

Spring 2021
EEE212-02 Microprocessors
Lab Assignment 1
04.03.2022 13:30-17:30

In this lab, you are going to get familiar with Assembly 8051 environment with a simple assignment. You are expected to use **MCU 8051 IDE** Software to write your codes and simulate and demonstrate your results. Please read the notes and the assignment requirements carefully since they are pretty important in terms of evaluation.

Important Notes:

- Please prepare your off-lab demonstration before starting the on-lab assignment. TAs will check them during the on-lab.
- After you have completed your lab, you need to get a check from one of the lab assistants (not tutors). The check consists of explanation of the code and a small demonstration.
- This is an individual lab. You can cooperate but you have to write your **OWN** code. Any kind of plagiarism will not be tolerated. Codes will be compared manually by assistants and by Turnitin software after the lab.
- The deadline is strict. Submit your code before the deadline. There will be no extension to the deadline.
- You can get a check after the deadline if the queue for the check is long, so do not worry. If such a case occurs, you will get your check based on your latest submission to the Moodle. Therefore, do not try to change your code after you have submitted your code.

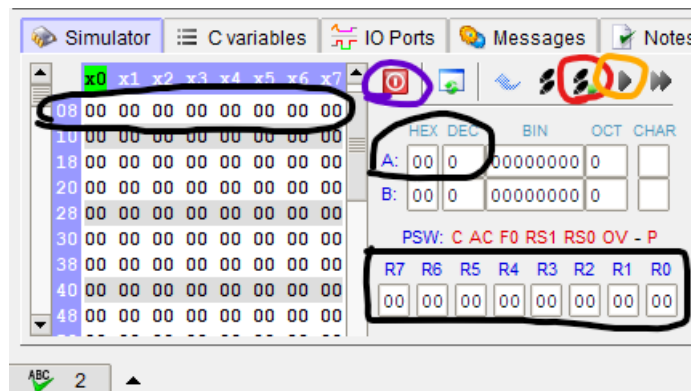
Q1: Countdown (100pts)

As your first on-lab assignment, you are going to implement a subroutine called **COUNT-DOWN** that counts down starting from the initial time with given intervals.

Requirements:

- Get the initial time in seconds from **R1**.
- Get the interval in seconds from **R2**.
- In your code, you will store the remaining time in **R7**.
- The initial time will be in the range from 50 to 100.

- The interval will be one of the following {1, 2, 5, 10}.
- Assume that the initial time is a multiple of the interval. (You can set it accordingly. For example, don't set the interval to 10 and the initial time to 55.)
- Update the remaining time only on the given intervals. For example, if the initial time is 50, and the interval is 10. The value stored in **R7** should be 50 for 10 seconds, 40 for 10 seconds and so on until the value stored in **R7** is 0.
- **HINT:** First write a subroutine for a delay of 1 second. Then use it according to the given interval value.
- Your simulation result needs to be correct in order to get full credit. Check your result using the simulation tool of your IDE Software. you don't need to show the remaining time using the seven segment display.



- When you start the simulation menu, you will see this popup.
 - Purple: Start/stop simulation mode
 - Red: Go one step
 - Orange: Start the simulation (pause button will be replaced when you start it)
 - Black: R0-R7 and ACC