COCOAHEADS • AUG 2018

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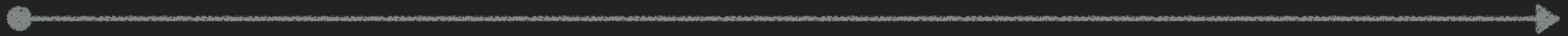
UI-TDD

SOFTWARE TESTING



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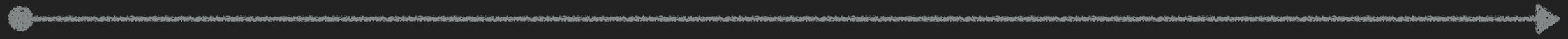

Repeatability

SOFTWARE TESTING

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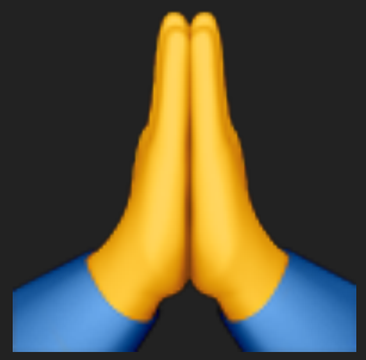

Repeatability

SOFTWARE TESTING

INFORMAL MANUAL TESTING

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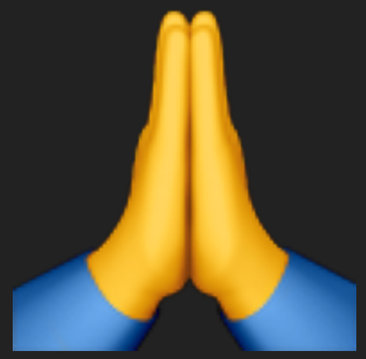

Repeatability

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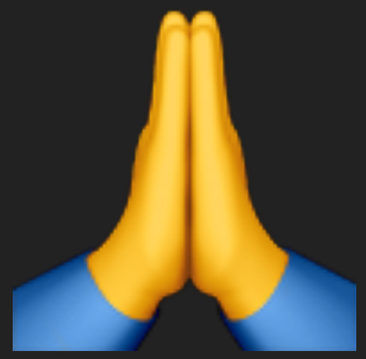


FORMAL MANUAL TESTING

AUTOMATED TESTING

Repeatability

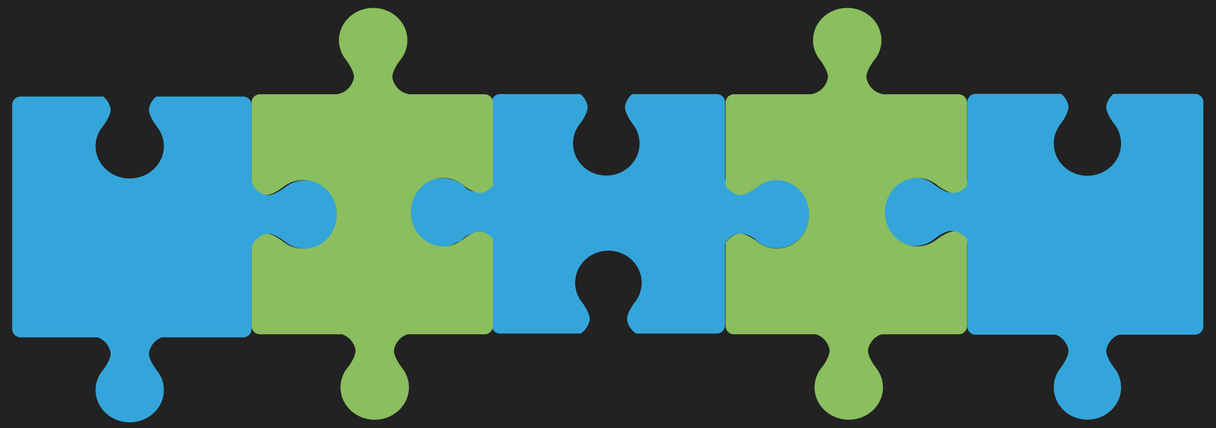
SOFTWARE TESTING

AUTOMATED

SOFTWARE TESTING

AUTOMATED

SOFTWARE TESTING



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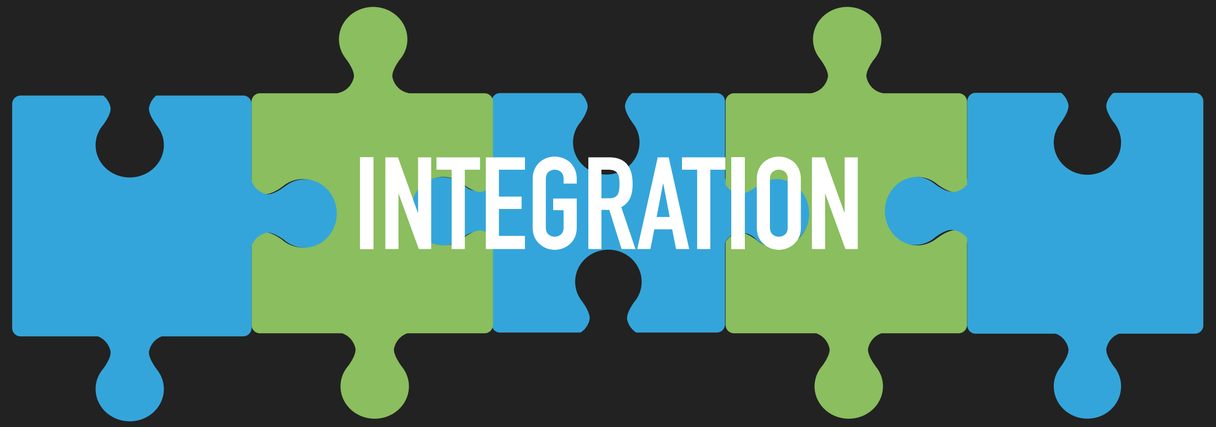

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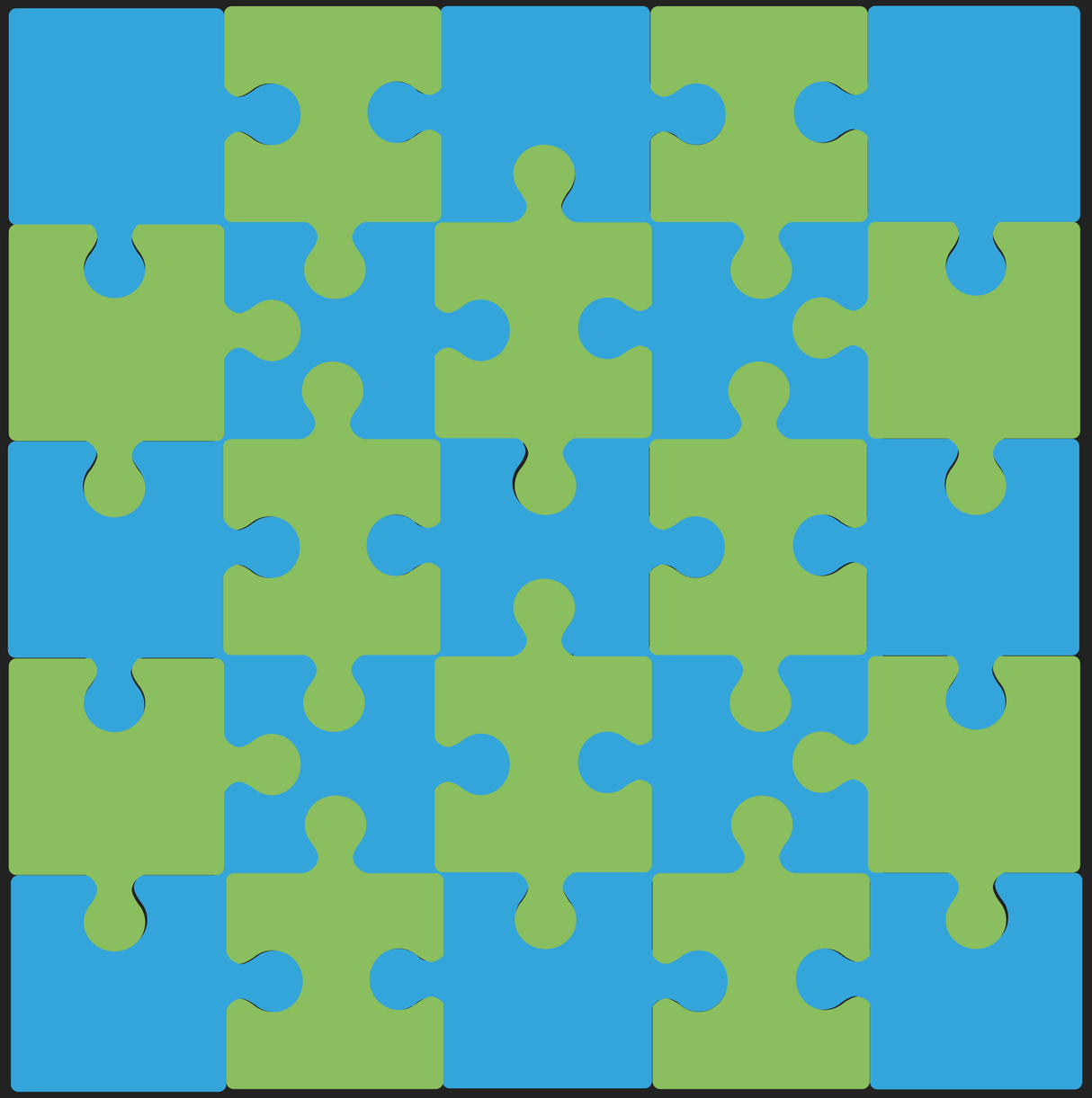

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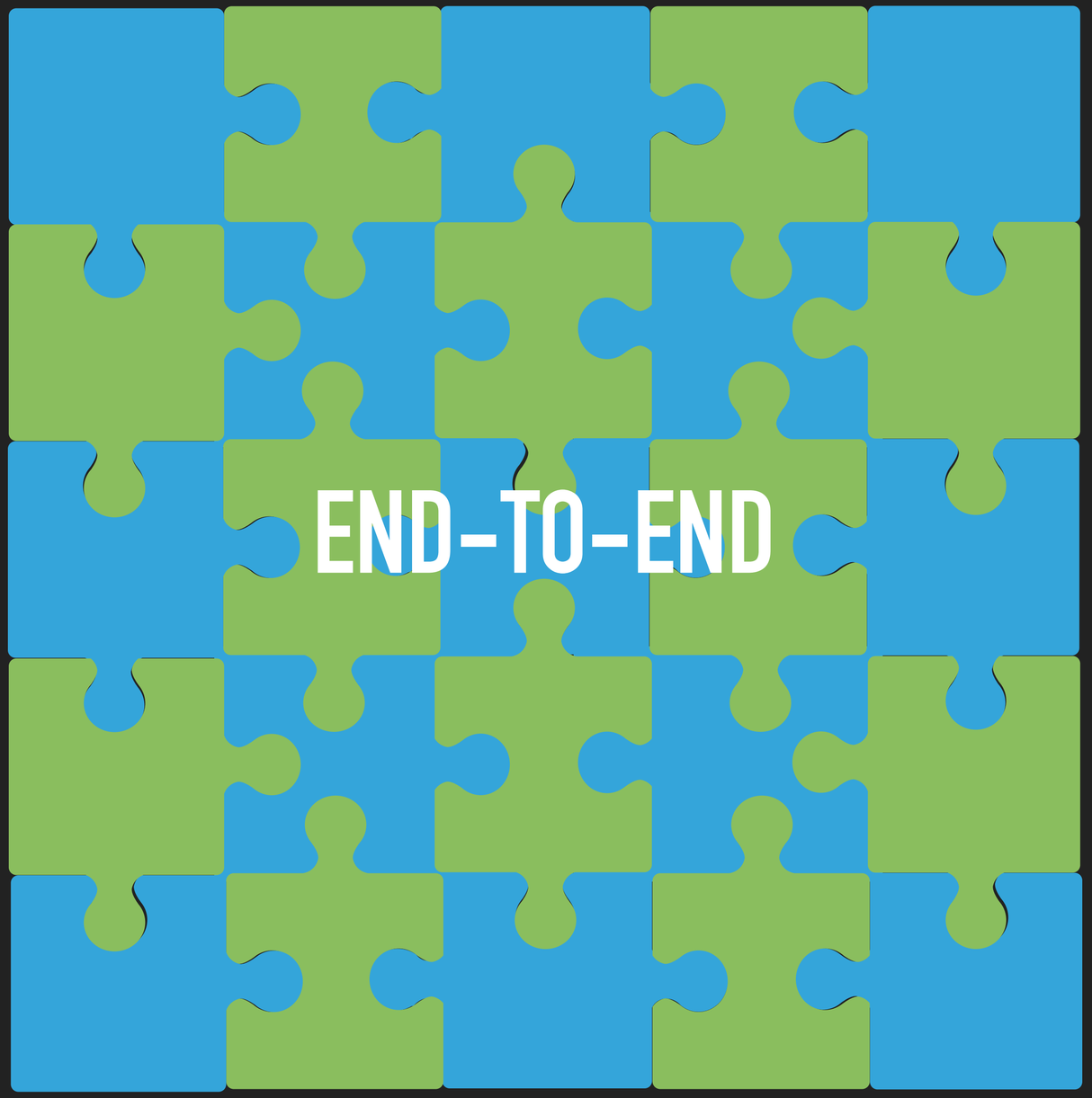

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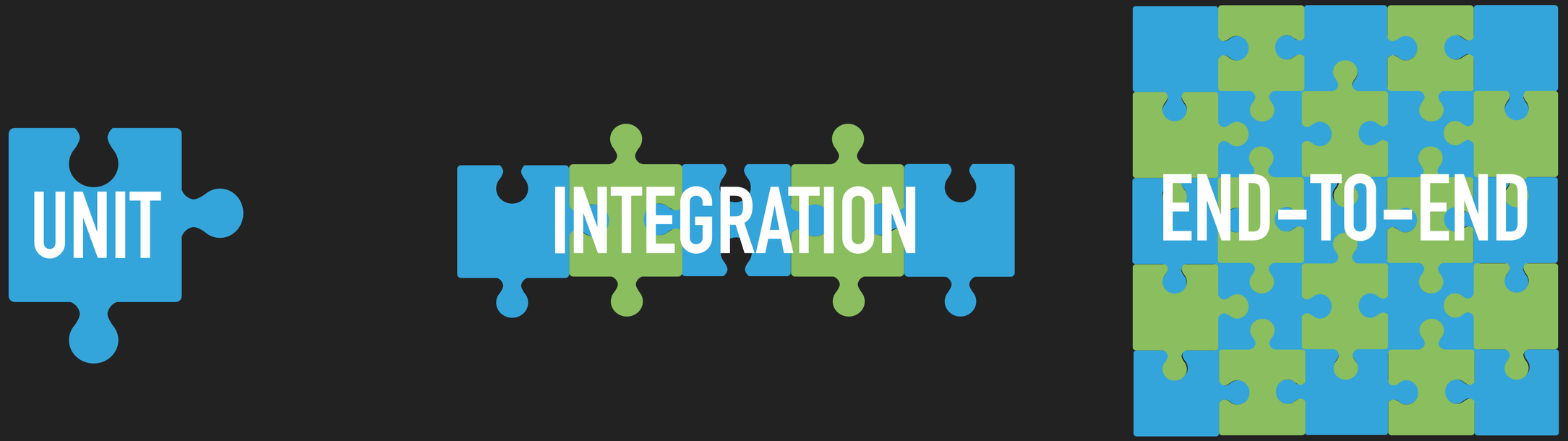

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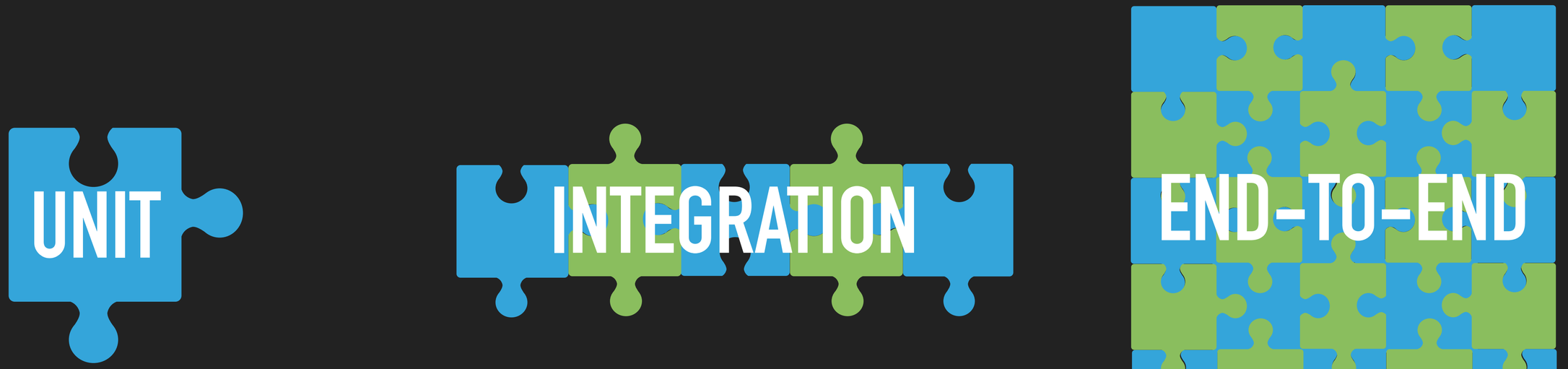

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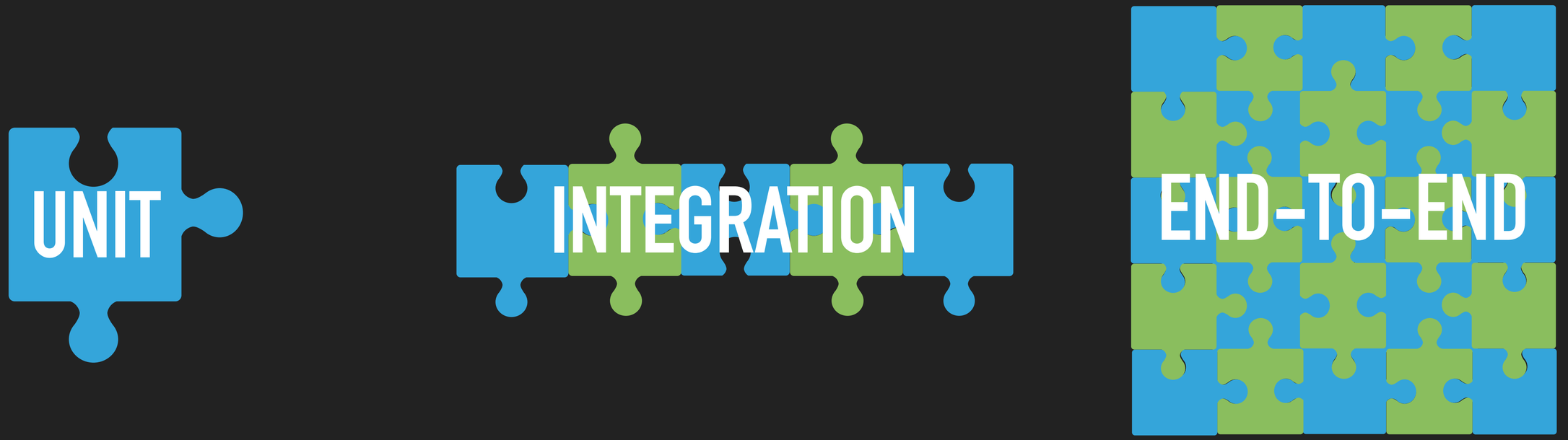

Time/Complexity

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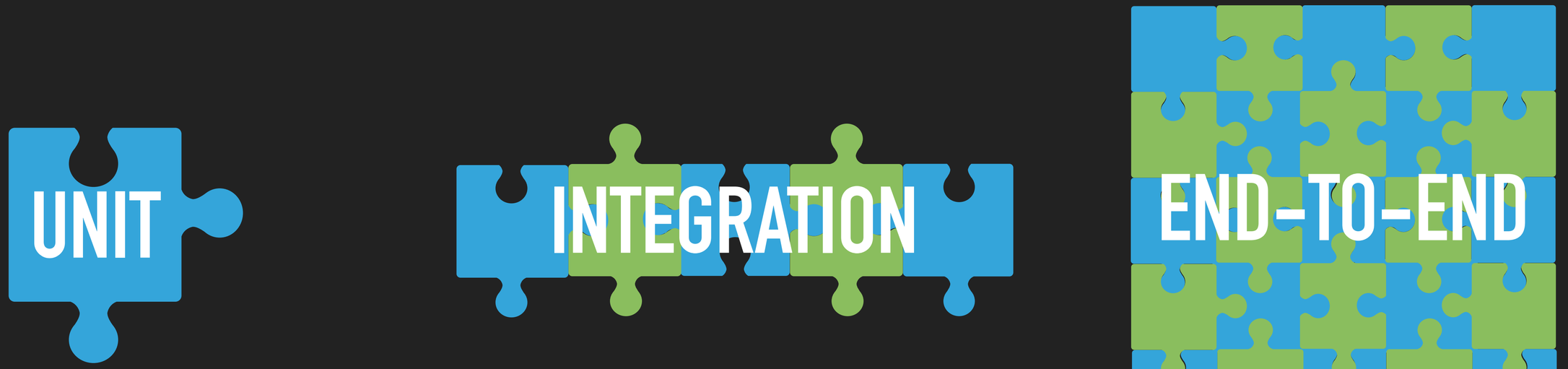


Time/Complexity

Realism

AUTOMATED

SOFTWARE TESTING

UI TESTS

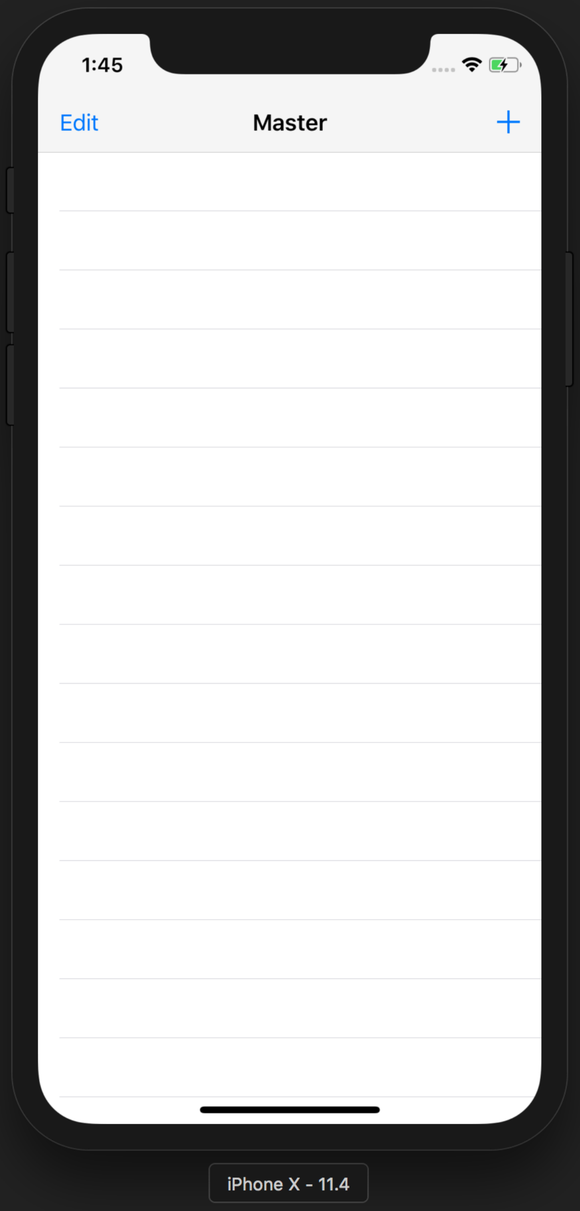
Time/Complexity

Realism

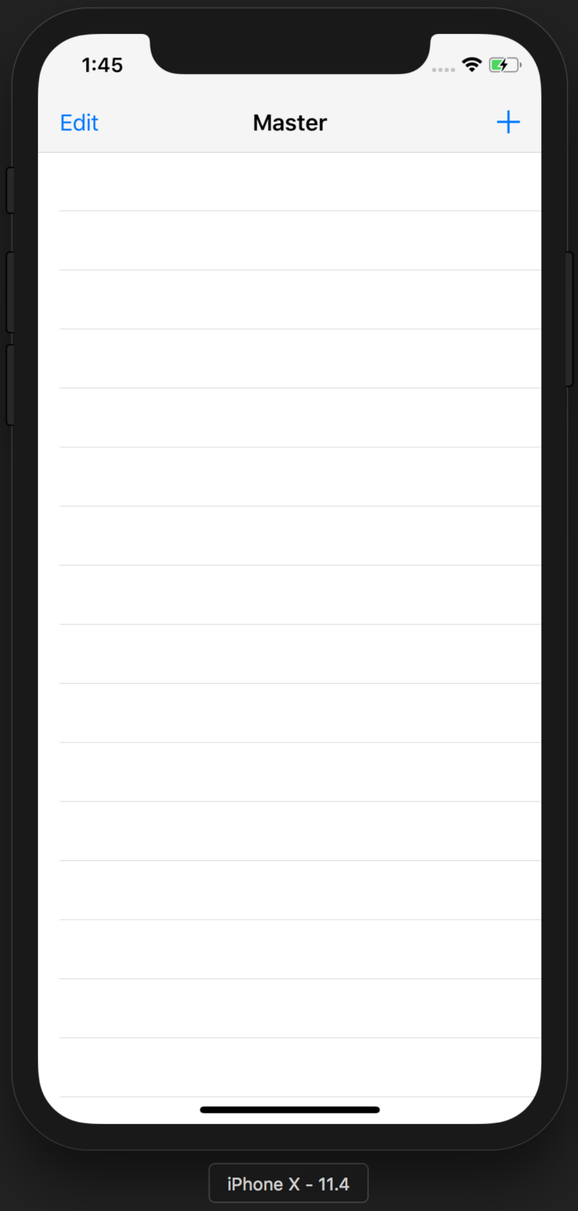
AUTOMATED

SOFTWARE TESTING

UI TESTS



UI TESTS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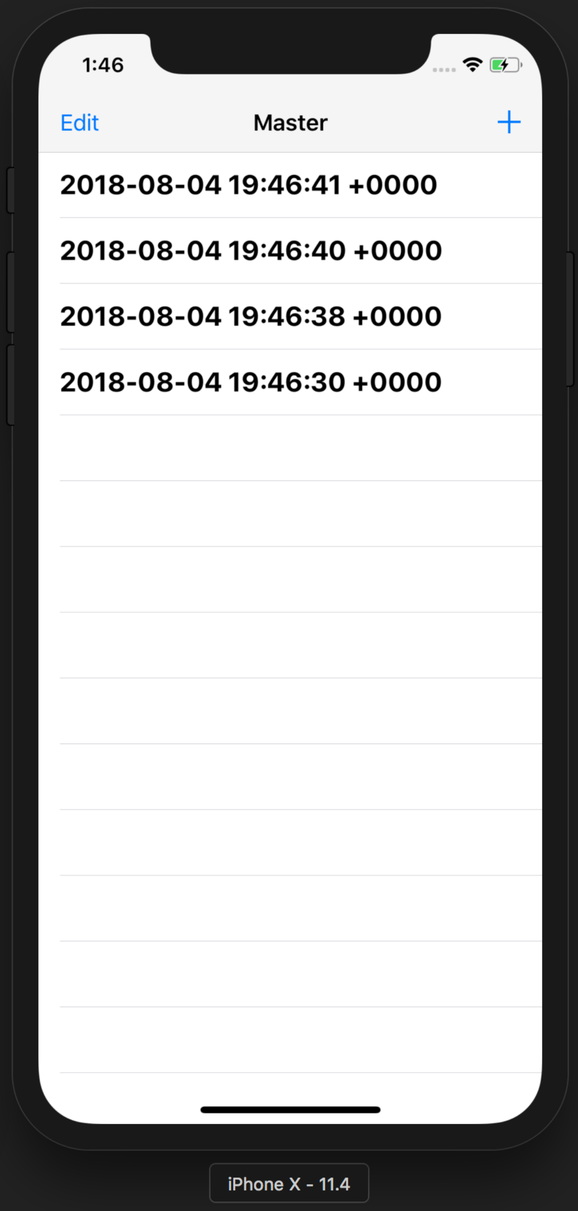
iPhone X - 11.4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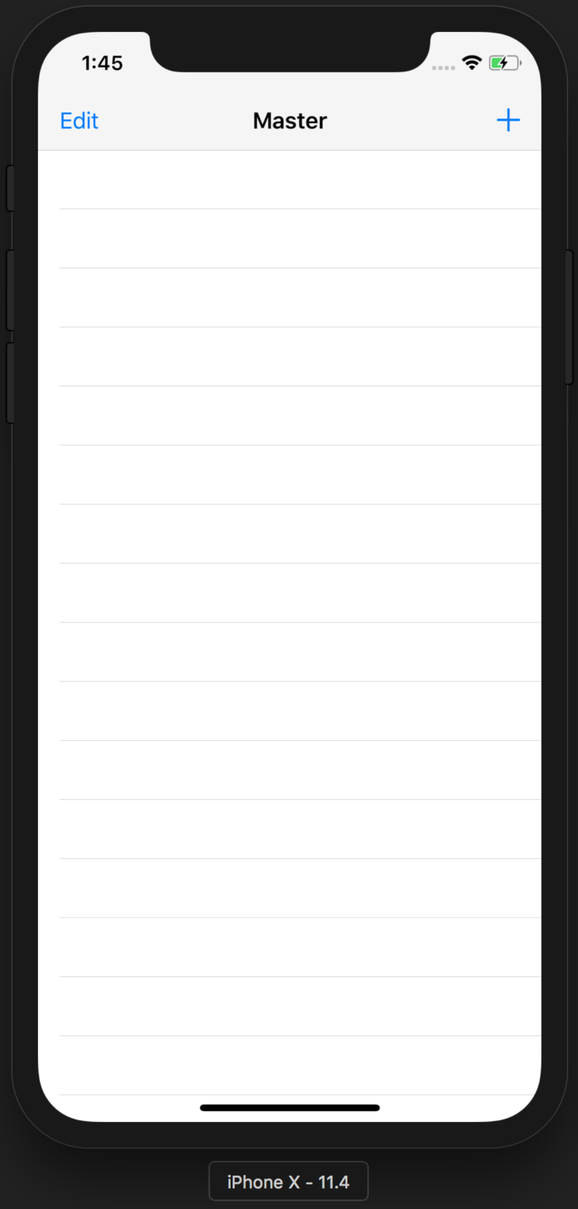
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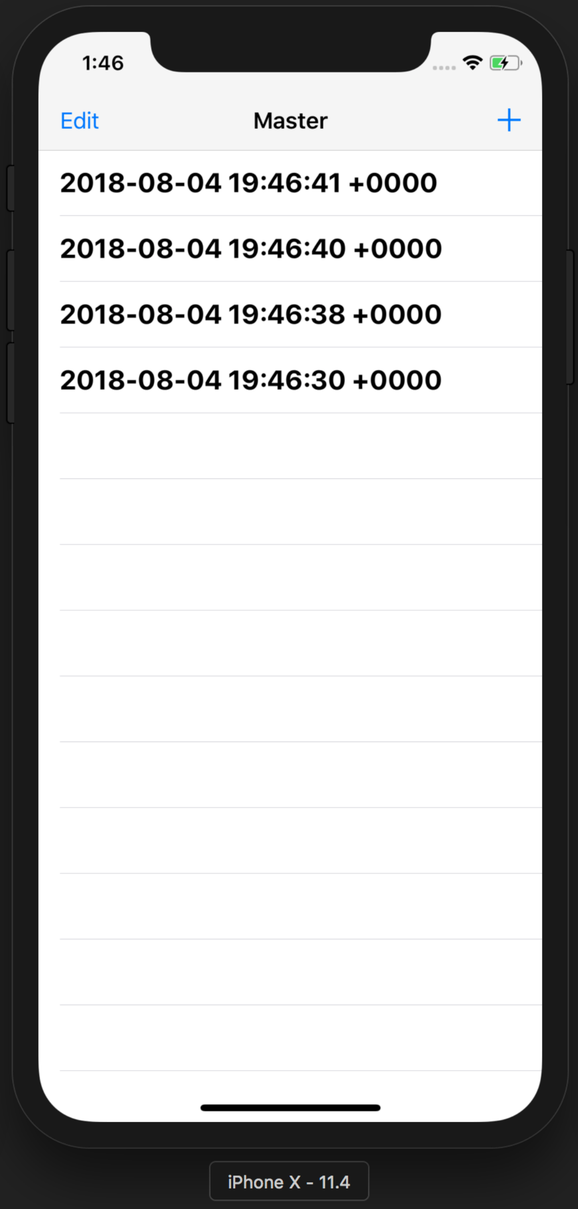
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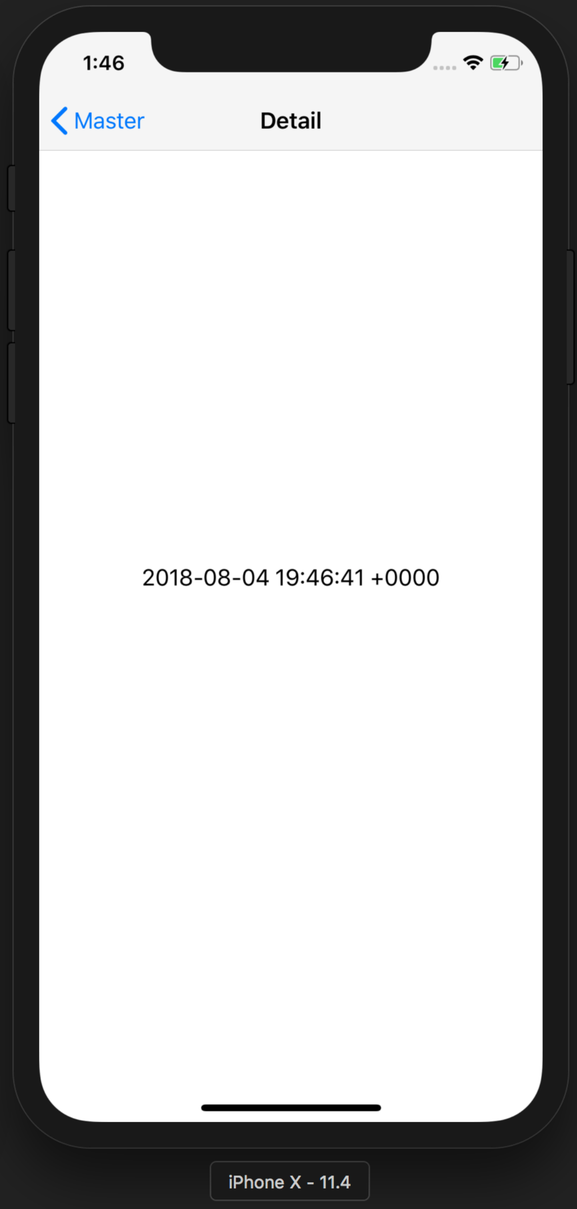
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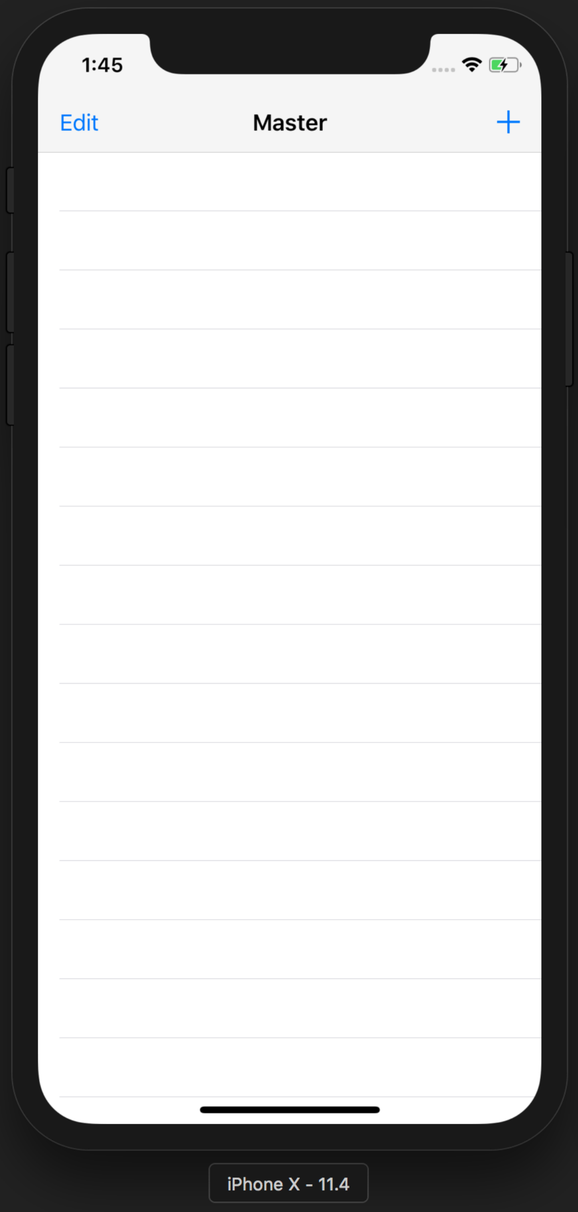
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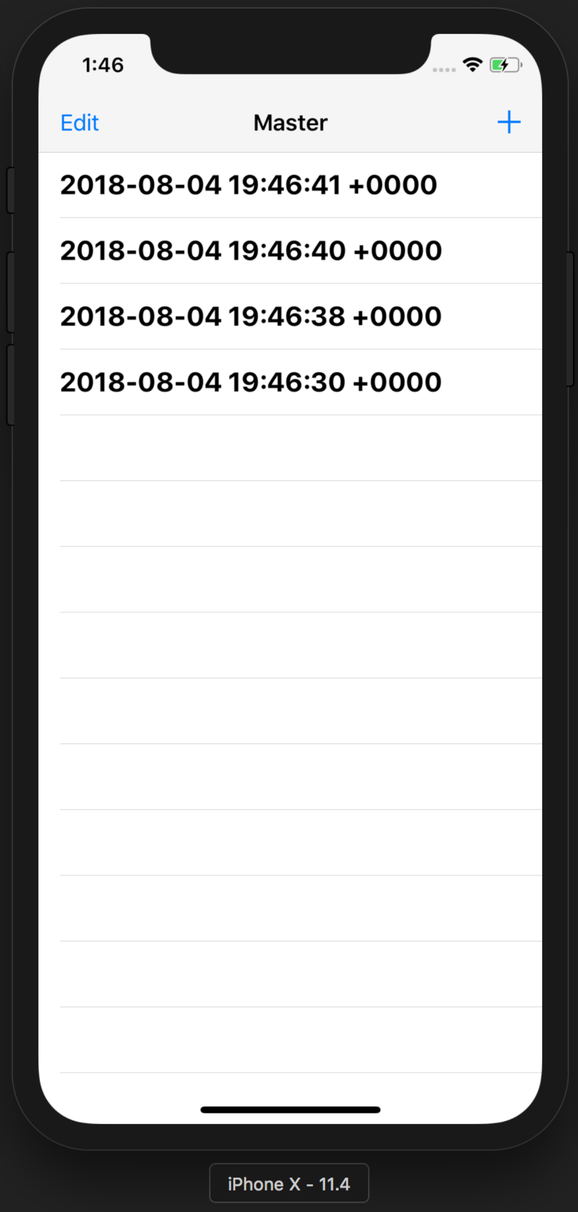
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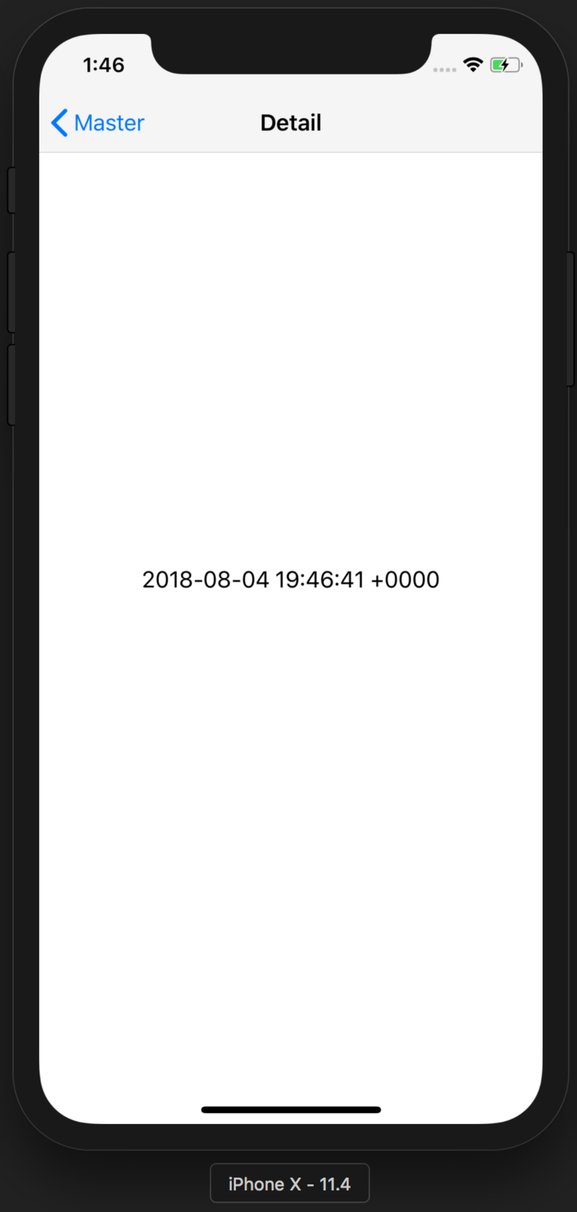
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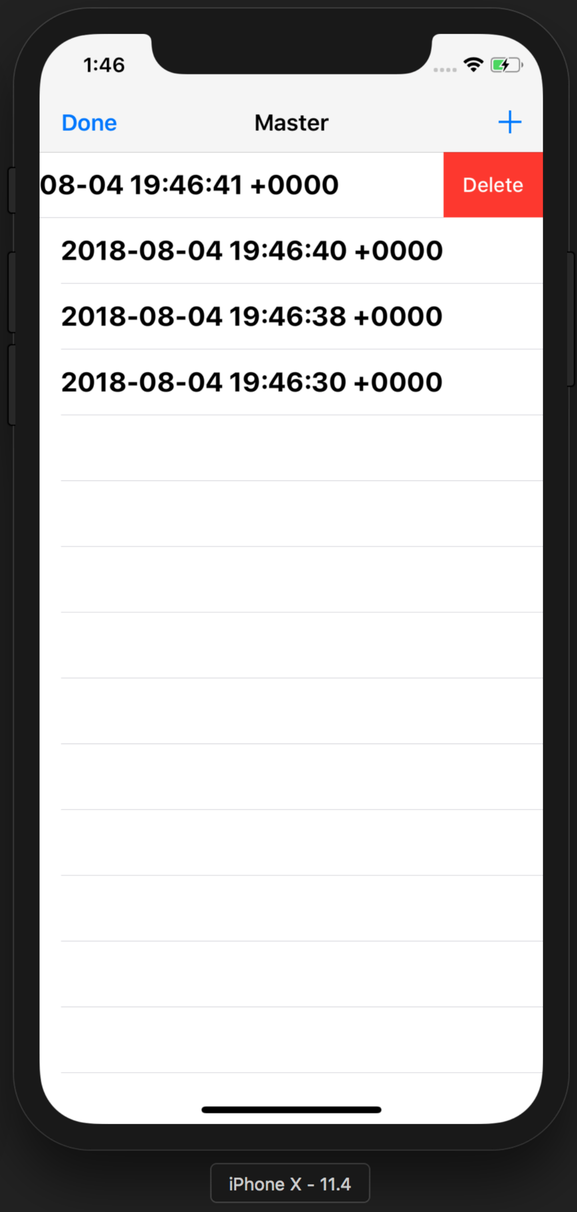
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UI TESTS

UI TESTS

VERIFY BEHAVIOR

UI TESTS

VERIFY BEHAVIOR

BUILT ON ACCESSIBILITY

UI TESTS

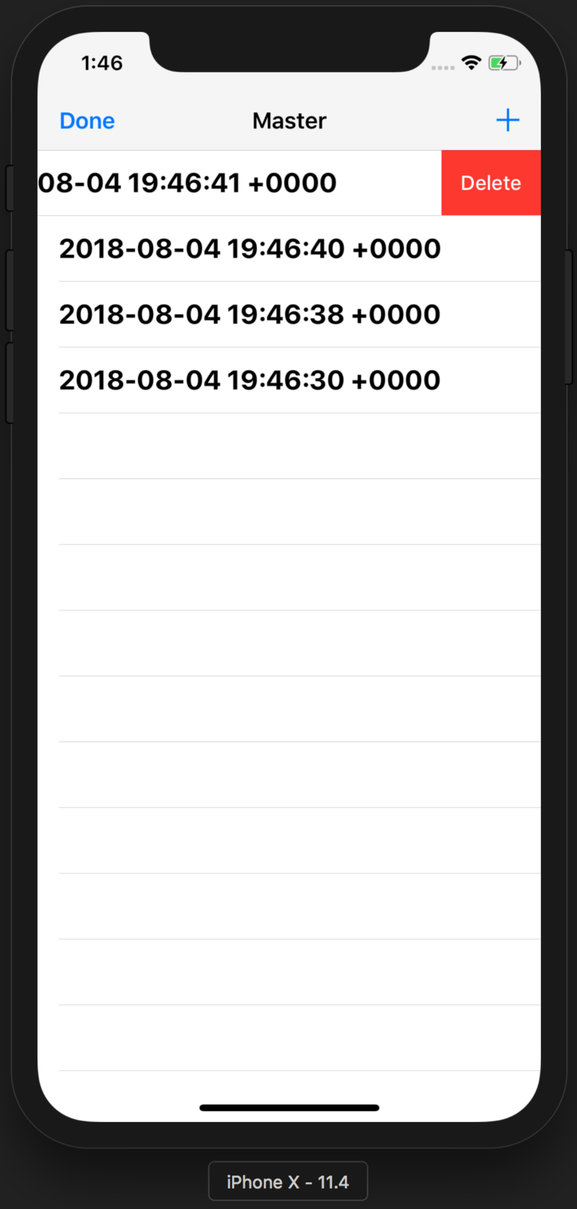
VERIFY BEHAVIOR

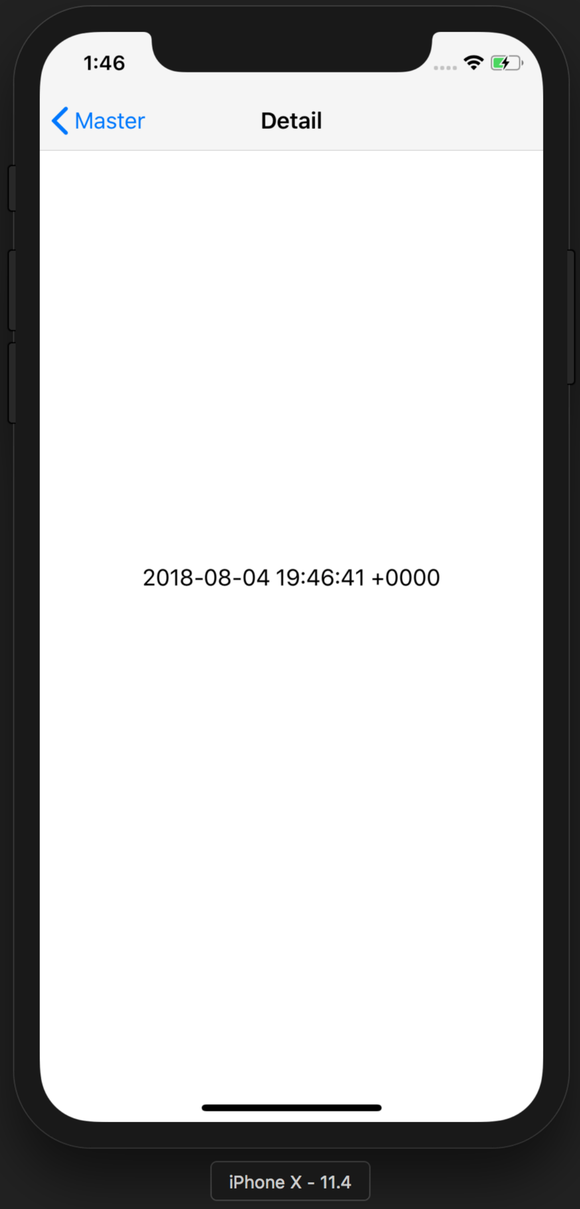
BUILT ON ACCESSIBILITY

RECORD TO LEARN

UI TESTS

BETTER UI TESTING





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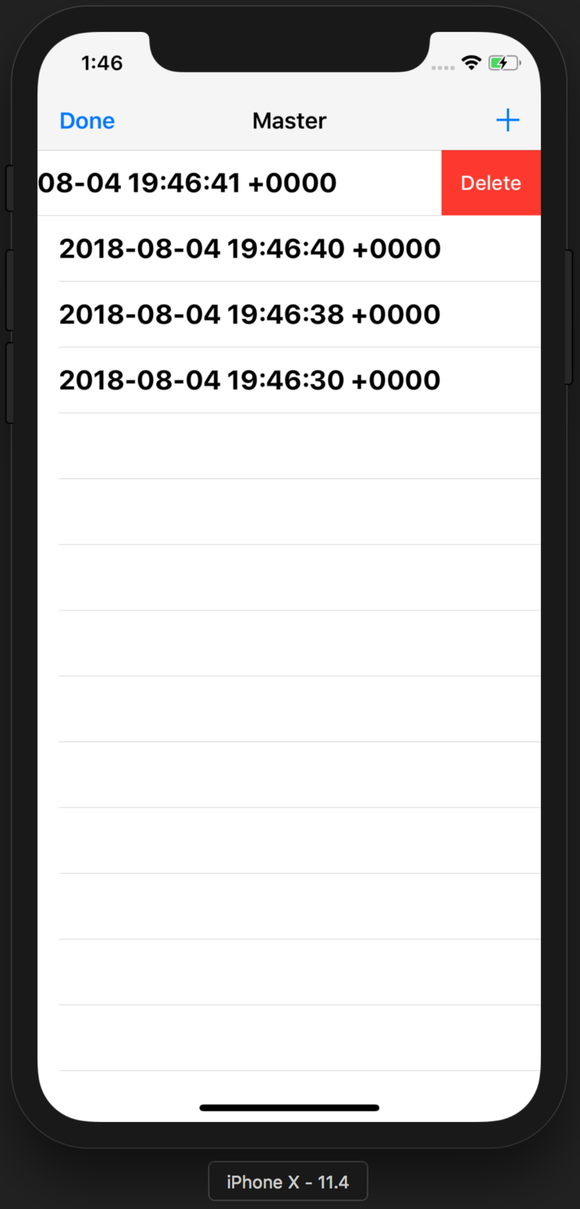

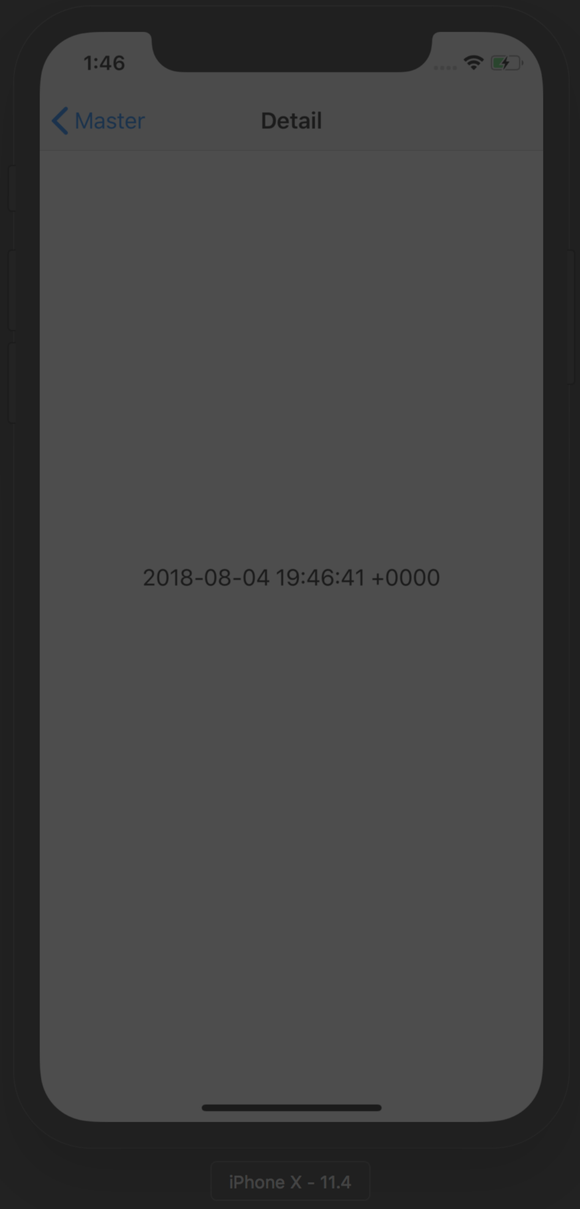

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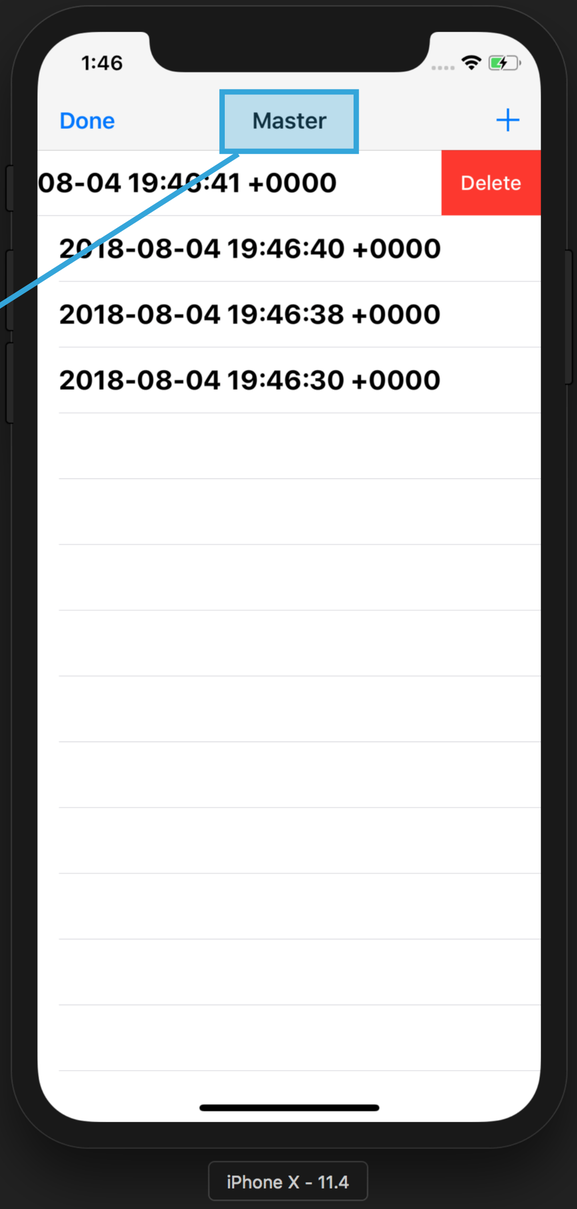

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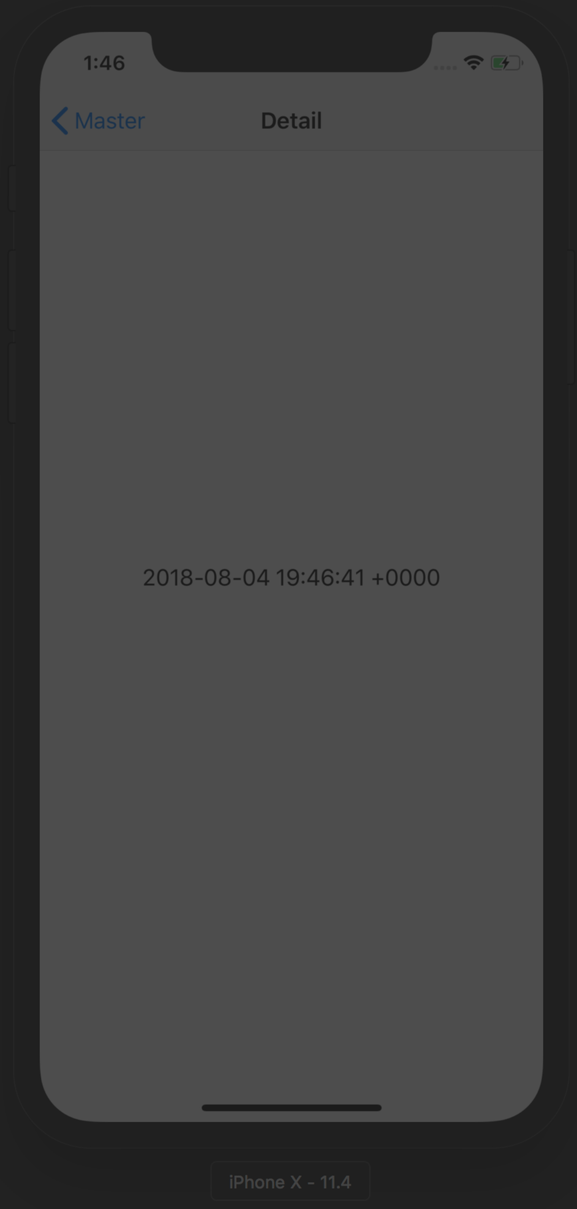

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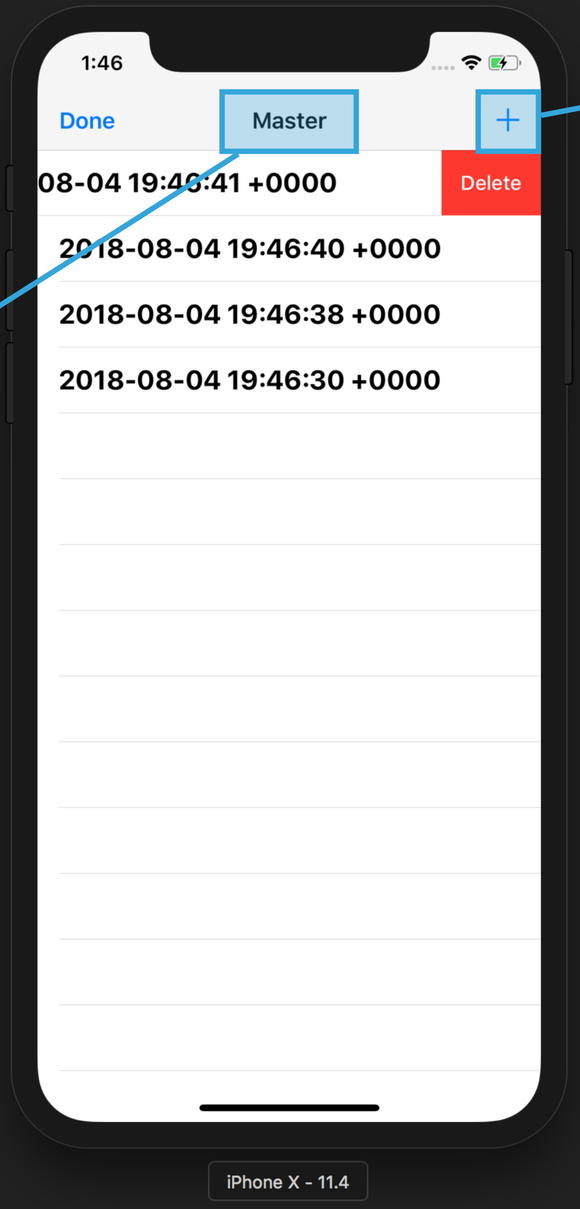

Button

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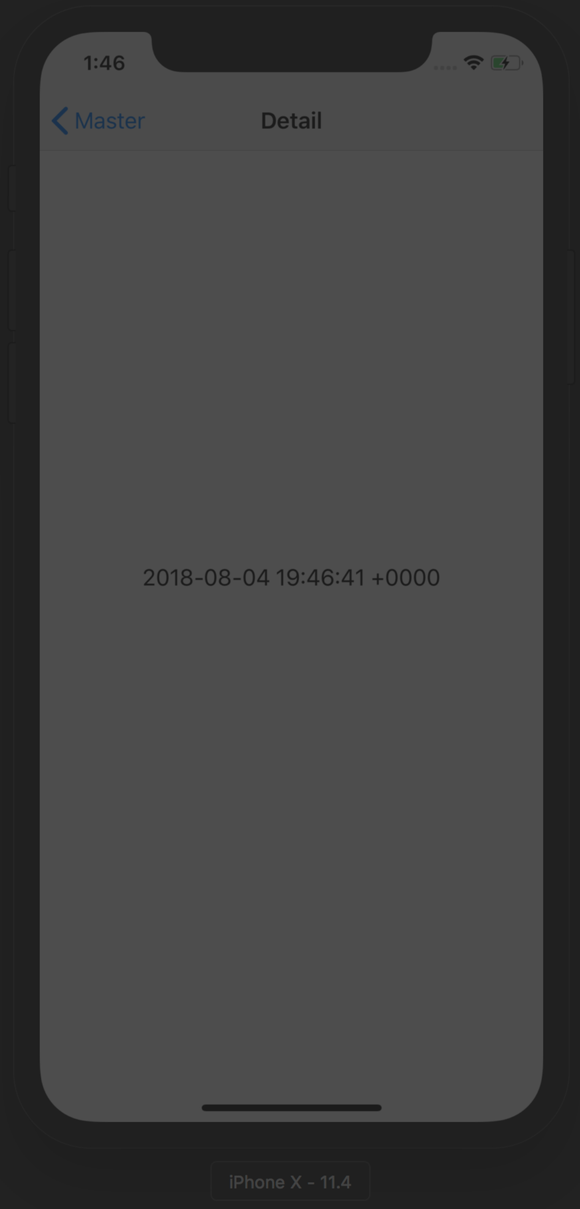

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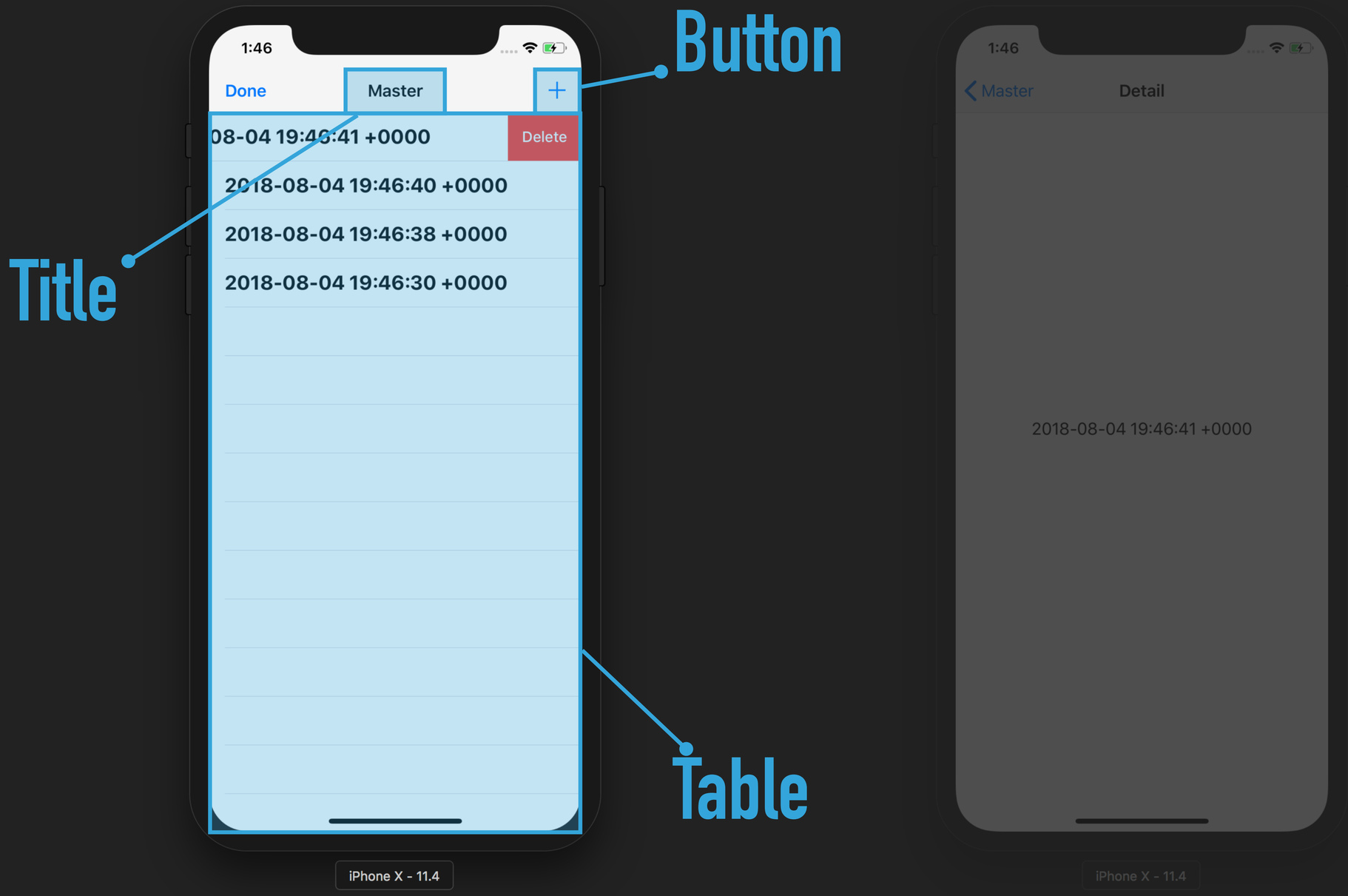

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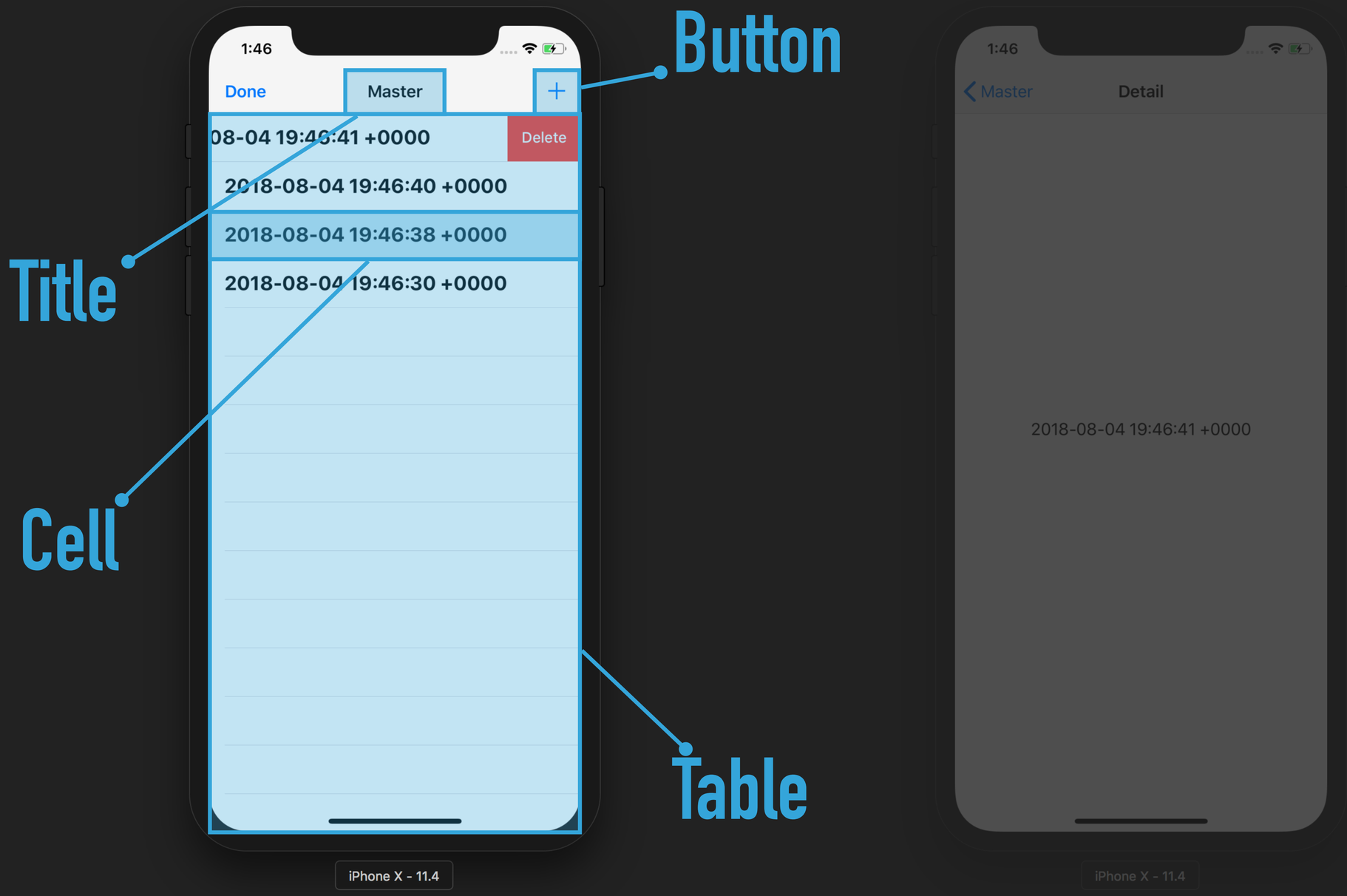

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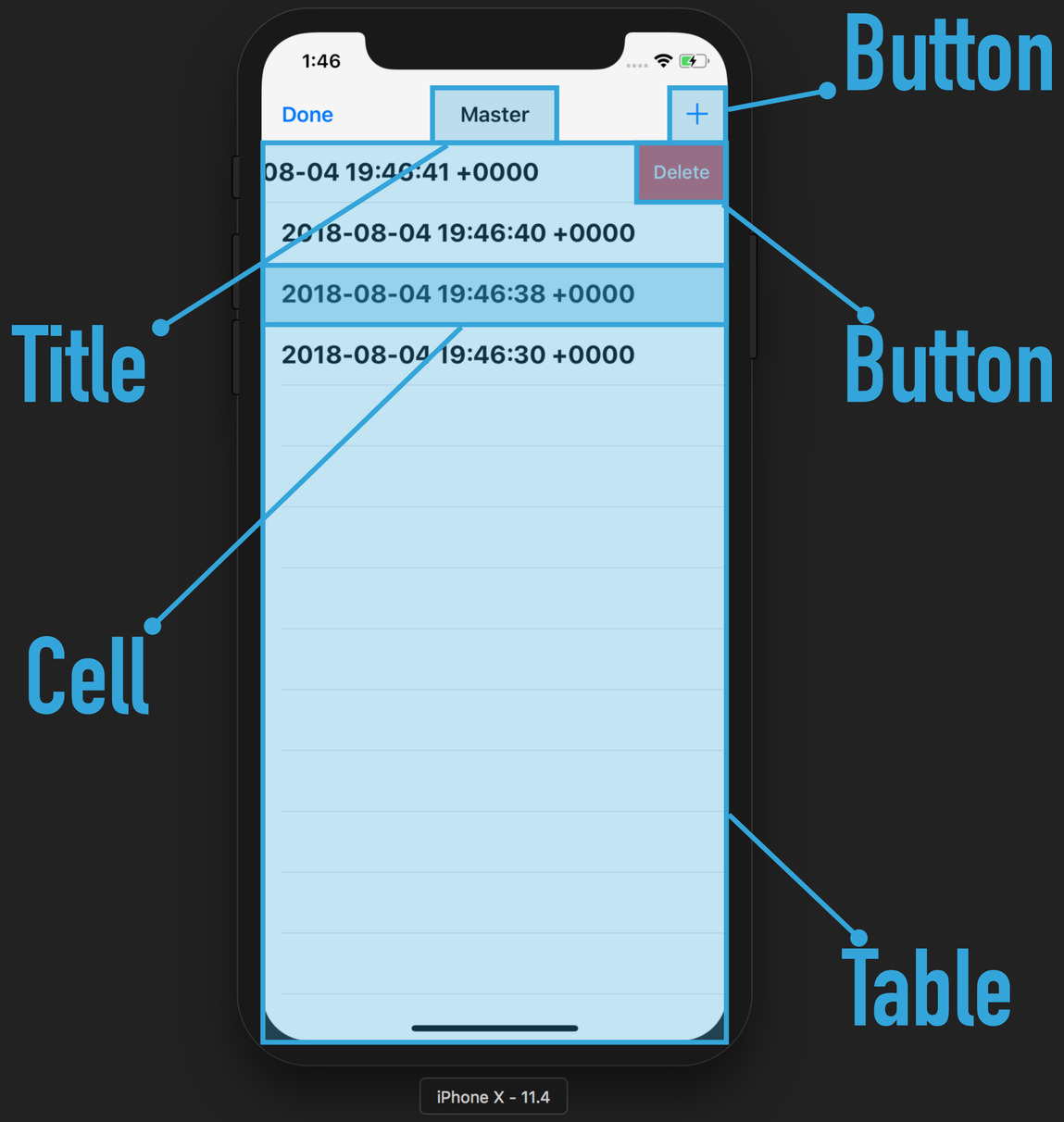

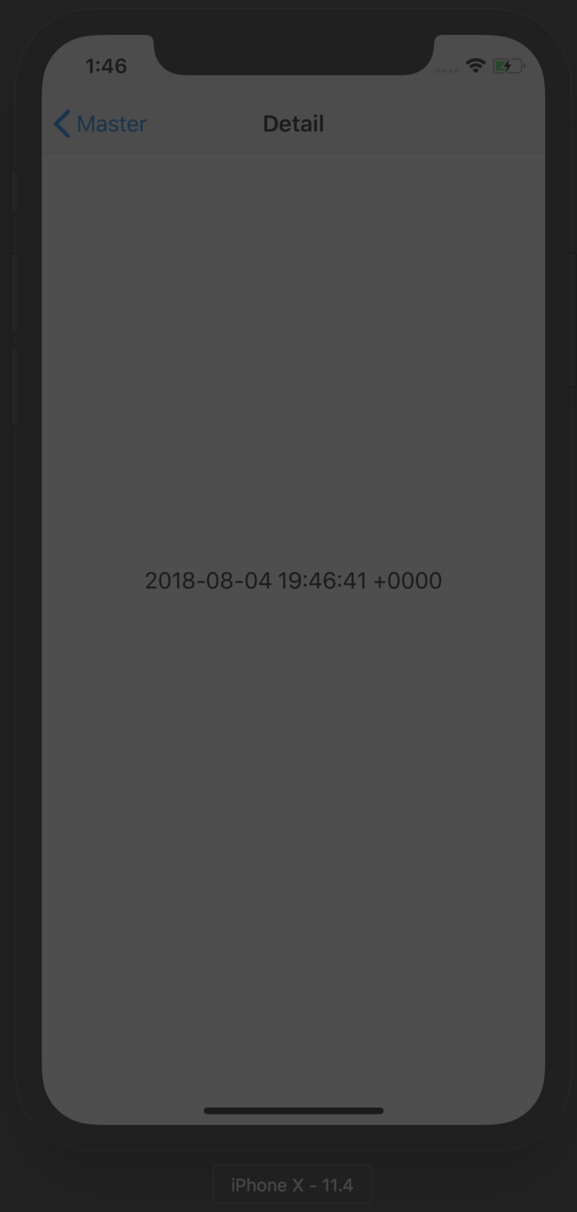

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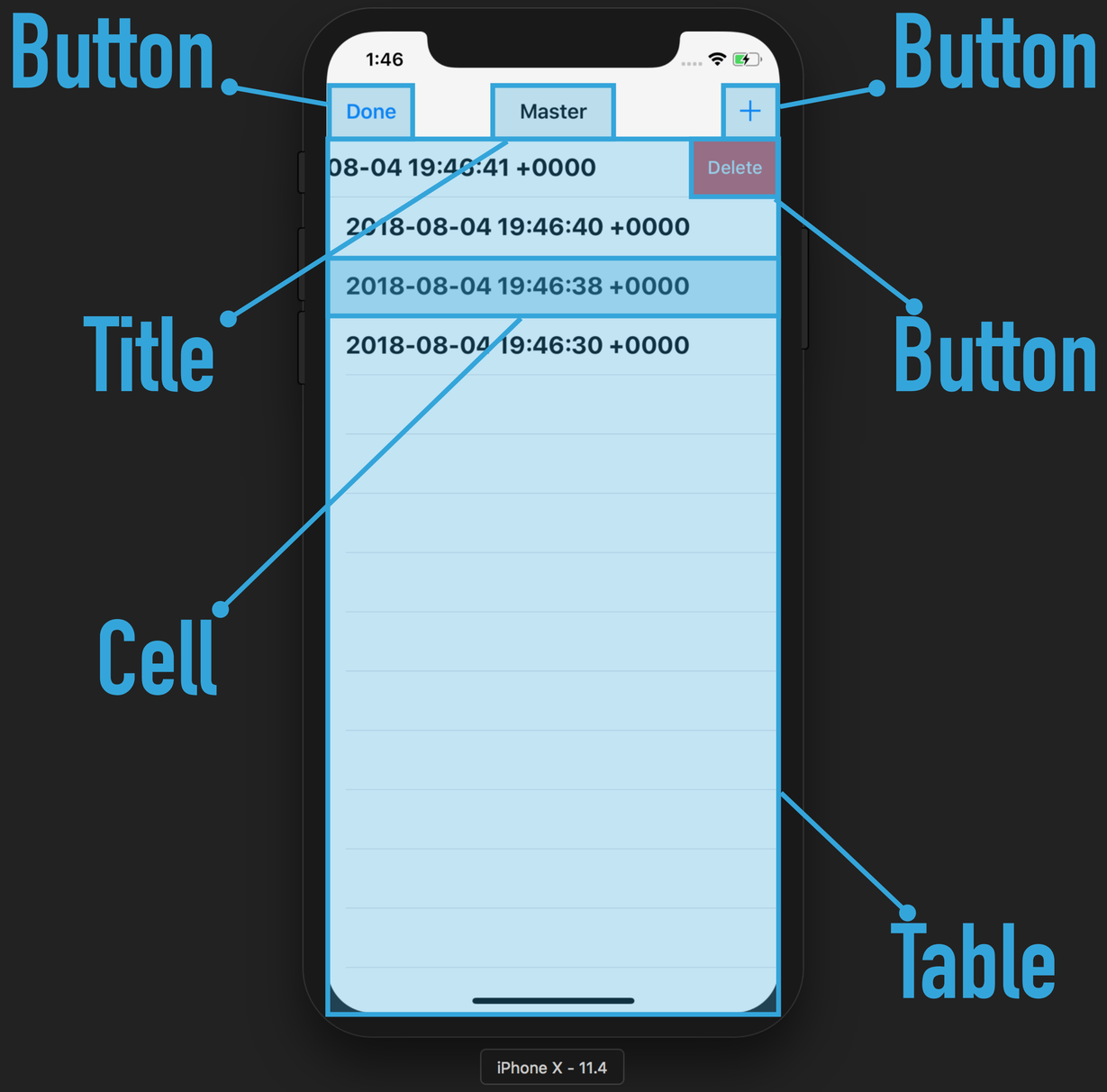

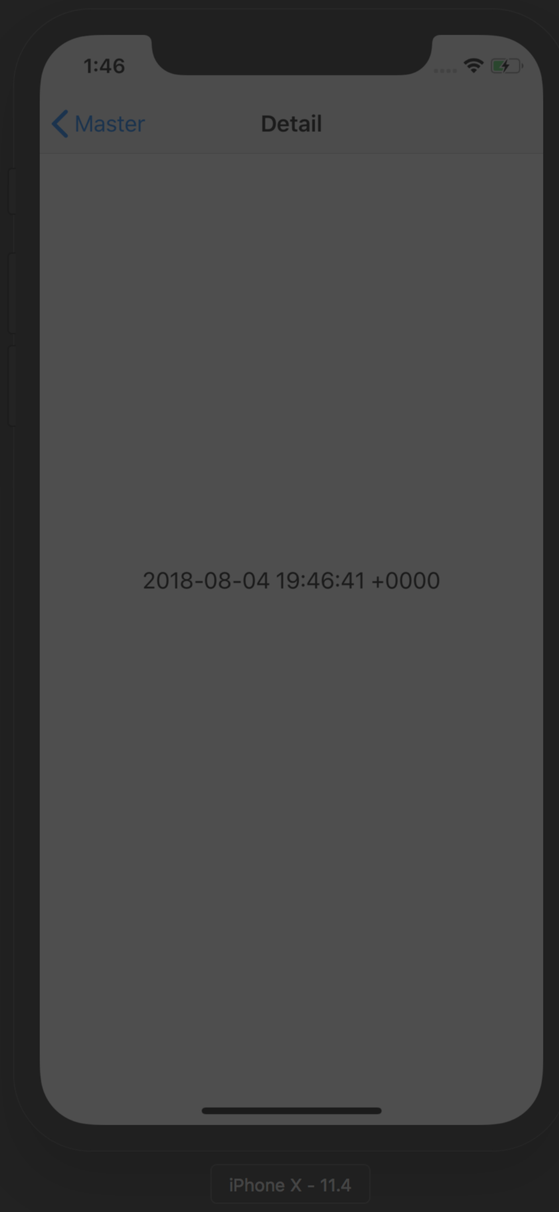

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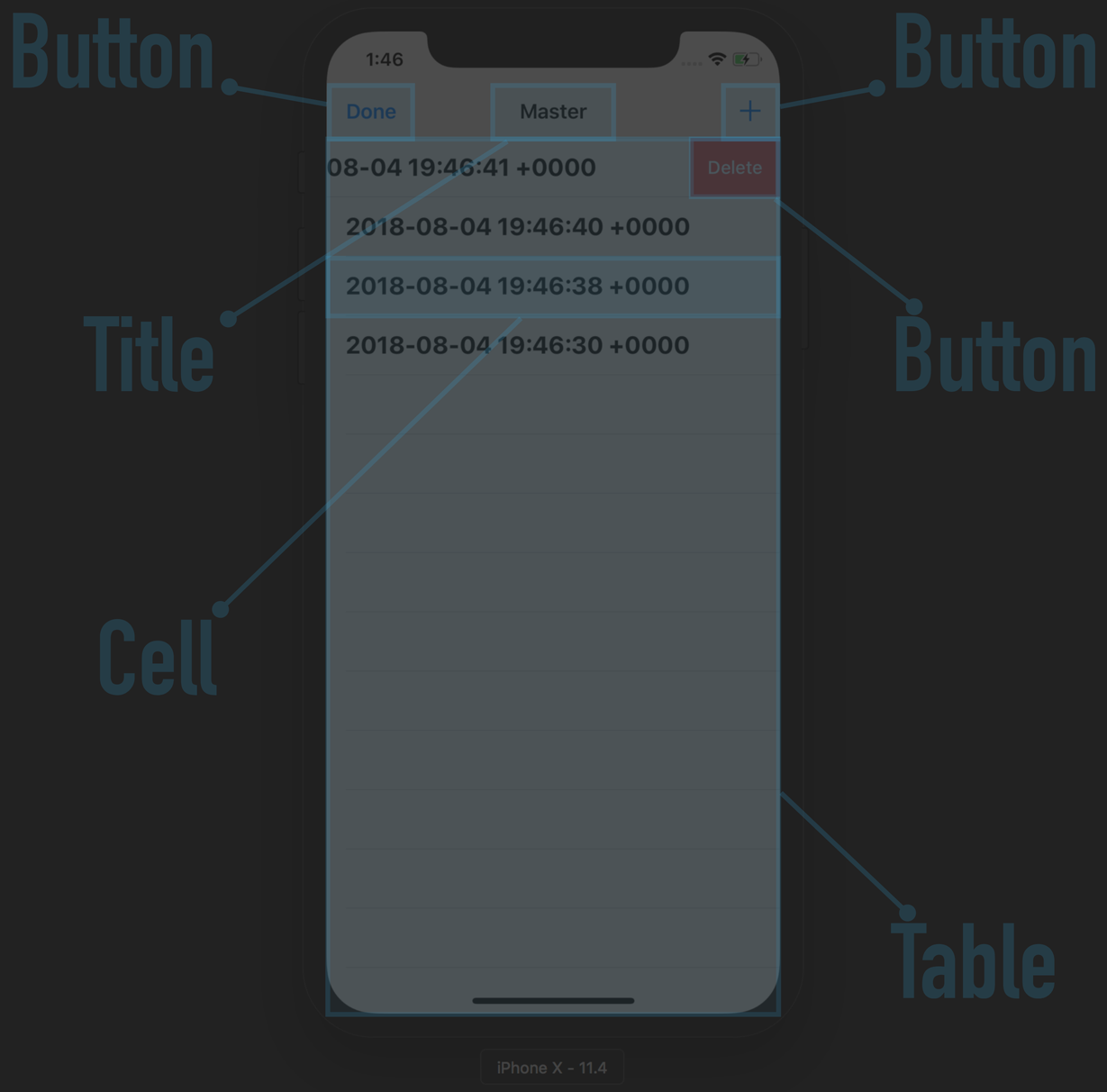

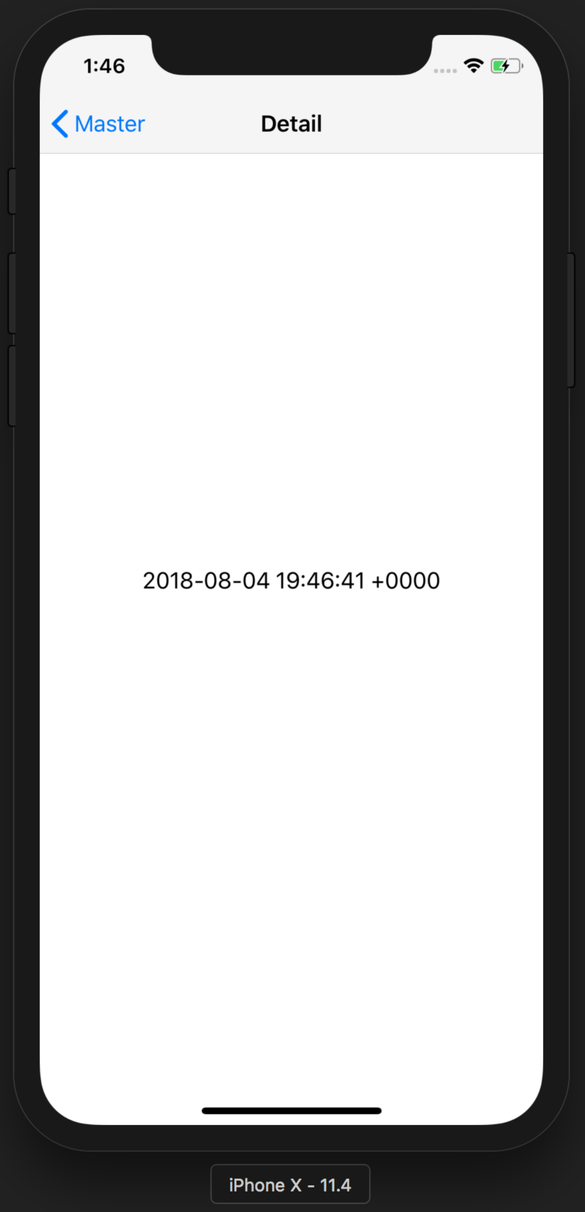

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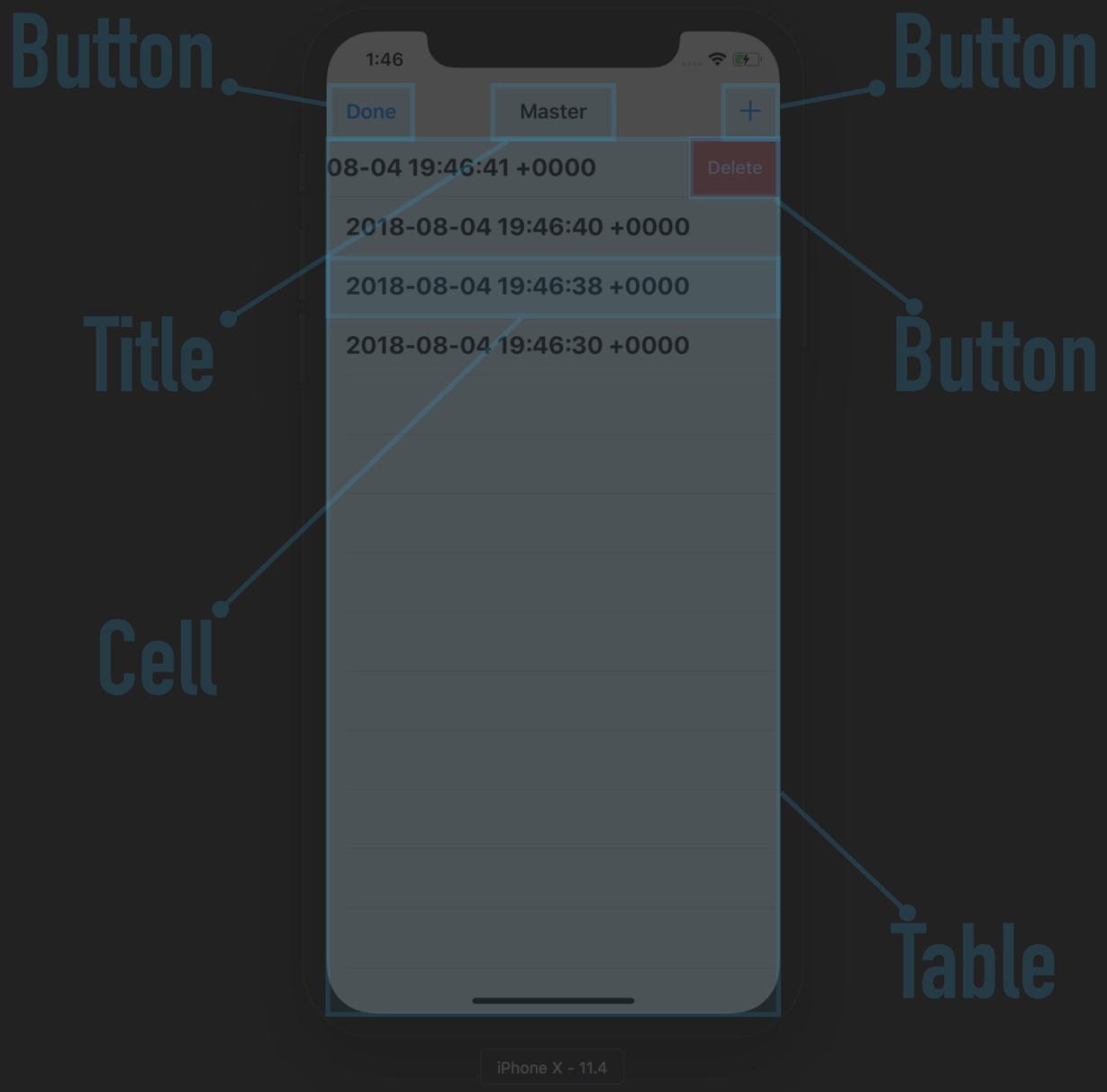

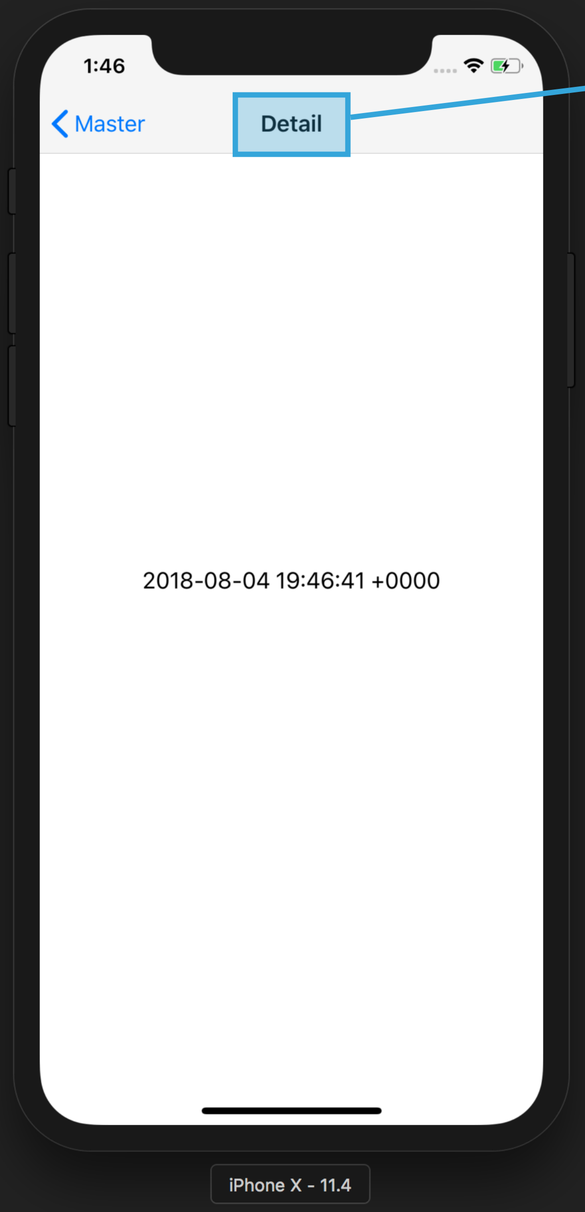

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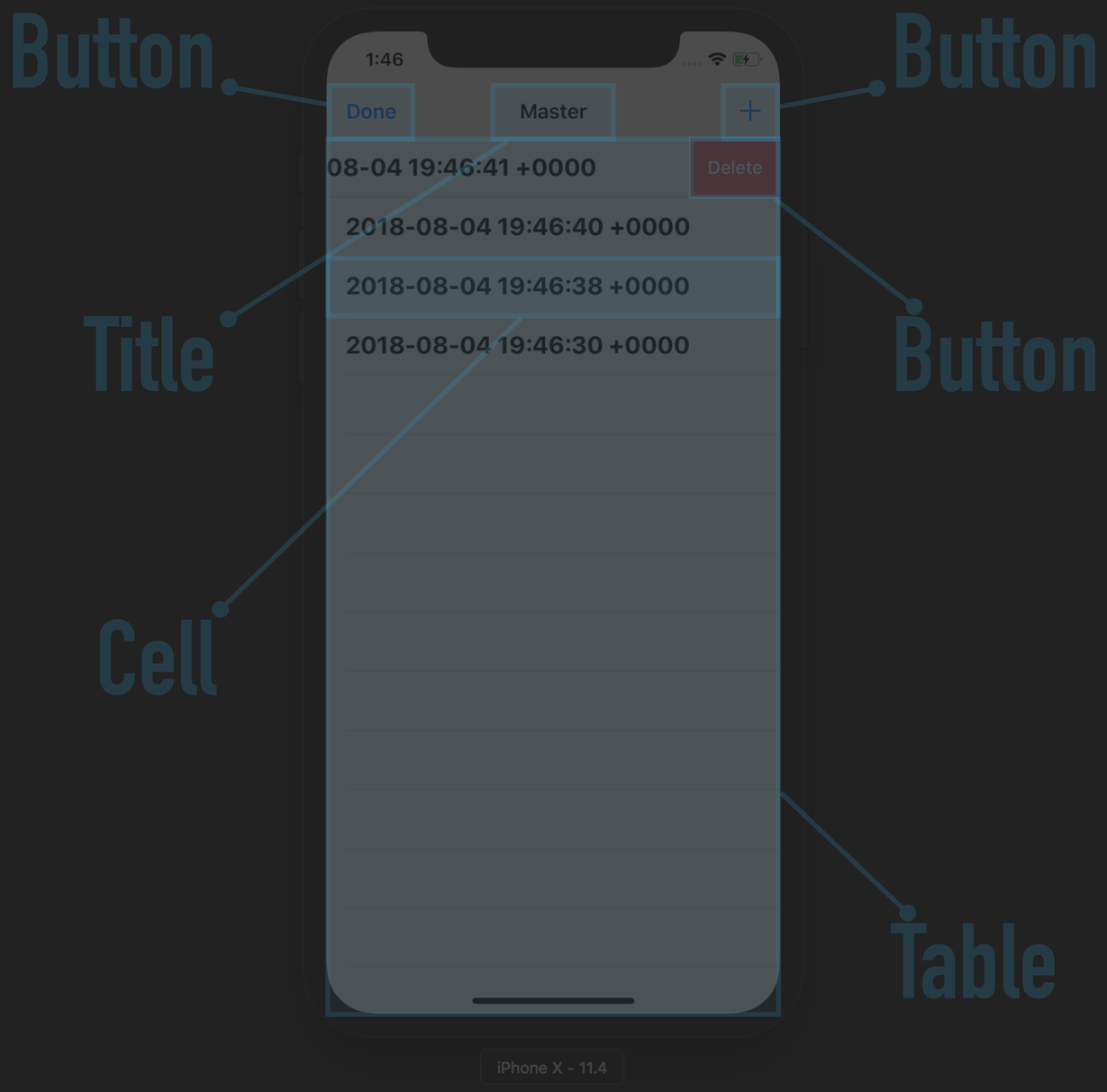

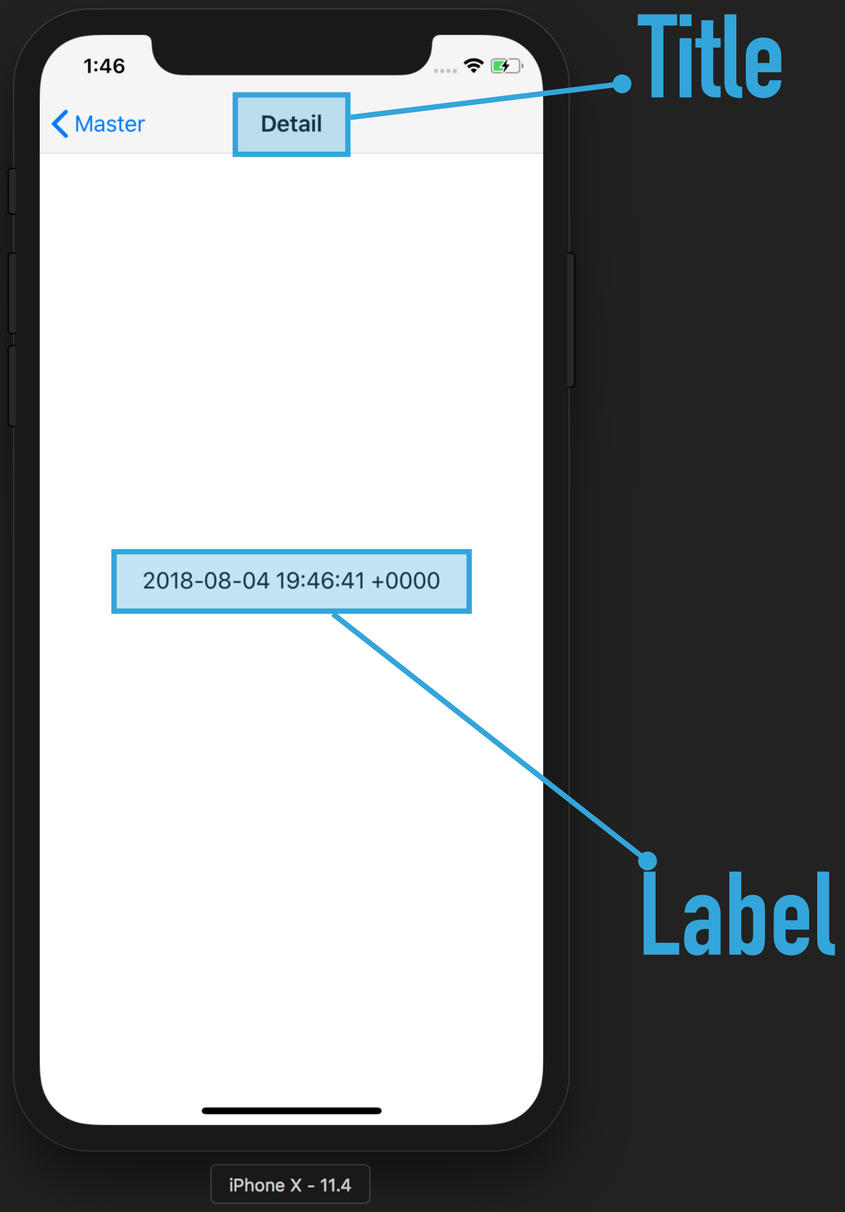

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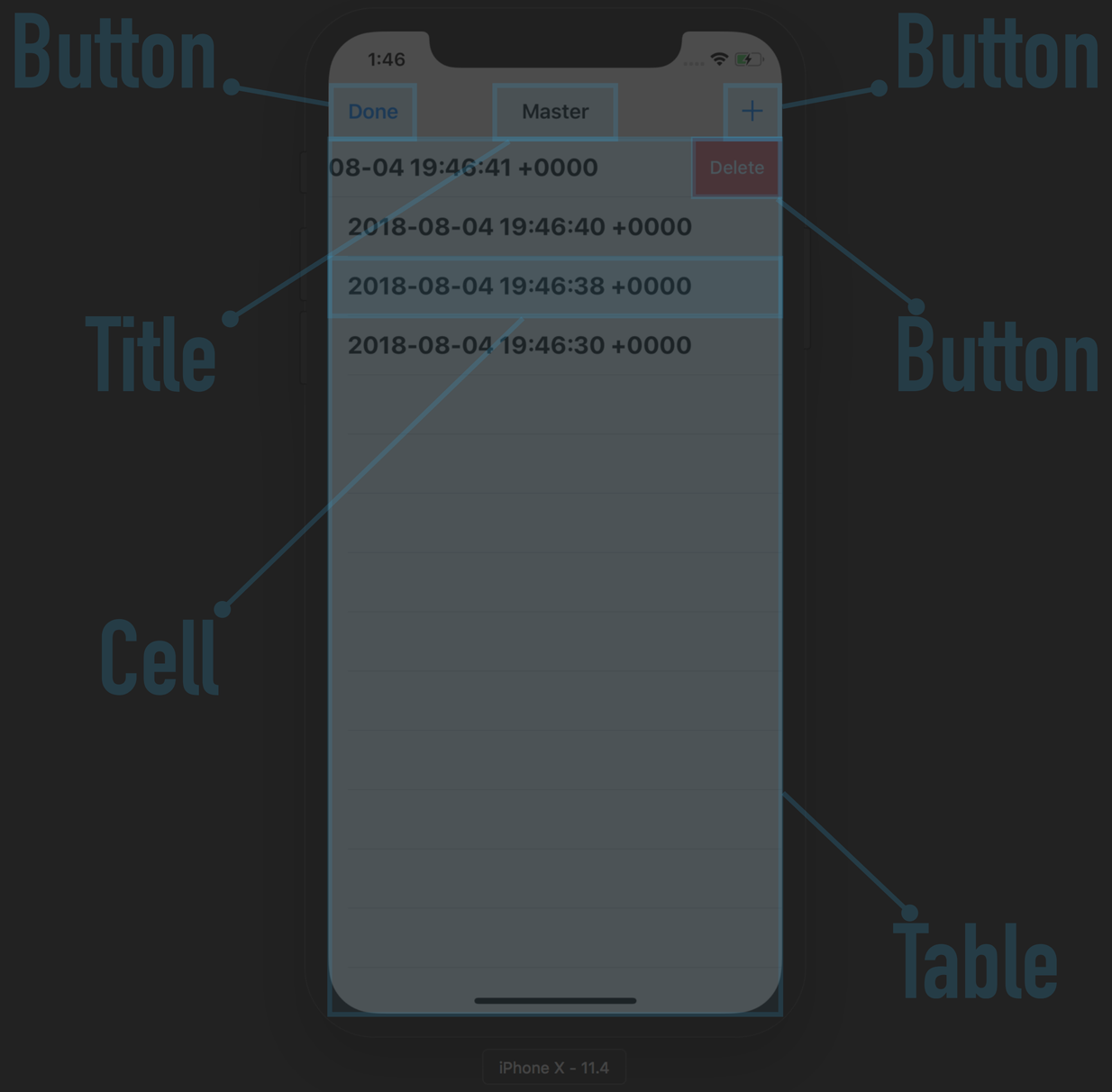

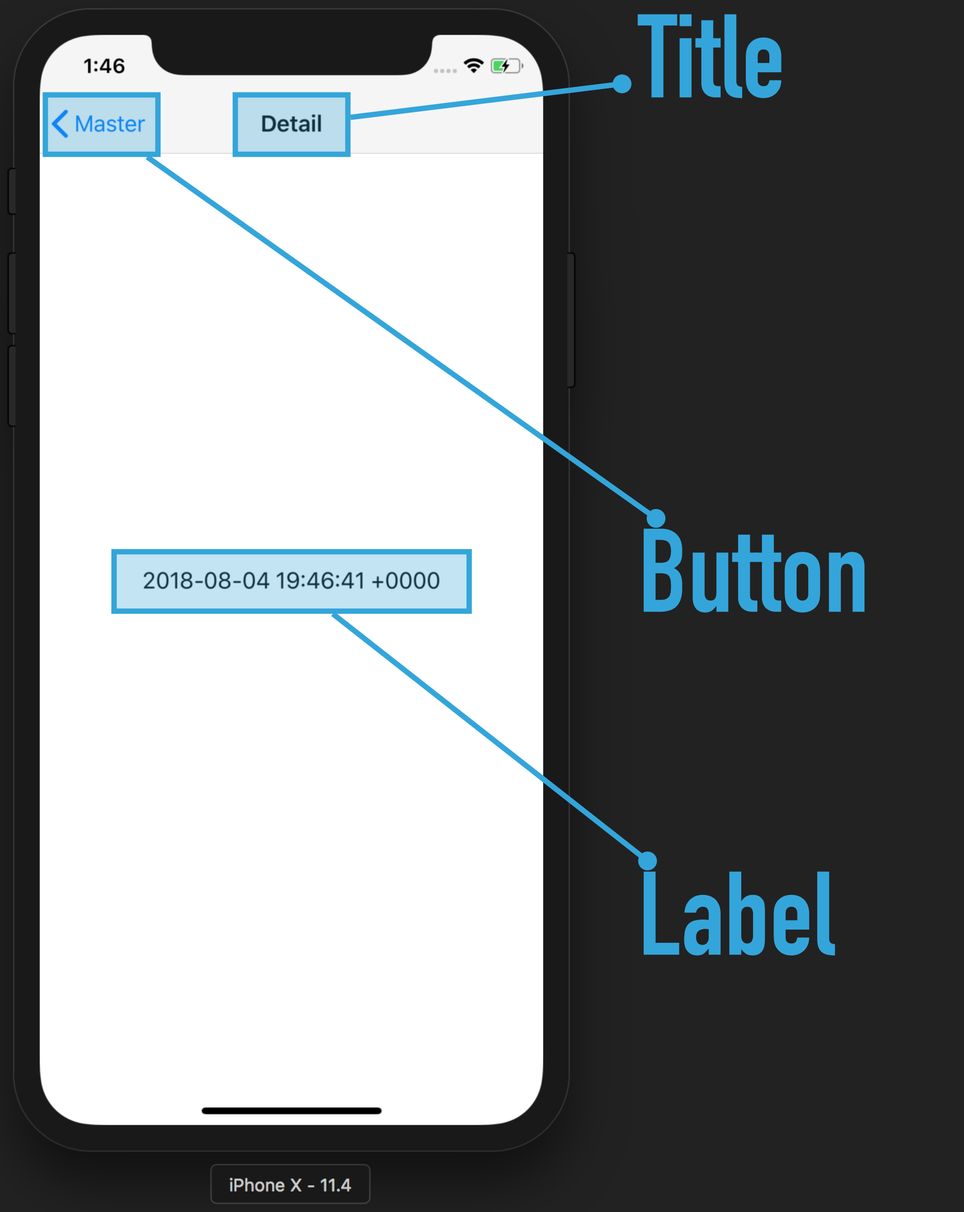

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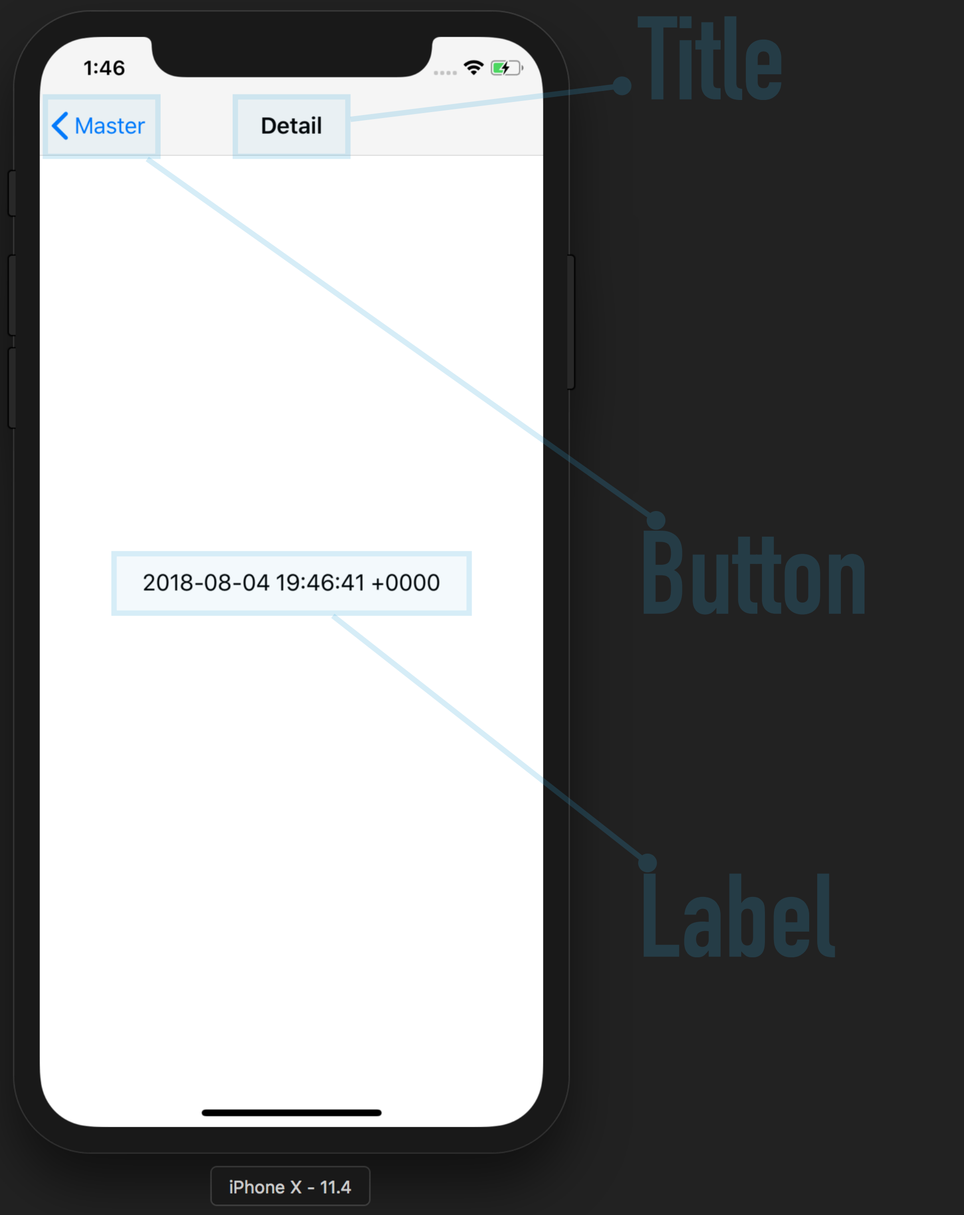

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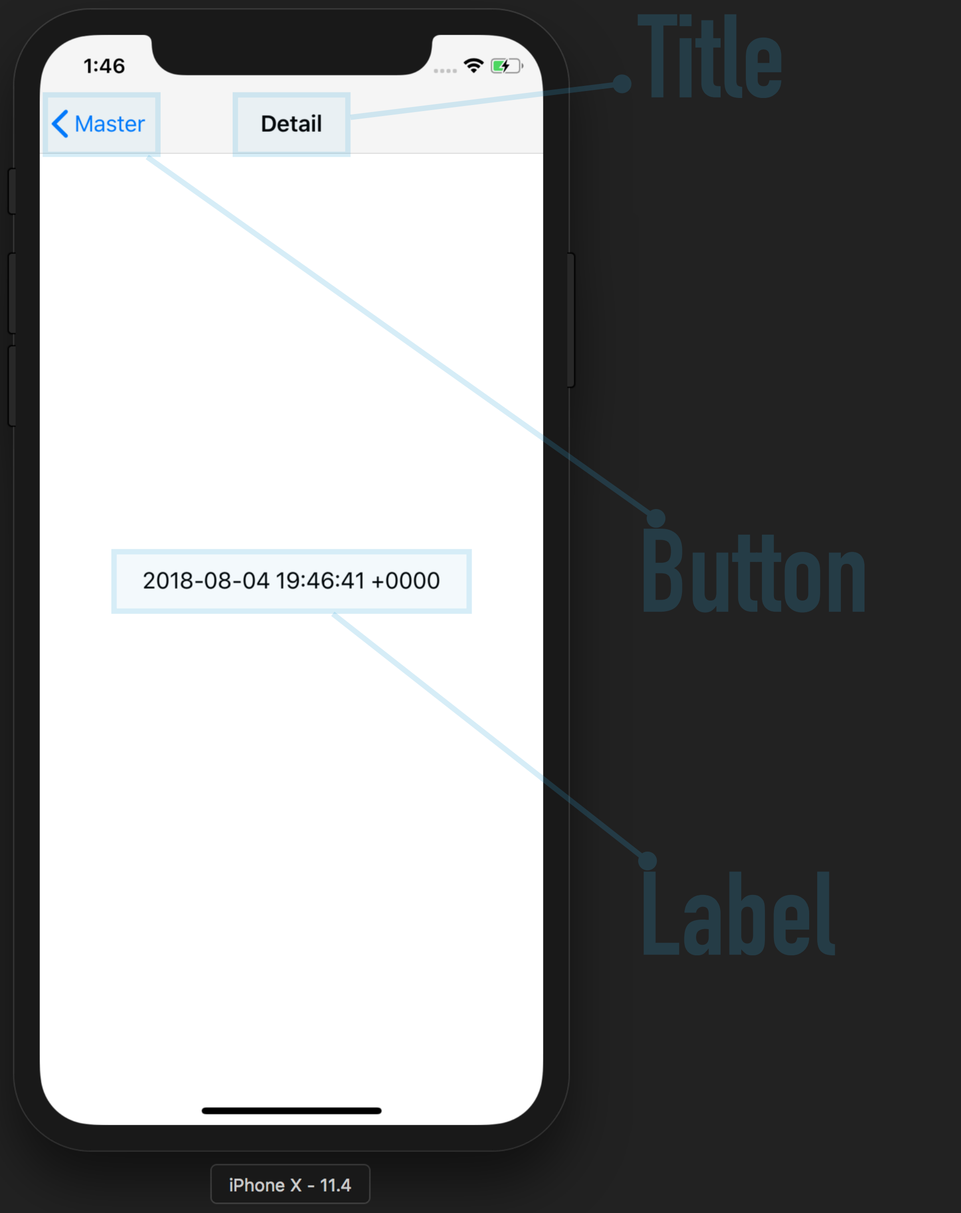
BETTER UI TESTING



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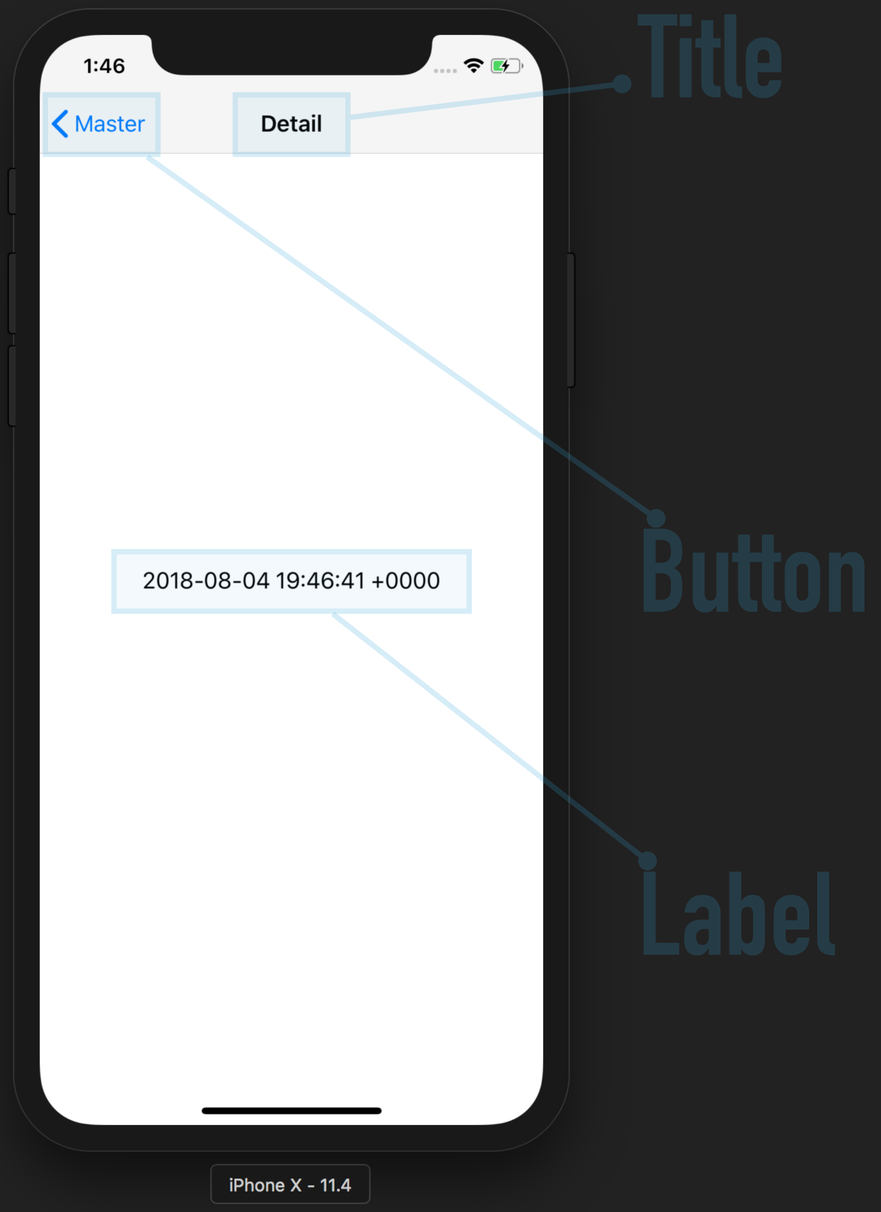

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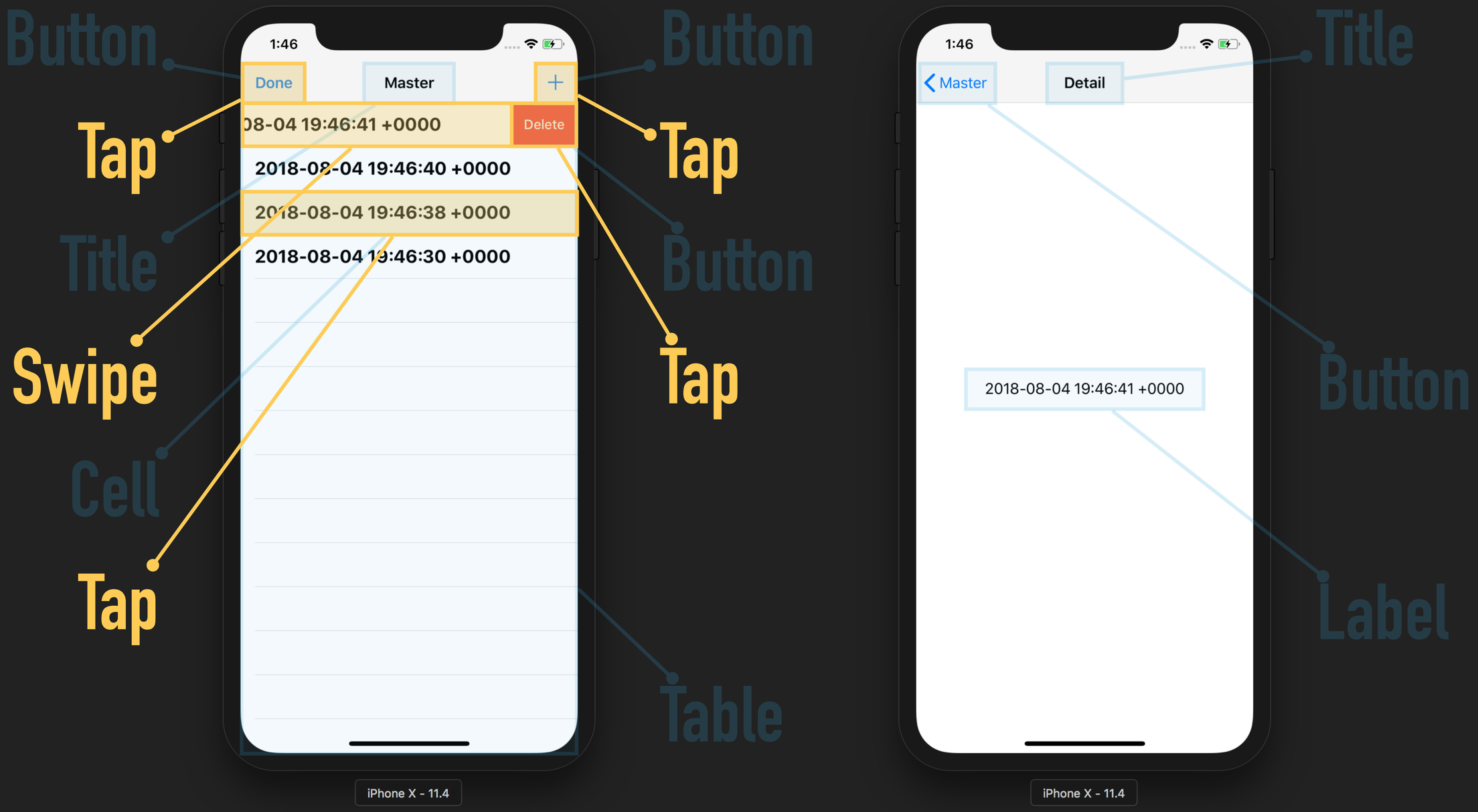

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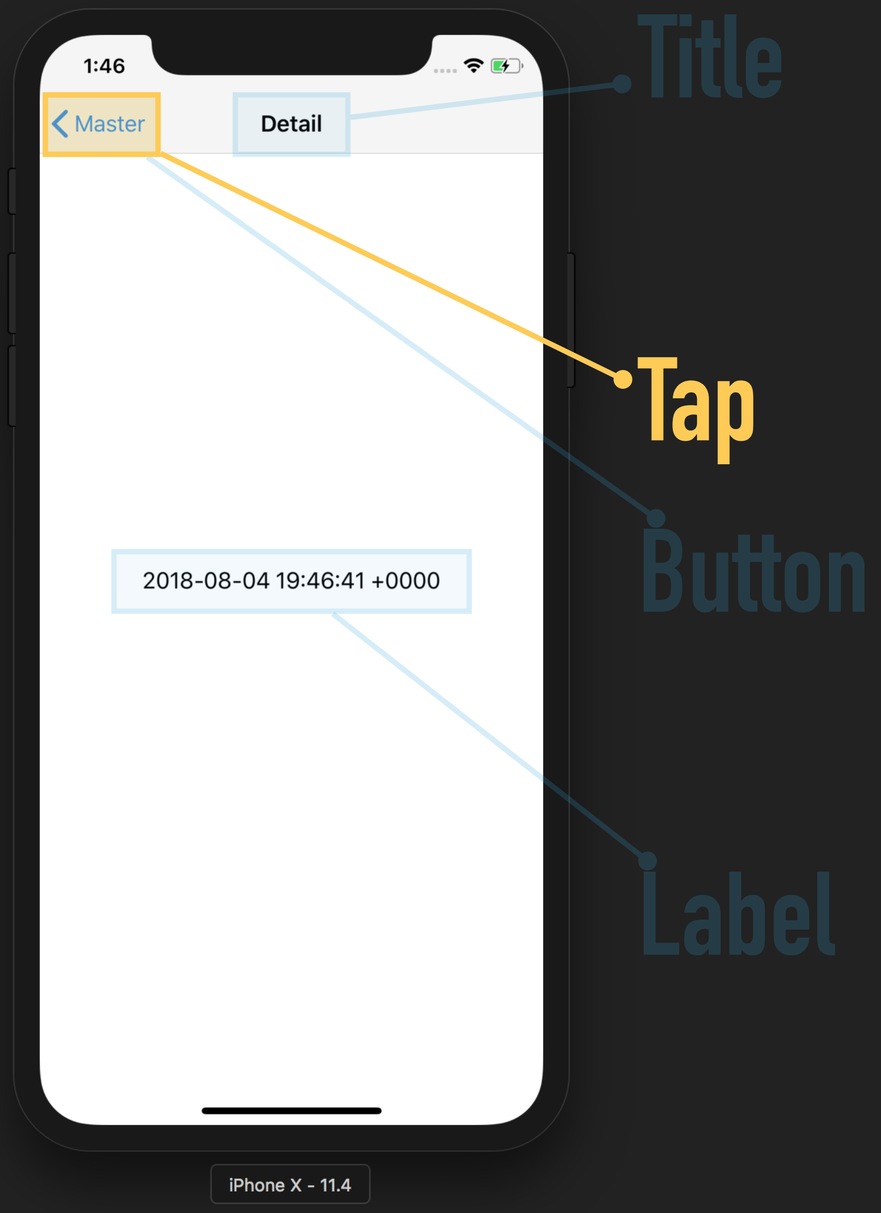

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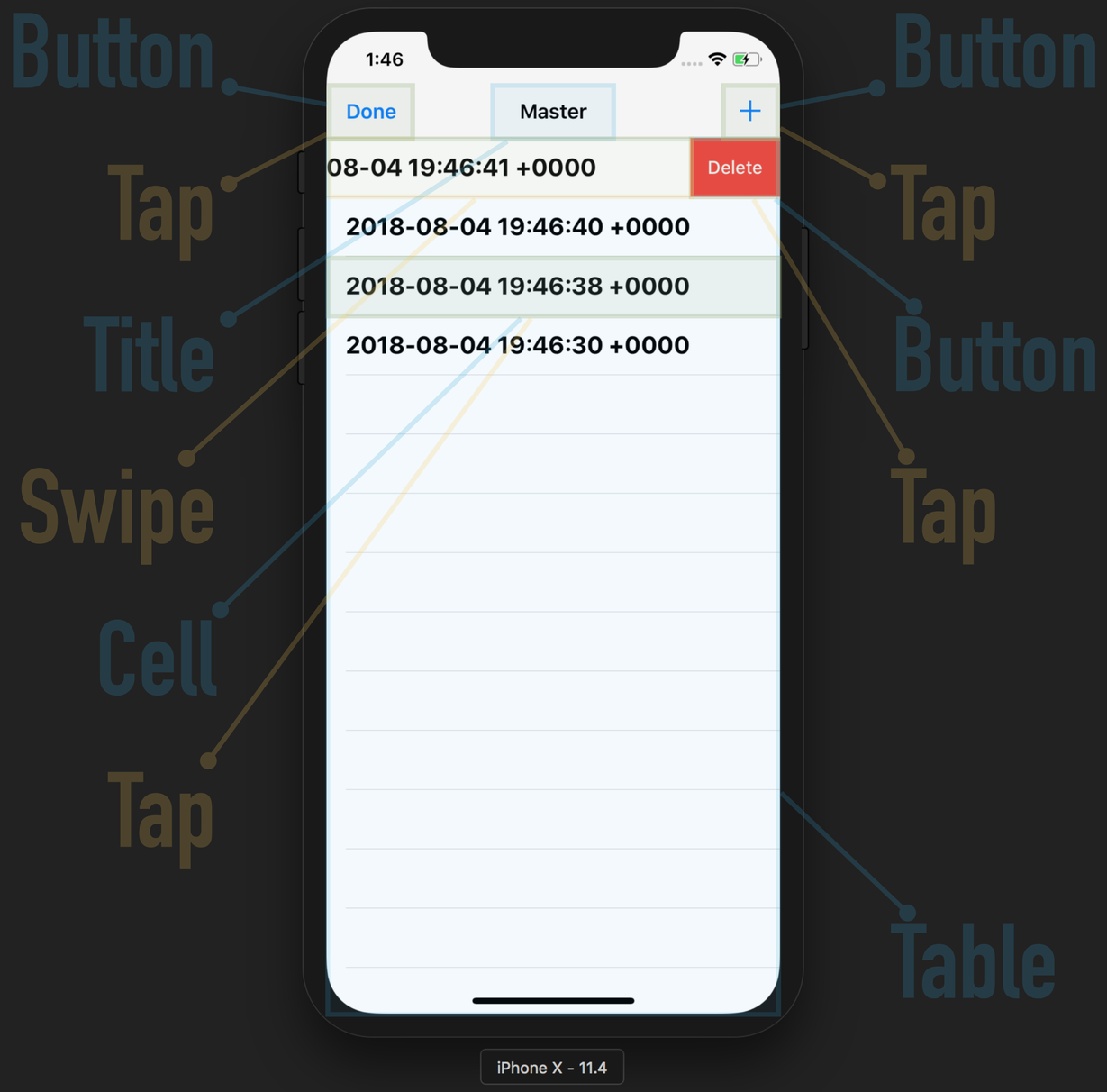

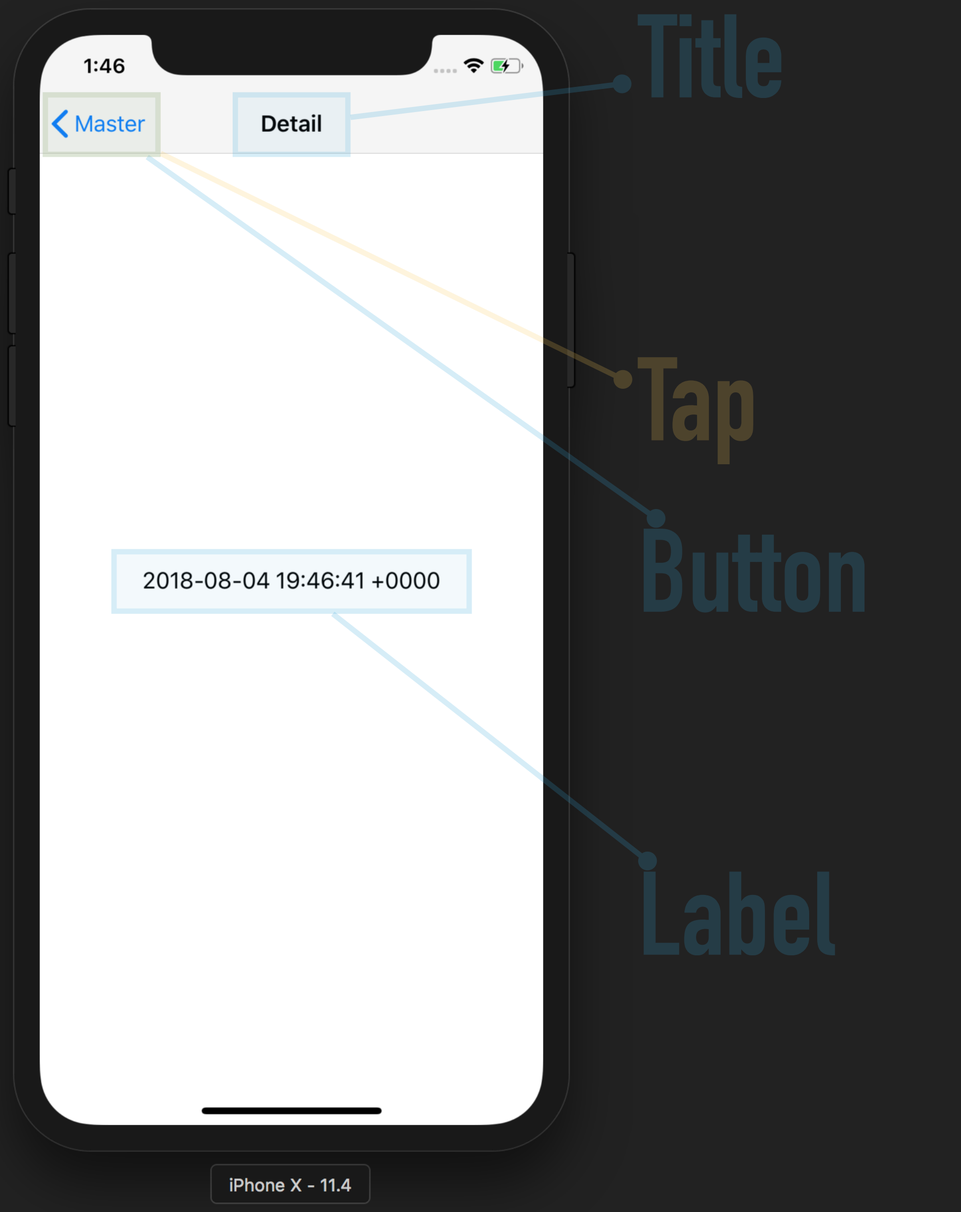

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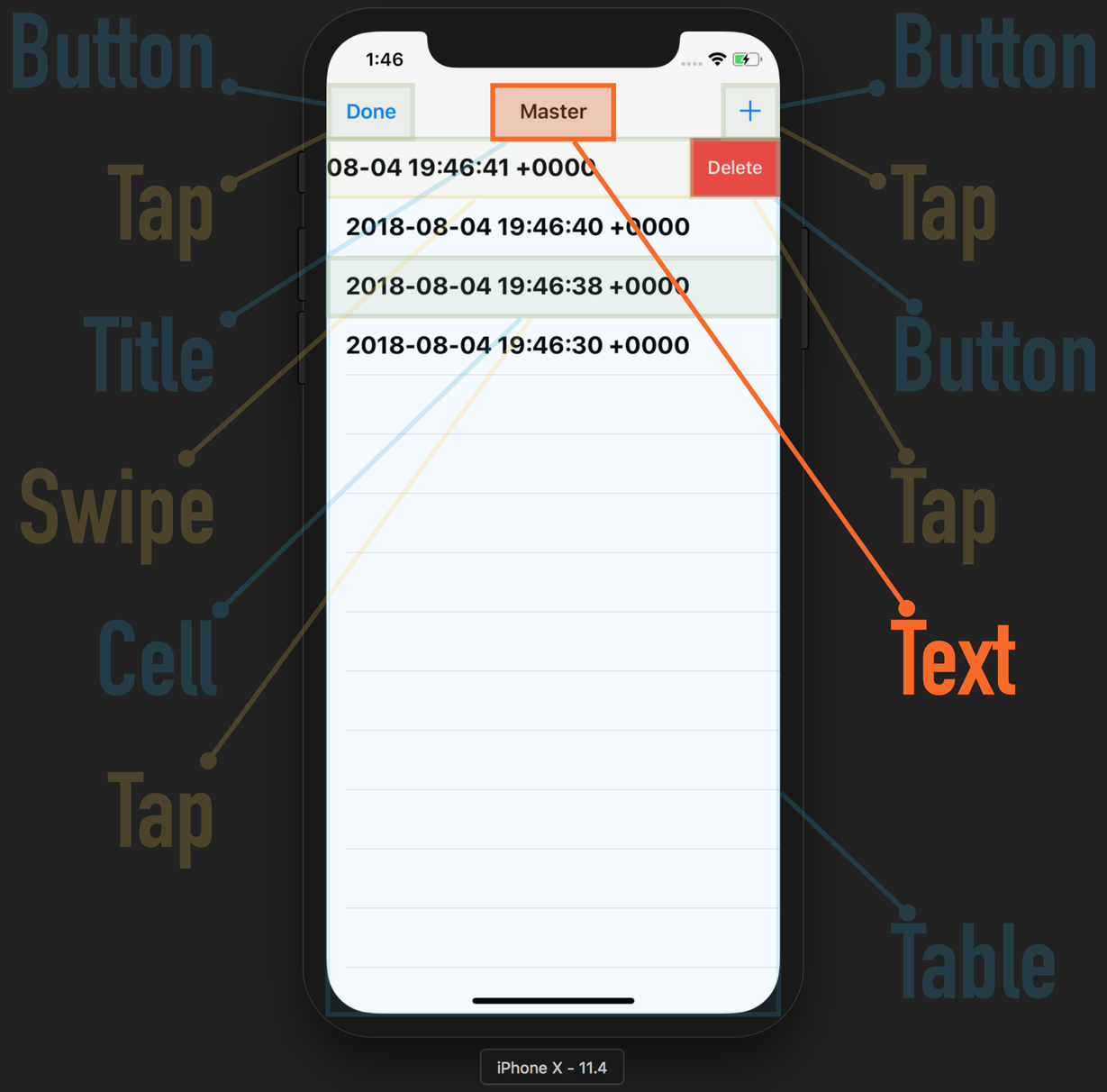

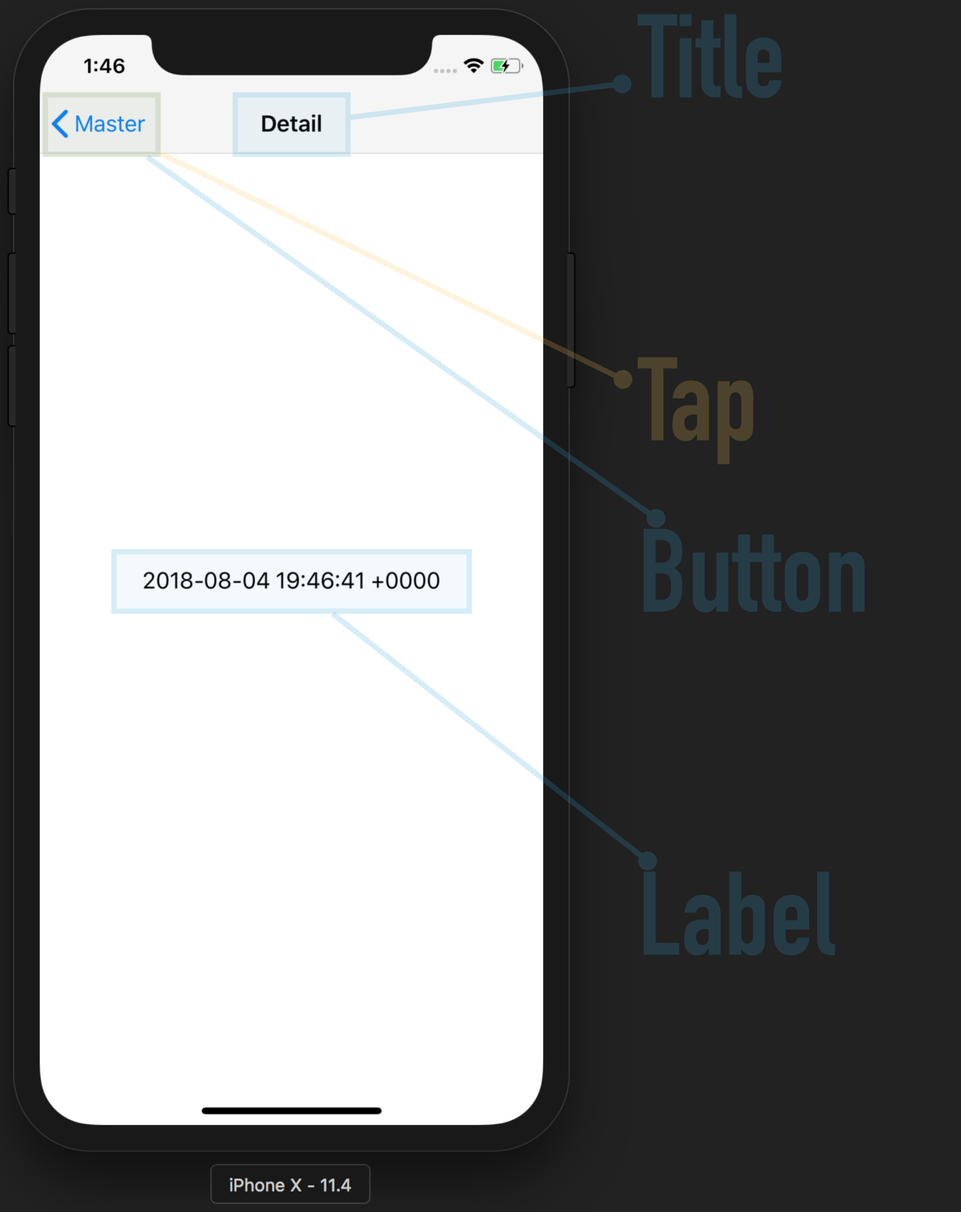

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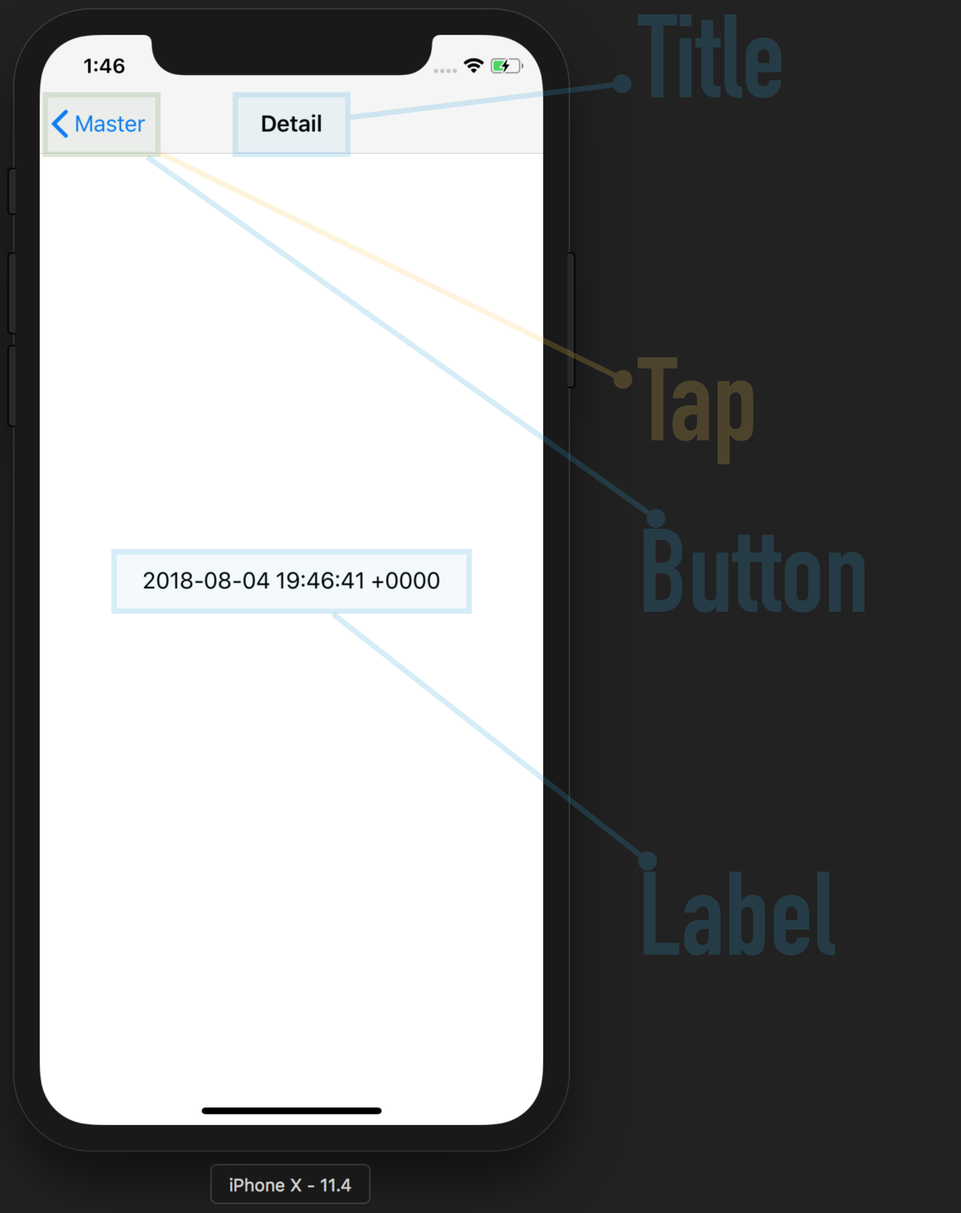
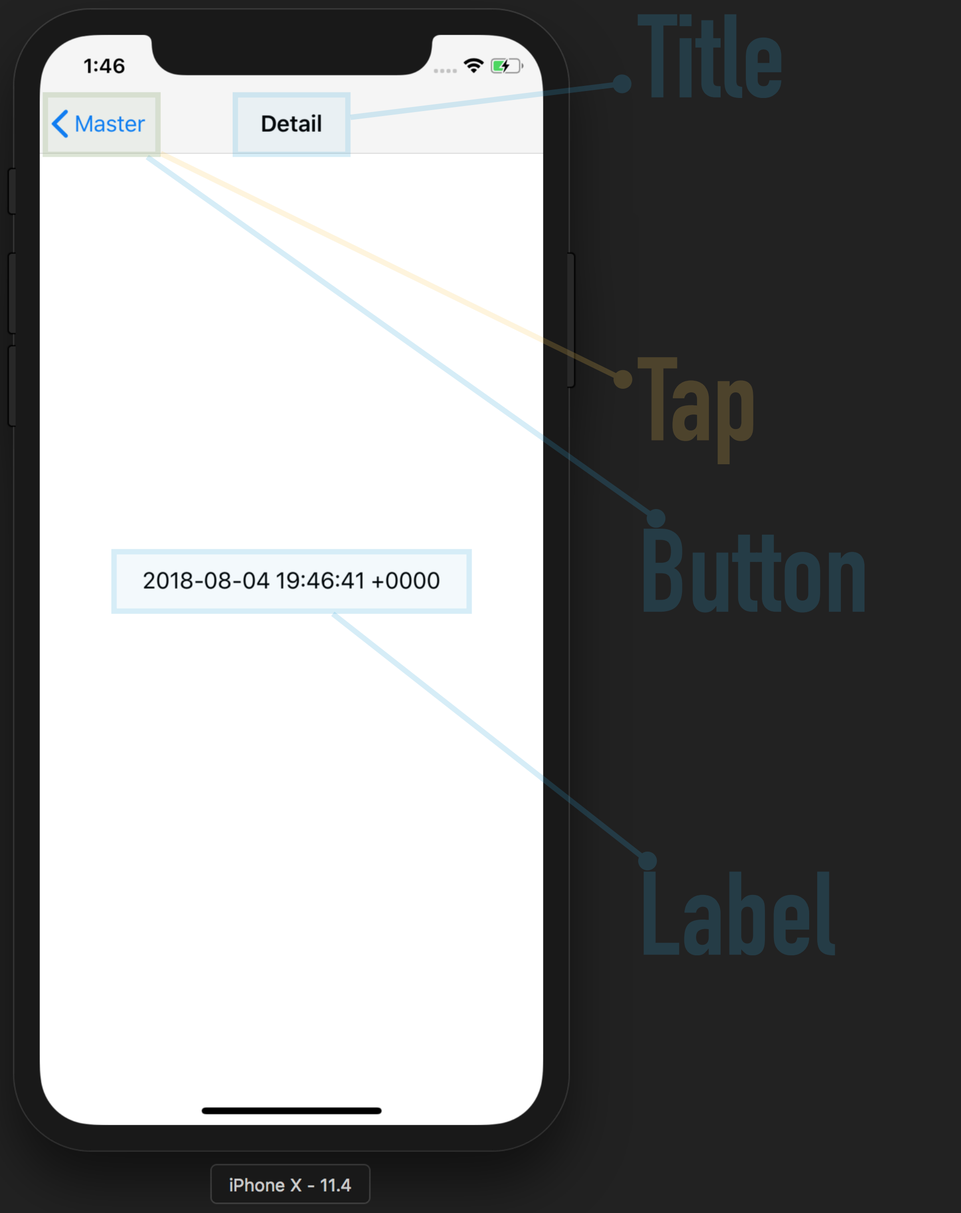
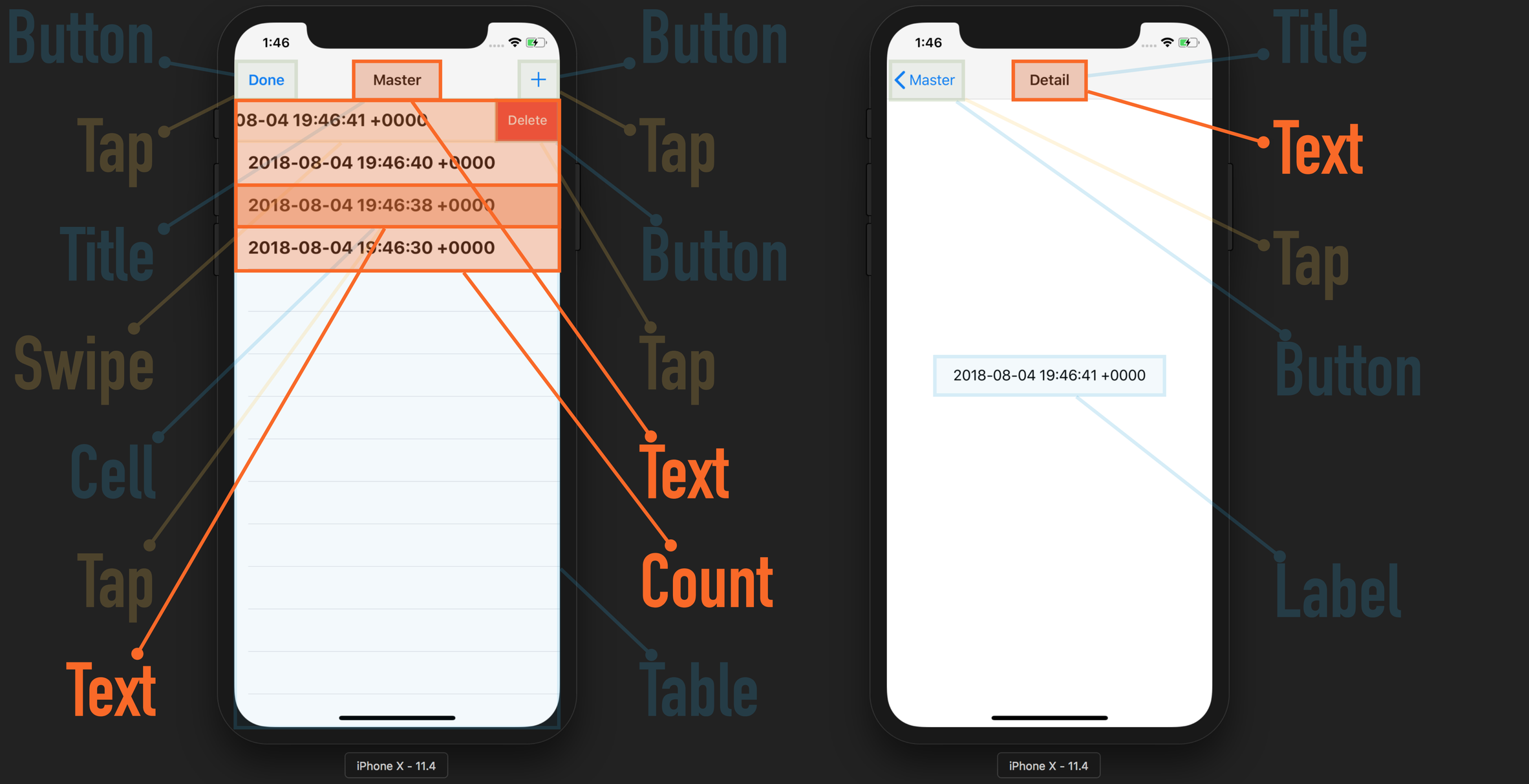


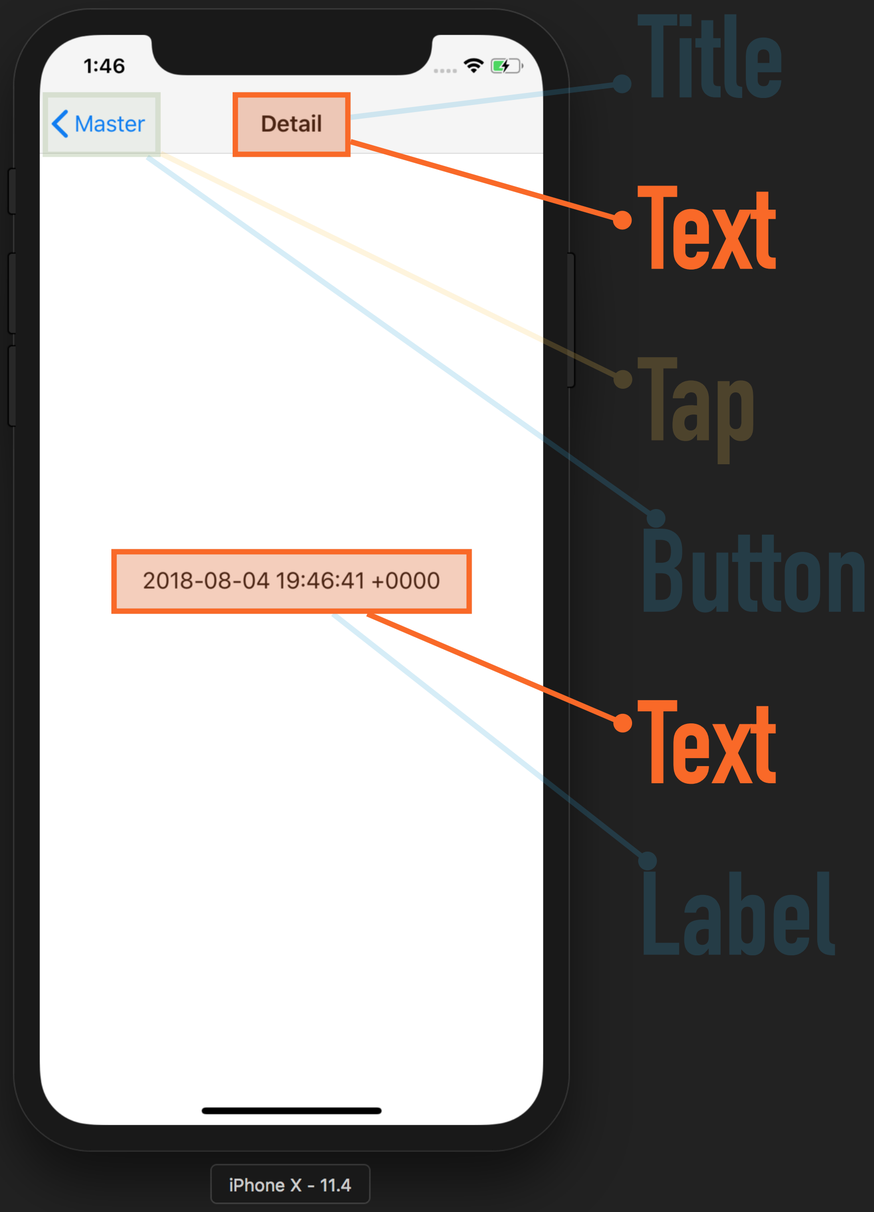
BETTER UI TESTING



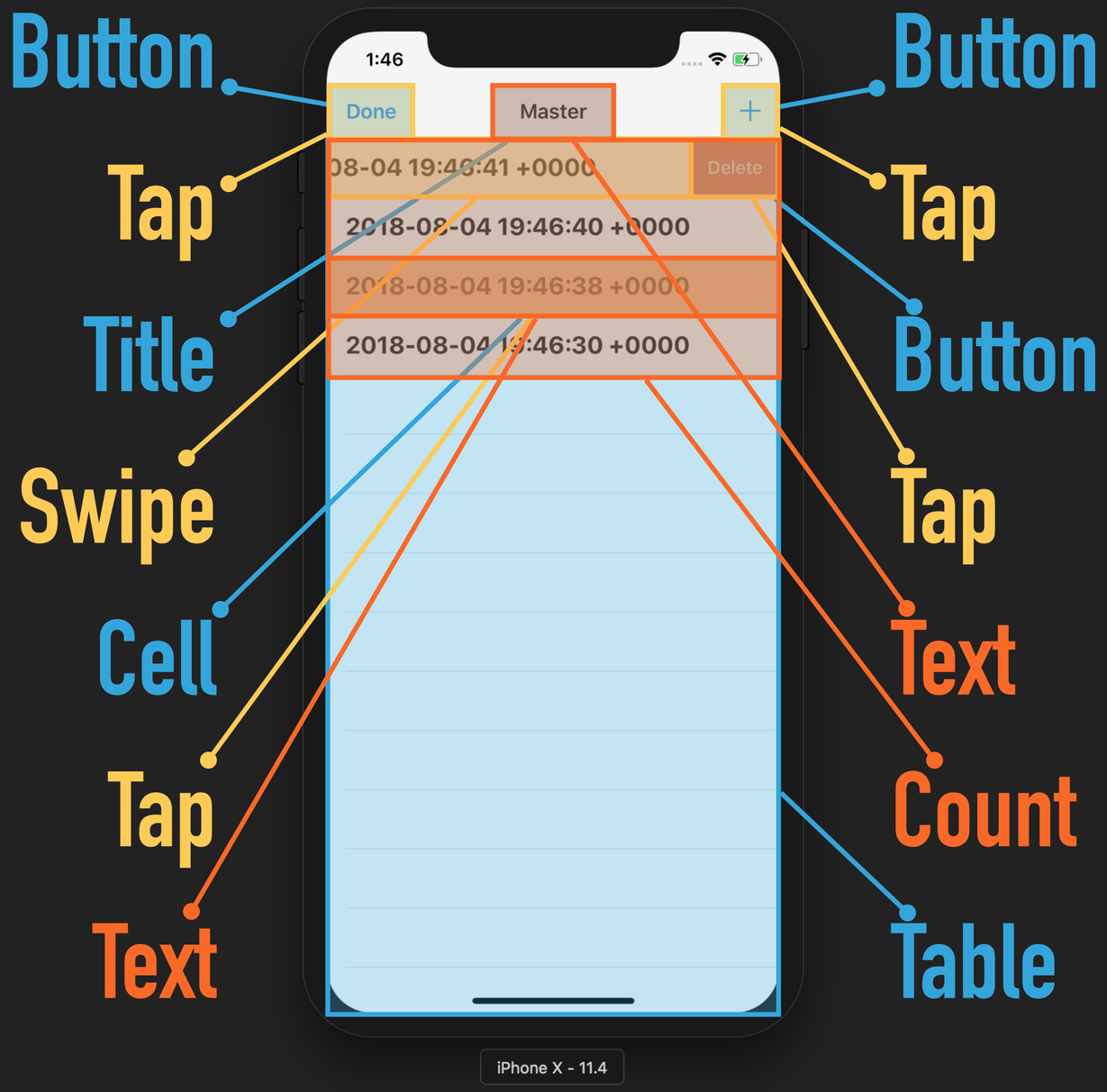
BETTER UI TESTING

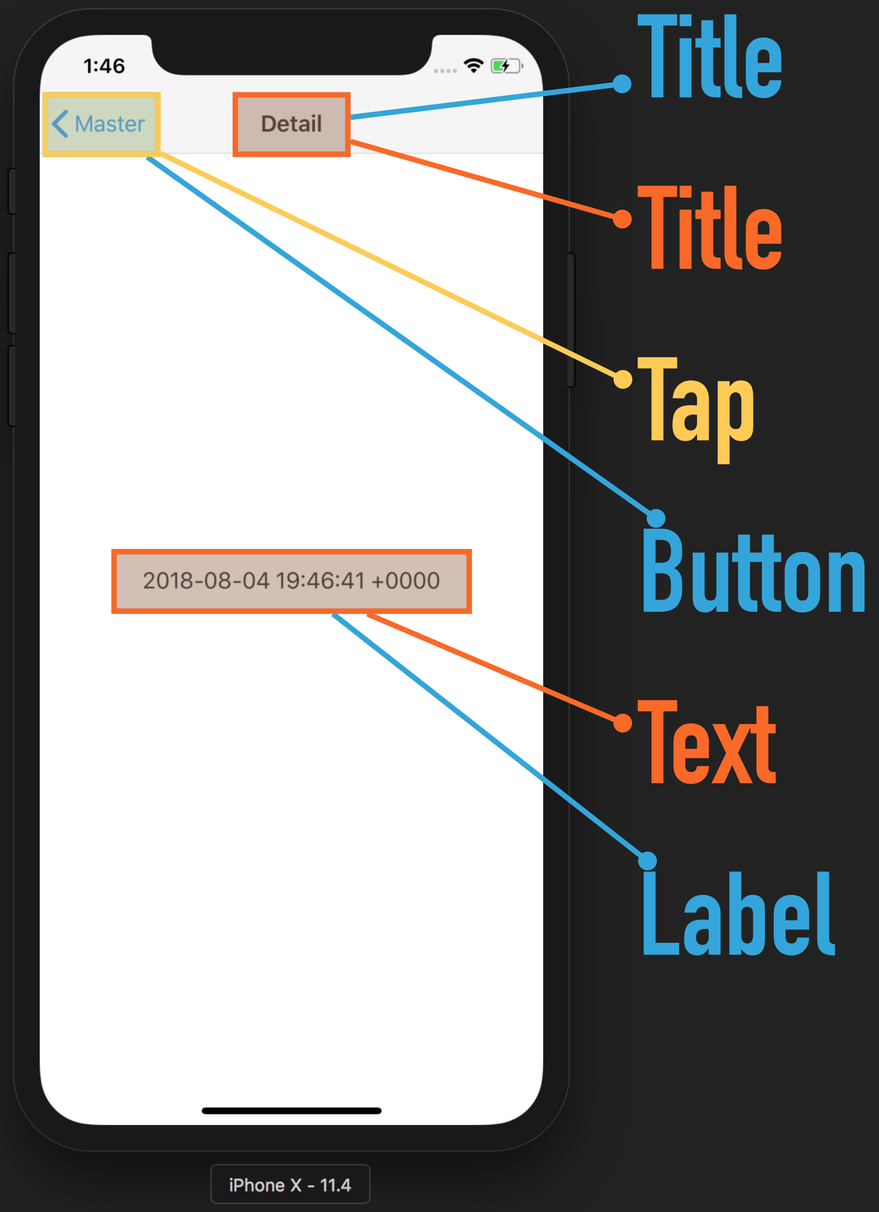


BETTER UI TESTING

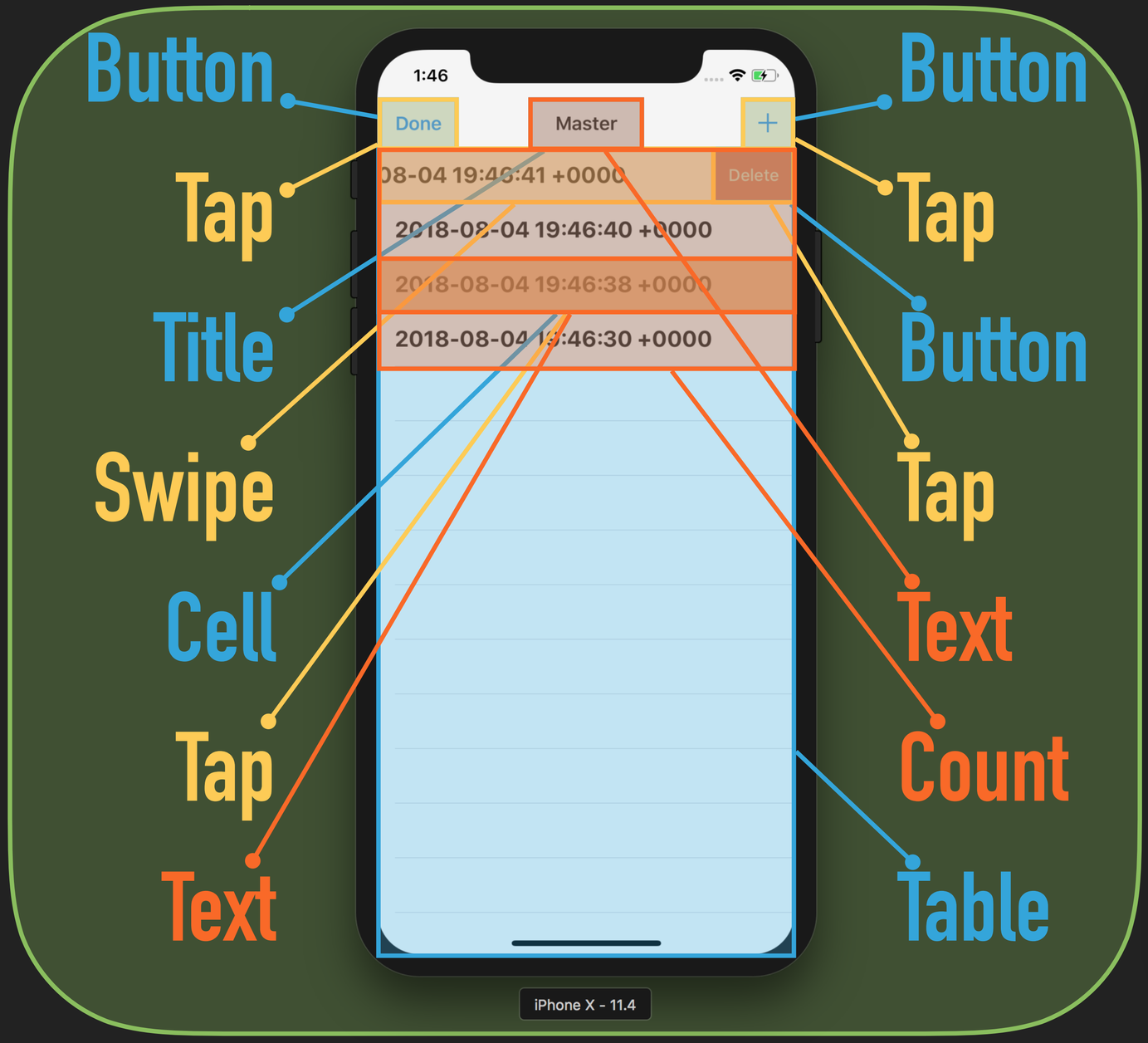


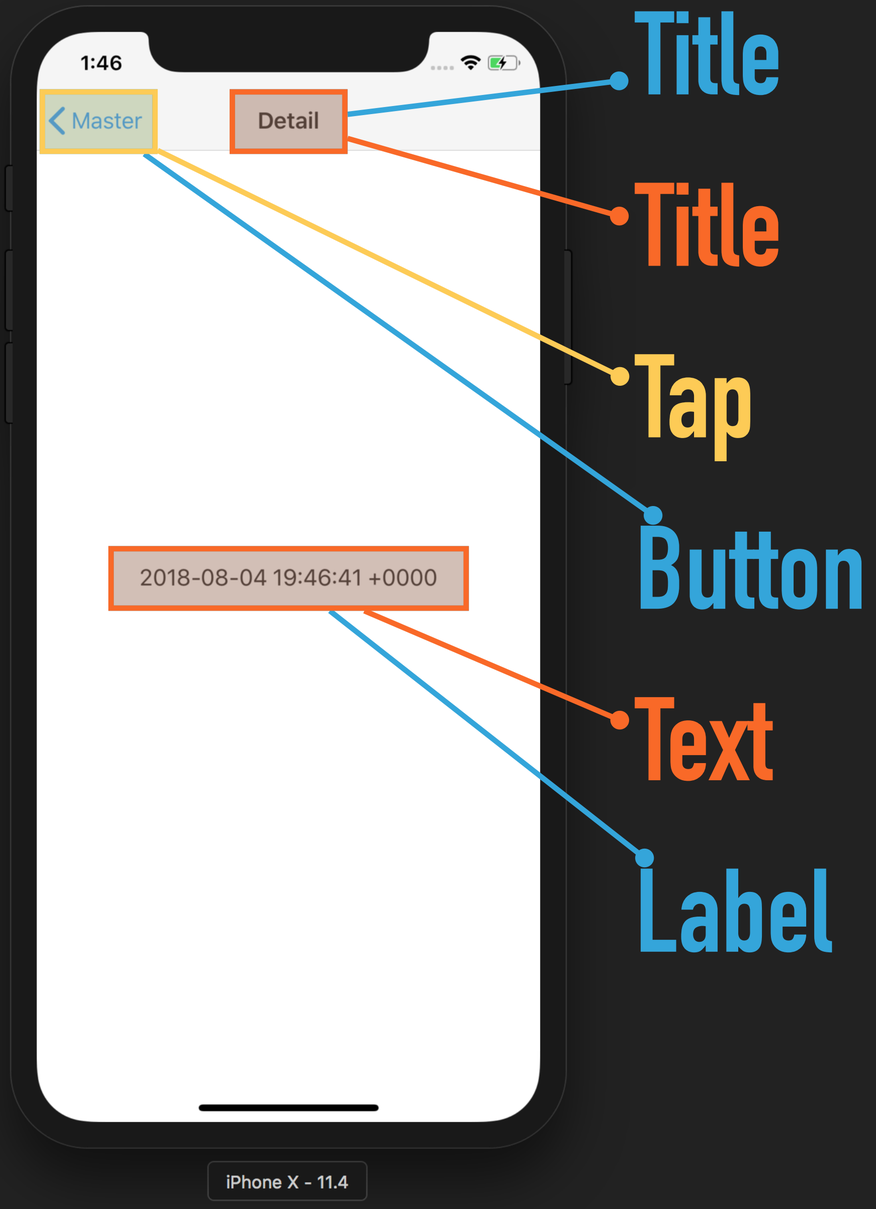
BETTER UI TESTING



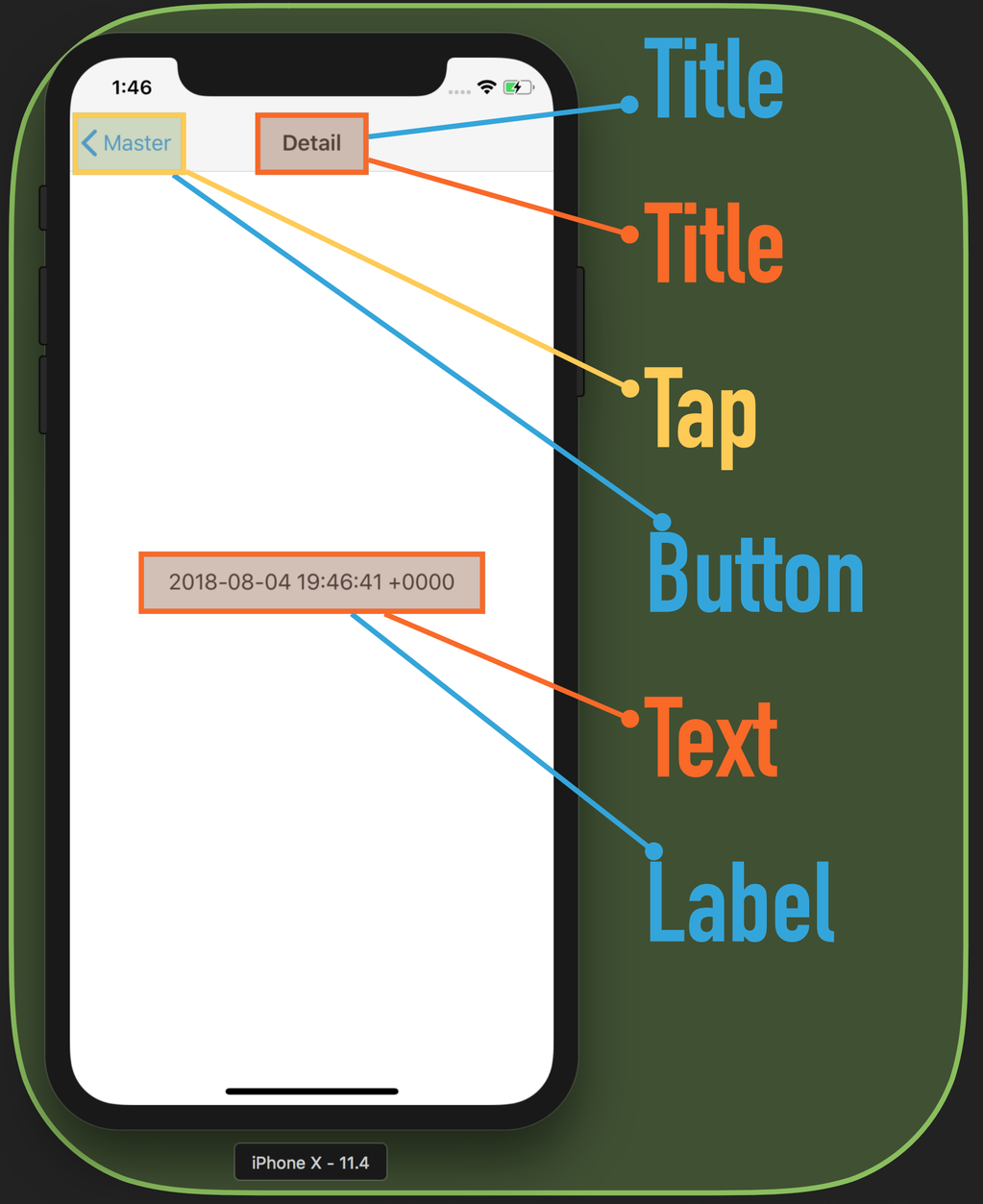


BETTER UI TESTING





BETTER UI TESTING



BETTER UI TESTING

BENEFITS

EASIER TO READ

BENEFITS

EASIER TO READ

Before

```
XCUIApplication().tables.children(matching: .cell).element(boundBy: 0).staticTexts["2018-07-03 20:45:14 +0000"].tap()
```

BENEFITS

EASIER TO READ

Before

```
XCUIApplication().tables.children(matching: .cell).element(boundBy: 0).staticTexts["2018-07-03 20:45:14 +0000"].tap()
```

After

```
.tapOnCell(at: 0)
```

BENEFITS

EASIER TO READ

EASIER TO MAINTAIN

BENEFITS

EASIER TO READ

EASIER TO MAINTAIN

WRITE TESTS FIRST!

BENEFITS

TDD

EASIER TO READ

EASIER TO MAINTAIN

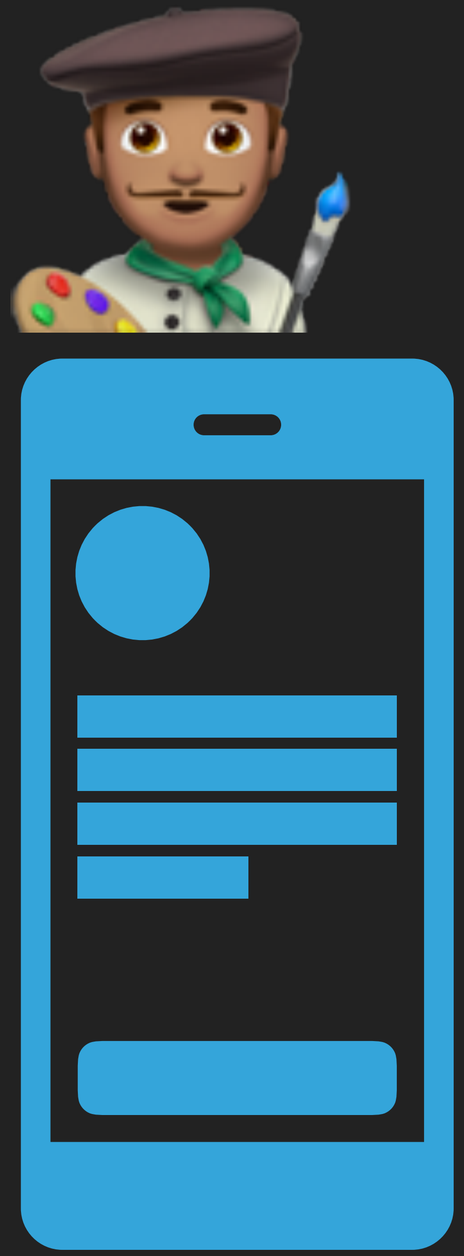
WRITE TESTS FIRST!

BENEFITS

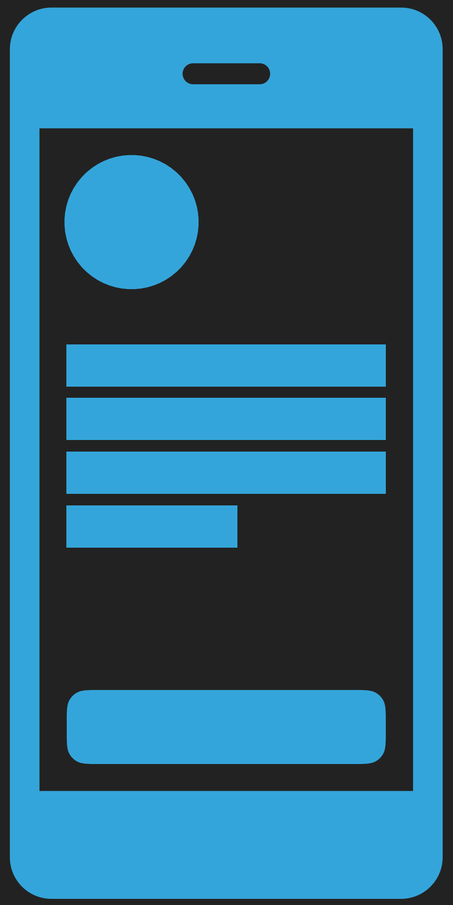
TDD

TEST-DRIVEN DEVELOPMENT

TDD



TDD



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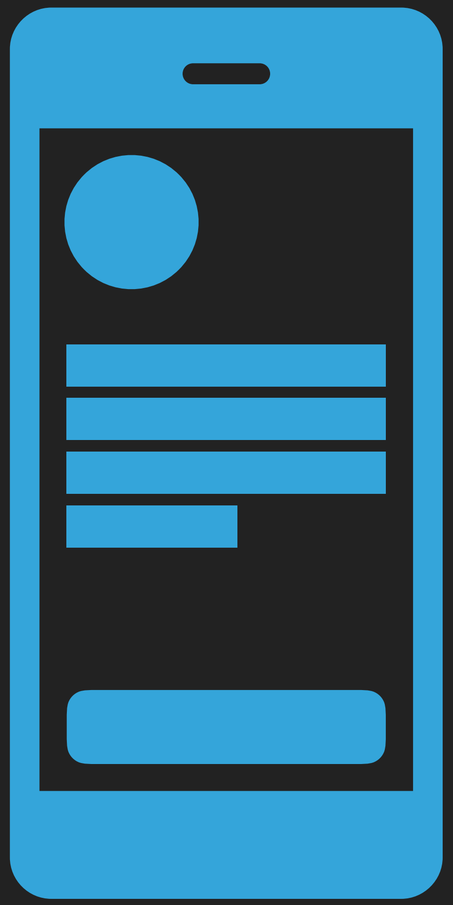

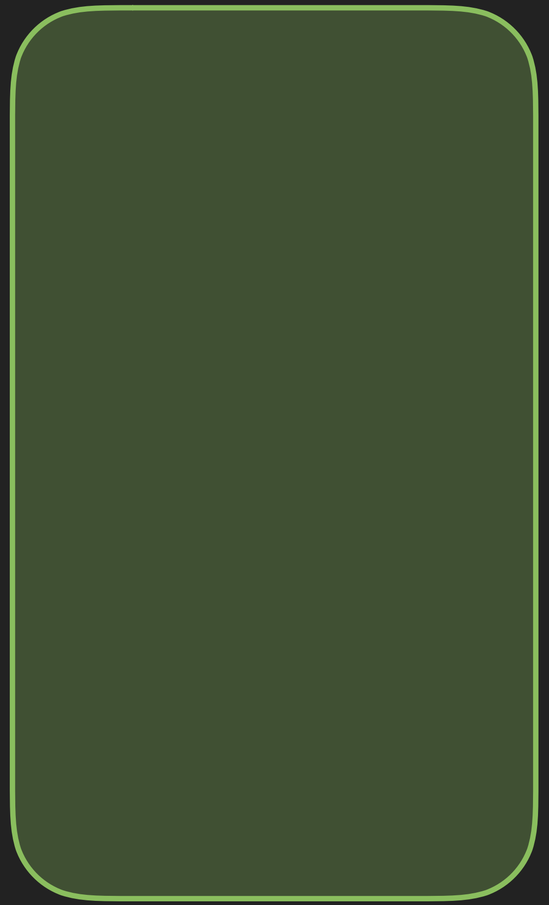

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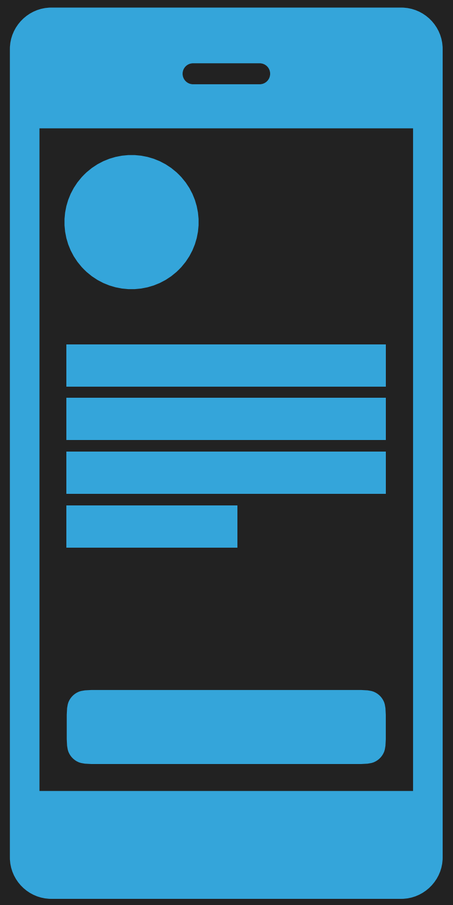

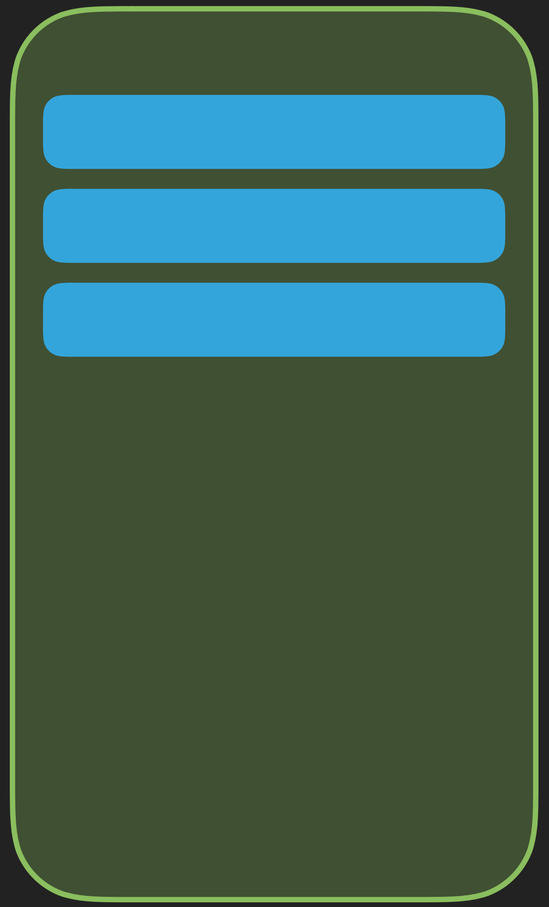

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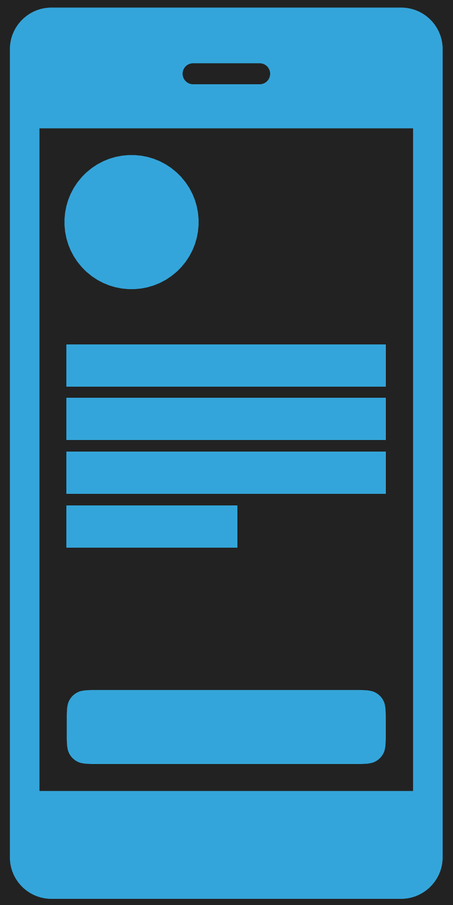

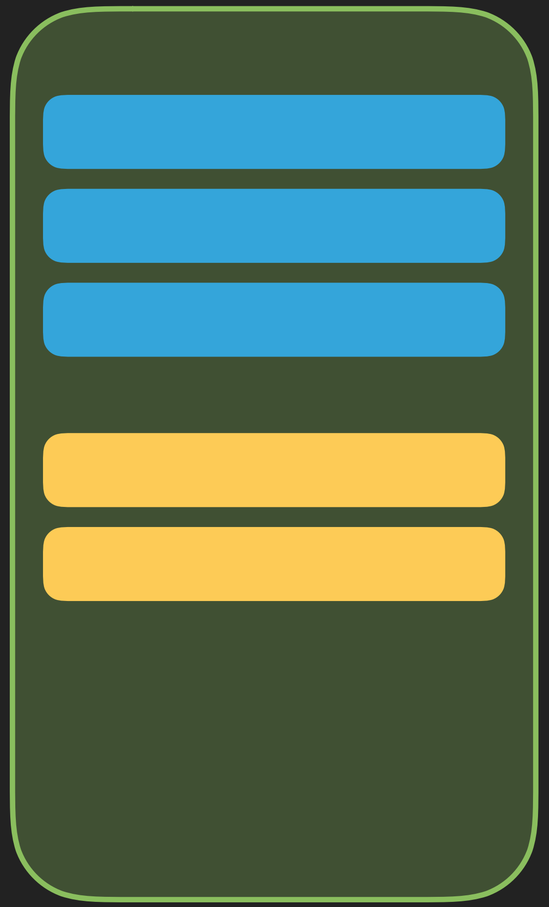

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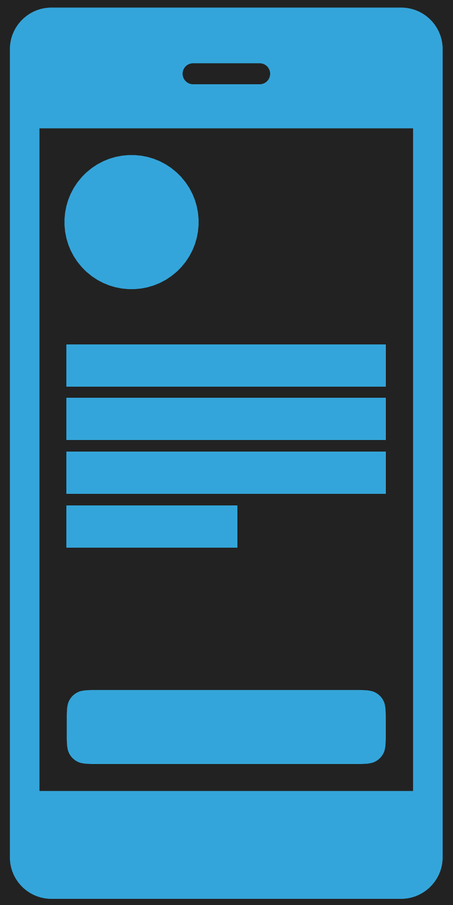

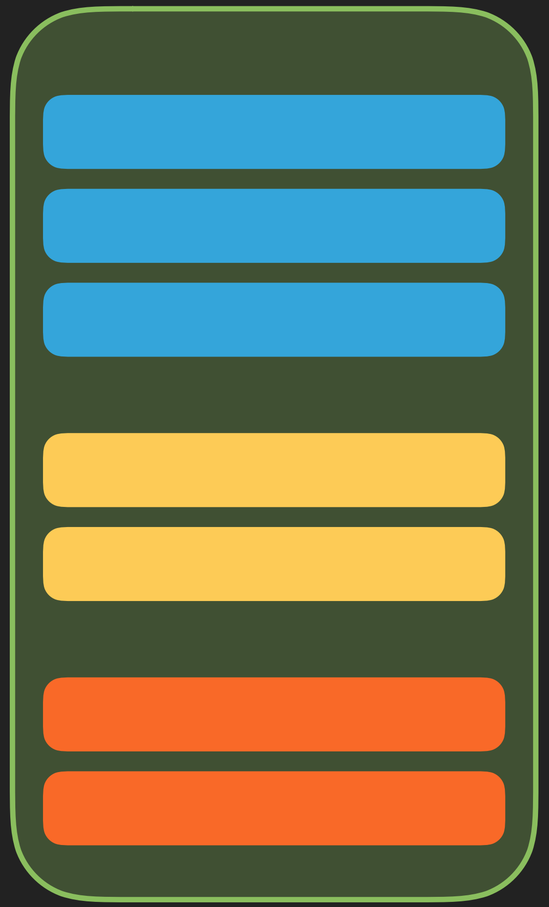

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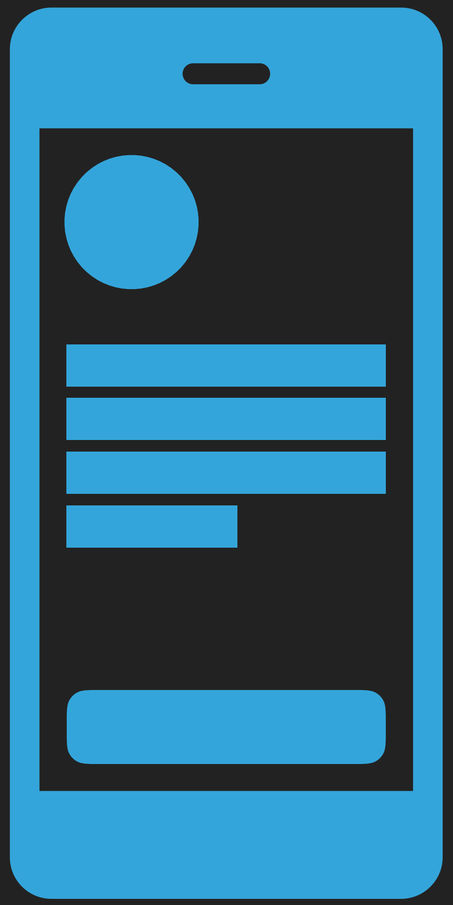

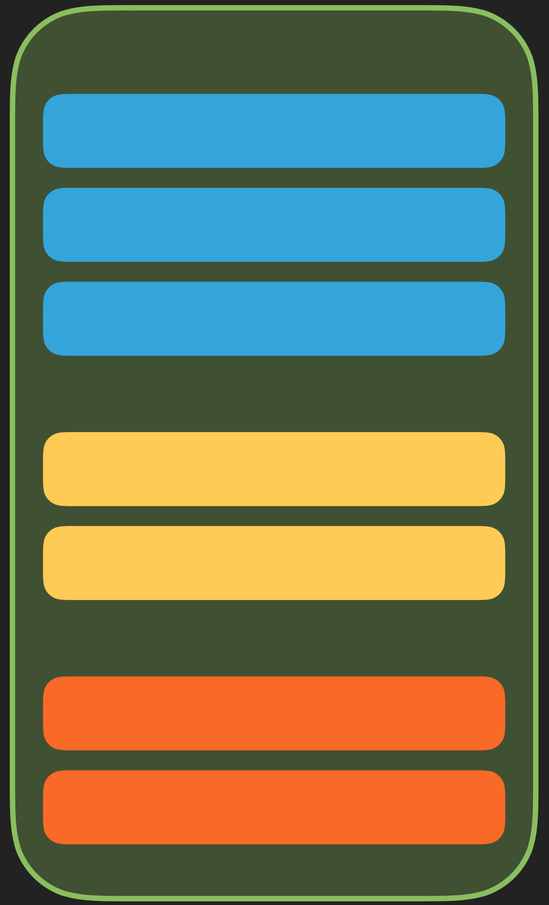

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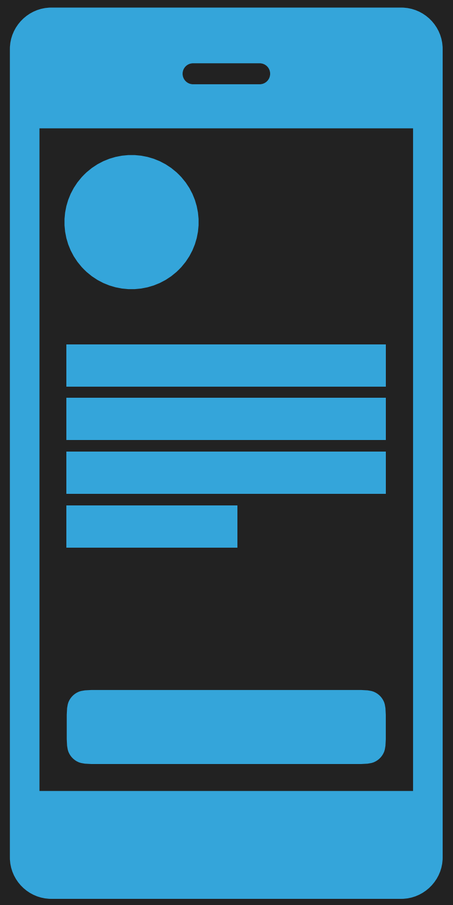

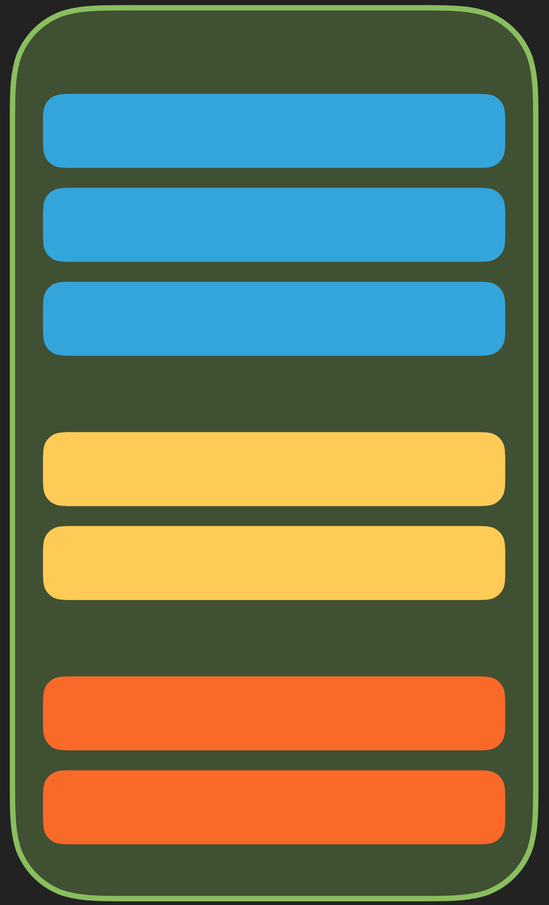

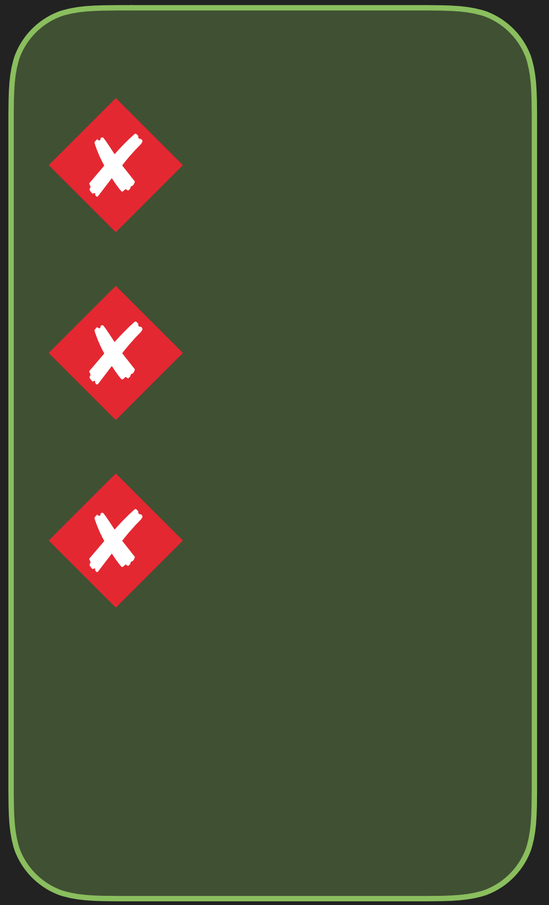

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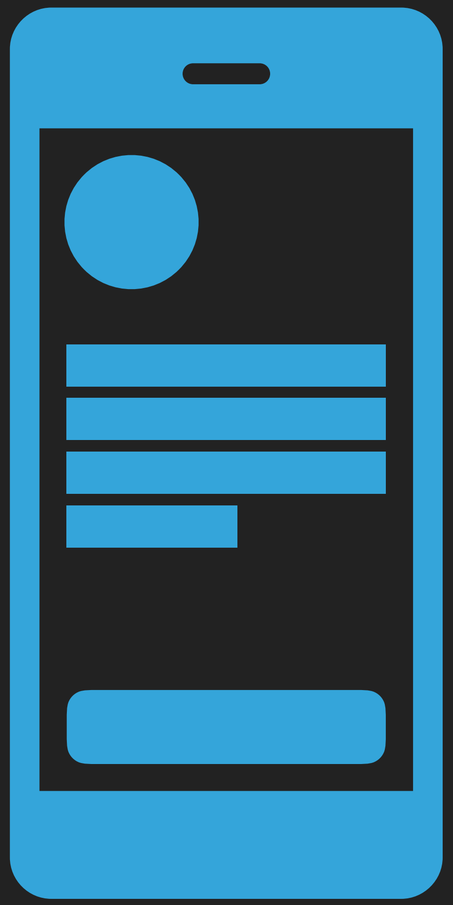
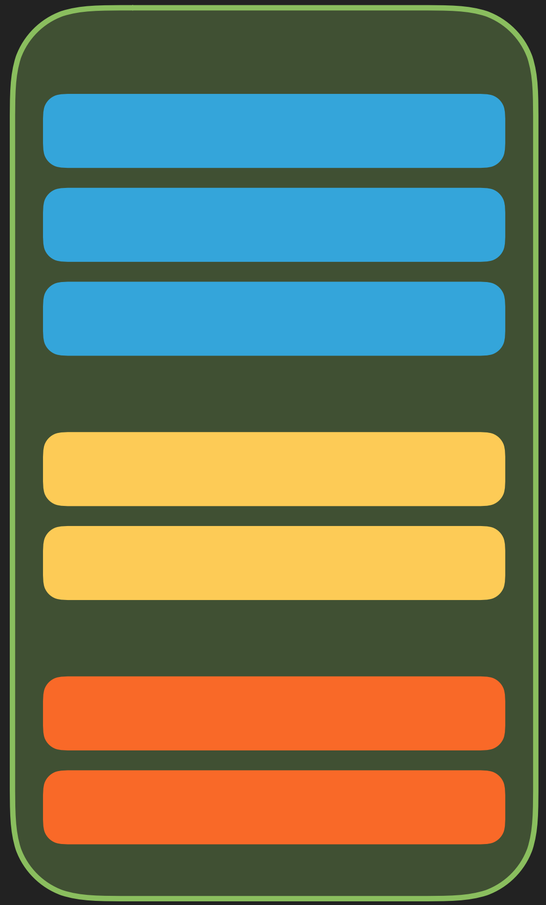
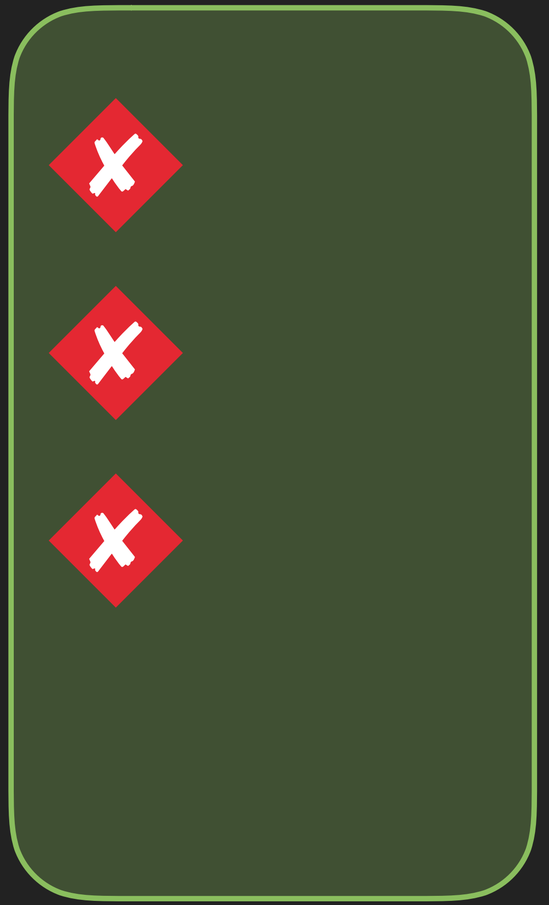
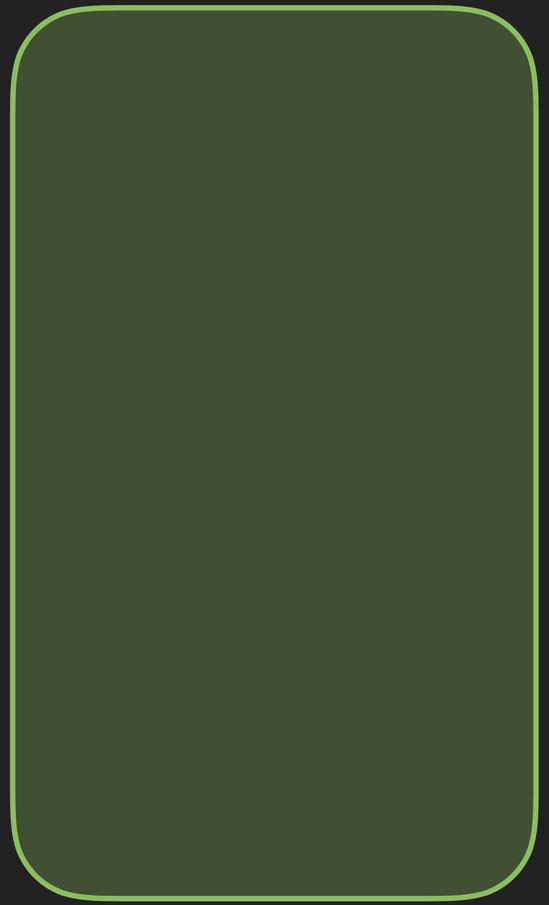
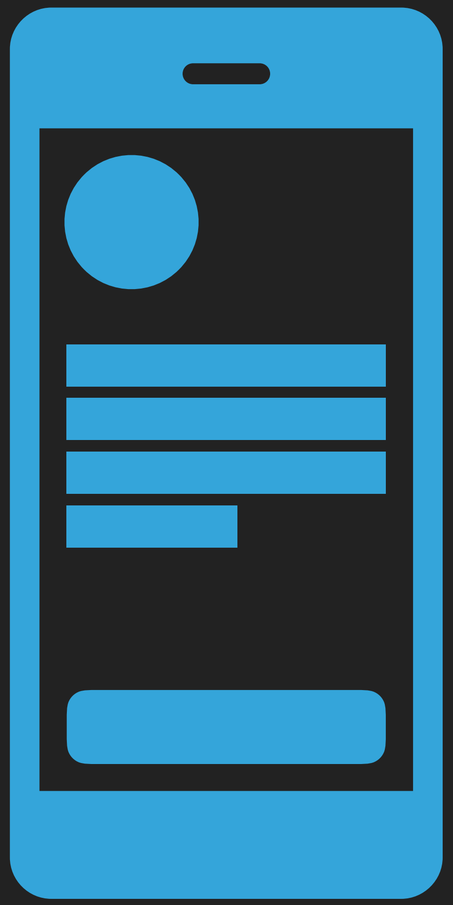


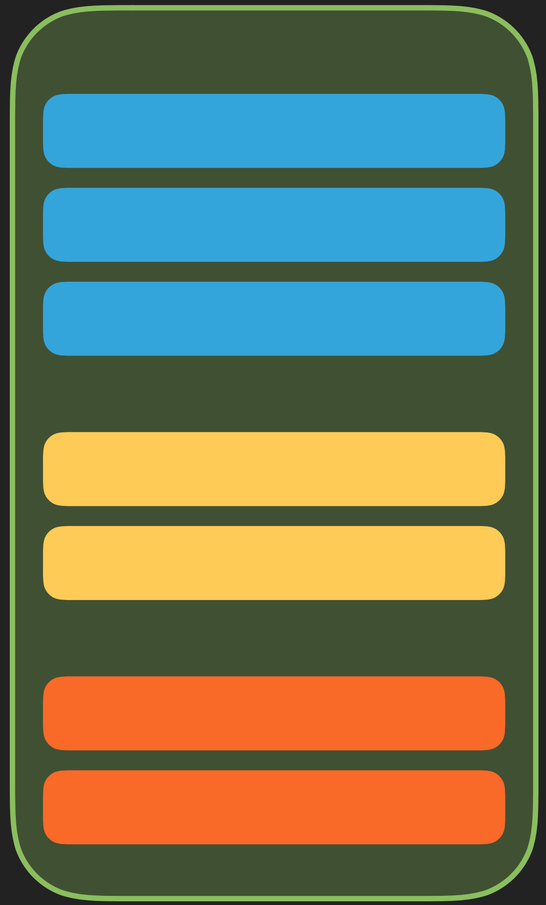


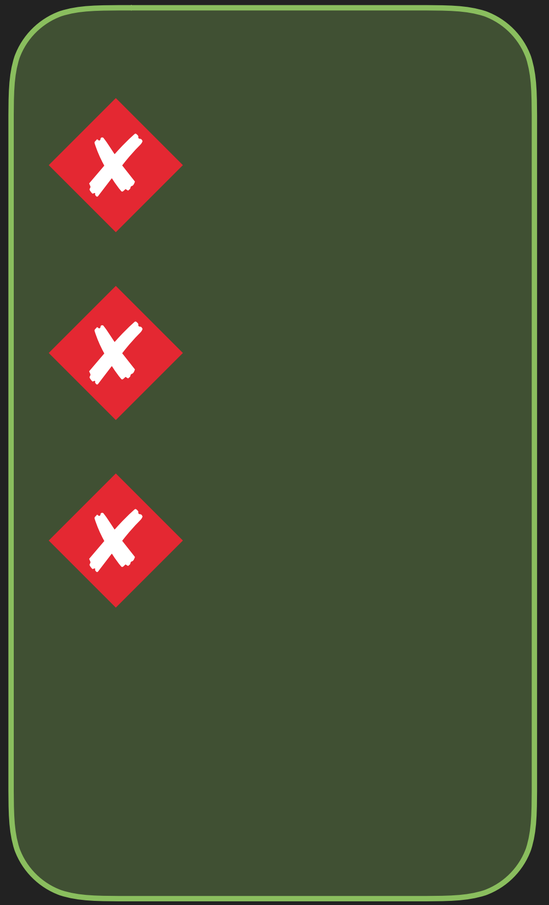


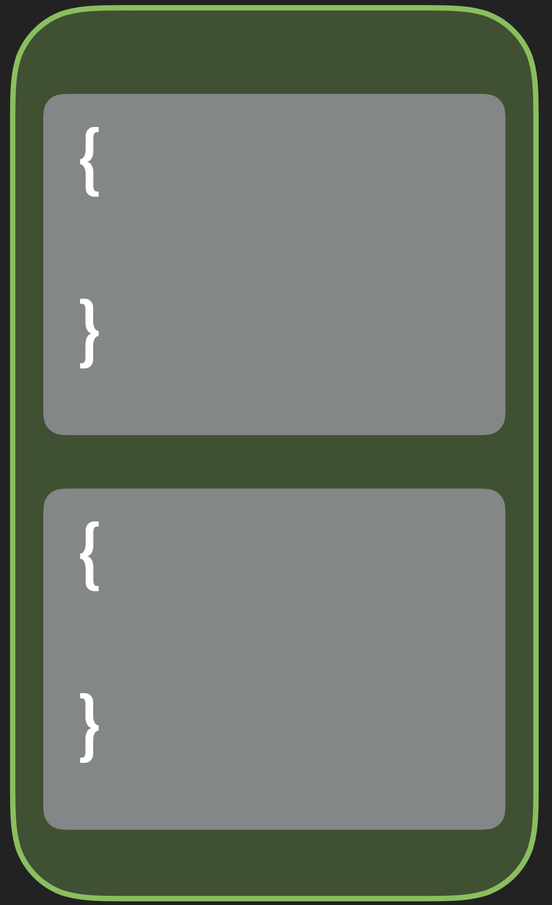


TDD









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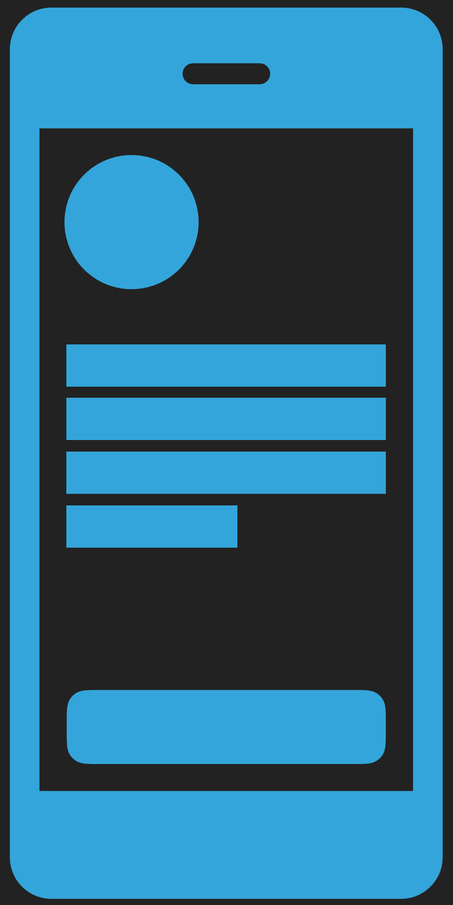
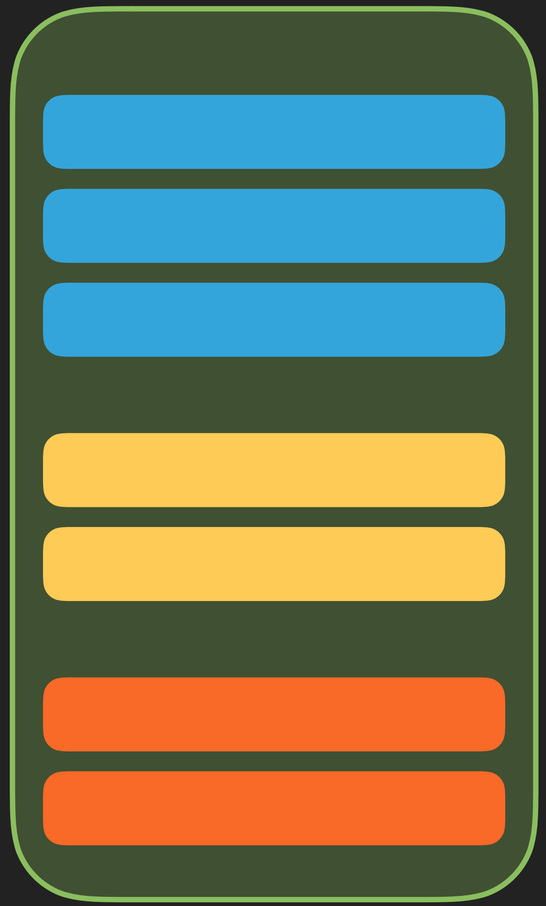
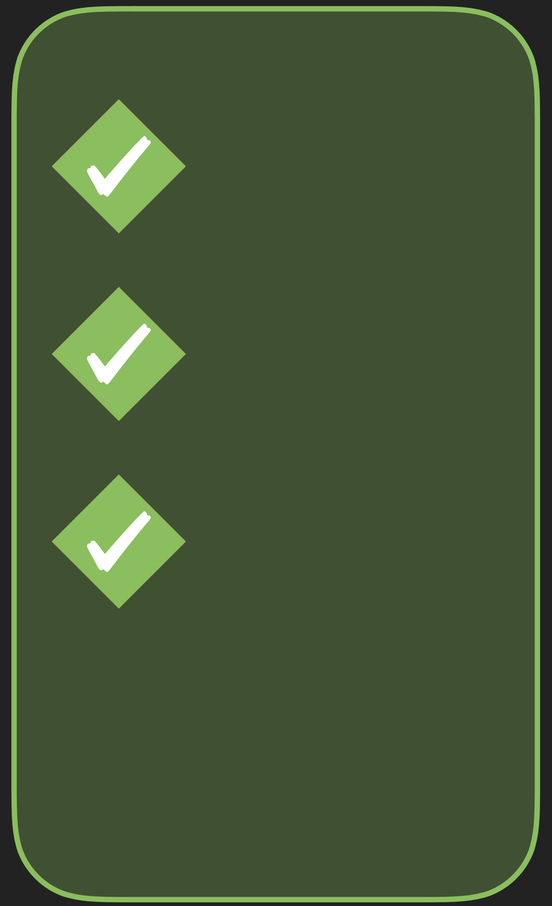
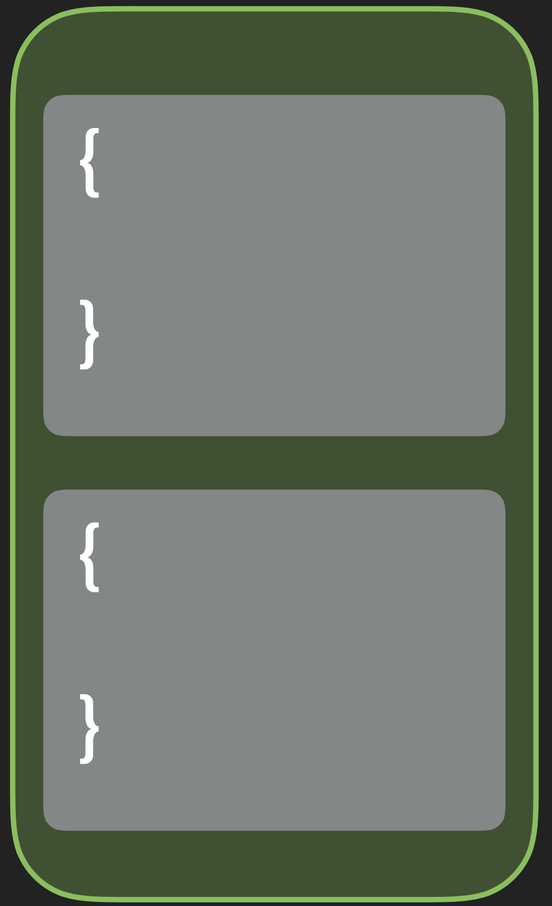


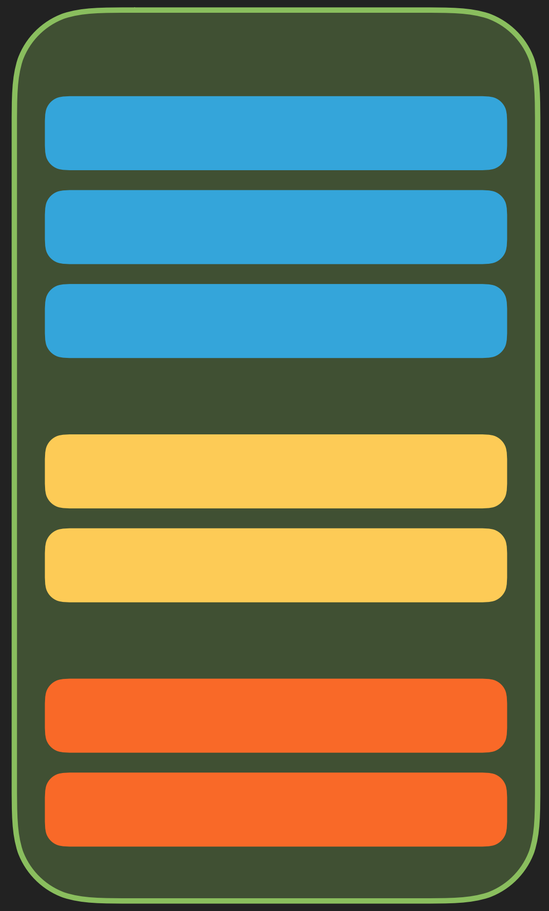






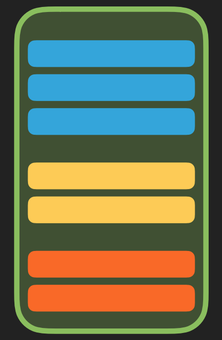
TDD

CODE



CODE

```
import XCTest

struct DetailPage: TestPage {

    let testCase: XCTestCase


    // MARK: - Elements


    // MARK: - Actions


    // MARK: - Verifications



}
```



CODE

```swift
import XCTest

struct DetailPage: TestPage {

    let testCase: XCTestCase


    // MARK: - Elements


    // MARK: - Actions


    // MARK: - Verifications



}
```

```swift
import XCTest

protocol TestPage {
    var testCase: XCTestCase { get }
}


extension TestPage {

    var app: XCUIApplication {
        return XCUIApplication()
    }

}
```

CODE

```
import XCTest

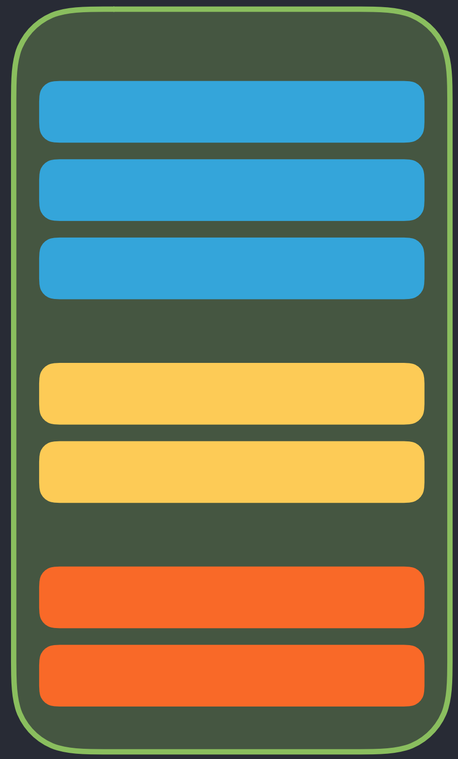
struct DetailPage: TestPage {
    let testCase: XCTestCase

    // MARK: - Elements

    // MARK: - Actions

    // MARK: - Verifications


}
```



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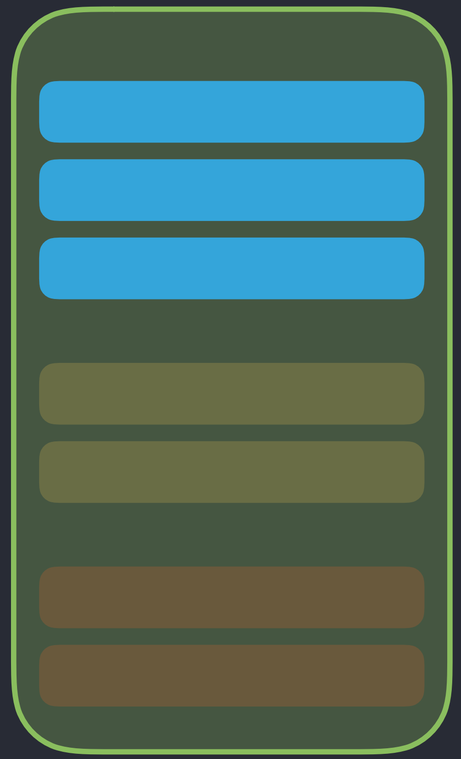


CODE

```
import XCTest

struct DetailPage: TestPage {

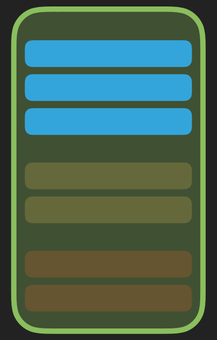
    let testCase: XCTestCase


    // MARK: - Elements

    fileprivate var detailText: XCUIElement {
        return app.staticTexts[“DetailViewController.label"]
    }

    fileprivate var backButton: XCUIElement {
        return app.navigationBars.buttons["Master"]
    }


    ...
}
```



CODE

```
import XCTest

struct DetailPage: TestPage {

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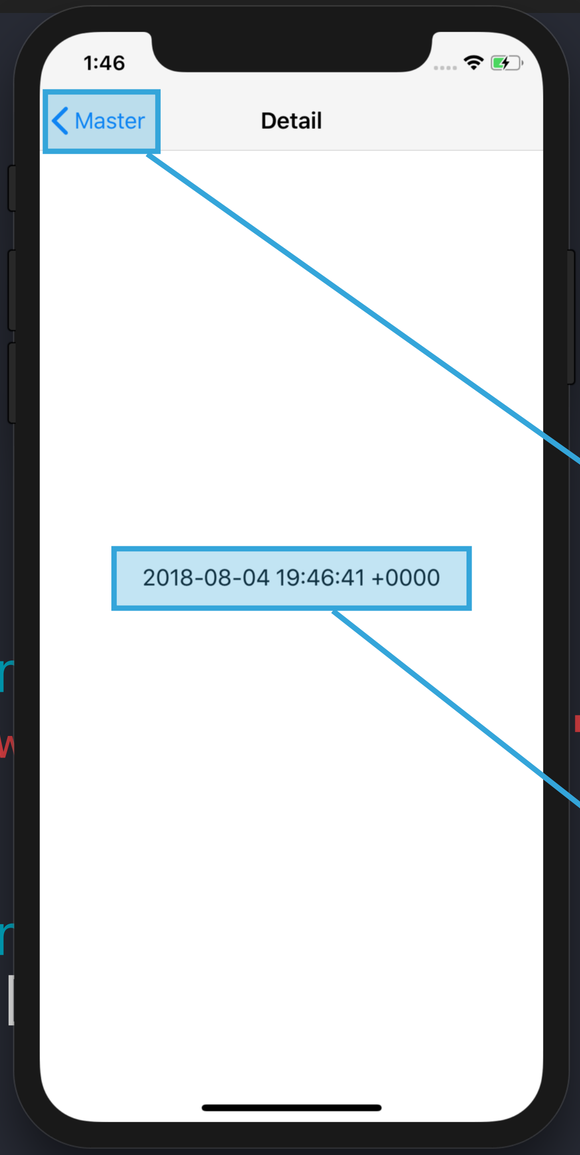
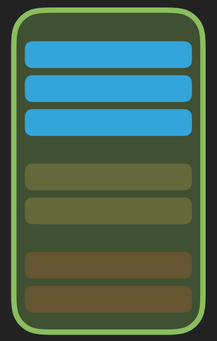
    // MARK: - Elements

    fileprivate var detailText: XCUIElemer
        return app.staticTexts[“DetailView                "]
    }

    fileprivate var backButton: XCUIElemer
        return app.navigationBars.buttons[
    }

    ...
}
```





Button

Label

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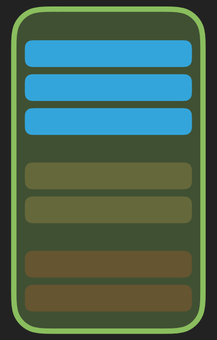

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    ...
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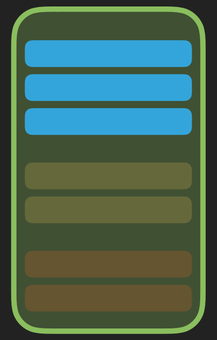

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    }

    ...
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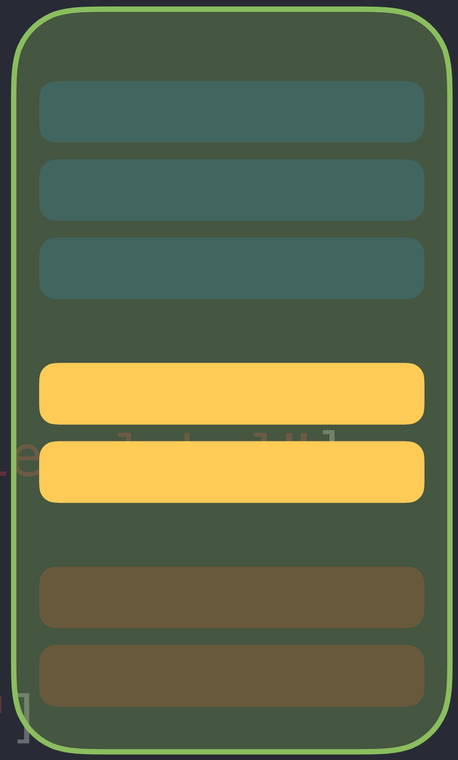
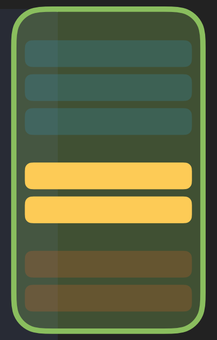


CODE



```
import XCTest

struct DetailPage: TestPage {
    ...

    // MARK: - Actions

    @discardableResult func tapOnBackButton(file: String = #file,
line: UInt = #line) -> MasterPage {
        testCase.expect(exists: backButton, file: file, line: line)
        backButton.tap()
        return MasterPage(testCase: testCase)
    }


    ...
}
```

CODE

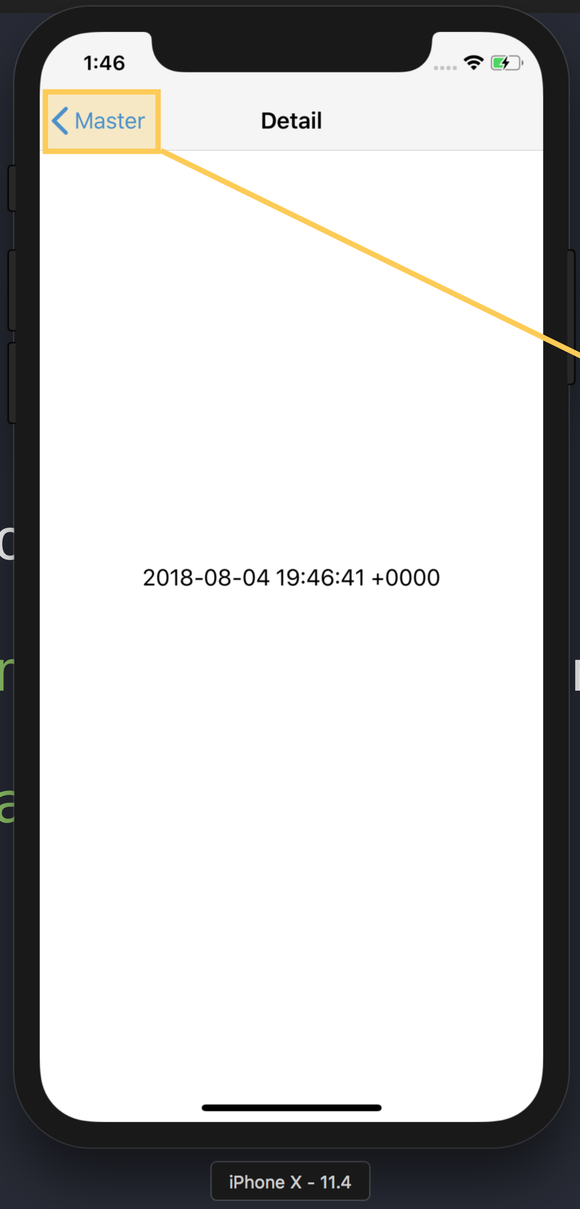
```
import XCTest

struct DetailPage: TestPage {
    ...

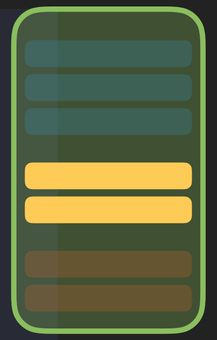
    // MARK: - Actions

    @discardableResult func tapOnBackButto                    #file,
line: UInt = #line) -> MasterPage {
        testCase.expect(exists: backButtor                ne: line)
        backButton.tap()
        return MasterPage(testCase: testCa
    }

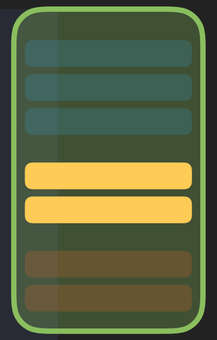
    ...
}
```



Tap



CODE



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    // MARK: - Actions

    @discardableResult func tapOnBackButton(file: String = #file,
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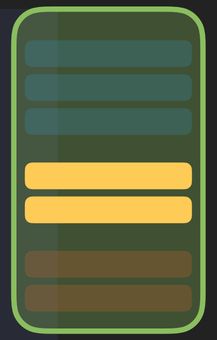
        testCase.expect(exists: backButton, file: file, line: line)
        backButton.tap()
        return MasterPage(testCase: testCase)
    }


    ...
}
```

CODE



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import XCTest

struct DetailPage: TestPage {
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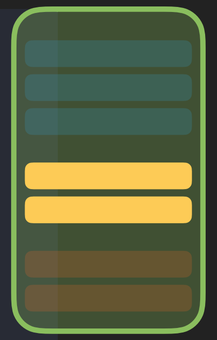

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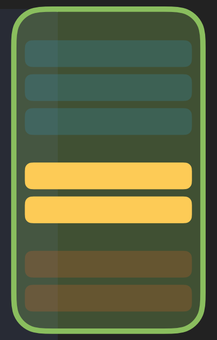

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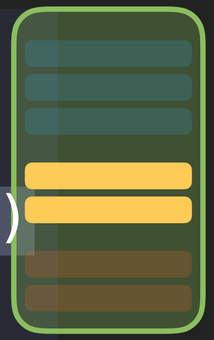

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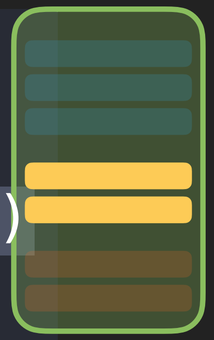

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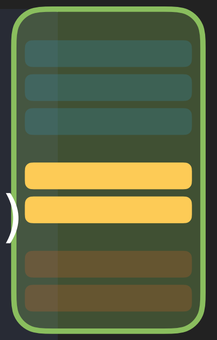

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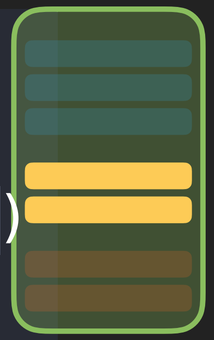

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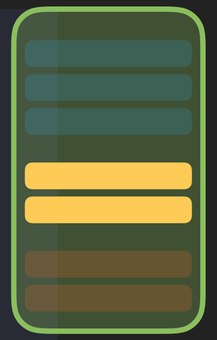

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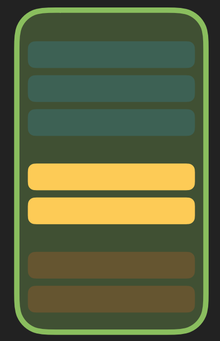

```
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struct DetailPage: TestPage {
    ...

    // MARK: - Actions

    @discardableResult func tapOnBackButton(file: StaticString =
#file, line: UInt = #line) -> MasterPage {
        XCTAssertTrue(backButton.exists, file: file, line: line)
        backButton.tap()
        return MasterPage(testCase: testCase)
    }

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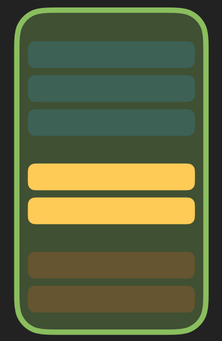
```

CODE



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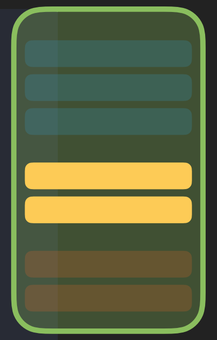

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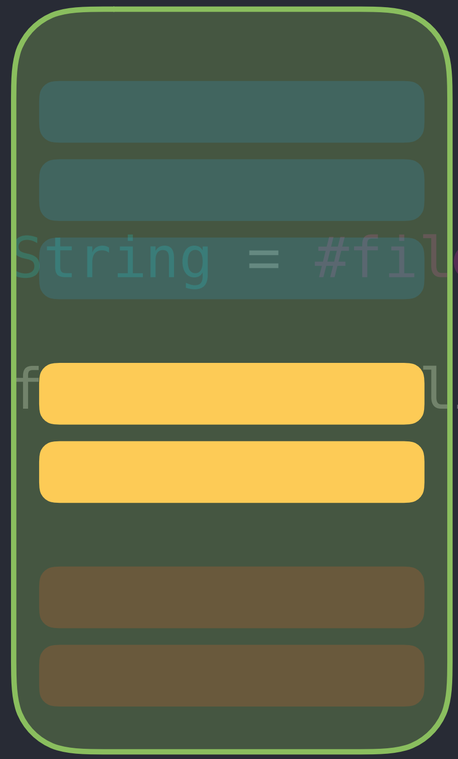

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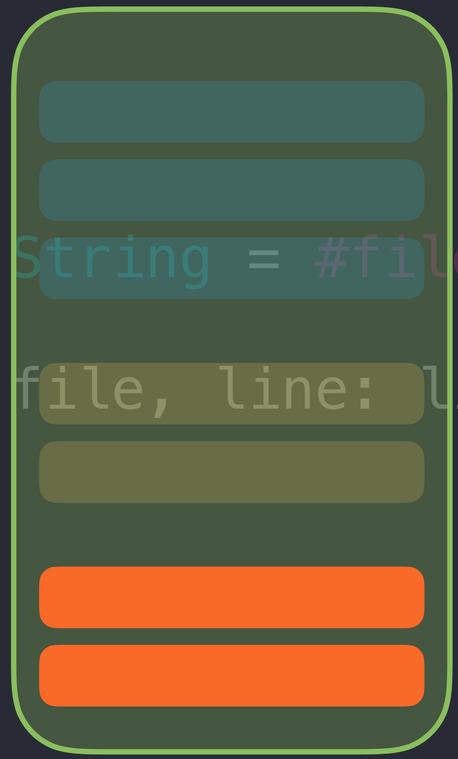

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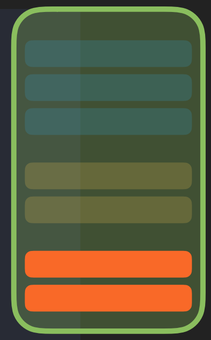


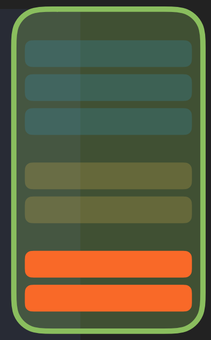
```
    ...

    // MARK: - Verifications

    @discardableResult func verifyDetailPageIsShowing(file: String
= #file, line: UInt = #line) -> DetailPage {
        testCase.expect(exists: detailText, file: file, line: line)
        return self
    }

    @discardableResult func verifyLabelText(is text: String, file:
String = #file, line: UInt = #line) -> DetailPage {
        testCase.expect(exists: detailText, file: file, line: line)
        testCase.expect(detailText.label, equals: text, file: file,
line: line)
        return self
    }
  ...
}
```

CODE



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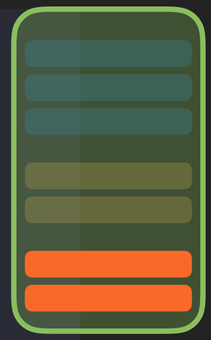

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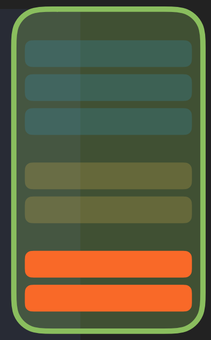

```
    // MARK: - Elements

    fileprivate var detailText: XCUIElement {
        return app.staticTexts[“DetailViewController.label"]
    }




   ...

    // MARK: - Verifications

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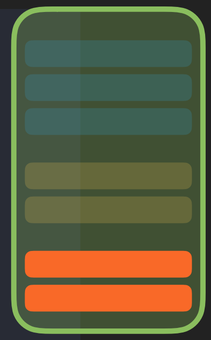

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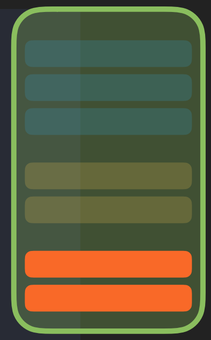

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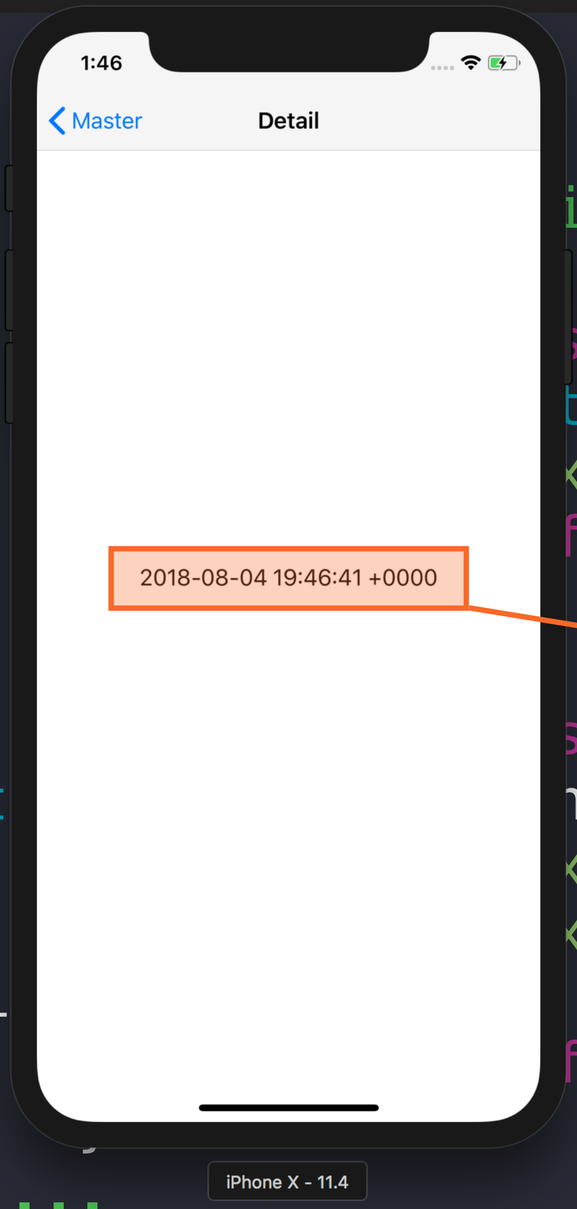

Text

```
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sult func verifyDetailPageIsShowing(file: String
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xpect(exists: detailText, file: file, line: line)
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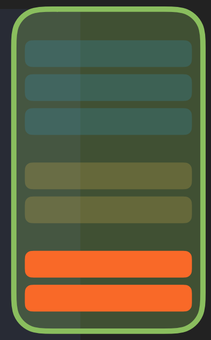

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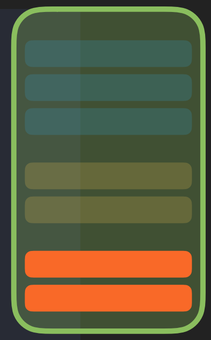

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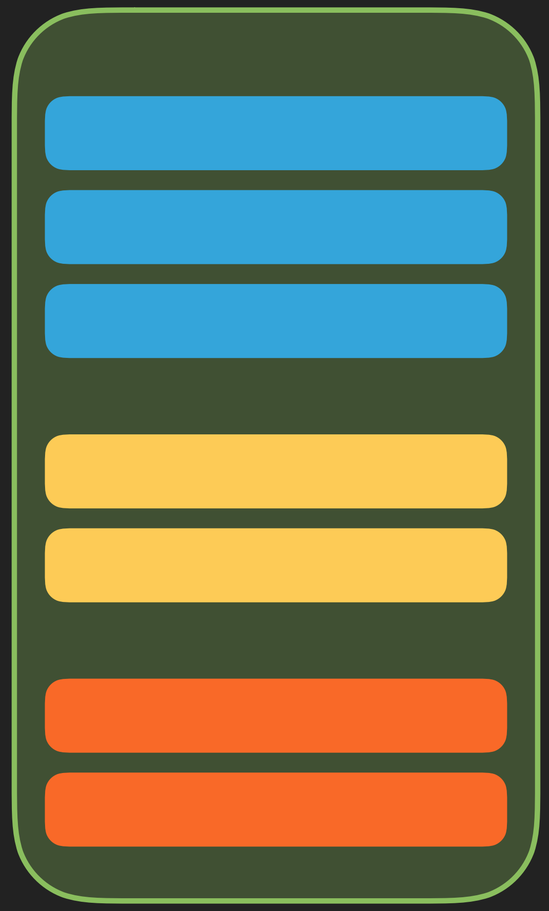

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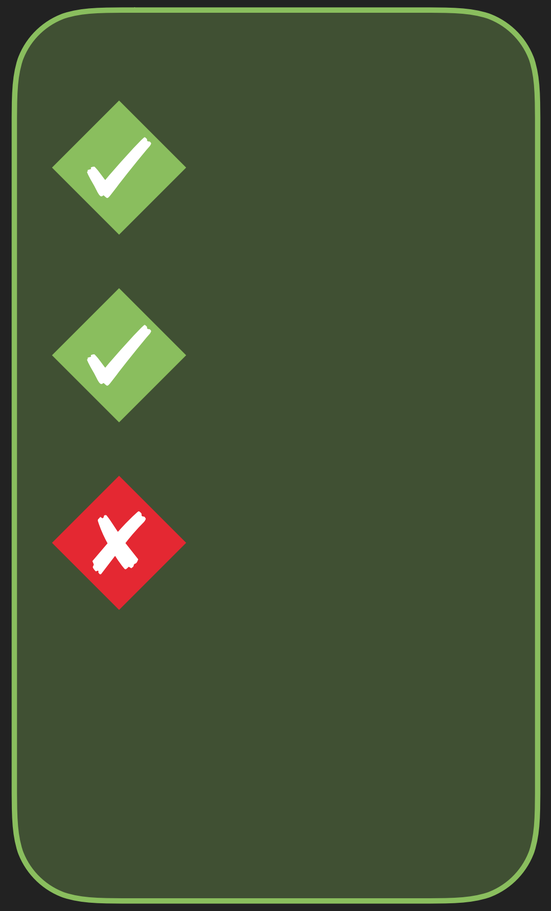


CODE

```
import XCTest

class BasicEntryUITests: XCTestCase {



}
```

CODE

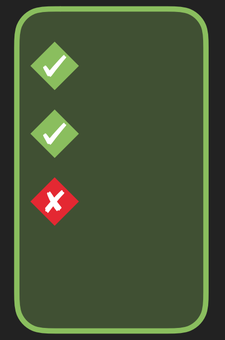
```
import XCTest

class BasicEntryUITests: XCTestCase {

    override func setUp() {
        super.setUp()

        continueAfterFailure = false
        let application = XCUIApplication()
        application.launchArguments.append("--uitesting")
        application.launch()
    }

}
```



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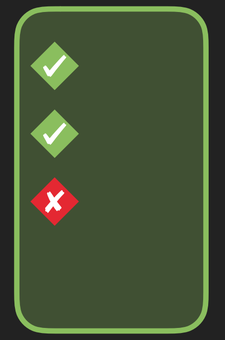

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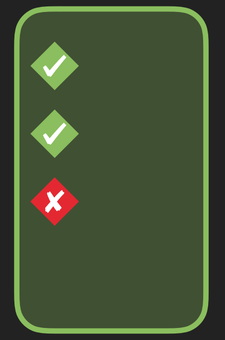


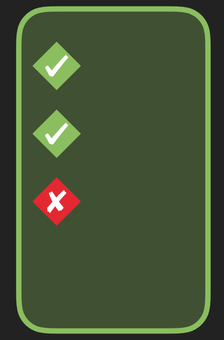
CODE

```
        continueAfterFailure = false
        let application = XCUIApplication()
        application.launchArguments.append("--uitesting")
        application.launch()
    }

}


class AppDelegate: UIResponder, UIApplicationDelegate {

    func application(_ application: UIApplication,
didFinishLaunchingWithOptions launchOptions:
[UIApplicationLaunchOptionsKey: Any]?) -> Bool {
        if CommandLine.arguments.contains("--uitesting") {
            // Set up state for UI testing
        }
        ...
    }
}
```



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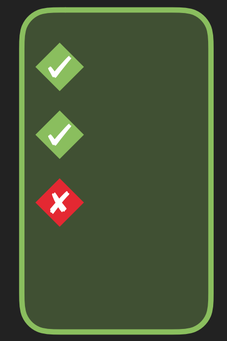

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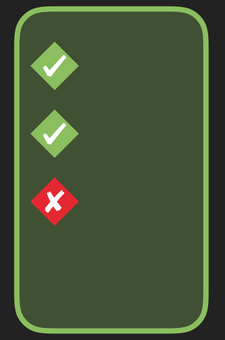
```
import XCTest

class BasicEntryUITests: XCTestCase {

    override func setUp() {
        super.setUp()

        continueAfterFailure = false
        let application = XCUIApplication()
        application.launchArguments.append("--uitesting")
        application.launch()
    }

}
```

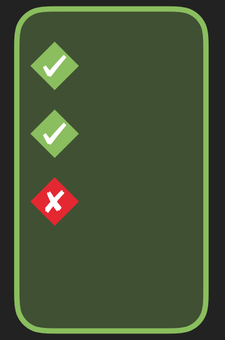


CODE

```
...
func testAddingEntry() {




}
```

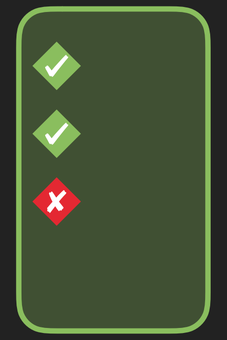


CODE

```
...
func testAddingEntry() {
    MasterPage(testCase: self)




}
```



CODE

```
...
func testAddingEntry() {
    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()

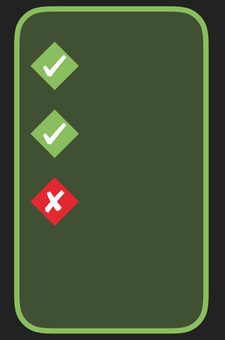








}
```

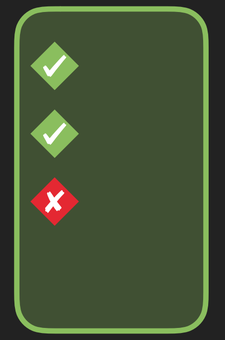


CODE

```
...
func testAddingEntry() {
    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)




}
```

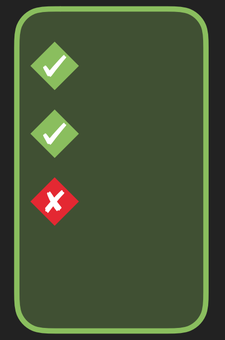


CODE

```
...
func testAddingEntry() {
    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()




}
```

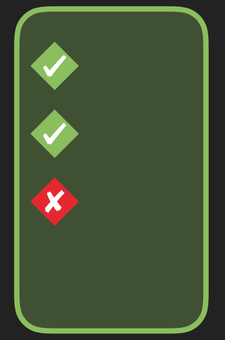


CODE

```
...
func testAddingEntry() {
    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)




}
```

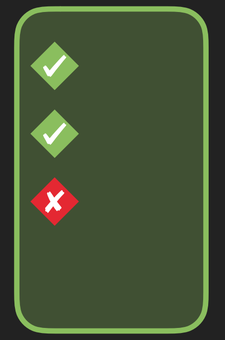


CODE

```
...
func testAddingEntry() {
    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: )




}
```



CODE

```
...
func testAddingEntry() {
    let nowLabel = String(describing: Date())

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: nowLabel)

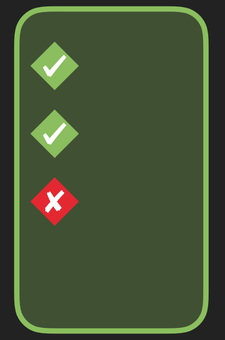








}
```



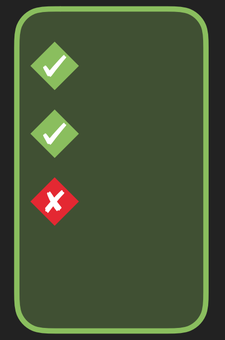
CODE

```
...
func testAddingEntry() {
    let nowLabel = String(describing: Date())

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: nowLabel)
        .tapOnCell(at: 0)




}
```



CODE

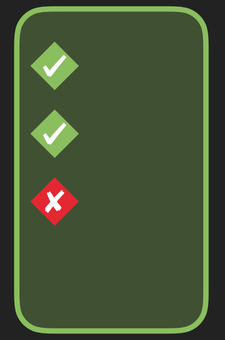
```
...
func testAddingEntry() {
    let nowLabel = String(describing: Date())

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: nowLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()



}
```



CODE

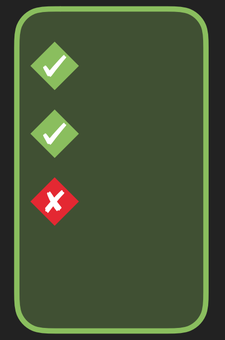
```
...
func testAddingEntry() {
    let nowLabel = String(describing: Date())

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: nowLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: nowLabel)



}
```



CODE

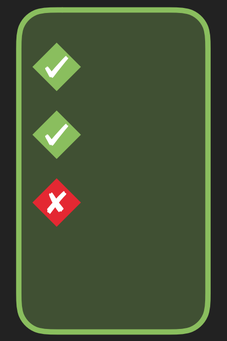
```
...
func testAddingEntry() {
    let nowLabel = String(describing: Date())

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: nowLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: nowLabel)
        .tapOnBackButton()



}
```



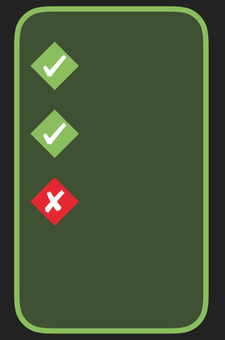
CODE

```
...
func testAddingEntry() {
    let nowLabel = String(describing: Date())

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: nowLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: nowLabel)
        .tapOnBackButton()

        // Master page
        .verifyMasterPageIsShowing()
}
```



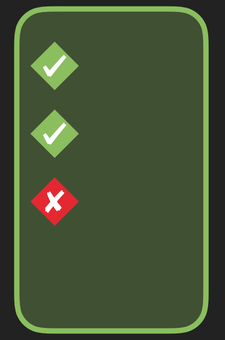
CODE

```
...
func testAddingEntry() {
    let nowLabel = String(describing: Date())

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: nowLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: nowLabel)
        .tapOnBackButton()

        // Master page
        .verifyMasterPageIsShowing()
}
```



CODE

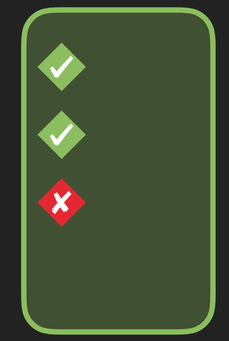
```
...
func testAddingEntry() {
    let nowLabel = String(describing: Date())

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: nowLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: nowLabel)
        .tapOnBackButton()

        // Master page
        .verifyMasterPageIsShowing()
}
```

✘ Expected ‘Optional(…



CODE

```
...
func testAddingEntry() {
    let zeroLabel = "0"

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: zeroLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: zeroLabel)
        .tapOnBackButton()

        // Master page
        .verifyMasterPageIsShowing()
}
```

CODE

```
...
func testAddingEntry() {
    let zeroLabel = "0"

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: zeroLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: zeroLabel)
        .tapOnBackButton()

        // Master page
        .verifyMasterPageIsShowing()
}
```

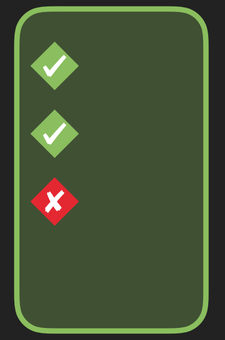
CODE

```
...
func testAddingAndDeletingEntry() {
    let zeroLabel = "0"

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: zeroLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: zeroLabel)
        .tapOnBackButton()

        // Master page
        .verifyMasterPageIsShowing()
}
```



CODE

```
...
func testAddingAndDeletingEntry() {
    let zeroLabel = "0"

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: zeroLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: zeroLabel)
        .tapOnBackButton()

        // Master page
        .verifyMasterPageIsShowing()
}
```

CODE

```
import XCTest

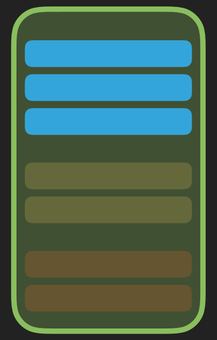
struct MasterPage: TestPage {

    let testCase: XCTestCase


    // MARK: - Elements

    fileprivate func cell(at index: Int) -> XCUIElement {
        return table.cells.element(boundBy: index)
    }

    fileprivate func deleteButton(for cell: XCUIElement) ->
    XCUIElement {
        return cell.buttons["Delete"]
    }
    ...
}
```



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    fileprivate func cell(at index: Int) -
        return table.cells.element(boundBy
    }

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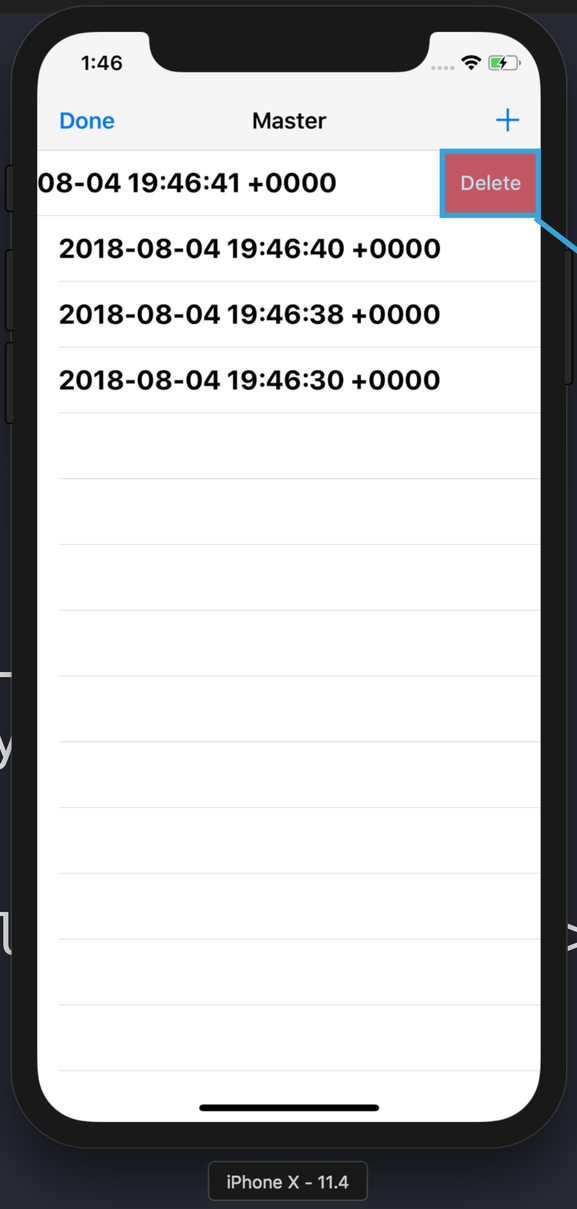
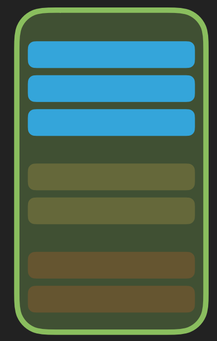
    XCUIElement {
        return cell.buttons["Delete"]
    }
    ...
}
```





Button

CODE

```
import XCTest

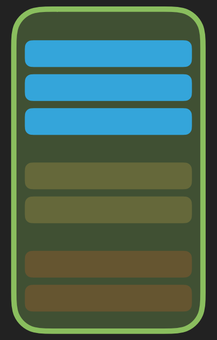
struct MasterPage: TestPage {

    let testCase: XCTestCase


    // MARK: - Elements

    fileprivate func cell(at index: Int) -> XCUIElement {
        return table.cells.element(boundBy: index)
    }

    fileprivate func deleteButton(for cell: XCUIElement) ->
    XCUIElement {
        return cell.buttons["Delete"]
    }
    ...
}
```



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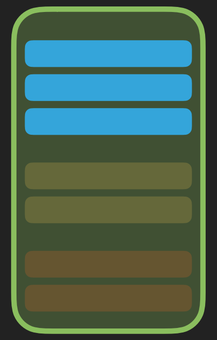
        return table.cells.element(boundBy: index)
    }

    fileprivate func deleteButton(for cell: XCUIElement) ->
    XCUIElement {
        return cell.buttons["Delete"]
    }
    ...
}
```



CODE

```
import XCTest

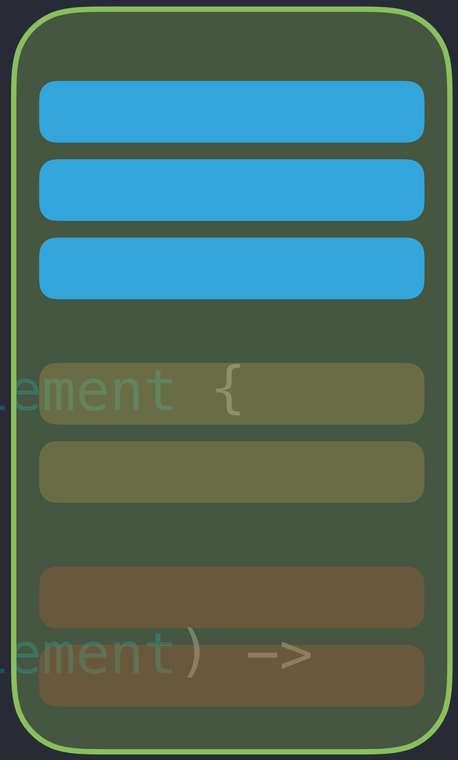
struct MasterPage: TestPage {

    let testCase: XCTestCase


    // MARK: - Elements

    fileprivate func cell(at index: Int) -> XCUIElement {
        return table.cells.element(boundBy: index)
    }

    fileprivate func deleteButton(for cell: XCUIElement) ->
    XCUIElement {
        return cell.buttons["Delete"]
    }
    ...
}
```



CODE

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    let testCase: XCTestCase


    // MARK: - Elements

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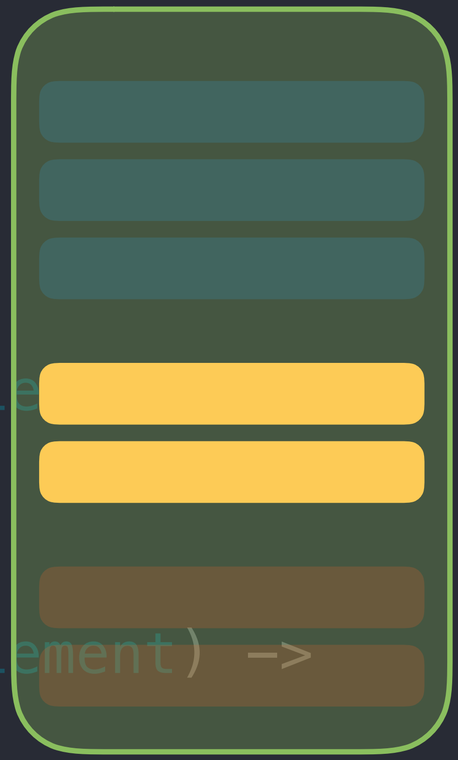
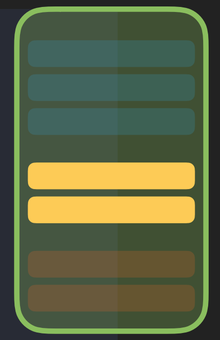
    }

    fileprivate func deleteButton(for cell: XCUIElement) ->
    XCUIElement {
        return cell.buttons["Delete"]
    }
    ...
}
```



CODE



```
import XCTest

struct MasterPage: TestPage {
    ...

     // MARK: - Actions

    @discardableResult func deleteCell(at index: Int, file: String =
    #file, line: UInt = #line) -> MasterPage {
        let cell = self.cell(at: index)
        testCase.expect(exists: cell, file: file, line: line)
        cell.swipeLeft()
        let deleteButton = self.deleteButton(for: cell)
        testCase.expect(exists: deleteButton, file: file, line: line)
        deleteButton.tap()
        return self
    }
    ...
}
```

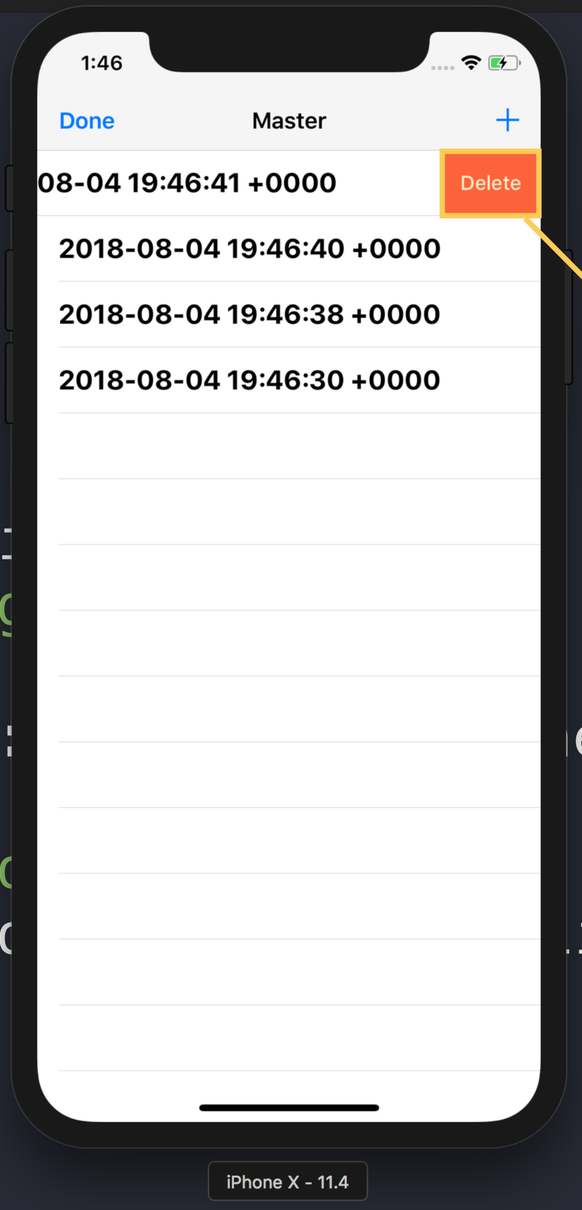
CODE

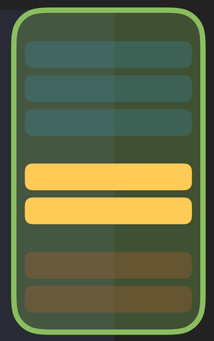
```
import XCTest

struct MasterPage: TestPage {
    ...

     // MARK: - Actions

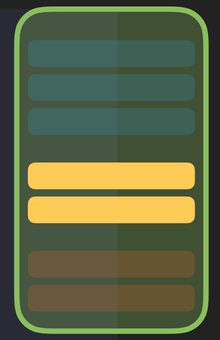
    @discardableResult func deleteCell(at :                String =
    #file, line: UInt = #line) -> MasterPag
        let cell = self.cell(at: index)
        testCase.expect(exists: cell, file:                e)
        cell.swipeLeft()
        let deleteButton = self.deleteButto
        testCase.expect(exists: deleteButto                ine: line)
        deleteButton.tap()
        return self
    }
    ...
}
```





Tap

CODE



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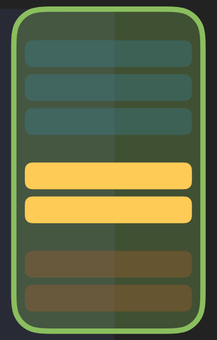
        testCase.expect(exists: cell, file: file, line: line)
        cell.swipeLeft()
        let deleteButton = self.deleteButton(for: cell)
        testCase.expect(exists: deleteButton, file: file, line: line)
        deleteButton.tap()
        return self
    }
    ...
}
```

CODE



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struct MasterPage: TestPage {
    ...

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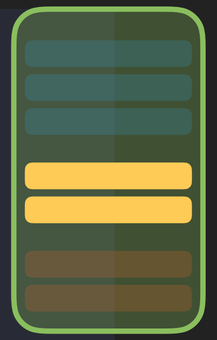
        cell.swipeLeft()
        let deleteButton = self.deleteButton(for: cell)
        testCase.expect(exists: deleteButton, file: file, line: line)
        deleteButton.tap()
        return self
    }
    ...
}
```

CODE



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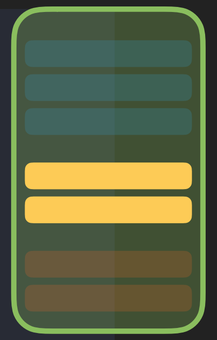
        let deleteButton = self.deleteButton(for: cell)
        testCase.expect(exists: deleteButton, file: file, line: line)
        deleteButton.tap()
        return self
    }
    ...
}
```

CODE



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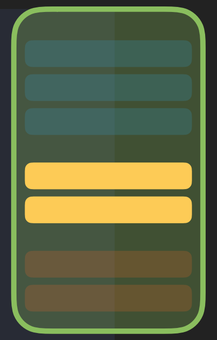
import XCTest

struct MasterPage: TestPage {
    ...

     // MARK: - Actions

    @discardableResult func deleteCell(at index: Int, file: String =
    #file, line: UInt = #line) -> MasterPage {
        let cell = self.cell(at: index)
        testCase.expect(exists: cell, file: file, line: line)
        cell.swipeLeft()
        let deleteButton = self.deleteButton(for: cell)
        testCase.expect(exists: deleteButton, file: file, line: line)
        deleteButton.tap()
        return self
    }
    ...
}
```

CODE



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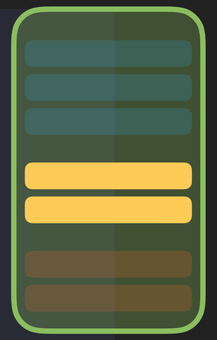
CODE



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        deleteButton.tap()
        return self
    }
    ...
}
```

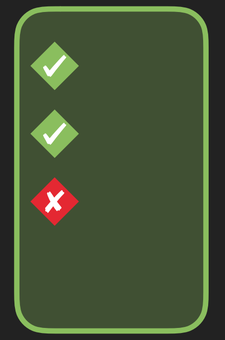
CODE

```
...
func testAddingAndDeletingEntry() {
    let zeroLabel = "0"

    MasterPage(testCase: self)
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 0)
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: zeroLabel)
        .tapOnCell(at: 0)

        // Detail page
        .verifyDetailPageIsShowing()
        .verifyLabelText(is: zeroLabel)
        .tapOnBackButton()

        // Master page
        .verifyMasterPageIsShowing()
}
```



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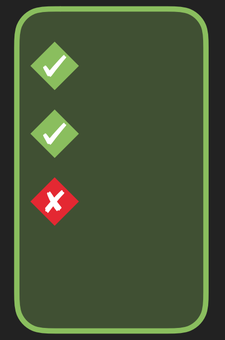
        .tapOnAddButton()
        .verifyTableCellCount(is: 1)
        .verifyCell(at: 0, hasLabel: zeroLabel)
        .tapOnCell(at: 0)

        ...

        // Master page
        .verifyMasterPageIsShowing()



}
```



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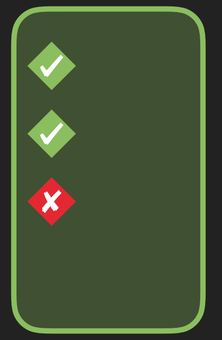
        .tapOnCell(at: 0)

        ...

        // Master page
        .verifyMasterPageIsShowing()
        .verifyTableCellCount(is: 1)
        .deleteCell(at: 0)
        .verifyTableCellCount(is: 0)
}
```



CODE

TIPS & TRICKS

WWDC

2018

Testing Tips & Tricks

2017

Engineering for Testability

TIPS & TRICKS

LOCAL DATA

TIPS & TRICKS

LOCAL DATA

AVOID DUPLICATION

TIPS & TRICKS

LOCAL DATA

AVOID DUPLICATION

USE MULTIPLE SCHEMES

TIPS & TRICKS

GETTING STARTED

NEXT BUG/ FEATURE

GETTING STARTED

NEXT BUG/
FEATURE

IMPORTANT
FREQUENT

GETTING STARTED

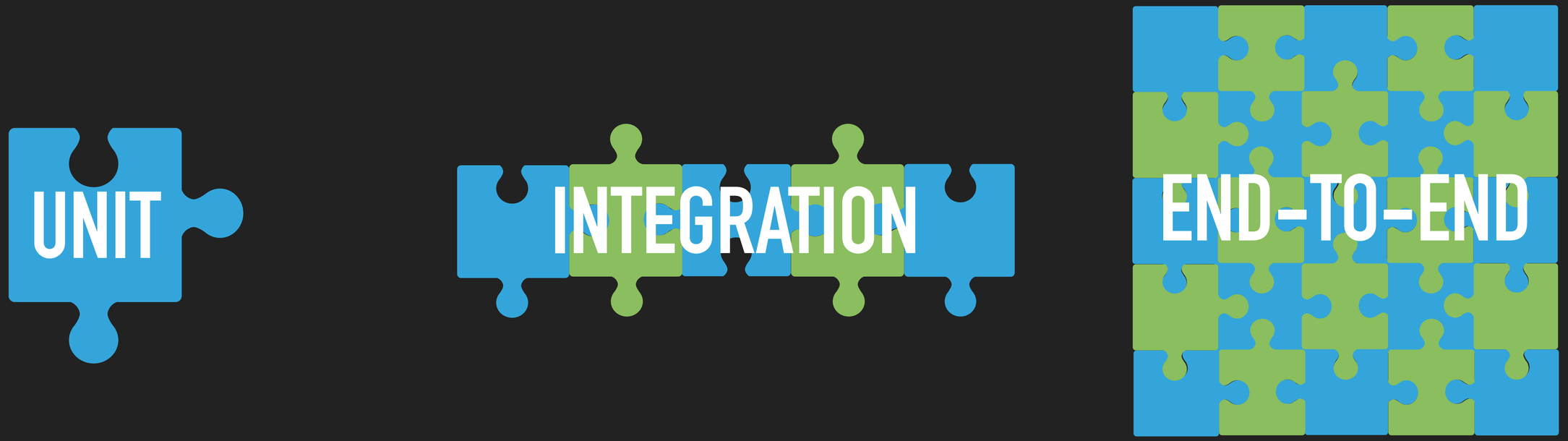
NEXT BUG/
FEATURE

IMPORTANT
FREQUENT

IMPORTANT
INFREQUENT

GETTING STARTED

SUMMARY



AUTOMATED

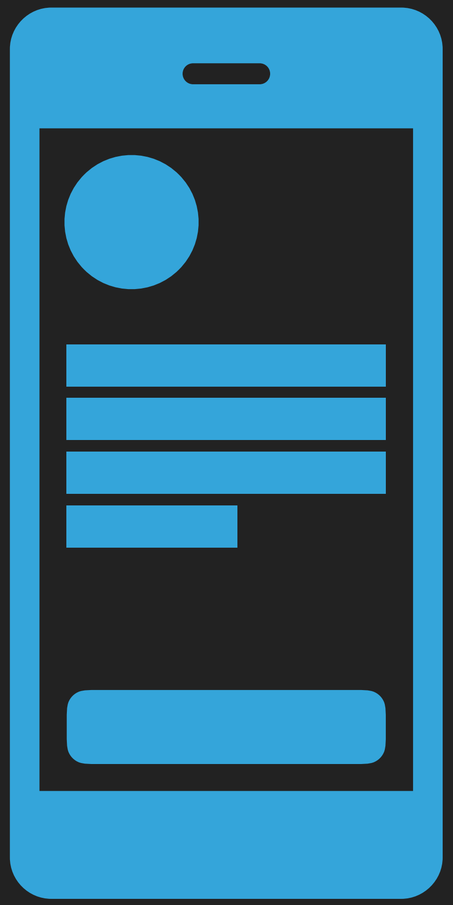
SOFTWARE TESTING

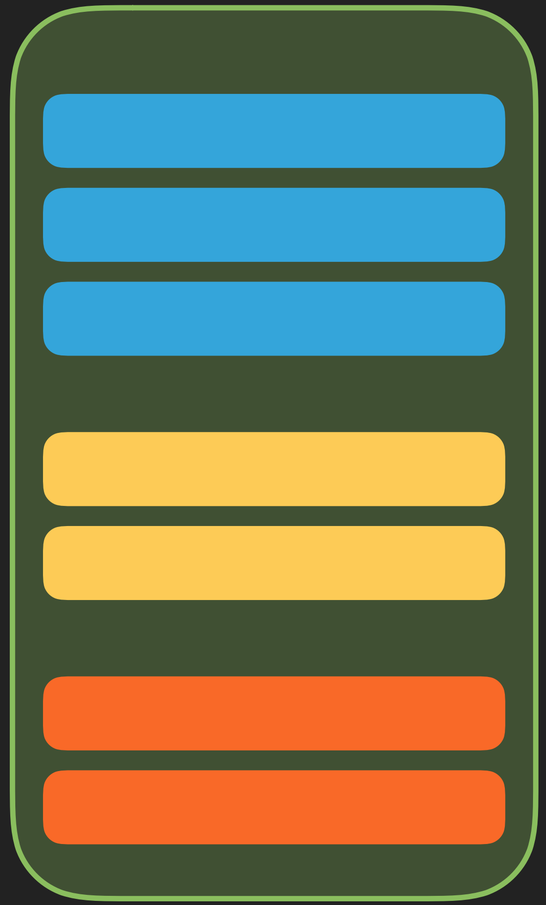
VERIFY BEHAVIOR

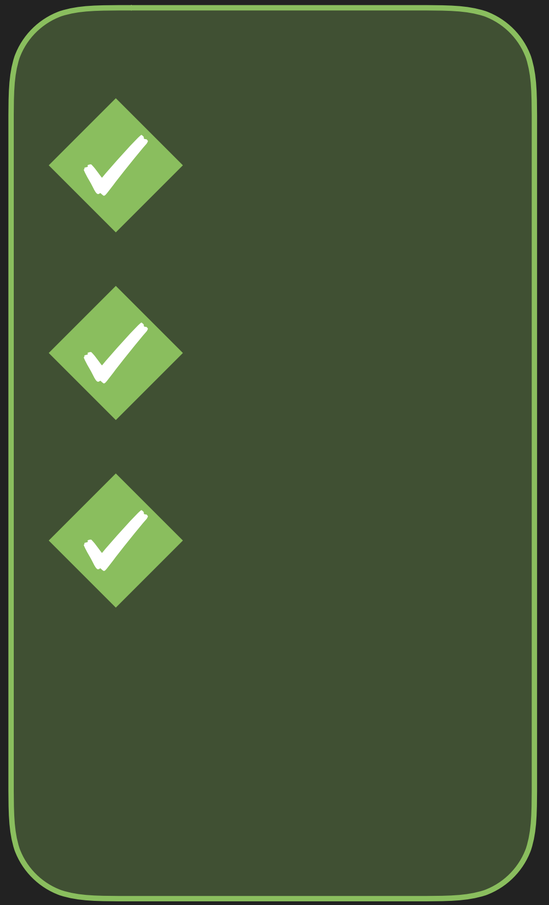
BUILT ON ACCESSIBILITY

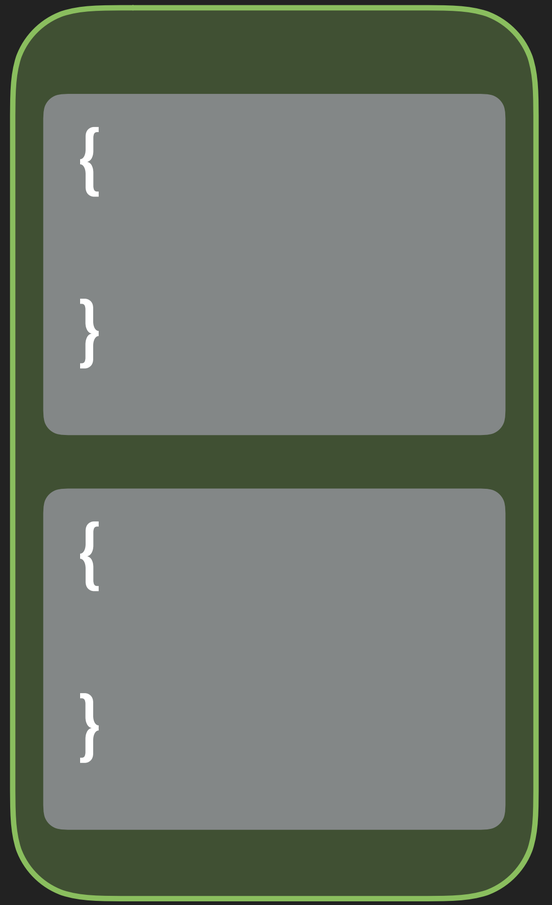
RECORD TO LEARN

UI TESTS









TDD

//BSN.DESIGN

COCOAHEADS • AUG 2018

UI-TDD