Unit 4—Lesson 5:
Table Views

Table views

An instance of the `UITableView` class

A subclass of `UIScrollView`

- Displays a list of items
- Displays one or possibly thousands of data objects
- Presents vertical scrolling and single-column, multiple rows
- Provides customizable options

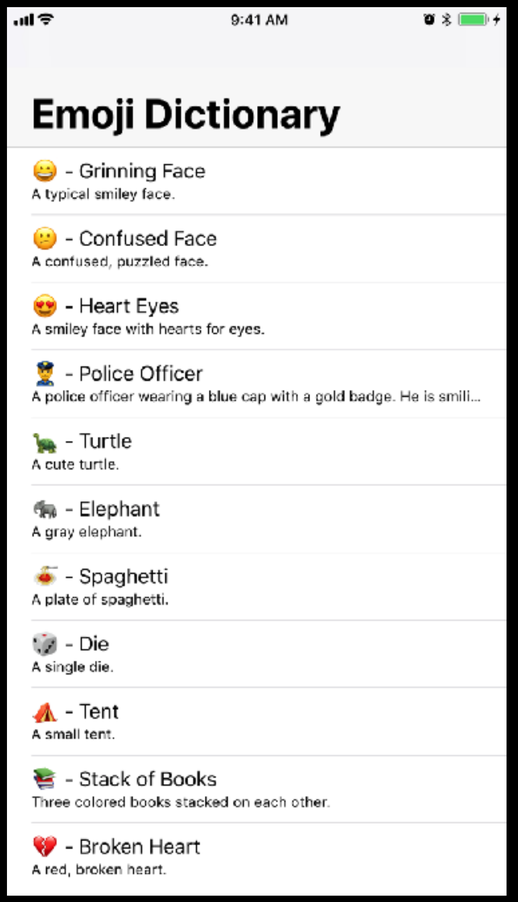
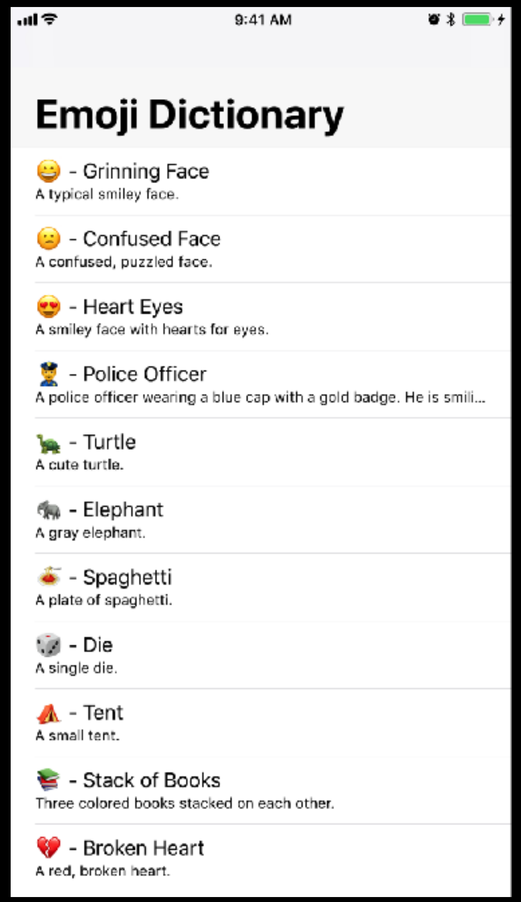


Table views

Types

When content changes



Dynamic

Static

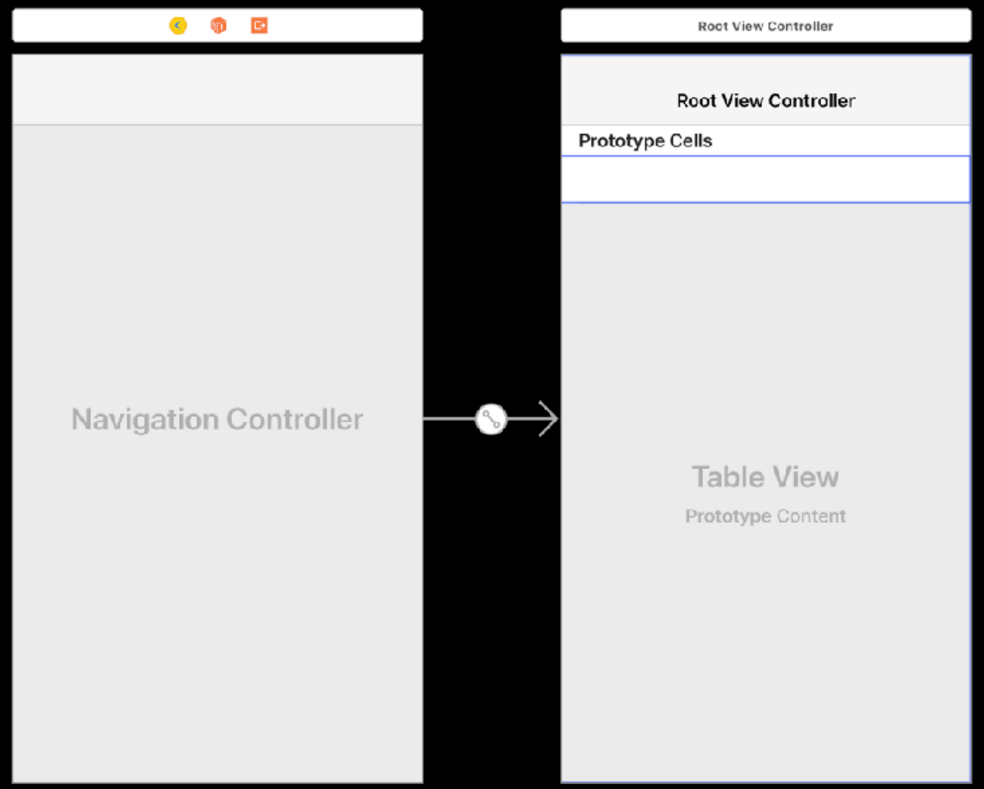
When content doesn’t changes

Anatomy of a table view

Table view controllers

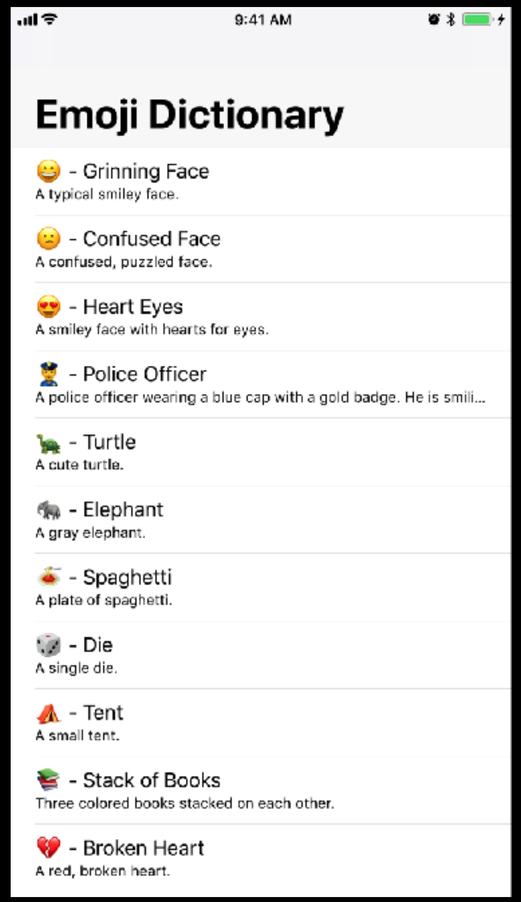
Two possible approaches to add table views:

- Add a table view instance directly to a view controller's view
- Add a table view controller to your storyboard

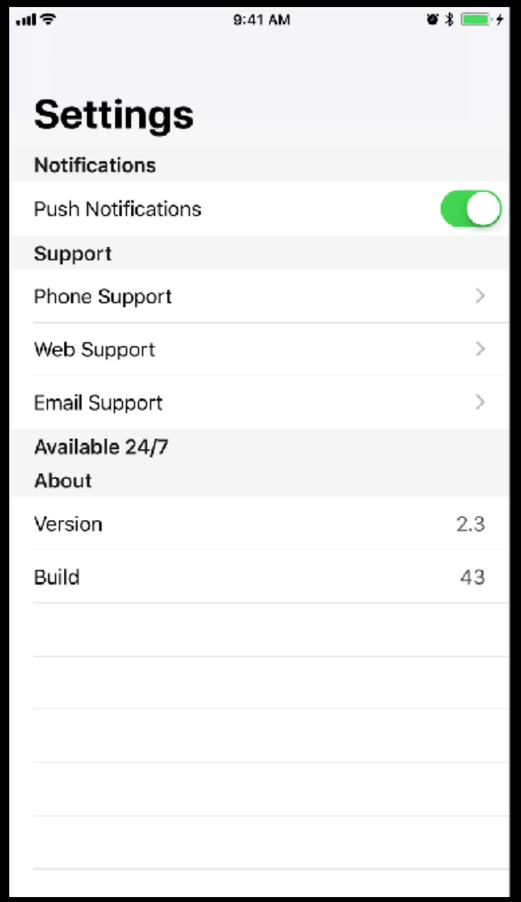


Anatomy of a table view

Table view styles



Plain



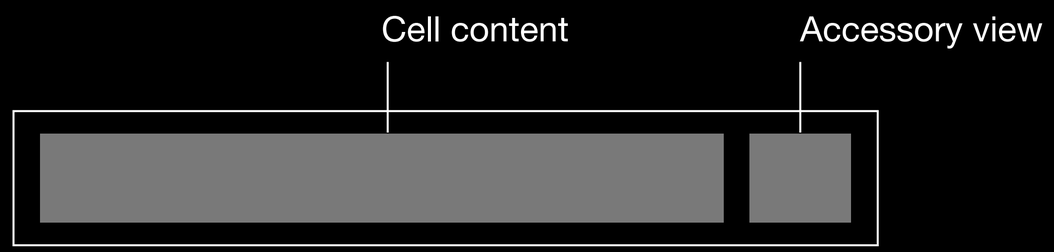
Grouped

Anatomy of a table view

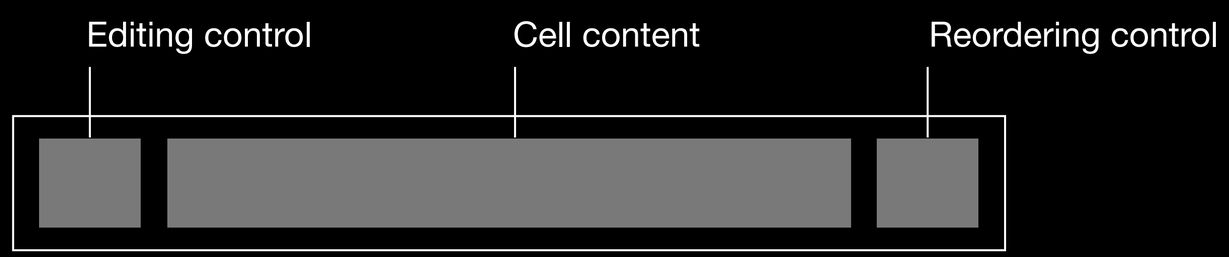
Table view cells (UITableViewCell)

`tableView(_:accessoryButtonTappedForRowWith:)`

Every row is represented with a table view cell



In editing mode, the cell content shrinks



Anatomy of a table view

UITableViewCell properties

`UITableViewCell` class defines three properties for cell content

Cell property	Description
`textLabel`	`UILabel` for the title
`detailTextLabel`	`UILabel` for the subtitle
`imageView`	`UIImageView` for an image

Anatomy of a table view

UITableViewCellStyle

Storyboard name	Programmatic enum name	Displays
Basic	`.default`	`textLabel`, `imageView`
Subtitle	`.subtitle`	`textlabel` , `detailTextLabel`, `imageView`
Right detail	`.value1`	`textlabel` , `detailTextLabel`, `imageView`
Left detail	`.value2`	`textLabel` , `detailTextLabel`

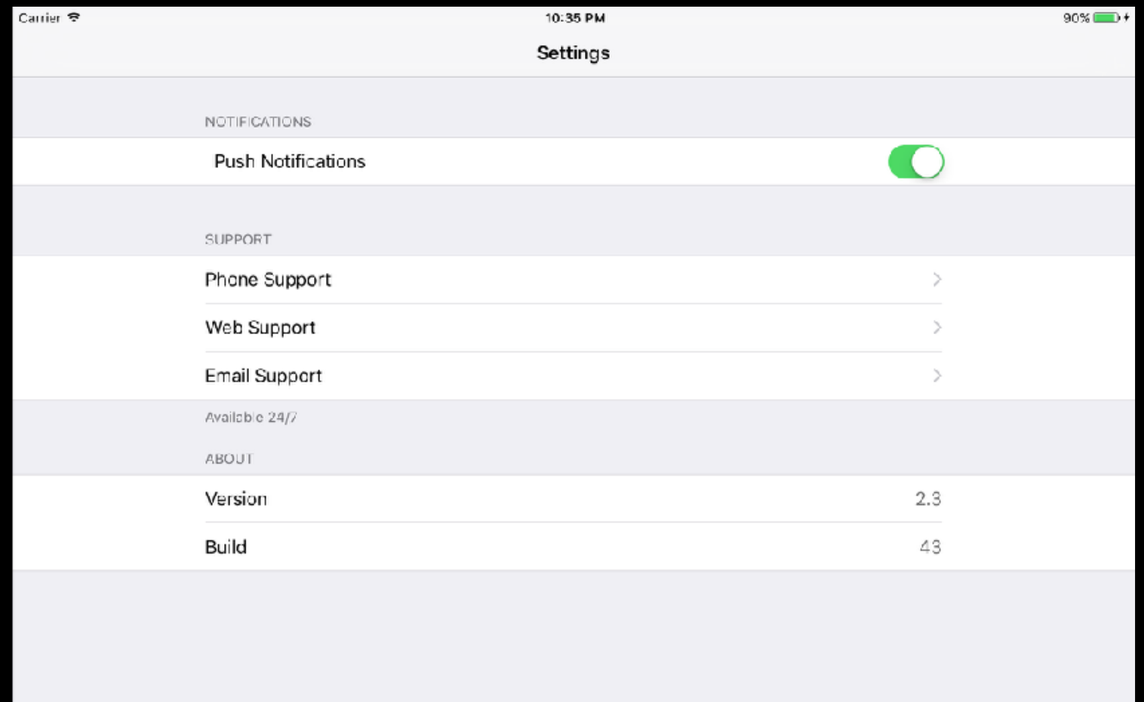
Anatomy of a table view

Table view readability margins

Set `tableView.cellLayoutMarginsFollowReadableWidth` to `true`

Default

Adjusted



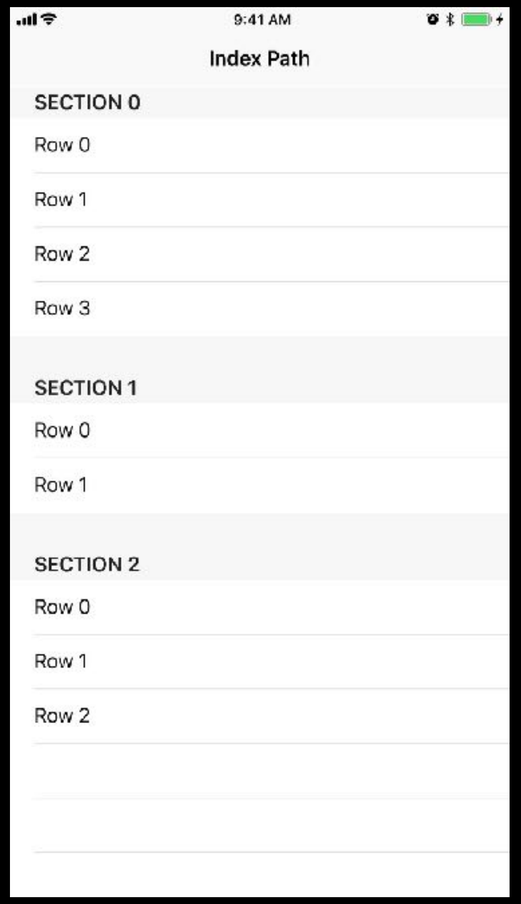
Index paths

Points to a specific row in a specific section

Accessible through the row and section properties

- `indexPath.row`
- `indexPath.section`

Values are zero-based



Arrays and table views

Collection of similar data

Typically backed by a collection of model objects

```
var emojis: [Emoji]
[Emoji(symbol: Character("😀"), name: "Grinning Face", description: "A typical smiley face.",
usage: "happiness"),
 Emoji(symbol: Character("😕"), name: "Confused Face", description: "A confused, puzzled face.",
usage: "unsure what to think; displeasure"),
 Emoji(symbol: Character("😍"), name: "Heart Eyes", description: "A smiley face with hearts for
eyes.", usage: "love of something; attractive")]
```

Arrays and table views

Cell dequeueing

Table views only load visible cells

Saves memory

Allows for a smooth flow when scrolling

```
let cell: UITableViewCell = tableView.dequeueReusableCell(withIdentifier: "Cell", for:
indexPath)
```

Table view protocols

Protocol	Description
`UITableViewDataSource`	Provides data for populating sections and rows
`UITableViewDelegate` (optional)	Customizes appearance and behavior

Table view data source (UITableViewDataSource)

Number of sections

```
optional func numberOfSections(in tableView: UITableView)
    -> Int
```

If function isn’t provided, the table view assumes one section

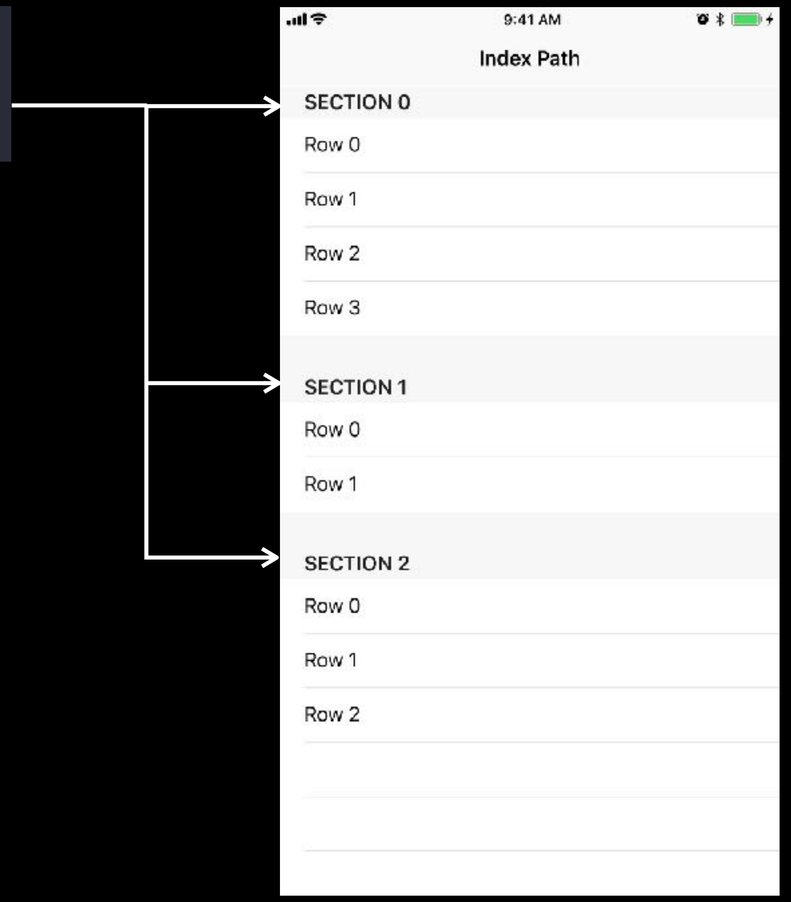


Table view data source (UITableViewDataSource)

Number of rows in a section

```
func tableView(_ tableView: UITableView,
  numberOfRowsInSection section: Int) -> Int
```

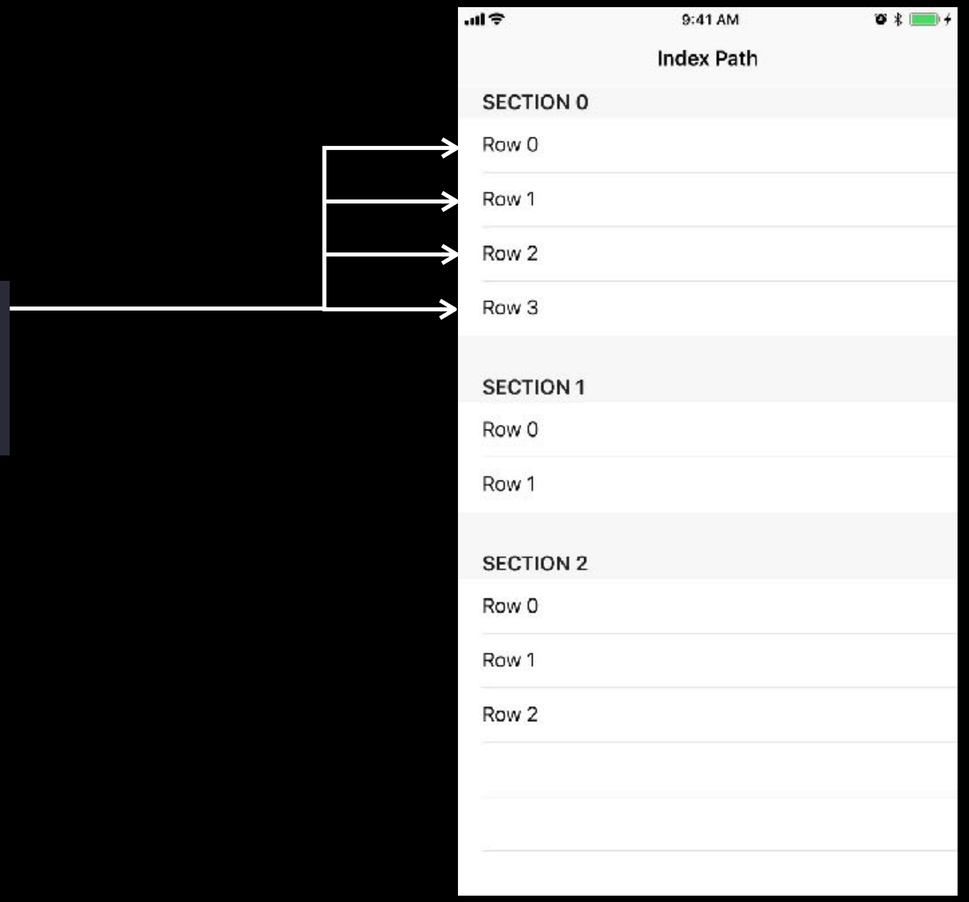


Table view data source (UITableViewDataSource)

Cell for row at index path

```
func tableView(_ tableView: UITableView,
  cellForRowAt indexPath: IndexPath) -> UITableViewCell
```

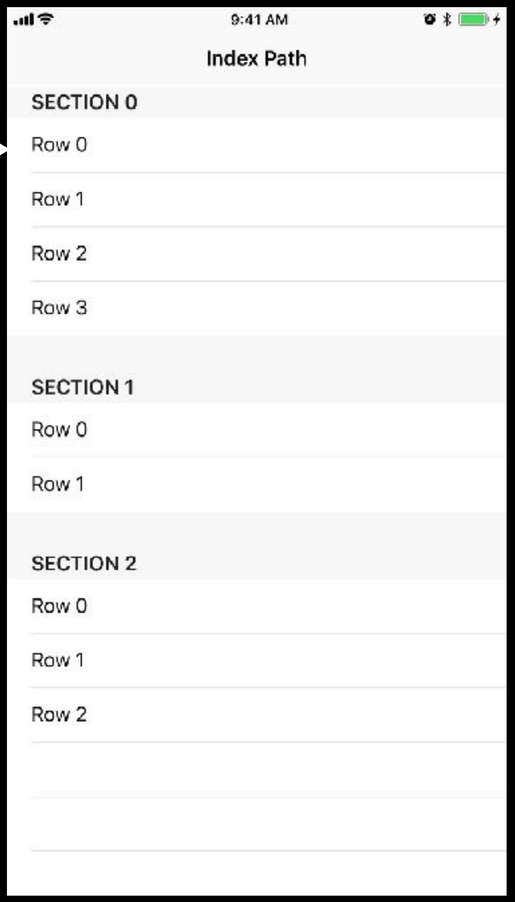


Table view delegate (UITableViewDelegate)

Optional

Responding to accessory view interaction

```
tableView(_:accessoryButtonTappedForRowWith:)
```

Responding to user interaction

```
tableView(_:didSelectRowAt:)
```

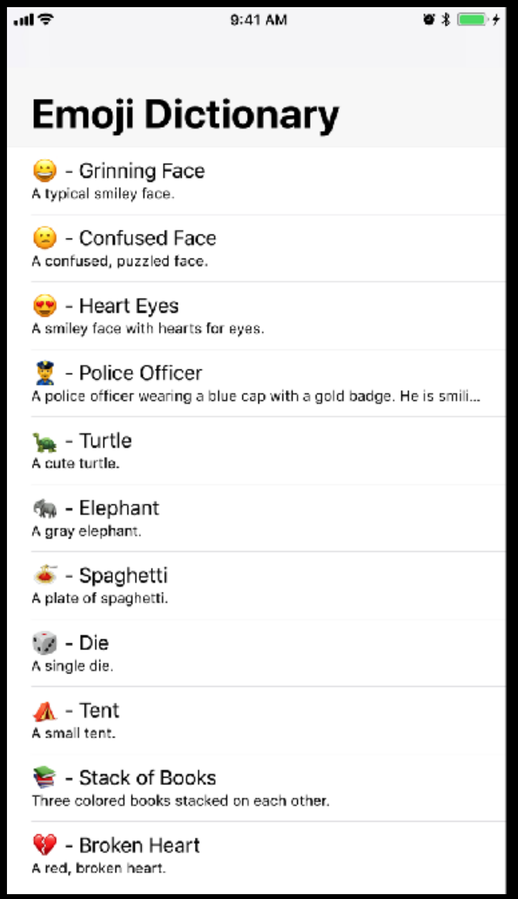
Reload data

```
reloadData()
```

To force a data refresh

Unit 4—Lesson 5
Table Views

Learn how to create dynamic table views by creating an emoji dictionary app



Unit 4—Lesson 5

Lab: Meal Tracker

Practice with the `UITableViewDataSource` and `UITableViewController` by creating an app that will display a list of foods, grouped into three sections, one for each meal of the day