بسم الله الرحمن الرحيم

An-Najah National University
Faculty of Engineering & IT

Computer Engineering Department

جامعة النجاح الوطنية
كلية الهندسة وتكنولوجيا المعلومات
قسم هندسة الحاسوب

Microcontrollers (10636426)
PIC18f4620 on PICSIMLAB

Project Description:

You are required to write a program using MPLABX for PIC18f4620. Then use the PICSIMLAB simulator to run and test your code.

The program contains the following features:

- Initially, the system is turned off, i.e., nothing is displayed on LCD and displays, and it does not respond to any input actions (except for listening to serial port).
- The system is turned on when message “ON” is received from the PC via the serial port. When the system receives the message “OFF”, it is turned off again, and so on. Any other messages are ignored by the system.
- Read the temperature sensor LM35 and display the degree on the first line of the LCD. The default temperature is in C. Use BTN0 to toggle the display of the temperature between C and F.
- Use one potentiometer (p1) to produce a reference threshold for the temperature sensor which can be controlled by the user. If the temperature exceeds the reference threshold, send a warning message to the PC through the serial port. Also, show the value of the reference threshold on the 7-segment displays.
- Use a timer of your choice to cause an interrupt every 200ms.
- By using the timer from the point above, blink a LED (of your choice) based on a frequency retrieved from the second potentiometer (you have to implement at least 3 levels of blinking’s frequency).
- For the serial port, you have to use the receiver’s interrupt.

General notes:

1. You can work in Groups of 2 at most.
2. Your code should run correctly on the PICSIMLAB simulator.
3. Submit your code Project Files (compressed) and the Hex executable file.
4. Write your Name and your partner's name in a clear location in your code.