BLG 212E - Microprocessor Systems
Homework-2

Assignment Date : 08.04.2019 Due Date : 22.04.2019 at 18:00

Write an Assembly program to perform the application described below.

- The PIA in Mikbil will be used as follows.
  PIA.A port (İSKELE.A) : Switches.
  PIA.B port (İSKELE.B) : LED lights.

- Direction Registers of PIA should be conditioned at the beginning of program as below.
  Receiver : Store $00 to PIA.A direction register (YÖNLEN.A)
  Transmitter : Store $FF to PIA.B direction register (YÖNLEN.B)

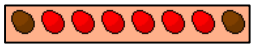
- Program should run in a loop, doing followings:
  - Read the switches (PIA.A port).
  - Get the LED character from LED_CHAR_TABLE, by using the switch value as an index.
  - Display the LED character (PIA.B port).

- The following LED character table (array) is already defined.
  The table will be used as if the PIA had a 7-Segment LED display.

```
*Character array for 7-Segment LED Display.
*LED type : Common ground which gives light when logical 1.

LED_CHAR_TABLE  RMB  10
  ORG  LED_CHAR_TABLE
  DAT %01111110   ;0
  DAT %00000110   ;1
  DAT %01011011   ;2
  DAT %01001111   ;3
  DAT %01100011   ;4
  DAT %01101101   ;5
  DAT %01111101   ;6
  DAT %00000111   ;7
  DAT %01111111   ;8
  DAT %01101111   ;9
```

- When all switches are OFF, program will display the LED character zero (first character in the table).



- When user changes any switches, program should get the corresponding LED character code from table, and display it on LEDs.

- **Example:**
  Switches are named as SW0, SW1, ... , SW7 from right to left.
  Suppose the user makes SW0 and SW1 switches ON, so the switch value is 3.
  Program gets the LED character code (01001111) from table for switch value 3.
  Then, program displays the character code on LEDS.