VIPER

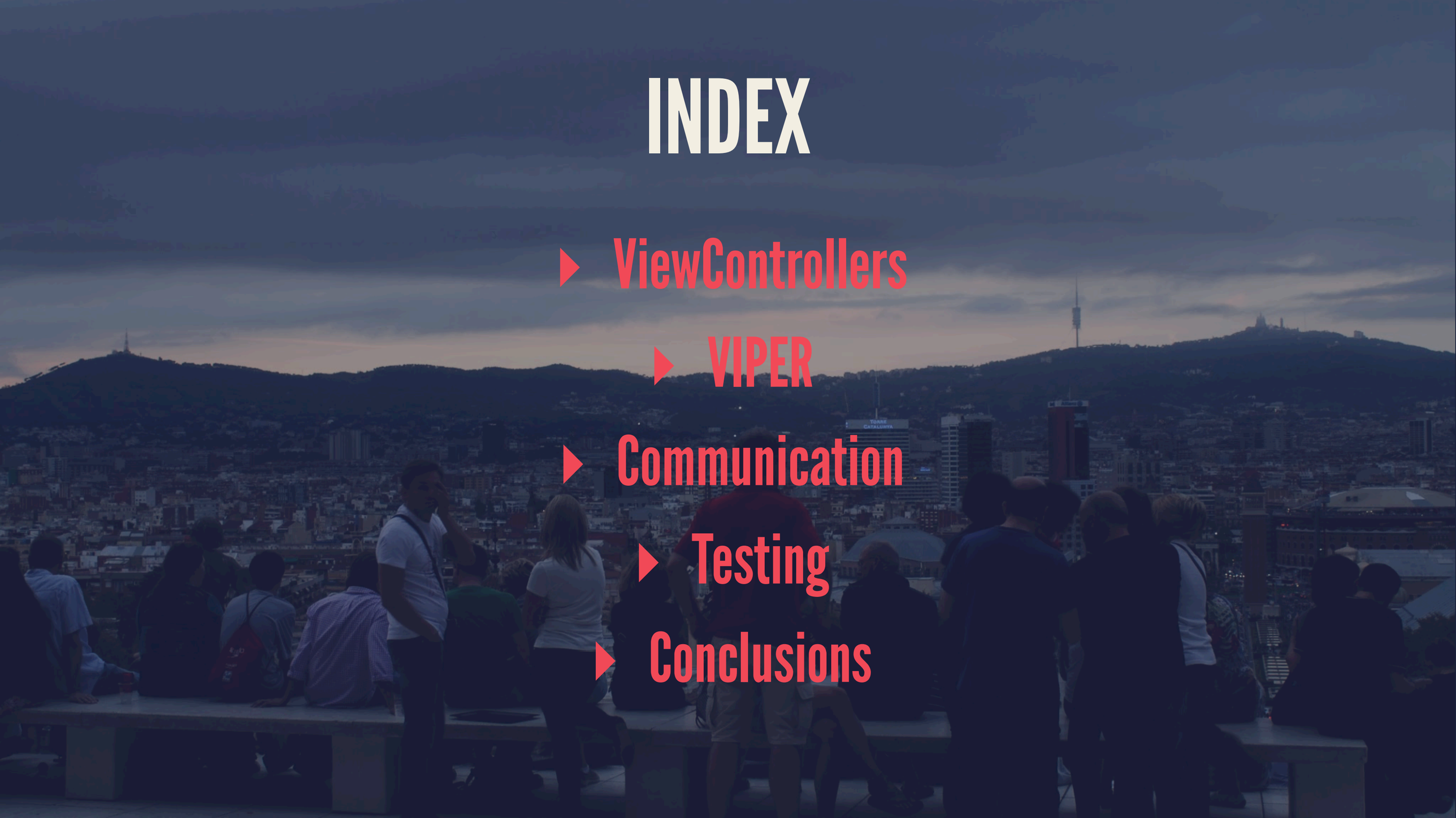
LOOKING FOR THE PERFECT ARCHITECTURE 🎯

@PEPIBUMUR

TWEET ABOUT THE TALK WITH THE #VIPERTALK HASHTAG

ABOUT ME

```
public struct Me
{
  let name = "Pedro"
  let surname = "Piñera Buendía"
  let twitter = @"pepibumur"
  let mail = "pepibumur@gmail.com"
  let webiste = "www.ppinera.es"
  let previousJob = "iOS Developer at Redbooth"
  let currentJob = "Mobile Developer at 8fit"
  let projects = ["SugarRecord": "github.com/sugarrecord",
                  "PopcornTV": "github.com/pepibumur/popcorntv",
                  "PPiAwesomeButton": "github.com/pepibumur/PPiAwesomeButton"]
}
```



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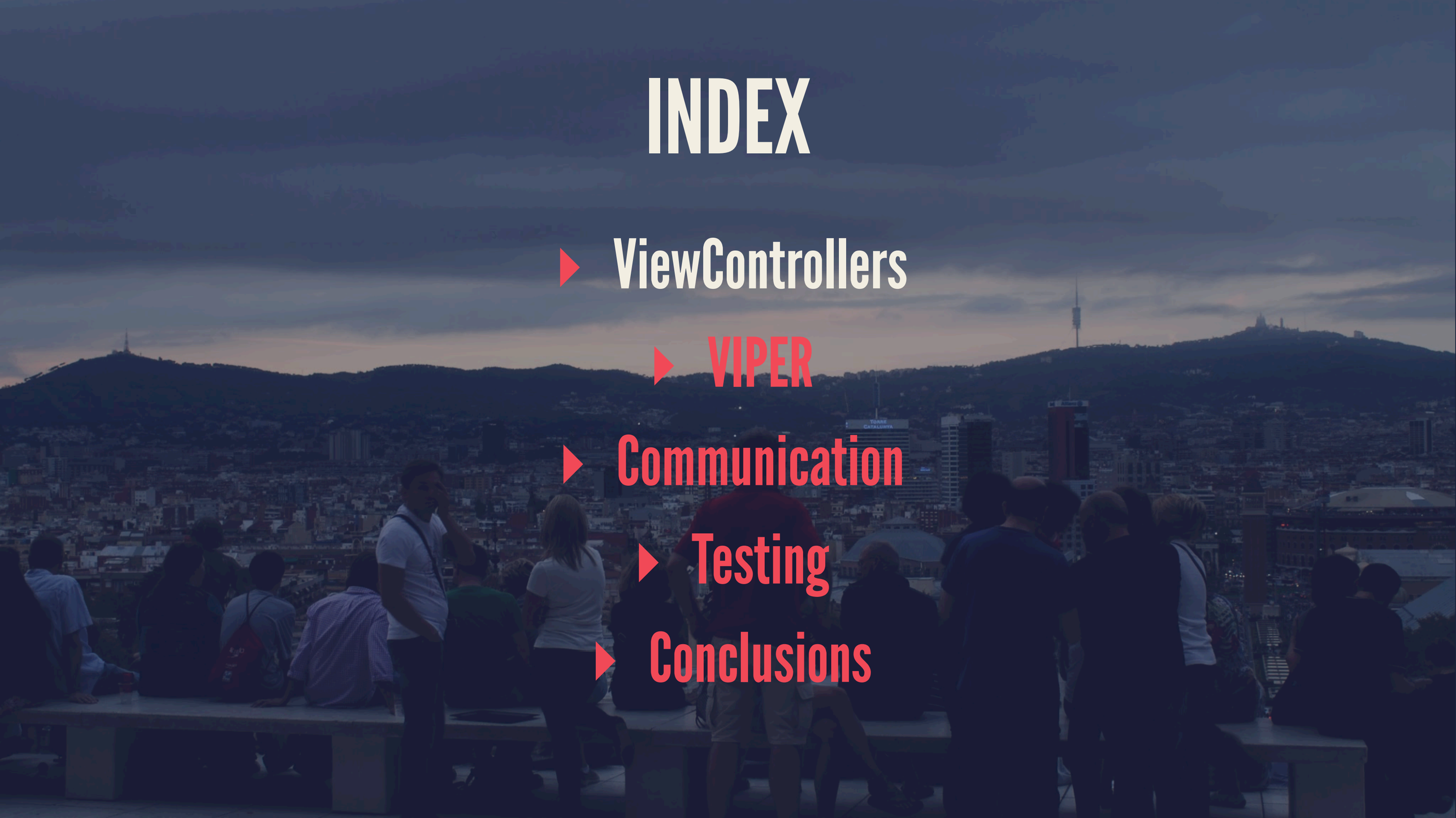

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DOCUMENTATION, BOOKS, EXAMPLES, TUTORIALS

objc.io, RayWenderlich, iOS Dev Weekly, NSHipster

PATTERNS

PROTOCOLS, DELEGATES, DATA SOURCES

KVO


OHMAGIF.COM
abc

Remember

THEY ARE EXAMPLES

VIEWCONTROLLER

A VIEW CONTROLLER COORDINATES ITS EFFORTS WITH MODEL OBJECTS AND OTHER CONTROLLER OBJECTS—INCLUDING OTHER VIEW CONTROLLERS

– Apple

~~ViewController~~Delegator

```
@interface TBThreadDetailViewController : RBViewController <UITableViewDataSource,
 UITableViewDelegate, RBViewControllerURLProtocol, NSFetchedResultsControllerDelegate, TBObjectDetailHeaderCellDelegate,
  TBUploadCellDelegate,TBWatchersViewDelegate>
```

~~ViewController~~Delegator

```
@interface TBThreadDetailViewController : RBViewController <UITableViewDataSource,
 UITableViewDelegate, RBViewControllerURLProtocol, NSFetchedResultsControllerDelegate, TBObjectDetailHeaderCellDelegate,
  TBUploadCellDelegate,TBWatchersViewDelegate>
```

Multi Responsibility

```
[self presentViewController:previewController animated:YES completion:nil]; //Navigation
[Task downloadNewObjectWithID:self.threadIdentifier.remoteIdentifier withSuccess:^{}]; // Networking
NSFetchRequest *request = [[NSFetchRequest alloc] initWithEntityName:[Comment entityName]]; // Data persistence
[self.view setBackgroundColor:ss_Color_White]; // Formatting
```

- Monster files

size > 1500 lines 😢

- Monster files

size > 1500 lines 😢

- Impossible to test 😑

- Monster files
  size > 1500 lines 😢
- Impossible to test 😑
- Components too coupled 💢

- Monster files

size > 1500 lines 😢

- Impossible to test 😑
- Components too coupled 💢
- Hard to understand (and review) classes. 😡

🚶 😊💻😯😮😟💩🏃

CLEAN ARCHITECTURE

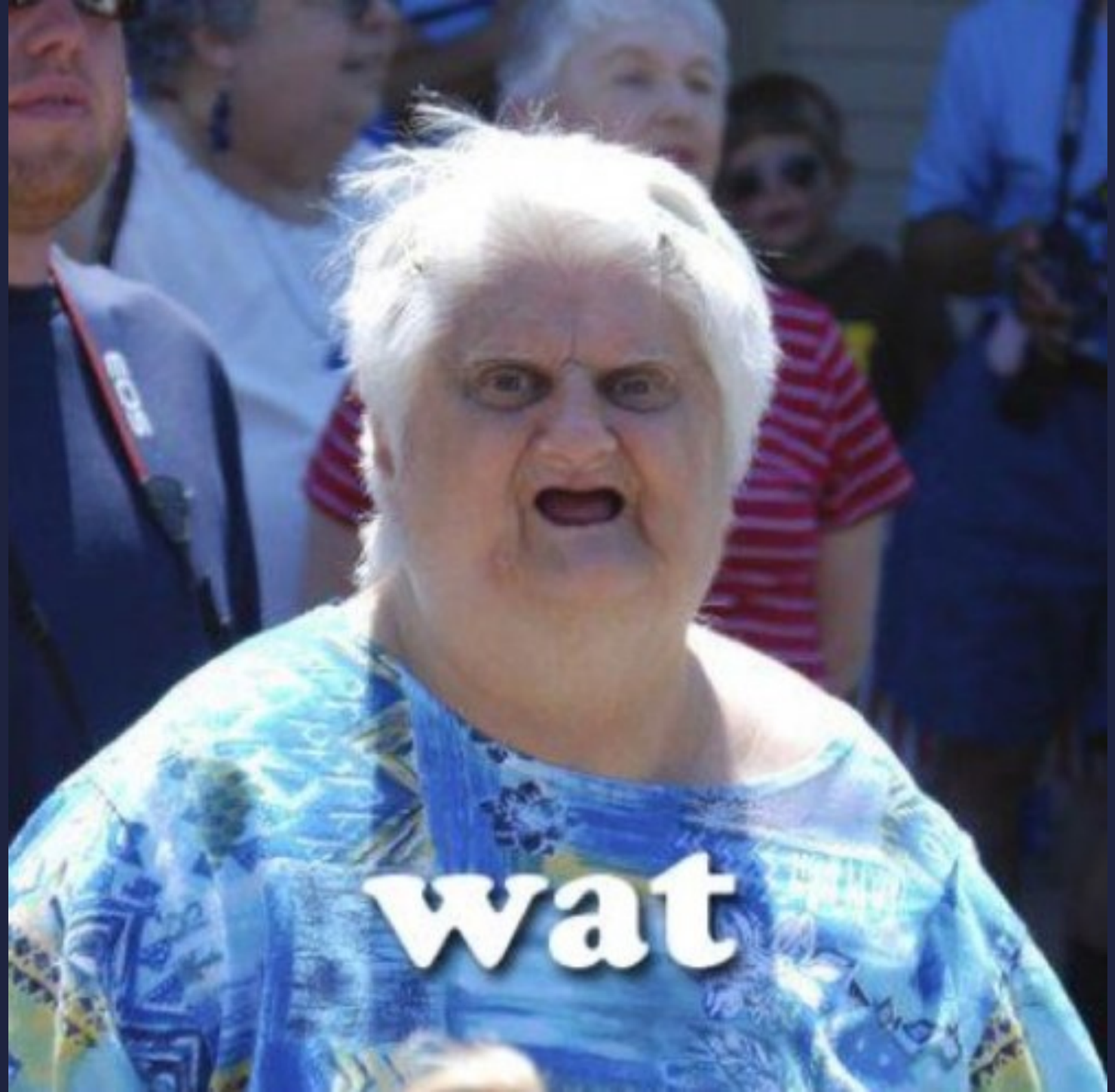
INDEPENDENT FROM FRAMEWORKS, UI, DATABASE AND EXTERNAL ENTITIES. EASY TO TEST

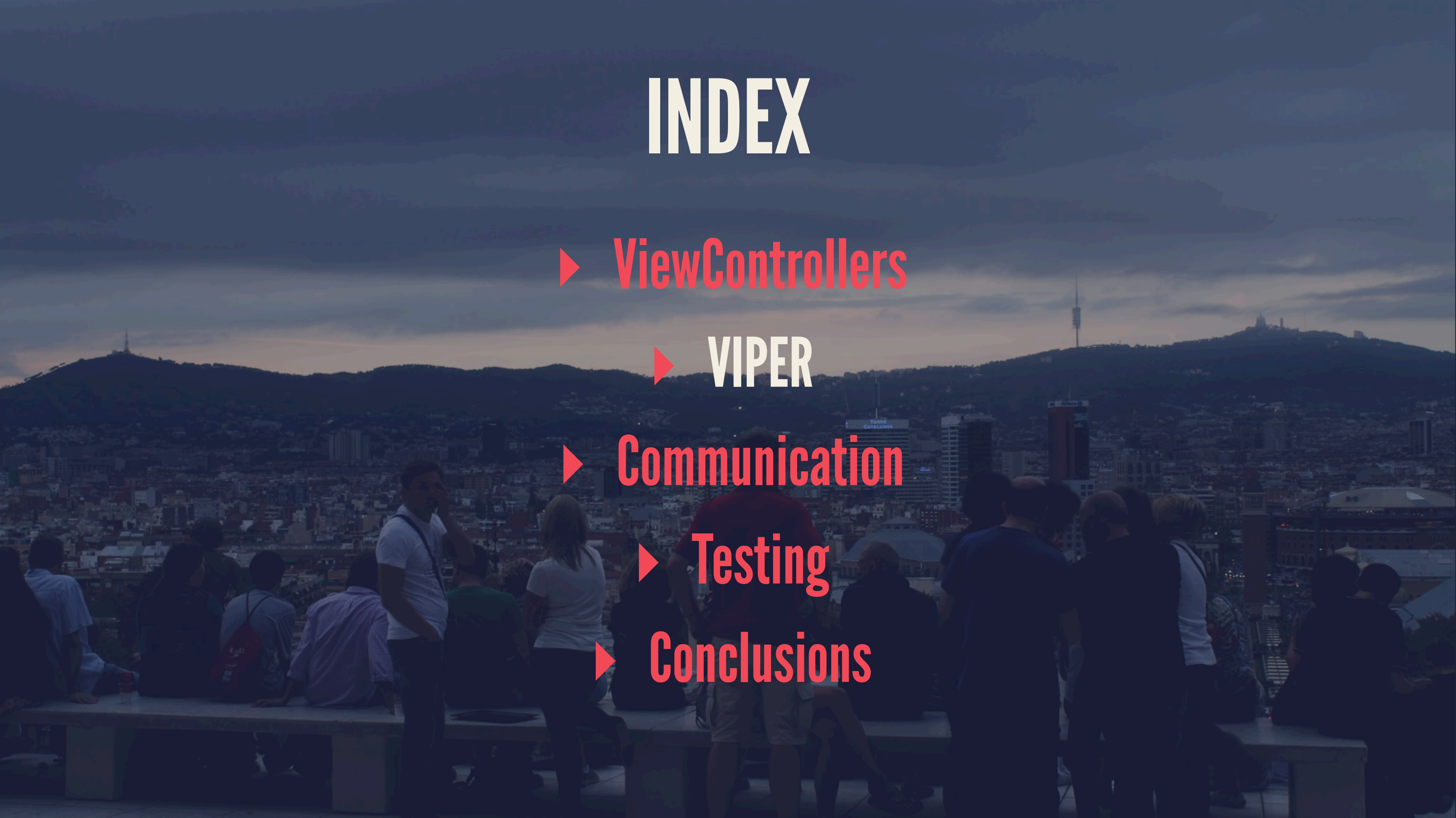
- Who will persist the data?

- Who will persist the data?
- And the API interaction?

- Who will persist the data?
- And the API interaction?
- Who controls the navigation?

Viper


wat



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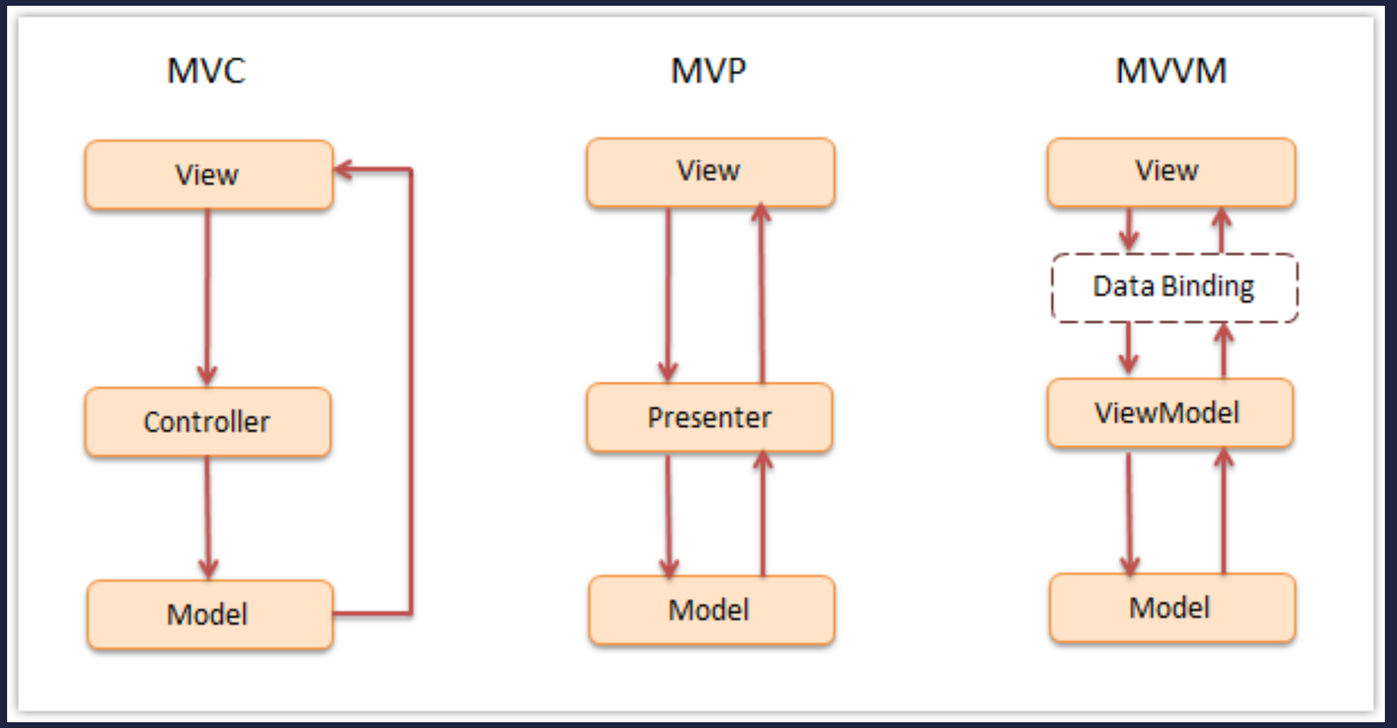
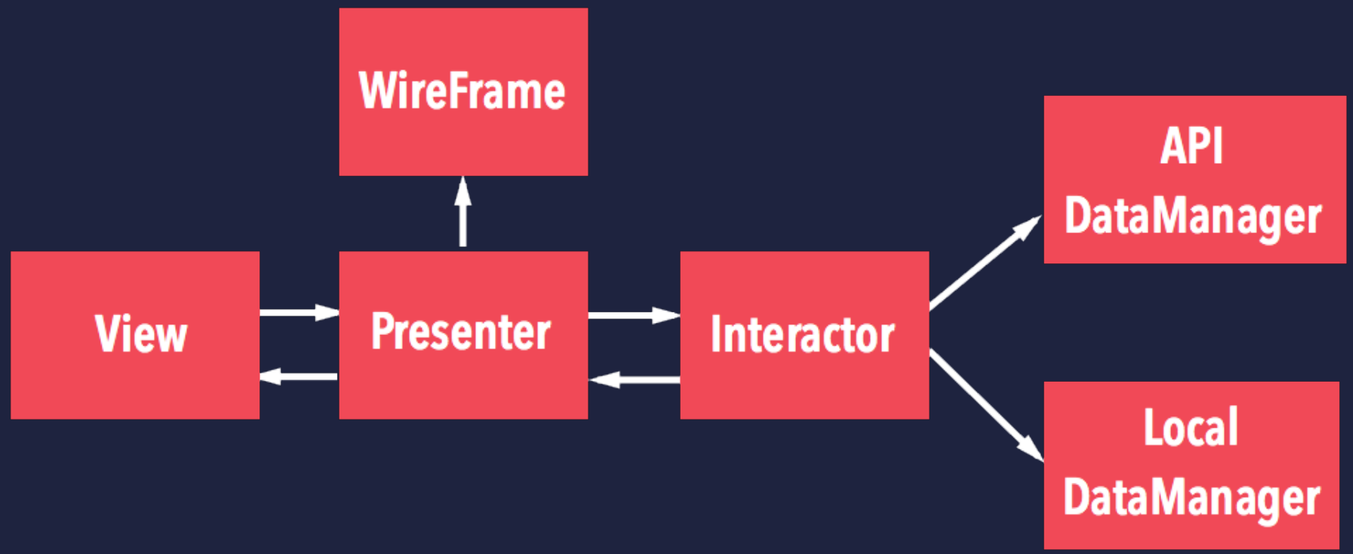
VIPER

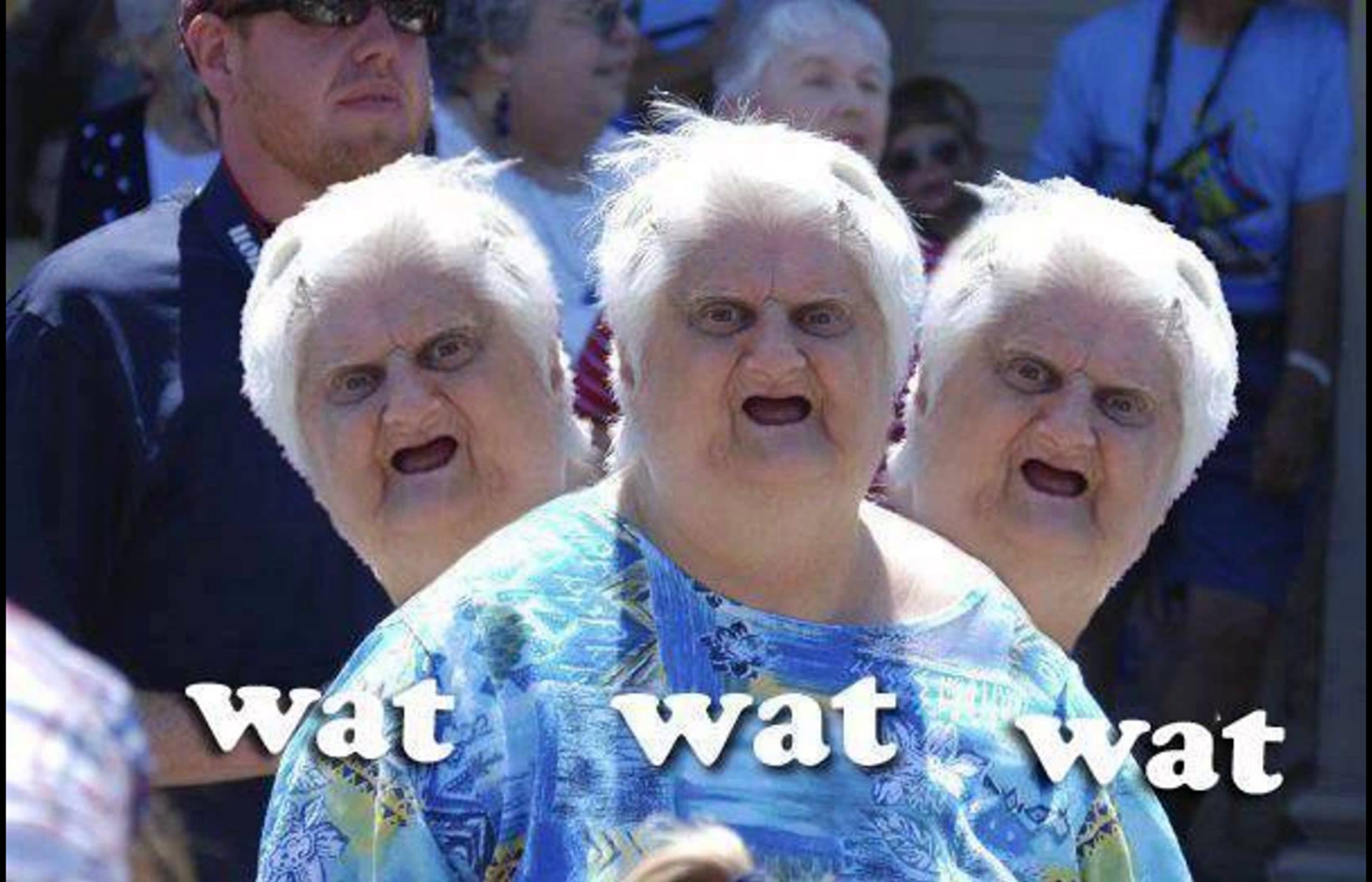
VIEW, INTERACTOR, PRESENTER, ENTITY, AND ROUTING

OBC.IO - VIPER

WHY VIPER  ?

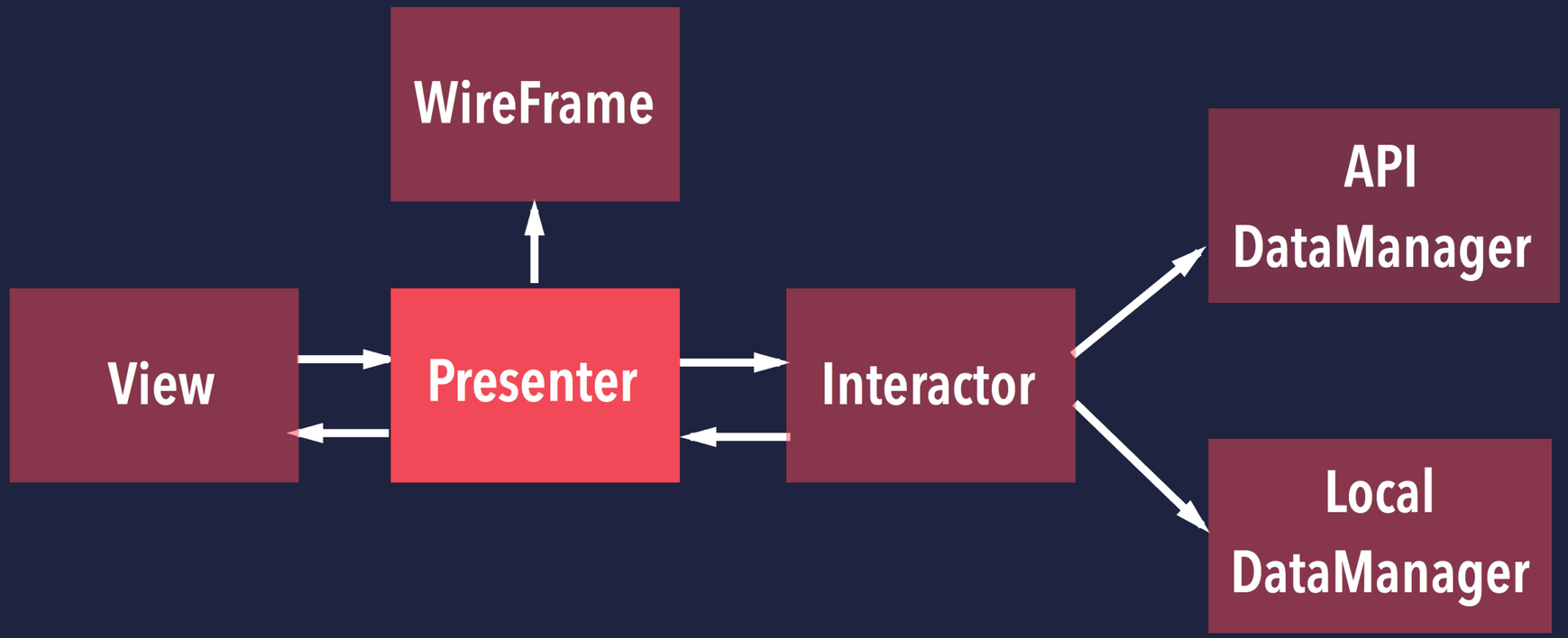

MVC
View
Controller
Model
MVP
View
Presenter
Model
MVVM
View
Data Binding
ViewModel
Model


WireFrame
View
Presenter
Interactor
API
DataManager
Local
DataManager


wat
wat
wat

VIEW

- Shows the content received from the presenter
  - Notifies user's actions to the presenter
- The presenter doesn't know anything about UI


WireFrame
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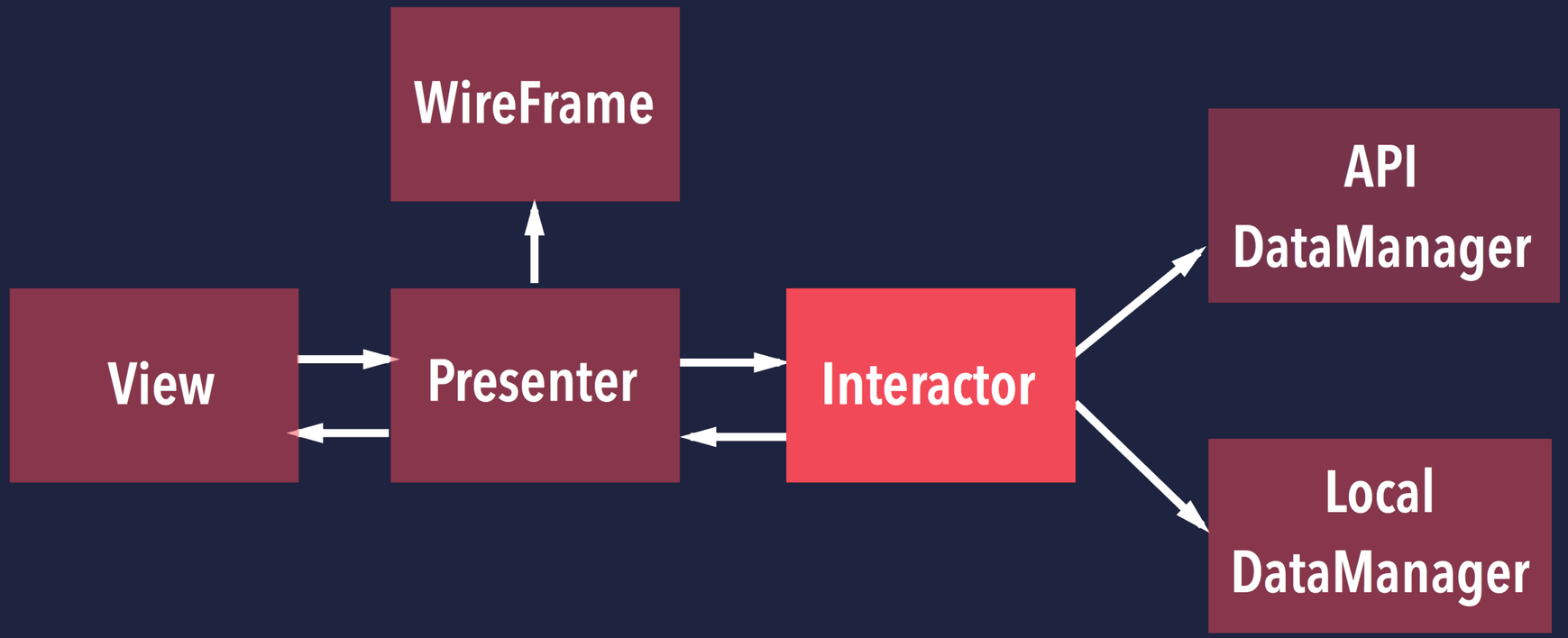
PRESENTER

- Includes the logic to format the view
- Gets the data from the interactor
- Receives actions from the view and traduces them into: *Navigation actions (wireframe) and Interactor requests*


WireFrame
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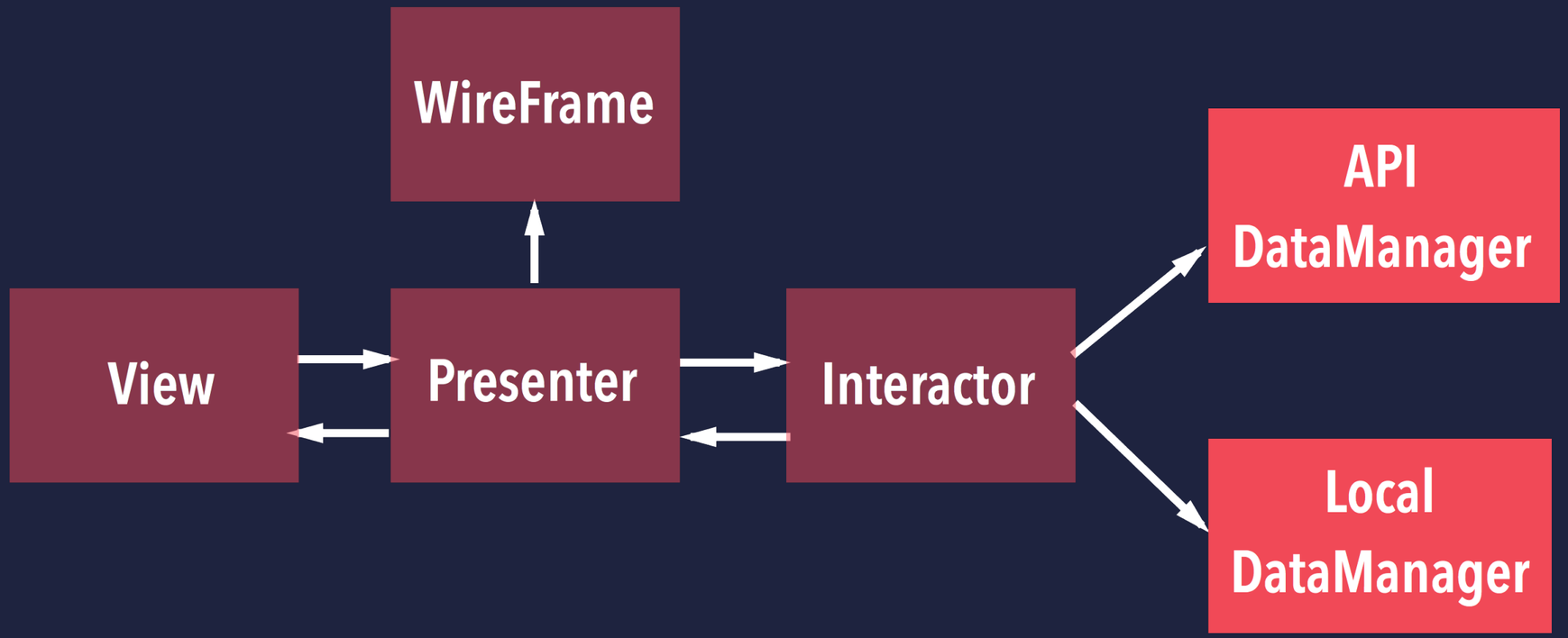
INTERACTOR

- Associated to an unique use case of the application
  - Works with PONSO entities
  - Coordinates both data managers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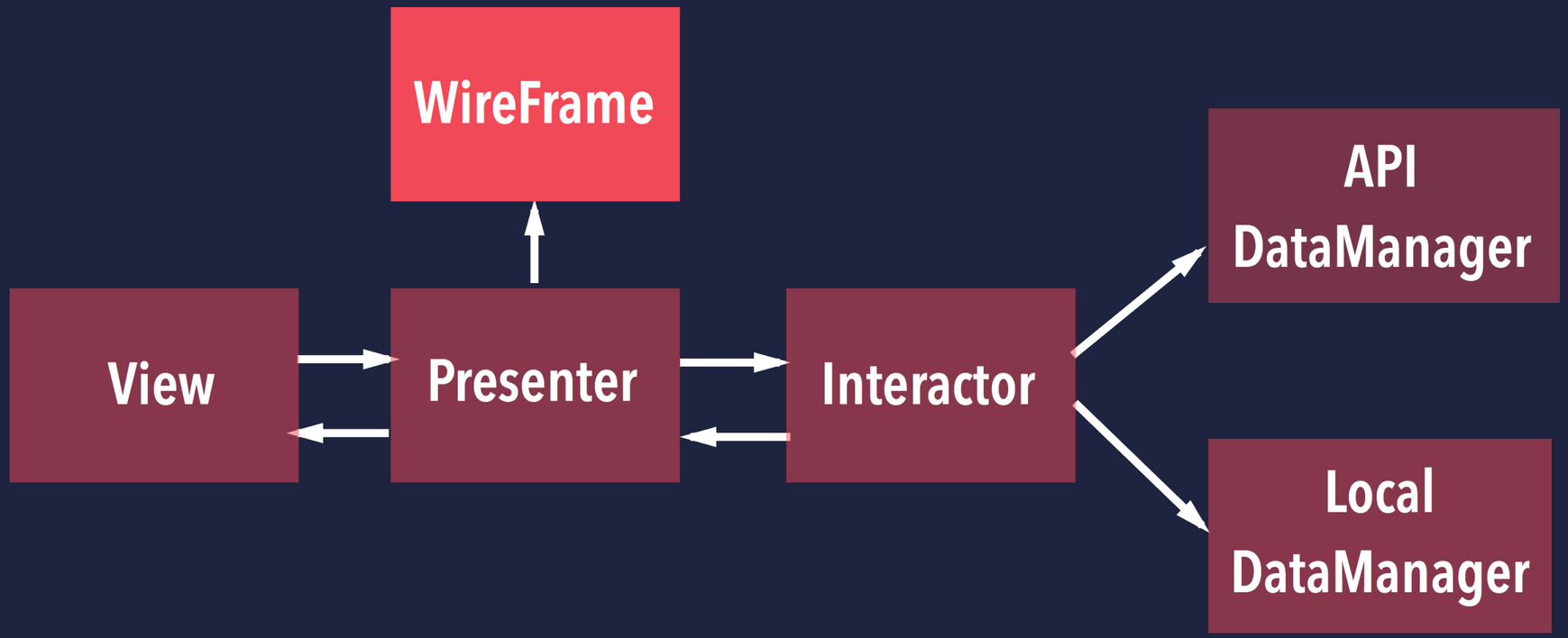
DATAMANAGER

- Provider of entities for the Interactor
- Responsible of the persistence (Web and Local)
- The entities don't know about how to persist themselves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WIREFRAME

- Initializes the VIPER module
- It knows how to navigate
- Delegate of transitions animations

KEEP IN MIND

PROTOCOLS

DEPENDENCY INVERSION

INTERFACE SEGREGATION

(SOLID)

STRONG/WEAK

BE CAREFUL WITH RETAIN CYCLES 🤓

```
@interface TweetDetailViewController: UIViewController
@property (nonatomic, strong) id <TweetDetailPresenterInput> presenter;
@end

@interface TweetDetailPresenter: NSObject<TweetDetailPresenterInput>
@property (nonatomic, weak) id <TweetDetailViewInput> view;
@end

@implementation TweetDetailPresenter
- (void)sendTweet:(NSString*)tweet
{
  __weak typeof(self) welf = self;
  [self.view showLoader];
  [self.interactor sendTweetWithCompletion:^(NSError *error) {
    [welf.view hideLoader];
    if (!error) [welf.wireframe moveBack];
  }];
}
@end
```

ENTITIES

DON'T PASS NSMANAGEDOBJECTS!

USE PONSOS INSTEAD

```
@interface TweetEntity: NSObject
@property (nonatomic, strong) NSString *body;
@property (nonatomic, strong) NSString *authorName;
@property (nonatomic, strong) NSDate *creationDate;
+ (TweetEntity*)tweetEntityFromTweet:(Tweet*)tweet;
@end
```

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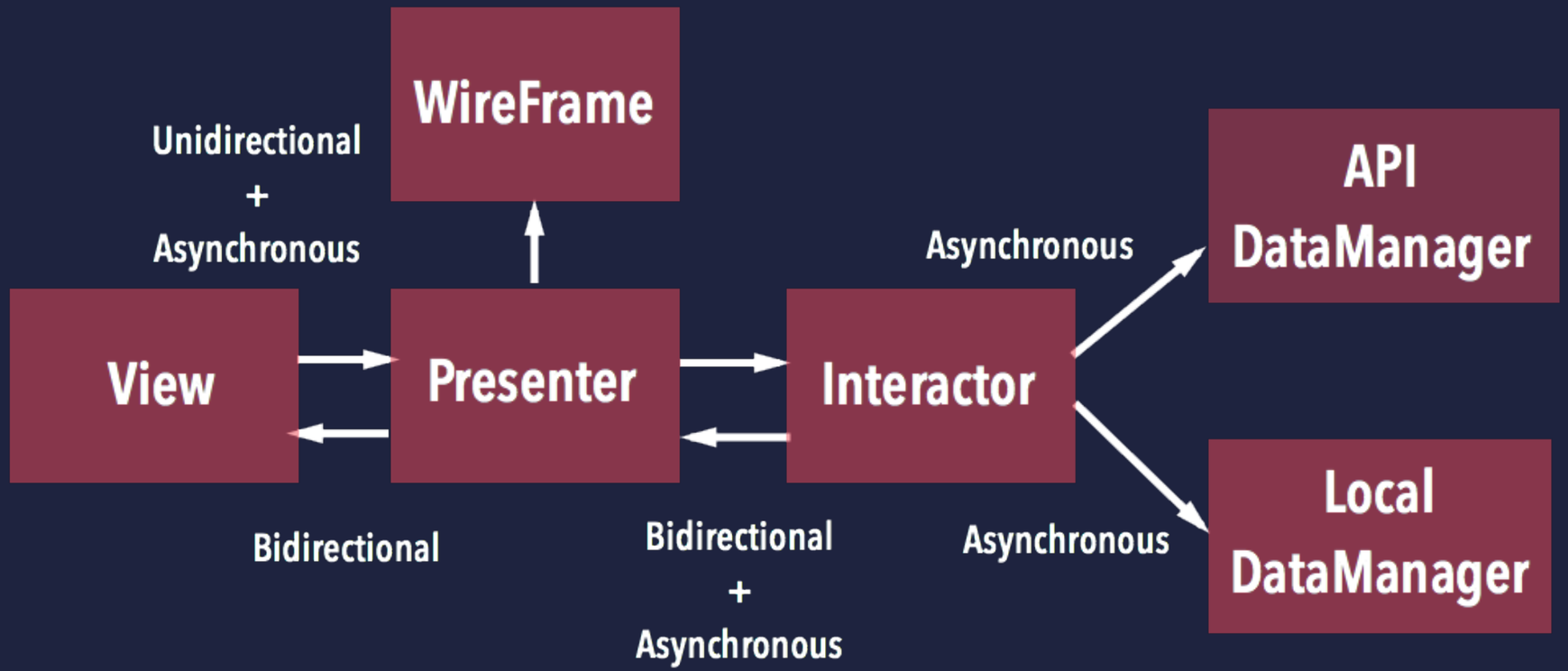
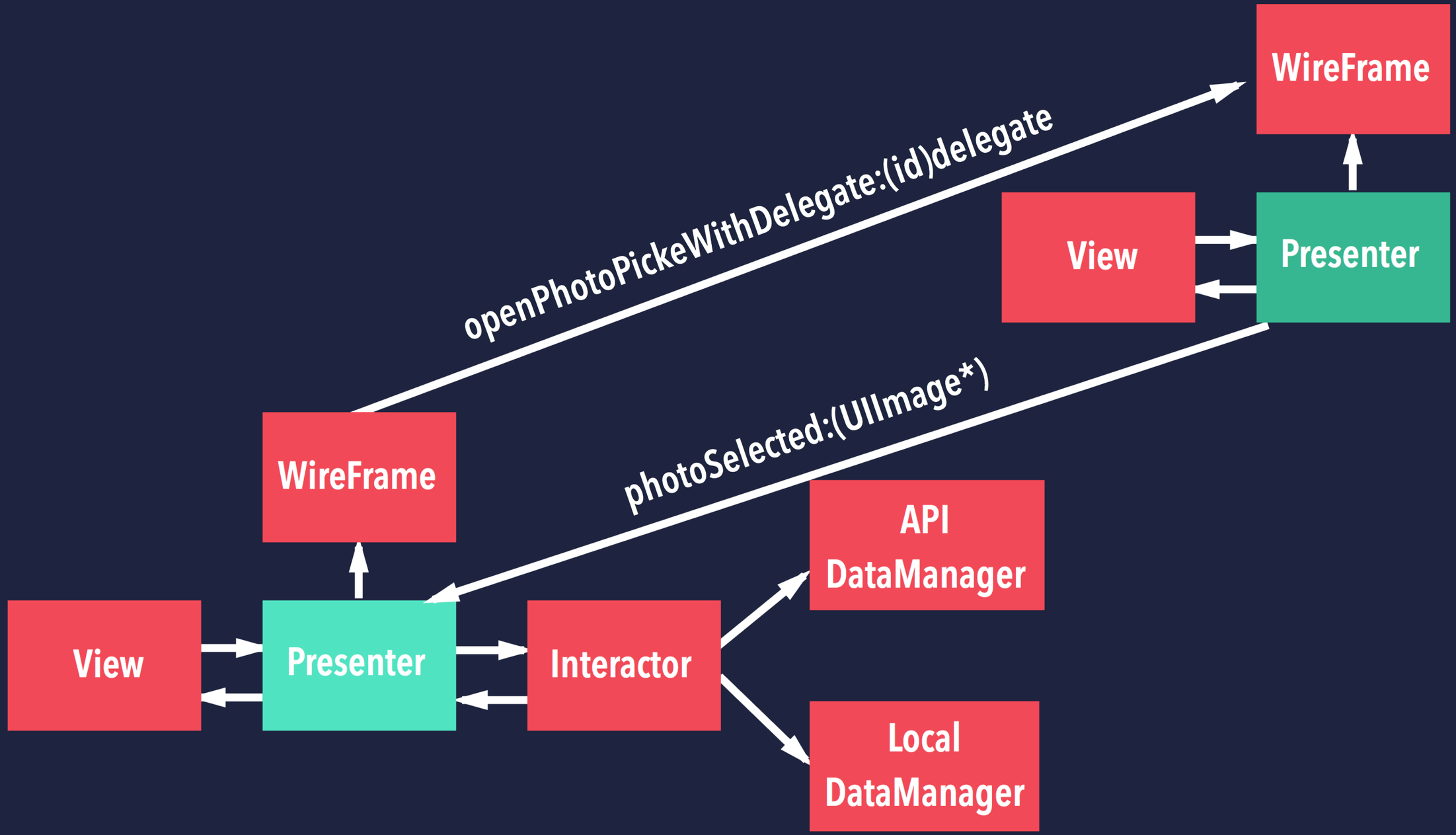
INNER COMMUNICATION

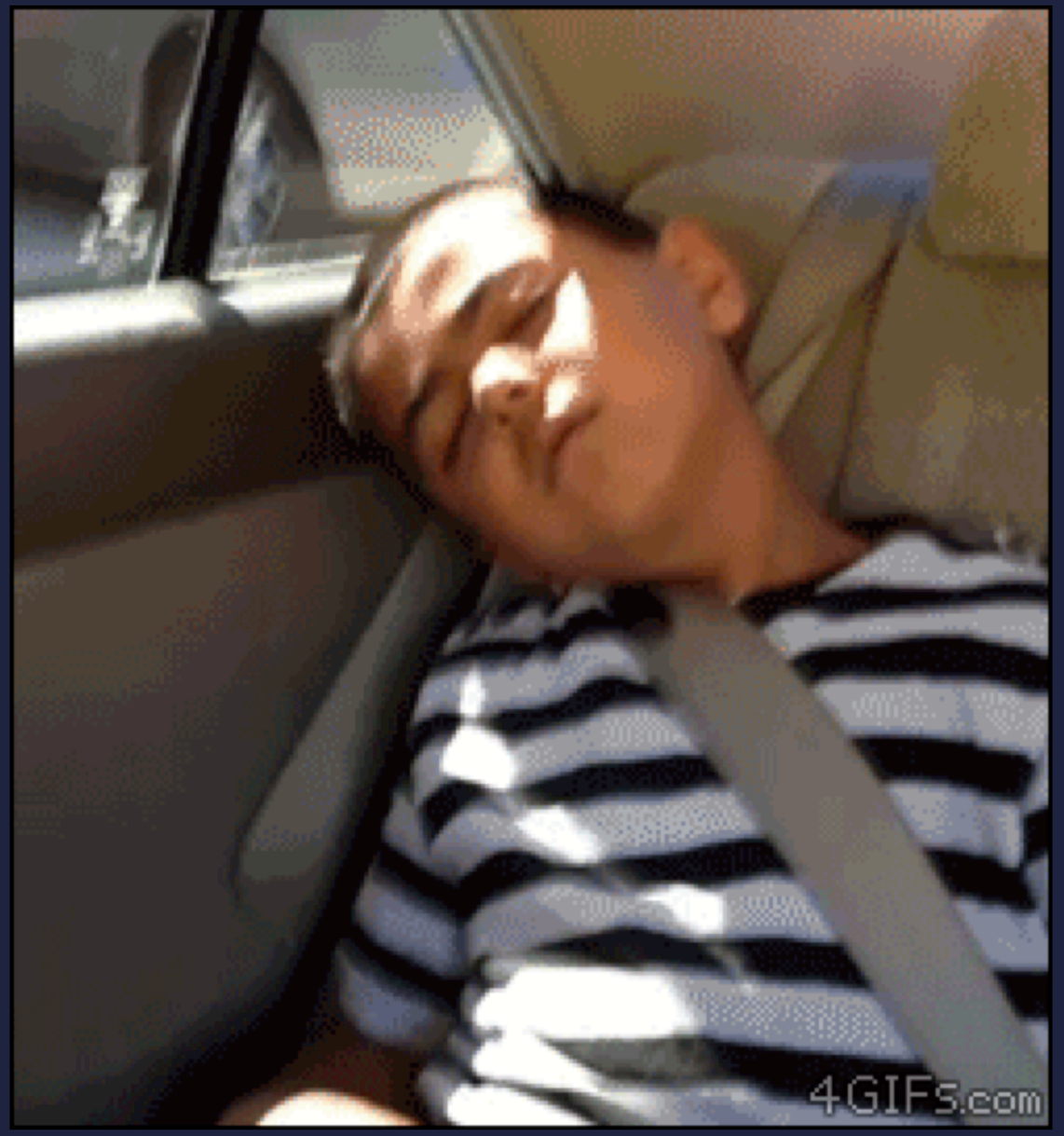

WireFrame
Unidirectional
+
Asynchronous
View
Presenter
Interactor
Asynchronous
API
DataManager
Local
DataManager
Asynchronous
Bidirectional
Bidirectional
+
Asynchronous

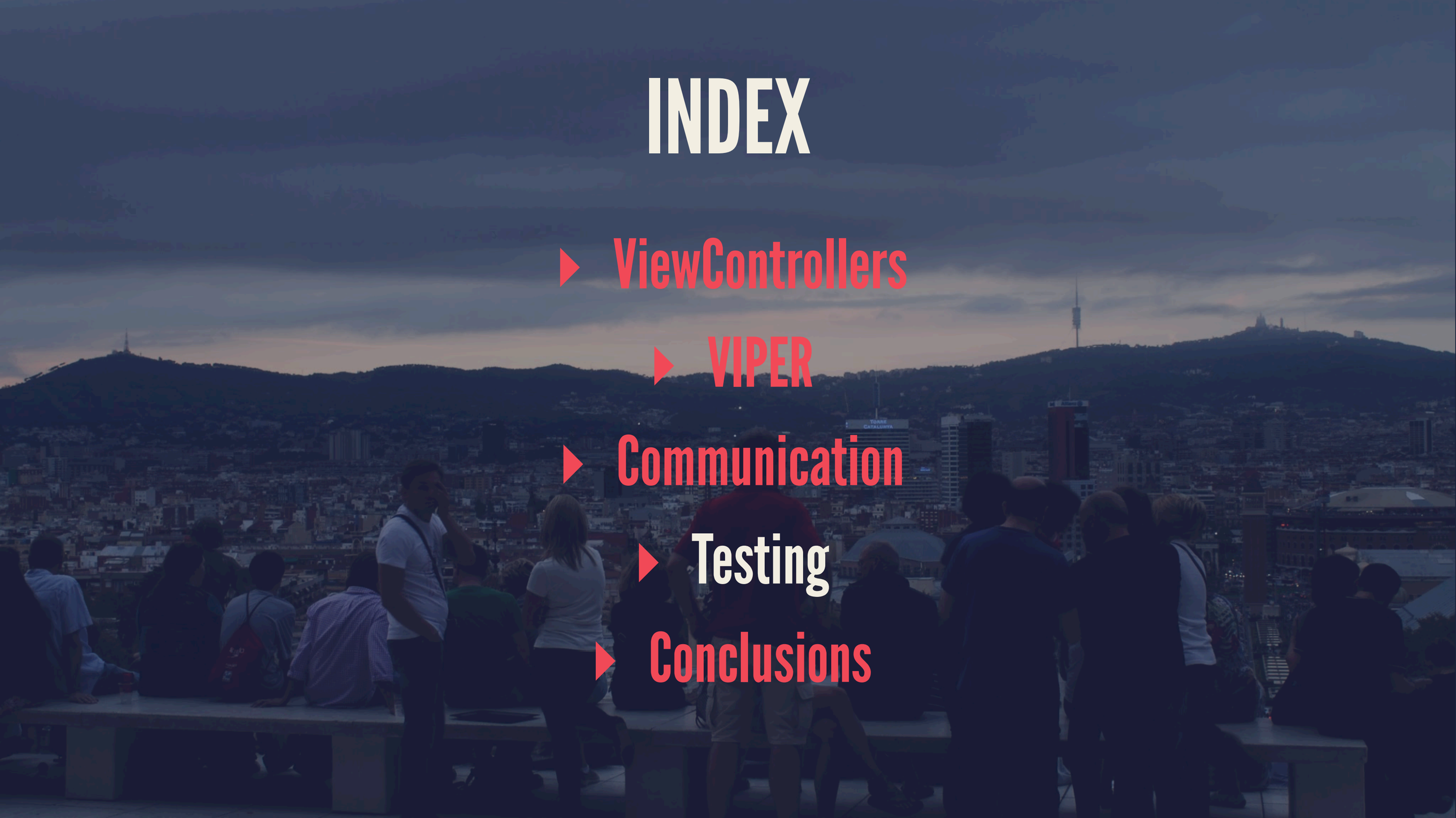
OUTER COMMUNICATION


WireFrame
openPhotoPickeWithDelegate:(id)delegate
View
Presenter
photoSelected:(UIImage*)
WireFrame
API
DataManager
View
Presenter
Interactor
Local
DataManager


WAIT...

TESTING


4GIFs.com



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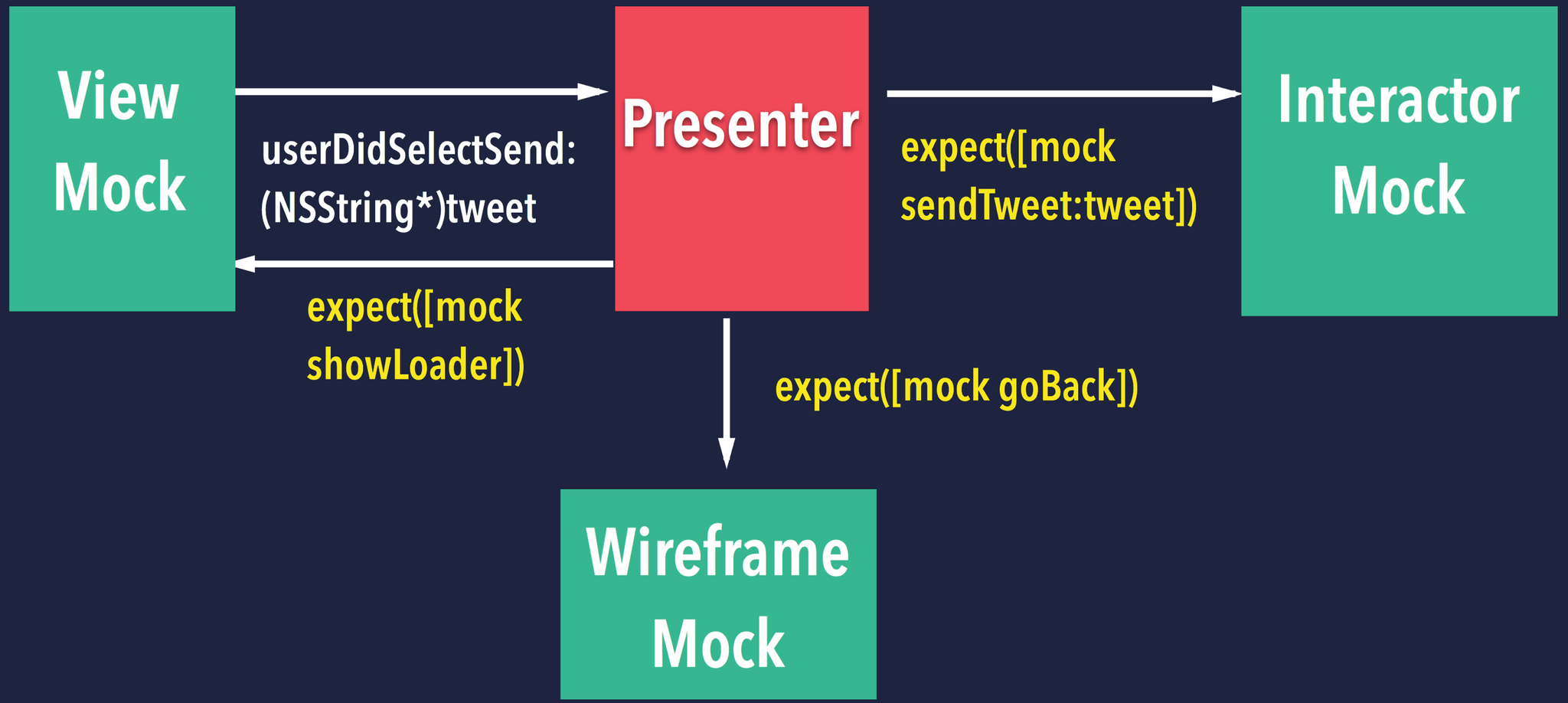
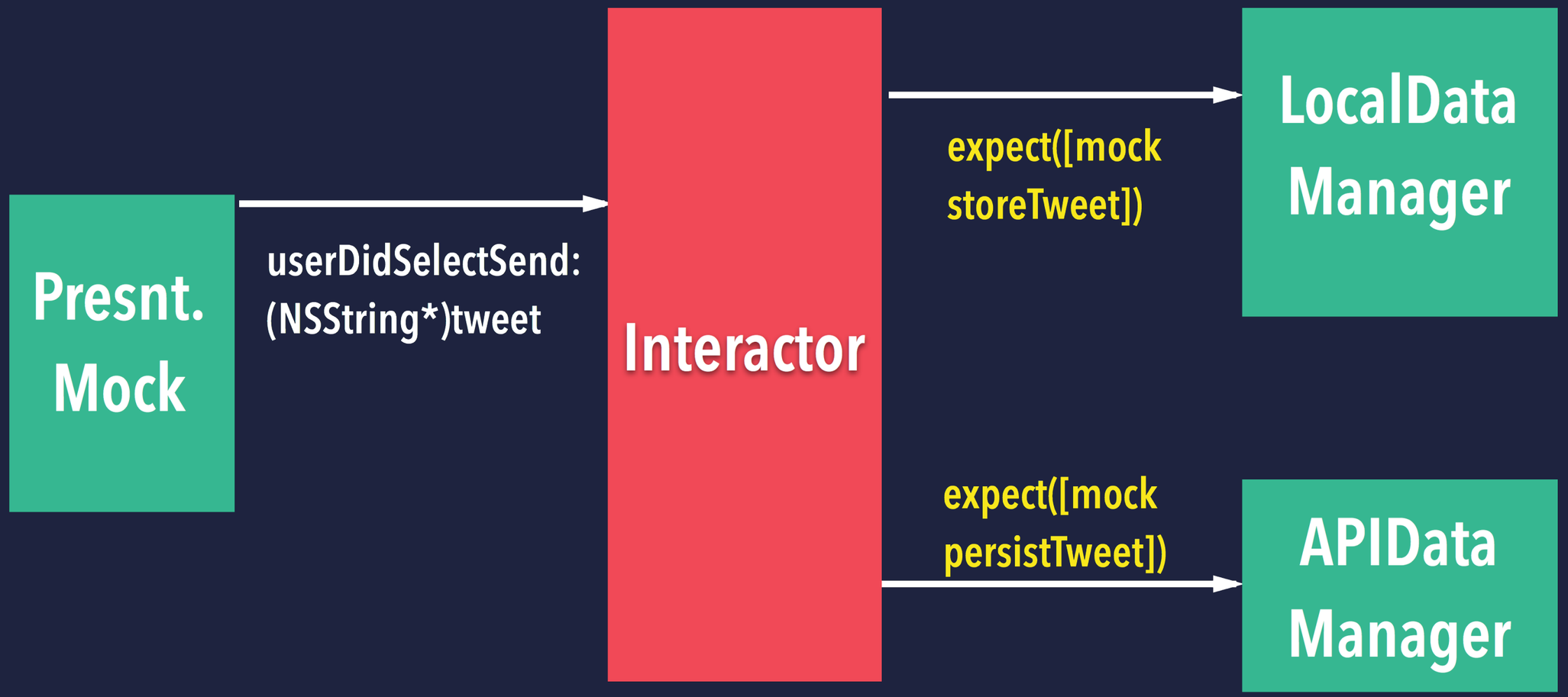
TESTING VIEW

Expected

TESTING PRESENTER



TESTING INTERACTOR



TESTING DATAMANAGER

Demo

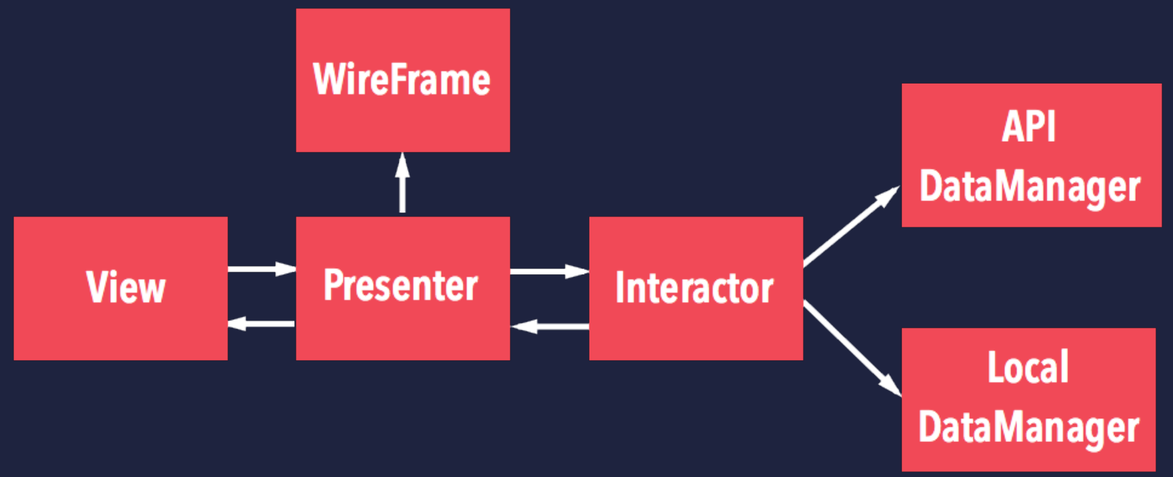
TWITTER APP

Login and Home views

WRITTEN 100% IN SWIFT

GITHUB.COM/PEPIBUMUR/VIPER-MODULE-GENERATOR

HANEKE, SUGARRECORD, SWIFTER, PURELAYOUT, PROGRESSHUD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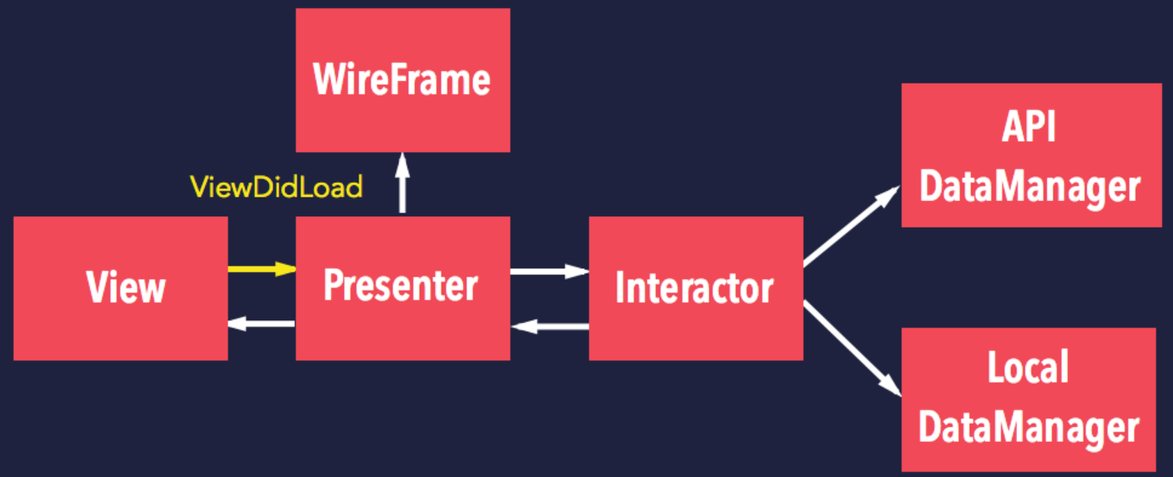
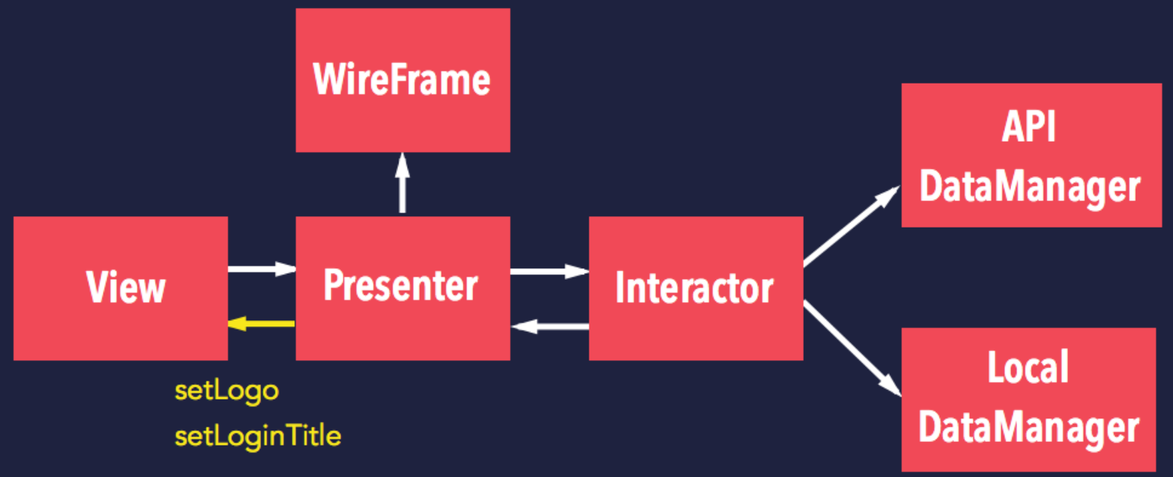
LOGIN FLOW



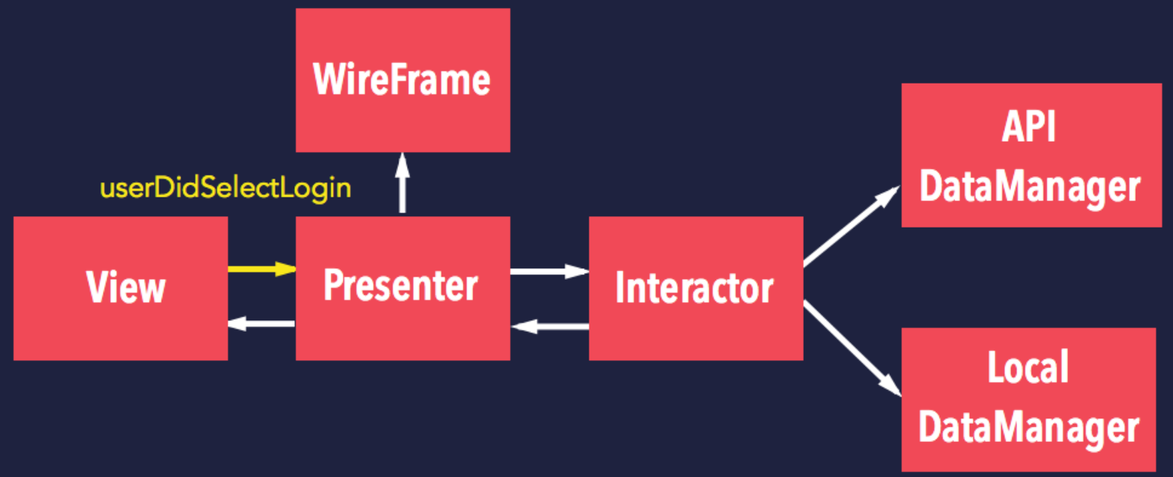
- The VIPER module is initialized and presented by the *Wireframe*
- The view notifies that DidLoad to the *Presenter*

```
override func viewDidLoad() {
    self.setupSubviews()
    self.setupConstraints()
    self.setNeedsStatusBarAppearanceUpdate()
    self.presenter?.viewDidLoad()
}
```



- The *Presenter* formats the View's content

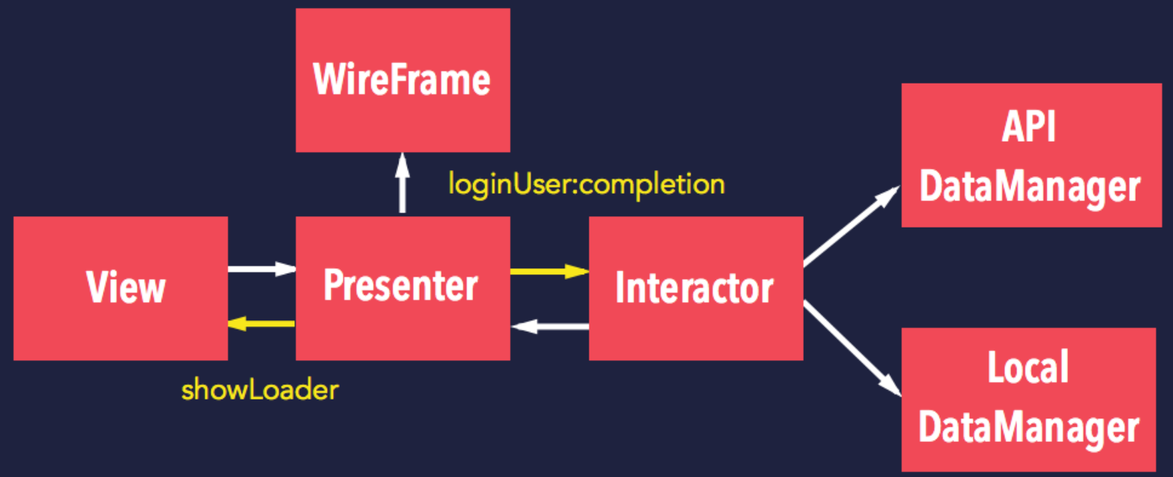
```
func viewDidLoad()
{
    self.view?.setLoginTitle("Login Twitter")
    self.view?.setLogo(UIImage(named: "twitter_logo")!)
}
```



When the user taps on Login

- The *View* notifies the *Presenter*

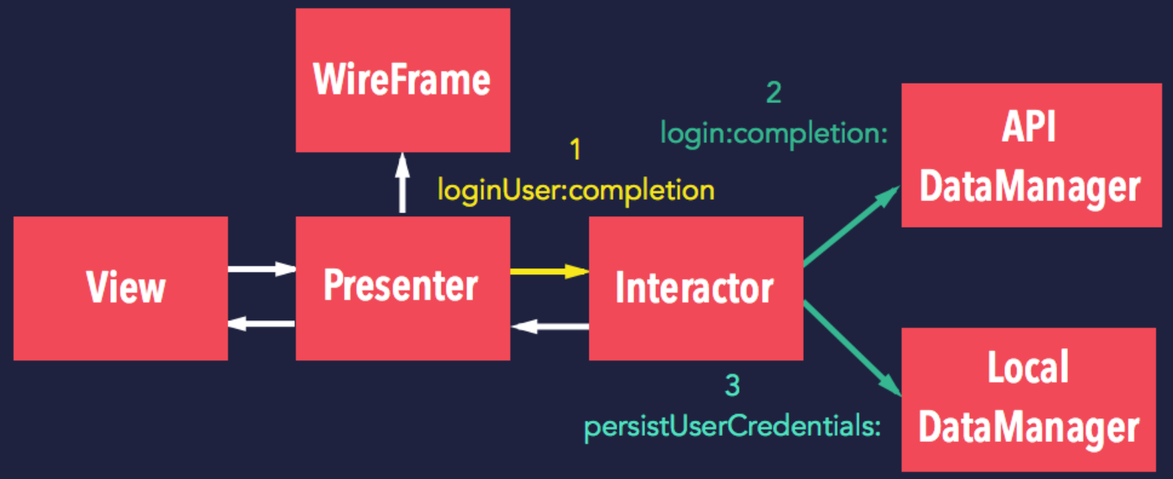
```
func userDidSelectLogin(sender: AnyObject)
{
    self.presenter?.userDidSelectLogin()
}
```



The *Presenter*:

- Tells the *View* to show a loader
- Asks the *Interactor* for Login

```
func userDidSelectLogin()
{
    self.view?.showLoader()
    self.interactor?.login() { [weak self] (error: NSError?) -> () in
        if error != nil {
          // What should we do here?
        }
        else {
          self?.view?.hideLoader()
          // And here?
        }
    }
}
```



The *Interactor:*

- Login the user through the *APIDataManager*
- Persists the user's credentials using the *LocalDataManager*

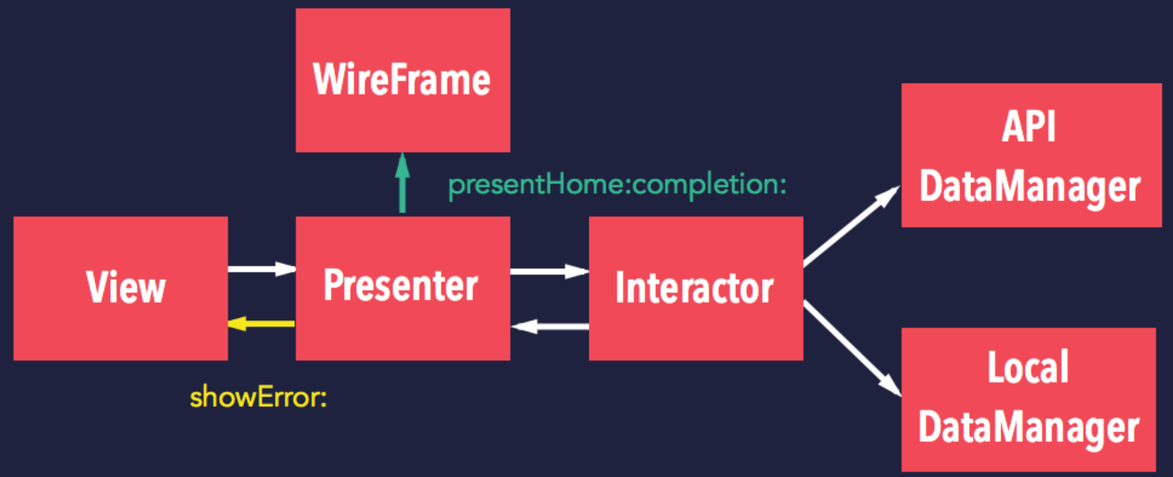
```
func login(completion: (error: NSError?) -> ())
{
    self.APIDataManager?.login({ [weak self] (error: NSError?, credentials: TwitterLoginItem?) -> () in
        if (credentials != nil) {
            self?.localDatamanager?.persistUserCredentials(credentials: credentials!)
            completion(error: nil)
        }
        else {
            completion(error: error)
        }
    })
}
```

APIDATAMANAGER

```
func login(completion: (error: NSError?, loginItem: TwitterLoginItem?) -> ())
{
    TwitterClient.requestAccesss { (error, credentials) -> () in
        if credentials != nil {
            completion(error: nil, loginItem: TwitterLoginItem(swifterCredentials: credentials!))
        }
        else {
            completion(error: error, loginItem: nil)
        }
    }
}
```

LOCALDATAMANAGER

```
func persistUserCredentials(#credentials: TwitterLoginItem)
{
    TwitterAccountManager.persistAccount(fromLoginItem: credentials)
}
```



If the login fails

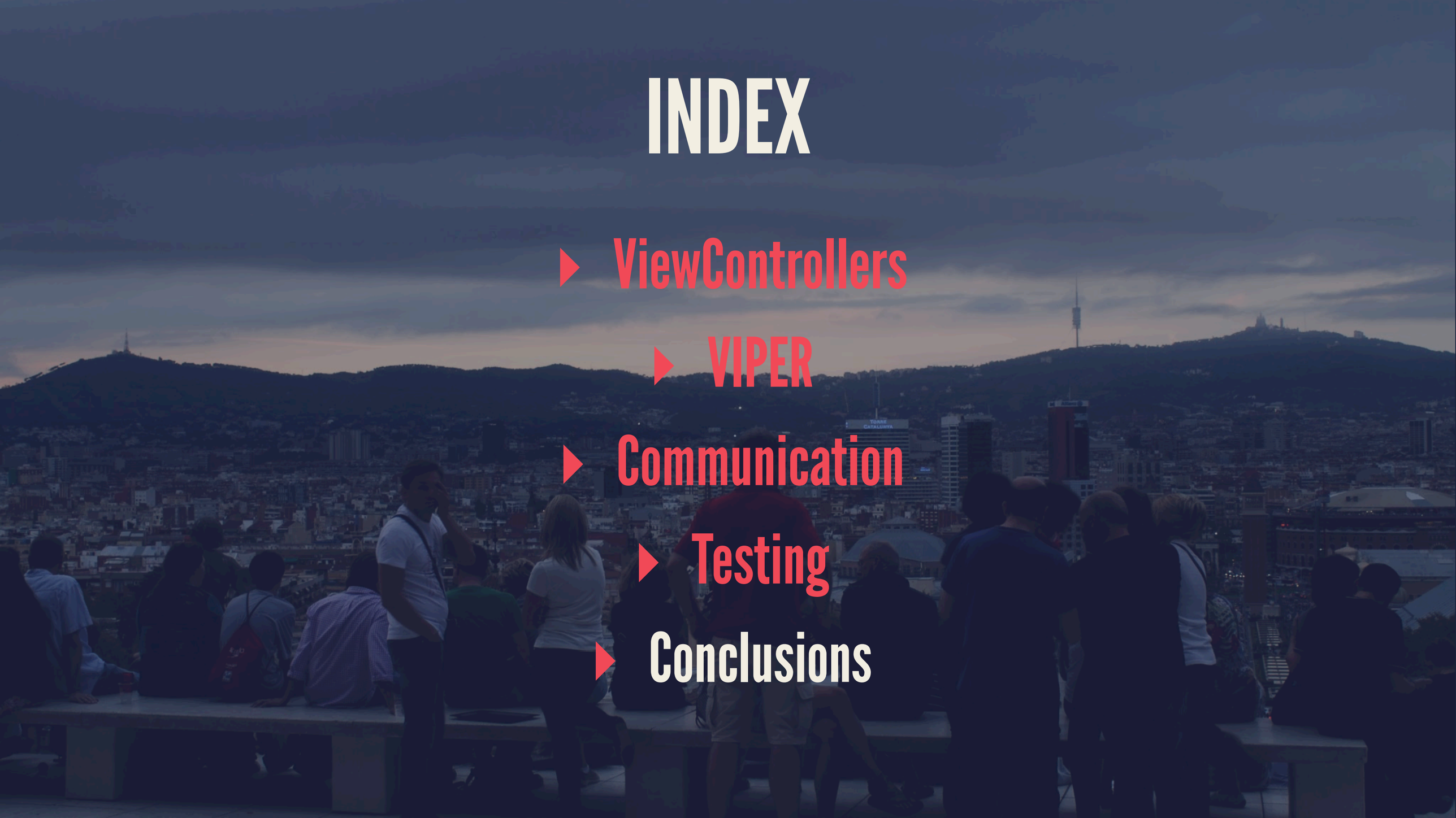
- The *Presenter* asks the *View* to show an error

```
func showError(let errorMessage: String)
{
    ProgressHUD.showError(errorMessage)
}
```

If the login success

- The *Presenter* asks the *Wireframe* to show the home view

Demo



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SOME CONCLUSIONS

- Lighter, more specific and readable classes
- Each team member can be working on a different component once the interfaces are defined
- There're no excuses for TDD 😛

TIPS

- Heavy work but you and you'll team will thank it
  - Keep in mind the SOLID principles
  - Refactor your components through iterations
- Decouple your code from the database models and data layers

RESOURCES

- VIPER Module Generator
- Objc.io post
- Mutual Mobile Engineering blog post
- Dobuts/Ideas/Suggestions on Github issues
- Slides http://bit.ly/14iWsPK

Thank
you

DOUBTS?