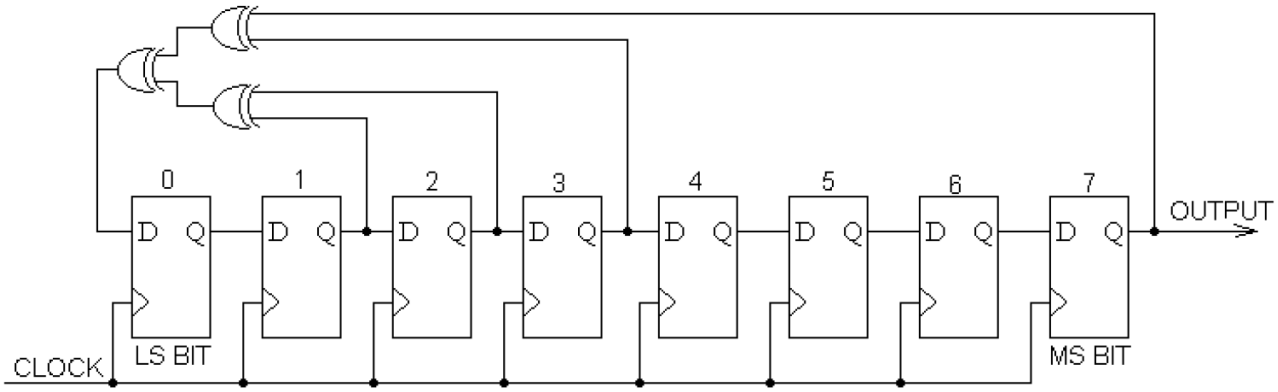
Homework 4

1. Using VMLAB, write a register-level AVR program that makes R16 into an 8-bit LFSR register with the following schematic representation. Remember that you have the AVR information in your lab description for Experiment 0x08 (Register-Level Programming) and the AVR instruction set posted on D2L. You will have to use some commands that were not used in the lab.



Here is a sample program…it is not the only possible solution.

```
ser r16 ;initial value
loop:
mov r17, r16
swap r17
mov r18, r17
lsl r18
mov r19, r18
lsl r19
eor r17, r16
eor r18, r19
eor r17, r18
lsl r17
rol r16
rjmp loop
```

2. Go to lab (ST313) and configure ARB to transmit a PRBS pattern (you pick PRBS type) at 1Kbps. Capture signal on oscilloscope triggering on the longest pulse (use width trigger). Capture enough bits to see the widest pulse along with a few extra bits. Paste scope shot below including time measurement of widest pulse and trigger menu.

Looking forward to seeing your screen shots!