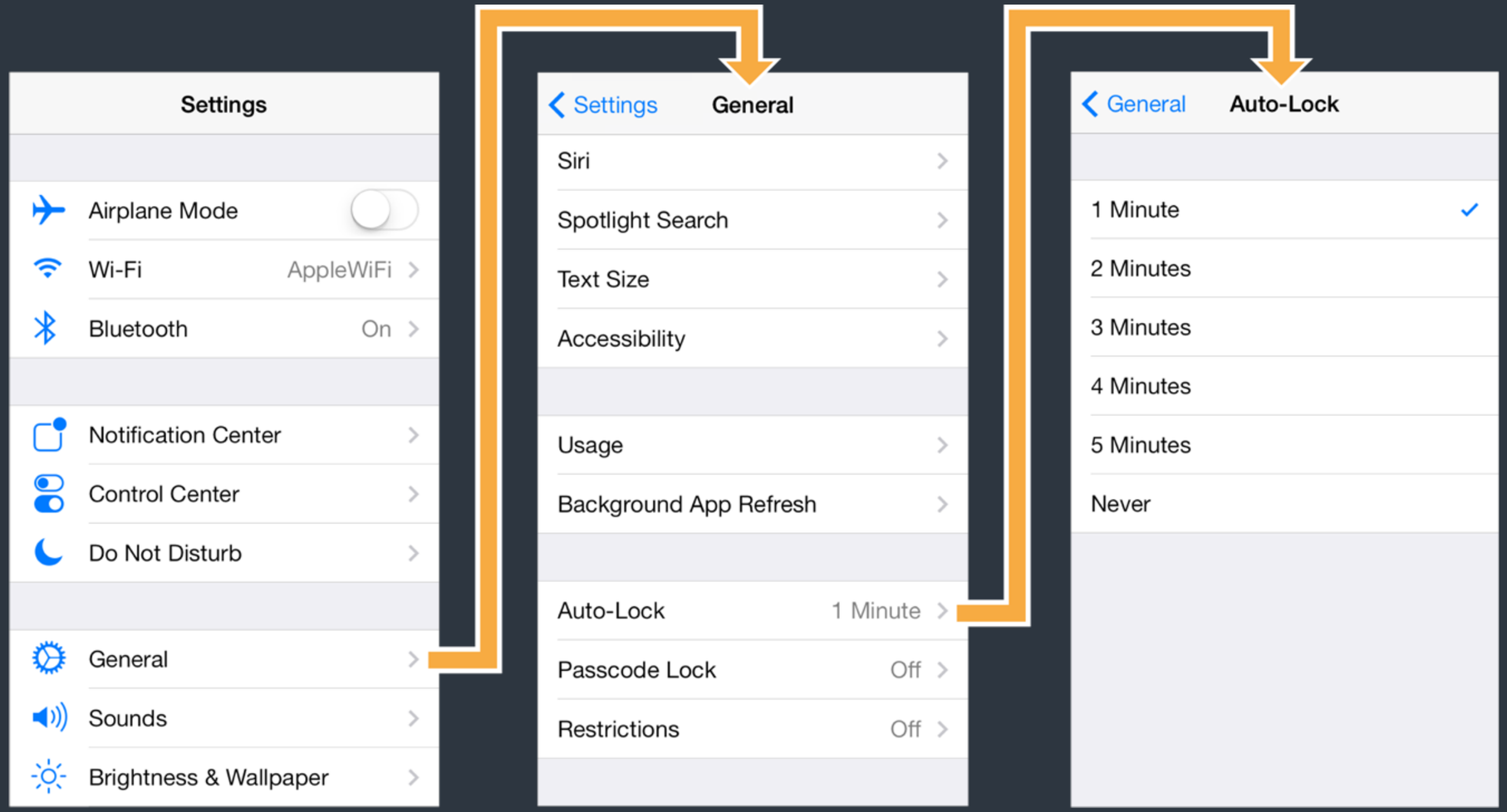
Table View and Navigation Controller

Mar. 24 ‘16

Navigation Controller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Brightness & Wallpaper
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Siri
Spotlight Search
Text Size
Accessibility
Usage
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1 Minute
2 Minutes
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5 Minutes
Never

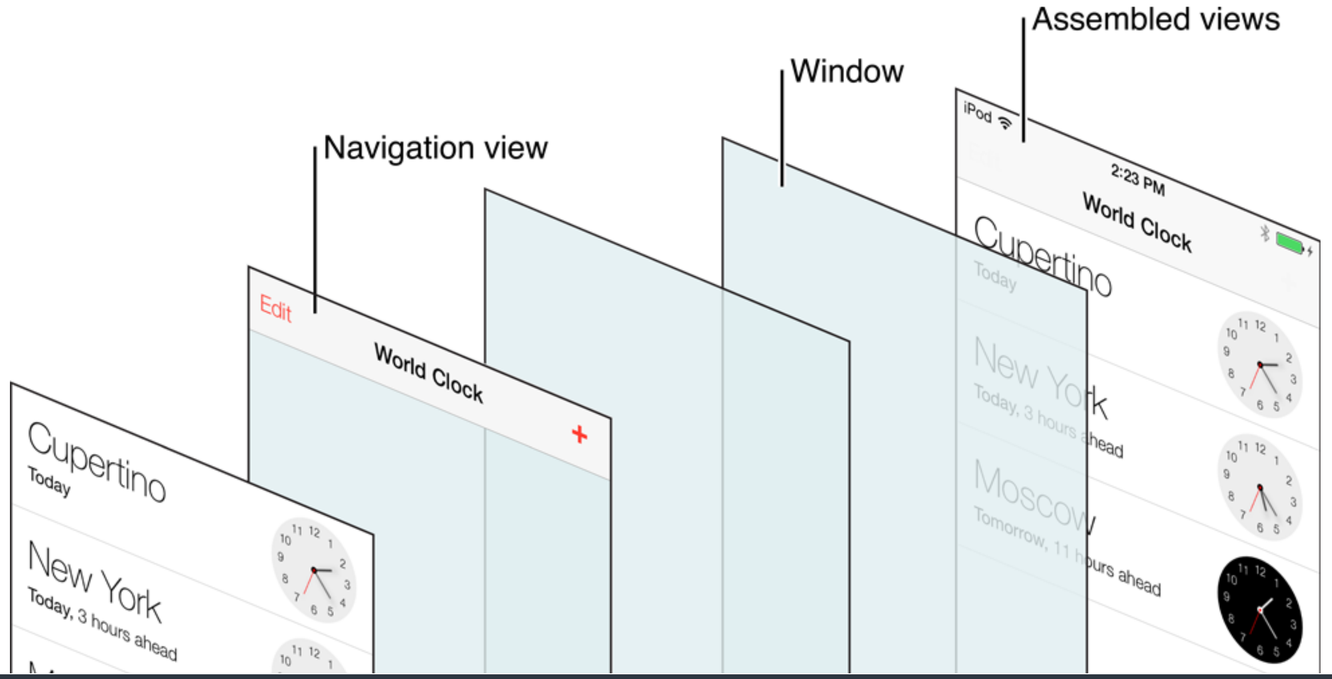
UINavigationController

- A navigation controller manages a stack of view controllers to provide a drill-down interface for hierarchical content.
  The top view controller is the one current showing. You push a view controller in to send users to next level, and pop the top view controller to bring users back.

- UINavigationController is one of container view controllers in the iOS and is widely used in the iOS.

- For each view controller, use `navigationController` property to access current UINavigationController.

Navigation Bar and Item



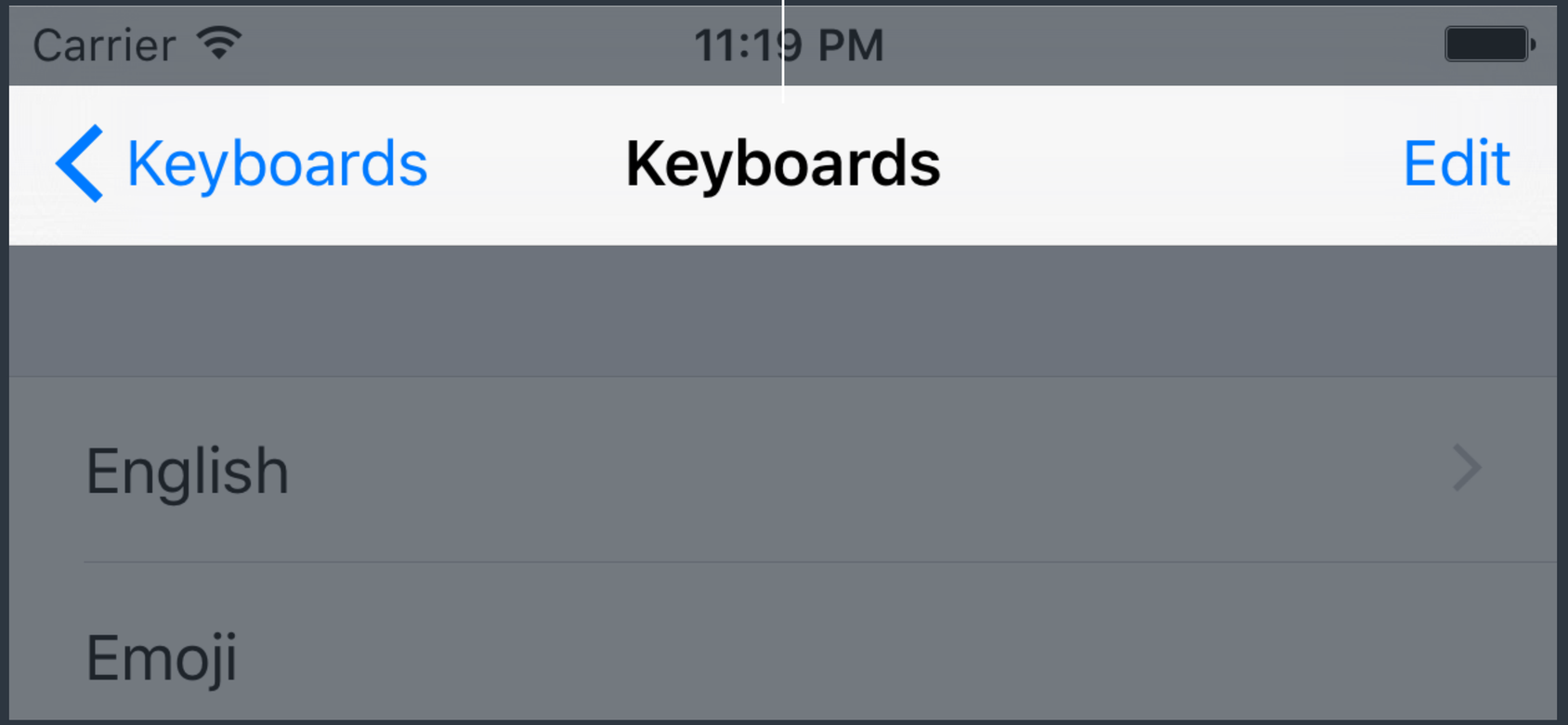
- Each view controller has a property `navigationItem` which is used to customize the navigation bar.

UINavigationItem

the **Left** item

the **Middle** item

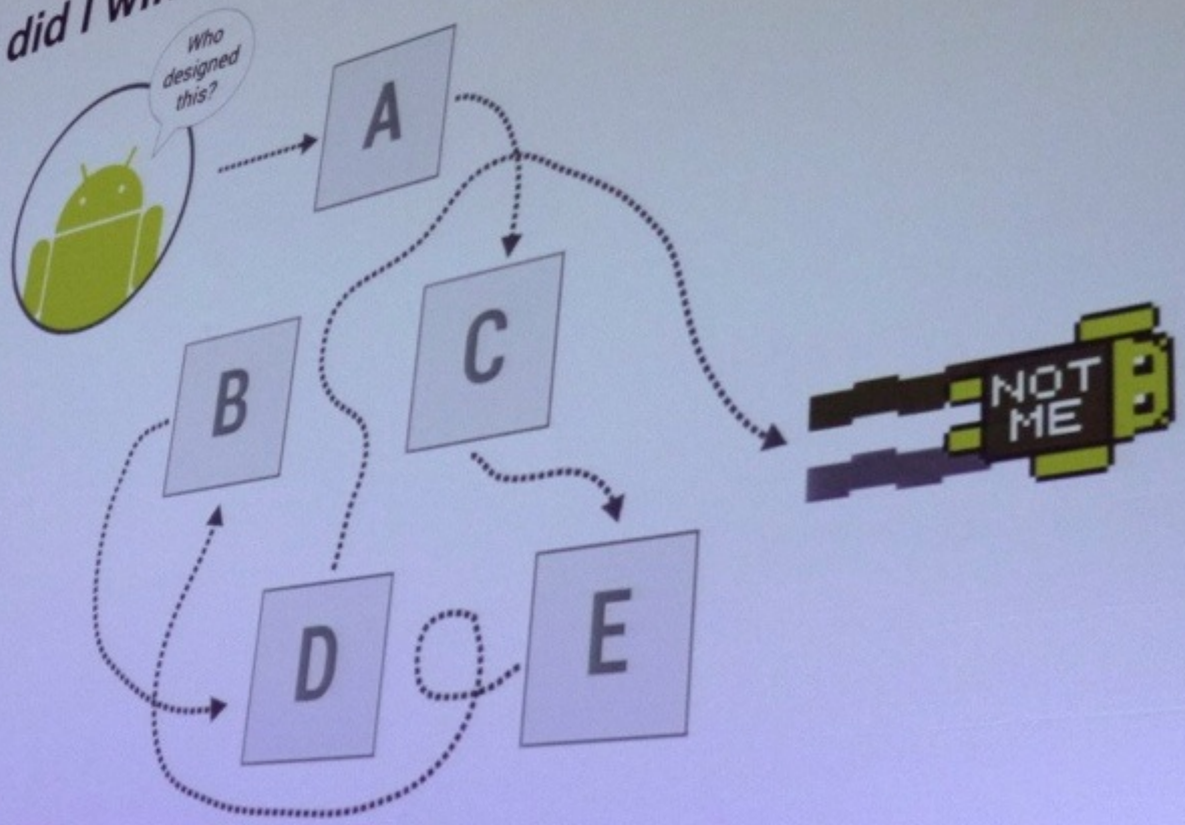
the **Right** item



UINavigationItem

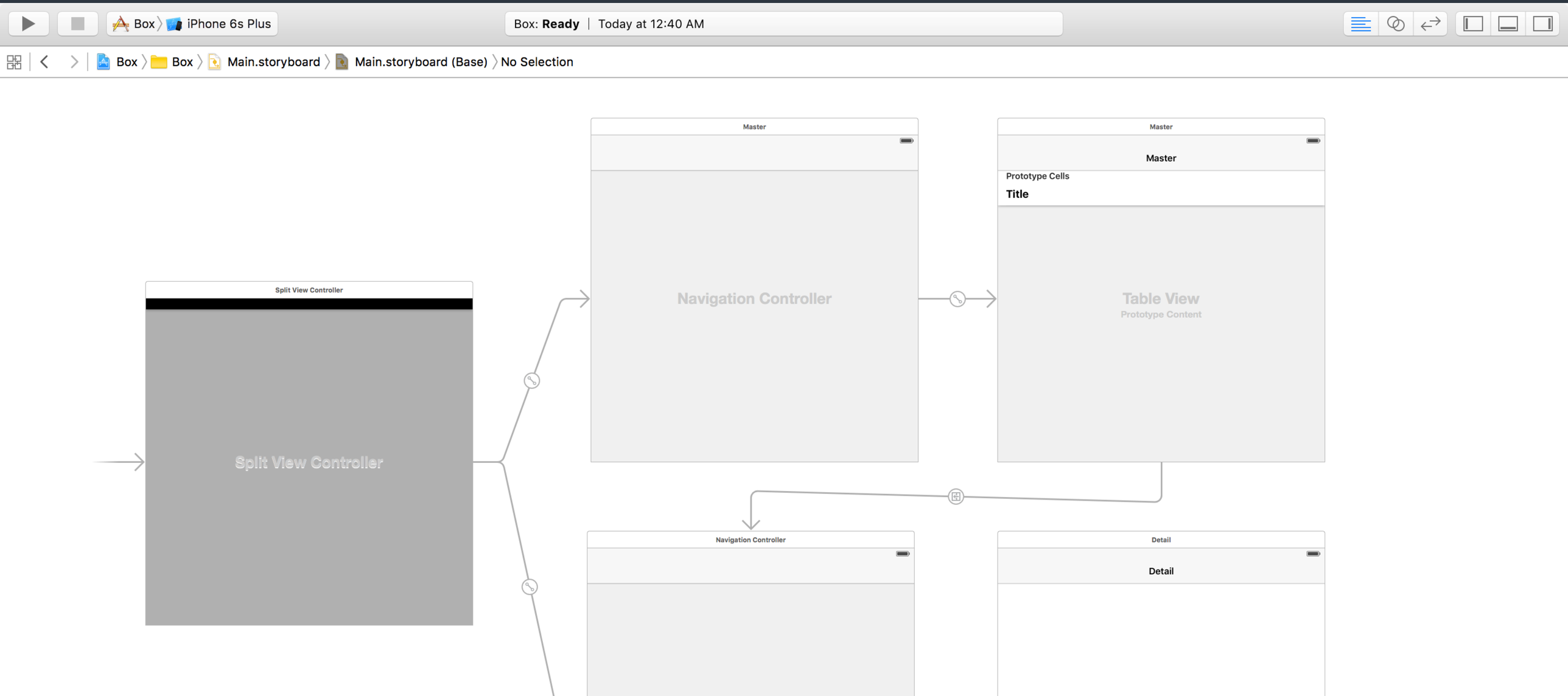
- The middle item shows the title of a view controller by default.
  Assign a view as titleView of the navigation item to replace it.
- The right item is empty by default.
- The left item shows a back arrow with title of previous view controller by default.
  Set leftBarButtonItem or backBarButtonItem of the navigation item to customize.

How did I wind up here?



Storyboard Segue

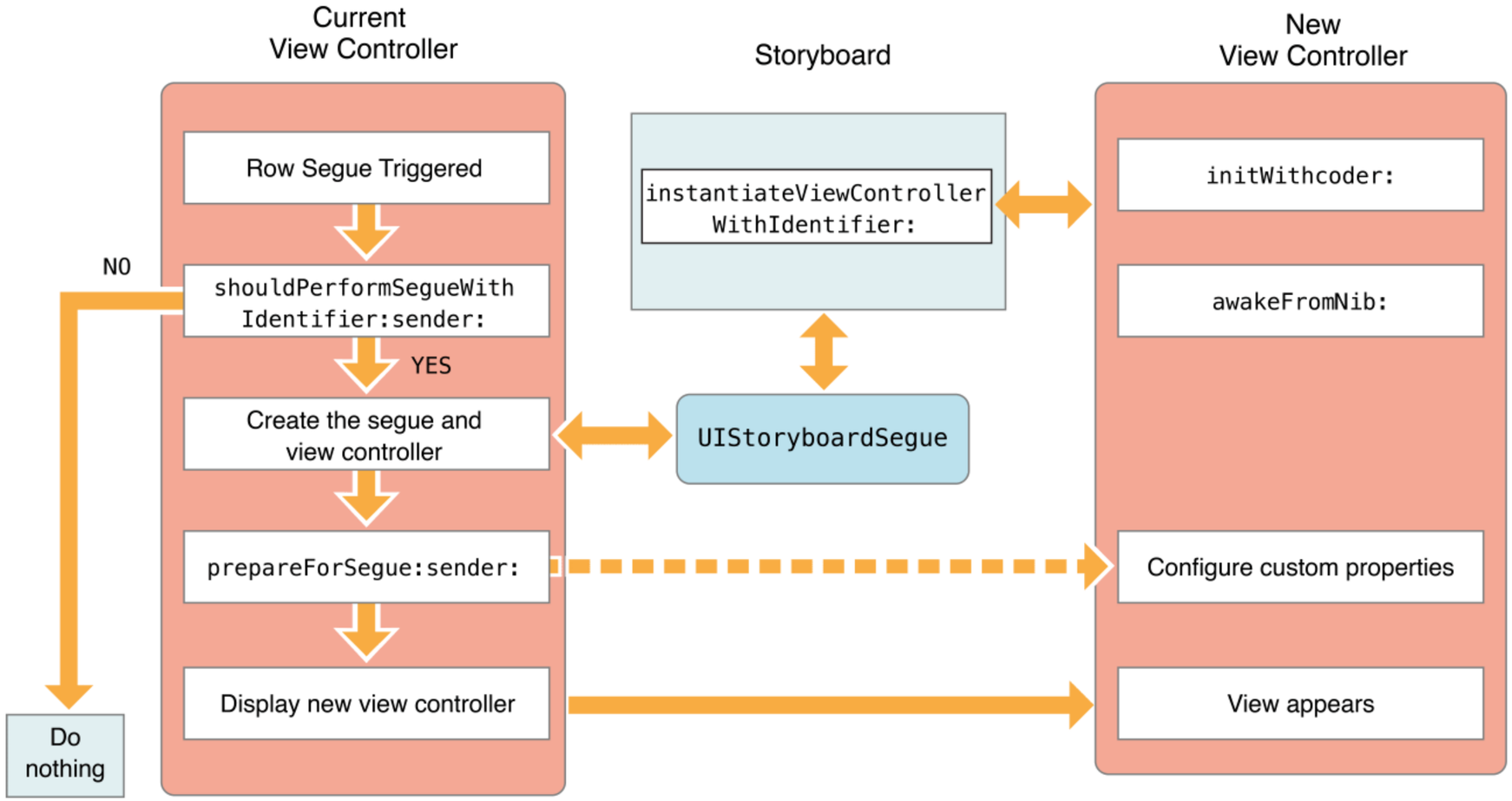
Storyboard Segue



Storyboard Segue

- Segue is responsible for performing the visual transition between two view controllers. Segue is also used to represent relationship between view controllers.
- Override methods of `UIViewController` to handle segue events.
- Use identifier to access segue in code.
- Also use *control+drag* to create segues.

Storyboard Segue

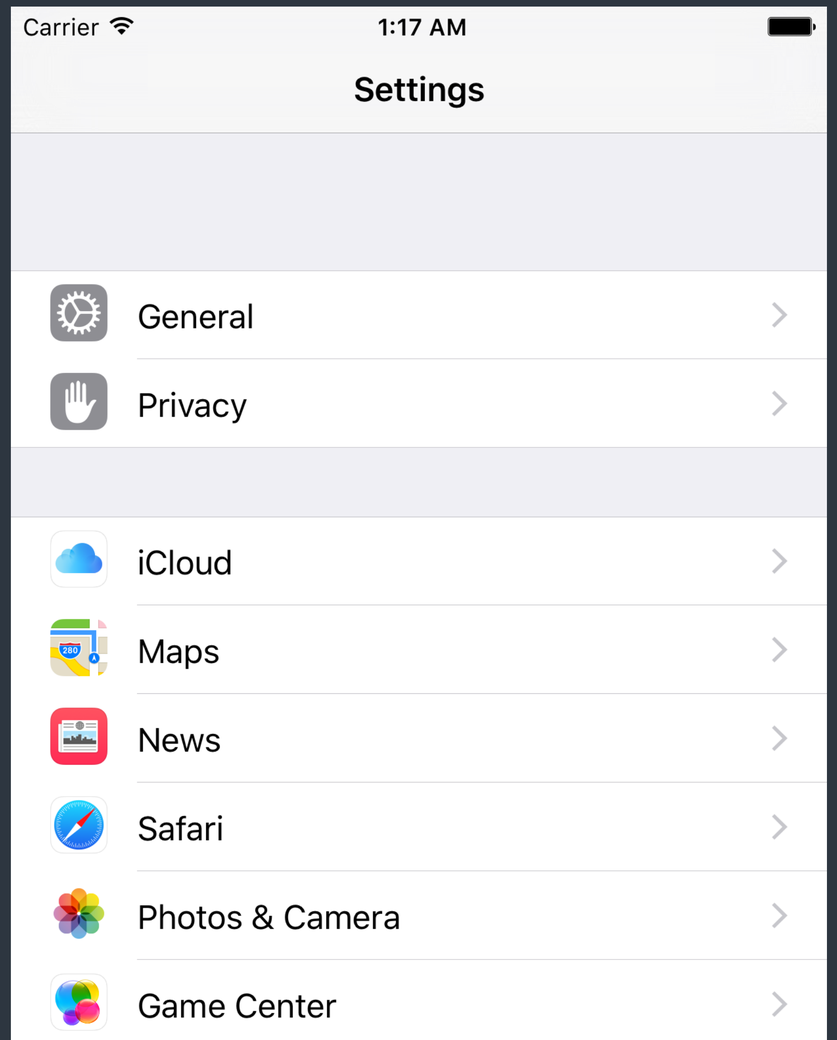


Storyboard Segue - *Future Topics*

- Common segue patterns
- Unwind segue
- Custom segues
- Perform segue via code

Table View

Table View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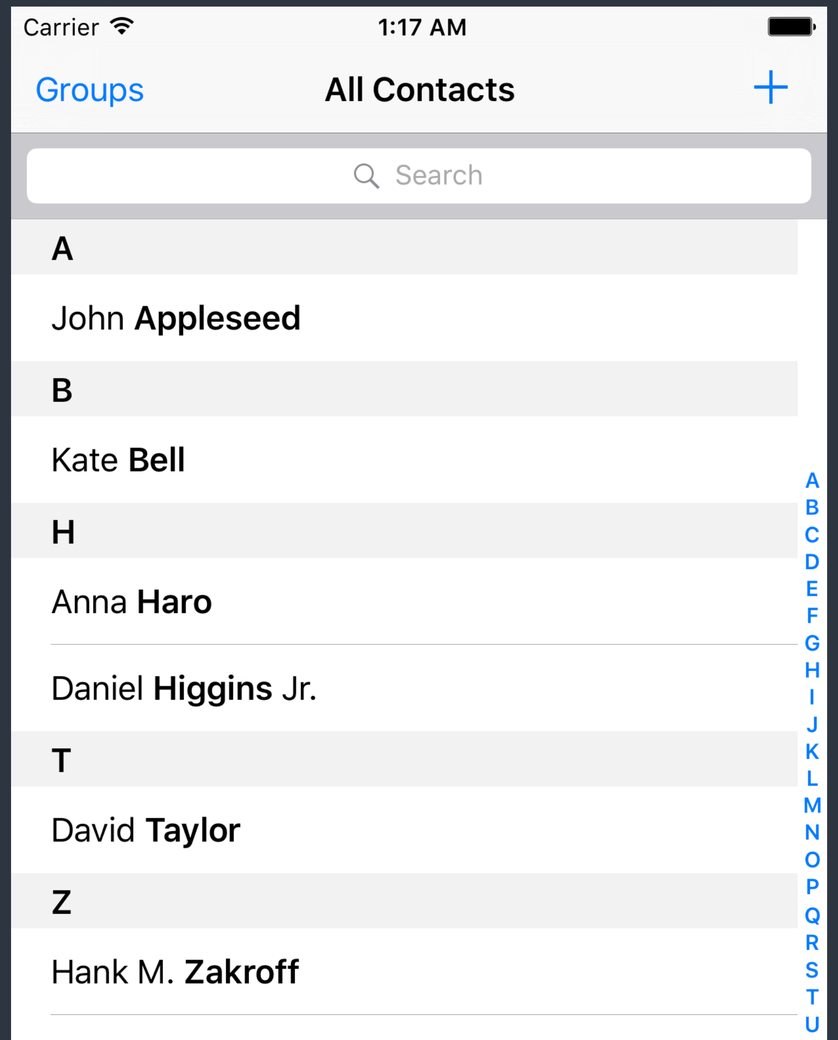
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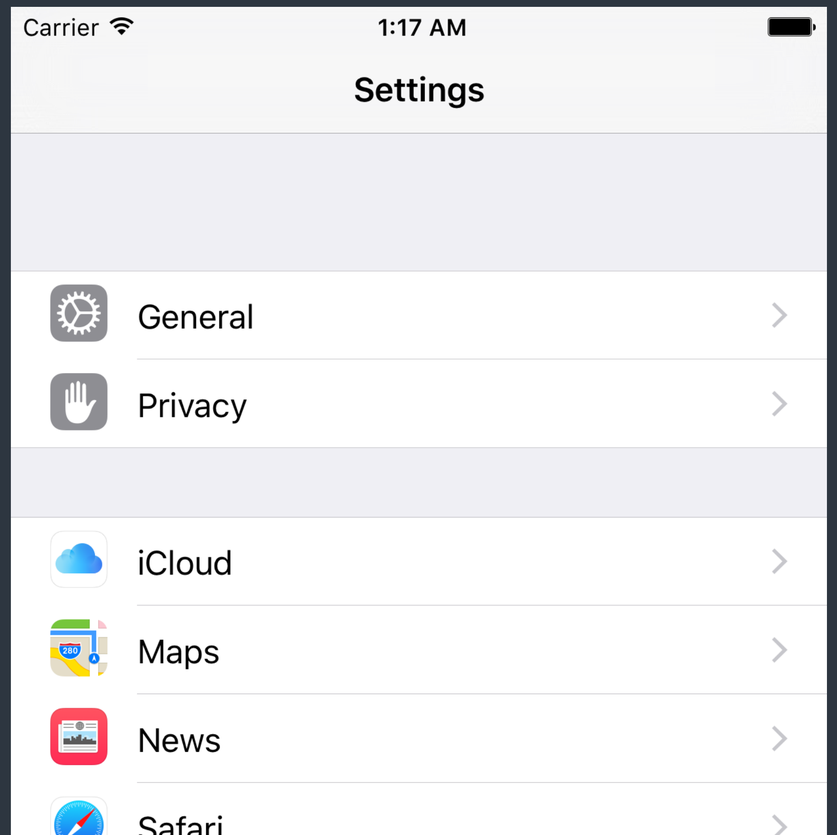
Table View

Grouped Style



Plain Style

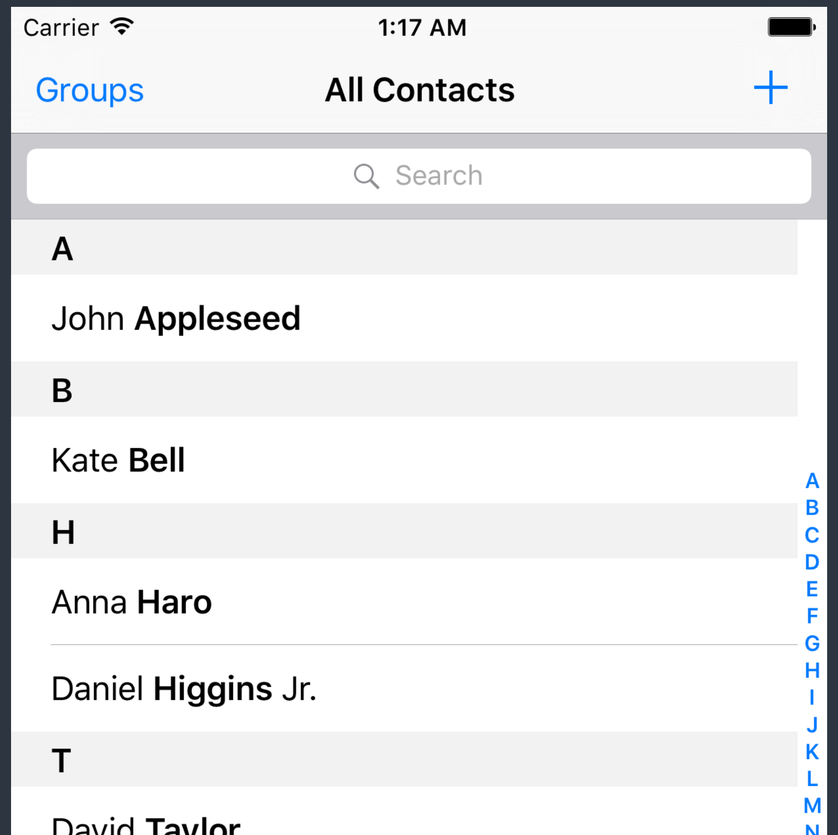
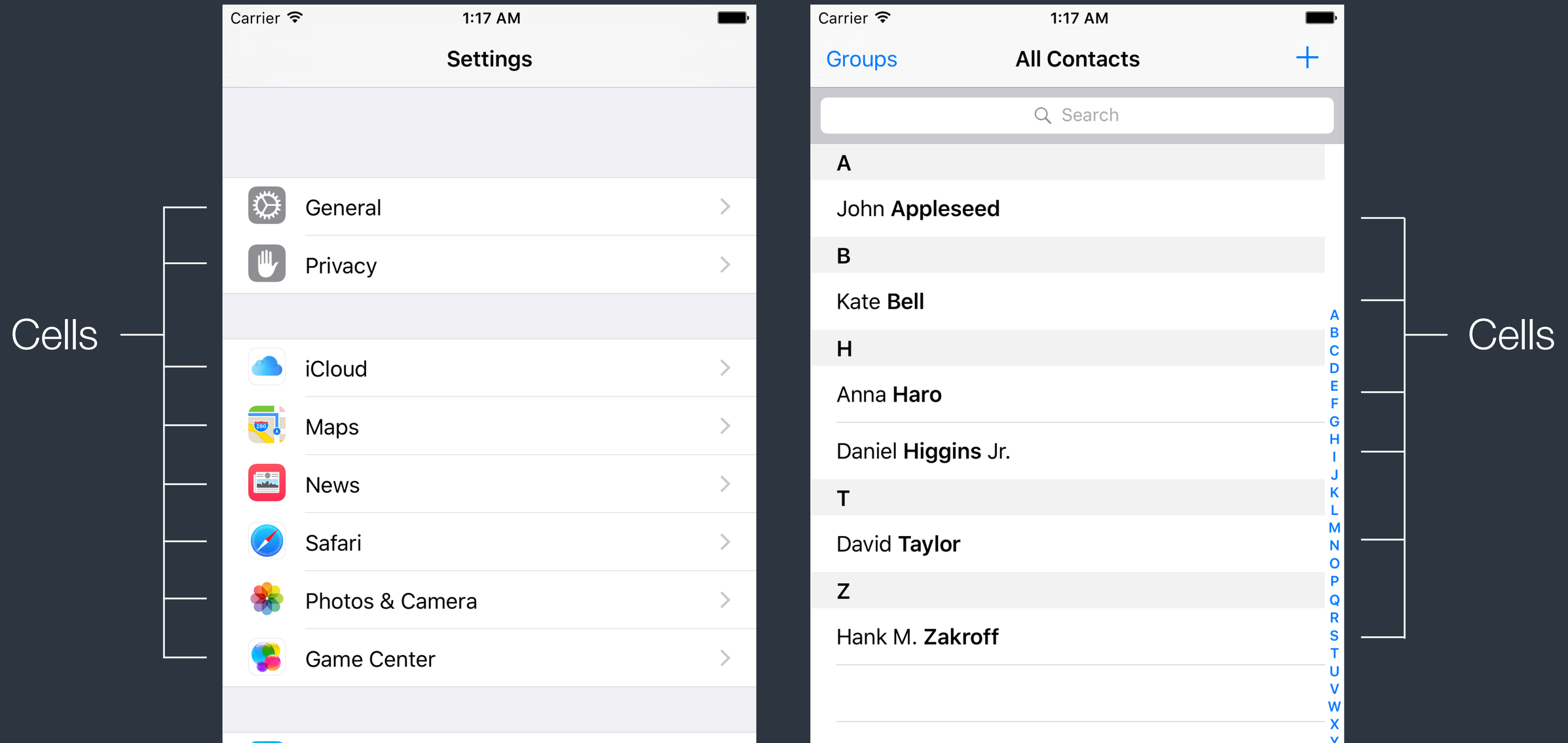


Table View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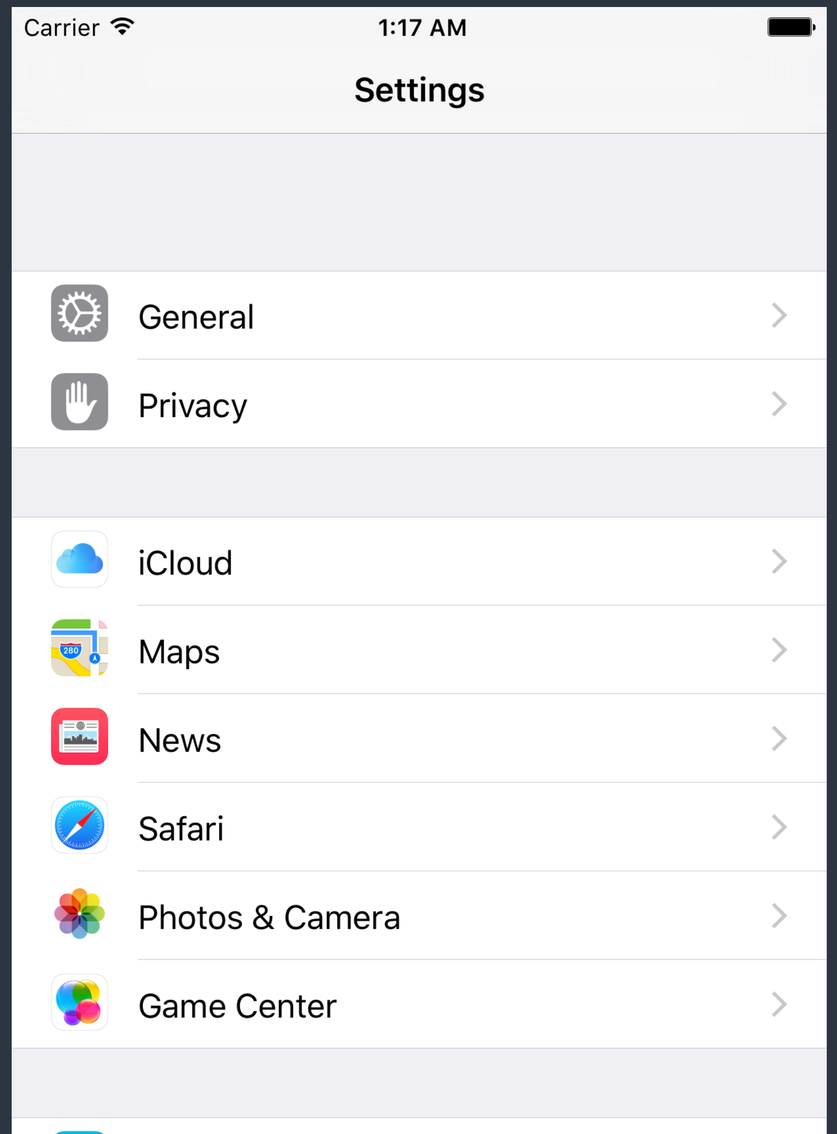
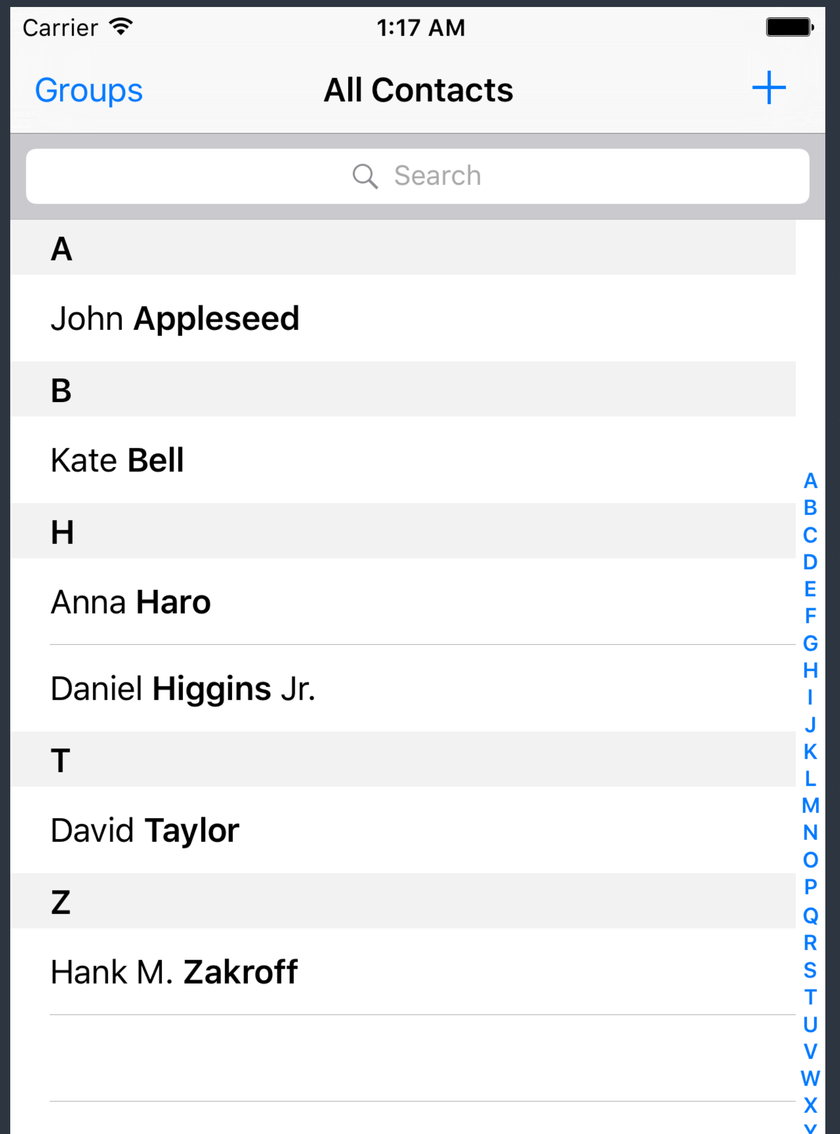
Cells

Table View

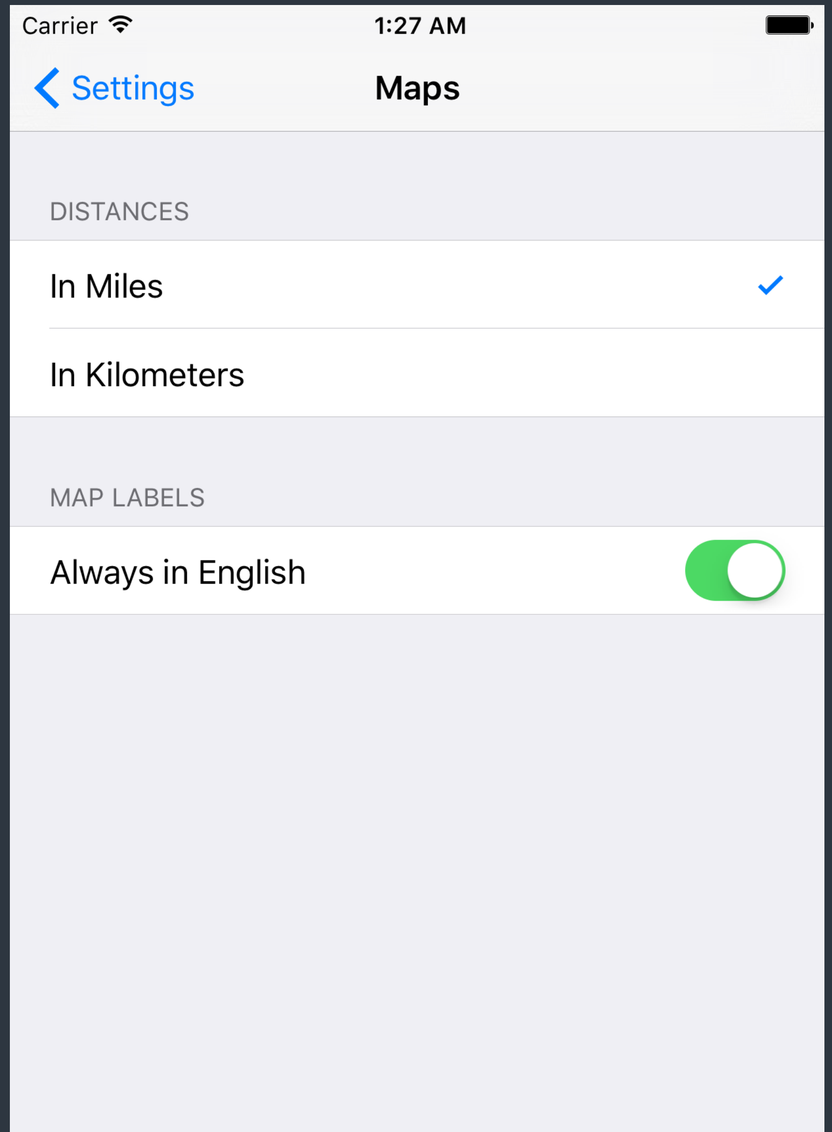


Sections

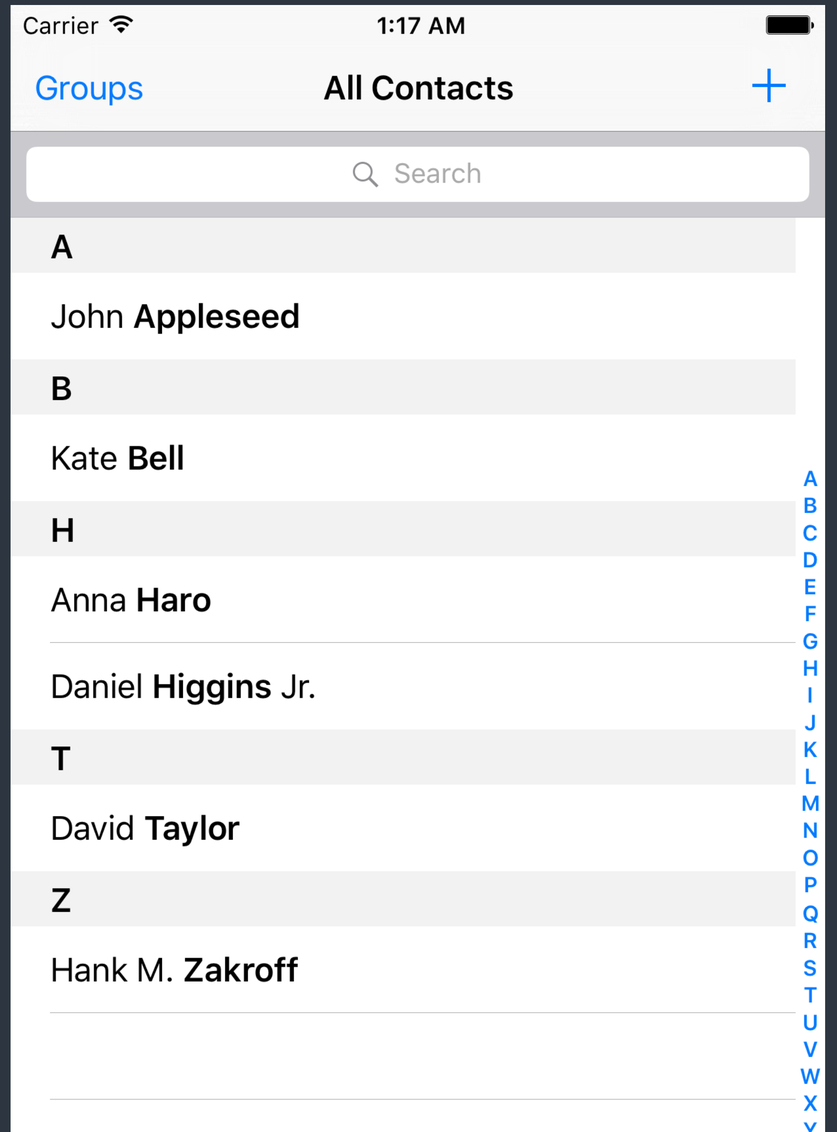


Sections

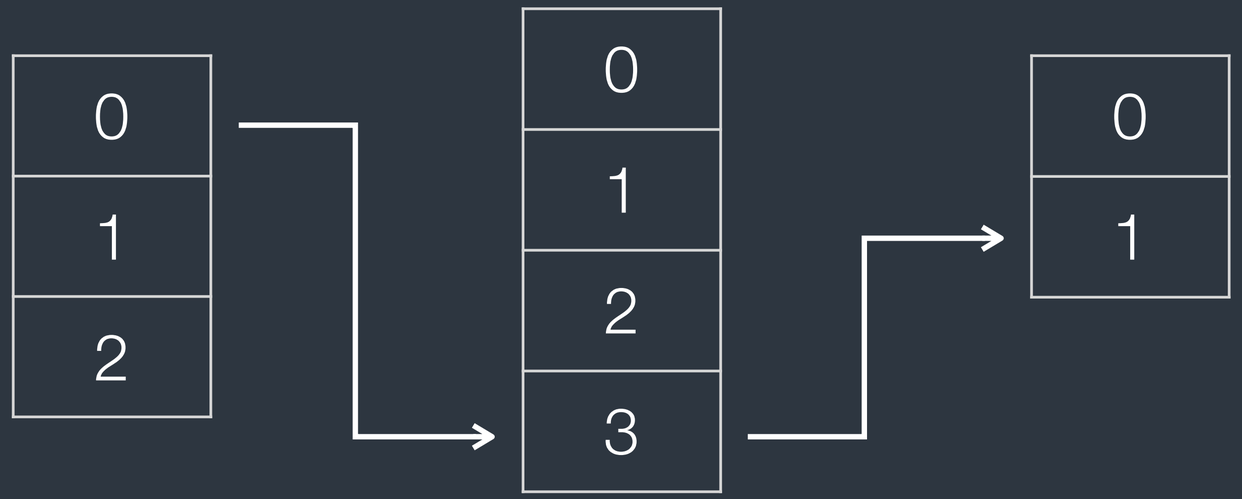
Table View



Section Header

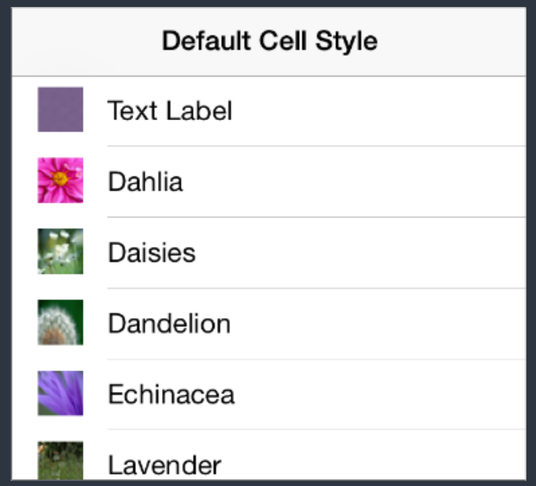


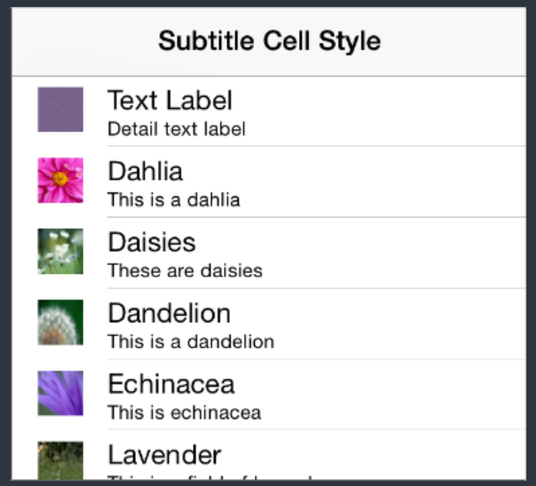
NSIndexPath

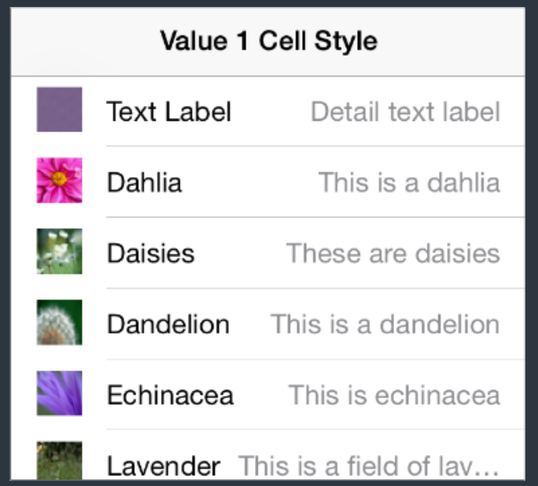


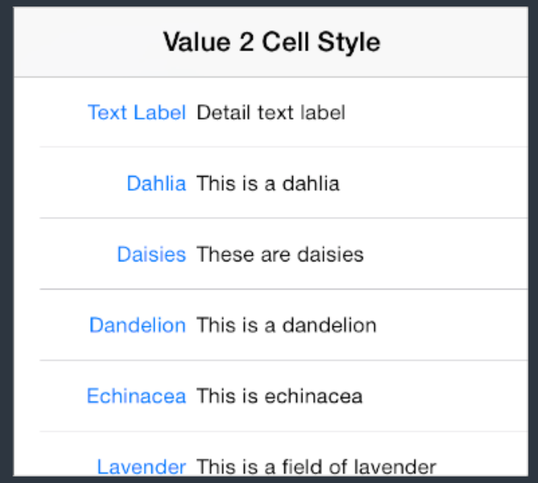
- The `NSIndexPath` class represents the path to a specific node in a tree of nested array collections.
- `UITableView` uses `NSIndexPath` to represents cell position by section and row.

Styles of UITableViewCell





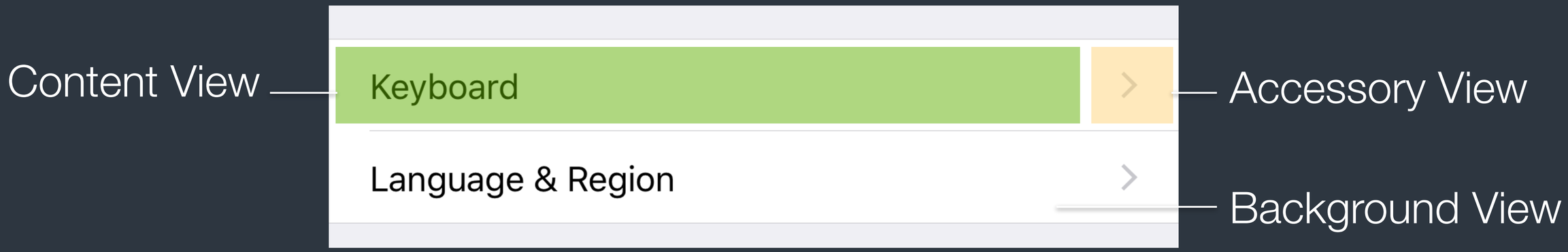




- UITableViewCell has 4 standard styles.
  Use properties like **`textLabel`** to access these standard style content.

Table View > Cell Styles

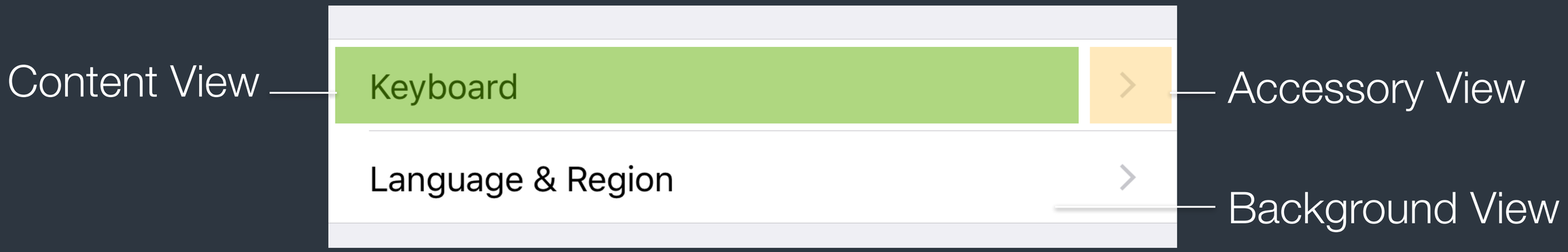
UITableViewCell



- Use tag to access subviews in cells is easier than using outlets.
  To use outlets, you have to create a subclass of UITableViewCell.

- Storyboard supports to create static UITableViewCell.

UITableViewCell



- Select Segue are triggered by events on the cell itself.
- Accessory Action *(Segue)* are triggered by the Accessory view.

Table View Performance

- Reuse cells. *(UITableView has provided reuse mechanism.)*
  Object allocation has a performance cost, especially if the allocation has to happen repeatedly over a short period.

- Use opaque subviews and avoid to relayout/redraw of content.
  Use static or rendered images, make things easier while reusing. When customizing table view cells, make the subviews of the cell not transparent.

- Leave main thread doing UI job.
  Fetch resources and perform I/O in other thread. Use preloading and caching.

Delegation Pattern

- The `UITableView` uses delegation pattern to fetch data and configure appearance and behavior.
- The `UITableViewDataSource` is designed for providing data for the table view. And the `UITableViewDelegate` is used to configure the table view and its events.
- The `UITableViewController` is a shortcut which conforms to both the 2 protocols.

Property List

Property List

- A file presentation to store Foundation data types.
  2 formats: XML and Binary.

- OS X and iOS uses Property List to save settings and preferences.
  Apps use Info.plist to save app info.

- Available data types are: NSArray, NSDictionary, NSString, NSData, NSDate, NSNumber.
  “NSDate” is date-time representation in Objective-C, and “NSData” is a wrapper of binary bytes.

Property List

```
let array = [1, 2, 3]
(array as NSArray).writeToFile(path, atomically: true)
let array2: NSArray? = NSArray(contentsOfFile: path)
```

- For NSString and NSData, they are written into plain files directly.
  String is written as text file, and data as binary file.
- For NSArray and NSDictionary, they are saved into plist files.
- Set “atomically” to use auxiliary file when writing files.

References

- UINavigationController references
- Navigation Controllers
  View Controller Catalog for iOS
- Using Segues
  View Controller Programming Guide for iOS
- Table View Programming guide for iOS
- Property List Programming Guide