

## Laboratory 9: Lookup Tables and Subtraction

### Problem 16:

- Determine the lookup table for a 7-segment display with common anode that is connected to PORTB of a PIC 16F84A microcontroller.
- Write a program to display number 9 on a 7-segment display at PORTB.

### Problem 17:

- A program partially written and with the delay subroutine can be found on the course webpage. Complete the program which is for a 7-segment display with common cathode to carry out following functions together. But first draw the **flow chart diagram**.
  - Display the number 9 on a 7-segment display at PORTB
  - Wait for 1 second
  - Subtract 7 from the displayed number and display the new number if the button at RA2 is pressed. If the result is negative, add 10 to the result and display the result of this computation.
  - go back to step 2.
- Test your program on the test card. Check the note taken from the datasheet of the card at the bottom of the page and make sure that the jumpers are in the correct position.

### Problem 18:

- Use the program from the lecture to display the number 98 on the two 7-segment displays of our test card.  
**Hint:** A program with the delay subroutine can be found on the webpage.
- Test your program on the test card. Check the note taken from the datasheet of the card at the bottom of the page and make sure that the jumpers are in the correct position.

## 5. 7 SEGMENT DISPLAY:

7 SEGMENT DISPLAY KULLANILDIĞINDA SADECE 1 TANE DISPLAY KULLANACAK İSENİZ JMP3'Ü "DISP" KONUMA ALINIZ. BU DURUMDA 1. SÜRÜCÜ TRANSİSTÖRÜN KOLLEKTÖRÜ ŞASE YAPILARAK BİLGİLERİN GÖRÜNTÜLENMESİ SAĞLANIR. ANCAK 2 DISPLAY KULANACAK İSENİZ JMP3 "DISP" KONUMUNDA OLMAMALIDIR. BU İŞ İÇİN SÜRÜCÜ TRANSİSTÖR YANINDAKİ A VE B PİNLERİ KULLANILACAKTIR. ARZU EDİLİRSE A.0 VE A.1 PİNLERİ BU AMAÇ İÇİN KULLANILABİLİR. BUNUN İÇİN JMP4 VE JMP5 JUMPERLERİ "B" KONUMUNA ALINMALIDIR. ("A.0" 2.DISPLAYI "A.1" İSE 1.DISPLAYI SÜREN TRANSİSTÖRÜN BEYZİNE BAĞLIDIR.[NPN TRANSİSTÖR KULLANILMIŞTIR])