Assignment 3, CSEN701: Embedded Systems, Winter 2017

With assignment 2, you have learned how to program implement delays on your microcontroller and embed it to your system. Now let us go further a little bit. After you learned delays, you are required to build the a circuit that shows the density of light using LDR (light dependent resistor).

You are required to build the minimum circuit of ATMega328p with a controlled led:

- Configure any pin as an input with an LDR.
- Configure any port as an output using Assembly using ATMEL Studio (see how to connect ATMEL studio to Arduino development kit on the MET website)
- The output should be displayed on 4 leds showing how intense the light is (on least , 4 highest).
- Burn the code using the Arduino kit
- Complete the circuit on your breadboard
- Connect the remaining components and the power supply

Aim:

By doing assignment 2, you should be able to:

- Understand the benefits of using the development kit
- Learn how to implement ADC
- Practice to be ready for the project later

Assignment 2 Tips and Regulations:

- The assignment is team based. So try to participate as much as you can.
- The assignment should be submitted as a **FUNCTIONING CIRCIUT** and **EMBEDDED C SOURCE CODE** during the lab without the Arduino development kit.
- The deadline for this assignment is at the tutorial time of the team's representative within **the week starting from 11th of November**. The deadline will not be postponed for any case so make sure it is working before that time.
- Any cheating case will receive a grade of 0.
- If you have any other microcontroller other than ATMega328p, replace it with the ATMega328p.
- In order to save the led from being broken down, connect it in series with 220 – 300 Ω resistor