

CS321 - Assignment 2

Problem Statement:

(a) Real-Time Clock: Use the 7-seg display on-board (Address & Data fields) to display the **Hours: Mts: Seconds** in decimal. This will mean you have a real-time clock running on the board.

Also provide the following extra features (for incentive marks!!):

- (i) An alarm facility (Set and Reset an alarm). Can we have multiple alarms? Can we have a reminder where a short (cryptic) message is displayed?
- (ii) Display time in 24 hours format (Railway timing format) where hours range from 0-24 rather than 0-12

(b) Timer:

Find out which interrupts on the kit can be used by the programmer.

When an interrupt (to be chosen based on your findings) occurs for the first time, it starts the timer. When it comes the second time, the timer should pause. And this process should continue. (i.e when the interrupt occurs for the third time, it should start the timer from where it had left the last time and fourth time the timer should be paused and so on..). The countdown of the timer should be displayed on the 7-segment display. Once the

countdown is complete, the timer should stop. (See the working of the timer on your mobile phone to get an idea)

Deadline:

Aug 20th 2018, 9:00am (for both part (a) and part (b))

Evaluation will be during the lab hours on Aug 20th 2018 (Monday)