BLG212E Microprocessor Systems

HW#2

Due Date: 15.12.2016

As you know, educational CPU simulator allows you to write and test programs for peripheral interface adapters (PIAs). There are two PIAs: PIA-A consists of 8 switches and PIA-B consists of 8 LEDs.

Write a program on educational CPU simulator which reads switch positions and based on the switch positions, shifts/rotates a number of turned-on LEDs as follows:

- Rightmost three switches determine how many LEDs will be turned on from right to left. If it is 000 then rightmost 1 LED will be turned on. If it is 001 then rightmost 2 LEDs will be turned on, …etc

- Fourth rightmost switch determines the direction of shift/rotate. If it is 0, then the LED(s) will be shifted/rotated to the right. If it is 1, then the LED(s) will be shifted/rotated to the left.

- Fifth rightmost switch determines the operation. If it is 0, then LED(s) will be rotated. If it is 1, then LED(s) will be shifted.

- Leftmost 3 switches determine how many times the shift/rotate operation will be repeated. If it is 000 then 1 shift/rotate will be made, If it is 001 then 2 shift/rotate will be made, …etc.