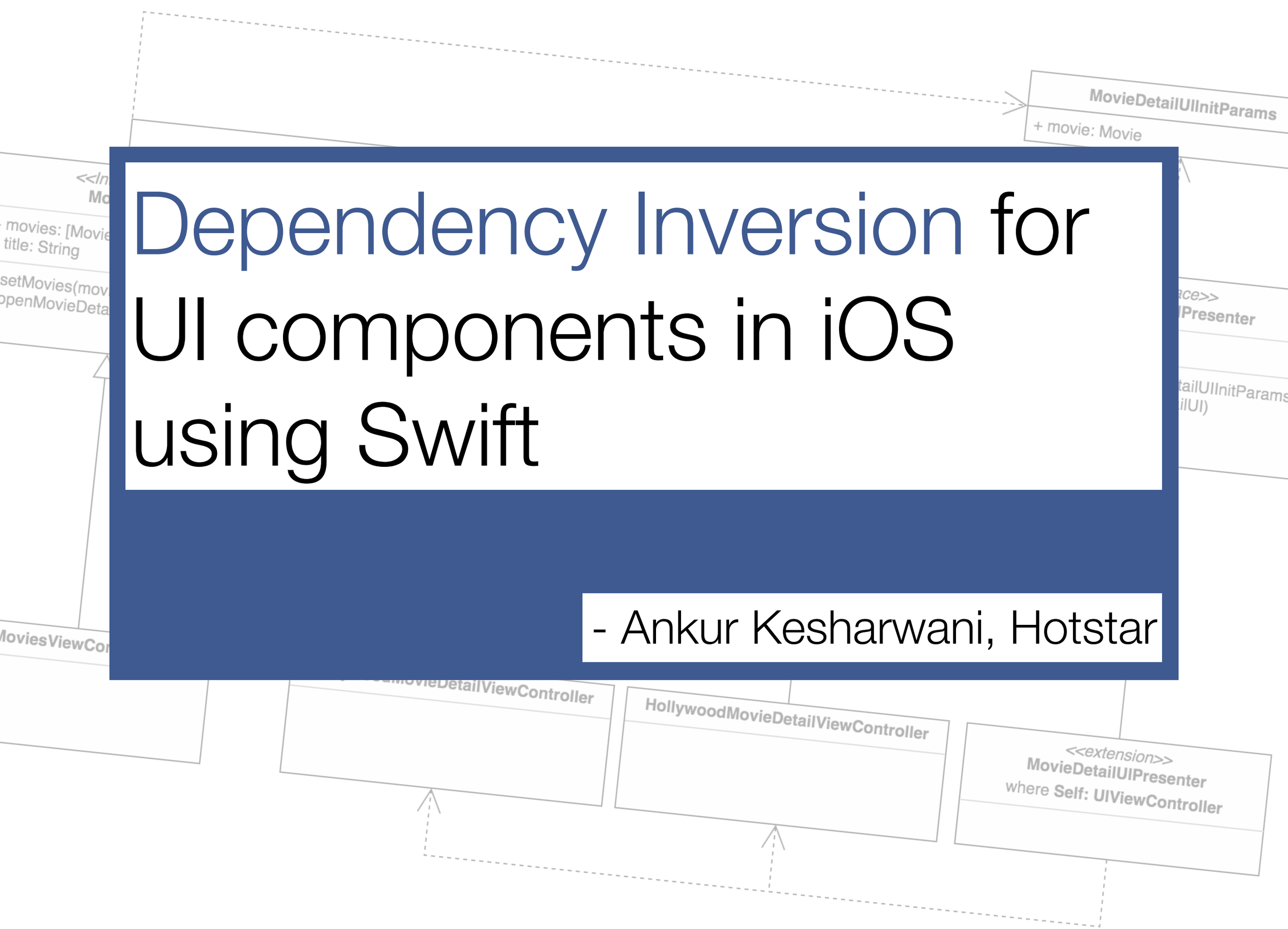
Dependency Inversion for UI components in iOS using Swift

- Ankur Kesharwani, Hotstar



About Me

- 4+ Years of development experience.
- Currently
    - Software Engineer at Hotstar.
- Former
    - Software Engineer, RoundGlass.
    - Founding Member & Tech Lead, Dogether.
    - Team Lead, Frankly
    - Software Engineer, Optimus Information

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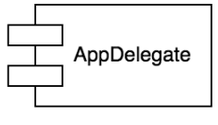

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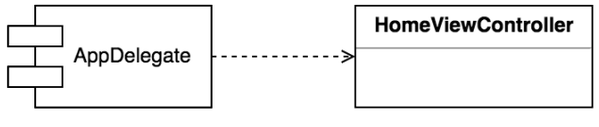

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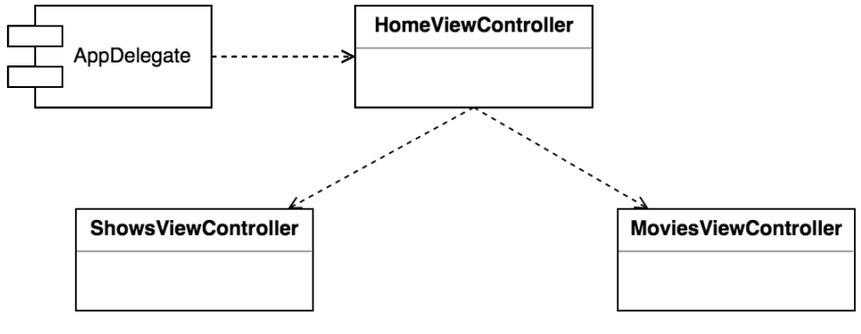

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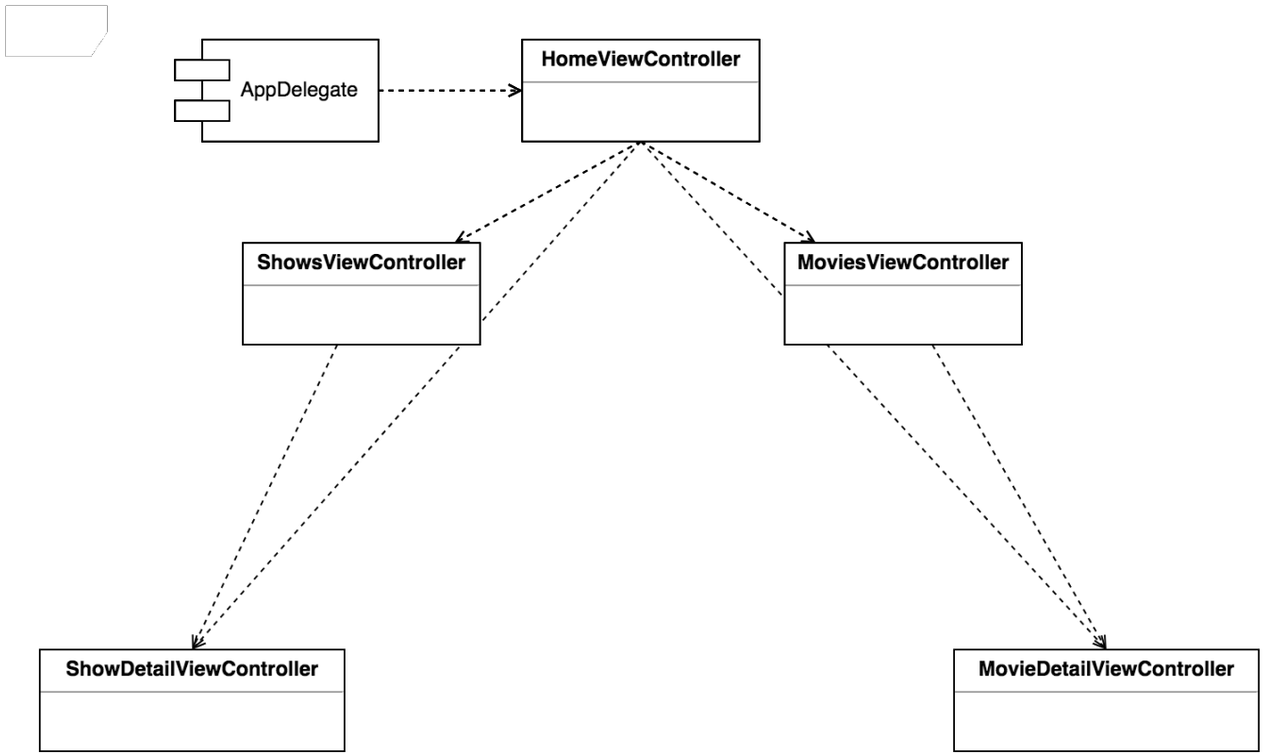

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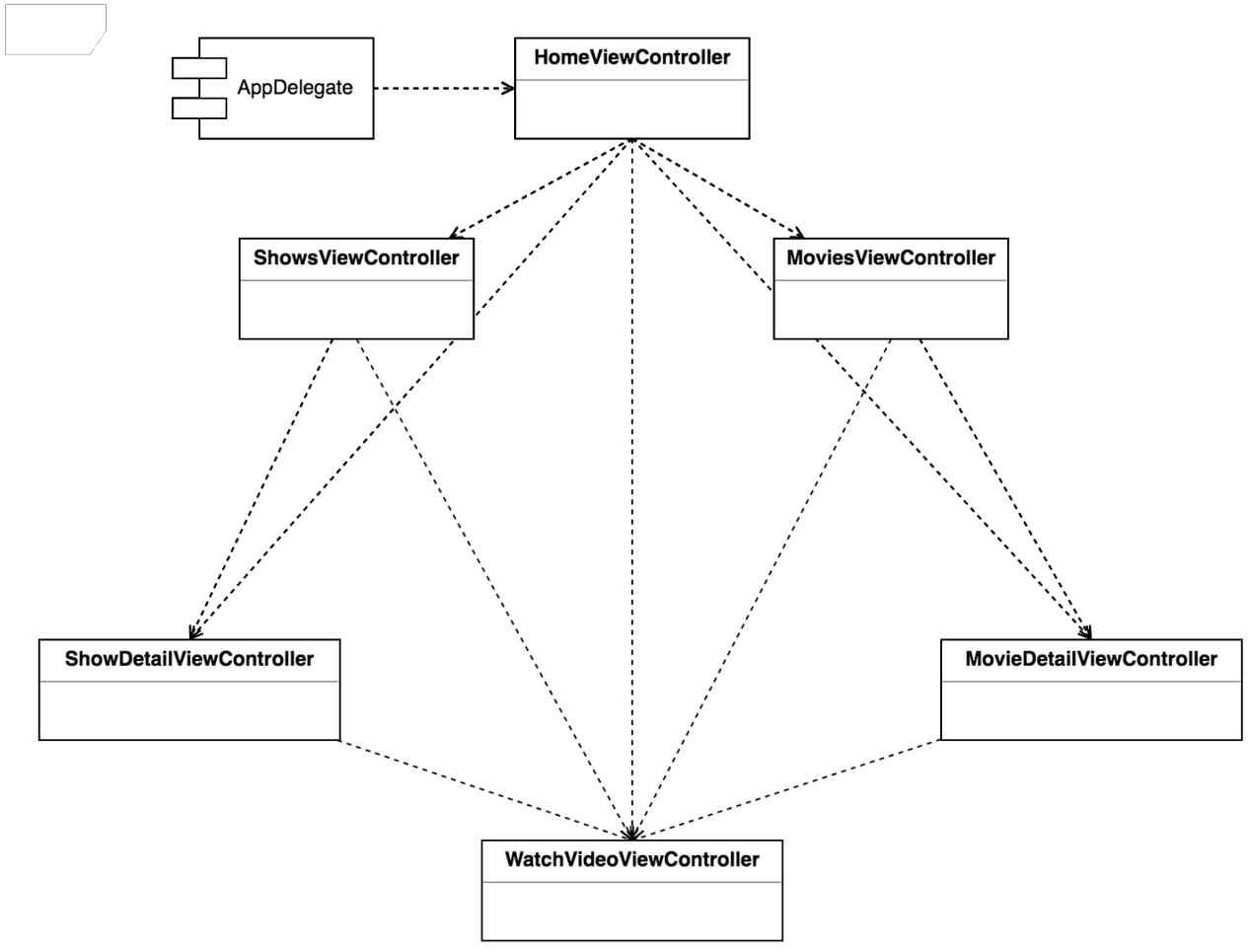

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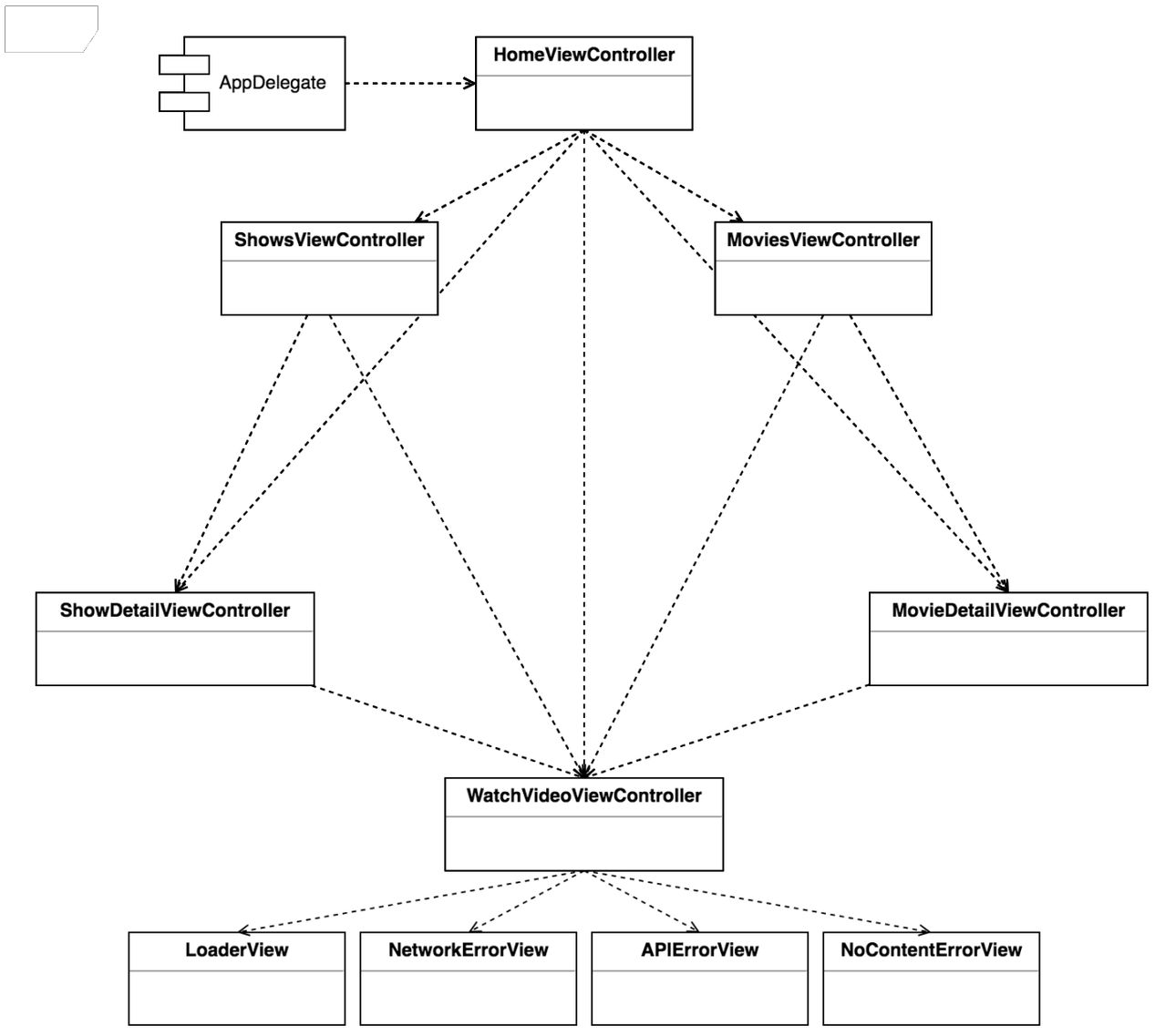

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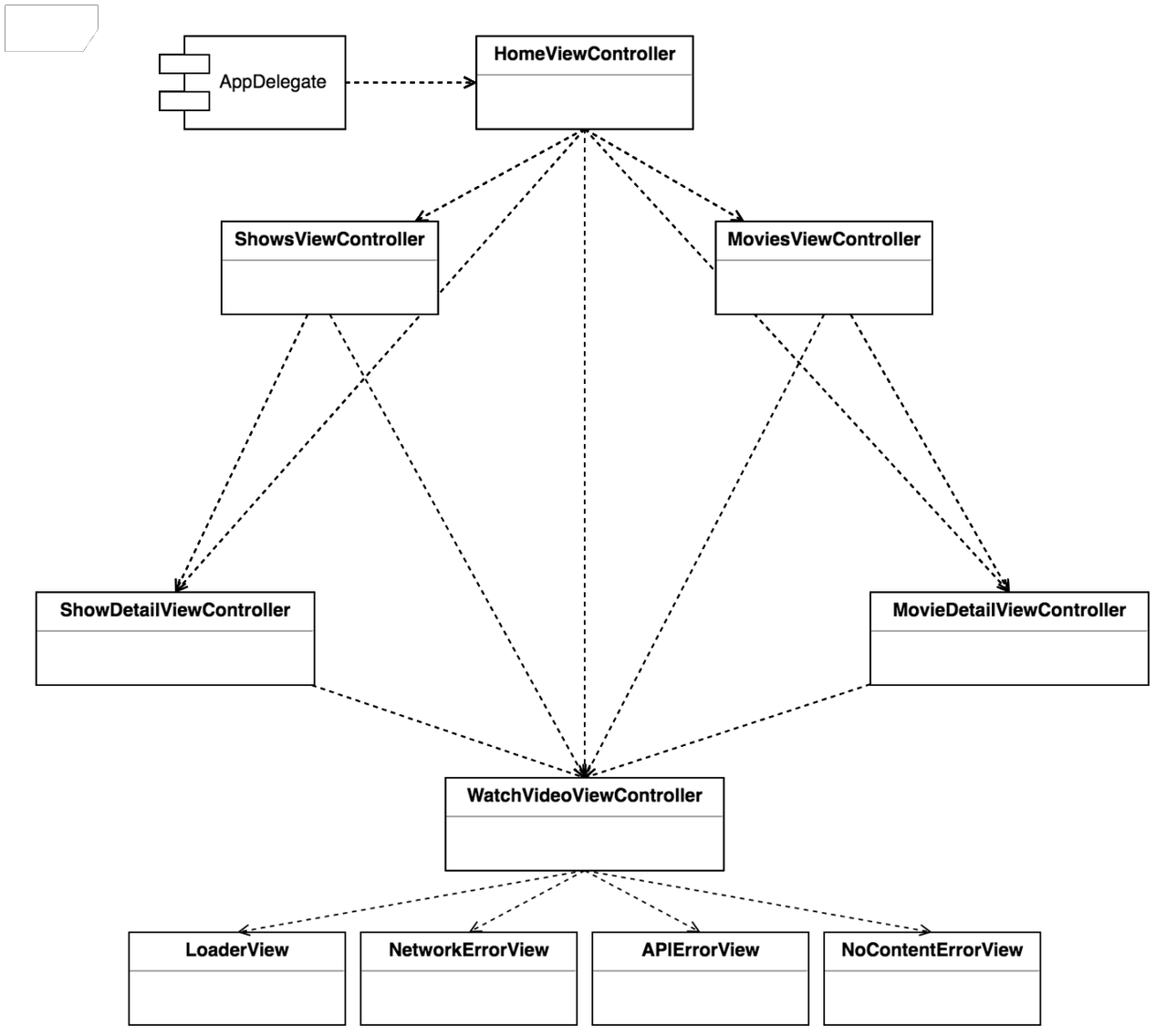

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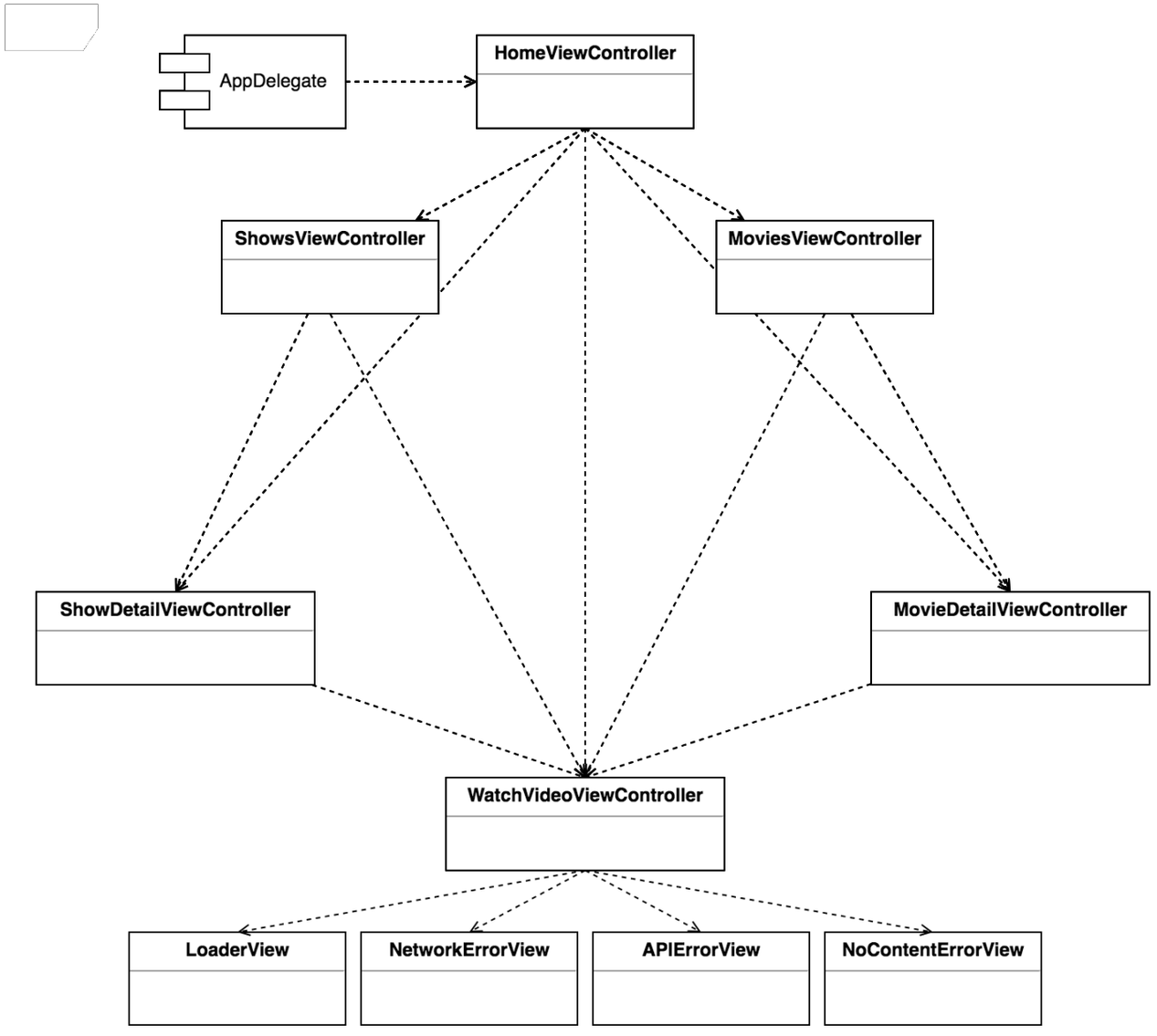
- This dependency flow makes top level modules dependent on lower level modules.
- When a lower level module changes, it can potentially break a top level module.



Dependency Ex. 1

```
class MoviesViewController: UIViewController {

    private func showMoviesDetailViewController(for movie: Movie) {

        // Instantiate
        let viewController = MoviesDetailViewController.init(nibName: "MoviesDetailViewController",
                                                              bundle: nil)

        // Set variables
        viewController.movie = movie

        // Present
        navigationController?.pushViewController(viewController, animated: true)

    }

}

class MoviesDetailViewController: UIViewController {

    var movie: Movie?

}
```

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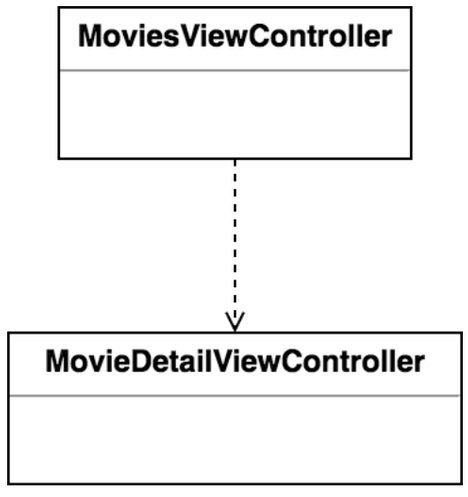

Dependency Ex. 2

```
class LoaderView: UIView {

}

class MoviesViewController: UIViewController {

    var loaderView: LoaderView?

    private func showLoader() {
        guard loaderView == nil else {
            return
        }

        let xib = UINib(nibName: "LoaderView", bundle: nil)
        self.loaderView = xib.instantiate(withOwner: nil, options: nil)[0] as? LoaderView

        if let loaderView = self.loaderView {
            view.addSubview(loaderView)
        }
    }

    private func hideLoader() {
        guard loaderView != nil else {
            return
        }

        loaderView?.removeFromSuperview()
    }
}
```

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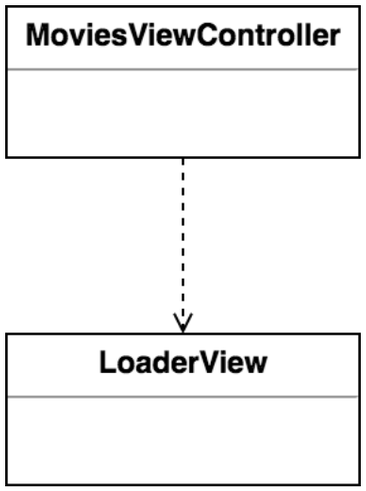

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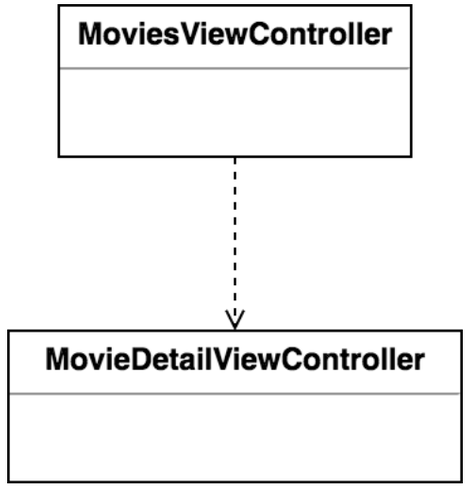

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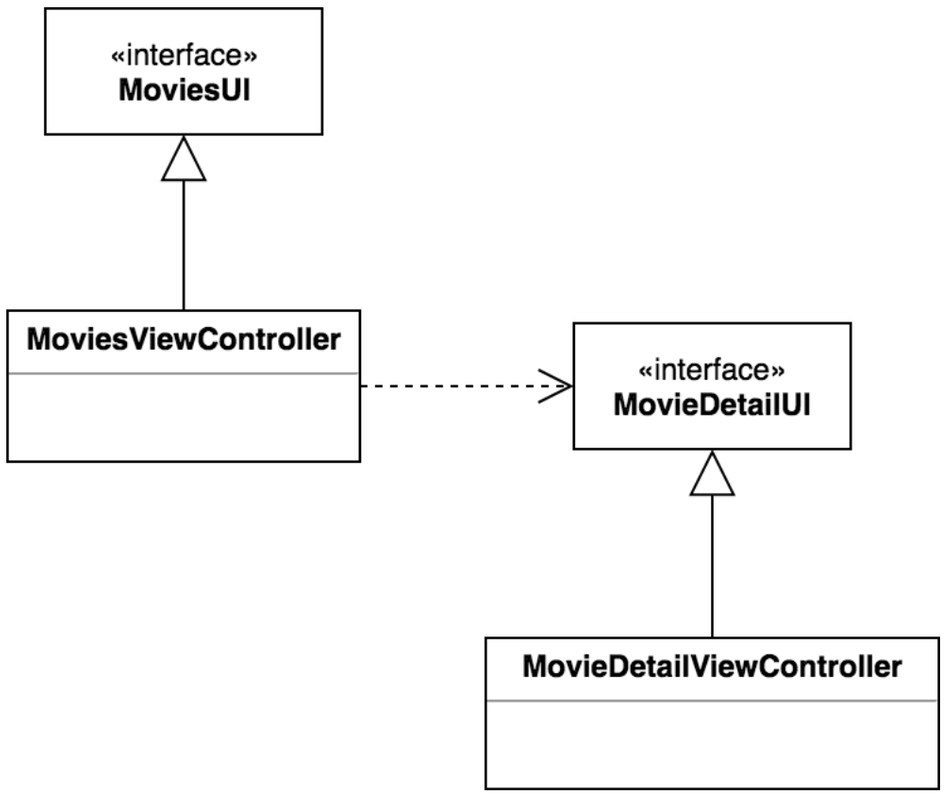

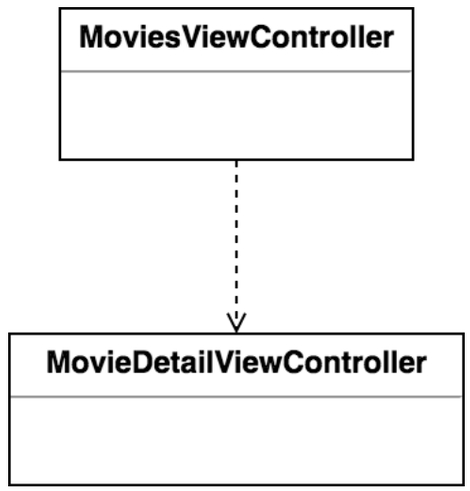

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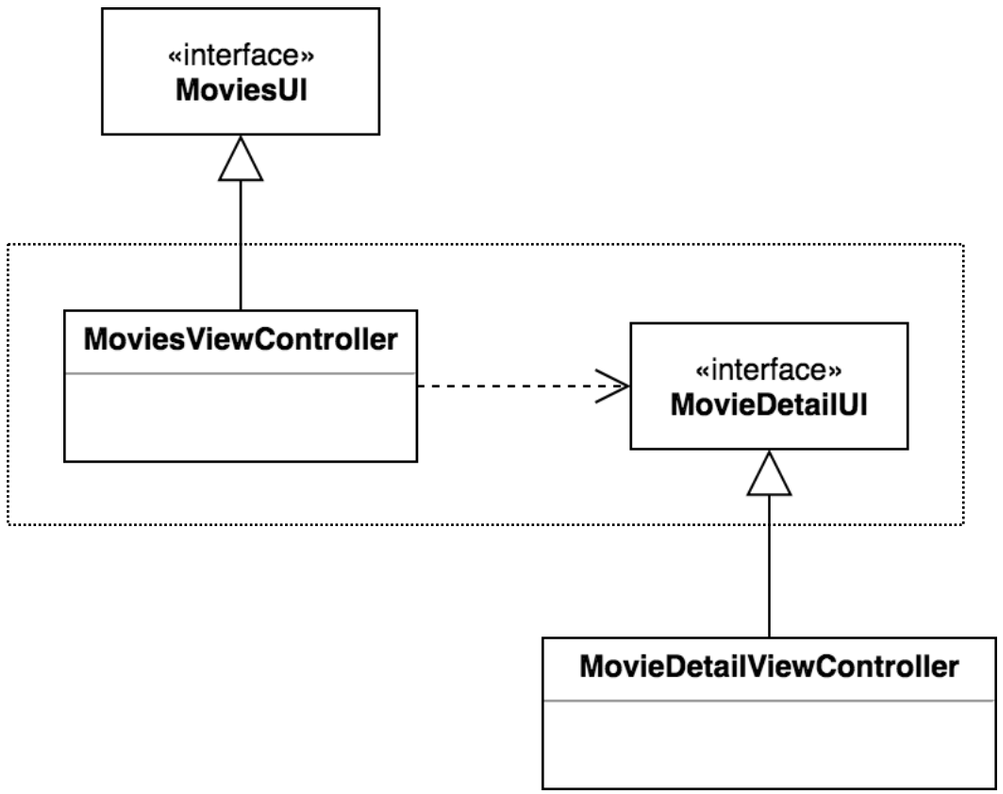

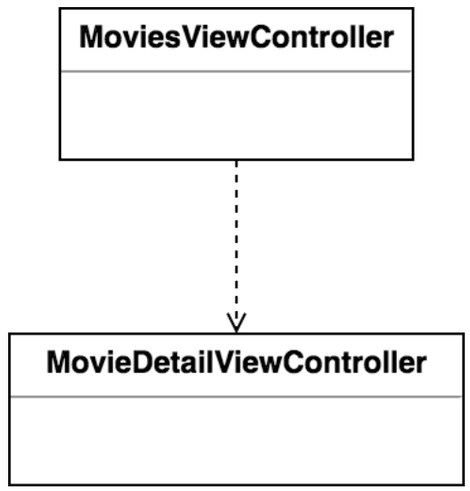

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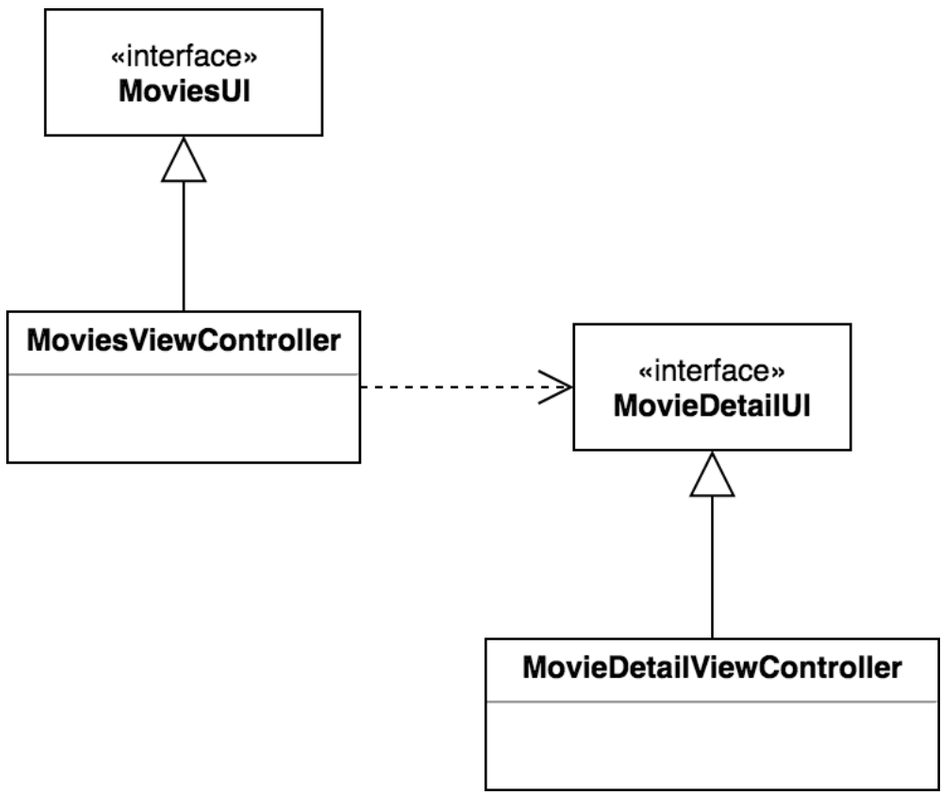

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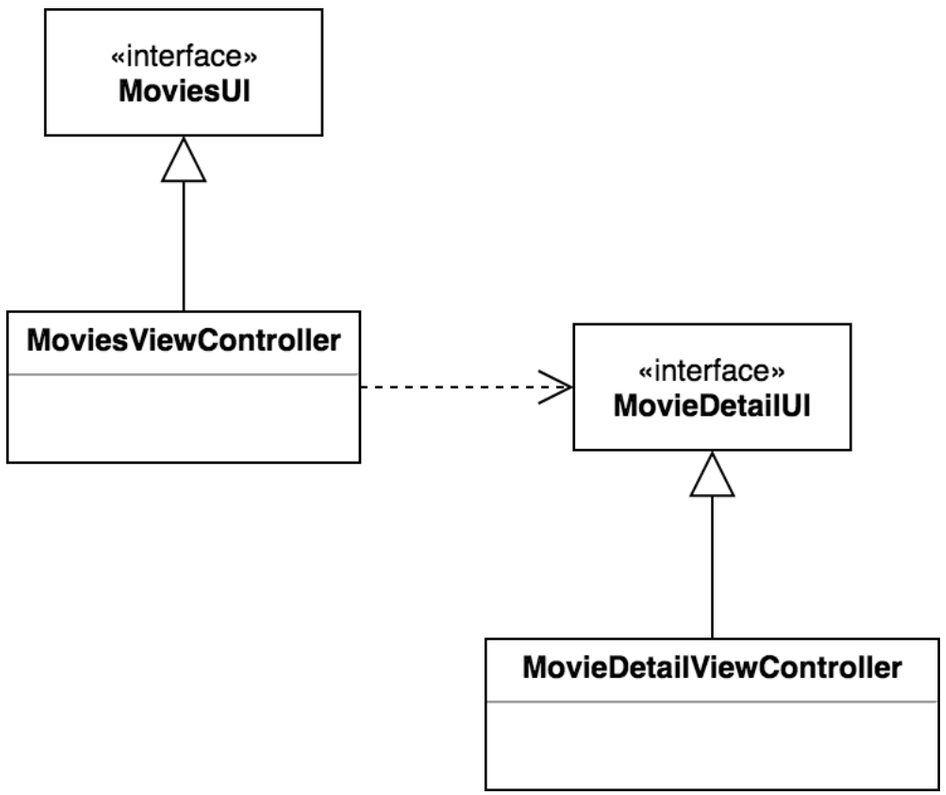

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- Dependency Injection is basically providing the objects that an object needs (its dependencies) instead of having it construct them itself.

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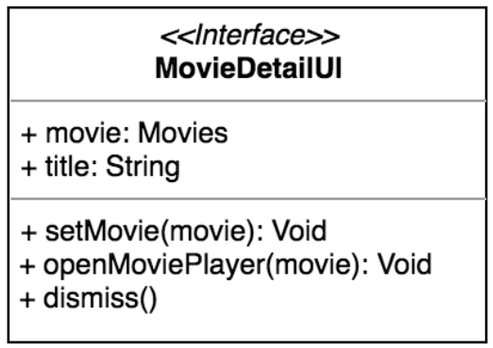
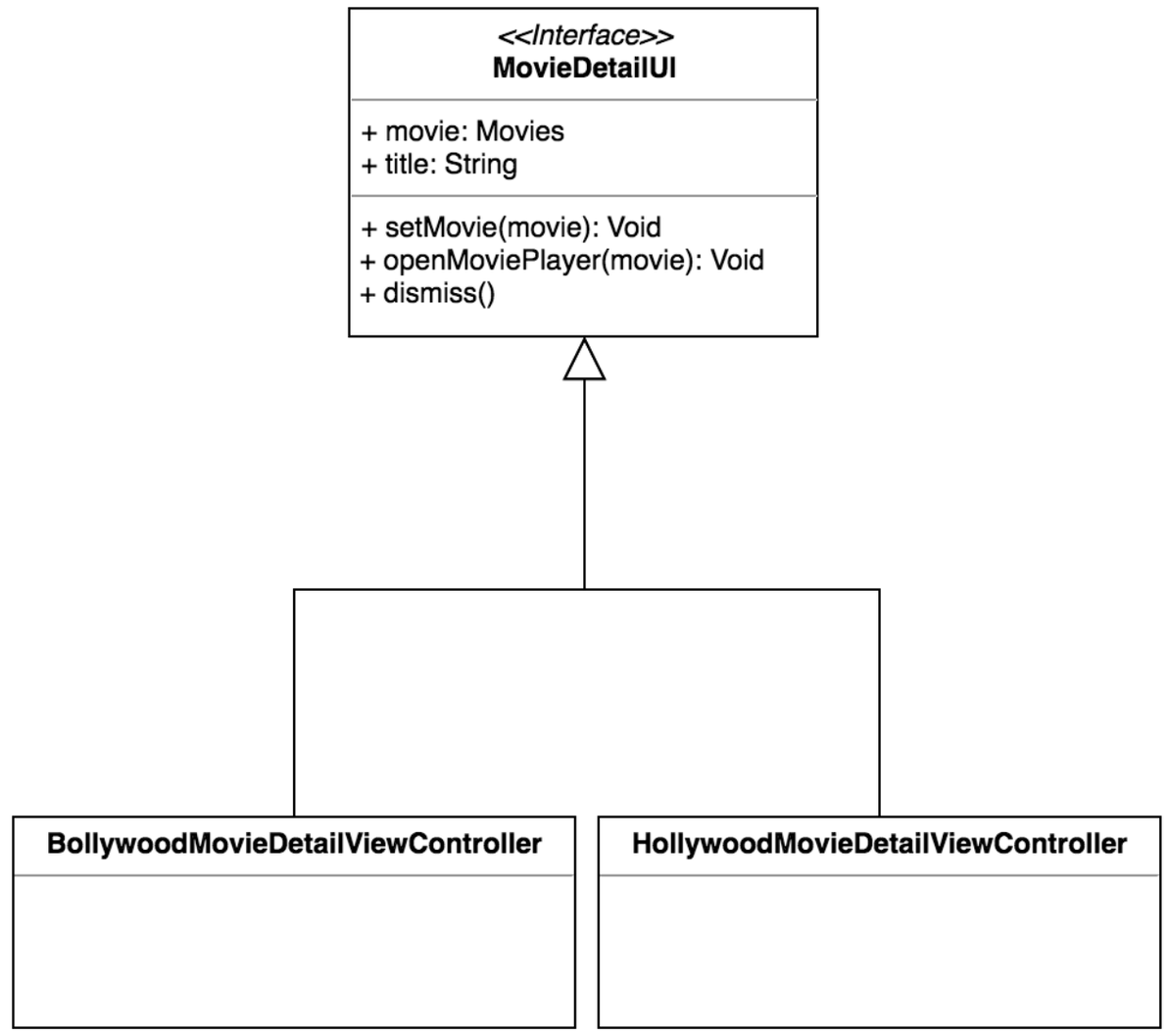
```
protocol Adder {
    func add(numbers: [Int]) -> Int
}

extension Adder {
    func add(numbers: [Int]) -> Int {
        var sum = 0
        for number in numbers {
            sum += number
        }

        return sum
    }
}

class Calculator: Adder {

}

let calculator = Calculator()
let sum = calculator.add(numbers: [3,5,1])
```

Using Swift Extensions to provide Dependency Injection


<<Interface>>
MovieDetailUI
+ movie: Movies
+ title: String
+ setMovie(movie): Void
+ openMoviePlayer(movie): Void
+ dismiss()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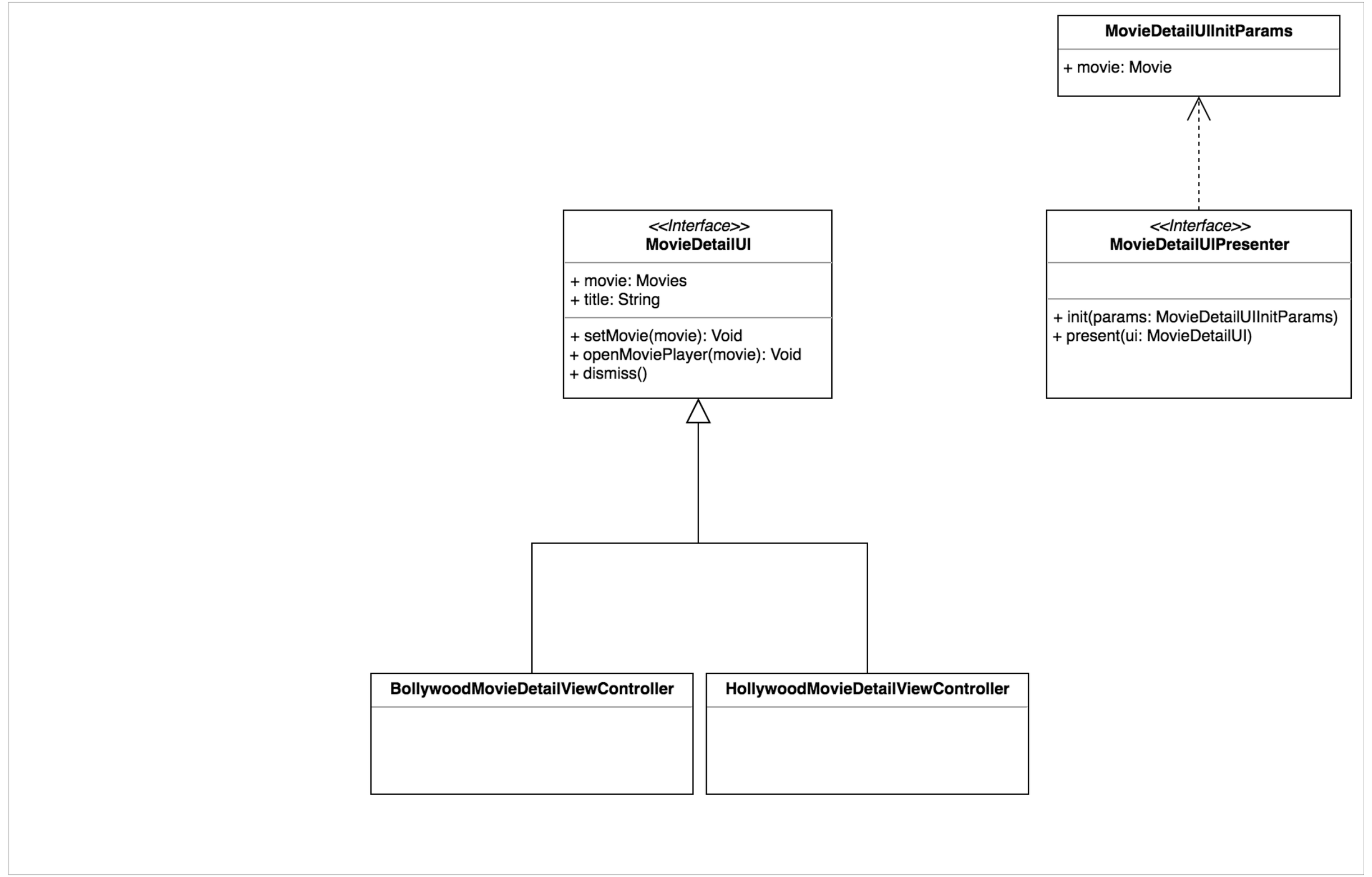
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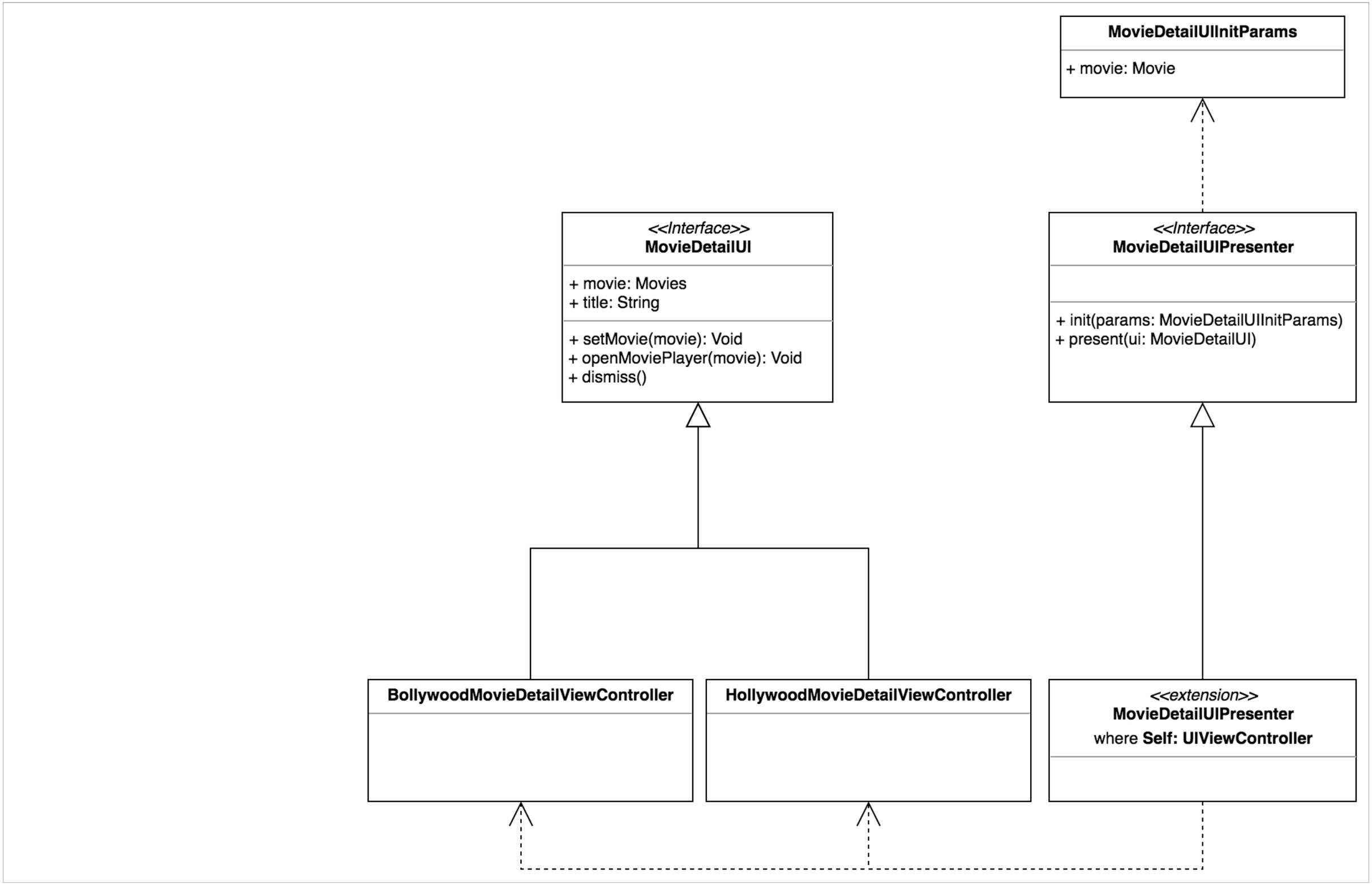
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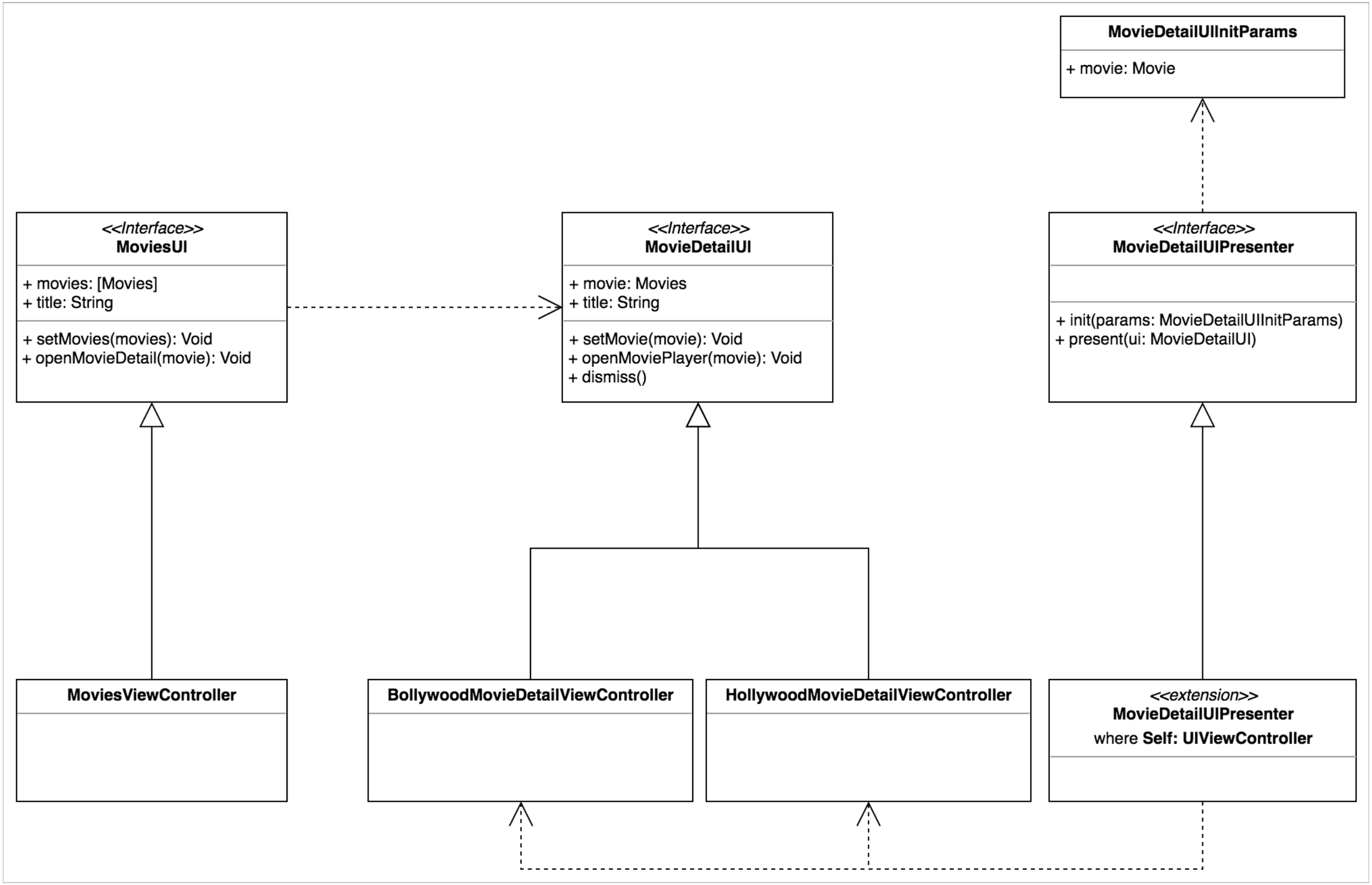
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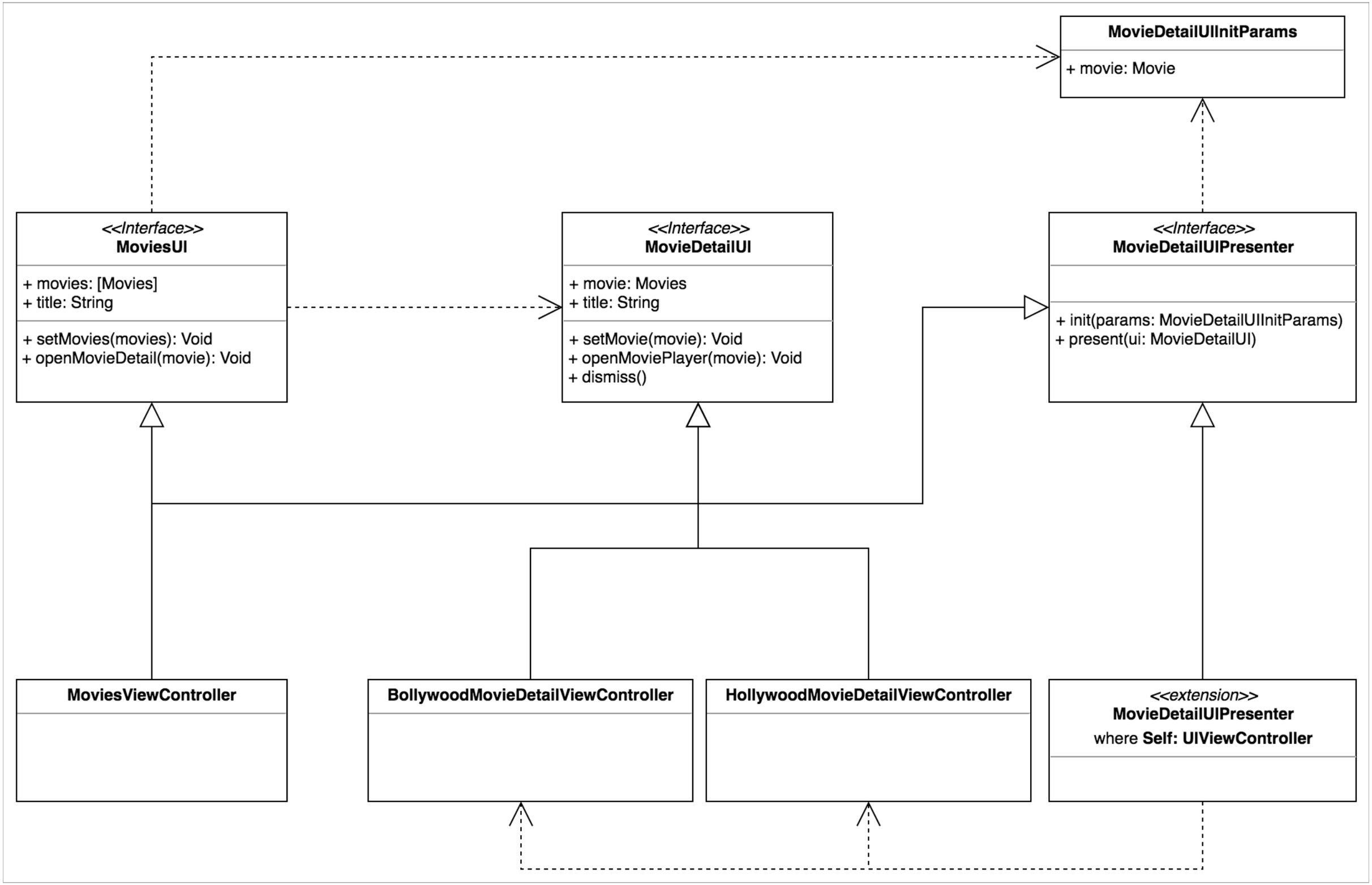
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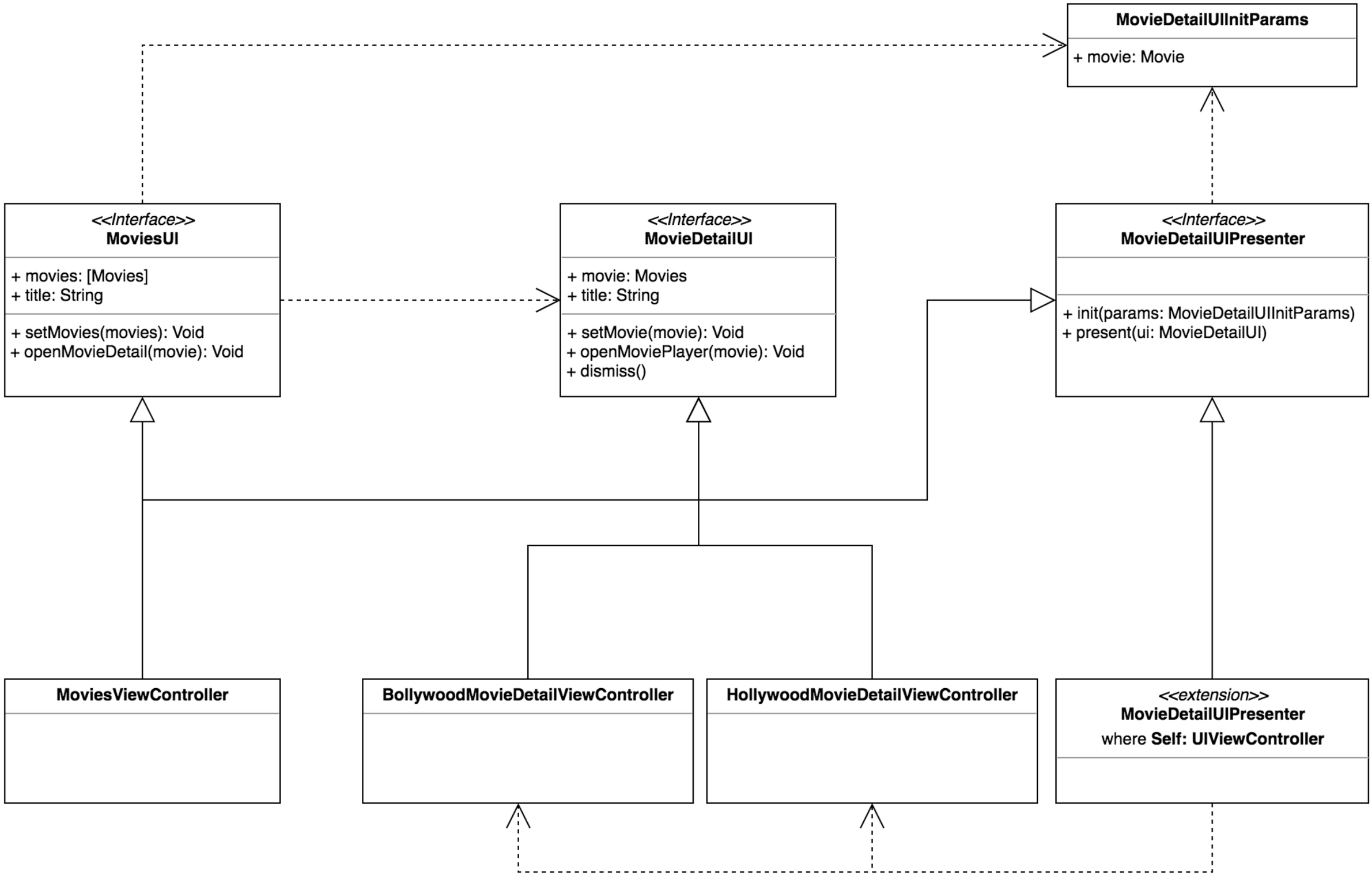
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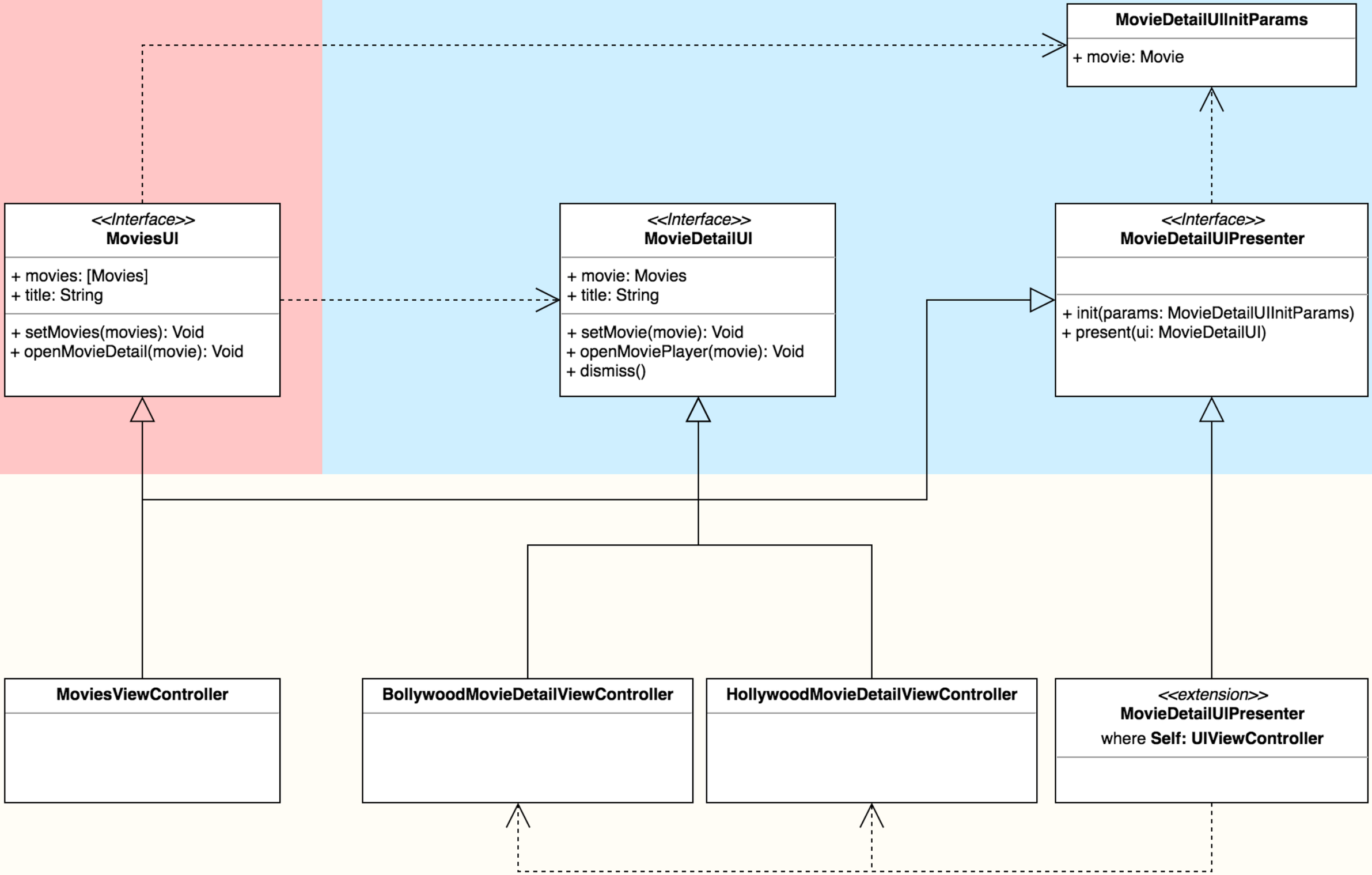

Demo

Questions?