ECE 3301L **CAL POLY POMONA**

ECE Department

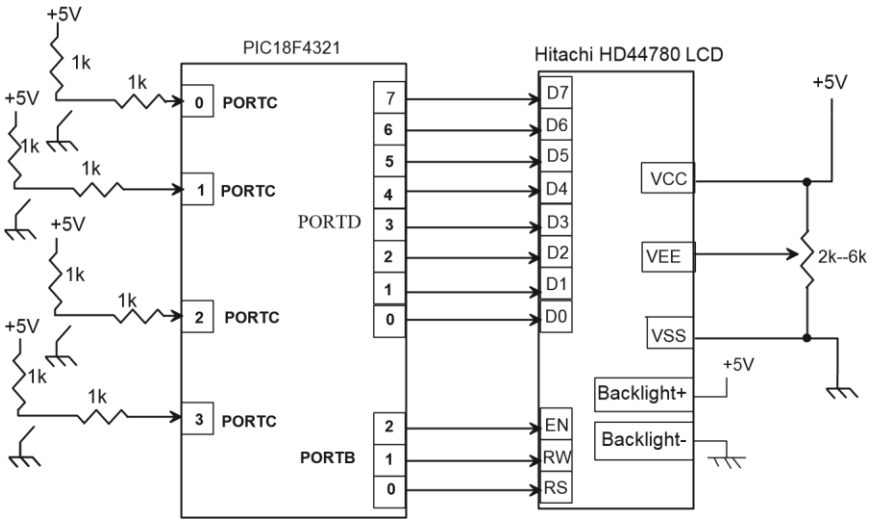
Dr. Rafi

LAB # 10

INTERFACING LCD TO THE PIC18F4321 USING C

1. **Title:** Interfacing LCD to the PIC18F4321
2. **Objective:**The purpose of this lab is to interface the PIC18F4321 chip to an LCD display and then write a C-program to display the message 'PIC18F'.

3. **Prelab:**



Assume the PIC18F4321- Hitachi HD44780 interface of the above figure. It is desired to display the phrase "PIC18F" on the LCD as soon as the four input switches connected to PORT C are all HIGH.
Write a C language program to accomplish this.

4. **Equipment, Software, and Components required:**

-Microchip's MPLAB assembler /Debugger

-Parts List:

- PICKit3 and PIC18F4321 chip from Microchip

- Push button, DIP switches and 20KΩ potentiometer
- Breadboard
- Resistors
- Power Supply
- Hitachi HD44780 LCD display
- Wires and Clip leads

5. **Description (corresponding topics covered in the textbook):**
   Four DIP switches are connected to Port C, and the Hitachi HD44780LCD is connected to Port D. A C-program is written to display the phrase "PIC18F" when all switches are HIGH.(Example 9.4 on Pages 254-259)

6. **Prerequisites:** Section 9.3 on Pages 252-254

7. **Procedure:**

   -Compile the C language program using the MPLAB.

   -Download the compiled program into the PIC18F4321 on the breadboard from your Personal Computer or Laptop using the PICKit3™ and MPLAB following the steps provided in Appendix H of the book.

   -Use the default clock of the PIC18F4321 and connect the appropriate RESET circuit to the PIC18F4321 $\overline{\text{MCLR}}$ pin.

   -Connect the hardware to the PIC18F4321 , and demonstrate the lab as a PIC18F4321-based stand-alone system.

8. **Deliverables:**

i) Postlab

-Write a PIC18F assembly language program to accomplish the Prelab.

ii) Lab report

- Submit a final Lab report (Staple Signed prelab, postlab, and the schematic (if any) using Word, p-spice, Wordpro or other software tools, at the end of the quarter or semester).

9.Concluding remarks:

- Complete each prelab before coming to the lab. Please get it signed.