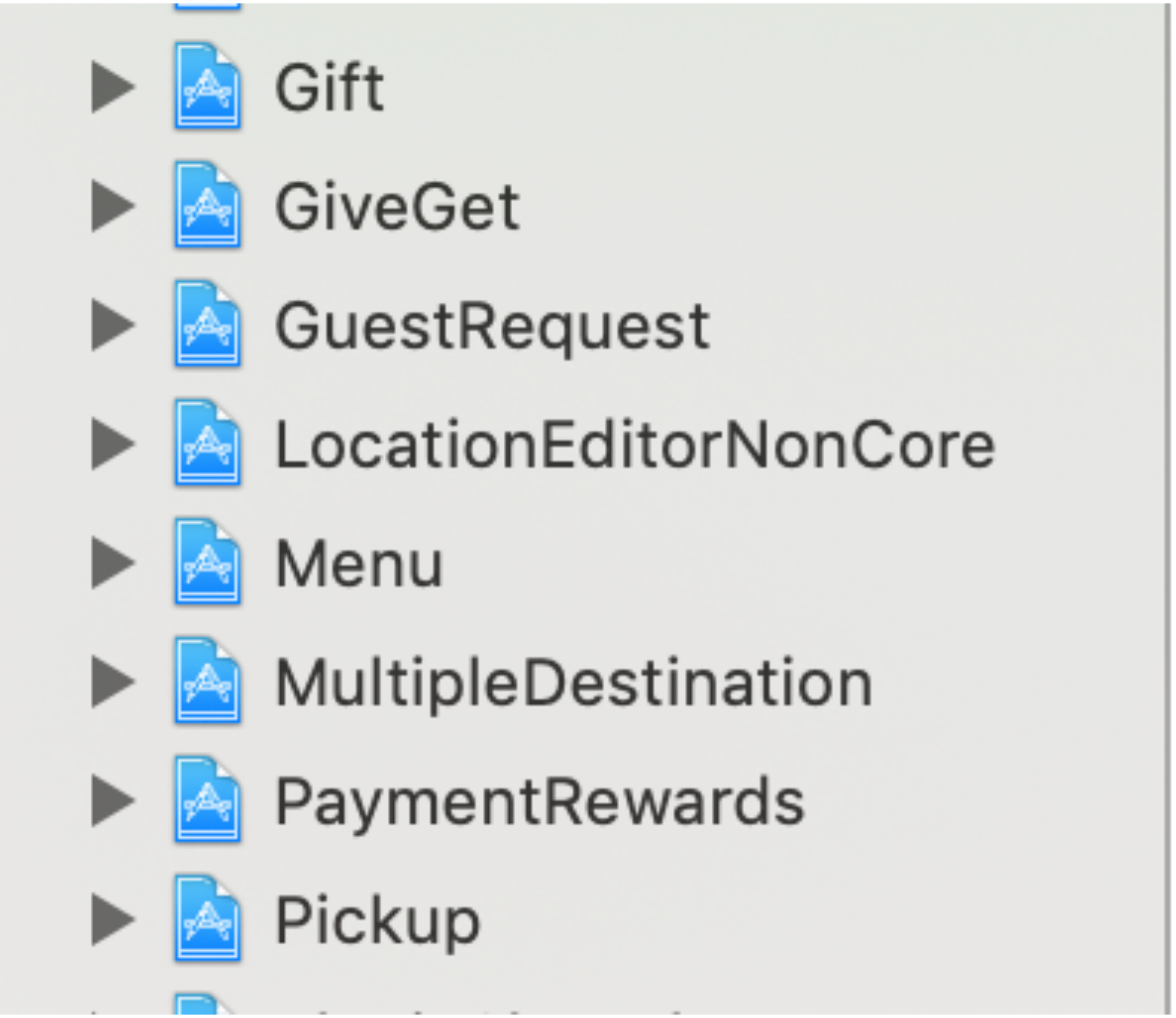
```swift
/// @CreateMock
public protocol SamplePluginPointing {
    func createPlugins(withContext context: SampleContext) -> ObjectTypeToBuild
}

/// @CreateMock
public protocol SampleContext {
    var contextVar: SomeType { get }
}

public enum SamplePluginSwitch: PluginSwitch {
    case firstPlugin
    case secondPlugin

    public var generatedExperimentKey: String {
        switch self {
        case .firstPlugin: return “sample_plugin_switch_first_plugin_tnkch8”
        case .secondPlugin: return “sample_plugin_switch_second_plugin_tnkch8”
        }
    }
}
```

```
final class SomePluginPoint: PluginPoint<ObjectTypeToBuild,
SamplePluginSwitch, SampleContext>, SamplePluginPointing {

    override var pluginFactories: [PluginFactory<ObjectTypeToBuild,
SamplePluginSwitch, SampleContext>] {
        return [
            FirstPluginFactory(some params),
            SecondPluginFactory(some params),
            …
        ]
    }

    init() {
        /* init code */
        super.init(…)
    }
}
```

```
public final class SamplePluginFactory: PluginFactory<ObjectTypeToBuild,
SamplePluginSwitch, SampleContext> {

    public init(some params) {
        …
        super.init(pluginSwitch: SamplePluginSwitch.firstPlugin) {
           (context: SampleContext) -> ObjectTypeToBuild in
               return ObjectTypeToBuild(
                   contextProvidedParam: context.someParam,
                   some params
               )
        }
    }

   public override func isApplicable(forContext context: Context) -> Bool {
        return context.someFlag == true
   }
}
```



Gift

GiveGet

GuestRequest

LocationEditorNonCore

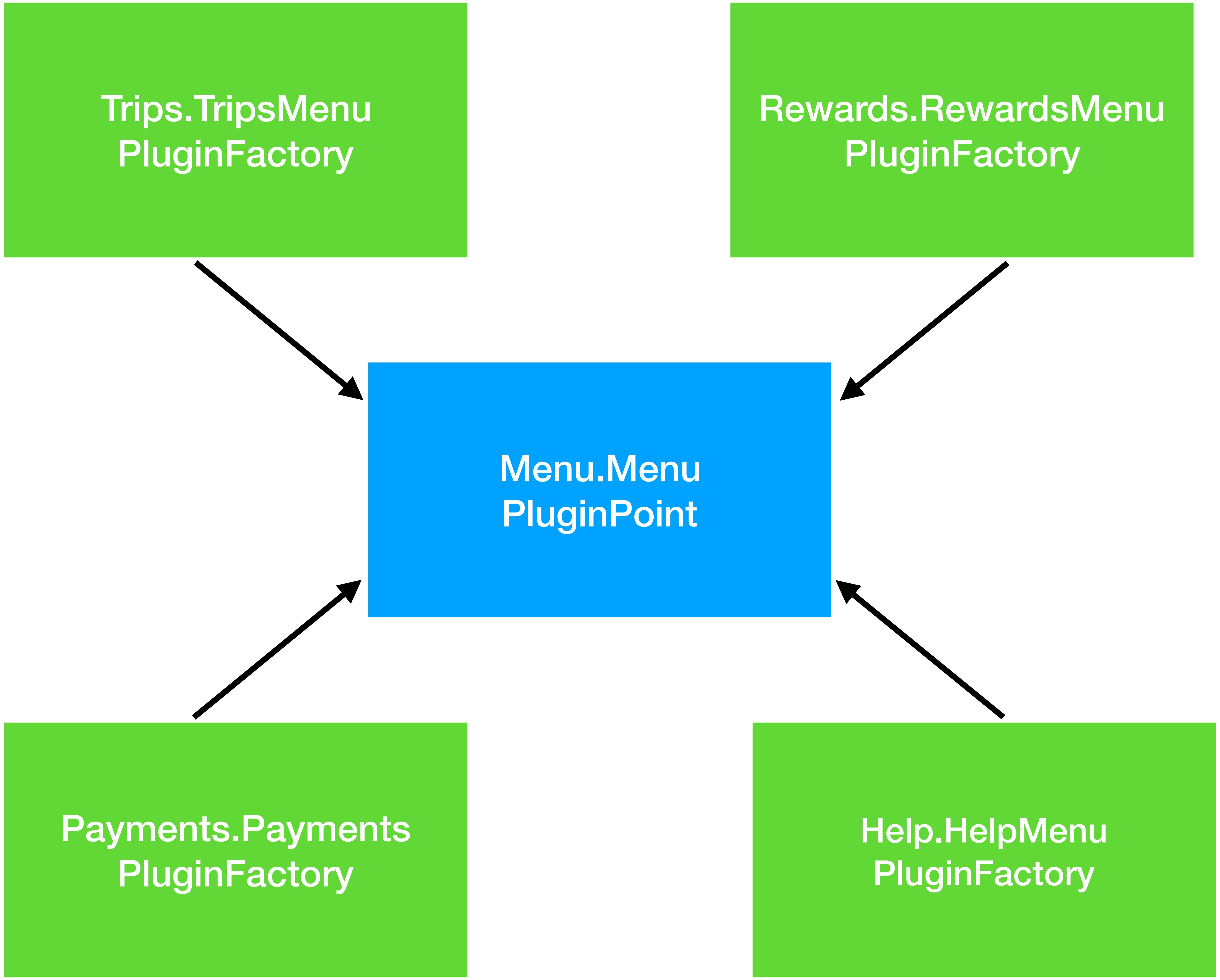
Menu

MultipleDestination

PaymentRewards

Pickup

200+ Modules



Trips.TripsMenu
PluginFactory

Rewards.RewardsMenu
PluginFactory

Menu.Menu
PluginPoint

Payments.Payments
PluginFactory

Help.HelpMenu
PluginFactory

Plugin Summary

- Safety
- Code Modularization
- Extensibility
- All code goes straight to master

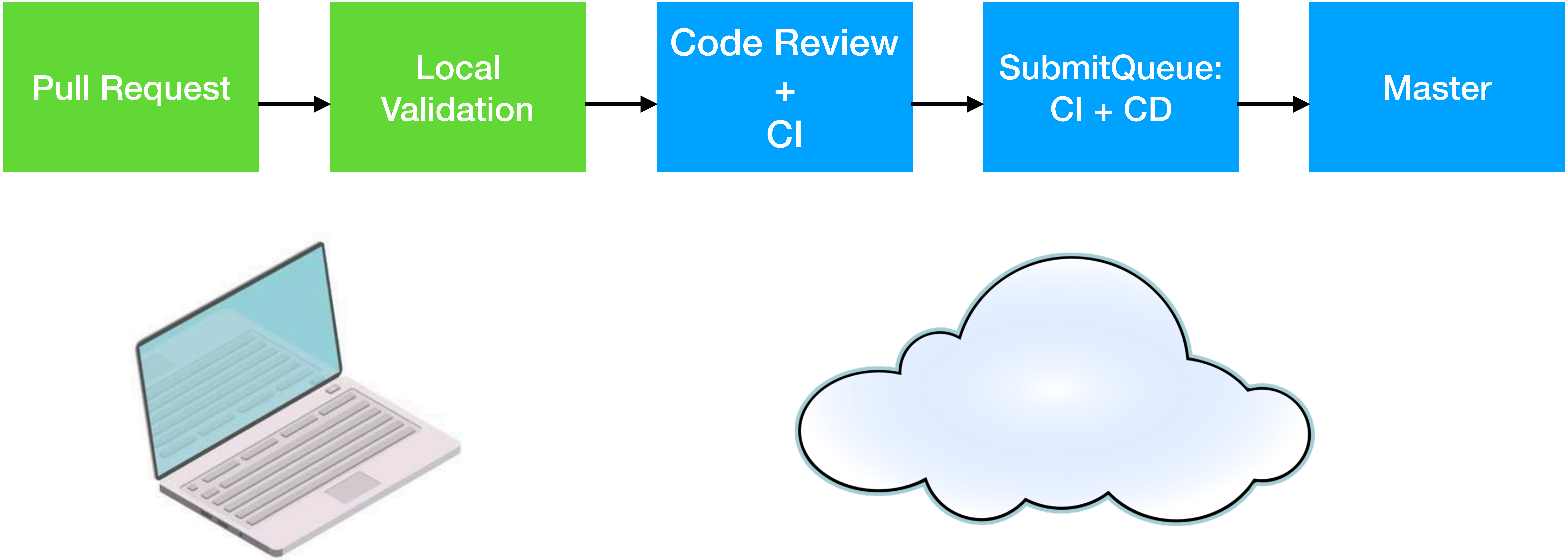
Plugin Summary

- Safety
- Code Modularization
- Extensibility
- **All code goes straight to master**

Agenda

- Manual Testing @Uber
- Snapshot Tests
- Feature Flags and A/B Testing
- Plugins
- **Git Flow**
- RIBs Architecture

Git Flow

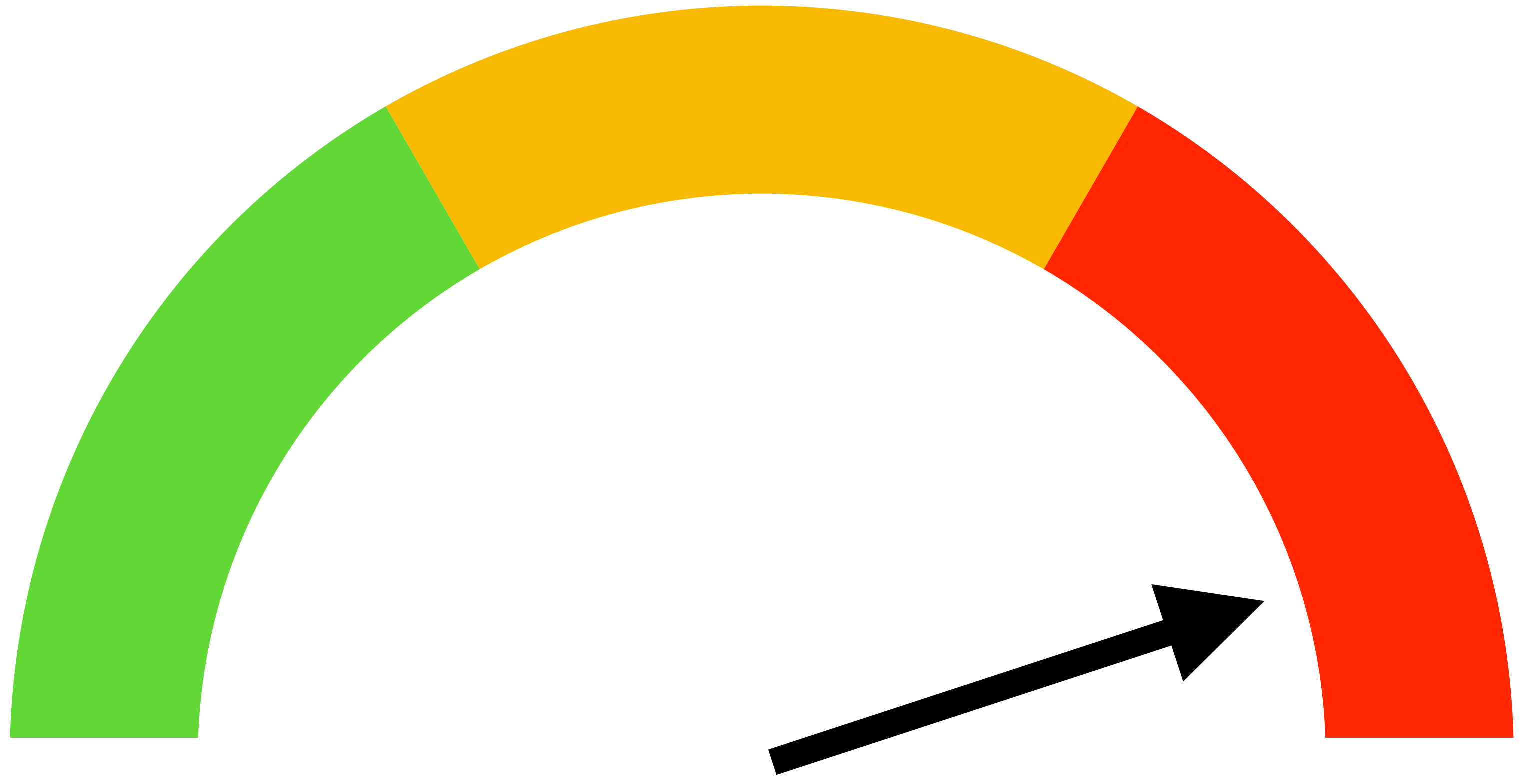


Pull Request → Local Validation → Code Review + CI → SubmitQueue: CI + CD → Master

Agenda

- Manual Testing @Uber
- Snapshot Tests
- Feature Flags and A/B Testing
- Plugins
- Git Flow
- **RIBs Architecture**

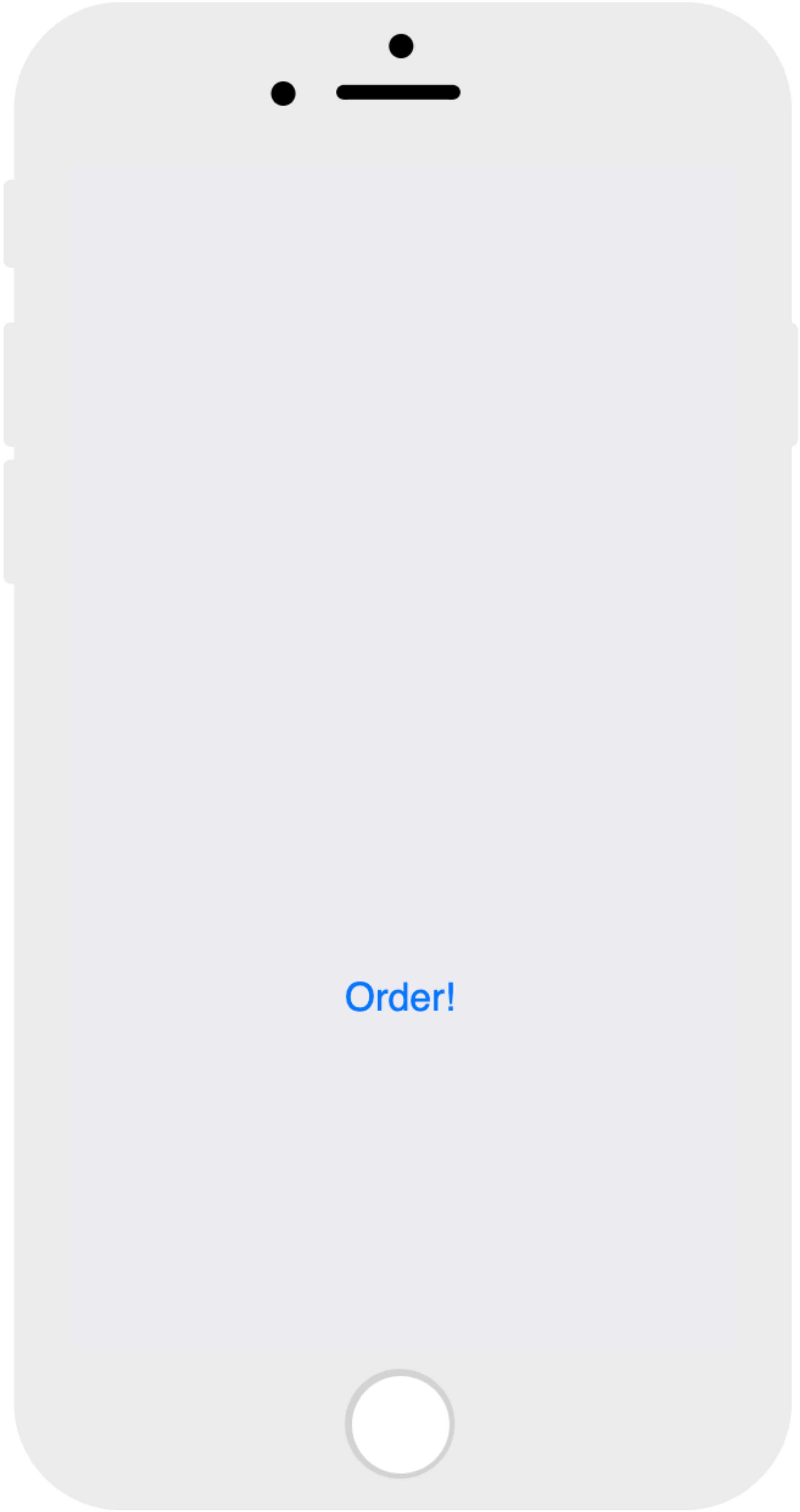
RIBs Architecture



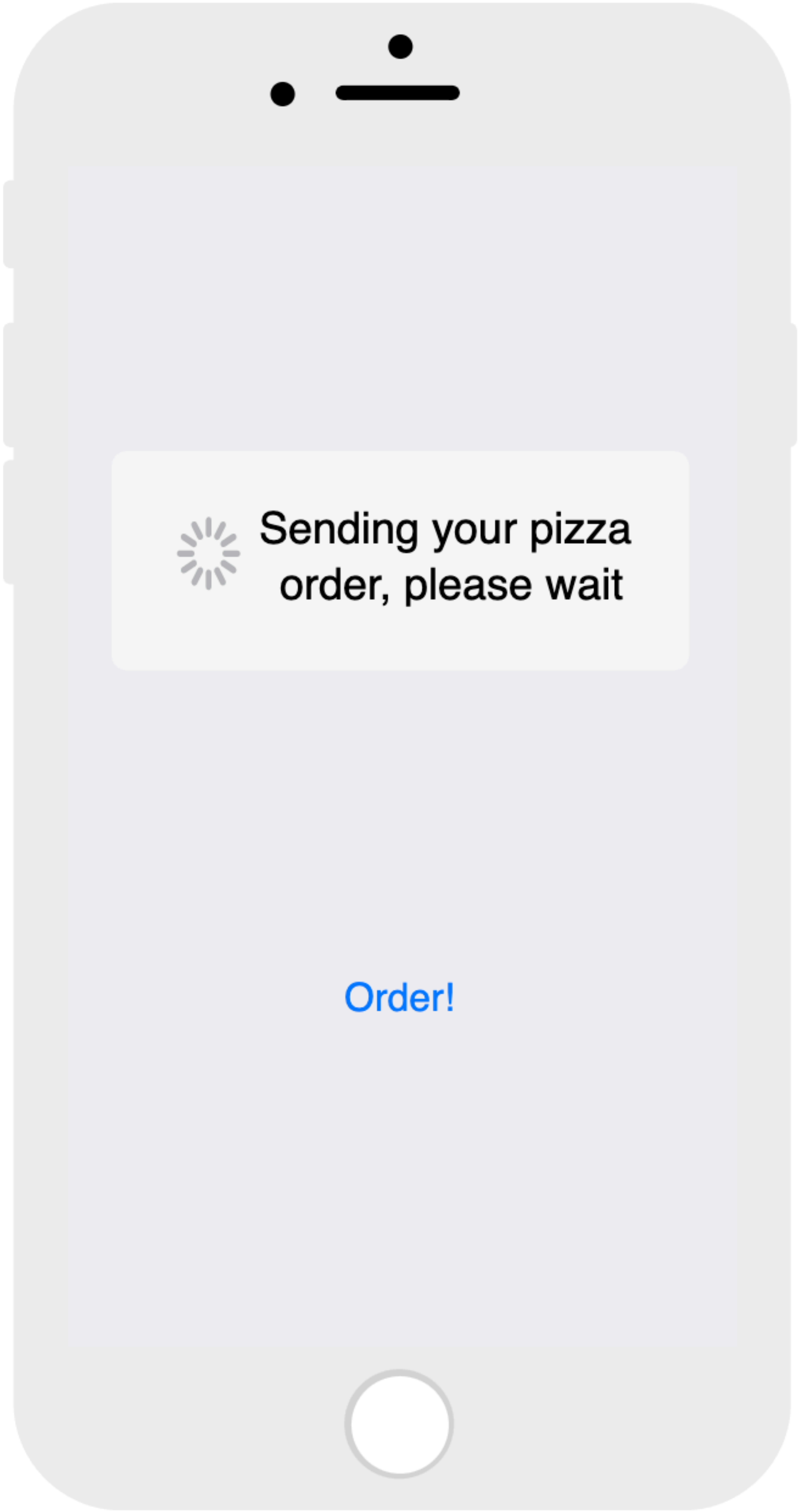
Adoption

Value

Flow

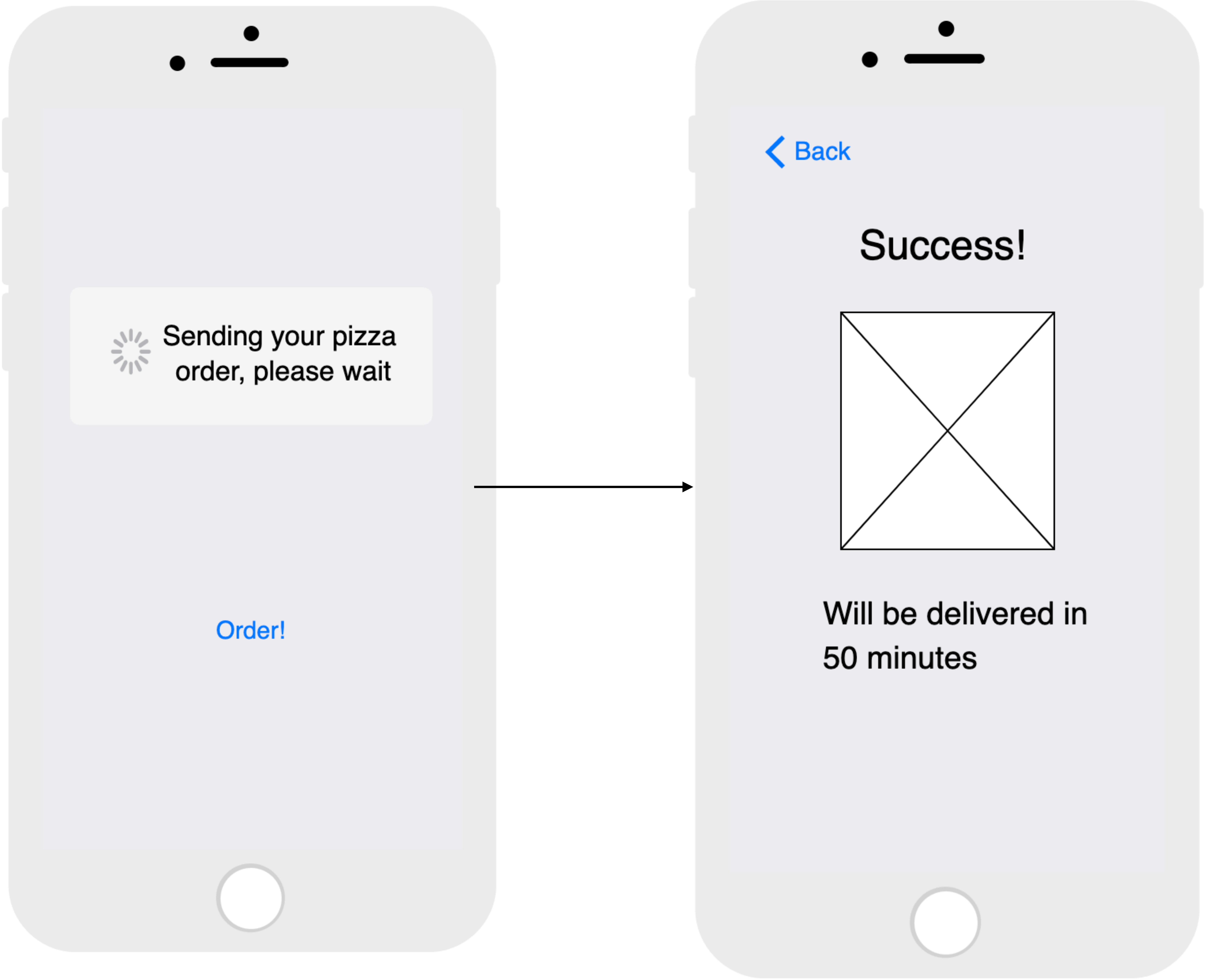


Flow



Sending your pizza order, please wait

Flow



Sending your pizza order, please wait

Success!

Will be delivered in 50 minutes

MVC

```swift
@objc func buttonTapped() {
}
```

```swift
@objc func buttonTapped() {
    // Analytics Logic
    Analytics.captureTap(uuid: "123455678")

    // View logic
    show(loading: true)
}
```

```swift
@objc func buttonTapped() {
    Analytics.captureTap(uuid: "123455678")
    show(loading: true)

    // Business logic
    someService.apiCall(ApiRequest())
        .subscribe(onNext: { response in
            // Success branch
        }, onError: { error in
            // Failure branch
        })
        .dispose(...)
}
```

```
@objc func buttonTapped() {
    ...
    // Business logic
    someService.apiCall(ApiRequest())
       .subscribe(onNext: { response in
           // View logic
           self.show(loading: false)
           // Parsing
           guard let parsedData = self.parser.parse(response) else {
               // Error handling
           }
           // More business logic with data
           self.localStorage.store(parsedData)

       }, onError: ...
}
```

```swift
@objc func buttonTapped() {
    ...
    // Business logic
    someService.apiCall(ApiRequest())
       .subscribe(onNext: { response in
           ...
           // More business logic with data
           self.localStorage.store(parsedData)

           // Flow creation logic
           let newViewController = NewViewController(data: parsedData)
           // Routing logic
           self.navigationController?
               .pushViewController(
                   newViewController,
                   animated: true
           )

       }, onError: ...
}
```

UIViewController

- Handles User Interaction

UIViewController

- Handles User Interaction
- Controls View State

UIViewController

- Handles User Interaction
- Controls View State
- Implements Business Logic

UIViewController

- Handles User Interaction
- Controls View State
- Implements Business Logic
- Creates Child Flow

UIViewController

- Handles User Interaction
- Controls View State
- Implements Business Logic
- Creates Child Flow
- Routing
- …

Issues

- Impossible To Test

Issues

- Impossible To Test
- Not Scalable

Issues

- Impossible To Test
- Not Scalable
- Hard To Read
- Hard To Extend

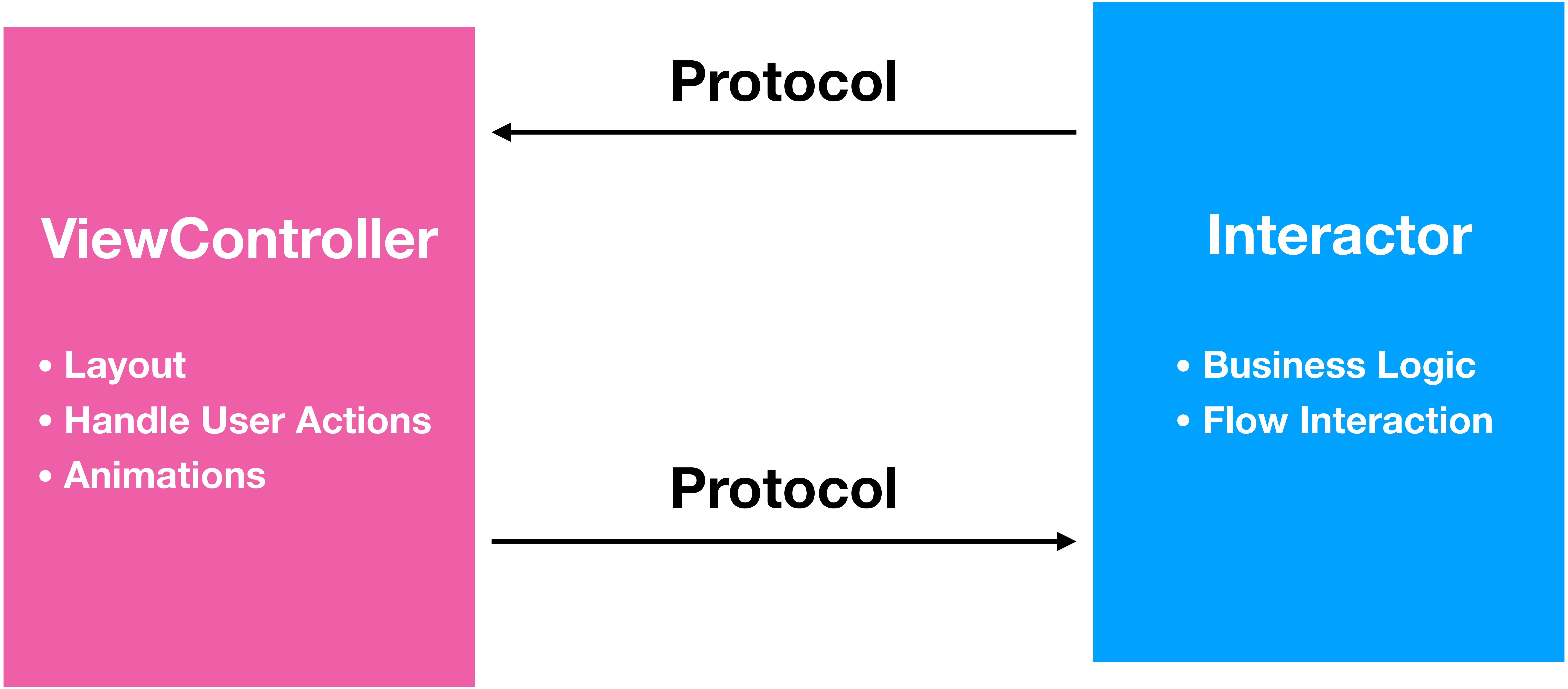
Issues

- Impossible To Test
- Not Scalable
- Hard To Read
- Hard To Extend
- Communication Between Flows?

RIB Arcitecture

- **R**outer
- **I**nteractor
- **B**uilder

ViewController + Interactor



ViewController

- Layout
- Handle User Actions
- Animations

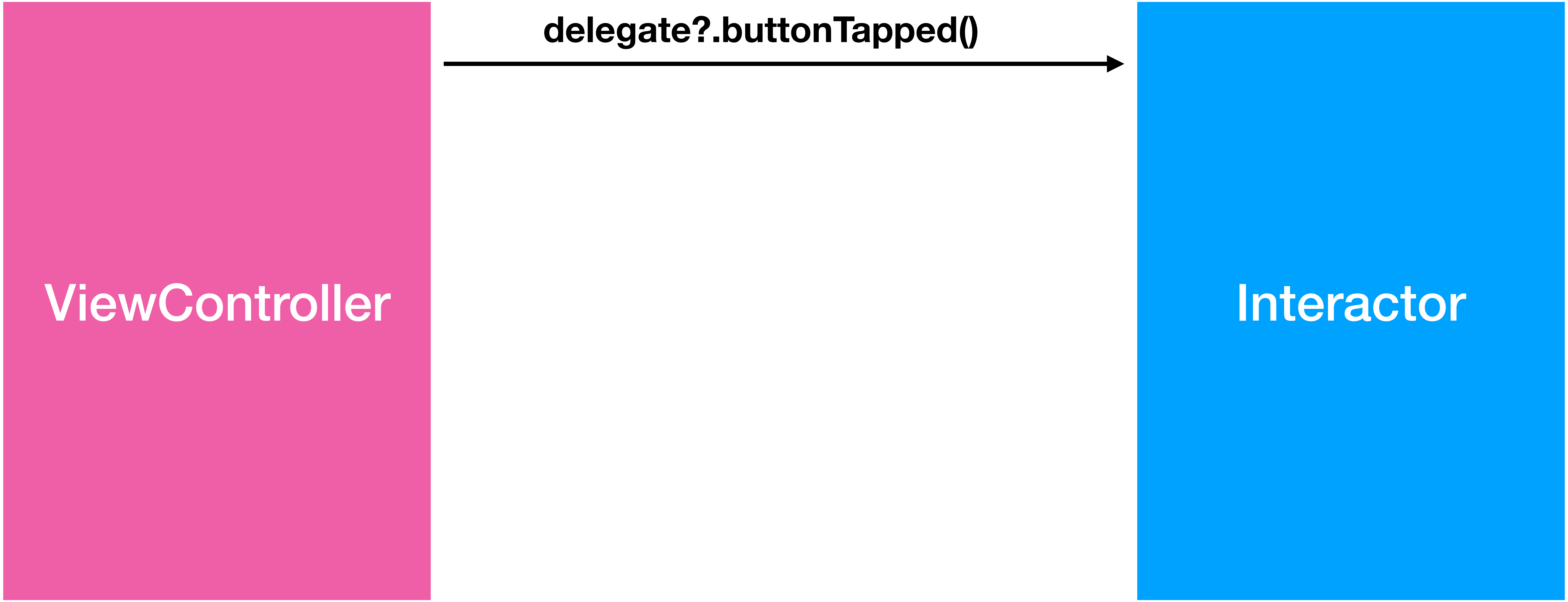
Protocol

Protocol

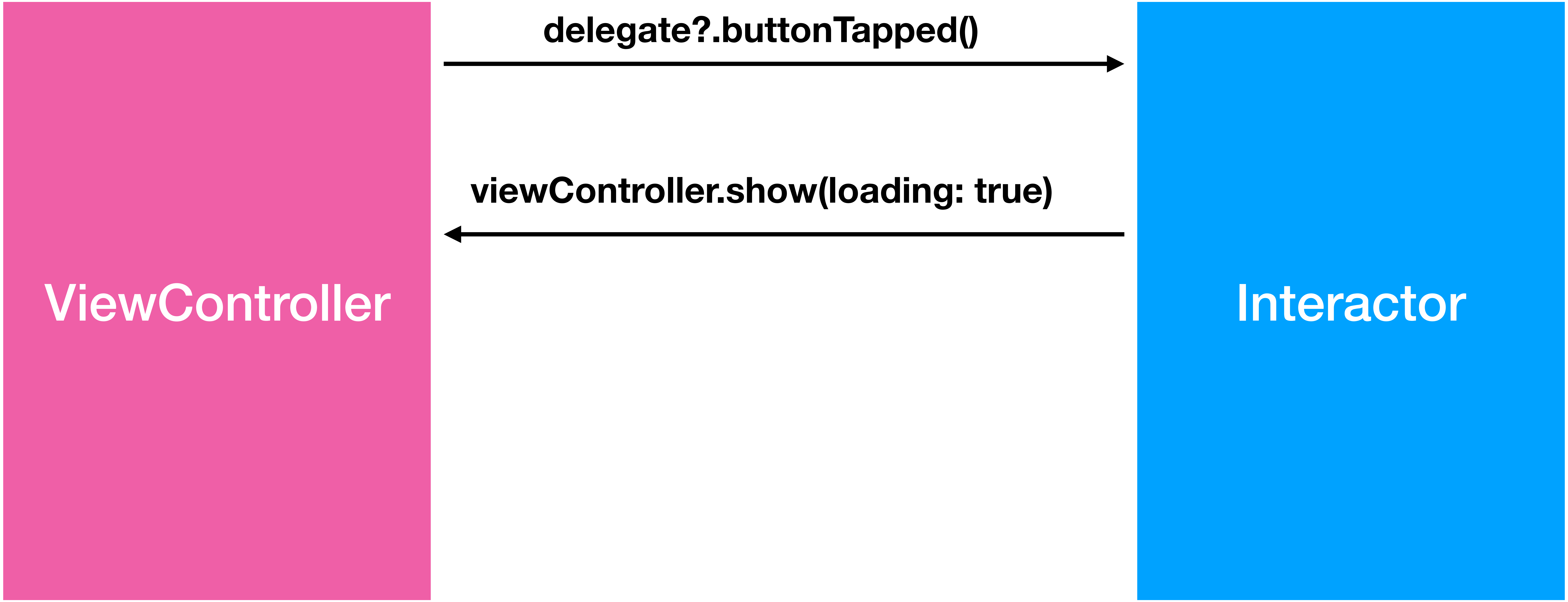
Interactor

- Business Logic
- Flow Interaction

```
protocol ViewControllable {
    func show(loading: Bool)
    func show(error: Error)

    var delegate: Interactable? { set get }
}


protocol Interactable {
    func buttonTapped()
}
```



delegate?.buttonTapped()
ViewController
Interactor

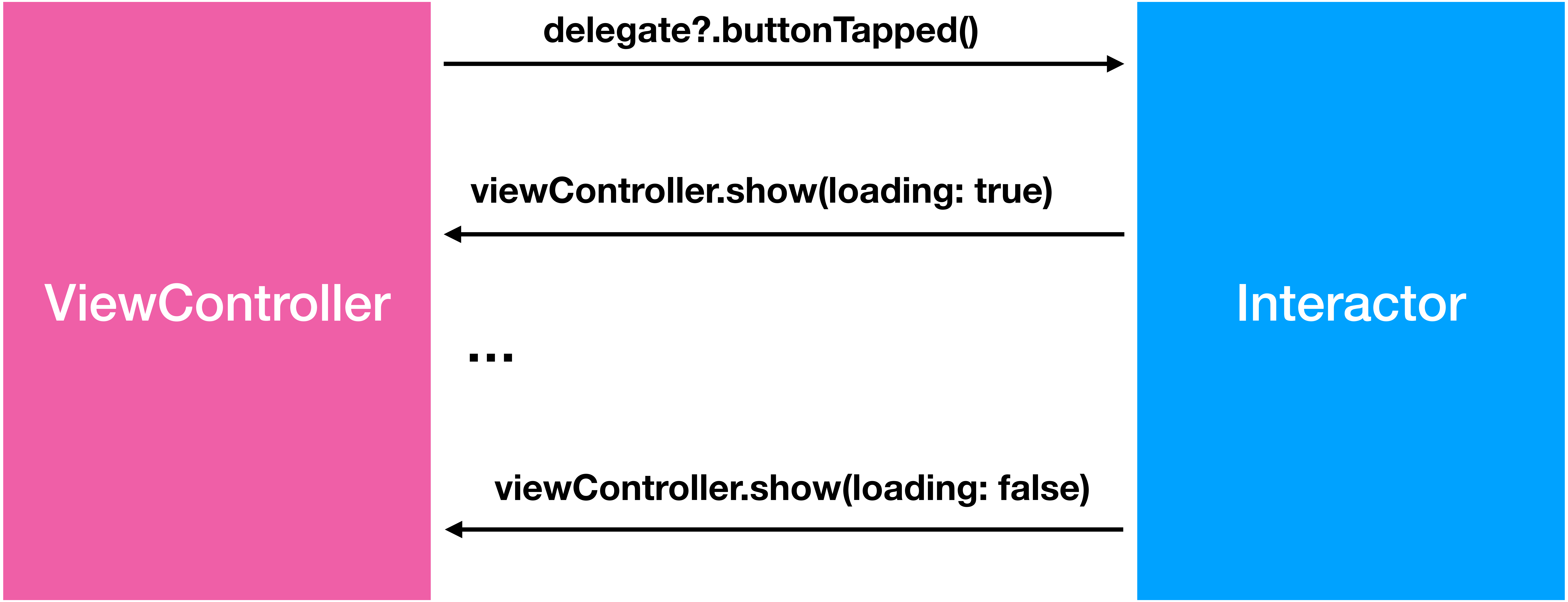


delegate?.buttonTapped()

viewController.show(loading: true)

ViewController

Interactor



ViewController

delegate?.buttonTapped()

viewController.show(loading: true)

...

viewController.show(loading: false)

Interactor

```swift
// generated code
class ViewControllableMock: ViewControllable {
    init() {}

    var delegate: Interactable?
    var showLoadingCallCount: Int = 0
    var showErrorCallCount: Int = 0

    var showLoadingHandler: ((loading: Bool) -> ())?
    var showErrorHandler: ((error: Error) -> ())?

    func showLoading(loading: Bool) {
        showLoadingCallCount += 1
        showLoadingHandler?(loading: loading)
    }

    func showError(error: Error) {
        showErrorCallCount += 1
        showErrorHandler?(error: error)
    }
}
```

```swift
// InteractorTests.swift

class InteractorTests: TestCase {

  func test_buttonTapped_success() {
    var loading: Bool?
    presentableMock.showLoadingHandler = { p in loading = p }

    XCTAssertEqual(presentableMock.showLoadingCallCount, 0)
    interactor.buttonTapped()
    XCTAssertEqual(presentableMock.showLoadingCallCount, 1)
    XCTAssertTrue(loading!)
    someServiceMock.apiCallSubject.onNext(ResponseFixture.success())
    XCTAssertEqual(presentableMock.showLoadingCallCount, 2)
    XCTAssertFalse(loading!)
    ...
  }
}
```

Summary

- Layers are connected with protocols

Summary

- Layers are connected with protocols
- Protocol -> Generated Mock Class

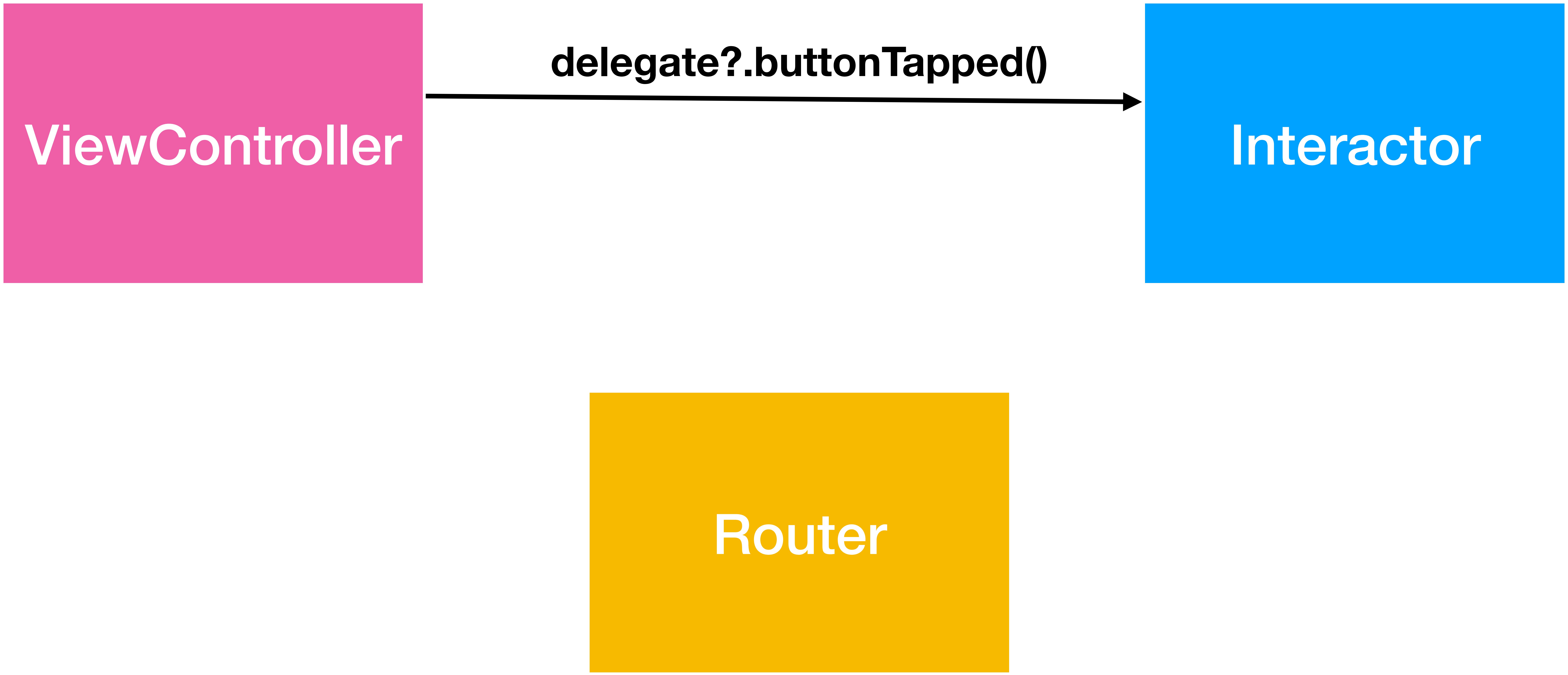
Summary

- Layers are connected with protocols
- Protocol -> Generated Mock Class
- Mocks = simulate any state with ease

Summary

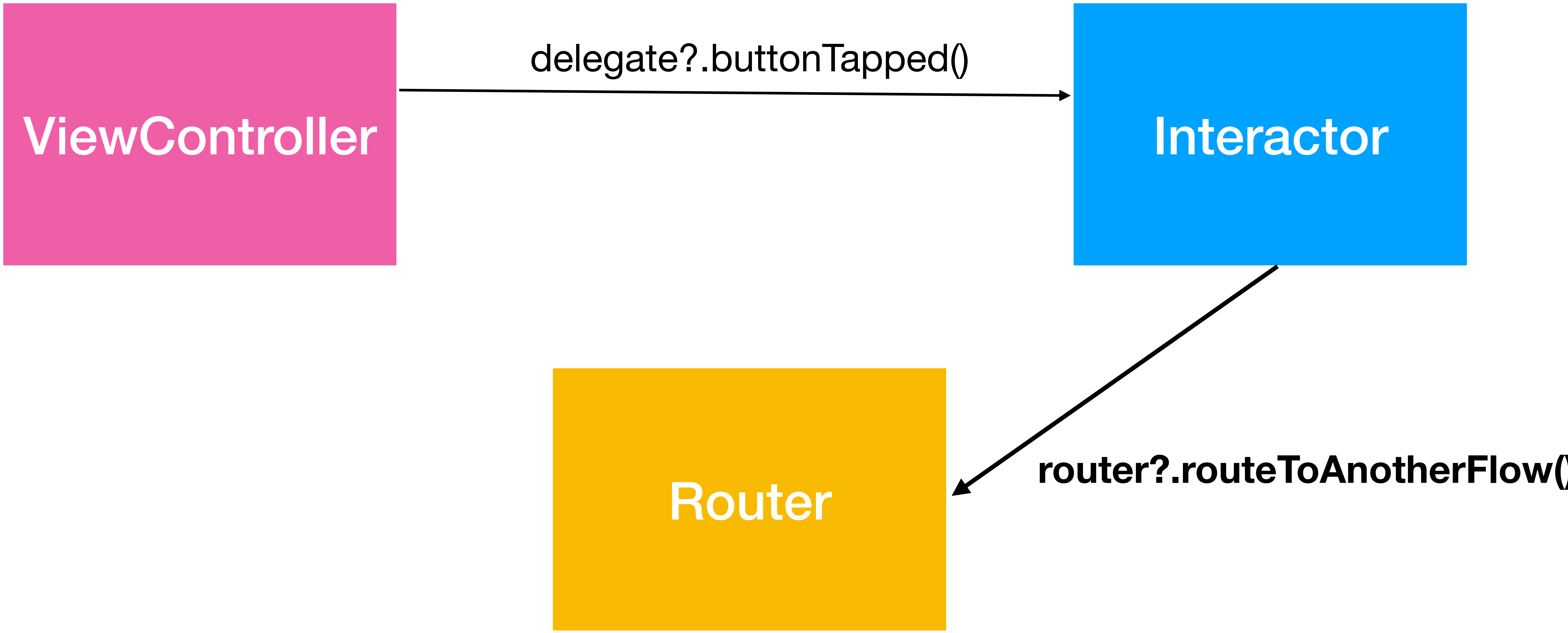
- Layers are connected with protocols
- Protocol -> Generated Mock Class
- Mocks = simulate any state with ease
- Cover all methods with tests, file by file

+Router

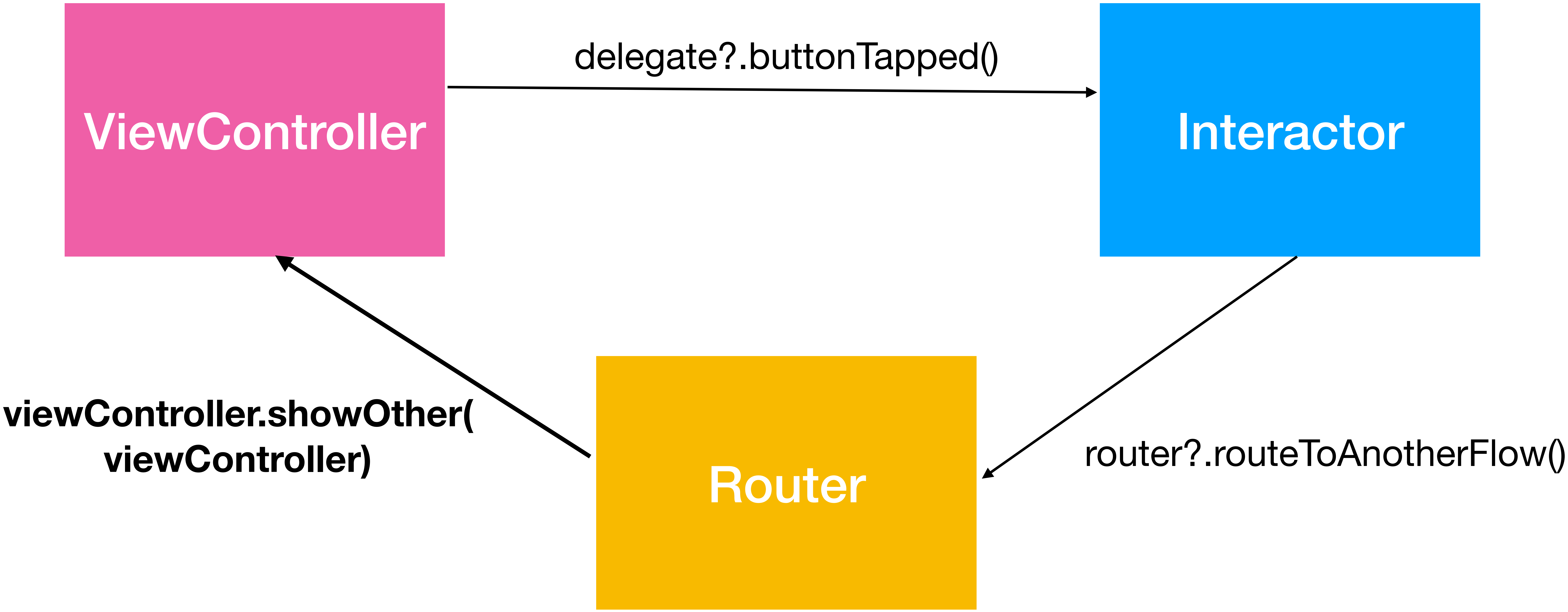


ViewController
delegate?.buttonTapped()
Interactor
Router

+Router


ViewController
delegate?.buttonTapped()
Interactor
Router
router?.routeToAnotherFlow(

+Router



ViewController
delegate?.buttonTapped()
Interactor
router?.routeToAnotherFlow()
Router
viewController.showOther(
viewController)

```swift
// Interactor.swift

protocol Routing {
  func routeToAnotherFlow()
  func routeFromAnotherFlow()
}

class SomeInteractor: PresentableInteractor<...> {
  weak var router: Routing?

  func buttonTapped() {
    ...
    router?.routeToAnotherFlow()
  }
}
```

```swift
// Router.swift

protocol Interactable {
    var router: Routing? { get set }
}

protocol ViewControllable {
    func showOther(_ viewController: UIViewController)
    func dismiss()
}

final class SomeRouter: ViewableRouter<...> {
    init(interactor: Interactable, viewController: ViewControllable) {
        super.init(interactor: interactor, viewController: viewController)
        interactor.router = self
    }

    func routeToAnotherFlow() {
        let otherFlowRouter = /* */
        viewController.showOther(otherFlowRouter.viewController)
    }
    func routeFromAnotherFlow() {
        viewController.dismiss()
    }
}
```

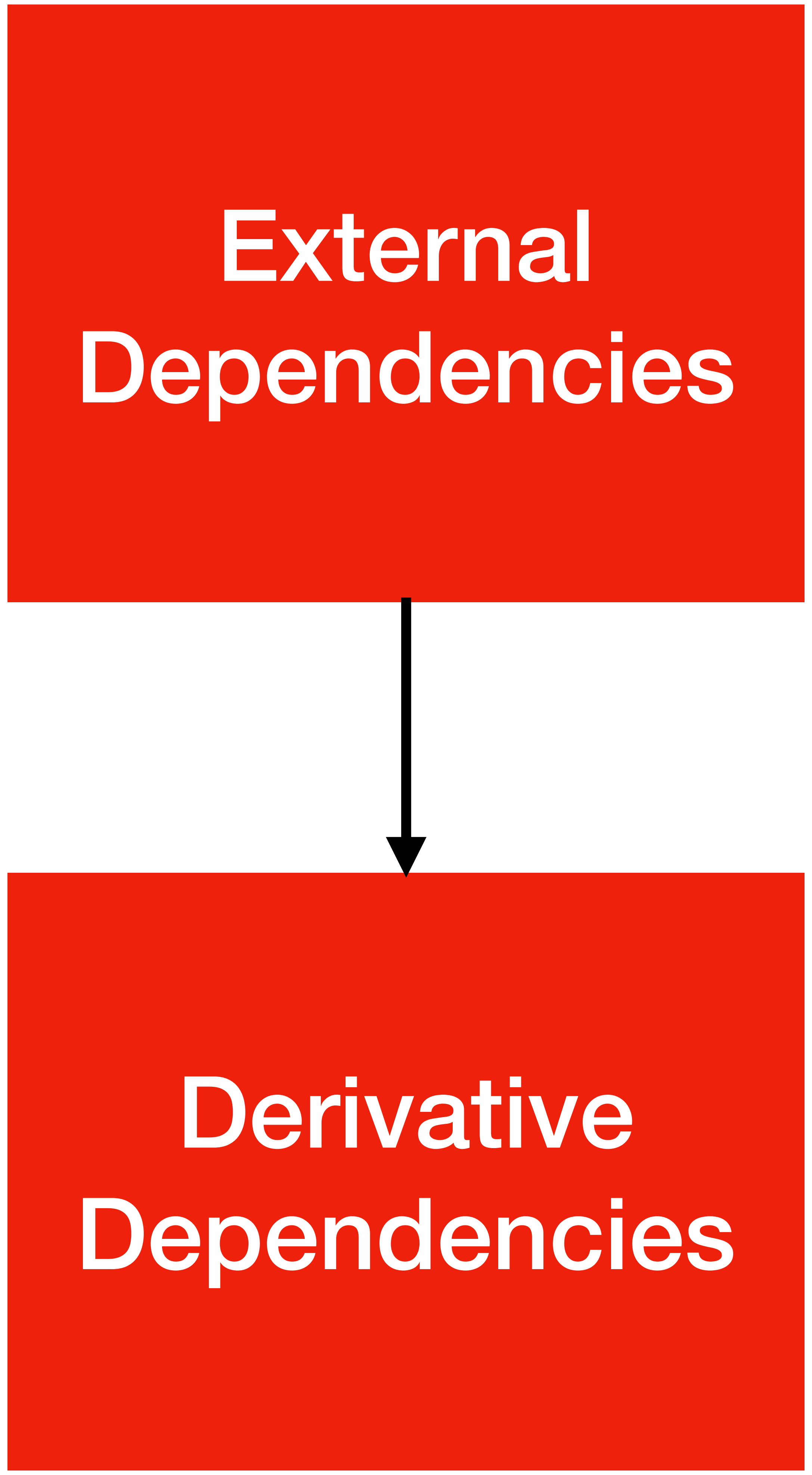
```swift
// ViewController.swift

class SomeViewController: ViewController, ... {

  …

  func showOther(_ viewController: UIViewController) {
    navigationController?.pushViewController(viewController,
animated: true)
  }

  func dismiss() {
    navigationController?.popViewController(animated: true)
  }
}
```

```
// RouterTests.swift
class RouterTests: TestCase {
  var router: Router!
  let interactorMock = InteractableMock()
  let viewControllerMock = ViewControllableMock()

  override func setUp() {
    super.setUp()
    router = Router(interactor: interactorMock, viewController:
viewControllerMock)
  }

  func test_routeToAnotherFlow() {
    router.routeToAnotherFlow()
    XCTAssertEqual(viewControllerMock.showOtherViewControllerCallCount, 1)
  }
}
```

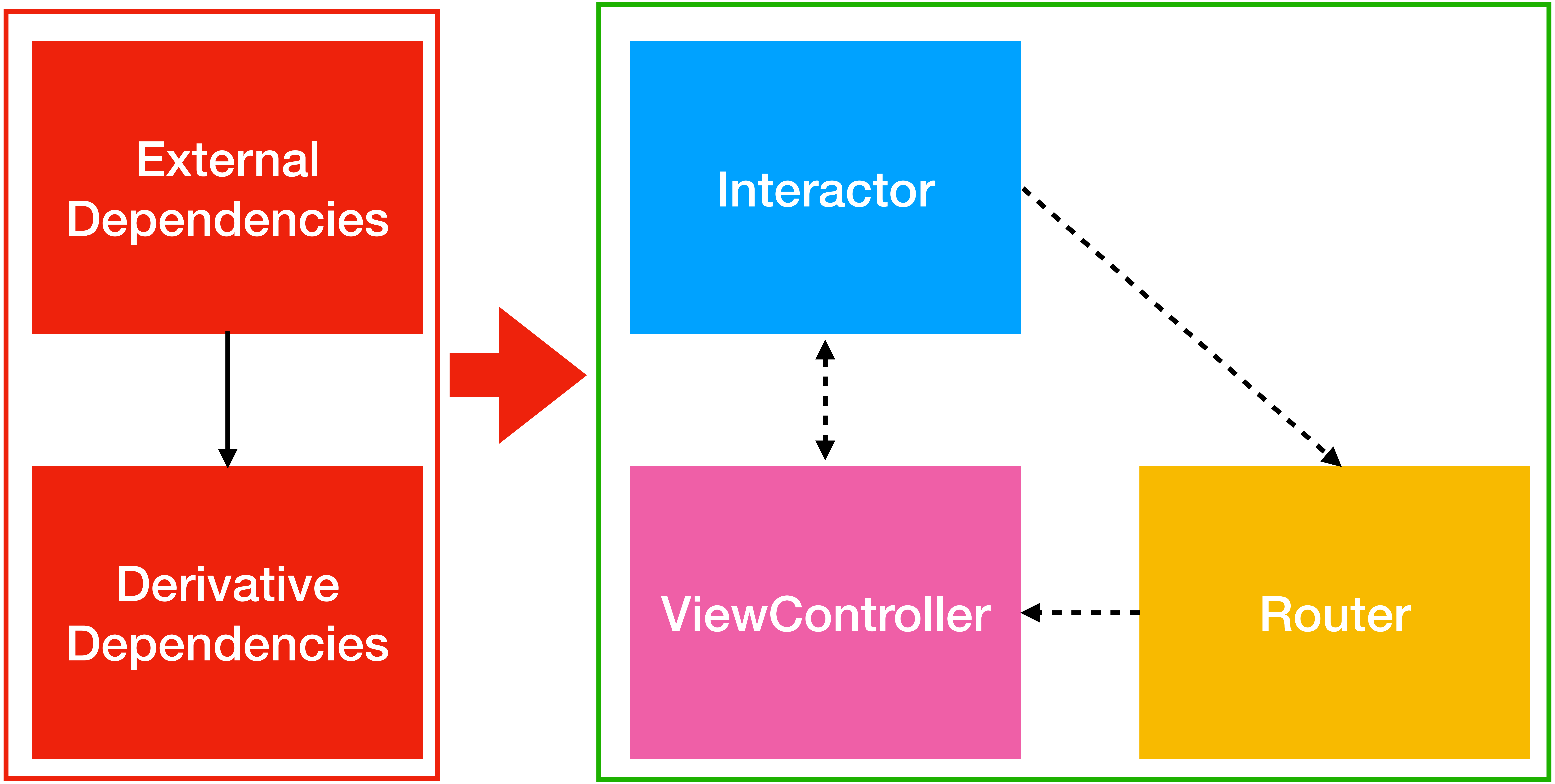
+Builder

External Dependencies

+Builder



+Builder


External Dependencies
Derivative Dependencies
Interactor
ViewController
Router

+Builder

Parent Interactor

External Dependencies

Derivative Dependencies

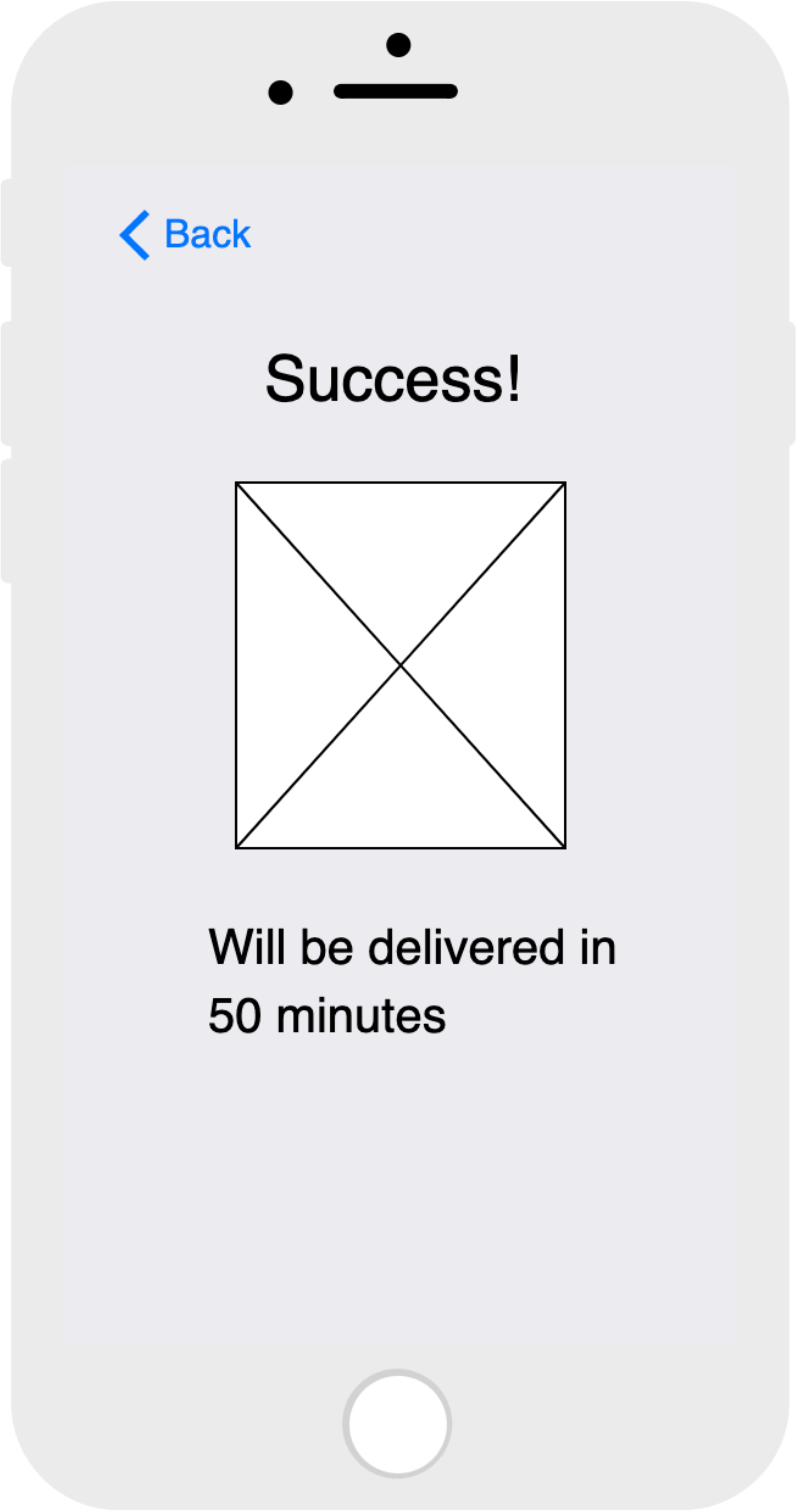
Interactor

ViewController

Router

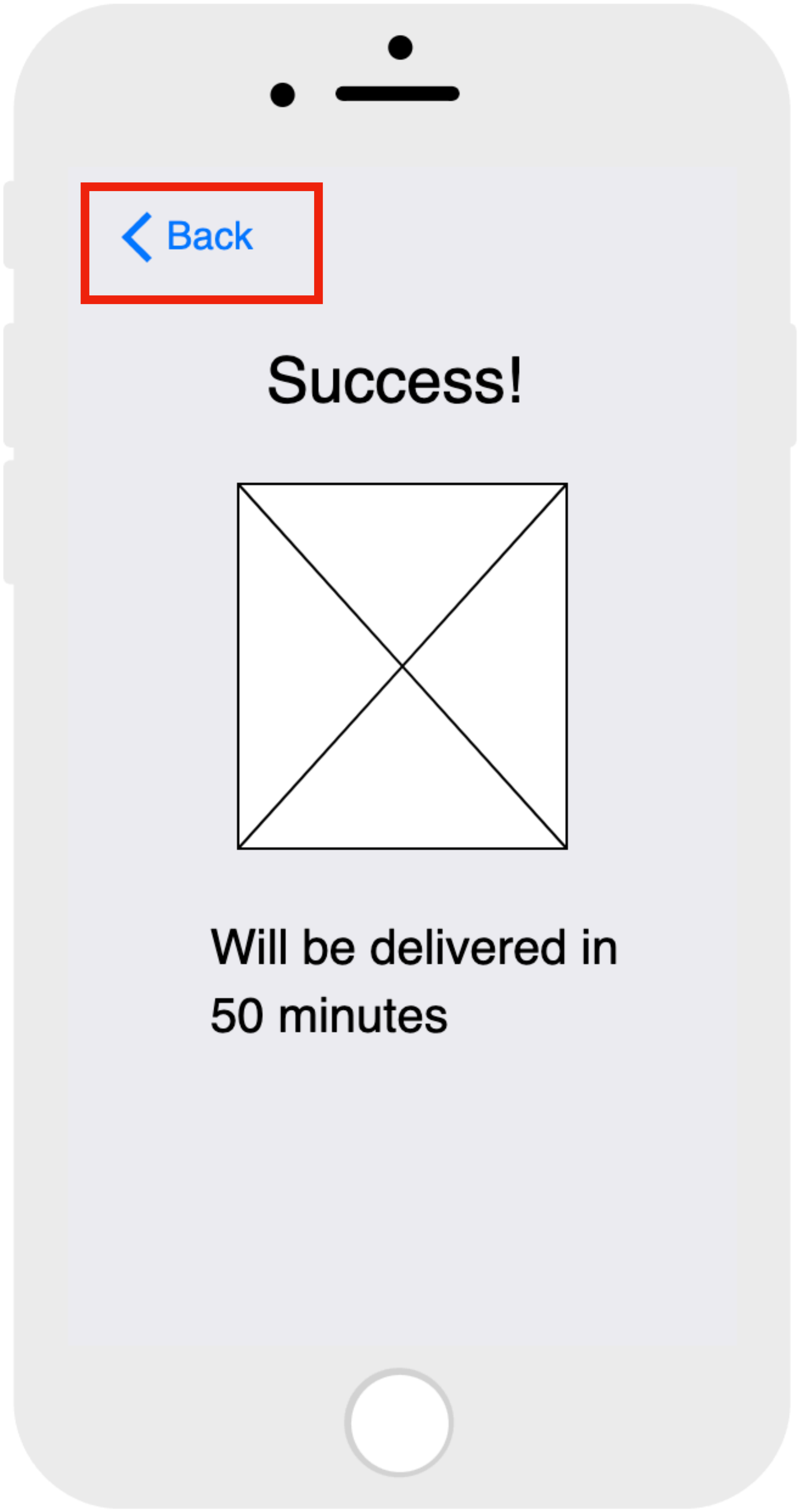
```
// Builder.swift
protocol Dependency {
  var realtimeClient: RealtimeClient { get }
}

final class Component: BaseComponent<Dependency> {
  var someNetworkService: NetworkingServicing {
    return SomeNeworkingService(realtimeClient: dependency.realtimeClient)
  }
}

protocol SomeBuildable: Buildable {
  func build(withListener delegate: FlowDelegate) -> Routing
}

final class SomeBuilder: Builder<Component>, SomeBuildable {
  func build(withDelegate delegate: FlowDelegate) -> Routing {
    let component = componentBuilder()
    let viewController = ViewController()
    let interactor = Interactor(presenter: viewController, someNetworkService:
component.someNetworkService)
    interactor.delegate = delegate
    let router = Router(interactor: interactor, viewController: viewController)
    return router
  }
}
```

```
// Router.swift

…

final class SomeRouter: ViewableRouter<...> {

    private let otherFlowBuilder: OtherFlowBuildable

    init(interactor: Interactable, viewController: ViewControllable, otherFlowBuilder:
OtherFlowBuildable) {
        self.otherFlowBuilder = otherFlowBuilder

        super.init(interactor: interactor, viewController: viewController)
        interactor.router = self
    }

    func routeToAnotherFlow() {
        let otherFlowRouter = otherFlowBuilder.build(delegate: interactor)
        viewController.showOther(otherFlowRouter.viewController)
    }
    func routeFromAnotherFlow() {
        viewController.dismiss()
    }
}
```



Success!

Will be delivered in
50 minutes



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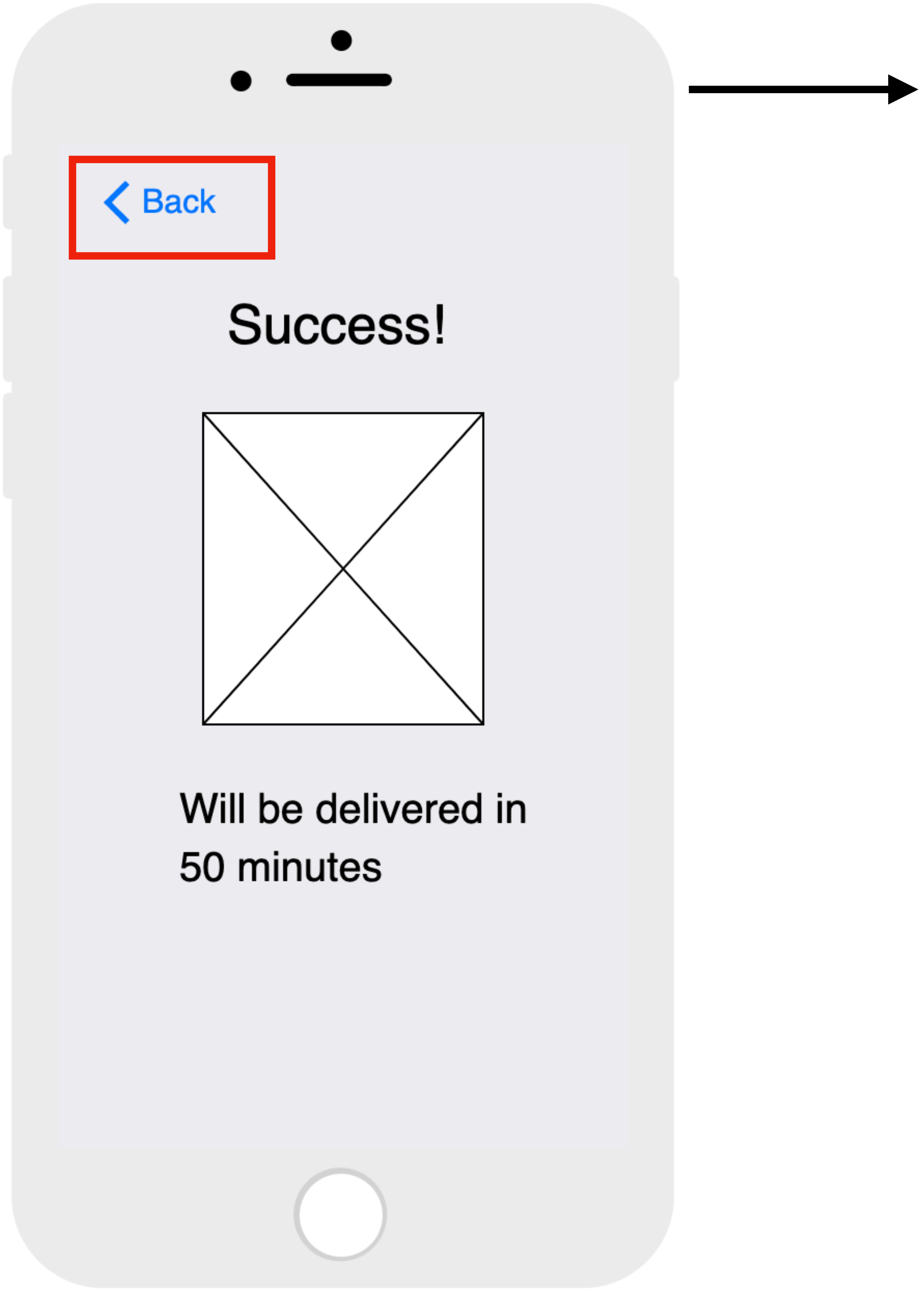
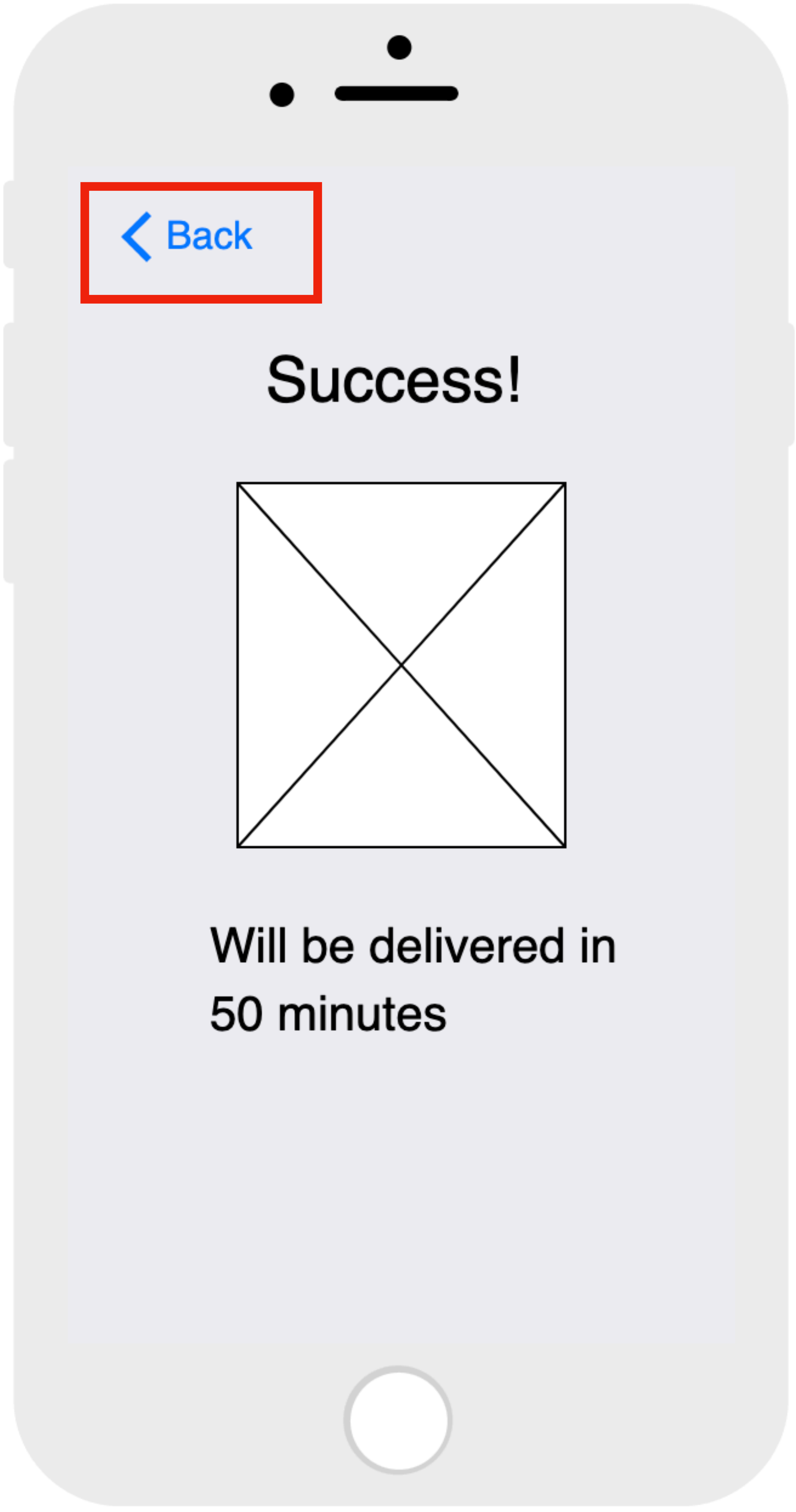


Success!

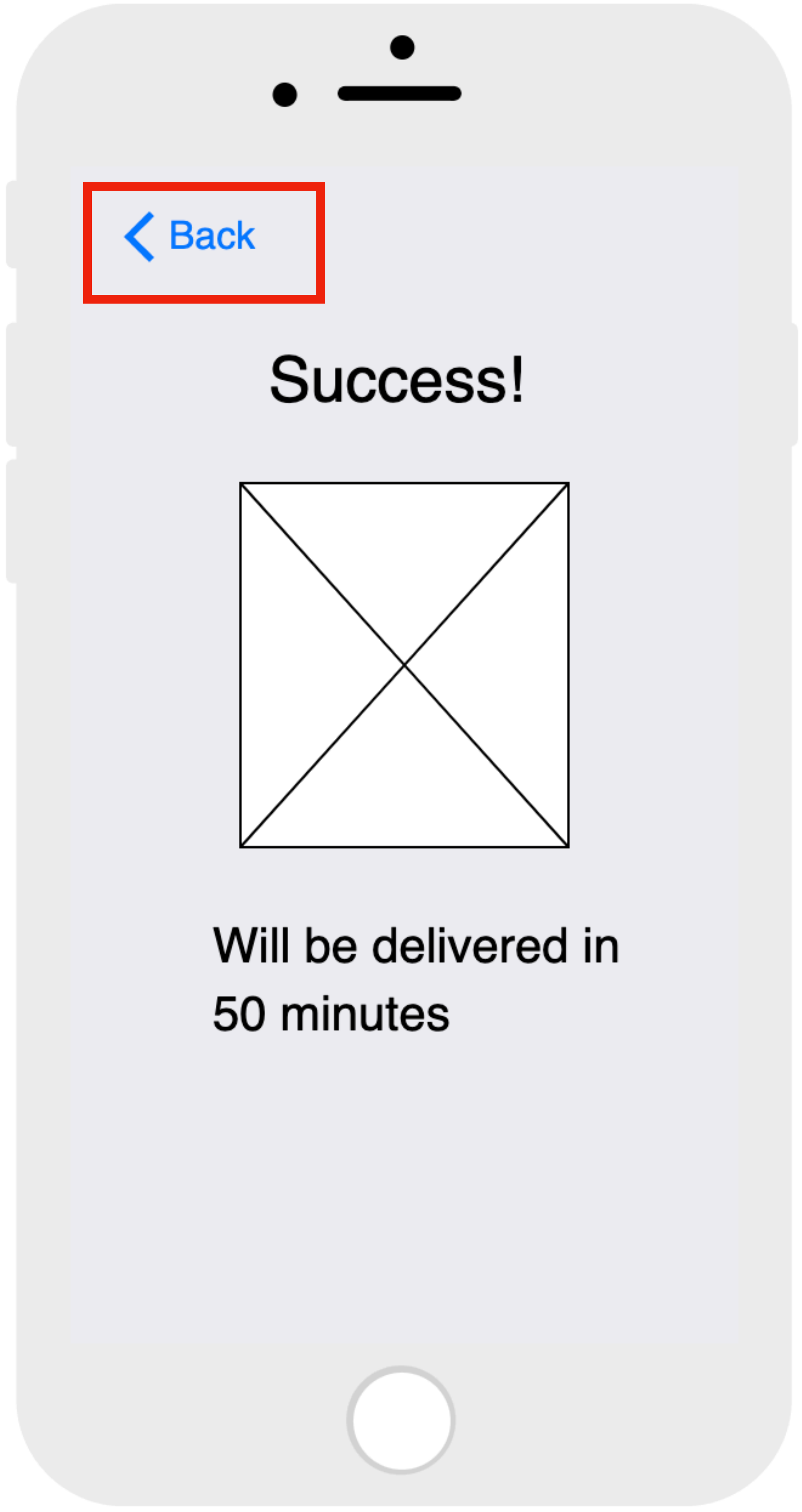
Will be delivered in 50 minutes

```swift
// OtherFlowViewController.swift
@objc func backButtonTapped() {
    delegate?.backButtonTapped()
}
```



```
// OtherFlowViewController.swift
@objc func backButtonTapped() {
    delegate?.backButtonTapped()
}
```

```
// OtherFlowInteractor.swift
func backButtonTapped() {
  delegate?.wantsToDismiss()
}
```



Success!

Will be delivered in 50 minutes

```swift
// OtherFlowViewController.swift
@objc func backButtonTapped() {
    delegate?.backButtonTapped()
}
```

```swift
// OtherFlowInteractor.swift
func backButtonTapped() {
  delegate?.wantsToDismiss()
}
```

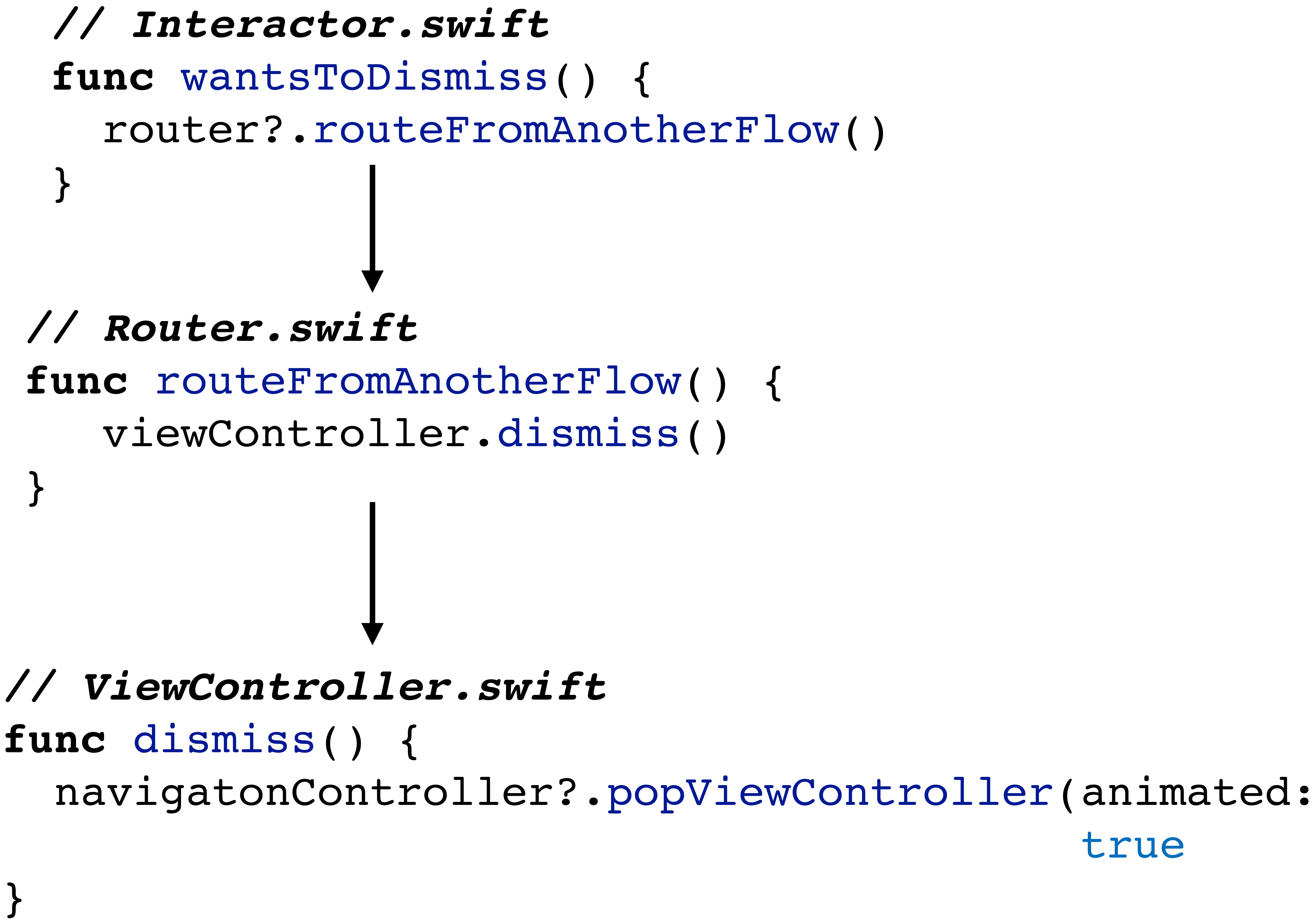
```swift
// Interactor.swift
func wantsToDismiss() {
  router?.routeFromAnotherFlow()
}
```

```swift
// Interactor.swift
func wantsToDismiss() {
  router?.routeFromAnotherFlow()
}
```

```swift
// Interactor.swift
func wantsToDismiss() {
  router?.routeFromAnotherFlow()
}
```

↓

```swift
// Router.swift
func routeFromAnotherFlow() {
   viewController.dismiss()
}
```



```swift
// Interactor.swift
func wantsToDismiss() {
  router?.routeFromAnotherFlow()
}
```

```swift
// Router.swift
func routeFromAnotherFlow() {
   viewController.dismiss()
}
```

```swift
// ViewController.swift
func dismiss() {
  navigatonController?.popViewController(animated:
                                         true
}
```

```
// Interactor.swift
func wantsToDismiss() {
  router?.routeFromAnotherFlow()
}
```

```
// Router.swift
func routeFromAnotherFlow() {
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// ViewController.swift
func dismiss() {
  navigatonController?.popViewController(animated:
                                         true
}
```
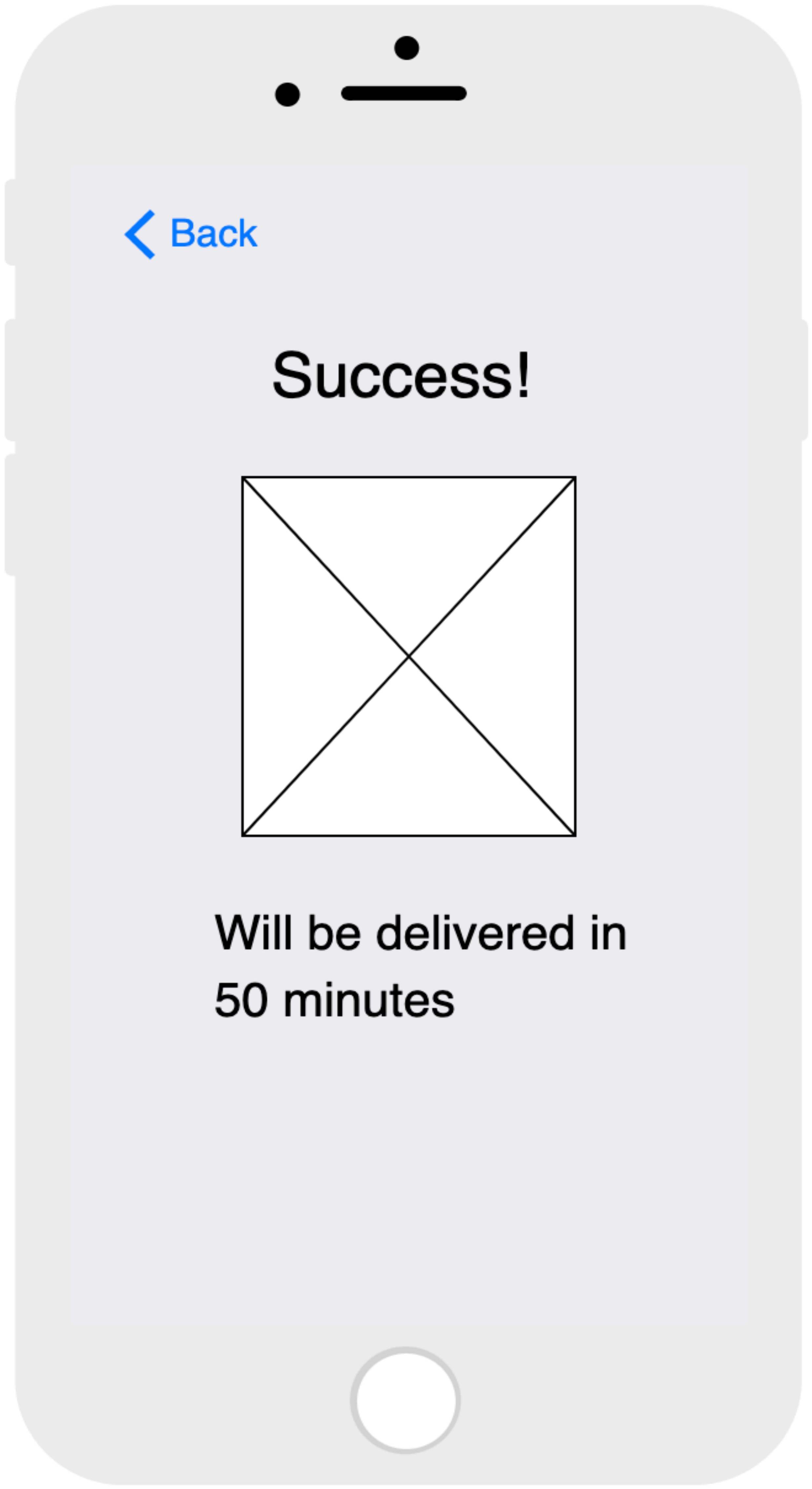
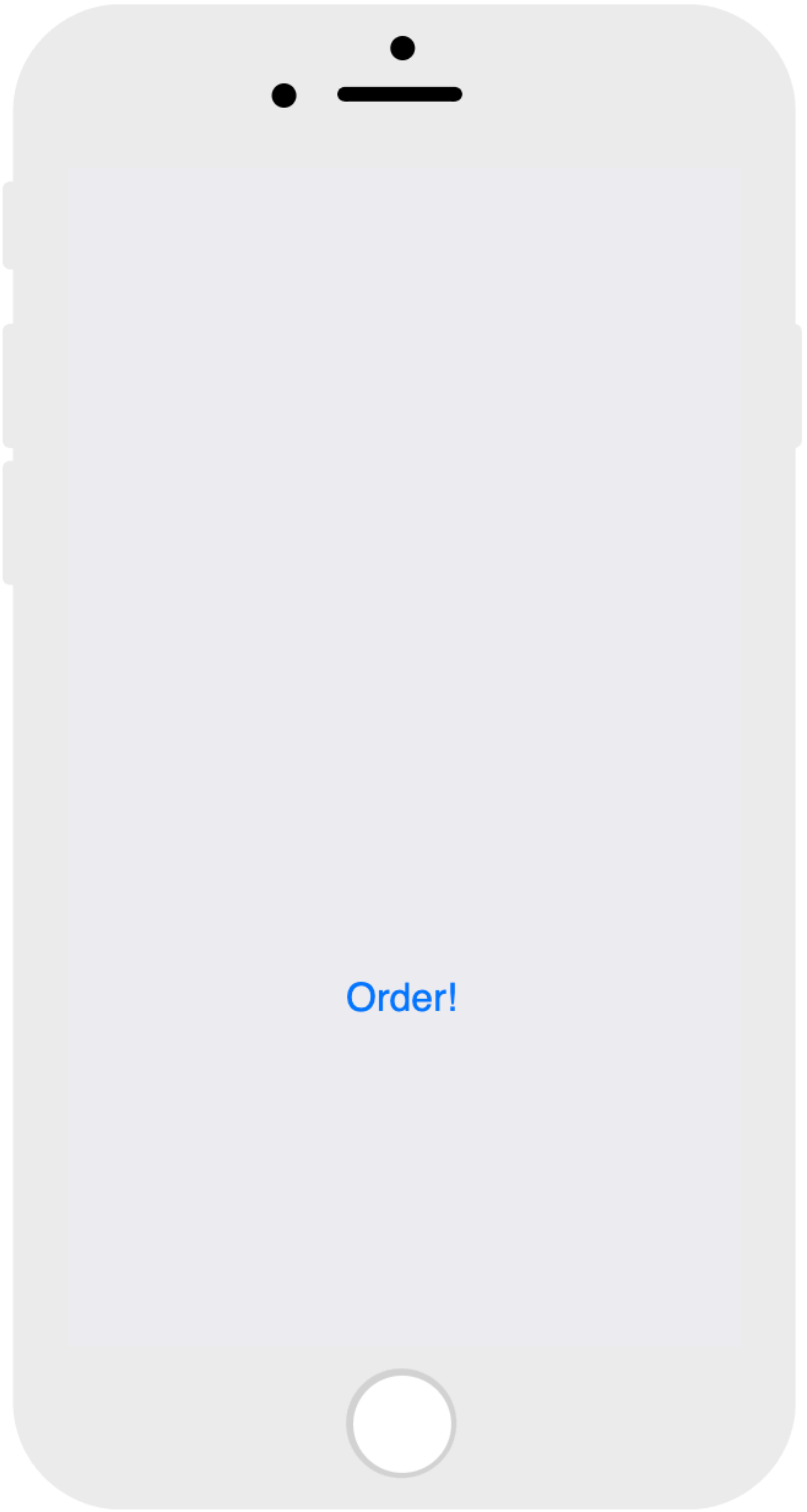



```swift
// Interactor.swift
func wantsToDismiss() {
  router?.routeFromAnotherFlow()
}
```

```swift
// Router.swift
func routeFromAnotherFlow() {
   viewController.dismiss()
}
```

```swift
// ViewController.swift
func dismiss() {
  navigatonController?.popViewController(animated:
                                          true
}
```

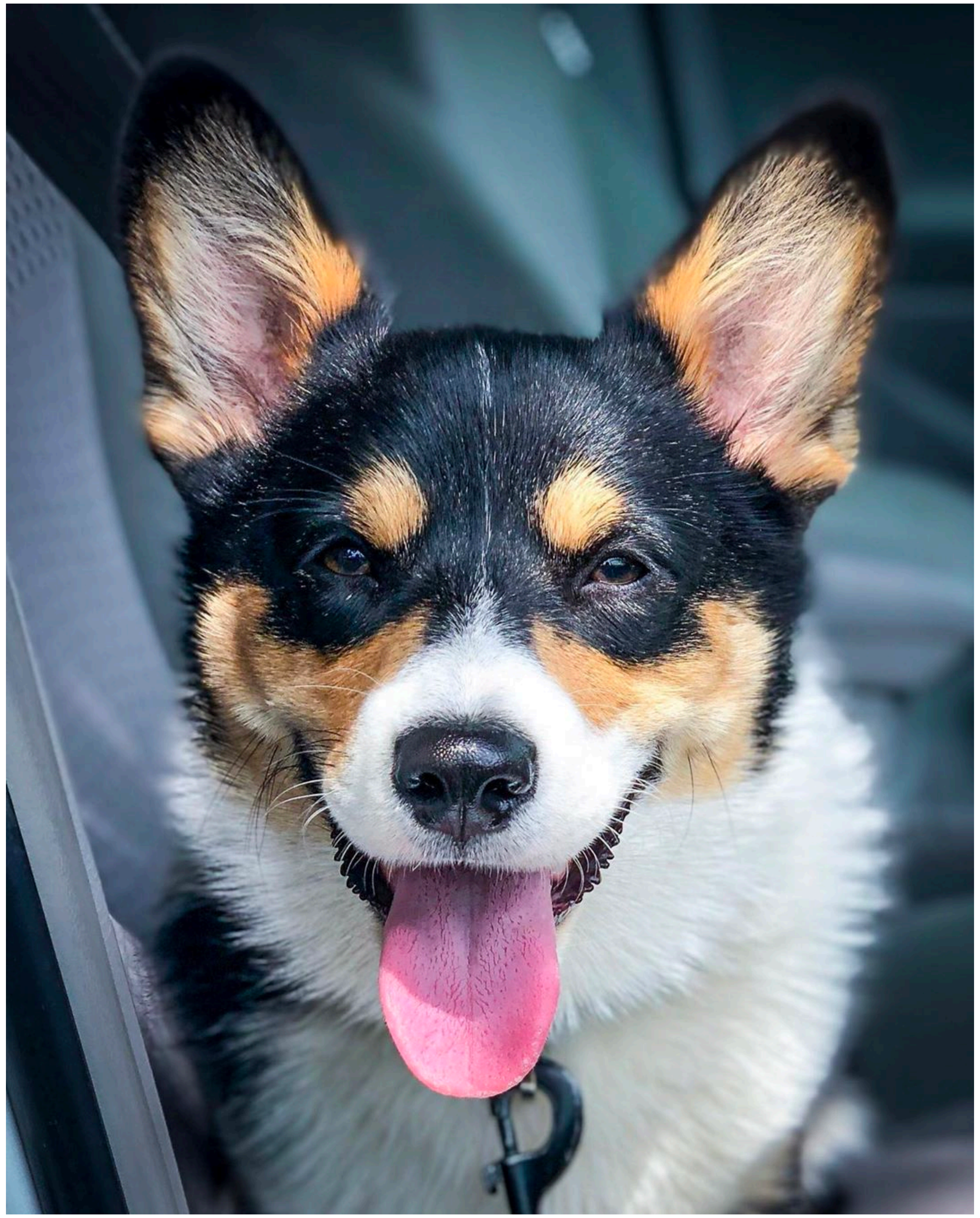


RIB Summary

- Scalable Architecture
- High Test Coverage
- Flexibility
- Easy to read codebase of any size

- More code to write
- Takes time to learn

Thank You!



darcy_the_pawesome

Links

Uber Eng Blog - https://eng.uber.com

Snapshot Tests iOS - https://github.com/uber/ios-snapshot-test-case
Snapshot Tests Android - https://facebook.github.io/screenshot-tests-for-android/

Martin Fowler on Feature Flags - https://martinfowler.com/articles/feature-toggles.html
Feature Flags @Uber - https://eng.uber.com/xp-background-push/

Plugin Architecture @Uber - https://eng.uber.com/plugins/

RIBs - https://github.com/uber/RIBs
Talk about RIBs - https://www.youtube.com/watch?v=FfwZSk6VRVY