Assignment #3 – Reaction Time Game

In this assignment you will use the InterruptIn, Timer, Serial, and DigitalOut interfaces on the mbed module to implement a 2 player reaction time game. (Depending on how you choose to implement this, you may also want to use Ticker and/or Timeout as well) For the hardware, connect one of the pushbutton switches (for player 1) between p18 and GND and a second switch (for player 2) between p17 and GND[1]. Note that these connections are different from the previous assignments.

In each round of the game, LED1 through LED4 will be on for 1 second each. The objective for each player is to press their switch as soon as possible *after* LED4 lights, but not before. If a player pressed their switch before LED4 lights, they forfeit the round and the other player gains a point. Otherwise, whichever player presses their switch first after LED4 lights gains a point.

At the end of each round, show (via Serial over the USB interface to your computer) the deciding time (in milliseconds) as well as the current score. For example:

```
Player x was xxxx ms too early and lost.
Player 1: xx points, Player 2: xx points
```

or

```
Player x won with a reaction time of only xxxx ms.
Player 1: xx points, Player 2: xx points
```

Then the program should pause for a few seconds (to give the players a small rest and let them release their switch) and start are new round.

As is usual for most games, both players should start with 0 points. For simplicity, you don't have to worry about the end of the game; the players can decided to stop playing whenever they want and if they want to reset the total score, they can just reset the mbed.

The serial interface should be configured for 9600 bits/second ("baud"), 8 bits, no parity, and 1 stop bit.

Submit your "main.cpp" to the appropriate dropbox on http://learn.ou.edu by the end of October 8th. (In the Program Workspace view of the mbed compiler, right-click on the file to save and select Export; this will save the file to your computer. You can then upload this file from your computer to the dropbox.)

[1] An earlier version of the assignment specified between p19 and GND, but InterruptIn does not support p19.