

# Project and Lesson Overview

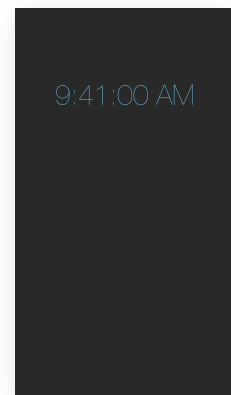
## Level 2: Single View Apps and MVC

Level 2 introduces iOS development with three applications: a clock, a stopwatch and a unit converter. Teach students about Model-View-Controller, and practice applying Swift fundamentals such as classes, properties, functions, collection types, and optionals.

### Clock (Six Lessons)

Display the current time on the screen as a vehicle for exploring controller life cycle methods. Learning outcomes include:

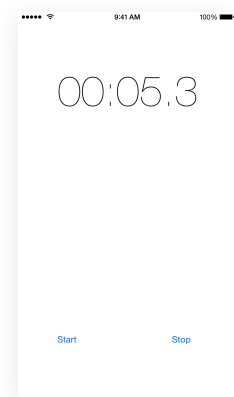
- Applying Xcode, Interface Builder, views, models and controllers
- Assembling UILabel components
- Defining controller outlets and the significance of IBOutlet
- Implementing Swift classes, properties and methods
- Identifying String objects, string formatting and the NSDate API
- Describing NotificationCenter and NSTimer
- Inferring application and controller life cycle events



### Stopwatch (Seven Lessons)

Create a stopwatch that displays the elapsed time. Learning outcomes include:

- Practicing applying Xcode, Interface Builder, and MVC
- Identifying UILabels, UIButtons, IBOutlets and IBActions
- Relating Model-View-Controller to project components
- Implementing Swift classes, properties and methods
- Applying String, string formatting, NSDate and NSTimeInterval
- Applying NSTimer, discovering Run Loops, assimilating lifecycle events
- Recognizing and assessing user accessibility



## UnitConverter (Eleven Lessons)

Display the the temperature in Fahrenheit while selecting a temperature in Celsius. Learning outcomes include:

- Practicing applying Xcode, Interface Builder, and MVC
- Applying UILabel and UIPickerView components, IBOutlets and IBActions
- Implementing Swift classes, properties and methods
- Demonstrating Arrays, ranges and the map function
- Applying Model-View-Controller, and discovering view models
- Describing protocols and delegates
- Using NSUserDefaults and property list files for persistence

