Assume a hypothetical situation that you are staying in a village where the voltage fluctuation is more. So, the electricity board has decided to control the usage of electric equipment based on the voltage level.

Design and set up an embedded system for this that satisfies the following conditions.

1. It consists of one microcontroller, LCD, and an ADC
2. ADC is used for converting the line voltage (for the study purpose, consider it very from 0-5V)
3. The system should monitor the voltage level of ADC and should display on the LCD.
4. If the voltage level is more than 3v, use two bulbs (Use LED for demonstration)
5. If the voltage level is 2-3 V, use only one bulbs (Use LED for demonstration)
6. If it is less than 2 v, the system should switch of all the bulbs.
7. The condition also should be displayed on the LCD

Instructions:

1. Create the folder named ES_Lab_Exam on the desktop
2. Create the project with name ESLabExam
3. Name of the .c file should be LabExamxxxx (xxxx is the last four digits of your roll number)
4. The name of the hex file should be LabExamxxxx (xxxx is the last four digits of your roll number)