

MOBILE DEVELOPMENT

LESSON 08

ARRAYS, DICTIONARIES, AND TABLES

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GETTING STARTED

LEARNING OBJECTIVES

GETTING STARTED

LEARNING OBJECTIVES

- › Collections
 - › Arrays
 - › Dictionaries
- › Table View Controllers

GETTING STARTED

COLLECTIONS

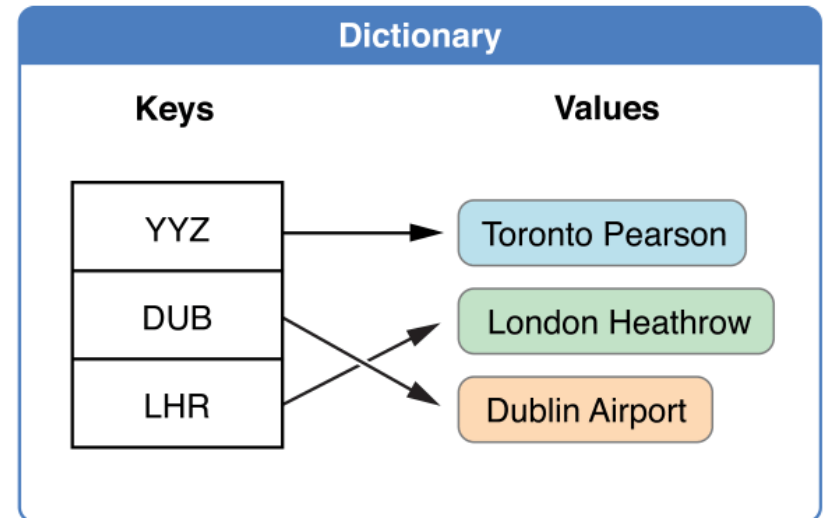
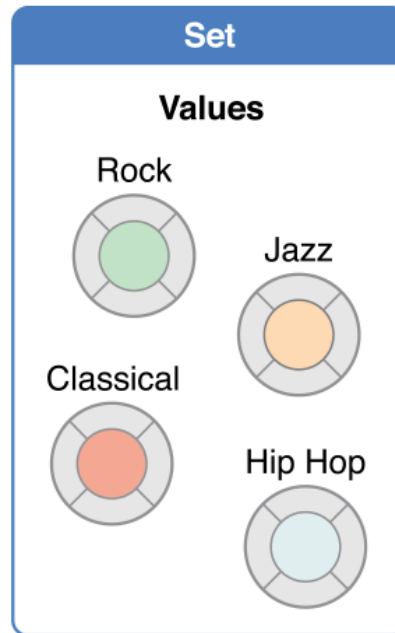
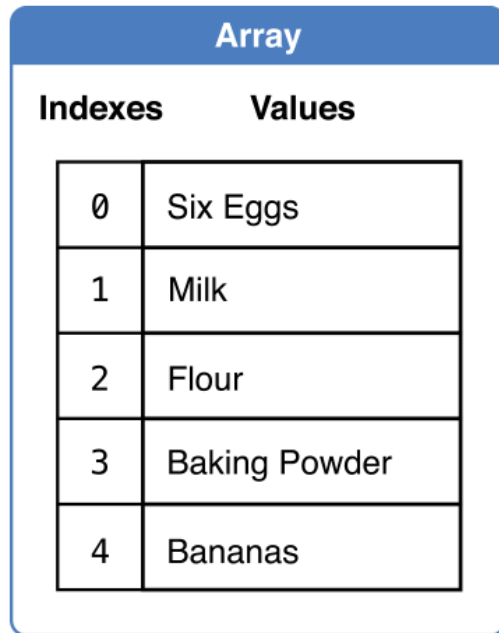
COLLECTIONS

WHAT ARE COLLECTIONS?

- › Collections, or Collection Types, are ways to store collections of values.
 - › Values are **var**, **let**, **class** instances, **struct** instances, other collections.
- › What kind of collections exist?
 - › Arrays
 - › Dictionaries
 - › Sets
 - › We **will not** cover sets in class.

COLLECTIONS

WHAT ARE COLLECTIONS?



GETTING STARTED

ARRAYS

COLLECTIONS

WHAT ARE ARRAYS?

- › An array stores values of the same type in an ordered list. The same value can appear in an array multiple times at different positions.
- › Arrays can be declared in multiple ways

```
// Declare an Array of Integers  
var arrayLong = Array<Int>()
```

```
// Declare an Array of Integers (Preferred)  
var arrayShort = [Int]()
```

COLLECTIONS

WHAT ARE ARRAYS?

- Arrays have a lot of cool properties and methods. We'll go over some of them:
 - Properties
 - isEmpty
 - count
 - Methods
 - append()
 - insert(_:atIndex:)
 - removeAtIndex(_:)
 - removeLast()
- To Playgrounds!

COLLECTIONS

MORE ADVANCED ARRAY METHODS

- map
- filter
- reduce

- More info here: <https://www.weheartswift.com/higher-order-functions-map-filter-reduce-and-more/>

GETTING STARTED

DICTIONARIES

COLLECTIONS

WHAT ARE DICTIONARIES?

- › A dictionary stores associations between keys of the same type and values of the same type in a collection with no defined ordering
- › Dictionaries can be declared in multiple ways

```
// Declare a Dictionary that takes keys made of Strings, and values made of Strings  
let constDict = Dictionary<String, String>()
```

```
// Declare a Dictionary that takes keys made of Strings, and values made of Strings (Preferred)  
var variableDict = [String: String]()
```

COLLECTIONS

WHAT ARE DICTIONARIES?

- Dictionaries have a lot of cool properties and methods. We'll go over some of them:
 - Properties
 - isEmpty
 - count
 - keys
 - values
 - Methods
 - removeAll()
 - removeValueForKey(_:)

GETTING STARTED

TABLE VIEW CONTROLLERS

TABLES

WHAT IS A UITABLEVIEWCONTROLLER?

- Table views are a one dimensional list
- Vocabulary:
 - Section: All table views contain multiple sections
 - Row: Every section has a number of rows, which are entries in that section
 - Index path: The combination of a section and row that is a unique entry in a table view
 - Cell: The view that is displayed for an index path (the class UITableViewCell is a subclass of UIView)

COLLECTIONS

WHAT IS A UITABLEVIEWCONTROLLER?

- Table views must have a number of sections, a number of cells in each section, and (optionally), the cells themselves
- Tableviews have a data source and a delegate
 - Data source: Provides cells, number of cells and number of sections
 - Delegate: Gets called when things happen to the table view, provides some views (e.g. header and footer)

GETTING STARTED

HOMEWORK

GETTING STARTED

HOMEWORK

- Read about:
 - Protocols chapter in Official Swift Book
 - https://developer.apple.com/library/ios/documentation/Swift/Conceptual/Swift_Programming_Language/Protocols.html#//apple_ref/doc/uid/TP40014097-CH25-ID267
 - Week 4 in the GA Book
 - <http://mobbook.generalassemb.ly/week04/intro.html>
- Start with Week 3 Homework
 - Found in Assessments folder
 - Due Next Wednesday (July 8) at 6:30pm

GETTING STARTED

NEXT CLASS

GETTING STARTED

NEXT CLASS

- More Tables!
- Protocols