LAB 3 - State Machines

A storeroom is secured with a digital lock.

To unlock the room, one must type a sequence of 5 presses to the SW1 and SW2 buttons. The right sequence is: SW1 – SW2 – SW2 – SW1 – SW2. Any other sequence will not unlock the room.

When the room is locked, the RGB-LED lights up RED. When the room is unlocked the RGB-LED lights up GREEN.

Any press at <SW1> or <SW2> while the room is unlocked will lock the room.

Design a state machine, which implements the lock system on the kit. Draw the state machine in your favorite drawing tool:

- on paper
- in yEd. http://www.yworks.com
- in Visio. http://web.tek.sdu.dk/software/
- in FidoCadJ. https://sourceforge.net/projects/fidocadj/
- or using any other tool.

Write the application in C and test it on the board.

Note: SW2 is by default locked as it has additional purposes. See the code example under itslearning -> Resources -> main_both_buttons.c file for how to use it.

Good luck,

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