Challenge 7.2 - Stop Watch: Create a Custom Class

You need to refactor the logic from ViewController.m and move it into a new class called StopWatch. The goal is to have the StopWatch class manage all the *NSDate* objects and the *NSTimer* object. If you separate the logic from the user interface (UI), then you can reuse the code in another project or you could create multiple StopWatch instances at once (i.e. list of timers).

During the transition to the new class, you will break the current functionality with the UI. Your UI will stop working until we can fix it in the next challenge. As a workaround you need to use NSLog() statements to test the StopWatch and verify it is working correctly.

Reusable Design

When you create a custom class it is good to think about what types of information you need to get from it, and actions you want to perform. Grab a paper and write down all of the things a StopWatch needs to do. Use the current code in ViewController.m as a starting point.

Good developers will refactor their code every now and then, so this is a good exercise to practice. Try and create the StopWatch class without following the steps below. If you get stuck, see if you missed something.

Refactoring Steps

1. Copy/paste the non-UI methods into StopWatch.m You will need to cleanup code to fix errors related to the UI.
2. Expose the *_startDate* and *_stopDate* as properties (without the underscore) in StopWatch.h
3. Add methods declarations for *startTimer*, *stopTimer*, and *resetTimer*, and *formatTimeInterval* to StopWatch.h
4. Add the method declaration for *formatTimeInterval:* in StopWatch.h
5. Remove all old method logic and variables in ViewController.m that you moved to StopWatch.m *Note:* You'll want to keep the stubs for *startTimer*, *stopTimer*, and *resetTimer, since they are called from the buttonPressed methods.*
6. Create an instance variable (ivar) of *StopWatch* in ViewController.m
7. Initialize the *StopWatch* ivar in *viewDidLoad:*
8. Add appropriate method calls to the *StopWatch* ivar.
9. Add an NSLog() statements and run the app to see if the timer works via the Console window.

Bonus 1: Create a second StopWatch and make the UI to display and control it.