Spring 2022
EEE212 Microprocessors - On Lab Assignment 2
Section 1

In this lab, you will build upon the knowledge you acquired in the off lab assignment. You will be using two software programs: (i) **MCU 8051 IDE**, for simulations of your code and (ii) **Proteus**, for setting up the required hardware setup and demonstrating your work with an LCD.

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 Moodle. Therefore, do not try to change your code after you have submitted your code.

Q1: Progressive Shift Caesar Cipher Encryption (100pts)

As your on-lab assignment, you are going to implement a program that encrypts a given text with a progressive shift Caesar cipher.

Requirements:

- Read the input as a variable length ASCII encoded null-terminate all-capital single word from the ROM of 8051.
- Read the initial shift amount from the **R0** register.
- Display the encrypted text on the LCD.