Name: **Id#**
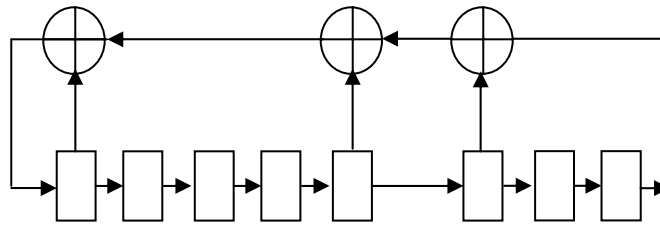
COE 205, Term 031

Computer Organization & Assembly Programming
Programming Assignment# 4

Due date: Sunday, Dec. 14

You are required to write an 8086 assembly program to implmenet a pseudo random generator using Liner Feedback Shift Register (LFSR). An 8-bit LFSR is shown below:

The 8-bit LFSR shown above is guaranteed to generate a random sequence in the range from 1 to 255 before it repeats again. The register has to be initialized first by a seed, which can be any number other than 0. In your implementation use a seed of 11011011.

   (i)   Write a MACRO, RAND8, that implements the pseudo random generator mentioned above. Every time RAND8 is called, it returns a new random number . The seed should be initialized outside the subroutine only once. The marco gets as parameter the name of an 8-bit register that has the current state of the random number generator and that will contain the generated random number.
   (ii)   Write a subroutine that displays the content of an 8-bit register in decimal. The content of the register should be passed on the stack.
   (iii)   Ask the user to enter a number n. This number will specify that the range of random numbers to be generated is between 0 and n.
   (iv)   Display in decimal using the first 10 numbers generated, between 0 and n, by the above shown LFSR. Hint: Divide the number generated by the LFSR by n. The reminader will be the random number generated.

Make sure that your program is well documented. Provide a hard copy of the program and a soft copy of both the assembly code and the executable stored in a floppy disk.