

ECE3411 – Fall 2016

Lab 4b.

Implementing a Stopwatch

Marten van Dijk, Chenglu Jin

Department of Electrical & Computer Engineering

University of Connecticut

Email: {marten.van_dijk, chenglu.jin}@uconn.edu

Copied from Lab 4b, ECE3411 – Fall 2015, by
Marten van Dijk and Syed Kamran Haider

UConn



Task 1: Simple Stopwatch

Implement a Stopwatch using Timer0 that measures the time down to 1ms resolution.

- Connect a switch to External Interrupt INT1 (PD3)
- Pushing the switch should start the Stopwatch.
- The same switch once pushed again should show the elapsed time on LCD.
- Another button push resets the Stopwatch and makes it ready for another measurement.
- Make sure you debounce the button pushes.

Task2: Improved Stopwatch

Implement a Stopwatch using Timer1 to measure the time down to 1ms resolution. Use Timer0 to introduce Polling Delay for Switch Debouncing.

- Connect a switch to External Interrupt INT1 (PD3)
- Pushing the switch should start the Stopwatch.
- The same switch once pushed again should show the elapsed time on LCD.
- Another button push resets the Stopwatch and makes it ready for another measurement.
- Make sure you debounce the button pushes.