Mobile App Development

CS 4153

Multi-Week Assignment 01

20 Points – Last updated: Sep 20, 2018 4:30 PM Due: Oct 11 11:59PM

Write an iOS app for iPhones that helps joggers keep track of their workout times and statistics, on a lap-by-lap basis.

1. Create a new, Swift 4.2 project in Xcode 10 beta, GM Seed, or production. Name the project

   MW1_lastName_firstName

2. Your app should run in upright, portrait orientation only. However, it must use *auto layout* to look good on all models of iPhones.

3. When the app starts, the display looks similar to that shown in Figure 1 (near the end of this document), and it is waiting for user interaction.
   a. I've named my app "Take a Lap" and provided a logo that includes the name; this logo actually is a button with which the user will interact. You should give your app a distinctive name, logo, and style – as long as it has all of the components shown in the image.
   b. The stopwatch image that displays the word *START* is another button with which the user will interact. You can make your own image or use one from a Web-based source; if you use artwork assets that you did not create (the runner and stopwatch images, in my case), reference them at the bottom of the display.
   c. There are three different numbers displayed on the screen: current lap number (upper-left), current lap time (lower), and total jogging time (upper-right). I suggest you use a monospaced font, such as *Helvetica Neue* (which is accessed as a *custom* font in the attribute inspector of a label).

4. When the user taps the *START* button, a number of changes take place:
   a. The stopwatch image changes its color/look so that the user sees a stopwatch with the word *STOP* on it.
   b. If the current lap number value is 0 when the user taps *START*, increment the number to 1; if the value already is ≥ 1, don't change it. (It is the job of the *New Lap* button – described below – to increment the lap counter once a run has started.)
   c. Start the lap and total time counters. (I suggest you keep just one Swift Timer object to keep both values updated.)
   d. A new, large (i.e., easy to hit with the thumb) button (*New Lap*) appears over the logo, hiding the logo. When the user taps this button, increment the current lap number and resets the current lap time to 0.

   e. After running for a while (on the first lap), the screen looks something like that shown in Figure 2.

5. When the user taps the *STOP* button, the timer stops, the *START* button reappears, and the *New Lap* button disappears. The screen will look something like that shown in Figure 3.

6. If the user taps on the *START* button again after pressing the *STOP* button, neither the times nor the lap count get reset; it simply continues the timer from where it left off, as though the *STOP* button had never been pressed. (Perhaps the jogger stopped for a burger in the middle of the lap.)

7. Recall that I mentioned above that the app logo actually is a button. When it is visible on the display, the user can tap on it and segue to a table view controller that lists the lap times. The navigation bar should contain an appropriate title, and the toolbar should provide the user with the average lap time. This view should look something like that shown in figure 4.

8. If the user *double-taps* on the *START* button, reset the timers and the lap counter. (You'll also erase the list of lap times used to generate the table view controller contents.)

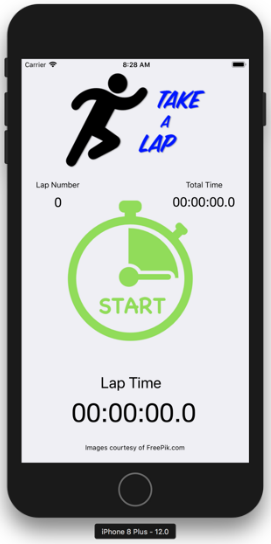
General notes

- Be as creative or as simple as you like with your app's format, fonts, colors, etc.
- You may add music or sound effects, if you wish.

Submitting your solution

- After closing your project in Xcode, compress (*zip*) the project folder and submit it to the appropriate dropbox on the course BrightSpace page.

Figures

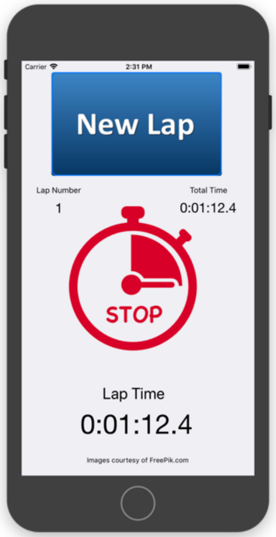


Lap Number 0

Total Time 00:00:00.0

Lap Time 00:00:00.0

Figure 4

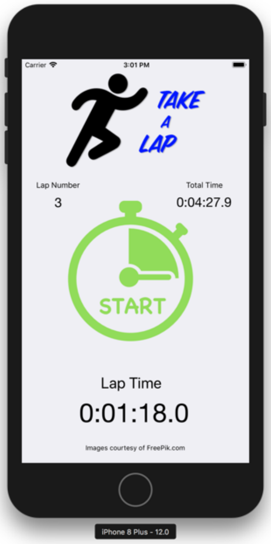


Lap Number 1

Total Time 0:01:12.4

Lap Time 0:01:12.4

Figure 3

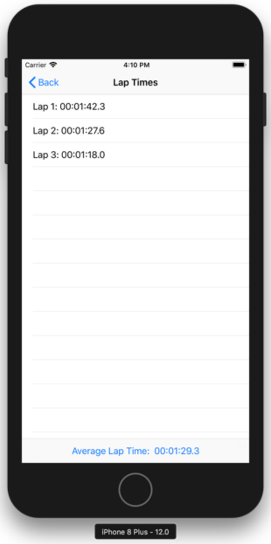


Lap Number 3

Total Time 0:04:27.9

Lap Time 0:01:18.0

Figure 2



Lap 1: 00:01:42.3

Lap 2: 00:01:27.6

Lap 3: 00:01:18.0

Average Lap Time: 00:01:29.3

Figure 1