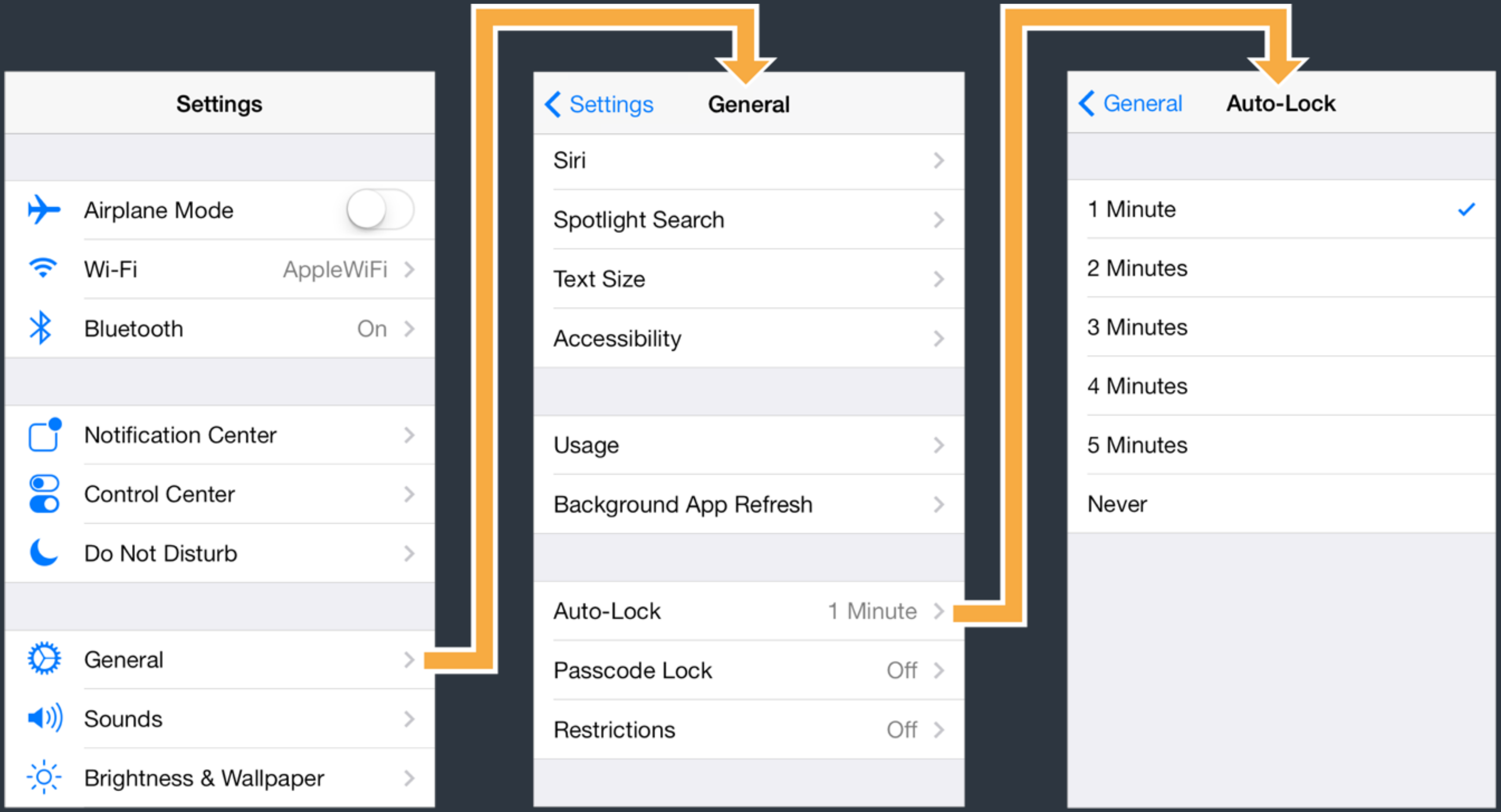
Table View and Navigation Controller

Mar. 24 ‘16

Navigation Controller



Settings

Airplane Mode

Wi-Fi AppleWiFi

Bluetooth On

Notification Center

Control Center

Do Not Disturb

General

Sounds

Brightness & Wallpaper

Settings General

Siri

Spotlight Search

Text Size

Accessibility

Usage

Background App Refresh

Auto-Lock 1 Minute

Passcode Lock Off

Restrictions Off

General Auto-Lock

1 Minute ✓

2 Minutes

3 Minutes

4 Minutes

5 Minutes

Never

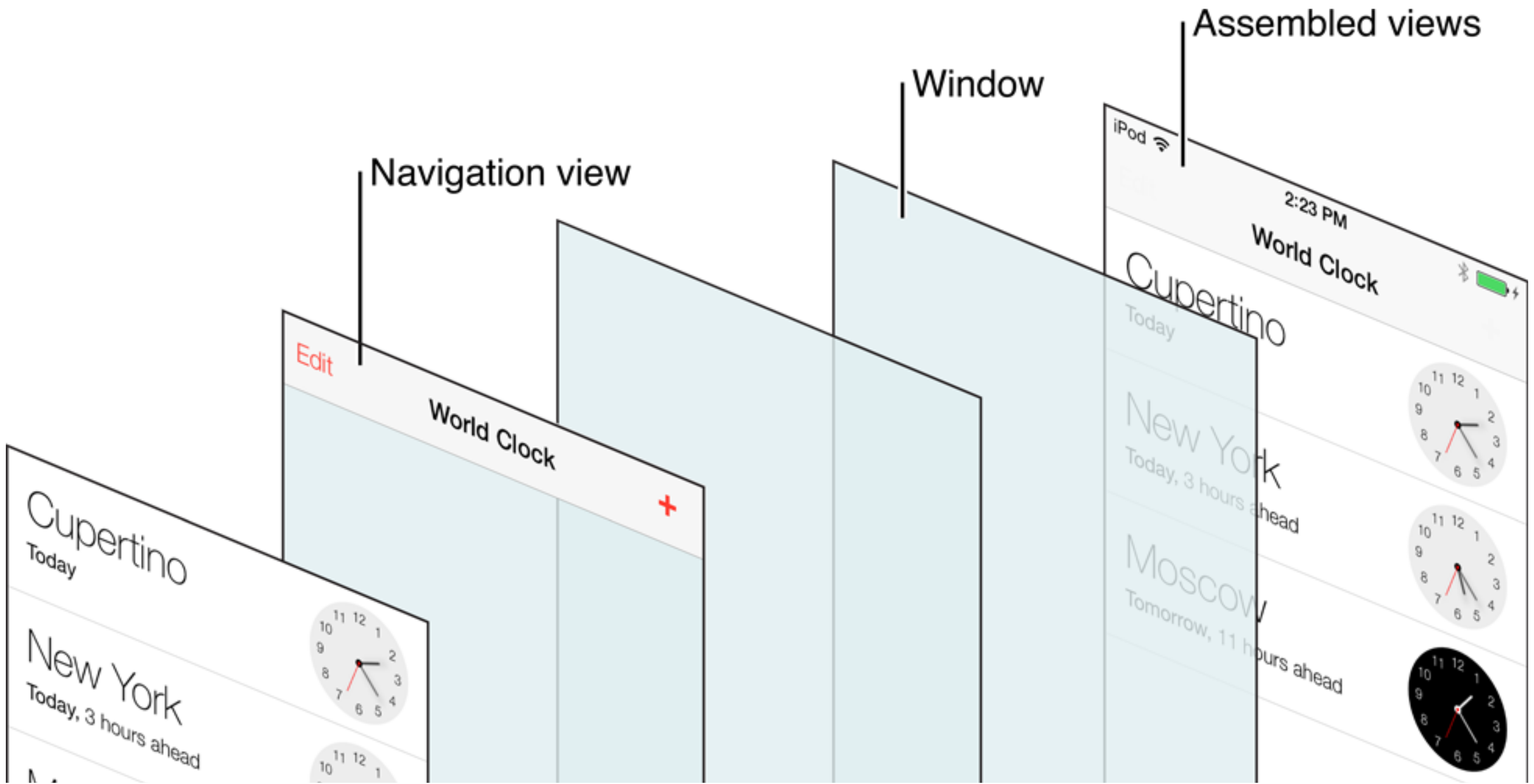
UINavigationController

- 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



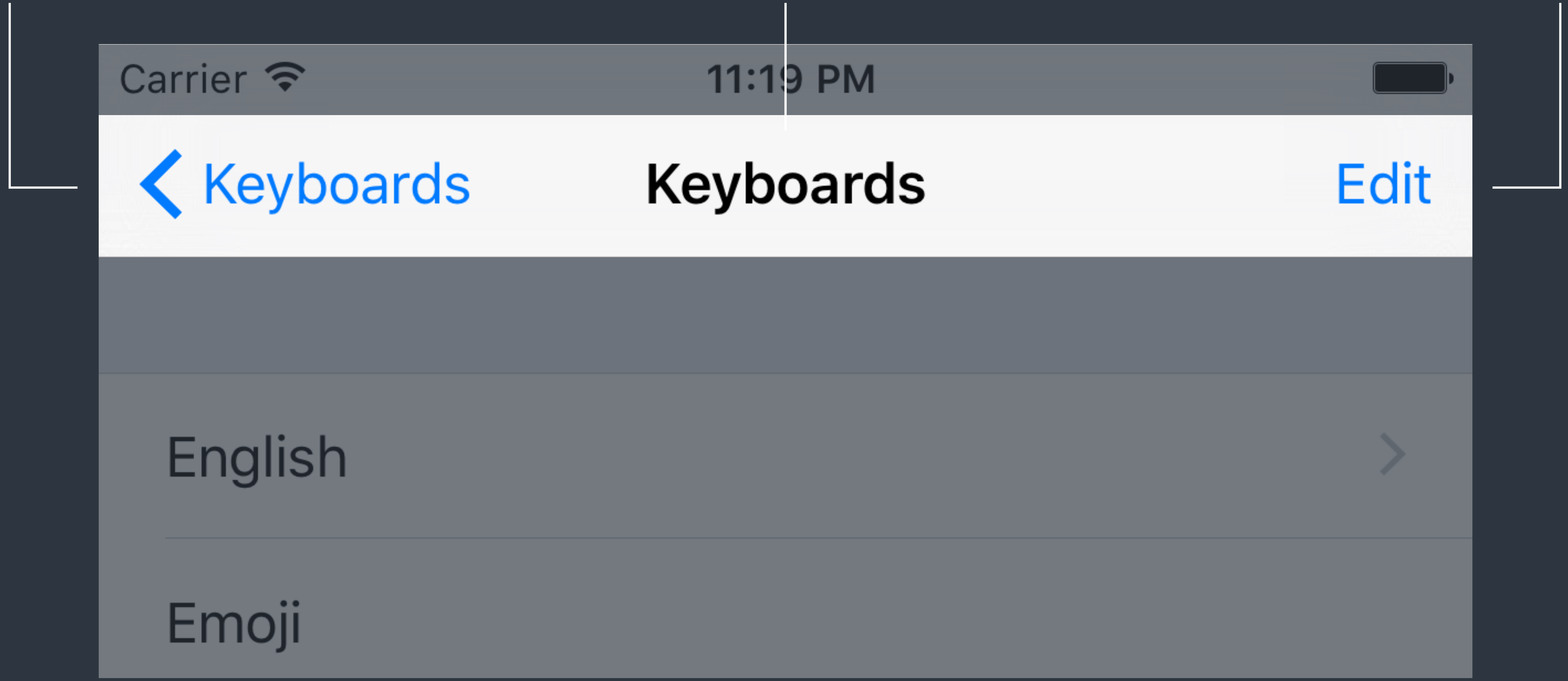
- Each view controller has a property `navigationItem` which is used to customize the navigation bar.

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.

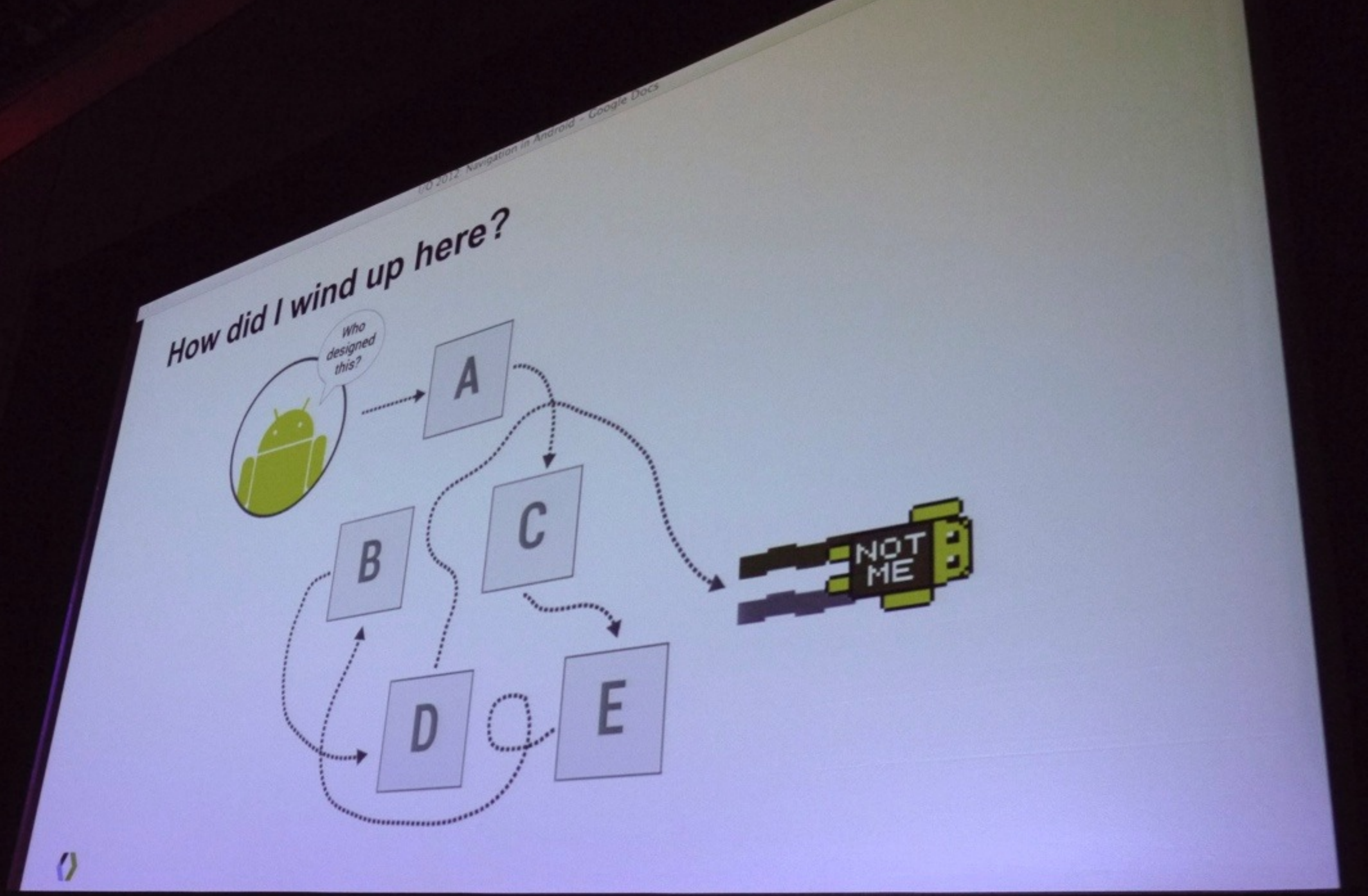
- The right item is empty by default.

- 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.

I/O 2012: Navigation in Android - Google Docs

How did I wind up here?



Storyboard Segue

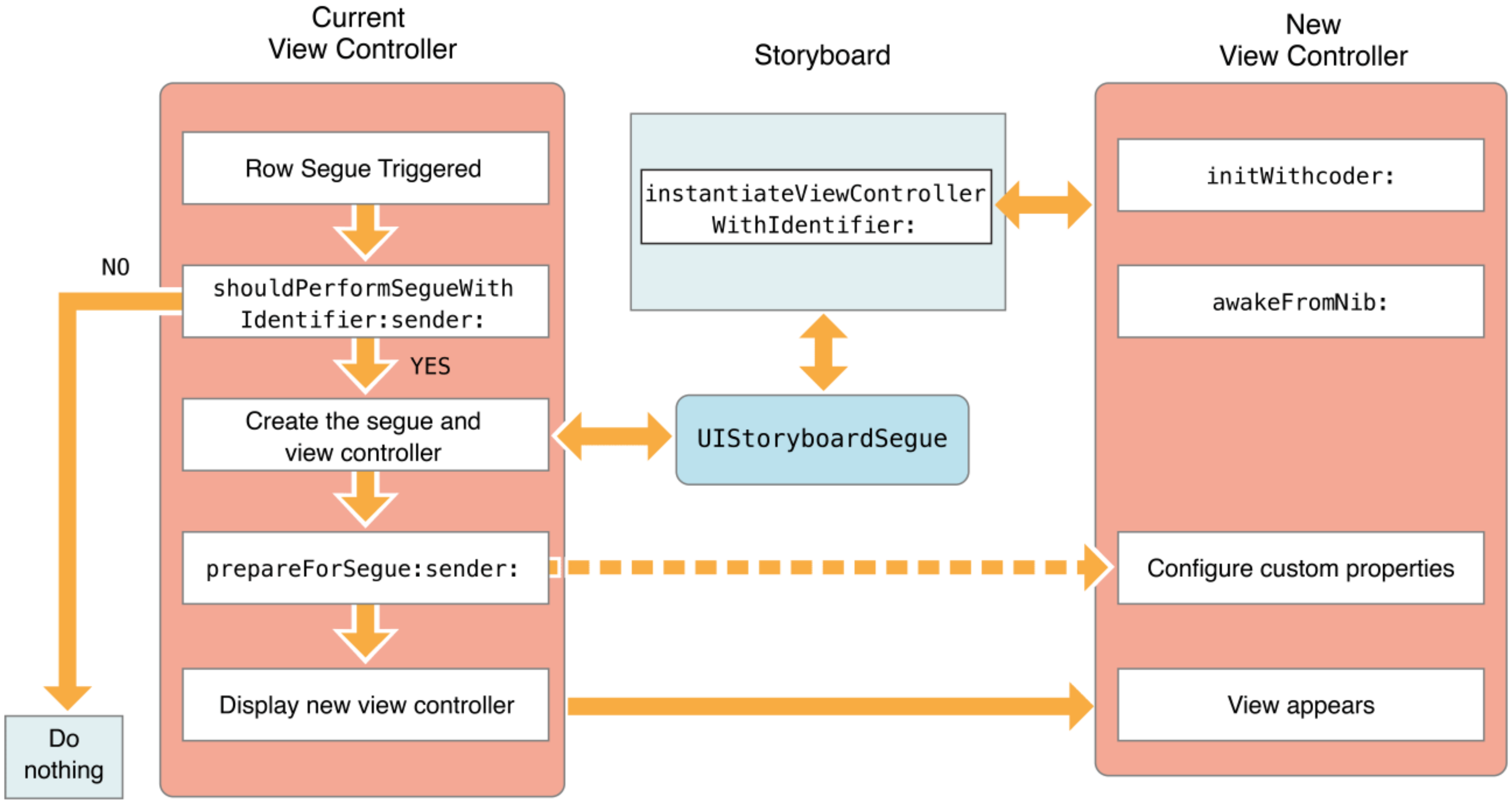
Storyboard Segue

Box
iPhone 6s Plus
Box: Ready | Today at 12:40 AM
Box
Box
Main.storyboard
Main.storyboard (Base)
No Selection
Split View Controller
Split View Controller
Master
Navigation Controller
Master
Master
Prototype Cells
Title
Table View
Prototype Content
Navigation Controller
Detail
Detail

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

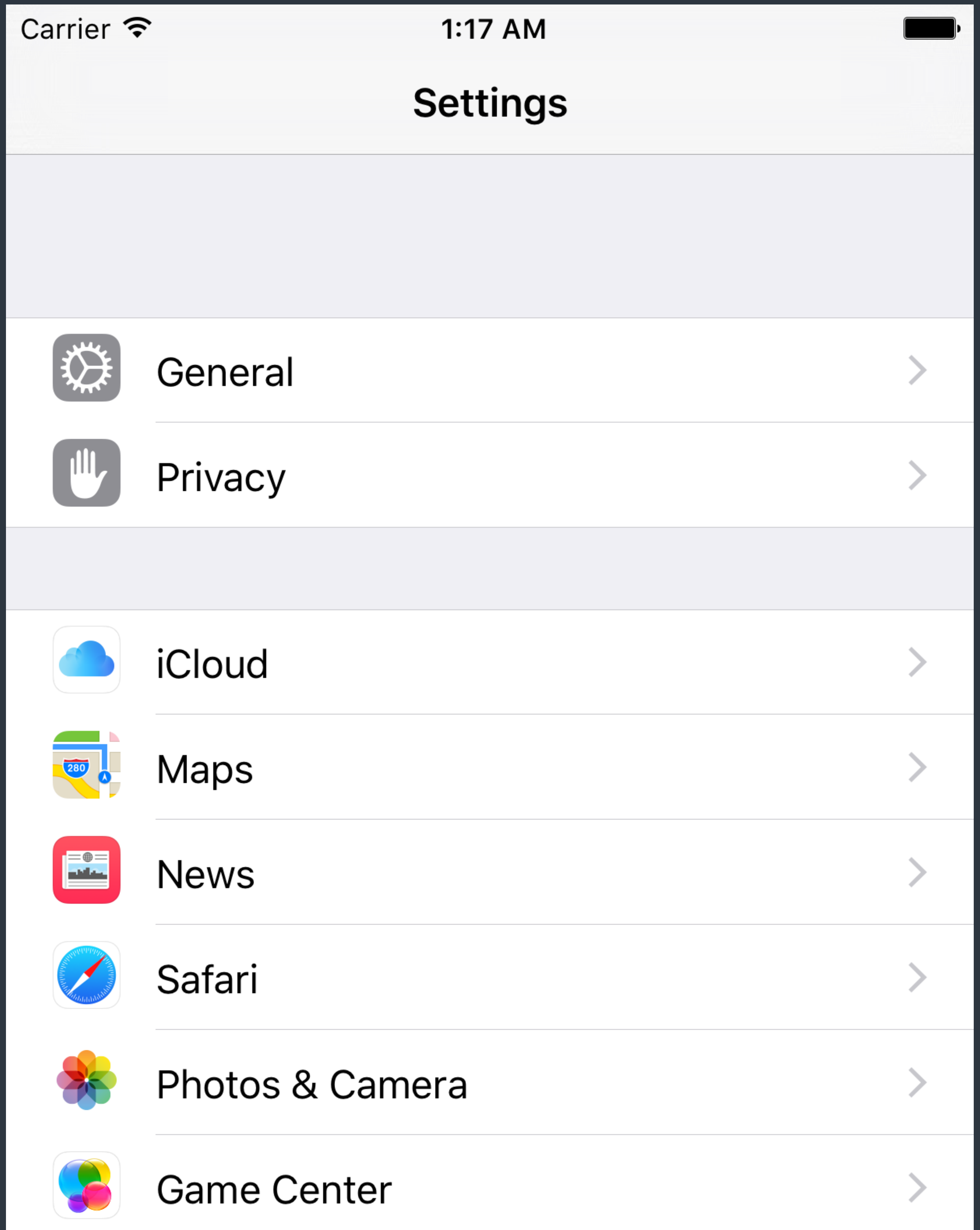


Storyboard Segue - *Future Topics*

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

Table View

Table View



Carrier 1:17 AM

Settings

General

Privacy

iCloud

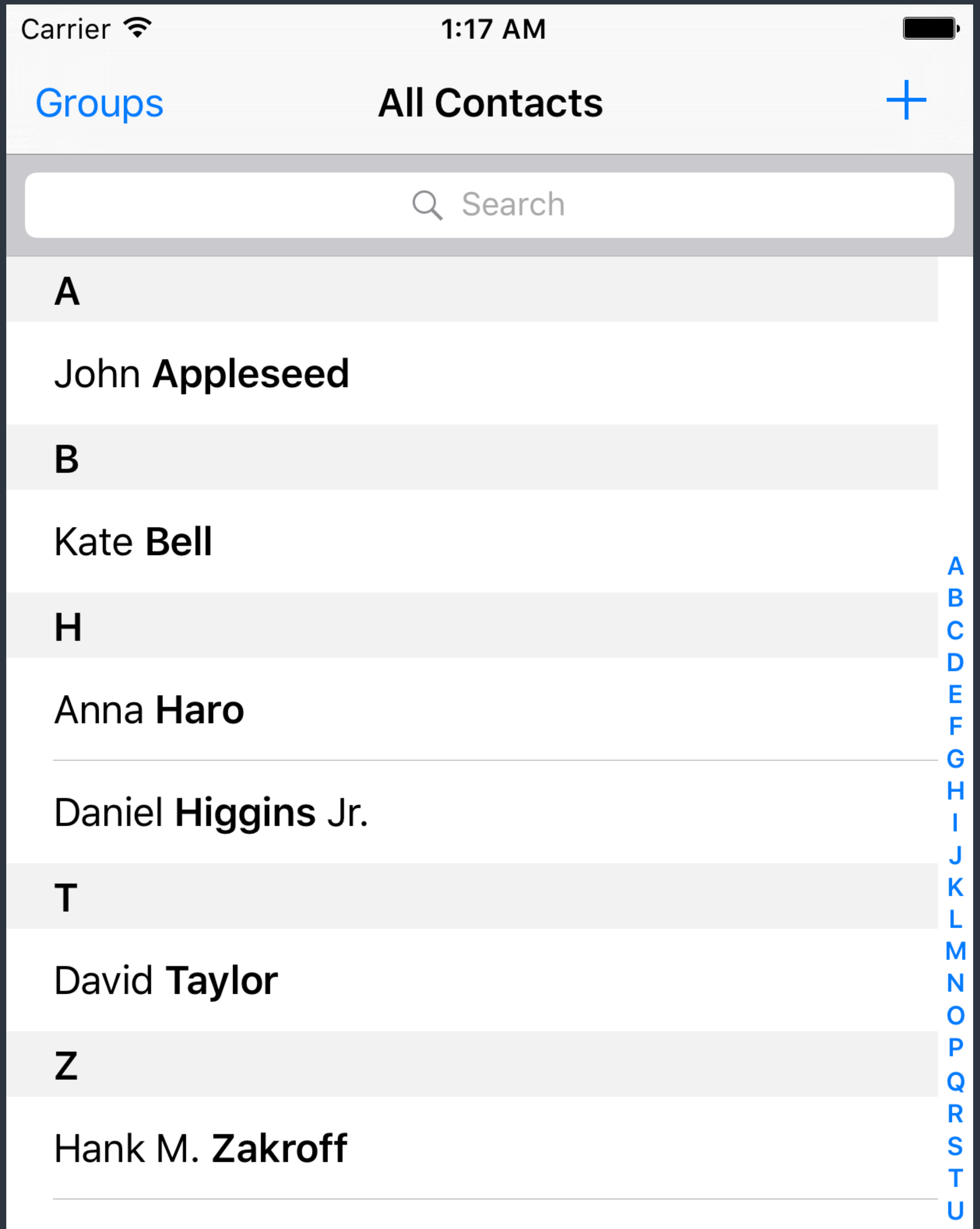
Maps

News

Safari

Photos & Camera

Game Center



Carrier 1:17 AM

Groups All Contacts +

Search

A

John **Appleseed**

B

Kate **Bell**

H

Anna **Haro**

Daniel **Higgins** Jr.

T

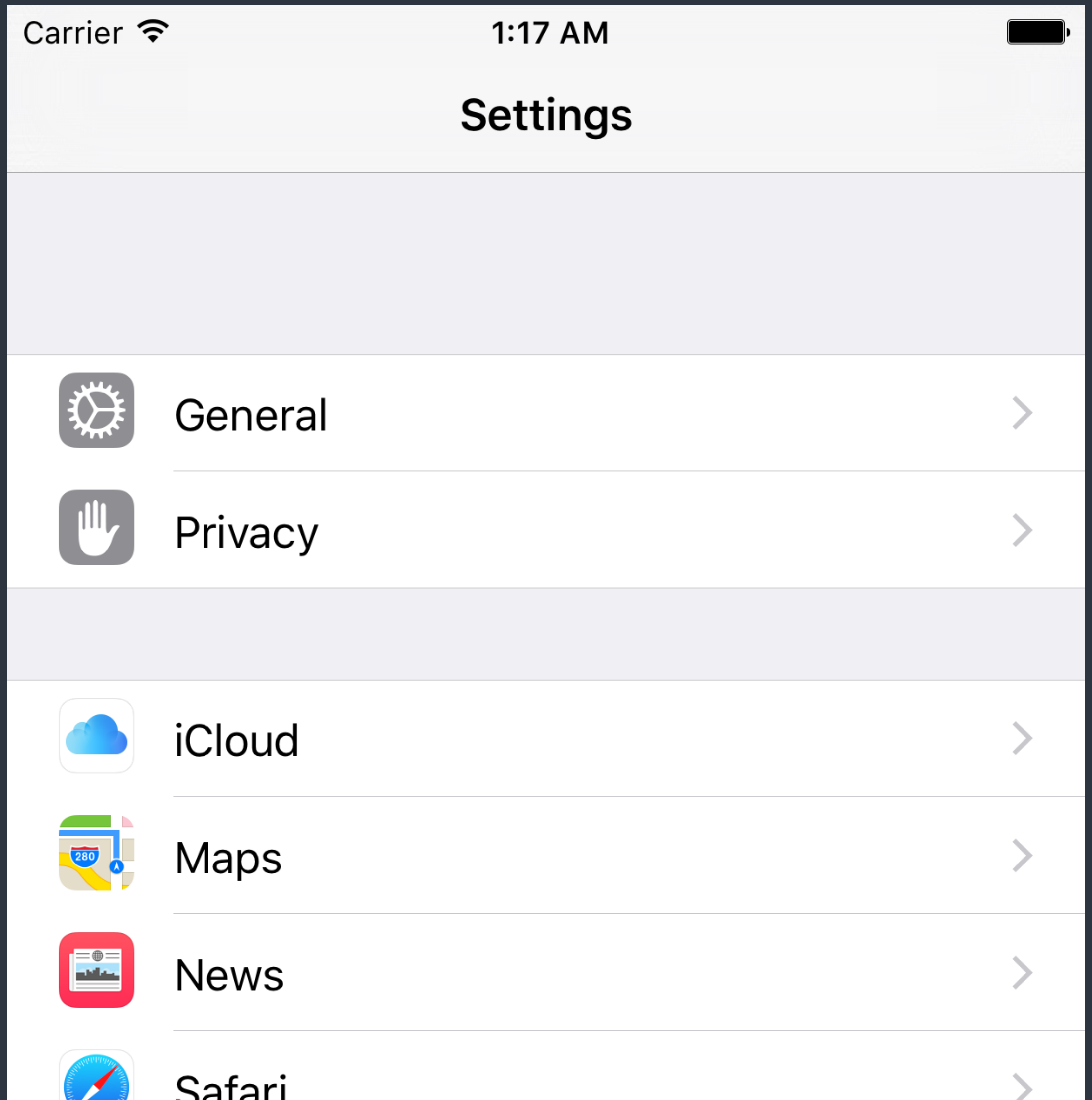
David **Taylor**

Z

Hank M. **Zakroff**

Table View

Grouped Style



Plain Style

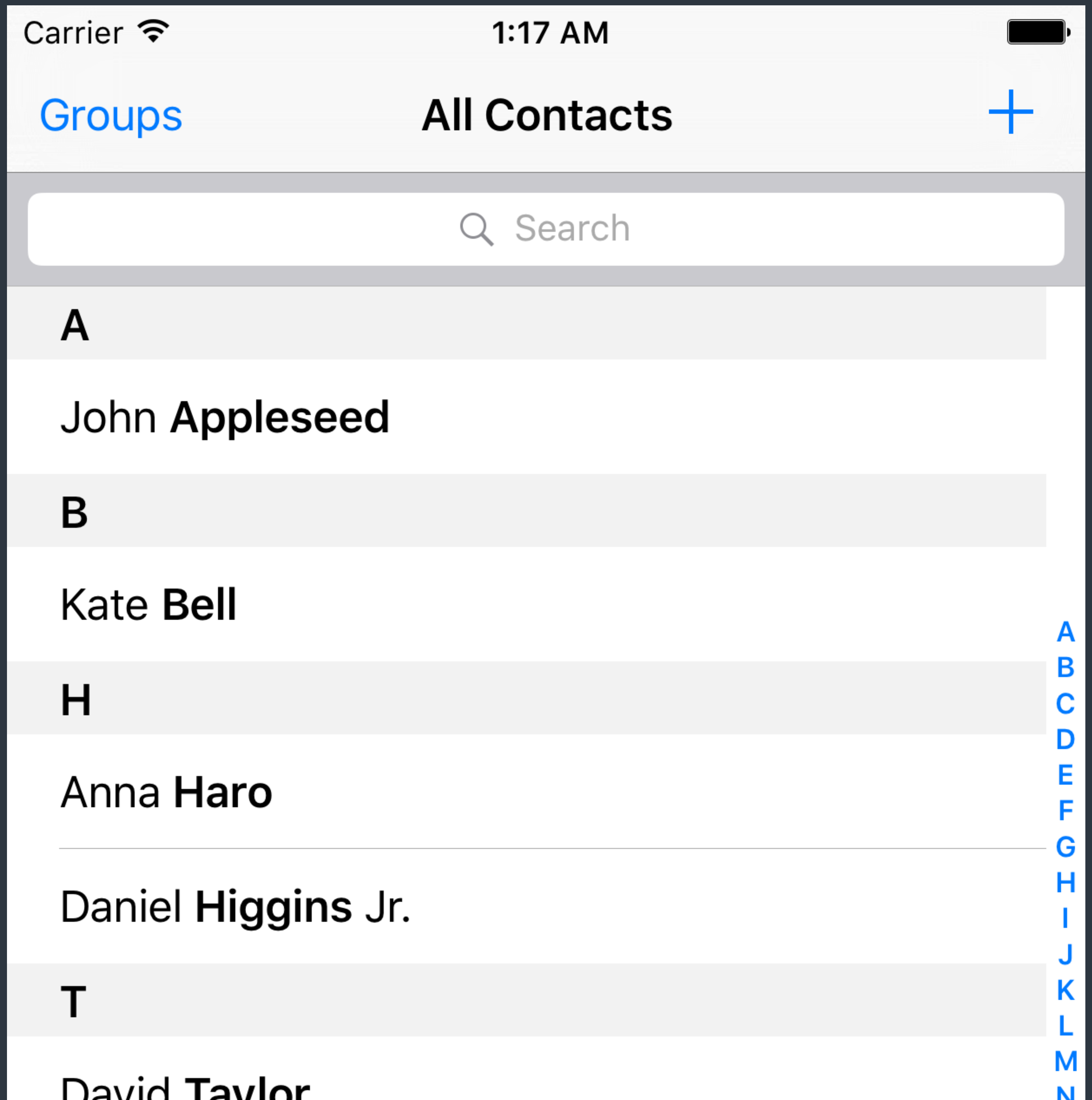


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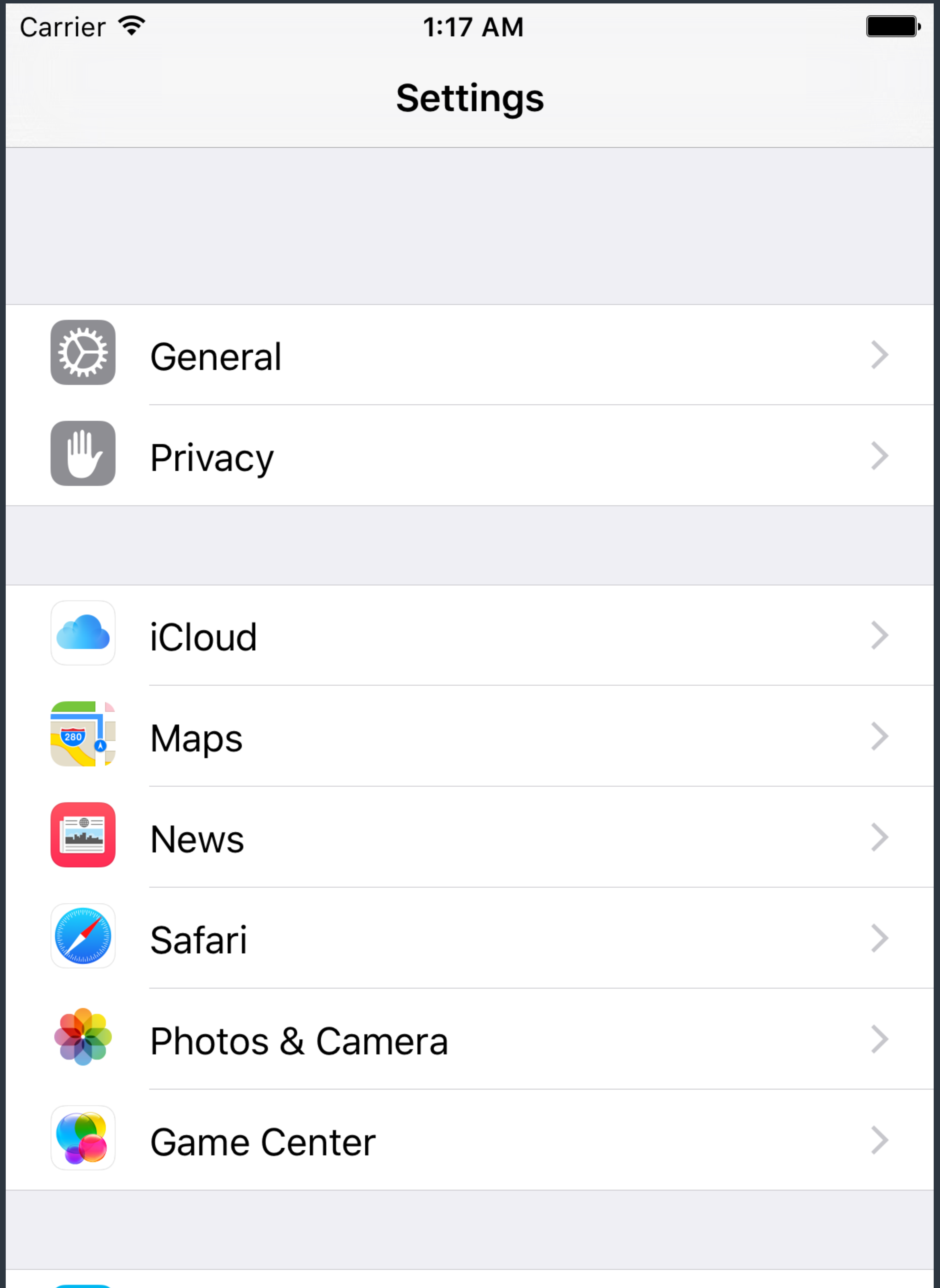
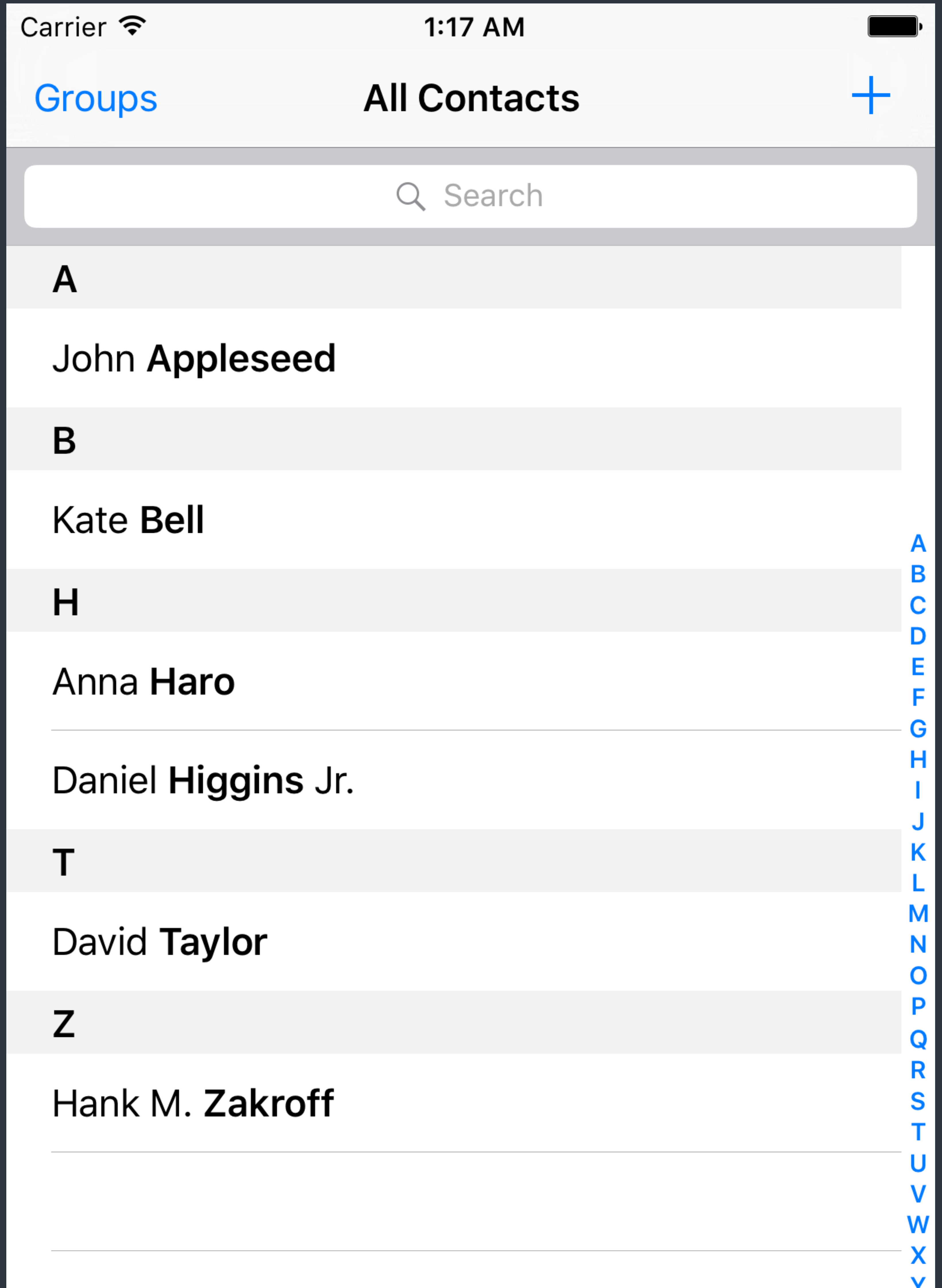
Table View

Cells



Settings

- General
- Privacy
- iCloud
- Maps
- News
- Safari
- Photos & Camera
- Game Center



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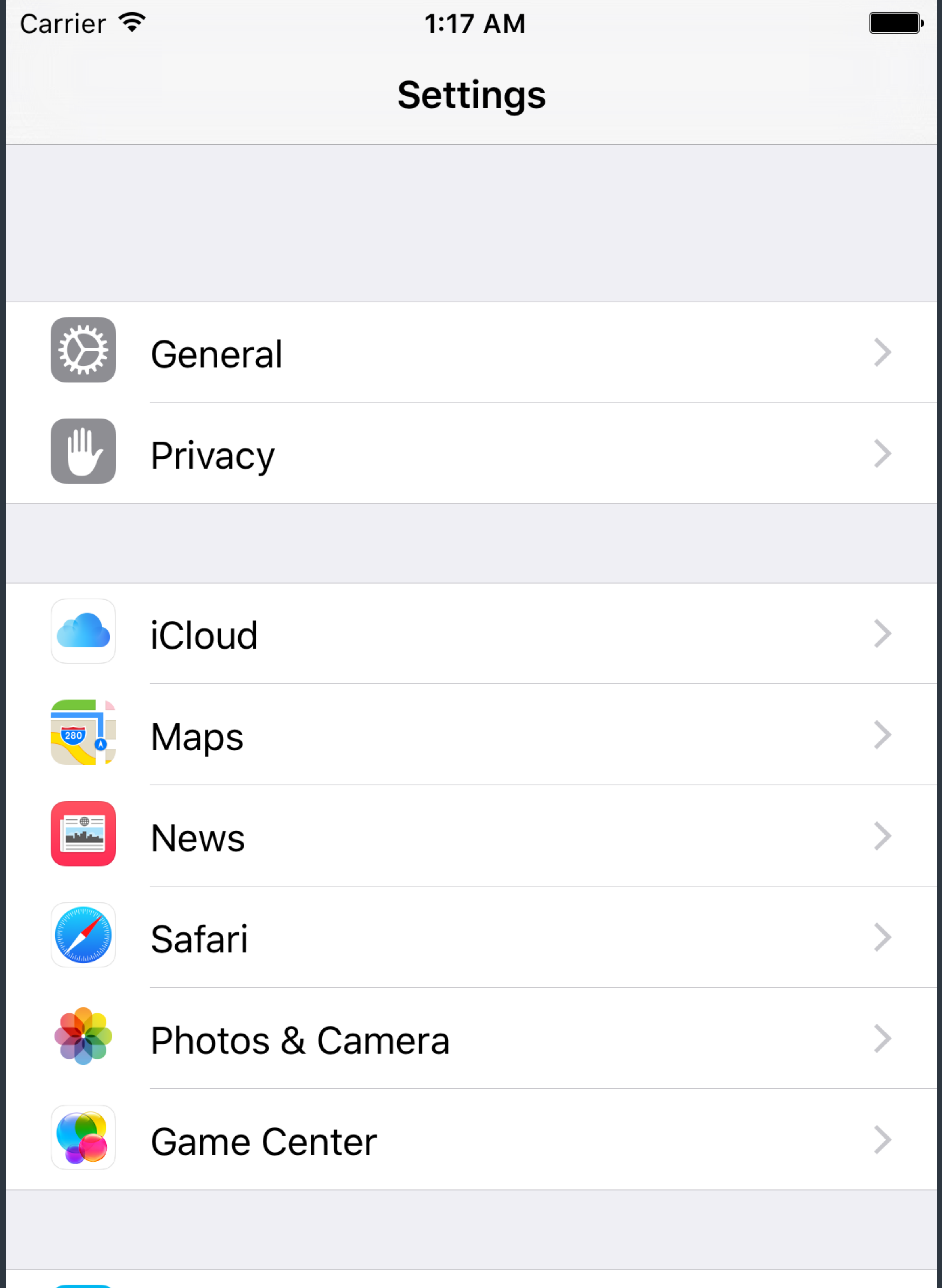
Cells

Table View

Sections



Carrier 1:17 AM

Settings

General

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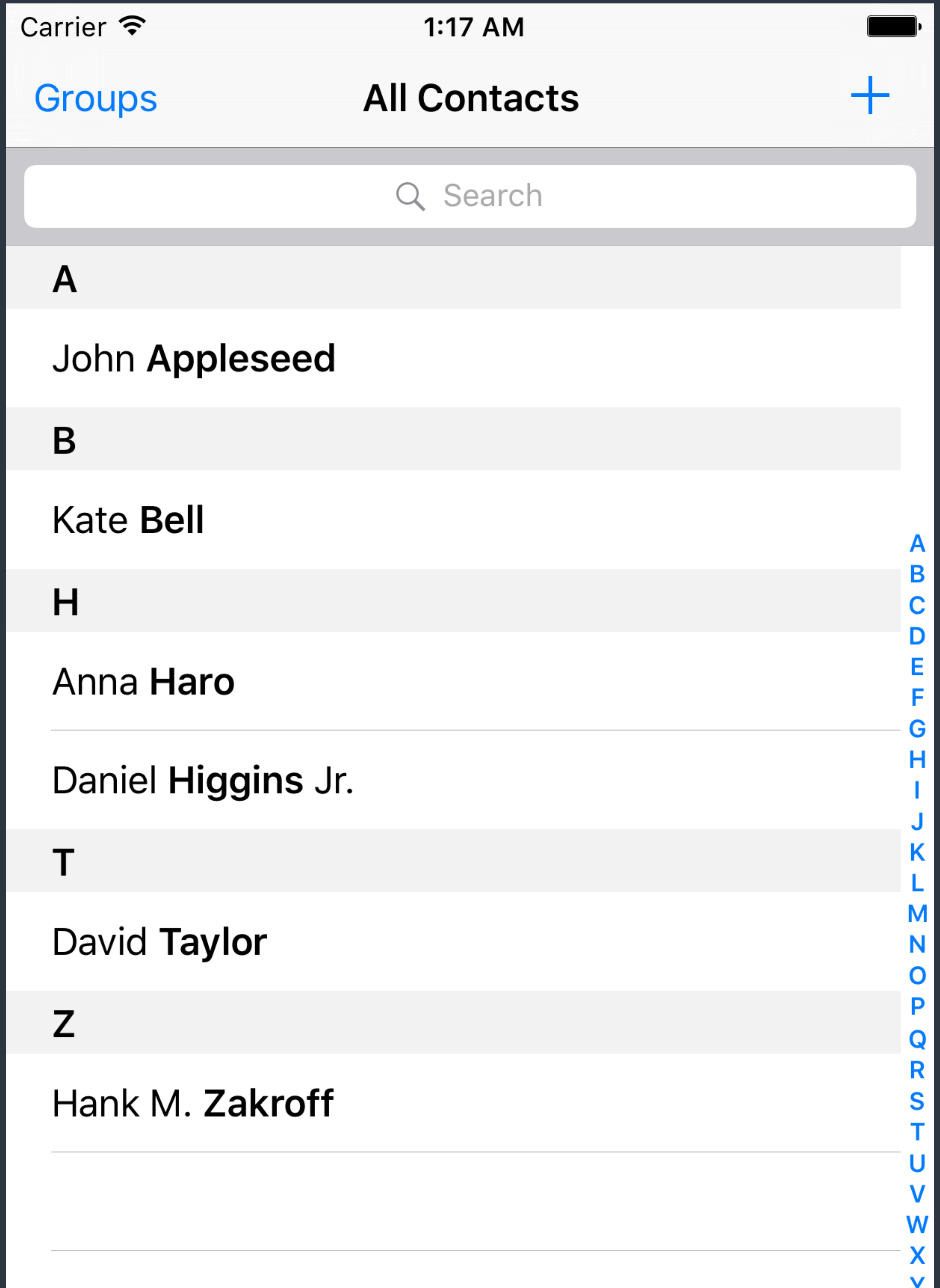

Carrier 1:17 AM

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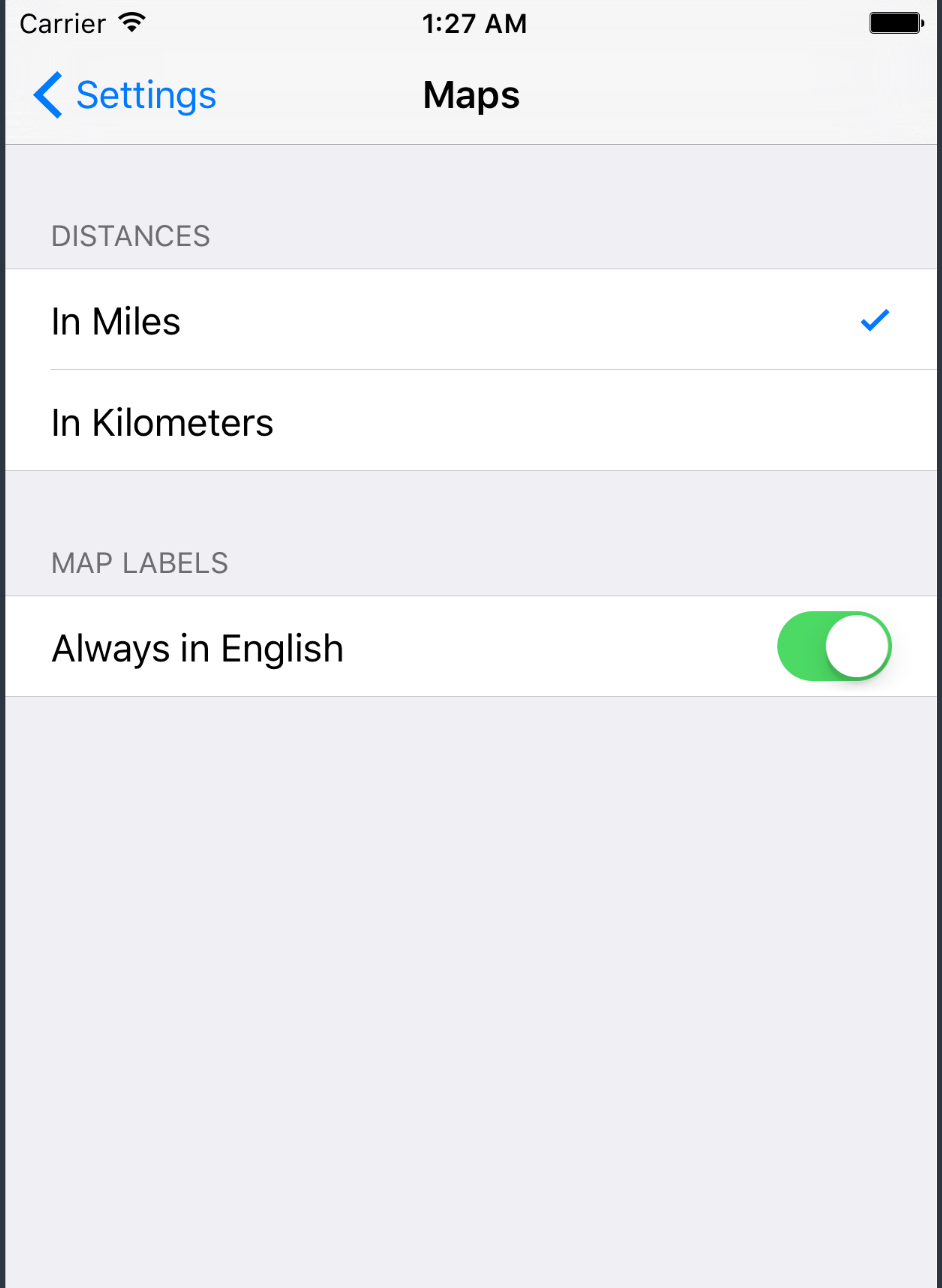
A B C D E F G H I J K L M N O P Q R S T U V W X

Sections

Table View



DISTANCES

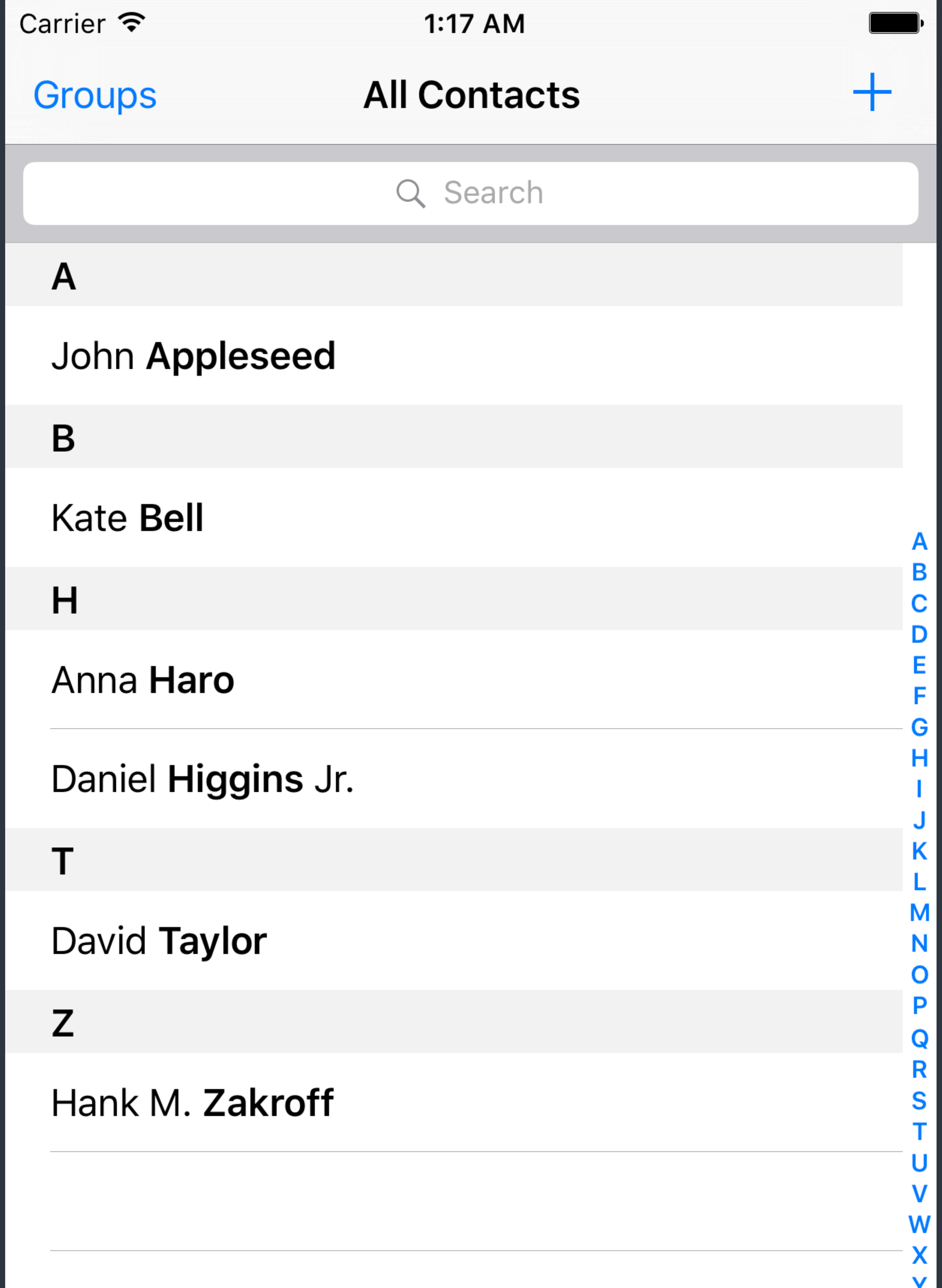
In Miles ✓

In Kilometers

MAP LABELS

Always in English ●

Section Header



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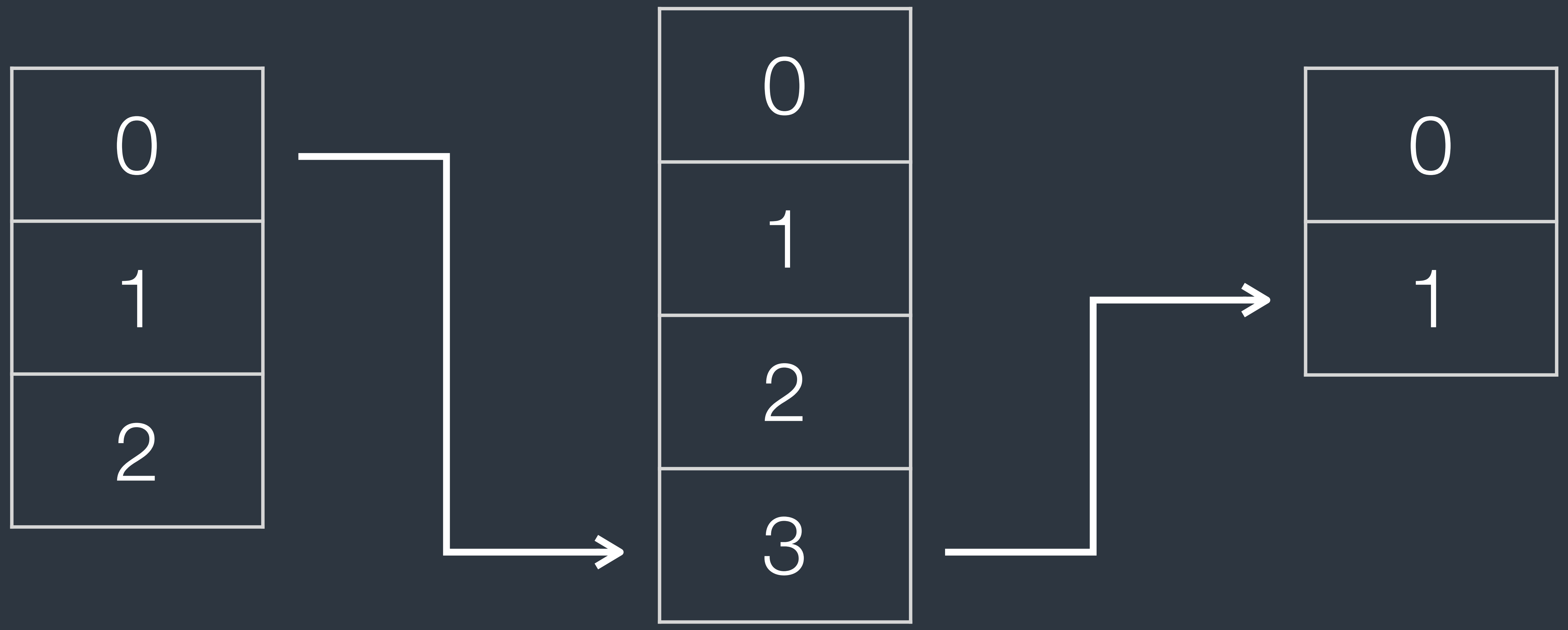
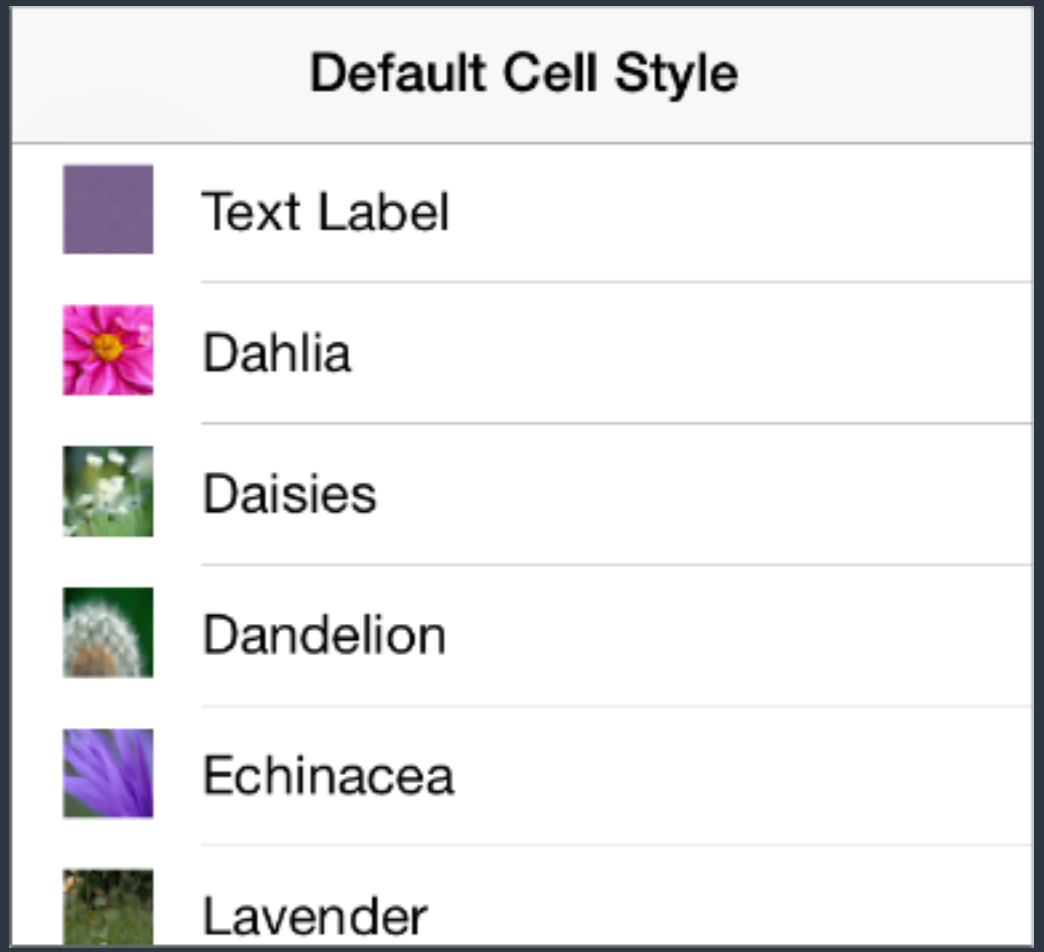
NSIndexPath



- The NSIndexPath class represents the path to a specific node in a tree of nested array collections.

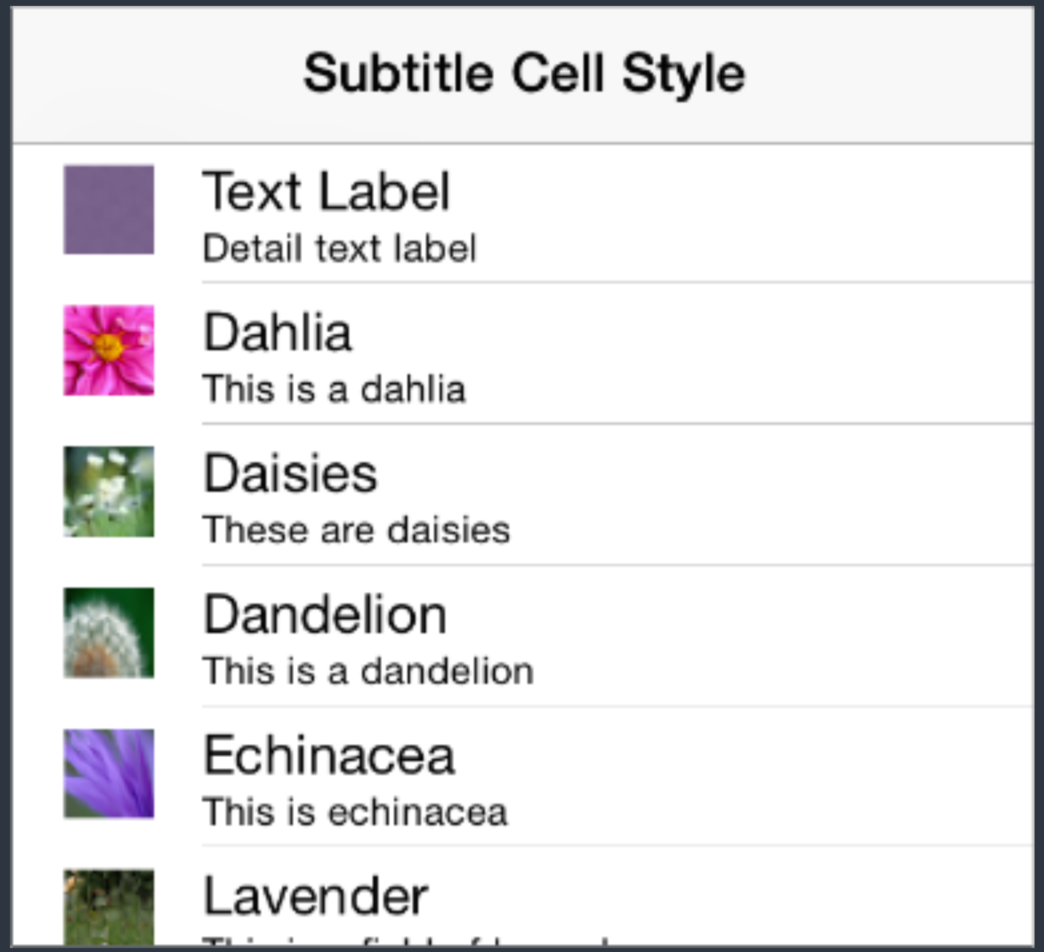
- UITableView uses NSIndexPath to represents cell position by section and row.

Styles of UITableViewCell



Default Cell Style

Text Label
Dahlia
Daisies
Dandelion
Echinacea
Lavender



Subtitle Cell Style

Text Label
Detail text label

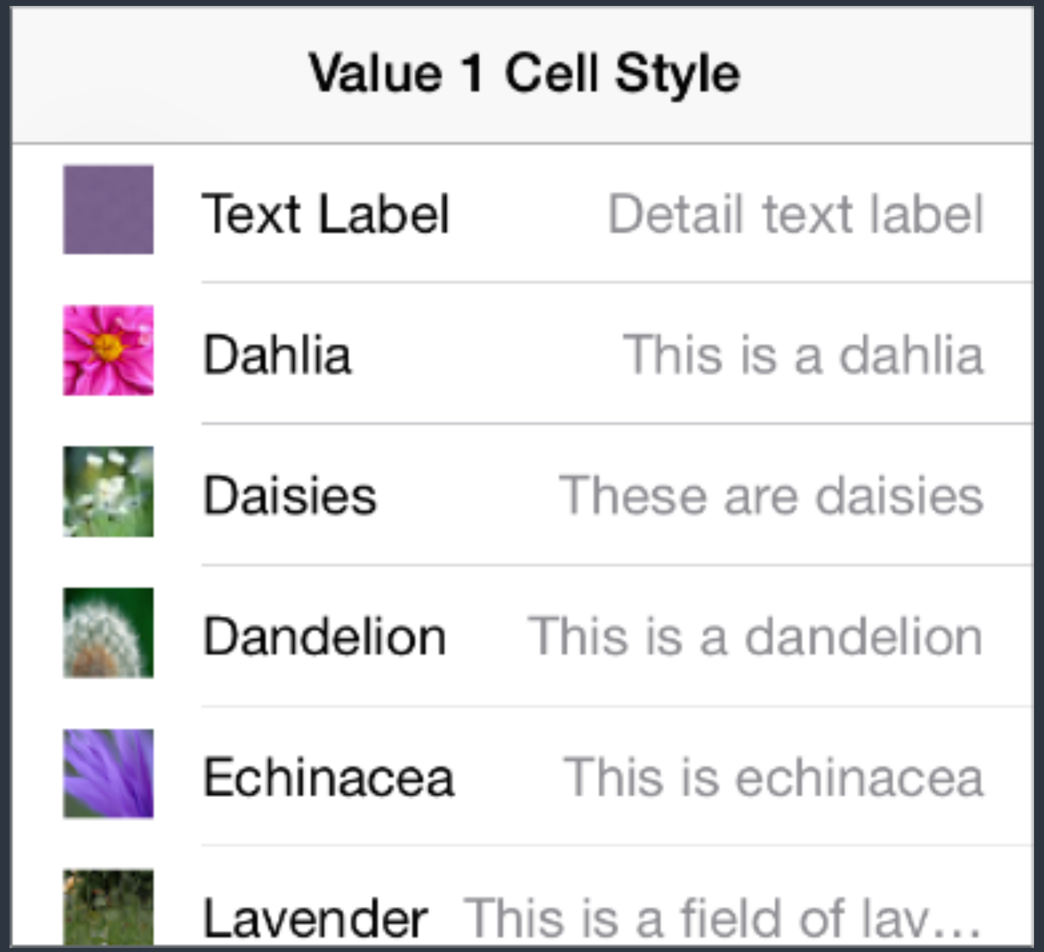
Dahlia
This is a dahlia

Daisies
These are daisies

Dandelion
This is a dandelion

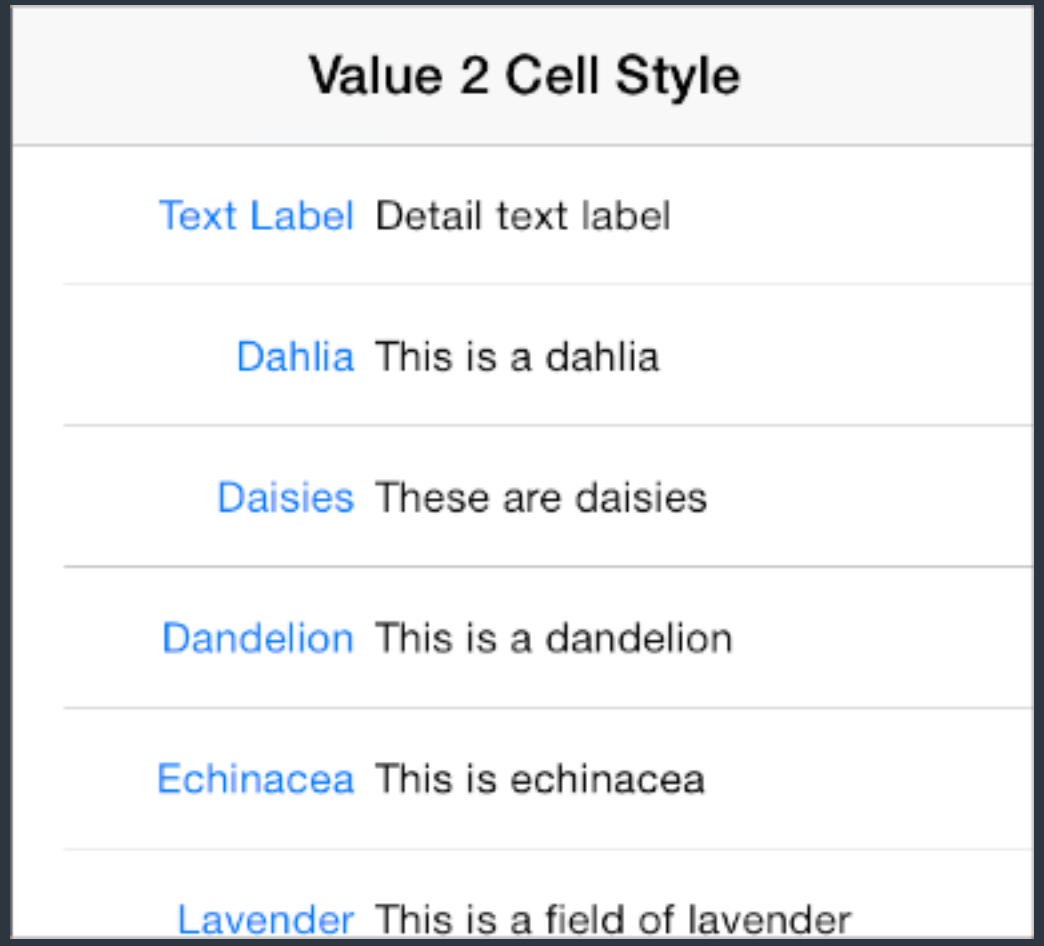
Echinacea
This is echinacea

Lavender



Value 1 Cell Style

Text Label	Detail text label
Dahlia	This is a dahlia
Daisies	These are daisies
Dandelion	This is a dandelion
Echinacea	This is echinacea
Lavender	This is a field of lav…



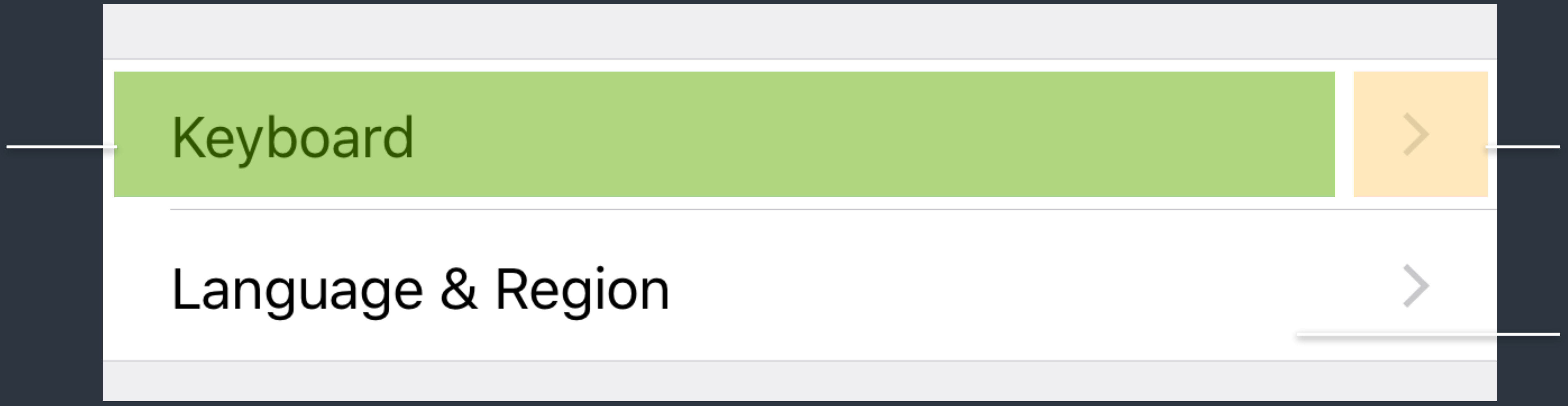
Value 2 Cell Style

Text Label	Detail text label
Dahlia	This is a dahlia
Daisies	These are daisies
Dandelion	This is a dandelion
Echinacea	This is echinacea
Lavender	This is a field of lavender

- UITableViewCell has 4 standard styles.

  Use properties like `textLabel` to access these standard style content.

UITableViewCell



Content View

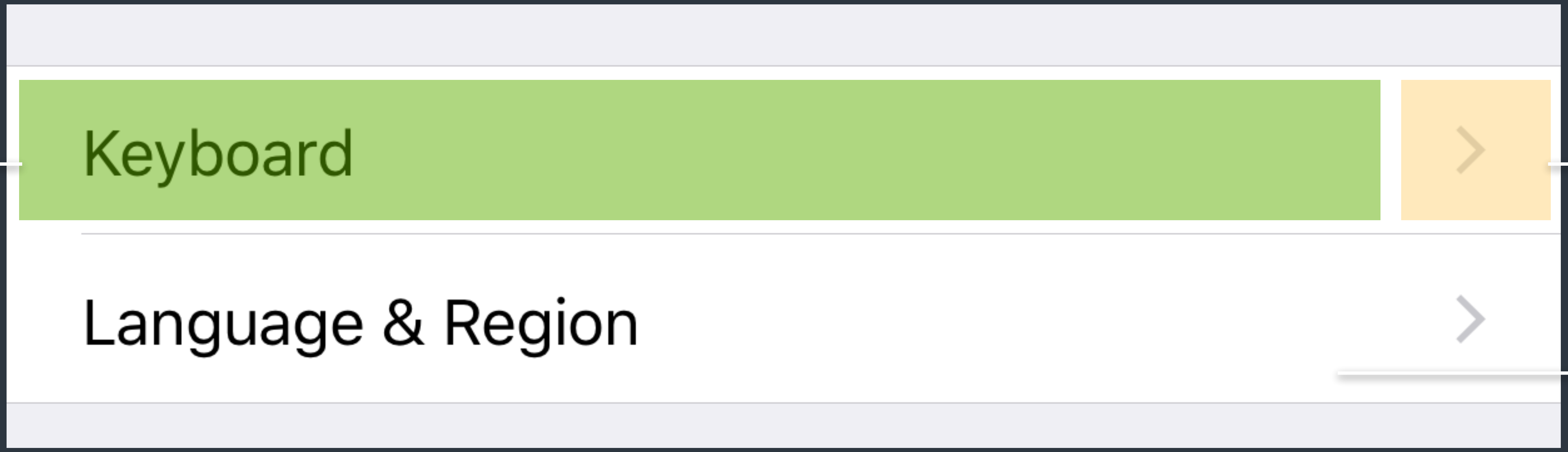
Accessory View

Background View

- 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 <u>static</u> UITableViewCell.

UITableViewCell



Content View

Accessory View

Background View

- 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.

References

- UINavigationController references
- Navigation Controllers
  View Controller Catalog for iOS
- Using Segues
  View Controller PG for iOS
- Table View Programming guide for iOS